



Filed by:

G. Scott Shepherd, Sr. Property Specialist - SBA Communications
134 Flanders Rd., Suite 125, Westborough, MA 01581
508.251.0720 x 3807 - GShepherd@sbsite.com

December 1, 2021

Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Tower Share Application
175 Dickenson Rd., Glastonbury, CT 06073
Latitude: 41.655897
Longitude: -72.523255
Dish Site# BOBDL00117A

Dear Ms. Bachman:

This letter and attachments are submitted on behalf of Dish Wireless LLC. Dish Wireless LLC plans to install antennas and related equipment to the tower site located at 175 Dickenson Rd., Glastonbury, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900/2100 MHz antennas and six (6) RRUs, at the 147-foot level of the existing 176-foot monopole tower, one (1) Fiber cables will also be installed. Dish Wireless LLC equipment cabinets will be placed within 7' x 5' lease area. Included are plans by B+T Group, dated September 24, 2021 Exhibit 10. Also included is a Structural Analysis prepared by TES, dated September 2, 2021, confirming that the existing tower is structurally capable of supporting the proposed equipment, attached as Exhibit 8. This facility was approved by the Town of Glastonbury's Zoning Board of Appeals August 9, 2000. Please see attached Exhibit 6.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of Dish Wireless LLC intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Noel Bishop, First Selectman for the Town of Westbrook, David Maiden-Building Official, as well as the tower owner (Crown Castle) and property owner (Toby Hill Farm LLC).

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

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the tower is 150-feet; Dish Wireless LLC proposed antennas will be located at a center line height of 147-feet.
2. The proposed modifications will not result in the increase of the site boundary as depicted on the attached site plan.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed local and state criteria. The incremental effect of the proposed changes will be negligent.
4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. As indicated in the attached power density calculations, the combined site operations will result in a total power density of 14.72% as evidenced by Exhibit 7.



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

- A. Technical Feasibility. The existing monopole has been deemed structurally capable of supporting Dish Wireless LLC proposed loading. The structural analysis is included as Exhibit 8.
- B. Legal Feasibility. As referenced above, C.G.S. 16-50aa has been authorized to issue orders approving the shared use of an existing tower such as this support tower in Glastonbury. Under the authority granted to the Council, an order of the Council approving the requested shared use would permit Dish Wireless LLC to obtain a building permit for the proposed installation. Further, a Letter of Intent is included as Exhibit 2, authorizing Dish Wireless LLC to file this application for shared use.
- C. Environmental Feasibility. The proposed shared use of this facility would have a minimal environmental impact. The installation of Dish Wireless LLC equipment at the 147-foot level of the existing 176-foot tower would have an insignificant visual impact on the area around the tower. Dish Wireless LLC ground equipment would be installed within the existing facility compound. Dish Wireless LLC shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit 7, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.
- D. Economic Feasibility. Dish Wireless LLC will be entering into an agreement with the owner of this facility to mutually agreeable terms. As previously mentioned, the Letter of Intent has been provided by the owner to assist Dish Wireless LLC with this tower sharing application.
- E. Public Safety Concerns. As discussed above, the tower is structurally capable of supporting Dish Wireless LLC proposed loading.

Dish Wireless LLC is not aware of any public safety concerns relative to the proposed sharing of the existing guyed tower. Dish Wireless LLC intentions of providing new and improved wireless service through the shared use of this facility is expected to enhance the safety and welfare of local residents and individuals traveling through Westbrook.

Sincerely,

Scott Shepherd
Site Development Specialist II
SBA COMMUNICATIONS CORPORATION
134 Flanders Rd., Suite 125
Westborough, MA 01581
508.251.0720 x3807 + T
508.366.2610 + F
508.868.6000 + C
GShepherd@sbsite.com

Attachments:



cc: Richard J. Johnson, Town Manager / with attachments
2155 Main St., Glastonbury, CT 06033
Peter R. Carey, Building Official / with attachments 5 Town
2155 Main St., Glastonbury, CT 06033
Karri-Lynn Bronzi / with attachments
8 Post Lane, Palm Coast, FL 32164 (SBA address on file)
Randall S. Chapman / with attachments
P.O. Box 7, Troy, ME 04987 (SBA address on file)

EXHIBIT LIST

Exhibit 1	Copy of Check	X
Exhibit 2	Letter of Intent to Allow Shared Use of the Existing SBA Telecommunications Site	X
Exhibit 3	Notification Receipts	x
Exhibit 4	Property Card	x
Exhibit 5	Property Map	x
Exhibit 6	Original Zoning Approval	Town of Glastonbury Zoning Board of Appeals 8/9/00
Exhibit 7	EME Report	EBI Consulting 11/30/21
Exhibit 8	Structural Analysis	TES 9/2/21
Exhibit 9	Mount Analysis	B+T Group 8/21/21
Exhibit 10	Construction Drawings	B+T Group 10/1/21

EXHIBIT 1

Copy of check

EXHIBIT 2

Letter of Intent

December 1, 2021

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

RE: **Notice of Intent to Allow Shared Use of the Existing SBA Telecommunications Site**
Location: 173 Dickenson Rd., Glastonbury, CT
Dish Wireless Site No: BOBDL00117A
Site No: CT02216-S

Dear Ms. Bachman:

Please let the following serve as Evidence of Intent to allow Dish Wireless' shared use of the existing SBA telecommunications site at **173 Dickenson Rd., Glastonbury, CT.**

SBA Properties, LLC ("Owner") and Dish Wireless ("Tenant") are entering into a Site Lease Agreement. Tenant will be provided ground space within the existing site compound for its base station equipment and space at the height of 147' for antennas and associated equipment.

Thank you,

Rick Woods

Site Development Manager
SBA COMMUNICATIONS CORPORATION
134 Flanders Road, Suite 125
Westboro, MA 01581

508.251.0720 x3800 + T
508.366.2610 + F
508.614.0389 + C
rwoods@sbsite.com

EXHIBIT 3

Fedex Labels

ORIGIN ID:BFBA (508) 614-0389
RICK WOODS
SBA COMMUNICATIONS CORPORATION
134 FLANDERS RD
SUITE 125
WESTBOROUGH, MA 01581
UNITED STATES US

SHIP DATE: 01DEC21
ACTWGT: 2.00 LB
CAD: 105843304/NET4400

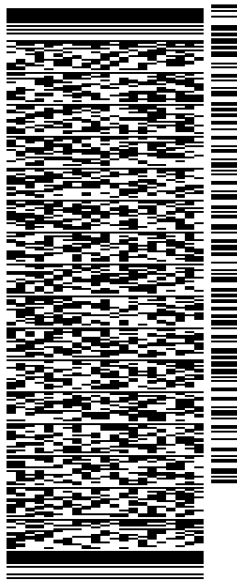
BILL SENDER

TO MELANIE A. BACHMAN EXEC. DIR
CONNECTICUT SITING COUNCIL
TEN FRANKLIN SQUARE

NEW BRITAIN CT 06051

(508) 251-0720 X 3807 REF: 105692009-6089
INV. PO. DEPT:

56D.J2/ADE5/FE4A

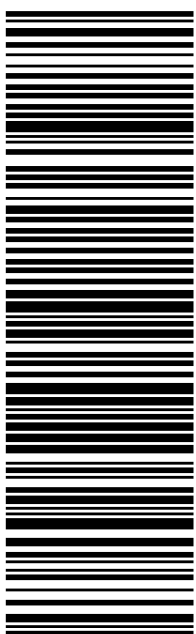


J212221101801uv

TRK# 7753 5644 9228 THU - 02 DEC 11:30A
0201 PRIORITY OVERNIGHT

EB BDLA

06051
CT:US BDL



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TRACK ANOTHER SHIPMENT

775356449228



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ON TIME

Scheduled delivery:
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FROM
WESTBOROUGH, MA US

TO
NEW BRITAIN, CT US
[MANAGE DELIVERY](#)

Travel History

Shipment Facts

Travel History

TIME ZONE
Local Scan Time



Wednesday, December 1, 2021

12:40 PM

WESTBOROUGH, MA

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Tendered at FedEx Office

9:43 AM

Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER
775356449228

SERVICE
FedEx Priority Overnight

WEIGHT
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TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
2 lbs / 0.91 kgs

TERMS
Shipper

SHIPPER REFERENCE
10-56-92009-6089

PACKAGING
FedEx Pak

SPECIAL HANDLING SECTION
Deliver Weekday

ACTUAL PICK UP

STANDARD TRANSIT

SCHEDULED DELIVERY

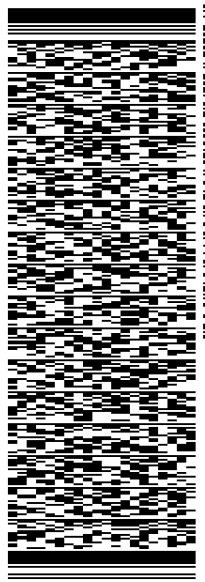
ORIGIN ID: BFEA (508) 614-0389
RICK WOODS
SBA COMMUNICATIONS CORPORATION
134 FLANDERS RD
SUITE 125
WESTBOROUGH, MA 01581
UNITED STATES US

SHIP DATE: 01DEC21
ACTWGT: 1.00 LB
CAD: 105843304/NET4400
BILL SENDER

TO
RICHARD J. JOHNSON
TOWN OF GLASTONBURY
TOWN MANAGER
2155 MAIN ST
GLASTONBURY CT 06033

(508) 251-0720 X 3807
REF: 1056920096089
PO: DEPT:

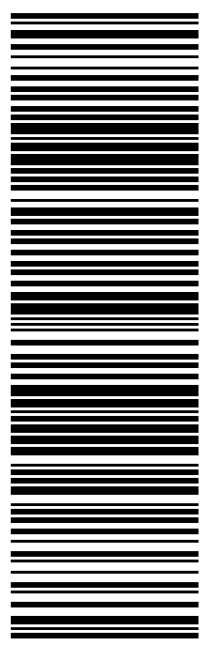
56D,J2/ADE5/FE4A



J212221101801uv

TRK# 7753 5652 0037
THU - 02 DEC 11:30A
PRIORITY OVERNIGHT

EBBDLA
06033
CT-US BDL



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WESTBOROUGH, MA US

TO
GLASTONBURY, CT US
[MANAGE DELIVERY](#)

Travel History

Shipment Facts

Travel History

TIME ZONE
Local Scan Time



Wednesday, December 1, 2021

12:40 PM

WESTBOROUGH, MA

Picked up
Tendered at FedEx Office

9:47 AM

Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER

775356520037

SERVICE

FedEx Priority Overnight

WEIGHT

0.5 lbs / 0.23 kgs

TOTAL PIECES

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TOTAL SHIPMENT WEIGHT

0.5 lbs / 0.23 kgs

TERMS

Shipper

SHIPPER REFERENCE

10-56-92009-6089

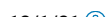
PACKAGING

FedEx Envelope

SPECIAL HANDLING SECTION

Deliver Weekday

ACTUAL PICK UP



STANDARD TRANSIT



SCHEDULED DELIVERY



ORIGIN ID:BFBA (508) 614-0389
RICK WOODS
SBA COMMUNICATIONS CORPORATION
134 FLANDERS RD
SUITE 125
WESTBOROUGH, MA 01581
UNITED STATES US

SHIP DATE: 01DEC21
ACTWGT: 1.00 LB
CAD: 105843304/NET4400
BILL SENDER

TO
PETER R. CAREY
TOWN OF GLASTONBURY
BUILDING OFFICIAL
2155 MAIN ST
GLASTONBURY CT 06033

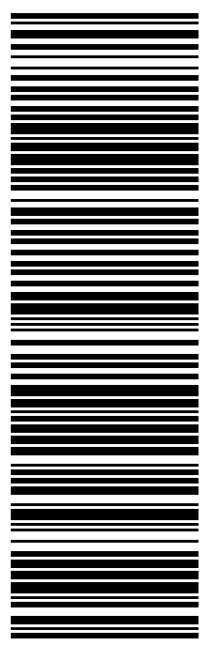
(508) 251-0720 X.3807
REF: 10-56-92009-6089
PO: DEPT:

56D,J2/ADE5/FE4A



TRK# 7753 5652 9744
0201
THU - 02 DEC 11:30A
PRIORITY OVERNIGHT

EBBDLA
06033
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775356529744


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Thursday, 12/2/2021 before 11:30 am



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WESTBOROUGH, MA

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FROM
WESTBOROUGH, MA US

TO
GLASTONBURY, CT US
[MANAGE DELIVERY](#)

Travel History

Shipment Facts

Travel History

TIME ZONE
Local Scan Time



Wednesday, December 1, 2021

12:40 PM

WESTBOROUGH, MA

Picked up
Tendered at FedEx Office

9:48 AM

Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER

775356529744

SERVICE

FedEx Priority Overnight

WEIGHT

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TOTAL PIECES

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TOTAL SHIPMENT WEIGHT

0.5 lbs / 0.23 kgs

TERMS

Shipper

SHIPPER REFERENCE

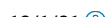
10-56-92009-6089

PACKAGING

FedEx Envelope

SPECIAL HANDLING SECTION

Deliver Weekday

ACTUAL PICK UP**STANDARD TRANSIT****SCHEDULED DELIVERY**

ORIGIN ID:BFBA (508) 614-0389
RICK WOODS
SBA COMMUNICATIONS CORPORATION
134 FLANDERS RD
SUITE 125
WESTBOROUGH, MA 01581
UNITED STATES US

SHIP DATE: 01DEC21
ACTWGT: 1.00 LB
CAD: 105843304/NET4400
BILL SENDER

TO KARRILYNN BRONZI

8 POST LANE

PALM COAST FL 32164

(508) 251-0720 X 3807 REF: 105692009-6089
INV/ PO: DEPT:

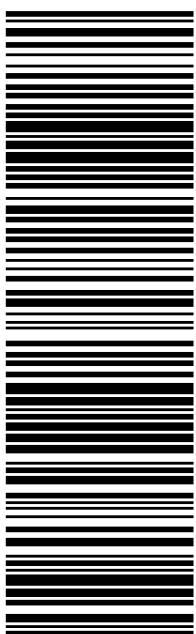


J212221101801uv

56D,J2/ADE5/FE4A

TRK# 7753 5659 0456 THU - 02 DEC 1:00P
0201 PRIORITY OVERNIGHT

XG DABA FL-US MCO 32164



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775356590456



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FROM

WESTBOROUGH, MA US

TO

PALM COAST, FL US

MANAGE DELIVERY

Travel History

Shipment Facts

Travel History

TIME ZONE
Local Scan Time



Wednesday, December 1, 2021

12:40 PM

WESTBOROUGH, MA

Picked up
Tendered at FedEx Office

9:51 AM

Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER

775356590456

SERVICE

FedEx Priority Overnight

WEIGHT

0.5 lbs / 0.23 kgs

TOTAL PIECES

1

TOTAL SHIPMENT WEIGHT

0.5 lbs / 0.23 kgs

TERMS

Shipper

G. SHEPHERD
SBA COMMUNICATIONS
134 FLANDERS RD
SUITE 125
WESTBOROUGH, MA 01581

RANDALL S. CHAPMAN
P.O. BOX 7
Troy, ME 04987



WESTBOROUGH
150 E MAIN ST
WESTBOROUGH, MA 01581-9998
(800)275-8777

12/01/2021 12:05 PM

Product	Qty	Unit Price	Price
Priority Mail® 2-Day 1 Troy, ME 04987 Weight: 0 lb 13.20 oz Expected Delivery Date Sat 12/04/2021			\$8.35
Tracking #: 9505 5112 4894 1335 6666 89			
Insurance Up to \$50.00 included			\$0.00
Total			\$8.35

EXHIBIT 4

Property Card

Owner of Record

GIS ID: 18600175
Owner: CHAPMAN RANDALL S+
Co-Owner: BRONZI KARRIE-LYNNE
Address: PO BOX 7
City, State ZIP: TROY, ME 04987-0007

Account Number: 18600175

Property Address: 175 DICKINSON RD

Parcel Information

Map/Street/Lot J12 / 1860 / N0003 **Property ID:** 1492
Developer Lot ID: **Water:** Well
Parcel Acreage: 30.35 **Sewer:** Septic
Zoning Code: RR **Census:** 5205.02

Valuation Summary

Item	Appraised Value	Assessed Value
Buildings	0	0
Land	1155200	808700
Appurtenances	0	0
Total	1155200	808700



Property highlighted in blue

**Building
 Picture
 Not
 Applicable**

Owner of Record	Deed / Page	Sale Date	Sale Price
CHAPMAN RANDALL S+	3456/0161	2017-11-07	0
CHAPMAN RANDALL S+	3379/0090	2016-10-20	0
CHAPMAN RANDALL S+	3057/0041	2013-01-11	0
CHAPMAN RANDALL S+	3057/0039	2013-01-11	0
CHAPMAN RANDALL S+	2684/0333	2009-08-03	0
CHAPMAN RANDALL S+	2295/0261	2006-02-02	0
CHAPMAN DONALD A (LU) + RANDALL S+	1582/0249	2002-05-08	0
CHAPMAN DONALD A+BRONZI	0442/0018	1988-08-25	0

Building ID 0

Building Information

Year Constructed :
Building Type :
Style :
Occupany :
Stories :
Building Zone :
Roof Type :
Roof Material :
Est. Gross S.F. :
Est. Living S.F. :

Number of Rooms :
Number of Bedrooms :
Number of Bathrooms :
Number of Half-Baths :
Exterior Wall :
Interior Wall :
Interior Floor :
Interior Floor #2 :
Air Conditioning Type :
Heat Type :
Fuel Type :

**Building
 Sketch
 Not
 Applicable**

Subarea Type	Est. Gross S.F.	Est. Living S.F.	Outbuilding Type	Est. Gross S.F.	Comments
--------------	-----------------	------------------	------------------	-----------------	----------

EXHIBIT 5

Property Map

Town of Glastonbury GIS



17,578 0 8,789 17,578 Feet

NAD_1983_StatePlane_Connecticut_FIPS_0600_Feet
© Town of Glastonbury GIS

1: 105,465



This map is a user generated static output from an Internet mapping site and is for reference only. Property boundaries and other data layers that appear on this map may or may not be accurate, current, or otherwise reliable. The Town of Glastonbury and the mapping companies assume no legal responsibility for the information contained in this data.

THIS MAP DOES NOT REPRESENT A LEGAL BOUNDARY DETERMINATION.

Google Maps 175 Dickinson Rd



Imagery ©2021 CNES / Airbus, Maxar Technologies, U.S. Geological Survey, USDA Farm Service Agency, Map data ©2021 200 ft

EXHIBIT 6

Zoning Approval

Town of Glastonbury



2155 MAIN STREET • P.O. BOX 6523 • GLASTONBURY, CONNECTICUT 06033-6523

DATE: August 15, 2000
 RE: Assessors Lot N3 Dickenson Road
 OWNER: Donald Chapman, Ronald Bronzi and Beverly Bronzi
 ZONE: RR

SBA, Inc., and Sprint PCS
 80 Eastern Boulevard
 Glastonbury, CT 06033

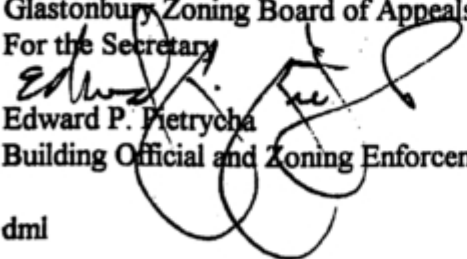
Dear Applicant(s):

Following a Public Hearing of your application on August 9, 2000, the following resolution was passed by the Zoning Board of Appeals:

The Board granted a special exception as provided for in Section 4.2.1 to construct a 180' monopole tower and the installation and operation of antennas and associated equipment for wireless communication system at assessors Lot N3 Dickenson Road as it meets all the requirements of Section 13.9.

The approval will become effective when it is recorded by the property owner in the Town Clerk's Office but to satisfy the provisions of Section 13.10 of the Glastonbury Building Zone Regulations concerning expiration, this approval shall become null and void two years from August 10, 2000, unless substantial construction on a building or structure or use is established on a lot.

This decision is based upon and subject to the representations made and evidence produced by the applicant(s) at the Public Hearing.

Glastonbury Zoning Board of Appeals
 For the Secretary

 Edward P. Pietrycha
 Building Official and Zoning Enforcement Officer

dml

cc: Wendell G. Davis, Jr., Cranmore, FitzGerald & Meaney, 49 Wethersfield Avenue, Hartford, CT.

GLASTONBURY, CT
 RECEIVED

2000 AUG 22 AM 9:32

VOL. _____ FALL _____
 E. J. FRIEDEBERG, TOWN CLERK

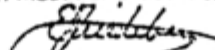


EXHIBIT 7

EME Report

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

Dish Wireless Existing Facility

Site ID: BOBDL00117A

BOBDL00117A
175 Dickenson Road
Glastonbury, Connecticut 06033

November 30, 2021

EBI Project Number: 6221007171

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	14.72%

November 30, 2021

Dish Wireless

Emissions Analysis for Site: BOBDL00117A - BOBDL00117A

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **175 Dickenson Road in Glastonbury, Connecticut** 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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits; therefore, it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately $400 \mu\text{W}/\text{cm}^2$ and $467 \mu\text{W}/\text{cm}^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is $1000 \mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed Dish Wireless Wireless antenna facility located at 175 Dickenson Road in Glastonbury, Connecticut 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 manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

- 1) 4 n71 channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 4 n70 channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 3) 4 n66 channels (AWS Band - 2190 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 4) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 5) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative

estimate as gain reductions for these particular antennas are typically much higher in this direction.

- 6) The antennas used in this modeling are the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector A, the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector B, the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 7) The antenna mounting height centerline of the proposed antennas is 147 feet above ground level (AGL).
- 8) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.
- 9) All calculations were done with respect to uncontrolled / general population threshold limits.

Dish Wireless Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	I	Antenna #:	I	Antenna #:	I
Make / Model:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21
Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz	Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz	Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz
Gain:	17.45 dBd / 22.65 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd / 22.65 dBd
Height (AGL):	147 feet	Height (AGL):	147 feet	Height (AGL):	147 feet
Channel Count:	12	Channel Count:	12	Channel Count:	12
Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts
ERP (W):	5,236.31	ERP (W):	5,236.31	ERP (W):	5,236.31
Antenna AI MPE %:	1.19%	Antenna BI MPE %:	1.19%	Antenna CI MPE %:	1.19%

Site Composite MPE %	
Carrier	MPE %
Dish Wireless (Max at Sector A):	1.19%
Voicestream	0.23%
Metro PCS	0.34%
T-Mobile	1.82%
Verizon	3.13%
Sprint	2.41%
AT&T	5.6%
Site Total MPE % :	14.72%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	1.19%
Dish Wireless Sector B Total:	1.19%
Dish Wireless Sector C Total:	1.19%
Site Total MPE % :	14.72%

Dish Wireless Maximum MPE Power Values (Sector A)							
Dish Wireless Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
Dish Wireless 600 MHz n71	4	223.68	147.0	1.62	600 MHz n71	400	0.40%
Dish Wireless 1900 MHz n70	4	542.70	147.0	3.93	1900 MHz n70	1000	0.39%
Dish Wireless 2190 MHz n66	4	542.70	147.0	3.93	2190 MHz n66	1000	0.39%
						Total:	1.19%

• NOTE: Totals may vary by approximately 0.01% due to summation of remainders in calculations.

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:	1.19%
Sector B:	1.19%
Sector C:	1.19%
Dish Wireless Maximum MPE % (Sector A):	1.19%
Site Total:	14.72%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **14.72%** 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.

EXHIBIT 8

Structural Analysis



Tower Engineering Solutions

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

Structural Analysis Report

Existing 176 ft SUMMIT Monopole
Customer Name: SBA Communications Corp
Customer Site Number: CT02216-S
Customer Site Name: Glastonbury
Carrier Name: Dish Wireless (App#: 167816, V1)
Carrier Site ID / Name: BOBDL00117A / 0
Site Location: 175 Dickenson Road
Glastonbury, Connecticut
Hartford County
Latitude: 41.655897
Longitude: -72.523255

Analysis Result:

Max Structural Usage: 91.2% [Pass]

Max Foundation Usage: 74.0% [Pass]

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

Report Prepared By: Mojdeh Sadeghzadeh



Introduction

The purpose of this report is to summarize the analysis results on the 176 ft SUMMIT 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	Paul J. Ford and Company, Job #29200-887 dated June 19, 2000
Foundation Drawing	Paul J. Ford and Company, Job #29200-887 dated June 19, 2000
Geotechnical Report	FDH Engineering, Project #1204838EG1 dated August 13, 2012
Modification Drawings	N/A

Analysis Criteria

The rigorous analysis was performed in accordance with the requirements and stipulations of the TIA-222-G-2. 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 $V_{ult} = 125.0$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 97.0$ 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:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	$S_5 = 0.179$, $S_1 = 0.063$

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	176.0	3	APXVAARR24 43-U-NA20 - Panel	(1) Low profile platform w/HRK & reinforcement kit Sitepro RMQP-4096-HK	(12) 1 5/8" (1) 1 5/8" Fiber	T-Mobile
2		3	KRY 112 489/2			
3		3	KRY 112 89/4			
4		3	4449			
5		3	RR90-17-02DP - Panel			
6		6	MHA FE15501P77/75			
7	167.0	3	RRH2X60-AWS	(1) Low Profile Platform	(6) 1 5/8" (2) 1 5/8" Hybrid	Verizon
8		3	RRH2X60-700			
9		6	SBNHH-1D65B - Panel			
10		4	LPA-80063-4CF-EDIN-5 - Panel			
11		2	APL868013 - Panel			
12		1	DB-T16Z-8AB-OZ			
13	157.0	3	ALU 1900 Mhz	(1) Low Profile Platform w/ Mount Reinforcement kit: (1) Sitepro PRK-1245L (1) Sitepro HRK14-U (1) Sitepro PRK-SFS-H-L	(4) 1 1/4" Fiber	Sprint Nextel
14		6	ALU 800 Mhz			
15		3	ALU TD-RRH8x20-25			
16		3	RFS APXVTM14-C-I20 - Panel			
17		3	Commscope NNVV-65B-R4 - Panel			
22	137.0	3	KMW HPA-65R-BU6AA Panel	(1) LP Platform w/ handrail Handrail SitePro 1: HRK14	(12) 1 5/8" (2) 1" DC Power (1) 1/2" Fiber	AT&T
23		3	CCI DMP65R-BU6DA Panel			
24		3	Powerwave 7770 Panel			
25		6	Powerwave LGP21401 TMA			
26		3	Ericsson 4449 B5/B12 RRU			
27		3	Ericsson RRUS 8843 B2 B66A RRU			
28		6	Powerwave LGP21903 Diplexer			
29		12	Powerwave 7020.00 RET			
30		1	Raycap DC6-48-60-18-8F			
31		3	Smart Bias T 1001940			

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
18	147.0	3	JMA -Wireless MX08FRO665-21 - Panel	(1) Platform w/Handrail Commscope MC-PK8-DSH	(1) 1.6" Hybrid	Dish Wireless
19		3	Fujitsu- TA08025-B605 -RRU			
20		3	Fujitsu -TA08025-B604- RRU			
21		1	Raycap RDIDC-9181-PF-48 - OVP			

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:	82.9%	73.4%	91.2%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	5844.3	43.3	65.9

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 TIA-222-G for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.8644 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 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 ANSI/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 82.88% at 49.0ft

Structure: CT02216-S-SBA
Site Name: Glastonbury
Height: 176.00 (ft)
Base Elev: 0.000 (ft)

Code: EIA/TIA-222-G
Exposure: C
Gh: 1.1

9/2/2021



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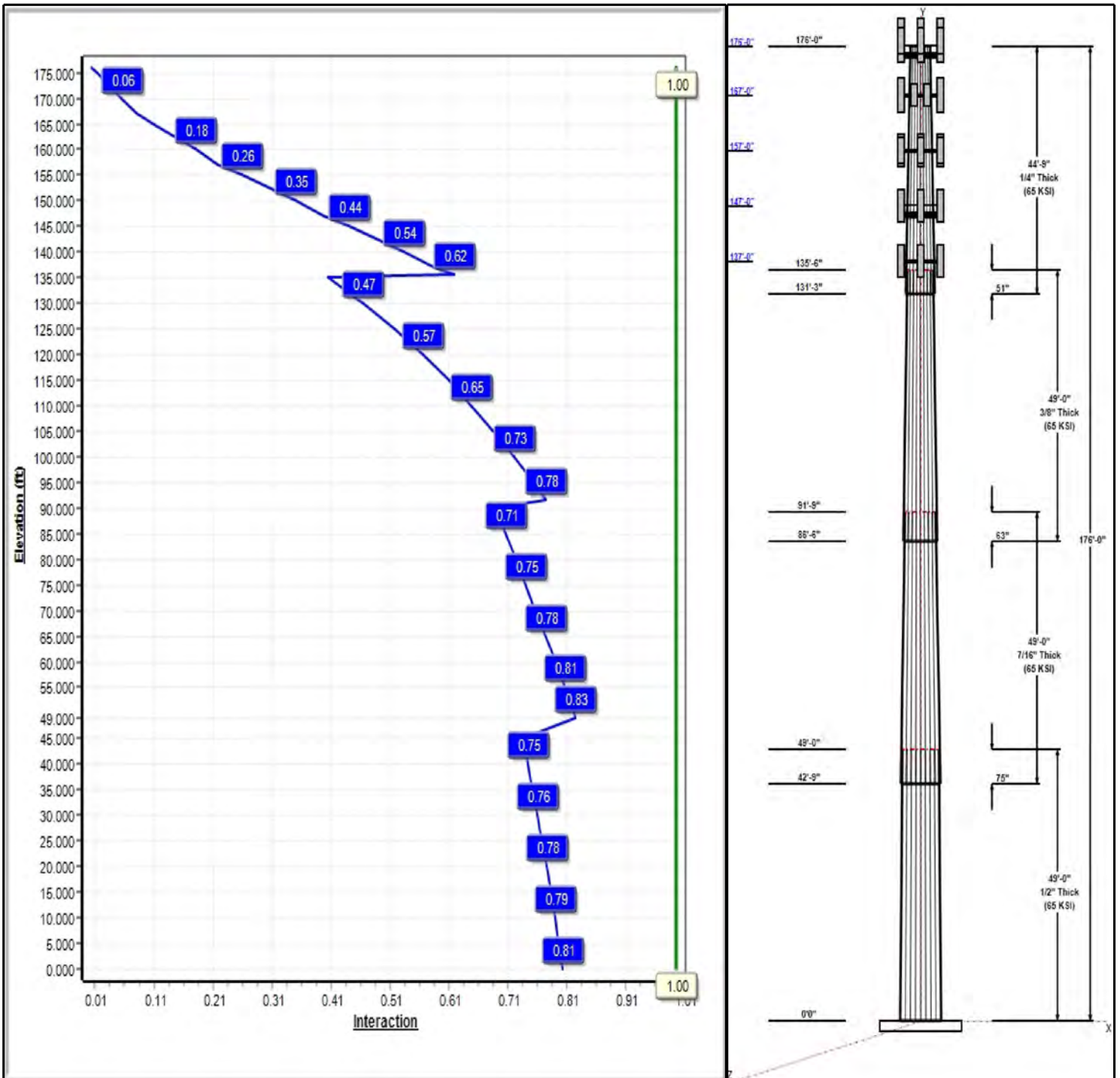
Dead Load Factor: 1.20
Wind Load Factor: 1.60

Iterations: 26

Load Case : 1.2D + 1.6W 97 mph Wind



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Structure: CT02216-S-SBA

Type: Tapered
Site Name: Glastonbury
Height: 176.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.19702

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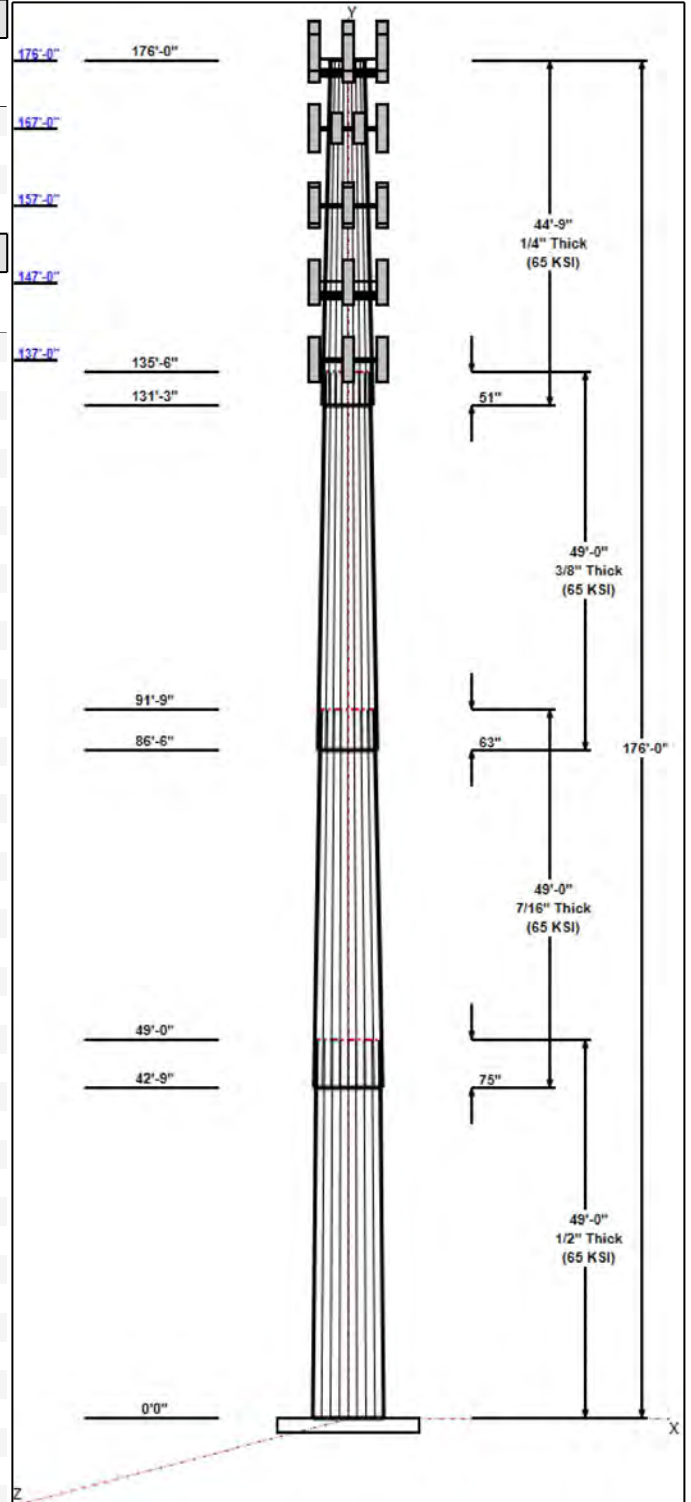


Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	49.00	46.90	56.55	0.500		0.19702	65
2	49.00	39.35	49.00	0.438	Slip	0.19702	65
3	49.00	31.48	41.13	0.375	Slip	0.19702	65
4	44.75	24.00	32.82	0.250	Slip	0.19702	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
176.00	177.00	3	RR90-17-02DP	T-Mobile
176.00	177.00	6	MHA FE15501P777/75	T-Mobile
176.00	177.00	3	APXVAARR24_43-U-NA20	T-Mobile
176.00	177.00	1	RMQP-496-HK	T-Mobile
176.00	177.00	3	KRY 112 489/2	T-Mobile
176.00	177.00	3	KRY 112 89/4	T-Mobile
176.00	177.00	3	4449	T-Mobile
176.00	179.50	1	Lightning Rod	
167.00	167.00	1	Low Profile	Verizon
167.00	167.00	3	RRH2X60-AWS	Verizon
167.00	167.00	3	RRH2X60-700	Verizon
167.00	167.00	6	SBNHH-1D65B	Verizon
167.00	167.00	4	LPA-80063-4CF-EDIN-5	Verizon
167.00	167.00	2	APL868013	Verizon
167.00	167.00	1	DB-T16Z-8AB-0Z	Verizon
157.00	157.00	1	Low Profile Platform	Sprint Nextel
157.00	157.00	3	ALU 1900 Mhz	Sprint Nextel
157.00	157.00	6	ALU 800 Mhz	Sprint Nextel
157.00	157.00	3	ALU TD-RRH8x20-25	Sprint Nextel
157.00	157.00	3	RFS APXVTM14-C-I20	Sprint Nextel
157.00	157.00	3	Commscope	Sprint Nextel
157.00	157.00	1	Sitepro PRK-1245L	Sprint Nextel
157.00	157.00	1	Sitepro HRK14-U	Sprint Nextel
157.00	157.00	1	Sitepro PRK-SFS-H-L	Sprint Nextel
147.00	147.00	3	MX08FRO665-21	Dish Wireless
147.00	147.00	1	MC-PK8-DSH	Dish Wireless
147.00	147.00	3	TA08025-B605	Dish Wireless
147.00	147.00	3	TA08025-B604	Dish Wireless
147.00	147.00	1	RDIDC-9181-PF-48	Dish Wireless
137.00	137.00	1	HRK14	AT&T
137.00	137.00	3	DMP65R-BU6DA	AT&T
137.00	137.00	3	HPA-65R-BUU-H6	AT&T
137.00	137.00	12	7020	AT&T
137.00	137.00	3	Smart Bias T 1001940	AT&T
137.00	137.00	1	DC6-48-60-18-8F	AT&T
137.00	137.00	3	7770.00	AT&T
137.00	137.00	6	LGP21401	AT&T
137.00	137.00	6	LGP21903	AT&T
137.00	137.00	1	LP Platform-Round	AT&T
137.00	137.00	3	4449 B5/B12	AT&T
137.00	137.00	3	B2 B66A 8843	AT&T



Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	176.00	Inside	1 5/8" Coax	T-Mobile

Structure: CT02216-S-SBA

Type: Tapered
Site Name: Glastonbury
Height: 176.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.19702

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0.00	176.00	Inside	1 5/8" Fiber	T-Mobile
0.00	176.00	Outside	Safety Cable	
0.00	176.00	Outside	Step bolts (ladder)	
0.00	167.00	Inside	1 5/8" Coax	Verizon
0.00	167.00	Inside	1 5/8" Hybrid	Verizon
0.00	157.00	Inside	1 1/4" Fiber	Sprint Nextel
0.00	147.00	Inside	1.6" Hybrid	Dish Wireless
0.00	137.00	Inside	1 5/8" Coax	AT&T
0.00	137.00	Inside	1" DC	AT&T
0.00	137.00	Inside	1/2" Coax	AT&T

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
24	2.25" 18J	75.0	Cluster

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
3.0000	66.0	50.0	Clipped

Reactions

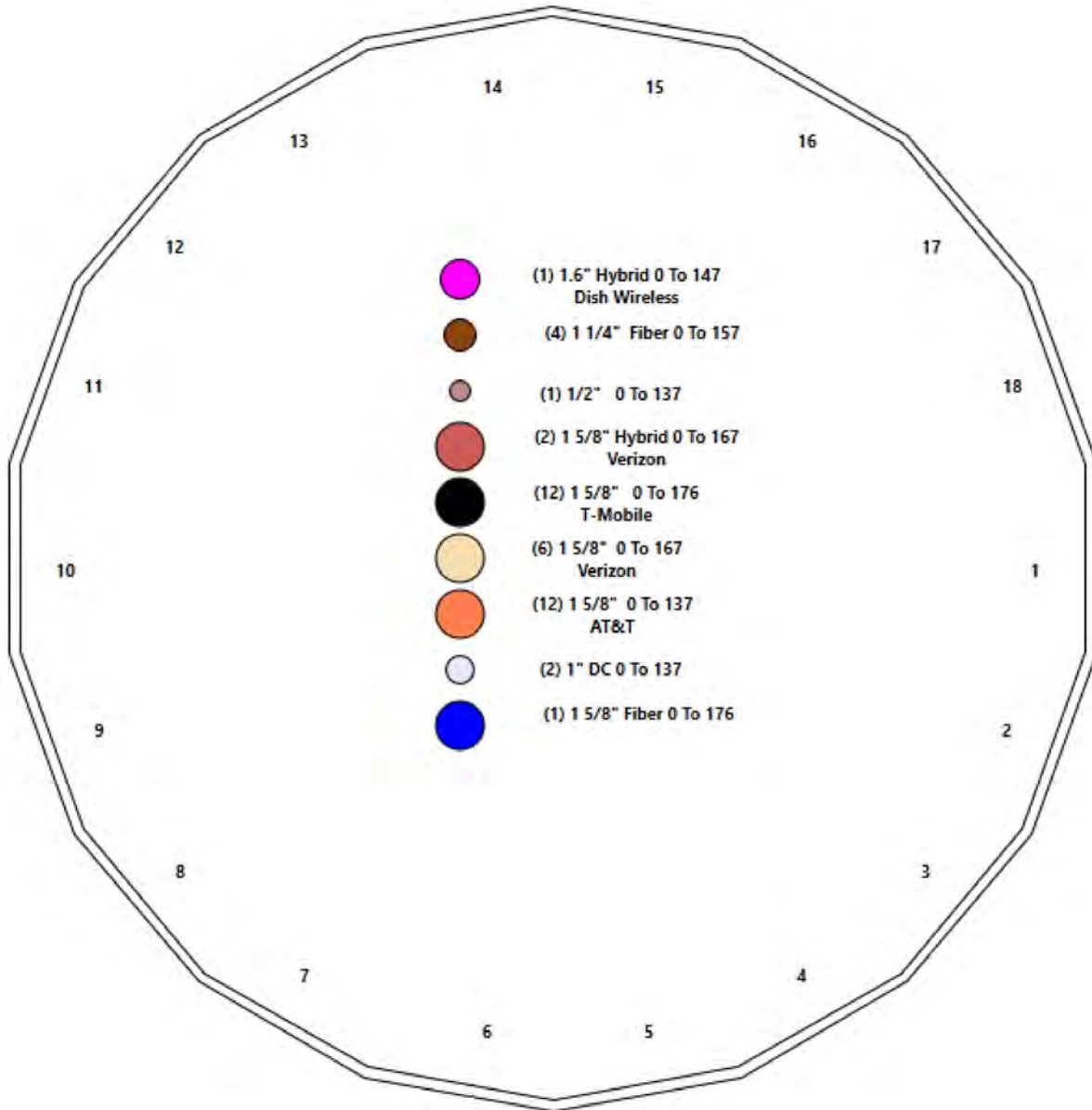
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 97 mph Wind	5844.3	43.3	65.9
0.9D + 1.6W 97 mph Wind	5751.1	43.3	49.4
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1877.3	13.2	113.3
1.2D + 1.0E	367.0	2.6	66.0
0.9D + 1.0E	360.7	2.6	49.5
1.0D + 1.0W 60 mph Wind	1386.8	10.4	55.0

Structure: CT02216-S-SBA - Coax Line Placement

Type: Monopole
Site Name: Glastonbury
Height: 176.00 (ft)

9/2/2021

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Shaft Properties

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	49.000	0.5000	65		0.00	13,554
2	18	49.000	0.4375	65	Slip	75.00	10,126
3	18	49.000	0.3750	65	Slip	63.00	7,131
4	18	44.750	0.2500	65	Slip	51.00	3,402
Total Shaft Weight:							34,213

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	56.55	0.00	88.95	35305.41	18.53	113.10	46.90	49.00	73.63	20024.4	15.13	93.79	0.197017
2	49.00	42.75	67.44	20095.24	18.34	112.01	39.35	91.75	54.03	10335.8	14.45	89.94	0.197017
3	41.13	86.50	48.51	10181.58	17.93	109.69	31.48	135.50	37.02	4525.14	13.39	83.94	0.197017
4	32.82	131.2	25.84	3462.57	21.74	131.27	24.00	176.00	18.84	1343.00	15.52	96.00	0.197017

Load Summary

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
1	176.00	RR90-17-02DP	3	13.50	4.36	0.68	161.46	5.741	0.68	0.00	1.00
2	176.00	MHA FE15501P77/75	6	11.00	0.93	0.65	37.10	1.886	0.65	0.00	1.00
3	176.00	APXVAARR24_43-U-NA20	3	128.00	20.24	0.70	720.02	22.848	0.70	0.00	1.00
4	176.00	RMQP-496-HK	1	2449.00	46.00	1.00	5923.32	89.506	1.00	0.00	1.00
5	176.00	KRY 112 489/2	3	15.40	0.65	0.67	39.27	1.479	0.67	0.00	1.00
6	176.00	KRY 112 89/4	3	15.40	0.65	0.67	39.27	1.479	0.67	0.00	1.00
7	176.00	4449	3	70.00	1.65	0.67	171.14	2.407	0.67	0.00	1.00
8	176.00	Lightning Rod	1	35.00	1.05	1.00	77.56	4.266	1.00	0.00	3.50
9	167.00	Low Profile Platform-Round	1	1500.00	22.00	1.00	3264.05	45.803	1.00	0.00	0.00
10	167.00	RRH2X60-AWS	3	60.00	3.50	0.76	177.64	4.564	0.76	0.00	0.00
11	167.00	RRH2X60-700	3	60.00	3.50	0.76	177.64	4.564	0.76	0.00	0.00
12	167.00	SBNHH-1D65B	6	40.00	8.16	0.83	332.23	9.954	0.83	0.00	0.00
13	167.00	LPA-80063-4CF-EDIN-5	4	20.00	6.15	0.93	266.55	8.702	0.93	0.00	0.00
14	167.00	APL868013	2	6.30	2.86	0.93	163.90	4.061	0.93	0.00	0.00
15	167.00	DB-T16Z-8AB-0Z	1	18.90	4.80	1.00	224.85	6.005	1.00	0.00	0.00
16	157.00	Low Profile Platform	1	1500.00	22.00	1.00	3253.19	45.656	1.00	0.00	0.00
17	157.00	ALU 1900 Mhz	3	60.00	2.77	0.67	171.76	4.469	0.67	0.00	0.00
18	157.00	ALU 800 Mhz	6	53.00	2.49	0.67	152.06	4.022	0.67	0.00	0.00
19	157.00	ALU TD-RRH8x20-25	3	70.00	4.05	0.67	228.65	5.168	0.67	0.00	0.00
20	157.00	RFS APXVTM14-C-I20	3	56.20	6.34	0.77	286.02	7.864	0.77	0.00	0.00
21	157.00	Commscope NNVV-65B-R4	3	77.40	12.27	0.75	459.89	14.220	0.75	0.00	0.00
22	157.00	Sitepro PRK-1245L	1	464.91	9.50	1.00	899.62	22.824	1.00	0.00	0.00
23	157.00	Sitepro HRK14-U	1	302.36	8.13	1.00	782.98	18.773	1.00	0.00	0.00
24	157.00	Sitepro PRK-SFS-H-L	1	230.00	6.70	1.00	660.12	16.097	1.00	0.00	0.00
25	147.00	MX08FRO665-21	3	64.50	12.49	0.74	451.55	14.439	0.74	0.00	0.00
26	147.00	MC-PK8-DSH	1	1727.00	37.59	1.00	3972.90	00.441	1.00	0.00	0.00
27	147.00	TA08025-B605	3	75.00	1.96	0.67	144.60	2.707	0.67	0.00	0.00
28	147.00	TA08025-B604	3	63.90	1.96	0.67	131.27	2.707	0.67	0.00	0.00
29	147.00	RDIDC-9181-PF-48	1	21.90	2.01	1.00	92.75	2.766	1.00	0.00	0.00
30	137.00	HRK14	1	302.36	8.13	1.00	776.48	18.628	1.00	0.00	0.00
31	137.00	DMP65R-BU6DA	3	79.40	12.71	0.72	468.58	14.644	0.72	0.00	0.00
32	137.00	HPA-65R-BUU-H6	3	51.00	9.66	0.85	396.24	11.499	0.85	0.00	0.00
33	137.00	7020	12	2.20	0.40	0.50	15.71	1.040	0.50	0.00	0.00
34	137.00	Smart Bias T 1001940	3	2.00	0.09	0.67	4.64	0.400	0.67	5.70	0.00
35	137.00	DC6-48-60-18-8F	1	32.80	1.47	1.00	117.06	2.395	1.00	0.00	0.00
36	137.00	7770.00	3	35.00	5.50	0.73	226.86	6.937	0.73	0.00	0.00
37	137.00	LGP21401	6	19.00	1.29	0.67	63.51	2.394	0.67	0.00	0.00
38	137.00	LGP21903	6	5.00	0.27	0.84	15.12	0.795	0.84	3.00	0.00
39	137.00	LP Platform-Round	1	1500.00	22.00	1.00	3229.47	45.336	1.00	0.00	0.00
40	137.00	4449 B5/B12	3	71.00	1.97	0.67	141.53	2.693	0.67	0.00	0.00
41	137.00	B2 B66A 8843	3	70.00	1.64	0.67	130.76	2.322	0.67	0.00	0.00
Totals:			121	14,384.33			42,643.50				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed

Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
0.00	176.00	(12) 1 5/8" Coax		0.00							
0.00	176.00	(1) 1 5/8" Fiber		0.00							
0.00	176.00	(1) Safety Cable		0.38							
0.00	176.00	(1) Step bolts (ladder)		0.63							
0.00	167.00	(6) 1 5/8" Coax		0.00							
0.00	167.00	(2) 1 5/8" Hybrid		0.00							
0.00	157.00	(4) 1 1/4" Fiber		0.00							
0.00	147.00	(1) 1.6" Hybrid		0.00							
0.00	137.00	(12) 1 5/8" Coax		0.00							
0.00	137.00	(2) 1" DC		0.00							
0.00	137.00	(1) 1/2" Coax		0.00							

Shaft Section Properties

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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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		0.5000	56.550	88.948	35305.4	18.53	113.10	79.6	1229.	0.0
5.00		0.5000	55.565	87.385	33476.4	18.18	111.13	80.0	1186.	1500.1
10.00		0.5000	54.580	85.822	31711.8	17.84	109.16	80.4	1144.	1473.5
15.00		0.5000	53.595	84.258	30010.2	17.49	107.19	80.8	1102.	1446.9
20.00		0.5000	52.610	82.695	28370.6	17.14	105.22	81.2	1062.	1420.3
25.00		0.5000	51.625	81.132	26791.9	16.79	103.25	81.6	1022.	1393.7
30.00		0.5000	50.639	79.569	25272.8	16.45	101.28	82.1	983.0	1367.1
35.00		0.5000	49.654	78.005	23812.3	16.10	99.31	82.5	944.6	1340.5
40.00		0.5000	48.669	76.442	22409.2	15.75	97.34	82.5	906.9	1313.9
42.75	Bot - Section 2	0.5000	48.128	75.582	21661.5	15.56	96.26	82.5	886.5	711.3
45.00		0.5000	47.684	74.879	21062.3	15.41	95.37	82.5	870.0	1089.9
49.00	Top - Section 1	0.4375	47.771	65.726	18605.1	17.84	109.19	0.0	0.0	1912.7
50.00		0.4375	47.574	65.453	18373.8	17.76	108.74	80.5	760.7	223.2
55.00		0.4375	46.589	64.085	17245.7	17.37	106.49	81.0	729.1	1102.0
60.00		0.4375	45.604	62.717	16164.8	16.97	104.24	81.4	698.2	1078.7
65.00		0.4375	44.619	61.349	15130.1	16.57	101.99	81.9	667.9	1055.4
70.00		0.4375	43.634	59.981	14140.4	16.18	99.73	82.4	638.3	1032.2
75.00		0.4375	42.649	58.613	13194.9	15.78	97.48	82.5	609.4	1008.9
80.00		0.4375	41.664	57.246	12292.5	15.38	95.23	82.5	581.1	985.6
85.00		0.4375	40.679	55.878	11432.2	14.98	92.98	82.5	553.5	962.3
86.50	Bot - Section 3	0.4375	40.383	55.467	11182.2	14.87	92.30	82.5	545.4	284.2
90.00		0.4375	39.693	54.510	10613.0	14.59	90.73	82.5	526.6	1227.8
91.75	Top - Section 2	0.3750	40.099	47.279	9425.9	17.44	106.93	0.0	0.0	605.9
95.00		0.3750	39.458	46.517	8977.4	17.14	105.22	81.2	448.1	518.7
100.00		0.3750	38.473	45.345	8315.6	16.68	102.60	81.8	425.7	781.5
105.00		0.3750	37.488	44.172	7687.1	16.22	99.97	82.3	403.9	761.5
110.00		0.3750	36.503	43.000	7091.1	15.75	97.34	82.5	382.6	741.6
115.00		0.3750	35.518	41.827	6526.7	15.29	94.71	82.5	361.9	721.6
120.00		0.3750	34.533	40.655	5993.1	14.83	92.09	82.5	341.8	701.7
125.00		0.3750	33.548	39.483	5489.4	14.36	89.46	82.5	322.3	681.7
130.00		0.3750	32.563	38.310	5014.7	13.90	86.83	82.5	303.3	661.8
131.25	Bot - Section 4	0.3750	32.317	38.017	4900.5	13.78	86.18	82.5	298.7	162.3
135.00		0.3750	31.578	37.138	4568.3	13.44	84.21	82.5	284.9	805.5
135.50	Top - Section 3	0.2500	31.979	25.176	3202.3	21.14	127.92	0.0	0.0	106.0
137.00		0.2500	31.684	24.942	3113.6	20.94	126.73	76.8	193.6	127.9
140.00		0.2500	31.093	24.473	2941.3	20.52	124.37	77.3	186.3	252.2
145.00		0.2500	30.108	23.691	2668.4	19.82	120.43	78.1	174.6	409.7
147.00		0.2500	29.713	23.378	2564.1	19.55	118.85	78.4	170.0	160.2
150.00		0.2500	29.122	22.909	2412.9	19.13	116.49	78.9	163.2	236.3
155.00		0.2500	28.137	22.128	2174.2	18.43	112.55	79.7	152.2	383.1
157.00		0.2500	27.743	21.815	2083.4	18.16	110.97	80.0	147.9	149.5
160.00		0.2500	27.152	21.346	1951.9	17.74	108.61	80.5	141.6	220.3
165.00		0.2500	26.167	20.565	1745.2	17.05	104.67	81.4	131.4	356.5
167.00		0.2500	25.773	20.252	1666.8	16.77	103.09	81.7	127.4	138.9
170.00		0.2500	25.182	19.783	1553.7	16.35	100.73	82.2	121.5	204.3
175.00		0.2500	24.197	19.001	1376.7	15.66	96.79	82.5	112.1	329.9
176.00		0.2500	24.000	18.845	1343.0	15.52	96.00	82.5	110.2	64.4

34212.9

Wind Loading - Shaft

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
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Totals:	176.00	18,241.5	41,055.5
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Discrete Appurtenance Forces

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 26

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor 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	176.00	Lightning Rod	1	32.756	36.032	1.00	1.00	1.05	42.00	0.000	3.500	60.53	0.00	211.87
2	176.00	4449	3	32.660	35.926	0.50	0.75	2.49	252.00	0.000	1.000	142.98	0.00	142.98
3	176.00	KRY 112 89/4	3	32.660	35.926	0.50	0.75	0.98	55.44	0.000	1.000	56.32	0.00	56.32
4	176.00	KRY 112 489/2	3	32.660	35.926	0.50	0.75	0.98	55.44	0.000	1.000	56.32	0.00	56.32
5	176.00	RMQP-496-HK	1	32.660	35.926	1.00	1.00	46.00	2938.80	0.000	1.000	2644.15	0.00	2644.15
6	176.00	APXVAARR24_43-U-NA2	3	32.660	35.926	0.52	0.75	31.88	460.80	0.000	1.000	1832.39	0.00	1832.39
7	176.00	MHA FE15501P77/75	6	32.660	35.926	0.49	0.75	2.72	79.20	0.000	1.000	156.36	0.00	156.36
8	176.00	RR90-17-02DP	3	32.660	35.926	0.51	0.75	6.67	48.60	0.000	1.000	383.45	0.00	383.45
9	167.00	RRH2X60-AWS	3	32.262	35.489	0.61	0.80	6.38	216.00	0.000	0.000	362.50	0.00	0.00
10	167.00	RRH2X60-700	3	32.262	35.489	0.61	0.80	6.38	216.00	0.000	0.000	362.50	0.00	0.00
11	167.00	Low Profile	1	32.262	35.489	1.00	1.00	22.00	1800.00	0.000	0.000	1249.20	0.00	0.00
12	167.00	APL868013	2	32.262	35.489	0.74	0.80	4.26	15.12	0.000	0.000	241.65	0.00	0.00
13	167.00	SBNHH-1D65B	6	32.262	35.489	0.66	0.80	32.51	288.00	0.000	0.000	1845.95	0.00	0.00
14	167.00	LPA-80063-4CF-EDIN-5	4	32.262	35.489	0.74	0.80	18.30	96.00	0.000	0.000	1039.25	0.00	0.00
15	167.00	DB-T16Z-8AB-0Z	1	32.262	35.489	1.00	1.00	4.80	22.68	0.000	0.000	272.55	0.00	0.00
16	157.00	Sitepro PRK-SFS-H-L	1	31.846	35.030	1.00	1.00	6.70	276.00	0.000	0.000	375.53	0.00	0.00
17	157.00	Sitepro HRK14-U	1	31.846	35.030	1.00	1.00	8.13	362.83	0.000	0.000	455.67	0.00	0.00
18	157.00	Sitepro PRK-1245L	1	31.846	35.030	1.00	1.00	9.50	557.89	0.000	0.000	532.46	0.00	0.00
19	157.00	Commscope	3	31.846	35.030	0.60	0.80	22.09	278.64	0.000	0.000	1237.89	0.00	0.00
20	157.00	RFS APXVTM14-C-I20	3	31.846	35.030	0.62	0.80	11.72	202.32	0.000	0.000	656.68	0.00	0.00
21	157.00	ALU TD-RRH8x20-25	3	31.846	35.030	0.54	0.80	6.51	252.00	0.000	0.000	365.01	0.00	0.00
22	157.00	ALU 800 Mhz	6	31.846	35.030	0.54	0.80	8.01	381.60	0.000	0.000	448.83	0.00	0.00
23	157.00	ALU 1900 Mhz	3	31.846	35.030	0.54	0.80	4.45	216.00	0.000	0.000	249.65	0.00	0.00
24	157.00	Low Profile Platform	1	31.846	35.030	1.00	1.00	22.00	1800.00	0.000	0.000	1233.07	0.00	0.00
25	147.00	RDIDC-9181-PF-48	1	31.408	34.548	1.00	1.00	2.01	26.28	0.000	0.000	111.11	0.00	0.00
26	147.00	TA08025-B604	3	31.408	34.548	0.50	0.75	2.95	230.04	0.000	0.000	163.33	0.00	0.00
27	147.00	TA08025-B605	3	31.408	34.548	0.50	0.75	2.95	270.00	0.000	0.000	163.33	0.00	0.00
28	147.00	MC-PK8-DSH	1	31.408	34.548	1.00	1.00	37.59	2072.40	0.000	0.000	2077.88	0.00	0.00
29	147.00	MX08FRO665-21	3	31.408	34.548	0.55	0.75	20.80	232.20	0.000	0.000	1149.54	0.00	0.00
30	137.00	7020	12	30.945	34.040	0.38	0.75	1.80	31.68	0.000	0.000	98.03	0.00	0.00
31	137.00	HPA-65R-BUU-H6	3	30.945	34.040	0.64	0.75	18.47	183.60	0.000	0.000	1006.20	0.00	0.00
32	137.00	Smart Bias T 1001940	3	30.945	34.040	0.50	0.75	0.14	7.20	7.041	0.000	7.39	32.52	0.00
33	137.00	DC6-48-60-18-8F	1	30.945	34.040	1.00	1.00	1.47	39.36	0.000	0.000	80.06	0.00	0.00
34	137.00	DMP65R-BU6DA	3	30.945	34.040	0.54	0.75	20.59	285.84	0.000	0.000	1121.42	0.00	0.00
35	137.00	HRK14	1	30.945	34.040	1.00	1.00	8.13	362.83	0.000	0.000	442.79	0.00	0.00
36	137.00	4449 B5/B12	3	30.945	34.040	0.50	0.75	2.97	255.60	0.000	0.000	161.74	0.00	0.00
37	137.00	7770.00	3	30.945	34.040	0.55	0.75	9.03	126.00	0.000	0.000	492.01	0.00	0.00
38	137.00	LGP21401	6	30.945	34.040	0.50	0.75	3.89	136.80	0.000	0.000	211.83	0.00	0.00
39	137.00	LGP21903	6	30.945	34.040	0.63	0.75	1.02	36.00	4.341	0.000	55.59	150.79	0.00
40	137.00	LP Platform-Round	1	30.945	34.040	1.00	1.00	22.00	1800.00	0.000	0.000	1198.20	0.00	0.00
41	137.00	B2 B66A 8843	3	30.945	34.040	0.50	0.75	2.47	252.00	0.000	0.000	134.65	0.00	0.00

Totals: 17,261.20 24,935.97

Total Applied Force Summary

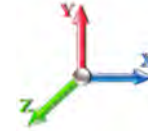
Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 26

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		527.74	2042.54	0.00	0.00
10.00		518.47	2010.63	0.00	0.00
15.00		509.20	1978.71	0.00	0.00
20.00		530.44	1946.79	0.00	0.00
25.00		545.64	1914.88	0.00	0.00
30.00		556.27	1882.96	0.00	0.00
35.00		563.55	1851.04	0.00	0.00
40.00		568.23	1819.13	0.00	0.00
42.75		312.01	986.91	0.00	0.00
45.00		260.09	1417.04	0.00	0.00
49.00		464.81	2489.25	0.00	0.00
50.00		115.50	316.32	0.00	0.00
55.00		581.92	1564.84	0.00	0.00
60.00		580.28	1536.91	0.00	0.00
65.00		577.53	1508.99	0.00	0.00
70.00		573.80	1481.06	0.00	0.00
75.00		569.20	1453.13	0.00	0.00
80.00		563.81	1425.21	0.00	0.00
85.00		557.71	1397.28	0.00	0.00
86.50		165.32	413.74	0.00	0.00
90.00		391.45	1643.04	0.00	0.00
91.75		194.03	811.99	0.00	0.00
95.00		358.55	779.99	0.00	0.00
100.00		546.21	1180.24	0.00	0.00
105.00		537.90	1156.30	0.00	0.00
110.00		529.10	1132.36	0.00	0.00
115.00		519.85	1108.42	0.00	0.00
120.00		510.18	1084.49	0.00	0.00
125.00		500.12	1060.55	0.00	0.00
130.00		489.67	1036.61	0.00	0.00
131.25		120.38	255.41	0.00	0.00
135.00		363.37	1148.46	0.00	0.00
135.50		47.86	151.43	0.00	0.00
137.00	(45) attachments	5152.94	3743.14	183.31	0.00
140.00		283.37	399.77	0.00	0.00
145.00		463.84	653.51	0.00	0.00
147.00	(11) attachments	3847.06	3087.86	0.00	0.00
150.00		269.47	377.02	0.00	0.00
155.00		440.11	615.59	0.00	0.00
157.00	(22) attachments	5727.06	4569.05	0.00	0.00
160.00		254.86	348.36	0.00	0.00
165.00		415.26	567.84	0.00	0.00
167.00	(20) attachments	5535.81	2876.47	0.00	0.00
170.00		239.61	298.83	0.00	0.00
175.00		389.36	485.28	0.00	0.00
176.00	(23) attachments	5408.61	4027.42	0.00	5483.85

Total Applied Force Summary

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Totals:	43,177.52	66,036.80	183.31	5,483.85
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Linear Appurtenance Segment Forces (Factored)

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



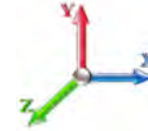
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Load Case: 1.2D + 1.6W 97 mph Wind

Iterations 26

Dead Load Factor 1.20

Wind Load Factor 1.60



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.018	0.000	19.450	0.00	1.64
5.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.018	0.000	19.450	0.00	6.24
10.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.018	0.000	19.450	0.00	1.64
10.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.018	0.000	19.450	0.00	6.24
15.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.018	0.000	19.450	0.00	1.64
15.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.018	0.000	19.450	0.00	6.24
20.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.019	0.000	20.638	0.00	1.64
20.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	20.638	0.00	6.24
25.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.019	0.000	21.630	0.00	1.64
25.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	21.630	0.00	6.24
30.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.019	0.000	22.477	0.00	1.64
30.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	22.477	0.00	6.24
35.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.020	0.000	23.218	0.00	1.64
35.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.020	0.000	23.218	0.00	6.24
40.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.020	0.000	23.880	0.00	1.64
40.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.020	0.000	23.880	0.00	6.24
42.75	Safety Cable	Yes	2.75	0.000	0.38	0.09	0.00	0.021	0.000	24.217	0.00	0.90
42.75	Step bolts (ladder)	Yes	2.75	0.000	0.63	0.14	0.00	0.021	0.000	24.217	0.00	3.43
45.00	Safety Cable	Yes	2.25	0.000	0.38	0.07	0.00	0.021	0.000	24.479	0.00	0.74
45.00	Step bolts (ladder)	Yes	2.25	0.000	0.63	0.12	0.00	0.021	0.000	24.479	0.00	2.81
49.00	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.021	0.000	24.922	0.00	1.31
49.00	Step bolts (ladder)	Yes	4.00	0.000	0.63	0.21	0.00	0.021	0.000	24.922	0.00	4.99
50.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.021	0.000	25.029	0.00	0.33
50.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.021	0.000	25.029	0.00	1.25
55.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.021	0.000	25.536	0.00	1.64
55.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	25.536	0.00	6.24
60.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.022	0.000	26.008	0.00	1.64
60.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.022	0.000	26.008	0.00	6.24
65.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.022	0.000	26.450	0.00	1.64
65.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.022	0.000	26.450	0.00	6.24
70.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.023	0.000	26.866	0.00	1.64
70.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.023	0.000	26.866	0.00	6.24
75.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.023	0.000	27.259	0.00	1.64
75.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.023	0.000	27.259	0.00	6.24
80.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.024	0.000	27.632	0.00	1.64
80.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	27.632	0.00	6.24
85.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.024	0.000	27.987	0.00	1.64
85.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	27.987	0.00	6.24
86.50	Safety Cable	Yes	1.50	0.000	0.38	0.05	0.00	0.025	0.000	28.090	0.00	0.49
86.50	Step bolts (ladder)	Yes	1.50	0.000	0.63	0.08	0.00	0.025	0.000	28.090	0.00	1.87
90.00	Safety Cable	Yes	3.50	0.000	0.38	0.11	0.00	0.025	0.000	28.325	0.00	1.15
90.00	Step bolts (ladder)	Yes	3.50	0.000	0.63	0.18	0.00	0.025	0.000	28.325	0.00	4.37
91.75	Safety Cable	Yes	1.75	0.000	0.38	0.06	0.00	0.025	0.000	28.441	0.00	0.57
91.75	Step bolts (ladder)	Yes	1.75	0.000	0.63	0.09	0.00	0.025	0.000	28.441	0.00	2.18
95.00	Safety Cable	Yes	3.25	0.000	0.38	0.10	0.00	0.025	0.000	28.650	0.00	1.06
95.00	Step bolts (ladder)	Yes	3.25	0.000	0.63	0.17	0.00	0.025	0.000	28.650	0.00	4.06
100.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.026	0.000	28.961	0.00	1.64

Linear Appurtenance Segment Forces (Factored)

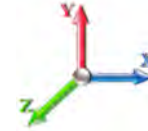
Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 26

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
100.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.026	0.000	28.961	0.00	6.24
105.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.026	0.000	29.260	0.00	1.64
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.026	0.000	29.260	0.00	6.24
110.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.027	0.000	29.548	0.00	1.64
110.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	29.548	0.00	6.24
115.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.028	0.000	29.826	0.00	1.64
115.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.028	0.000	29.826	0.00	6.24
120.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.028	0.000	30.094	0.00	1.64
120.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.028	0.000	30.094	0.00	6.24
125.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.029	0.000	30.354	0.00	1.64
125.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.029	0.000	30.354	0.00	6.24
130.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.030	0.000	30.605	0.00	1.64
130.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	30.605	0.00	6.24
131.25	Safety Cable	Yes	1.25	0.000	0.38	0.04	0.00	0.031	0.000	30.667	0.00	0.41
131.25	Step bolts (ladder)	Yes	1.25	0.000	0.63	0.07	0.00	0.031	0.000	30.667	0.00	1.56
135.00	Safety Cable	Yes	3.75	0.000	0.38	0.12	0.00	0.031	0.000	30.850	0.00	1.23
135.00	Step bolts (ladder)	Yes	3.75	0.000	0.63	0.20	0.00	0.031	0.000	30.850	0.00	4.68
135.50	Safety Cable	Yes	0.50	0.000	0.38	0.02	0.00	0.032	0.000	30.874	0.00	0.16
135.50	Step bolts (ladder)	Yes	0.50	0.000	0.63	0.03	0.00	0.032	0.000	30.874	0.00	0.62
137.00	Safety Cable	Yes	1.50	0.000	0.38	0.05	0.00	0.031	0.000	30.945	0.00	0.49
137.00	Step bolts (ladder)	Yes	1.50	0.000	0.63	0.08	0.00	0.031	0.000	30.945	0.00	1.87
140.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.032	0.000	31.087	0.00	0.98
140.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.032	0.000	31.087	0.00	3.74
145.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.033	0.000	31.317	0.00	1.64
145.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.033	0.000	31.317	0.00	6.24
147.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.033	0.000	31.408	0.00	0.66
147.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.033	0.000	31.408	0.00	2.50
150.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.034	0.000	31.541	0.00	0.98
150.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.034	0.000	31.541	0.00	3.74
155.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.035	0.000	31.760	0.00	1.64
155.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.035	0.000	31.760	0.00	6.24
157.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.036	0.000	31.846	0.00	0.66
157.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.036	0.000	31.846	0.00	2.50
160.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.036	0.000	31.973	0.00	0.98
160.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.036	0.000	31.973	0.00	3.74
165.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.037	0.000	32.181	0.00	1.64
165.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.037	0.000	32.181	0.00	6.24
167.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.038	0.000	32.262	0.00	0.66
167.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.038	0.000	32.262	0.00	2.50
170.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.039	0.000	32.384	0.00	0.98
170.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.039	0.000	32.384	0.00	3.74
175.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.040	0.000	32.582	0.00	1.64
175.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.040	0.000	32.582	0.00	6.24
176.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.041	0.000	32.621	0.00	0.33
176.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.041	0.000	32.621	0.00	1.25
Totals:											0.0	277.3

Calculated Forces

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (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



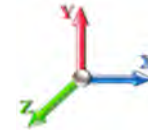
Wind Loading - Shaft

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 26

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	19.450	21.40	427.94	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	19.450	21.40	420.48	0.650	0.000	5.00	23.718	15.42	527.7	0.0	1350.0
10.00		1.00	0.85	19.450	21.40	413.03	0.650	0.000	5.00	23.301	15.15	518.5	0.0	1326.1
15.00		1.00	0.85	19.450	21.40	405.57	0.650	0.000	5.00	22.884	14.87	509.2	0.0	1302.2
20.00		1.00	0.90	20.638	22.70	410.09	0.650	0.000	5.00	22.467	14.60	530.4	0.0	1278.2
25.00		1.00	0.95	21.630	23.79	411.98	0.650	0.000	5.00	22.050	14.33	545.6	0.0	1254.3
30.00		1.00	0.98	22.477	24.72	411.95	0.650	0.000	5.00	21.634	14.06	556.3	0.0	1230.4
35.00		1.00	1.01	23.218	25.54	410.54	0.650	0.000	5.00	21.217	13.79	563.5	0.0	1206.4
40.00		1.00	1.04	23.880	26.27	408.09	0.650	0.000	5.00	20.800	13.52	568.2	0.0	1182.5
42.75	Bot - Section 2	1.00	1.06	24.217	26.64	406.38	0.650	0.000	2.75	11.262	7.32	312.0	0.0	640.2
45.00		1.00	1.07	24.479	26.93	404.82	0.650	0.000	2.25	9.288	6.04	260.1	0.0	980.9
49.00	Top - Section 1	1.00	1.09	24.922	27.41	401.71	0.650	0.000	4.00	16.303	10.60	464.8	0.0	1721.5
50.00		1.00	1.09	25.029	27.53	408.39	0.650	0.000	1.00	4.034	2.62	115.5	0.0	200.9
55.00		1.00	1.12	25.536	28.09	403.97	0.650	0.000	5.00	19.920	12.95	581.9	0.0	991.8
60.00		1.00	1.14	26.008	28.61	399.06	0.650	0.000	5.00	19.503	12.68	580.3	0.0	970.8
65.00		1.00	1.16	26.450	29.09	393.75	0.650	0.000	5.00	19.086	12.41	577.5	0.0	949.9
70.00		1.00	1.17	26.866	29.55	388.07	0.650	0.000	5.00	18.670	12.14	573.8	0.0	928.9
75.00		1.00	1.19	27.259	29.98	382.07	0.650	0.000	5.00	18.253	11.86	569.2	0.0	908.0
80.00		1.00	1.21	27.632	30.39	375.79	0.650	0.000	5.00	17.836	11.59	563.8	0.0	887.0
85.00		1.00	1.22	27.987	30.79	369.25	0.650	0.000	5.00	17.419	11.32	557.7	0.0	866.1
86.50	Bot - Section 3	1.00	1.23	28.090	30.90	367.25	0.650	0.000	1.50	5.145	3.34	165.3	0.0	255.7
90.00		1.00	1.24	28.325	31.16	362.49	0.650	0.000	3.50	12.080	7.85	391.4	0.0	1105.0
91.75	Top - Section 2	1.00	1.24	28.441	31.28	360.07	0.650	0.000	1.75	5.963	3.88	194.0	0.0	545.3
95.00		1.00	1.25	28.650	31.51	362.40	0.650	0.000	3.25	10.940	7.11	358.5	0.0	466.8
100.00		1.00	1.27	28.961	31.86	355.26	0.650	0.000	5.00	16.486	10.72	546.2	0.0	703.3
105.00		1.00	1.28	29.260	32.19	347.95	0.650	0.000	5.00	16.069	10.45	537.9	0.0	685.4
110.00		1.00	1.29	29.548	32.50	340.47	0.650	0.000	5.00	15.653	10.17	529.1	0.0	667.4
115.00		1.00	1.30	29.826	32.81	332.83	0.650	0.000	5.00	15.236	9.90	519.9	0.0	649.5
120.00		1.00	1.32	30.094	33.10	325.06	0.650	0.000	5.00	14.819	9.63	510.2	0.0	631.5
125.00		1.00	1.33	30.354	33.39	317.14	0.650	0.000	5.00	14.402	9.36	500.1	0.0	613.6
130.00		1.00	1.34	30.605	33.67	309.11	0.650	0.000	5.00	13.986	9.09	489.7	0.0	595.6
131.25	Bot - Section 4	1.00	1.34	30.667	33.73	307.08	0.650	0.000	1.25	3.431	2.23	120.4	0.0	146.1
135.00		1.00	1.35	30.850	33.93	300.95	0.650	0.000	3.75	10.296	6.69	363.4	0.0	724.9
135.50	Top - Section 3	1.00	1.35	30.874	33.96	300.13	0.650	0.000	0.50	1.355	0.88	47.9	0.0	95.4
137.00	Appurtenance(s)	1.00	1.35	30.945	34.04	302.42	0.650	0.000	1.50	4.040	2.63	143.0	0.0	115.1
140.00		1.00	1.36	31.087	34.20	297.46	0.650	0.000	3.00	7.968	5.18	283.4	0.0	227.0
145.00		1.00	1.37	31.317	34.45	289.10	0.650	0.000	5.00	12.947	8.42	463.8	0.0	368.8
147.00	Appurtenance(s)	1.00	1.37	31.408	34.55	285.73	0.650	0.000	2.00	5.062	3.29	181.9	0.0	144.2
150.00		1.00	1.38	31.541	34.70	280.64	0.650	0.000	3.00	7.468	4.85	269.5	0.0	212.6
155.00		1.00	1.39	31.760	34.94	272.09	0.650	0.000	5.00	12.113	7.87	440.1	0.0	344.8
157.00	Appurtenance(s)	1.00	1.39	31.846	35.03	268.64	0.650	0.000	2.00	4.729	3.07	172.3	0.0	134.6
160.00		1.00	1.40	31.973	35.17	263.44	0.650	0.000	3.00	6.968	4.53	254.9	0.0	198.3
165.00		1.00	1.41	32.181	35.40	254.71	0.650	0.000	5.00	11.280	7.33	415.3	0.0	320.9
167.00	Appurtenance(s)	1.00	1.41	32.262	35.49	251.19	0.650	0.000	2.00	4.395	2.86	162.2	0.0	125.0
170.00		1.00	1.42	32.384	35.62	245.89	0.650	0.000	3.00	6.468	4.20	239.6	0.0	183.9
175.00		1.00	1.42	32.582	35.84	236.99	0.650	0.000	5.00	10.446	6.79	389.4	0.0	296.9
176.00	Appurtenance(s)	1.00	1.43	32.621	35.88	235.20	0.650	0.000	1.00	2.039	1.33	76.1	0.0	58.0

Wind Loading - Shaft

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (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



Totals:	176.00	18,241.5	30,791.6
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Discrete Appurtenance Forces

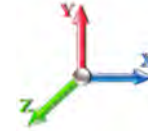
Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 26

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor 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	176.00	Lightning Rod	1	32.756	36.032	1.00	1.00	1.05	31.50	0.000	3.500	60.53	0.00	211.87	
2	176.00	4449	3	32.660	35.926	0.50	0.75	2.49	189.00	0.000	1.000	142.98	0.00	142.98	
3	176.00	KRY 112 89/4	3	32.660	35.926	0.50	0.75	0.98	41.58	0.000	1.000	56.32	0.00	56.32	
4	176.00	KRY 112 489/2	3	32.660	35.926	0.50	0.75	0.98	41.58	0.000	1.000	56.32	0.00	56.32	
5	176.00	RMQP-496-HK	1	32.660	35.926	1.00	1.00	46.00	2204.10	0.000	1.000	2644.15	0.00	2644.15	
6	176.00	APXVAARR24_43-U-NA2	3	32.660	35.926	0.52	0.75	31.88	345.60	0.000	1.000	1832.39	0.00	1832.39	
7	176.00	MHA FE15501P77/75	6	32.660	35.926	0.49	0.75	2.72	59.40	0.000	1.000	156.36	0.00	156.36	
8	176.00	RR90-17-02DP	3	32.660	35.926	0.51	0.75	6.67	36.45	0.000	1.000	383.45	0.00	383.45	
9	167.00	RRH2X60-AWS	3	32.262	35.489	0.61	0.80	6.38	162.00	0.000	0.000	362.50	0.00	0.00	
10	167.00	RRH2X60-700	3	32.262	35.489	0.61	0.80	6.38	162.00	0.000	0.000	362.50	0.00	0.00	
11	167.00	Low Profile	1	32.262	35.489	1.00	1.00	22.00	1350.00	0.000	0.000	1249.20	0.00	0.00	
12	167.00	APL868013	2	32.262	35.489	0.74	0.80	4.26	11.34	0.000	0.000	241.65	0.00	0.00	
13	167.00	SBNHH-1D65B	6	32.262	35.489	0.66	0.80	32.51	216.00	0.000	0.000	1845.95	0.00	0.00	
14	167.00	LPA-80063-4CF-EDIN-5	4	32.262	35.489	0.74	0.80	18.30	72.00	0.000	0.000	1039.25	0.00	0.00	
15	167.00	DB-T16Z-8AB-0Z	1	32.262	35.489	1.00	1.00	4.80	17.01	0.000	0.000	272.55	0.00	0.00	
16	157.00	Sitepro PRK-SFS-H-L	1	31.846	35.030	1.00	1.00	6.70	207.00	0.000	0.000	375.53	0.00	0.00	
17	157.00	Sitepro HRK14-U	1	31.846	35.030	1.00	1.00	8.13	272.12	0.000	0.000	455.67	0.00	0.00	
18	157.00	Sitepro PRK-1245L	1	31.846	35.030	1.00	1.00	9.50	418.42	0.000	0.000	532.46	0.00	0.00	
19	157.00	Commscope	3	31.846	35.030	0.60	0.80	22.09	208.98	0.000	0.000	1237.89	0.00	0.00	
20	157.00	RFS APXVTM14-C-I20	3	31.846	35.030	0.62	0.80	11.72	151.74	0.000	0.000	656.68	0.00	0.00	
21	157.00	ALU TD-RRH8x20-25	3	31.846	35.030	0.54	0.80	6.51	189.00	0.000	0.000	365.01	0.00	0.00	
22	157.00	ALU 800 Mhz	6	31.846	35.030	0.54	0.80	8.01	286.20	0.000	0.000	448.83	0.00	0.00	
23	157.00	ALU 1900 Mhz	3	31.846	35.030	0.54	0.80	4.45	162.00	0.000	0.000	249.65	0.00	0.00	
24	157.00	Low Profile Platform	1	31.846	35.030	1.00	1.00	22.00	1350.00	0.000	0.000	1233.07	0.00	0.00	
25	147.00	RDIDC-9181-PF-48	1	31.408	34.548	1.00	1.00	2.01	19.71	0.000	0.000	111.11	0.00	0.00	
26	147.00	TA08025-B604	3	31.408	34.548	0.50	0.75	2.95	172.53	0.000	0.000	163.33	0.00	0.00	
27	147.00	TA08025-B605	3	31.408	34.548	0.50	0.75	2.95	202.50	0.000	0.000	163.33	0.00	0.00	
28	147.00	MC-PK8-DSH	1	31.408	34.548	1.00	1.00	37.59	1554.30	0.000	0.000	2077.88	0.00	0.00	
29	147.00	MX08FRO665-21	3	31.408	34.548	0.55	0.75	20.80	174.15	0.000	0.000	1149.54	0.00	0.00	
30	137.00	7020	12	30.945	34.040	0.38	0.75	1.80	23.76	0.000	0.000	98.03	0.00	0.00	
31	137.00	HPA-65R-BUU-H6	3	30.945	34.040	0.64	0.75	18.47	137.70	0.000	0.000	1006.20	0.00	0.00	
32	137.00	Smart Bias T 1001940	3	30.945	34.040	0.50	0.75	0.14	5.40	7.041	0.000	7.39	32.52	0.00	
33	137.00	DC6-48-60-18-8F	1	30.945	34.040	1.00	1.00	1.47	29.52	0.000	0.000	80.06	0.00	0.00	
34	137.00	DMP65R-BU6DA	3	30.945	34.040	0.54	0.75	20.59	214.38	0.000	0.000	1121.42	0.00	0.00	
35	137.00	HRK14	1	30.945	34.040	1.00	1.00	8.13	272.12	0.000	0.000	442.79	0.00	0.00	
36	137.00	4449 B5/B12	3	30.945	34.040	0.50	0.75	2.97	191.70	0.000	0.000	161.74	0.00	0.00	
37	137.00	7770.00	3	30.945	34.040	0.55	0.75	9.03	94.50	0.000	0.000	492.01	0.00	0.00	
38	137.00	LGP21401	6	30.945	34.040	0.50	0.75	3.89	102.60	0.000	0.000	211.83	0.00	0.00	
39	137.00	LGP21903	6	30.945	34.040	0.63	0.75	1.02	27.00	4.341	0.000	55.59	150.79	0.00	
40	137.00	LP Platform-Round	1	30.945	34.040	1.00	1.00	22.00	1350.00	0.000	0.000	1198.20	0.00	0.00	
41	137.00	B2 B66A 8843	3	30.945	34.040	0.50	0.75	2.47	189.00	0.000	0.000	134.65	0.00	0.00	
Totals:									12,945.90						24,935.97

Total Applied Force Summary

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 26

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		527.74	1531.91	0.00	0.00
10.00		518.47	1507.97	0.00	0.00
15.00		509.20	1484.03	0.00	0.00
20.00		530.44	1460.10	0.00	0.00
25.00		545.64	1436.16	0.00	0.00
30.00		556.27	1412.22	0.00	0.00
35.00		563.55	1388.28	0.00	0.00
40.00		568.23	1364.34	0.00	0.00
42.75		312.01	740.19	0.00	0.00
45.00		260.09	1062.78	0.00	0.00
49.00		464.81	1866.94	0.00	0.00
50.00		115.50	237.24	0.00	0.00
55.00		581.92	1173.63	0.00	0.00
60.00		580.28	1152.69	0.00	0.00
65.00		577.53	1131.74	0.00	0.00
70.00		573.80	1110.80	0.00	0.00
75.00		569.20	1089.85	0.00	0.00
80.00		563.81	1068.90	0.00	0.00
85.00		557.71	1047.96	0.00	0.00
86.50		165.32	310.30	0.00	0.00
90.00		391.45	1232.28	0.00	0.00
91.75		194.03	608.99	0.00	0.00
95.00		358.55	584.99	0.00	0.00
100.00		546.21	885.18	0.00	0.00
105.00		537.90	867.23	0.00	0.00
110.00		529.10	849.27	0.00	0.00
115.00		519.85	831.32	0.00	0.00
120.00		510.18	813.37	0.00	0.00
125.00		500.12	795.41	0.00	0.00
130.00		489.67	777.46	0.00	0.00
131.25		120.38	191.56	0.00	0.00
135.00		363.37	861.34	0.00	0.00
135.50		47.86	113.57	0.00	0.00
137.00	(45) attachments	5152.94	2807.36	183.31	0.00
140.00		283.37	299.82	0.00	0.00
145.00		463.84	490.13	0.00	0.00
147.00	(11) attachments	3847.06	2315.89	0.00	0.00
150.00		269.47	282.76	0.00	0.00
155.00		440.11	461.70	0.00	0.00
157.00	(22) attachments	5727.06	3426.79	0.00	0.00
160.00		254.86	261.27	0.00	0.00
165.00		415.26	425.88	0.00	0.00
167.00	(20) attachments	5535.81	2157.35	0.00	0.00
170.00		239.61	224.12	0.00	0.00
175.00		389.36	363.96	0.00	0.00
176.00	(23) attachments	5408.61	3020.57	0.00	5483.85

Total Applied Force Summary

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Totals:	43,177.52	49,527.60	183.31	5,483.85
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Linear Appurtenance Segment Forces (Factored)

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 97 mph Wind

Iterations 26

Dead Load Factor 0.90

Wind Load Factor 1.60



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.018	0.000	19.450	0.00	1.23
5.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.018	0.000	19.450	0.00	4.68
10.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.018	0.000	19.450	0.00	1.23
10.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.018	0.000	19.450	0.00	4.68
15.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.018	0.000	19.450	0.00	1.23
15.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.018	0.000	19.450	0.00	4.68
20.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.019	0.000	20.638	0.00	1.23
20.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	20.638	0.00	4.68
25.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.019	0.000	21.630	0.00	1.23
25.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	21.630	0.00	4.68
30.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.019	0.000	22.477	0.00	1.23
30.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	22.477	0.00	4.68
35.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.020	0.000	23.218	0.00	1.23
35.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.020	0.000	23.218	0.00	4.68
40.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.020	0.000	23.880	0.00	1.23
40.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.020	0.000	23.880	0.00	4.68
42.75	Safety Cable	Yes	2.75	0.000	0.38	0.09	0.00	0.021	0.000	24.217	0.00	0.68
42.75	Step bolts (ladder)	Yes	2.75	0.000	0.63	0.14	0.00	0.021	0.000	24.217	0.00	2.57
45.00	Safety Cable	Yes	2.25	0.000	0.38	0.07	0.00	0.021	0.000	24.479	0.00	0.55
45.00	Step bolts (ladder)	Yes	2.25	0.000	0.63	0.12	0.00	0.021	0.000	24.479	0.00	2.11
49.00	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.021	0.000	24.922	0.00	0.98
49.00	Step bolts (ladder)	Yes	4.00	0.000	0.63	0.21	0.00	0.021	0.000	24.922	0.00	3.74
50.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.021	0.000	25.029	0.00	0.25
50.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.021	0.000	25.029	0.00	0.94
55.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.021	0.000	25.536	0.00	1.23
55.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	25.536	0.00	4.68
60.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.022	0.000	26.008	0.00	1.23
60.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.022	0.000	26.008	0.00	4.68
65.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.022	0.000	26.450	0.00	1.23
65.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.022	0.000	26.450	0.00	4.68
70.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.023	0.000	26.866	0.00	1.23
70.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.023	0.000	26.866	0.00	4.68
75.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.023	0.000	27.259	0.00	1.23
75.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.023	0.000	27.259	0.00	4.68
80.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.024	0.000	27.632	0.00	1.23
80.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	27.632	0.00	4.68
85.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.024	0.000	27.987	0.00	1.23
85.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	27.987	0.00	4.68
86.50	Safety Cable	Yes	1.50	0.000	0.38	0.05	0.00	0.025	0.000	28.090	0.00	0.37
86.50	Step bolts (ladder)	Yes	1.50	0.000	0.63	0.08	0.00	0.025	0.000	28.090	0.00	1.40
90.00	Safety Cable	Yes	3.50	0.000	0.38	0.11	0.00	0.025	0.000	28.325	0.00	0.86
90.00	Step bolts (ladder)	Yes	3.50	0.000	0.63	0.18	0.00	0.025	0.000	28.325	0.00	3.28
91.75	Safety Cable	Yes	1.75	0.000	0.38	0.06	0.00	0.025	0.000	28.441	0.00	0.43
91.75	Step bolts (ladder)	Yes	1.75	0.000	0.63	0.09	0.00	0.025	0.000	28.441	0.00	1.64
95.00	Safety Cable	Yes	3.25	0.000	0.38	0.10	0.00	0.025	0.000	28.650	0.00	0.80
95.00	Step bolts (ladder)	Yes	3.25	0.000	0.63	0.17	0.00	0.025	0.000	28.650	0.00	3.04
100.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.026	0.000	28.961	0.00	1.23

Linear Appurtenance Segment Forces (Factored)

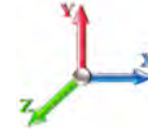
Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 26

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
100.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.026	0.000	28.961	0.00	4.68
105.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.026	0.000	29.260	0.00	1.23
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.026	0.000	29.260	0.00	4.68
110.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.027	0.000	29.548	0.00	1.23
110.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	29.548	0.00	4.68
115.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.028	0.000	29.826	0.00	1.23
115.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.028	0.000	29.826	0.00	4.68
120.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.028	0.000	30.094	0.00	1.23
120.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.028	0.000	30.094	0.00	4.68
125.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.029	0.000	30.354	0.00	1.23
125.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.029	0.000	30.354	0.00	4.68
130.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.030	0.000	30.605	0.00	1.23
130.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	30.605	0.00	4.68
131.25	Safety Cable	Yes	1.25	0.000	0.38	0.04	0.00	0.031	0.000	30.667	0.00	0.31
131.25	Step bolts (ladder)	Yes	1.25	0.000	0.63	0.07	0.00	0.031	0.000	30.667	0.00	1.17
135.00	Safety Cable	Yes	3.75	0.000	0.38	0.12	0.00	0.031	0.000	30.850	0.00	0.92
135.00	Step bolts (ladder)	Yes	3.75	0.000	0.63	0.20	0.00	0.031	0.000	30.850	0.00	3.51
135.50	Safety Cable	Yes	0.50	0.000	0.38	0.02	0.00	0.032	0.000	30.874	0.00	0.12
135.50	Step bolts (ladder)	Yes	0.50	0.000	0.63	0.03	0.00	0.032	0.000	30.874	0.00	0.47
137.00	Safety Cable	Yes	1.50	0.000	0.38	0.05	0.00	0.031	0.000	30.945	0.00	0.37
137.00	Step bolts (ladder)	Yes	1.50	0.000	0.63	0.08	0.00	0.031	0.000	30.945	0.00	1.40
140.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.032	0.000	31.087	0.00	0.74
140.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.032	0.000	31.087	0.00	2.81
145.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.033	0.000	31.317	0.00	1.23
145.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.033	0.000	31.317	0.00	4.68
147.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.033	0.000	31.408	0.00	0.49
147.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.033	0.000	31.408	0.00	1.87
150.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.034	0.000	31.541	0.00	0.74
150.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.034	0.000	31.541	0.00	2.81
155.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.035	0.000	31.760	0.00	1.23
155.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.035	0.000	31.760	0.00	4.68
157.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.036	0.000	31.846	0.00	0.49
157.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.036	0.000	31.846	0.00	1.87
160.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.036	0.000	31.973	0.00	0.74
160.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.036	0.000	31.973	0.00	2.81
165.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.037	0.000	32.181	0.00	1.23
165.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.037	0.000	32.181	0.00	4.68
167.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.038	0.000	32.262	0.00	0.49
167.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.038	0.000	32.262	0.00	1.87
170.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.039	0.000	32.384	0.00	0.74
170.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.039	0.000	32.384	0.00	2.81
175.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.040	0.000	32.582	0.00	1.23
175.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.040	0.000	32.582	0.00	4.68
176.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.041	0.000	32.621	0.00	0.25
176.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.041	0.000	32.621	0.00	0.94
Totals:											0.0	208.0

Calculated Forces

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Wind Loading - Shaft

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (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



Totals:	176.00	6,209.3	60,806.5
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Discrete Appurtenance Forces

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 27

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor 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	176.00	Lightning Rod	1	8.703	9.574	1.00	1.00	4.27	75.56	0.000	3.500	40.84	0.00	142.94
2	176.00	4449	3	8.678	9.546	0.50	0.75	3.63	555.42	0.000	1.000	34.64	0.00	34.64
3	176.00	KRY 112 89/4	3	8.678	9.546	0.50	0.75	2.23	112.06	0.000	1.000	21.29	0.00	21.29
4	176.00	KRY 112 489/2	3	8.678	9.546	0.50	0.75	2.23	112.06	0.000	1.000	21.29	0.00	21.29
5	176.00	RMQP-496-HK	1	8.678	9.546	1.00	1.00	89.51	5623.12	0.000	1.000	854.39	0.00	854.39
6	176.00	APXVAARR24_43-U-NA2	3	8.678	9.546	0.52	0.75	35.99	2236.86	0.000	1.000	343.51	0.00	343.51
7	176.00	MHA FE15501P77/75	6	8.678	9.546	0.49	0.75	5.52	202.82	0.000	1.000	52.66	0.00	52.66
8	176.00	RR90-17-02DP	3	8.678	9.546	0.51	0.75	8.78	492.47	0.000	1.000	83.85	0.00	83.85
9	167.00	RRH2X60-AWS	3	8.572	9.429	0.61	0.80	8.32	508.62	0.000	0.000	78.49	0.00	0.00
10	167.00	RRH2X60-700	3	8.572	9.429	0.61	0.80	8.32	508.62	0.000	0.000	78.49	0.00	0.00
11	167.00	Low Profile	1	8.572	9.429	1.00	1.00	45.80	3264.05	0.000	0.000	431.90	0.00	0.00
12	167.00	APL868013	2	8.572	9.429	0.74	0.80	6.04	330.32	0.000	0.000	56.98	0.00	0.00
13	167.00	SBNHH-1D65B	6	8.572	9.429	0.66	0.80	39.66	2041.39	0.000	0.000	373.93	0.00	0.00
14	167.00	LPA-80063-4CF-EDIN-5	4	8.572	9.429	0.74	0.80	25.90	872.61	0.000	0.000	244.19	0.00	0.00
15	167.00	DB-T16Z-8AB-0Z	1	8.572	9.429	1.00	1.00	6.01	228.63	0.000	0.000	56.63	0.00	0.00
16	157.00	Sitepro PRK-SFS-H-L	1	8.462	9.308	1.00	1.00	16.10	605.12	0.000	0.000	149.83	0.00	0.00
17	157.00	Sitepro HRK14-U	1	8.462	9.308	1.00	1.00	18.77	1145.81	0.000	0.000	174.73	0.00	0.00
18	157.00	Sitepro PRK-1245L	1	8.462	9.308	1.00	1.00	22.82	897.51	0.000	0.000	212.44	0.00	0.00
19	157.00	Commscope	3	8.462	9.308	0.60	0.80	25.60	1228.70	0.000	0.000	238.25	0.00	0.00
20	157.00	RFS APXVTM14-C-I20	3	8.462	9.308	0.62	0.80	14.53	891.79	0.000	0.000	135.26	0.00	0.00
21	157.00	ALU TD-RRH8x20-25	3	8.462	9.308	0.54	0.80	8.31	727.95	0.000	0.000	77.34	0.00	0.00
22	157.00	ALU 800 Mhz	6	8.462	9.308	0.54	0.80	12.93	849.39	0.000	0.000	120.39	0.00	0.00
23	157.00	ALU 1900 Mhz	3	8.462	9.308	0.54	0.80	7.19	479.57	0.000	0.000	66.89	0.00	0.00
24	157.00	Low Profile Platform	1	8.462	9.308	1.00	1.00	45.66	3253.19	0.000	0.000	424.96	0.00	0.00
25	147.00	RDIDC-9181-PF-48	1	8.345	9.180	1.00	1.00	2.77	84.43	0.000	0.000	25.39	0.00	0.00
26	147.00	TA08025-B604	3	8.345	9.180	0.50	0.75	4.08	395.85	0.000	0.000	37.45	0.00	0.00
27	147.00	TA08025-B605	3	8.345	9.180	0.50	0.75	4.08	440.99	0.000	0.000	37.45	0.00	0.00
28	147.00	MC-PK8-DSH	1	8.345	9.180	1.00	1.00	100.44	3945.30	0.000	0.000	922.01	0.00	0.00
29	147.00	MX08FRO665-21	3	8.345	9.180	0.55	0.75	24.04	1191.74	0.000	0.000	220.69	0.00	0.00
30	137.00	7020	12	8.222	9.044	0.38	0.75	4.68	159.06	0.000	0.000	42.32	0.00	0.00
31	137.00	HPA-65R-BUU-H6	3	8.222	9.044	0.64	0.75	21.99	1219.31	0.000	0.000	198.91	0.00	0.00
32	137.00	Smart Bias T 1001940	3	8.222	9.044	0.50	0.75	0.60	8.22	7.041	0.000	5.45	38.38	0.00
33	137.00	DC6-48-60-18-8F	1	8.222	9.044	1.00	1.00	2.39	106.92	0.000	0.000	21.66	0.00	0.00
34	137.00	DMP65R-BU6DA	3	8.222	9.044	0.54	0.75	23.72	1251.49	0.000	0.000	214.57	0.00	0.00
35	137.00	HRK14	1	8.222	9.044	1.00	1.00	18.63	1139.31	0.000	0.000	168.49	0.00	0.00
36	137.00	4449 B5/B12	3	8.222	9.044	0.50	0.75	4.06	426.40	0.000	0.000	36.72	0.00	0.00
37	137.00	7770.00	3	8.222	9.044	0.55	0.75	11.39	701.59	0.000	0.000	103.05	0.00	0.00
38	137.00	LGP21401	6	8.222	9.044	0.50	0.75	7.22	390.68	0.000	0.000	65.29	0.00	0.00
39	137.00	LGP21903	6	8.222	9.044	0.63	0.75	3.01	79.34	4.341	0.000	27.20	118.04	0.00
40	137.00	LP Platform-Round	1	8.222	9.044	1.00	1.00	45.34	3229.47	0.000	0.000	410.04	0.00	0.00
41	137.00	B2 B66A 8843	3	8.222	9.044	0.50	0.75	3.50	400.37	0.000	0.000	31.66	0.00	0.00

Totals: 42,414.09

6,941.50

Total Applied Force Summary

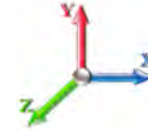
Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 27

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		171.21	2676.29	0.00	0.00
10.00		169.04	2682.76	0.00	0.00
15.00		166.62	2669.74	0.00	0.00
20.00		174.10	2648.12	0.00	0.00
25.00		179.58	2621.56	0.00	0.00
30.00		183.56	2591.71	0.00	0.00
35.00		186.43	2559.52	0.00	0.00
40.00		188.44	2525.55	0.00	0.00
42.75		103.65	1374.49	0.00	0.00
45.00		86.38	1738.47	0.00	0.00
49.00		154.63	3057.89	0.00	0.00
50.00		38.46	458.28	0.00	0.00
55.00		194.11	2269.23	0.00	0.00
60.00		194.04	2235.07	0.00	0.00
65.00		193.60	2200.21	0.00	0.00
70.00		192.85	2164.75	0.00	0.00
75.00		191.80	2128.74	0.00	0.00
80.00		190.50	2092.26	0.00	0.00
85.00		188.97	2055.36	0.00	0.00
86.50		56.11	610.33	0.00	0.00
90.00		132.82	2104.42	0.00	0.00
91.75		65.93	1041.51	0.00	0.00
95.00		122.02	1202.13	0.00	0.00
100.00		186.37	1819.70	0.00	0.00
105.00		184.11	1785.47	0.00	0.00
110.00		181.69	1750.98	0.00	0.00
115.00		179.13	1716.23	0.00	0.00
120.00		176.43	1681.24	0.00	0.00
125.00		173.60	1646.02	0.00	0.00
130.00		170.64	1610.61	0.00	0.00
131.25		42.05	398.19	0.00	0.00
135.00		126.97	1575.61	0.00	0.00
135.50		16.75	208.27	0.00	0.00
137.00	(45) attachments	1375.46	9507.82	156.42	0.00
140.00		99.47	734.38	0.00	0.00
145.00		163.43	1199.20	0.00	0.00
147.00	(11) attachments	1307.29	6531.59	0.00	0.00
150.00		95.48	697.12	0.00	0.00
155.00		156.60	1136.77	0.00	0.00
157.00	(22) attachments	1661.60	10527.27	0.00	0.00
160.00		91.27	653.58	0.00	0.00
165.00		149.41	1063.91	0.00	0.00
167.00	(20) attachments	1379.21	8173.32	0.00	0.00
170.00		86.84	588.82	0.00	0.00
175.00		141.87	955.71	0.00	0.00
176.00	(23) attachments	1480.30	9599.06	0.00	1554.56

Total Applied Force Summary

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Totals:	13,150.82	113,269.2 3	156.42	1,554.56
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Linear Appurtenance Segment Forces (Factored)

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Safety Cable	Yes	5.00	0.000	0.38	1.54	0.00	0.018	0.000	5.168	0.00	20.86
5.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.64	0.00	0.018	0.000	5.168	0.00	27.18
10.00	Safety Cable	Yes	5.00	0.000	0.38	1.64	0.00	0.018	0.000	5.168	0.00	23.53
10.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.74	0.00	0.018	0.000	5.168	0.00	29.96
15.00	Safety Cable	Yes	5.00	0.000	0.38	1.70	0.00	0.018	0.000	5.168	0.00	25.26
15.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.80	0.00	0.018	0.000	5.168	0.00	31.77
20.00	Safety Cable	Yes	5.00	0.000	0.38	1.74	0.00	0.019	0.000	5.483	0.00	26.58
20.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.85	0.00	0.019	0.000	5.483	0.00	33.13
25.00	Safety Cable	Yes	5.00	0.000	0.38	1.78	0.00	0.019	0.000	5.747	0.00	27.65
25.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.88	0.00	0.019	0.000	5.747	0.00	34.25
30.00	Safety Cable	Yes	5.00	0.000	0.38	1.81	0.00	0.019	0.000	5.972	0.00	28.56
30.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.91	0.00	0.019	0.000	5.972	0.00	35.19
35.00	Safety Cable	Yes	5.00	0.000	0.38	1.83	0.00	0.020	0.000	6.169	0.00	29.35
35.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.94	0.00	0.020	0.000	6.169	0.00	36.02
40.00	Safety Cable	Yes	5.00	0.000	0.38	1.86	0.00	0.020	0.000	6.345	0.00	30.06
40.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.96	0.00	0.020	0.000	6.345	0.00	36.75
42.75	Safety Cable	Yes	2.75	0.000	0.38	1.03	0.00	0.021	0.000	6.434	0.00	16.73
42.75	Step bolts (ladder)	Yes	2.75	0.000	0.63	1.09	0.00	0.021	0.000	6.434	0.00	20.42
45.00	Safety Cable	Yes	2.25	0.000	0.38	0.84	0.00	0.021	0.000	6.504	0.00	13.82
45.00	Step bolts (ladder)	Yes	2.25	0.000	0.63	0.89	0.00	0.021	0.000	6.504	0.00	16.84
49.00	Safety Cable	Yes	4.00	0.000	0.38	1.51	0.00	0.021	0.000	6.622	0.00	24.94
49.00	Step bolts (ladder)	Yes	4.00	0.000	0.63	1.60	0.00	0.021	0.000	6.622	0.00	30.32
50.00	Safety Cable	Yes	1.00	0.000	0.38	0.38	0.00	0.021	0.000	6.650	0.00	6.26
50.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.40	0.00	0.021	0.000	6.650	0.00	7.60
55.00	Safety Cable	Yes	5.00	0.000	0.38	1.91	0.00	0.021	0.000	6.785	0.00	31.83
55.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.02	0.00	0.021	0.000	6.785	0.00	38.58
60.00	Safety Cable	Yes	5.00	0.000	0.38	1.93	0.00	0.022	0.000	6.910	0.00	32.33
60.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.03	0.00	0.022	0.000	6.910	0.00	39.10
65.00	Safety Cable	Yes	5.00	0.000	0.38	1.94	0.00	0.022	0.000	7.028	0.00	32.80
65.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.05	0.00	0.022	0.000	7.028	0.00	39.59
70.00	Safety Cable	Yes	5.00	0.000	0.38	1.96	0.00	0.023	0.000	7.138	0.00	33.24
70.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.06	0.00	0.023	0.000	7.138	0.00	40.04
75.00	Safety Cable	Yes	5.00	0.000	0.38	1.97	0.00	0.023	0.000	7.243	0.00	33.66
75.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.07	0.00	0.023	0.000	7.243	0.00	40.47
80.00	Safety Cable	Yes	5.00	0.000	0.38	1.98	0.00	0.024	0.000	7.342	0.00	34.05
80.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.08	0.00	0.024	0.000	7.342	0.00	40.88
85.00	Safety Cable	Yes	5.00	0.000	0.38	1.99	0.00	0.024	0.000	7.436	0.00	34.43
85.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.09	0.00	0.024	0.000	7.436	0.00	41.27
86.50	Safety Cable	Yes	1.50	0.000	0.38	0.60	0.00	0.025	0.000	7.464	0.00	10.36
86.50	Step bolts (ladder)	Yes	1.50	0.000	0.63	0.63	0.00	0.025	0.000	7.464	0.00	12.42
90.00	Safety Cable	Yes	3.50	0.000	0.38	1.40	0.00	0.025	0.000	7.526	0.00	24.35
90.00	Step bolts (ladder)	Yes	3.50	0.000	0.63	1.47	0.00	0.025	0.000	7.526	0.00	29.15
91.75	Safety Cable	Yes	1.75	0.000	0.38	0.70	0.00	0.025	0.000	7.557	0.00	12.22
91.75	Step bolts (ladder)	Yes	1.75	0.000	0.63	0.74	0.00	0.025	0.000	7.557	0.00	14.62
95.00	Safety Cable	Yes	3.25	0.000	0.38	1.31	0.00	0.025	0.000	7.612	0.00	22.83
95.00	Step bolts (ladder)	Yes	3.25	0.000	0.63	1.37	0.00	0.025	0.000	7.612	0.00	27.30
100.00	Safety Cable	Yes	5.00	0.000	0.38	2.02	0.00	0.026	0.000	7.695	0.00	35.46

Linear Appurtenance Segment Forces (Factored)

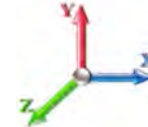
Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
100.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.12	0.00	0.026	0.000	7.695	0.00	42.33
105.00	Safety Cable	Yes	5.00	0.000	0.38	2.03	0.00	0.026	0.000	7.774	0.00	35.77
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.13	0.00	0.026	0.000	7.774	0.00	42.66
110.00	Safety Cable	Yes	5.00	0.000	0.38	2.04	0.00	0.027	0.000	7.851	0.00	36.07
110.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.14	0.00	0.027	0.000	7.851	0.00	42.97
115.00	Safety Cable	Yes	5.00	0.000	0.38	2.05	0.00	0.028	0.000	7.925	0.00	36.37
115.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.15	0.00	0.028	0.000	7.925	0.00	43.28
120.00	Safety Cable	Yes	5.00	0.000	0.38	2.05	0.00	0.028	0.000	7.996	0.00	36.65
120.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.16	0.00	0.028	0.000	7.996	0.00	43.57
125.00	Safety Cable	Yes	5.00	0.000	0.38	2.06	0.00	0.029	0.000	8.065	0.00	36.92
125.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.17	0.00	0.029	0.000	8.065	0.00	43.85
130.00	Safety Cable	Yes	5.00	0.000	0.38	2.07	0.00	0.030	0.000	8.132	0.00	37.19
130.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.17	0.00	0.030	0.000	8.132	0.00	44.12
131.25	Safety Cable	Yes	1.25	0.000	0.38	0.52	0.00	0.031	0.000	8.148	0.00	9.31
131.25	Step bolts (ladder)	Yes	1.25	0.000	0.63	0.54	0.00	0.031	0.000	8.148	0.00	11.05
135.00	Safety Cable	Yes	3.75	0.000	0.38	1.56	0.00	0.031	0.000	8.197	0.00	28.08
135.00	Step bolts (ladder)	Yes	3.75	0.000	0.63	1.64	0.00	0.031	0.000	8.197	0.00	33.29
135.50	Safety Cable	Yes	0.50	0.000	0.38	0.21	0.00	0.032	0.000	8.203	0.00	3.75
135.50	Step bolts (ladder)	Yes	0.50	0.000	0.63	0.22	0.00	0.032	0.000	8.203	0.00	4.44
137.00	Safety Cable	Yes	1.50	0.000	0.38	0.62	0.00	0.031	0.000	8.222	0.00	11.26
137.00	Step bolts (ladder)	Yes	1.50	0.000	0.63	0.66	0.00	0.031	0.000	8.222	0.00	13.35
140.00	Safety Cable	Yes	3.00	0.000	0.38	1.25	0.00	0.032	0.000	8.260	0.00	22.61
140.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	1.31	0.00	0.032	0.000	8.260	0.00	26.79
145.00	Safety Cable	Yes	5.00	0.000	0.38	2.09	0.00	0.033	0.000	8.321	0.00	37.93
145.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.20	0.00	0.033	0.000	8.321	0.00	44.89
147.00	Safety Cable	Yes	2.00	0.000	0.38	0.84	0.00	0.033	0.000	8.345	0.00	15.21
147.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.88	0.00	0.033	0.000	8.345	0.00	18.00
150.00	Safety Cable	Yes	3.00	0.000	0.38	1.26	0.00	0.034	0.000	8.381	0.00	22.90
150.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	1.32	0.00	0.034	0.000	8.381	0.00	27.08
155.00	Safety Cable	Yes	5.00	0.000	0.38	2.10	0.00	0.035	0.000	8.439	0.00	38.40
155.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.21	0.00	0.035	0.000	8.439	0.00	45.37
157.00	Safety Cable	Yes	2.00	0.000	0.38	0.84	0.00	0.036	0.000	8.462	0.00	15.39
157.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.88	0.00	0.036	0.000	8.462	0.00	18.19
160.00	Safety Cable	Yes	3.00	0.000	0.38	1.27	0.00	0.036	0.000	8.495	0.00	23.17
160.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	1.33	0.00	0.036	0.000	8.495	0.00	27.36
165.00	Safety Cable	Yes	5.00	0.000	0.38	2.12	0.00	0.037	0.000	8.551	0.00	38.84
165.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.22	0.00	0.037	0.000	8.551	0.00	45.83
167.00	Safety Cable	Yes	2.00	0.000	0.38	0.85	0.00	0.038	0.000	8.572	0.00	15.57
167.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.89	0.00	0.038	0.000	8.572	0.00	18.37
170.00	Safety Cable	Yes	3.00	0.000	0.38	1.27	0.00	0.039	0.000	8.604	0.00	23.43
170.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	1.34	0.00	0.039	0.000	8.604	0.00	27.63
175.00	Safety Cable	Yes	5.00	0.000	0.38	2.13	0.00	0.040	0.000	8.657	0.00	39.26
175.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.23	0.00	0.040	0.000	8.657	0.00	46.26
176.00	Safety Cable	Yes	1.00	0.000	0.38	0.43	0.00	0.041	0.000	8.667	0.00	7.86
176.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.45	0.00	0.041	0.000	8.667	0.00	9.26
Totals:											0.0	2,605.9

Calculated Forces

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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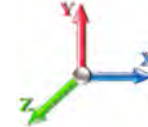
Seismic Segment Forces (Factored)

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0E						Iterations 24
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)	0.27	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		1500.0	0.00	0.03	0.02	28.84	
10.00		1473.4	0.01	0.05	0.03	41.04	
15.00		1446.8	0.01	0.06	0.03	46.77	
20.00		1420.2	0.02	0.07	0.04	49.35	
25.00		1393.6	0.04	0.07	0.04	50.37	
30.00		1367.0	0.05	0.07	0.04	50.67	
35.00		1340.4	0.07	0.07	0.04	50.74	
40.00		1313.8	0.10	0.07	0.04	50.77	
42.75	Bot - Section 2	711.29	0.11	0.07	0.04	27.81	
45.00		1089.9	0.12	0.07	0.03	43.02	
49.00	Top - Section 1	1912.7	0.15	0.07	0.03	76.69	
50.00		223.19	0.15	0.07	0.03	8.98	
55.00		1101.9	0.18	0.06	0.03	44.87	
60.00		1078.7	0.22	0.06	0.02	43.76	
65.00		1055.4	0.26	0.05	0.02	41.49	
70.00		1032.1	0.30	0.05	0.01	37.48	
75.00		1008.8	0.34	0.03	0.01	31.14	
80.00		985.61	0.39	0.02	0.01	22.05	
85.00		962.33	0.44	0.00	0.01	10.37	
86.50	Bot - Section 3	284.16	0.46	0.00	0.01	1.93	
90.00		1227.7	0.49	-0.01	0.01	-3.73	
91.75	Top - Section 2	605.94	0.51	-0.02	0.01	-4.89	
95.00		518.65	0.55	-0.03	0.01	-8.92	
100.00		781.47	0.61	-0.06	0.02	-23.10	
105.00		761.52	0.67	-0.08	0.02	-29.38	
110.00		741.57	0.74	-0.10	0.04	-32.34	
115.00		721.62	0.81	-0.11	0.06	-32.16	
120.00		701.67	0.88	-0.12	0.08	-29.21	
125.00		681.73	0.95	-0.12	0.11	-23.85	
130.00		661.78	1.03	-0.10	0.15	-16.39	
131.25	Bot - Section 4	162.33	1.05	-0.09	0.16	-3.52	
135.00		805.50	1.11	-0.06	0.19	-8.90	
135.50	Top - Section 3	105.99	1.12	-0.06	0.20	-1.00	
137.00	Appurtenance(s)	3058.6	1.15	-0.04	0.22	-14.00	
140.00		252.22	1.20	0.00	0.25	1.56	
145.00		409.73	1.28	0.10	0.32	11.03	
147.00	Appurtenance(s)	2519.2	1.32	0.15	0.35	91.27	
150.00		236.26	1.37	0.23	0.40	12.11	
155.00		383.13	1.47	0.42	0.50	30.36	
157.00	Appurtenance(s)	3755.6	1.50	0.51	0.55	343.56	
160.00		220.30	1.56	0.67	0.62	24.45	
165.00		356.53	1.66	0.98	0.76	52.23	
167.00	Appurtenance(s)	2350.3	1.70	1.13	0.82	380.29	
170.00		204.34	1.76	1.38	0.92	37.99	
175.00		329.93	1.87	1.87	1.10	75.67	

Seismic Segment Forces (Factored)

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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176.00	Appurtenance(s)	3341.2	1.89	1.98	1.14	796.98	
Totals:		48,597.3				2,384.2	Total Wind: 43,177.5

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

Calculated Forces

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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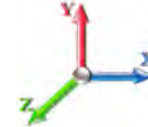
Seismic Segment Forces (Factored)

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0E						Iterations 24
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)	0.27	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		1500.0	0.00	0.03	0.02	28.84	
10.00		1473.4	0.01	0.05	0.03	41.04	
15.00		1446.8	0.01	0.06	0.03	46.77	
20.00		1420.2	0.02	0.07	0.04	49.35	
25.00		1393.6	0.04	0.07	0.04	50.37	
30.00		1367.0	0.05	0.07	0.04	50.67	
35.00		1340.4	0.07	0.07	0.04	50.74	
40.00		1313.8	0.10	0.07	0.04	50.77	
42.75	Bot - Section 2	711.29	0.11	0.07	0.04	27.81	
45.00		1089.9	0.12	0.07	0.03	43.02	
49.00	Top - Section 1	1912.7	0.15	0.07	0.03	76.69	
50.00		223.19	0.15	0.07	0.03	8.98	
55.00		1101.9	0.18	0.06	0.03	44.87	
60.00		1078.7	0.22	0.06	0.02	43.76	
65.00		1055.4	0.26	0.05	0.02	41.49	
70.00		1032.1	0.30	0.05	0.01	37.48	
75.00		1008.8	0.34	0.03	0.01	31.14	
80.00		985.61	0.39	0.02	0.01	22.05	
85.00		962.33	0.44	0.00	0.01	10.37	
86.50	Bot - Section 3	284.16	0.46	0.00	0.01	1.93	
90.00		1227.7	0.49	-0.01	0.01	-3.73	
91.75	Top - Section 2	605.94	0.51	-0.02	0.01	-4.89	
95.00		518.65	0.55	-0.03	0.01	-8.92	
100.00		781.47	0.61	-0.06	0.02	-23.10	
105.00		761.52	0.67	-0.08	0.02	-29.38	
110.00		741.57	0.74	-0.10	0.04	-32.34	
115.00		721.62	0.81	-0.11	0.06	-32.16	
120.00		701.67	0.88	-0.12	0.08	-29.21	
125.00		681.73	0.95	-0.12	0.11	-23.85	
130.00		661.78	1.03	-0.10	0.15	-16.39	
131.25	Bot - Section 4	162.33	1.05	-0.09	0.16	-3.52	
135.00		805.50	1.11	-0.06	0.19	-8.90	
135.50	Top - Section 3	105.99	1.12	-0.06	0.20	-1.00	
137.00	Appurtenance(s)	3058.6	1.15	-0.04	0.22	-14.00	
140.00		252.22	1.20	0.00	0.25	1.56	
145.00		409.73	1.28	0.10	0.32	11.03	
147.00	Appurtenance(s)	2519.2	1.32	0.15	0.35	91.27	
150.00		236.26	1.37	0.23	0.40	12.11	
155.00		383.13	1.47	0.42	0.50	30.36	
157.00	Appurtenance(s)	3755.6	1.50	0.51	0.55	343.56	
160.00		220.30	1.56	0.67	0.62	24.45	
165.00		356.53	1.66	0.98	0.76	52.23	
167.00	Appurtenance(s)	2350.3	1.70	1.13	0.82	380.29	
170.00		204.34	1.76	1.38	0.92	37.99	
175.00		329.93	1.87	1.87	1.10	75.67	

Seismic Segment Forces (Factored)

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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176.00	Appurtenance(s)	3341.2	1.89	1.98	1.14	796.98	
Totals:		48,597.3				2,384.2	Total Wind: 43,177.5

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

Calculated Forces

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
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Wind Loading - Shaft

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
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Totals:	176.00	4,362.1	34,212.9
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Discrete Appurtenance Forces

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

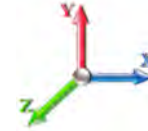


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Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 25

Dead Load Factor 1.00
Wind Load Factor 1.00



No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor 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	176.00	Lightning Rod	1	12.533	13.786	1.00	1.00	1.05	35.00	0.000	3.500	14.48	0.00	50.66
2	176.00	4449	3	12.496	13.746	0.50	0.75	2.49	210.00	0.000	1.000	34.19	0.00	34.19
3	176.00	KRY 112 89/4	3	12.496	13.746	0.50	0.75	0.98	46.20	0.000	1.000	13.47	0.00	13.47
4	176.00	KRY 112 489/2	3	12.496	13.746	0.50	0.75	0.98	46.20	0.000	1.000	13.47	0.00	13.47
5	176.00	RMQP-496-HK	1	12.496	13.746	1.00	1.00	46.00	2449.00	0.000	1.000	632.30	0.00	632.30
6	176.00	APXVAARR24_43-U-NA2	3	12.496	13.746	0.52	0.75	31.88	384.00	0.000	1.000	438.19	0.00	438.19
7	176.00	MHA FE15501P77/75	6	12.496	13.746	0.49	0.75	2.72	66.00	0.000	1.000	37.39	0.00	37.39
8	176.00	RR90-17-02DP	3	12.496	13.746	0.51	0.75	6.67	40.50	0.000	1.000	91.69	0.00	91.69
9	167.00	RRH2X60-AWS	3	12.344	13.578	0.61	0.80	6.38	180.00	0.000	0.000	86.68	0.00	0.00
10	167.00	RRH2X60-700	3	12.344	13.578	0.61	0.80	6.38	180.00	0.000	0.000	86.68	0.00	0.00
11	167.00	Low Profile	1	12.344	13.578	1.00	1.00	22.00	1500.00	0.000	0.000	298.73	0.00	0.00
12	167.00	APL868013	2	12.344	13.578	0.74	0.80	4.26	12.60	0.000	0.000	57.79	0.00	0.00
13	167.00	SBNHH-1D65B	6	12.344	13.578	0.66	0.80	32.51	240.00	0.000	0.000	441.43	0.00	0.00
14	167.00	LPA-80063-4CF-EDIN-5	4	12.344	13.578	0.74	0.80	18.30	80.00	0.000	0.000	248.52	0.00	0.00
15	167.00	DB-T16Z-8AB-OZ	1	12.344	13.578	1.00	1.00	4.80	18.90	0.000	0.000	65.18	0.00	0.00
16	157.00	Sitepro PRK-SFS-H-L	1	12.185	13.403	1.00	1.00	6.70	230.00	0.000	0.000	89.80	0.00	0.00
17	157.00	Sitepro HRK14-U	1	12.185	13.403	1.00	1.00	8.13	302.36	0.000	0.000	108.97	0.00	0.00
18	157.00	Sitepro PRK-1245L	1	12.185	13.403	1.00	1.00	9.50	464.91	0.000	0.000	127.33	0.00	0.00
19	157.00	Commscope	3	12.185	13.403	0.60	0.80	22.09	232.20	0.000	0.000	296.02	0.00	0.00
20	157.00	RFS APXVTM14-C-I20	3	12.185	13.403	0.62	0.80	11.72	168.60	0.000	0.000	157.03	0.00	0.00
21	157.00	ALU TD-RRH8x20-25	3	12.185	13.403	0.54	0.80	6.51	210.00	0.000	0.000	87.29	0.00	0.00
22	157.00	ALU 800 Mhz	6	12.185	13.403	0.54	0.80	8.01	318.00	0.000	0.000	107.33	0.00	0.00
23	157.00	ALU 1900 Mhz	3	12.185	13.403	0.54	0.80	4.45	180.00	0.000	0.000	59.70	0.00	0.00
24	157.00	Low Profile Platform	1	12.185	13.403	1.00	1.00	22.00	1500.00	0.000	0.000	294.87	0.00	0.00
25	147.00	RDIDC-9181-PF-48	1	12.017	13.219	1.00	1.00	2.01	21.90	0.000	0.000	26.57	0.00	0.00
26	147.00	TA08025-B604	3	12.017	13.219	0.50	0.75	2.95	191.70	0.000	0.000	39.06	0.00	0.00
27	147.00	TA08025-B605	3	12.017	13.219	0.50	0.75	2.95	225.00	0.000	0.000	39.06	0.00	0.00
28	147.00	MC-PK8-DSH	1	12.017	13.219	1.00	1.00	37.59	1727.00	0.000	0.000	496.89	0.00	0.00
29	147.00	MX08FRO665-21	3	12.017	13.219	0.55	0.75	20.80	193.50	0.000	0.000	274.89	0.00	0.00
30	137.00	7020	12	11.840	13.024	0.38	0.75	1.80	26.40	0.000	0.000	23.44	0.00	0.00
31	137.00	HPA-65R-BUU-H6	3	11.840	13.024	0.64	0.75	18.47	153.00	0.000	0.000	240.62	0.00	0.00
32	137.00	Smart Bias T 1001940	3	11.840	13.024	0.50	0.75	0.14	6.00	7.041	0.000	1.77	12.44	0.00
33	137.00	DC6-48-60-18-8F	1	11.840	13.024	1.00	1.00	1.47	32.80	0.000	0.000	19.15	0.00	0.00
34	137.00	DMP65R-BU6DA	3	11.840	13.024	0.54	0.75	20.59	238.20	0.000	0.000	268.17	0.00	0.00
35	137.00	HRK14	1	11.840	13.024	1.00	1.00	8.13	302.36	0.000	0.000	105.89	0.00	0.00
36	137.00	4449 B5/B12	3	11.840	13.024	0.50	0.75	2.97	213.00	0.000	0.000	38.68	0.00	0.00
37	137.00	7770.00	3	11.840	13.024	0.55	0.75	9.03	105.00	0.000	0.000	117.66	0.00	0.00
38	137.00	LGP21401	6	11.840	13.024	0.50	0.75	3.89	114.00	0.000	0.000	50.65	0.00	0.00
39	137.00	LGP21903	6	11.840	13.024	0.63	0.75	1.02	30.00	4.341	0.000	13.29	57.70	0.00
40	137.00	LP Platform-Round	1	11.840	13.024	1.00	1.00	22.00	1500.00	0.000	0.000	286.53	0.00	0.00
41	137.00	B2 B66A 8843	3	11.840	13.024	0.50	0.75	2.47	210.00	0.000	0.000	32.20	0.00	0.00

Totals: 14,384.33 5,963.01

Total Applied Force Summary

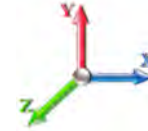
Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 25

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		126.20	1702.12	0.00	0.00
10.00		123.98	1675.52	0.00	0.00
15.00		121.77	1648.93	0.00	0.00
20.00		126.84	1622.33	0.00	0.00
25.00		130.48	1595.73	0.00	0.00
30.00		133.02	1569.13	0.00	0.00
35.00		134.76	1542.54	0.00	0.00
40.00		135.88	1515.94	0.00	0.00
42.75		74.61	822.43	0.00	0.00
45.00		62.20	1180.86	0.00	0.00
49.00		111.15	2074.38	0.00	0.00
50.00		27.62	263.60	0.00	0.00
55.00		139.16	1304.03	0.00	0.00
60.00		138.76	1280.76	0.00	0.00
65.00		138.11	1257.49	0.00	0.00
70.00		137.21	1234.22	0.00	0.00
75.00		136.11	1210.94	0.00	0.00
80.00		134.83	1187.67	0.00	0.00
85.00		133.37	1164.40	0.00	0.00
86.50		39.53	344.78	0.00	0.00
90.00		93.61	1369.20	0.00	0.00
91.75		46.40	676.66	0.00	0.00
95.00		85.74	649.99	0.00	0.00
100.00		130.62	983.53	0.00	0.00
105.00		128.63	963.58	0.00	0.00
110.00		126.53	943.64	0.00	0.00
115.00		124.31	923.69	0.00	0.00
120.00		122.00	903.74	0.00	0.00
125.00		119.59	883.79	0.00	0.00
130.00		117.10	863.84	0.00	0.00
131.25		28.79	212.84	0.00	0.00
135.00		86.89	957.05	0.00	0.00
135.50		11.45	126.19	0.00	0.00
137.00	(45) attachments	1232.24	3119.28	70.14	0.00
140.00		67.76	333.14	0.00	0.00
145.00		110.92	544.59	0.00	0.00
147.00	(11) attachments	919.96	2573.21	0.00	0.00
150.00		64.44	314.18	0.00	0.00
155.00		105.25	512.99	0.00	0.00
157.00	(22) attachments	1369.53	3807.54	0.00	0.00
160.00		60.95	290.30	0.00	0.00
165.00		99.30	473.20	0.00	0.00
167.00	(20) attachments	1323.79	2397.06	0.00	0.00
170.00		57.30	249.02	0.00	0.00
175.00		93.11	404.40	0.00	0.00
176.00	(23) attachments	1293.38	3356.18	0.00	1311.37

Total Applied Force Summary

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Totals:	10,325.16	55,030.67	70.14	1,311.37
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Linear Appurtenance Segment Forces (Factored)

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 25

Dead Load Factor 1.00
Wind Load Factor 1.00



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.018	0.000	7.442	0.00	1.37
5.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.018	0.000	7.442	0.00	5.20
10.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.018	0.000	7.442	0.00	1.37
10.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.018	0.000	7.442	0.00	5.20
15.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.018	0.000	7.442	0.00	1.37
15.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.018	0.000	7.442	0.00	5.20
20.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.019	0.000	7.896	0.00	1.37
20.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	7.896	0.00	5.20
25.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.019	0.000	8.276	0.00	1.37
25.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	8.276	0.00	5.20
30.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.019	0.000	8.600	0.00	1.37
30.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	8.600	0.00	5.20
35.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.020	0.000	8.883	0.00	1.37
35.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.020	0.000	8.883	0.00	5.20
40.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.020	0.000	9.137	0.00	1.37
40.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.020	0.000	9.137	0.00	5.20
42.75	Safety Cable	Yes	2.75	0.000	0.38	0.09	0.00	0.021	0.000	9.266	0.00	0.75
42.75	Step bolts (ladder)	Yes	2.75	0.000	0.63	0.14	0.00	0.021	0.000	9.266	0.00	2.86
45.00	Safety Cable	Yes	2.25	0.000	0.38	0.07	0.00	0.021	0.000	9.366	0.00	0.61
45.00	Step bolts (ladder)	Yes	2.25	0.000	0.63	0.12	0.00	0.021	0.000	9.366	0.00	2.34
49.00	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.021	0.000	9.536	0.00	1.09
49.00	Step bolts (ladder)	Yes	4.00	0.000	0.63	0.21	0.00	0.021	0.000	9.536	0.00	4.16
50.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.021	0.000	9.576	0.00	0.27
50.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.021	0.000	9.576	0.00	1.04
55.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.021	0.000	9.770	0.00	1.37
55.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	9.770	0.00	5.20
60.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.022	0.000	9.951	0.00	1.37
60.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.022	0.000	9.951	0.00	5.20
65.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.022	0.000	10.120	0.00	1.37
65.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.022	0.000	10.120	0.00	5.20
70.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.023	0.000	10.279	0.00	1.37
70.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.023	0.000	10.279	0.00	5.20
75.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.023	0.000	10.430	0.00	1.37
75.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.023	0.000	10.430	0.00	5.20
80.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.024	0.000	10.572	0.00	1.37
80.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	10.572	0.00	5.20
85.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.024	0.000	10.708	0.00	1.37
85.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	10.708	0.00	5.20
86.50	Safety Cable	Yes	1.50	0.000	0.38	0.05	0.00	0.025	0.000	10.748	0.00	0.41
86.50	Step bolts (ladder)	Yes	1.50	0.000	0.63	0.08	0.00	0.025	0.000	10.748	0.00	1.56
90.00	Safety Cable	Yes	3.50	0.000	0.38	0.11	0.00	0.025	0.000	10.838	0.00	0.96
90.00	Step bolts (ladder)	Yes	3.50	0.000	0.63	0.18	0.00	0.025	0.000	10.838	0.00	3.64
91.75	Safety Cable	Yes	1.75	0.000	0.38	0.06	0.00	0.025	0.000	10.882	0.00	0.48
91.75	Step bolts (ladder)	Yes	1.75	0.000	0.63	0.09	0.00	0.025	0.000	10.882	0.00	1.82
95.00	Safety Cable	Yes	3.25	0.000	0.38	0.10	0.00	0.025	0.000	10.962	0.00	0.89
95.00	Step bolts (ladder)	Yes	3.25	0.000	0.63	0.17	0.00	0.025	0.000	10.962	0.00	3.38
100.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.026	0.000	11.081	0.00	1.37

Linear Appurtenance Segment Forces (Factored)

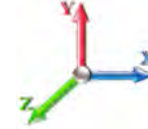
Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
100.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.026	0.000	11.081	0.00	5.20
105.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.026	0.000	11.195	0.00	1.37
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.026	0.000	11.195	0.00	5.20
110.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.027	0.000	11.305	0.00	1.37
110.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	11.305	0.00	5.20
115.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.028	0.000	11.412	0.00	1.37
115.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.028	0.000	11.412	0.00	5.20
120.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.028	0.000	11.514	0.00	1.37
120.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.028	0.000	11.514	0.00	5.20
125.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.029	0.000	11.614	0.00	1.37
125.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.029	0.000	11.614	0.00	5.20
130.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.030	0.000	11.710	0.00	1.37
130.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	11.710	0.00	5.20
131.25	Safety Cable	Yes	1.25	0.000	0.38	0.04	0.00	0.031	0.000	11.734	0.00	0.34
131.25	Step bolts (ladder)	Yes	1.25	0.000	0.63	0.07	0.00	0.031	0.000	11.734	0.00	1.30
135.00	Safety Cable	Yes	3.75	0.000	0.38	0.12	0.00	0.031	0.000	11.803	0.00	1.02
135.00	Step bolts (ladder)	Yes	3.75	0.000	0.63	0.20	0.00	0.031	0.000	11.803	0.00	3.90
135.50	Safety Cable	Yes	0.50	0.000	0.38	0.02	0.00	0.032	0.000	11.813	0.00	0.14
135.50	Step bolts (ladder)	Yes	0.50	0.000	0.63	0.03	0.00	0.032	0.000	11.813	0.00	0.52
137.00	Safety Cable	Yes	1.50	0.000	0.38	0.05	0.00	0.031	0.000	11.840	0.00	0.41
137.00	Step bolts (ladder)	Yes	1.50	0.000	0.63	0.08	0.00	0.031	0.000	11.840	0.00	1.56
140.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.032	0.000	11.894	0.00	0.82
140.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.032	0.000	11.894	0.00	3.12
145.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.033	0.000	11.982	0.00	1.37
145.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.033	0.000	11.982	0.00	5.20
147.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.033	0.000	12.017	0.00	0.55
147.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.033	0.000	12.017	0.00	2.08
150.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.034	0.000	12.068	0.00	0.82
150.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.034	0.000	12.068	0.00	3.12
155.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.035	0.000	12.152	0.00	1.37
155.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.035	0.000	12.152	0.00	5.20
157.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.036	0.000	12.185	0.00	0.55
157.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.036	0.000	12.185	0.00	2.08
160.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.036	0.000	12.233	0.00	0.82
160.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.036	0.000	12.233	0.00	3.12
165.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.037	0.000	12.313	0.00	1.37
165.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.037	0.000	12.313	0.00	5.20
167.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.038	0.000	12.344	0.00	0.55
167.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.038	0.000	12.344	0.00	2.08
170.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.039	0.000	12.390	0.00	0.82
170.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.039	0.000	12.390	0.00	3.12
175.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.040	0.000	12.466	0.00	1.37
175.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.040	0.000	12.466	0.00	5.20
176.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.041	0.000	12.481	0.00	0.27
176.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.041	0.000	12.481	0.00	1.04
Totals:											0.0	231.1

Calculated Forces

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Final Analysis Summary

Structure: CT02216-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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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 97 mph Wind	43.3	0.00	65.95	0.01	0.18	5844.27
0.9D + 1.6W 97 mph Wind	43.3	0.00	49.44	0.00	0.18	5751.06
1.2D + 1.0Di + 1.0Wi 50 mph Wind	13.2	0.00	113.26	0.00	0.16	1877.26
1.2D + 1.0E	2.6	0.00	66.04	0.00	0.00	367.04
0.9D + 1.0E	2.6	0.00	49.53	0.00	0.00	360.75
1.0D + 1.0W 60 mph Wind	10.4	0.00	55.03	0.00	0.07	1386.80

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 97 mph Wind	-44.04	-39.73	-0.18	-3790.4	-0.01	-3790.4	4756.80	2378.4	9239.06	4626.40	49.00	0.829
0.9D + 1.6W 97 mph Wind	-32.66	-39.22	-0.18	-3711.5	0.00	-3711.5	4756.80	2378.4	9239.06	4626.40	49.00	0.809
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-85.96	-12.58	-0.16	-1239.1	0.00	-1239.1	4756.80	2378.4	9239.06	4626.40	49.00	0.286
1.2D + 1.0E	-22.03	-2.05	0.00	-64.74	0.00	-64.74	1734.08	867.04	2260.78	1132.07	135.50	0.070
0.9D + 1.0E	-16.52	-2.00	0.00	-63.48	0.00	-63.48	1734.08	867.04	2260.78	1132.07	135.50	0.066
1.0D + 1.0W 60 mph Wind	-37.99	-9.43	-0.07	-897.81	0.00	-897.81	4756.80	2378.4	9239.06	4626.40	49.00	0.202

Base Plate Summary

Structure: CT02216-S-SB	Code: EIA/TIA-222-G	9/2/2021
Site Name: Glastonbury	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
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Reactions	Base Plate	Anchor Bolts
Original Design	Yield (ksi): 50.00	Bolt Circle: 64.00
Moment (kip-ft): 5100.00	Width (in): 66.00	Number Bolts: 24.00
Axial (kip): 47.00	Style: Clipped	Bolt Type: 2.25" 18J
Shear (kip): 38.00	Polygon Sides: 0.00	Bolt Diameter (in): 2.25
Analysis (1.2D + 1.6W)	Clip Length (in): 16.00	Yield (ksi): 75.00
Moment (kip-ft): 5844.27	Effective Len (in): 7.55	Ultimate (ksi): 100.00
Axial (kip): 65.95	Moment (kip-in): 697.89	Arrangement: Clustered
Shear (kip): 43.31	Allow Stress (ksi): 67.50	Cluster Dist (in): 6.00
	Applied Stress (ksi): 61.42	Start Angle (deg): 45.00
	Stress Ratio: 0.91	Compression
		Force (kip): 187.35
		Allowable (kip): 260.00
		Ratio: 0.73
		Tension
		Force (kip): 177.91
		Allowable (kip): 260.00
		Ratio: 0.70



Pier Foundation Design For Monopole			Date
			9/2/2021
Customer Name:	Dish Wireless	EIA/TIA Standard:	EIA-222-G
Site Name:		Structure Height (Ft.):	176
Site Number:	CT02216-S-SBA	Engineer Name:	J. Tibbetts
Engr. Number:	114607	Engineer Login ID:	

Foundation Info Obtained from:

Drawings/Calculations	Monopole
Analysis	

Acceptable overstress (σ) = 5.0%

Structure Type:

Analysis or Design?

Base Reactions (Factored):

Axial Load (Kips):	65.9	Shear Force (Kips):	43.3
Uplift Force (Kips):	0.0	Moment (Kips-ft):	5844.2

Foundation Geometries:

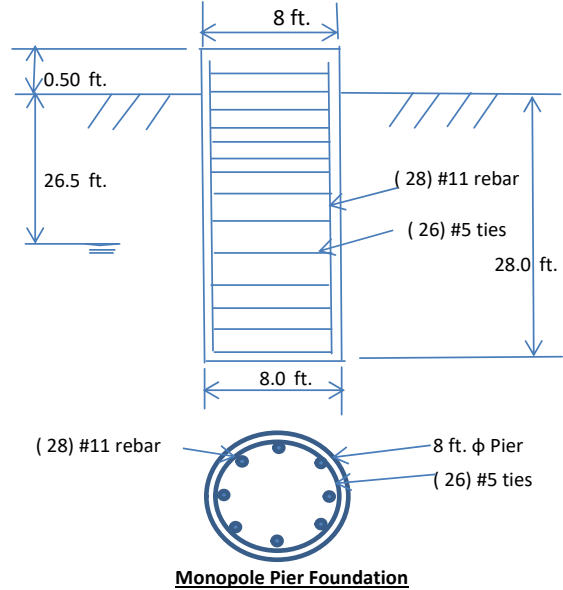
Diameter of Pier (ft.):	8.0	Depth of Base B. G. S. :	28.0 ft.
Pier Height A. G. (ft.):	0.50		

Material Properties and Rebar Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000 ksi
Vertical bar yield (ksi)	60	Tie steel yield strength:	40 ksi
Vertical Rebar Size #:	11	Tie / Stirrup Size #:	5
Qty. of Vertical Rebars:	28	Tie Spacing:	18.0 in.
Concrete Cover (in.):	4	Concrete unit weight:	150.0 pcf

Soil Design Parameters:

Water Table B.G.S. (ft):	26.5	Unit weight of water:	62.4 psf
Ratio of Uplift/Axial Skin Friction:	1.0	Pullout failure Angle:	30 (°)
Skin Frictions are to be obtained from:		Soil Report	



Monopole Pier Foundation

Depth of Layers (ft)		γ_{soil} (pcf)	ϕ (°)	Cohesion (psf)	Ultimate Skin Friction (psf)	Ultimate Bearing (psf)	Soil Types					
Top	Bottom											
0.0	4.0	100	0	0		0	Sand					
4.0	9.0	120	33	0		0	Sand					
9.0	19.0	120	34	0		0	Sand					
19.0	26.5	125	36	0		0	Sand					
26.5	29.0	125	36	0		19800	Sand					
29.0	34.0											

Soil weight Increase Factor for bouyant soils (1.0 to 1.15): 1.1

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Soil Bearing Strength Reduction Factor:	0.75
Total Dry Soil Volume from Conical Failure (cu. Ft.):	13308	Dry Soil Weight from Conical Failure:	1576 Kips
Total Buoyant Soil Volume from Conical Failure (cu. Ft.):	18	Buoyant Soil Weight from Conical Failure (Kips):	0 Kips
Total Dry Concrete Volume (cu. Ft.):	1357	Total Dry Concrete Weight:	203.6 Kips
Total Buoyant Concrete Volume (cu. Ft.):	75.4	Total Buoyant Concrete Weight:	6.60 Kips
Total Effective Concrete Weight (Kips):	210.2	Total Effective Soil Weight:	1575.4 Kips
Total Effective Vertical Load on Base (Kips):	119.5		

Check Soil Capacities:

Allowable Foundation Overturning Resistance (kips-ft.):	12894.5	>	Design Factored Moment (kips-ft):	6712	Usage	0.52	OK!
Factor of Safety of Passive Soil Resistance against Moment:	1.92	OK!					

Check the capacities of Reinforcing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75
Strength reduction factor (Axial compression):	0.65	Wind Load Factor on Concrete Design:	1.00

Reinforcing Concrete Pier:

Vertical Steel Rebar Area (sq. in./each):	1.56	Tie / Stirrup Area (sq. in./each):	0.31	Usage	
Calculated Moment Capacity (Mn,Kips-Ft):	8183.2	>	Design Factored Moment (Mu, K-Ft):	6063.0	0.74 OK!
Calculated Shear Capacity (Kips):	1274.2	>	Design Factored Shear (Kips):	501.7	0.39 OK!
Calculated Tension Capacity (Tn, Kips):	2358.7	>	Design Factored Tension (Tu Kips):	0.0	0.00 OK!
Calculated Compression Capacity (Pn, Kips):	9540	>	Design Factored Axial Load (Pu Kips):	65.9	0.01 OK!
Moment & Axial Strength Combination:	0.74	OK!	Max. Allowable Tie/Stirrup Spacing:	12.00	in.
Pier Reinforcement Ratio:	0.006	Reinforcement Ratio is satisfied per ACI			

EXHIBIT 9

Antenna Mount Analysis



August 27, 2021

Sherri Knapik
SBA Network Services, LLC.
134 Flanders Road, Suite 125
Westborough, MA 01581
(508) 251-0720 x3805

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587- 4630
btwo@btgrp.com

Subject: **Appurtenance Mount Analysis Report**

Carrier Designation: **Dish Co-Locate**
Site Number: BOBDL00117A
Site Name: N/A

SBA Network Services Designation: **Site Number:** CT02216-S
Site Name: Glastonbury
Application Number: 167816, v1

Engineering Firm Designation: **Project Number:** 149436.003.01

Site Data: **175 Dickenson Road, Glastonbury, CT, 06033, Hartford County**
Latitude 41.65589°, Longitude -72.52325°
Monopole
8 ft. Platform Mount

Dear Ms. Knapik,

B+T Group is pleased to submit this “**Appurtenance Mount Analysis Report**” to determine the structural integrity of the antenna mount on the above-mentioned structure.

The purpose of the analysis is to determine acceptability of the mount’s stress level. Based on our analysis we have determined the stress level for the mount under the following load case to be:

Existing + Proposed Equipment	Sufficient Capacity
Note: See Table 1 for the final loading configuration	(Passing at 75.5%)

This analysis has been performed in accordance with the 2018 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 125 mph converted to a nominal 3-second gust wind speed of 97 mph per Section 1609.3 and Appendix N as required for use in the ANSI/TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category C, topographic factor 1 and Risk Category II were used in this analysis.

All the equipment proposed in this report shall be installed in accordance with the drawings for the determined available structural capacity to be effective.

We at B+T Group appreciate the opportunity of providing our continuing professional services to you and SBA Network Services, LLC. If you have any questions or need further assistance on this or any other projects, please give us a call.

Mount structural analysis prepared by: Rose Denny

Respectfully submitted by: B&T Engineering, Inc.
COA: PEC.0001564 Expires: 02/10/2022

Chad E. Tuttle, P.E.

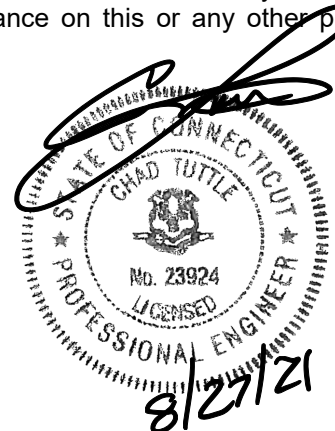


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RISA-3D Output

7) APPENDIX B

Additional Calculations

1) INTRODUCTION

The appurtenance mount consists of platform mount designed by Commscope (Part# MC-PK8-DSH) at 147 ft., attached to monopole at 175 Dickenson Road, Glastonbury, CT, 06033, Hartford County. The proposed antenna loading information was obtained from SBA Network Services, LLC. All information provided to B+T Group was assumed accurate and complete.

2) ANALYSIS CRITERIA

The structural analysis was performed for this mount in accordance with the ANSI/TIA-222-G-2-2005 Structural Standard for Antenna Supporting Structures and Antennas – Addendum 2 using a 3-second gust wind speed of 97 mph with no ice and 50 mph with 1 inch escalated ice thickness. Exposure Category C, Topographic Category 1 and Risk Category II were used in this analysis. In addition, the platform mount has been analyzed for various live loading conditions consisting of a 250-lb man live load applied individually at the midpoint and cantilevered ends of horizontal members as well as a 500-pound man live load applied individually at mount pipe locations using a 3-second gust of 30 mph. The mount was analyzed under 30° increments in the wind direction. The analyzed loading is detailed in Table 1.

Table 1 – Proposed and Existing Equipment Information

Loading	RAD Center Elev. (ft.)	Position	Qty.	Description	Note
Proposed	147	1	3	JMA Wireless MX08FRO665-21	1
		1	3	FUJITSU TA08025-B605	2
		1	3	FUJITSU TA08025-B604	
		-	1	Raycap RDIDC-9181-PF-48	3

Note:

- (1) Proposed Antenna to be installed on the Proposed Mount Pipe.
- (2) Proposed Equipment to be installed directly behind the Antenna.
- (3) Proposed Equipment to be installed on the mount.

Table 2 – Documents Provided

Documents	Remarks	Reference	Source
RFDS	Existing Loading & Proposed Loading	Date: 07/22/2021	SBA Network Services, LLC
Collo App		Date: 08/01/2021	SBA Network Services, LLC

3) ANALYSIS PROCEDURE

3.1) Analysis Method

RISA-3D (Version 19.0.4), a commercially available analysis software package, was used to create a three-dimensional model of the mount and calculate member stresses and deflections for various loading cases. Selected output from the analysis is included in Appendix A.

Manufacturers drawing were used to create the model.

3.2) Assumptions

1. The mount was built in accordance with the manufacturer's specifications.
2. The mount has been maintained in accordance with the manufacturer's specifications and is free of damage.
3. The configuration of antennas and other appurtenances are as specified in Table 1.
4. All mount components have been assumed to be in sufficient condition to carry their full design capacity for the analysis.
5. Mount area and weights are determined from field measurements, standard material properties, and/or manufacturer product data.

6. Serviceability with respect to antenna twist, tilt, roll or lateral translation is not checked and is left to the carrier or tower owner to ensure conformance.
7. All prior structural modifications, if any are assumed to be correctly installed and fully effective.
8. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
9. The following material grades were assumed (Unless Noted Otherwise):
 - a) Connection Bolts : ASTM A325
 - b) Steel Pipe : ASTM A53 (GR. 35)
 - c) HSS (Round) : ASTM 500 (GR. B-42)
 - d) HSS (Rectangular) : ASTM 500 (GR. B-46)
 - e) Channel : ASTM A36 (GR. 36)
 - f) Steel Solid Rod : ASTM A36 (GR. 36)
 - g) Steel Plate : ASTM A36 (GR. 36)
 - h) Steel Angle : ASTM A36 (GR. 36)
 - i) UNISTRUT : ASTM A570 (GR. 33)

This analysis may be affected if any assumptions are not valid or have been made in error. B+T Group should be notified to determine the effect on the structural integrity of the antenna mounting system.

4) ANALYSIS RESULTS

Table 3 – Mount Component Stresses vs. Capacity

Notes	Component	Elevation (ft.)	% Capacity	Pass / Fail
-	Main Horizontals	147	11.1	Pass
-	Support Rails	147	19.8	Pass
-	Support Tubes	147	75.5	Pass
-	Support Channels	147	55.6	Pass
-	Support Angles	147	52.6	Pass
-	Mount Pipes	147	21.8	Pass
-	Connection Plates	147	30.3	Pass
-	Connection Angles	147	34.3	Pass

5) RECOMMENDATIONS

The platform mount designed by Commscope (Part# MC-PK8-DSH) has sufficient capacity to carry the proposed loads and is in compliance with the ANSI/TIA-222-G standard for the proposed loading. (Refer to the RISA output for the specific members).

APPENDIX A

(RISA-3D Output)



Envelope Only Solution

B+T Group

AK

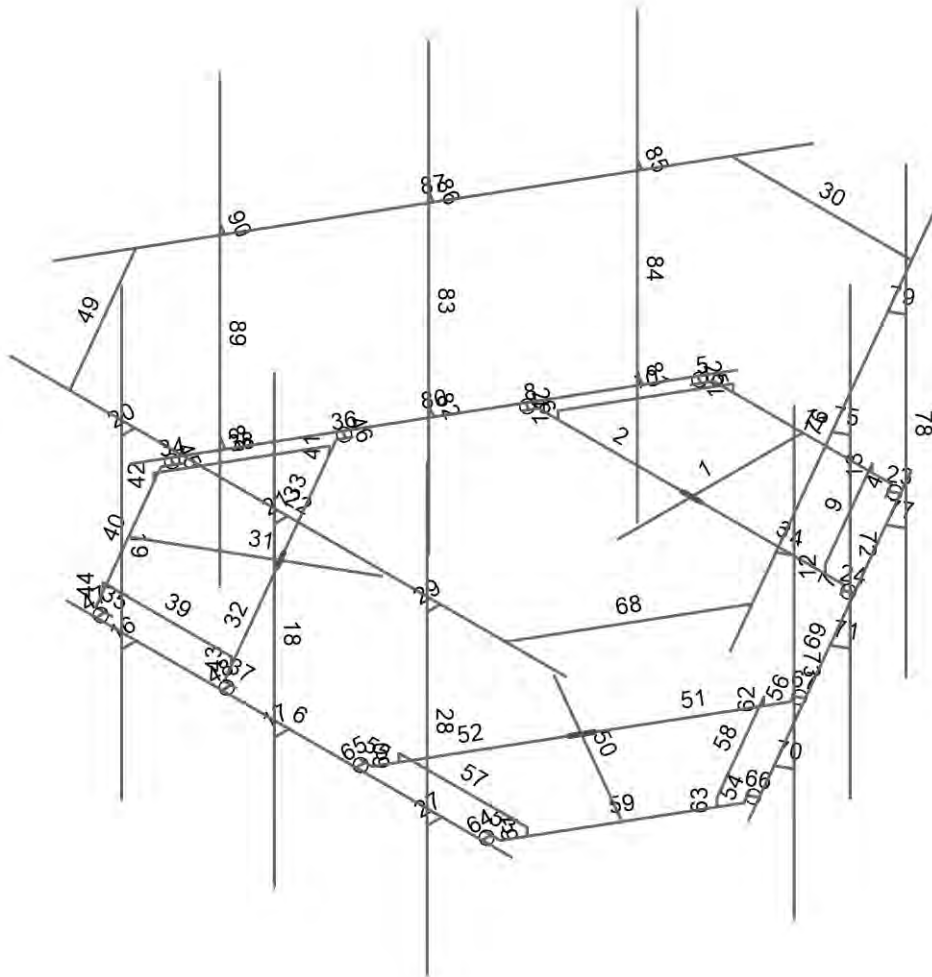
149436.003.01

CT02216-S - Glastonbury

AK1

Aug 26, 2021

149436_003_01_Glastonbury_CT...



Envelope Only Solution

B+T Group

CT02216-S - Glastonbury

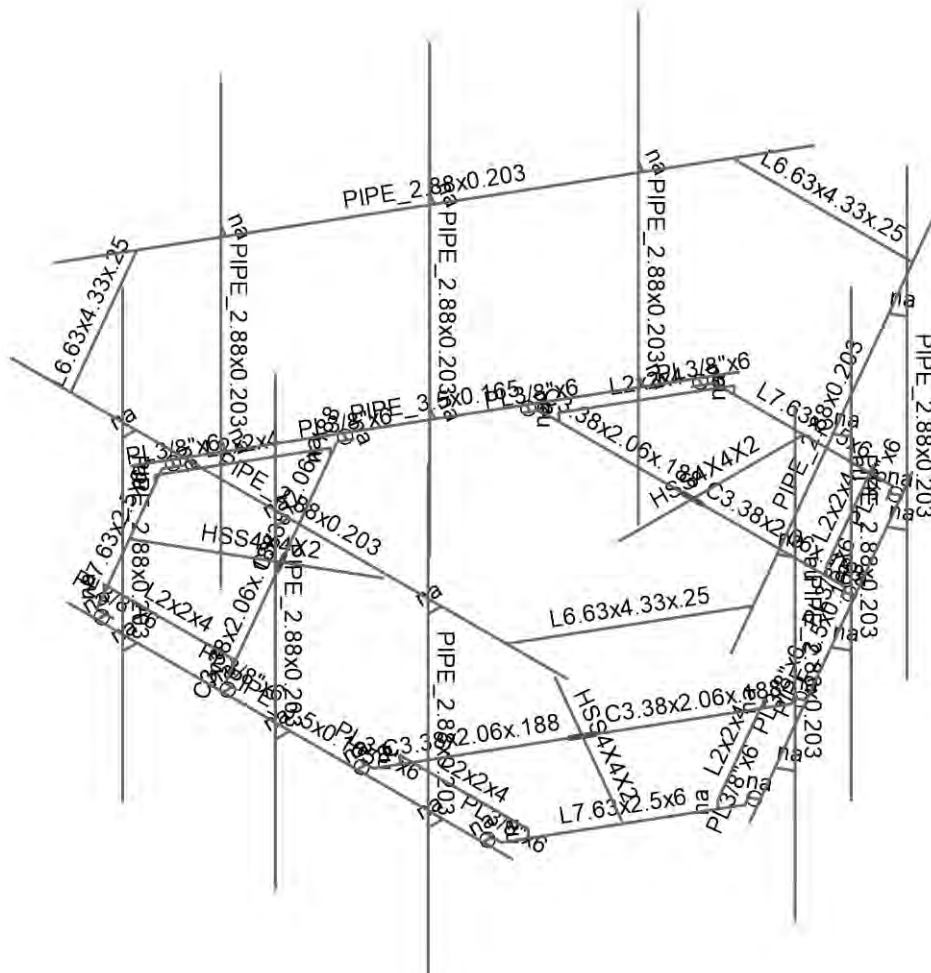
AK2

AK

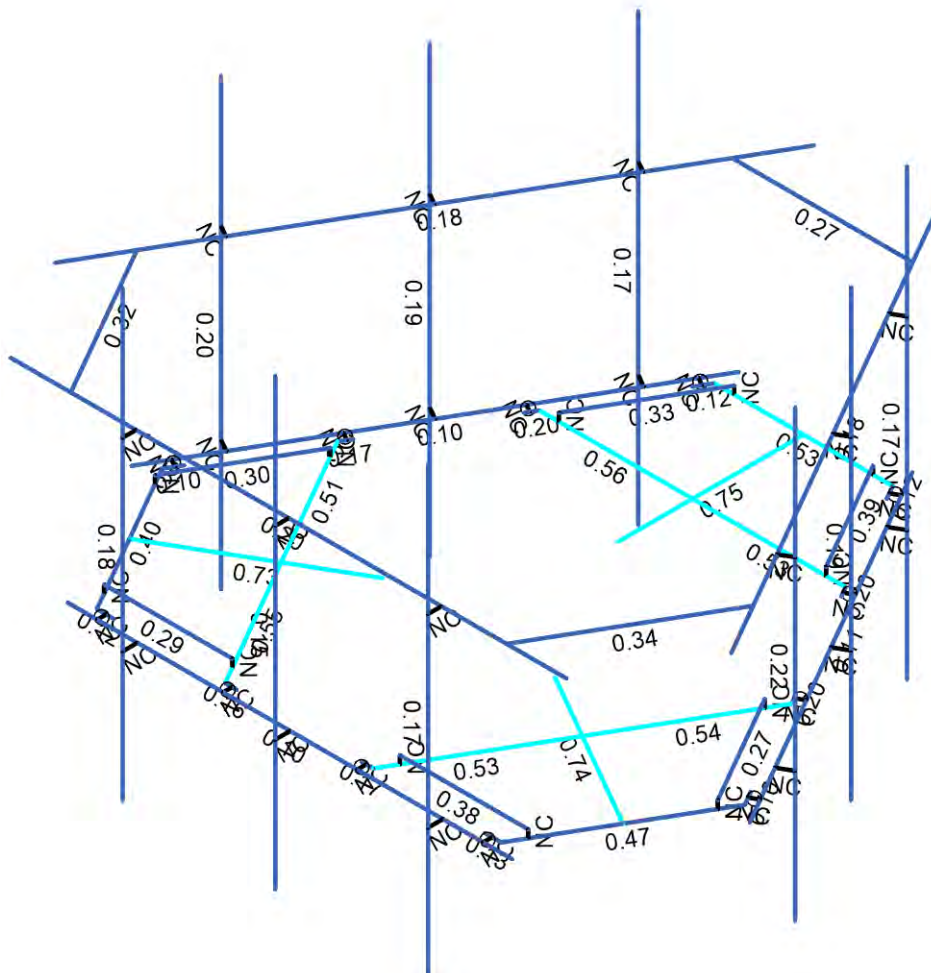
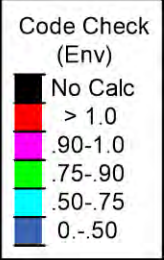
Aug 26, 2021

149436.003.01

149436_003_01_Glastonbury_CT....

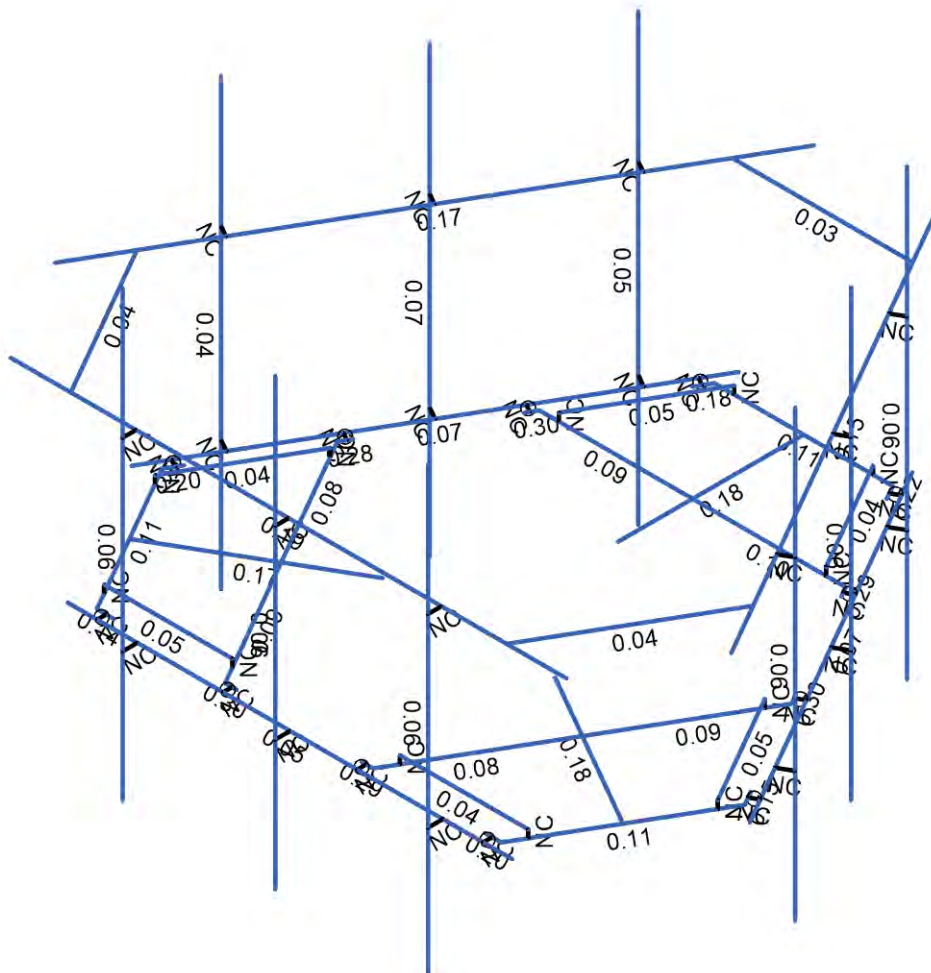
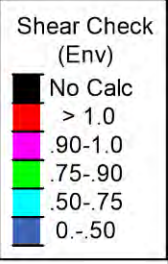


Envelope Only Solution		
B+T Group	CT02216-S - Glastonbury	AK3
AK		Aug 26, 2021
149436.003.01		149436_003_01_Glastonbury_CT...



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	CT02216-S - Glastonbury	AK4
AK		Aug 26, 2021
149436.003.01		149436_003_01_Glastonbury_CT....



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	CT02216-S - Glastonbury	AK5
AK		Aug 26, 2021
149436.003.01		149436_003_01_Glastonbury_CT....



Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in ²]	Iyy [in ⁴]	Izz [in ⁴]	J [in ⁴]
1	MF-H1	PIPE 3.5x0.165	Beam	Pipe	A500 Gr.C	Typical	1.729	2.409	2.409	4.819
2	MF-H2	PIPE 2.88x0.203	Beam	Pipe	A500 Gr.C	Typical	1.707	1.538	1.538	3.076
3	SF-H1	HSS4X4X2	Beam	Tube	A500 Gr.B Rect	Typical	1.77	4.4	4.4	6.91
4	SF-H2	C3.38x2.06x.188	Beam	Channel	A36 Gr.36	Typical	1.339	0.562	2.4	0.015
5	SF-H3	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical	0.944	0.346	0.346	0.021
6	SF-H4	L7.63x2.5x6	Beam	Single Angle	A36 Gr.36	Typical	3.658	1.307	22.092	0.163
7	MF-P1	PIPE 2.88x0.203	Column	Pipe	A500 Gr.C	Typical	1.707	1.538	1.538	3.076
8	MF-CP1	PL3/8"x6	Beam	RECT	A36 Gr.36	Typical	2.25	0.026	6.75	0.101
9	MF-H3	L6.63x4.33x.25	Beam	Single Angle	A36 Gr.36	Typical	2.678	4.383	12.502	0.054

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	1	1	2		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
2	2	5	3	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
3	3	3	4	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
4	4	7	8		MF-CP1	Beam	RECT	A36 Gr.36	Typical
5	5	6	9		MF-CP1	Beam	RECT	A36 Gr.36	Typical
6	6	14	15		MF-H1	Beam	Pipe	A500 Gr.C	Typical
7	7	16	4		MF-CP1	Beam	RECT	A36 Gr.36	Typical
8	8	5	19		MF-CP1	Beam	RECT	A36 Gr.36	Typical
9	9	25	24		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
10	10	23	22		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
11	11	6	7		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
12	12	28	24		RIGID	None	None	RIGID	Typical
13	13	29	25		RIGID	None	None	RIGID	Typical
14	14	27	23		RIGID	None	None	RIGID	Typical
15	15	26	22		RIGID	None	None	RIGID	Typical
16	16	32	30		RIGID	None	None	RIGID	Typical
17	17	33	31		RIGID	None	None	RIGID	Typical
18	18	37	35		MF-P1	Column	Pipe	A500 Gr.C	Typical
19	19	36	34		MF-P1	Column	Pipe	A500 Gr.C	Typical
20	20	38	40		RIGID	None	None	RIGID	Typical
21	21	39	41		RIGID	None	None	RIGID	Typical
22	22	42	43		MF-H2	Beam	Pipe	A500 Gr.C	Typical
23	23	11	10		RIGID	None	None	RIGID	Typical
24	24	18	17		RIGID	None	None	RIGID	Typical
25	25	13	12		RIGID	None	None	RIGID	Typical
26	26	21	20		RIGID	None	None	RIGID	Typical
27	27	45	44		RIGID	None	None	RIGID	Typical
28	28	47	46		MF-P1	Column	Pipe	A500 Gr.C	Typical
29	29	48	49		RIGID	None	None	RIGID	Typical
30	30	51	52	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
31	31	53	54		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
32	32	57	55	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
33	33	55	56	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
34	34	59	60		MF-CP1	Beam	RECT	A36 Gr.36	Typical
35	35	58	61		MF-CP1	Beam	RECT	A36 Gr.36	Typical
36	36	66	56		MF-CP1	Beam	RECT	A36 Gr.36	Typical
37	37	57	69		MF-CP1	Beam	RECT	A36 Gr.36	Typical
38	38	75	74		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
39	39	73	72		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
40	40	58	59		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
41	41	78	74		RIGID	None	None	RIGID	Typical
42	42	79	75		RIGID	None	None	RIGID	Typical
43	43	77	73		RIGID	None	None	RIGID	Typical
44	44	76	72		RIGID	None	None	RIGID	Typical
45	45	63	62		RIGID	None	None	RIGID	Typical



Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
46	46	68	67		RIGID	None	None	RIGID	Typical
47	47	65	64		RIGID	None	None	RIGID	Typical
48	48	71	70		RIGID	None	None	RIGID	Typical
49	49	80	81	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
50	50	82	83		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
51	51	86	84	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
52	52	84	85	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
53	53	88	89		MF-CP1	Beam	RECT	A36 Gr.36	Typical
54	54	87	90		MF-CP1	Beam	RECT	A36 Gr.36	Typical
55	55	95	85		MF-CP1	Beam	RECT	A36 Gr.36	Typical
56	56	86	98		MF-CP1	Beam	RECT	A36 Gr.36	Typical
57	57	104	103		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
58	58	102	101		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
59	59	87	88		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
60	60	107	103		RIGID	None	None	RIGID	Typical
61	61	108	104		RIGID	None	None	RIGID	Typical
62	62	106	102		RIGID	None	None	RIGID	Typical
63	63	105	101		RIGID	None	None	RIGID	Typical
64	64	92	91		RIGID	None	None	RIGID	Typical
65	65	97	96		RIGID	None	None	RIGID	Typical
66	66	94	93		RIGID	None	None	RIGID	Typical
67	67	100	99		RIGID	None	None	RIGID	Typical
68	68	109	110	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
69	69	111	112		MF-H1	Beam	Pipe	A500 Gr.C	Typical
70	70	115	113		RIGID	None	None	RIGID	Typical
71	71	116	114		RIGID	None	None	RIGID	Typical
72	72	120	118		MF-P1	Column	Pipe	A500 Gr.C	Typical
73	73	119	117		MF-P1	Column	Pipe	A500 Gr.C	Typical
74	74	121	123		RIGID	None	None	RIGID	Typical
75	75	122	124		RIGID	None	None	RIGID	Typical
76	76	125	126		MF-H2	Beam	Pipe	A500 Gr.C	Typical
77	77	128	127		RIGID	None	None	RIGID	Typical
78	78	130	129		MF-P1	Column	Pipe	A500 Gr.C	Typical
79	79	131	132		RIGID	None	None	RIGID	Typical
80	80	133	134		MF-H1	Beam	Pipe	A500 Gr.C	Typical
81	81	137	135		RIGID	None	None	RIGID	Typical
82	82	138	136		RIGID	None	None	RIGID	Typical
83	83	142	140		MF-P1	Column	Pipe	A500 Gr.C	Typical
84	84	141	139		MF-P1	Column	Pipe	A500 Gr.C	Typical
85	85	143	145		RIGID	None	None	RIGID	Typical
86	86	144	146		RIGID	None	None	RIGID	Typical
87	87	147	148		MF-H2	Beam	Pipe	A500 Gr.C	Typical
88	88	150	149		RIGID	None	None	RIGID	Typical
89	89	152	151		MF-P1	Column	Pipe	A500 Gr.C	Typical
90	90	153	154		RIGID	None	None	RIGID	Typical

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
1	Dead	DL	-1		20		3
2	0 Wind - No Ice	WLZ			20	48	
3	90 Wind - No Ice	WLX			20	48	
4	0 Wind - Ice	WLZ			20	48	
5	90 Wind - Ice	WLX			20	48	
6	0 Wind - Service	WLZ			20	48	
7	90 Wind - Service	WLX			20	48	
8	Ice	OL1			20	48	3
9	Live Load a	LL		3			
10	Live Load b	LL		3			



Basic Load Cases (Continued)

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
11	Live Load c	LL		3			
12	Live Load d	LL					
13	Maint LL 1	LL			1		
14	Maint LL 2	LL			1		
15	Maint LL 3	LL			1		
16	Maint LL 4	LL			1		
17	Maint LL 5	LL			1		
18	Maint LL 6	LL			1		
19	Maint LL 7	LL			1		
20	Maint LL 8	LL			1		
21	Maint LL 9	LL			1		
22	Maint LL 10	LL			1		
23	Maint LL 11	LL			1		
24	Maint LL 12	LL			1		
25	Maint LL 13	LL			1		
26	Maint LL 14	LL			1		
27	Maint LL 15	LL			1		
31	BLC 1 Transient Area Loads	None				9	
32	BLC 8 Transient Area Loads	None				9	

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 Dead	Yes	Y	1	1.4						
2	0.9 D + 1.6 - 0 W	Yes	Y	1	0.9	2	1.6				
3	0.9 D + 1.6 - 30 W	Yes	Y	1	0.9	2	1.386	3	0.8		
4	0.9 D + 1.6 - 60 W	Yes	Y	1	0.9	3	1.386	2	0.8		
5	0.9 D + 1.6 - 90 W	Yes	Y	1	0.9	3	1.6				
6	0.9 D + 1.6 - 120 W	Yes	Y	1	0.9	3	1.386	2	-0.8		
7	0.9 D + 1.6 - 150 W	Yes	Y	1	0.9	2	-1.386	3	0.8		
8	0.9 D + 1.6 - 180 W	Yes	Y	1	0.9	2	-1.6				
9	0.9 D + 1.6 - 210 W	Yes	Y	1	0.9	2	-1.386	3	-0.8		
10	0.9 D + 1.6 - 240 W	Yes	Y	1	0.9	3	-1.386	2	-0.8		
11	0.9 D + 1.6 - 270 W	Yes	Y	1	0.9	3	-1.6				
12	0.9 D + 1.6 - 300 W	Yes	Y	1	0.9	3	-1.386	2	0.8		
13	0.9 D + 1.6 - 330 W	Yes	Y	1	0.9	2	1.386	3	-0.8		
14	1.2 D + 1.6 - 0 W	Yes	Y	1	1.2	2	1.6				
15	1.2 D + 1.6 - 30 W	Yes	Y	1	1.2	2	1.386	3	0.8		
16	1.2 D + 1.6 - 60 W	Yes	Y	1	1.2	3	1.386	2	0.8		
17	1.2 D + 1.6 - 90 W	Yes	Y	1	1.2	3	1.6				
18	1.2 D + 1.6 - 120 W	Yes	Y	1	1.2	3	1.386	2	-0.8		
19	1.2 D + 1.6 - 150 W	Yes	Y	1	1.2	2	-1.386	3	0.8		
20	1.2 D + 1.6 - 180 W	Yes	Y	1	1.2	2	-1.6				
21	1.2 D + 1.6 - 210 W	Yes	Y	1	1.2	2	-1.386	3	-0.8		
22	1.2 D + 1.6 - 240 W	Yes	Y	1	1.2	3	-1.386	2	-0.8		
23	1.2 D + 1.6 - 270 W	Yes	Y	1	1.2	3	-1.6				
24	1.2 D + 1.6 - 300 W	Yes	Y	1	1.2	3	-1.386	2	0.8		
25	1.2 D + 1.6 - 330 W	Yes	Y	1	1.2	2	1.386	3	-0.8		
26	0.9 D + 1.6 - 0 W/Ice	Yes	Y	1	0.9	4	1.6			8	1
27	0.9 D + 1.6 - 30 W/Ice	Yes	Y	1	0.9	4	1.386	5	0.8	8	1
28	0.9 D + 1.6 - 60 W/Ice	Yes	Y	1	0.9	5	1.386	4	0.8	8	1
29	0.9 D + 1.6 - 90 W/Ice	Yes	Y	1	0.9	5	1.6			8	1
30	0.9 D + 1.6 - 120 W/Ice	Yes	Y	1	0.9	5	1.386	4	-0.8	8	1
31	0.9 D + 1.6 - 150 W/Ice	Yes	Y	1	0.9	4	-1.386	5	0.8	8	1
32	0.9 D + 1.6 - 180 W/Ice	Yes	Y	1	0.9	4	-1.6			8	1
33	0.9 D + 1.6 - 210 W/Ice	Yes	Y	1	0.9	4	-1.386	5	-0.8	8	1
34	0.9 D + 1.6 - 240 W/Ice	Yes	Y	1	0.9	5	-1.386	4	-0.8	8	1
35	0.9 D + 1.6 - 270 W/Ice	Yes	Y	1	0.9	5	-1.6			8	1
36	0.9 D + 1.6 - 300 W/Ice	Yes	Y	1	0.9	5	-1.386	4	0.8	8	1



Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
37	0.9 D + 1.6 - 330 W/Ice	Yes	Y	1	0.9	4	1.386	5	-0.8	8	1
38	1.2 D + 1.0 - 0 W/Ice	Yes	Y	1	1.2	4	1			8	1
39	1.2 D + 1.0 - 30 W/Ice	Yes	Y	1	1.2	4	0.866	5	0.5	8	1
40	1.2 D + 1.0 - 60 W/Ice	Yes	Y	1	1.2	5	0.866	4	0.5	8	1
41	1.2 D + 1.0 - 90 W/Ice	Yes	Y	1	1.2	5	1			8	1
42	1.2 D + 1.0 - 120 W/Ice	Yes	Y	1	1.2	5	0.866	4	-0.5	8	1
43	1.2 D + 1.0 - 150 W/Ice	Yes	Y	1	1.2	4	-0.866	5	0.5	8	1
44	1.2 D + 1.0 - 180 W/Ice	Yes	Y	1	1.2	4	-1			8	1
45	1.2 D + 1.0 - 210 W/Ice	Yes	Y	1	1.2	4	-0.866	5	-0.5	8	1
46	1.2 D + 1.0 - 240 W/Ice	Yes	Y	1	1.2	5	-0.866	4	-0.5	8	1
47	1.2 D + 1.0 - 270 W/Ice	Yes	Y	1	1.2	5	-1			8	1
48	1.2 D + 1.0 - 300 W/Ice	Yes	Y	1	1.2	5	-0.866	4	0.5	8	1
49	1.2 D + 1.0 - 330 W/Ice	Yes	Y	1	1.2	4	0.866	5	-0.5	8	1
50	1.2 D + 1.5 LL a + Service - 0 W	Yes	Y	1	1.2	6	1			9	1.5
51	1.2 D + 1.5 LL a + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	9	1.5
52	1.2 D + 1.5 LL a + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	9	1.5
53	1.2 D + 1.5 LL a + Service - 90 W	Yes	Y	1	1.2	7	1			9	1.5
54	1.2 D + 1.5 LL a + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	9	1.5
55	1.2 D + 1.5 LL a + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	9	1.5
56	1.2 D + 1.5 LL a + Service - 180 W	Yes	Y	1	1.2	6	-1			9	1.5
57	1.2 D + 1.5 LL a + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	9	1.5
58	1.2 D + 1.5 LL a + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	9	1.5
59	1.2 D + 1.5 LL a + Service - 270 W	Yes	Y	1	1.2	7	-1			9	1.5
60	1.2 D + 1.5 LL a + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	9	1.5
61	1.2 D + 1.5 LL a + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	9	1.5
62	1.2 D + 1.5 LL b + Service - 0 W	Yes	Y	1	1.2	6	1			10	1.5
63	1.2 D + 1.5 LL b + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	10	1.5
64	1.2 D + 1.5 LL b + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	10	1.5
65	1.2 D + 1.5 LL b + Service - 90 W	Yes	Y	1	1.2	7	1			10	1.5
66	1.2 D + 1.5 LL b + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	10	1.5
67	1.2 D + 1.5 LL b + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	10	1.5
68	1.2 D + 1.5 LL b + Service - 180 W	Yes	Y	1	1.2	6	-1			10	1.5
69	1.2 D + 1.5 LL b + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	10	1.5
70	1.2 D + 1.5 LL b + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	10	1.5
71	1.2 D + 1.5 LL b + Service - 270 W	Yes	Y	1	1.2	7	-1			10	1.5
72	1.2 D + 1.5 LL b + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	10	1.5
73	1.2 D + 1.5 LL b + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	10	1.5
74	1.2 D + 1.5 LL c + Service - 0 W	Yes	Y	1	1.2	6	1			11	1.5
75	1.2 D + 1.5 LL c + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	11	1.5
76	1.2 D + 1.5 LL c + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	11	1.5
77	1.2 D + 1.5 LL c + Service - 90 W	Yes	Y	1	1.2	7	1			11	1.5
78	1.2 D + 1.5 LL c + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	11	1.5
79	1.2 D + 1.5 LL c + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	11	1.5
80	1.2 D + 1.5 LL c + Service - 180 W	Yes	Y	1	1.2	6	-1			11	1.5
81	1.2 D + 1.5 LL c + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	11	1.5
82	1.2 D + 1.5 LL c + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	11	1.5
83	1.2 D + 1.5 LL c + Service - 270 W	Yes	Y	1	1.2	7	-1			11	1.5
84	1.2 D + 1.5 LL c + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	11	1.5
85	1.2 D + 1.5 LL c + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	11	1.5
86	1.2 D + 1.5 LL d + Service - 0 W	Yes	Y	1	1.2	6	1			12	1.5
87	1.2 D + 1.5 LL d + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	12	1.5
88	1.2 D + 1.5 LL d + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	12	1.5
89	1.2 D + 1.5 LL d + Service - 90 W	Yes	Y	1	1.2	7	1			12	1.5
90	1.2 D + 1.5 LL d + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	12	1.5
91	1.2 D + 1.5 LL d + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	12	1.5
92	1.2 D + 1.5 LL d + Service - 180 W	Yes	Y	1	1.2	6	-1			12	1.5
93	1.2 D + 1.5 LL d + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	12	1.5
94	1.2 D + 1.5 LL d + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	12	1.5



Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
95	1.2 D + 1.5 LL d + Service - 270 W	Yes	Y	1	1.2	7	-1			12	1.5
96	1.2 D + 1.5 LL d + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	12	1.5
97	1.2 D + 1.5 LL d + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	12	1.5
98	1.2 D + 1.5 LL Maint (1)	Yes	Y	1	1.2					13	1.5
99	1.2 D + 1.5 LL Maint (2)	Yes	Y	1	1.2					14	1.5
100	1.2 D + 1.5 LL Maint (3)	Yes	Y	1	1.2					15	1.5
101	1.2 D + 1.5 LL Maint (4)	Yes	Y	1	1.2					16	1.5
102	1.2 D + 1.5 LL Maint (5)	Yes	Y	1	1.2					17	1.5
103	1.2 D + 1.5 LL Maint (6)	Yes	Y	1	1.2					18	1.5
104	1.2 D + 1.5 LL Maint (7)	Yes	Y	1	1.2					19	1.5
105	1.2 D + 1.5 LL Maint (8)	Yes	Y	1	1.2					20	1.5
106	1.2 D + 1.5 LL Maint (9)	Yes	Y	1	1.2					21	1.5
107	1.2 D + 1.5 LL Maint (10)	Yes	Y	1	1.2					22	1.5
108	1.2 D + 1.5 LL Maint (11)	Yes	Y	1	1.2					23	1.5
109	1.2 D + 1.5 LL Maint (12)	Yes	Y	1	1.2					24	1.5
110	1.2 D + 1.5 LL Maint (13)	Yes	Y	1	1.2					25	1.5
111	1.2 D + 1.5 LL Maint (14)	Yes	Y	1	1.2					26	1.5
112	1.2 D + 1.5 LL Maint (15)	Yes	Y	1	1.2					27	1.5
113	1.2 D + 1.5 LL Maint (16)	Yes	Y	1	1.2					28	1.5
114	1.2 D + 1.5 LL Maint (17)	Yes	Y	1	1.2					29	1.5
115	1.2 D + 1.5 LL Maint (18)	Yes	Y	1	1.2					30	1.5

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Y	-0.032	%15
2	28	Y	-0.032	%85
3	28	Y	-0.075	%15
4	28	Y	-0.064	%50
5	28	Y	0	0
6	89	Y	-0.032	%15
7	89	Y	-0.032	%85
8	89	Y	-0.075	%15
9	89	Y	-0.064	%50
10	89	Y	0	0
11	78	Y	-0.032	%15
12	78	Y	-0.032	%85
13	78	Y	-0.075	%15
14	78	Y	-0.064	%50
15	78	Y	0	0
16	1	Y	-0.022	%20
17	1	Y	0	0
18	1	Y	0	0
19	1	Y	0	0
20	1	Y	0	0

Member Point Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Z	-0.196	%15
2	28	Z	-0.196	%85
3	28	Z	-0.062	%15
4	28	Z	-0.062	%50
5	28	Z	0	0
6	89	Z	-0.196	%15
7	89	Z	-0.196	%85
8	89	Z	-0.062	%15
9	89	Z	-0.062	%50



Member Point Loads (BLC 2 : 0 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
10	89	Z	0	0
11	78	Z	-0.196	%15
12	78	Z	-0.196	%85
13	78	Z	-0.062	%15
14	78	Z	-0.062	%50
15	78	Z	0	0
16	1	Z	-0.035	%20
17	1	Z	0	0
18	1	Z	0	0
19	1	Z	0	0
20	1	Z	0	0

Member Point Loads (BLC 3 : 90 Wind - No Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	X	-0.078	%15
2	28	X	-0.078	%85
3	28	X	-0.037	%15
4	28	X	-0.032	%50
5	28	X	0	0
6	89	X	-0.078	%15
7	89	X	-0.078	%85
8	89	X	-0.037	%15
9	89	X	-0.032	%50
10	89	X	0	0
11	78	X	-0.078	%15
12	78	X	-0.078	%85
13	78	X	-0.037	%15
14	78	X	-0.032	%50
15	78	X	0	0
16	1	X	-0.063	%20
17	1	X	0	0
18	1	X	0	0
19	1	X	0	0
20	1	X	0	0

Member Point Loads (BLC 4 : 0 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Z	-0.068	%15
2	28	Z	-0.068	%85
3	28	Z	-0.028	%15
4	28	Z	-0.028	%50
5	28	Z	0	0
6	89	Z	-0.068	%15
7	89	Z	-0.068	%85
8	89	Z	-0.028	%15
9	89	Z	-0.028	%50
10	89	Z	0	0
11	78	Z	-0.068	%15
12	78	Z	-0.068	%85
13	78	Z	-0.028	%15
14	78	Z	-0.028	%50
15	78	Z	0	0
16	1	Z	-0.019	%20
17	1	Z	0	0
18	1	Z	0	0
19	1	Z	0	0



Member Point Loads (BLC 4 : 0 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
20	1	Z	0	0

Member Point Loads (BLC 5 : 90 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	X	-0.035	%15
2	28	X	-0.035	%85
3	28	X	-0.019	%15
4	28	X	-0.018	%50
5	28	X	0	0
6	89	X	-0.035	%15
7	89	X	-0.035	%85
8	89	X	-0.019	%15
9	89	X	-0.018	%50
10	89	X	0	0
11	78	X	-0.035	%15
12	78	X	-0.035	%85
13	78	X	-0.019	%15
14	78	X	-0.018	%50
15	78	X	0	0
16	1	X	-0.028	%20
17	1	X	0	0
18	1	X	0	0
19	1	X	0	0
20	1	X	0	0

Member Point Loads (BLC 6 : 0 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Z	-0.019	%15
2	28	Z	-0.019	%85
3	28	Z	-0.006	%15
4	28	Z	-0.006	%50
5	28	Z	0	0
6	89	Z	-0.019	%15
7	89	Z	-0.019	%85
8	89	Z	-0.006	%15
9	89	Z	-0.006	%50
10	89	Z	0	0
11	78	Z	-0.019	%15
12	78	Z	-0.019	%85
13	78	Z	-0.006	%15
14	78	Z	-0.006	%50
15	78	Z	0	0
16	1	Z	-0.003	%20
17	1	Z	0	0
18	1	Z	0	0
19	1	Z	0	0
20	1	Z	0	0

Member Point Loads (BLC 7 : 90 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	X	-0.007	%15
2	28	X	-0.007	%85
3	28	X	-0.004	%15
4	28	X	-0.003	%50
5	28	X	0	0



Member Point Loads (BLC 7 : 90 Wind - Service) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
6	89	X	-0.007	%15
7	89	X	-0.007	%85
8	89	X	-0.004	%15
9	89	X	-0.003	%50
10	89	X	0	0
11	78	X	-0.007	%15
12	78	X	-0.007	%85
13	78	X	-0.004	%15
14	78	X	-0.003	%50
15	78	X	0	0
16	1	X	-0.006	%20
17	1	X	0	0
18	1	X	0	0
19	1	X	0	0
20	1	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Y	-0.203	%15
2	28	Y	-0.203	%85
3	28	Y	-0.074	%15
4	28	Y	-0.072	%50
5	28	Y	0	0
6	89	Y	-0.203	%15
7	89	Y	-0.203	%85
8	89	Y	-0.074	%15
9	89	Y	-0.072	%50
10	89	Y	0	0
11	78	Y	-0.203	%15
12	78	Y	-0.203	%85
13	78	Y	-0.074	%15
14	78	Y	-0.072	%50
15	78	Y	0	0
16	1	Y	-0.075	%20
17	1	Y	0	0
18	1	Y	0	0
19	1	Y	0	0
20	1	Y	0	0

Member Point Loads (BLC 13 : Maint LL 1)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	22	Y	-0.25	%5

Member Point Loads (BLC 14 : Maint LL 2)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	6	Y	-0.25	%5

Member Point Loads (BLC 15 : Maint LL 3)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	22	Y	-0.25	%95



Member Point Loads (BLC 16 : Maint LL 4)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	6	Y	-0.25	%95

Member Point Loads (BLC 17 : Maint LL 5)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	87	Y	-0.25	%5

Member Point Loads (BLC 18 : Maint LL 6)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	80	Y	-0.25	%5

Member Point Loads (BLC 19 : Maint LL 7)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	87	Y	-0.25	%95

Member Point Loads (BLC 20 : Maint LL 8)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	80	Y	-0.25	%95

Member Point Loads (BLC 21 : Maint LL 9)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	76	Y	-0.25	%5

Member Point Loads (BLC 22 : Maint LL 10)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	69	Y	-0.25	%5

Member Point Loads (BLC 23 : Maint LL 11)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	76	Y	-0.25	%95

Member Point Loads (BLC 24 : Maint LL 12)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	69	Y	-0.25	%95

Member Point Loads (BLC 25 : Maint LL 13)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	31	Y	-0.25	%95

Member Point Loads (BLC 26 : Maint LL 14)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	1	Y	-0.25	%95



Member Point Loads (BLC 27 : Maint LL 15)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	50	Y	-0.25	%95

Member Distributed Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.015	-0.015	0	%100
2	2	Z	-0.013	-0.013	0	%100
3	3	Z	-0.013	-0.013	0	%100
4	4	Z	-0.019	-0.019	0	%100
5	5	Z	-0.019	-0.019	0	%100
6	6	Z	-0.011	-0.011	0	%100
7	7	Z	-0.019	-0.019	0	%100
8	8	Z	-0.019	-0.019	0	%100
9	9	Z	-0.008	-0.008	0	%100
10	10	Z	-0.008	-0.008	0	%100
11	11	Z	-0.026	-0.026	0	%100
12	18	Z	-0.009	-0.009	0	%100
13	19	Z	-0.009	-0.009	0	%100
14	22	Z	-0.009	-0.009	0	%100
15	28	Z	-0.009	-0.009	0	%100
16	30	Z	-0.023	-0.023	0	%100
17	31	Z	-0.015	-0.015	0	%100
18	32	Z	-0.013	-0.013	0	%100
19	33	Z	-0.013	-0.013	0	%100
20	34	Z	-0.019	-0.019	0	%100
21	35	Z	-0.019	-0.019	0	%100
22	36	Z	-0.019	-0.019	0	%100
23	37	Z	-0.019	-0.019	0	%100
24	38	Z	-0.008	-0.008	0	%100
25	39	Z	-0.008	-0.008	0	%100
26	40	Z	-0.026	-0.026	0	%100
27	49	Z	-0.023	-0.023	0	%100
28	50	Z	-0.015	-0.015	0	%100
29	51	Z	-0.013	-0.013	0	%100
30	52	Z	-0.013	-0.013	0	%100
31	53	Z	-0.019	-0.019	0	%100
32	54	Z	-0.019	-0.019	0	%100
33	55	Z	-0.019	-0.019	0	%100
34	56	Z	-0.019	-0.019	0	%100
35	57	Z	-0.008	-0.008	0	%100
36	58	Z	-0.008	-0.008	0	%100
37	59	Z	-0.026	-0.026	0	%100
38	68	Z	-0.023	-0.023	0	%100
39	69	Z	-0.011	-0.011	0	%100
40	72	Z	-0.009	-0.009	0	%100
41	73	Z	-0.009	-0.009	0	%100
42	76	Z	-0.009	-0.009	0	%100
43	78	Z	-0.009	-0.009	0	%100
44	80	Z	-0.011	-0.011	0	%100
45	83	Z	-0.009	-0.009	0	%100
46	84	Z	-0.009	-0.009	0	%100
47	87	Z	-0.009	-0.009	0	%100
48	89	Z	-0.009	-0.009	0	%100



Member Distributed Loads (BLC 3 : 90 Wind - No Ice)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.015	-0.015	0	%100
2	2	X	-0.013	-0.013	0	%100
3	3	X	-0.013	-0.013	0	%100
4	4	X	-0.019	-0.019	0	%100
5	5	X	-0.019	-0.019	0	%100
6	6	X	-0.011	-0.011	0	%100
7	7	X	-0.019	-0.019	0	%100
8	8	X	-0.019	-0.019	0	%100
9	9	X	-0.008	-0.008	0	%100
10	10	X	-0.008	-0.008	0	%100
11	11	X	-0.026	-0.026	0	%100
12	18	X	-0.009	-0.009	0	%100
13	19	X	-0.009	-0.009	0	%100
14	22	X	-0.009	-0.009	0	%100
15	28	X	-0.009	-0.009	0	%100
16	30	X	-0.023	-0.023	0	%100
17	31	X	-0.015	-0.015	0	%100
18	32	X	-0.013	-0.013	0	%100
19	33	X	-0.013	-0.013	0	%100
20	34	X	-0.019	-0.019	0	%100
21	35	X	-0.019	-0.019	0	%100
22	36	X	-0.019	-0.019	0	%100
23	37	X	-0.019	-0.019	0	%100
24	38	X	-0.008	-0.008	0	%100
25	39	X	-0.008	-0.008	0	%100
26	40	X	-0.026	-0.026	0	%100
27	49	X	-0.023	-0.023	0	%100
28	50	X	-0.015	-0.015	0	%100
29	51	X	-0.013	-0.013	0	%100
30	52	X	-0.013	-0.013	0	%100
31	53	X	-0.019	-0.019	0	%100
32	54	X	-0.019	-0.019	0	%100
33	55	X	-0.019	-0.019	0	%100
34	56	X	-0.019	-0.019	0	%100
35	57	X	-0.008	-0.008	0	%100
36	58	X	-0.008	-0.008	0	%100
37	59	X	-0.026	-0.026	0	%100
38	68	X	-0.023	-0.023	0	%100
39	69	X	-0.011	-0.011	0	%100
40	72	X	-0.009	-0.009	0	%100
41	73	X	-0.009	-0.009	0	%100
42	76	X	-0.009	-0.009	0	%100
43	78	X	-0.009	-0.009	0	%100
44	80	X	-0.011	-0.011	0	%100
45	83	X	-0.009	-0.009	0	%100
46	84	X	-0.009	-0.009	0	%100
47	87	X	-0.009	-0.009	0	%100
48	89	X	-0.009	-0.009	0	%100

Member Distributed Loads (BLC 4 : 0 Wind - Ice)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.01	-0.01	0	%100
2	2	Z	-0.009	-0.009	0	%100
3	3	Z	-0.009	-0.009	0	%100
4	4	Z	-0.021	-0.021	0	%100
5	5	Z	-0.021	-0.021	0	%100
6	6	Z	-0.004	-0.004	0	%100



Member Distributed Loads (BLC 4 : 0 Wind - Ice) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
7	7	Z	-0.025	-0.025	0	%100
8	8	Z	-0.025	-0.025	0	%100
9	9	Z	-0.009	-0.009	0	%100
10	10	Z	-0.009	-0.009	0	%100
11	11	Z	-0.012	-0.012	0	%100
12	18	Z	-0.003	-0.003	0	%100
13	19	Z	-0.003	-0.003	0	%100
14	22	Z	-0.003	-0.003	0	%100
15	28	Z	-0.003	-0.003	0	%100
16	30	Z	-0.012	-0.012	0	%100
17	31	Z	-0.01	-0.01	0	%100
18	32	Z	-0.009	-0.009	0	%100
19	33	Z	-0.009	-0.009	0	%100
20	34	Z	-0.021	-0.021	0	%100
21	35	Z	-0.021	-0.021	0	%100
22	36	Z	-0.025	-0.025	0	%100
23	37	Z	-0.025	-0.025	0	%100
24	38	Z	-0.009	-0.009	0	%100
25	39	Z	-0.009	-0.009	0	%100
26	40	Z	-0.012	-0.012	0	%100
27	49	Z	-0.012	-0.012	0	%100
28	50	Z	-0.01	-0.01	0	%100
29	51	Z	-0.009	-0.009	0	%100
30	52	Z	-0.009	-0.009	0	%100
31	53	Z	-0.021	-0.021	0	%100
32	54	Z	-0.021	-0.021	0	%100
33	55	Z	-0.025	-0.025	0	%100
34	56	Z	-0.025	-0.025	0	%100
35	57	Z	-0.009	-0.009	0	%100
36	58	Z	-0.009	-0.009	0	%100
37	59	Z	-0.012	-0.012	0	%100
38	68	Z	-0.012	-0.012	0	%100
39	69	Z	-0.004	-0.004	0	%100
40	72	Z	-0.003	-0.003	0	%100
41	73	Z	-0.003	-0.003	0	%100
42	76	Z	-0.003	-0.003	0	%100
43	78	Z	-0.003	-0.003	0	%100
44	80	Z	-0.004	-0.004	0	%100
45	83	Z	-0.003	-0.003	0	%100
46	84	Z	-0.003	-0.003	0	%100
47	87	Z	-0.003	-0.003	0	%100
48	89	Z	-0.003	-0.003	0	%100

Member Distributed Loads (BLC 5 : 90 Wind - Ice)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.01	-0.01	0	%100
2	2	X	-0.009	-0.009	0	%100
3	3	X	-0.009	-0.009	0	%100
4	4	X	-0.021	-0.021	0	%100
5	5	X	-0.021	-0.021	0	%100
6	6	X	-0.004	-0.004	0	%100
7	7	X	-0.025	-0.025	0	%100
8	8	X	-0.025	-0.025	0	%100
9	9	X	-0.009	-0.009	0	%100
10	10	X	-0.009	-0.009	0	%100
11	11	X	-0.012	-0.012	0	%100
12	18	X	-0.003	-0.003	0	%100
13	19	X	-0.003	-0.003	0	%100



Company : B+T Group
 Designer : AK
 Job Number : 149436.003.01
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Member Distributed Loads (BLC 5 : 90 Wind - Ice) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
14	22	X	-0.003	-0.003	0	%100
15	28	X	-0.003	-0.003	0	%100
16	30	X	-0.012	-0.012	0	%100
17	31	X	-0.01	-0.01	0	%100
18	32	X	-0.009	-0.009	0	%100
19	33	X	-0.009	-0.009	0	%100
20	34	X	-0.021	-0.021	0	%100
21	35	X	-0.021	-0.021	0	%100
22	36	X	-0.025	-0.025	0	%100
23	37	X	-0.025	-0.025	0	%100
24	38	X	-0.009	-0.009	0	%100
25	39	X	-0.009	-0.009	0	%100
26	40	X	-0.012	-0.012	0	%100
27	49	X	-0.012	-0.012	0	%100
28	50	X	-0.01	-0.01	0	%100
29	51	X	-0.009	-0.009	0	%100
30	52	X	-0.009	-0.009	0	%100
31	53	X	-0.021	-0.021	0	%100
32	54	X	-0.021	-0.021	0	%100
33	55	X	-0.025	-0.025	0	%100
34	56	X	-0.025	-0.025	0	%100
35	57	X	-0.009	-0.009	0	%100
36	58	X	-0.009	-0.009	0	%100
37	59	X	-0.012	-0.012	0	%100
38	68	X	-0.012	-0.012	0	%100
39	69	X	-0.004	-0.004	0	%100
40	72	X	-0.003	-0.003	0	%100
41	73	X	-0.003	-0.003	0	%100
42	76	X	-0.003	-0.003	0	%100
43	78	X	-0.003	-0.003	0	%100
44	80	X	-0.004	-0.004	0	%100
45	83	X	-0.003	-0.003	0	%100
46	84	X	-0.003	-0.003	0	%100
47	87	X	-0.003	-0.003	0	%100
48	89	X	-0.003	-0.003	0	%100

Member Distributed Loads (BLC 6 : 0 Wind - Service)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.002	-0.002	0	%100
2	2	Z	-0.001	-0.001	0	%100
3	3	Z	-0.001	-0.001	0	%100
4	4	Z	-0.002	-0.002	0	%100
5	5	Z	-0.002	-0.002	0	%100
6	6	Z	-0.0005	-0.0005	0	%100
7	7	Z	-0.002	-0.002	0	%100
8	8	Z	-0.002	-0.002	0	%100
9	9	Z	-0.0008	-0.0008	0	%100
10	10	Z	-0.0008	-0.0008	0	%100
11	11	Z	-0.003	-0.003	0	%100
12	18	Z	-0.0004	-0.0004	0	%100
13	19	Z	-0.0004	-0.0004	0	%100
14	22	Z	-0.0004	-0.0004	0	%100
15	28	Z	-0.0004	-0.0004	0	%100
16	30	Z	-0.002	-0.002	0	%100
17	31	Z	-0.002	-0.002	0	%100
18	32	Z	-0.001	-0.001	0	%100
19	33	Z	-0.001	-0.001	0	%100
20	34	Z	-0.002	-0.002	0	%100



Company : B+T Group
 Designer : AK
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Member Distributed Loads (BLC 6 : 0 Wind - Service) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
21	35	Z	-0.002	-0.002	0	%100
22	36	Z	-0.002	-0.002	0	%100
23	37	Z	-0.002	-0.002	0	%100
24	38	Z	-0.0008	-0.0008	0	%100
25	39	Z	-0.0008	-0.0008	0	%100
26	40	Z	-0.003	-0.003	0	%100
27	49	Z	-0.002	-0.002	0	%100
28	50	Z	-0.002	-0.002	0	%100
29	51	Z	-0.001	-0.001	0	%100
30	52	Z	-0.001	-0.001	0	%100
31	53	Z	-0.002	-0.002	0	%100
32	54	Z	-0.002	-0.002	0	%100
33	55	Z	-0.002	-0.002	0	%100
34	56	Z	-0.002	-0.002	0	%100
35	57	Z	-0.0008	-0.0008	0	%100
36	58	Z	-0.0008	-0.0008	0	%100
37	59	Z	-0.003	-0.003	0	%100
38	68	Z	-0.002	-0.002	0	%100
39	69	Z	-0.0005	-0.0005	0	%100
40	72	Z	-0.0004	-0.0004	0	%100
41	73	Z	-0.0004	-0.0004	0	%100
42	76	Z	-0.0004	-0.0004	0	%100
43	78	Z	-0.0004	-0.0004	0	%100
44	80	Z	-0.0005	-0.0005	0	%100
45	83	Z	-0.0004	-0.0004	0	%100
46	84	Z	-0.0004	-0.0004	0	%100
47	87	Z	-0.0004	-0.0004	0	%100
48	89	Z	-0.0004	-0.0004	0	%100

Member Distributed Loads (BLC 7 : 90 Wind - Service)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.002	-0.002	0	%100
2	2	X	-0.001	-0.001	0	%100
3	3	X	-0.001	-0.001	0	%100
4	4	X	-0.002	-0.002	0	%100
5	5	X	-0.002	-0.002	0	%100
6	6	X	-0.0005	-0.0005	0	%100
7	7	X	-0.002	-0.002	0	%100
8	8	X	-0.002	-0.002	0	%100
9	9	X	-0.0008	-0.0008	0	%100
10	10	X	-0.0008	-0.0008	0	%100
11	11	X	-0.003	-0.003	0	%100
12	18	X	-0.0004	-0.0004	0	%100
13	19	X	-0.0004	-0.0004	0	%100
14	22	X	-0.0004	-0.0004	0	%100
15	28	X	-0.0004	-0.0004	0	%100
16	30	X	-0.002	-0.002	0	%100
17	31	X	-0.002	-0.002	0	%100
18	32	X	-0.001	-0.001	0	%100
19	33	X	-0.001	-0.001	0	%100
20	34	X	-0.002	-0.002	0	%100
21	35	X	-0.002	-0.002	0	%100
22	36	X	-0.002	-0.002	0	%100
23	37	X	-0.002	-0.002	0	%100
24	38	X	-0.0008	-0.0008	0	%100
25	39	X	-0.0008	-0.0008	0	%100
26	40	X	-0.003	-0.003	0	%100
27	49	X	-0.002	-0.002	0	%100



Company : B+T Group
 Designer : AK
 Job Number : 149436.003.01
 Model Name : CT02216-S - Glastonbury

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Member Distributed Loads (BLC 7 : 90 Wind - Service) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
28	50	X	-0.002	-0.002	0	%100
29	51	X	-0.001	-0.001	0	%100
30	52	X	-0.001	-0.001	0	%100
31	53	X	-0.002	-0.002	0	%100
32	54	X	-0.002	-0.002	0	%100
33	55	X	-0.002	-0.002	0	%100
34	56	X	-0.002	-0.002	0	%100
35	57	X	-0.0008	-0.0008	0	%100
36	58	X	-0.0008	-0.0008	0	%100
37	59	X	-0.003	-0.003	0	%100
38	68	X	-0.002	-0.002	0	%100
39	69	X	-0.0005	-0.0005	0	%100
40	72	X	-0.0004	-0.0004	0	%100
41	73	X	-0.0004	-0.0004	0	%100
42	76	X	-0.0004	-0.0004	0	%100
43	78	X	-0.0004	-0.0004	0	%100
44	80	X	-0.0005	-0.0005	0	%100
45	83	X	-0.0004	-0.0004	0	%100
46	84	X	-0.0004	-0.0004	0	%100
47	87	X	-0.0004	-0.0004	0	%100
48	89	X	-0.0004	-0.0004	0	%100

Member Distributed Loads (BLC 8 : Ice)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Y	-0.023	-0.023	0	%100
2	2	Y	-0.018	-0.018	0	%100
3	3	Y	-0.018	-0.018	0	%100
4	4	Y	-0.024	-0.024	0	%100
5	5	Y	-0.024	-0.024	0	%100
6	6	Y	-0.017	-0.017	0	%100
7	7	Y	-0.024	-0.024	0	%100
8	8	Y	-0.024	-0.024	0	%100
9	9	Y	-0.015	-0.015	0	%100
10	10	Y	-0.015	-0.015	0	%100
11	11	Y	-0.029	-0.029	0	%100
12	18	Y	-0.015	-0.015	0	%100
13	19	Y	-0.015	-0.015	0	%100
14	22	Y	-0.015	-0.015	0	%100
15	28	Y	-0.015	-0.015	0	%100
16	30	Y	-0.029	-0.029	0	%100
17	31	Y	-0.023	-0.023	0	%100
18	32	Y	-0.018	-0.018	0	%100
19	33	Y	-0.018	-0.018	0	%100
20	34	Y	-0.024	-0.024	0	%100
21	35	Y	-0.024	-0.024	0	%100
22	36	Y	-0.024	-0.024	0	%100
23	37	Y	-0.024	-0.024	0	%100
24	38	Y	-0.015	-0.015	0	%100
25	39	Y	-0.015	-0.015	0	%100
26	40	Y	-0.029	-0.029	0	%100
27	49	Y	-0.029	-0.029	0	%100
28	50	Y	-0.023	-0.023	0	%100
29	51	Y	-0.018	-0.018	0	%100
30	52	Y	-0.018	-0.018	0	%100
31	53	Y	-0.024	-0.024	0	%100
32	54	Y	-0.024	-0.024	0	%100
33	55	Y	-0.024	-0.024	0	%100
34	56	Y	-0.024	-0.024	0	%100

Member Distributed Loads (BLC 8 : Ice) (Continued)

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
35	57	Y	-0.015	-0.015	0 %100
36	58	Y	-0.015	-0.015	0 %100
37	59	Y	-0.029	-0.029	0 %100
38	68	Y	-0.029	-0.029	0 %100
39	69	Y	-0.017	-0.017	0 %100
40	72	Y	-0.015	-0.015	0 %100
41	73	Y	-0.015	-0.015	0 %100
42	76	Y	-0.015	-0.015	0 %100
43	78	Y	-0.015	-0.015	0 %100
44	80	Y	-0.017	-0.017	0 %100
45	83	Y	-0.015	-0.015	0 %100
46	84	Y	-0.015	-0.015	0 %100
47	87	Y	-0.015	-0.015	0 %100
48	89	Y	-0.015	-0.015	0 %100

Member Distributed Loads (BLC 31 : BLC 1 Transient Area Loads)

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	9	Y	-0.015	-0.015	0 2.078
2	10	Y	-0.014	-0.02	0.231 1.27
3	10	Y	-0.02	-0.026	1.27 2.309
4	38	Y	-0.014	-0.02	0 2.078
5	39	Y	0.0006164	-0.016	0 1.155
6	39	Y	-0.016	-0.035	1.155 2.309
7	57	Y	-0.035	-0.016	0 1.155
8	57	Y	-0.016	0.0006163	1.155 2.309
9	58	Y	-0.018	-0.016	0.231 2.309

Member Distributed Loads (BLC 32 : BLC 8 Transient Area Loads)

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	9	Y	-0.017	-0.017	0 2.078
2	10	Y	-0.016	-0.022	0.231 1.27
3	10	Y	-0.022	-0.029	1.27 2.309
4	38	Y	-0.015	-0.022	0 2.078
5	39	Y	0.0006781	-0.017	0 1.155
6	39	Y	-0.017	-0.038	1.155 2.309
7	57	Y	-0.038	-0.017	0 1.155
8	57	Y	-0.017	0.000678	1.155 2.309
9	58	Y	-0.02	-0.017	0.231 2.309

Member Area Loads (BLC 1 : Dead)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	23	22	25	24	Y	Two Way	-0.01
2	73	72	75	74	Y	Two Way	-0.01
3	102	101	104	103	Y	Two Way	-0.01

Member Area Loads (BLC 8 : Ice)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	23	22	25	24	Y	Two Way	-0.011
2	73	72	75	74	Y	Two Way	-0.011
3	102	101	104	103	Y	Two Way	-0.011



Node Loads and Enforced Displacements (BLC 9 : Live Load a)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s ² /ft, k*s ² *ft)]
1	30	L	Y	-0.5
2	113	L	Y	-0.5
3	135	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 10 : Live Load b)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s ² /ft, k*s ² *ft)]
1	31	L	Y	-0.5
2	114	L	Y	-0.5
3	136	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 11 : Live Load c)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s ² /ft, k*s ² *ft)]
1	44	L	Y	-0.5
2	127	L	Y	-0.5
3	149	L	Y	-0.5

Envelope Node Reactions

	Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	1	max	1.639	5	2.946	38	1.952	2	5.923	26	1.613	11	0.396	24
2		min	-1.642	23	-0.707	8	-2.066	20	-2.215	8	-1.615	17	-0.281	6
3	53	max	1.535	5	2.796	42	1.885	14	0.894	13	1.896	3	1.266	12
4		min	-1.629	23	-0.444	12	-1.825	8	-2.653	31	-1.897	21	-5.009	30
5	82	max	1.502	17	2.79	46	2.184	14	0.952	3	1.967	7	4.764	34
6		min	-1.405	11	-0.451	4	-2.13	8	-3.091	33	-1.969	25	-1.299	4
7	Totals:	max	4.662	5	7.657	44	6.005	2						
8		min	-4.662	23	1.797	2	-6.005	8						

Envelope AISC 13TH (360-05): LRFD Member Steel Code Checks

Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	1	HSS4X4X2	0.755	0	37	0.179	0	y	37	70.173	73.278	8.24	8.24	2.15 H1-1b
2	2	C3.38x2.06x.188	0.556	2.592	27	0.087	0.351	y	40	38.433	43.394	1.694	4.483	1.626 H1-1b
3	3	C3.38x2.06x.188	0.529	0	37	0.096	2.241	z	20	38.433	43.394	1.694	4.483	1.626 H1-1b
4	4	PL3/8"x6	0.116	0.164	19	0.219	0	y	14	68.856	72.9	0.57	9.113	2.775 H1-1b
5	5	PL3/8"x6	0.125	0	15	0.176	0	y	14	68.856	72.9	0.57	9.113	2.035 H1-1b
6	6	PIPE 3.5x0.165	0.099	6.75	19	0.052	4		16	45.872	71.57	6.336	6.336	1.891 H1-1b
7	7	PL3/8"x6	0.2	0.208	20	0.286	0.208	y	49	70.733	72.9	0.57	9.113	1.425 H1-1b
8	8	PL3/8"x6	0.197	0	25	0.3	0	y	39	70.733	72.9	0.57	9.113	2.807 H1-1b
9	9	L2x2x4	0.388	0	20	0.038	2.309	z	31	23.349	30.586	0.691	1.577	1.5 H2-1
10	10	L2x2x4	0.333	2.309	20	0.051	0	y	40	23.349	30.586	0.691	1.577	1.5 H2-1
11	11	L7.63x2.5x6	0.526	1.604	8	0.108	0.334	y	38	73.845	118.523	1.798	13.641	1.225 H2-1
12	18	PIPE 2.88x0.203	0.154	5.667	17	0.056	5.667		18	35.519	70.68	5.029	5.029	3 H1-1b
13	19	PIPE 2.88x0.203	0.182	2.333	21	0.063	5.667		21	35.519	70.68	5.029	5.029	3 H1-1b
14	22	PIPE 2.88x0.203	0.198	7.812	25	0.19	8.854		14	24.131	70.68	5.029	5.029	2.507 H1-1b
15	28	PIPE 2.88x0.203	0.169	2.333	19	0.062	2.333		20	35.519	70.68	5.029	5.029	3 H1-1b
16	30	L6.63x4.33x.25	0.275	3.25	6	0.032	3.25	z	24	49.975	86.751	2.311	6.976	1.5 H2-1
17	31	HSS4X4X2	0.733	0	31	0.171	0	y	41	70.173	73.278	8.24	8.24	2.148 H1-1b
18	32	C3.38x2.06x.188	0.554	2.592	31	0.088	0.351	y	45	38.433	43.394	1.694	4.483	1.624 H1-1b
19	33	C3.38x2.06x.188	0.508	0	29	0.085	2.241	y	48	38.433	43.394	1.694	4.483	1.629 H1-1b
20	34	PL3/8"x6	0.098	0	18	0.199	0	y	30	68.856	72.9	0.57	9.113	2.416 H1-1b
21	35	PL3/8"x6	0.125	0	19	0.143	0	y	18	68.856	72.9	0.57	9.113	1.949 H1-1b
22	36	PL3/8"x6	0.173	0.208	19	0.28	0.208	y	41	70.733	72.9	0.57	9.113	2.657 H1-1b
23	37	PL3/8"x6	0.157	0	17	0.303	0	y	43	70.733	72.9	0.57	9.113	2.879 H1-1b



Company : B+T Group
 Designer : AK
 Job Number : 149436.003.01
 Model Name : CT02216-S - Glastonbury

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Envelope AISC 13TH (360-05): LRFD Member Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn	
24	38	L2x2x4	0.296	0	23	0.037	2.309	y	39	23.349	30.586	0.691	1.577	1.5	H2-1
25	39	L2x2x4	0.288	2.309	25	0.052	2.309	y	44	23.349	30.586	0.691	1.577	1.5	H2-1
26	40	L7.63x2.5x6	0.399	1.604	12	0.108	0.334	y	43	73.845	118.523	1.798	13.676	1.232	H2-1
27	49	L6.63x4.33x.25	0.319	0	2	0.036	3.25	y	21	49.975	86.751	2.311	6.976	1.5	H2-1
28	50	HSS4X4X2	0.743	0	33	0.178	0	y	32	70.173	73.278	8.24	8.24	2.14	H1-1b
29	51	C3.38x2.06x.188	0.538	2.592	35	0.088	0.351	y	49	38.433	43.394	1.694	4.483	1.627	H1-1b
30	52	C3.38x2.06x.188	0.526	0	33	0.085	2.241	y	39	38.433	43.394	1.694	4.483	1.625	H1-1b
31	53	PL3/8"x6	0.128	0.164	15	0.196	0	y	34	68.856	72.9	0.57	9.113	2.684	H1-1b
32	54	PL3/8"x6	0.099	0	23	0.147	0	y	21	68.856	72.9	0.57	9.113	1.935	H1-1b
33	55	PL3/8"x6	0.174	0.085	14	0.285	0.208	y	45	70.733	72.9	0.57	9.113	1.324	H1-1b
34	56	PL3/8"x6	0.2	0	21	0.295	0	y	47	70.733	72.9	0.57	9.113	2.815	H1-1b
35	57	L2x2x4	0.38	0	15	0.038	2.309	z	27	23.349	30.586	0.691	1.577	1.5	H2-1
36	58	L2x2x4	0.274	2.309	16	0.051	0	y	48	23.349	30.586	0.691	1.577	1.5	H2-1
37	59	L7.63x2.5x6	0.471	1.604	3	0.109	0.334	y	46	73.845	118.523	1.798	13.883	1.278	H2-1
38	68	L6.63x4.33x.25	0.343	3.25	2	0.041	3.25	z	20	49.975	86.751	2.311	6.976	1.5	H2-1
39	69	PIPE 3.5x0.165	0.111	1.25	14	0.069	4		20	45.872	71.57	6.336	6.336	1.72	H1-1b
40	72	PIPE 2.88x0.203	0.195	5.667	21	0.065	5.667		21	35.519	70.68	5.029	5.029	3	H1-1b
41	73	PIPE 2.88x0.203	0.218	2.333	14	0.064	5.667		25	35.519	70.68	5.029	5.029	3	H1-1b
42	76	PIPE 2.88x0.203	0.185	2.188	25	0.155	2.188		25	24.131	70.68	5.029	5.029	2.182	H1-1b
43	78	PIPE 2.88x0.203	0.172	5.667	21	0.064	2.333		25	35.519	70.68	5.029	5.029	3	H1-1b
44	80	PIPE 3.5x0.165	0.096	4	14	0.065	2.833		25	45.872	71.57	6.336	6.336	1.431	H1-1b
45	83	PIPE 2.88x0.203	0.194	5.667	25	0.072	5.667		25	35.519	70.68	5.029	5.029	3	H1-1b
46	84	PIPE 2.88x0.203	0.172	2.333	18	0.048	5.667		17	35.519	70.68	5.029	5.029	3	H1-1b
47	87	PIPE 2.88x0.203	0.183	7.813	21	0.171	8.854		21	24.131	70.68	5.029	5.029	2.438	H1-1b
48	89	PIPE 2.88x0.203	0.198	5.667	14	0.044	2.333		17	35.519	70.68	5.029	5.029	3	H1-1b

APPENDIX B

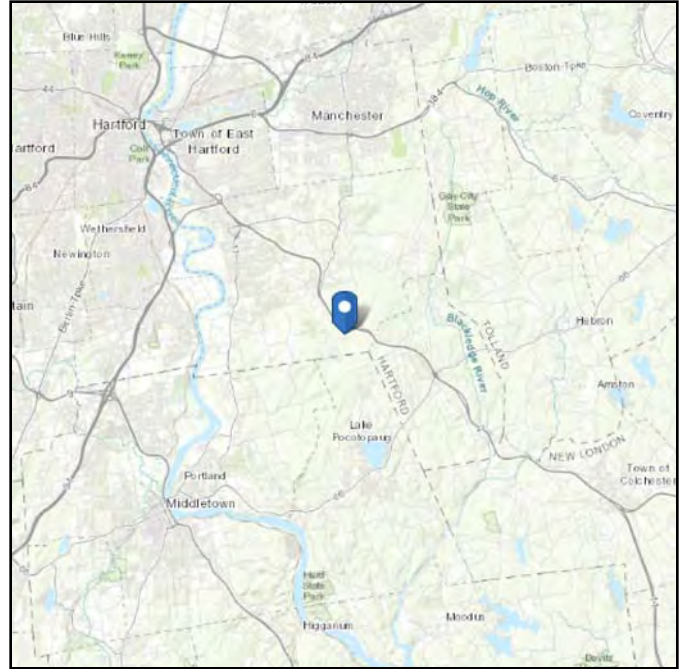
Additional Calculations

ASCE 7 Hazards Report

Address:
No Address at This
Location

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 462.99 ft (NAVD 88)
Latitude: 41.655897
Longitude: -72.523255

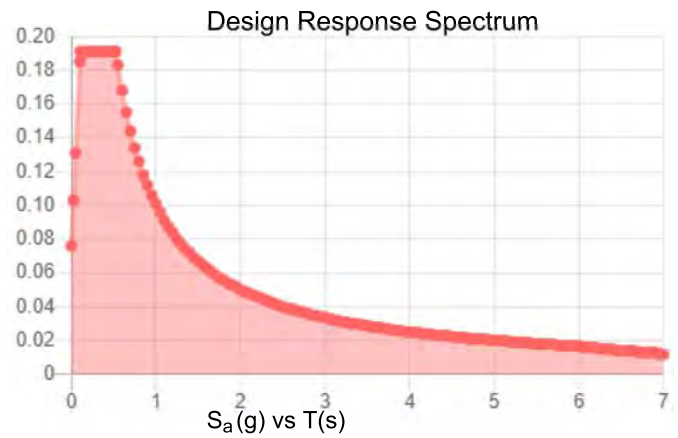
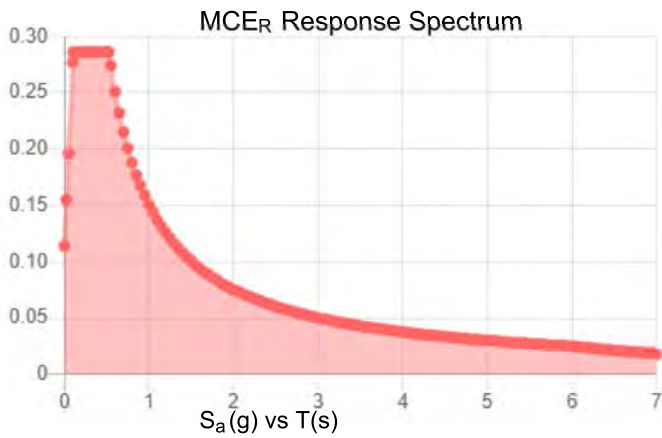


Site Soil Class: D - Stiff Soil

Results:

S_s :	0.179	S_{DS} :	0.191
S_1 :	0.063	S_{D1} :	0.101
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.09
S_{MS} :	0.286	PGA _M :	0.144
S_{M1} :	0.151	F _{PGA} :	1.6
		I_e :	1

Seismic Design Category B



Data Accessed:

Thu Aug 26 2021

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness: 1.00 in.

Concurrent Temperature: 5 F

Gust Speed: 50 mph

Data Source: Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8

Date Accessed: Thu Aug 26 2021

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 50-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.

EXHIBIT 10

Construction Drawings



DISH Wireless L.L.C. SITE ID:

BOBDL00117A

DISH Wireless L.L.C. SITE ADDRESS:

**175 DICKENSON ROAD
GLASTONBURY, CT 06033**



By Stephen Roth at 6:06:51 AM, 10/1/2021

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:

- TOWER SCOPE OF WORK:**
- INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR)
 - INSTALL (1) PROPOSED ANTENNA PLATFORM MOUNT
 - INSTALL PROPOSED JUMPERS
 - INSTALL (6) PROPOSED RRUs (2 PER SECTOR)
 - INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP)
 - INSTALL (1) PROPOSED HYBRID CABLE

- GROUND SCOPE OF WORK:**
- INSTALL (1) PROPOSED METAL PLATFORM
 - INSTALL (1) PROPOSED ICE BRIDGE
 - INSTALL (1) PROPOSED PPC CABINET
 - INSTALL (1) PROPOSED EQUIPMENT CABINET
 - INSTALL (1) PROPOSED POWER CONDUIT
 - INSTALL (1) PROPOSED TELCO CONDUIT
 - INSTALL (1) PROPOSED TELCO-FIBER BOX
 - INSTALL (1) PROPOSED GPS UNIT
 - INSTALL (1) PROPOSED FIBER NID (IF REQUIRED)

SITE INFORMATION

PROPERTY OWNER: CHAPMAN RANDALL S+ BRONZI KARRIE-LYNNE
ADDRESS: P.O. BOX 7 TROY, ME 04987

TOWER TYPE: MONOPOLE

TOWER CO SITE ID: CT02216-S

TOWER APP NUMBER: 167816

COUNTY: HARTFORD

LATITUDE (NAD 83): 41° 39' 21.23" N 41.655897 N

LONGITUDE (NAD 83): 72° 31' 23.72" W 72.523256 W

ZONING JURISDICTION: TOWN OF GLASTONBURY

ZONING DISTRICT: RESERVED LAND

PARCEL NUMBER: 09003054-18600175

OCCUPANCY GROUP: U

CONSTRUCTION TYPE: II-B

POWER COMPANY: EVERSOURCE

TELEPHONE COMPANY: AT&T

PROJECT DIRECTORY

APPLICANT: DISH Wireless L.L.C.
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

TOWER OWNER: SBA COMMUNICATAIONS CORP.
8051 CONGRESS AVENUE
BOCA RATON, FL 33487
(800) 487-7483

SITE DESIGNER: B+T GROUP
1717 S. BOULDER AVE, SUITE 300
TULSA, OK 74119
(918) 587-4630

SITE ACQUISITION: JEAN COTTRELL
JEAN.COTTRELL@DISH.COM

CONST. MANAGER: JAVIER SOTO
JAVIER.SOTO@DISH.COM

RF ENGINEER: BOSSENER CHARLES
BOSSENER.CHARLES@DISH.COM



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



8051 CONGRESS AVENUE
BOCA RATON, FL 33487



1717 S. BOULDER
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TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com



B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

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DRAWN BY: RY CHECKED BY: BLB APPROVED BY: BLB

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	9/1/21	ISSUED FOR REVIEW
0	9/24/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149436.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00117A
175 DICKENSON ROAD
GLASTONBURY, CT 06033

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

CONNECTICUT CODE OF COMPLIANCE

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

CODE TYPE	CODE
BUILDING	2018 CT STATE BUILDING CODE/2015 IBC W/ CT AMENDMENTS
MECHANICAL	2018 CT STATE BUILDING CODE/2015 IMC W/ CT AMENDMENTS
ELECTRICAL	2018 CT STATE BUILDING CODE/2017 NEC W/ CT AMENDMENTS

SHEET INDEX

SHEET NO.	SHEET TITLE
T-1	TITLE SHEET
LS1	SITE SURVEY
A-1	OVERALL AND ENLARGED SITE PLAN
A-2	ELEVATION, ANTENNA LAYOUT AND SCHEDULE
A-3	EQUIPMENT PLATFORM AND H-FRAME DETAILS
A-4	EQUIPMENT DETAILS
A-5	EQUIPMENT DETAILS
A-6	EQUIPMENT DETAILS
E-1	ELECTRICAL/FIBER ROUTE PLAN AND NOTES
E-2	ELECTRICAL DETAILS
E-3	ELECTRICAL ONE-LINE, FAULT CALCS & PANEL SCHEDULE
G-1	GROUNDING PLANS AND NOTES
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS
RF-1	RF CABLE COLOR CODE
GN-1	LEGEND AND ABBREVIATIONS
GN-2	GENERAL NOTES
GN-3	GENERAL NOTES
GN-4	GENERAL NOTES

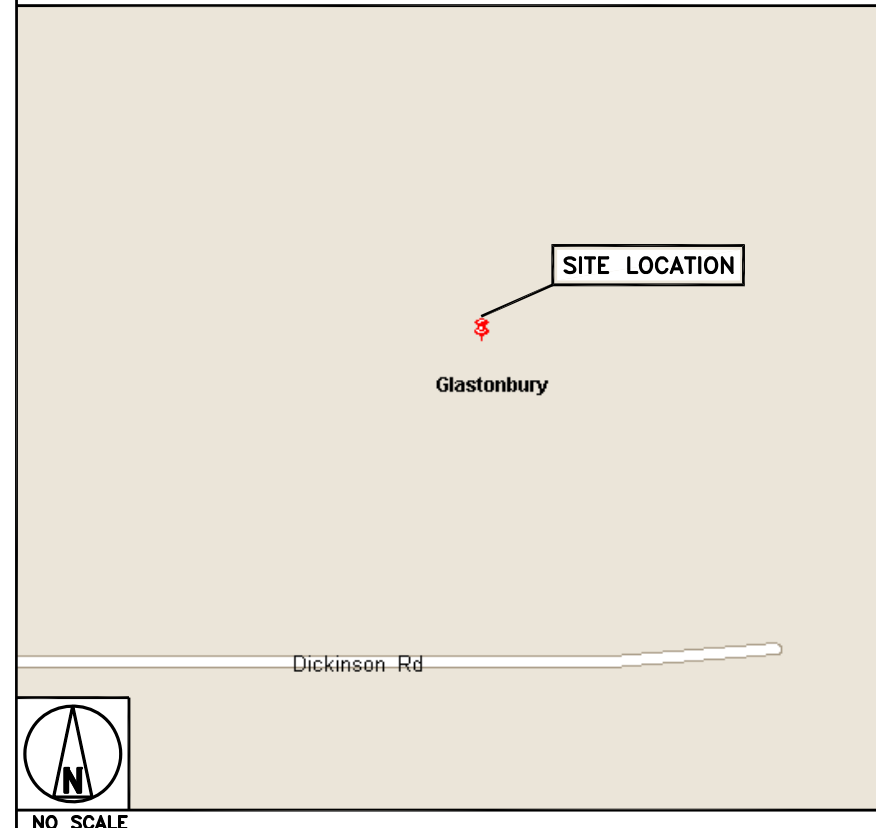
SITE PHOTO



DIRECTIONS

DIRECTIONS FROM BRADLEY INTERNATIONAL AIRPORT:
CONTINUE TO BRADLEY INTERNATIONAL AIRPORT CON, HEAD NORTH TOWARD BRADLEY INTERNATIONAL AIRPORT, SLIGHT LEFT ONTO BRADLEY INTERNATIONAL AIRPORT, SLIGHT LEFT, TAKE I-91 S AND CT-2 E TO CT-83 S IN GLASTONBURY. TAKE EXIT 10 FROM CT-2 E, CONTINUE ONTO BRADLEY INTERNATIONAL AIRPORT CON, CONTINUE ONTO CT-20 E/BRADLEY INTERNATIONAL AIRPORT CON, USE THE RIGHT 2 LANES TO MERGE WITH I-91 S TOWARD HARTFORD, USE THE LEFT LANE TO TAKE EXIT 30 TO MERGE WITH I-84 E, TAKE EXIT 55 FOR CT-2 E TOWARD NORWICH/NEW LONDON/I-84 E, CONTINUE ONTO CT-2 E, TAKE EXIT 10 TOWARD CT-83 S, TAKE WASSUC RD, COUNTRY CLUB RD AND MOTT HILL RD TO DICKINSON RD, TURN RIGHT ONTO CT-83 S, TURN LEFT ONTO NEW LONDON TURNPIKE, CONTINUE ONTO WASSUC RD, TURN RIGHT ONTO COUNTRY CLUB RD, TURN LEFT ONTO MOTT HILL RD, SLIGHT LEFT ONTO DICKINSON RD, ARRIVING AT BOBDL00117A.

VICINITY MAP



UNDERGROUND SERVICE ALERT CBYD 811
UTILITY NOTIFICATION CENTER OF CONNECTICUT
(800) 922-4455
WWW.CBYD.COM
CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

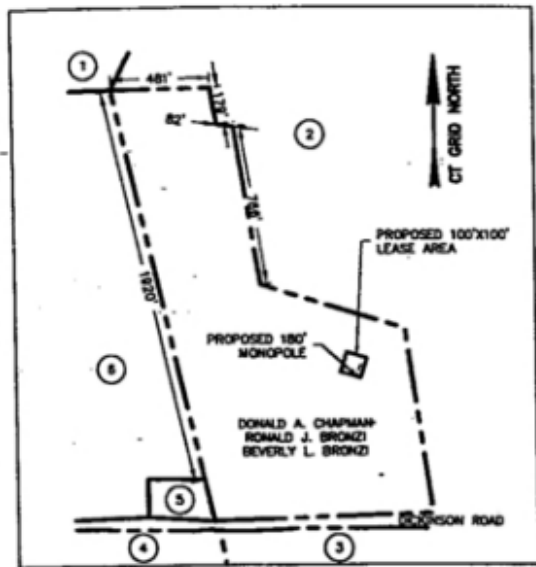


GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. 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.

11"x17" PLOT WILL BE HALF SCALE UNLESS OTHERWISE NOTED

CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON THE JOB SITE, AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.



AREA MAP

SCALE 1"=400'



NOTES:

1. THIS SURVEY AND MAP HAVE BEEN PREPARED IN ACCORDANCE WITH SECTIONS 20-300B-1 THRU 20-300B-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES - "MINIMUM STANDARDS FOR SURVEY AND MAPS IN THE STATE OF CONNECTICUT" AS ENDORSED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPT. 28, 1998.

IT IS A ZONING LOCATION SURVEY BASED ON A DEPENDENT RESURVEY CONFORMING TO HORIZONTAL ACCURACY CLASS A-2 AND INTENDED TO BE USED FOR THE PURPOSE OF DEPICTING ZONING COMPLIANCE.

2. THE TYPE OF SURVEY IS FOR LEASED PROPERTY AND IS INTENDED TO DEPICT THE LIMITS OF THE PROJECT AREA OF PROPERTY FOR THE PROJECT REFERENCED HEREON.

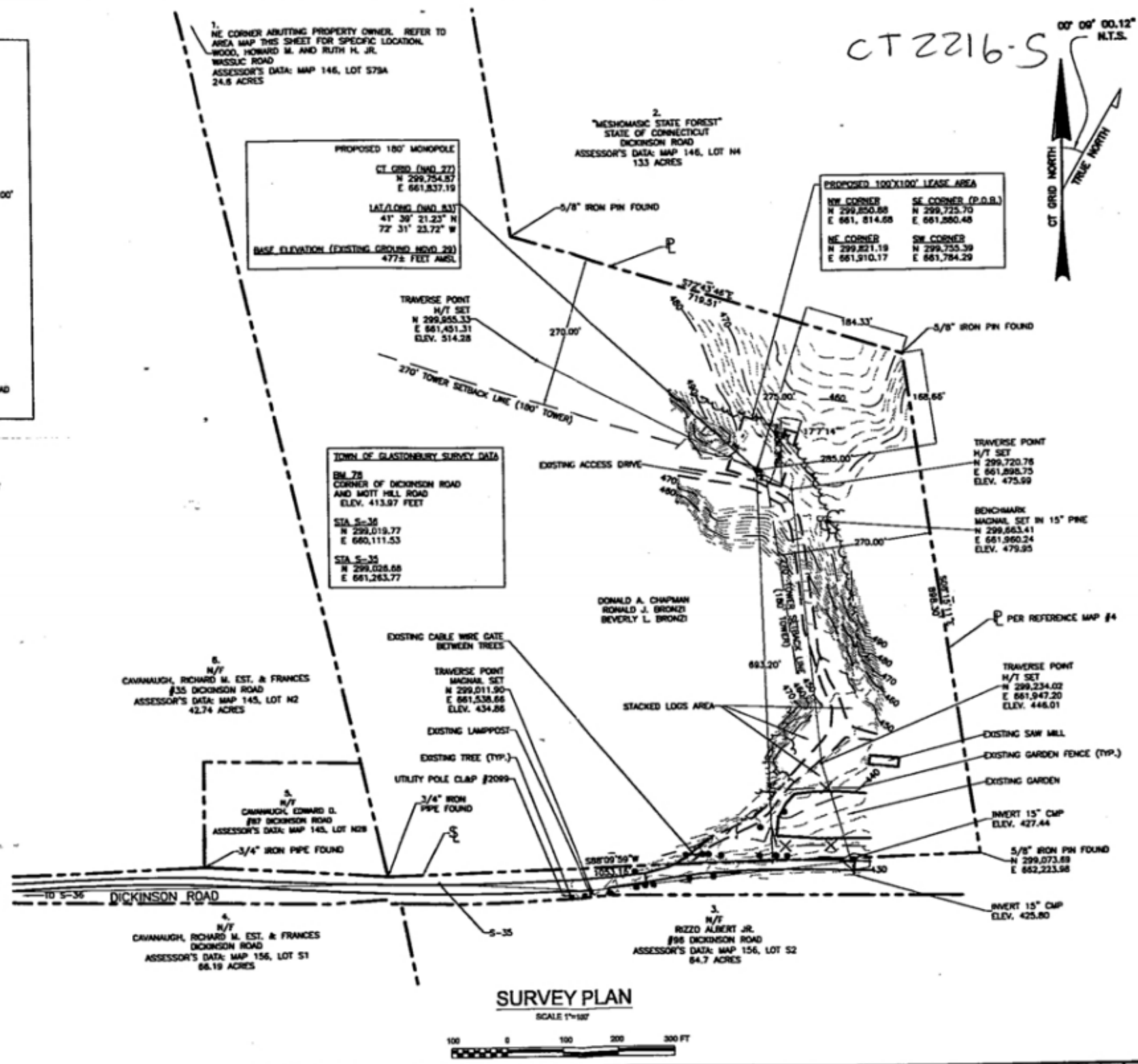
3. THE BASE LINE FROM WHICH THIS PROPERTY TRANSACTION IS REFERENCED CONFORMS TO CLASS A-2 HORIZONTAL ACCURACY.

4. COORDINATE SYSTEM IS NORTH AMERICAN DATUM OF 1987 (NAD 87).

5. VERTICAL DATUM IS NATIONAL GEODETIC VERTICAL DATUM OF 1929.

REFERENCE MAPS:

- "TOPOGRAPHIC MAP, TOWN OF GLASTONBURY" SCALE 1"=100', DATED 10-4-06, SHEETS 145,146.
- "PUBLIC WORKS DEPARTMENT PLANIMETRIC MAP 158 MOTT HILL WETLANDS" SCALE 1"=100', DATED 10-4-06.
- "PUBLIC WORKS DEPARTMENT PLANIMETRIC MAP 157 MOTT HILL WETLANDS EAST" SCALE 1"=100', DATED 10-4-06.
- MAP ENTITLED "CONNECTICUT STATE PARK AND FOREST COMMISSION SURVEY OF BOUNDARY BETWEEN THE STATE OF COAN AND D. CHAPMAN-G. BRONZI LAND", SCALE 1"=150', DATED JUNE 13, 1988, G.T.C. MAP # 182.



SURVEY PLAN

SCALE 1"=100'



TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.
Edward A. Nelson 4/23/08
 EDWARD A. NELSON
 4115 1/4
 1000 W. MAIN ST. SUITE 100
 BRIDGEVILLE, PA 17015

PROPERTY INFORMATION

- PROPERTY ADDRESS:
DICKINSON ROAD
GLASTONBURY, CONNECTICUT
- PROPERTY OWNERS:
DONALD A. CHAPMAN
348 MANCHESTER ROAD
GLASTONBURY, CONNECTICUT 06033
RONALD J. & BEVERLY L. BRONZI
188 WASSUC ROAD
GLASTONBURY, CONNECTICUT 06033
CONTACT: ATTORNEY JIM MARK
(860) 458-6484
DEED: VOLUME 442, PAGE 18 (8/25/88)
- ASSESSOR DATA: MAP 145, LOT N2
- ZONE: RURAL RESIDENTIAL (RR)
- FEMA FIRM MAP: ZONED "C"
- LOT AREA: 37.41 ACRES

TOWER INFORMATION

- LOCATION:
NAD 87-CT
N 299,754.87
E 661,837.19
GEOID LAT/LONG NAD83
41° 38' 21.22" N
72° 31' 23.72" W
- GROUND ELEVATION AT TOWER: 477± AMSL
- TYPE: MONOPOLE
- TOWER HEIGHT: 180' ABOVE TOP OF FOUNDATION

LEGEND

- DATUM IS MEAN SEA LEVEL.
- EXISTING HIGHWAY LINE/PROPERTY LINE
 - PROPOSED LEASE AREA
 - BUILDING SETBACKS
 - WETLAND BOUNDARY
 - TREE, HEDGE, EDGE OF WOODS
 - EXISTING CONTOUR
 - EXISTING SPOT ELEVATION @ X
 - BARBED WIRE, FARM AND CHAIN LINK FENCE
 - EXISTING UTILITY POLE AND OVERHEAD UTILITIES
 - PROPOSED UTILITY POLE AND OVERHEAD UTILITIES
 - GRID BOUNDARY MONUMENT
 - CLEARING LINE
 - STONE WALLS

Goodkind & O'Dea, Inc.
 Consulting Engineers and Planners
 59 ELM STREET, SUITE 101
 NEW HAVEN, CONNECTICUT 06510
 (203) 776-2277

GLASTONBURY
 DICKINSON ROAD
 GLASTONBURY, CONNECTICUT 06033

SBA, INC.
 80 EASTERN BOULEVARD
 GLASTONBURY, CONNECTICUT
 (860) 859-9101
 ESTHER WILMAY

ONE TOWN CENTER RD., 3RD FL.
 BOCA RATON, FL. 33486
 (561) 995-7870

ISSUED FOR ZONING	ENC	EAM	FDK
PRELIMINARY ISSUE FOR ZONING	ENC	EAM	FDK
DATE	REVISION	BY	CHK
DATE	REVISION	BY	CHK

SITE NUMBER 10125-016
GLASTONBURY
EXISTING CONDITION SURVEY

DATE	REVISION	BY	CHK
DATE	REVISION	BY	CHK



5701 SOUTH SANTA FE DRIVE
 LITTLETON, CO 80120



8051 CONGRESS AVENUE
 BOCA RATON, FL 33487



1717 S. BOULDER
 SUITE 300
 TULSA, OK 74119
 PH: (918) 587-4630
 www.blgrp.com



B&T ENGINEERING, INC.
 PEC.0001564
 Expires 2/10/22

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DRAWN BY:	CHECKED BY:	APPROVED BY:
RY	BLB	BLB

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	9/1/21	ISSUED FOR REVIEW
0	9/24/21	ISSUED FOR CONSTRUCTION

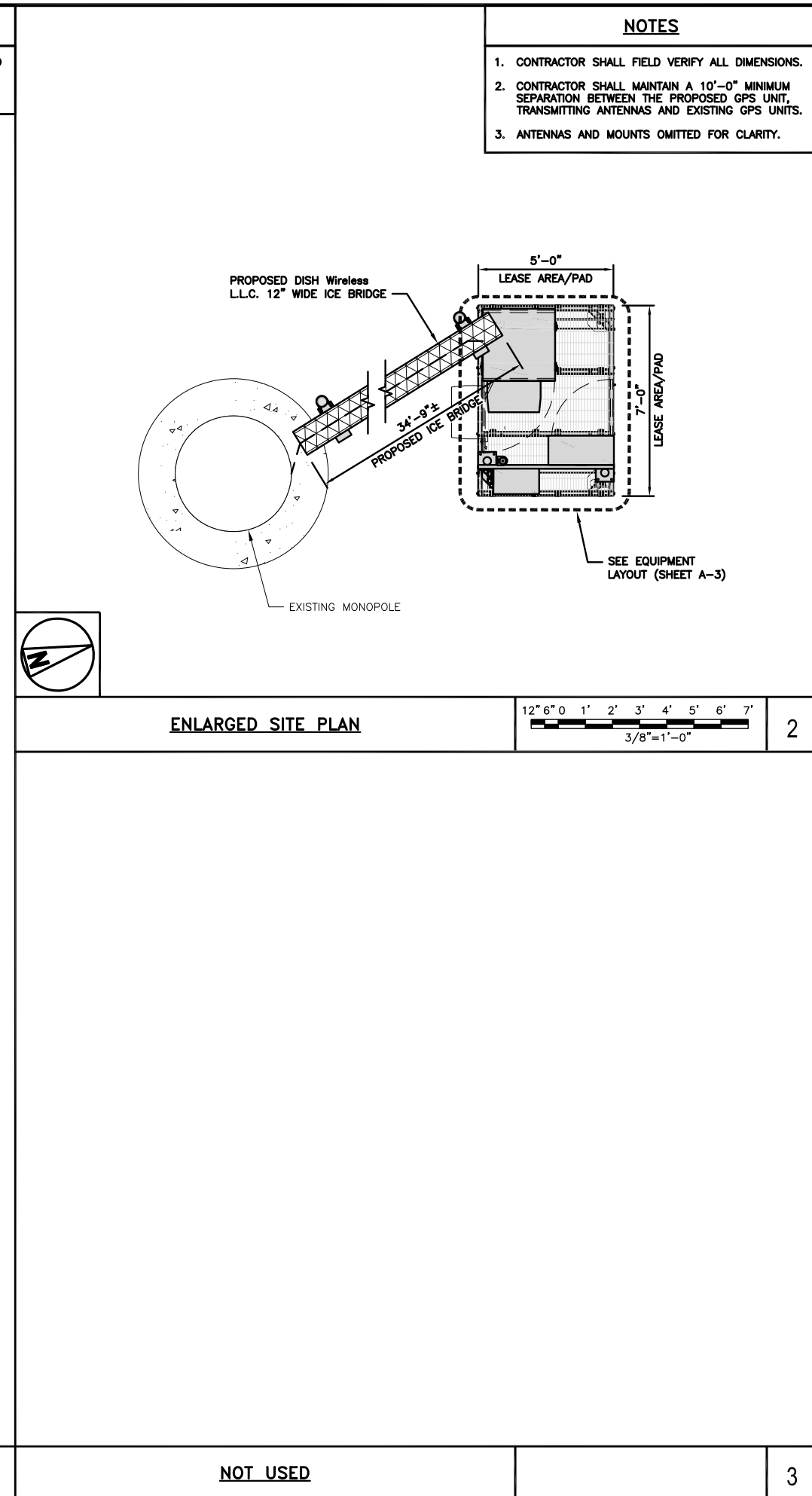
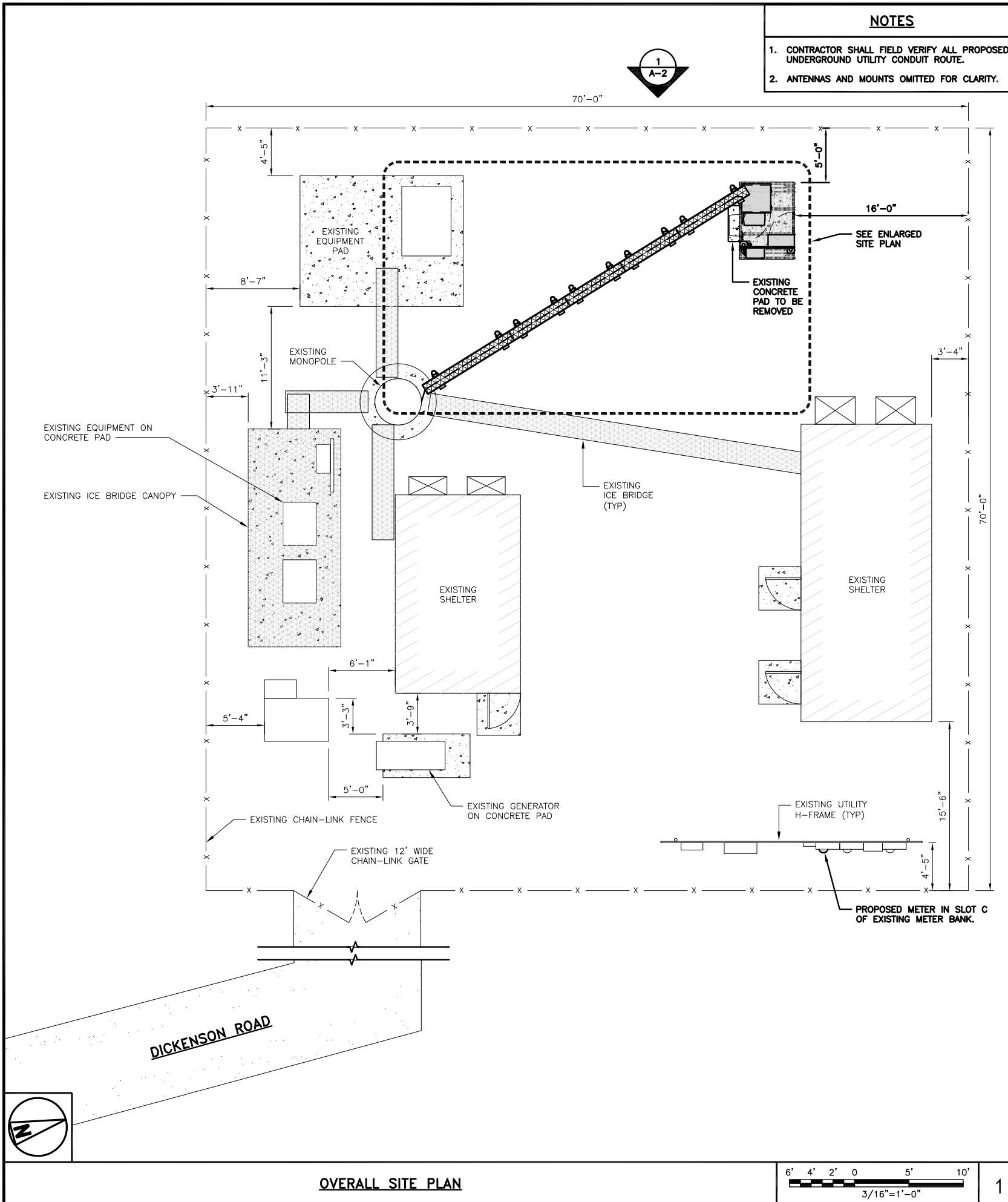
A&E PROJECT NUMBER
 149436.001.01

DISH Wireless L.L.C.
 PROJECT INFORMATION

BOBDL00117A
 175 DICKENSON ROAD
 GLASTONBURY, CT 06033

SHEET TITLE
 SITE SURVEY

SHEET NUMBER
LS1



dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

SBA

8051 CONGRESS AVENUE
BOCA RATON, FL 33487

B+T GRP

1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

Professional Engineer Seal

9/24/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

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DRAWN BY: RY CHECKED BY: BLB APPROVED BY: BLB

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	9/1/21	ISSUED FOR REVIEW
0	9/24/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149436.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

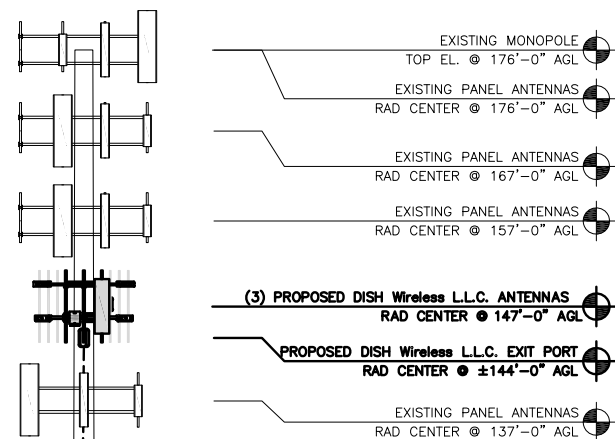
BOBDL00117A
175 DICKENSON ROAD
GLASTONBURY, CT 06033

SHEET TITLE
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER
A-1

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



EXISTING MONOPOLE

(1) PROPOSED DISH Wireless L.L.C. HYBRID CABLE ROUTED INSIDE POLE

PROPOSED DISH Wireless L.L.C. ICE BRIDGE

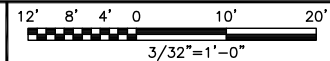
PROPOSED DISH Wireless L.L.C. GPS UNIT

PROPOSED DISH Wireless L.L.C. EQUIPMENT ON PROPOSED STEEL PLATFORM

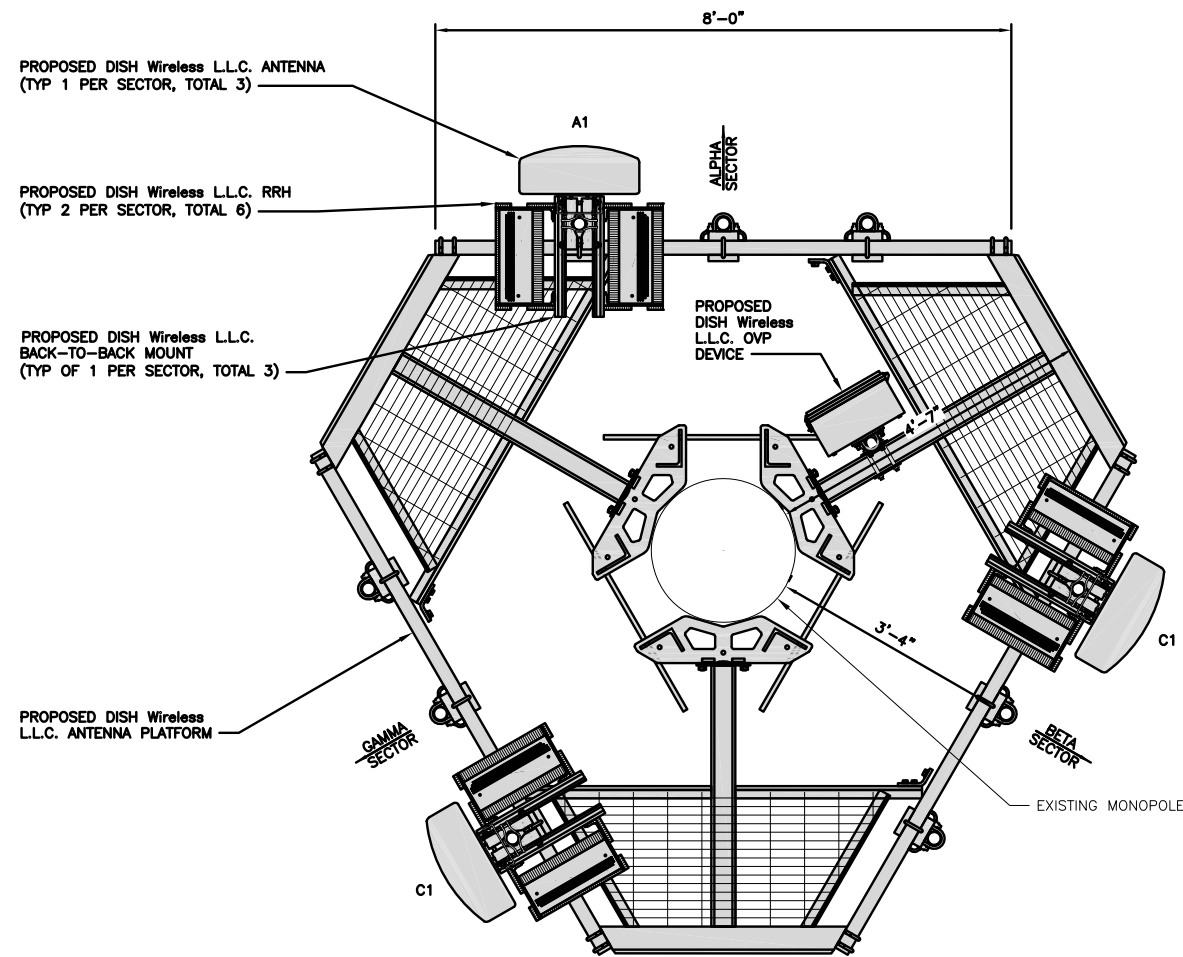
EXISTING ENTRY PORT

EXISTING MONOPOLE
BOTTOM EL. @ 6" AGL

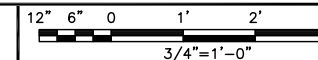
PROPOSED WEST ELEVATION



1



ANTENNA LAYOUT



2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER - MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	JMA - MX08FR0665-21	5G	72.0" x 20.0"	0°	147'-0"	(1) HIGH-CAPACITY HYBRID CABLE (205' LONG)
BETA	B1	PROPOSED	JMA - MX08FR0665-21	5G	72.0" x 20.0"	120°	147'-0"	
GAMMA	G1	PROPOSED	JMA - MX08FR0665-21	5G	72.0" x 20.0"	240°	147'-0"	

SECTOR	POSITION	RRH		NOTES
		MANUFACTURER - MODEL NUMBER	TECHNOLOGY	
ALPHA	A1	FUJITSU - TA08025-B605	5G	1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS. 2. ANTENNA AND RRH MODELS MAY CHANGE DUE TO EQUIPMENT AVAILABILITY. ALL EQUIPMENT CHANGES MUST BE APPROVED AND REMAIN IN COMPLIANCE WITH THE PROPOSED DESIGN AND STRUCTURAL ANALYSES.
	A1	FUJITSU - TA08025-B605	5G	
BETA	B1	FUJITSU - TA08025-B605	5G	
	B1	FUJITSU - TA08025-B605	5G	
GAMMA	G1	FUJITSU - TA08025-B605	5G	
	G1	FUJITSU - TA08025-B605	5G	

ANTENNA SCHEDULE

NO SCALE

3



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



8051 CONGRESS AVENUE
BOCA RATON, FL 33487



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CONSTRUCTION DOCUMENTS

SUBMITTALS		
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A&E PROJECT NUMBER
149436.001.01

DISH Wireless L.L.C. PROJECT INFORMATION
BOBDL00117A
175 DICKENSON ROAD
GLASTONBURY, CT 06033

SHEET TITLE
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER

A-2



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



8051 CONGRESS AVENUE
BOCA RATON, FL 33487



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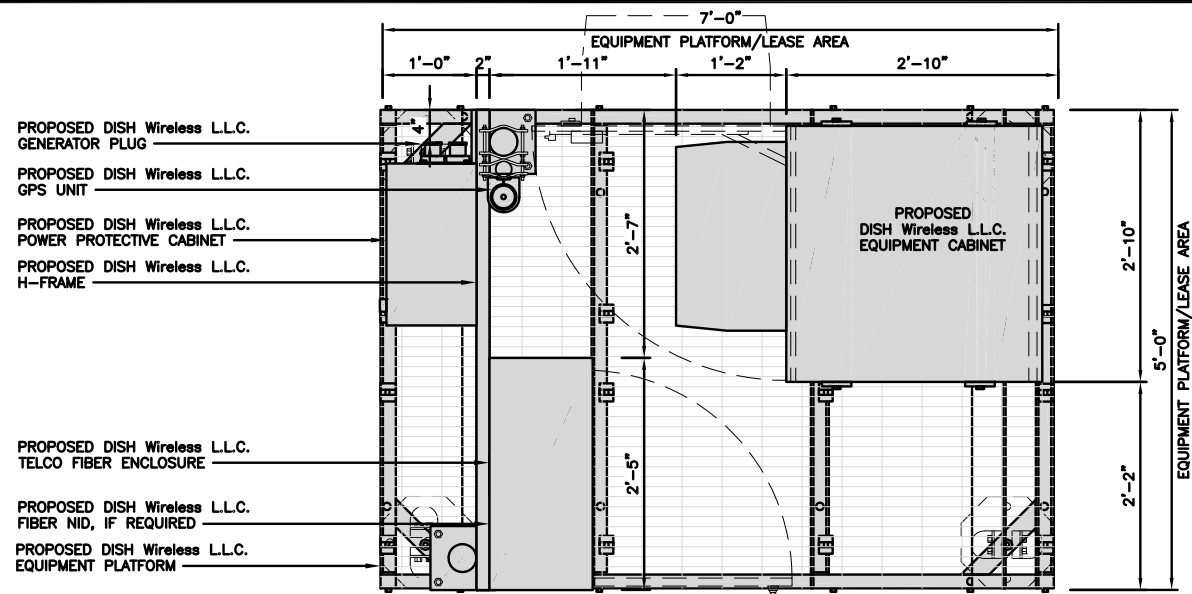
SHEET TITLE
EQUIPMENT PLATFORM AND
H-FRAME DETAILS

SHEET NUMBER

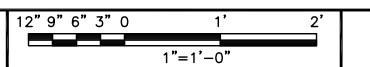
A-3

NOTES

- CONTRACTOR TO BURY PLATFORM FEET WITH A MINIMUM OF 2" OF FILL PER EXISTING SITE SURFACE
- WEED BARRIER FABRIC TO BE ADDED AT DISCRETION OF DISH Wireless L.L.C. CONSTRUCTION MANAGER AT TIME OF CONSTRUCTION. ONE SHEET 8'x8' INSTALLED UNDER ALL FOUR FEET OF THE PLATFORM (4 MIL BLACK PLASTIC)
- EQUIPMENT CABINET OMITTED FOR CLARITY

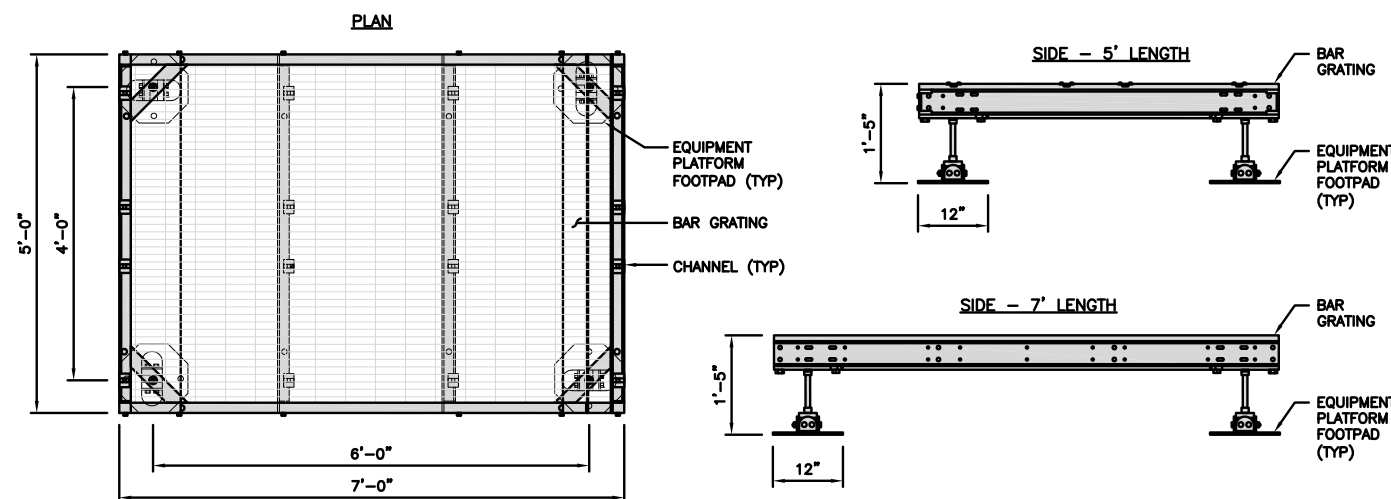


PLATFORM EQUIPMENT PLAN



COMMSCOPE MTC4045LP 5X7 PLATFORM	
DIMENSIONS (HxWxD)	16"x84"x60"
TOTAL WEIGHT	423 LBS

NOTE:
GC TO PROVIDE EXTENDED
THREAD FOR PLATFORM IF
REQUIRED HEIGHT EXCEEDS 17"

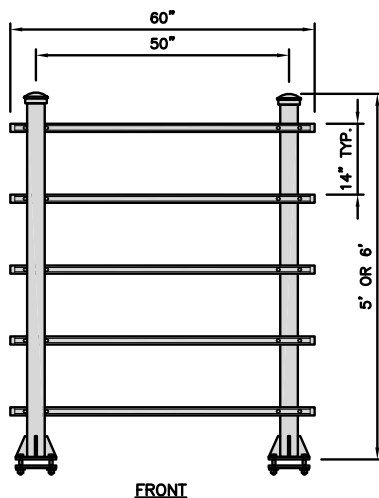
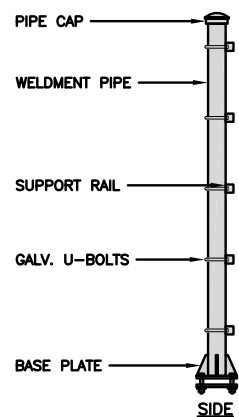


PLATFORM DETAIL

NO SCALE 2

COMMSCOPE MTC4045HFLD H-FRAME	
UNISTRUT/SUPPORT RAILS QTY	5
WEIGHT	59.74 lbs

NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

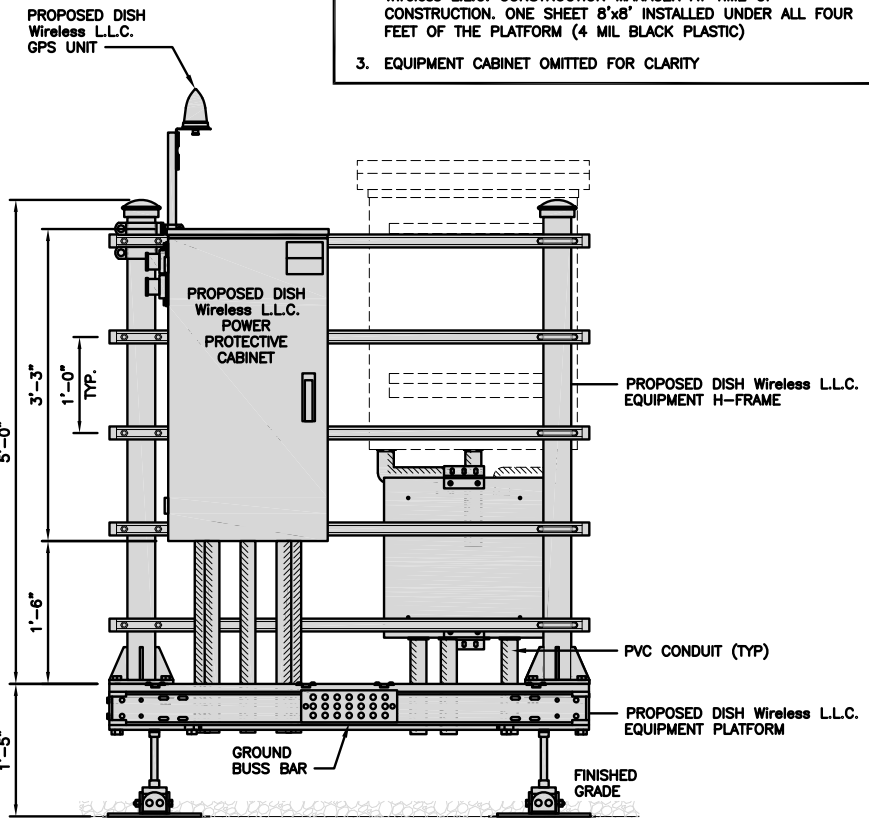


H-FRAME DETAIL

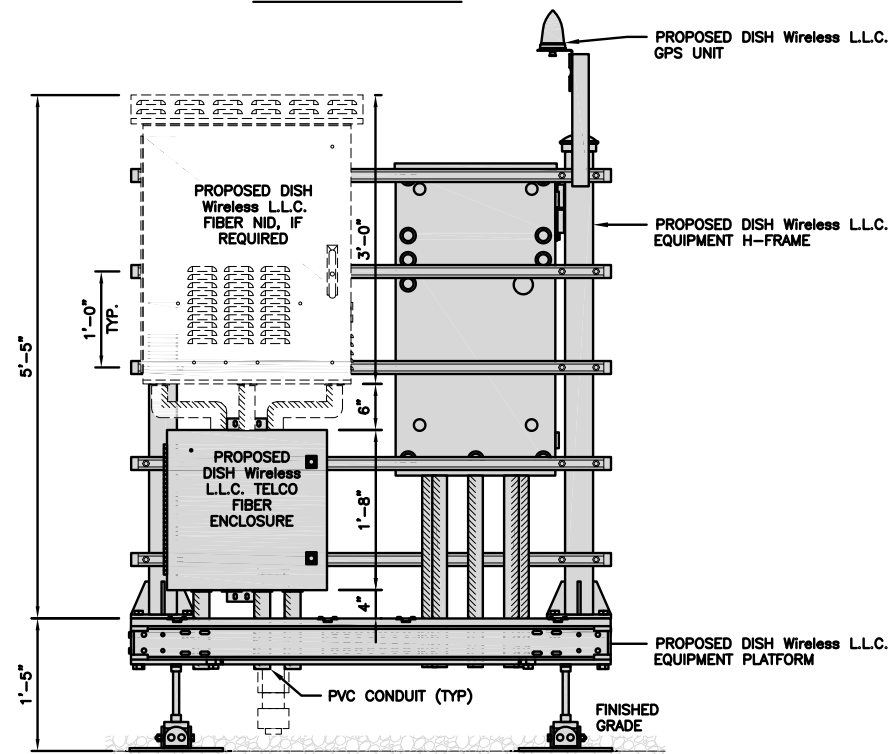
NO SCALE 3

NOT USED

NO SCALE 4

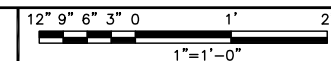


FRONT ELEVATION

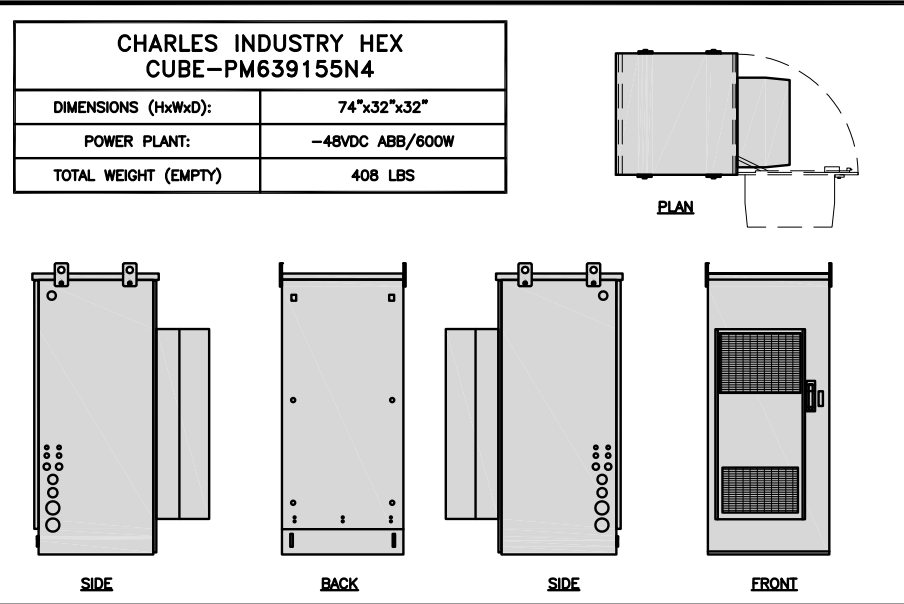


BACK ELEVATION

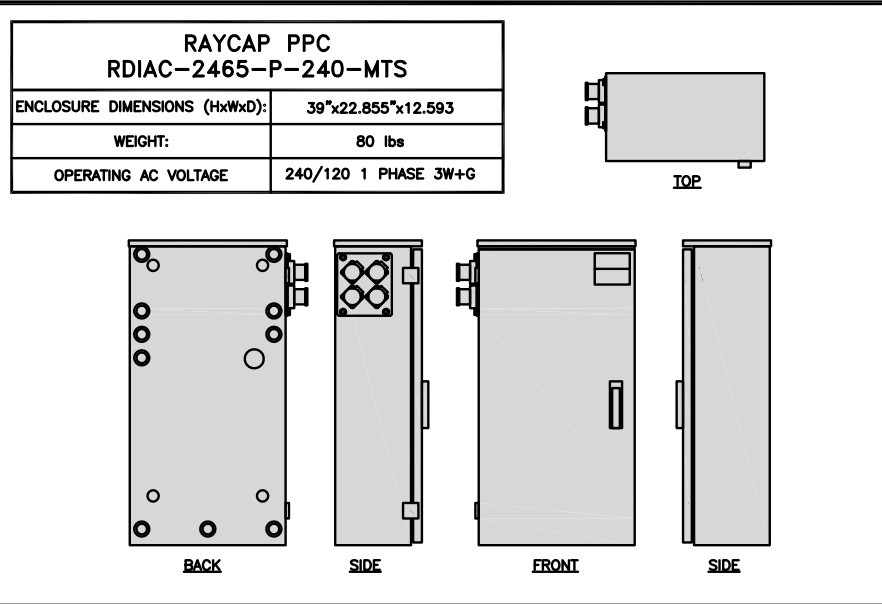
H-FRAME EQUIPMENT ELEVATION



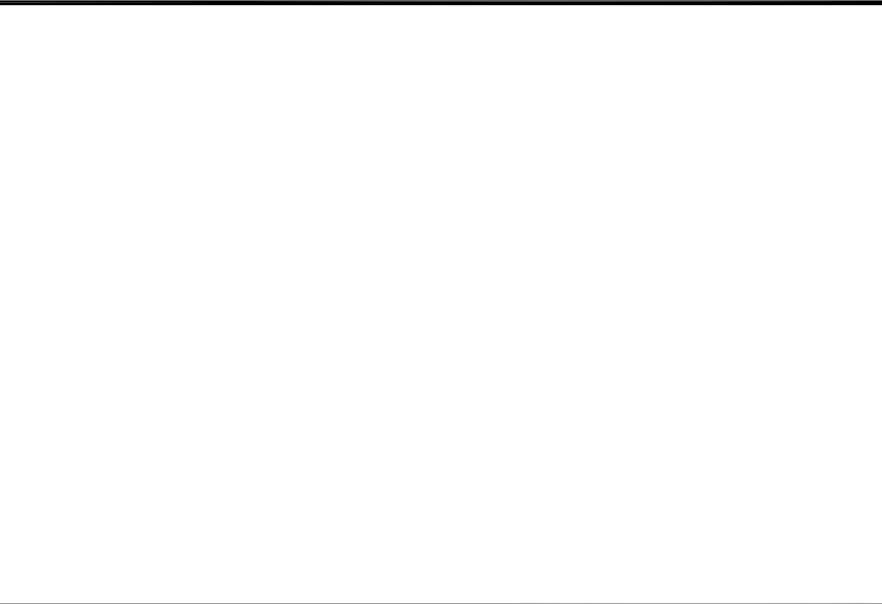
5



CABINET DETAIL NO SCALE 1



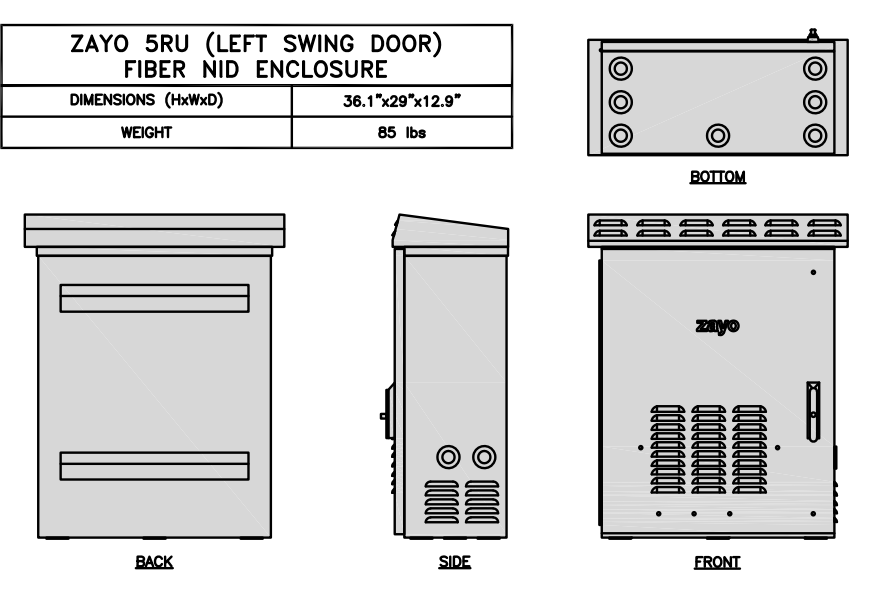
POWER PROTECTION CABINET (PPC) DETAIL NO SCALE 2



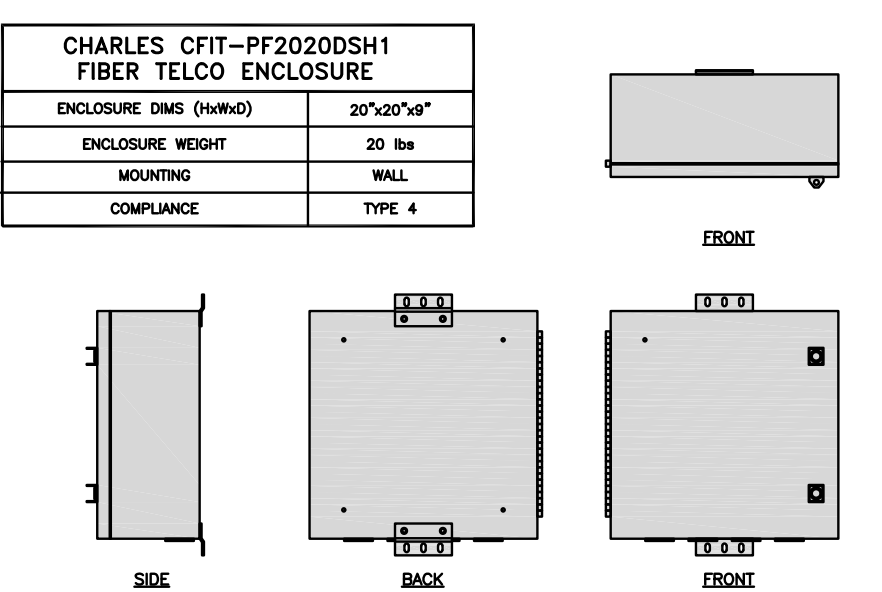
NOT USED NO SCALE 3



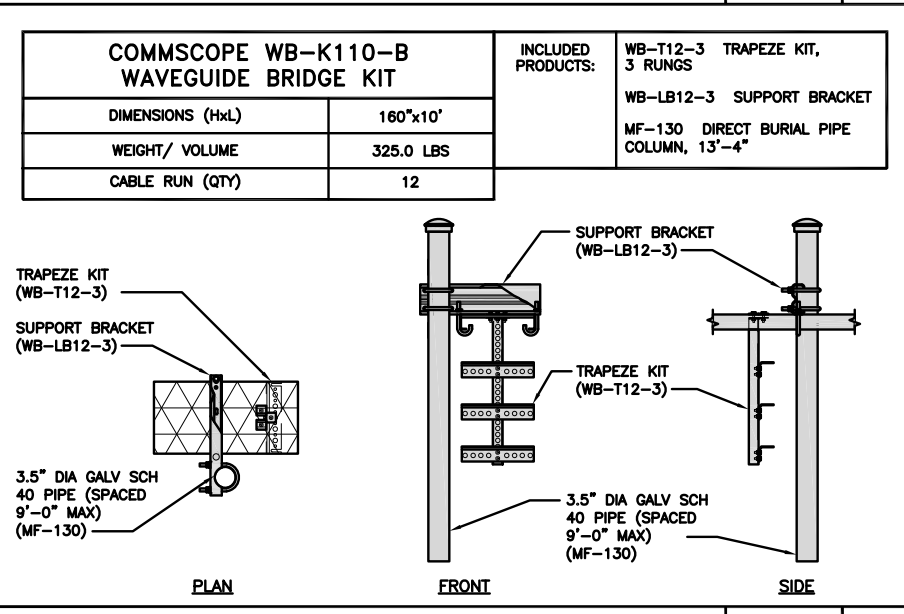
NOT USED NO SCALE 4



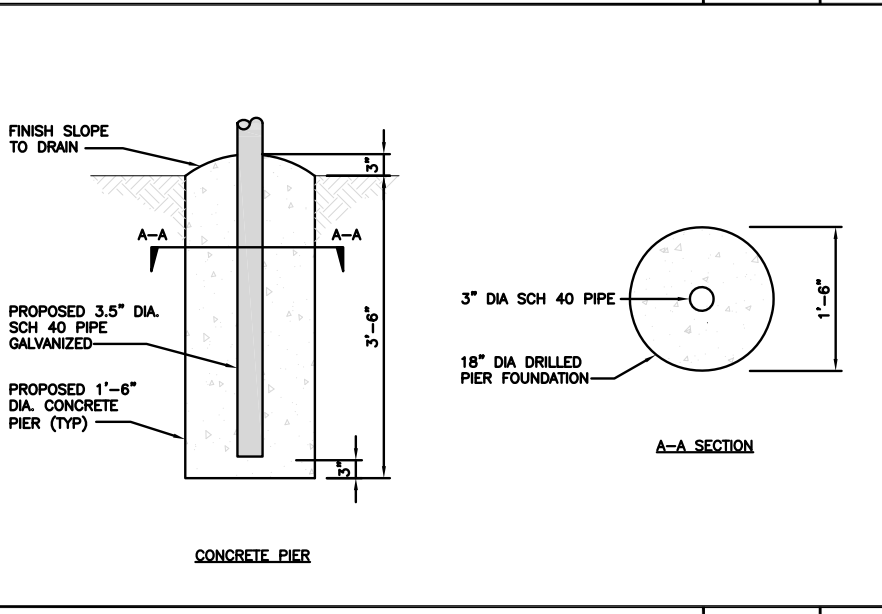
FIBER NID ENCLOSURE DETAIL NO SCALE 5



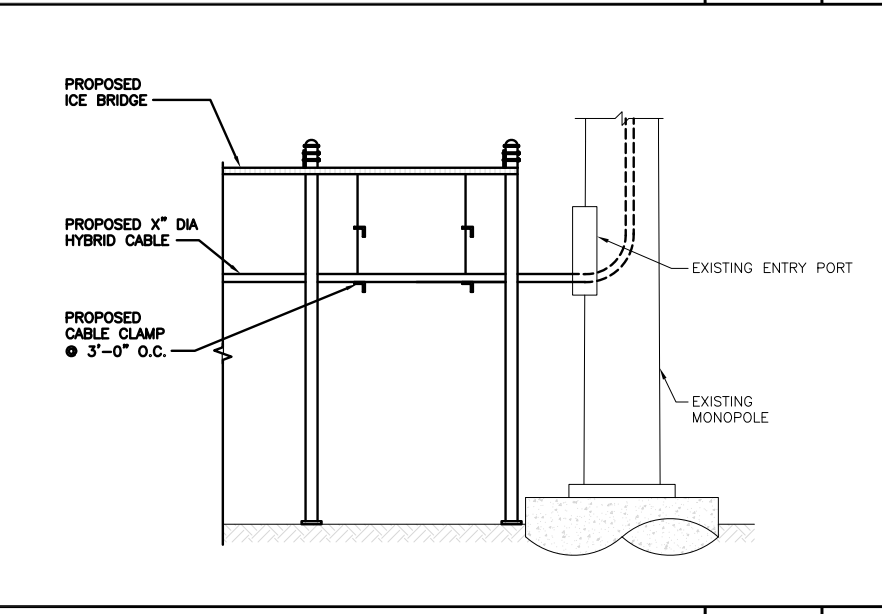
FIBER TELCO ENCLOSURE DETAIL NO SCALE 6



ICE BRIDGE DETAIL NO SCALE 7



TYPICAL ICE BRIDGE CONCRETE PIER DETAIL NO SCALE 8



HYBRID CABLE RUN NO SCALE 9

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9/24/21

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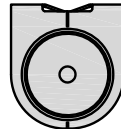
DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00117A
175 DICKENSON ROAD
GLASTONBURY, CT 06033

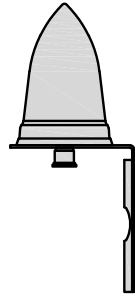
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-4

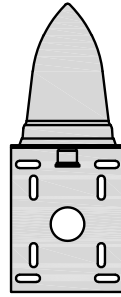
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



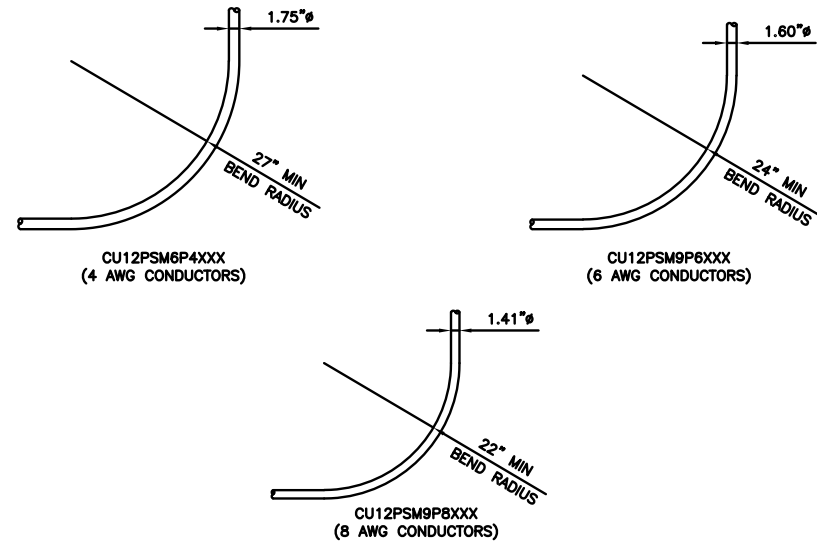
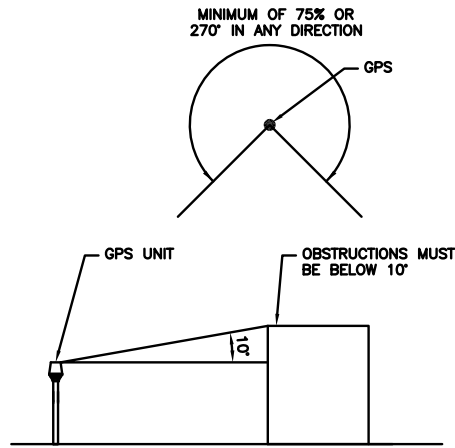
TOP



BACK



SIDE



GPS DETAIL

NO SCALE

1

GPS MINIMUM SKY VIEW REQUIREMENTS

NO SCALE

2

CABLES UNLIMITED HYBRID CABLE
MINIMUM BEND RADIUS

NO SCALE

3

NOT USED

NO SCALE

4

NOT USED

NO SCALE

5

NOT USED

NO SCALE

6

NOT USED

NO SCALE

7

NOT USED

NO SCALE

8

NOT USED

NO SCALE

9



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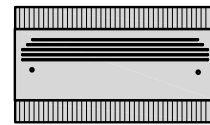
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00117A
175 DICKENSON ROAD
GLASTONBURY, CT 06033

SHEET TITLE
EQUIPMENT DETAILS

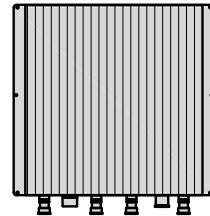
SHEET NUMBER

A-5

FUJITSU TRIPLE BAND TA08025-B605	
DIMENSIONS (HxWxD)	14.9"x15.7"x9"
WEIGHT	74.95 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



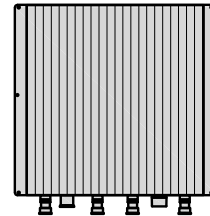
PLAN



BACK



SIDE



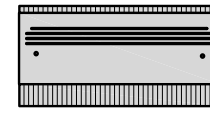
FRONT

RRH DETAIL

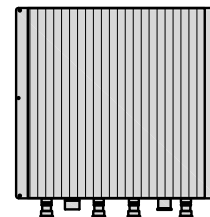
NO SCALE

1

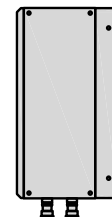
FUJITSU DUAL BAND TA08025-B604	
DIMENSIONS (HxWxD)	14.9"x15.7"x7.8"
WEIGHT	63.9 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



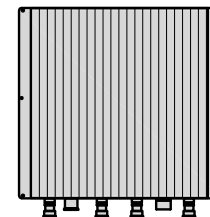
PLAN



BACK



SIDE



FRONT

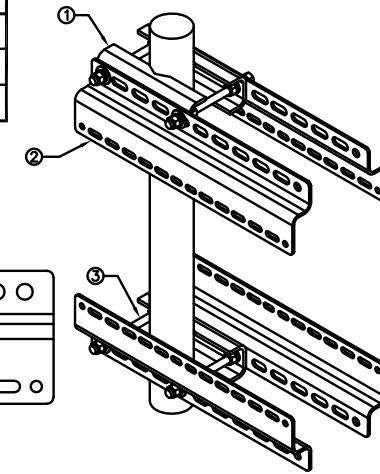
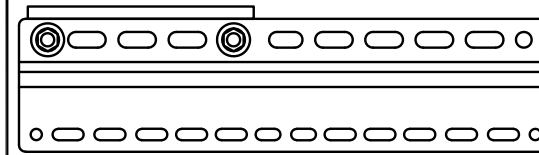
RRH DETAIL

NO SCALE

2

SABRE DOUBLE Z-BRACKET C10123155	
DIMENSIONS (HxWxD) (1 BRACKET)	5"x20"x1-13/16"
WEIGHT (FULL ASSEMBLY)	35.79 lbs
PACKAGE QUANTITY	4

#	DESCRIPTION
1	PLATE, CHANNEL BRACKET
2	RRH Z BRACKET, 3/16"
3	THREADED ROD ASSEMBLY 1/2"x12"



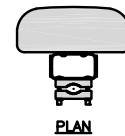
NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

RRH MOUNT DETAIL

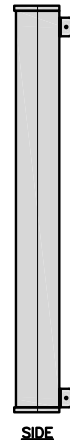
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3

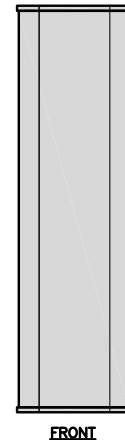
JMA MX08FRO665-21	
DIMENSIONS (HxWxD)	72"x20.0"x8.0"
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE
WEIGHT	64.5 lbs
WEIGHT WITH BRACKETS	82.5 lbs



PLAN



SIDE



FRONT

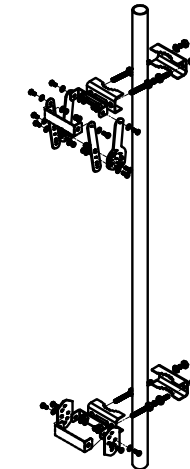
ANTENNA DETAIL

NO SCALE

4

JMA ANTENNA MOUNT BRACKET #91900318	
TOTAL WEIGHT (WITH BRACKETS)	18 lbs (8.18 Kg)
POLE DIAMETER RANGE	2.5" TO 4.5"

NOTE:
KIT #91900318: TOP AND BOTTOM BRACKETS
FOR 4-, 6-, AND 8-FOOT ANTENNAS
ANTENNA BRACKET NOT PART OF KIT



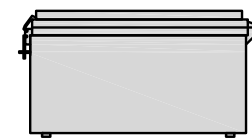
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ANTENNA BRACKET DETAIL

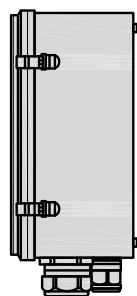
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6

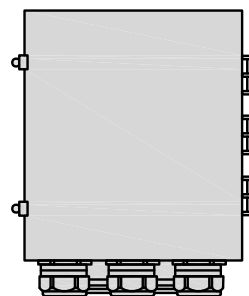
RAYCAP RDIDC-9181-PF-48 DC SURGE PROTECTION (OVP)	
DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 LBS



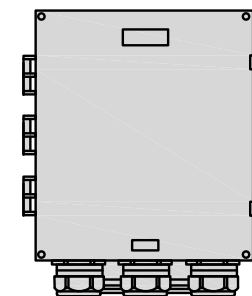
PLAN



SIDE



BACK



FRONT

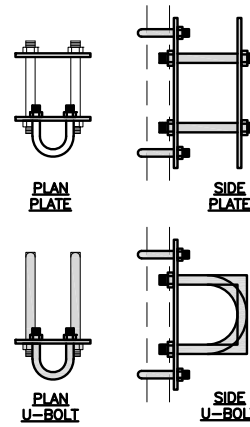
SURGE SUPPRESSION DETAIL (OVP)

NO SCALE

7

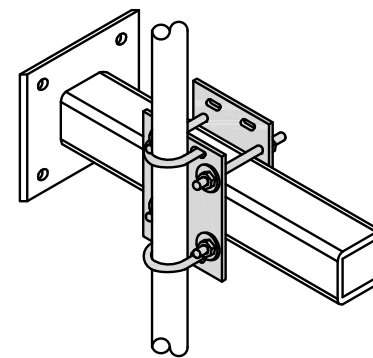
COMMSCOPE XP-2040 CROSSOVER PLATE	
DIMENSIONS (HxW)	10"x12"
WEIGHT	11 lbs

NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT



PLAN
U-BOLT

SIDE
U-BOLT



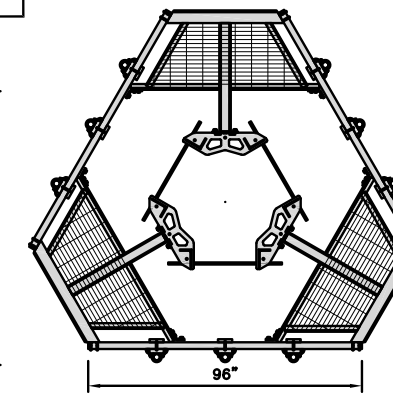
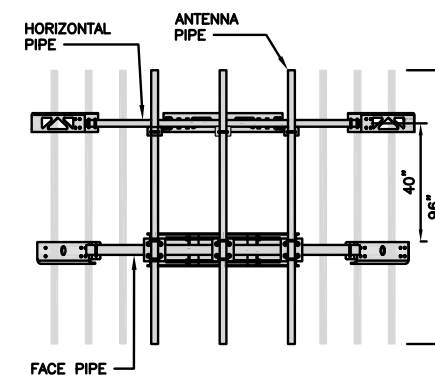
RRH/OVP MOUNT DETAIL

NO SCALE

8

COMMSCOPE MC-PK8-DSH	
FACE WIDTH	96"
WEIGHT	1373.08 lbs
NOTE: 15" TO 38" O.D.	

NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT



ANTENNA PLATFORM DETAIL

NO SCALE

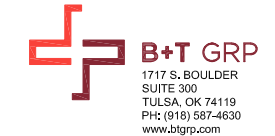
9

dish
wireless.

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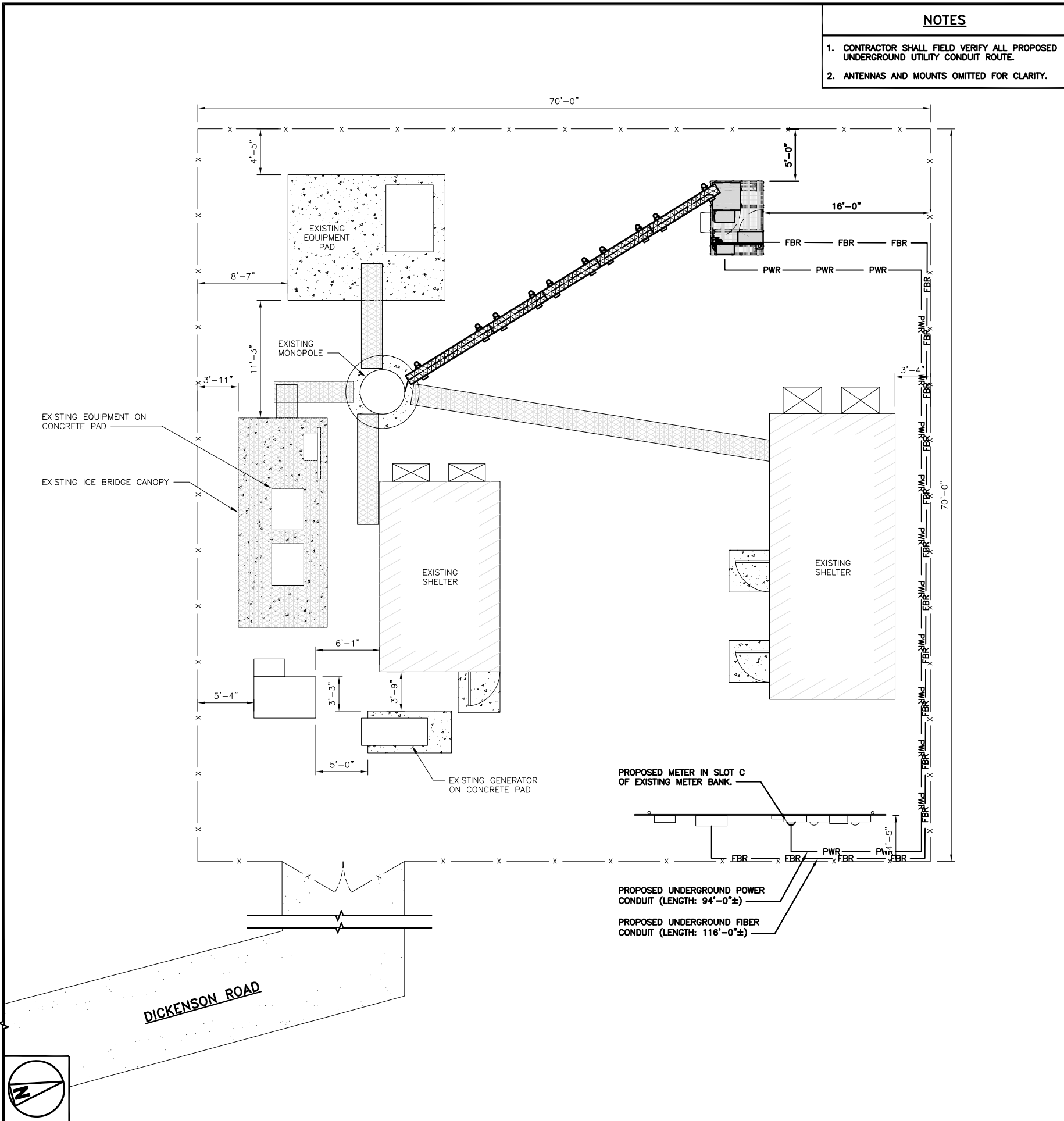
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PROJECT INFORMATION
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GLASTONBURY, CT 06033

SHEET TITLE
EQUIPMENT DETAILS

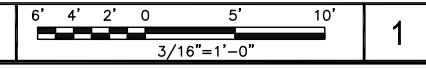
SHEET NUMBER

A-6



UTILITY ROUTE PLAN

- NOTES**
1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
 2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



- DC POWER WIRING SHALL BE COLOR CODED AT EACH END FOR IDENTIFYING +24V AND -48V CONDUCTORS. RED MARKINGS SHALL IDENTIFY +24V AND BLUE MARKINGS SHALL IDENTIFY -48V.
1. CONTRACTOR SHALL INSPECT THE EXISTING CONDITIONS PRIOR TO SUBMITTING A BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTOR'S FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE PROJECT MANAGER FOR CLARIFICATION, NOT AFTER THE CONTRACT HAS BEEN AWARDED.
 2. ALL ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH CURRENT NATIONAL ELECTRICAL CODES AND ALL STATE AND LOCAL CODES, LAWS, AND ORDINANCES. PROVIDE ALL COMPONENTS AND WIRING SIZES AS REQUIRED TO MEET NEC STANDARDS.
 3. LOCATION OF EQUIPMENT, CONDUIT AND DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND SHALL BE COORDINATED WITH FIELD CONDITIONS PRIOR TO CONSTRUCTION.
 4. CONDUIT ROUGH-IN SHALL BE COORDINATED WITH THE MECHANICAL EQUIPMENT TO AVOID LOCATION CONFLICTS. VERIFY WITH THE MECHANICAL EQUIPMENT CONTRACTOR AND COMPLY AS REQUIRED.
 5. CONTRACTOR SHALL PROVIDE ALL BREAKERS, CONDUITS AND CIRCUITS AS REQUIRED FOR A COMPLETE SYSTEM.
 6. CONTRACTOR SHALL PROVIDE PULL BOXES AND JUNCTION BOXES AS REQUIRED BY THE NEC ARTICLE 314.
 7. CONTRACTOR SHALL PROVIDE ALL STRAIN RELIEF AND CABLE SUPPORTS FOR ALL CABLE ASSEMBLIES. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
 8. ALL DISCONNECTS AND CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED PHENOLIC NAMEPLATES INDICATING EQUIPMENT CONTROLLED, BRANCH CIRCUITS INSTALLED ON, AND PANEL FIELD LOCATIONS FED FROM.
 9. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS PER THE SPECIFICATIONS AND NEC 250. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULL BOXES, AND ALL DISCONNECT SWITCHES, AND EQUIPMENT CABINETS.
 10. ALL NEW MATERIAL SHALL HAVE A U.L. LABEL.
 11. PANEL SCHEDULE LOADING AND CIRCUIT ARRANGEMENTS REFLECT POST-CONSTRUCTION EQUIPMENT.
 12. CONTRACTOR SHALL BE RESPONSIBLE FOR AS-BUILT PANEL SCHEDULE AND SITE DRAWINGS.
 13. ALL TRENCHES IN COMPOUND TO BE HAND DUG.

ELECTRICAL NOTES

NO SCALE 2

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CONSTRUCTION DOCUMENTS

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A&E PROJECT NUMBER
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DISH Wireless L.L.C.
PROJECT INFORMATION

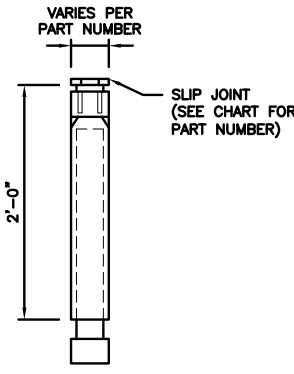
BOBDL00117A
175 DICKENSON ROAD
GLASTONBURY, CT 06033

SHEET TITLE
ELECTRICAL/FIBER ROUTE
PLAN AND NOTES

SHEET NUMBER
E-1

CARLON EXPANSION FITTINGS

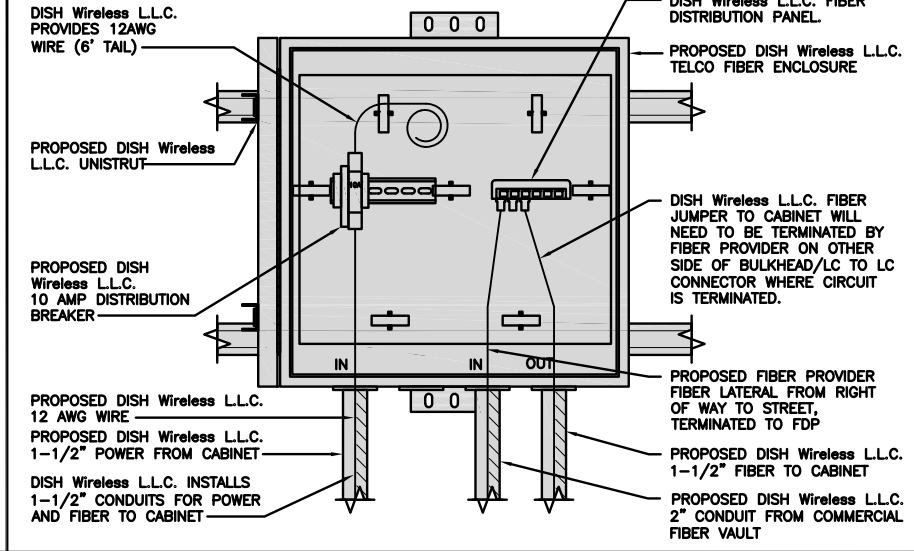
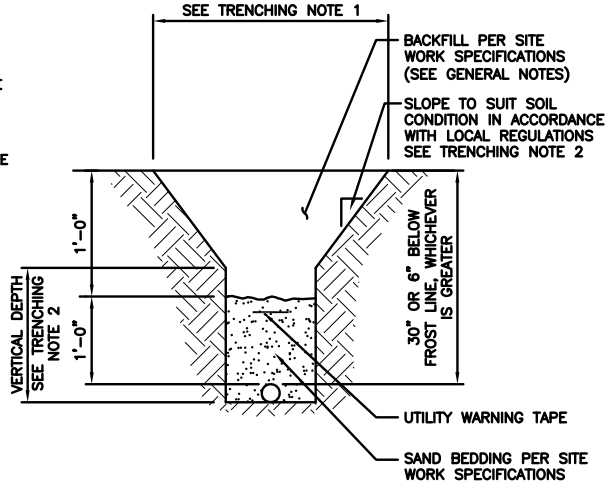
COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD CTN QTY.	TRAVEL LENGTH
E945D	E945DX	1/2"	20	4"
E945E	E945EX	3/4"	15	4"
E945F	E945FX	1"	10	4"
E945G	E945GX	1 1/4"	5	4"
E945H	E945HX	1 1/2"	5	4"
E945J	E945JX	2"	15	8"
E945K	E945KX	2 1/2"	10	8"
E945L	E945LX	3"	10	8"
E945M	E945MX	3 1/2"	5	8"
E945N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



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

TRENCHING NOTES

- CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
- TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT OSHA TRENCHING AND EXCAVATION SAFETY STANDARDS.
- ALL CONDUITS SHALL BE INSTALLED IN COMPLIANCE WITH THE CURRENT NATIONAL ELECTRIC CODE (NEC) OR AS REQUIRED BY THE LOCAL JURISDICTION, WHICHEVER IS THE MOST STRINGENT.



EXPANSION JOINT DETAIL

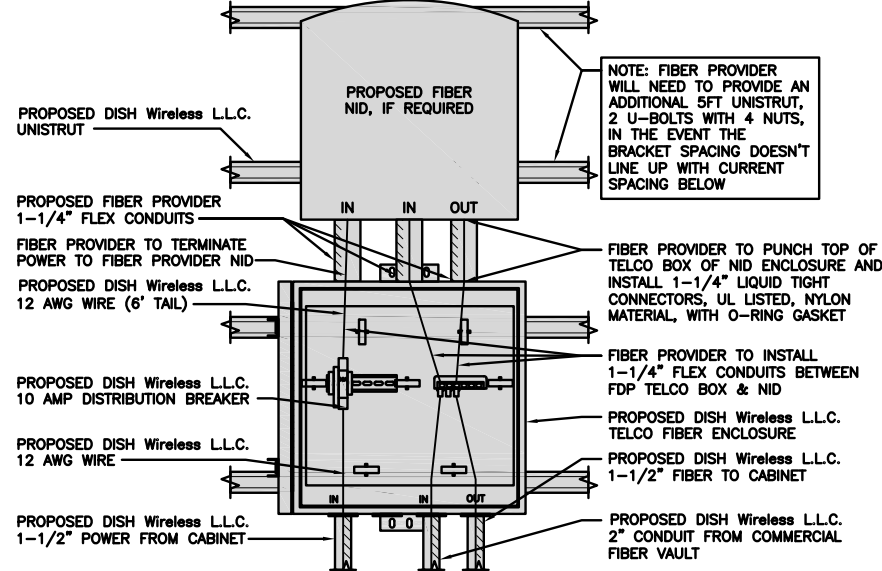
NO SCALE 1

TYPICAL UNDERGROUND TRENCH DETAIL

NO SCALE 2

DARK TELCO BOX – INTERIOR WIRING LAYOUT

NO SCALE 3



LIT TELCO BOX – INTERIOR WIRING LAYOUT (OPTIONAL)

NO SCALE 4

NOT USED

NO SCALE 5

NOT USED

NO SCALE 6

NOT USED

NO SCALE 8

NOT USED

NO SCALE 9



5701 SOUTH SANTA FE DRIVE
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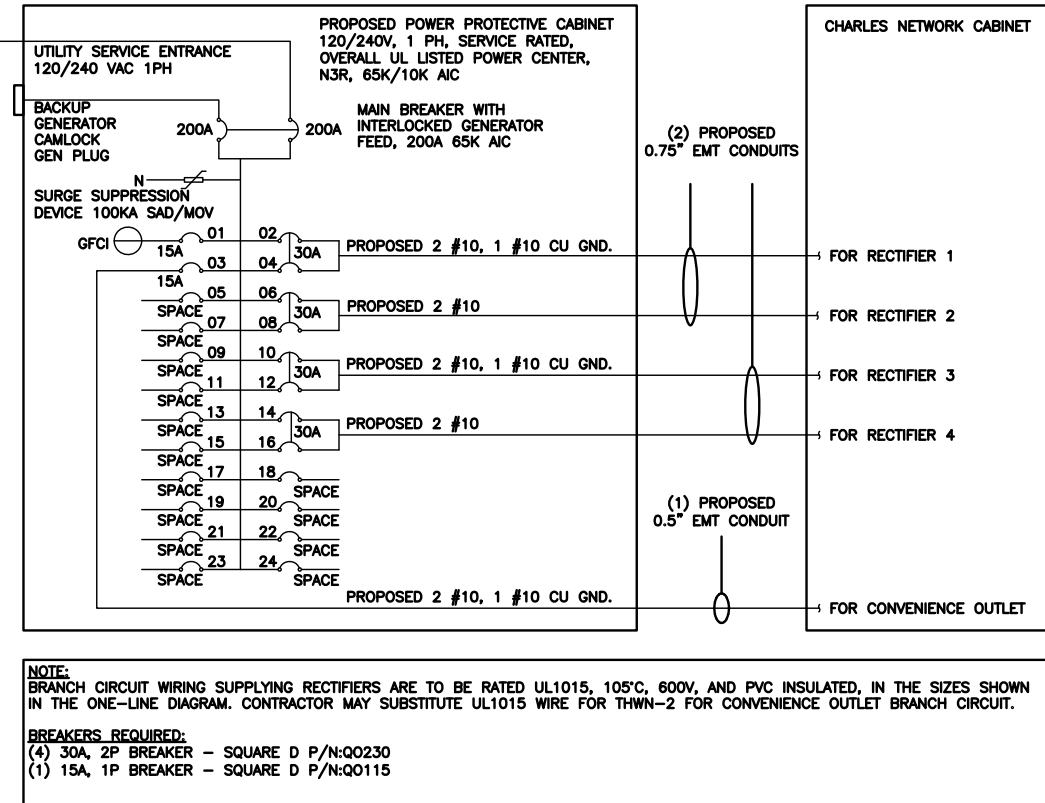
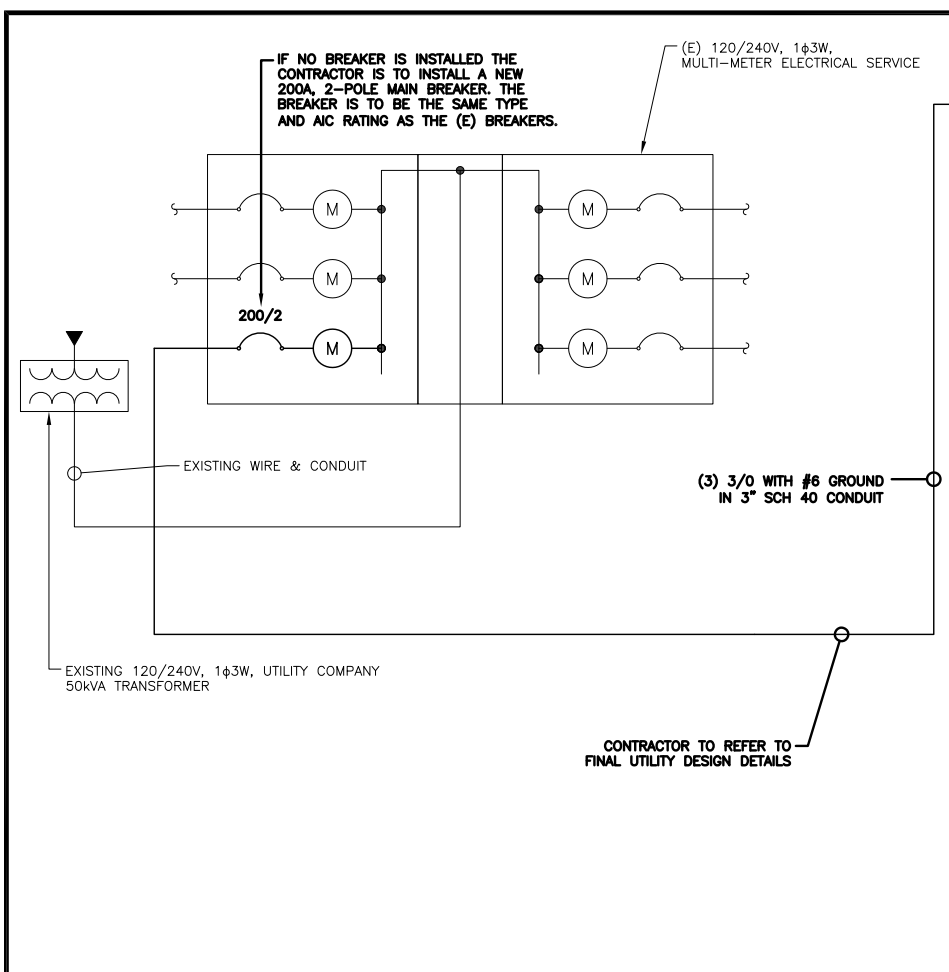
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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00117A
175 DICKENSON ROAD
GLASTONBURY, CT 06033

SHEET TITLE
ELECTRICAL
DETAILS

SHEET NUMBER
E-2



NOTES

THE (2) CONDUITS WITH (4) CURRENT CARRYING CONDUCTORS EACH, SHALL APPLY THE ADJUSTMENT FACTOR OF 80% PER 2014/17 NEC TABLE 310.15(B)(3)(g) OR 2020 NEC TABLE 310.15(C)(1) FOR UL1015 WIRE.

#12 FOR 15A-20A/1P BREAKER: 0.8 x 30A = 24.0A
 #10 FOR 25A-30A/2P BREAKER: 0.8 x 40A = 32.0A
 #8 FOR 35A-40A/2P BREAKER: 0.8 x 55A = 44.0A
 #6 FOR 45A-60A/2P BREAKER: 0.8 x 75A = 60.0A

CONDUIT SIZING: AT 40% FILL PER NEC CHAPTER 9, TABLE 4, ARTICLE 358.
 0.5" CONDUIT - 0.122 SQ. IN AREA
 0.75" CONDUIT - 0.213 SQ. IN AREA
 2.0" CONDUIT - 1.316 SQ. IN AREA
 3.0" CONDUIT - 2.907 SQ. IN AREA

CABINET CONVENIENCE OUTLET CONDUCTORS (1 CONDUIT): USING THWN-2, CU.
 #10 - 0.0211 SQ. IN X 2 = 0.0422 SQ. IN
 #10 - 0.0211 SQ. IN X 1 = 0.0211 SQ. IN <GROUND
 TOTAL = 0.0633 SQ. IN

0.5" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (3) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

RECTIFIER CONDUCTORS (2 CONDUITS): USING UL1015, CU.
 #10 - 0.0266 SQ. IN X 4 = 0.1064 SQ. IN
 #10 - 0.0082 SQ. IN X 1 = 0.0082 SQ. IN <BARE GROUND
 TOTAL = 0.1146 SQ. IN

0.75" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (5) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

PPC FEED CONDUCTORS (1 CONDUIT): USING THWN, CU.
 3/0 - 0.2679 SQ. IN X 3 = 0.8037 SQ. IN
 #6 - 0.0507 SQ. IN X 1 = 0.0507 SQ. IN <GROUND
 TOTAL = 0.8544 SQ. IN

3.0" SCH 40 PVC CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (4) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

PPC ONE-LINE DIAGRAM

NO SCALE 1

PROPOSED CHARLES PANEL SCHEDULE											
LOAD SERVED	VOLT AMPS (WATTS)		TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPS (WATTS)		LOAD SERVED	
	L1	L2						L1	L2		
PPC GFCI OUTLET	180	180	15A	1	A	2	30A	2880	2880	ABB/GE INFINITY RECTIFIER 1	
CHARLES GFCI OUTLET			15A	3	B	4					
-SPACE-				5	A	6	30A	2880	2880	ABB/GE INFINITY RECTIFIER 2	
-SPACE-				7	B	8					
-SPACE-				9	A	10	30A	2880	2880	ABB/GE INFINITY RECTIFIER 3	
-SPACE-				11	B	12					
-SPACE-				13	A	14	30A	2880	2880	ABB/GE INFINITY RECTIFIER 4	
-SPACE-				15	B	16					
-SPACE-				17	A	18				-SPACE-	
-SPACE-				19	B	20				-SPACE-	
-SPACE-				21	A	22				-SPACE-	
-SPACE-				23	B	24				-SPACE-	
VOLTAGE AMPS		180	180					11520	11520		
200A MCB, 1 ϕ , 24 SPACE, 120/240V				L1	L2						
MB RATING: 65,000 AIC				11700	11700						
				98	98						
				98							
				123							

PANEL SCHEDULE

NO SCALE 2

NOT USED

NO SCALE 3

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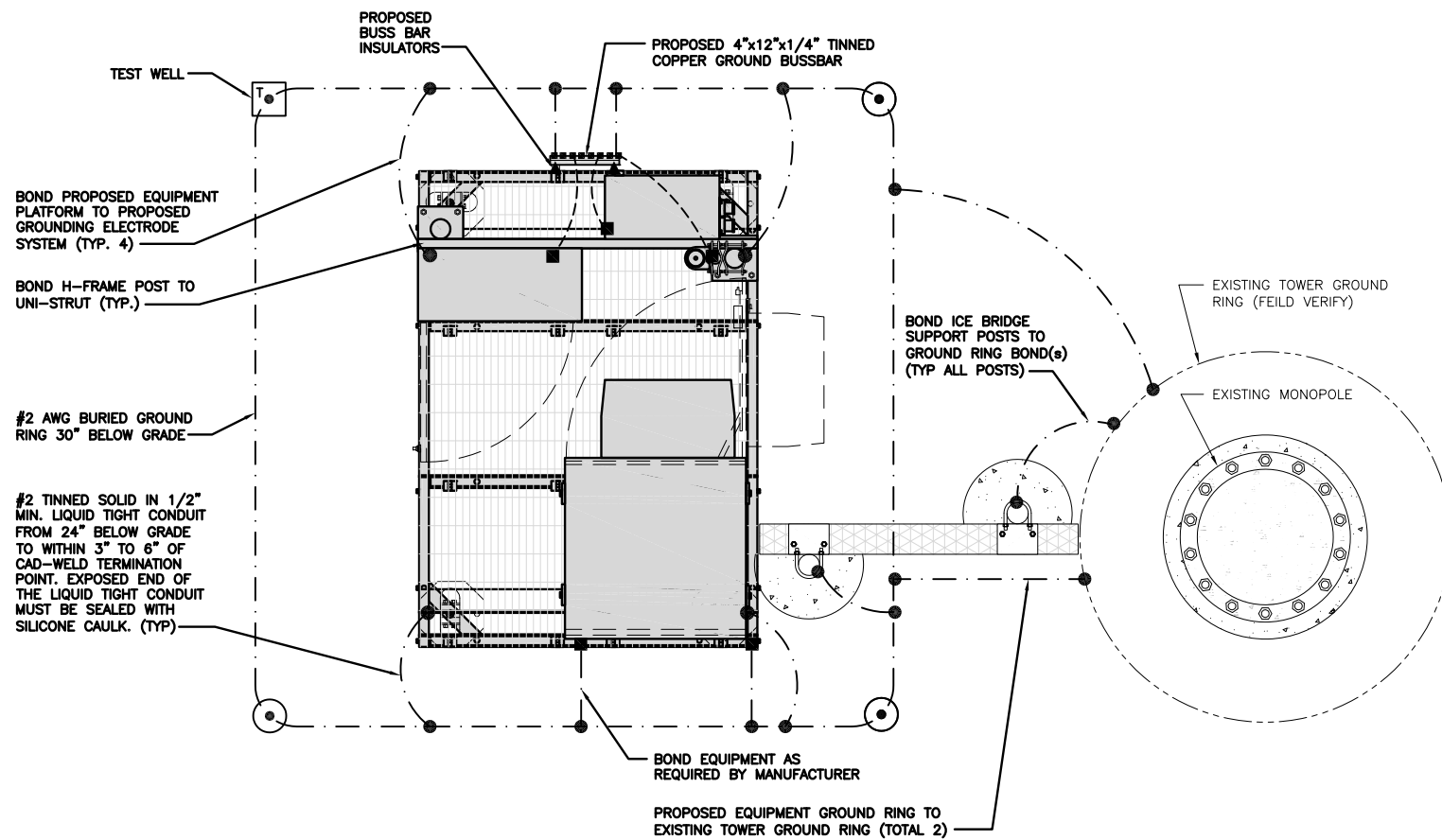
A&E PROJECT NUMBER
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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00117A
175 DICKENSON ROAD
GLASTONBURY, CT 06033

SHEET TITLE
ELECTRICAL ONE-LINE, FAULT CALCS & PANEL SCHEDULE

SHEET NUMBER
E-3

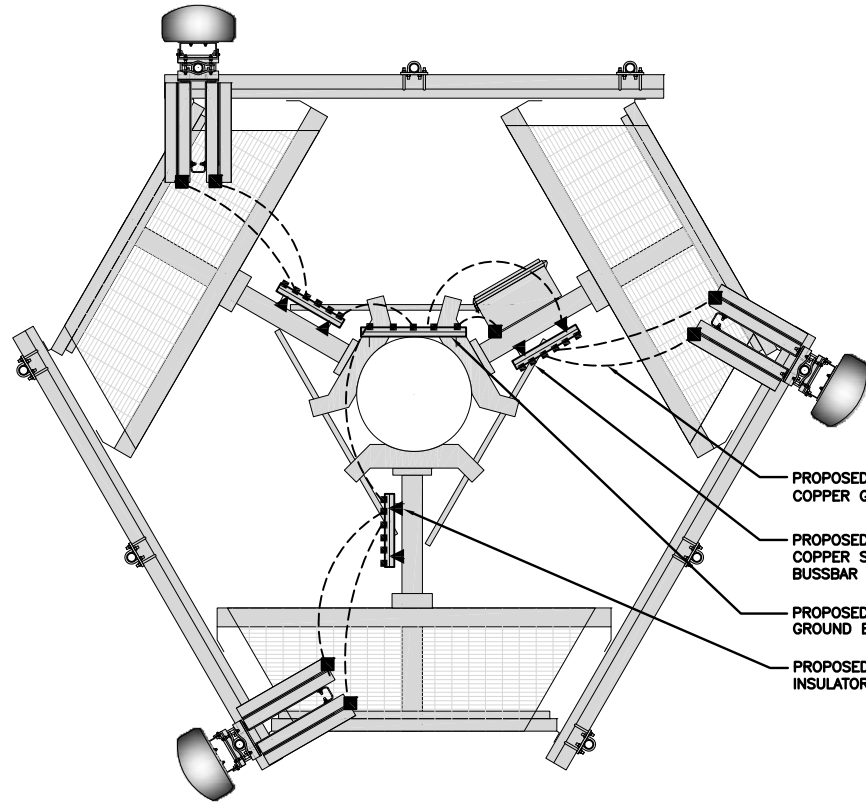


TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE 1

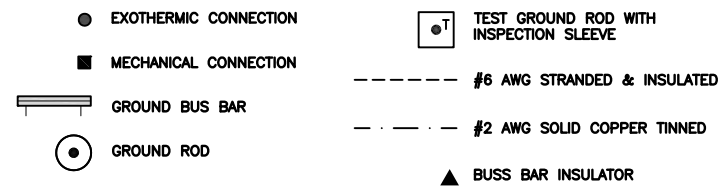
NOTES

1. ANTENNAS AND OVP SHOWN ARE GENERIC AND NOT REFERENCING TO A SPECIFIC MANUFACTURER. THIS LAYOUT IS FOR REFERENCE ONLY



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE 2



GROUNDING LEGEND

1. GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.
2. CONTRACTOR SHALL GROUND ALL EQUIPMENT AS A COMPLETE SYSTEM. GROUNDING SHALL BE IN COMPLIANCE WITH NEC SECTION 250 AND DISH Wireless L.L.C. GROUNDING AND BONDING REQUIREMENTS AND MANUFACTURER'S SPECIFICATIONS.
3. ALL GROUND CONDUCTORS SHALL BE COPPER; NO ALUMINUM CONDUCTORS SHALL BE USED.

GROUNDING KEY NOTES

- (A) EXTERIOR GROUND RING: #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING.
- (B) TOWER GROUND RING: THE GROUND RING SYSTEM SHALL BE INSTALLED AROUND AN ANTENNA TOWER'S LEGS, AND/OR GUY ANCHORS. WHERE SEPARATE SYSTEMS HAVE BEEN PROVIDED FOR THE TOWER AND THE BUILDING, AT LEAST TWO BONDS SHALL BE MADE BETWEEN THE TOWER RING GROUND SYSTEM AND THE BUILDING RING GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS.
- (C) INTERIOR GROUND RING: #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTOR EXTENDED AROUND THE PERIMETER OF THE EQUIPMENT AREA. ALL NON-TELECOMMUNICATIONS RELATED METALLIC OBJECTS FOUND WITHIN A SITE SHALL BE GROUNDED TO THE INTERIOR GROUND RING WITH #6 AWG STRANDED GREEN INSULATED CONDUCTOR.
- (D) BOND TO INTERIOR GROUND RING: #2 AWG SOLID TINNED COPPER WIRE PRIMARY BONDS SHALL BE PROVIDED AT LEAST AT FOUR POINTS ON THE INTERIOR GROUND RING, LOCATED AT THE CORNERS OF THE BUILDING.
- (E) GROUND ROD: UL LISTED COPPER CLAD STEEL MINIMUM 1/2" DIAMETER BY EIGHT FEET LONG. GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.
- (F) CELL REFERENCE GROUND BAR: POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG UNLESS NOTED OTHERWISE STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUCTORS.
- (G) HATCH PLATE GROUND BAR: BOND TO THE INTERIOR GROUND RING WITH TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CRGB MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS EACH.
- (H) EXTERIOR CABLE ENTRY PORT GROUND BARS: LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE.
- (I) TELCO GROUND BAR: BOND TO BOTH CELL REFERENCE GROUND BAR OR EXTERIOR GROUND RING.
- (J) FRAME BONDING: THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK.
- (K) INTERIOR UNIT BONDS: METAL FRAMES, CABINETS AND INDIVIDUAL METALLIC UNITS LOCATED WITH THE AREA OF THE INTERIOR GROUND RING REQUIRE A #6 AWG STRANDED GREEN INSULATED COPPER BOND TO THE INTERIOR GROUND RING.
- (L) FENCE AND GATE GROUNDING: METAL FENCES WITHIN 7 FEET OF THE EXTERIOR GROUND RING OR OBJECTS BONDED TO THE EXTERIOR GROUND RING SHALL BE BONDED TO THE GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTOR AT AN INTERVAL NOT EXCEEDING 25 FEET. BONDS SHALL BE MADE AT EACH GATE POST AND ACROSS GATE OPENINGS.
- (M) EXTERIOR UNIT BONDS: METALLIC OBJECTS, EXTERNAL TO OR MOUNTED TO THE BUILDING, SHALL BE BONDED TO THE EXTERIOR GROUND RING. USING #2 TINNED SOLID COPPER WIRE
- (N) ICE BRIDGE SUPPORTS: EACH ICE BRIDGE LEG SHALL BE BONDED TO THE GROUND RING WITH #2 AWG BARE TINNED COPPER CONDUCTOR. PROVIDE EXOTHERMIC WELDS AT BOTH THE ICE BRIDGE LEG AND BURIED GROUND RING.
- (O) DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICE CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH A MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR
- (P) TOWER TOP COLLECTOR BUSS BAR IS TO BE MECHANICALLY BONDED TO PROPOSED ANTENNA MOUNT COLLAR. REFER TO DISH Wireless L.L.C. GROUNDING NOTES.

GROUNDING KEY NOTES

NO SCALE 3



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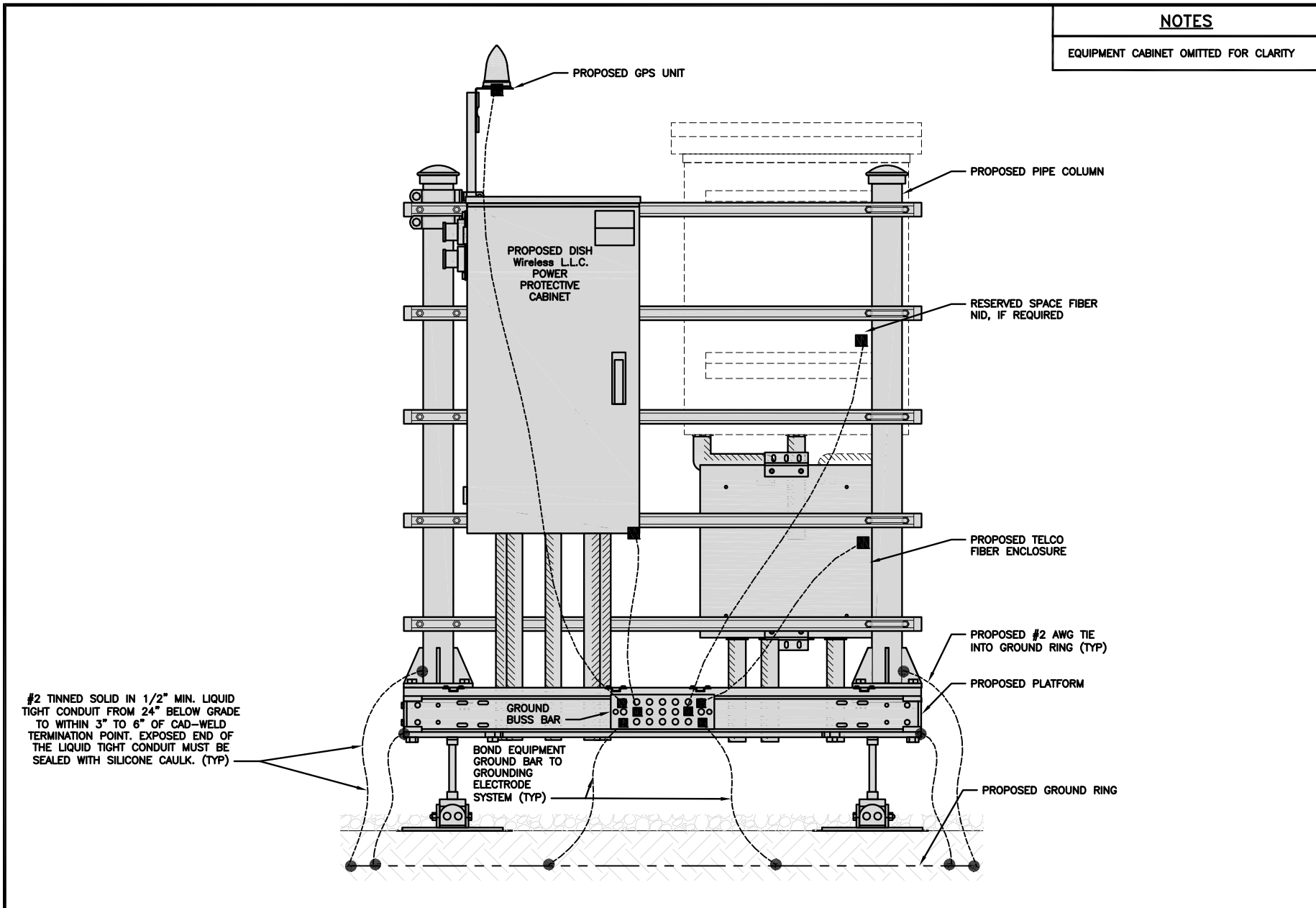
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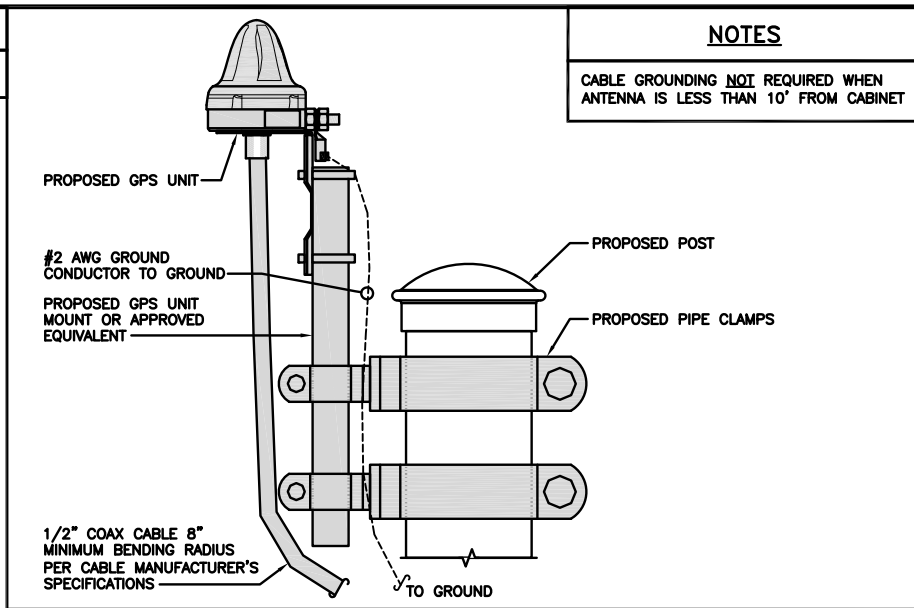
SHEET TITLE
GROUNDING PLANS
AND NOTES

SHEET NUMBER
G-1



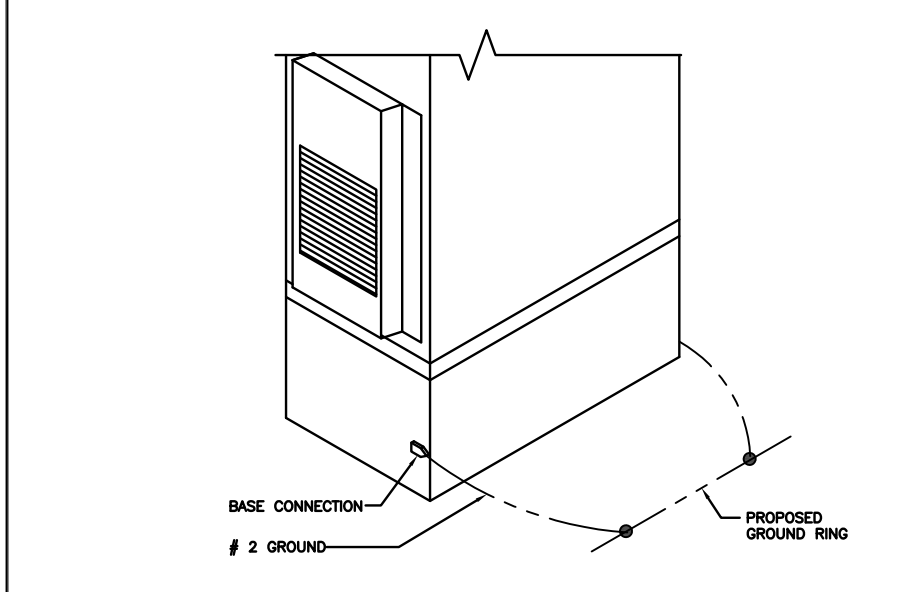
H-FRAME GROUNDING DETAIL

NO SCALE 1



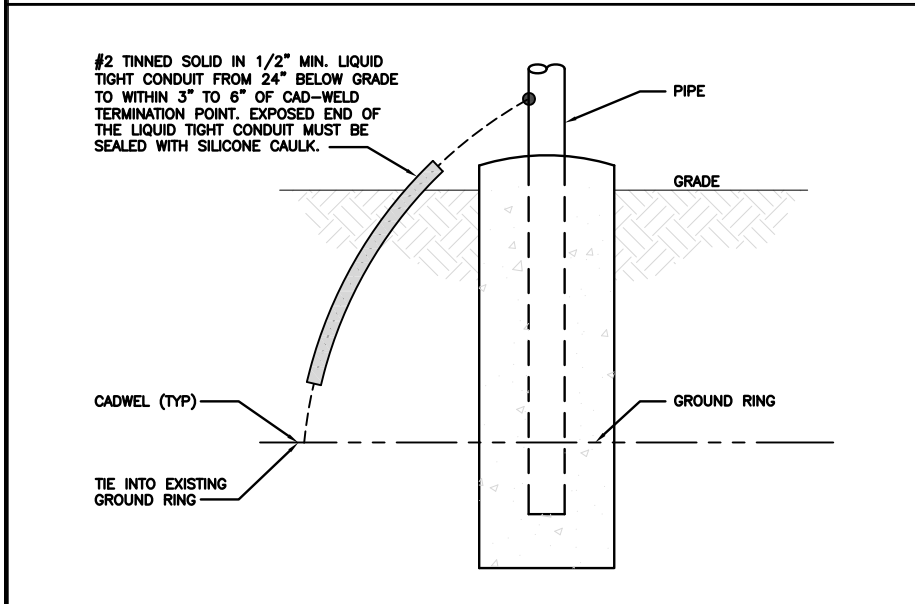
TYPICAL GPS UNIT GROUNDING

NO SCALE 2



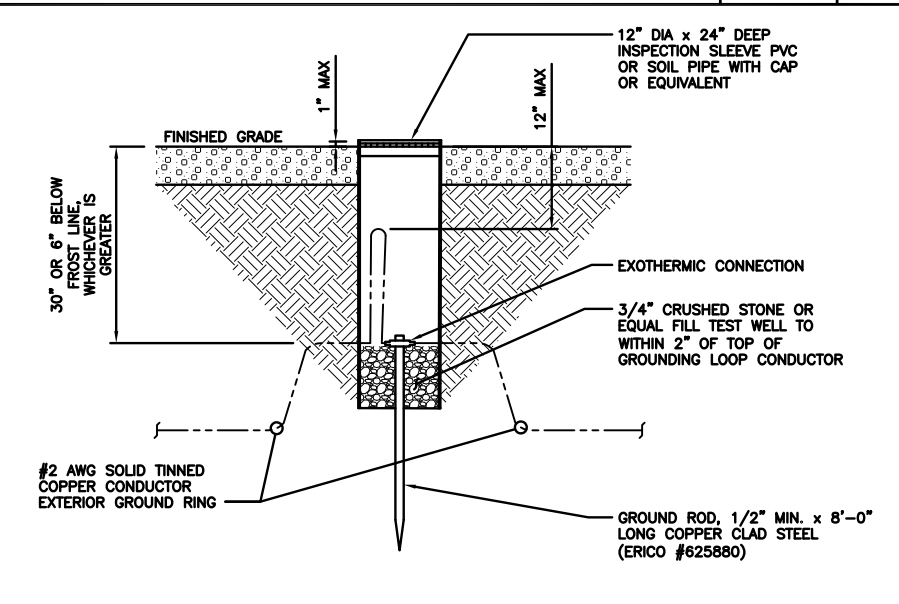
OUTDOOR CABINET GROUNDING

NO SCALE 3



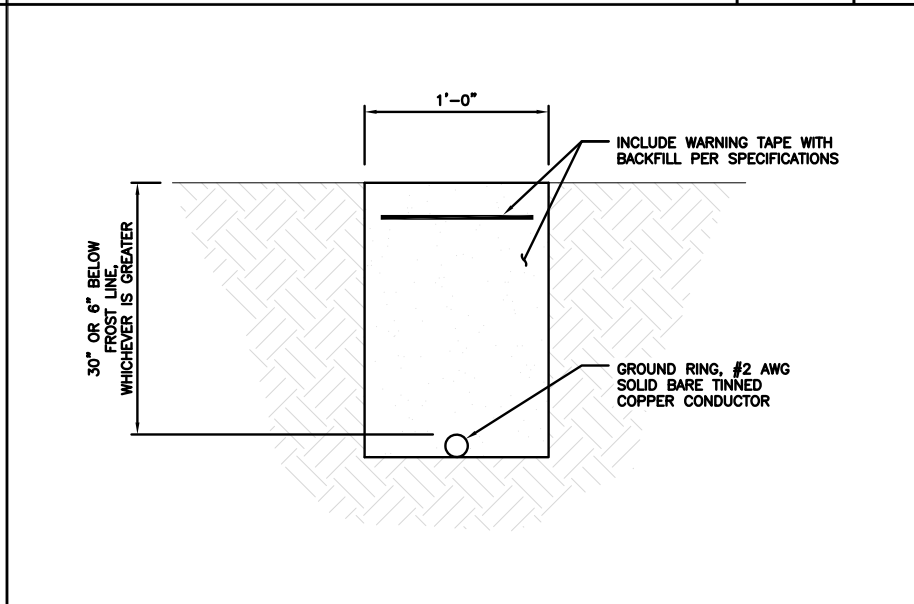
TRANSITIONING GROUND DETAIL

NO SCALE 4



TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE

NO SCALE 5



TYPICAL GROUND RING TRENCH

NO SCALE 6



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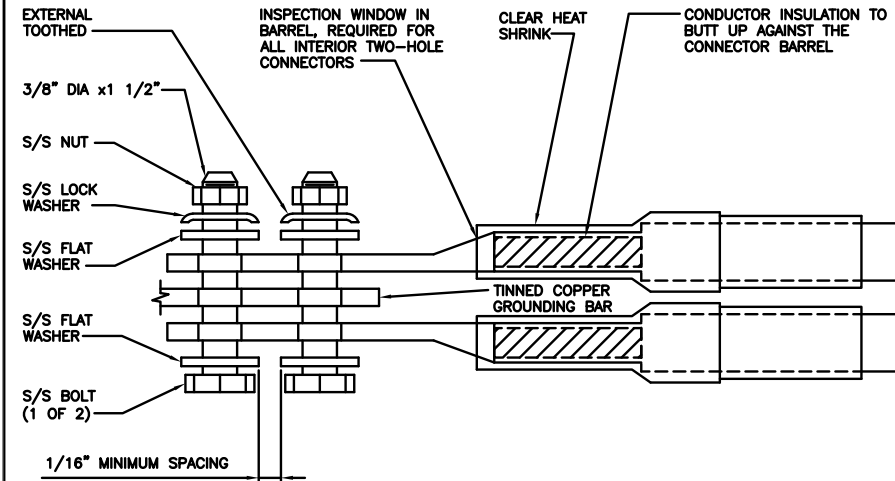
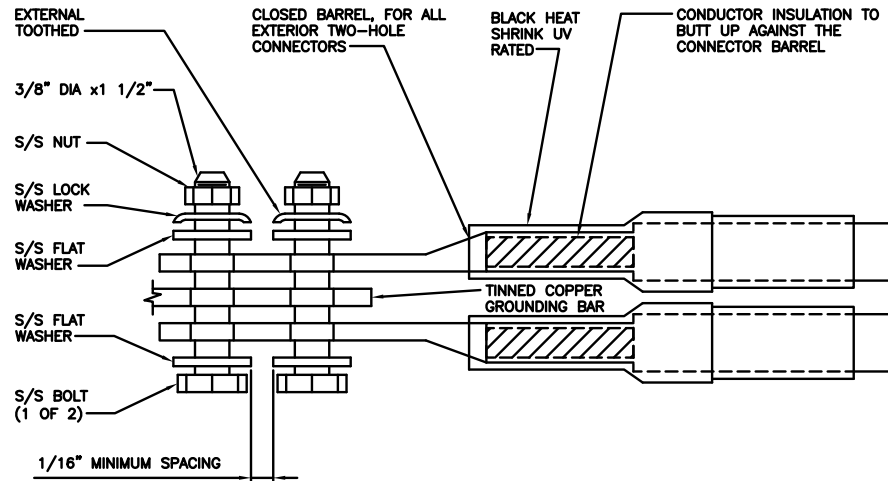
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BOBDL00117A
175 DICKENSON ROAD
GLASTONBURY, CT 06033

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-2

1. EXOTHERMIC WELD (2) TWO, #2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUND BAR. ROUTE CONDUCTORS TO BURIED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
2. ALL EXTERIOR GROUNDING HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
3. FOR GROUND BOND TO STEEL ONLY: COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
4. DO NOT INSTALL CABLE GROUNDING KIT AT A BEND AND ALWAYS DIRECT GROUND CONDUCTOR DOWN TO GROUNDING BUS.
5. NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUND BAR AND BOLTED ON THE BACK SIDE.
6. ALL GROUNDING PARTS AND EQUIPMENT TO BE SUPPLIED AND INSTALLED BY CONTRACTOR.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUND BAR AS REQUIRED.
8. ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).



TYPICAL GROUNDING NOTES

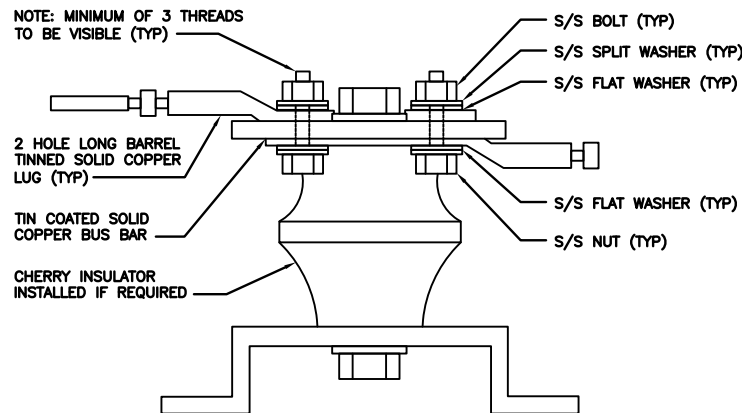
NO SCALE 1

TYPICAL EXTERIOR TWO HOLE LUG

NO SCALE 2

TYPICAL INTERIOR TWO HOLE LUG

NO SCALE 3



LUG DETAIL

NO SCALE 4

NOT USED

NO SCALE 5

NOT USED

NO SCALE 6

NOT USED

NO SCALE 7

NOT USED

NO SCALE 8

NOT USED

NO SCALE 9



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GLASTONBURY, CT 06033

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-3

RF JUMPER COLOR CODING

3/4" TAPE WIDTHS WITH 3/4" SPACING

LOW-BAND RRH -
(600MHz N71 BASEBAND) +
(850MHz N26 BAND) +
(700MHz N29 BAND) - OPTIONAL PER MARKET

ADD FREQUENCY COLOR TO SECTOR BAND
(CBRS WILL USE YELLOW BANDS)

ALPHA RRH				BETA RRH				GAMMA RRH			
PORT 1 + SLANT	PORT 2 - SLANT	PORT 3 + SLANT	PORT 4 - SLANT	PORT 1 + SLANT	PORT 2 - SLANT	PORT 3 + SLANT	PORT 4 - SLANT	PORT 1 + SLANT	PORT 2 - SLANT	PORT 3 + SLANT	PORT 4 - SLANT
RED	RED	RED	RED	BLUE	BLUE	BLUE	BLUE	GREEN	GREEN	GREEN	GREEN
ORANGE	ORANGE	RED	RED	ORANGE	ORANGE	BLUE	BLUE	ORANGE	ORANGE	GREEN	GREEN
	WHITE (-) PORT	ORANGE	ORANGE		WHITE (-) PORT	ORANGE	ORANGE		WHITE (-) PORT	ORANGE	ORANGE
			WHITE (-) PORT				WHITE (-) PORT				WHITE (-) PORT

MID-BAND RRH -
(AWS BANDS N66+N70)

ADD FREQUENCY COLOR TO SECTOR BAND
(CBRS WILL USE YELLOW BANDS)

RED	RED	RED	RED	BLUE	BLUE	BLUE	BLUE	GREEN	GREEN	GREEN	GREEN
PURPLE	PURPLE	RED	RED	PURPLE	PURPLE	BLUE	BLUE	PURPLE	PURPLE	GREEN	GREEN
	WHITE (-) PORT	PURPLE	PURPLE		WHITE (-) PORT	PURPLE	PURPLE		WHITE (-) PORT	PURPLE	PURPLE
			WHITE (-) PORT				WHITE (-) PORT				WHITE (-) PORT

HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED
ALONG WITH FREQUENCY BANDS

EXAMPLE 1 - HYBRID, OR DISCREET, SUPPORTS
ALL SECTORS, BOTH LOW-BANDS AND MID-BANDS

EXAMPLE 2 - HYBRID, OR DISCREET, SUPPORTS
CBRS ONLY, ALL SECTORS

EXAMPLE 1	EXAMPLE 2	EXAMPLE 3
RED	RED	RED
BLUE	BLUE	
GREEN	GREEN	ORANGE
ORANGE	YELLOW	PURPLE
PURPLE		

CONTRACTOR TO REFER TO FINAL
CONSTRUCTION RFDS FOR ALL RF
DETAILS. FINAL RFDS IS IN NEXSYSONE.

FIBER JUMPERS TO RRHs

LOW-BAND RRH FIBER CABLES HAVE SECTOR
STRIPE ONLY

LOW BAND RRH	HIGH BAND RRH	LOW BAND RRH	HIGH BAND RRH	LOW BAND RRH	HIGH BAND RRH
RED	RED	BLUE	BLUE	GREEN	GREEN
	PURPLE		PURPLE		PURPLE

POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR
STRIPE ONLY

LOW BAND RRH	HIGH BAND RRH	LOW BAND RRH	HIGH BAND RRH	LOW BAND RRH	HIGH BAND RRH
RED	RED	BLUE	BLUE	GREEN	GREEN
	PURPLE		PURPLE		PURPLE

RET MOTORS AT ANTENNAS

ANTENNA 1 LOW BAND/ "IN"	ANTENNA 1 HIGH BAND/ "IN"	ANTENNA 1 LOW BAND/ "IN"	ANTENNA 1 HIGH BAND/ "IN"	ANTENNA 1 LOW BAND/ "IN"	ANTENNA 1 HIGH BAND/ "IN"
RED	RED	BLUE	BLUE	GREEN	GREEN
	PURPLE		PURPLE		PURPLE

MICROWAVE RADIO LINKS

LINKS WILL HAVE A 1.5-2 INCH WHITE WRAP WITH
THE AZIMUTH COLOR OVERLAPPING IN THE MIDDLE.
ADD ADDITIONAL SECTOR COLOR BANDS FOR EACH
ADDITIONAL MW RADIO.

MICROWAVE CABLES WILL REQUIRE P-TOUCH
LABELS INSIDE THE CABINET TO IDENTIFY THE
LOCAL AND REMOTE SITE ID'S

FORWARD AZIMUTH OF 0-120 DEGREES		FORWARD AZIMUTH OF 120-240 DEGREES		FORWARD AZIMUTH OF 240-360 DEGREES	
PRIMARY	SECONDARY	PRIMARY	SECONDARY	PRIMARY	SECONDARY
WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
RED	RED	BLUE	BLUE	GREEN	GREEN
WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
	RED		BLUE		GREEN
	WHITE		WHITE		WHITE

RF CABLE COLOR CODES

NO SCALE

1

NOT USED

NO SCALE

4

LOW BANDS (N71+N26)
OPTIONAL - (N29)



CBRS TECH
(3 GHz)



AWS
(N66+N70+H-BLOCK)



NEGATIVE SLANT PORT
ON ANT/RRH



ALPHA SECTOR



BETA SECTOR



GAMMA SECTOR



COLOR IDENTIFIER

NO SCALE

2

NOT USED

NO SCALE

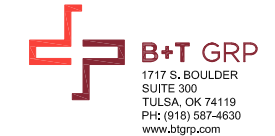
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RY BLB BLB

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	9/1/21	ISSUED FOR REVIEW
0	9/24/21	ISSUED FOR CONSTRUCTION

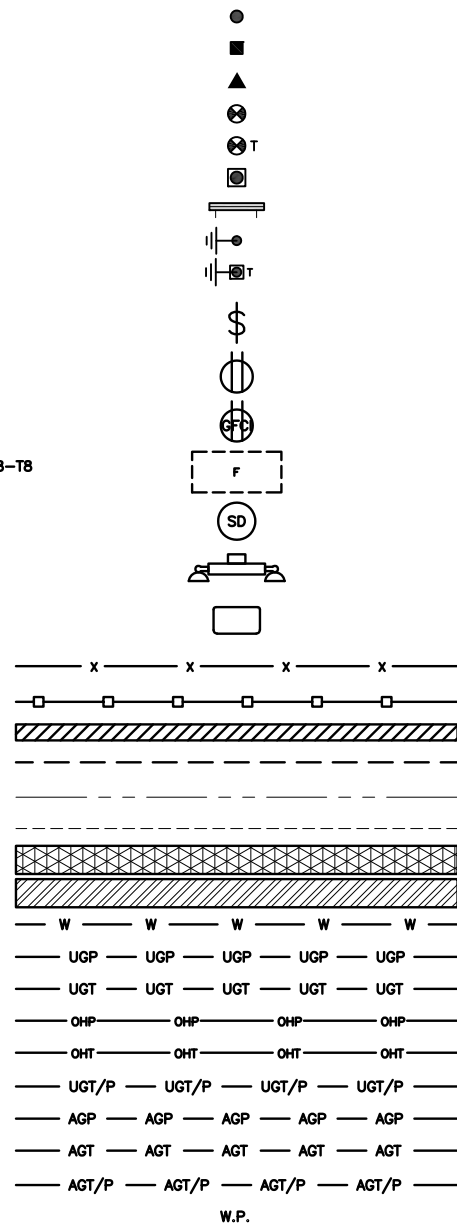
A&E PROJECT NUMBER
149436.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
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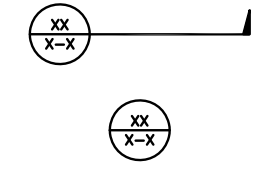
SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER
RF-1

EXOTHERMIC CONNECTION
 MECHANICAL CONNECTION
 BUSS BAR INSULATOR
 CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
 TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
 EXOTHERMIC WITH INSPECTION SLEEVE
 GROUNDING BAR
 GROUND ROD
 TEST GROUND ROD WITH INSPECTION SLEEVE
 SINGLE POLE SWITCH
 DUPLEX RECEPTACLE
 DUPLEX GFCI RECEPTACLE
 FLUORESCENT LIGHTING FIXTURE (2) TWO LAMPS 48-T8
 SMOKE DETECTION (DC)
 EMERGENCY LIGHTING (DC)
 SECURITY LIGHT W/PHOTOCELL LITHONIA ALXW
 LED-1-25A400/51K-SR4-120-PE-DOBXTD
 CHAIN LINK FENCE
 WOOD/WROUGHT IRON FENCE
 WALL STRUCTURE
 LEASE AREA
 PROPERTY LINE (PL)
 SETBACKS
 ICE BRIDGE
 CABLE TRAY
 WATER LINE
 UNDERGROUND POWER
 UNDERGROUND TELCO
 OVERHEAD POWER
 OVERHEAD TELCO
 UNDERGROUND TELCO/POWER
 ABOVE GROUND POWER
 ABOVE GROUND TELCO
 ABOVE GROUND TELCO/POWER
 WORKPOINT



SECTION REFERENCE
 DETAIL REFERENCE



LEGEND

AB	ANCHOR BOLT	IN	INCH	INT	INTERIOR
ABV	ABOVE	LB(S)	POUND(S)	LF	LINEAR FEET
AC	ALTERNATING CURRENT	LTE	LONG TERM EVOLUTION	MAS	MASONRY
ADDL	ADDITIONAL	MAX	MAXIMUM	MB	MACHINE BOLT
AFF	ABOVE FINISHED FLOOR	MECH	MECHANICAL	MFR	MANUFACTURER
AFG	ABOVE FINISHED GRADE	MGB	MASTER GROUND BAR	MIN	MINIMUM
AGL	ABOVE GROUND LEVEL	MISC	MISCELLANEOUS	MTL	METAL
AIC	AMPERAGE INTERRUPTION CAPACITY	MTS	MANUAL TRANSFER SWITCH	MW	MICROWAVE
ALUM	ALUMINUM	NEC	NATIONAL ELECTRIC CODE	NM	NEWTON METERS
ALT	ALTERNATE	NO.	NUMBER	#	NUMBER
ANT	ANTENNA	NTS	NOT TO SCALE	OC	ON-CENTER
APPROX	APPROXIMATE	OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION	OPNG	OPENING
ARCH	ARCHITECTURAL	P/C	PRECAST CONCRETE	PCS	PERSONAL COMMUNICATION SERVICES
ATS	AUTOMATIC TRANSFER SWITCH	PCU	PRIMARY CONTROL UNIT	PP	POLARIZING PRESERVING
AWG	AMERICAN WIRE GAUGE	PRC	PRIMARY RADIO CABINET	PSF	POUNDS PER SQUARE FOOT
BATT	BATTERY	PP	POLARIZING PRESERVING	PSI	POUNDS PER SQUARE INCH
BLDG	BUILDING	PT	PRESSURE TREATED	PWR	POWER CABINET
BLK	BLOCK	QTY	QUANTITY	RAD	RADIUS
BLKG	BLOCKING	RECT	RECTIFIER	REF	REFERENCE
BM	BEAM	REINF	REINFORCEMENT	REQ'D	REQUIRED
BTC	BARE TINNED COPPER CONDUCTOR	RET	REMOTE ELECTRIC TILT	RF	RADIO FREQUENCY
BOF	BOTTOM OF FOOTING	RMC	RIGID METALLIC CONDUIT	RRH	REMOTE RADIO HEAD
CAB	CABINET	RRU	REMOTE RADIO UNIT	RWY	RACEWAY
CANT	CANTILEVERED	SCH	SCHEDULE	SHT	SHEET
CHG	CHARGING	SIAD	SMART INTEGRATED ACCESS DEVICE	SIM	SIMILAR
CLG	CEILING	SPEC	SPECIFICATION	SQ	SQUARE
CLR	CLEAR	SS	STAINLESS STEEL	STD	STANDARD
COL	COLUMN	STL	STEEL	TEMP	TEMPORARY
COMM	COMMON	THK	THICKNESS	TMA	TOWER MOUNTED AMPLIFIER
CONC	CONCRETE	TOA	TOP OF ANTENNA	TN	TOE NAIL
CONSTR	CONSTRUCTION	TOC	TOP OF CURB	TOA	TOP OF ANTENNA
DBL	DOUBLE	TOF	TOP OF FOUNDATION	TOF	TOP OF FOUNDATION
DC	DIRECT CURRENT	TOP	TOP OF PLATE (PARAPET)	TOS	TOP OF STEEL
DEPT	DEPARTMENT	TOW	TOP OF WALL	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
DF	DOUGLAS FIR	TYP	TYPICAL	UG	UNDERGROUND
DIA	DIAMETER	UL	UNDERWRITERS LABORATORY	UNO	UNLESS NOTED OTHERWISE
DIAG	DIAGONAL	UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM	UPS	UNINTERRUPTIBLE POWER SYSTEM (DC POWER PLANT)
DIM	DIMENSION	VIF	VERIFIED IN FIELD	W	WIDE
DWG	DRAWING	W/	WITH	WD	WOOD
DWL	DOWEL	WP	WEATHERPROOF	WT	WEIGHT
EA	EACH				
EC	ELECTRICAL CONDUCTOR				
EL	ELEVATION				
ELEC	ELECTRICAL				
EMT	ELECTRICAL METALLIC TUBING				
ENG	ENGINEER				
EQ	EQUAL				
EXP	EXPANSION				
EXT	EXTERIOR				
EW	EACH WAY				
FAB	FABRICATION				
FF	FINISH FLOOR				
FG	FINISH GRADE				
FIF	FACILITY INTERFACE FRAME				
FIN	FINISH(ED)				
FLR	FLOOR				
FDN	FOUNDATION				
FOC	FACE OF CONCRETE				
FOM	FACE OF MASONRY				
FOS	FACE OF STUD				
FOW	FACE OF WALL				
FS	FINISH SURFACE				
FT	FOOT				
FTG	FOOTING				
GA	GAUGE				
GEN	GENERATOR				
GFCI	GROUND FAULT CIRCUIT INTERRUPTER				
GLB	GLUE LAMINATED BEAM				
GLV	GALVANIZED				
GPS	GLOBAL POSITIONING SYSTEM				
GND	GROUND				
GSM	GLOBAL SYSTEM FOR MOBILE				
HDG	HOT DIPPED GALVANIZED				
HDR	HEADER				
HGR	HANGER				
HVAC	HEAT/VENTILATION/AIR CONDITIONING				
HT	HEIGHT				
IGR	INTERIOR GROUND RING				

ABBREVIATIONS



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 175 DICKENSON ROAD
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SHEET TITLE
 LEGEND AND ABBREVIATIONS

SHEET NUMBER
GN-1

SITE ACTIVITY REQUIREMENTS:

- NOTICE TO PROCEED – NO WORK SHALL COMMENCE PRIOR TO CONTRACTOR RECEIVING A WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE DISH Wireless L.L.C. AND TOWER OWNER NOC & THE DISH Wireless L.L.C. AND TOWER OWNER CONSTRUCTION MANAGER.
- "LOOK UP" – DISH Wireless L.L.C. AND TOWER OWNER SAFETY CLIMB REQUIREMENT:
THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR DISH Wireless L.L.C. AND DISH Wireless L.L.C. AND TOWER OWNER POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.
- PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.
- ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND DISH Wireless L.L.C. AND TOWER OWNER STANDARDS, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA-322 (LATEST EDITION).
- ALL SITE WORK TO COMPLY WITH DISH Wireless L.L.C. AND TOWER OWNER INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON DISH Wireless L.L.C. AND TOWER OWNER TOWER SITE AND LATEST VERSION OF ANSI/TIA-1019-A-2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
- IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY DISH Wireless L.L.C. AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES INCLUDING PRIVATE LOCATES SERVICES PRIOR TO THE START OF CONSTRUCTION.
- ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.
- ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND DISH PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
- CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
- ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF DISH Wireless L.L.C. AND TOWER OWNER, AND/OR LOCAL UTILITIES.
- THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.
- THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.
- THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
- THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.
- CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
- THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
- CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS AND RADIOS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
- CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
- NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES:

- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION
CARRIER:DISH Wireless L.L.C.
TOWER OWNER:TOWER OWNER
- THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
- THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
- NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
- SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.
- PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CARRIER POC AND TOWER OWNER.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
- CONTRACTOR IS TO PERFORM A SITE INVESTIGATION, BEFORE SUBMITTING BIDS, TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.
- THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF DISH Wireless L.L.C. AND TOWER OWNER
- CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
- CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.



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RY BLB BLB

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CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	9/1/21	ISSUED FOR REVIEW
0	9/24/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149436.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00117A
175 DICKENSON ROAD
GLASTONBURY, CT 06033

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-2

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF PLACEMENT.
4. CONCRETE EXPOSED TO FREEZE-THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.
5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:
 #4 BARS AND SMALLER 40 ksi
 #5 BARS AND LARGER 60 ksi
6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
 - CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
 - CONCRETE EXPOSED TO EARTH OR WEATHER:
 - #6 BARS AND LARGER 2"
 - #5 BARS AND SMALLER 1-1/2"
 - CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
 - SLAB AND WALLS 3/4"
 - BEAMS AND COLUMNS 1-1/2"
7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
- 4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
- 4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.
5. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).
7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
8. TIE WRAPS ARE NOT ALLOWED.
9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

16. ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.
21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).
22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3 (OR BETTER) FOR EXTERIOR LOCATIONS.
25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR DISH Wireless L.L.C. AND TOWER OWNER BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "DISH Wireless L.L.C.".
30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.



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PEC.0001564
Expires 2/10/22

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RFDS REV #: 1

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GN-3

GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.
7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
17. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.
19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON-METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).
21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 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). DO NOT ATTACH GROUNDING TO FIRE SPRINKLER SYSTEM PIPES.



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