



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

November 16, 2021

Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: **Tower Share Application**
292 Plain Hill Rd., Norwich, CT
Latitude: 41.578199
Longitude: -72.103675
Dish Site# BOBOS00045A

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 **292 Plain Hill Rd., Norwich, Connecticut.**

Dish Wireless LLC proposes to install three (3) 600/1900/2100 MHz antennas and six (6) RRUs, at the 97-foot level of the existing 120-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 October 19, 2021 Exhibit 10. Also included is a Structural Analysis prepared by TES, dated August 9, 2021, confirming that the existing tower is structurally capable of supporting the proposed equipment and attached as Exhibit 8. This facility was approved by the Town of Norwich Zoning April 20, 1999 and Special Permit #SP-99-2 April 28, 1999. 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 180-feet; Dish Wireless LLC proposed antennas will be located at a center line height of 137-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 13.89% 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 Norwich. 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 137-foot level of the existing 180-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: Peter A. Nystrom, Mayor / with attachments
Norwich City Hall 100 Broadway, Norwich, CT 06360
Richard Shuck, Zoning Enforcement Officer
Norwich City Hall 100 Broadway, Norwich, CT 06360
Kelvin H. Stott and Francis S. Stott / with attachments
300 Plain Hill Rd., Norwich, CT 06360-9401 (SBA's Records)

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	City of Norwich Site Devel. Plan (4/20/99), Special Permit #SP-99-2 (4/28/99)
Exhibit 7	EME Report	EBI Consulting 11/4/21
Exhibit 8	Structural Analysis	TES 8/9/21
Exhibit 9	Mount Analysis	B+T Group 9/22/21
Exhibit 10	Construction Drawings	B+T Group 10/19/21

EXHIBIT 1

Copy of check

EXHIBIT 2

Letter of Intent

November 16, 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: **292 Plain Hill Rd., Norwich, CT**
Dish Wireless Site No: BOBOS00045A
Site No: CT01365-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 **292 Plain Hill Rd., Norwich, 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 137' for antennas and associated equipment.

Thank you,

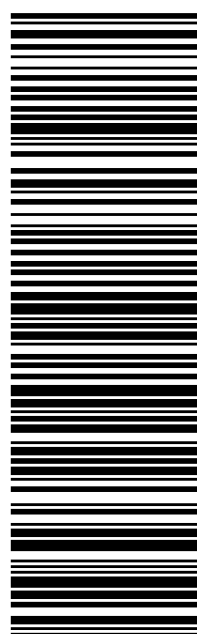
Rick Woods

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: BFEA (508) 614-0389 RICK WOODS SBA COMMUNICATIONS CORPORATION 134 FLANDERS RD SUITE 125 WESTBOROUGH, MA 01581 UNITED STATES US	SHIP DATE: 16NOV21 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: 1056-92009-6089 INV: DEPT:	
 	
TRK# 7752 2372 5062 0201	WED - 17 NOV 11:30A PRIORITY OVERNIGHT
EB BDLA CT-US BDL 06051	

56D.J29A7E/FE4A

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775223725062

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ON TIME

Scheduled delivery:
Wednesday, 11/17/2021 before 11:30 am



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WESTBOROUGH, MA US

TO
NEW BRITAIN, CT US
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Travel History

Shipment Facts

Travel History

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Tuesday, November 16,
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Shipment Facts

TRACKING NUMBER
775223725062

SERVICE
FedEx Priority Overnight

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TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
2 lbs / 0.91 kgs

TERMS
Shipper

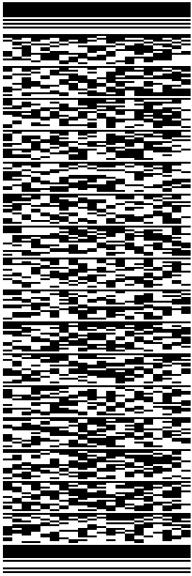
SHIPPER REFERENCE
10-56-92009-6089

PACKAGING
FedEx Pak

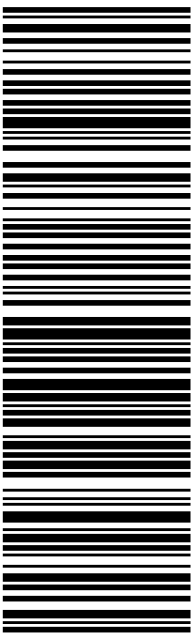
SPECIAL HANDLING SECTION
Deliver Weekday

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

ORIGIN ID: BFFA (508) 614-0389 RICK WOODS SBA COMMUNICATIONS CORPORATION 134 FLANDERS RD SUITE 125 WESTBOROUGH, MA 01581 UNITED STATES US		SHIP DATE: 16NOV21 ACTWGT: 1.00 LB CAD: 105843304/NET4400
TO PETER A. NYSTROM NORWICH CITY HALL MAYOR 100 BROADWAY NORWICH CT 06360 (508) 251-0720 X 3807 INV: REF: 1056-92009-6089 PO: DEPT:		BILL SENDER




TRK# 7752 2375 8557
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10:53 AM

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Shipment Facts

TRACKING NUMBER
775223758557

SERVICE
FedEx Priority Overnight

WEIGHT
1 lbs / 0.45 kgs

TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
1 lbs / 0.45 kgs

TERMS
Shipper

SHIPPER REFERENCE
10-56-92009-6089

PACKAGING
FedEx Pak

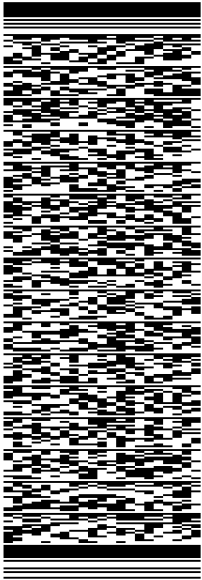
SPECIAL HANDLING SECTION
Deliver Weekday

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

ORIGIN ID: BFFA (508) 614-0389 RICK WOODS SBA COMMUNICATIONS CORPORATION 134 FLANDERS RD SUITE 125 WESTBOROUGH, MA 01581 UNITED STATES US		SHIP DATE: 16NOV21 ACTWGT: 1.00 LB CAD: 105843304/NET4400
TO RICHARD SHUCK NORWICH CITY HALL ZONING ENFORCEMENT OFFICER 100 BROADWAY NORWICH CT 06360 (508) 251-0720 X 3807 INV: REF: 1056-92009-6089 PO: DEPT:		BILL SENDER

TRK# 7752 2377 7655
 0201
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 06360

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Travel History

Shipment Facts

Travel History

TIME ZONE
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Tuesday, November 16,
2021

1:05 PM

WESTBOROUGH, MA

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10:54 AM

Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER
775223777655

SERVICE
FedEx Priority Overnight

WEIGHT
1 lbs / 0.45 kgs

TOTAL PIECES
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TOTAL SHIPMENT WEIGHT
1 lbs / 0.45 kgs

TERMS
Shipper

SHIPPER REFERENCE
10-56-92009-6089

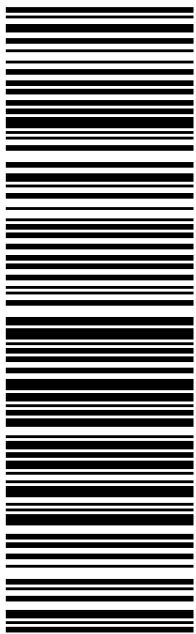
PACKAGING
FedEx Pak

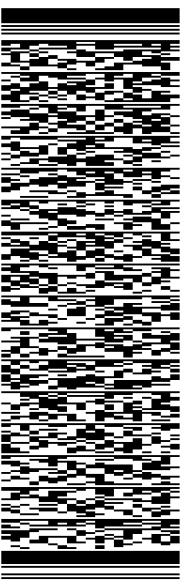
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ACTUAL PICK UP**STANDARD TRANSIT****SCHEDULED DELIVERY**

ORIGIN ID: BFFA (508) 614-0389 RICK WOODS SBA COMMUNICATIONS CORPORATION 134 FLANDERS RD SUITE 125 WESTBOROUGH, MA 01581 UNITED STATES US		SHIP DATE: 16NOV21 ACTWGT: 1.00 LB CAD: 105843304/NET4400
TO KEVIN H & FRANCIS S. STOTT 300 PLAIN HILL RD NORWICH CT 06360 (508) 251-0720 X 3807 INV: REF: 1056-92009-6089 PO: DEPT:		BILL SENDER
56D.J2/9A7E/FE4A		

TRK# 7752 2381 9200 0201	WED - 17 NOV 11:30A PRIORITY OVERNIGHT
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Tuesday, November 16,
2021

1:05 PM

WESTBOROUGH, MA

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10:56 AM

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Shipment Facts

TRACKING NUMBER

775223819200

SERVICE

FedEx Priority Overnight

WEIGHT

1 lbs / 0.45 kgs

TOTAL PIECES

1

TOTAL SHIPMENT WEIGHT

1 lbs / 0.45 kgs

TERMS

Chassis

EXHIBIT 4

Property Card

292R PLAIN HILL RD

Location 292R PLAIN HILL RD

Mblu 28/ 1/ 13/ 1/

Acct# 0280130001

Owner STOTT KELVIN H + STOTT
FRANCES S

Assessment \$683,600

Appraisal \$976,300

PID 112017

Building Count 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2018	\$848,800	\$127,500	\$976,300
Assessment			
Valuation Year	Improvements	Land	Total
2018	\$594,300	\$89,300	\$683,600

Parcel Addresses

Additional Addresses
No Additional Addresses available for this parcel

Owner of Record

Owner	STOTT KELVIN H + STOTT FRANCES S % SBA PROPERTIES LLC	Sale Price	\$0
Address	8051 CONGRESS AVE ATTN: TAX DEPT CT01365 BOCA RATON, FL 33487-1307	Certificate	
		Book & Page	1691/0144
		Sale Date	09/11/2002

Ownership History

Ownership History				
Owner	Sale Price	Certificate	Book & Page	Sale Date
STOTT KELVIN H + STOTT FRANCES S	\$0		1691/0144	09/11/2002

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0
Replacement Cost: \$0
Building Percent Good:
Replacement Cost
Less Depreciation: \$0

Building Attributes	
Field	Description
Style	Vacant
Model	
Grade:	
Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Num Kitchens	
Fireplace (s)	
Whirlpool	
FPLG Gas	
FPLW Wood	
FPO	
Usrflid 107	
park	
Fireplaces	
Usrflid 108	
Usrflid 101	

Building Photo



(<http://images.vgsi.com/photos/NorwichCTPhotos//default.jpg>)

Building Layout

([ParcelSketch.ashx?pid=112017&bid=110618](#))

Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Usrflid 102	
Usrflid 100	
Usrflid 300	
Usrflid 301	

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use	Land Line Valuation
Use Code 431V	Size (Acres) 1
Description TEL REL TW M-00	Frontage
Zone BP	Depth
Neighborhood 0050	Assessed Value \$89,300
Alt Land Appr No	Appraised Value \$127,500
Category	

Outbuildings

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
FN3	Fence Chain 6'			280.00 L.F.	\$4,500	1
SHD5	Shed Comm Mas			192.00 S.F.	\$4,800	1
SHD5	Shed Comm Mas			360.00 S.F.	\$9,000	1
SHD5	Shed Comm Mas			280.00 S.F.	\$7,000	1
TWR	CELL TOWER			180.00 UNITS	\$121,500	1
MSC5	ARRAYS			3.00 UNIT	\$702,000	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2020	\$848,800	\$127,500	\$976,300
2019	\$848,800	\$127,500	\$976,300
2018	\$848,800	\$127,500	\$976,300

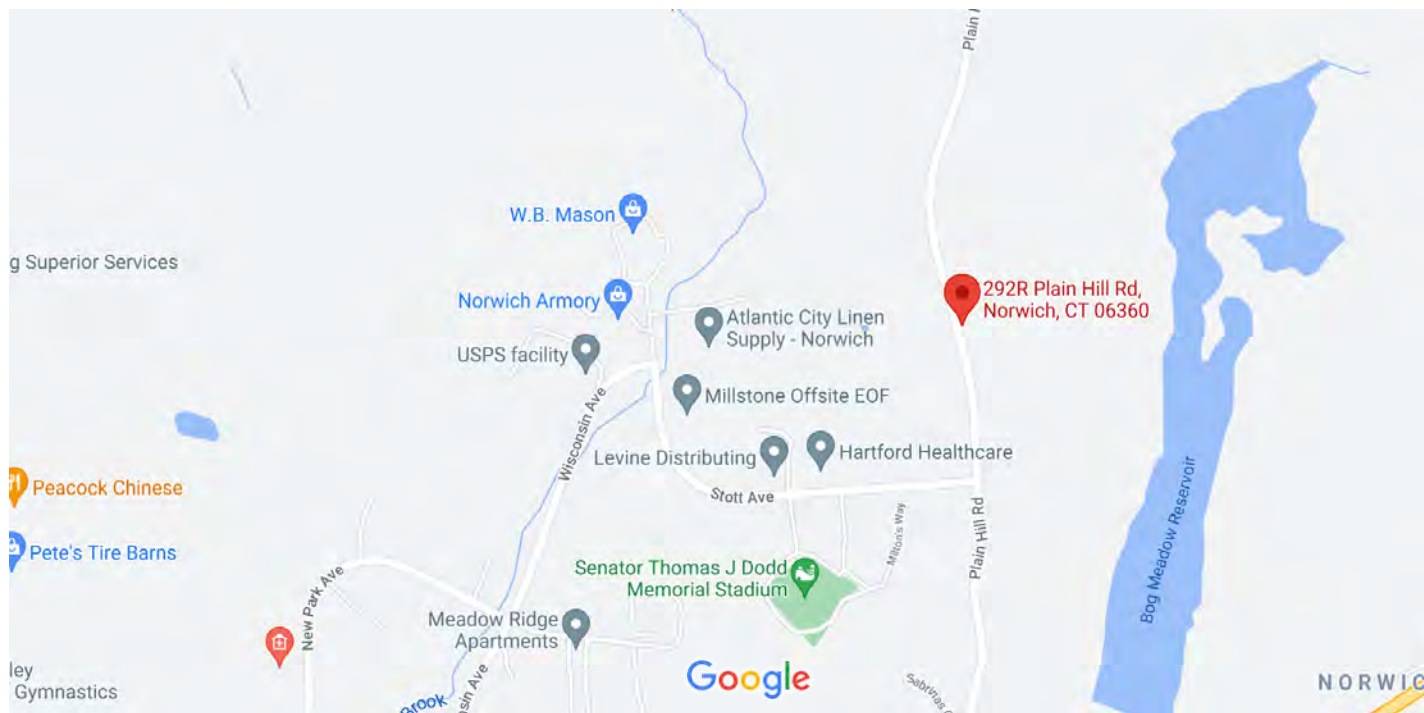
Assessment			
Valuation Year	Improvements	Land	Total
2020	\$594,300	\$89,300	\$683,600
2019	\$594,300	\$89,300	\$683,600
2018	\$594,300	\$89,300	\$683,600

EXHIBIT 5

Property Map



292R Plain Hill Rd



Map data ©2021 1000 ft



292R Plain Hill Rd

Norwich, CT 06360



Directions



Save



Nearby

Send to your
phone

Share



HVJX+33 Norwich, Connecticut

Photos

Google Maps 292 Plain Hill Rd



Imagery ©2021 Maxar Technologies, USDA Farm Service Agency, Map data ©2021 200 ft

EXHIBIT 6

Zoning Approval

SITE ID #4290

SITE NAME: Norwich 2, CT
CTO 1365-S

JOB COST #001365

ZONING/PERMITTING COMPLETION FORM

Zoning Classification for Site: R-80

Special Relief (setback, height variance, special use permit, wetlands permit etc.):

Special Permit Approval

* Date of Zoning Decision: 04/20/99

Summary of zoning conditions (Include details of any conditions relative to time restrictions, expiration dates, renewal obligations, monetary obligations, performance obligation, inspection fees).

See attached

Submitted by: Esther McNany

Title: Territory Manager

Territory Manager Approval:

* Attach a copy of the Zoning decision and forward to the Regional Compliance Manager as soon as possible, after the decision.



CERTIFIED MAIL
#Z011426906

CITY OF NORWICH CONNECTICUT

SITE PLAN APPROVAL

Date: April 28, 1999

Site Development Plan # 796 - SBA, Inc.; construction of a 180-ft. multi-tenant monopole telecommunications facility and the placement of associated equipment.

Name: SBA, Inc.
125 Shaw Street, #116
New London, CT 06320

Location: 292 Plain Hill Road, Norwich, CT

The final plan of Site Development Plan #796 as referenced above was considered at the regular meeting of the Commission on the City Plan held on April 20, 1999.

After careful consideration the Commission voted unanimously to approve the site plan.

A coastal site plan review was not required in accordance with Chapter 444 of the Connecticut General Statutes. After careful consideration the Commission on the City Plan voted n/a to n/a the coastal site plan application.

The approval of the above referenced site plan is subject to the following conditions and/or modifications:

1. A bond in the amount of \$30,000.00 for site improvements shall be posted prior to endorsement of the plan;
2. A bond in the amount of \$15,000.00 for removal of the facility in the event it is abandoned shall be posted prior to endorsement of the plan.

Please provide the following plans, bond, and deeds to the Planning Department, 23 Union Street, within 60 days after the date of approval.

1. Two sets of mylars and six sets of prints of the final site plan; one set of the mylars shall be produced by one of the following processes: wash-off photographic polyester film; fixed line photographic polyester film; original ink drawing on polyester film or linen. All modifications of approval shall be incorporated into the final plan.

2. All R.O.W. and/or easement deeds associated with the site plan.
3. Post a passbook or surety bond with the Commission on the City Plan in a form acceptable to the Corporation Counsel and in the amount approved by the Director of Public Works.

The Chairperson of the Commission on the City Plan must endorse the site plans prior to filing the approved plans with the City Clerk and prior to the issuance of a zoning compliance permit and a building permit.

The Planning Department will contact you after the site plan has been endorsed by the chairperson. You are responsible for filing the plan with the City Clerk within 90 days after approval by the Commission; provided acceptable plans and bond are submitted by the applicant. If an acceptable plan is not filed with the clerk within the 90 day period, the Commission's approval is invalid.

CHANGES TO THE APPROVED PLAN: All site activities shall be constructed in accordance with the approved plans, specifications and documents of record. Any change to the plans must be approved by the Commission on the City Plan.

EROSION AND SEDIMENT CONTROL: The erosion and sediment control measures shall be installed in accordance with the Connecticut Guidelines for Erosion and Sediment Control; such measures shall be installed prior to site disturbance. Additional erosion and sediment control measures shall be provided if determined to be necessary by a representative of the Planning Department or Public Works Department.

PRE-CONSTRUCTION CONFERENCE: It is the responsibility of the permittee or the contractor to schedule a pre-construction conference with the Planning Department for the purpose of inspecting the installation of the erosion and sediment control measures, and Public Works to set up an inspection schedule for road, drainage and sidewalk construction. City Hall telephone number: Planning Department, (860) 823-3766; Public Works Department, (860) 823-3798.

PUBLIC UTILITIES: Contact the Department of Public Utilities for an inspection of the sewer, water, electric and gas lines installation.

TIME PERIODS: Site plan approval is valid for one year, however, an extension to such approval may be granted by the Commission. In addition, all construction in the approved site plan must be completed within 5 years, based on Section 8.3.i of the Connecticut General Statutes.

CONSTRUCTION REQUIREMENTS: The following conditions shall be a requirement of the approval:

1. Unsuitable material in the pavement areas must be removed and replaced with suitable material as directed by the City Road Inspector.
2. If blasting is required for construction, a pre-blast survey shall be conducted prior to blasting. Contact the Fire Marshal, telephone (860) 887-2780.

ZONING PERMIT: After the plan has been filed, a zoning permit can be applied for through the zoning enforcement officer: telephone (860) 823-3766.

BUILDING PERMIT: For any building construction, please submit building plans and separate application to the building inspector.

CERTIFICATE OF COMPLIANCE will be issued after all parking, sidewalks, recreation area (for multi-family development) and public safety concerns are addressed in accordance with the approved site plan.

CERTIFICATE OF OCCUPANCY is issued by the building inspector. Certificate of Compliance must be obtained prior to the issuance of a Certificate of Occupancy.

AS-BUILT DRAWING may be required by the Commission prior to the final release of the bond.

Congratulations on the successful completion of your application.



Peter W. Davis
Planning Director

cc-Director of Public Works

-City Engineer

-Building Inspector

-John F. Bilda, Engineer, Public Utilities Dept.

CITY OF NORWICH
CONNECTICUT

TO: SBA, Inc.
125 Shaw St., #116
New London, CT 06320

Date April 28, 1999

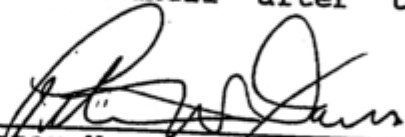
CERTIFIED MAIL
#Z011426905

FROM: COMMISSION ON THE CITY PLAN

SUBJECT: RECORDING OF COMMISSION ON THE CITY PLAN DECISION -
PUBLIC ACT NO. 75-317 - Special Permit #SP-99-2

The attached form MUST be recorded in the office of the City Clerk after 15 days from the effective date of the decision. Please note the dates on the lower left hand corner of the form. The decision IS NOT VALID until after the form has been properly recorded.

Recording fee is \$10.00, payable to the City Clerk. After recording the decision, the Planning Department office IS TO BE NOTIFIED of the receipt number so that our files for your hearing can be closed. Note that no permits will be issued until after the recording process is completed.


Peter W. Davis, Planning Director

FILE LOWER PORTION WITH CITY CLERK
cut here-----

Special Permit #SP-99-2

COMMISSION ON THE CITY PLAN
CITY OF NORWICH

NOTICE OF SPECIAL PERMIT RECORDED
PURSUANT TO PUBLIC ACT NO. 75-317 - CONNECTICUT STATUTES

Record owner of property Kelvin H. Stott

Property recorded in Norwich Land Records Vol. 572 Page 155

Location of property 292 Plain Hill Road

DESCRIPTION: Special permit pursuant to Section 7.5 of the Zoning Regulations to permit the construction of a 180-foot multi-tenant monopole telecommunications facility and the placement of associated equipment.

Effective date of decision: April 24, 1999


Peter W. Davis
Planning Director

NOT TO BE FILED WITH
CITY CLERK BEFORE

May 10, 1999

EXHIBIT 7

EME Report



EBI Consulting

environmental | engineering | due diligence

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

Dish Wireless Existing Facility

Site ID: BOBOS00045A

BOBOS00045A
292 Plain Hill Road
Norwich, Connecticut 06360

November 4, 2021

EBI Project Number: 6221006447

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	13.89%



November 4, 2021

Dish Wireless

Emissions Analysis for Site: BOBOS00045A - BOBOS00045A

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **292 Plain Hill Road in Norwich, 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 292 Plain Hill Road in Norwich, 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 COMMSCOPE FFVV-65B-R2 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector A, the COMMSCOPE FFVV-65B-R2 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector B, the COMMSCOPE FFVV-65B-R2 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 137 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

Antenna #:	I	Antenna #:	I	Antenna #:	I
Make / Model:	COMMSCOPE FFVV-65B-R2	Make / Model:	COMMSCOPE FFVV-65B-R2	Make / Model:	COMMSCOPE FFVV-65B-R2
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:	11.1 dBd / 15.52 dBd / 16.04 dBd	Gain:	11.1 dBd / 15.52 dBd / 16.04 dBd	Gain:	11.1 dBd / 15.52 dBd / 16.04 dBd
Height (AGL):	137 feet	Height (AGL):	137 feet	Height (AGL):	137 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):	2,400.15	ERP (W):	2,400.15	ERP (W):	2,400.15
Antenna AI MPE %:	0.64%	Antenna BI MPE %:	0.64%	Antenna CI MPE %:	0.64%



EBI Consulting

environmental | engineering | due diligence

Site Composite MPE %	
Carrier	MPE %
Dish Wireless (Max at Sector A):	0.64%
Sprint	1.95%
Verizon	7.91%
AT&T	3.39%
Site Total MPE % :	13.89%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	0.64%
Dish Wireless Sector B Total:	0.64%
Dish Wireless Sector C Total:	0.64%
Site Total MPE % :	13.89%

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	107.68	137.0	0.90	600 MHz n71	400	0.23%
Dish Wireless 1900 MHz n70	4	238.81	137.0	2.00	1900 MHz n70	1000	0.20%
Dish Wireless 2190 MHz n66	4	253.55	137.0	2.12	2190 MHz n66	1000	0.21%
						Total:	0.64%

• 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:	0.64%
Sector B:	0.64%
Sector C:	0.64%
Dish Wireless Maximum MPE % (Sector A):	0.64%
Site Total:	13.89%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **13.89%** 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 180 ft Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT01365-S

Customer Site Name: Norwich 2 CT

Carrier Name: Dish Wireless (App#: 163180, V2)

Carrier Site ID / Name: BOBOS00045A / 0

Site Location: 292 Plain Hill Road

Norwich, Connecticut

New London County

Latitude: 41.578199

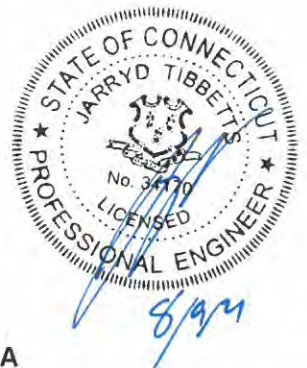
Longitude: -72.103675

Analysis Result:

Max Structural Usage: 99.3% [Pass]

Max Foundation Usage: 89.0% [Pass]

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



Report Prepared By: Morteza Shakeri

Introduction

The purpose of this report is to summarize the analysis results on the 180 ft 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	Tower Design prepared by Valmont, job # 18407-99, dated 06/03/1999
Foundation Drawing	Foundation Design prepared by Valmont, job # 18407-99, dated 06/03/1999
Geotechnical Report	Geotechnical Report prepared by FDH, job # 1207121EG1, dated 08/13/2012
Modification Drawings	FDH, Job # 1316541400, dated 03/14/2013 TES, Job # 23727, dated 09/13/2016

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 $V_{ult} = 135.0$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 105.0$ mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 3/4" 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:	$S_S = 0.17$, $S_1 = 0.061$

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	177.0	3	RFS APXVAALL24 43-U-NA20 - Panel	Platform w/ Handrails	(3) 1.99" Hybrid - 6x24	T-Mobile Sprint
2		3	RFS APX16DWV-16DWVS-E-A20 - Panel			
3		3	Ericsson AIR6449 B41 - Panel			
4		4	4" x 2" x 3.5" RETs			
5		3	Ericsson 4424 B25 RRU			
6		3	Ericsson 4415 B66A RRU			
7		3	Ericsson 4449 B71 + B85 RRU			
8		3	10" x 8" x 3" Filter			
9	159.0	3	Samsung VZS01 - Panel	Modified Low Profile Platform w/ (3) Commscope BSAMNT-SBS-1-2	(11) 1 5/8" (2) 1 5/8" Hybrid	Verizon
10		6	Commscope SBNHH-1D65B- Panel			
11		3	Antel BXA-80040/4CF- Panel			
12		3	Samsung B2/B66A RRH-BR049 (RFV01U-D1A)			
13		3	Samsung B5/B13 RRH-BR04C (RFV01U-D2A)			
14		2	RFS DB-T1-6Z-8AB-0Z-OVP			
15	147.0	3	Powerwave - 7770 - Panel	Platform w/ Handrails	(12) 1 5/8" (2) 3" Conduit [Housing (4) 3/4" DC & (2) 1/2" Fiber]	AT&T
16		2	CCI - DMP65R-BU6DA - Panel			
17		4	CCI - DMP65R-BU8DA - Panel			
18		6	Powerwave LGP21401 TMA			
19		12	Kathrein 860 10025 RET			
20		3	Ericsson RRUS 12			
21		3	Ericsson RRUS 4478 B14			
22		3	Ericsson RRUS 4449 B5/B12			
23		3	Ericsson RRUS-A2			
24		2	Raycap DC6-48-60-18-8F COVP			
29	127.0	1	CS72188.01 LMU - Whip	Direct Mount	(1) 1/2" w/LMU	Sprint Nextel
30	52.0	1	GPS	-	(1) 1/2"	

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
25	137.0	3	JMA Wireless MX08FRO665-21 - Panel	Platform w/ Handrails Commscope MC-PK8-DSH	(1) 1.60" Hybrid	Dish Wireless
26		3	Fujitsu TA08025-B605 - RRU			
27		3	Fujitsu TA08025-B604 - RRU			
28		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:	99.3%	83.0%	62.0%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	6317.1	50.3	58.4

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 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.5144 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 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 99.15% at 98.9ft

Structure: CT01365-S-SBA
Site Name: Norwich 2 CT
Height: 180.00 (ft)
Base Elev: 0.000 (ft)

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

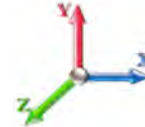
8/9/2021

Page: 1



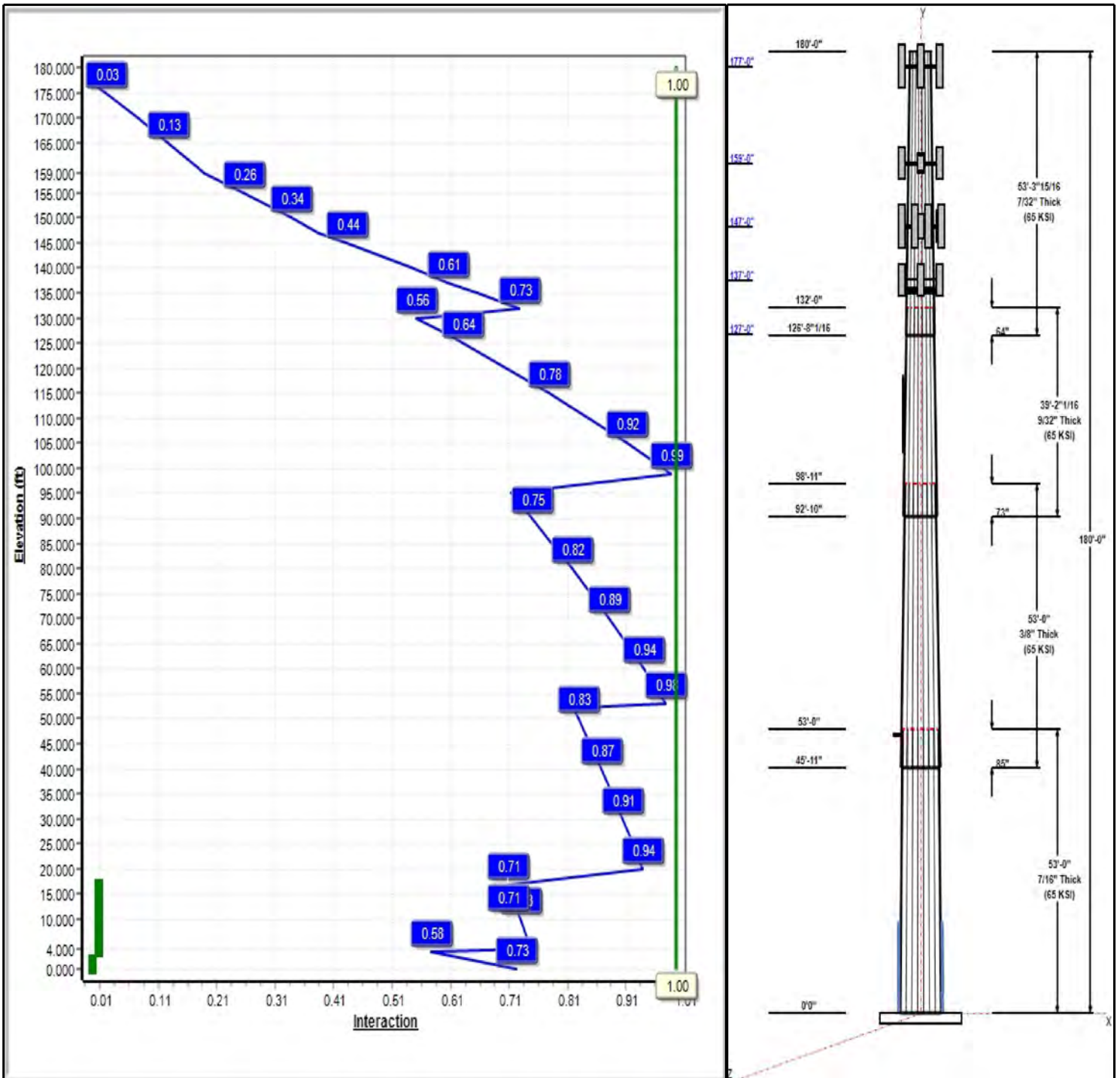
Dead Load Factor: 1.20
Wind Load Factor: 1.60

Load Case : 1.2D + 1.6W 105 mph Wind



Iterations: 26

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Structure: CT01365-S-SBA

Type: Tapered
Site Name: Norwich 2 CT
Height: 180.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 16 Sided
Taper: 0.18500

8/9/2021

Page: 2



Shaft Properties

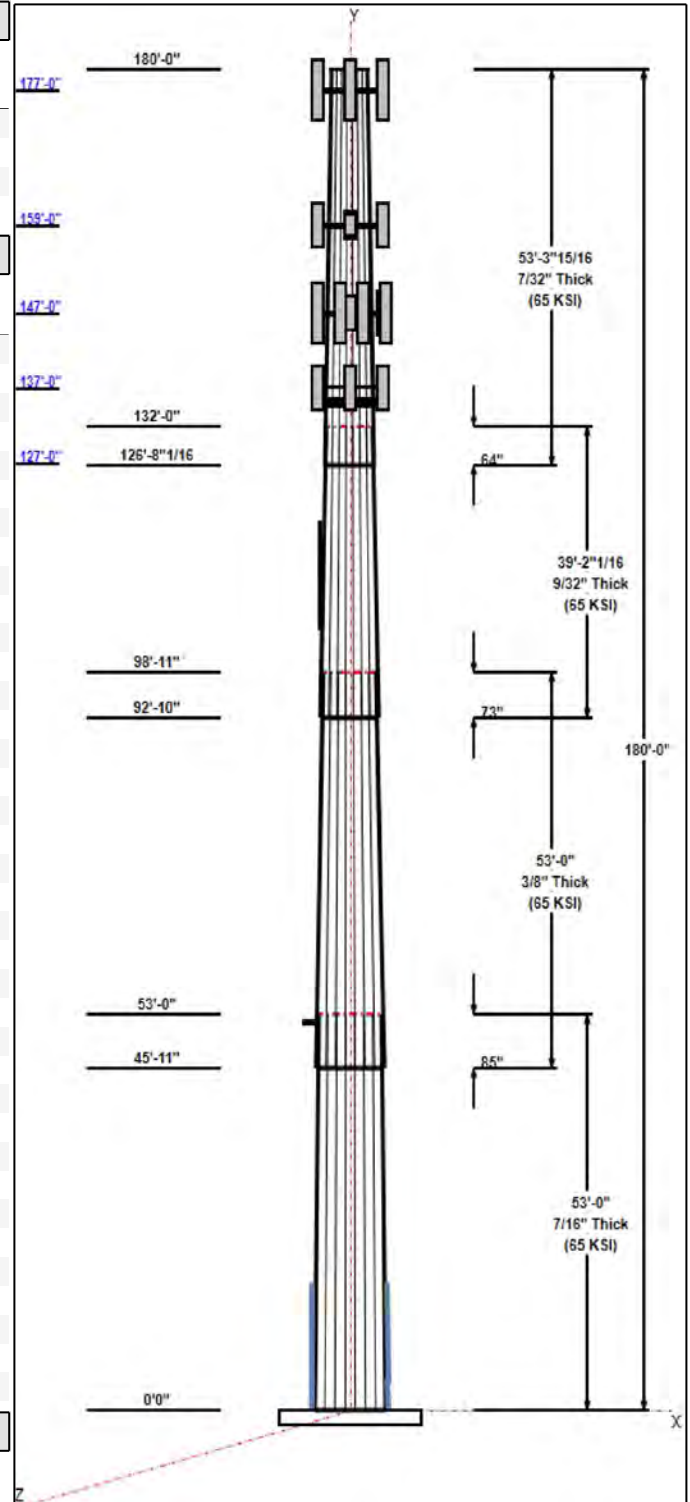
Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	53.00	48.20	58.00	0.438		0.18500	65
2	53.00	40.45	50.26	0.375	Slip	0.18500	65
3	39.17	34.89	42.14	0.281	Slip	0.18500	65
4	53.33	26.45	36.32	0.219	Slip	0.18500	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
180.00	183.00	1	Lightning Rod	
177.00	177.00	3	10" x 8" x 3" Filter	T-Mobile Sprint
177.00	177.00	4	4" x 2" x 3.5" RETs	T-Mobile Sprint
177.00	177.00	1	Platform w/ Hand Rail	T-Mobile Sprint
177.00	177.00	3	RFS	T-Mobile Sprint
177.00	177.00	3	RFS	T-Mobile Sprint
177.00	177.00	3	Ericsson AIR6449 B41	T-Mobile Sprint
177.00	177.00	3	Ericsson 4424 B25 RRU	T-Mobile Sprint
177.00	177.00	3	Ericsson 4415 B66A RRU	T-Mobile Sprint
177.00	177.00	3	Ericsson 4449 B71 + B85	T-Mobile Sprint
159.00	159.00	3	BXA-80040/4CF	Verizon
159.00	159.00	6	SBNHH-1D65B	Verizon
159.00	159.00	2	DB-T1-6Z-8AB-0Z	Verizon
159.00	159.00	1	Low Profile Platform	Verizon
159.00	159.00	3	Samsung VZS01	Verizon
159.00	159.00	3	BSAMNT-SBS-1-2	Verizon
159.00	159.00	3	B2/B66A	Verizon
159.00	159.00	3	B5/B13 RRH-BR04C	Verizon
147.00	147.00	3	7770	AT&T
147.00	147.00	6	Powerwave LGP21401	AT&T
147.00	147.00	2	Raycap DC6-48-60-18-8F	AT&T
147.00	147.00	1	Platform w/ Hand Rails	AT&T
147.00	147.00	12	Kathrein 860 10025 RET	AT&T
147.00	147.00	3	Ericsson RRUS 12	AT&T
147.00	147.00	3	Ericsson RRUS-A2	AT&T
147.00	147.00	2	DMP65R-BU6DA	AT&T
147.00	147.00	4	DMP65R-BU8DA	AT&T
147.00	147.00	3	Ericsson RRUS 4478 B14	AT&T
147.00	147.00	3	Ericsson RRUS 4449	AT&T
137.00	137.00	3	MX08FRO665-21	Dish Wireless
137.00	137.00	3	TA08025-B605	Dish Wireless
137.00	137.00	3	TA08025-B604	Dish Wireless
137.00	137.00	1	RDIDC-9181-OF-48	Dish Wireless
137.00	137.00	1	MC-PK8-DSH	Dish Wireless
127.00	112.00	1	CS72188.01 LMU	AT&T
52.00	52.00	1	3 ft Standoff	Sprint Nextel
52.00	52.00	1	GPS	Sprint Nextel

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	177.00	Inside	1.99" Hybrid - 6x24	T-Mobile Sprint
0.00	159.00	Inside	1 5/8" Coax	Verizon
0.00	159.00	Inside	1 5/8" Hybrid	Verizon
0.00	147.00	Inside	1 5/8" Coax	AT&T
0.00	147.00	Inside	1/2" Fiber	AT&T



Structure: CT01365-S-SBA

Type: Tapered	Base Shape: 16 Sided	8/9/2021
Site Name: Norwich 2 CT	Taper: 0.18500	
Height: 180.00 (ft)		
Base Elev: 0.00 (ft)		Page: 3



0.00	147.00	Inside	3" Conduit	AT&T
0.00	147.00	Inside	3/4" DC	AT&T
0.00	137.00	Inside	1.60" Hybrid	Dish Wireless
0.00	127.00	Inside	1/2" w/LMU	AT&T
0.00	52.00	Outside	1/2" Coax	Sprint Nextel
0.00	20.00	Outside	1.25" Reinforcing plate	

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
20	2.25" 18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.7500	72.5	60.0	Polygon

Reactions

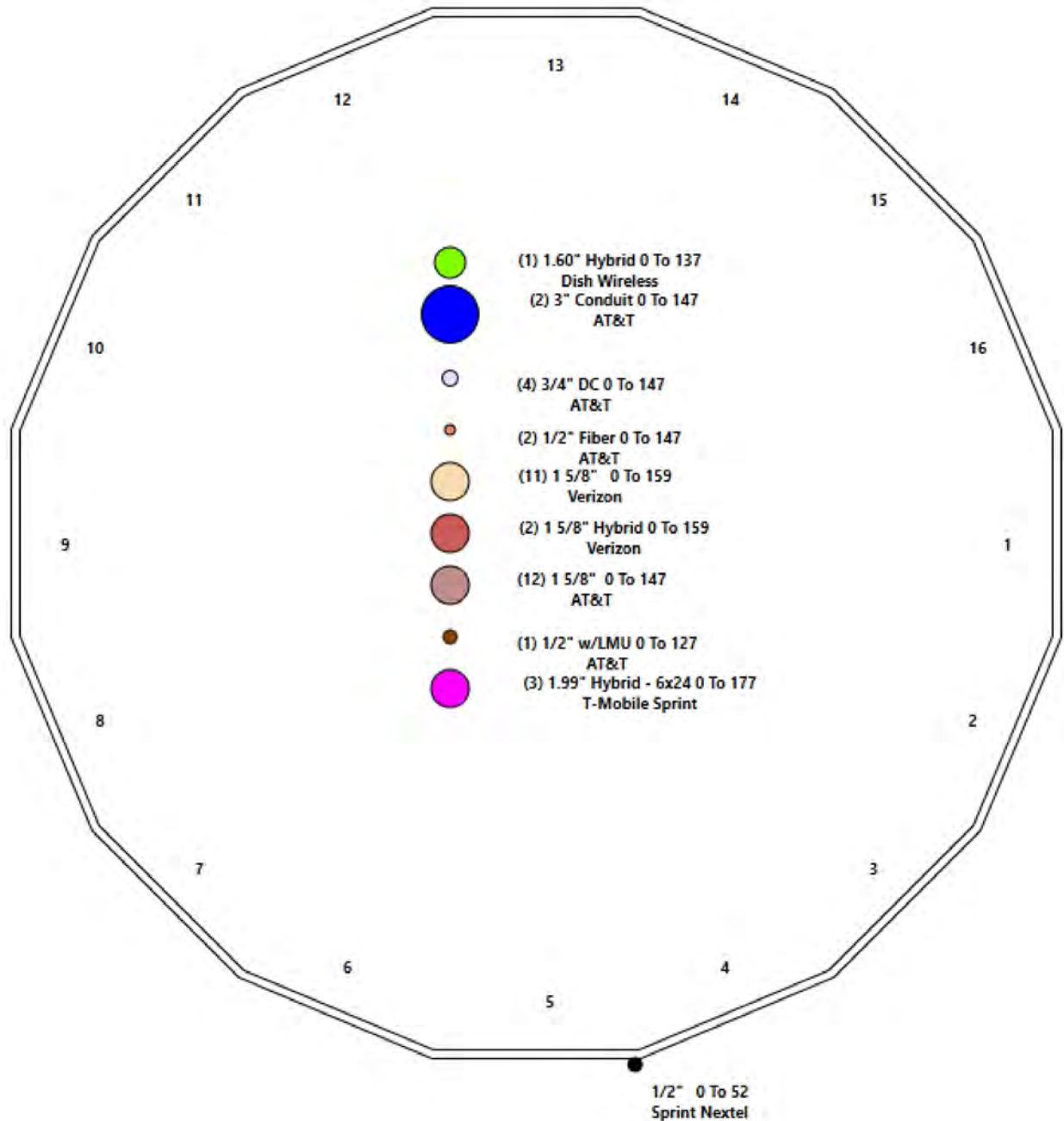
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 105 mph Wind	6317.1	50.3	58.4
0.9D + 1.6W 105 mph Wind	6239.9	50.3	43.8
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1499.1	11.6	89.8
1.2D + 1.0E	242.3	1.8	58.4
0.9D + 1.0E	239.0	1.8	43.8
1.0D + 1.0W 60 mph Wind	1282.4	10.3	48.7

Structure: CT01365-S-SBA - Coax Line Placement

Type: Monopole
Site Name: Norwich 2 CT
Height: 180.00 (ft)

8/9/2021

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Shaft Properties

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (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	16	53.000	0.4380	65		0.00	13,269
2	16	53.000	0.3750	65	Slip	85.00	9,704
3	16	39.170	0.2810	65	Slip	73.00	4,568
4	16	53.330	0.2190	65	Slip	64.00	3,951
Total Shaft Weight:							31,492

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	58.00	0.00	80.43	33665.63	24.75	132.42	48.20	53.00	66.73	19226.0	20.30	110.0	0.185000
2	50.26	45.92	59.67	18755.41	25.07	134.01	40.45	98.92	47.94	9726.81	19.86	107.8	0.185000
3	42.14	92.83	37.52	8304.44	28.24	149.96	34.89	132.00	31.02	4694.95	23.11	124.1	0.185000
4	36.32	126.6	25.22	4151.11	31.39	165.83	26.45	180.00	18.33	1592.92	22.43	120.7	0.185000

Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Fu (ksi)	Offset (in)	Intermediate Connectors		Termination Connectors			
							Description	Spacing (in)	Description	Spacing (in)	Lower Qty	Upper Qty
0.00	4.00	6	PLT 1.25"x4.5" STFNR	65	80	0.00	AJM20&sleeve	0.00	AJM20&sleeve			
3.42	16.88	3	PLT 7.5"x1.25"(1.25"hole	65	80	0.00	AJM20&sleeve	18.00	AJM20&sleeve	3.00	14	14

Load Summary

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (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	180.00	Lightning Rod	1	5.00	0.50	1.00	26.33	2.277	1.00	0.00	3.00
2	177.00	10" x 8" x 3" Filter	3	8.80	0.78	0.50	26.74	1.438	0.50	0.00	0.00
3	177.00	4" x 2" x 3.5" RETs	4	1.00	0.14	0.50	5.37	0.442	0.50	0.00	0.00
4	177.00	Platform w/ Hand Rail	1	1600.00	40.00	1.00	3734.89	75.487	1.00	0.00	0.00
5	177.00	RFS APXVAALL24_43-U-NA20	3	122.80	20.24	0.70	548.61	22.173	0.70	0.00	0.00
6	177.00	RFS APX16DWV-16DWVS-E-A20	3	40.70	6.46	0.62	180.50	7.594	0.62	0.00	0.00
7	177.00	Ericsson AIR6449 B41	3	103.00	5.65	0.71	242.41	6.616	0.71	0.00	0.00
8	177.00	Ericsson 4424 B25 RRU	3	88.00	2.05	0.50	176.17	2.657	0.50	0.00	0.00
9	177.00	Ericsson 4415 B66A RRU	3	46.30	1.86	0.50	108.37	2.435	0.50	0.00	0.00
10	177.00	Ericsson 4449 B71 + B85 RRU	3	73.20	1.97	0.50	131.91	2.549	0.50	0.00	0.00
11	159.00	BXA-80040/4CF	3	25.00	9.28	0.67	248.22	10.551	0.67	0.00	0.00
12	159.00	SBNHH-1D65B	6	40.60	8.08	0.78	243.61	9.380	0.78	0.00	0.00
13	159.00	DB-T1-6Z-8AB-0Z	2	44.00	4.80	0.50	188.72	5.679	0.50	0.00	0.00
14	159.00	Low Profile Platform	1	1500.00	25.00	1.00	2816.56	45.187	1.00	0.00	0.00
15	159.00	Samsung VZS01	3	87.10	4.30	0.69	198.92	5.189	0.69	0.00	0.00
16	159.00	BSAMNT-SBS-1-2	3	25.35	0.00	1.00	43.15	0.000	1.00	0.00	0.00
17	159.00	B2/B66A RRH-BR049(RFV01U-D1A)	3	67.50	1.87	0.50	144.61	2.447	0.50	0.00	0.00
18	159.00	B5/B13 RRH-BR04C (RFV01U-D2A)	3	82.00	1.87	0.50	151.87	2.447	0.50	0.00	0.00
19	147.00	7770	3	35.00	5.50	0.73	169.84	6.563	0.73	0.00	0.00
20	147.00	Powerwave LGP21401 TMA	6	19.00	1.29	0.50	52.62	2.124	0.50	0.00	0.00
21	147.00	Raycap DC6-48-60-18-8F COVP	2	32.80	0.92	0.50	96.44	1.357	0.50	1.00	0.00
22	147.00	Platform w/ Hand Rails (flat)	1	2000.00	40.00	1.00	4090.03	60.900	1.00	0.00	0.00
23	147.00	Kathrein 860 10025 RET	12	1.20	0.18	0.50	7.18	0.558	0.50	0.00	0.00
24	147.00	Ericsson RRUS 12	3	58.00	2.70	0.50	122.65	3.358	0.50	0.00	0.00
25	147.00	Ericsson RRUS-A2	3	22.00	1.86	0.50	59.40	2.832	0.50	0.00	0.00
26	147.00	DMP65R-BU6DA	2	79.40	9.66	0.81	366.20	14.195	0.81	0.00	0.00
27	147.00	DMP65R-BU8DA	4	95.70	12.75	0.77	471.76	19.689	0.77	0.00	0.00
28	147.00	Ericsson RRUS 4478 B14	3	59.40	1.65	0.50	100.78	2.167	0.50	0.00	0.00
29	147.00	Ericsson RRUS 4449 B5/B12	3	73.00	1.97	0.50	127.77	2.516	0.50	0.00	0.00
30	137.00	MX08FRO665-21	3	64.50	12.49	0.74	352.75	13.942	0.74	0.00	0.00
31	137.00	TA08025-B605	3	75.00	1.96	0.50	126.83	2.516	0.50	0.00	0.00
32	137.00	TA08025-B604	3	63.90	1.96	0.50	114.07	2.516	0.50	0.00	0.00
33	137.00	RDIDC-9181-OF-48	1	21.90	2.01	0.50	74.67	2.573	0.50	0.00	0.00
34	137.00	MC-PK8-DSH	1	1727.00	37.59	1.00	3399.60	84.398	1.00	0.00	0.00
35	127.00	CS72188.01 LMU	1	35.00	6.41	1.00	187.54	11.458	1.00	1.50	-15.00
36	52.00	3 ft Standoff	1	40.00	2.63	1.00	112.21	7.999	1.00	0.00	0.00
37	52.00	GPS	1	0.20	0.11	1.00	0.92	0.542	1.00	1.00	0.00
Totals:			107	11,661.95			29,644.26				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	177.00	(3) 1.99" Hybrid - 6x24	0.00	Inside
0.00	159.00	(11) 1 5/8" Coax	0.00	Inside
0.00	159.00	(2) 1 5/8" Hybrid	0.00	Inside
0.00	147.00	(12) 1 5/8" Coax	0.00	Inside

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	147.00	(2) 1/2" Fiber		0.00		Inside					
0.00	147.00	(2) 3" Conduit		0.00		Inside					
0.00	147.00	(4) 3/4" DC		0.00		Inside					
0.00	137.00	(1) 1.60" Hybrid		0.00		Inside					
0.00	127.00	(1) 1/2" w/LMU		0.00		Inside					
0.00	52.00	(1) 1/2" Coax		0.65		Outside					
0.00	20.00	(3) 1.25" Reinforcing plate		1.25		Outside					

Shaft Section Properties

Structure: CT01365-S-SBA

Code: EIA/TIA-222-G

8/9/2021

Site Name: Norwich 2 CT

Exposure: C

Height: 180.00 (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)

											Additional Reinforcing			
Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Area (in^2)	Ixp (in^4)	Iyp (in^4)	Weight (lb)
0.00	RB1	0.4380	58.000	80.427	33665.6	24.75	132.42	65	75	0.0	33.75	20101.4	12848.7	
3.42	RB2	0.4380	57.367	79.543	32567.7	24.46	130.98	65	75	930.8	61.88	33484.9	23015.7	720.0
4.00	RT1	0.4380	57.260	79.393	32383.9	24.41	130.73	65	75	156.8	28.13	13756.1	10383.4	55.5
5.00		0.4380	57.075	79.134	32068.6	24.33	130.31	65	75	269.7	28.13	13669.6	10318.1	95.7
10.00		0.4380	56.150	77.842	30522.9	23.91	128.20	65	76	1335.4	28.13	13241.3	9995.2	478.5
15.00		0.4380	55.225	76.549	29027.6	23.49	126.08	65	76	1313.4	28.13	12819.9	9677.4	478.5
16.88	RT2	0.4380	54.877	76.064	28478.3	23.33	125.29	65	76	488.1	28.13	12663.2	9559.3	179.9
20.00		0.4380	54.300	75.257	27582.1	23.07	123.97	65	76	803.3				
25.00		0.4380	53.375	73.965	26185.3	22.65	121.86	65	77	1269.4				
30.00		0.4380	52.450	72.672	24836.5	22.23	119.75	65	77	1247.4				
35.00		0.4380	51.525	71.380	23534.8	21.81	117.64	65	78	1225.4				
40.00		0.4380	50.600	70.087	22279.4	21.39	115.53	65	78	1203.5				
45.00		0.4380	49.675	68.795	21069.5	20.97	113.41	65	79	1181.5				
45.92	Bot - Section 2	0.4380	49.505	68.558	20852.5	20.89	113.03	65	79	214.2				
50.00		0.4380	48.750	67.502	19904.2	20.55	111.30	65	79	1768.1				
52.00		0.4380	48.380	66.986	19450.4	20.38	110.46	65	80	856.1				
53.00	Top - Section 1	0.3750	48.945	58.102	17315.7	24.37	130.52	65	75	425.6				
55.00		0.3750	48.575	57.659	16923.0	24.17	129.53	65	75	393.9				
60.00		0.3750	47.650	56.553	15967.3	23.68	127.07	65	76	971.6				
65.00		0.3750	46.725	55.446	15048.2	23.19	124.60	65	76	952.8				
70.00		0.3750	45.800	54.340	14165.1	22.70	122.13	65	77	933.9				
75.00		0.3750	44.875	53.233	13317.3	22.21	119.67	65	77	915.1				
80.00		0.3750	43.950	52.127	12504.0	21.72	117.20	65	78	896.3				
85.00		0.3750	43.025	51.020	11724.5	21.23	114.73	65	79	877.5				
90.00		0.3750	42.100	49.914	10978.1	20.74	112.27	65	79	858.6				
92.83	Bot - Section 3	0.3750	41.576	49.286	10569.5	20.46	110.87	65	79	478.2				
95.00		0.3750	41.175	48.807	10264.0	20.25	109.80	65	80	636.9				
98.92	Top - Section 2	0.2810	41.012	36.511	7652.4	27.44	145.95	65	72	1135.6				
100.00		0.2810	40.812	36.332	7540.0	27.30	145.24	65	72	134.3				
105.00		0.2810	39.887	35.502	7035.5	26.64	141.95	65	72	611.1				
110.00		0.2810	38.962	34.673	6554.0	25.99	138.65	65	73	597.0				
115.00		0.2810	38.037	33.844	6094.9	25.33	135.36	65	74	582.9				
120.00		0.2810	37.112	33.015	5657.9	24.68	132.07	65	75	568.8				
125.00		0.2810	36.187	32.186	5242.2	24.02	128.78	65	75	554.7				
126.67	Bot - Section 4	0.2810	35.878	31.909	5108.0	23.81	127.68	65	76	182.1				
127.00		0.2810	35.817	31.854	5081.8	23.76	127.46	65	76	64.1				
130.00		0.2810	35.262	31.357	4847.4	23.37	125.49	65	76	577.7				
132.00	Top - Section 3	0.2190	35.329	24.528	3819.9	30.50	161.32	65	68	380.7				
135.00		0.2190	34.775	24.141	3641.8	29.99	158.79	65	69	248.1				
137.00		0.2190	34.405	23.883	3526.1	29.66	157.10	65	69	163.4				
140.00		0.2190	33.850	23.495	3357.1	29.15	154.57	65	70	241.8				
145.00		0.2190	32.925	22.849	3087.7	28.31	150.34	65	71	394.2				
147.00		0.2190	32.555	22.590	2984.1	27.98	148.65	65	71	154.6				
150.00		0.2190	32.000	22.203	2833.0	27.47	146.12	65	71	228.6				
155.00		0.2190	31.075	21.556	2592.8	26.63	141.89	65	72	372.3				
159.00		0.2190	30.335	21.039	2410.7	25.96	138.52	65	73	289.9				
160.00		0.2190	30.150	20.910	2366.5	25.79	137.67	65	73	71.4				
165.00		0.2190	29.225	20.264	2153.8	24.95	133.45	65	74	350.3				
170.00		0.2190	28.300	19.618	1954.3	24.11	129.22	65	75	339.3				
175.00		0.2190	27.375	18.971	1767.4	23.27	125.00	65	76	328.3				

Increment Length: 5 (ft)

											Additional Reinforcing			
Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Area (in^2)	Ixp (in^4)	Iyp (in^4)	Weight (lb)
177.00		0.2190	27.005	18.713	1696.2	22.94	123.31	65	77	128.2				
180.00		0.2190	26.450	18.325	1592.9	22.43	120.78	65	77	189.0				
Total Weight										31491.9				2008.2

Wind Loading - Shaft

Structure: CT01365-S-SBA

Code: EIA/TIA-222-G

8/9/2021

Site Name: Norwich 2 CT

Exposure: C

Height: 180.00 (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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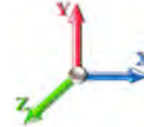


Load Case: 1.2D + 1.6W 105 mph Wind

Iterations 26

Dead Load Factor 1.20

Wind Load Factor 1.60



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	RB1	1.00	0.85	22.791	25.07	477.06	0.750	0.000	0.00	0.000	0.00	0.0	0.0	0.0
3.42	RB2	1.00	0.85	22.791	25.07	471.85	0.750	0.000	3.42	16.762	12.57	504.3	0.0	1117.0
4.00	RT1	1.00	0.85	22.791	25.07	470.97	0.750	0.000	0.58	2.824	2.12	85.0	0.0	188.2
5.00		1.00	0.85	22.791	25.07	469.45	0.750	0.000	1.00	4.857	3.64	146.1	0.0	323.7
10.00		1.00	0.85	22.791	25.07	461.84	0.750	0.000	5.00	24.051	18.04	723.5	0.0	1602.5
15.00		1.00	0.85	22.791	25.07	454.23	0.750	0.000	5.00	23.658	17.74	711.7	0.0	1576.1
16.88	RT2	1.00	0.87	23.334	25.67	456.72	0.750	0.000	1.88	8.794	6.60	270.9	0.0	585.8
20.00		1.00	0.90	24.182	26.60	460.05	0.750	0.000	3.12	14.471	10.85	461.9	0.0	963.9
25.00		1.00	0.95	25.345	27.88	462.97	0.750	0.000	5.00	22.872	17.15	765.2	0.0	1523.3
30.00		1.00	0.98	26.337	28.97	463.76	0.750	0.000	5.00	22.479	16.86	781.5	0.0	1496.9
35.00		1.00	1.01	27.206	29.93	463.03	0.750	0.000	5.00	22.086	16.56	793.1	0.0	1470.5
40.00		1.00	1.04	27.981	30.78	461.16	0.750	0.000	5.00	21.693	16.27	801.2	0.0	1444.1
45.00		1.00	1.07	28.684	31.55	458.37	0.750	0.000	5.00	21.300	15.97	806.5	0.0	1417.8
45.92	Bot - Section 2	1.00	1.07	28.806	31.69	457.78	0.750	0.000	0.92	3.862	2.90	146.9	0.0	257.1
50.00		1.00	1.09	29.327	32.26	454.85	0.750	0.000	4.08	17.305	12.98	669.9	0.0	2121.7
52.00	Appurtenance(s)	1.00	1.10	29.570	32.53	453.27	0.750	0.000	2.00	8.380	6.29	327.1	0.0	1027.3
53.00	Top - Section 1	1.00	1.11	29.689	32.66	452.44	0.750	0.000	1.00	4.167	3.12	163.3	0.0	510.7
55.00		1.00	1.12	29.922	32.91	457.79	0.750	0.000	2.00	8.286	6.21	327.3	0.0	472.7
60.00		1.00	1.14	30.475	33.52	453.21	0.750	0.000	5.00	20.440	15.33	822.2	0.0	1165.9
65.00		1.00	1.16	30.993	34.09	448.17	0.750	0.000	5.00	20.047	15.03	820.1	0.0	1143.3
70.00		1.00	1.17	31.480	34.63	442.74	0.750	0.000	5.00	19.654	14.74	816.7	0.0	1120.7
75.00		1.00	1.19	31.941	35.13	436.96	0.750	0.000	5.00	19.261	14.45	812.1	0.0	1098.1
80.00		1.00	1.21	32.377	35.62	430.87	0.750	0.000	5.00	18.868	14.15	806.4	0.0	1075.5
85.00		1.00	1.22	32.793	36.07	424.50	0.750	0.000	5.00	18.475	13.86	799.7	0.0	1053.0
90.00		1.00	1.24	33.190	36.51	417.88	0.750	0.000	5.00	18.082	13.56	792.2	0.0	1030.4
92.83	Bot - Section 3	1.00	1.25	33.408	36.75	414.03	0.750	0.000	2.83	10.072	7.55	444.2	0.0	573.8
95.00		1.00	1.25	33.570	36.93	411.03	0.750	0.000	2.17	7.720	5.79	342.1	0.0	764.3
98.92	Top - Section 2	1.00	1.26	33.857	37.24	405.52	0.750	0.000	3.92	13.769	10.33	615.3	0.0	1362.8
100.00		1.00	1.27	33.935	37.33	409.61	0.750	0.000	1.08	3.766	2.82	168.7	0.0	161.1
105.00		1.00	1.28	34.285	37.71	402.39	0.750	0.000	5.00	17.142	12.86	775.8	0.0	733.3
110.00		1.00	1.29	34.623	38.08	394.99	0.750	0.000	5.00	16.749	12.56	765.4	0.0	716.4
115.00		1.00	1.30	34.948	38.44	387.42	0.750	0.000	5.00	16.356	12.27	754.5	0.0	699.4
120.00		1.00	1.32	35.263	38.79	379.69	0.750	0.000	5.00	15.963	11.97	743.0	0.0	682.5
125.00		1.00	1.33	35.567	39.12	371.83	0.750	0.000	5.00	15.570	11.68	731.0	0.0	665.6
126.67	Bot - Section 4	1.00	1.33	35.667	39.23	369.17	0.750	0.000	1.67	5.113	3.83	240.7	0.0	218.5
127.00	Appurtenance(s)	1.00	1.33	35.686	39.25	368.64	0.750	0.000	0.33	1.017	0.76	47.9	0.0	76.9
130.00		1.00	1.34	35.862	39.45	363.82	0.750	0.000	3.00	9.171	6.88	434.1	0.0	693.2
132.00	Top - Section 3	1.00	1.34	35.978	39.58	360.58	0.750	0.000	2.00	6.045	4.53	287.1	0.0	456.9
135.00		1.00	1.35	36.148	39.76	360.22	0.750	0.000	3.00	8.925	6.69	425.8	0.0	297.8
137.00	Appurtenance(s)	1.00	1.35	36.260	39.89	356.94	0.750	0.000	2.00	5.878	4.41	281.3	0.0	196.1
140.00		1.00	1.36	36.426	40.07	351.99	0.750	0.000	3.00	8.699	6.52	418.3	0.0	290.2
145.00		1.00	1.37	36.696	40.37	343.64	0.750	0.000	5.00	14.184	10.64	687.1	0.0	473.1
147.00	Appurtenance(s)	1.00	1.37	36.802	40.48	340.26	0.750	0.000	2.00	5.564	4.17	270.3	0.0	185.5
150.00		1.00	1.38	36.959	40.65	335.17	0.750	0.000	3.00	8.227	6.17	401.4	0.0	274.4
155.00		1.00	1.39	37.215	40.94	326.61	0.750	0.000	5.00	13.398	10.05	658.2	0.0	446.7
159.00	Appurtenance(s)	1.00	1.40	37.415	41.16	319.69	0.750	0.000	4.00	10.436	7.83	515.4	0.0	347.9
160.00		1.00	1.40	37.464	41.21	317.95	0.750	0.000	1.00	2.570	1.93	127.1	0.0	85.6

Wind Loading - Shaft

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 11



165.00	1.00	1.41	37.708	41.48	309.20	0.750	0.000	5.00	12.612	9.46	627.8	0.0	420.3
170.00	1.00	1.42	37.946	41.74	300.35	0.750	0.000	5.00	12.219	9.16	612.0	0.0	407.1
175.00	1.00	1.42	38.178	42.00	291.42	0.750	0.000	5.00	11.826	8.87	596.0	0.0	393.9
177.00 Appurtenance(s)	1.00	1.43	38.269	42.10	287.83	0.750	0.000	2.00	4.620	3.47	233.4	0.0	153.9
180.00 Appurtenance(s)	1.00	1.43	38.405	42.25	282.41	0.750	0.000	3.00	6.813	5.11	345.4	0.0	226.9
Totals:								180.00			26,703.8		37,790.2

Discrete Appurtenance Forces

Structure: CT01365-S-SBA

Code: EIA/TIA-222-G

8/9/2021

Site Name: Norwich 2 CT

Exposure: C

Height: 180.00 (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 105 mph Wind

Iterations 26

Dead Load Factor 1.20

Wind Load Factor 1.60



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	180.00	Lightning Rod	1	38.539	42.393	1.00	1.00	0.50	6.00	0.000	3.000	33.91	0.00	101.74
2	177.00	RFS	3	38.269	42.096	0.46	0.75	9.01	146.52	0.000	0.000	606.97	0.00	0.00
3	177.00	10" x 8" x 3" Filter	3	38.269	42.096	0.38	0.75	0.88	31.68	0.000	0.000	59.10	0.00	0.00
4	177.00	Platform w/ Hand Rail	1	38.269	42.096	1.00	1.00	40.00	1920.00	0.000	0.000	2694.16	0.00	0.00
5	177.00	RFS	3	38.269	42.096	0.52	0.75	31.88	442.08	0.000	0.000	2147.11	0.00	0.00
6	177.00	4" x 2" x 3.5" RETs	4	38.269	42.096	0.38	0.75	0.21	4.80	0.000	0.000	14.14	0.00	0.00
7	177.00	Ericsson 4424 B25 RRU	3	38.269	42.096	0.38	0.75	2.31	316.80	0.000	0.000	155.33	0.00	0.00
8	177.00	Ericsson 4415 B66A RRU	3	38.269	42.096	0.38	0.75	2.09	166.68	0.000	0.000	140.94	0.00	0.00
9	177.00	Ericsson 4449 B71 + B85	3	38.269	42.096	0.38	0.75	2.22	263.52	0.000	0.000	149.27	0.00	0.00
10	177.00	Ericsson AIR6449 B41	3	38.269	42.096	0.53	0.75	9.03	370.80	0.000	0.000	607.93	0.00	0.00
11	159.00	DB-T1-6Z-8AB-OZ	2	37.415	41.156	0.40	0.80	3.84	105.60	0.000	0.000	252.86	0.00	0.00
12	159.00	Samsung VZS01	3	37.415	41.156	0.55	0.80	7.12	313.56	0.000	0.000	468.91	0.00	0.00
13	159.00	BXA-80040/4CF	3	37.415	41.156	0.54	0.80	14.92	90.00	0.000	0.000	982.63	0.00	0.00
14	159.00	SBNHH-1D65B	6	37.415	41.156	0.62	0.80	30.25	292.32	0.000	0.000	1992.07	0.00	0.00
15	159.00	B2/B66A	3	37.415	41.156	0.40	0.80	2.24	243.00	0.000	0.000	147.77	0.00	0.00
16	159.00	Low Profile Platform	1	37.415	41.156	1.00	1.00	25.00	1800.00	0.000	0.000	1646.26	0.00	0.00
17	159.00	BSAMNT-SBS-1-2	3	37.415	41.156	1.00	1.00	0.00	91.26	0.000	0.000	0.00	0.00	0.00
18	159.00	B5/B13 RRH-BR04C	3	37.415	41.156	0.40	0.80	2.24	295.20	0.000	0.000	147.77	0.00	0.00
19	147.00	Ericsson RRUS 4449	3	36.802	40.482	0.38	0.75	2.22	262.80	0.000	0.000	143.55	0.00	0.00
20	147.00	Kathrein 860 10025 RET	12	36.802	40.482	0.38	0.75	0.81	17.28	0.000	0.000	52.46	0.00	0.00
21	147.00	7770	3	36.802	40.482	0.55	0.75	9.03	126.00	0.000	0.000	585.13	0.00	0.00
22	147.00	Powerwave LGP21401	6	36.802	40.482	0.38	0.75	2.90	136.80	0.000	0.000	188.00	0.00	0.00
23	147.00	Raycap DC6-48-60-18-8F	2	36.802	40.482	0.38	0.75	0.69	78.72	2.383	0.000	44.69	66.56	0.00
24	147.00	Platform w/ Hand Rails	1	36.802	40.482	1.00	1.00	40.00	2400.00	0.000	0.000	2590.85	0.00	0.00
25	147.00	Ericsson RRUS 4478 B14	3	36.802	40.482	0.38	0.75	1.86	213.84	0.000	0.000	120.23	0.00	0.00
26	147.00	Ericsson RRUS-A2	3	36.802	40.482	0.38	0.75	2.09	79.20	0.000	0.000	135.53	0.00	0.00
27	147.00	DMP65R-BU6DA	2	36.802	40.482	0.61	0.75	11.74	190.56	0.000	0.000	760.21	0.00	0.00
28	147.00	DMP65R-BU8DA	4	36.802	40.482	0.58	0.75	29.45	459.36	0.000	0.000	1907.68	0.00	0.00
29	147.00	Ericsson RRUS 12	3	36.802	40.482	0.38	0.75	3.04	208.80	0.000	0.000	196.74	0.00	0.00
30	137.00	TA08025-B605	3	36.260	39.886	0.38	0.75	2.21	270.00	0.000	0.000	140.72	0.00	0.00
31	137.00	MX08FRO665-21	3	36.260	39.886	0.55	0.75	20.80	232.20	0.000	0.000	1327.14	0.00	0.00
32	137.00	RDIDC-9181-OF-48	1	36.260	39.886	0.38	0.75	0.75	26.28	0.000	0.000	48.10	0.00	0.00
33	137.00	TA08025-B604	3	36.260	39.886	0.38	0.75	2.21	230.04	0.000	0.000	140.72	0.00	0.00
34	137.00	MC-PK8-DSH	1	36.260	39.886	1.00	1.00	37.59	2072.40	0.000	0.000	2398.91	0.00	0.00
35	127.00	CS72188.01 LMU	1	34.754	38.230	1.00	1.00	6.41	42.00	3.022	-15.000	392.08	740.45	-5881.24
36	52.00	GPS	1	29.570	32.527	1.00	1.00	0.11	0.24	3.055	0.000	5.72	10.93	0.00
37	52.00	3 ft Standoff	1	29.570	32.527	1.00	1.00	2.63	48.00	0.000	0.000	136.88	0.00	0.00

Totals: 13,994.34

23,562.49

Total Applied Force Summary

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (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 105 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
3.42		504.26	1264.81	0.00	0.00
4.00		84.97	213.28	0.00	0.00
5.00		146.13	366.88	0.00	0.00
10.00		723.54	1818.59	0.00	0.00
15.00		711.72	1792.20	0.00	0.00
16.88		270.85	667.04	0.00	0.00
20.00		461.92	1098.77	0.00	0.00
25.00		765.19	1739.42	0.00	0.00
30.00		781.47	1713.04	0.00	0.00
35.00		793.13	1686.65	0.00	0.00
40.00		801.23	1660.26	0.00	0.00
45.00		806.47	1633.88	0.00	0.00
45.92		146.86	296.68	0.00	0.00
50.00		669.90	2298.18	0.00	0.00
52.00	(2) attachments	469.70	1161.96	10.93	0.00
53.00		163.28	553.73	0.00	0.00
55.00		327.26	558.76	0.00	0.00
60.00		822.22	1381.07	0.00	0.00
65.00		820.11	1358.48	0.00	0.00
70.00		816.68	1335.89	0.00	0.00
75.00		812.06	1313.30	0.00	0.00
80.00		806.37	1290.71	0.00	0.00
85.00		799.72	1268.12	0.00	0.00
90.00		792.19	1245.52	0.00	0.00
92.83		444.15	695.77	0.00	0.00
95.00		342.11	857.52	0.00	0.00
98.92		615.35	1531.30	0.00	0.00
100.00		168.69	207.73	0.00	0.00
105.00		775.77	948.47	0.00	0.00
110.00		765.45	931.54	0.00	0.00
115.00		754.51	914.61	0.00	0.00
120.00		743.01	897.68	0.00	0.00
125.00		730.98	880.75	0.00	0.00
126.67		240.71	290.40	0.00	0.00
127.00	(1) attachments	440.01	133.11	740.45	-5881.24
130.00		434.11	821.71	0.00	0.00
132.00		287.09	542.68	0.00	0.00
135.00		425.85	426.15	0.00	0.00
137.00	(11) attachments	4336.93	3112.70	0.00	0.00
140.00		418.27	415.11	0.00	0.00
145.00		687.05	681.29	0.00	0.00
147.00	(42) attachments	6995.35	4442.18	66.56	0.00
150.00		401.38	335.34	0.00	0.00
155.00		658.16	548.34	0.00	0.00
159.00	(24) attachments	6153.65	3660.12	0.00	0.00
160.00		127.07	89.61	0.00	0.00

Total Applied Force Summary

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (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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165.00	627.76	440.12	0.00	0.00
170.00	612.03	426.92	0.00	0.00
175.00	595.98	413.73	0.00	0.00
177.00 (26) attachments	6808.36	3824.68	0.00	0.00
180.00 (1) attachments	379.28	232.86	0.00	101.74
Totals:	50,266.31	58,419.63	817.95	-5,779.50

Linear Appurtenance Segment Forces (Factored)

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

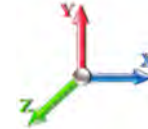


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Load Case: 1.2D + 1.6W 105 mph Wind

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)
3.42	1/2" Coax	Yes	3.42	0.000	0.65	0.19	0.00	0.032	0.000	22.791	0.00	0.66
3.42	1.25" Reinforcing	Yes	3.42	0.000	1.25	0.36	0.00	0.032	0.000	22.791	0.00	0.00
4.00	1/2" Coax	Yes	0.58	0.000	0.65	0.03	0.00	0.033	0.000	22.791	0.00	0.11
4.00	1.25" Reinforcing	Yes	0.58	0.000	1.25	0.06	0.00	0.033	0.000	22.791	0.00	0.00
5.00	1/2" Coax	Yes	1.00	0.000	0.65	0.05	0.00	0.033	0.000	22.791	0.00	0.19
5.00	1.25" Reinforcing	Yes	1.00	0.000	1.25	0.10	0.00	0.033	0.000	22.791	0.00	0.00
10.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.033	0.000	22.791	0.00	0.96
10.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.033	0.000	22.791	0.00	0.00
15.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.033	0.000	22.791	0.00	0.96
15.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.033	0.000	22.791	0.00	0.00
16.88	1/2" Coax	Yes	1.88	0.000	0.65	0.10	0.00	0.034	0.000	23.334	0.00	0.36
16.88	1.25" Reinforcing	Yes	1.88	0.000	1.25	0.20	0.00	0.034	0.000	23.334	0.00	0.00
20.00	1/2" Coax	Yes	3.12	0.000	0.65	0.17	0.00	0.034	0.000	24.182	0.00	0.60
20.00	1.25" Reinforcing	Yes	3.12	0.000	1.25	0.33	0.00	0.034	0.000	24.182	0.00	0.00
25.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	25.345	0.00	0.96
30.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	26.337	0.00	0.96
35.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	27.206	0.00	0.96
40.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	27.981	0.00	0.96
45.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.013	0.000	28.684	0.00	0.96
45.92	1/2" Coax	Yes	0.92	0.000	0.65	0.05	0.00	0.013	0.000	28.806	0.00	0.18
50.00	1/2" Coax	Yes	4.08	0.000	0.65	0.22	0.00	0.013	0.000	29.327	0.00	0.78
52.00	1/2" Coax	Yes	2.00	0.000	0.65	0.11	0.00	0.013	0.000	29.570	0.00	0.38
Totals:											0.0	10.0

Calculated Forces

Structure: CT01365-S-SBA

Code: EIA/TIA-222-G

8/9/2021

Site Name: Norwich 2 CT

Exposure: C

Height: 180.00 (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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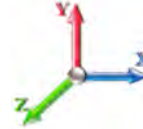


Load Case: 1.2D + 1.6W 105 mph Wind

Iterations 26

Dead Load Factor 1.20

Wind Load Factor 1.60



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-58.36	-50.33	-0.80	-6317.0	-0.02	6317.05	5397.55	2698.78	12826.5	6367.63	0.00	0.000	0.000	0.726
3.42	-57.03	-49.90	-0.80	-6144.9	-0.02	6144.92	5361.50	2680.75	12599.7	6255.04	0.05	-0.130	0.000	0.582
4.00	-56.79	-49.85	-0.80	-6115.9	-0.02	6115.97	5355.33	2677.67	12561.3	6235.98	0.07	-0.149	0.000	0.750
5.00	-56.32	-49.82	-0.80	-6066.1	-0.02	6066.13	5344.66	2672.33	12495.2	6203.15	0.10	-0.189	0.000	0.747
10.00	-54.34	-49.27	-0.80	-5817.0	-0.02	5817.05	5290.67	2645.34	12165.4	6039.43	0.41	-0.388	0.000	0.733
15.00	-52.43	-48.67	-0.80	-5570.6	-0.01	5570.69	5235.58	2617.79	11837.2	5876.53	0.92	-0.588	0.000	0.718
16.88	-51.68	-48.49	-0.80	-5479.1	-0.01	5479.18	5214.57	2607.29	11714.3	5815.50	1.17	-0.664	0.000	0.712
16.88	-51.68	-48.49	-0.80	-5479.1	-0.01	5479.18	5214.57	2607.29	11714.3	5815.50	1.17	-0.664	0.000	0.712
20.00	-50.42	-48.19	-0.80	-5327.9	-0.01	5327.91	5179.37	2589.69	11510.9	5714.52	1.64	-0.790	0.000	0.942
25.00	-48.47	-47.62	-0.80	-5086.9	-0.02	5086.99	5122.07	2561.03	11186.5	5553.45	2.62	-1.059	0.000	0.926
30.00	-46.56	-47.02	-0.80	-4848.9	-0.02	4848.90	5063.65	2531.83	10864.1	5393.40	3.87	-1.329	0.000	0.909
35.00	-44.67	-46.40	-0.80	-4613.7	-0.02	4613.79	5004.13	2502.07	10543.8	5234.42	5.41	-1.600	0.000	0.891
40.00	-42.82	-45.75	-0.80	-4381.7	-0.02	4381.79	4943.51	2471.75	10225.9	5076.58	7.23	-1.872	0.000	0.872
45.00	-41.09	-45.00	-0.80	-4153.0	-0.02	4153.04	4881.77	2440.89	9910.40	4919.94	9.33	-2.144	0.000	0.853
45.92	-40.69	-44.94	-0.80	-4111.7	-0.02	4111.79	4870.34	2435.17	9852.83	4891.36	9.75	-2.195	0.000	0.849
50.00	-38.29	-44.29	-0.80	-3928.2	-0.02	3928.27	4818.94	2409.47	9597.43	4764.57	11.73	-2.419	0.000	0.833
52.00	-37.09	-43.83	-0.79	-3839.6	-0.02	3839.68	4793.49	2396.75	9472.99	4702.79	12.76	-2.530	0.000	0.825
53.00	-36.48	-43.69	-0.79	-3795.8	-0.02	3795.85	3921.66	1960.83	7862.59	3903.32	13.30	-2.586	0.000	0.982
55.00	-35.78	-43.47	-0.79	-3708.4	-0.02	3708.46	3903.31	1951.65	7765.73	3855.23	14.41	-2.697	0.000	0.972
60.00	-34.21	-42.76	-0.79	-3491.1	-0.02	3491.11	3856.65	1928.33	7524.53	3735.49	17.39	-3.000	-0.001	0.944
65.00	-32.68	-42.04	-0.79	-3277.3	-0.03	3277.30	3808.89	1904.45	7284.80	3616.48	20.70	-3.301	-0.001	0.915
70.00	-31.18	-41.31	-0.79	-3067.1	-0.03	3067.10	3760.03	1880.02	7046.68	3498.27	24.31	-3.601	-0.001	0.886
75.00	-29.72	-40.57	-0.79	-2860.5	-0.03	2860.55	3710.06	1855.03	6810.28	3380.91	28.24	-3.899	-0.001	0.855
80.00	-28.28	-39.82	-0.79	-2657.7	-0.03	2657.72	3658.99	1829.49	6575.75	3264.48	32.48	-4.193	-0.001	0.822
85.00	-26.88	-39.06	-0.79	-2458.6	-0.04	2458.65	3606.81	1803.40	6343.20	3149.03	37.02	-4.485	-0.001	0.789
90.00	-25.55	-38.27	-0.79	-2263.3	-0.04	2263.35	3553.52	1776.76	6112.76	3034.63	41.87	-4.771	-0.001	0.754
92.83	-24.81	-37.83	-0.79	-2154.9	-0.04	2154.93	3522.83	1761.42	5983.17	2970.30	44.75	-4.933	-0.001	0.733
95.00	-23.87	-37.48	-0.80	-2072.9	-0.04	2072.97	3499.13	1749.56	5884.57	2921.35	47.01	-5.056	-0.001	0.717
98.92	-22.31	-36.79	-0.80	-1926.1	-0.04	1926.15	2350.25	1175.12	3954.81	1963.33	51.25	-5.274	-0.001	0.992
100.00	-21.99	-36.68	-0.80	-1886.3	-0.04	1886.30	2343.93	1171.97	3924.64	1948.36	52.45	-5.334	-0.001	0.979
105.00	-20.91	-35.94	-0.80	-1702.9	-0.05	1702.91	2314.11	1157.05	3785.67	1879.37	58.21	-5.673	-0.001	0.916
110.00	-19.87	-35.19	-0.80	-1523.2	-0.05	1523.23	2283.18	1141.59	3647.23	1810.64	64.32	-5.999	-0.002	0.851
115.00	-18.86	-34.44	-0.80	-1347.2	-0.06	1347.27	2251.15	1125.57	3509.45	1742.24	70.76	-6.310	-0.002	0.783
120.00	-17.88	-33.69	-0.80	-1175.0	-0.06	1175.05	2218.01	1109.01	3372.44	1674.22	77.51	-6.605	-0.002	0.711
125.00	-16.99	-32.92	-0.80	-1006.5	-0.06	1006.58	2183.77	1091.88	3236.35	1606.66	84.57	-6.879	-0.002	0.635
126.67	-16.70	-32.66	-0.81	-951.61	-0.06	951.61	2172.08	1086.04	3191.13	1584.21	86.98	-6.968	-0.002	0.609
127.00	-16.58	-32.23	-0.07	-940.83	0.02	940.83	2169.76	1084.88	3182.20	1579.78	87.46	-6.985	-0.002	0.604
130.00	-15.75	-31.73	-0.07	-844.14	0.02	844.14	2148.42	1074.21	3101.30	1539.62	91.89	-7.135	-0.002	0.556
132.00	-15.18	-31.41	-0.07	-780.57	0.02	780.57	1502.55	751.27	2180.88	1082.68	94.90	-7.230	-0.002	0.733
135.00	-14.75	-30.96	-0.07	-686.44	0.02	686.44	1491.20	745.60	2130.02	1057.43	99.47	-7.364	-0.002	0.661
137.00	-12.16	-26.29	-0.07	-624.52	0.01	624.52	1483.41	741.70	2096.06	1040.57	102.57	-7.466	-0.002	0.610
140.00	-11.73	-25.86	-0.07	-545.65	0.01	545.65	1471.39	735.69	2045.11	1015.28	107.30	-7.608	-0.002	0.547
145.00	-11.09	-25.11	-0.07	-416.38	0.01	416.38	1450.46	725.23	1960.22	973.13	115.35	-7.811	-0.002	0.437
147.00	-7.62	-17.58	0.00	-366.16	0.01	366.16	1441.79	720.89	1926.30	956.30	118.63	-7.883	-0.002	0.389
150.00	-7.30	-17.15	0.00	-313.42	0.01	313.42	1428.44	714.22	1875.49	931.07	123.60	-7.981	-0.002	0.342
155.00	-6.82	-16.44	0.00	-227.64	0.01	227.64	1405.30	702.65	1791.05	889.15	132.01	-8.117	-0.002	0.261
159.00	-4.07	-9.83	0.00	-161.89	0.01	161.89	1386.00	693.00	1723.78	855.76	138.83	-8.202	-0.002	0.192
160.00	-3.99	-9.70	0.00	-152.05	0.01	152.05	1381.06	690.53	1707.02	847.43	140.54	-8.221	-0.002	0.183

Calculated Forces

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (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



165.00	-3.63	-9.02	0.00	-103.57	0.00	103.57	1355.72	677.86	1623.53	805.99	149.16	-8.297	-0.002	0.131
170.00	-3.29	-8.35	0.00	-58.49	0.00	58.49	1329.27	664.63	1540.71	764.87	157.86	-8.351	-0.002	0.079
175.00	-2.97	-7.70	0.00	-16.73	0.00	16.73	1301.71	650.86	1458.68	724.15	166.59	-8.378	-0.002	0.026
177.00	-0.18	-0.41	0.00	-1.33	0.00	1.33	1290.38	645.19	1426.13	707.99	170.09	-8.381	-0.002	0.002
180.00	0.00	-0.38	0.00	-0.10	0.00	0.10	1273.05	636.53	1377.59	683.89	175.33	-8.382	-0.002	0.000

Wind Loading - Shaft

Structure: CT01365-S-SBA

Code: EIA/TIA-222-G

8/9/2021

Site Name: Norwich 2 CT

Exposure: C

Height: 180.00 (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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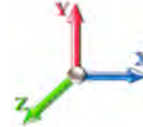


Load Case: 0.9D + 1.6W 105 mph Wind

Iterations 26

Dead Load Factor 0.90

Wind Load Factor 1.60



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	RB1	1.00	0.85	22.791	25.07	477.06	0.750	0.000	0.00	0.000	0.00	0.0	0.0	0.0
3.42	RB2	1.00	0.85	22.791	25.07	471.85	0.750	0.000	3.42	16.762	12.57	504.3	0.0	837.7
4.00	RT1	1.00	0.85	22.791	25.07	470.97	0.750	0.000	0.58	2.824	2.12	85.0	0.0	141.2
5.00		1.00	0.85	22.791	25.07	469.45	0.750	0.000	1.00	4.857	3.64	146.1	0.0	242.7
10.00		1.00	0.85	22.791	25.07	461.84	0.750	0.000	5.00	24.051	18.04	723.5	0.0	1201.8
15.00		1.00	0.85	22.791	25.07	454.23	0.750	0.000	5.00	23.658	17.74	711.7	0.0	1182.1
16.88	RT2	1.00	0.87	23.334	25.67	456.72	0.750	0.000	1.88	8.794	6.60	270.9	0.0	439.3
20.00		1.00	0.90	24.182	26.60	460.05	0.750	0.000	3.12	14.471	10.85	461.9	0.0	722.9
25.00		1.00	0.95	25.345	27.88	462.97	0.750	0.000	5.00	22.872	17.15	765.2	0.0	1142.5
30.00		1.00	0.98	26.337	28.97	463.76	0.750	0.000	5.00	22.479	16.86	781.5	0.0	1122.7
35.00		1.00	1.01	27.206	29.93	463.03	0.750	0.000	5.00	22.086	16.56	793.1	0.0	1102.9
40.00		1.00	1.04	27.981	30.78	461.16	0.750	0.000	5.00	21.693	16.27	801.2	0.0	1083.1
45.00		1.00	1.07	28.684	31.55	458.37	0.750	0.000	5.00	21.300	15.97	806.5	0.0	1063.3
45.92	Bot - Section 2	1.00	1.07	28.806	31.69	457.78	0.750	0.000	0.92	3.862	2.90	146.9	0.0	192.8
50.00		1.00	1.09	29.327	32.26	454.85	0.750	0.000	4.08	17.305	12.98	669.9	0.0	1591.3
52.00	Appurtenance(s)	1.00	1.10	29.570	32.53	453.27	0.750	0.000	2.00	8.380	6.29	327.1	0.0	770.5
53.00	Top - Section 1	1.00	1.11	29.689	32.66	452.44	0.750	0.000	1.00	4.167	3.12	163.3	0.0	383.0
55.00		1.00	1.12	29.922	32.91	457.79	0.750	0.000	2.00	8.286	6.21	327.3	0.0	354.5
60.00		1.00	1.14	30.475	33.52	453.21	0.750	0.000	5.00	20.440	15.33	822.2	0.0	874.4
65.00		1.00	1.16	30.993	34.09	448.17	0.750	0.000	5.00	20.047	15.03	820.1	0.0	857.5
70.00		1.00	1.17	31.480	34.63	442.74	0.750	0.000	5.00	19.654	14.74	816.7	0.0	840.5
75.00		1.00	1.19	31.941	35.13	436.96	0.750	0.000	5.00	19.261	14.45	812.1	0.0	823.6
80.00		1.00	1.21	32.377	35.62	430.87	0.750	0.000	5.00	18.868	14.15	806.4	0.0	806.7
85.00		1.00	1.22	32.793	36.07	424.50	0.750	0.000	5.00	18.475	13.86	799.7	0.0	789.7
90.00		1.00	1.24	33.190	36.51	417.88	0.750	0.000	5.00	18.082	13.56	792.2	0.0	772.8
92.83	Bot - Section 3	1.00	1.25	33.408	36.75	414.03	0.750	0.000	2.83	10.072	7.55	444.2	0.0	430.4
95.00		1.00	1.25	33.570	36.93	411.03	0.750	0.000	2.17	7.720	5.79	342.1	0.0	573.2
98.92	Top - Section 2	1.00	1.26	33.857	37.24	405.52	0.750	0.000	3.92	13.769	10.33	615.3	0.0	1022.1
100.00		1.00	1.27	33.935	37.33	409.61	0.750	0.000	1.08	3.766	2.82	168.7	0.0	120.8
105.00		1.00	1.28	34.285	37.71	402.39	0.750	0.000	5.00	17.142	12.86	775.8	0.0	550.0
110.00		1.00	1.29	34.623	38.08	394.99	0.750	0.000	5.00	16.749	12.56	765.4	0.0	537.3
115.00		1.00	1.30	34.948	38.44	387.42	0.750	0.000	5.00	16.356	12.27	754.5	0.0	524.6
120.00		1.00	1.32	35.263	38.79	379.69	0.750	0.000	5.00	15.963	11.97	743.0	0.0	511.9
125.00		1.00	1.33	35.567	39.12	371.83	0.750	0.000	5.00	15.570	11.68	731.0	0.0	499.2
126.67	Bot - Section 4	1.00	1.33	35.667	39.23	369.17	0.750	0.000	1.67	5.113	3.83	240.7	0.0	163.9
127.00	Appurtenance(s)	1.00	1.33	35.686	39.25	368.64	0.750	0.000	0.33	1.017	0.76	47.9	0.0	57.7
130.00		1.00	1.34	35.862	39.45	363.82	0.750	0.000	3.00	9.171	6.88	434.1	0.0	519.9
132.00	Top - Section 3	1.00	1.34	35.978	39.58	360.58	0.750	0.000	2.00	6.045	4.53	287.1	0.0	342.6
135.00		1.00	1.35	36.148	39.76	360.22	0.750	0.000	3.00	8.925	6.69	425.8	0.0	223.3
137.00	Appurtenance(s)	1.00	1.35	36.260	39.89	356.94	0.750	0.000	2.00	5.878	4.41	281.3	0.0	147.1
140.00		1.00	1.36	36.426	40.07	351.99	0.750	0.000	3.00	8.699	6.52	418.3	0.0	217.6
145.00		1.00	1.37	36.696	40.37	343.64	0.750	0.000	5.00	14.184	10.64	687.1	0.0	354.8
147.00	Appurtenance(s)	1.00	1.37	36.802	40.48	340.26	0.750	0.000	2.00	5.564	4.17	270.3	0.0	139.2
150.00		1.00	1.38	36.959	40.65	335.17	0.750	0.000	3.00	8.227	6.17	401.4	0.0	205.8
155.00		1.00	1.39	37.215	40.94	326.61	0.750	0.000	5.00	13.398	10.05	658.2	0.0	335.0
159.00	Appurtenance(s)	1.00	1.40	37.415	41.16	319.69	0.750	0.000	4.00	10.436	7.83	515.4	0.0	260.9
160.00		1.00	1.40	37.464	41.21	317.95	0.750	0.000	1.00	2.570	1.93	127.1	0.0	64.2

Wind Loading - Shaft

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 19
	Struct Class: II	



165.00	1.00	1.41	37.708	41.48	309.20	0.750	0.000	5.00	12.612	9.46	627.8	0.0	315.2
170.00	1.00	1.42	37.946	41.74	300.35	0.750	0.000	5.00	12.219	9.16	612.0	0.0	305.3
175.00	1.00	1.42	38.178	42.00	291.42	0.750	0.000	5.00	11.826	8.87	596.0	0.0	295.4
177.00 Appurtenance(s)	1.00	1.43	38.269	42.10	287.83	0.750	0.000	2.00	4.620	3.47	233.4	0.0	115.4
180.00 Appurtenance(s)	1.00	1.43	38.405	42.25	282.41	0.750	0.000	3.00	6.813	5.11	345.4	0.0	170.1
Totals:								180.00			26,703.8		28,342.7

Discrete Appurtenance Forces

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 20



Load Case: 0.9D + 1.6W 105 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	180.00	Lightning Rod	1	38.539	42.393	1.00	1.00	0.50	4.50	0.000	3.000	33.91	0.00	101.74
2	177.00	RFS	3	38.269	42.096	0.46	0.75	9.01	109.89	0.000	0.000	606.97	0.00	0.00
3	177.00	10" x 8" x 3" Filter	3	38.269	42.096	0.38	0.75	0.88	23.76	0.000	0.000	59.10	0.00	0.00
4	177.00	Platform w/ Hand Rail	1	38.269	42.096	1.00	1.00	40.00	1440.00	0.000	0.000	2694.16	0.00	0.00
5	177.00	RFS	3	38.269	42.096	0.52	0.75	31.88	331.56	0.000	0.000	2147.11	0.00	0.00
6	177.00	4" x 2" x 3.5" RETs	4	38.269	42.096	0.38	0.75	0.21	3.60	0.000	0.000	14.14	0.00	0.00
7	177.00	Ericsson 4424 B25 RRU	3	38.269	42.096	0.38	0.75	2.31	237.60	0.000	0.000	155.33	0.00	0.00
8	177.00	Ericsson 4415 B66A RRU	3	38.269	42.096	0.38	0.75	2.09	125.01	0.000	0.000	140.94	0.00	0.00
9	177.00	Ericsson 4449 B71 + B85	3	38.269	42.096	0.38	0.75	2.22	197.64	0.000	0.000	149.27	0.00	0.00
10	177.00	Ericsson AIR6449 B41	3	38.269	42.096	0.53	0.75	9.03	278.10	0.000	0.000	607.93	0.00	0.00
11	159.00	DB-T1-6Z-8AB-OZ	2	37.415	41.156	0.40	0.80	3.84	79.20	0.000	0.000	252.86	0.00	0.00
12	159.00	Samsung VZS01	3	37.415	41.156	0.55	0.80	7.12	235.17	0.000	0.000	468.91	0.00	0.00
13	159.00	BXA-80040/4CF	3	37.415	41.156	0.54	0.80	14.92	67.50	0.000	0.000	982.63	0.00	0.00
14	159.00	SBNHH-1D65B	6	37.415	41.156	0.62	0.80	30.25	219.24	0.000	0.000	1992.07	0.00	0.00
15	159.00	B2/B66A	3	37.415	41.156	0.40	0.80	2.24	182.25	0.000	0.000	147.77	0.00	0.00
16	159.00	Low Profile Platform	1	37.415	41.156	1.00	1.00	25.00	1350.00	0.000	0.000	1646.26	0.00	0.00
17	159.00	BSAMNT-SBS-1-2	3	37.415	41.156	1.00	1.00	0.00	68.45	0.000	0.000	0.00	0.00	0.00
18	159.00	B5/B13 RRH-BR04C	3	37.415	41.156	0.40	0.80	2.24	221.40	0.000	0.000	147.77	0.00	0.00
19	147.00	Ericsson RRUS 4449	3	36.802	40.482	0.38	0.75	2.22	197.10	0.000	0.000	143.55	0.00	0.00
20	147.00	Kathrein 860 10025 RET	12	36.802	40.482	0.38	0.75	0.81	12.96	0.000	0.000	52.46	0.00	0.00
21	147.00	7770	3	36.802	40.482	0.55	0.75	9.03	94.50	0.000	0.000	585.13	0.00	0.00
22	147.00	Powerwave LGP21401	6	36.802	40.482	0.38	0.75	2.90	102.60	0.000	0.000	188.00	0.00	0.00
23	147.00	Raycap DC6-48-60-18-8F	2	36.802	40.482	0.38	0.75	0.69	59.04	2.383	0.000	44.69	66.56	0.00
24	147.00	Platform w/ Hand Rails	1	36.802	40.482	1.00	1.00	40.00	1800.00	0.000	0.000	2590.85	0.00	0.00
25	147.00	Ericsson RRUS 4478 B14	3	36.802	40.482	0.38	0.75	1.86	160.38	0.000	0.000	120.23	0.00	0.00
26	147.00	Ericsson RRUS-A2	3	36.802	40.482	0.38	0.75	2.09	59.40	0.000	0.000	135.53	0.00	0.00
27	147.00	DMP65R-BU6DA	2	36.802	40.482	0.61	0.75	11.74	142.92	0.000	0.000	760.21	0.00	0.00
28	147.00	DMP65R-BU8DA	4	36.802	40.482	0.58	0.75	29.45	344.52	0.000	0.000	1907.68	0.00	0.00
29	147.00	Ericsson RRUS 12	3	36.802	40.482	0.38	0.75	3.04	156.60	0.000	0.000	196.74	0.00	0.00
30	137.00	TA08025-B605	3	36.260	39.886	0.38	0.75	2.21	202.50	0.000	0.000	140.72	0.00	0.00
31	137.00	MX08FRO665-21	3	36.260	39.886	0.55	0.75	20.80	174.15	0.000	0.000	1327.14	0.00	0.00
32	137.00	RDIDC-9181-OF-48	1	36.260	39.886	0.38	0.75	0.75	19.71	0.000	0.000	48.10	0.00	0.00
33	137.00	TA08025-B604	3	36.260	39.886	0.38	0.75	2.21	172.53	0.000	0.000	140.72	0.00	0.00
34	137.00	MC-PK8-DSH	1	36.260	39.886	1.00	1.00	37.59	1554.30	0.000	0.000	2398.91	0.00	0.00
35	127.00	CS72188.01 LMU	1	34.754	38.230	1.00	1.00	6.41	31.50	3.022	-15.000	392.08	740.45	-5881.24
36	52.00	GPS	1	29.570	32.527	1.00	1.00	0.11	0.18	3.055	0.000	5.72	10.93	0.00
37	52.00	3 ft Standoff	1	29.570	32.527	1.00	1.00	2.63	36.00	0.000	0.000	136.88	0.00	0.00

Totals: 10,495.75

23,562.49

Total Applied Force Summary

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



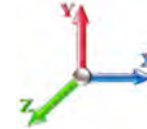
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Load Case: 0.9D + 1.6W 105 mph Wind

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
3.42		504.26	948.61	0.00	0.00
4.00		84.97	159.96	0.00	0.00
5.00		146.13	275.16	0.00	0.00
10.00		723.54	1363.94	0.00	0.00
15.00		711.72	1344.15	0.00	0.00
16.88		270.85	500.28	0.00	0.00
20.00		461.92	824.08	0.00	0.00
25.00		765.19	1304.57	0.00	0.00
30.00		781.47	1284.78	0.00	0.00
35.00		793.13	1264.99	0.00	0.00
40.00		801.23	1245.20	0.00	0.00
45.00		806.47	1225.41	0.00	0.00
45.92		146.86	222.51	0.00	0.00
50.00		669.90	1723.63	0.00	0.00
52.00	(2) attachments	469.70	871.47	10.93	0.00
53.00		163.28	415.30	0.00	0.00
55.00		327.26	419.07	0.00	0.00
60.00		822.22	1035.81	0.00	0.00
65.00		820.11	1018.86	0.00	0.00
70.00		816.68	1001.92	0.00	0.00
75.00		812.06	984.97	0.00	0.00
80.00		806.37	968.03	0.00	0.00
85.00		799.72	951.09	0.00	0.00
90.00		792.19	934.14	0.00	0.00
92.83		444.15	521.83	0.00	0.00
95.00		342.11	643.14	0.00	0.00
98.92		615.35	1148.48	0.00	0.00
100.00		168.69	155.80	0.00	0.00
105.00		775.77	711.35	0.00	0.00
110.00		765.45	698.65	0.00	0.00
115.00		754.51	685.96	0.00	0.00
120.00		743.01	673.26	0.00	0.00
125.00		730.98	660.56	0.00	0.00
126.67		240.71	217.80	0.00	0.00
127.00	(1) attachments	440.01	99.83	740.45	-5881.24
130.00		434.11	616.28	0.00	0.00
132.00		287.09	407.01	0.00	0.00
135.00		425.85	319.61	0.00	0.00
137.00	(11) attachments	4336.93	2334.52	0.00	0.00
140.00		418.27	311.33	0.00	0.00
145.00		687.05	510.97	0.00	0.00
147.00	(42) attachments	6995.35	3331.64	66.56	0.00
150.00		401.38	251.50	0.00	0.00
155.00		658.16	411.26	0.00	0.00
159.00	(24) attachments	6153.65	2745.09	0.00	0.00
160.00		127.07	67.21	0.00	0.00

Total Applied Force Summary

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (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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165.00	627.76	330.09	0.00	0.00
170.00	612.03	320.19	0.00	0.00
175.00	595.98	310.30	0.00	0.00
177.00 (26) attachments	6808.36	2868.51	0.00	0.00
180.00 (1) attachments	379.28	174.64	0.00	101.74
Totals:	50,266.31	43,814.72	817.95	-5,779.50

Linear Appurtenance Segment Forces (Factored)

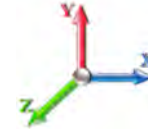
Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021	
Site Name: Norwich 2 CT	Exposure: C		
Height: 180.00 (ft)	Crest Height: 0.00		
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil		
Gh: 1.1	Topography: 1	Struct Class: II	

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Load Case: 0.9D + 1.6W 105 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)
3.42	1/2" Coax	Yes	3.42	0.000	0.65	0.19	0.00	0.032	0.000	22.791	0.00	0.49
3.42	1.25" Reinforcing	Yes	3.42	0.000	1.25	0.36	0.00	0.032	0.000	22.791	0.00	0.00
4.00	1/2" Coax	Yes	0.58	0.000	0.65	0.03	0.00	0.033	0.000	22.791	0.00	0.08
4.00	1.25" Reinforcing	Yes	0.58	0.000	1.25	0.06	0.00	0.033	0.000	22.791	0.00	0.00
5.00	1/2" Coax	Yes	1.00	0.000	0.65	0.05	0.00	0.033	0.000	22.791	0.00	0.14
5.00	1.25" Reinforcing	Yes	1.00	0.000	1.25	0.10	0.00	0.033	0.000	22.791	0.00	0.00
10.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.033	0.000	22.791	0.00	0.72
10.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.033	0.000	22.791	0.00	0.00
15.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.033	0.000	22.791	0.00	0.72
15.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.033	0.000	22.791	0.00	0.00
16.88	1/2" Coax	Yes	1.88	0.000	0.65	0.10	0.00	0.034	0.000	23.334	0.00	0.27
16.88	1.25" Reinforcing	Yes	1.88	0.000	1.25	0.20	0.00	0.034	0.000	23.334	0.00	0.00
20.00	1/2" Coax	Yes	3.12	0.000	0.65	0.17	0.00	0.034	0.000	24.182	0.00	0.45
20.00	1.25" Reinforcing	Yes	3.12	0.000	1.25	0.33	0.00	0.034	0.000	24.182	0.00	0.00
25.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	25.345	0.00	0.72
30.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	26.337	0.00	0.72
35.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	27.206	0.00	0.72
40.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	27.981	0.00	0.72
45.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.013	0.000	28.684	0.00	0.72
45.92	1/2" Coax	Yes	0.92	0.000	0.65	0.05	0.00	0.013	0.000	28.806	0.00	0.13
50.00	1/2" Coax	Yes	4.08	0.000	0.65	0.22	0.00	0.013	0.000	29.327	0.00	0.59
52.00	1/2" Coax	Yes	2.00	0.000	0.65	0.11	0.00	0.013	0.000	29.570	0.00	0.29
Totals:											0.0	7.5

Calculated Forces

Structure: CT01365-S-SBA

Code: EIA/TIA-222-G

8/9/2021

Site Name: Norwich 2 CT

Exposure: C

Height: 180.00 (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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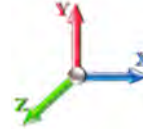


Load Case: 0.9D + 1.6W 105 mph Wind

Iterations 26

Dead Load Factor 0.90

Wind Load Factor 1.60



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-43.76	-50.32	-0.80	-6239.8	-0.01	6239.87	5397.55	2698.78	12826.5	6367.63	0.00	0.000	0.000	0.715
3.42	-42.75	-49.87	-0.80	-6067.7	-0.01	6067.79	5361.50	2680.75	12599.7	6255.04	0.05	-0.129	0.000	0.573
4.00	-42.56	-49.80	-0.80	-6038.8	-0.01	6038.87	5355.33	2677.67	12561.3	6235.98	0.06	-0.147	0.000	0.739
5.00	-42.18	-49.74	-0.80	-5989.0	-0.01	5989.07	5344.66	2672.33	12495.2	6203.15	0.10	-0.187	0.000	0.736
10.00	-40.65	-49.15	-0.80	-5740.3	-0.01	5740.36	5290.67	2645.34	12165.4	6039.43	0.40	-0.383	0.000	0.722
15.00	-39.20	-48.52	-0.80	-5494.6	-0.01	5494.61	5235.58	2617.79	11837.2	5876.53	0.91	-0.580	0.000	0.707
16.88	-38.62	-48.31	-0.80	-5403.3	-0.01	5403.39	5214.57	2607.29	11714.3	5815.50	1.15	-0.656	0.000	0.701
16.88	-38.62	-48.31	-0.80	-5403.3	-0.01	5403.39	5214.57	2607.29	11714.3	5815.50	1.15	-0.656	0.000	0.701
20.00	-37.64	-47.97	-0.80	-5252.6	-0.01	5252.65	5179.37	2589.69	11510.9	5714.52	1.62	-0.780	0.000	0.927
25.00	-36.13	-47.35	-0.80	-5012.8	-0.01	5012.81	5122.07	2561.03	11186.5	5553.45	2.58	-1.045	0.000	0.910
30.00	-34.64	-46.71	-0.80	-4776.0	-0.01	4776.05	5063.65	2531.83	10864.1	5393.40	3.82	-1.311	0.000	0.893
35.00	-33.18	-46.04	-0.80	-4542.5	-0.01	4542.53	5004.13	2502.07	10543.8	5234.42	5.33	-1.577	0.000	0.875
40.00	-31.75	-45.35	-0.80	-4312.3	-0.01	4312.36	4943.51	2471.75	10225.9	5076.58	7.13	-1.845	0.000	0.856
45.00	-30.43	-44.58	-0.80	-4085.6	-0.01	4085.63	4881.77	2440.89	9910.40	4919.94	9.21	-2.113	0.000	0.837
45.92	-30.11	-44.50	-0.80	-4044.7	-0.02	4044.76	4870.34	2435.17	9852.83	4891.36	9.62	-2.163	0.000	0.833
50.00	-28.29	-43.84	-0.80	-3863.0	-0.02	3863.06	4818.94	2409.47	9597.43	4764.57	11.56	-2.384	0.000	0.817
52.00	-27.37	-43.38	-0.79	-3775.3	-0.02	3775.38	4793.49	2396.75	9472.99	4702.79	12.59	-2.493	0.000	0.809
53.00	-26.90	-43.23	-0.79	-3732.0	-0.02	3732.00	4791.66	1960.83	7862.59	3903.32	13.11	-2.548	0.000	0.963
55.00	-26.35	-42.98	-0.79	-3645.5	-0.02	3645.54	3903.31	1951.65	7765.73	3855.23	14.20	-2.657	0.000	0.953
60.00	-25.13	-42.24	-0.79	-3430.6	-0.02	3430.64	3856.65	1928.33	7524.53	3735.49	17.15	-2.954	-0.001	0.925
65.00	-23.95	-41.49	-0.79	-3219.4	-0.02	3219.44	3808.89	1904.45	7284.80	3616.48	20.40	-3.251	-0.001	0.897
70.00	-22.79	-40.73	-0.79	-3012.0	-0.02	3012.00	3760.03	1880.02	7046.68	3498.27	23.96	-3.545	-0.001	0.868
75.00	-21.65	-39.97	-0.79	-2808.3	-0.03	2808.34	3710.06	1855.03	6810.28	3380.91	27.83	-3.837	-0.001	0.837
80.00	-20.55	-39.20	-0.79	-2608.5	-0.03	2608.50	3658.99	1829.49	6575.75	3264.48	32.00	-4.127	-0.001	0.805
85.00	-19.47	-38.43	-0.79	-2412.5	-0.03	2412.50	3606.81	1803.40	6343.20	3149.03	36.47	-4.412	-0.001	0.772
90.00	-18.46	-37.64	-0.79	-2220.3	-0.03	2220.36	3553.52	1776.76	6112.76	3034.63	41.24	-4.693	-0.001	0.737
92.83	-17.88	-37.19	-0.80	-2113.7	-0.04	2113.72	3522.83	1761.42	5983.17	2970.30	44.07	-4.852	-0.001	0.717
95.00	-17.16	-36.85	-0.80	-2033.1	-0.04	2033.14	3499.13	1749.56	5884.57	2921.35	46.30	-4.973	-0.001	0.701
98.92	-15.99	-36.17	-0.80	-1888.8	-0.04	1888.82	2350.25	1175.12	3954.81	1963.33	50.46	-5.186	-0.001	0.970
100.00	-15.72	-36.04	-0.80	-1849.6	-0.04	1849.64	2343.93	1171.97	3924.64	1948.36	51.64	-5.245	-0.001	0.957
105.00	-14.89	-35.29	-0.80	-1669.4	-0.04	1669.42	2314.11	1157.05	3785.67	1879.37	57.31	-5.577	-0.001	0.896
110.00	-14.08	-34.54	-0.80	-1492.9	-0.05	1492.97	2283.18	1141.59	3647.23	1810.64	63.32	-5.897	-0.002	0.832
115.00	-13.30	-33.78	-0.80	-1320.3	-0.05	1320.30	2251.15	1125.57	3509.45	1742.24	69.65	-6.202	-0.002	0.765
120.00	-12.56	-33.03	-0.80	-1151.3	-0.06	1151.39	2218.01	1109.01	3372.44	1674.22	76.29	-6.491	-0.002	0.694
125.00	-11.89	-32.26	-0.80	-986.24	-0.06	986.24	2183.77	1091.88	3236.35	1606.66	83.22	-6.760	-0.002	0.620
126.67	-11.67	-32.01	-0.81	-932.36	-0.06	932.36	2172.08	1086.04	3191.13	1584.21	85.59	-6.847	-0.002	0.595
127.00	-11.58	-31.58	-0.07	-921.79	0.03	921.79	2169.76	1084.88	3182.20	1579.78	86.06	-6.864	-0.002	0.590
130.00	-10.95	-31.10	-0.07	-827.06	0.02	827.06	2148.42	1074.21	3101.30	1539.62	90.42	-7.010	-0.002	0.543
132.00	-10.52	-30.78	-0.07	-764.76	0.02	764.76	1502.55	751.27	2180.88	1082.68	93.37	-7.104	-0.002	0.715
135.00	-10.20	-30.34	-0.07	-672.52	0.02	672.52	1491.20	745.60	2130.02	1057.43	97.86	-7.235	-0.002	0.644
137.00	-8.38	-25.76	-0.07	-611.84	0.01	611.84	1483.41	741.70	2096.06	1040.57	100.91	-7.335	-0.002	0.595
140.00	-8.05	-25.33	-0.07	-534.56	0.01	534.56	1471.39	735.69	2045.11	1015.28	105.55	-7.474	-0.002	0.533
145.00	-7.58	-24.60	-0.07	-407.92	0.01	407.92	1450.46	725.23	1960.22	973.13	113.47	-7.673	-0.002	0.426
147.00	-5.19	-17.23	0.00	-358.72	0.01	358.72	1441.79	720.89	1926.30	956.30	116.69	-7.744	-0.002	0.379
150.00	-4.96	-16.80	0.00	-307.04	0.01	307.04	1428.44	714.22	1875.49	931.07	121.57	-7.839	-0.002	0.334
155.00	-4.61	-16.11	0.00	-223.02	0.01	223.02	1405.30	702.65	1791.05	889.15	129.83	-7.972	-0.002	0.255
159.00	-2.75	-9.63	0.00	-158.60	0.01	158.60	1386.00	693.00	1723.78	855.76	136.53	-8.056	-0.002	0.188
160.00	-2.69	-9.50	0.00	-148.97	0.01	148.97	1381.06	690.53	1707.02	847.43	138.21	-8.074	-0.002	0.178

Calculated Forces

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 25



165.00	-2.44	-8.83	0.00	-101.48	0.00	101.48	1355.72	677.86	1623.53	805.99	146.68	-8.149	-0.002	0.128
170.00	-2.21	-8.18	0.00	-57.32	0.00	57.32	1329.27	664.63	1540.71	764.87	155.22	-8.202	-0.002	0.077
175.00	-1.98	-7.55	0.00	-16.40	0.00	16.40	1301.71	650.86	1458.68	724.15	163.80	-8.229	-0.002	0.024
177.00	-0.12	-0.40	0.00	-1.30	0.00	1.30	1290.38	645.19	1426.13	707.99	167.23	-8.232	-0.002	0.002
180.00	0.00	-0.38	0.00	-0.10	0.00	0.10	1273.05	636.53	1377.59	683.89	172.39	-8.232	-0.002	0.000

Wind Loading - Shaft

Structure: CT01365-S-SBA

Code: EIA/TIA-222-G

8/9/2021

Site Name: Norwich 2 CT

Exposure: C

Height: 180.00 (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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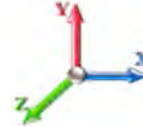


Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 26

Dead Load Factor 1.20

Wind Load Factor 1.00



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	RB1	1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
3.42	RB2	1.00	0.85	5.168	5.68	0.00	1.200	1.196	3.42	17.443	20.93	119.0	302.8	1419.8
4.00	RT1	1.00	0.85	5.168	5.68	0.00	1.200	1.215	0.58	2.942	3.53	20.1	52.1	240.3
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.242	1.00	5.064	6.08	34.5	91.6	415.2
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	5.00	25.160	30.19	171.6	483.7	2086.2
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	5.00	24.813	29.78	169.3	496.1	2072.2
16.88	RT2	1.00	0.87	5.291	5.82	0.00	1.200	1.403	1.88	9.233	11.08	64.5	187.6	773.4
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	3.12	15.213	18.26	110.1	313.6	1277.5
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	5.00	24.088	28.91	182.7	505.7	2029.0
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	5.00	23.717	28.46	187.0	506.5	2003.5
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	5.00	23.343	28.01	190.1	505.8	1976.3
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	5.00	22.967	27.56	192.4	503.8	1948.0
45.00		1.00	1.07	6.504	7.15	0.00	1.200	1.547	5.00	22.589	27.11	193.9	500.9	1918.7
45.92	Bot - Section 2	1.00	1.07	6.532	7.19	0.00	1.200	1.550	0.92	4.099	4.92	35.3	91.7	348.8
50.00		1.00	1.09	6.650	7.32	0.00	1.200	1.564	4.08	18.369	22.04	161.2	412.1	2533.8
52.00	Appurtenance(s)	1.00	1.10	6.705	7.38	0.00	1.200	1.570	2.00	8.903	10.68	78.8	201.2	1228.5
53.00	Top - Section 1	1.00	1.11	6.732	7.41	0.00	1.200	1.573	1.00	4.429	5.31	39.4	100.4	611.1
55.00		1.00	1.12	6.785	7.46	0.00	1.200	1.579	2.00	8.812	10.57	78.9	200.2	672.9
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	5.00	21.767	26.12	198.5	495.6	1661.5
65.00		1.00	1.16	7.028	7.73	0.00	1.200	1.605	5.00	21.384	25.66	198.4	490.3	1633.6
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	5.00	21.001	25.20	197.9	484.6	1605.4
75.00		1.00	1.19	7.243	7.97	0.00	1.200	1.628	5.00	20.618	24.74	197.1	478.6	1576.7
80.00		1.00	1.21	7.342	8.08	0.00	1.200	1.639	5.00	20.233	24.28	196.1	472.2	1547.7
85.00		1.00	1.22	7.436	8.18	0.00	1.200	1.649	5.00	19.849	23.82	194.8	465.5	1518.5
90.00		1.00	1.24	7.526	8.28	0.00	1.200	1.658	5.00	19.464	23.36	193.4	458.6	1488.9
92.83	Bot - Section 3	1.00	1.25	7.575	8.33	0.00	1.200	1.663	2.83	10.857	13.03	108.6	257.6	831.4
95.00		1.00	1.25	7.612	8.37	0.00	1.200	1.667	2.17	8.322	9.99	83.6	198.2	962.5
98.92	Top - Section 2	1.00	1.26	7.677	8.45	0.00	1.200	1.674	3.92	14.862	17.83	150.6	353.7	1716.5
100.00		1.00	1.27	7.695	8.46	0.00	1.200	1.676	1.08	4.068	4.88	41.3	97.5	258.6
105.00		1.00	1.28	7.774	8.55	0.00	1.200	1.684	5.00	18.545	22.25	190.3	442.4	1175.7
110.00		1.00	1.29	7.851	8.64	0.00	1.200	1.692	5.00	18.159	21.79	188.2	434.7	1151.0
115.00		1.00	1.30	7.925	8.72	0.00	1.200	1.699	5.00	17.772	21.33	185.9	426.7	1126.2
120.00		1.00	1.32	7.996	8.80	0.00	1.200	1.707	5.00	17.385	20.86	183.5	418.6	1101.2
125.00		1.00	1.33	8.065	8.87	0.00	1.200	1.714	5.00	16.998	20.40	181.0	410.4	1076.0
126.67	Bot - Section 4	1.00	1.33	8.088	8.90	0.00	1.200	1.716	1.67	5.590	6.71	59.7	136.1	354.7
127.00	Appurtenance(s)	1.00	1.33	8.092	8.90	0.00	1.200	1.716	0.33	1.112	1.33	11.9	27.2	104.1
130.00		1.00	1.34	8.132	8.95	0.00	1.200	1.720	3.00	10.031	12.04	107.7	244.1	937.3
132.00	Top - Section 3	1.00	1.34	8.158	8.97	0.00	1.200	1.723	2.00	6.620	7.94	71.3	161.6	618.5
135.00		1.00	1.35	8.197	9.02	0.00	1.200	1.727	3.00	9.787	11.74	105.9	238.7	536.5
137.00	Appurtenance(s)	1.00	1.35	8.222	9.04	0.00	1.200	1.729	2.00	6.454	7.75	70.1	157.9	354.0
140.00		1.00	1.36	8.260	9.09	0.00	1.200	1.733	3.00	9.566	11.48	104.3	233.8	524.0
145.00		1.00	1.37	8.321	9.15	0.00	1.200	1.739	5.00	15.633	18.76	171.7	380.9	854.0
147.00	Appurtenance(s)	1.00	1.37	8.345	9.18	0.00	1.200	1.742	2.00	6.144	7.37	67.7	151.0	336.5
150.00		1.00	1.38	8.381	9.22	0.00	1.200	1.745	3.00	9.100	10.92	100.7	223.3	497.6
155.00		1.00	1.39	8.439	9.28	0.00	1.200	1.751	5.00	14.857	17.83	165.5	363.1	809.8
159.00	Appurtenance(s)	1.00	1.40	8.484	9.33	0.00	1.200	1.755	4.00	11.606	13.93	130.0	284.7	632.6
160.00		1.00	1.40	8.495	9.34	0.00	1.200	1.757	1.00	2.862	3.43	32.1	70.8	156.5

Wind Loading - Shaft

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021	
Site Name: Norwich 2 CT	Exposure: C		
Height: 180.00 (ft)	Crest Height: 0.00		
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil		
Gh: 1.1	Topography: 1	Struct Class: II	Page: 27



165.00	1.00	1.41	8.551	9.41	0.00	1.200	1.762	5.00	14.080	16.90	158.9	344.9	765.2
170.00	1.00	1.42	8.604	9.46	0.00	1.200	1.767	5.00	13.692	16.43	155.5	335.7	742.8
175.00	1.00	1.42	8.657	9.52	0.00	1.200	1.772	5.00	13.303	15.96	152.0	326.3	720.3
177.00 Appurtenance(s)	1.00	1.43	8.678	9.55	0.00	1.200	1.774	2.00	5.212	6.25	59.7	129.0	282.9
180.00 Appurtenance(s)	1.00	1.43	8.709	9.58	0.00	1.200	1.777	3.00	7.701	9.24	88.5	190.1	417.0
Totals:								180.00			6,531.1		53,630.8

Discrete Appurtenance Forces

Structure: CT01365-S-SBA

Code: EIA/TIA-222-G

8/9/2021

Site Name: Norwich 2 CT

Exposure: C

Height: 180.00 (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

Iterations 26

Dead Load Factor 1.20

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	180.00	Lightning Rod	1	8.739	9.613	1.00	1.00	2.28	21.33	0.000	3.000	21.89	0.00	65.67
2	177.00	RFS	3	8.678	9.546	0.46	0.75	10.59	565.93	0.000	0.000	101.12	0.00	0.00
3	177.00	10" x 8" x 3" Filter	3	8.678	9.546	0.38	0.75	1.62	70.49	0.000	0.000	15.44	0.00	0.00
4	177.00	Platform w/ Hand Rail	1	8.678	9.546	1.00	1.00	75.49	3454.89	0.000	0.000	720.57	0.00	0.00
5	177.00	RFS	3	8.678	9.546	0.52	0.75	34.92	1719.51	0.000	0.000	333.36	0.00	0.00
6	177.00	4" x 2" x 3.5" RETs	4	8.678	9.546	0.38	0.75	0.66	17.07	0.000	0.000	6.32	0.00	0.00
7	177.00	Ericsson 4424 B25 RRU	3	8.678	9.546	0.38	0.75	2.99	581.31	0.000	0.000	28.53	0.00	0.00
8	177.00	Ericsson 4415 B66A RRU	3	8.678	9.546	0.38	0.75	2.74	352.90	0.000	0.000	26.15	0.00	0.00
9	177.00	Ericsson 4449 B71 + B85	3	8.678	9.546	0.38	0.75	2.87	264.44	0.000	0.000	27.37	0.00	0.00
10	177.00	Ericsson AIR6449 B41	3	8.678	9.546	0.53	0.75	10.57	693.92	0.000	0.000	100.89	0.00	0.00
11	159.00	DB-T1-6Z-8AB-OZ	2	8.484	9.333	0.40	0.80	4.54	395.04	0.000	0.000	42.40	0.00	0.00
12	159.00	Samsung VZS01	3	8.484	9.333	0.55	0.80	8.59	649.01	0.000	0.000	80.20	0.00	0.00
13	159.00	BXA-80040/4CF	3	8.484	9.333	0.54	0.80	16.97	759.65	0.000	0.000	158.33	0.00	0.00
14	159.00	SBNHH-1D65B	6	8.484	9.333	0.62	0.80	35.12	1510.39	0.000	0.000	327.75	0.00	0.00
15	159.00	B2/B66A	3	8.484	9.333	0.40	0.80	2.94	474.34	0.000	0.000	27.40	0.00	0.00
16	159.00	Low Profile Platform	1	8.484	9.333	1.00	1.00	45.19	2816.56	0.000	0.000	421.71	0.00	0.00
17	159.00	BSAMNT-SBS-1-2	3	8.484	9.333	1.00	1.00	0.00	141.21	0.000	0.000	0.00	0.00	0.00
18	159.00	B5/B13 RRH-BR04C	3	8.484	9.333	0.40	0.80	2.94	504.81	0.000	0.000	27.40	0.00	0.00
19	147.00	Ericsson RRUS 4449	3	8.345	9.180	0.38	0.75	2.83	392.32	0.000	0.000	25.99	0.00	0.00
20	147.00	Kathrein 860 10025 RET	12	8.345	9.180	0.38	0.75	2.51	69.89	0.000	0.000	23.05	0.00	0.00
21	147.00	7770	3	8.345	9.180	0.55	0.75	10.78	530.52	0.000	0.000	98.95	0.00	0.00
22	147.00	Powerwave LGP21401	6	8.345	9.180	0.38	0.75	4.78	325.33	0.000	0.000	43.87	0.00	0.00
23	147.00	Raycap DC6-48-60-18-8F	2	8.345	9.180	0.38	0.75	1.02	172.60	2.383	0.000	9.34	22.27	0.00
24	147.00	Platform w/ Hand Rails	1	8.345	9.180	1.00	1.00	60.90	3890.03	0.000	0.000	559.04	0.00	0.00
25	147.00	Ericsson RRUS 4478 B14	3	8.345	9.180	0.38	0.75	2.44	309.79	0.000	0.000	22.38	0.00	0.00
26	147.00	Ericsson RRUS-A2	3	8.345	9.180	0.38	0.75	3.19	160.73	0.000	0.000	29.24	0.00	0.00
27	147.00	DMP65R-BU6DA	2	8.345	9.180	0.61	0.75	17.25	764.15	0.000	0.000	158.32	0.00	0.00
28	147.00	DMP65R-BU8DA	4	8.345	9.180	0.58	0.75	45.48	1963.59	0.000	0.000	417.50	0.00	0.00
29	147.00	Ericsson RRUS 12	3	8.345	9.180	0.38	0.75	3.78	349.65	0.000	0.000	34.68	0.00	0.00
30	137.00	TA08025-B605	3	8.222	9.044	0.38	0.75	2.83	387.70	0.000	0.000	25.60	0.00	0.00
31	137.00	MX08FRO665-21	3	8.222	9.044	0.55	0.75	23.21	895.34	0.000	0.000	209.95	0.00	0.00
32	137.00	RDIDC-9181-OF-48	1	8.222	9.044	0.38	0.75	0.96	66.35	0.000	0.000	8.73	0.00	0.00
33	137.00	TA08025-B604	3	8.222	9.044	0.38	0.75	2.83	344.26	0.000	0.000	25.60	0.00	0.00
34	137.00	MC-PK8-DSH	1	8.222	9.044	1.00	1.00	84.40	3372.00	0.000	0.000	763.33	0.00	0.00
35	127.00	CS72188.01 LMU	1	7.881	8.669	1.00	1.00	11.46	150.24	3.022	-15.000	99.33	300.12	-1489.89
36	52.00	GPS	1	6.705	7.376	1.00	1.00	0.54	0.76	3.055	0.000	4.00	12.21	0.00
37	52.00	3 ft Standoff	1	6.705	7.376	1.00	1.00	8.00	97.21	0.000	0.000	59.00	0.00	0.00

Totals: 29,235.24

5,084.74

Total Applied Force Summary

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 29

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

Dead Load Factor 1.20

Wind Load Factor 1.00

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
3.42		119.00	1595.02	0.00	0.00
4.00		20.07	270.11	0.00	0.00
5.00		34.55	466.91	0.00	0.00
10.00		171.64	2348.86	0.00	0.00
15.00		169.27	2337.62	0.00	0.00
16.88		64.49	873.55	0.00	0.00
20.00		110.11	1444.46	0.00	0.00
25.00		182.74	2261.97	0.00	0.00
30.00		186.96	2236.99	0.00	0.00
35.00		190.09	2210.34	0.00	0.00
40.00		192.36	2182.43	0.00	0.00
45.00		193.94	2153.52	0.00	0.00
45.92		35.34	391.85	0.00	0.00
50.00		161.25	2725.89	0.00	0.00
52.00	(2) attachments	141.80	1420.58	12.21	0.00
53.00		39.36	654.17	0.00	0.00
55.00		78.92	758.92	0.00	0.00
60.00		198.55	1876.68	0.00	0.00
65.00		198.38	1848.81	0.00	0.00
70.00		197.89	1820.52	0.00	0.00
75.00		197.11	1791.87	0.00	0.00
80.00		196.09	1762.90	0.00	0.00
85.00		194.83	1733.64	0.00	0.00
90.00		193.36	1704.11	0.00	0.00
92.83		108.57	953.35	0.00	0.00
95.00		83.63	1055.70	0.00	0.00
98.92		150.61	1885.05	0.00	0.00
100.00		41.32	305.23	0.00	0.00
105.00		190.31	1390.87	0.00	0.00
110.00		188.18	1366.19	0.00	0.00
115.00		185.91	1341.34	0.00	0.00
120.00		183.50	1316.32	0.00	0.00
125.00		180.96	1291.16	0.00	0.00
126.67		59.68	426.54	0.00	0.00
127.00	(1) attachments	111.20	268.53	300.12	-1489.89
130.00		107.67	1065.78	0.00	0.00
132.00		71.29	704.31	0.00	0.00
135.00		105.90	664.86	0.00	0.00
137.00	(11) attachments	1103.26	5505.37	0.00	0.00
140.00		104.29	648.91	0.00	0.00
145.00		171.71	1062.23	0.00	0.00
147.00	(42) attachments	1490.06	9348.39	22.27	0.00
150.00		100.67	558.59	0.00	0.00
155.00		165.50	911.47	0.00	0.00
159.00	(24) attachments	1215.17	7964.89	0.00	0.00
160.00		32.10	160.42	0.00	0.00

Total Applied Force Summary

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (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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165.00	158.92	785.03	0.00	0.00
170.00	155.51	762.58	0.00	0.00
175.00	152.02	740.05	0.00	0.00
177.00 (26) attachments	1419.46	8011.28	0.00	0.00
180.00 (1) attachments	110.42	438.33	0.00	65.67
Totals:	11,615.89	89,804.50	334.60	-1,424.21

Linear Appurtenance Segment Forces (Factored)

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (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 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)
3.42	1/2" Coax	Yes	3.42	0.000	0.65	0.87	0.00	0.032	0.000	5.168	0.00	8.82
3.42	1.25" Reinforcing	Yes	3.42	0.000	1.25	1.04	0.00	0.032	0.000	5.168	0.00	19.24
4.00	1/2" Coax	Yes	0.58	0.000	0.65	0.15	0.00	0.033	0.000	5.168	0.00	1.53
4.00	1.25" Reinforcing	Yes	0.58	0.000	1.25	0.18	0.00	0.033	0.000	5.168	0.00	3.33
5.00	1/2" Coax	Yes	1.00	0.000	0.65	0.26	0.00	0.033	0.000	5.168	0.00	2.74
5.00	1.25" Reinforcing	Yes	1.00	0.000	1.25	0.31	0.00	0.033	0.000	5.168	0.00	5.90
10.00	1/2" Coax	Yes	5.00	0.000	0.65	1.38	0.00	0.033	0.000	5.168	0.00	15.33
10.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	1.63	0.00	0.033	0.000	5.168	0.00	32.19
15.00	1/2" Coax	Yes	5.00	0.000	0.65	1.43	0.00	0.033	0.000	5.168	0.00	16.38
15.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	1.68	0.00	0.033	0.000	5.168	0.00	33.91
16.88	1/2" Coax	Yes	1.88	0.000	0.65	0.54	0.00	0.034	0.000	5.291	0.00	6.28
16.88	1.25" Reinforcing	Yes	1.88	0.000	1.25	0.64	0.00	0.034	0.000	5.291	0.00	12.95
20.00	1/2" Coax	Yes	3.12	0.000	0.65	0.91	0.00	0.034	0.000	5.483	0.00	10.72
20.00	1.25" Reinforcing	Yes	3.12	0.000	1.25	1.07	0.00	0.034	0.000	5.483	0.00	21.96
25.00	1/2" Coax	Yes	5.00	0.000	0.65	1.49	0.00	0.012	0.000	5.747	0.00	17.83
30.00	1/2" Coax	Yes	5.00	0.000	0.65	1.51	0.00	0.012	0.000	5.972	0.00	18.38
35.00	1/2" Coax	Yes	5.00	0.000	0.65	1.53	0.00	0.012	0.000	6.169	0.00	18.86
40.00	1/2" Coax	Yes	5.00	0.000	0.65	1.55	0.00	0.012	0.000	6.345	0.00	19.29
45.00	1/2" Coax	Yes	5.00	0.000	0.65	1.56	0.00	0.013	0.000	6.504	0.00	19.67
45.92	1/2" Coax	Yes	0.92	0.000	0.65	0.29	0.00	0.013	0.000	6.532	0.00	3.62
50.00	1/2" Coax	Yes	4.08	0.000	0.65	1.29	0.00	0.013	0.000	6.650	0.00	16.35
52.00	1/2" Coax	Yes	2.00	0.000	0.65	0.63	0.00	0.013	0.000	6.705	0.00	8.06
Totals:											0.0	313.3

Calculated Forces

Structure: CT01365-S-SBA

Code: EIA/TIA-222-G

8/9/2021

Site Name: Norwich 2 CT

Exposure: C

Height: 180.00 (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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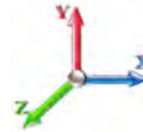


Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 26

Dead Load Factor 1.20

Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-89.80	-11.64	-0.33	-1499.0	0.00	1499.09	5397.55	2698.78	12826.5	6367.63	0.00	0.000	0.000	0.182
3.42	-88.20	-11.55	-0.33	-1459.2	0.00	1459.28	5361.50	2680.75	12599.7	6255.04	0.01	-0.031	0.000	0.146
4.00	-87.93	-11.54	-0.33	-1452.5	0.00	1452.58	5355.33	2677.67	12561.3	6235.98	0.02	-0.035	0.000	0.188
5.00	-87.46	-11.55	-0.33	-1441.0	0.00	1441.04	5344.66	2672.33	12495.2	6203.15	0.02	-0.045	0.000	0.188
10.00	-85.10	-11.44	-0.33	-1383.3	0.00	1383.30	5290.67	2645.34	12165.4	6039.43	0.10	-0.092	0.000	0.184
15.00	-82.76	-11.32	-0.33	-1326.0	0.00	1326.09	5235.58	2617.79	11837.2	5876.53	0.22	-0.140	0.000	0.181
16.88	-81.88	-11.28	-0.33	-1304.8	0.00	1304.81	5214.57	2607.29	11714.3	5815.50	0.28	-0.158	0.000	0.179
16.88	-81.88	-11.28	-0.33	-1304.8	0.00	1304.81	5214.57	2607.29	11714.3	5815.50	0.28	-0.158	0.000	0.179
20.00	-80.43	-11.24	-0.33	-1269.6	0.00	1269.61	5179.37	2589.69	11510.9	5714.52	0.39	-0.188	0.000	0.238
25.00	-78.15	-11.13	-0.33	-1213.4	0.00	1213.43	5122.07	2561.03	11186.5	5553.45	0.62	-0.252	0.000	0.234
30.00	-75.90	-11.02	-0.33	-1157.7	0.00	1157.76	5063.65	2531.83	10864.1	5393.40	0.92	-0.316	0.000	0.230
35.00	-73.68	-10.90	-0.33	-1102.6	0.00	1102.67	5004.13	2502.07	10543.8	5234.42	1.29	-0.381	0.000	0.225
40.00	-71.49	-10.77	-0.33	-1048.1	0.00	1048.17	4943.51	2471.75	10225.9	5076.58	1.72	-0.446	0.000	0.221
45.00	-69.33	-10.61	-0.33	-994.30	0.00	994.30	4881.77	2440.89	9910.40	4919.94	2.22	-0.511	0.000	0.216
45.92	-68.93	-10.61	-0.33	-984.58	0.00	984.58	4870.34	2435.17	9852.83	4891.36	2.32	-0.524	0.000	0.215
50.00	-66.20	-10.47	-0.33	-941.26	0.00	941.26	4818.94	2409.47	9597.43	4764.57	2.79	-0.577	0.000	0.211
52.00	-64.78	-10.33	-0.32	-920.33	0.00	920.33	4793.49	2396.75	9472.99	4702.79	3.04	-0.604	0.000	0.209
53.00	-64.12	-10.31	-0.32	-910.00	0.00	910.00	3921.66	1960.83	7862.59	3903.32	3.17	-0.617	0.000	0.250
55.00	-63.35	-10.28	-0.32	-889.38	0.00	889.38	3903.31	1951.65	7765.73	3855.23	3.43	-0.644	0.000	0.247
60.00	-61.47	-10.13	-0.32	-837.99	0.00	837.99	3856.65	1928.33	7524.53	3735.49	4.15	-0.716	0.000	0.240
65.00	-59.61	-9.99	-0.32	-787.32	0.00	787.32	3808.89	1904.45	7284.80	3616.48	4.94	-0.789	0.000	0.233
70.00	-57.78	-9.84	-0.32	-737.39	0.00	737.39	3760.03	1880.02	7046.68	3498.27	5.80	-0.861	0.000	0.226
75.00	-55.98	-9.68	-0.32	-688.21	0.00	688.21	3710.06	1855.03	6810.28	3380.91	6.74	-0.932	0.000	0.219
80.00	-54.21	-9.52	-0.32	-639.81	0.00	639.81	3658.99	1829.49	6575.75	3264.48	7.76	-1.003	0.000	0.211
85.00	-52.47	-9.36	-0.32	-592.21	0.00	592.21	3606.81	1803.40	6343.20	3149.03	8.84	-1.073	0.000	0.203
90.00	-50.76	-9.18	-0.32	-545.42	0.00	545.42	3553.52	1776.76	6112.76	3034.63	10.01	-1.143	0.000	0.194
92.83	-49.80	-9.08	-0.32	-519.41	0.00	519.41	3522.83	1761.42	5983.17	2970.30	10.70	-1.182	0.000	0.189
95.00	-48.74	-9.01	-0.32	-499.74	-0.01	499.74	3499.13	1749.56	5884.57	2921.35	11.24	-1.211	0.000	0.185
98.92	-46.85	-8.85	-0.32	-464.45	-0.01	464.45	2350.25	1175.12	3954.81	1963.33	12.25	-1.264	-0.001	0.257
100.00	-46.54	-8.84	-0.32	-454.86	-0.01	454.86	2343.93	1171.97	3924.64	1948.36	12.54	-1.278	-0.001	0.253
105.00	-45.14	-8.68	-0.32	-410.67	-0.01	410.67	2314.11	1157.05	3785.67	1879.37	13.93	-1.360	-0.001	0.238
110.00	-43.77	-8.52	-0.32	-367.28	-0.01	367.28	2283.18	1141.59	3647.23	1810.64	15.39	-1.439	-0.001	0.222
115.00	-42.42	-8.35	-0.32	-324.70	-0.01	324.70	2251.15	1125.57	3509.45	1742.24	16.94	-1.514	-0.001	0.205
120.00	-41.10	-8.18	-0.32	-282.95	-0.01	282.95	2218.01	1109.01	3372.44	1674.22	18.56	-1.585	-0.001	0.188
125.00	-39.81	-7.99	-0.32	-242.05	-0.01	242.05	2183.77	1091.88	3236.35	1606.66	20.26	-1.651	-0.001	0.169
126.67	-39.39	-7.93	-0.32	-228.70	-0.01	228.70	2172.08	1086.04	3191.13	1584.21	20.84	-1.672	-0.001	0.163
127.00	-39.12	-7.82	-0.02	-226.08	0.00	226.08	2169.76	1084.88	3182.20	1579.78	20.96	-1.676	-0.001	0.161
130.00	-38.05	-7.70	-0.02	-202.61	0.00	202.61	2148.42	1074.21	3101.30	1539.62	22.02	-1.712	-0.001	0.149
132.00	-37.35	-7.63	-0.02	-187.18	0.00	187.18	1502.55	751.27	2180.88	1082.68	22.75	-1.735	-0.001	0.198
135.00	-36.68	-7.52	-0.02	-164.31	0.00	164.31	1491.20	745.60	2130.02	1057.43	23.84	-1.767	-0.001	0.180
137.00	-31.21	-6.26	-0.02	-149.27	0.00	149.27	1483.41	741.70	2096.06	1040.57	24.59	-1.791	-0.001	0.165
140.00	-30.56	-6.16	-0.02	-130.47	0.00	130.47	1471.39	735.69	2045.11	1015.28	25.73	-1.825	-0.001	0.149
145.00	-29.50	-5.97	-0.02	-99.67	0.00	99.67	1450.46	725.23	1960.22	973.13	27.67	-1.874	-0.001	0.123
147.00	-20.20	-4.18	0.00	-87.72	0.00	87.72	1441.79	720.89	1926.30	956.30	28.45	-1.891	-0.001	0.106
150.00	-19.65	-4.07	0.00	-75.17	0.00	75.17	1428.44	714.22	1875.49	931.07	29.65	-1.915	-0.001	0.095
155.00	-18.74	-3.89	0.00	-54.80	0.00	54.80	1405.30	702.65	1791.05	889.15	31.67	-1.947	-0.001	0.075
159.00	-10.82	-2.40	0.00	-39.26	0.00	39.26	1386.00	693.00	1723.78	855.76	33.31	-1.968	-0.001	0.054
160.00	-10.66	-2.37	0.00	-36.86	0.00	36.86	1381.06	690.53	1707.02	847.43	33.73	-1.972	-0.001	0.051

Calculated Forces

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (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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165.00	-9.88	-2.18	0.00	-25.02	0.00	25.02	1355.72	677.86	1623.53	805.99	35.80	-1.991	-0.001	0.038
170.00	-9.13	-2.00	0.00	-14.11	0.00	14.11	1329.27	664.63	1540.71	764.87	37.90	-2.004	-0.001	0.025
175.00	-8.39	-1.83	0.00	-4.09	0.00	4.09	1301.71	650.86	1458.68	724.15	40.00	-2.010	-0.001	0.012
177.00	-0.43	-0.13	0.00	-0.44	0.00	0.44	1290.38	645.19	1426.13	707.99	40.84	-2.011	-0.001	0.001
180.00	0.00	-0.11	0.00	-0.07	0.00	0.07	1273.05	636.53	1377.59	683.89	42.10	-2.011	-0.001	0.000

Seismic Segment Forces (Factored)

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (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 23

Gust Response Factor 1.10

Sds 0.18

Ss 0.17

Dead Load Factor 1.20 **Seismic Load Factor** 1.00

Sd1 0.10

S1 0.06

Wind Load Factor 0.00 **Structure Frequency (f1)** 0.28

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	RB1	0.00	0.00	0.00	0.00	0.00	
3.42	RB2	930.82	0.00	0.02	0.01	12.56	
4.00	RT1	156.84	0.00	0.02	0.01	2.36	
5.00		269.72	0.00	0.03	0.02	4.72	
10.00		1335.3	0.01	0.05	0.03	34.24	
15.00		1313.4	0.01	0.06	0.03	39.33	
16.88	RT2	488.15	0.02	0.06	0.04	15.13	
20.00		803.26	0.02	0.07	0.04	25.95	
25.00		1269.4	0.04	0.07	0.04	42.76	
30.00		1247.4	0.05	0.07	0.04	43.14	
35.00		1225.4	0.07	0.07	0.04	43.27	
40.00		1203.4	0.09	0.07	0.04	43.36	
45.00		1181.4	0.12	0.07	0.03	43.44	
45.92	Bot - Section 2	214.22	0.12	0.07	0.03	7.91	
50.00		1768.0	0.15	0.07	0.03	66.25	
52.00	Appurtenance(s)	896.26	0.16	0.07	0.03	33.80	
53.00	Top - Section 1	425.58	0.16	0.07	0.03	16.09	
55.00		393.91	0.18	0.07	0.03	14.96	
60.00		971.59	0.21	0.06	0.02	36.91	
65.00		952.77	0.25	0.06	0.02	35.39	
70.00		933.94	0.29	0.05	0.01	32.62	
75.00		915.12	0.33	0.04	0.01	28.17	
80.00		896.29	0.37	0.03	0.01	21.64	
85.00		877.46	0.42	0.01	0.01	12.98	
90.00		858.64	0.47	-0.01	0.01	2.68	
92.83	Bot - Section 3	478.20	0.50	-0.02	0.01	-1.95	
95.00		636.91	0.53	-0.03	0.01	-6.14	
98.92	Top - Section 2	1135.6	0.57	-0.04	0.01	-21.85	
100.00		134.26	0.58	-0.05	0.01	-2.92	
105.00		611.09	0.64	-0.07	0.02	-19.25	
110.00		596.98	0.71	-0.09	0.03	-22.71	
115.00		582.87	0.77	-0.11	0.05	-23.87	
120.00		568.77	0.84	-0.12	0.07	-22.91	
125.00		554.66	0.91	-0.12	0.09	-20.05	
126.67	Bot - Section 4	182.11	0.94	-0.12	0.10	-6.20	
127.00	Appurtenance(s)	99.09	0.94	-0.12	0.10	-3.33	
130.00		577.66	0.99	-0.11	0.12	-16.57	
132.00	Top - Section 3	380.71	1.02	-0.11	0.14	-9.44	
135.00		248.14	1.06	-0.09	0.17	-4.46	
137.00	Appurtenance(s)	2522.5	1.09	-0.07	0.18	-32.33	
140.00		241.82	1.14	-0.04	0.21	-0.99	
145.00		394.24	1.23	0.03	0.27	5.13	
147.00	Appurtenance(s)	3632.4	1.26	0.07	0.30	75.38	
150.00		228.63	1.31	0.14	0.35	7.62	
155.00		372.25	1.40	0.29	0.43	21.21	
159.00	Appurtenance(s)	2982.3	1.47	0.44	0.51	233.44	

Seismic Segment Forces (Factored)

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (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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160.00		71.37	1.49	0.48	0.53	5.99
165.00		350.26	1.59	0.74	0.65	40.05
170.00		339.27	1.69	1.07	0.79	50.29
175.00		328.28	1.79	1.48	0.95	60.95
177.00	Appurtenance(s)	3180.6	1.83	1.67	1.03	641.44
180.00	Appurtenance(s)	194.05	1.89	1.98	1.14	44.00
Totals:		43,153.8				1,630.2
						Total Wind: 50,266.3

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

Calculated Forces

Structure: CT01365-S-SBA **Code:** EIA/TIA-222-G 8/9/2021
Site Name: Norwich 2 CT **Exposure:** C
Height: 180.00 (ft) **Crest Height:** 0.00
Base Elev: 0.000 (ft) **Site Class:** D - Stiff Soil
Gh: 1.1 **Topography:** 1 **Struct Class:** II Page: 36



Load Case: 1.2D + 1.0E

Iterations 23

Gust Response Factor 1.10

Sds 0.18

Ss 0.17

Dead Load Factor 1.20

Seismic Load Factor 1.00

Sd1 0.10

S1 0.06

Wind Load Factor 0.00

Structure Frequency (f1) 0.28

SA 0.03

Seismic Importance Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-58.42	-1.85	0.00	-242.27	0.00	242.27	5397.55	2698.78	12826.5	6367.63	0.00	0.00	0.00	0.035
3.42	-57.15	-1.84	0.00	-235.96	0.00	235.96	5361.50	2680.75	12599.7	6255.04	0.00	-0.01	0.00	0.028
4.00	-56.94	-1.84	0.00	-234.89	0.00	234.89	5355.33	2677.67	12561.3	6235.98	0.00	-0.01	0.00	0.036
5.00	-56.57	-1.84	0.00	-233.05	0.00	233.05	5344.66	2672.33	12495.2	6203.15	0.00	-0.01	0.00	0.036
10.00	-54.76	-1.81	0.00	-223.88	0.00	223.88	5290.67	2645.34	12165.4	6039.43	0.02	-0.01	0.00	0.036
15.00	-52.96	-1.77	0.00	-214.84	0.00	214.84	5235.58	2617.79	11837.2	5876.53	0.04	-0.02	0.00	0.035
16.88	-52.30	-1.76	0.00	-211.50	0.00	211.50	5214.57	2607.29	11714.3	5815.50	0.04	-0.03	0.00	0.035
16.88	-52.30	-1.76	0.00	-211.50	0.00	211.50	5214.57	2607.29	11714.3	5815.50	0.04	-0.03	0.00	0.035
20.00	-51.20	-1.74	0.00	-206.01	0.00	206.01	5179.37	2589.69	11510.9	5714.52	0.06	-0.03	0.00	0.046
25.00	-49.46	-1.71	0.00	-197.30	0.00	197.30	5122.07	2561.03	11186.5	5553.45	0.10	-0.04	0.00	0.045
30.00	-47.74	-1.67	0.00	-188.77	0.00	188.77	5063.65	2531.83	10864.1	5393.40	0.15	-0.05	0.00	0.044
35.00	-46.06	-1.63	0.00	-180.41	0.00	180.41	5004.13	2502.07	10543.8	5234.42	0.21	-0.06	0.00	0.044
40.00	-44.40	-1.60	0.00	-172.24	0.00	172.24	4943.51	2471.75	10225.9	5076.58	0.28	-0.07	0.00	0.043
45.00	-42.76	-1.56	0.00	-164.25	0.00	164.25	4881.77	2440.89	9910.40	4919.94	0.36	-0.08	0.00	0.042
45.92	-42.47	-1.55	0.00	-162.83	0.00	162.83	4870.34	2435.17	9852.83	4891.36	0.38	-0.09	0.00	0.042
50.00	-40.17	-1.49	0.00	-156.49	0.00	156.49	4818.94	2409.47	9597.43	4764.57	0.45	-0.09	0.00	0.041
52.00	-39.01	-1.45	0.00	-153.51	0.00	153.51	4793.49	2396.75	9472.99	4702.79	0.49	-0.10	0.00	0.041
53.00	-38.45	-1.44	0.00	-152.06	0.00	152.06	3921.66	1960.83	7862.59	3903.32	0.52	-0.10	0.00	0.049
55.00	-37.89	-1.43	0.00	-149.18	0.00	149.18	3903.31	1951.65	7765.73	3855.23	0.56	-0.11	0.00	0.048
60.00	-36.51	-1.40	0.00	-142.04	0.00	142.04	3856.65	1928.33	7524.53	3735.49	0.68	-0.12	0.00	0.047
65.00	-35.15	-1.37	0.00	-135.06	0.00	135.06	3808.89	1904.45	7284.80	3616.48	0.80	-0.13	0.00	0.047
70.00	-33.82	-1.34	0.00	-128.23	0.00	128.23	3760.03	1880.02	7046.68	3498.27	0.95	-0.14	0.00	0.046
75.00	-32.50	-1.31	0.00	-121.54	0.00	121.54	3710.06	1855.03	6810.28	3380.91	1.10	-0.15	0.00	0.045
80.00	-31.21	-1.29	0.00	-114.97	0.00	114.97	3658.99	1829.49	6575.75	3264.48	1.27	-0.17	0.00	0.044
85.00	-29.94	-1.28	0.00	-108.50	0.00	108.50	3606.81	1803.40	6343.20	3149.03	1.45	-0.18	0.00	0.043
90.00	-28.70	-1.28	0.00	-102.08	0.00	102.08	3553.52	1776.76	6112.76	3034.63	1.65	-0.19	0.00	0.042
92.83	-28.00	-1.28	0.00	-98.44	0.00	98.44	3522.83	1761.42	5983.17	2970.30	1.77	-0.20	0.00	0.041
95.00	-27.14	-1.28	0.00	-95.66	0.00	95.66	3499.13	1749.56	5884.57	2921.35	1.86	-0.21	0.00	0.041
98.92	-25.61	-1.28	0.00	-90.63	0.00	90.63	2350.25	1175.12	3954.81	1963.33	2.03	-0.22	0.00	0.057
100.00	-25.41	-1.29	0.00	-89.24	0.00	89.24	2343.93	1171.97	3924.64	1948.36	2.08	-0.22	0.00	0.057
105.00	-24.46	-1.29	0.00	-82.82	0.00	82.82	2314.11	1157.05	3785.67	1879.37	2.32	-0.24	0.00	0.055
110.00	-23.52	-1.29	0.00	-76.37	0.00	76.37	2283.18	1141.59	3647.23	1810.64	2.58	-0.25	0.00	0.052
115.00	-22.61	-1.29	0.00	-69.92	0.00	69.92	2251.15	1125.57	3509.45	1742.24	2.85	-0.27	0.00	0.050
120.00	-21.71	-1.29	0.00	-63.45	0.00	63.45	2218.01	1109.01	3372.44	1674.22	3.14	-0.28	0.00	0.048
125.00	-20.83	-1.29	0.00	-56.98	0.00	56.98	2183.77	1091.88	3236.35	1606.66	3.44	-0.30	0.00	0.045
126.67	-20.54	-1.29	0.00	-54.82	0.00	54.82	2172.08	1086.04	3191.13	1584.21	3.54	-0.30	0.00	0.044
127.00	-20.41	-1.29	0.00	-54.39	0.00	54.39	2169.76	1084.88	3182.20	1579.78	3.57	-0.30	0.00	0.044
130.00	-19.58	-1.29	0.00	-50.51	0.00	50.51	2148.42	1074.21	3101.30	1539.62	3.76	-0.31	0.00	0.042
132.00	-19.04	-1.29	0.00	-47.92	0.00	47.92	1502.55	751.27	2180.88	1082.68	3.89	-0.32	0.00	0.057
135.00	-18.62	-1.29	0.00	-44.05	0.00	44.05	1491.20	745.60	2130.02	1057.43	4.09	-0.33	0.00	0.054
137.00	-15.50	-1.28	0.00	-41.46	0.00	41.46	1483.41	741.70	2096.06	1040.57	4.23	-0.33	0.00	0.050
140.00	-15.09	-1.28	0.00	-37.63	0.00	37.63	1471.39	735.69	2045.11	1015.28	4.45	-0.34	0.00	0.047
145.00	-14.41	-1.27	0.00	-31.25	0.00	31.25	1450.46	725.23	1960.22	973.13	4.81	-0.36	0.00	0.042
147.00	-9.96	-1.17	0.00	-28.71	0.00	28.71	1441.79	720.89	1926.30	956.30	4.96	-0.36	0.00	0.037
150.00	-9.63	-1.16	0.00	-25.20	0.00	25.20	1428.44	714.22	1875.49	931.07	5.20	-0.37	0.00	0.034
155.00	-9.08	-1.14	0.00	-19.40	0.00	19.40	1405.30	702.65	1791.05	889.15	5.59	-0.38	0.00	0.028
159.00	-5.42	-0.88	0.00	-14.85	0.00	14.85	1386.00	693.00	1723.78	855.76	5.91	-0.39	0.00	0.021

Calculated Forces

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 37



160.00	-5.33	-0.87	0.00	-13.97	0.00	13.97	1381.06	690.53	1707.02	847.43	6.00	-0.39	0.020
165.00	-4.89	-0.83	0.00	-9.61	0.00	9.61	1355.72	677.86	1623.53	805.99	6.41	-0.40	0.016
170.00	-4.47	-0.78	0.00	-5.45	0.00	5.45	1329.27	664.63	1540.71	764.87	6.83	-0.40	0.010
175.00	-4.05	-0.71	0.00	-1.56	0.00	1.56	1301.71	650.86	1458.68	724.15	7.25	-0.41	0.005
177.00	-0.23	-0.05	0.00	-0.14	0.00	0.14	1290.38	645.19	1426.13	707.99	7.42	-0.41	0.000
180.00	0.00	-0.04	0.00	0.00	0.00	0.00	1273.05	636.53	1377.59	683.89	7.68	-0.41	0.000

Seismic Segment Forces (Factored)

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (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 23

Gust Response Factor 1.10

Sds 0.18

Ss 0.17

Dead Load Factor 0.90 **Seismic Load Factor** 1.00

Sd1 0.10

S1 0.06

Wind Load Factor 0.00 **Structure Frequency (f1)** 0.28

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	RB1	0.00	0.00	0.00	0.00	0.00	
3.42	RB2	930.82	0.00	0.02	0.01	12.56	
4.00	RT1	156.84	0.00	0.02	0.01	2.36	
5.00		269.72	0.00	0.03	0.02	4.72	
10.00		1335.3	0.01	0.05	0.03	34.24	
15.00		1313.4	0.01	0.06	0.03	39.33	
16.88	RT2	488.15	0.02	0.06	0.04	15.13	
20.00		803.26	0.02	0.07	0.04	25.95	
25.00		1269.4	0.04	0.07	0.04	42.76	
30.00		1247.4	0.05	0.07	0.04	43.14	
35.00		1225.4	0.07	0.07	0.04	43.27	
40.00		1203.4	0.09	0.07	0.04	43.36	
45.00		1181.4	0.12	0.07	0.03	43.44	
45.92	Bot - Section 2	214.22	0.12	0.07	0.03	7.91	
50.00		1768.0	0.15	0.07	0.03	66.25	
52.00	Appurtenance(s)	896.26	0.16	0.07	0.03	33.80	
53.00	Top - Section 1	425.58	0.16	0.07	0.03	16.09	
55.00		393.91	0.18	0.07	0.03	14.96	
60.00		971.59	0.21	0.06	0.02	36.91	
65.00		952.77	0.25	0.06	0.02	35.39	
70.00		933.94	0.29	0.05	0.01	32.62	
75.00		915.12	0.33	0.04	0.01	28.17	
80.00		896.29	0.37	0.03	0.01	21.64	
85.00		877.46	0.42	0.01	0.01	12.98	
90.00		858.64	0.47	-0.01	0.01	2.68	
92.83	Bot - Section 3	478.20	0.50	-0.02	0.01	-1.95	
95.00		636.91	0.53	-0.03	0.01	-6.14	
98.92	Top - Section 2	1135.6	0.57	-0.04	0.01	-21.85	
100.00		134.26	0.58	-0.05	0.01	-2.92	
105.00		611.09	0.64	-0.07	0.02	-19.25	
110.00		596.98	0.71	-0.09	0.03	-22.71	
115.00		582.87	0.77	-0.11	0.05	-23.87	
120.00		568.77	0.84	-0.12	0.07	-22.91	
125.00		554.66	0.91	-0.12	0.09	-20.05	
126.67	Bot - Section 4	182.11	0.94	-0.12	0.10	-6.20	
127.00	Appurtenance(s)	99.09	0.94	-0.12	0.10	-3.33	
130.00		577.66	0.99	-0.11	0.12	-16.57	
132.00	Top - Section 3	380.71	1.02	-0.11	0.14	-9.44	
135.00		248.14	1.06	-0.09	0.17	-4.46	
137.00	Appurtenance(s)	2522.5	1.09	-0.07	0.18	-32.33	
140.00		241.82	1.14	-0.04	0.21	-0.99	
145.00		394.24	1.23	0.03	0.27	5.13	
147.00	Appurtenance(s)	3632.4	1.26	0.07	0.30	75.38	
150.00		228.63	1.31	0.14	0.35	7.62	
155.00		372.25	1.40	0.29	0.43	21.21	
159.00	Appurtenance(s)	2982.3	1.47	0.44	0.51	233.44	

Seismic Segment Forces (Factored)

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (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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160.00		71.37	1.49	0.48	0.53	5.99
165.00		350.26	1.59	0.74	0.65	40.05
170.00		339.27	1.69	1.07	0.79	50.29
175.00		328.28	1.79	1.48	0.95	60.95
177.00	Appurtenance(s)	3180.6	1.83	1.67	1.03	641.44
180.00	Appurtenance(s)	194.05	1.89	1.98	1.14	44.00
Totals:		43,153.8				1,630.2
						Total Wind: 50,266.3

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

Calculated Forces

Structure: CT01365-S-SBA **Code:** EIA/TIA-222-G 8/9/2021
Site Name: Norwich 2 CT **Exposure:** C
Height: 180.00 (ft) **Crest Height:** 0.00
Base Elev: 0.000 (ft) **Site Class:** D - Stiff Soil
Gh: 1.1 **Topography:** 1 **Struct Class:** II Page: 40



Load Case: 0.9D + 1.0E

Iterations 23

Gust Response Factor 1.10

Sds 0.18

Ss 0.17

Dead Load Factor 0.90 **Seismic Load Factor** 1.00 **Sd1** 0.10

S1 0.06

Wind Load Factor 0.00 **Structure Frequency (f1)** 0.28 **SA** 0.03 **Seismic Importance Factor** 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-43.81	-1.85	0.00	-239.03	0.00	239.03	5397.55	2698.78	12826.5	6367.63	0.00	0.00	0.00	0.033
3.42	-42.87	-1.84	0.00	-232.72	0.00	232.72	5361.50	2680.75	12599.7	6255.04	0.00	0.00	0.00	0.026
4.00	-42.71	-1.83	0.00	-231.65	0.00	231.65	5355.33	2677.67	12561.3	6235.98	0.00	-0.01	0.00	0.034
5.00	-42.43	-1.83	0.00	-229.82	0.00	229.82	5344.66	2672.33	12495.2	6203.15	0.00	-0.01	0.00	0.034
10.00	-41.07	-1.80	0.00	-220.66	0.00	220.66	5290.67	2645.34	12165.4	6039.43	0.02	-0.01	0.00	0.033
15.00	-39.72	-1.77	0.00	-211.64	0.00	211.64	5235.58	2617.79	11837.2	5876.53	0.03	-0.02	0.00	0.033
16.88	-39.22	-1.75	0.00	-208.32	0.00	208.32	5214.57	2607.29	11714.3	5815.50	0.04	-0.03	0.00	0.032
16.88	-39.22	-1.75	0.00	-208.32	0.00	208.32	5214.57	2607.29	11714.3	5815.50	0.04	-0.03	0.00	0.032
20.00	-38.40	-1.73	0.00	-202.84	0.00	202.84	5179.37	2589.69	11510.9	5714.52	0.06	-0.03	0.00	0.043
25.00	-37.09	-1.70	0.00	-194.18	0.00	194.18	5122.07	2561.03	11186.5	5553.45	0.10	-0.04	0.00	0.042
30.00	-35.81	-1.66	0.00	-185.70	0.00	185.70	5063.65	2531.83	10864.1	5393.40	0.15	-0.05	0.00	0.042
35.00	-34.54	-1.62	0.00	-177.40	0.00	177.40	5004.13	2502.07	10543.8	5234.42	0.21	-0.06	0.00	0.041
40.00	-33.30	-1.58	0.00	-169.30	0.00	169.30	4943.51	2471.75	10225.9	5076.58	0.27	-0.07	0.00	0.040
45.00	-32.07	-1.54	0.00	-161.39	0.00	161.39	4881.77	2440.89	9910.40	4919.94	0.36	-0.08	0.00	0.039
45.92	-31.85	-1.54	0.00	-159.98	0.00	159.98	4870.34	2435.17	9852.83	4891.36	0.37	-0.08	0.00	0.039
50.00	-30.13	-1.47	0.00	-153.71	0.00	153.71	4818.94	2409.47	9597.43	4764.57	0.45	-0.09	0.00	0.039
52.00	-29.25	-1.44	0.00	-150.77	0.00	150.77	4793.49	2396.75	9472.99	4702.79	0.49	-0.10	0.00	0.038
53.00	-28.84	-1.42	0.00	-149.34	0.00	149.34	3921.66	1960.83	7862.59	3903.32	0.51	-0.10	0.00	0.046
55.00	-28.42	-1.41	0.00	-146.49	0.00	146.49	3903.31	1951.65	7765.73	3855.23	0.55	-0.10	0.00	0.045
60.00	-27.38	-1.38	0.00	-139.45	0.00	139.45	3856.65	1928.33	7524.53	3735.49	0.66	-0.12	0.00	0.044
65.00	-26.36	-1.34	0.00	-132.57	0.00	132.57	3808.89	1904.45	7284.80	3616.48	0.79	-0.13	0.00	0.044
70.00	-25.36	-1.31	0.00	-125.85	0.00	125.85	3760.03	1880.02	7046.68	3498.27	0.93	-0.14	0.00	0.043
75.00	-24.38	-1.29	0.00	-119.27	0.00	119.27	3710.06	1855.03	6810.28	3380.91	1.09	-0.15	0.00	0.042
80.00	-23.41	-1.27	0.00	-112.83	0.00	112.83	3658.99	1829.49	6575.75	3264.48	1.25	-0.16	0.00	0.041
85.00	-22.46	-1.26	0.00	-106.48	0.00	106.48	3606.81	1803.40	6343.20	3149.03	1.43	-0.18	0.00	0.040
90.00	-21.52	-1.26	0.00	-100.18	0.00	100.18	3553.52	1776.76	6112.76	3034.63	1.62	-0.19	0.00	0.039
92.83	-21.00	-1.26	0.00	-96.62	0.00	96.62	3522.83	1761.42	5983.17	2970.30	1.74	-0.20	0.00	0.038
95.00	-20.36	-1.26	0.00	-93.90	0.00	93.90	3499.13	1749.56	5884.57	2921.35	1.83	-0.20	0.00	0.038
98.92	-19.21	-1.26	0.00	-88.97	0.00	88.97	2350.25	1175.12	3954.81	1963.33	2.00	-0.21	0.00	0.053
100.00	-19.05	-1.26	0.00	-87.61	0.00	87.61	2343.93	1171.97	3924.64	1948.36	2.05	-0.22	0.00	0.053
105.00	-18.34	-1.26	0.00	-81.31	0.00	81.31	2314.11	1157.05	3785.67	1879.37	2.28	-0.23	0.00	0.051
110.00	-17.64	-1.26	0.00	-75.01	0.00	75.01	2283.18	1141.59	3647.23	1810.64	2.53	-0.25	0.00	0.049
115.00	-16.96	-1.26	0.00	-68.69	0.00	68.69	2251.15	1125.57	3509.45	1742.24	2.80	-0.26	0.00	0.047
120.00	-16.28	-1.27	0.00	-62.37	0.00	62.37	2218.01	1109.01	3372.44	1674.22	3.08	-0.28	0.00	0.045
125.00	-15.62	-1.27	0.00	-56.04	0.00	56.04	2183.77	1091.88	3236.35	1606.66	3.38	-0.29	0.00	0.042
126.67	-15.40	-1.26	0.00	-53.93	0.00	53.93	2172.08	1086.04	3191.13	1584.21	3.48	-0.30	0.00	0.041
127.00	-15.30	-1.27	0.00	-53.51	0.00	53.51	2169.76	1084.88	3182.20	1579.78	3.51	-0.30	0.00	0.041
130.00	-14.69	-1.26	0.00	-49.71	0.00	49.71	2148.42	1074.21	3101.30	1539.62	3.70	-0.31	0.00	0.039
132.00	-14.28	-1.26	0.00	-47.18	0.00	47.18	1502.55	751.27	2180.88	1082.68	3.83	-0.31	0.00	0.053
135.00	-13.96	-1.26	0.00	-43.39	0.00	43.39	1491.20	745.60	2130.02	1057.43	4.03	-0.32	0.00	0.050
137.00	-11.63	-1.25	0.00	-40.86	0.00	40.86	1483.41	741.70	2096.06	1040.57	4.16	-0.33	0.00	0.047
140.00	-11.31	-1.25	0.00	-37.11	0.00	37.11	1471.39	735.69	2045.11	1015.28	4.37	-0.34	0.00	0.044
145.00	-10.80	-1.25	0.00	-30.84	0.00	30.84	1450.46	725.23	1960.22	973.13	4.73	-0.35	0.00	0.039
147.00	-7.47	-1.15	0.00	-28.35	0.00	28.35	1441.79	720.89	1926.30	956.30	4.88	-0.36	0.00	0.035
150.00	-7.22	-1.14	0.00	-24.89	0.00	24.89	1428.44	714.22	1875.49	931.07	5.11	-0.36	0.00	0.032
155.00	-6.81	-1.12	0.00	-19.18	0.00	19.18	1405.30	702.65	1791.05	889.15	5.50	-0.38	0.00	0.026
159.00	-4.07	-0.87	0.00	-14.69	0.00	14.69	1386.00	693.00	1723.78	855.76	5.81	-0.38	0.00	0.020

Calculated Forces

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (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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160.00	-4.00	-0.86	0.00	-13.82	0.00	13.82	1381.06	690.53	1707.02	847.43	5.89	-0.38	0.019
165.00	-3.67	-0.82	0.00	-9.50	0.00	9.50	1355.72	677.86	1623.53	805.99	6.30	-0.39	0.014
170.00	-3.35	-0.77	0.00	-5.40	0.00	5.40	1329.27	664.63	1540.71	764.87	6.71	-0.40	0.010
175.00	-3.04	-0.71	0.00	-1.55	0.00	1.55	1301.71	650.86	1458.68	724.15	7.13	-0.40	0.004
177.00	-0.17	-0.05	0.00	-0.14	0.00	0.14	1290.38	645.19	1426.13	707.99	7.30	-0.40	0.000
180.00	0.00	-0.04	0.00	0.00	0.00	0.00	1273.05	636.53	1377.59	683.89	7.55	-0.40	0.000

Wind Loading - Shaft

Structure: CT01365-S-SBA

Code: EIA/TIA-222-G

8/9/2021

Site Name: Norwich 2 CT

Exposure: C

Height: 180.00 (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



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	RB1	1.00	0.85	7.442	8.19	272.60	0.750	0.000	0.00	0.000	0.00	0.0	0.0	0.0
3.42	RB2	1.00	0.85	7.442	8.19	269.63	0.750	0.000	3.42	16.762	12.57	102.9	0.0	930.8
4.00	RT1	1.00	0.85	7.442	8.19	269.13	0.750	0.000	0.58	2.824	2.12	17.3	0.0	156.8
5.00		1.00	0.85	7.442	8.19	268.26	0.750	0.000	1.00	4.857	3.64	29.8	0.0	269.7
10.00		1.00	0.85	7.442	8.19	263.91	0.750	0.000	5.00	24.051	18.04	147.7	0.0	1335.4
15.00		1.00	0.85	7.442	8.19	259.56	0.750	0.000	5.00	23.658	17.74	145.2	0.0	1313.4
16.88	RT2	1.00	0.87	7.619	8.38	260.98	0.750	0.000	1.88	8.794	6.60	55.3	0.0	488.1
20.00		1.00	0.90	7.896	8.69	262.89	0.750	0.000	3.12	14.471	10.85	94.3	0.0	803.3
25.00		1.00	0.95	8.276	9.10	264.55	0.750	0.000	5.00	22.872	17.15	156.2	0.0	1269.4
30.00		1.00	0.98	8.600	9.46	265.00	0.750	0.000	5.00	22.479	16.86	159.5	0.0	1247.4
35.00		1.00	1.01	8.883	9.77	264.59	0.750	0.000	5.00	22.086	16.56	161.9	0.0	1225.4
40.00		1.00	1.04	9.137	10.05	263.52	0.750	0.000	5.00	21.693	16.27	163.5	0.0	1203.5
45.00		1.00	1.07	9.366	10.30	261.93	0.750	0.000	5.00	21.300	15.97	164.6	0.0	1181.5
45.92	Bot - Section 2	1.00	1.07	9.406	10.35	261.59	0.750	0.000	0.92	3.862	2.90	30.0	0.0	214.2
50.00		1.00	1.09	9.576	10.53	259.92	0.750	0.000	4.08	17.305	12.98	136.7	0.0	1768.1
52.00	Appurtenance(s)	1.00	1.10	9.656	10.62	259.01	0.750	0.000	2.00	8.380	6.29	66.8	0.0	856.1
53.00	Top - Section 1	1.00	1.11	9.694	10.66	258.54	0.750	0.000	1.00	4.167	3.12	33.3	0.0	425.6
55.00		1.00	1.12	9.770	10.75	261.60	0.750	0.000	2.00	8.286	6.21	66.8	0.0	393.9
60.00		1.00	1.14	9.951	10.95	258.98	0.750	0.000	5.00	20.440	15.33	167.8	0.0	971.6
65.00		1.00	1.16	10.120	11.13	256.10	0.750	0.000	5.00	20.047	15.03	167.4	0.0	952.8
70.00		1.00	1.17	10.279	11.31	252.99	0.750	0.000	5.00	19.654	14.74	166.7	0.0	933.9
75.00		1.00	1.19	10.430	11.47	249.69	0.750	0.000	5.00	19.261	14.45	165.7	0.0	915.1
80.00		1.00	1.21	10.572	11.63	246.21	0.750	0.000	5.00	18.868	14.15	164.6	0.0	896.3
85.00		1.00	1.22	10.708	11.78	242.57	0.750	0.000	5.00	18.475	13.86	163.2	0.0	877.5
90.00		1.00	1.24	10.838	11.92	238.79	0.750	0.000	5.00	18.082	13.56	161.7	0.0	858.6
92.83	Bot - Section 3	1.00	1.25	10.909	12.00	236.59	0.750	0.000	2.83	10.072	7.55	90.6	0.0	478.2
95.00		1.00	1.25	10.962	12.06	234.87	0.750	0.000	2.17	7.720	5.79	69.8	0.0	636.9
98.92	Top - Section 2	1.00	1.26	11.055	12.16	231.72	0.750	0.000	3.92	13.769	10.33	125.6	0.0	1135.6
100.00		1.00	1.27	11.081	12.19	234.06	0.750	0.000	1.08	3.766	2.82	34.4	0.0	134.3
105.00		1.00	1.28	11.195	12.31	229.94	0.750	0.000	5.00	17.142	12.86	158.3	0.0	611.1
110.00		1.00	1.29	11.305	12.44	225.71	0.750	0.000	5.00	16.749	12.56	156.2	0.0	597.0
115.00		1.00	1.30	11.412	12.55	221.38	0.750	0.000	5.00	16.356	12.27	154.0	0.0	582.9
120.00		1.00	1.32	11.514	12.67	216.97	0.750	0.000	5.00	15.963	11.97	151.6	0.0	568.8
125.00		1.00	1.33	11.614	12.78	212.47	0.750	0.000	5.00	15.570	11.68	149.2	0.0	554.7
126.67	Bot - Section 4	1.00	1.33	11.646	12.81	210.95	0.750	0.000	1.67	5.113	3.83	49.1	0.0	182.1
127.00	Appurtenance(s)	1.00	1.33	11.653	12.82	210.65	0.750	0.000	0.33	1.017	0.76	9.8	0.0	64.1
130.00		1.00	1.34	11.710	12.88	207.90	0.750	0.000	3.00	9.171	6.88	88.6	0.0	577.7
132.00	Top - Section 3	1.00	1.34	11.748	12.92	206.04	0.750	0.000	2.00	6.045	4.53	58.6	0.0	380.7
135.00		1.00	1.35	11.803	12.98	205.84	0.750	0.000	3.00	8.925	6.69	86.9	0.0	248.1
137.00	Appurtenance(s)	1.00	1.35	11.840	13.02	203.97	0.750	0.000	2.00	5.878	4.41	57.4	0.0	163.4
140.00		1.00	1.36	11.894	13.08	201.14	0.750	0.000	3.00	8.699	6.52	85.4	0.0	241.8
145.00		1.00	1.37	11.982	13.18	196.36	0.750	0.000	5.00	14.184	10.64	140.2	0.0	394.2
147.00	Appurtenance(s)	1.00	1.37	12.017	13.22	194.44	0.750	0.000	2.00	5.564	4.17	55.2	0.0	154.6
150.00		1.00	1.38	12.068	13.27	191.53	0.750	0.000	3.00	8.227	6.17	81.9	0.0	228.6
155.00		1.00	1.39	12.152	13.37	186.64	0.750	0.000	5.00	13.398	10.05	134.3	0.0	372.3
159.00	Appurtenance(s)	1.00	1.40	12.217	13.44	182.68	0.750	0.000	4.00	10.436	7.83	105.2	0.0	289.9
160.00		1.00	1.40	12.233	13.46	181.69	0.750	0.000	1.00	2.570	1.93	25.9	0.0	71.4

Wind Loading - Shaft

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 43



165.00	1.00	1.41	12.313	13.54	176.68	0.750	0.000	5.00	12.612	9.46	128.1	0.0	350.3
170.00	1.00	1.42	12.390	13.63	171.63	0.750	0.000	5.00	12.219	9.16	124.9	0.0	339.3
175.00	1.00	1.42	12.466	13.71	166.53	0.750	0.000	5.00	11.826	8.87	121.6	0.0	328.3
177.00 Appurtenance(s)	1.00	1.43	12.496	13.75	164.47	0.750	0.000	2.00	4.620	3.47	47.6	0.0	128.2
180.00 Appurtenance(s)	1.00	1.43	12.540	13.79	161.38	0.750	0.000	3.00	6.813	5.11	70.5	0.0	189.0
Totals:								180.00			5,449.8		31,491.9

Discrete Appurtenance Forces

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021	
Site Name: Norwich 2 CT	Exposure: C		
Height: 180.00 (ft)	Crest Height: 0.00		
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil		
Gh: 1.1	Topography: 1	Struct Class: II	Page: 44



Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 25

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	180.00	Lightning Rod	1	12.584	13.842	1.00	1.00	0.50	5.00	0.000	3.000	6.92	0.00	20.76
2	177.00	RFS	3	12.496	13.746	0.46	0.75	9.01	122.10	0.000	0.000	123.87	0.00	0.00
3	177.00	10" x 8" x 3" Filter	3	12.496	13.746	0.38	0.75	0.88	26.40	0.000	0.000	12.06	0.00	0.00
4	177.00	Platform w/ Hand Rail	1	12.496	13.746	1.00	1.00	40.00	1600.00	0.000	0.000	549.83	0.00	0.00
5	177.00	RFS	3	12.496	13.746	0.52	0.75	31.88	368.40	0.000	0.000	438.19	0.00	0.00
6	177.00	4" x 2" x 3.5" RETs	4	12.496	13.746	0.38	0.75	0.21	4.00	0.000	0.000	2.89	0.00	0.00
7	177.00	Ericsson 4424 B25 RRU	3	12.496	13.746	0.38	0.75	2.31	264.00	0.000	0.000	31.70	0.00	0.00
8	177.00	Ericsson 4415 B66A RRU	3	12.496	13.746	0.38	0.75	2.09	138.90	0.000	0.000	28.76	0.00	0.00
9	177.00	Ericsson 4449 B71 + B85	3	12.496	13.746	0.38	0.75	2.22	219.60	0.000	0.000	30.46	0.00	0.00
10	177.00	Ericsson AIR6449 B41	3	12.496	13.746	0.53	0.75	9.03	309.00	0.000	0.000	124.07	0.00	0.00
11	159.00	DB-T1-6Z-8AB-OZ	2	12.217	13.439	0.40	0.80	3.84	88.00	0.000	0.000	51.61	0.00	0.00
12	159.00	Samsung VZS01	3	12.217	13.439	0.55	0.80	7.12	261.30	0.000	0.000	95.70	0.00	0.00
13	159.00	BXA-80040/4CF	3	12.217	13.439	0.54	0.80	14.92	75.00	0.000	0.000	200.54	0.00	0.00
14	159.00	SBNHH-1D65B	6	12.217	13.439	0.62	0.80	30.25	243.60	0.000	0.000	406.54	0.00	0.00
15	159.00	B2/B66A	3	12.217	13.439	0.40	0.80	2.24	202.50	0.000	0.000	30.16	0.00	0.00
16	159.00	Low Profile Platform	1	12.217	13.439	1.00	1.00	25.00	1500.00	0.000	0.000	335.97	0.00	0.00
17	159.00	BSAMNT-SBS-1-2	3	12.217	13.439	1.00	1.00	0.00	76.05	0.000	0.000	0.00	0.00	0.00
18	159.00	B5/B13 RRH-BR04C	3	12.217	13.439	0.40	0.80	2.24	246.00	0.000	0.000	30.16	0.00	0.00
19	147.00	Ericsson RRUS 4449	3	12.017	13.219	0.38	0.75	2.22	219.00	0.000	0.000	29.30	0.00	0.00
20	147.00	Kathrein 860 10025 RET	12	12.017	13.219	0.38	0.75	0.81	14.40	0.000	0.000	10.71	0.00	0.00
21	147.00	7770	3	12.017	13.219	0.55	0.75	9.03	105.00	0.000	0.000	119.41	0.00	0.00
22	147.00	Powerwave LGP21401	6	12.017	13.219	0.38	0.75	2.90	114.00	0.000	0.000	38.37	0.00	0.00
23	147.00	Raycap DC6-48-60-18-8F	2	12.017	13.219	0.38	0.75	0.69	65.60	2.383	0.000	9.12	21.74	0.00
24	147.00	Platform w/ Hand Rails	1	12.017	13.219	1.00	1.00	40.00	2000.00	0.000	0.000	528.75	0.00	0.00
25	147.00	Ericsson RRUS 4478 B14	3	12.017	13.219	0.38	0.75	1.86	178.20	0.000	0.000	24.54	0.00	0.00
26	147.00	Ericsson RRUS-A2	3	12.017	13.219	0.38	0.75	2.09	66.00	0.000	0.000	27.66	0.00	0.00
27	147.00	DMP65R-BU6DA	2	12.017	13.219	0.61	0.75	11.74	158.80	0.000	0.000	155.15	0.00	0.00
28	147.00	DMP65R-BU8DA	4	12.017	13.219	0.58	0.75	29.45	382.80	0.000	0.000	389.32	0.00	0.00
29	147.00	Ericsson RRUS 12	3	12.017	13.219	0.38	0.75	3.04	174.00	0.000	0.000	40.15	0.00	0.00
30	137.00	TA08025-B605	3	11.840	13.024	0.38	0.75	2.21	225.00	0.000	0.000	28.72	0.00	0.00
31	137.00	MX08FRO665-21	3	11.840	13.024	0.55	0.75	20.80	193.50	0.000	0.000	270.85	0.00	0.00
32	137.00	RDIDC-9181-OF-48	1	11.840	13.024	0.38	0.75	0.75	21.90	0.000	0.000	9.82	0.00	0.00
33	137.00	TA08025-B604	3	11.840	13.024	0.38	0.75	2.21	191.70	0.000	0.000	28.72	0.00	0.00
34	137.00	MC-PK8-DSH	1	11.840	13.024	1.00	1.00	37.59	1727.00	0.000	0.000	489.57	0.00	0.00
35	127.00	CS72188.01 LMU	1	11.348	12.483	1.00	1.00	6.41	35.00	3.022	-15.000	80.02	241.78	-1200.25
36	52.00	GPS	1	9.656	10.621	1.00	1.00	0.11	0.20	3.055	0.000	1.17	3.57	0.00
37	52.00	3 ft Standoff	1	9.656	10.621	1.00	1.00	2.63	40.00	0.000	0.000	27.93	0.00	0.00

Totals: 11,661.95

4,808.67

Total Applied Force Summary

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (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
3.42		102.91	1054.01	0.00	0.00
4.00		17.34	177.73	0.00	0.00
5.00		29.82	305.74	0.00	0.00
10.00		147.66	1515.49	0.00	0.00
15.00		145.25	1493.50	0.00	0.00
16.88		55.28	555.87	0.00	0.00
20.00		94.27	915.64	0.00	0.00
25.00		156.16	1449.52	0.00	0.00
30.00		159.48	1427.53	0.00	0.00
35.00		161.86	1405.54	0.00	0.00
40.00		163.52	1383.55	0.00	0.00
45.00		164.59	1361.56	0.00	0.00
45.92		29.97	247.23	0.00	0.00
50.00		136.71	1915.15	0.00	0.00
52.00	(2) attachments	95.86	968.30	3.57	0.00
53.00		33.32	461.44	0.00	0.00
55.00		66.79	465.63	0.00	0.00
60.00		167.80	1150.89	0.00	0.00
65.00		167.37	1132.07	0.00	0.00
70.00		166.67	1113.24	0.00	0.00
75.00		165.73	1094.42	0.00	0.00
80.00		164.57	1075.59	0.00	0.00
85.00		163.21	1056.76	0.00	0.00
90.00		161.67	1037.94	0.00	0.00
92.83		90.64	579.81	0.00	0.00
95.00		69.82	714.60	0.00	0.00
98.92		125.58	1276.09	0.00	0.00
100.00		34.43	173.11	0.00	0.00
105.00		158.32	790.39	0.00	0.00
110.00		156.21	776.28	0.00	0.00
115.00		153.98	762.17	0.00	0.00
120.00		151.64	748.07	0.00	0.00
125.00		149.18	733.96	0.00	0.00
126.67		49.12	242.00	0.00	0.00
127.00	(1) attachments	89.80	110.93	241.78	-1200.25
130.00		88.59	684.76	0.00	0.00
132.00		58.59	452.23	0.00	0.00
135.00		86.91	355.12	0.00	0.00
137.00	(11) attachments	885.09	2593.91	0.00	0.00
140.00		85.36	345.92	0.00	0.00
145.00		140.21	567.74	0.00	0.00
147.00	(42) attachments	1427.62	3701.82	21.74	0.00
150.00		81.91	279.45	0.00	0.00
155.00		134.32	456.95	0.00	0.00
159.00	(24) attachments	1255.85	3050.10	0.00	0.00
160.00		25.93	74.67	0.00	0.00

Total Applied Force Summary

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (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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165.00	128.11	366.76	0.00	0.00
170.00	124.91	355.77	0.00	0.00
175.00	121.63	344.78	0.00	0.00
177.00 (26) attachments	1389.46	3187.23	0.00	0.00
180.00 (1) attachments	77.40	194.05	0.00	20.76
Totals:	10,258.43	48,683.03	267.08	-1,179.49

Linear Appurtenance Segment Forces (Factored)

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

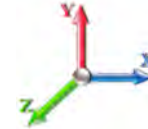


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Load Case: 1.0D + 1.0W 60 mph Wind

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)
3.42	1/2" Coax	Yes	3.42	0.000	0.65	0.19	0.00	0.032	0.000	7.442	0.00	0.55
3.42	1.25" Reinforcing	Yes	3.42	0.000	1.25	0.36	0.00	0.032	0.000	7.442	0.00	0.00
4.00	1/2" Coax	Yes	0.58	0.000	0.65	0.03	0.00	0.033	0.000	7.442	0.00	0.09
4.00	1.25" Reinforcing	Yes	0.58	0.000	1.25	0.06	0.00	0.033	0.000	7.442	0.00	0.00
5.00	1/2" Coax	Yes	1.00	0.000	0.65	0.05	0.00	0.033	0.000	7.442	0.00	0.16
5.00	1.25" Reinforcing	Yes	1.00	0.000	1.25	0.10	0.00	0.033	0.000	7.442	0.00	0.00
10.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.033	0.000	7.442	0.00	0.80
10.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.033	0.000	7.442	0.00	0.00
15.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.033	0.000	7.442	0.00	0.80
15.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.033	0.000	7.442	0.00	0.00
16.88	1/2" Coax	Yes	1.88	0.000	0.65	0.10	0.00	0.034	0.000	7.619	0.00	0.30
16.88	1.25" Reinforcing	Yes	1.88	0.000	1.25	0.20	0.00	0.034	0.000	7.619	0.00	0.00
20.00	1/2" Coax	Yes	3.12	0.000	0.65	0.17	0.00	0.034	0.000	7.896	0.00	0.50
20.00	1.25" Reinforcing	Yes	3.12	0.000	1.25	0.33	0.00	0.034	0.000	7.896	0.00	0.00
25.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	8.276	0.00	0.80
30.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	8.600	0.00	0.80
35.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	8.883	0.00	0.80
40.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	9.137	0.00	0.80
45.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.013	0.000	9.366	0.00	0.80
45.92	1/2" Coax	Yes	0.92	0.000	0.65	0.05	0.00	0.013	0.000	9.406	0.00	0.15
50.00	1/2" Coax	Yes	4.08	0.000	0.65	0.22	0.00	0.013	0.000	9.576	0.00	0.65
52.00	1/2" Coax	Yes	2.00	0.000	0.65	0.11	0.00	0.013	0.000	9.656	0.00	0.32
Totals:											0.0	8.3

Calculated Forces

Structure: CT01365-S-SBA

Code: EIA/TIA-222-G

8/9/2021

Site Name: Norwich 2 CT

Exposure: C

Height: 180.00 (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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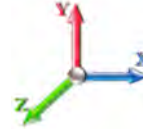


Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 25

Dead Load Factor 1.00

Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-48.68	-10.27	-0.27	-1282.3	0.00	1282.38	5397.55	2698.78	12826.5	6367.63	0.00	0.000	0.000	0.152
3.42	-47.62	-10.18	-0.27	-1247.2	0.00	1247.26	5361.50	2680.75	12599.7	6255.04	0.01	-0.026	0.000	0.122
4.00	-47.45	-10.17	-0.27	-1241.3	0.00	1241.36	5355.33	2677.67	12561.3	6235.98	0.01	-0.030	0.000	0.157
5.00	-47.14	-10.16	-0.27	-1231.1	0.00	1231.19	5344.66	2672.33	12495.2	6203.15	0.02	-0.038	0.000	0.157
10.00	-45.61	-10.04	-0.27	-1180.4	0.00	1180.41	5290.67	2645.34	12165.4	6039.43	0.08	-0.079	0.000	0.153
15.00	-44.11	-9.91	-0.27	-1130.2	0.00	1130.21	5235.58	2617.79	11837.2	5876.53	0.19	-0.119	0.000	0.150
16.88	-43.56	-9.87	-0.27	-1111.5	0.00	1111.58	5214.57	2607.29	11714.3	5815.50	0.24	-0.135	0.000	0.149
16.88	-43.56	-9.87	-0.27	-1111.5	0.00	1111.58	5214.57	2607.29	11714.3	5815.50	0.24	-0.135	0.000	0.149
20.00	-42.63	-9.81	-0.27	-1080.7	0.00	1080.78	5179.37	2589.69	11510.9	5714.52	0.33	-0.160	0.000	0.197
25.00	-41.17	-9.68	-0.27	-1031.7	0.00	1031.75	5122.07	2561.03	11186.5	5553.45	0.53	-0.215	0.000	0.194
30.00	-39.74	-9.56	-0.27	-983.33	0.00	983.33	5063.65	2531.83	10864.1	5393.40	0.79	-0.270	0.000	0.190
35.00	-38.33	-9.42	-0.27	-935.55	0.00	935.55	5004.13	2502.07	10543.8	5234.42	1.10	-0.325	0.000	0.186
40.00	-36.93	-9.29	-0.27	-888.43	0.00	888.43	4943.51	2471.75	10225.9	5076.58	1.47	-0.380	0.000	0.182
45.00	-35.57	-9.13	-0.27	-842.00	0.00	842.00	4881.77	2440.89	9910.40	4919.94	1.89	-0.435	0.000	0.178
45.92	-35.32	-9.12	-0.27	-833.62	0.00	833.62	4870.34	2435.17	9852.83	4891.36	1.98	-0.445	0.000	0.178
50.00	-33.40	-8.99	-0.27	-796.39	0.00	796.39	4818.94	2409.47	9597.43	4764.57	2.38	-0.491	0.000	0.174
52.00	-32.43	-8.89	-0.26	-778.42	0.00	778.42	4793.49	2396.75	9472.99	4702.79	2.59	-0.513	0.000	0.172
53.00	-31.96	-8.86	-0.26	-769.53	0.00	769.53	3921.66	1960.83	7862.59	3903.32	2.70	-0.525	0.000	0.205
55.00	-31.49	-8.82	-0.26	-751.80	0.00	751.80	3903.31	1951.65	7765.73	3855.23	2.92	-0.547	0.000	0.203
60.00	-30.33	-8.67	-0.26	-707.72	0.00	707.72	3856.65	1928.33	7524.53	3735.49	3.53	-0.608	0.000	0.197
65.00	-29.19	-8.52	-0.26	-664.38	0.00	664.38	3808.89	1904.45	7284.80	3616.48	4.20	-0.669	0.000	0.191
70.00	-28.07	-8.37	-0.26	-621.78	0.00	621.78	3760.03	1880.02	7046.68	3498.27	4.93	-0.730	0.000	0.185
75.00	-26.97	-8.22	-0.26	-579.94	0.00	579.94	3710.06	1855.03	6810.28	3380.91	5.73	-0.791	0.000	0.179
80.00	-25.89	-8.06	-0.26	-538.85	0.00	538.85	3658.99	1829.49	6575.75	3264.48	6.59	-0.850	0.000	0.172
85.00	-24.83	-7.91	-0.26	-498.54	0.00	498.54	3606.81	1803.40	6343.20	3149.03	7.51	-0.909	0.000	0.165
90.00	-23.79	-7.75	-0.26	-458.99	0.00	458.99	3553.52	1776.76	6112.76	3034.63	8.50	-0.967	0.000	0.158
92.83	-23.21	-7.66	-0.26	-437.03	0.00	437.03	3522.83	1761.42	5983.17	2970.30	9.08	-1.000	0.000	0.154
95.00	-22.49	-7.59	-0.26	-420.43	0.00	420.43	3499.13	1749.56	5884.57	2921.35	9.54	-1.025	0.000	0.150
98.92	-21.21	-7.45	-0.26	-390.69	0.00	390.69	2350.25	1175.12	3954.81	1963.33	10.40	-1.069	0.000	0.208
100.00	-21.03	-7.43	-0.26	-382.62	0.00	382.62	2343.93	1171.97	3924.64	1948.36	10.64	-1.082	0.000	0.205
105.00	-20.24	-7.28	-0.26	-345.46	0.00	345.46	2314.11	1157.05	3785.67	1879.37	11.81	-1.150	0.000	0.193
110.00	-19.46	-7.13	-0.26	-309.06	0.00	309.06	2283.18	1141.59	3647.23	1810.64	13.06	-1.217	-0.001	0.179
115.00	-18.69	-6.98	-0.26	-273.40	0.00	273.40	2251.15	1125.57	3509.45	1742.24	14.36	-1.280	-0.001	0.165
120.00	-17.94	-6.83	-0.26	-238.50	0.00	238.50	2218.01	1109.01	3372.44	1674.22	15.74	-1.339	-0.001	0.151
125.00	-17.21	-6.67	-0.26	-204.35	0.00	204.35	2183.77	1091.88	3236.35	1606.66	17.17	-1.395	-0.001	0.135
126.67	-16.96	-6.62	-0.26	-193.21	0.00	193.21	2172.08	1086.04	3191.13	1584.21	17.66	-1.413	-0.001	0.130
127.00	-16.85	-6.54	-0.02	-191.02	0.00	191.02	2169.76	1084.88	3182.20	1579.78	17.76	-1.417	-0.001	0.129
130.00	-16.17	-6.44	-0.02	-171.42	0.00	171.42	2148.42	1074.21	3101.30	1539.62	18.66	-1.447	-0.001	0.119
132.00	-15.71	-6.37	-0.02	-158.52	0.00	158.52	1502.55	751.27	2180.88	1082.68	19.27	-1.467	-0.001	0.157
135.00	-15.36	-6.28	-0.02	-139.42	0.00	139.42	1491.20	745.60	2130.02	1057.43	20.20	-1.494	-0.001	0.142
137.00	-12.79	-5.34	-0.02	-126.86	0.00	126.86	1483.41	741.70	2096.06	1040.57	20.83	-1.514	-0.001	0.131
140.00	-12.44	-5.25	-0.02	-110.85	0.00	110.85	1471.39	735.69	2045.11	1015.28	21.79	-1.543	-0.001	0.118
145.00	-11.87	-5.10	-0.02	-84.61	0.00	84.61	1450.46	725.23	1960.22	973.13	23.43	-1.585	-0.001	0.095
147.00	-8.21	-3.57	0.00	-74.41	0.00	74.41	1441.79	720.89	1926.30	956.30	24.10	-1.599	-0.001	0.084
150.00	-7.93	-3.49	0.00	-63.70	0.00	63.70	1428.44	714.22	1875.49	931.07	25.11	-1.619	-0.001	0.074
155.00	-7.48	-3.34	0.00	-46.27	0.00	46.27	1405.30	702.65	1791.05	889.15	26.82	-1.647	-0.001	0.057
159.00	-4.47	-2.00	0.00	-32.91	0.00	32.91	1386.00	693.00	1723.78	855.76	28.21	-1.664	-0.001	0.042
160.00	-4.39	-1.97	0.00	-30.91	0.00	30.91	1381.06	690.53	1707.02	847.43	28.56	-1.668	-0.001	0.040

Calculated Forces

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (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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165.00	-4.03	-1.83	0.00	-21.06	0.00	21.06	1355.72	677.86	1623.53	805.99	30.31	-1.683	-0.001	0.029
170.00	-3.68	-1.70	0.00	-11.89	0.00	11.89	1329.27	664.63	1540.71	764.87	32.08	-1.694	-0.001	0.018
175.00	-3.34	-1.57	0.00	-3.40	0.00	3.40	1301.71	650.86	1458.68	724.15	33.86	-1.700	-0.001	0.007
177.00	-0.19	-0.08	0.00	-0.27	0.00	0.27	1290.38	645.19	1426.13	707.99	34.57	-1.700	-0.001	0.001
180.00	0.00	-0.08	0.00	-0.02	0.00	0.02	1273.05	636.53	1377.59	683.89	35.64	-1.700	-0.001	0.000

Final Analysis Summary

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	8/9/2021
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (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 105 mph Wind	50.3	0.00	58.36	0.02	0.80	6317.05
0.9D + 1.6W 105 mph Wind	50.3	0.00	43.76	0.01	0.80	6239.87
1.2D + 1.0Di + 1.0Wi 50 mph Wind	11.6	0.00	89.80	0.00	0.33	1499.09
1.2D + 1.0E	1.8	0.00	58.42	0.00	0.00	242.27
0.9D + 1.0E	1.8	0.00	43.81	0.00	0.00	239.03
1.0D + 1.0W 60 mph Wind	10.3	0.00	48.68	0.00	0.27	1282.38

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 105 mph Wind	-22.31	-36.79	-0.80	-1926.1	-0.04	-1926.1	2350.25	1175.1	3954.81	1963.33	98.92	0.992
0.9D + 1.6W 105 mph Wind	-15.99	-36.17	-0.80	-1888.8	-0.04	-1888.8	2350.25	1175.1	3954.81	1963.33	98.92	0.970
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-46.85	-8.85	-0.32	-464.45	-0.01	-464.45	2350.25	1175.1	3954.81	1963.33	98.92	0.257
1.2D + 1.0E	-25.61	-1.28	0.00	-90.63	0.00	-90.63	2350.25	1175.1	3954.81	1963.33	98.92	0.057
0.9D + 1.0E	-19.21	-1.26	0.00	-88.97	0.00	-88.97	2350.25	1175.1	3954.81	1963.33	98.92	0.053
1.0D + 1.0W 60 mph Wind	-21.21	-7.45	-0.26	-390.69	0.00	-390.69	2350.25	1175.1	3954.81	1963.33	98.92	0.208

Additional Steel Summary

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors			Lower Termination				Upper Termination				Max Member			
			VQ/I (lb/in)	Vu (kips)	phi Vn (kips)	MQ/I (kips)	phi Vn (kips)	Num Req'd	Num Actual	MQ/I (kips)	phi Vn (kips)	Num Req'd	Num Actual	Pu (kips)	phi Pn (kips)	phi Tn (kips)	Ratio
0.0	4.0	(6) PLT-1.25"x4.5" STFNR	189.4	0.00	37.1	282.2	37.1	8	0	222.8	37.1	7	0	282.19	329.1	329.06	0.858
3.4	16.9	(3) PLT-7.5"x1.25"(1.25"hole)	328.1	5.90	37.1	355.1	37.1	10	14	444.9	37.1	12	14	460.72	516.9	464.06	0.993

Base Plate Summary

Structure: CT01365-S-SB	Code: EIA/TIA-222-G	8/9/2021
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 51



Reactions	Base Plate	Anchor Bolts
Original Design	Yield (ksi): 60.00	Bolt Circle: 66.55
Moment (kip-ft): 4948.00	Width (in): 72.55	Number Bolts: 20.00
Axial (kip): 54.00	Style: Polygon	Bolt Type: 2.25" 18J
Shear (kip): 38.80	Polygon Sides: 16.00	Bolt Diameter (in): 2.25
Analysis (1.2D + 1.6W)	Clip Length (in): 0.00	Yield (ksi): 75.00
Moment (kip-ft): 6317.05	Effective Len (in): 13.49	Ultimate (ksi): 100.00
Axial (kip): 58.36	Moment (kip-in): 923.58	Arrangement: Radial
Shear (kip): 50.33	Allow Stress (ksi): 81.00	Cluster Dist (in): 0.00
	Applied Stress (ksi): 54.27	Start Angle (deg): 0.00
	Stress Ratio: 0.67	Compression
		Force (kip): 187.39
		Allowable (kip): 260.00
		Ratio: 0.74
		Tension
		Force (kip): 178.41
		Allowable (kip): 260.00
		Ratio: 0.71

	Monopole Mat Foundation Design		Date	
			8/9/2021	
	Customer Name:	Dish Wireless	EIA/TIA Standard:	EIA-222-G
	Site Name:		Structure Height (Ft.):	180
	Site Number:	CT01365-S-SBA	Engineer Name:	J. Tibbetts
	Engr. Number:	112648	Engineer Login ID:	

Foundation Info Obtained from:

Structure Type:

Analysis or Design?

Base Reactions (Factored):

Axial Load (Kips):	58.4	Shear Force (Kips):	50.3
Uplift Force (Kips):	0.0	Moment (Kips-ft):	6317.1

Allowable overstress %: 5.0%

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	8.0	Depth of Base BG (ft.):	11.0
Pier Height A. G. (ft.):	0.50	Thickness of Pad (ft):	2.50
Length of Pad (ft.):	22.5	Width of Pad (ft.):	22.5

Final Length of pad (ft)	22.5	Final width of pad (ft):	22.5
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Material Properties and Rebar Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	40	
Vertical Rebar Size #:	10	Tie / Stirrup Size #:	5	
Qty. of Vertical Rebars:	36	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	10	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf

Rebar at the bottom of the concrete pad:

Qty. of Rebar in Pad (L):	20	Qty. of Rebar in Pad (W):	20
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Rebar at the top of the concrete pad:

Qty. of Rebar in Pad (L):	20	Qty. of Rebar in Pad (W):	20
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Apply 1.35 factor for e/w Per G: 1.35

Soil Design Parameters:

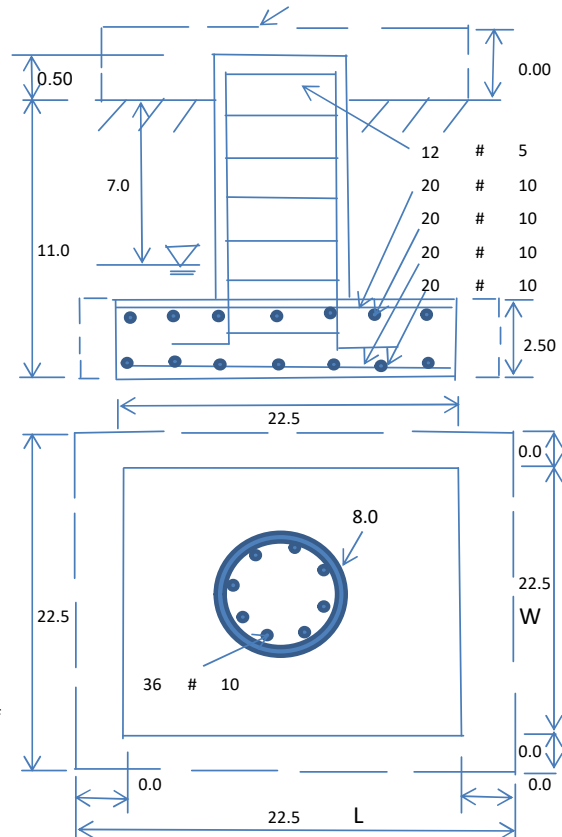
Soil Unit Weight (pcf):	135.0	Soil Buoyant Weight:	50.0	Pcf
Water Table B.G.S. (ft):	7.0	Unit Weight of Water:	62.4	pcf
Ultimate Bearing Pressure (psf):	30000	Ultimate Skin Friction:	500	Psf
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	Yes	
Consider soil hor. resist. for OTM.:	Yes	Reduction factor on the maximum soil bearing pressure:	1.00	
		Angle from Top of Pad:	30	
		Angle from Bottm of Pad:	25	
		Angle from Bottm of Pad:	25	

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):	3191.89	Total Dry Soil Weight (Kips):	430.91
Total Buoyant Soil Volume (cu. Ft.):	743.18	Total Buoyant Soil Weight (Kips):	37.16
Total Effective Soil Weight (Kips):	468.06	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	376.99	Total Dry Concrete Weight (Kips):	56.55
Total Buoyant Concrete Volume (cu. Ft.):	1341.02	Total Buoyant Concrete Weight (Kips):	117.47
Total Effective Concrete Weight (Kips):	174.02	Total Vertical Load on Base (Kips):	700.49

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	6271	< Allowable Factored Soil Bearing (psf):	22500	0.28	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	7128.2	> Design Factored Momont (kips-ft):	6313	0.89	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.13				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	Load/ Capacity Ratio

(1) Concrete Pier:

Vertical Steel Rebar Area (sq. in./each):	1.27	Tie / Stirrup Area (sq. in./each):	0.31	
Calculated Moment Capacity (Mn,Kips-Ft):	8888.9	> Design Factored Moment (Mu, Kips-F	6769.8	0.76 OK!
Calculated Shear Capacity (Kips):	845.4	> Design Factored Shear (Kips):	50.3	0.06 OK!
Calculated Tension Capacity (Tn, Kips):	2468.9	> Design Factored Tension (Tu Kips):	0.0	0.00 OK!
Calculated Compression Capacity (Pn, Kips):	12716.4	> Design Factored Axial Load (Pu Kips):	58.4	0.00 OK!
Moment & Axial Strength Combination:	0.76	OK! Check Tie Spacing (Design/Required):	1	OK!
Pier Reinforcement Ratio:	0.006	Reinforcement Ratio is satisfied per ACI		

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	675.6	> One-Way Factored Shear (L-D. Kips):	417.7	0.62 OK!
One-Way Design Shear Capacity (W-Direction, Kips):	675.6	> One-Way Factored Shear (W-D., Kips)	417.7	0.62 OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	583.2	> One-Way Factored Shear (C-C, Kips):	422.7	0.72 OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0036	OK! Lower Steel Pad Reinf. Ratio (W-Direc	0.0036	
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	2919.8	> Moment at Bottom (L-Dir. K-Ft):	1787.8	0.61 OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	2919.8	> Moment at Bottom (W-Dir. K-Ft):	1787.8	0.61 OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	4084.1	> Moment at Bottom (C-C Dir. K-Ft):	2528.4	0.62 OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0036	OK! Upper Steel Reinf. Ratio (W-Dir.):	0.0036	
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	2919.8	> Moment at the top (L-Dir K-Ft):	719.5	0.25 OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	2919.8	> Moment at the top (W-Dir K-Ft):	719.5	0.25 OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	4084.1	> Moment at the top (C-C Dir. K-Ft):	685.2	0.17 OK!

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

Moment transferred by punching shear:	2526.8	k-ft.	Max. factored shear stress v_{u_CD} :	5.9	Psi
Max. factored shear stress v_{u_AB} :	15.4	Psi	Factored shear Strength ϕv_n :	189.7	Psi
Max. factored shear stress v_u :	15.4	Psi	Check Usage of Punching Shear Capacity:	0.08	OK!

EXHIBIT 9

Antenna Mount Analysis

September 22, 2021

Sherri Knapik
SBA Communications Corporation
134 Flanders Road, Suite 125
Westborough, MA 01581
(508) 251-0720 x 3805



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 Wireless Co-Locate
Site Number: BOBOS00045A
Site Name: N/A

SBA Network Services Designation: **Site Number:** CT01365-S
Site Name: Norwich 2 CT
Application Number: 163180, v2

Engineering Firm Designation: **B+T Group Project Number:** 149431.003.01

Site Data: 292 Plain Hill Road, Boston, Norwich, CT, 06360, New London County
Latitude 41.57819°, Longitude -72.10367°
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:

Proposed Equipment

Note: See Table 1 for the final loading configuration

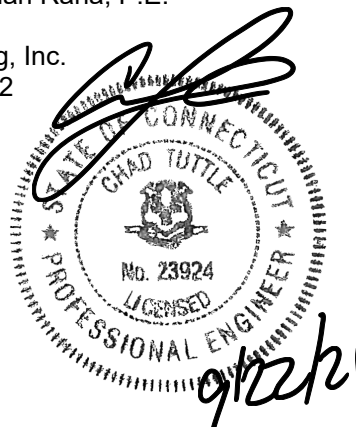
**Sufficient Capacity
(Passing at 72.1%)**

"This analysis has been performed in accordance with the 2018 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 135 mph converted to a nominal 3-second gust wind speed of 105 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 and Risk Category II were used in this analysis."

We at B+T Group appreciate the opportunity of providing our continuing professional services to you and *SBA Communications Corporation*. 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: Suman Rana, P.E.

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



Chad E. Tuttle, P.E.

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Additional Calculations

1) INTRODUCTION

The appurtenance mount consists of CommScope platform mount (Part# MC-PK8-DSH) at 137 ft., attached to monopole at 292 Plain Hill Road, Boston, Norwich, CT, 06360, New London County. The proposed antenna loading information was obtained from SBA Communications Corporation. 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 105 mph with no ice and 50 mph with 0.75 inch escalated ice thickness. Exposure category C, risk category II & Topo category 1 were used in the 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 30mph. The mount was analyzed under 30° increments in the wind direction. The analyzed loading is detailed in Table 1.

Table 1 – Proposed Equipment Information

Loading	RAD Center Elev. (ft.)	Position	Qty.	Description	Note
Proposed	137	1	3	JMA Wireless - MX08FRO665-21	1
			3	Fujitsu - TA08025-B605	2
			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 Mount.

Table 2 - Documents Provided

Documents	Remarks	Reference	Source
SBA Application	Proposed Loading	Date: 07/15/2021	SBA Communications Corporation
RFDS		Date: 07/07/2021	

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.

Manufacturer's drawings 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 areas 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	137	12.3	Pass
-	Support Rails	137	23.8	Pass
-	Support Tubes	137	72.1	Pass
-	Support Channel	137	49.7	Pass
-	Support Angle	137	62.3	Pass
-	Mount Pipes	137	24.9	Pass
-	Connection Plates	137	24.1	Pass
-	Connection Angles	137	39.7	Pass

5) RECOMMENDATIONS

The CommScope platform mount, 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

SV

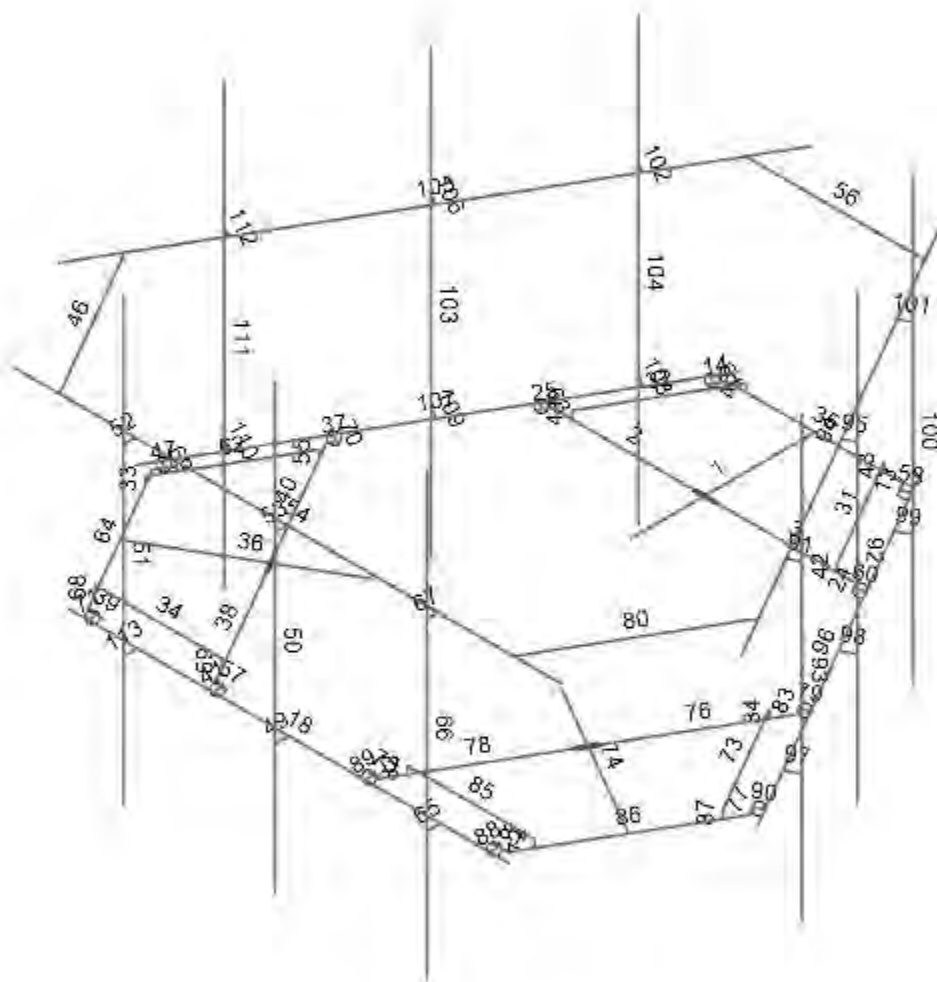
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CT01365-S - Norwich 2 CT

SK-1

Sep 21, 2021

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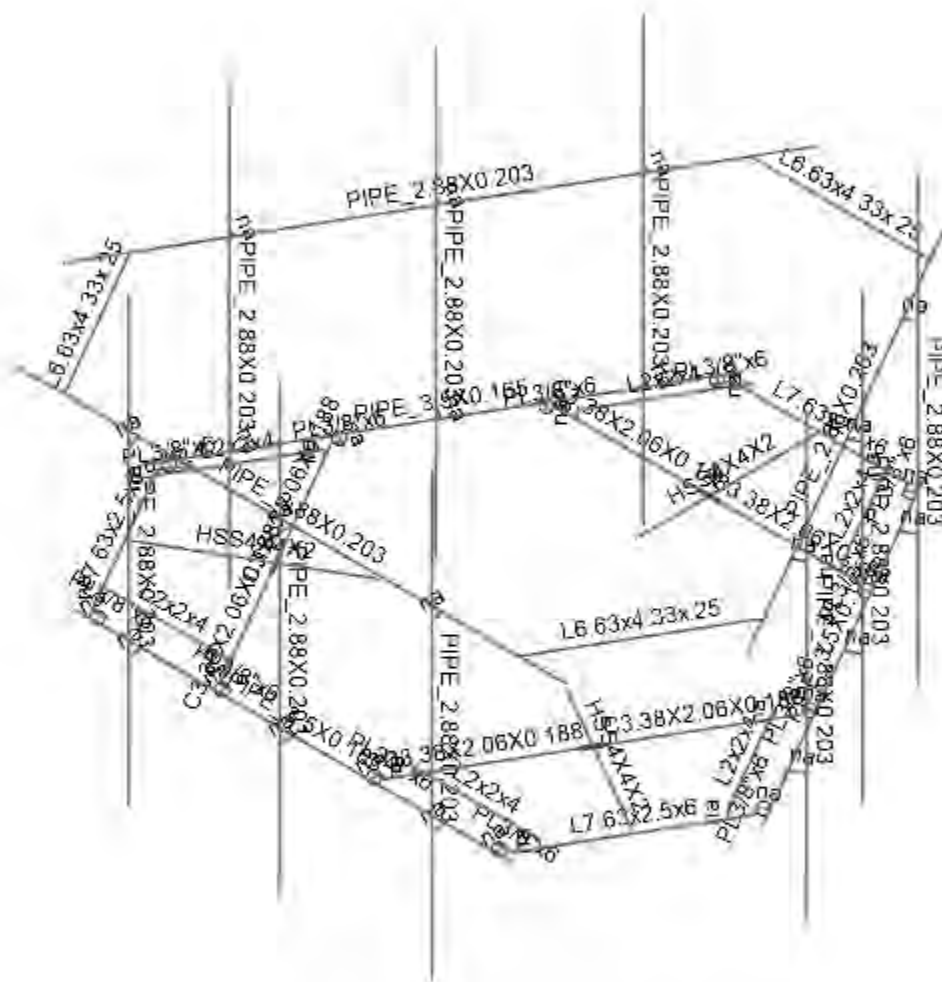
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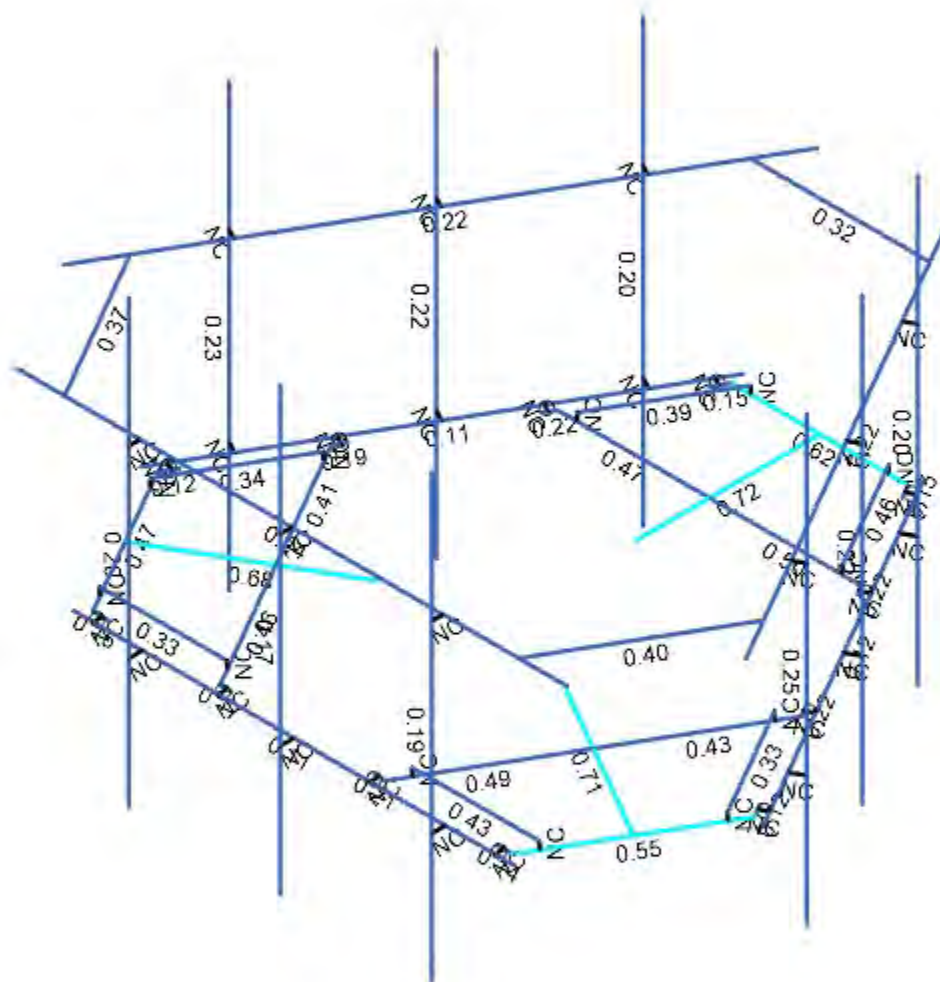
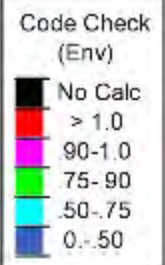
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Member Code Checks Displayed (Enveloped)
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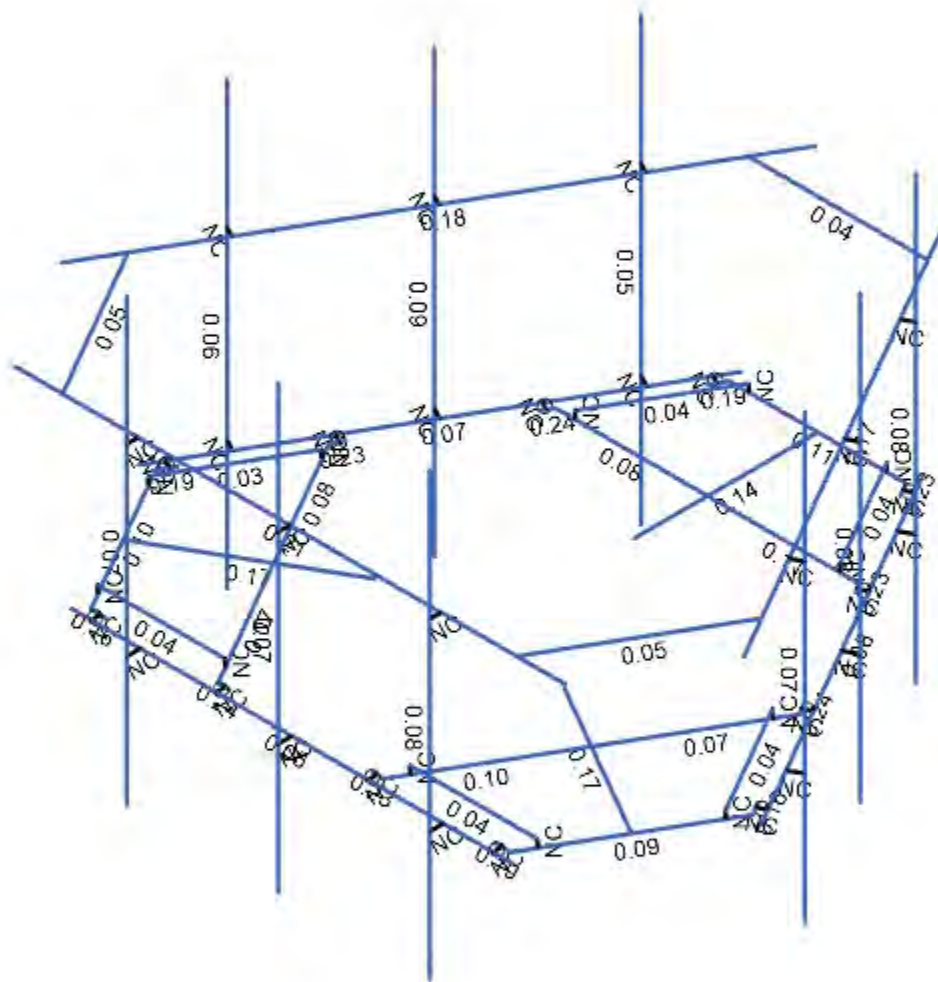
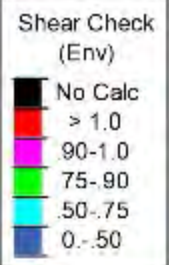
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CT01365-S - Norwich 2 CT

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Sep 21, 2021

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Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

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SV

149431.003.01

CT01365-S - Norwich 2 CT

SK-5

Sep 21, 2021

149431_003_01_Norwich 2 CT_C...

Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	2	0	0.333337	-1.99245	
2	4	0	0.333337	-5.325783	
3	5	0	0.333337	-3.325783	
4	6	2.758333	0.333337	-3.325783	
5	7	-2.758333	0.333337	-3.325783	
6	16	-1.603633	0.333337	-5.325783	
7	17	1.603633	0.333337	-5.325783	
8	25	1.749466	0.333337	-5.073193	
9	26	-1.749466	0.333337	-5.073193	
10	33	1.686966	0.333337	-5.181446	
11	35	1.826806	0.333337	-5.262182	
12	36	-1.686966	0.333337	-5.181446	
13	38	-1.826806	0.333337	-5.262182	
14	40	-3.999998	0.333337	4.213451	
15	41	3.999998	0.333337	4.213451	
16	49	2.8625	0.333337	-3.145361	
17	51	2.820833	0.333337	-3.217531	
18	53	2.960672	0.333337	-3.298267	
19	54	-2.8625	0.333337	-3.145361	
20	56	-2.820833	0.333337	-3.217531	
21	58	-2.960672	0.333337	-3.298267	
22	60	-1.25	0.47417	-5.325783	
23	64	-2.404701	0.47417	-3.325783	
24	65	2.404701	0.47417	-3.325783	
25	71	1.25	0.47417	-5.325783	
26	72	-1.25	0.333337	-5.325783	
27	76	-2.404701	0.333337	-3.325783	
28	77	2.404701	0.333337	-3.325783	
29	83	1.25	0.333337	-5.325783	
30	85	0.000002	0.333337	4.213451	
31	87	0.000002	0.333337	4.463451	
32	88	-2.749998	6	4.463451	
33	89	0.000002	6	4.463451	
34	90	-2.749998	-2	4.463451	
35	91	0.000002	-2	4.463451	
36	92	-2.749998	3.666667	4.463451	
37	93	0.000002	3.666667	4.463451	
38	94	-2.749998	3.666667	4.255118	
39	95	0.000002	3.666667	4.255118	
40	96	-5	3.666667	4.255118	
41	97	5	3.666667	4.255118	
42	100	1.625018	3.666667	-5.695022	
43	101	-1.625018	3.666667	-5.695022	
44	102	2.749998	0.333337	4.213451	
45	103	2.749998	0.333337	4.463451	
46	104	2.749998	6	4.463451	
47	105	2.749998	-2	4.463451	
48	106	2.749998	3.666667	4.463451	
49	107	2.749998	3.666667	4.255118	
50	154	0	0.333337	0	
51	55	-4.082563	0.333337	-0.41964	
52	57	-5.237264	0.333337	1.58036	
53	59	-1.501046	0.333337	4.051678	
54	61	-4.155213	0.333337	-0.906317	
55	62	-1.725512	0.333337	0.996225	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
56	63	-2.880213	0.333337	1.662892	
57	66	-4.612264	0.333337	2.662892	
58	67	-4.259379	0.333337	-0.725895	
59	68	-5.268247	0.333337	1.021514	
60	69	-3.810447	0.333337	4.051678	
61	70	-5.41408	0.333337	1.274105	
62	73	-1.376047	0.333337	4.051678	
63	74	-3.518781	0.333337	4.051678	
64	75	-5.330747	0.333337	1.129767	
65	78	-5.470586	0.333337	1.049031	
66	79	-4.19688	0.333337	-0.834147	
67	80	-3.643781	0.333337	4.051678	
68	81	-3.643781	0.333337	4.213451	
69	82	-4.336719	0.333337	-0.914884	
70	98	-1.292713	0.333337	4.051678	
71	99	-1.376047	0.333337	4.213451	
72	108	-3.987264	0.47417	3.745423	
73	109	-1.677863	0.47417	3.745423	
74	110	-4.082563	0.47417	-0.41964	
75	111	-5.237264	0.47417	1.58036	
76	112	-3.987264	0.333337	3.745423	
77	113	-1.677863	0.333337	3.745423	
78	114	-5.744542	3.666667	1.440204	
79	115	-4.119351	3.666667	4.255118	
80	116	1.677889	0.333337	3.745438	
81	117	3.98729	0.333337	3.745438	
82	118	4.259405	0.333337	-0.72588	
83	119	1.292739	0.333337	4.051693	
84	120	1.725538	0.333337	0.99624	
85	121	2.880239	0.333337	1.662907	
86	122	4.61229	0.333337	2.662907	
87	123	1.501072	0.333337	4.051693	
88	124	3.518807	0.333337	4.051693	
89	125	5.414106	0.333337	1.27412	
90	126	3.810473	0.333337	4.051693	
91	127	4.196906	0.333337	-0.834132	
92	128	5.268273	0.333337	1.021529	
93	129	3.643807	0.333337	4.051693	
94	130	3.643807	0.333337	4.213451	
95	131	1.376073	0.333337	4.051693	
96	132	5.330773	0.333337	1.129782	
97	133	5.470599	0.333337	1.049054	
98	134	1.376073	0.333337	4.213451	
99	135	4.155239	0.333337	-0.906302	
100	136	4.336732	0.333337	-0.914861	
101	137	5.23729	0.47417	1.580375	
102	138	4.082589	0.47417	-0.419625	
103	139	1.677889	0.47417	3.745438	
104	140	3.98729	0.47417	3.745438	
105	141	5.23729	0.333337	1.580375	
106	142	4.082589	0.333337	-0.419625	
107	143	4.119386	3.666667	4.255118	
108	144	5.74456	3.666667	1.440234	
109	145	2.309781	3.666667	-4.508977	
110	146	2.273697	0.333337	-4.488144	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
111	147	5.023695	0.333337	0.274993	
112	148	3.648695	0.333337	-2.106577	
113	149	5.240201	0.333337	0.149993	
114	150	3.865201	0.333337	-2.231577	
115	151	5.240201	6	0.149993	
116	152	3.865201	6	-2.231577	
117	153	5.240201	-2	0.149993	
118	156	3.865201	-2	-2.231577	
119	157	5.240201	3.666667	0.149993	
120	158	3.865201	3.666667	-2.231577	
121	159	5.059779	3.666667	0.254159	
122	160	3.684779	3.666667	-2.127411	
123	161	2.490203	0.333337	-4.613144	
124	162	2.490203	6	-4.613144	
125	163	2.490203	-2	-4.613144	
126	164	2.490203	3.666667	-4.613144	
127	165	6.18478	3.666667	2.202718	
128	166	1.18478	3.666667	-6.457536	
129	167	5.648695	0.333337	1.357524	
130	168	1.648697	0.333337	-5.570675	
131	169	-5.059779	3.666667	0.254159	
132	170	-5.023695	0.333337	0.274993	
133	171	-2.273697	0.333337	-4.488144	
134	172	-3.648697	0.333337	-2.106574	
135	173	-2.490203	0.333337	-4.613144	
136	174	-3.865203	0.333337	-2.231574	
137	175	-2.490203	6	-4.613144	
138	176	-3.865203	6	-2.231574	
139	177	-2.490203	-2	-4.613144	
140	178	-3.865203	-2	-2.231574	
141	179	-2.490203	3.666667	-4.613144	
142	180	-3.865203	3.666667	-2.231574	
143	181	-2.309781	3.666667	-4.508977	
144	182	-3.684781	3.666667	-2.127407	
145	183	-5.240201	0.333337	0.149993	
146	184	-5.240201	6	0.149993	
147	185	-5.240201	-2	0.149993	
148	186	-5.240201	3.666667	0.149993	
149	187	-1.18478	3.666667	-6.457536	
150	188	-6.18478	3.666667	2.202718	
151	189	-1.648697	0.333337	-5.570675	
152	190	-5.648695	0.333337	1.357524	
153	155	-2.749998	0.333337	4.463451	
154	191	-2.749998	0.333337	4.213451	

Node Boundary Conditions

	Node Label	X [k/in] Reaction	Y [k/in] Reaction	Z [k/in] Reaction	X Rot [k-ft/rad] Reaction	Y Rot [k-ft/rad] Reaction	Z Rot [k-ft/rad] Reaction
1	2						
2	4						
3	5						
4	6						
5	7						
6	49						
7	51						
8	54						

Node Boundary Conditions (Continued)

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
9	56						
10	60						
11	71						
12	72						
13	83						
14	57						
15	59						
16	61						
17	62	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
18	63						
19	66						
20	67						
21	73						
22	79						
23	98						
24	108						
25	111						
26	112						
27	117						
28	118						
29	119						
30	120	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
31	121						
32	122						
33	123						
34	127						
35	131						
36	135						
37	137						
38	140						
39	141						

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e ⁶ F ⁻¹]	Density [k/ft ³]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3
8	A500 Gr.C	29000	11154	0.3	0.65	0.49	46	1.4	62	1.3

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
2	MF-H2	PIPE 2.88X0.203	Beam	Pipe	A500 Gr.C	Typical	1.704	1.53	1.53
3	SF-H1	HSS4X4X2	Beam	Tube	A500 Gr.B Rect	Typical	1.77	4.4	4.4
4	SF-H2	C3.38X2.06X0.188	Beam	Channel	A36 Gr.36	Typical	1.339	0.562	2.4
5	SF-H3	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical	0.944	0.346	0.346
6	SF-H4	L7.63x2.5x6	Beam	Single Angle	A36 Gr.36	Typical	3.658	1.307	22.092
7	MF-P1	PIPE 2.88X0.203	Column	Pipe	A500 Gr.C	Typical	1.704	1.53	1.53
8	MF-CP1	PL3/8"x6	Beam	RECT	A36 Gr.36	Typical	2.25	0.026	6.75

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design Rule Area [in ²]	Iyy [in ⁴]	Izz [in ⁴]	J [in ⁴]	
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	2	4		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
2	2	7	5	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
3	3	5	6	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
4	13	17	25		MF-CP1	Beam	RECT	A36 Gr.36	Typical
5	14	16	26		MF-CP1	Beam	RECT	A36 Gr.36	Typical
6	18	40	41		MF-H1	Beam	Pipe	A500 Gr.C	Typical
7	24	49	6		MF-CP1	Beam	RECT	A36 Gr.36	Typical
8	25	7	54		MF-CP1	Beam	RECT	A36 Gr.36	Typical
9	31	71	65		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
10	32	64	60		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
11	35	16	17		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
12	42	77	65		RIGID	None	None	RIGID	Typical
13	43	83	71		RIGID	None	None	RIGID	Typical
14	44	76	64		RIGID	None	None	RIGID	Typical
15	45	72	60		RIGID	None	None	RIGID	Typical
16	49	87	85		RIGID	None	None	RIGID	Typical
17	50	89	91		MF-P1	Column	Pipe	A500 Gr.C	Typical
18	51	88	90		MF-P1	Column	Pipe	A500 Gr.C	Typical
19	52	92	94		RIGID	None	None	RIGID	Typical
20	53	93	95		RIGID	None	None	RIGID	Typical
21	54	96	97		MF-H2	Beam	Pipe	A500 Gr.C	Typical
22	56	100	101	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
23	58	35	33		RIGID	None	None	RIGID	Typical
24	60	53	51		RIGID	None	None	RIGID	Typical
25	61	38	36		RIGID	None	None	RIGID	Typical
26	63	58	56		RIGID	None	None	RIGID	Typical
27	65	103	102		RIGID	None	None	RIGID	Typical
28	66	104	105		MF-P1	Column	Pipe	A500 Gr.C	Typical
29	67	106	107		RIGID	None	None	RIGID	Typical
30	33	57	111		RIGID	None	None	RIGID	Typical
31	34	109	108		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
32	36	62	66		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
33	37	61	67		MF-CP1	Beam	RECT	A36 Gr.36	Typical
34	38	59	63	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
35	39	69	74		MF-CP1	Beam	RECT	A36 Gr.36	Typical
36	40	63	67	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
37	41	99	73		RIGID	None	None	RIGID	Typical
38	46	114	115	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
39	47	70	68		MF-CP1	Beam	RECT	A36 Gr.36	Typical
40	55	55	110		RIGID	None	None	RIGID	Typical
41	57	59	98		MF-CP1	Beam	RECT	A36 Gr.36	Typical
42	59	113	109		RIGID	None	None	RIGID	Typical
43	62	111	110		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
44	64	69	70		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
45	68	112	108		RIGID	None	None	RIGID	Typical
46	69	78	75		RIGID	None	None	RIGID	Typical
47	70	82	79		RIGID	None	None	RIGID	Typical
48	71	81	80		RIGID	None	None	RIGID	Typical
49	72	117	140		RIGID	None	None	RIGID	Typical
50	73	138	137		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
51	74	120	122		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
52	75	119	123		MF-CP1	Beam	RECT	A36 Gr.36	Typical
53	76	118	121	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
54	77	125	128		MF-CP1	Beam	RECT	A36 Gr.36	Typical
55	78	121	123	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
56	79	136	127		RIGID	None	None	RIGID	Typical
57	80	143	144	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
58	81	126	124		MF-CP1	Beam	RECT	A36 Gr.36	Typical
59	82	116	139		RIGID	None	None	RIGID	Typical
60	83	118	135		MF-CP1	Beam	RECT	A36 Gr.36	Typical
61	84	142	138		RIGID	None	None	RIGID	Typical
62	85	140	139		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
63	86	125	126		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
64	87	141	137		RIGID	None	None	RIGID	Typical
65	88	130	129		RIGID	None	None	RIGID	Typical
66	89	134	131		RIGID	None	None	RIGID	Typical
67	90	133	132		RIGID	None	None	RIGID	Typical
68	91	157	159		RIGID	None	None	RIGID	Typical
69	92	152	156		MF-P1	Column	Pipe	A500 Gr.C	Typical
70	93	151	153		MF-P1	Column	Pipe	A500 Gr.C	Typical
71	94	165	166		MF-H2	Beam	Pipe	A500 Gr.C	Typical
72	95	158	160		RIGID	None	None	RIGID	Typical
73	96	167	168		MF-H1	Beam	Pipe	A500 Gr.C	Typical
74	97	149	147		RIGID	None	None	RIGID	Typical
75	98	150	148		RIGID	None	None	RIGID	Typical
76	99	161	146		RIGID	None	None	RIGID	Typical
77	100	162	163		MF-P1	Column	Pipe	A500 Gr.C	Typical
78	101	164	145		RIGID	None	None	RIGID	Typical
79	102	179	181		RIGID	None	None	RIGID	Typical
80	103	176	178		MF-P1	Column	Pipe	A500 Gr.C	Typical
81	104	175	177		MF-P1	Column	Pipe	A500 Gr.C	Typical
82	105	187	188		MF-H2	Beam	Pipe	A500 Gr.C	Typical
83	106	180	182		RIGID	None	None	RIGID	Typical
84	107	189	190		MF-H1	Beam	Pipe	A500 Gr.C	Typical
85	108	173	171		RIGID	None	None	RIGID	Typical
86	109	174	172		RIGID	None	None	RIGID	Typical
87	110	183	170		RIGID	None	None	RIGID	Typical
88	111	184	185		MF-P1	Column	Pipe	A500 Gr.C	Typical
89	112	186	169		RIGID	None	None	RIGID	Typical
90	113	155	191		RIGID	None	None	RIGID	Typical

Member Advanced Data

	Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
1	1				Yes	N/A	None
2	2			2	Yes	N/A	None
3	3		2		Yes	N/A	None
4	13				Yes	Default	None
5	14				Yes	Default	None
6	18				Yes	N/A	None
7	24				Yes	Default	None
8	25				Yes	Default	None
9	31				Yes	N/A	None
10	32				Yes	N/A	None
11	35				Yes	N/A	None
12	42				Yes	** NA **	None
13	43				Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
14	44				Yes	** NA **	None
15	45				Yes	** NA **	None
16	49				Yes	** NA **	None
17	50				Yes	** NA **	None
18	51				Yes	** NA **	None
19	52				Yes	** NA **	None
20	53				Yes	** NA **	None
21	54				Yes	N/A	None
22	56				Yes	Default	None
23	58	OOOOOX			Yes	** NA **	None
24	60	OOOOOX			Yes	** NA **	None
25	61	OOOOOX			Yes	** NA **	None
26	63	OOOOOX			Yes	** NA **	None
27	65				Yes	** NA **	None
28	66				Yes	** NA **	None
29	67				Yes	** NA **	None
30	33				Yes	** NA **	None
31	34				Yes	N/A	None
32	36				Yes	Default	None
33	37				Yes	Default	None
34	38			2	Yes	N/A	None
35	39				Yes	Default	None
36	40		2		Yes	N/A	None
37	41	OOOOOX			Yes	** NA **	None
38	46				Yes	Default	None
39	47				Yes	Default	None
40	55				Yes	** NA **	None
41	57				Yes	Default	None
42	59				Yes	** NA **	None
43	62				Yes	N/A	None
44	64				Yes	N/A	None
45	68				Yes	** NA **	None
46	69	OOOOOX			Yes	** NA **	None
47	70	OOOOOX			Yes	** NA **	None
48	71	OOOOOX			Yes	** NA **	None
49	72				Yes	** NA **	None
50	73				Yes	N/A	None
51	74				Yes	N/A	None
52	75				Yes	Default	None
53	76			2	Yes	N/A	None
54	77				Yes	Default	None
55	78		2		Yes	N/A	None
56	79	OOOOOX			Yes	** NA **	None
57	80				Yes	Default	None
58	81				Yes	Default	None
59	82				Yes	** NA **	None
60	83				Yes	Default	None
61	84				Yes	** NA **	None
62	85				Yes	N/A	None
63	86				Yes	Default	None
64	87				Yes	** NA **	None
65	88	OOOOOX			Yes	** NA **	None
66	89	OOOOOX			Yes	** NA **	None
67	90	OOOOOX			Yes	** NA **	None
68	91				Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
69	92				Yes	** NA **	None
70	93				Yes	** NA **	None
71	94				Yes	N/A	None
72	95				Yes	** NA **	None
73	96				Yes	N/A	None
74	97				Yes	** NA **	None
75	98				Yes	** NA **	None
76	99				Yes	** NA **	None
77	100				Yes	** NA **	None
78	101				Yes	** NA **	None
79	102				Yes	** NA **	None
80	103				Yes	** NA **	None
81	104				Yes	** NA **	None
82	105				Yes	N/A	None
83	106				Yes	** NA **	None
84	107				Yes	N/A	None
85	108				Yes	** NA **	None
86	109				Yes	** NA **	None
87	110				Yes	** NA **	None
88	111				Yes	** NA **	None
89	112				Yes	** NA **	None
90	113				Yes	** NA **	None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
1	1	SF-H1	3.333	Lbyy	Lateral
2	2	SF-H2	2.758	Lbyy	Lateral
3	3	SF-H2	2.758	Lbyy	Lateral
4	13	MF-CP1	0.292	Lbyy	Lateral
5	14	MF-CP1	0.292	Lbyy	Lateral
6	18	MF-H1	8	Lbyy	Lateral
7	24	MF-CP1	0.208	Lbyy	Lateral
8	25	MF-CP1	0.208	Lbyy	Lateral
9	31	SF-H3	2.309	Lbyy	Lateral
10	32	SF-H3	2.309	Lbyy	Lateral
11	35	SF-H4	3.207	Lbyy	Lateral
12	50	MF-P1	8	Lbyy	Lateral
13	51	MF-P1	8	Lbyy	Lateral
14	54	MF-H2	10	Lbyy	Lateral
15	56	MF-H3	3.25	Lbyy	Lateral
16	66	MF-P1	8	Lbyy	Lateral
17	34	SF-H3	2.309	Lbyy	Lateral
18	36	SF-H1	3.333	Lbyy	Lateral
19	37	MF-CP1	0.208	Lbyy	Lateral
20	38	SF-H2	2.758	Lbyy	Lateral
21	39	MF-CP1	0.292	Lbyy	Lateral
22	40	SF-H2	2.758	Lbyy	Lateral
23	46	MF-H3	3.25	Lbyy	Lateral
24	47	MF-CP1	0.292	Lbyy	Lateral
25	57	MF-CP1	0.208	Lbyy	Lateral
26	62	SF-H3	2.309	Lbyy	Lateral
27	64	SF-H4	3.207	Lbyy	Lateral
28	73	SF-H3	2.309	Lbyy	Lateral
29	74	SF-H1	3.333	Lbyy	Lateral
30	75	MF-CP1	0.208	Lbyy	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
31	76	SF-H2	2.758	Lbyy	Lateral
32	77	MF-CP1	0.292	Lbyy	Lateral
33	78	SF-H2	2.758	Lbyy	Lateral
34	80	MF-H3	3.25	Lbyy	Lateral
35	81	MF-CP1	0.292	Lbyy	Lateral
36	83	MF-CP1	0.208	Lbyy	Lateral
37	85	SF-H3	2.309	Lbyy	Lateral
38	86	SF-H4	3.207	Lbyy	Lateral
39	92	MF-P1	8	Lbyy	Lateral
40	93	MF-P1	8	Lbyy	Lateral
41	94	MF-H2	10	Lbyy	Lateral
42	96	MF-H1	8	Lbyy	Lateral
43	100	MF-P1	8	Lbyy	Lateral
44	103	MF-P1	8	Lbyy	Lateral
45	104	MF-P1	8	Lbyy	Lateral
46	105	MF-H2	10	Lbyy	Lateral
47	107	MF-H1	8	Lbyy	Lateral
48	111	MF-P1	8	Lbyy	Lateral

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	66	Y	-0.032	%15
2	66	Y	-0.032	%85
3	66	Y	-0.064	%15
4	66	Y	-0.075	%50
5	66	Y	0	0
6	36	Y	-0.022	%20
7	36	Y	0	0
8	36	Y	0	0
9	36	Y	0	0
10	36	Y	0	0
11	111	Y	-0.032	%15
12	111	Y	-0.032	%85
13	111	Y	-0.064	%15
14	111	Y	-0.075	%50
15	111	Y	0	0
16	100	Y	-0.032	%15
17	100	Y	-0.032	%85
18	100	Y	-0.064	%15
19	100	Y	-0.075	%50
20	100	Y	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	66	Z	-0.226	%15
2	66	Z	-0.226	%85
3	66	Z	-0.071	%15
4	66	Z	-0.071	%50
5	66	Z	0	0
6	36	Z	-0.073	%20
7	36	Z	0	0
8	36	Z	0	0
9	36	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
10	36	Z	0	0
11	111	Z	-0.226	%15
12	111	Z	-0.226	%85
13	111	Z	-0.071	%15
14	111	Z	-0.071	%50
15	111	Z	0	0
16	100	Z	-0.226	%15
17	100	Z	-0.226	%85
18	100	Z	-0.071	%15
19	100	Z	-0.071	%50
20	100	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	66	X	-0.091	%15
2	66	X	-0.091	%85
3	66	X	-0.038	%15
4	66	X	-0.043	%50
5	66	X	0	0
6	36	X	-0.041	%20
7	36	X	0	0
8	36	X	0	0
9	36	X	0	0
10	36	X	0	0
11	111	X	-0.091	%15
12	111	X	-0.091	%85
13	111	X	-0.038	%15
14	111	X	-0.043	%50
15	111	X	0	0
16	100	X	-0.091	%15
17	100	X	-0.091	%85
18	100	X	-0.038	%15
19	100	X	-0.043	%50
20	100	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	66	Z	-0.063	%15
2	66	Z	-0.063	%85
3	66	Z	-0.024	%15
4	66	Z	-0.024	%50
5	66	Z	0	0
6	36	Z	-0.025	%20
7	36	Z	0	0
8	36	Z	0	0
9	36	Z	0	0
10	36	Z	0	0
11	111	Z	-0.063	%15
12	111	Z	-0.063	%85
13	111	Z	-0.024	%15
14	111	Z	-0.024	%50
15	111	Z	0	0
16	100	Z	-0.063	%15

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
17	100	Z	-0.063	%85
18	100	Z	-0.024	%15
19	100	Z	-0.024	%50
20	100	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	66	X	-0.031	%15
2	66	X	-0.031	%85
3	66	X	-0.015	%15
4	66	X	-0.017	%50
5	66	X	0	0
6	36	X	-0.016	%20
7	36	X	0	0
8	36	X	0	0
9	36	X	0	0
10	36	X	0	0
11	111	X	-0.031	%15
12	111	X	-0.031	%85
13	111	X	-0.015	%15
14	111	X	-0.017	%50
15	111	X	0	0
16	100	X	-0.031	%15
17	100	X	-0.031	%85
18	100	X	-0.015	%15
19	100	X	-0.017	%50
20	100	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	66	Z	-0.018	%15
2	66	Z	-0.018	%85
3	66	Z	-0.006	%15
4	66	Z	-0.006	%50
5	66	Z	0	0
6	36	Z	-0.006	%20
7	36	Z	0	0
8	36	Z	0	0
9	36	Z	0	0
10	36	Z	0	0
11	111	Z	-0.018	%15
12	111	Z	-0.018	%85
13	111	Z	-0.006	%15
14	111	Z	-0.006	%50
15	111	Z	0	0
16	100	Z	-0.018	%15
17	100	Z	-0.018	%85
18	100	Z	-0.006	%15
19	100	Z	-0.006	%50
20	100	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	66	X	-0.007	%15
2	66	X	-0.007	%85
3	66	X	-0.003	%15
4	66	X	-0.004	%50
5	66	X	0	0
6	36	X	-0.003	%20
7	36	X	0	0
8	36	X	0	0
9	36	X	0	0
10	36	X	0	0
11	111	X	-0.007	%15
12	111	X	-0.007	%85
13	111	X	-0.003	%15
14	111	X	-0.004	%50
15	111	X	0	0
16	100	X	-0.007	%15
17	100	X	-0.007	%85
18	100	X	-0.003	%15
19	100	X	-0.004	%50
20	100	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	66	Y	-0.148	%15
2	66	Y	-0.148	%85
3	66	Y	-0.052	%15
4	66	Y	-0.053	%50
5	66	Y	0	0
6	36	Y	-0.054	%20
7	36	Y	0	0
8	36	Y	0	0
9	36	Y	0	0
10	36	Y	0	0
11	111	Y	-0.148	%15
12	111	Y	-0.148	%85
13	111	Y	-0.052	%15
14	111	Y	-0.053	%50
15	111	Y	0	0
16	100	Y	-0.148	%15
17	100	Y	-0.148	%85
18	100	Y	-0.052	%15
19	100	Y	-0.053	%50
20	100	Y	0	0

Member Point Loads (BLC 13 : Maint LL 1)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	74	Y	-0.25	%95

Member Point Loads (BLC 14 : Maint LL 2)

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

Member Point Loads (BLC 15 : Maint LL 3)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	18	Y	-0.25	%95

Member Point Loads (BLC 16 : Maint LL 4)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	54	Y	-0.25	%5

Member Point Loads (BLC 17 : Maint LL 5)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	107	Y	-0.25	%5

Member Point Loads (BLC 18 : Maint LL 6)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	105	Y	-0.25	%5

Member Point Loads (BLC 19 : Maint LL 7)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	96	Y	-0.25	%5

Member Point Loads (BLC 20 : Maint LL 8)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	94	Y	-0.25	%5

Member Point Loads (BLC 21 : Maint LL 9)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	18	Y	-0.25	%5

Member Point Loads (BLC 22 : Maint LL 10)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	54	Y	-0.25	%95

Member Point Loads (BLC 23 : Maint LL 11)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	107	Y	-0.25	%95

Member Point Loads (BLC 24 : Maint LL 12)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	105	Y	-0.25	%95

Member Point Loads (BLC 25 : Maint LL 13)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	96	Y	-0.25	%95

Member Point Loads (BLC 26 : Maint LL 14)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	94	Y	-0.25	%95

Member Point Loads (BLC 27 : Maint LL 15)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	36	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	-0.018	-0.018	0	%100
2	2	Z	-0.015	-0.015	0	%100
3	3	Z	-0.015	-0.015	0	%100
4	13	Z	-0.022	-0.022	0	%100
5	14	Z	-0.022	-0.022	0	%100
6	18	Z	-0.011	-0.011	0	%100
7	24	Z	-0.022	-0.022	0	%100
8	25	Z	-0.022	-0.022	0	%100
9	31	Z	-0.01	-0.01	0	%100
10	32	Z	-0.01	-0.01	0	%100
11	35	Z	-0.03	-0.03	0	%100
12	50	Z	-0.01	-0.01	0	%100
13	51	Z	-0.01	-0.01	0	%100
14	54	Z	-0.01	-0.01	0	%100
15	56	Z	-0.026	-0.026	0	%100
16	66	Z	-0.01	-0.01	0	%100
17	34	Z	-0.01	-0.01	0	%100
18	36	Z	-0.018	-0.018	0	%100
19	37	Z	-0.022	-0.022	0	%100
20	38	Z	-0.015	-0.015	0	%100
21	39	Z	-0.022	-0.022	0	%100
22	40	Z	-0.015	-0.015	0	%100
23	46	Z	-0.026	-0.026	0	%100
24	47	Z	-0.022	-0.022	0	%100
25	57	Z	-0.022	-0.022	0	%100
26	62	Z	-0.01	-0.01	0	%100
27	64	Z	-0.03	-0.03	0	%100
28	73	Z	-0.01	-0.01	0	%100
29	74	Z	-0.018	-0.018	0	%100
30	75	Z	-0.022	-0.022	0	%100
31	76	Z	-0.015	-0.015	0	%100
32	77	Z	-0.022	-0.022	0	%100
33	78	Z	-0.015	-0.015	0	%100

Member Distributed Loads (BLC 2 : 0 Wind - No 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, %)]
34	80	Z	-0.026	-0.026	0	%100
35	81	Z	-0.022	-0.022	0	%100
36	83	Z	-0.022	-0.022	0	%100
37	85	Z	-0.01	-0.01	0	%100
38	86	Z	-0.03	-0.03	0	%100
39	92	Z	-0.01	-0.01	0	%100
40	93	Z	-0.01	-0.01	0	%100
41	94	Z	-0.01	-0.01	0	%100
42	96	Z	-0.011	-0.011	0	%100
43	100	Z	-0.01	-0.01	0	%100
44	103	Z	-0.01	-0.01	0	%100
45	104	Z	-0.01	-0.01	0	%100
46	105	Z	-0.01	-0.01	0	%100
47	107	Z	-0.011	-0.011	0	%100
48	111	Z	-0.01	-0.01	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	-0.018	-0.018	0	%100
2	2	X	-0.015	-0.015	0	%100
3	3	X	-0.015	-0.015	0	%100
4	13	X	-0.022	-0.022	0	%100
5	14	X	-0.022	-0.022	0	%100
6	18	X	-0.011	-0.011	0	%100
7	24	X	-0.022	-0.022	0	%100
8	25	X	-0.022	-0.022	0	%100
9	31	X	-0.01	-0.01	0	%100
10	32	X	-0.01	-0.01	0	%100
11	35	X	-0.03	-0.03	0	%100
12	50	X	-0.01	-0.01	0	%100
13	51	X	-0.01	-0.01	0	%100
14	54	X	-0.01	-0.01	0	%100
15	56	X	-0.026	-0.026	0	%100
16	66	X	-0.01	-0.01	0	%100
17	34	X	-0.01	-0.01	0	%100
18	36	X	-0.018	-0.018	0	%100
19	37	X	-0.022	-0.022	0	%100
20	38	X	-0.015	-0.015	0	%100
21	39	X	-0.022	-0.022	0	%100
22	40	X	-0.015	-0.015	0	%100
23	46	X	-0.026	-0.026	0	%100
24	47	X	-0.022	-0.022	0	%100
25	57	X	-0.022	-0.022	0	%100
26	62	X	-0.01	-0.01	0	%100
27	64	X	-0.03	-0.03	0	%100
28	73	X	-0.01	-0.01	0	%100
29	74	X	-0.018	-0.018	0	%100
30	75	X	-0.022	-0.022	0	%100
31	76	X	-0.015	-0.015	0	%100
32	77	X	-0.022	-0.022	0	%100
33	78	X	-0.015	-0.015	0	%100
34	80	X	-0.026	-0.026	0	%100
35	81	X	-0.022	-0.022	0	%100
36	83	X	-0.022	-0.022	0	%100
37	85	X	-0.01	-0.01	0	%100

Member Distributed Loads (BLC 3 : 90 Wind - No 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, %)]
38	86	X	-0.03	-0.03	0	%100
39	92	X	-0.01	-0.01	0	%100
40	93	X	-0.01	-0.01	0	%100
41	94	X	-0.01	-0.01	0	%100
42	96	X	-0.011	-0.011	0	%100
43	100	X	-0.01	-0.01	0	%100
44	103	X	-0.01	-0.01	0	%100
45	104	X	-0.01	-0.01	0	%100
46	105	X	-0.01	-0.01	0	%100
47	107	X	-0.011	-0.011	0	%100
48	111	X	-0.01	-0.01	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	-0.008	-0.008	0	%100
2	2	Z	-0.008	-0.008	0	%100
3	3	Z	-0.008	-0.008	0	%100
4	13	Z	-0.016	-0.016	0	%100
5	14	Z	-0.016	-0.016	0	%100
6	18	Z	-0.003	-0.003	0	%100
7	24	Z	-0.019	-0.019	0	%100
8	25	Z	-0.019	-0.019	0	%100
9	31	Z	-0.007	-0.007	0	%100
10	32	Z	-0.007	-0.007	0	%100
11	35	Z	-0.011	-0.011	0	%100
12	50	Z	-0.003	-0.003	0	%100
13	51	Z	-0.003	-0.003	0	%100
14	54	Z	-0.003	-0.003	0	%100
15	56	Z	-0.01	-0.01	0	%100
16	66	Z	-0.003	-0.003	0	%100
17	34	Z	-0.007	-0.007	0	%100
18	36	Z	-0.008	-0.008	0	%100
19	37	Z	-0.019	-0.019	0	%100
20	38	Z	-0.008	-0.008	0	%100
21	39	Z	-0.016	-0.016	0	%100
22	40	Z	-0.008	-0.008	0	%100
23	46	Z	-0.01	-0.01	0	%100
24	47	Z	-0.016	-0.016	0	%100
25	57	Z	-0.019	-0.019	0	%100
26	62	Z	-0.007	-0.007	0	%100
27	64	Z	-0.011	-0.011	0	%100
28	73	Z	-0.007	-0.007	0	%100
29	74	Z	-0.008	-0.008	0	%100
30	75	Z	-0.019	-0.019	0	%100
31	76	Z	-0.008	-0.008	0	%100
32	77	Z	-0.016	-0.016	0	%100
33	78	Z	-0.008	-0.008	0	%100
34	80	Z	-0.01	-0.01	0	%100
35	81	Z	-0.016	-0.016	0	%100
36	83	Z	-0.019	-0.019	0	%100
37	85	Z	-0.007	-0.007	0	%100
38	86	Z	-0.011	-0.011	0	%100
39	92	Z	-0.003	-0.003	0	%100
40	93	Z	-0.003	-0.003	0	%100
41	94	Z	-0.003	-0.003	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, %)]
42	96	Z	-0.003	-0.003	0	%100
43	100	Z	-0.003	-0.003	0	%100
44	103	Z	-0.003	-0.003	0	%100
45	104	Z	-0.003	-0.003	0	%100
46	105	Z	-0.003	-0.003	0	%100
47	107	Z	-0.003	-0.003	0	%100
48	111	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	-0.008	-0.008	0	%100
2	2	X	-0.008	-0.008	0	%100
3	3	X	-0.008	-0.008	0	%100
4	13	X	-0.016	-0.016	0	%100
5	14	X	-0.016	-0.016	0	%100
6	18	X	-0.003	-0.003	0	%100
7	24	X	-0.019	-0.019	0	%100
8	25	X	-0.019	-0.019	0	%100
9	31	X	-0.007	-0.007	0	%100
10	32	X	-0.007	-0.007	0	%100
11	35	X	-0.011	-0.011	0	%100
12	50	X	-0.003	-0.003	0	%100
13	51	X	-0.003	-0.003	0	%100
14	54	X	-0.003	-0.003	0	%100
15	56	X	-0.01	-0.01	0	%100
16	66	X	-0.003	-0.003	0	%100
17	34	X	-0.007	-0.007	0	%100
18	36	X	-0.008	-0.008	0	%100
19	37	X	-0.019	-0.019	0	%100
20	38	X	-0.008	-0.008	0	%100
21	39	X	-0.016	-0.016	0	%100
22	40	X	-0.008	-0.008	0	%100
23	46	X	-0.01	-0.01	0	%100
24	47	X	-0.016	-0.016	0	%100
25	57	X	-0.019	-0.019	0	%100
26	62	X	-0.007	-0.007	0	%100
27	64	X	-0.011	-0.011	0	%100
28	73	X	-0.007	-0.007	0	%100
29	74	X	-0.008	-0.008	0	%100
30	75	X	-0.019	-0.019	0	%100
31	76	X	-0.008	-0.008	0	%100
32	77	X	-0.016	-0.016	0	%100
33	78	X	-0.008	-0.008	0	%100
34	80	X	-0.01	-0.01	0	%100
35	81	X	-0.016	-0.016	0	%100
36	83	X	-0.019	-0.019	0	%100
37	85	X	-0.007	-0.007	0	%100
38	86	X	-0.011	-0.011	0	%100
39	92	X	-0.003	-0.003	0	%100
40	93	X	-0.003	-0.003	0	%100
41	94	X	-0.003	-0.003	0	%100
42	96	X	-0.003	-0.003	0	%100
43	100	X	-0.003	-0.003	0	%100
44	103	X	-0.003	-0.003	0	%100
45	104	X	-0.003	-0.003	0	%100

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, %)]
46	105	X	-0.003	-0.003	0	%100
47	107	X	-0.003	-0.003	0	%100
48	111	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	-0.001	-0.001	0	%100
2	2	Z	-0.001	-0.001	0	%100
3	3	Z	-0.001	-0.001	0	%100
4	13	Z	-0.002	-0.002	0	%100
5	14	Z	-0.002	-0.002	0	%100
6	18	Z	-0.0005	-0.0005	0	%100
7	24	Z	-0.002	-0.002	0	%100
8	25	Z	-0.002	-0.002	0	%100
9	31	Z	-0.0008	-0.0008	0	%100
10	32	Z	-0.0008	-0.0008	0	%100
11	35	Z	-0.002	-0.002	0	%100
12	50	Z	-0.0004	-0.0004	0	%100
13	51	Z	-0.0004	-0.0004	0	%100
14	54	Z	-0.0004	-0.0004	0	%100
15	56	Z	-0.002	-0.002	0	%100
16	66	Z	-0.0004	-0.0004	0	%100
17	34	Z	-0.0008	-0.0008	0	%100
18	36	Z	-0.001	-0.001	0	%100
19	37	Z	-0.002	-0.002	0	%100
20	38	Z	-0.001	-0.001	0	%100
21	39	Z	-0.002	-0.002	0	%100
22	40	Z	-0.001	-0.001	0	%100
23	46	Z	-0.002	-0.002	0	%100
24	47	Z	-0.002	-0.002	0	%100
25	57	Z	-0.002	-0.002	0	%100
26	62	Z	-0.0008	-0.0008	0	%100
27	64	Z	-0.002	-0.002	0	%100
28	73	Z	-0.0008	-0.0008	0	%100
29	74	Z	-0.001	-0.001	0	%100
30	75	Z	-0.002	-0.002	0	%100
31	76	Z	-0.001	-0.001	0	%100
32	77	Z	-0.002	-0.002	0	%100
33	78	Z	-0.001	-0.001	0	%100
34	80	Z	-0.002	-0.002	0	%100
35	81	Z	-0.002	-0.002	0	%100
36	83	Z	-0.002	-0.002	0	%100
37	85	Z	-0.0008	-0.0008	0	%100
38	86	Z	-0.002	-0.002	0	%100
39	92	Z	-0.0004	-0.0004	0	%100
40	93	Z	-0.0004	-0.0004	0	%100
41	94	Z	-0.0004	-0.0004	0	%100
42	96	Z	-0.0005	-0.0005	0	%100
43	100	Z	-0.0004	-0.0004	0	%100
44	103	Z	-0.0004	-0.0004	0	%100
45	104	Z	-0.0004	-0.0004	0	%100
46	105	Z	-0.0004	-0.0004	0	%100
47	107	Z	-0.0005	-0.0005	0	%100
48	111	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	-0.001	-0.001	0	%100
2	2	X	-0.001	-0.001	0	%100
3	3	X	-0.001	-0.001	0	%100
4	13	X	-0.002	-0.002	0	%100
5	14	X	-0.002	-0.002	0	%100
6	18	X	-0.0005	-0.0005	0	%100
7	24	X	-0.002	-0.002	0	%100
8	25	X	-0.002	-0.002	0	%100
9	31	X	-0.0008	-0.0008	0	%100
10	32	X	-0.0008	-0.0008	0	%100
11	35	X	-0.002	-0.002	0	%100
12	50	X	-0.0004	-0.0004	0	%100
13	51	X	-0.0004	-0.0004	0	%100
14	54	X	-0.0004	-0.0004	0	%100
15	56	X	-0.002	-0.002	0	%100
16	66	X	-0.0004	-0.0004	0	%100
17	34	X	-0.0008	-0.0008	0	%100
18	36	X	-0.001	-0.001	0	%100
19	37	X	-0.002	-0.002	0	%100
20	38	X	-0.001	-0.001	0	%100
21	39	X	-0.002	-0.002	0	%100
22	40	X	-0.001	-0.001	0	%100
23	46	X	-0.002	-0.002	0	%100
24	47	X	-0.002	-0.002	0	%100
25	57	X	-0.002	-0.002	0	%100
26	62	X	-0.0008	-0.0008	0	%100
27	64	X	-0.002	-0.002	0	%100
28	73	X	-0.0008	-0.0008	0	%100
29	74	X	-0.001	-0.001	0	%100
30	75	X	-0.002	-0.002	0	%100
31	76	X	-0.001	-0.001	0	%100
32	77	X	-0.002	-0.002	0	%100
33	78	X	-0.001	-0.001	0	%100
34	80	X	-0.002	-0.002	0	%100
35	81	X	-0.002	-0.002	0	%100
36	83	X	-0.002	-0.002	0	%100
37	85	X	-0.0008	-0.0008	0	%100
38	86	X	-0.002	-0.002	0	%100
39	92	X	-0.0004	-0.0004	0	%100
40	93	X	-0.0004	-0.0004	0	%100
41	94	X	-0.0004	-0.0004	0	%100
42	96	X	-0.0005	-0.0005	0	%100
43	100	X	-0.0004	-0.0004	0	%100
44	103	X	-0.0004	-0.0004	0	%100
45	104	X	-0.0004	-0.0004	0	%100
46	105	X	-0.0004	-0.0004	0	%100
47	107	X	-0.0005	-0.0005	0	%100
48	111	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	-0.016	-0.016	0	%100
2	2	Y	-0.012	-0.012	0	%100
3	3	Y	-0.012	-0.012	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, %)]
4	13	Y	-0.016	-0.016	0	%100
5	14	Y	-0.016	-0.016	0	%100
6	18	Y	-0.011	-0.011	0	%100
7	24	Y	-0.016	-0.016	0	%100
8	25	Y	-0.016	-0.016	0	%100
9	31	Y	-0.01	-0.01	0	%100
10	32	Y	-0.01	-0.01	0	%100
11	35	Y	-0.021	-0.021	0	%100
12	50	Y	-0.01	-0.01	0	%100
13	51	Y	-0.01	-0.01	0	%100
14	54	Y	-0.01	-0.01	0	%100
15	56	Y	-0.02	-0.02	0	%100
16	66	Y	-0.01	-0.01	0	%100
17	34	Y	-0.01	-0.01	0	%100
18	36	Y	-0.016	-0.016	0	%100
19	37	Y	-0.016	-0.016	0	%100
20	38	Y	-0.012	-0.012	0	%100
21	39	Y	-0.016	-0.016	0	%100
22	40	Y	-0.012	-0.012	0	%100
23	46	Y	-0.02	-0.02	0	%100
24	47	Y	-0.016	-0.016	0	%100
25	57	Y	-0.016	-0.016	0	%100
26	62	Y	-0.01	-0.01	0	%100
27	64	Y	-0.021	-0.021	0	%100
28	73	Y	-0.01	-0.01	0	%100
29	74	Y	-0.016	-0.016	0	%100
30	75	Y	-0.016	-0.016	0	%100
31	76	Y	-0.012	-0.012	0	%100
32	77	Y	-0.016	-0.016	0	%100
33	78	Y	-0.012	-0.012	0	%100
34	80	Y	-0.02	-0.02	0	%100
35	81	Y	-0.016	-0.016	0	%100
36	83	Y	-0.016	-0.016	0	%100
37	85	Y	-0.01	-0.01	0	%100
38	86	Y	-0.021	-0.021	0	%100
39	92	Y	-0.01	-0.01	0	%100
40	93	Y	-0.01	-0.01	0	%100
41	94	Y	-0.01	-0.01	0	%100
42	96	Y	-0.011	-0.011	0	%100
43	100	Y	-0.01	-0.01	0	%100
44	103	Y	-0.01	-0.01	0	%100
45	104	Y	-0.01	-0.01	0	%100
46	105	Y	-0.01	-0.01	0	%100
47	107	Y	-0.011	-0.011	0	%100
48	111	Y	-0.01	-0.01	0	%100

Member Distributed Loads (BLC 28 : 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	62	Y	-0.016	0.0006163	1.155	2.309
2	73	Y	0.0006164	-0.016	0	1.155
3	73	Y	-0.016	-0.035	1.155	2.309
4	85	Y	-0.018	-0.016	0	2.078
5	31	Y	-0.035	-0.016	0	1.155
6	31	Y	-0.016	0.0006163	1.155	2.309
7	32	Y	-0.018	-0.016	0.231	2.309

Member Distributed Loads (BLC 28 : BLC 1 Transient Area Loads) (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, %)]
8	34	Y	-0.018	-0.016	0.231	2.309
9	62	Y	-0.035	-0.016	0	1.155

Member Distributed Loads (BLC 29 : 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	31	Y	-0.029	-0.013	0	1.155
2	31	Y	-0.013	0.0005082	1.155	2.309
3	32	Y	-0.015	-0.013	0.231	2.309
4	34	Y	-0.014	-0.013	0.231	2.309
5	62	Y	-0.028	-0.013	0	1.155
6	62	Y	-0.013	0.0004931	1.155	2.309
7	73	Y	0.0004931	-0.013	0	1.155
8	73	Y	-0.013	-0.028	1.155	2.309
9	85	Y	-0.014	-0.013	0	2.078

Member Area Loads (BLC 1 : Dead)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	64	60	71	65	Y	Two Way	-0.01
2	111	110	109	108	Y	Two Way	-0.01
3	139	138	137	140	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	64	60	71	65	Y	Two Way	-0.008
2	111	110	109	108	Y	Two Way	-0.008
3	139	138	137	140	Y	Two Way	-0.008

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	102	L	Y	-0.5
2	170	L	Y	-0.5
3	147	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	85	L	Y	-0.5
2	172	L	Y	-0.5
3	148	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	171	L	Y	-0.5
2	146	L	Y	-0.5
3	191	L	Y	-0.5

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			
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		
28	BLC 1 Transient Area Loads	None				9	
29	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		

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
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
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

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
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
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

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	2	max	1.705	5	2.28	14	2.272	2	5.29	14	1.73	11
2		min	-1.707	11	-0.897	8	-2.388	20	-2.63	8	-1.729	5
3	62	max	1.871	5	2.293	42	2.215	14	1.017	13	2.162	3
4		min	-1.968	23	-0.552	12	-2.155	8	-2.247	19	-2.158	9
5	120	max	1.738	17	2.214	46	2.481	14	1.094	3	2.188	7
6		min	-1.64	11	-0.577	4	-2.426	8	-2.556	21	-2.188	13
7	Totals:	max	5.301	5	6.04	44	6.953	2				
8		min	-5.301	23	1.796	2	-6.953	20				

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

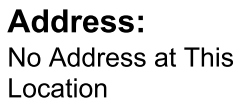
Member	Shape	Code Check	Loc [ft]	LC	Shear	Check	Loc [ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	1	HSS4X4X2	0.721	0	25	0.144	0	y	25	70.173	73.278	8.24	8.24	1.973	H1-1b
2	2	C3.38X2.06X0.188	0.469	2.592	15	0.079	0.351	z	20	38.433	43.394	1.694	4.483	1.59	H1-1b
3	3	C3.38X2.06X0.188	0.497	0	25	0.11	2.241	z	20	38.433	43.394	1.694	4.483	1.585	H1-1b
4	13	PL3/8"x6	0.147	0	14	0.234	0	y	14	68.856	72.9	0.57	9.113	2.372	H1-1b

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
5	14	PL3/8"x6	0.152	0	15	0.193	0	y	14	68.856	72.9	0.57	9.113	1.994	H1-1b					
6	18	PIPE 3.5X0.165	0.111	6.75	19	0.06	4		16	45.872	71.57	6.336	6.336	1.898	H1-1b					
7	24	PL3/8"x6	0.219	0.208	14	0.232	0.208	y	38	70.733	72.9	0.57	9.113	2.256	H1-1b					
8	25	PL3/8"x6	0.219	0	25	0.241	0	y	39	70.733	72.9	0.57	9.113	2.711	H1-1b					
9	31	L2x2x4	0.457	0	20	0.037	2.309	z	25	23.349	30.586	0.691	1.577	1.5	H2-1					
10	32	L2x2x4	0.395	2.309	20	0.042	0	y	40	23.349	30.586	0.691	1.577	1.5	H2-1					
11	35	L7.63x2.5x6	0.623	1.604	8	0.108	1.604	z	14	73.845	118.523	1.798	13.637	1.224	H2-1					
12	50	PIPE 2.88X0.203	0.174	5.667	17	0.067	5.667		18	35.361	70.548	5.01	5.01	3	H1-1b					
13	51	PIPE 2.88X0.203	0.204	2.333	21	0.075	5.667		20	35.361	70.548	5.01	5.01	3	H1-1b					
14	54	PIPE 2.88X0.203	0.238	7.812	14	0.207	9.062		14	23.996	70.548	5.01	5.01	2.458	H1-1b					
15	56	L6.63x4.33x.25	0.317	3.25	6	0.04	3.25	z	24	49.975	86.751	2.311	6.976	1.5	H2-1					
16	66	PIPE 2.88X0.203	0.194	2.333	19	0.075	2.333		20	35.361	70.548	5.01	5.01	3	H1-1b					
17	34	L2x2x4	0.327	2.309	25	0.042	0	y	44	23.349	30.586	0.691	1.577	1.5	H2-1					
18	36	HSS4X4X2	0.678	0	19	0.168	0	z	15	70.173	73.278	8.24	8.24	2	H1-1b					
19	37	PL3/8"x6	0.192	0.208	19	0.227	0.208	y	42	70.733	72.9	0.57	9.113	2.552	H1-1b					
20	38	C3.38X2.06X0.188	0.461	2.592	19	0.07	0.351	y	45	38.433	43.394	1.694	4.483	1.593	H1-1b					
21	39	PL3/8"x6	0.147	0	19	0.155	0	y	18	68.856	72.9	0.57	9.113	1.912	H1-1b					
22	40	C3.38X2.06X0.188	0.409	0	17	0.082	2.241	z	24	38.433	43.394	1.694	4.483	1.59	H1-1b					
23	46	L6.63x4.33x.25	0.365	0	2	0.046	3.25	y	21	49.974	86.751	2.311	6.976	1.5	H2-1					
24	47	PL3/8"x6	0.122	0	18	0.192	0	y	18	68.856	72.9	0.57	9.113	2.368	H1-1b					
25	57	PL3/8"x6	0.173	0	17	0.24	0	y	43	70.733	72.9	0.57	9.113	2.795	H1-1b					
26	62	L2x2x4	0.34	0	24	0.032	2.309	z	84	23.349	30.586	0.691	1.577	1.5	H2-1					
27	64	L7.63x2.5x6	0.473	1.604	12	0.1	1.604	z	19	73.845	118.523	1.798	13.657	1.228	H2-1					
28	73	L2x2x4	0.328	2.309	16	0.042	2.309	y	48	23.349	30.586	0.691	1.577	1.5	H2-1					
29	74	HSS4X4X2	0.713	0	21	0.175	0	z	19	70.173	73.278	8.24	8.24	1.974	H1-1b					
30	75	PL3/8"x6	0.21	0.085	14	0.229	0.208	y	45	70.733	72.9	0.57	9.113	1.376	H1-1b					
31	76	C3.38X2.06X0.188	0.428	2.592	47	0.07	0.351	y	38	38.433	43.394	1.694	4.483	1.628	H1-1b					
32	77	PL3/8"x6	0.119	0	23	0.162	0	y	21	68.856	72.9	0.57	9.113	1.906	H1-1b					
33	78	C3.38X2.06X0.188	0.487	0	21	0.097	2.241	z	15	38.433	43.394	1.694	4.483	1.586	H1-1b					
34	80	L6.63x4.33x.25	0.397	3.25	2	0.053	3.25	z	20	49.974	86.751	2.311	6.976	1.5	H2-1					
35	81	PL3/8"x6	0.139	0.164	15	0.195	0	y	22	68.856	72.9	0.57	9.113	2.991	H1-1b					
36	83	PL3/8"x6	0.222	0	21	0.238	0	y	47	70.733	72.9	0.57	9.113	2.705	H1-1b					
37	85	L2x2x4	0.434	0	15	0.037	2.309	z	21	23.349	30.586	0.691	1.577	1.5	H2-1					
38	86	L7.63x2.5x6	0.55	1.604	3	0.091	1.604	z	21	73.845	118.523	1.798	13.904	1.283	H2-1					
39	92	PIPE 2.88X0.203	0.222	5.667	21	0.077	5.667		21	35.361	70.548	5.01	5.01	3	H1-1b					
40	93	PIPE 2.88X0.203	0.249	2.333	14	0.073	5.667		25	35.361	70.548	5.01	5.01	3	H1-1b					
41	94	PIPE 2.88X0.203	0.22	2.187	25	0.166	2.187		25	23.996	70.548	5.01	5.01	2.2	H1-1b					
42	96	PIPE 3.5X0.165	0.123	1.25	14	0.08	4		20	45.872	71.57	6.336	6.336	1.695	H1-1b					
43	100	PIPE 2.88X0.203	0.201	5.667	21	0.079	2.333		25	35.361	70.548	5.01	5.01	3	H1-1b					
44	103	PIPE 2.88X0.203	0.221	5.667	25	0.087	5.667		14	35.361	70.548	5.01	5.01	3	H1-1b					
45	104	PIPE 2.88X0.203	0.195	2.333	18	0.055	5.667		17	35.361	70.548	5.01	5.01	3	H1-1b					
46	105	PIPE 2.88X0.203	0.218	7.812	21	0.183	9.062		21	23.996	70.548	5.01	5.01	2.418	H1-1b					
47	107	PIPE 3.5X0.165	0.108	4	14	0.075	2.667		25	45.872	71.57	6.336	6.336	1.441	H1-1b					
48	111	PIPE 2.88X0.203	0.231	5.667	14	0.055	5.667		18	35.361	70.548	5.01	5.01	3	H1-1b					

APPENDIX B

(Additional Calculations)

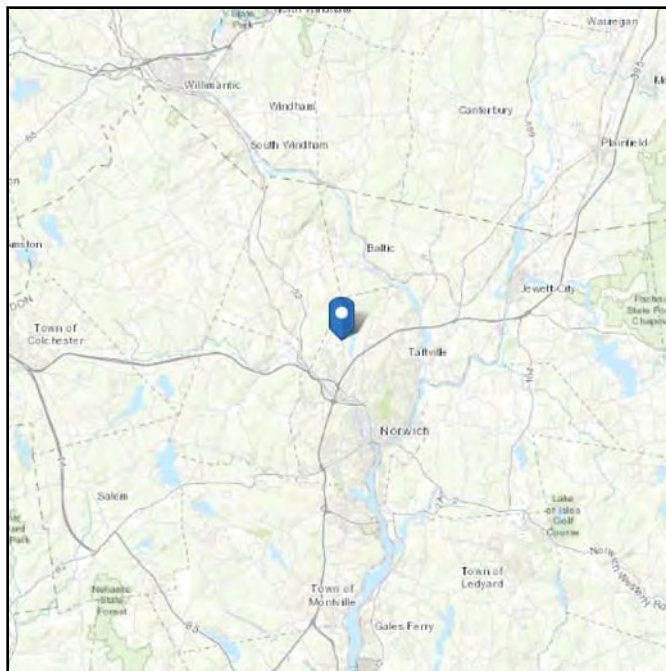


ASCE 7 Hazards Report

Address:
No Address at This
Location

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

Elevation: 427.18 ft (NAVD 88)
Latitude: 41.578199
Longitude: -72.103675

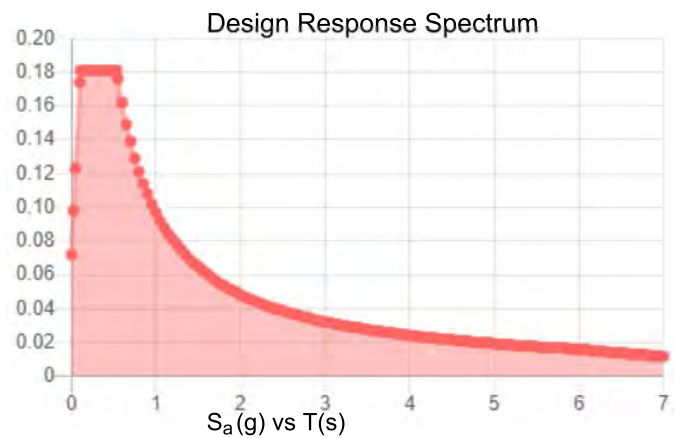
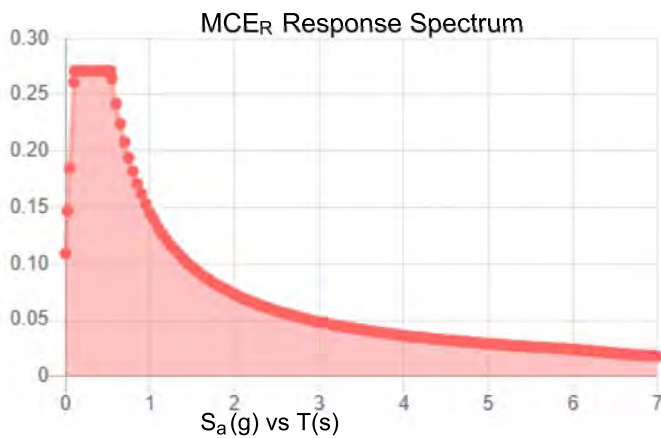


Site Soil Class: D - Stiff Soil

Results:

S_S :	0.17	S_{DS} :	0.181
S_1 :	0.061	S_{D1} :	0.097
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.085
S_{MS} :	0.271	PGA_M :	0.136
S_{M1} :	0.145	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B



Data Accessed:

Wed Jul 21 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: 0.75 in.

Concurrent Temperature: 15 F

Gust Speed: 50 mph

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

Date Accessed: Wed Jul 21 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:

BOBOS00045A

DISH Wireless L.L.C. SITE ADDRESS:

**292 PLAIN HILL ROAD
NORWICH, CT 06360**



By Stephen Roth at 6:01:05 AM, 10/26/2021

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 TOWER 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 PROPOSED 1'-0"X6'-0" CONCRETE PAD
 - 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: KELVIN H STOTT
ADDRESS: 300 PLAIN HILL ROAD
NORWICH, CT 06360

TOWER TYPE: MONOPOLE

TOWER CO SITE ID: CT01365-S

TOWER APP NUMBER: 163180

COUNTY: NEW LONDON

LATITUDE (NAD 83): 41° 34' 41.52" N
41.578199 N

LONGITUDE (NAD 83): 72° 6' 13.23" W
72.103675 W

ZONING JURISDICTION: CITY OF NORWICH

ZONING DISTRICT: BP

PARCEL NUMBER: 028-001-013.000-0000

OCCUPANCY GROUP: U

CONSTRUCTION TYPE: II-B

POWER COMPANY: CONNECTICUT LIGHT & POWER

TELEPHONE COMPANY: XFINITY

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: RYAN LYNCH
rayan.lynych@dish.com

CONSTRUCTION MANAGER: JAVIER SOTO
javier.soto@dish.com

RF ENGINEER: ARVIN SEBASTIAN
arvin.sebastian@dish.com

CONNECTICUT CODE 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



**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

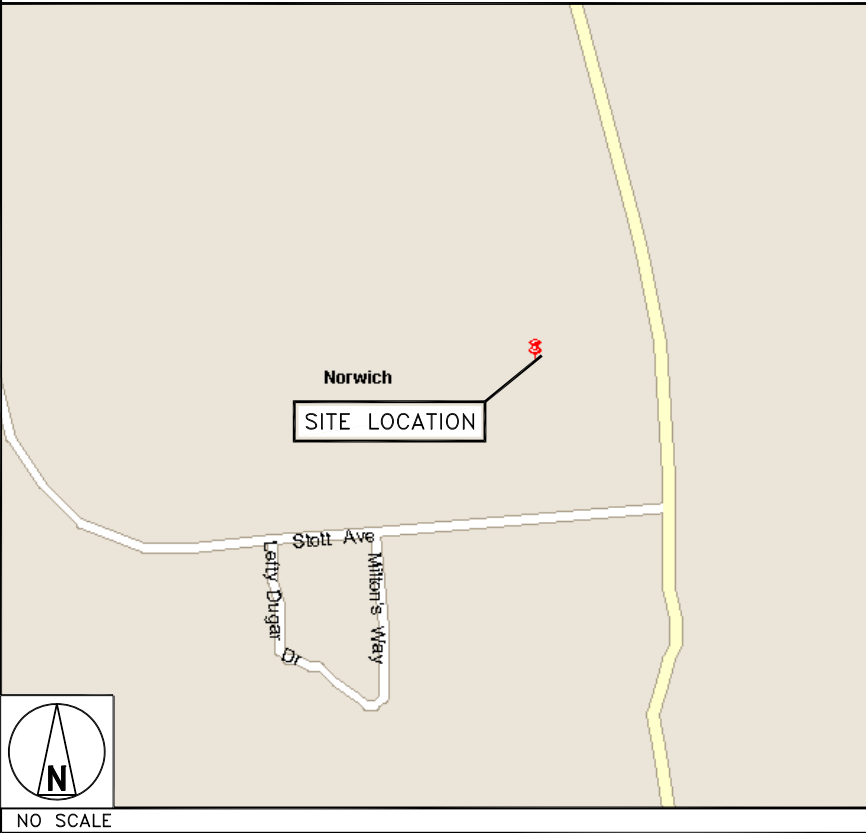
CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON THE JOB SITE, AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

DIRECTIONS

DIRECTIONS FROM BRADLEY INTERNATIONAL AIRPORT:

NORWICHTOWN NORWICH, CT 06360, USA GET ON CT-2 W FROM PLAIN HILL RD AND W TOWN ST HEAD SOUTH ON PLAIN HILL RD TOWARD STOTT AVE CONTINUE ONTO HUNTINGTON AVE TURN RIGHT ONTO W TOWN ST CONTINUE ONTO FITCHVILLE RD/FRANKLIN TURNPIKE/NORWICH-COLCHESTER TURNPIKE TURN LEFT TO MERGE WITH CT-2 W TOWARD HARTFORD CONTINUE ON CT-2 W. TAKE I-91 N TO SCHOEPHOESTER RD IN WINDSOR LOCKS MERGE WITH CT-2 W USE THE LEFT 2 LANES TO TAKE EXIT 2W FOR I-84 W TOWARD I-91 N MERGE WITH I-84 TAKE EXIT 51 TO MERGE WITH I-91 N TOWARD SPRINGFIELD USE THE RIGHT 2 LANES TO TAKE EXIT 40 FOR CT-20 TOWARD BRADLEY INTERNATIONAL AIRPORT CONTINUE ONTO CT-20 W CONTINUE ONTO BRADLEY INTERNATIONAL AIRPORT CON DRIVE TO YOUR DESTINATION USE ANY LANE TO TURN SLIGHTLY RIGHT ONTO SCHOEPHOESTER RD USE THE RIGHT 2 LANES TO TURN SLIGHTLY RIGHT ARRIVE AT BOBOS00045A.

VICINITY MAP



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



8051 CONGRESS AVENUE
BOCA RATON, FL 33487



B&T ENGINEERING, INC.
PEC.0001564
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CONSTRUCTION DOCUMENTS

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A&E PROJECT NUMBER
149431.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00045A
292 PLAIN HILL ROAD
NORWICH, CT 06360

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

CUSTOMER PROVIDED SITE SURVEY
UNAVAILABLE AT TIME OF RELEASE



5701 SOUTH SANTA FE DRIVE
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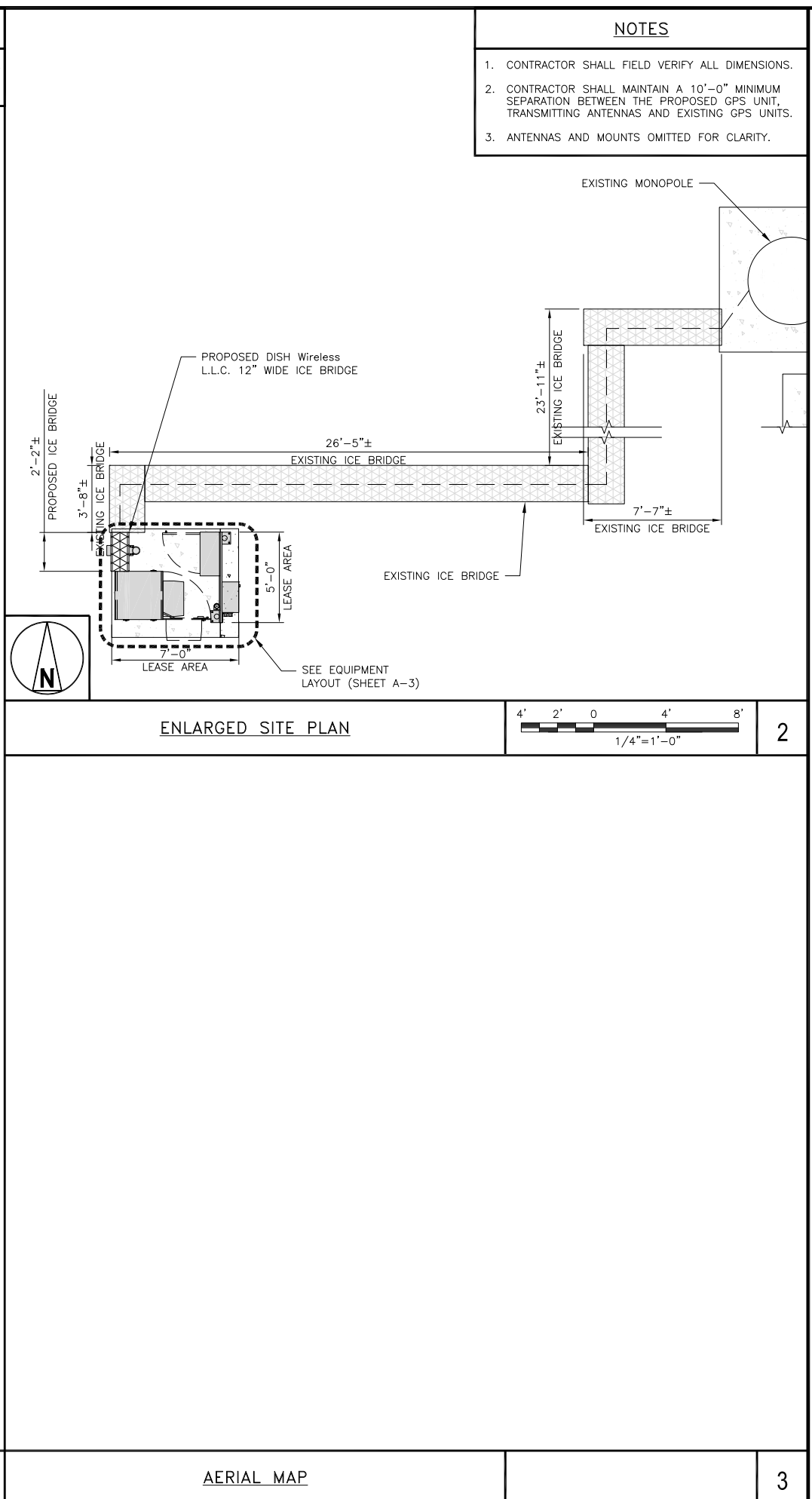
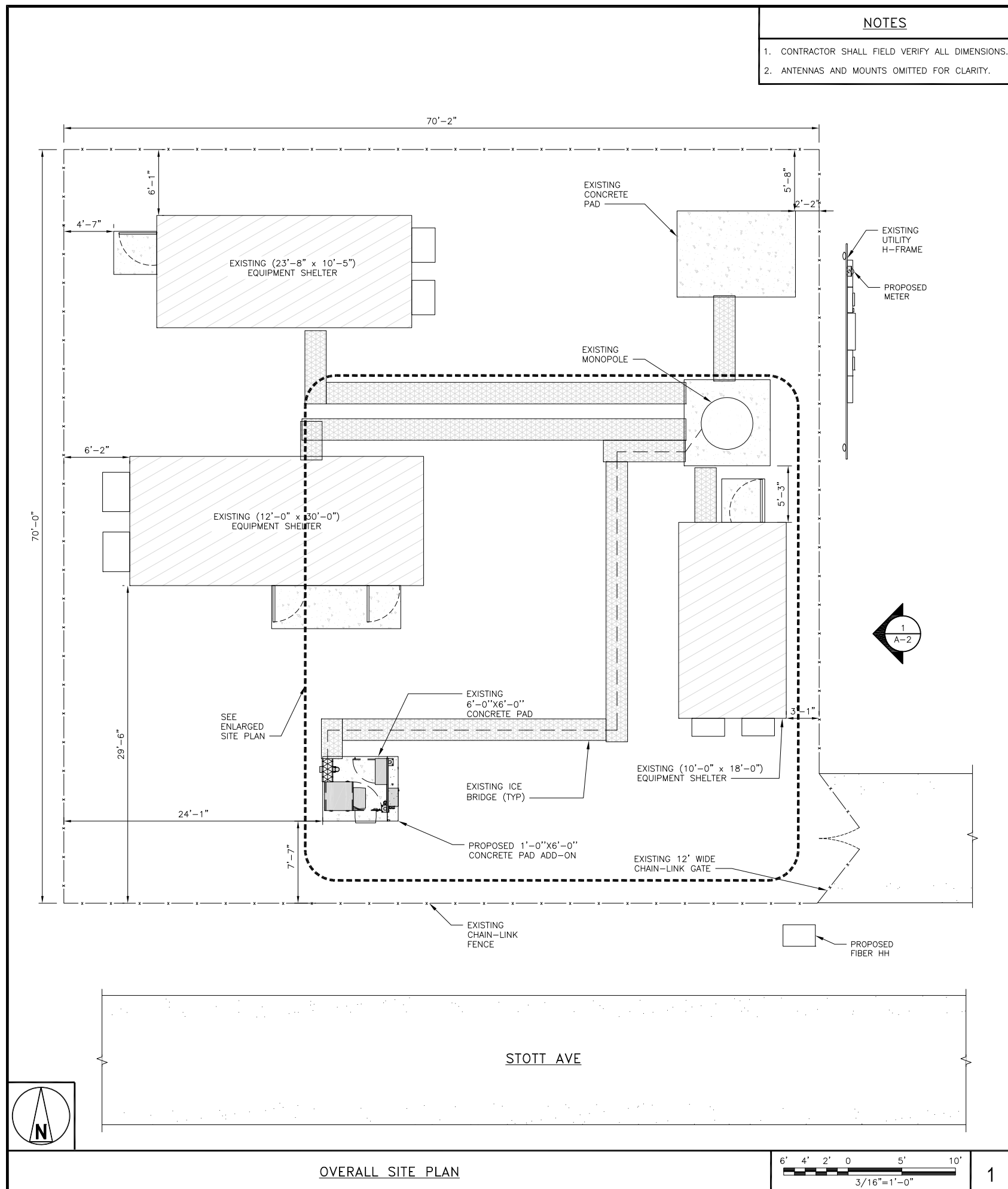
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292 PLAIN HILL ROAD
NORWICH, CT 06360

SHEET TITLE
SITE SURVEY

SHEET NUMBER
LS-1





5701 SOUTH SANTA FE DRIVE
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10/19/21

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PROJECT INFORMATION

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292 PLAIN HILL ROAD
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SHEET TITLE

OVERALL AND ENLARGED
SITE PLAN

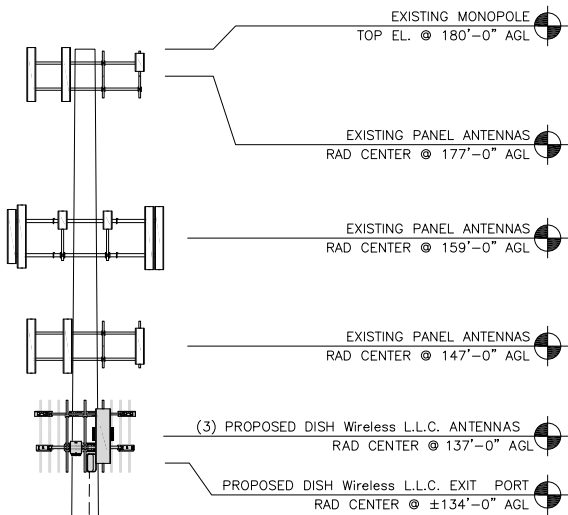
SHEET NUMBER

A-1

- NOTES
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.

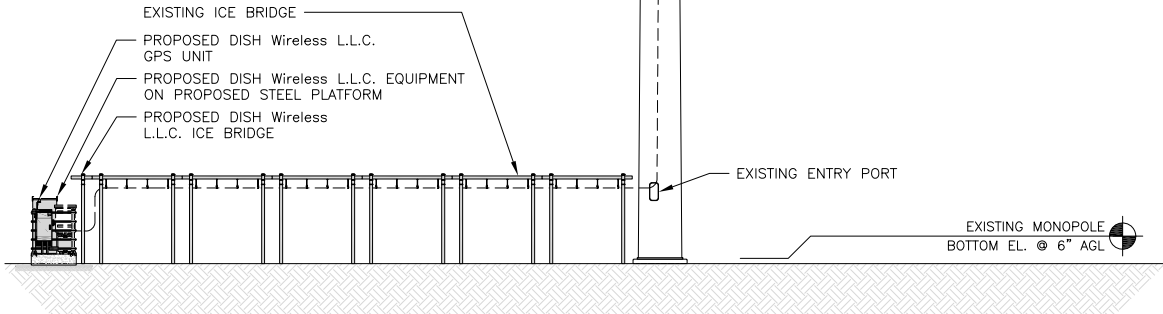
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS

3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.

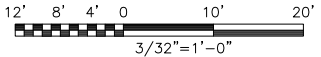


(1) PROPOSED DISH Wireless L.L.C. HYBRID CABLE ROUTED INSIDE POLE

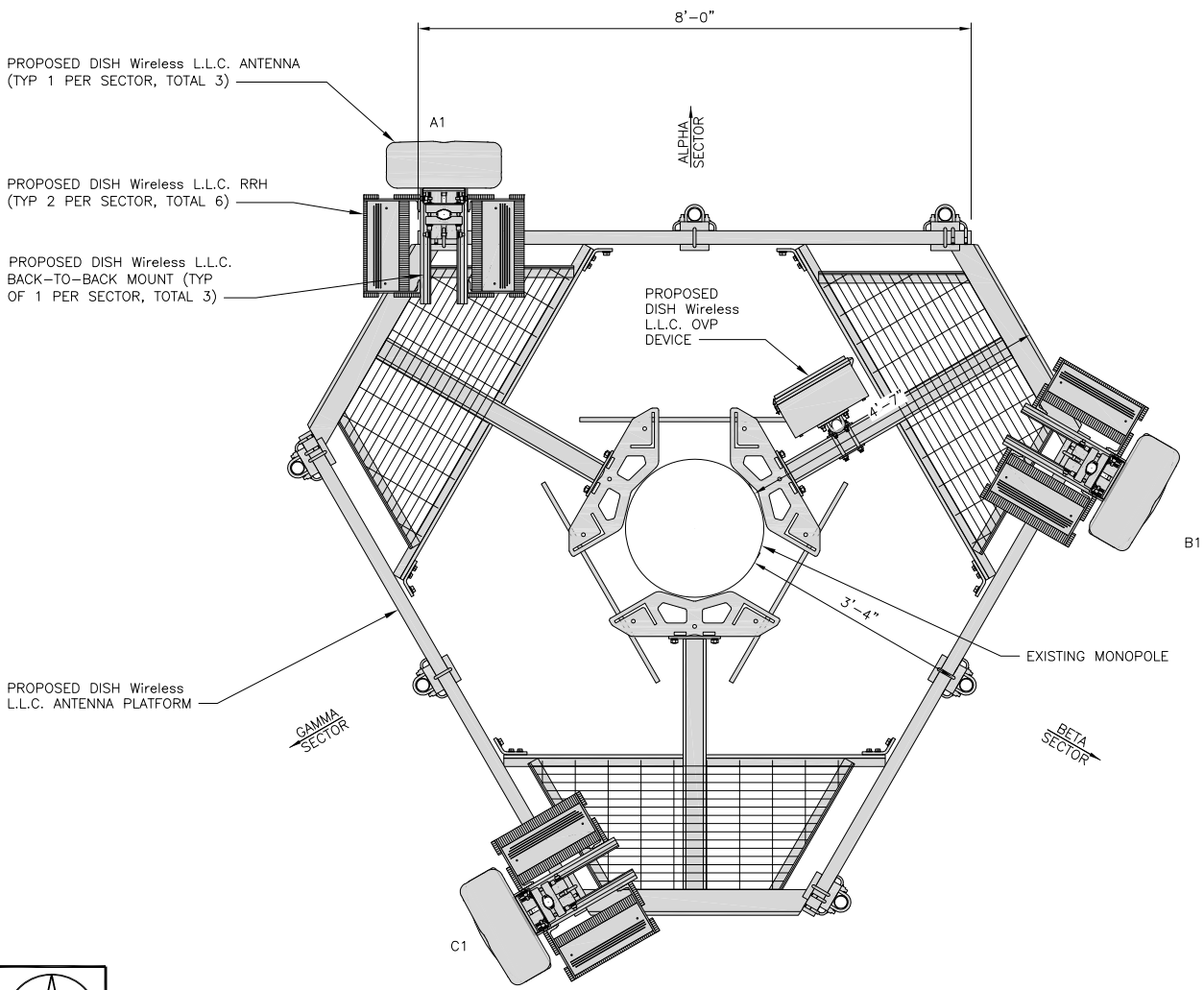
EXISTING MONOPOLE



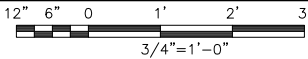
PROPOSED EAST ELEVATION



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	COMMSCOPE - FFV-65B-R2	5G	72.0" x 19.6"	0°	137'-0"	(1) HIGH-CAPACITY HYBRID CABLE (225' LONG)
BETA	B1	PROPOSED	COMMSCOPE - FFV-65B-R2	5G	72.0" x 19.6"	120°	137'-0"	
GAMMA	C1	PROPOSED	COMMSCOPE - FFV-65B-R2	5G	72.0" x 19.6"	240°	137'-0"	

SECTOR	POSITION	RRH	
		MANUFACTURER - MODEL NUMBER	TECHNOLOGY
ALPHA	A1	FUJITSU - TA08025-B605	5G
	A1	FUJITSU - TA08025-B604	5G
BETA	B1	FUJITSU - TA08025-B605	5G
	B1	FUJITSU - TA08025-B604	5G
GAMMA	C1	FUJITSU - TA08025-B605	5G
	C1	FUJITSU - TA08025-B604	5G

- NOTES
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.

ANTENNA SCHEDULE

NO SCALE

3



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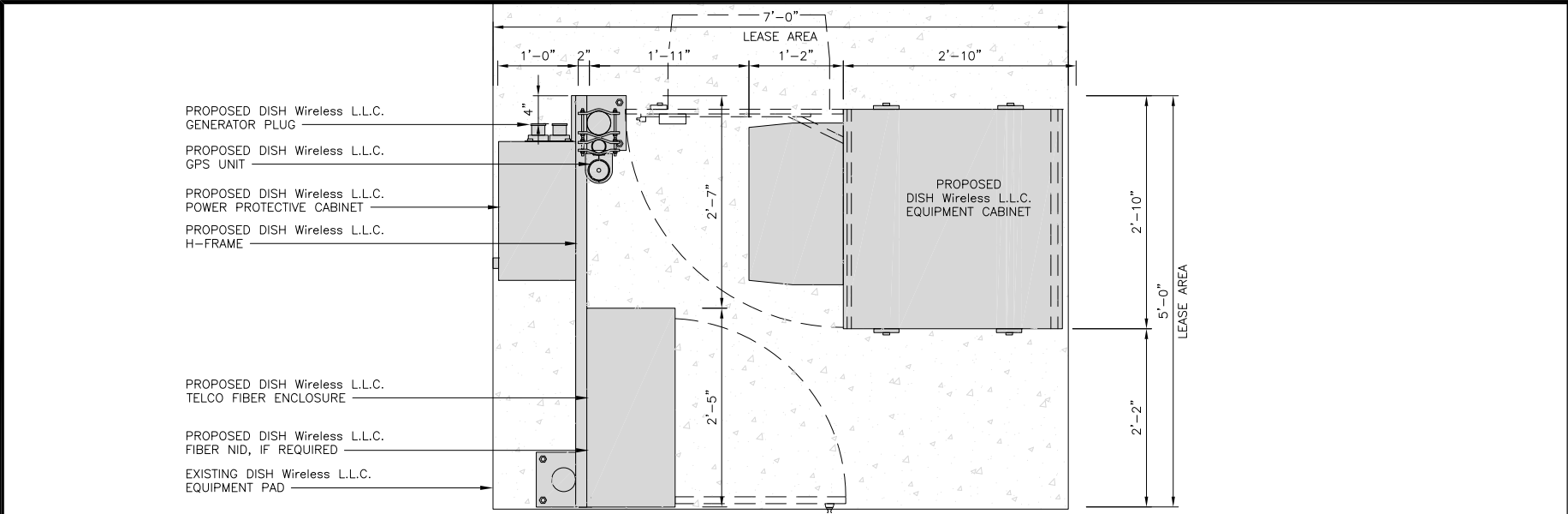
DISH Wireless L.L.C.
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292 PLAIN HILL ROAD
NORWICH, CT 06360

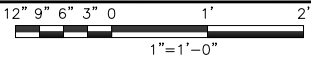
SHEET TITLE
ELEVATION, ANTENNA
LAYOUT AND SCHEDULE

SHEET NUMBER

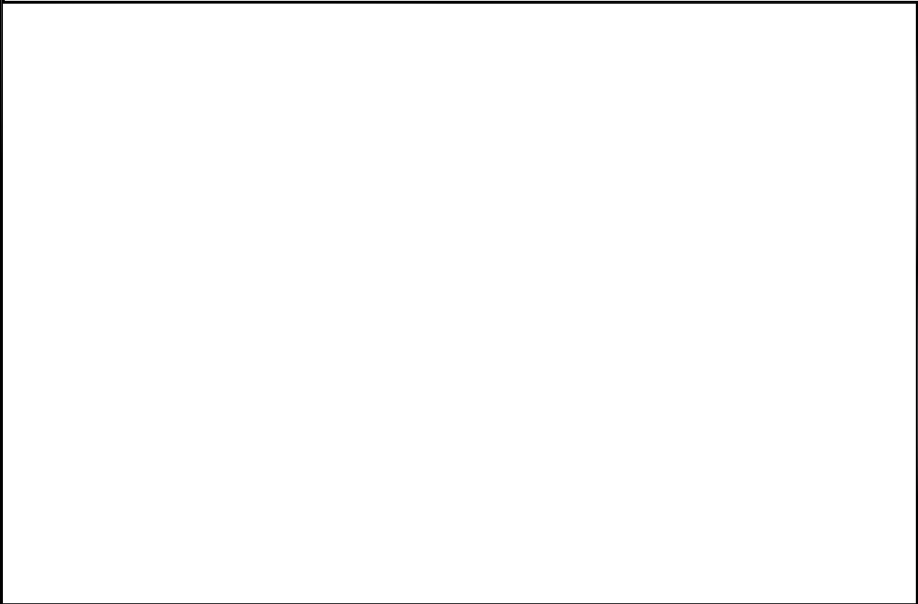
A-2



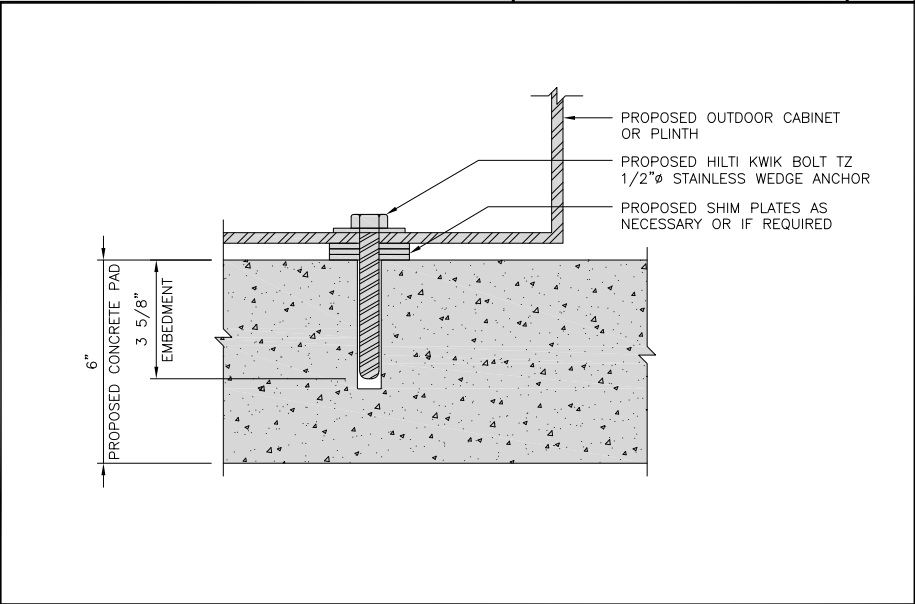
PLATFORM EQUIPMENT PLAN



1

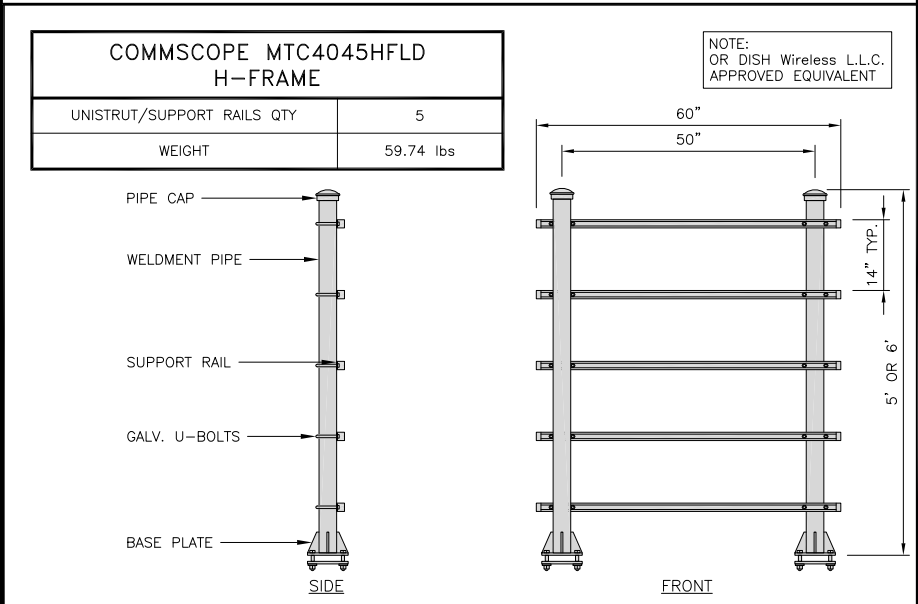


NOT USED



TYPICAL OUTDOOR EQUIPMENT TO CONCRETE SLAB ANCHORAGE

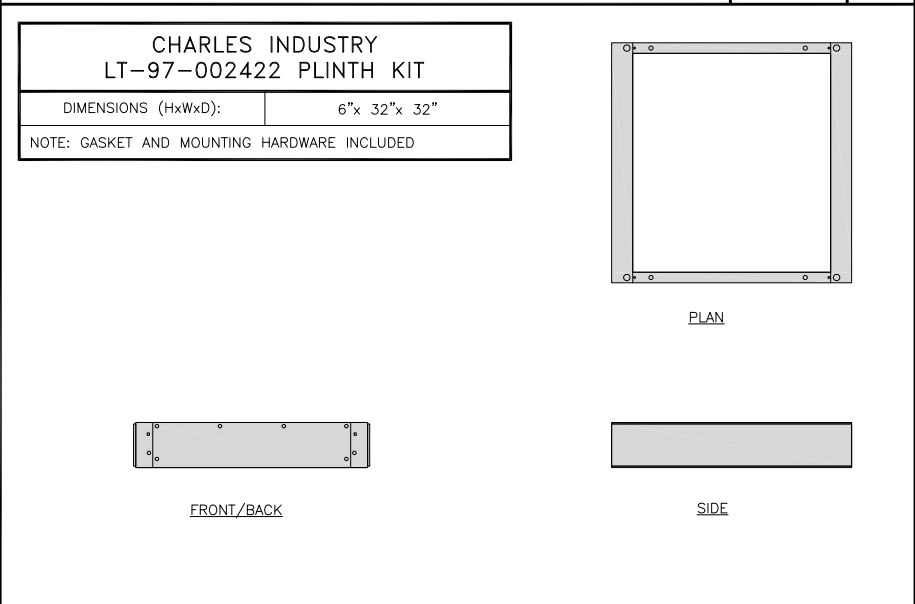
2



H-FRAME DETAIL

NO SCALE

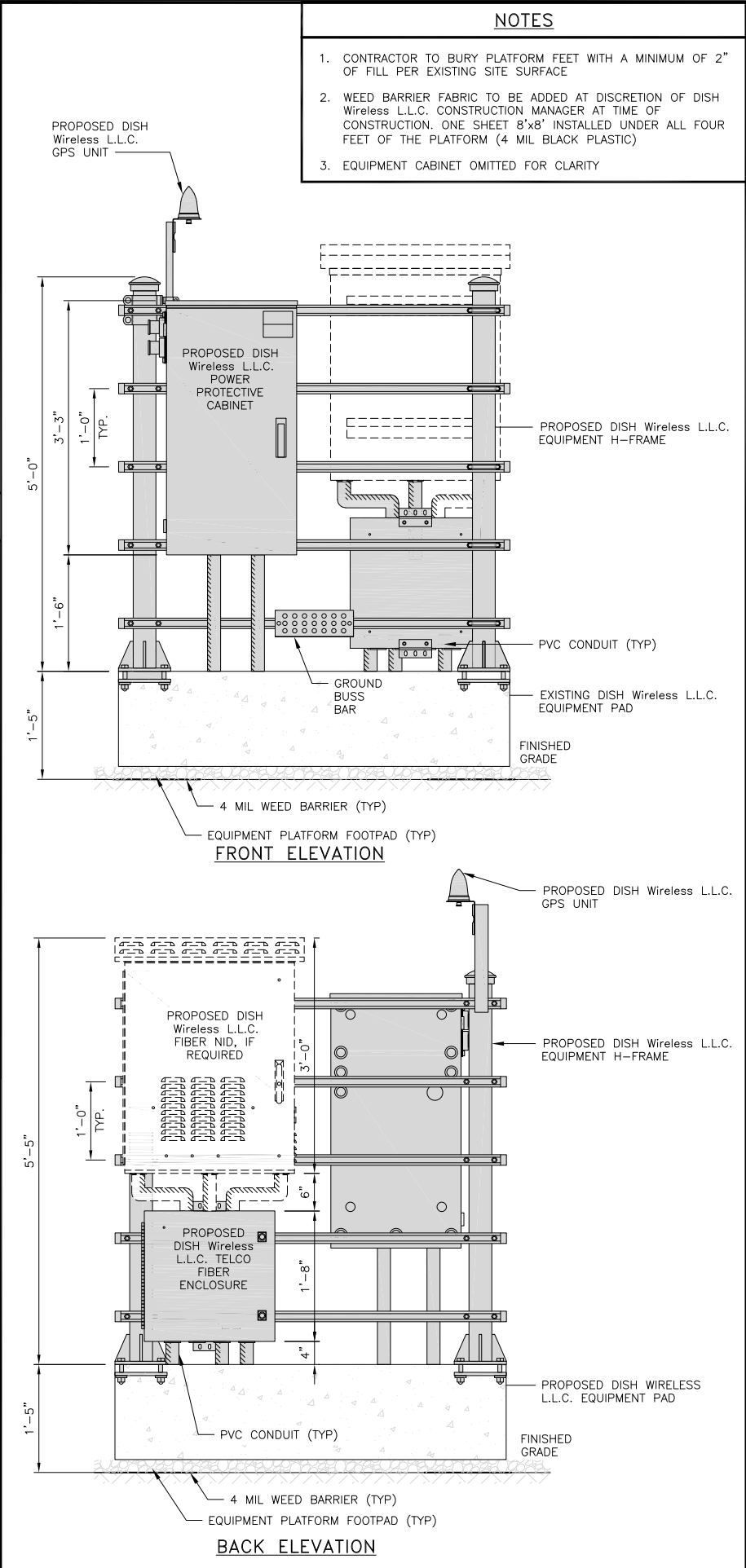
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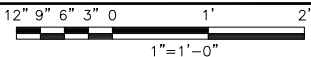
PLINTH DETAIL

NO SCALE

4



H-FRAME EQUIPMENT ELEVATION



5

NOTES

1. CONTRACTOR TO BURY PLATFORM FEET WITH A MINIMUM OF 2" OF FILL PER EXISTING SITE SURFACE
2. WEED BARRIER FABRIC TO BE ADDED AT DISCRETION OF DISH Wireless 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)
3. EQUIPMENT CABINET OMITTED FOR CLARITY



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PROJECT INFORMATION

BOBOS00045A
292 PLAIN HILL ROAD
NORWICH, CT 06360

SHEET TITLE
EQUIPMENT PLATFORM AND
H-FRAME DETAILS

SHEET NUMBER

A-3

CHARLES INDUSTRY HEX
CUBE-PM639155N4

DIMENSIONS (HxWxD):	74"x32"x32"
POWER PLANT:	-48VDC ABB/600W
TOTAL WEIGHT (EMPTY)	408 LBS

PLAN

SIDE

BACK

SIDE

FRONT

CABINET DETAIL

NO SCALE

1

RAYCAP PPC
RDIAC-2465-P-240-MTS

ENCLOSURE DIMENSIONS (HxWxD):	39"x22.855"x12.593
WEIGHT:	80 lbs
OPERATING AC VOLTAGE	240/120 1 PHASE 3W+G

TOP

BACK

SIDE

FRONT

SIDE

POWER PROTECTION CABINET (PPC) DETAIL

NO SCALE

2

NOT USED

NO SCALE

3

ZAYO 5RU (LEFT SWING DOOR)
FIBER NID ENCLOSURE

DIMENSIONS (HxWxD)	36.1"x29"x12.9"
WEIGHT	85 lbs

BOTTOM

BACK

SIDE

FRONT

FIBER NID ENCLOSURE DETAIL

NO SCALE

5

CHARLES CFIT-PF2020DSH1
FIBER TELCO ENCLOSURE

ENCLOSURE DIMS (HxWxD)	20"x20"x9"
ENCLOSURE WEIGHT	20 lbs
MOUNTING	WALL
COMPLIANCE	TYPE 4

FRONT

SIDE

BACK

FRONT

FIBER TELCO ENCLOSURE DETAIL

NO SCALE

6

NOT USED

NO SCALE

4

COMMSCOPE WB-K110-B
WAVEGUIDE BRIDGE KIT

DIMENSIONS (HxL)	160"x10'
WEIGHT/ VOLUME	325.0 LBS
CABLE RUN (QTY)	12

INCLUDED PRODUCTS:

WB-T12-3 TRAPEZE KIT,
3 RUNGS

WB-LB12-3 SUPPORT BRACKET

MF-130 DIRECT BURIAL PIPE
COLUMN, 13'-4"

TRAPEZE KIT (WB-T12-3)

SUPPORT BRACKET (WB-LB12-3)

3.5" DIA GALV SCH 40 PIPE (SPACED 9'-0" MAX) (MF-130)

PLAN

FRONT

SIDE

ICE BRIDGE DETAIL

NO SCALE

7

SITEPRO1 BSF35
BASE SHOE FEET

DIMENSIONS (HxWxL)	8"x8"x1/2"
WEIGHT	15.0 LBS
POST SIZE:	2-7/8" OR 3-1/2"

VERTICAL POST

BASE SHOE FEET

EXISTING CONCRETE PAD

11/16" HOLES FOR 5/8" ANCHORS

5/8" ANCHORS

CONCRETE SLAB

BASE SHOE WELDMENT

ICE BRIDGE PIPE MOUNT DETAIL

NO SCALE

8

PROPOSED ICE BRIDGE

PROPOSED X" DIA HYBRID CABLE (OPTION "A")

PROPOSED X" DIA HYBRID CABLE (OPTION "B")

PROPOSED CABLE CLAMP @ 3'-0" O.C.

HYBRID SUPPORT BRACKET AND BANDING @ 4'-0" O.C.

EXISTING ENTRY PORT

EXISTING MONOPOLE

HYBRID CABLE RUN

NO SCALE

9

dish
wireless.

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SBA

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PH: (918) 587-4630
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Professional Engineer
No. 2384
L.C. License
20/19/21

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PROJECT INFORMATION

BOBOS00045A
292 PLAIN HILL ROAD
NORWICH, CT 06360

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-4

<table><tr><td colspan="2">PCTEL GPSGL-TMG-SPI-40NCB</td></tr><tr><td>DIMENSIONS (DIAxH) MM/INCH</td><td>81x184mm 3.2"x7.25"</td></tr><tr><td>WEIGHT W/ACCESSORIES</td><td>075 lbs</td></tr><tr><td>CONNECTOR</td><td>N-FEMALE</td></tr><tr><td>FREQUENCY RANGE</td><td>1590 ± 30MHz</td></tr></table>			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						
PCTEL GPSGL-TMG-SPI-40NCB																		
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WEIGHT W/ACCESSORIES	075 lbs																	
CONNECTOR	N-FEMALE																	
FREQUENCY RANGE	1590 ± 30MHz																	
GPS DETAIL		NO SCALE	1	GPS MINIMUM SKY VIEW REQUIREMENTS		NO SCALE	2	CABLES UNLIMITED HYBRID CABLE MINIMUM BEND RADIUSES		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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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

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

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 DETAILNO SCALE1RRH DETAILNO SCALE2RRH MOUNT DETAILNO SCALE3

COMMSCOPE
FFVV-65B-R2

DIMENSIONS (HxWxD)(MM/IN)	1828x498x197 72"x19.6"x7.8"
RF CONNECTOR INTERFACE	4.3-10 FEMALE
WEIGHT	70.8 lbs
WEIGHT WITH BRACKETS	98.1 lbs

PLAN

BACK

SIDE

FRONT

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

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

ANTENNA DETAILNO SCALE4NOT USEDNO SCALE5ANTENNA BRACKET DETAILNO SCALE6

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

COMMSCOPE XP-2040
CROSSOVER PLATE

DIMENSIONS (HxW)	10"x12"
WEIGHT	11 lbs

PLAN U-BOLT

SIDE U-BOLT

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

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

SURGE SUPPRESSION DETAIL (OVP)NO SCALE7RRH/OVP MOUNT DETAILNO SCALE8ANTENNA PLATFORM DETAILNO SCALE9

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RFDS REV #: 1

CONSTRUCTION DOCUMENTS

REV	DATE	DESCRIPTION
A	7/23/21	ISSUED FOR REVIEW
0	10/7/21	ISSUED FOR CONSTRUCTION
1	10/19/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149431.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBOS00045A
292 PLAIN HILL ROAD
NORWICH, CT 06360

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-6

DISH Wireless L.L.C. TEMPLATE VERSION 37 - 07/09/2021

FINAL POWER OR FIBER DESIGN
NOT AVAILABLE AT TIME OF ISSUE

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

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LITTLETON, CO 80120



8051 CONGRESS AVENUE
BOCA RATON, FL 33487



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SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
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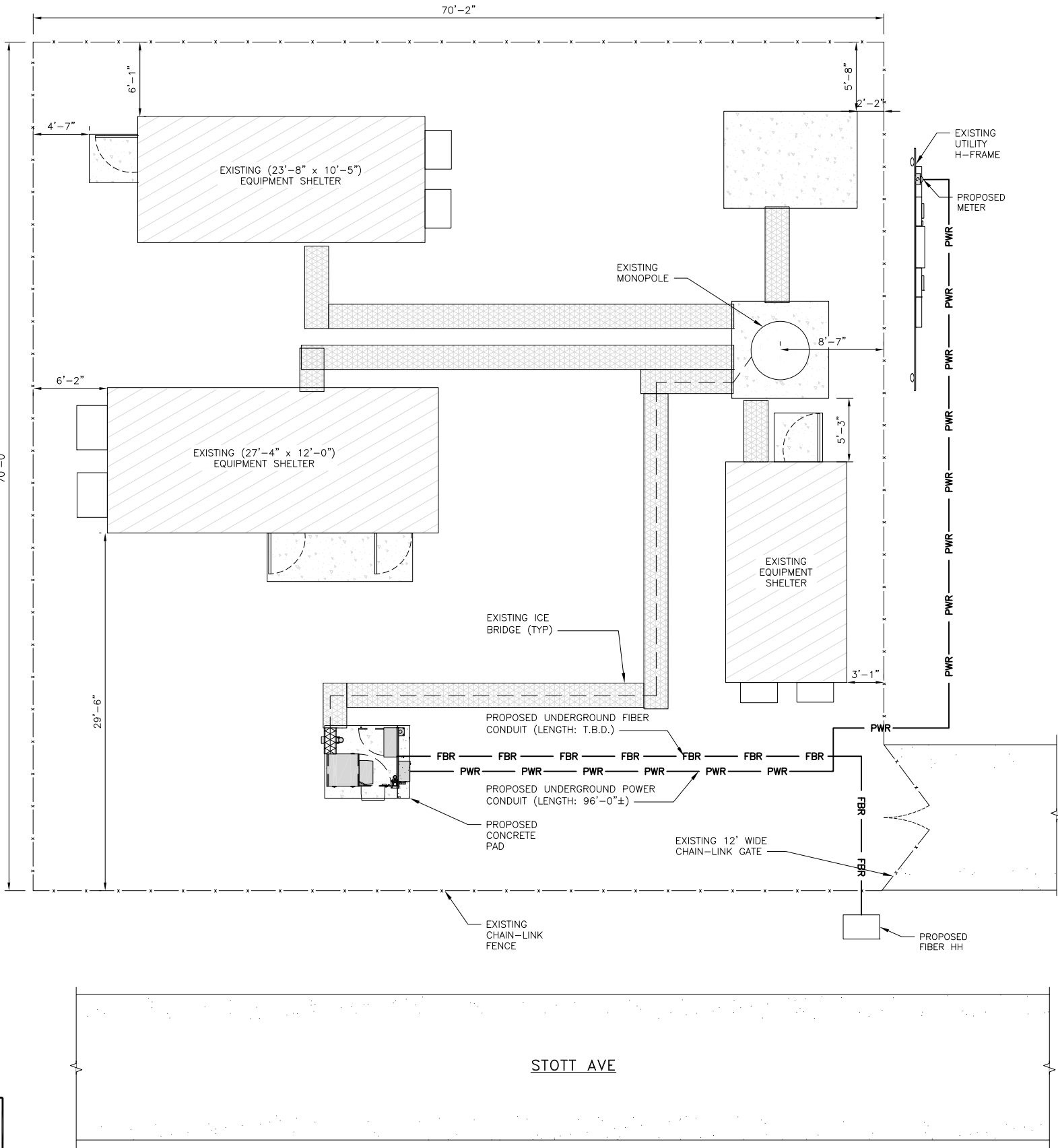
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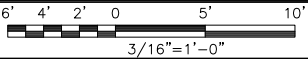
SHEET TITLE
ELECTRICAL/FIBER ROUTE
PLAN AND NOTES

SHEET NUMBER

E-1



UTILITY ROUTE PLAN



1

ELECTRICAL NOTES

NO SCALE

2

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"

VARIES PER PART NUMBER

2'-0"

SLIP JOINT (SEE CHART FOR PART NUMBER)

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

1. 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.

2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT OSHA TRENCHING AND EXCAVATION SAFETY STANDARDS.

3. 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.

SEE TRENCHING NOTE 1

BACKFILL PER SITE WORK SPECIFICATIONS (SEE GENERAL NOTES)

SLOPE TO SUIT SOIL CONDITION IN ACCORDANCE WITH LOCAL REGULATIONS SEE TRENCHING NOTE 2

1'-0"

1'-0"

30" OR 6" BELOW FROST LINE, WHICHEVER IS GREATER

UTILITY WARNING TAPE

SAND BEDDING PER SITE WORK SPECIFICATIONS

VERTICAL DEPTH SEE TRENCHING NOTE 2

DISH Wireless L.L.C. PROVIDES 12AWG WIRE (6' TAIL)

PROPOSED DISH Wireless L.L.C. UNISTRUT

PROPOSED DISH Wireless L.L.C. 10 AMP DISTRIBUTION BREAKER

PROPOSED DISH Wireless L.L.C. 12 AWG WIRE

PROPOSED DISH Wireless L.L.C. 1-1/2" POWER FROM CABINET

DISH Wireless L.L.C. INSTALLS 1-1/2" CONDUITS FOR POWER AND FIBER TO CABINET

DISH Wireless L.L.C. FIBER DISTRIBUTION PANEL

PROPOSED DISH Wireless L.L.C. TELCO FIBER ENCLOSURE

DISH Wireless L.L.C. FIBER JUMPER TO CABINET WILL NEED TO BE TERMINATED BY FIBER PROVIDER ON OTHER SIDE OF BULKHEAD/LC TO LC CONNECTOR WHERE CIRCUIT IS TERMINATED.

PROPOSED FIBER PROVIDER FIBER LATERAL FROM RIGHT OF WAY TO STREET, TERMINATED TO FDP

PROPOSED DISH Wireless L.L.C. 1-1/2" FIBER TO CABINET

PROPOSED DISH Wireless L.L.C. 2" CONDUIT FROM COMMERCIAL FIBER VAULT

EXPANSION JOINT DETAIL

NO SCALE

1

PROPOSED DISH Wireless L.L.C. UNISTRUT

PROPOSED FIBER PROVIDER 1-1/4" FLEX CONDUITS

FIBER PROVIDER TO TERMINATE POWER TO FIBER PROVIDER NID

PROPOSED DISH Wireless L.L.C. 12 AWG WIRE (6' TAIL)

PROPOSED DISH Wireless L.L.C. 10 AMP DISTRIBUTION BREAKER

PROPOSED DISH Wireless L.L.C. 12 AWG WIRE

PROPOSED DISH Wireless L.L.C. 1-1/2" POWER FROM CABINET

NOTE: FIBER PROVIDER WILL NEED TO PROVIDE AN ADDITIONAL 5FT UNISTRUT, 2 U-BOLTS WITH 4 NUTS, IN THE EVENT THE BRACKET SPACING DOESN'T LINE UP WITH CURRENT SPACING BELOW

IN IN OUT

FIBER PROVIDER TO PUNCH TOP OF TELCO BOX OF NID ENCLOSURE AND INSTALL 1-1/4" LIQUID TIGHT CONNECTORS, UL LISTED, NYLON MATERIAL, WITH O-RING GASKET

FIBER PROVIDER TO INSTALL 1-1/4" FLEX CONDUITS BETWEEN FDP TELCO BOX & NID

PROPOSED DISH Wireless L.L.C. TELCO FIBER ENCLOSURE

PROPOSED DISH Wireless L.L.C. 1-1/2" FIBER TO CABINET

PROPOSED DISH Wireless L.L.C. 2" CONDUIT FROM COMMERCIAL FIBER VAULT

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

7

NOT USED

NO SCALE

8

NOT USED

NO SCALE

9

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SBA

8051 CONGRESS AVENUE
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PH: (918) 587-4630
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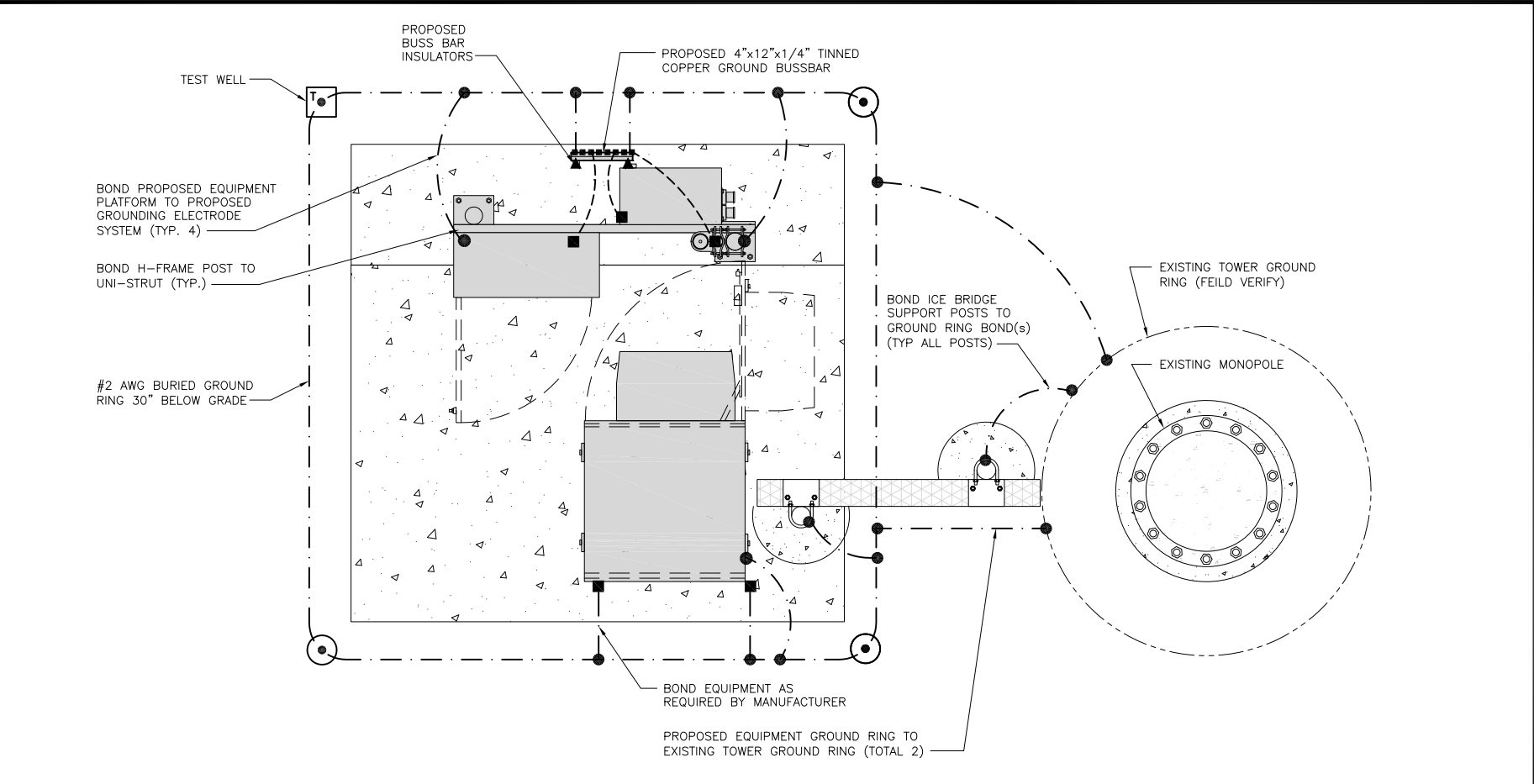
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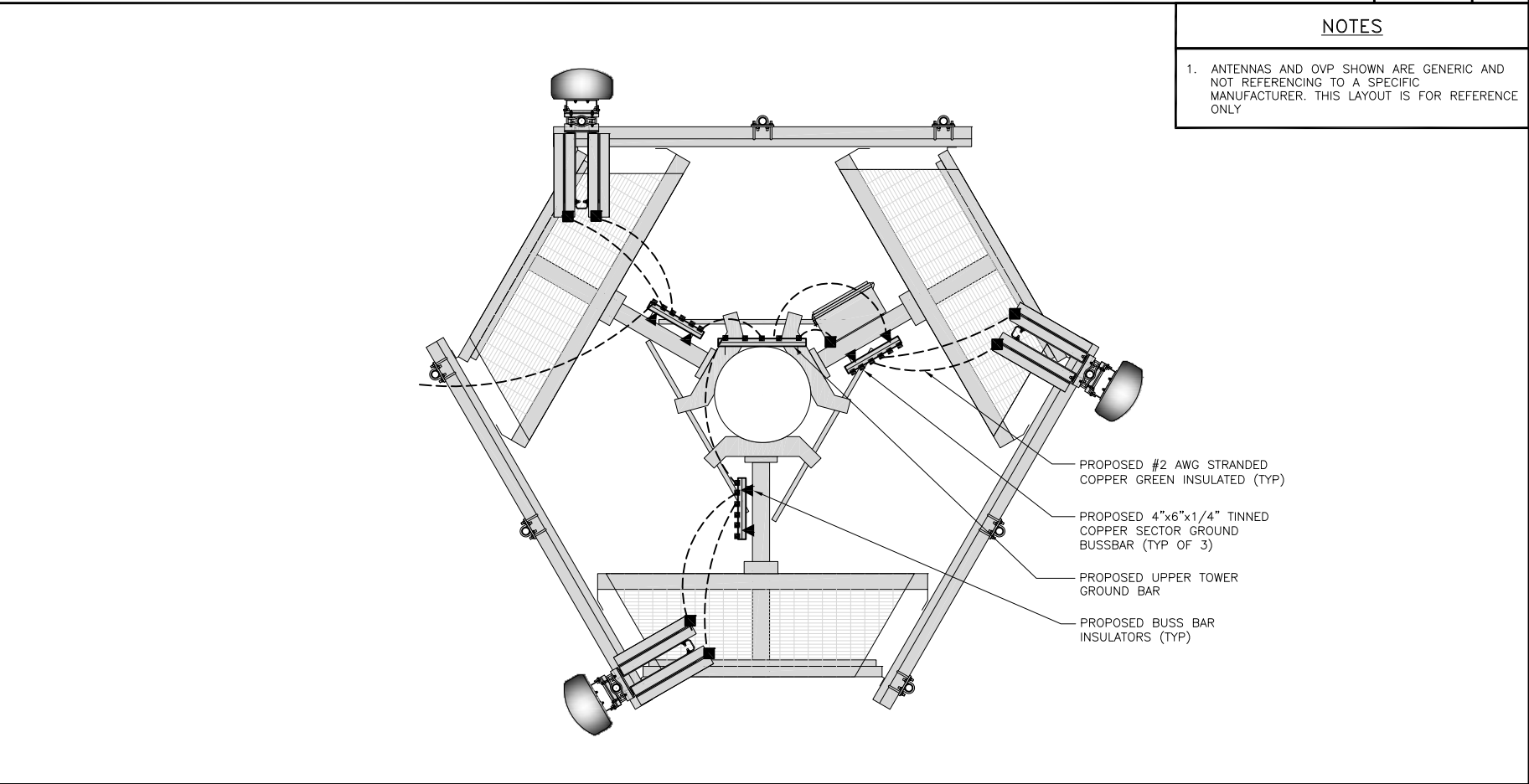
SHEET NUMBER
E-2

DISH Wireless L.L.C. TEMPLATE VERSION 37 – 07/09/2021



TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE 1



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE 2

- EXOTHERMIC CONNECTION

■

MECHANICAL CONNECTION

▬

GROUND BUS BAR

○

GROUND ROD
- TEST GROUND ROD WITH INSPECTION SLEEVE

#6 AWG STRANDED & INSULATED

- · - · -

#2 AWG SOLID COPPER TINNED

▲

BUSS BAR INSULATOR

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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LITTLETON, CO 80120



8051 CONGRESS AVENUE
BOCA RATON, FL 33487



1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
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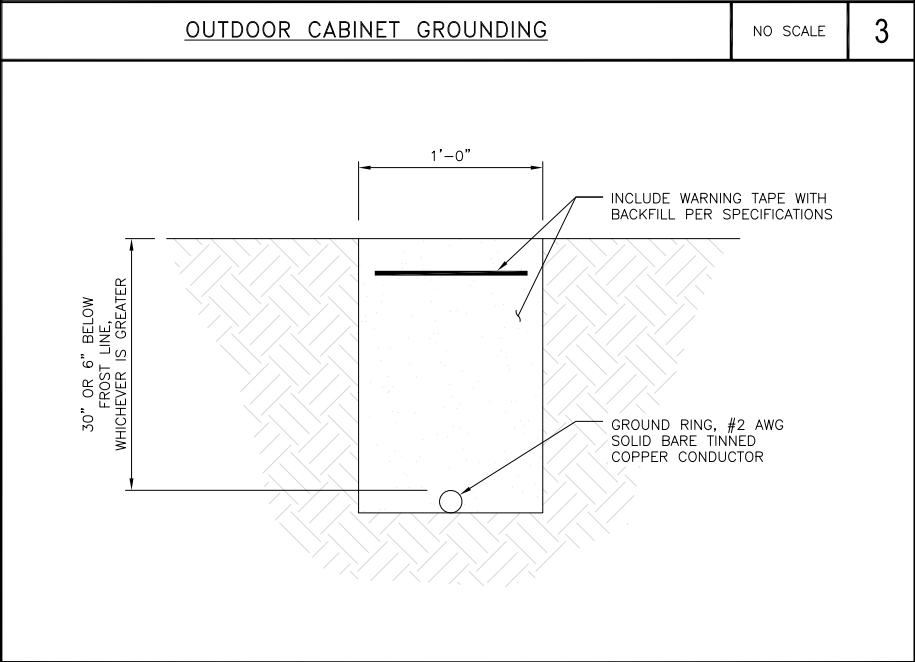
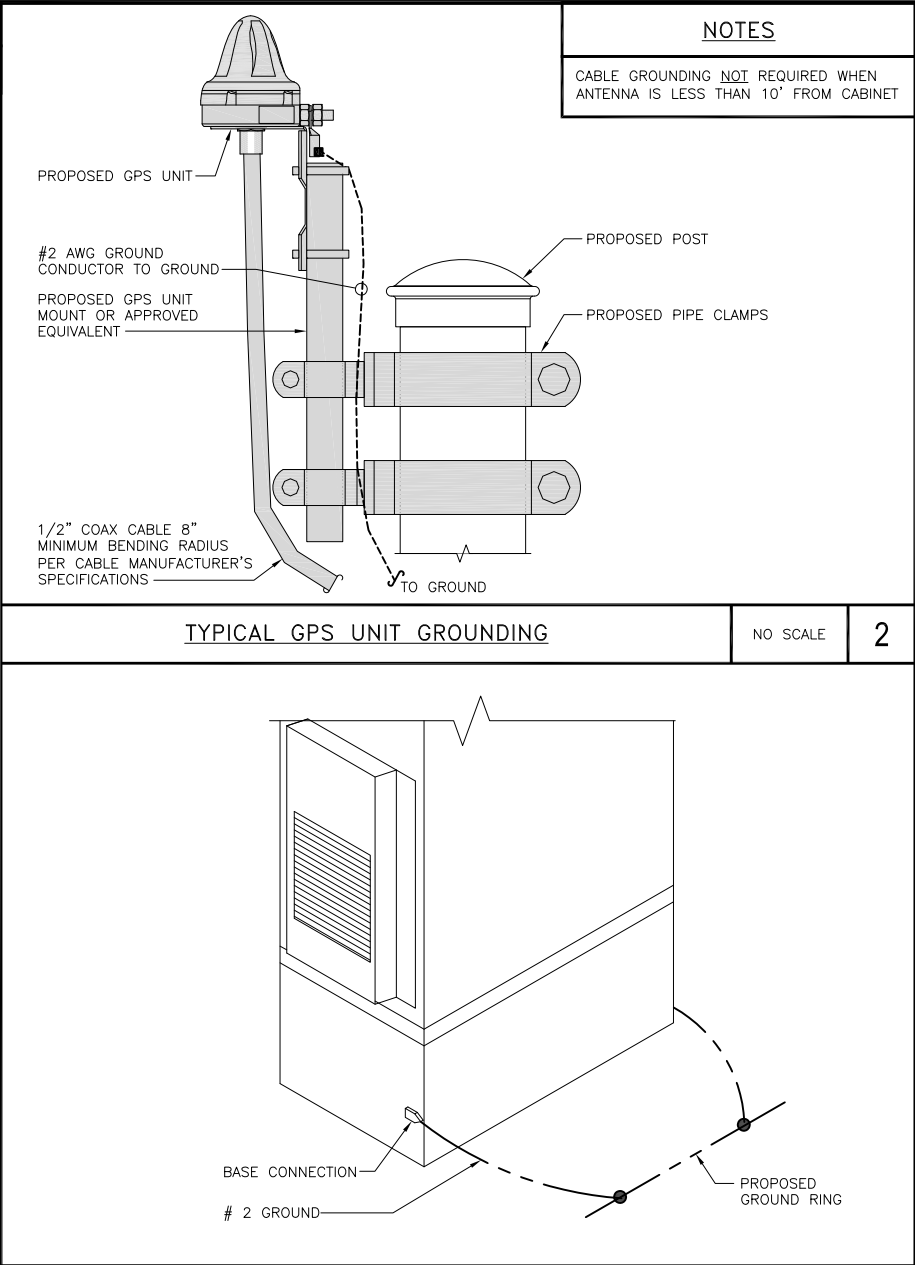
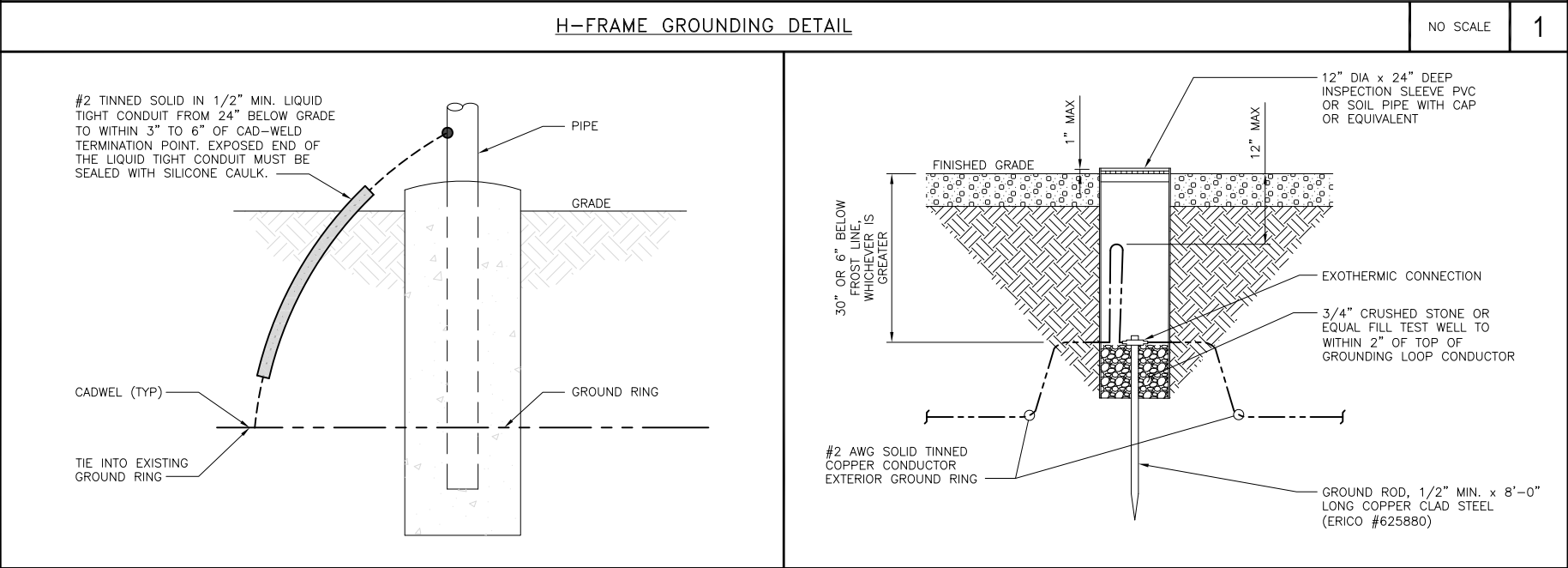
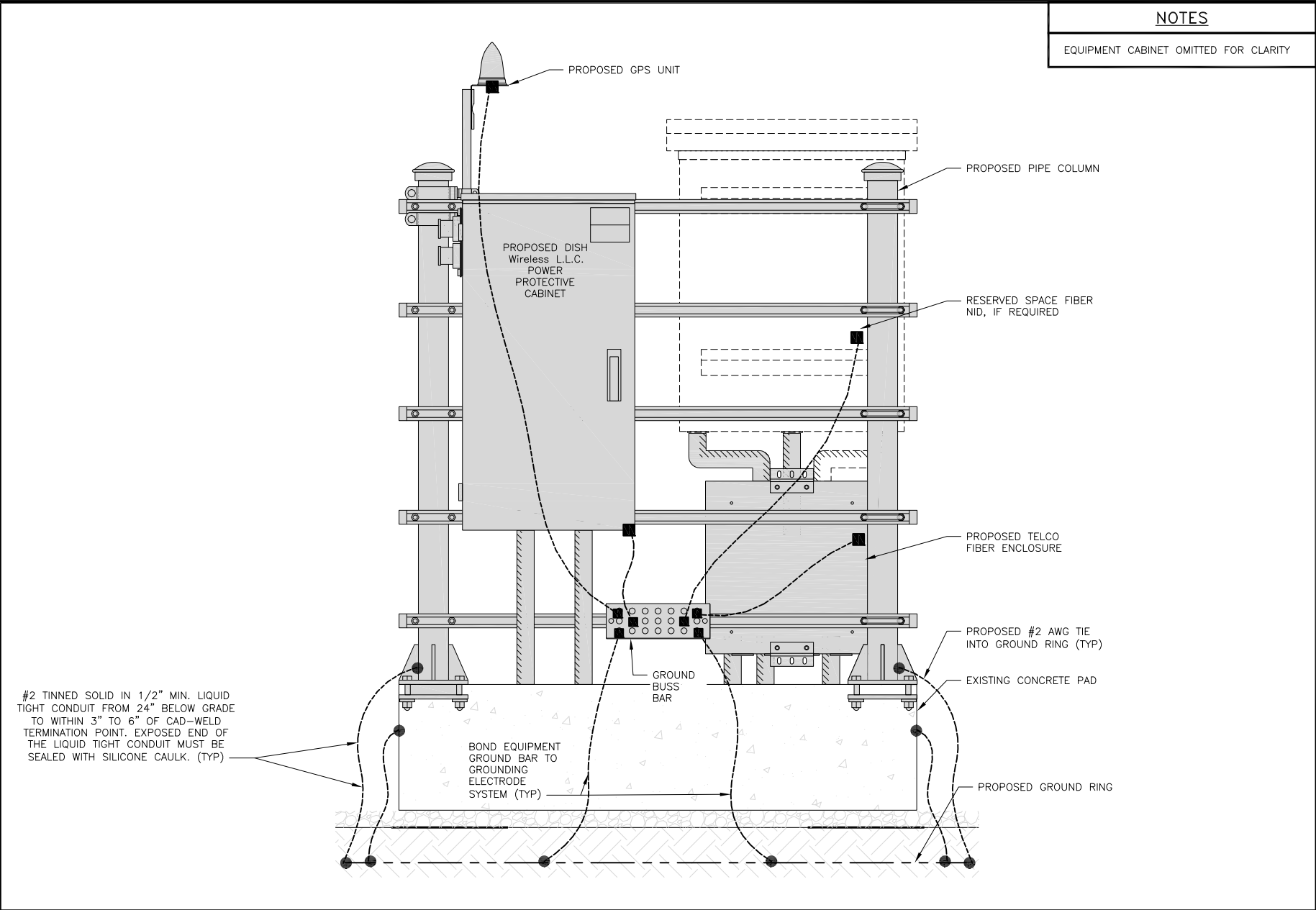
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SHEET TITLE
GROUNDING PLANS
AND NOTES

SHEET NUMBER

G-1



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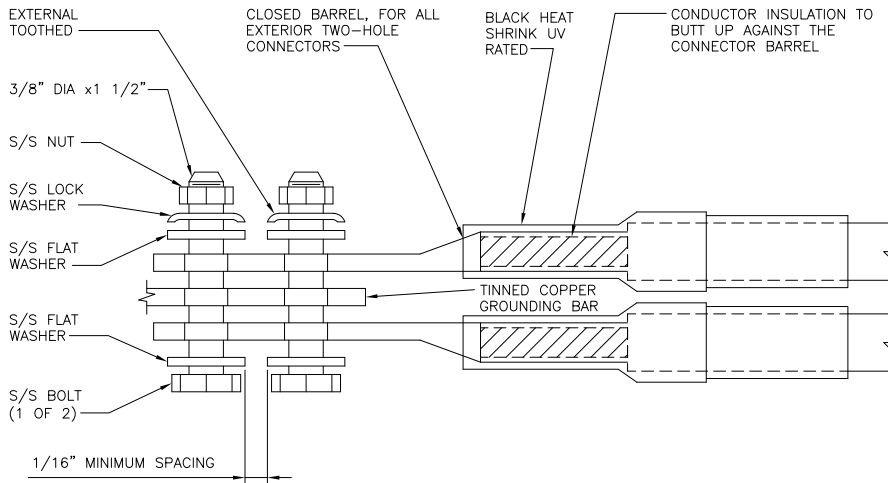
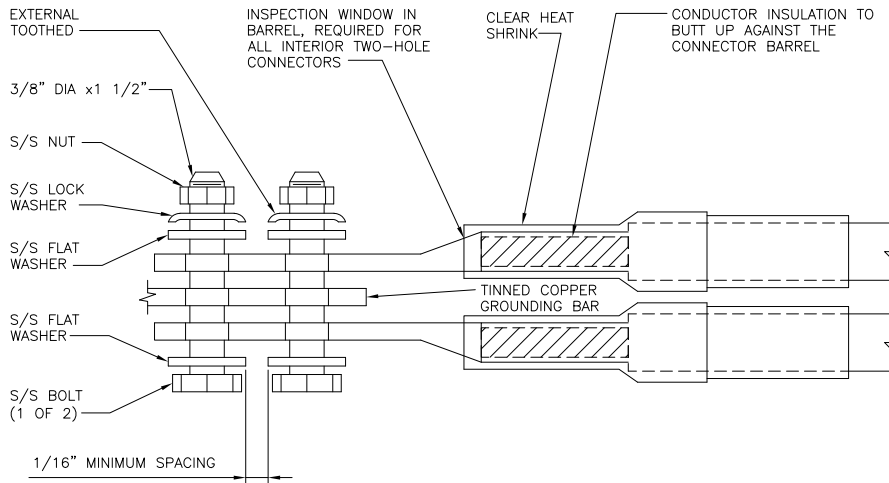
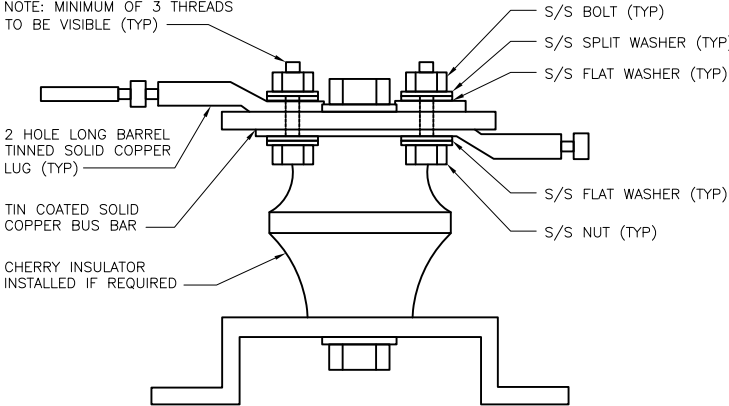
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SHEET TITLE
GROUNDING DETAILS

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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SHEET TITLE
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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	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)	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	EXAMPLE 1		EXAMPLE 2		EXAMPLE 3		NOTES					
	RED		RED		RED		1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS. FINAL RFDS IS IN NEXYSONE.					
	BLUE		BLUE		ORANGE							
	GREEN		GREEN		PURPLE							
	ORANGE		YELLOW									
PURPLE												
FIBER JUMPERS TO RRHs	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		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	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	
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.	WHITE		WHITE		WHITE		WHITE		WHITE		WHITE	
	RED		RED		BLUE		BLUE		GREEN		GREEN	
	WHITE		WHITE		WHITE		WHITE		WHITE		WHITE	
			RED		BLUE		BLUE				GREEN	
			WHITE		WHITE		WHITE				WHITE	
MICROWAVE CABLES WILL REQUIRE P–TOUCH LABELS INSIDE THE CABINET TO IDENTIFY THE LOCAL AND REMOTE SITE ID'S	WHITE		WHITE		WHITE		WHITE		WHITE		WHITE	

RF CABLE COLOR CODES

NO SCALE

1

NOT USED

NO SCALE

4

LOW BANDS (N71+N26)
OPTIONAL – (N29)

ORANGE

AWS
(N66+N70+H–BLOCK)

PURPLE

CBRS TECH
(3 GHz)

YELLOW

NEGATIVE SLANT PORT
ON ANT/RRH

WHITE

ALPHA SECTOR

RED

BETA SECTOR

BLUE

GAMMA SECTOR

GREEN

COLOR IDENTIFIER

NO SCALE

2

NOT USED

NO SCALE

3

dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



8051 CONGRESS AVENUE
BOCA RATON, FL 33487



B&T ENGINEERING, INC.
PEC.0001564
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DRAWN BY: CHECKED BY: APPROVED BY:

BLJ

BLJ

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RFDS REV #: 1

CONSTRUCTION
DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	7/23/21	ISSUED FOR REVIEW
0	10/7/21	ISSUED FOR CONSTRUCTION
1	10/19/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149431.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00045A
292 PLAIN HILL ROAD
NORWICH, CT 06360

SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER

RF-1

DISH Wireless L.L.C. TEMPLATE VERSION 37 – 07/09/2021

SITE ACTIVITY REQUIREMENTS:

1. 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.
2. "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.
3. 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.
4. 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).
5. 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."
6. 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.
7. 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.
8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER’S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES INCLUDING PRIVATE LOCATES SERVICES PRIOR TO THE START OF CONSTRUCTION.
10. 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.
11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND DISH PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
12. 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.
13. 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.
14. 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.
15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER’S EQUIPMENT AND TOWER AREAS.
16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
17. 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.
18. 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.
19. 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.
20. 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.
21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
22. 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:

- 1.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
2. 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.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER’S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
10. 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.
11. 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.
12. 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
13. 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.
14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



8051 CONGRESS AVENUE
BOCA RATON, FL 33487



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BLJ	BLJ	BLJ

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

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A	7/23/21	ISSUED FOR REVIEW
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1	10/19/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149431.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00045A
292 PLAIN HILL ROAD
NORWICH, CT 06360

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.
- 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

10/19/21

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

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UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

DRAWN BY:BLJ

CHECKED BY:BLJ

APPROVED BY:BLJ

RFDS REV #:1

CONSTRUCTION
DOCUMENTS

REV

DATE

DESCRIPTION

A

7/23/21

ISSUED FOR REVIEW

0

10/7/21

ISSUED FOR CONSTRUCTION

1

10/19/21

ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149431.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00045A
292 PLAIN HILL ROAD
NORWICH, CT 06360

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-3
- DISH Wireless L.L.C. TEMPLATE VERSION 37 – 07/09/2021

GROUNDING NOTES:

3. 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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RFDS REV #: 1

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DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
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GN-4