



NORTHEAST
SITE SOLUTIONS

Turnkey Wireless Development

Northeast Site Solutions
Denise Sabo
4 Angela's Way, Burlington CT 06013
203-435-3640
denise@northeastsitesolutions.com

May 10th, 2022

Members of the Siting Council
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Tower Share Application
39 Maennerchor Avenue, Norwich, CT 06380
Latitude: 41.558472
Longitude: -72.05127
Site #: CT13556-S_BOBOS00060A_SBA_DISH

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 39 Maennerchor Avenue, Norwich, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900 MHz 5G antennas and six (6) RRUs, at the 91-foot level of the existing 128-foot monopole tower, one (1) Fiber cable will also be installed. Dish Wireless LLC equipment cabinets will be placed within a 7' x 5' lease area within the fenced compound. Included are plans by B+T, dated September 13, 2021, Exhibit C. Also included is a structural analysis prepared by TES, dated September 1, 2021, confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit D. The facility was approved by the Connecticut Siting Council, Docket No. 365 on February 19, 2009. Please see attached Exhibit A.

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 Mayor Peter Albert Nystrom, John L. Salamone, City Manager, and Deana Rhodes, City Planner for the City of Norwich, as well as the tower owner (SBA) and property owner (Maennerchor Club).

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 existing tower is 128-feet and the Dish Wireless LLC antennas will be located at a center line height of 91-feet.
2. The proposed modifications will not result in an increase of the site boundary as depicted on the attached site plan.



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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. The combined site operations will result in a total power density of 38.46% as evidenced by Exhibit F.

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 submits 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 D.

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 monopole 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 Authorization is included as Exhibit G, 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 91-foot level of the existing 128-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 F, 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 Authorization 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 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 Norwich.

Sincerely,

Denise Sabo

Denise Sabo

Mobile: 203-435-3640

Fax: 413-521-0558

Office: 4 Angela's Way, Burlington CT 06013

Email: denise@northeastsitesolutions.com



NORTHEAST
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Attachments

Cc: Mayor Peter Albert Nystrom
City of Norwich
23 Union Street
Norwich, CT 06360

John L. Salamone, City Manager
City of Norwich
23 Union Street
Norwich, CT 06360

Deana Rhodes, City Planner
City of Norwich
23 Union Street
Norwich, CT 06360

Maennerchor Club – Property Owner
39 Maennerchor Avenue
Taftville, CT 06380

SBA - Tower Owner

Exhibit A

Original Facility Approval

SITE NAME: Norwich SITE ID # CT 13556-5

ZONING/PERMITTING COMPLETION FORM

Address: 39 Maennerchor Avenue, Taftville

Jurisdiction: Conn. State Council Zoning District: _____

Zoning Approval Type: Cert. of Public Need Case #: Docket # 365

Approval Date: 11/20/2008 Approved Height: 120' monopole

Conditions of Approval:	Yes	No	N/A
Removal Bond _____	☐	☒	☐
Site Plan Submittal _____	☐	☒	☐
Fall Zone _____	☐	☒	☐
Periodic Inspections _____	☐	☒	☐
Periodic Reporting _____	☐	☒	☐
Approval Renewal _____	☐	☒	☐
Additional Conditions <u>Development and Management</u>	☒	☐	☐
<u>Plan to be provided to City of Norwich</u>	☐	☐	☐
_____	☐	☐	☐

City/County POC/Dept. _____

Phone: _____ Fax: _____

Submitted by: _____ Title: _____

Date: _____ Telephone #: _____

TO BE COMPLETED BY CORPORATE

Zoning Approval Attached (required) ☒ ☐

Ordinance Attached (required) ☐ ☒

Building Permit Attached (required) ☒ ☐ Date Recd

Building Permit # 09-0336 3/27/2009

Certificate of Occupancy or Compliance (CO) attached (required) ☐ ☐ _____

Zoning Manager Approval: D E Borchardt Date 3/30/2009
Diane E. Borchardt, AICP

RECEIPT NO. 453708BUILDING PERMIT NO. 09-0376

APPLICATION FOR COMMERCIAL OR RESIDENTIAL BUILDING PERMIT

City of Norwich Building Dept., 23 Union Street, Norwich, CT 06360

Telephone (860)823-3745

Fax (860)823-3741

Application must be filled out completely in ink.

☐ RESIDENTIAL ☐ # of Units ☒ COMMERCIAL ☐ INDUSTRIAL ☐ OTHER
☒ NEW ☐ ACCESSORY ☐ ADDITION ☐ ALTERATION

JOB LOCATION 39 Maennerchor AveDATE: 3/27/09PROPERTY OWNER'S NAME: Maennerchor ClubTEL. NO. 860-887-3813PROPERTY OWNER'S ADDRESS: 39 Maennerchor Ave, Taftville, CT 06380CONTRACTOR'S NAME: SBA Network Svcs IncTEL. NO. 203-464-3623CONTRACTOR'S ADDRESS: 80 Eastern BlvdCITY: GlensburySTATE: CTZIP CODE: 06033CT STATE LICENSE MC0.0901026DESCRIPTION OF WORK TO BE PERFORMED Construction of new telecommunication tower and installation of omni-point (T-Mobile) Antennas and equipment.

USE:	ELECTRICAL	SPRINKLER /SUPPRESSION: <u>NA</u>
TYPE:		REQUIRED SYSTEM?
NO. OF STORIES <u>NA</u>		CITY WATER: <u>NA</u>
FLOOR AREA PER:	PLUMBING FIXTURES: <u>NA</u>	WELL WATER:
	SINK:	HEATING SYSTEM:
NO. OF ROOMS: <u>NA</u>	TOILETS	
FOUNDATION:	LAVATORIES	FUEL
EXT. WALLS:	BATHTUBS:	
	SHOWER STALLS:	AIR CONDITIONING
INT WALLS: <u>NA</u>		FIREPLACE:
BASEMENT:	HISTORIC DISTRICT: <u>NO</u>	
OCCUPANT LOAD:		CITY SEWER <u>NA</u>
FLOOR LIVE LOAD: PSF	FLOOD PLAIN? <u>NO</u>	PRIVATE SEPTIC: <u>NA</u>

ALL WORK COVERED BY THIS APPLICATION HAS BEEN AUTHORIZED BY THE OWNER OR AGENT OF THIS PROPERTY AND WILL BE DONE IN ACCORDANCE WITH THE STATE BUILDING CODE. NO WORK SHALL BE STARTED UNTIL THE DEPARTMENT HAS RECEIVED THIS APPLICATION AND HAS ISSUED A BUILDING PERMIT.

APPLICANT SIGNATURE: Hollis M. ReddingDATE: 3/10/09PLEASE PRINT NAME Hollis M. Redding

TEL. NO.

203 464 3623TRADE PERMIT INCLUDED: NoneESTIMATED VALUE: \$168,000⁰⁰BUILDING PERMIT FEE: \$ 2368EDUCATIONAL FEE: \$ 30.24

ELEC ___ PLMG ___ HVAC ___ SPR ___

LATE FEE: \$TOTAL DUE: \$ 2398.24APPROVED BY: Jal East (BUILDING OFFICIAL)

Modifications/changes to approved plans must be submitted to ALL departments prior to construction.



Daniel F. Caruso
Chairman

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

Internet: ct.gov/csc

February 24, 2009

Carrie L. Larson, Esq.
Pullman and Comley, LLC
90 State House Square
Hartford, CT 06103-3702

RE: **DOCKET NO. 365** - Optasite Towers LLC and Omnipoint Communications, Inc.
application for a Certificate of Environmental Compatibility and Public Need for the
construction, maintenance and operation of a telecommunications facility located at 39
Maennerchor Avenue, Norwich, Connecticut.

Dear Attorney Larson:

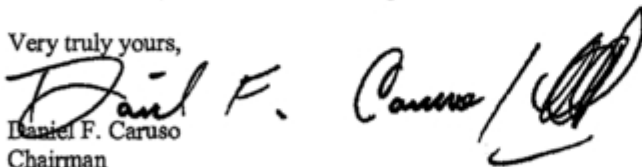
At a public meeting of the Connecticut Siting Council held on February 19, 2009, the Connecticut
Siting Council (Council) considered and approved the Development and Management (D&M)
Plan submitted for this project on January 20, 2009, with the condition that the certificate holder
use a native tree species such as Eastern Hemlock or White Pine to provide the landscaped
screening.

This approval applies only to the D&M Plan submitted on January 20, 2009. Any changes to the
D&M Plan require advance Council notification and approval.

Please be advised that deviations from this plan are enforceable under the provisions of the
Connecticut General Statutes § 16-50u. Enclosed is a copy of the staff report on this D&M Plan,
dated January 30, 2009.

Thank you for your attention and cooperation.

Very truly yours,


Daniel F. Caruso
Chairman

DFC/CDM/jb

Enclosure: Staff Report, dated January 30, 2009

c: Parties and Intervenor

The Honorable Benjamin P. Lathrop, Mayor, City of Norwich
Robert Zarnetske, City Manager, City of Norwich
Michael Schaefer, City Planner, City of Norwich

Docket 365: Norwich (Taftville)
Development and Management Plan
Staff Report
February 19, 2009

On November 20, 2008, the Council issued a Certificate of Environmental Compatibility and Public Need to Optasite Towers LLC (Optasite) for the construction, maintenance, and operation of a cellular telecommunications facility at 39 Maennerchor Avenue in the Taftville section of Norwich, Connecticut. In its decision, the Council specified that the approved tower could not exceed 120 feet in height. As required in the Council's Decision and Order, Optasite submitted a Development and Management (D&M) Plan for this facility on January 20, 2009.

Optasite's site is located on a seven-acre parcel owned by the Maennerchor Club. At this location, Optasite would develop a 65-foot by 65-foot compound within a 70-foot by 70-foot lease area. Optasite's compound would be enclosed by an eight-foot high chain link fence. Optasite would erect a 120-foot monopole tower, designed to be extendable to a height of 150 feet, within the compound. T-Mobile, Optasite's co-applicant in this proceeding, would install panel antennas on a low profile platform at a centerline height of 117 feet.

Vehicular access to the site would extend from the end of Beauregard Street approximately 363 feet over a new gravel drive. Utility service for the proposed facility would cross Beauregard Street overhead from an existing utility pole to a new riser pole to be installed at the beginning of the access road. It would then run underground from the riser pole adjacent to the gravel access drive to the site. Silt fencing would be installed prior to the start of construction and would be maintained in accordance with State of Connecticut erosion and sedimentation guidelines.

A landscaping plan calls for cypress trees and holly shrubs to be planted around the perimeter of the compound. Optasite was questioned about planting cypress trees, a non-native species, and offered to plant Eastern Hemlock instead.

The Development and Management Plan submitted complies with the requirements set forth in the Council's Decision & Order for Docket 365. Staff recommends approving the D&M plan with the stipulation that Optasite substitute Eastern Hemlocks for cypress trees in its landscaping plan.

Exhibit B

Property Card

39 MAENNERCHOR AVE

Location 39 MAENNERCHOR AVE

Mblu 55/ 2/ 43/ /

Acct# 0069120001

Owner MAENNERCHOR CLUB

Assessment \$234,900

Appraisal \$335,500

PID 102164

Building Count 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2018	\$172,500	\$163,000	\$335,500
Assessment			
Valuation Year	Improvements	Land	Total
2018	\$120,800	\$114,100	\$234,900

Parcel Addresses

Additional Addresses
No Additional Addresses available for this parcel

Owner of Record

Owner MAENNERCHOR CLUB
Address 39 MAENNERCHOR AVE
TAFTVILLE, CT 06380

Sale Price \$0
Certificate
Book & Page 0187/0065
Sale Date 01/01/1900
Instrument 25

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
MAENNERCHOR CLUB	\$0		0187/0065	25	01/01/1900

Building Information

Building 1 : Section 1

Year Built:	1893
Living Area:	5,637
Replacement Cost:	\$526,277
Building Percent Good:	25
Replacement Cost Less Depreciation:	\$131,600

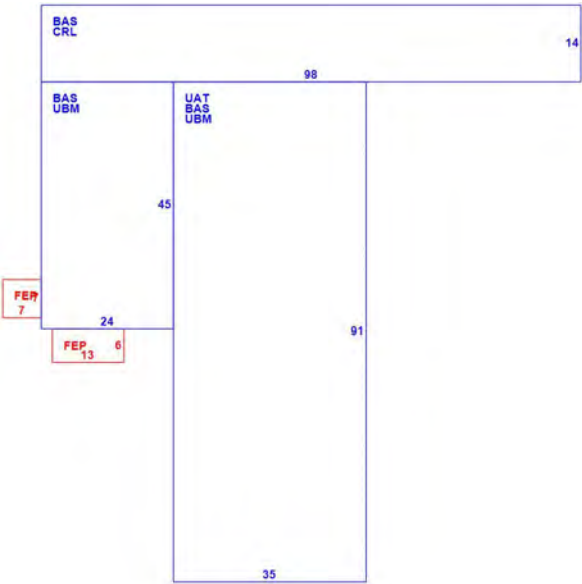
Building Attributes	
Field	Description
STYLE	Clubs/Lodges
MODEL	Commercial
Grade	Average
Stories:	1.5
Occupancy	1.00
Exterior Wall 1	Wood Shingle
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Wall 1	Plastered
Interior Wall 2	Drywall/Sheet
Interior Floor 1	Minimum/Plywd
Interior Floor 2	Inlaid Sht Gds
Heating Fuel	Oil
Heating Type	Steam
AC Type	None
Struct Class	
Bldg Use	FRATNL ORG M-94
Total Rooms	
Total Bedrms	00
Total Baths	0
Usrflid 218	
Usrflid 219	
1st Floor Use:	3530
Heat/AC	NONE
Frame Type	WOOD FRAME
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	8.00
% Comn Wall	

Building Photo



(<http://images.vgsi.com/photos/NorwichCTPhotos//00\02\08\51.jpg>)

Building Layout



(ParcelSketch.ashx?pid=102164&bid=101732)

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	5,637	5,637
CRL	Crawl Space/Slab	1,372	0
FEP	Porch, Enclosed, Finished	127	0
UAT	Attic, Unfinished	3,185	0
UBM	Basement, Unfinished	4,265	0
		14,586	5,637

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use	Land Line Valuation
Use Code3530 DescriptionFRATNL ORG M-94 ZoneR20 NeighborhoodC040 Alt Land ApprNo Category	Size (Acres)7 Frontage Depth Assessed Value\$114,100 Appraised Value\$163,000

Outbuildings

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
PAV1	Paving Asphalt			25000.00 S.F.	\$37,500	1
LT1	Lights			3.00 UNITS	\$1,700	1
FOP	Open Porch			288.00 S.F.	\$1,700	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2020	\$172,500	\$163,000	\$335,500
2019	\$172,500	\$163,000	\$335,500
2018	\$172,500	\$163,000	\$335,500

Assessment			
Valuation Year	Improvements	Land	Total
2020	\$120,800	\$114,100	\$234,900
2019	\$120,800	\$114,100	\$234,900
2018	\$120,800	\$114,100	\$234,900

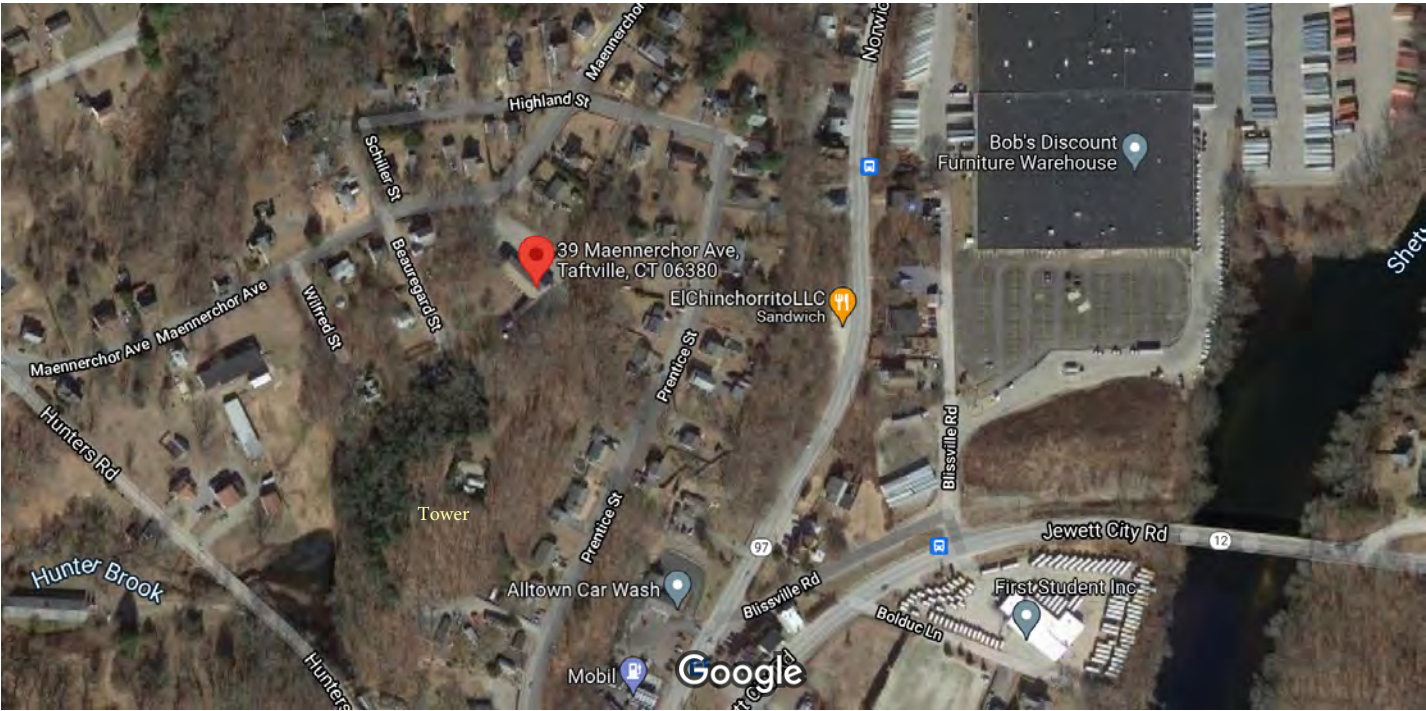
Google Maps 39 Maennerchor Ave



Map data ©2021 200 ft

Google Maps

39 Maennerchor Ave



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

Exhibit C

Construction Drawings



DISH Wireless L.L.C. SITE ID:

BOBOS00060A

DISH Wireless L.L.C. SITE ADDRESS:

39 MAENNERCHOR AVENUE
NORWICH, CT 06380

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

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 (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 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.

SITE INFORMATION

PROPERTY OWNER: SBA TOWERS II LLC
ADDRESS: 8051 CONGRESS AVENUE
BOCA RATON, FL 33487-1307

TOWER TYPE: MONOPOLE

TOWER CO SITE ID: CT13556-S

TOWER APP NUMBER: 163274

COUNTY: NEW LONDON

LATITUDE (NAD 83): 41° 33' 30.5" N
41.55847222 N

LONGITUDE (NAD 83): 72° 3' 4.6" W
72.0512777800 W

ZONING JURISDICTION: CITY OF NORWICH

ZONING DISTRICT: R-20

PARCEL NUMBER: 55/2/43/0001

OCCUPANCY GROUP: U

CONSTRUCTION TYPE: II-B

POWER COMPANY: CONNECTICUT LIGHT & POWER CO

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
RYAN.LYNCH@DISH.COM

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

RF ENGINEER: ARVIN SEBASTIAN
ARVIN.SEBASTIAN@DISH.COM

DIRECTIONS

DIRECTIONS FROM WINDHAM AIRPORT:
DEPART WINDHAM AIRPORT ON AIRPORT RD. TURN RIGHT ONTO US-6 [BOSTON POST RD]. ROAD NAME CHANGES TO CT-66 [BOSTON POST RD]. TURN LEFT ONTO CT-66. TURN LEFT ONTO CT-32 [PLEASANT ST]. TAKE RAMP (RIGHT) ONTO CT-2 [CT-32]. TURN LEFT ONTO CT-32 [WASHINGTON ST], THEN IMMEDIATELY TURN RIGHT ONTO CT-169 [HARLAND RD]. BEAR RIGHT ONTO HUNTERS RD. BEAR LEFT ONTO MAENNERCHOR AVE. TURN RIGHT ONTO BEAUREGARD ST. BEAR RIGHT ONTO ACCESS ROAD. ARRIVE AT BOBOS00060A.

VICINITY MAP



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



8051 CONGRESS AVENUE
BOCA RATON, FL 33487



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

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

DRAWN BY: BLJ
CHECKED BY: BLJ
APPROVED BY: MP

RFDS REV #: 0

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	7/28/21	ISSUED FOR REVIEW
0	9/13/21	ISSUED FOR CONSTRUCTION

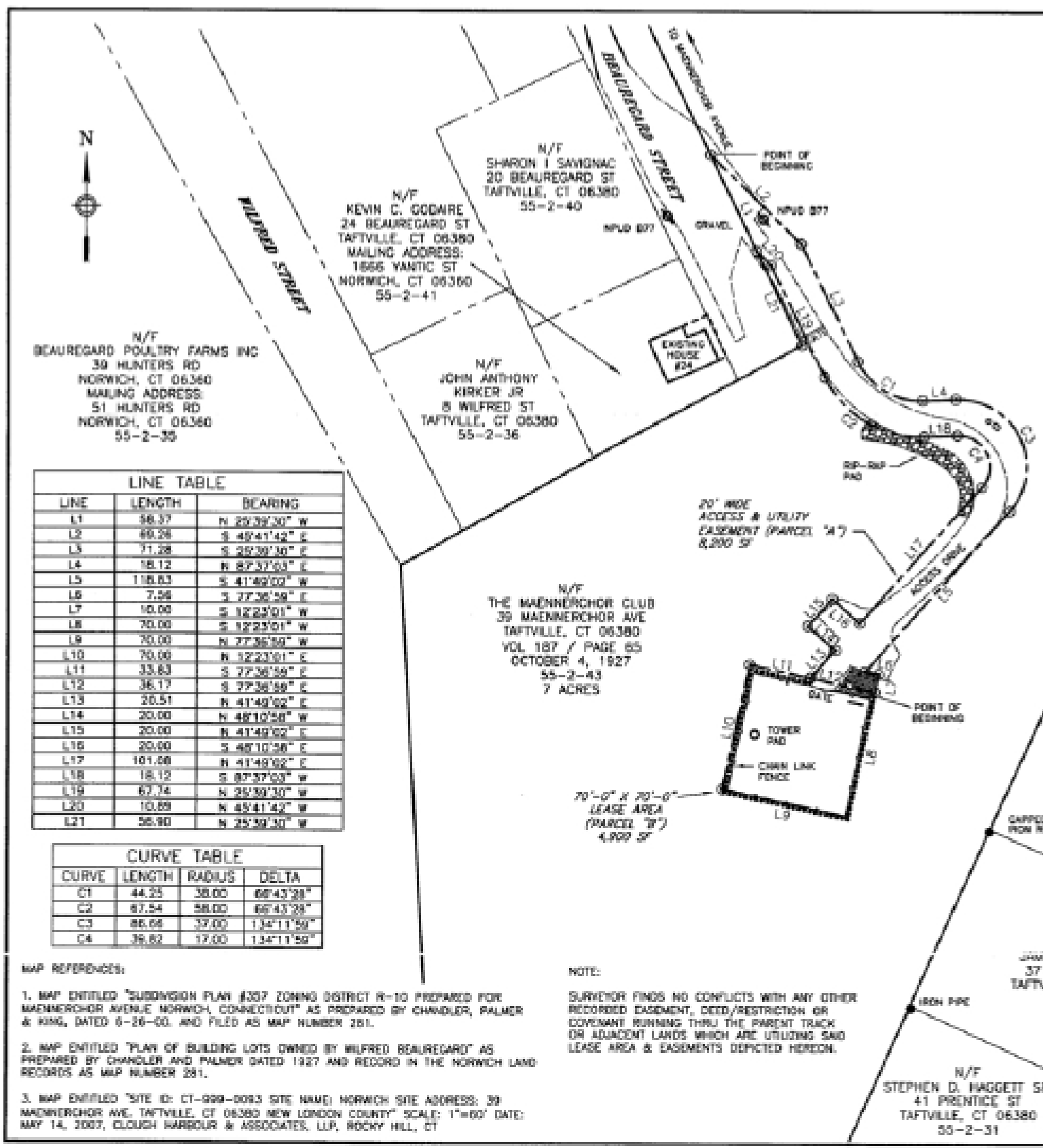
A&E PROJECT NUMBER
149470.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBOS00060A
39 MAENNERCHOR AVENUE
NORWICH, CT 06380

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

CT-13556-S



A CERTAIN PARCEL OF LAND LOCATED AT 39 MAENNERCHOR AVENUE IN THE TAFTVILLE SECTION OF THE TOWN OF NORWICH, COUNTY OF NEW LONDON, STATE OF CONNECTICUT, BOUNDED AND DESCRIBED AS FOLLOWS:

ACCESS AND UTILITY EASEMENT (0.0000+ SQUARE FEET)

BEGINNING AT A POINT SOUTHERLY OF MAENNERCHOR AVENUE ON THE EASTERLY LINE OF BEAUREGARD STREET AT LAND NOW OR FORMERLY OF THE MAENNERCHOR CLUB; THENCE SOUTH 45 DEGREES 41 MINUTES 42 SECONDS EAST 88.25 FEET TO A POINT; THENCE SOUTH 25 DEGREES 39 MINUTES 30 SECONDS EAST 71.38 FEET TO A POINT; THENCE FOLLOWING A CURVE TO THE LEFT HAVING A RADIUS OF 38.00 FEET FOR A LENGTH OF 44.25 FEET TO A POINT; THENCE NORTH 87 DEGREES 37 MINUTES 03 SECONDS EAST 18.12 FEET TO A POINT; THENCE FOLLOWING A CURVE TO THE RIGHT HAVING A RADIUS OF 37.00 FEET FOR A LENGTH OF 36.82 FEET TO A POINT; THENCE SOUTH 41 DEGREES 49 MINUTES 02 SECONDS WEST 118.83 FEET TO A POINT; THENCE SOUTH 37 DEGREES 34 MINUTES 58 SECONDS EAST 7.65 FEET TO A POINT; THENCE SOUTH 12 DEGREES 23 MINUTES 01 SECONDS WEST 70.00 FEET TO A POINT AT A TOWER LEASE AREA; THENCE ALONG SAID TOWER LEASE AREA NORTH 77 DEGREES 34 MINUTES 59 SECONDS WEST 36.17 FEET TO A POINT; THENCE NORTH 41 DEGREES 49 MINUTES 02 SECONDS EAST 20.51 FEET TO A POINT; THENCE NORTH 48 DEGREES 10 MINUTES 58 SECONDS WEST 20.00 FEET TO A POINT; THENCE NORTH 41 DEGREES 49 MINUTES 02 SECONDS EAST 20.00 FEET TO A POINT; THENCE SOUTH 48 DEGREES 10 MINUTES 58 SECONDS EAST 20.00 FEET TO A POINT; THENCE NORTH 41 DEGREES 49 MINUTES 02 SECONDS EAST 101.28 FEET TO A POINT; THENCE FOLLOWING A CURVE TO THE LEFT HAVING A RADIUS OF 17.00 FEET FOR A LENGTH OF 39.82 FEET TO A POINT; THENCE SOUTH 87 DEGREES 37 MINUTES 03 SECONDS WEST 18.12 FEET TO A POINT; THENCE FOLLOWING A CURVE TO THE RIGHT HAVING A RADIUS OF 36.00 FEET FOR A LENGTH OF 37.00 FEET TO A POINT; THENCE NORTH 28 DEGREES 39 MINUTES 30 SECONDS WEST 87.74 FEET TO A POINT; THENCE NORTH 45 DEGREES 41 MINUTES 42 SECONDS WEST 10.89 FEET TO A POINT AT SAID EASTERLY LINE OF BEAUREGARD STREET; THENCE ALONG SAID BEAUREGARD STREET NORTH 25 DEGREES 39 MINUTES 30 SECONDS WEST 84.37 FEET TO SAID POINT MARKING THE PLACE OF BEGINNING OF THE HEREIN DESCRIBED EASEMENT.

TOWER LEASE AREA (4.9000+ SQUARE FEET)

BEGINNING AT A POINT MARKING THE NORTHEASTLY CORNER OF THE HEREIN DESCRIBED TOWER LEASE AREA AT THE SOUTHEASTLY TERMINUS OF THE ABOVE DESCRIBED ACCESS AND UTILITY EASEMENT; THENCE SOUTH 12 DEGREES 23 MINUTES 01 SECONDS WEST 70.00 FEET TO A POINT; THENCE NORTH 77 DEGREES 34 MINUTES 59 SECONDS WEST 36.17 FEET TO A POINT; THENCE NORTH 18 DEGREES 23 MINUTES 01 SECONDS EAST 70.00 FEET TO A POINT; THENCE SOUTH 17 DEGREES 34 MINUTES 58 SECONDS EAST 70.00 FEET TO SAID POINT MARKING THE PLACE OF BEGINNING OF THE HEREIN DESCRIBED TOWER LEASE AREA.

SAS EASEMENTS ARE TO ENCUMBER LAND COMEDED TO THE MAENNERCHOR CLUB BY DEED RECORDED ON OCTOBER 4, 1927 IN VOLUME 187, PAGE 65 OF THE NORWICH LAND RECORDS.

N/F WILLIAM F. WAY & LUCINDA WAY
29 PRENTICE ST
TAFTVILLE, CT 06380
55-2-28

N/F JAMES J. SERWINSKI SR. & CYNTHIA A. SERWINSKI
31 PRENTICE ST
TAFTVILLE, CT 06380
55-2-29

N/F JAMES B. MORTICA
37 PRENTICE ST
TAFTVILLE, CT 06380
55-2-30

N/F STEPHEN D. HAGGETT SR.
41 PRENTICE ST
TAFTVILLE, CT 06380
55-2-31

NOTE: SURVEYOR FINDS NO CONFLICTS WITH ANY OTHER RECORDED EASEMENT, DEED/RESTRICTION OR COVENANT RUNNING THRU THE PARENT TRACK OR ADJACENT LANDS WHICH ARE UTILIZING SAID LEASE AREA & EASEMENTS DEPICTED HEREON.

PREPARED FOR:

SBA
TOWERS & LLC
ONE TOWER CENTER - 3RD FLOOR
BOCA RATON, FL 33488
OFFICE: (561) 992-1010

PREPARED BY:

CME
CME Associates, Inc.
32 Chalmers Lane, Norwalk, CT 06854
55 Main Street, Suite 202, Norwich, CT 06360
222 East River Street, East Hartford, CT 06108
22 River Street, Southbridge, MA 01550
Phone: 860.261.3227
www.cmeengineering.com

STATE OF CONNECTICUT
JEFFREY J. STEFANIK
No. 77028
LICENSED LAND SURVEYOR

THIS PLAN WAS COMPILED FROM OTHER SURVEY RECORDS INCLUDING OR SOURCE OF INFORMATION. IT IS A COMPILED PLAN AND IT IS NOT TO BE CONSIDERED AS HAVING BEEN OBTAINED AS THE RESULT OF A FIELD SURVEY AND SUBJECT TO SUCH CHANGE AS AN ACCURATE FIELD SURVEY MAY REVEAL.

I, JEFFREY J. STEFANIK, HEREBY STATE AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE SURVEY DEPICTED HEREON WAS MADE IN ACCORDANCE WITH THE MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT AND HEREIN I CHALLENGE THE PROVISIONS FOR A CLASS "D" SURVEY SPECIFIED HEREON.

CONNECTICUT L.S. #77028
JEFFREY J. STEFANIK

SITE NO:
CT13556-S
SITE NAME:
NORWICH
SITE ADDRESS:
39 MAENNERCHOR AVE
TAFTVILLE, CT
06380
NEW LONDON COUNTY

SHEET NO:
"AS-BUILT" SURVEY
DATE: 08-17-20
SHEET # 1 OF 1
REVISION:
SCALE: 1"=50'



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



8051 CONGRESS AVENUE
BOCA RATON, FL 33487



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

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CONSTRUCTION DOCUMENTS

SUBMITTALS		
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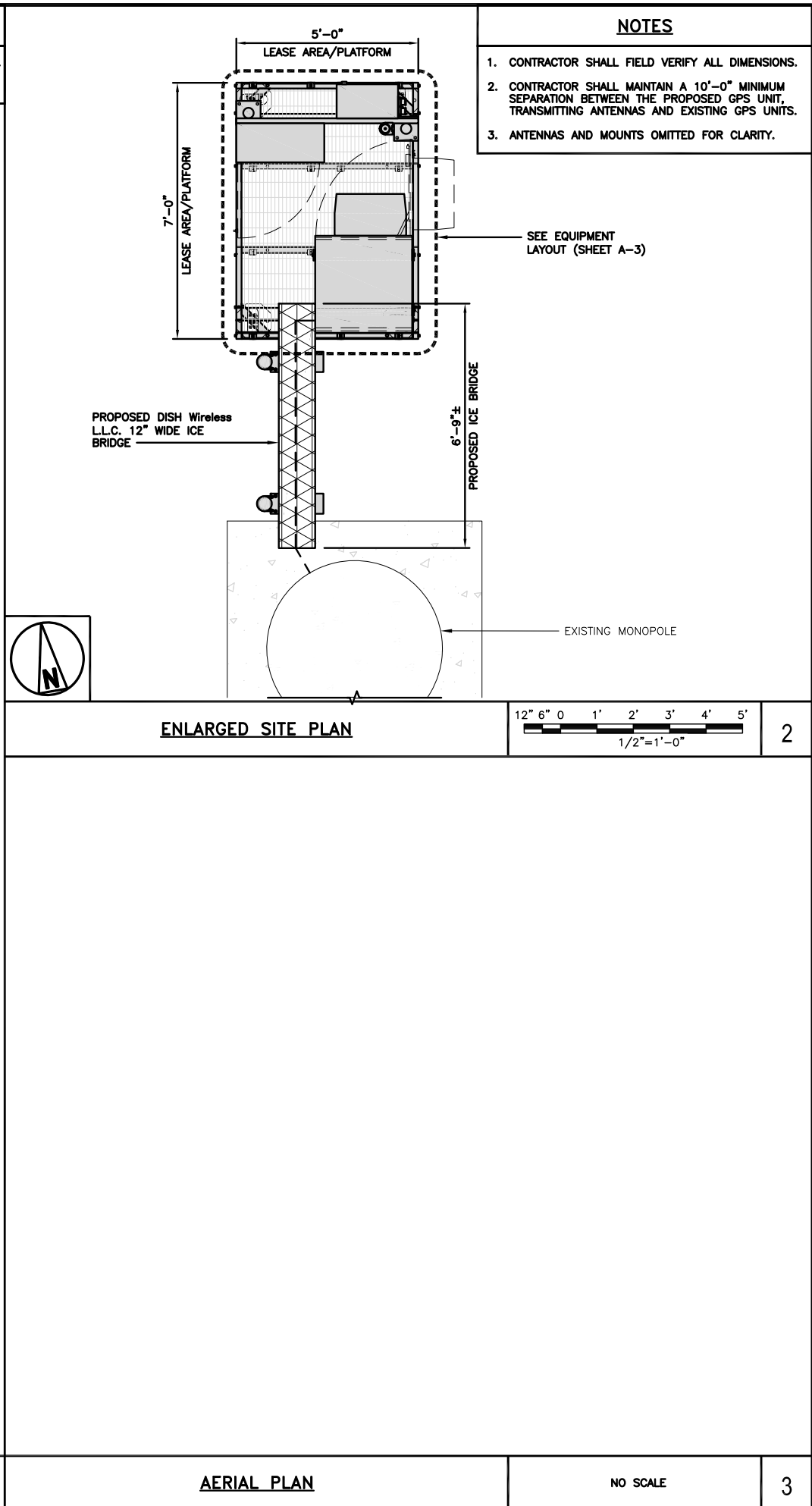
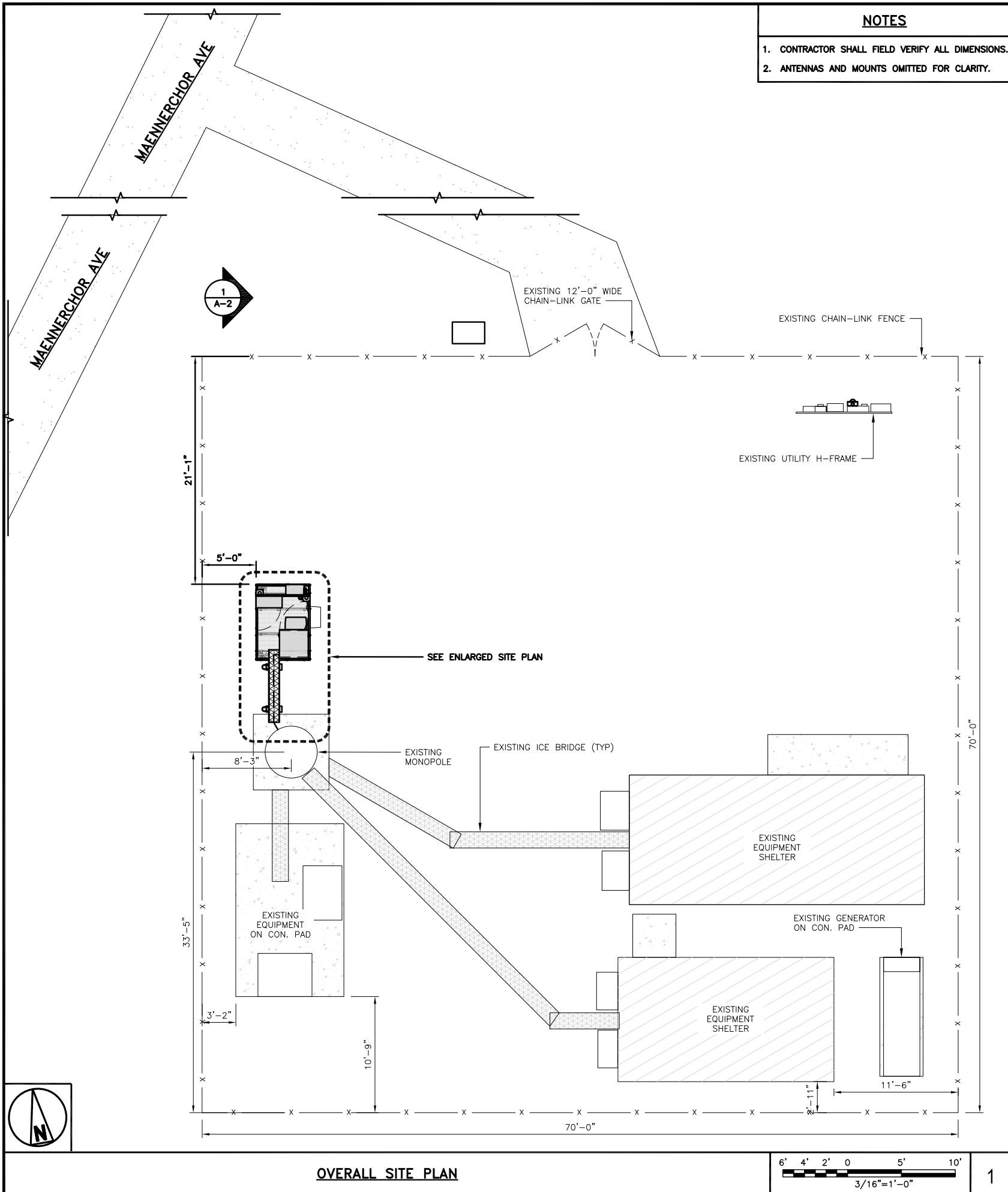
A&E PROJECT NUMBER
149470.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00060A
39 MAENNERCHOR AVENUE
NORWICH, CT 06380

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



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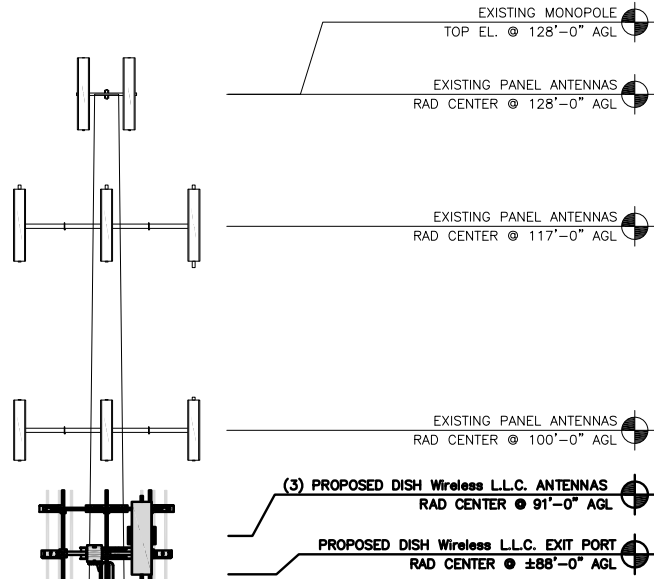
SHEET TITLE
OVERALL AND ENLARGED
SITE PLAN

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 DISH Wireless L.L.C.
ICE BRIDGE

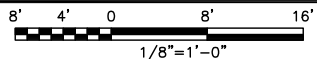
PROPOSED DISH Wireless L.L.C.
GPS UNIT

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

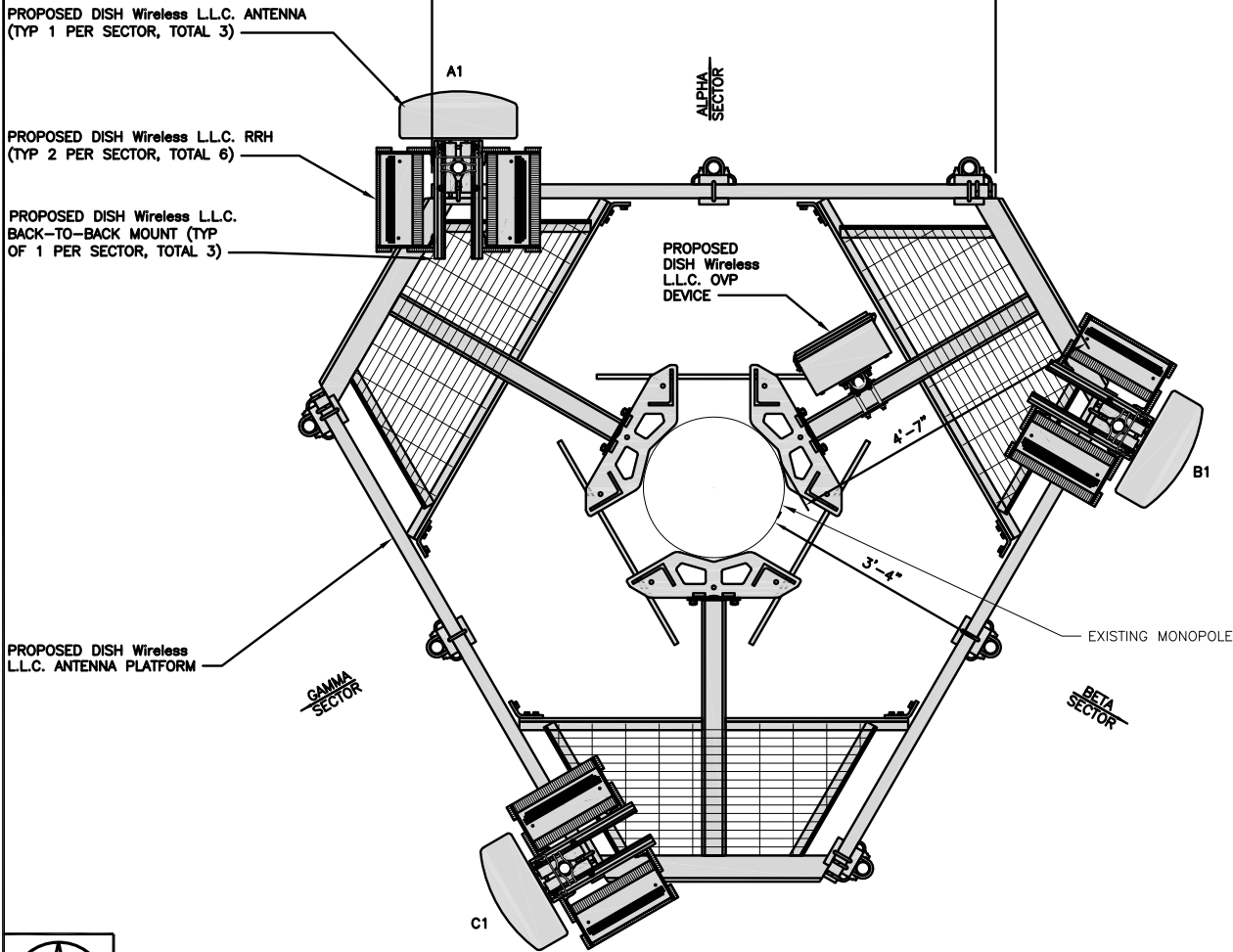
EXISTING ENTRY PORT

EXISTING MONOPOLE
BOTTOM EL. @ 6" AGL

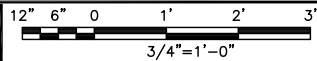
PROPOSED WEST ELEVATION



1



ANTENNA LAYOUT



2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER - MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE, TYPE AND LENGTH
ALPHA	A1	PROPOSED	JMA WIRELESS-MX08FRO665-21	5G	72.0" x 20.0"	0°	91'-0"	(1) HIGH-CAPACITY HYBRID CABLE (125' LONG)
BETA	B1	PROPOSED	JMA WIRELESS-MX08FRO665-21	5G	72.0" x 20.0"	120°	91'-0"	
GAMMA	C1	PROPOSED	JMA WIRELESS-MX08FRO665-21	5G	72.0" x 20.0"	240°	91'-0"	

SECTOR	POSITION	RRH		NOTES
		MANUFACTURER - MODEL NUMBER	TECHNOLOGY	
ALPHA	A1	FUJITSU-TA08025-B605	5G	1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS. 2. ANTENNA AND RRH MODELS MAY CHANGE DUE TO EQUIPMENT AVAILABILITY. ALL EQUIPMENT CHANGES MUST BE APPROVED AND REMAIN IN COMPLIANCE WITH THE PROPOSED DESIGN AND STRUCTURAL ANALYSES.
	A1	FUJITSU-TA08025-B604	5G	
BETA	B1	FUJITSU-TA08025-B605	5G	
	B1	FUJITSU-TA08025-B604	5G	
GAMMA	C1	FUJITSU-TA08025-B605	5G	
	C1	FUJITSU-TA08025-B604	5G	

ANTENNA SCHEDULE

NO SCALE

3



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LITTLETON, CO 80120



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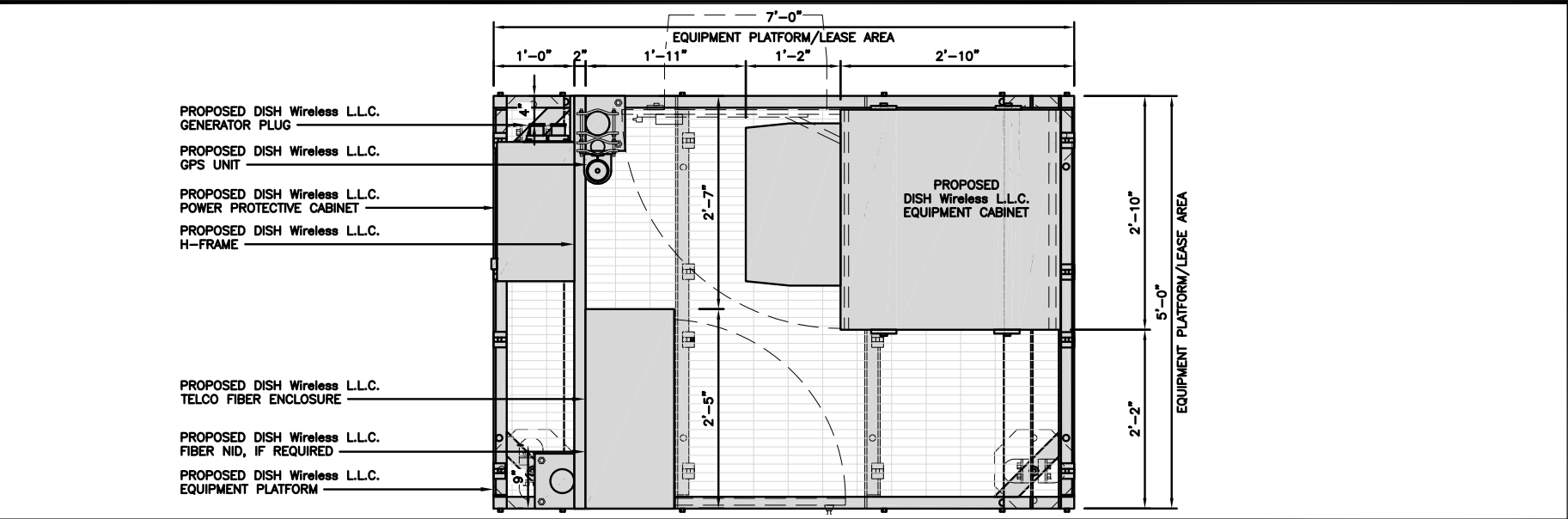
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DISH Wireless L.L.C.
PROJECT INFORMATION
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39 MAENNERCHOR AVENUE
NORWICH, CT 06380

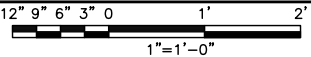
SHEET TITLE
ELEVATION, ANTENNA
LAYOUT AND SCHEDULE

SHEET NUMBER

A-2



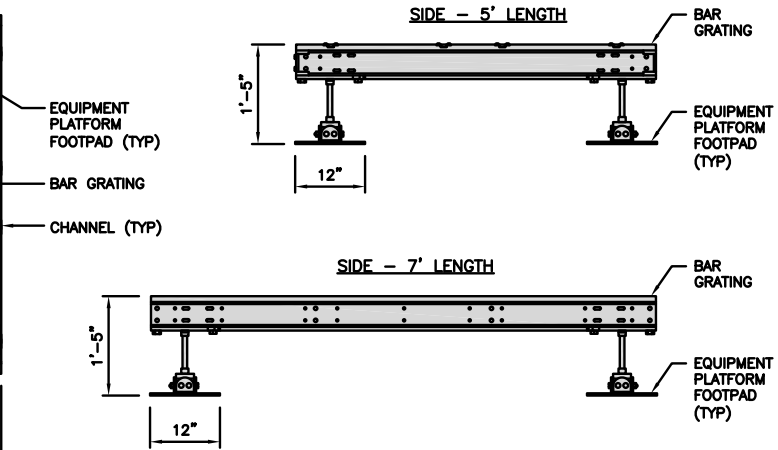
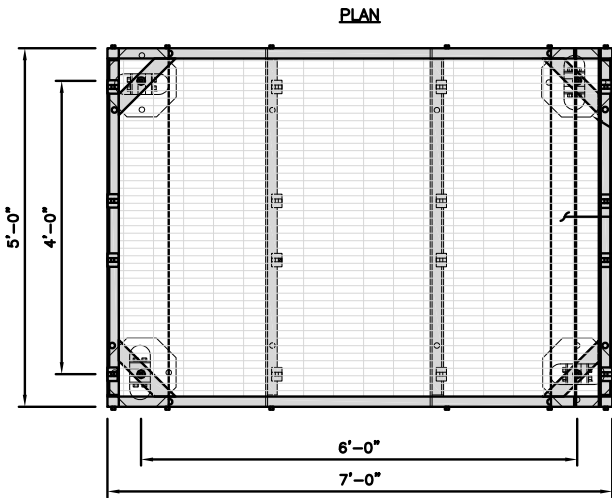
PLATFORM EQUIPMENT PLAN



1

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

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

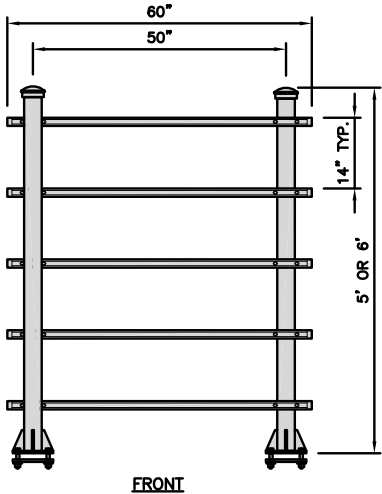
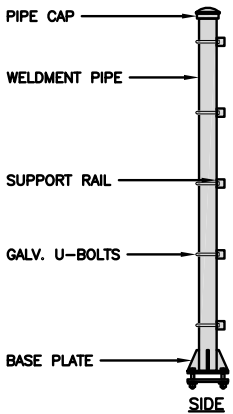


PLATFORM DETAIL

NO SCALE

2

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



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

H-FRAME DETAIL

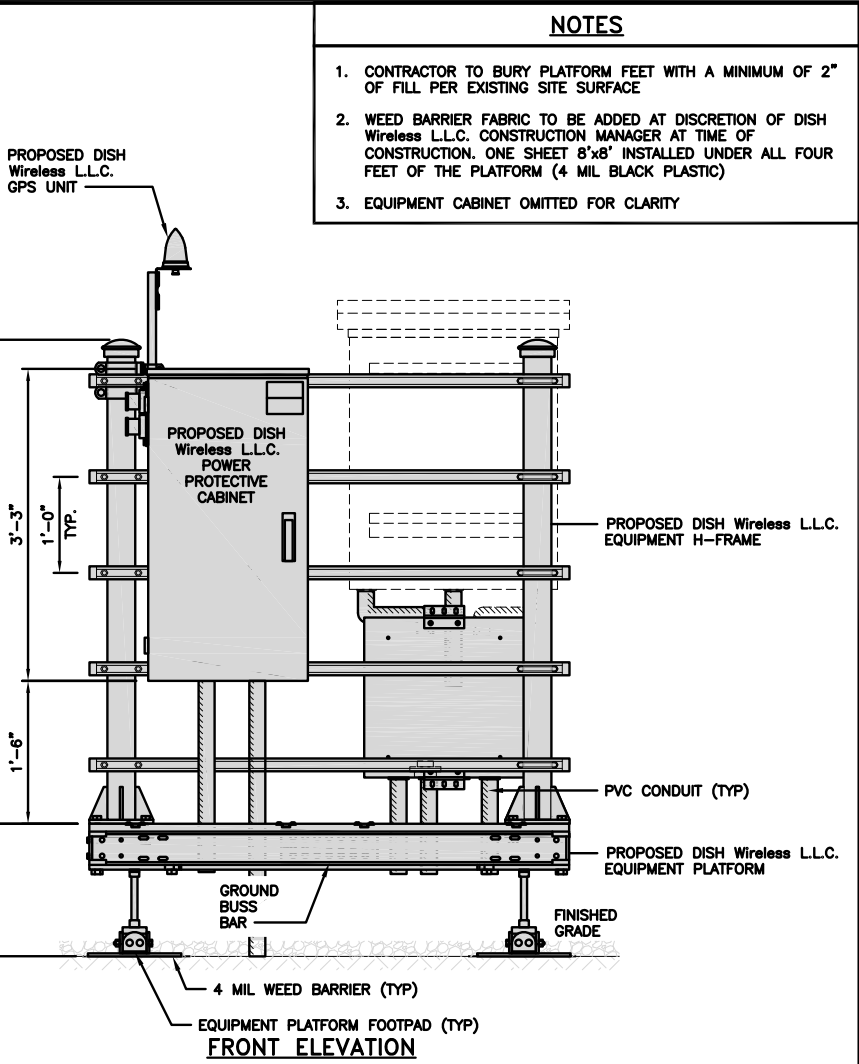
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3

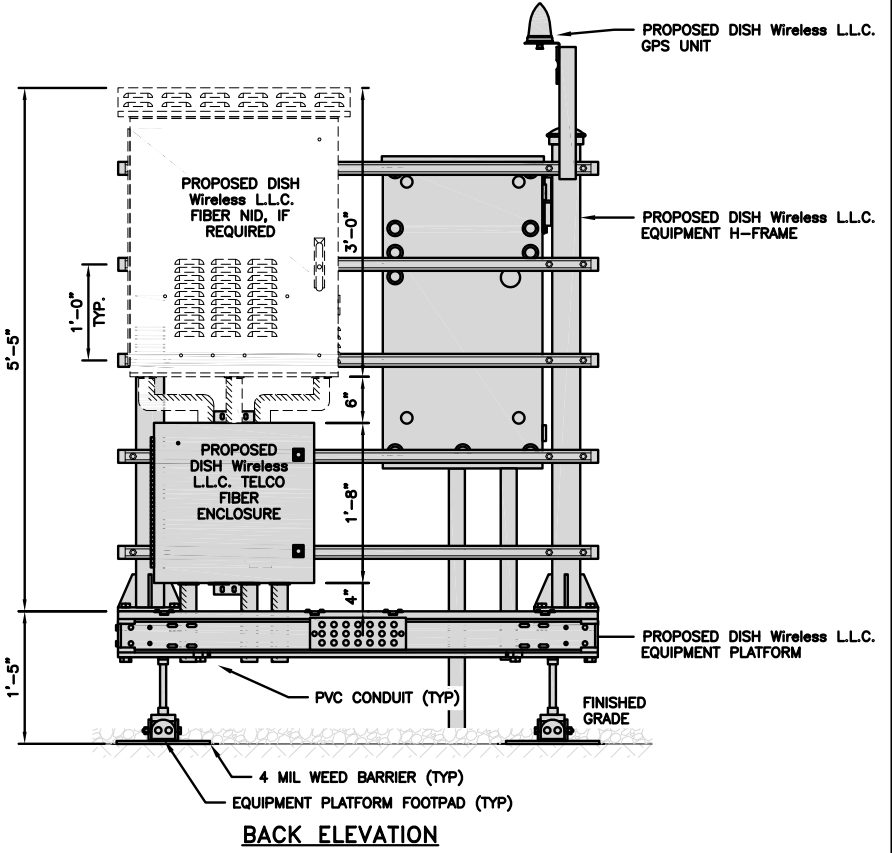
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NO SCALE

4

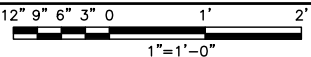


FRONT ELEVATION



BACK ELEVATION

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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LITTLETON, CO 80120



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DISH Wireless L.L.C.
PROJECT INFORMATION
BOBOS00060A
39 MAENNERCHOR AVENUE
NORWICH, CT 06380

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

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)

TRAPEZE KIT (WB-T12-3)

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

FRONT

SIDE

ICE BRIDGE DETAIL

NO SCALE

7

FINISH SLOPE TO DRAIN

A-A

A-A

PROPOSED 3.5" DIA. SCH 40 PIPE GALVANIZED

PROPOSED 1'-6" DIA. CONCRETE PIER (TYP)

CONCRETE PIER

3" DIA SCH 40 PIPE

18" DIA DRILLED PIER FOUNDATION

A-A SECTION

TYPICAL ICE BRIDGE CONCRETE PIER 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 L.L.C. TEMPLATE VERSION 37 - 07/09/2021

dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

SBA

8051 CONGRESS AVENUE
BOCA RATON, FL 33487

B+T GRP

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

Professional Engineer
No. 23824
LUCAS

9/13/21

B&T ENGINEERING, INC.
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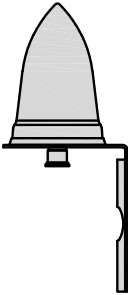
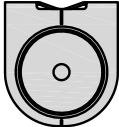
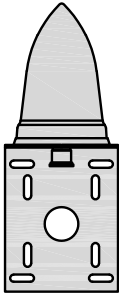
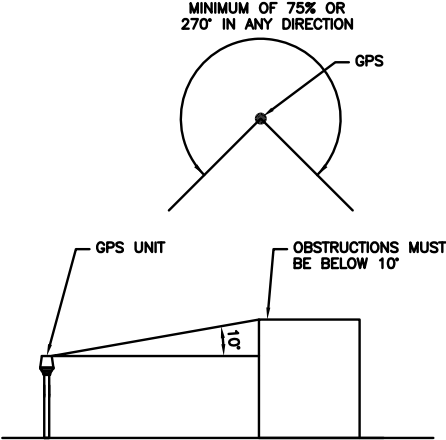
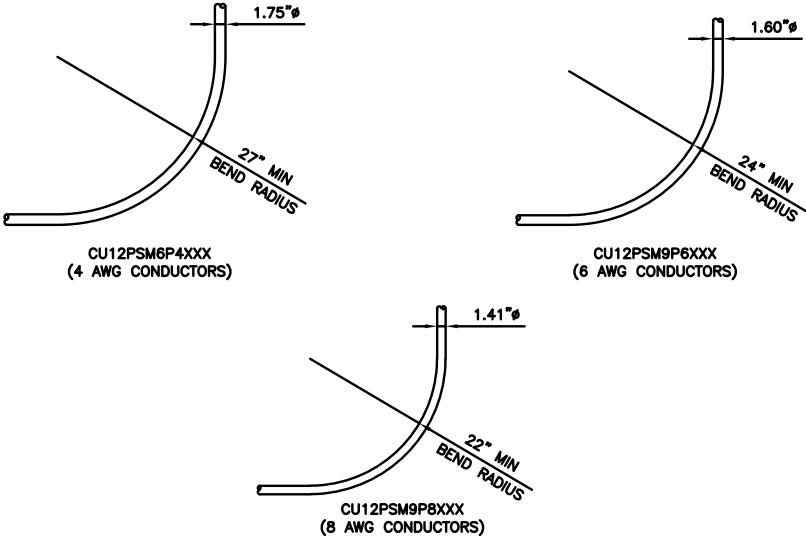
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PROJECT INFORMATION
BOBOS00060A
39 MAENNERCHOR AVENUE
NORWICH, CT 06380

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>  BACK  TOP  SIDE			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	 MINIMUM OF 75% OR 270° IN ANY DIRECTION GPS GPS UNIT OBSTRUCTIONS MUST BE BELOW 10'			 1.75"Ø 27" MIN BEND RADIUS CU12PSM6P4XXX (4 AWG CONDUCTORS) 1.60"Ø 24" MIN BEND RADIUS CU12PSM9P6XXX (6 AWG CONDUCTORS) 1.41"Ø 22" MIN BEND RADIUS CU12PSM9P8XXX (8 AWG CONDUCTORS)		
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																	
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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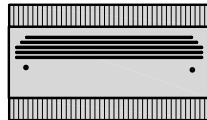
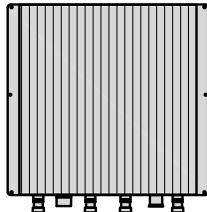
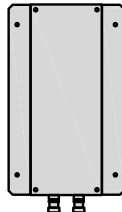
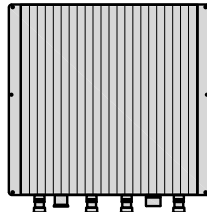
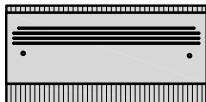
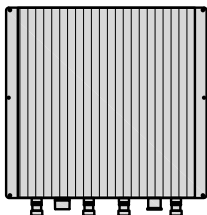
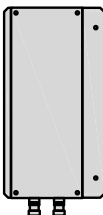
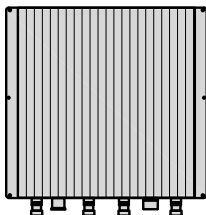
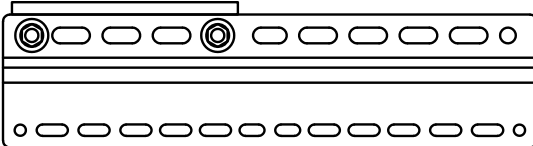
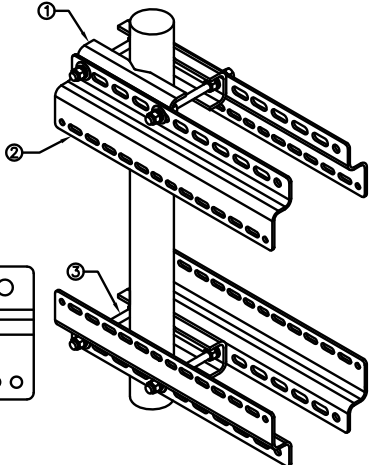
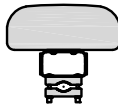
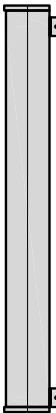
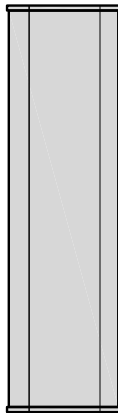
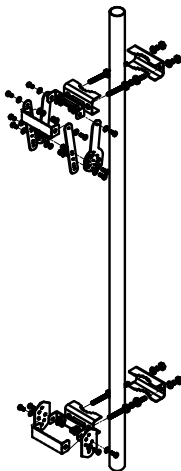
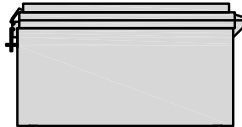
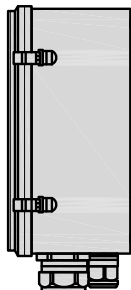
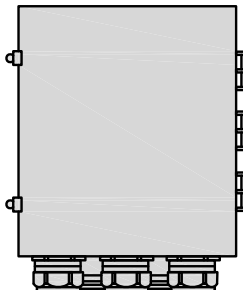
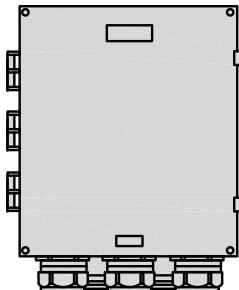
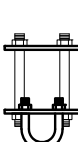
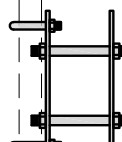
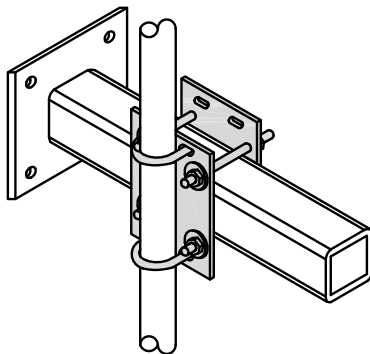
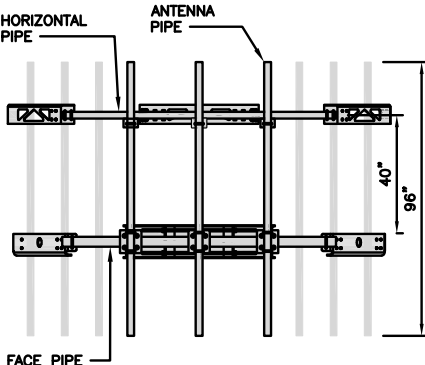
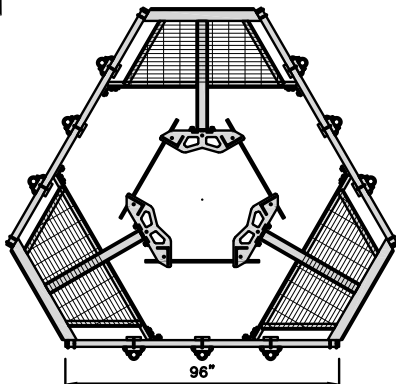
A&E PROJECT NUMBER
149470.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00060A
39 MAENNERCHOR AVENUE
NORWICH, CT 06380

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-5

FUJITSU TRIPLE BAND TA08025-B605 <table><tr><td>DIMENSIONS (HxWxD)</td><td>14.9"x15.7"x9"</td></tr><tr><td>WEIGHT</td><td>74.95 lbs</td></tr><tr><td>CONNECTOR TYPE</td><td>4.3-10 RF CONNECTOR</td></tr><tr><td>POWER SUPPLY</td><td>DC -58~-36V</td></tr></table>  PLAN  BACK  SIDE  FRONT			DIMENSIONS (HxWxD)	14.9"x15.7"x9"	WEIGHT	74.95 lbs	CONNECTOR TYPE	4.3-10 RF CONNECTOR	POWER SUPPLY	DC -58~-36V	FUJITSU DUAL BAND TA08025-B604 <table><tr><td>DIMENSIONS (HxWxD)</td><td>14.9"x15.7"x7.8"</td></tr><tr><td>WEIGHT</td><td>63.9 lbs</td></tr><tr><td>CONNECTOR TYPE</td><td>4.3-10 RF CONNECTOR</td></tr><tr><td>POWER SUPPLY</td><td>DC -58~-36V</td></tr></table>  PLAN  BACK  SIDE  FRONT			DIMENSIONS (HxWxD)	14.9"x15.7"x7.8"	WEIGHT	63.9 lbs	CONNECTOR TYPE	4.3-10 RF CONNECTOR	POWER SUPPLY	DC -58~-36V	SABRE DOUBLE Z-BRACKET C10123155 <table><tr><td>DIMENSIONS (HxWxD) (1 BRACKET)</td><td>5"x20"x1-13/16"</td></tr><tr><td>WEIGHT (FULL ASSEMBLY)</td><td>35.79 lbs</td></tr><tr><td>PACKAGE QUANTITY</td><td>4</td></tr></table><table><tr><th>#</th><th>DESCRIPTION</th></tr><tr><td>1</td><td>PLATE, CHANNEL BRACKET</td></tr><tr><td>2</td><td>RRH Z BRACKET, 3/16"</td></tr><tr><td>3</td><td>THREADED ROD ASSEMBLY 1/2"x12"</td></tr></table>  NOTE: OR DISH Wireless L.L.C. APPROVED EQUIVALENT 			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"	RRH DETAIL			NO SCALE			1		
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JMA MX08FR0665-21 <table><tr><td>DIMENSIONS (HxWxD)</td><td>72"x20.0"x8.0"</td></tr><tr><td>RF PORTS, CONNECTOR TYPE</td><td>8 x 4.3-10 FEMALE</td></tr><tr><td>WEIGHT</td><td>64.5 lbs</td></tr><tr><td>WEIGHT WITH BRACKETS</td><td>82.5 lbs</td></tr></table>  PLAN  SIDE  FRONT			DIMENSIONS (HxWxD)	72"x20.0"x8.0"	RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE	WEIGHT	64.5 lbs	WEIGHT WITH BRACKETS	82.5 lbs	JMA ANTENNA MOUNT BRACKET #91900318 <table><tr><td>TOTAL WEIGHT (WITH BRACKETS)</td><td>18 lbs (8.18 Kg)</td></tr><tr><td>POLE DIAMETER RANGE</td><td>2.5" TO 4.5"</td></tr></table> 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			TOTAL WEIGHT (WITH BRACKETS)	18 lbs (8.18 Kg)	POLE DIAMETER RANGE	2.5" TO 4.5"	ANTENNA DETAIL			NO SCALE			4																							
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RAYCAP RDIDC-9181-PF-48 DC SURGE PROTECTION (OVP) <table><tr><td>DIMENSIONS (HxWxD)</td><td>18.98"x14.39"x8.15"</td></tr><tr><td>WEIGHT</td><td>21.82 LBS</td></tr></table>  PLAN  SIDE  BACK  FRONT			DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"	WEIGHT	21.82 LBS	COMMSCOPE XP-2040 CROSSOVER PLATE <table><tr><td>DIMENSIONS (HxW)</td><td>10"x12"</td></tr><tr><td>WEIGHT</td><td>11 lbs</td></tr></table> NOTE: OR DISH Wireless L.L.C. APPROVED EQUIVALENT  PLAN U-BOLT  SIDE U-BOLT 			DIMENSIONS (HxW)	10"x12"	WEIGHT	11 lbs	COMMSCOPE MC-PK8-DSH <table><tr><td>FACE WIDTH</td><td>96"</td></tr><tr><td>WEIGHT</td><td>1373.08 lbs</td></tr></table> NOTE: 15" TO 38" O.D.   NOTE: OR DISH Wireless L.L.C. APPROVED EQUIVALENT			FACE WIDTH	96"	WEIGHT	1373.08 lbs	SURGE SUPPRESSION DETAIL (OVP)			NO SCALE			7																				
DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"																																														
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RRH/OVP MOUNT DETAIL NO SCALE 8			ANTENNA PLATFORM DETAIL NO SCALE 9																																												



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



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BOCA RATON, FL 33487



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PEC.0001564
Expires 2/10/22

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DRAWN BY: CHECKED BY: APPROVED BY:

BLJ BLJ MP

RFDS REV #: 0

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	7/28/21	ISSUED FOR REVIEW
0	9/13/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00060A
39 MAENNERCHOR AVENUE
NORWICH, CT 06380

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER

A-6

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

dish
wireless.

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BOCA RATON, FL 33487



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CHECKED BY: BLJ
APPROVED BY: MP

RFDS REV #: 0

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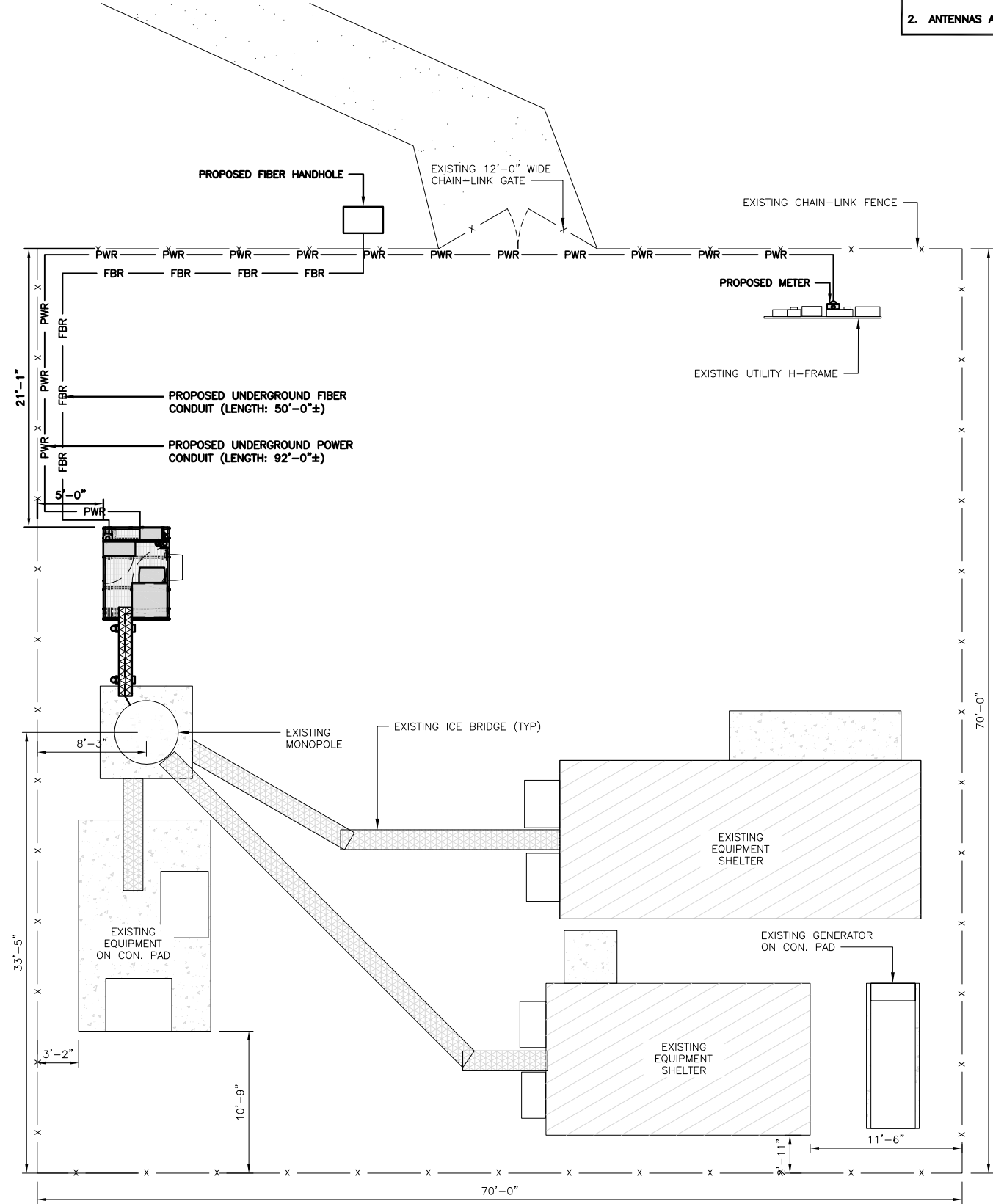
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DISH Wireless L.L.C.
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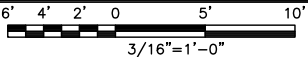
BOBOS00060A
39 MAENNERCHOR AVENUE
NORWICH, CT 06380

SHEET TITLE
ELECTRICAL/FIBER ROUTE
PLAN AND NOTES

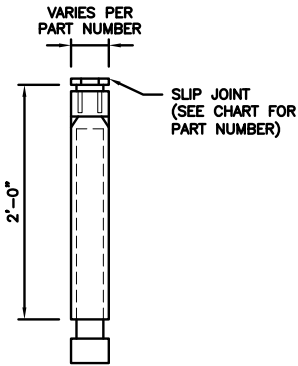
SHEET NUMBER
E-1



UTILITY ROUTE PLAN



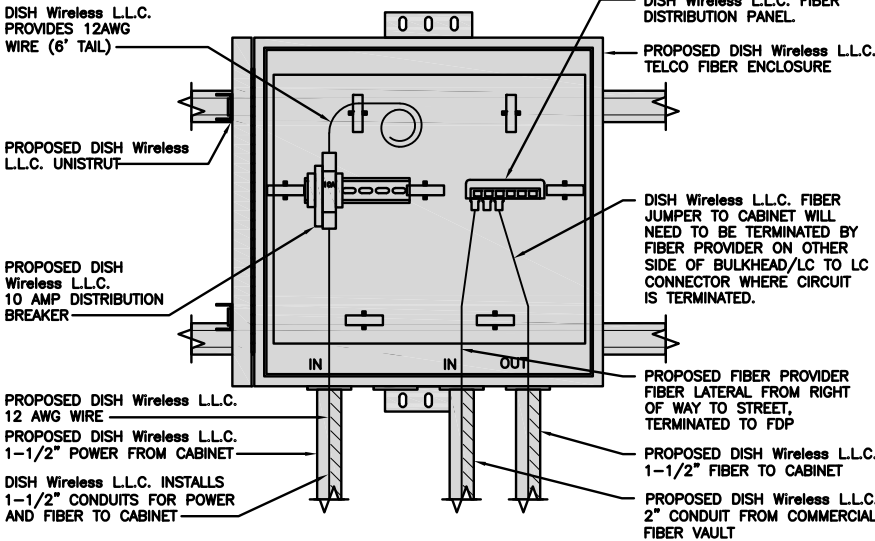
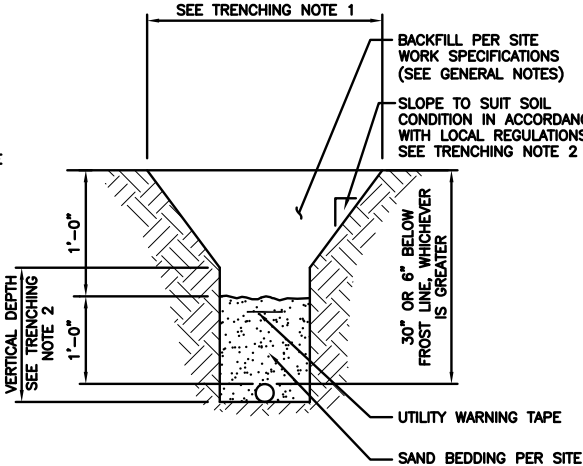
CARLON EXPANSION FITTINGS				
COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD CTN QTY.	TRAVEL LENGTH
E945D	E945DX	1/2"	20	4"
E945E	E945EX	3/4"	15	4"
E945F	E945FX	1"	10	4"
E945G	E945GX	1 1/4"	5	4"
E945H	E945HX	1 1/2"	5	4"
E945J	E945JX	2"	15	8"
E945K	E945KX	2 1/2"	10	8"
E945L	E945LX	3"	10	8"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



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

TRENCHING NOTES

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



EXPANSION JOINT DETAIL

NO SCALE

1

TYPICAL UNDERGROUND TRENCH DETAIL

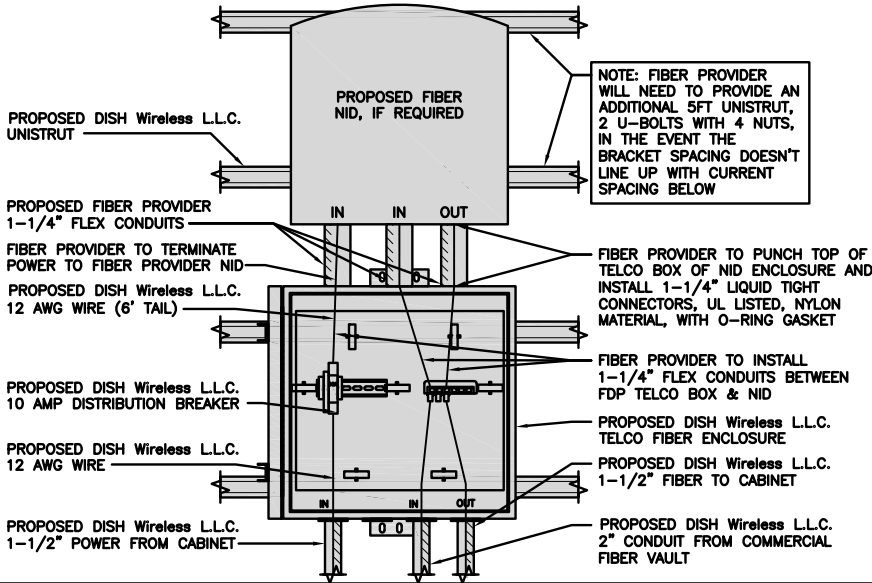
NO SCALE

2

DARK TELCO BOX – INTERIOR WIRING LAYOUT

NO SCALE

3



LIT TELCO BOX – INTERIOR WIRING LAYOUT (OPTIONAL)

NO SCALE

4

NOT USED

NO SCALE

5

NOT USED

NO SCALE

6

NOT USED

NO SCALE

7

NOT USED

NO SCALE

8

NOT USED

NO SCALE

9



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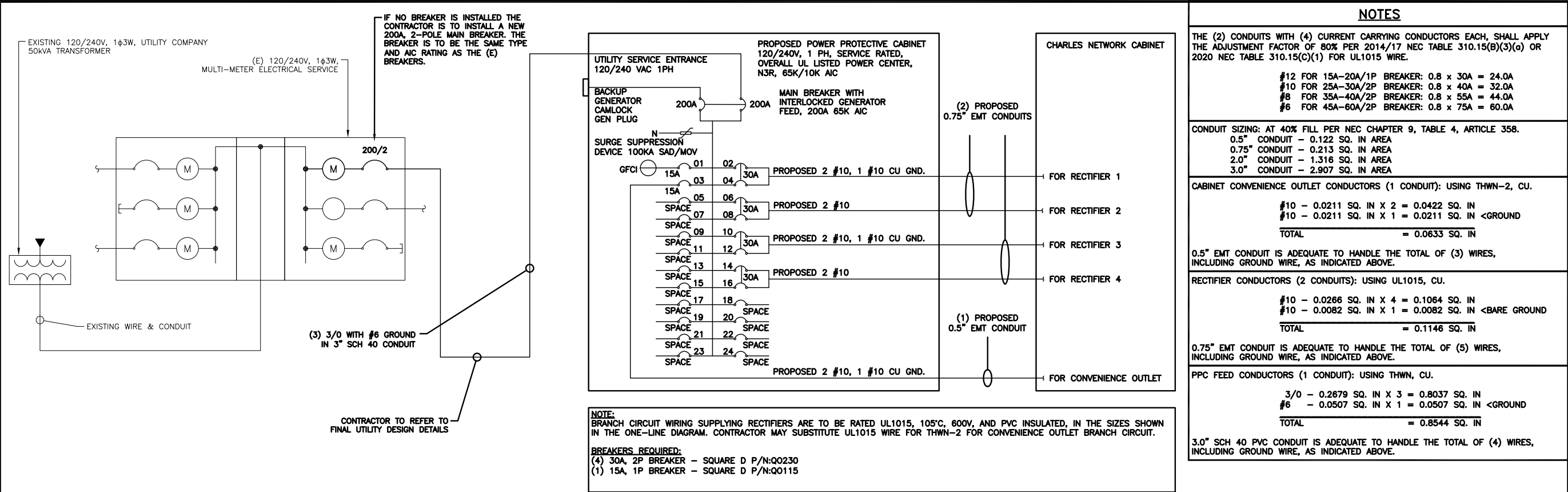
DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00060A
39 MAENNERCHOR AVENUE
NORWICH, CT 06380

SHEET TITLE
ELECTRICAL
DETAILS

SHEET NUMBER

E-2



PPC ONE-LINE DIAGRAM

NO SCALE

1

PROPOSED CHARLES PANEL SCHEDULE												
LOAD SERVED	VOLT AMPS (WATTS)		TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPS (WATTS)		LOAD SERVED		
	L1	L2						L1	L2			
PPC GFCI OUTLET	180		15A	1	A	2	30A	2880	2880	ABB/GE INFINITY RECTIFIER 1		
CHARLES GFCI OUTLET		180	15A	3	B	4						
-SPACE-				5	A	6	30A	2880	2880	ABB/GE INFINITY RECTIFIER 2		
-SPACE-				7	B	8						
-SPACE-				9	A	10						
-SPACE-				11	B	12	30A	2880	2880	ABB/GE INFINITY RECTIFIER 3		
-SPACE-				13	A	14						
-SPACE-				15	B	16	30A	2880	2880	ABB/GE INFINITY RECTIFIER 4		
-SPACE-				17	A	18						
-SPACE-				19	B	20						
-SPACE-				21	A	22						
-SPACE-				23	B	24						
VOLTAGE AMPS 180 180 11520 11520												
200A MCB, 1ϕ, 24 SPACE, 120/240V												
MB RATING: 65,000 AIC												
				L1	L2	VOLTAGE AMPS						
				11700	11700	AMPS						
				98	98	MAX AMPS						
				123	123	MAX 125%						

PANEL SCHEDULE

NO SCALE

2

NOT USED

NO SCALE

3

dish
wireless.

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SBA

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Professional Engineer
No. 23824
LUDWIG
9/13/21

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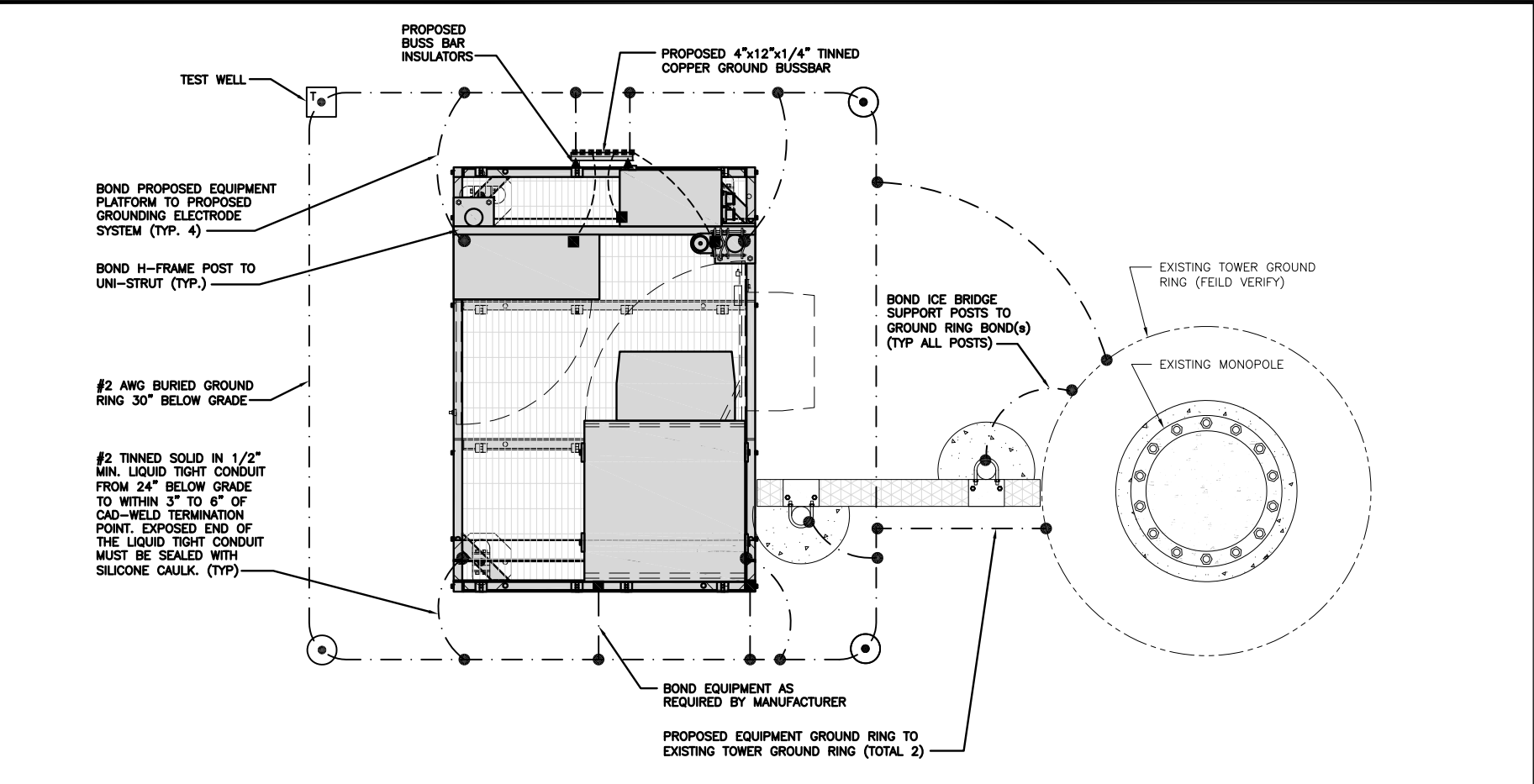
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39 MAENNERCHOR AVENUE
NORWICH, CT 06380

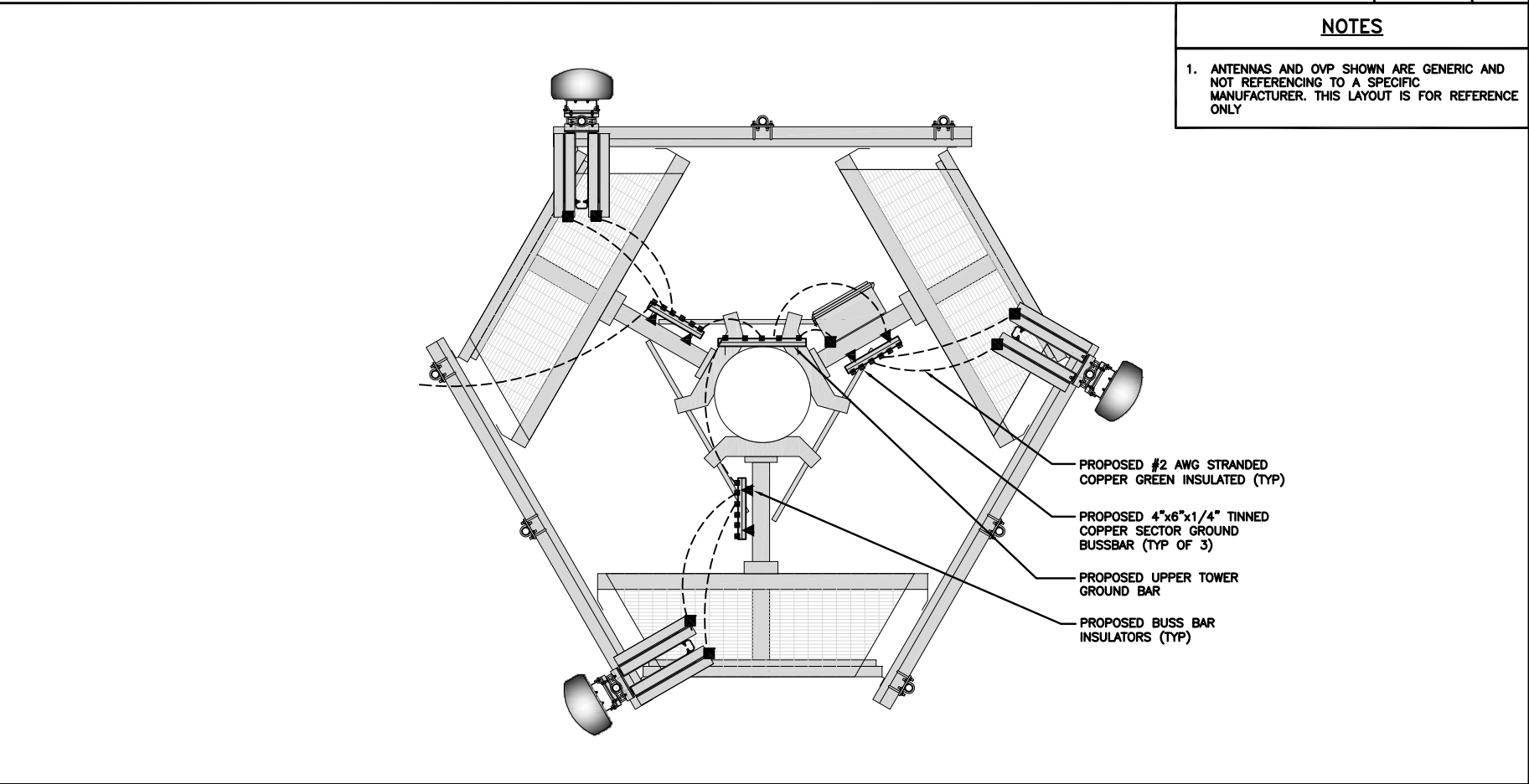
SHEET TITLE
ELECTRICAL ONE-LINE, FAULT
CALCS & PANEL SCHEDULE

SHEET NUMBER
E-3



TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE 1



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE 2

- EXOTHERMIC CONNECTION

■

MECHANICAL CONNECTION

—

GROUND BUS BAR

○

GROUND ROD
- T

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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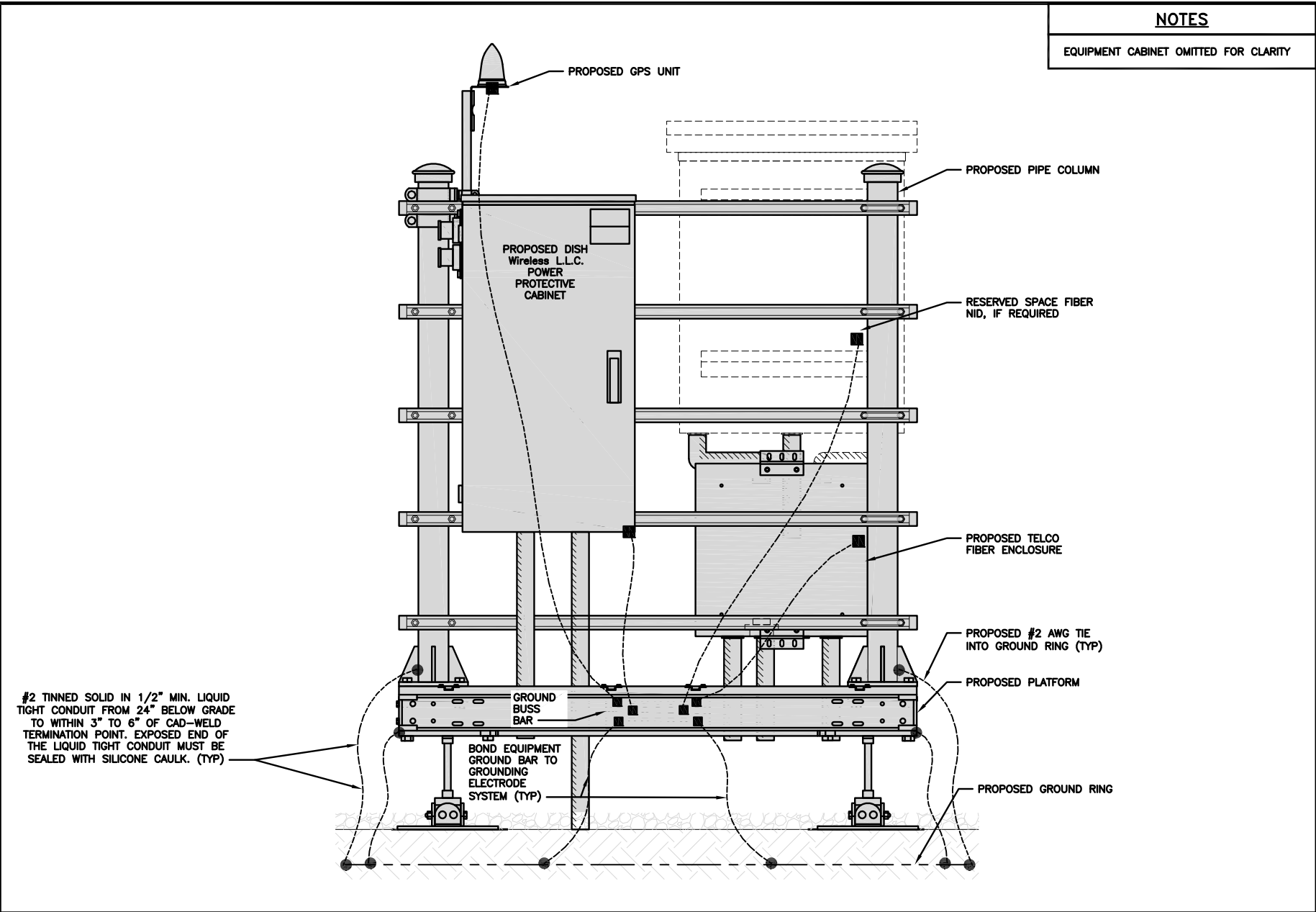
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PROJECT INFORMATION

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39 MAENNERCHOR AVENUE
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SHEET TITLE
GROUNDING PLANS
AND NOTES

SHEET NUMBER

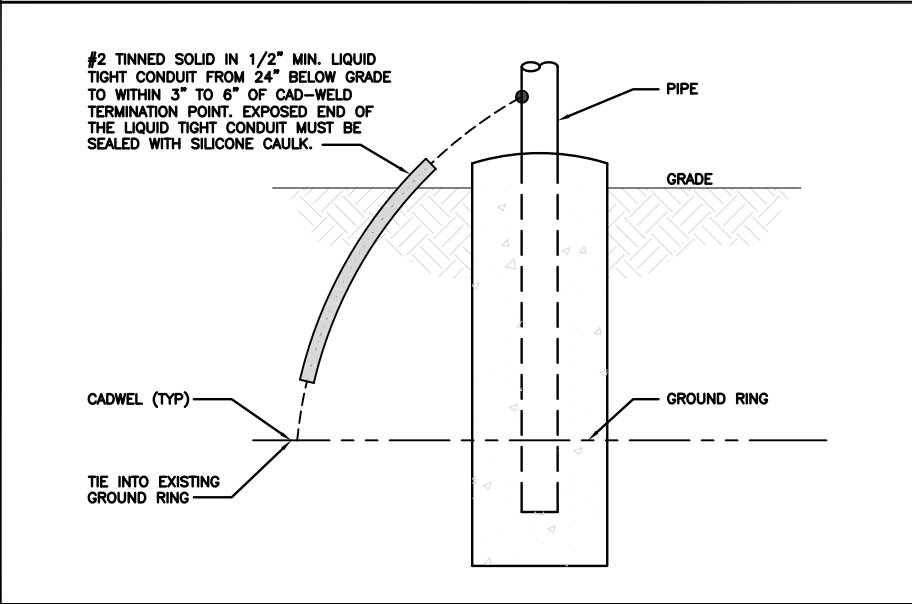
G-1



H-FRAME GROUNDING DETAIL

NO SCALE

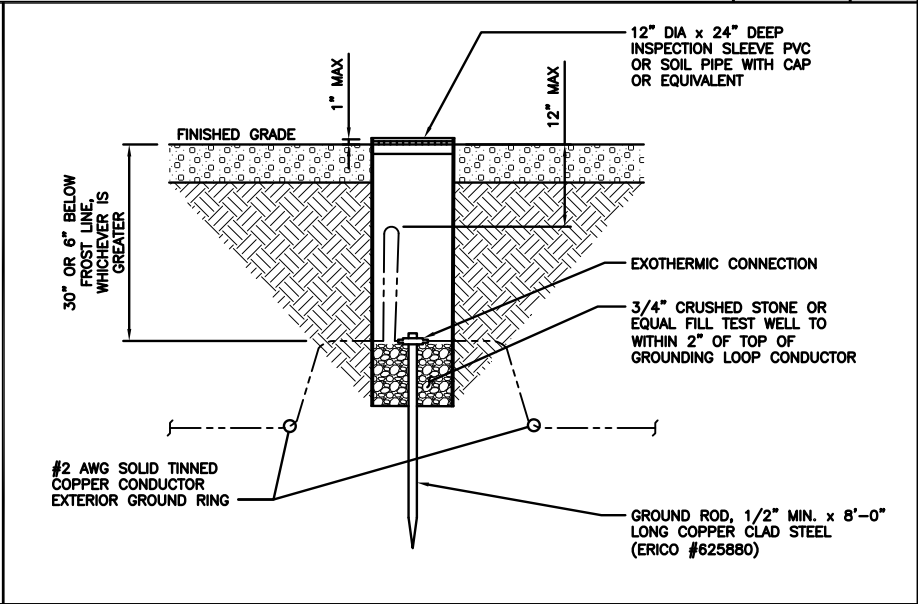
1



TRANSITIONING GROUND DETAIL

NO SCALE

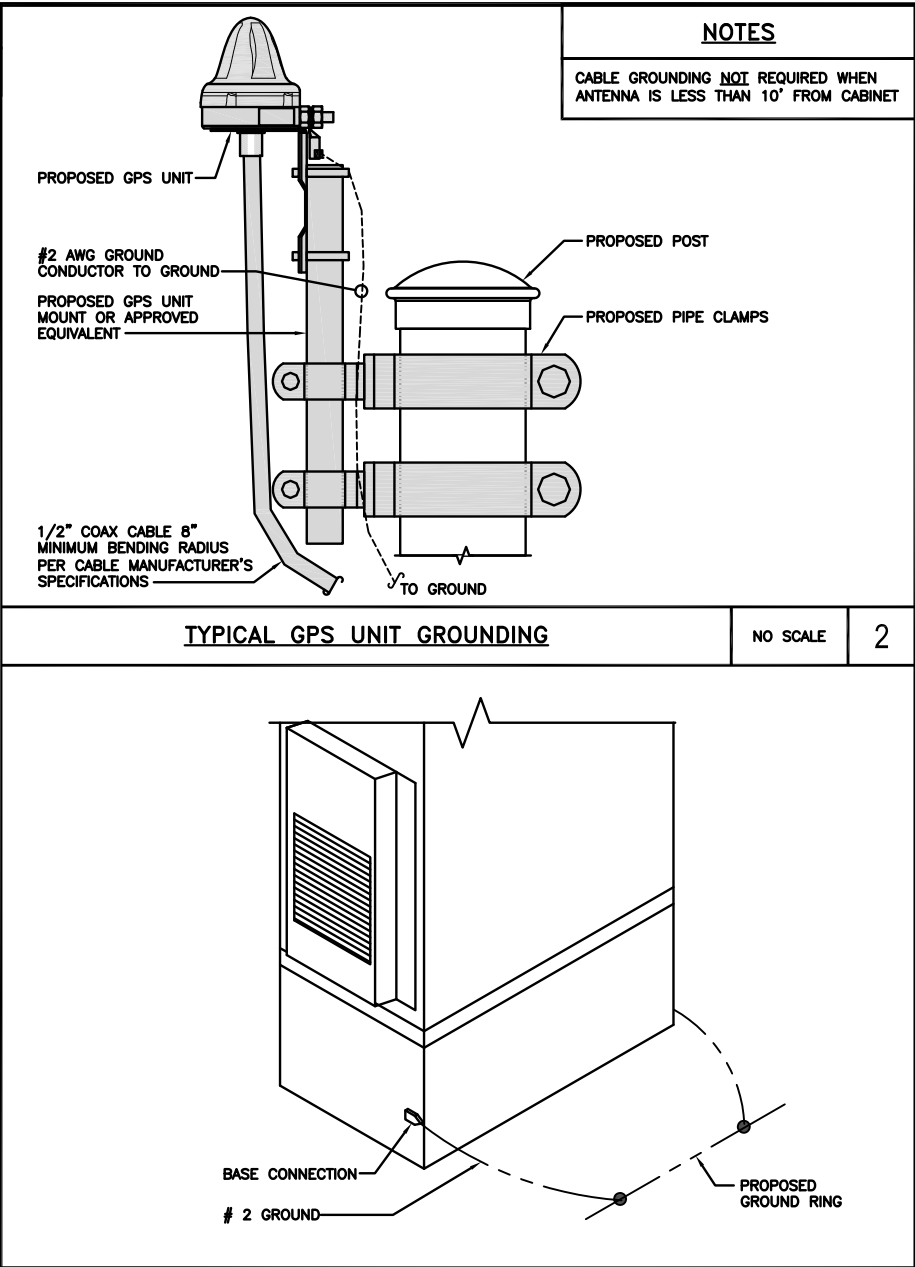
4



TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE

NO SCALE

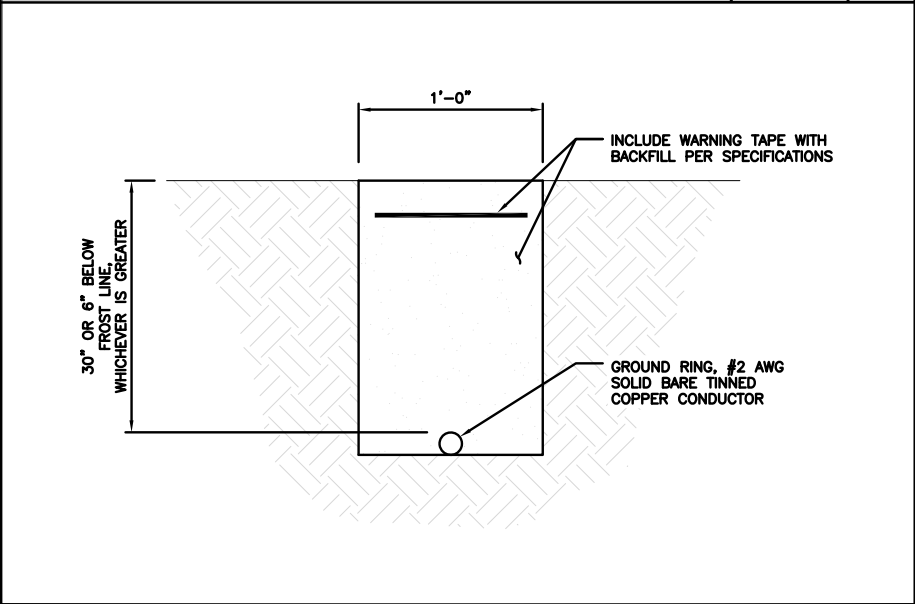
5



OUTDOOR CABINET GROUNDING

NO SCALE

3



TYPICAL GROUND RING TRENCH

NO SCALE

6

dish
wireless.

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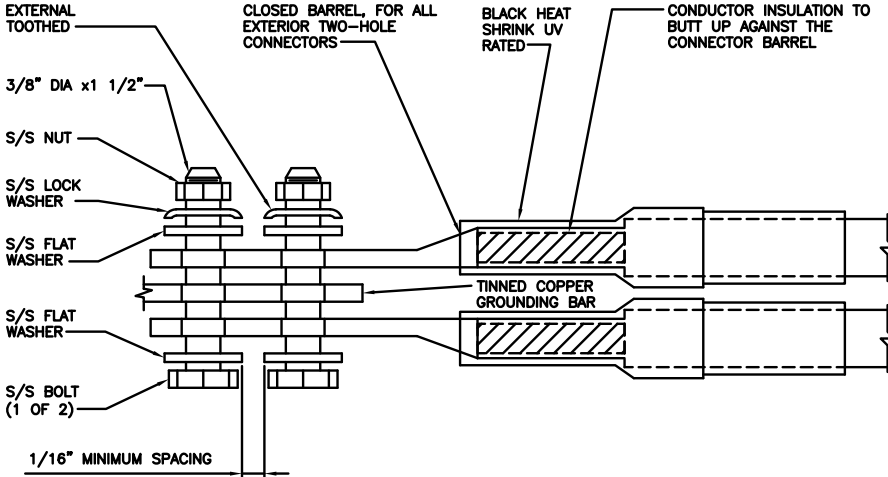
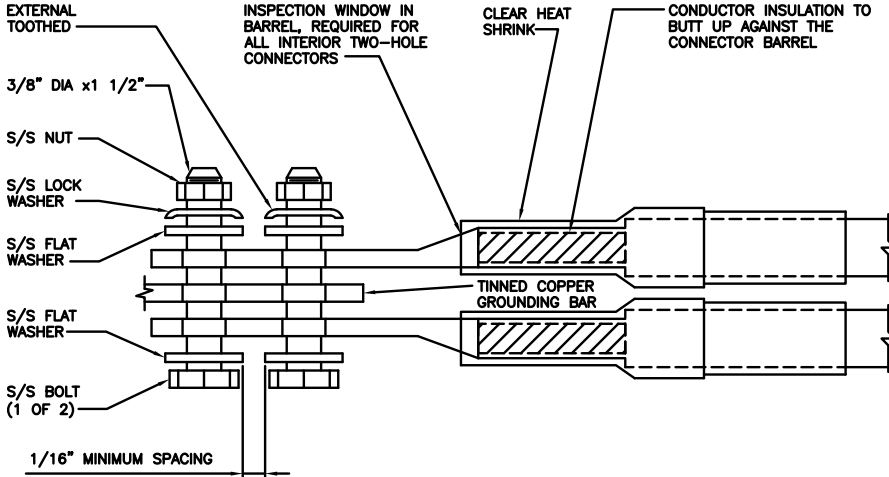
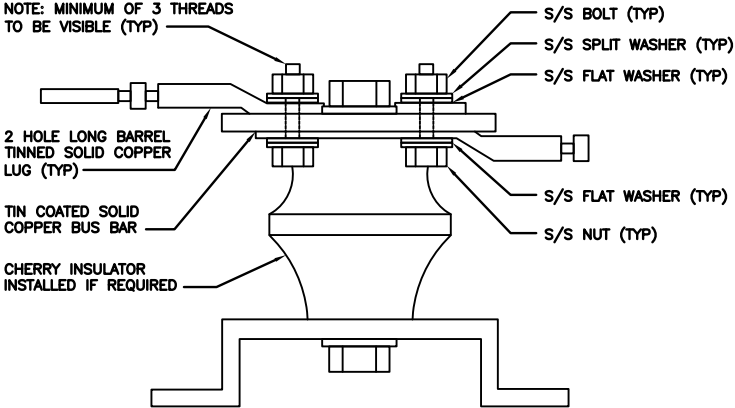
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SHEET TITLE
GROUNDING DETAILS

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
GROUNDING DETAILS

SHEET NUMBER
G-3

RF JUMPER COLOR CODING

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

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

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

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

MID-BAND RRH –
(AWS BANDS N66+N70)

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

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

HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED
ALONG WITH FREQUENCY BANDS

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

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

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

FIBER JUMPERS TO RRHs

LOW-BAND RRH FIBER CABLES HAVE SECTOR
STRIPE ONLY

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

POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR
STRIPE ONLY

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

RET MOTORS AT ANTENNAS

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

MICROWAVE RADIO LINKS

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

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

FORWARD AZIMUTH OF 0–120 DEGREES

FORWARD AZIMUTH OF 120–240 DEGREES

FORWARD AZIMUTH OF 240–360 DEGREES

PRIMARY	SECONDARY	PRIMARY	SECONDARY	PRIMARY	SECONDARY
WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
RED	RED	BLUE	BLUE	GREEN	GREEN
WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
	RED		BLUE		GREEN
	WHITE		WHITE		WHITE

NOTES

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

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

BETA SECTOR

GAMMA SECTOR

RED

BLUE

GREEN

COLOR IDENTIFIER

NO SCALE

2

NOT USED

NO SCALE

3

NOT USED

NO SCALE

4

dish
wireless.

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PROJECT INFORMATION

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39 MAENNERCHOR AVENUE
NORWICH, CT 06380

SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER

RF-1

RF CABLE COLOR CODES

NO SCALE

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.



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BOCA RATON, FL 33487



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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00060A
39 MAENNERCHOR AVENUE
NORWICH, CT 06380

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-2

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

ELECTRICAL INSTALLATION NOTES:

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

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



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A&E PROJECT NUMBER
149470.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00060A
39 MAENNERCHOR AVENUE
NORWICH, CT 06380

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-3

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

GROUNDING NOTES:

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



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SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-4

Exhibit D

Structural Analysis Report



Tower Engineering Solutions

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

Structural Analysis Report

Existing 128 ft SABRE Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT13556-S

Customer Site Name: Norwich

Carrier Name: Dish Wireless (App#: 163274, V2)

Carrier Site ID / Name: BOBOS00060A / 0

Site Location: 39 Maennerchor Avenue

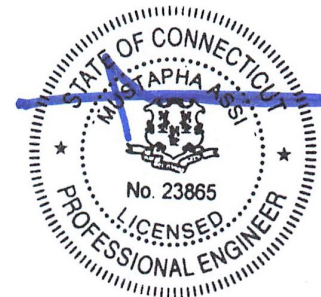
Taftville, Connecticut

New London County

Latitude: 41.558472

Longitude: -72.051278

Exp.10/31/2021



Analysis Result:

09/01/2021

Max Structural Usage: 58.5% [Pass]

Max Foundation Usage: 60.0% [Pass]

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

Report Prepared By : Dipika Dhungana



Tower Engineering Solutions

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

Structural Analysis Report

Existing 128 ft SABRE Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT13556-S

Customer Site Name: Norwich

Carrier Name: Dish Wireless (App#: 163274, V2)

Carrier Site ID / Name: BOBOS00060A / 0

Site Location: 39 Maennerchor Avenue

Taftville, Connecticut

New London County

Latitude: 41.558472

Longitude: -72.051278

Analysis Result:

Max Structural Usage: 58.5% [Pass]

Max Foundation Usage: 60.0% [Pass]

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

Report Prepared By : Dipika Dhungana

Introduction

The purpose of this report is to summarize the analysis results on the 128 ft SABRE 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	Sabre Job #09-01086, dated 01/05/09
Foundation Drawing	Sabre Job #09-01086, dated 01/05/09
Geotechnical Report	TEP Project #083184.01, dated 12/08/08
Modification Drawings	FDH Project #12-05460E S4, dated 02/25/13
Mount Analysis	N/A

Analysis Criteria

The rigorous analysis was performed in accordance with the requirements and stipulations of the TIA-222-G-2. In accordance with this standard, the structure was analyzed using **TESPoles**, a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed $V_{ult} = 135.0$ 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:	B
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	$S_S = 0.168$, $S_1 = 0.06$

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	128.0	2	Andrew SBNHH-1D65C- Panel	Modified Low Profile Platform W/ (1) SitePro1 HRK12-HD (Handrail Kit) & (2) Pipe Masts	(1) 3" Conduit* (3) 3/8" Fiber (6) 5/8" DC Power	AT&T
2		1	KMW AM-X-CD-16-65-00T-RET- Panel			
3		2	Cci HPA-65R-BUU-H8- Panel			
4		1	Cci HPA-65R-BUU-H6- Panel			
5		1	Cci DMP65R-BU6DA- Panel			
6		2	Cci DMP65R-BU8DA- Panel			
7		3	Ericsson RRUS-11			
8		3	Ericsson RRUS 32 B30			
9		3	Ericsson 4449 B5/B12			
10		3	Ericsson RRUS 4478 B14			
11		3	Raycap DC6-48-60-18-8F			
12	117.0	3	Ericsson AIR32 KRD901146-1_B66A_B2A (Octo)- Panel	Modified Low Profile Platform W/ (1) Metrosite Heavy Collar Mount Assembly (MS-H1436) (1) Metrosite T-arm kit (MS-P-TARM) (9) 8ft pipe	(15) 1-5/8" (3) 1 5/8" Fiber	T-Mobile
13		3	Ericsson AIR6449 B41- Panel			
14		3	RFS APXVAALL24-43-U-NA20- Panel			
15		6	Allen Telecom FE15501P77/75- TMAs			
16		3	Ericsson 4449 B71 + B85- RRUs			
17		3	Ericsson 4415 B25- RRUs			
18	100.0	3	Kathrein 782 11056- Bias-Ts	Low Profile Platform	(12) 1/2" (2) 1 5/8" Fiber	Verizon
19		6	JMA Wireless MX06FR0660-03 - Panel			
20		3	VZS01 - Panel			
21		3	Amphenol BXA-70063-6CF-2- Panel			
22		3	Samsung B2/B66A RRH-BRO49(RFV01U-D1A)			
23		3	Samsung B5/B13 RRH-BR04C (RFV01U-D2A)			
24		1	Raycap RRFDC-3315-PF-48 OVP			
25		1	RFS DB-T1-6Z-8AB-0Z-OVP			

* (3) 3/8" RET lines within.

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
26	91.0	3	JMA Wireless MX08FRO665-21	Platform w/HRK Commscope MC-PK8- DSH	(1) 1.6" Hybrid	Dish Wireless
27		3	Fujitsu TA08025-B605			
28		3	Fujitsu TA08025-B604			
29		1	Raycap RDIDC-9181-PF-48			

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	Flange Check
Max. Usage:	58.5%	56.5%	46.4%	50.7%
Pass/Fail	Pass	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Analysis Reactions	2983.7	30.8

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

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 0.6349 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 58.53% at 53.0ft

Structure: CT13556-S-SBA

Code: EIA/TIA-222-G

9/1/2021

Site Name: Norwich

Exposure: B

Height: 128.00 (ft)

Gh: 1.1

Base Elev: 0.000 (ft)

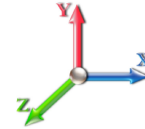
Page: 1



Dead Load Factor: 1.20

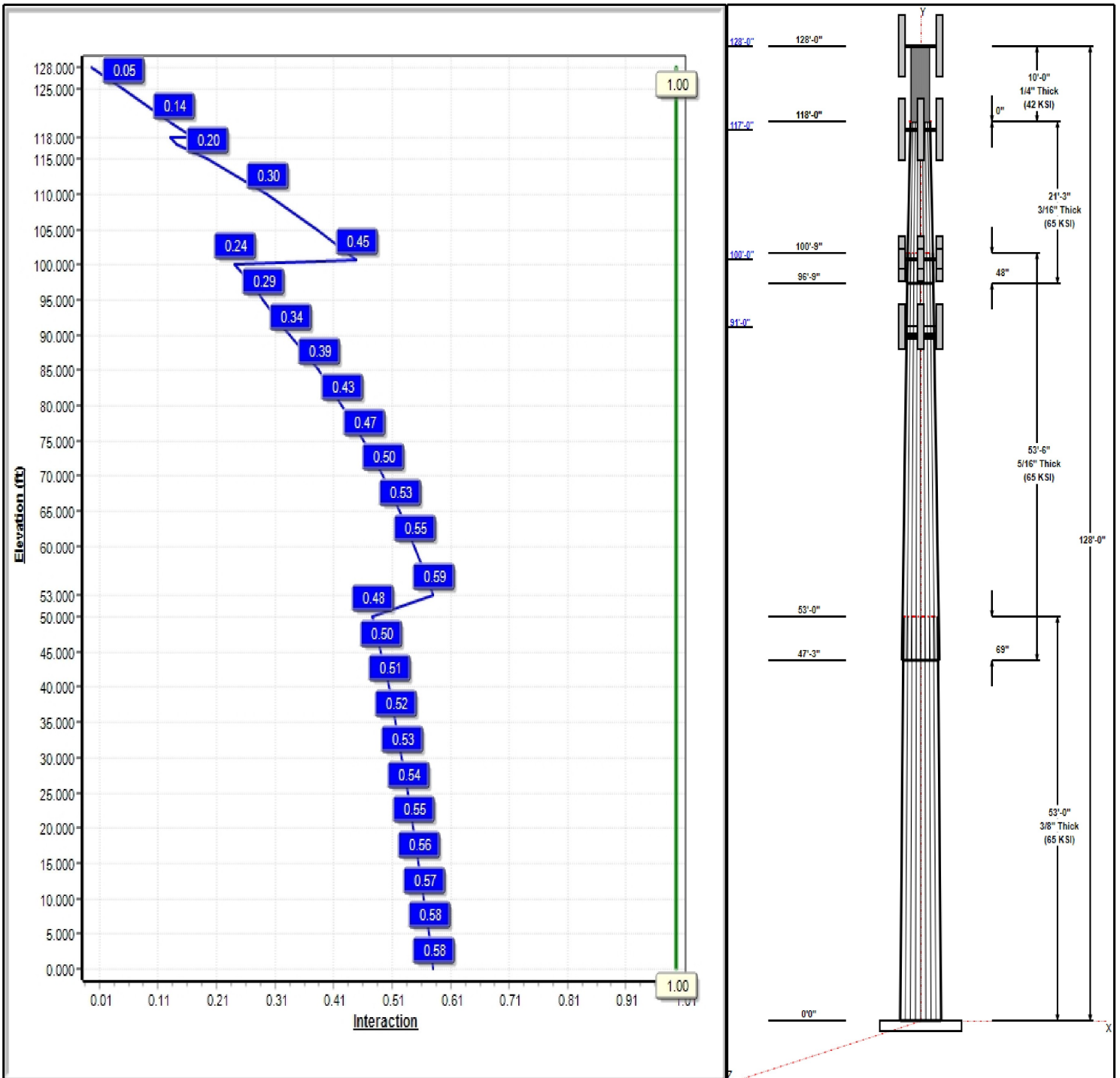
Wind Load Factor: 1.60

Load Case : 1.2D + 1.6W 105 mph Wind



Iterations: 21

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Structure: CT13556-S-SBA

Type: Custom
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.28797

9/1/2021

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Shaft Properties

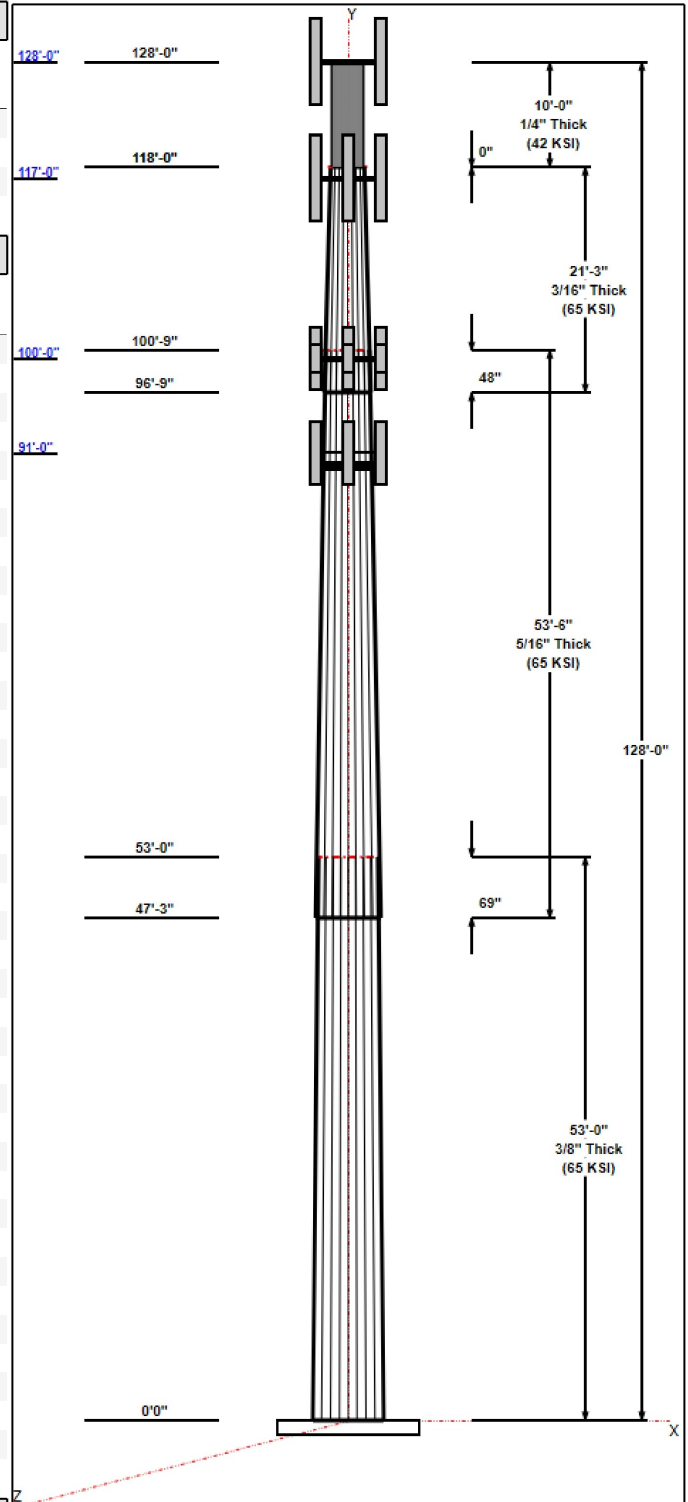
Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	53.00	42.65	57.91	0.375		0.28797	65
2	53.50	29.52	44.93	0.313	Slip	0.28797	65
3	21.25	24.93	31.05	0.188	Slip	0.28797	65
4	10.00	24.00	24.00	0.250	Butt	0.00000	42

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
128.00	128.00	1	Low Profile Platform	AT&T
128.00	128.00	2	SBNHH-1D65C	AT&T
128.00	128.00	1	AM-X-CD-16-65-00T-RET	AT&T
128.00	128.00	2	HPA-65R-BUU-H8	AT&T
128.00	128.00	1	HPA-65R-BUU-H6	AT&T
128.00	128.00	3	RRUS-11	AT&T
128.00	128.00	3	RRUS 32 B30	AT&T
128.00	128.00	3	DC6-48-60-18-8F	AT&T
128.00	128.00	1	DMP65R-BU6DA	AT&T
128.00	128.00	2	DMP65R-BU8DA	AT&T
128.00	128.00	1	HRK12-HD	AT&T
128.00	128.00	2	Pipe Masts	AT&T
128.00	128.00	3	4449 B5/B12	AT&T
128.00	128.00	3	RRUS 4478 B14	AT&T
117.00	117.00	1	Low Profile Platform	T-Mobile
117.00	120.75	6	FE15501P77/75	T-Mobile
117.00	120.75	3	782 11056	T-Mobile
117.00	117.00	3	AIR6449 B41	T-Mobile
117.00	117.00	3	APXVAALL24-43-U-NA20	T-Mobile
117.00	117.00	3	4449 B71 + B85	T-Mobile
117.00	117.00	3	4415 B25	T-Mobile
117.00	117.00	3	AIR32	T-Mobile
117.00	117.00	1	pipes	T-Mobile
117.00	117.00	1	(3) T-Arm Kit	T-Mobile
117.00	117.00	1	MS-H1436 (Heavy Collar	T-Mobile
100.00	100.00	1	Low Profile Platform	Verizon
100.00	100.00	3	BXA 70063 6CF 2	Verizon
100.00	100.00	1	DB-T1-6Z-8AB-OZ	Verizon
100.00	100.00	6	JMA Wireless	Verizon
100.00	100.00	3	VZS01	Verizon
100.00	100.00	3	JMA 91900314-02	Verizon
100.00	100.00	3	Samsung B2/B66A	Verizon
100.00	100.00	3	B5/B13	Verizon
100.00	100.00	1	Raycap	Verizon
100.00	100.00	1	Mount mod	Verizon
91.00	91.00	3	MX08FRO665-21	Dish Wireless
91.00	91.00	3	TA08025-B604	Dish Wireless
91.00	91.00	3	TA08025-B605	Dish Wireless
91.00	91.00	1	RDIDC-9181-OF-48	Dish Wireless
91.00	91.00	1	MC-PK8-DSH	Dish Wireless

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	128.00	Inside	3" Innerduct	AT&T
0.00	128.00	Inside	3/8" Fiber	AT&T



Structure: CT13556-S-SBA

Type: Custom
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.00000

9/1/2021

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0.00	128.00	Inside	3/8" RET	AT&T
0.00	128.00	Inside	5/8" DC	AT&T
0.00	117.00	Inside	1 5/8"	T-Mobile
0.00	117.00	Inside	1 5/8" Fiber	T-Mobile
0.00	100.00	Inside	1 5/8" Fiber	Verizon
0.00	100.00	Inside	1/2"	Verizon
0.00	91.00	Inside	1.6" Hybrid	Dish Wireless

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
16	2.25" 18J	75.0	Cluster

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
3.2500	62.5	50.0	Clipped

Reactions

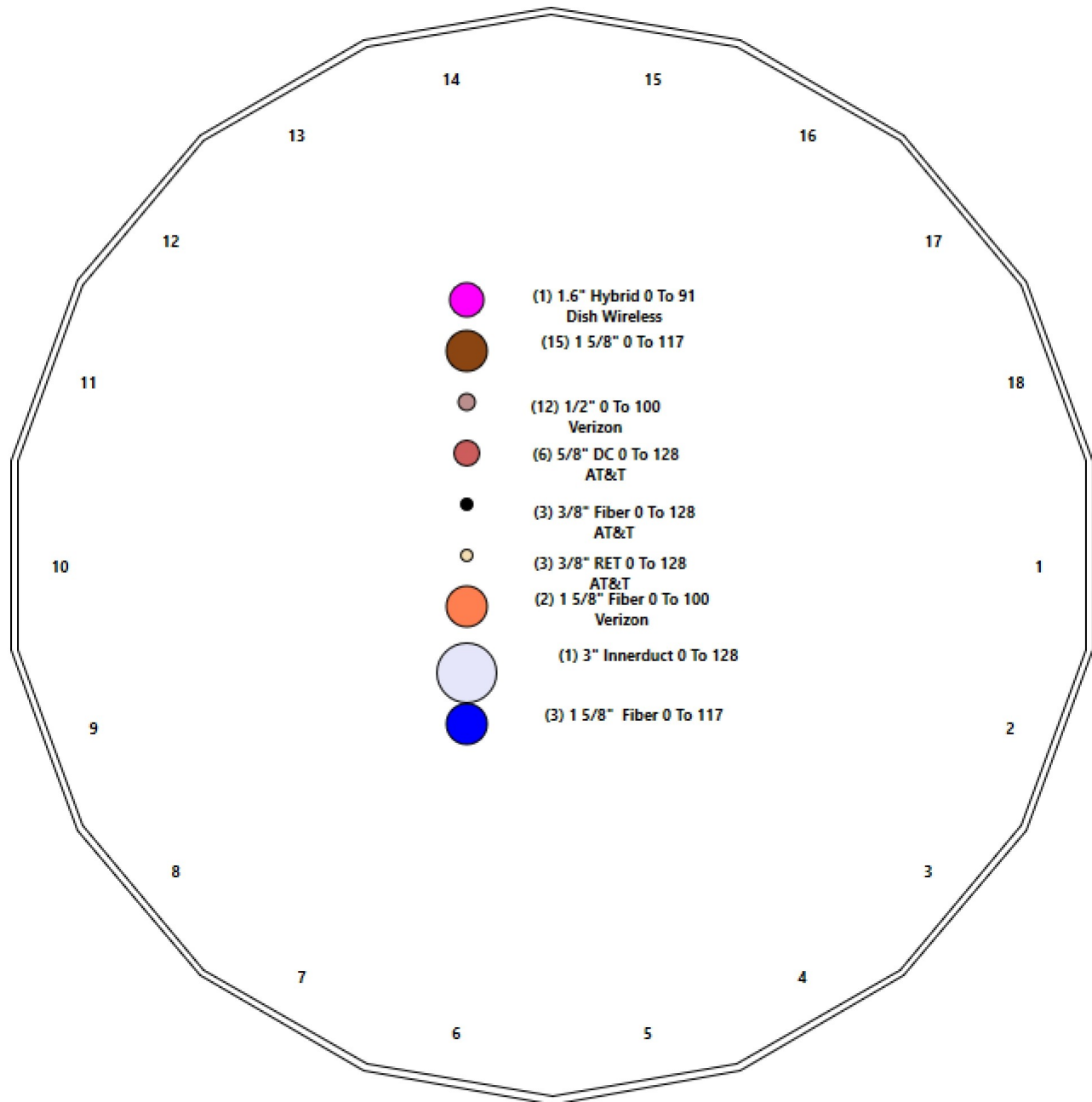
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 105 mph Wind	2983.7	30.8	42.7
0.9D + 1.6W 105 mph Wind	2961.4	30.8	32.0
1.2D + 1.0Di + 1.0Wi 50 mph Wind	696.2	7.3	69.3
1.2D + 1.0E	194.6	1.8	42.7
0.9D + 1.0E	193.0	1.8	32.0
1.0D + 1.0W 60 mph Wind	606.1	6.3	35.6

Structure: CT13556-S-SBA - Coax Line Placement

Type: Monopole
Site Name: Norwich
Height: 128.00 (ft)

9/1/2021

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Shaft Properties

Structure: CT13556-S-SBA	Code: EIA/TIA-222-G	9/1/2021
Site Name: Norwich	Exposure: B	
Height: 128.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	53.000	0.3750	65		0.00	10,712
2	18	53.500	0.3125	65	Slip	69.00	6,665
3	18	21.250	0.1875	65	Slip	48.00	1,196
4	R	10.000	0.2500	42	Flange	0.00	635
Total Shaft Weight:							19,208

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	57.91	0.00	68.48	28639.93	25.82	154.43	42.65	53.00	50.31	11359.4	18.64	113.7	0.287966
2	44.93	47.25	44.25	11129.34	23.94	143.77	29.52	100.75	28.97	3123.10	15.25	94.47	0.287966
3	31.05	96.75	18.37	2210.08	27.79	165.60	24.93	118.00	14.72	1138.88	22.03	132.9	0.287966
4	24.00	118.0	18.65	1316.20	0.00	96.00	24.00	128.00	18.65	1316.20	0.00	96.00	0.000000

Load Summary

Structure: CT13556-S-SBA	Code: EIA/TIA-222-G	9/1/2021
Site Name: Norwich	Exposure: B	
Height: 128.00 (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	128.00	Low Profile Platform	1	1200.00	25.00	1.00	2230.65	45.613	1.00	0.00	0.00
2	128.00	SBNHH-1D65C	2	49.60	11.39	0.84	310.86	13.018	0.85	0.00	0.00
3	128.00	AM-X-CD-16-65-00T-RET	1	33.00	6.05	0.84	175.51	8.116	0.86	0.00	0.00
4	128.00	HPA-65R-BUU-H8	2	68.00	12.98	0.79	362.91	14.576	0.81	0.00	0.00
5	128.00	HPA-65R-BUU-H6	1	51.00	9.66	0.83	279.69	11.007	0.85	0.00	0.00
6	128.00	RRUS-11	3	51.00	2.52	0.67	122.14	3.143	0.67	0.00	0.00
7	128.00	RRUS 32 B30	3	60.00	2.74	0.67	142.45	3.681	0.67	0.00	0.00
8	128.00	DC6-48-60-18-8F	3	31.80	0.92	1.00	92.65	1.351	1.00	0.00	0.00
9	128.00	DMP65R-BU6DA	1	79.40	12.71	0.72	369.31	14.151	0.72	0.00	0.00
10	128.00	DMP65R-BU8DA	2	82.50	17.87	0.72	472.84	19.638	0.72	0.00	0.00
11	128.00	HRK12-HD	1	406.61	9.75	1.00	881.56	19.129	1.00	0.00	0.00
12	128.00	Pipe Masts	2	72.50	2.00	1.00	142.24	4.474	1.00	0.00	0.00
13	128.00	4449 B5/B12	3	71.00	1.97	0.67	123.54	2.509	0.67	0.00	0.00
14	128.00	RRUS 4478 B14	3	59.40	1.65	0.67	100.21	2.160	0.67	0.00	0.00
15	117.00	Low Profile Platform	1	1500.00	22.00	1.00	2776.79	39.228	1.00	0.00	0.00
16	117.00	FE15501P77/75	6	70.00	1.75	0.77	165.33	2.346	0.77	0.00	3.75
17	117.00	782 11056	3	1.80	0.28	0.65	6.21	0.671	0.65	0.00	3.75
18	117.00	AIR6449 B41	3	103.00	5.65	0.71	236.75	6.577	0.71	0.00	0.00
19	117.00	APXVAALL24-43-U-NA20	3	128.00	20.24	0.73	543.93	22.092	0.73	0.00	0.00
20	117.00	4449 B71 + B85	3	73.20	1.97	0.67	129.53	2.525	0.67	0.00	0.00
21	117.00	4415 B25	3	46.30	1.86	0.67	105.17	2.409	0.67	0.00	0.00
22	117.00	AIR32 KRD901146-1_B66A_B2A	3	132.20	6.51	0.87	310.14	7.602	0.87	0.00	0.00
23	117.00	pipes	1	430.00	8.75	1.00	927.78	17.092	1.00	0.00	0.00
24	117.00	(3) T-Arm Kit	1	500.00	16.50	1.00	1078.81	32.230	1.00	0.00	0.00
25	117.00	MS-H1436 (Heavy Collar Mount)	1	136.70	2.25	1.00	322.87	4.548	1.00	0.00	0.00
26	100.00	Low Profile Platform	1	1500.00	22.00	1.00	2756.90	38.960	1.00	0.00	0.00
27	100.00	BXA 70063 6CF 2	3	17.00	7.57	0.75	153.08	10.224	0.78	0.00	0.00
28	100.00	DB-T1-6Z-8AB-0Z	1	18.90	4.80	1.00	135.17	6.409	1.00	0.00	0.00
29	100.00	JMA Wireless MX06FR0660-03	6	60.00	9.87	0.87	316.72	11.188	0.87	0.00	0.00
30	100.00	VZS01	3	87.10	4.30	0.69	192.80	5.147	0.69	0.00	0.00
31	100.00	JMA 91900314-02	3	28.00	0.00	1.00	46.77	0.000	1.00	0.00	0.00
32	100.00	Samsung B2/B66A	3	84.40	1.87	0.67	157.21	2.418	0.67	0.00	0.00
33	100.00	B5/B13 RRH-BR04C(RFV01U-D2A)	3	70.30	1.87	0.67	136.23	2.418	0.67	0.00	0.00
34	100.00	Raycap RRFDC-3315-PF-48 OVP	1	26.90	2.50	0.83	119.50	3.105	0.83	0.00	0.00
35	100.00	Mount mod	1	514.00	12.25	1.00	1099.75	23.747	1.00	0.00	0.00
36	91.00	MX08FRO665-21	3	64.50	12.49	0.74	341.19	13.883	0.74	0.00	0.00
37	91.00	TA08025-B604	3	63.90	1.96	0.67	112.06	2.494	0.67	0.00	0.00
38	91.00	TA08025-B605	3	75.00	1.96	0.67	124.75	2.494	0.67	0.00	0.00
39	91.00	RDIDC-9181-OF-48	1	21.90	2.01	0.67	72.55	2.551	0.67	0.00	0.00
40	91.00	MC-PK8-DSH	1	1727.00	37.59	1.00	3332.55	82.521	1.00	0.00	0.00
Totals:			92	13,214.31			31,559.85				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	128.00	(1) 3" Innerduct	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	128.00	(3) 3/8" Fiber		0.00	Inside						
0.00	128.00	(3) 3/8" RET		0.00	Inside						
0.00	128.00	(6) 5/8" DC		0.00	Inside						
0.00	117.00	(15) 1 5/8"		0.00	Inside						
0.00	117.00	(3) 1 5/8" Fiber		0.00	Inside						
0.00	100.00	(2) 1 5/8" Fiber		0.00	Inside						
0.00	100.00	(12) 1/2"		0.00	Inside						
0.00	91.00	(1) 1.6" Hybrid		0.00	Inside						

Shaft Section Properties

Structure: CT13556-S-SBA	Code: EIA/TIA-222-G	9/1/2021
Site Name: Norwich	Exposure: B	
Height: 128.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.3750	57.910	68.479	28639.9	25.82	154.43	71.0	974.1	0.0
5.00		0.3750	56.470	66.765	26543.1	25.14	150.59	71.8	925.8	1150.5
10.00		0.3750	55.030	65.051	24551.2	24.46	146.75	72.6	878.7	1121.4
15.00		0.3750	53.591	63.337	22661.6	23.79	142.91	73.4	832.9	1092.2
20.00		0.3750	52.151	61.624	20871.5	23.11	139.07	74.2	788.3	1063.0
25.00		0.3750	50.711	59.910	19178.2	22.43	135.23	75.0	744.9	1033.9
30.00		0.3750	49.271	58.196	17579.1	21.76	131.39	75.8	702.7	1004.7
35.00		0.3750	47.831	56.483	16071.4	21.08	127.55	76.6	661.8	975.6
40.00		0.3750	46.391	54.769	14652.5	20.40	123.71	77.4	622.1	946.4
45.00		0.3750	44.952	53.055	13319.7	19.73	119.87	78.2	583.6	917.3
47.25	Bot - Section 2	0.3750	44.304	52.284	12747.3	19.42	118.14	78.6	566.7	403.3
50.00		0.3750	43.512	51.342	12070.2	19.05	116.03	79.0	546.4	895.3
53.00	Top - Section 1	0.3125	43.273	42.610	9935.6	23.01	138.47	0.0	0.0	958.2
55.00		0.3125	42.697	42.038	9541.4	22.68	136.63	74.7	440.1	288.0
60.00		0.3125	41.257	40.610	8601.7	21.87	132.02	75.7	410.6	703.1
65.00		0.3125	39.817	39.182	7725.8	21.06	127.42	76.6	382.2	678.8
70.00		0.3125	38.377	37.754	6911.4	20.24	122.81	77.6	354.7	654.5
75.00		0.3125	36.938	36.326	6156.4	19.43	118.20	78.5	328.3	630.2
80.00		0.3125	35.498	34.898	5458.5	18.62	113.59	79.5	302.9	605.9
85.00		0.3125	34.058	33.470	4815.5	17.81	108.99	80.5	278.5	581.6
90.00		0.3125	32.618	32.042	4225.0	16.99	104.38	81.4	255.1	557.3
91.00		0.3125	32.330	31.756	4113.0	16.83	103.46	81.6	250.6	108.5
95.00		0.3125	31.178	30.614	3684.9	16.18	99.77	82.4	232.8	424.5
96.75	Bot - Section 3	0.3125	30.674	30.114	3507.3	15.90	98.16	82.6	225.2	180.8
100.00		0.3125	29.738	29.186	3192.9	15.37	95.16	82.6	211.5	527.9
100.75	Top - Section 2	0.1875	29.897	17.680	1971.7	26.71	159.45	0.0	0.0	119.5
105.00		0.1875	28.674	16.952	1738.0	25.55	152.93	71.3	119.4	250.4
110.00		0.1875	27.234	16.095	1487.5	24.20	145.25	72.9	107.6	281.1
115.00		0.1875	25.794	15.238	1262.4	22.85	137.57	74.5	96.4	266.6
117.00		0.1875	25.218	14.896	1179.1	22.30	134.50	75.2	92.1	102.5
118.00	Top - Section 3	0.1875	24.930	14.724	1138.9	22.03	132.96	75.5	90.0	50.4
118.00	Bot - Section 4	0.2500	24.000	18.653	1316.2	16.53	99.72	39.4	109.7	
120.00		0.2500	24.000	18.653	1316.2	0.00	96.00	39.4	109.7	126.9
125.00		0.2500	24.000	18.653	1316.2	0.00	96.00	39.4	109.7	317.4
128.00		0.2500	24.000	18.653	1316.2	0.00	96.00	39.4	109.7	190.4

19208.1

Wind Loading - Shaft

Structure: CT13556-S-SBA

Code: EIA/TIA-222-G

9/1/2021

Site Name: Norwich

Exposure: B

Height: 128.00 (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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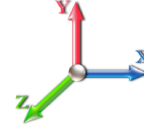


Load Case: 1.2D + 1.6W 105 mph Wind

Iterations 21

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		1.00	0.70	18.769	20.65	430.49	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	18.769	20.65	419.78	0.650	0.000	5.00	24.197	15.73	519.5	0.0	1380.6
10.00		1.00	0.70	18.769	20.65	409.08	0.650	0.000	5.00	23.588	15.33	506.5	0.0	1345.6
15.00		1.00	0.70	18.769	20.65	398.38	0.650	0.000	5.00	22.978	14.94	493.4	0.0	1310.6
20.00		1.00	0.70	18.769	20.65	387.67	0.650	0.000	5.00	22.369	14.54	480.3	0.0	1275.6
25.00		1.00	0.70	18.769	20.65	376.97	0.650	0.000	5.00	21.760	14.14	467.2	0.0	1240.7
30.00		1.00	0.70	18.785	20.66	366.42	0.650	0.000	5.00	21.151	13.75	454.5	0.0	1205.7
35.00		1.00	0.73	19.631	21.59	363.63	0.650	0.000	5.00	20.542	13.35	461.3	0.0	1170.7
40.00		1.00	0.76	20.394	22.43	359.48	0.650	0.000	5.00	19.933	12.96	465.0	0.0	1135.7
45.00		1.00	0.79	21.092	23.20	354.23	0.650	0.000	5.00	19.323	12.56	466.3	0.0	1100.7
47.25	Bot - Section 2	1.00	0.80	21.388	23.53	351.57	0.650	0.000	2.25	8.497	5.52	207.9	0.0	483.9
50.00		1.00	0.81	21.737	23.91	348.09	0.650	0.000	2.75	10.363	6.74	257.7	0.0	1074.3
53.00	Top - Section 1	1.00	0.82	22.102	24.31	344.03	0.650	0.000	3.00	11.095	7.21	280.5	0.0	1149.9
55.00		1.00	0.83	22.337	24.57	346.25	0.650	0.000	2.00	7.275	4.73	185.9	0.0	345.6
60.00		1.00	0.85	22.899	25.19	338.76	0.650	0.000	5.00	17.760	11.54	465.3	0.0	843.7
65.00		1.00	0.87	23.429	25.77	330.70	0.650	0.000	5.00	17.151	11.15	459.7	0.0	814.6
70.00		1.00	0.89	23.930	26.32	322.13	0.650	0.000	5.00	16.542	10.75	452.8	0.0	785.4
75.00		1.00	0.91	24.406	26.85	313.12	0.650	0.000	5.00	15.933	10.36	444.9	0.0	756.2
80.00		1.00	0.93	24.861	27.35	303.70	0.650	0.000	5.00	15.323	9.96	435.8	0.0	727.1
85.00		1.00	0.94	25.295	27.82	293.91	0.650	0.000	5.00	14.714	9.56	425.8	0.0	697.9
90.00		1.00	0.96	25.711	28.28	283.80	0.650	0.000	5.00	14.105	9.17	414.9	0.0	668.8
91.00	Appurtenance(s)	1.00	0.96	25.793	28.37	281.74	0.650	0.000	1.00	2.748	1.79	81.1	0.0	130.3
95.00		1.00	0.97	26.112	28.72	273.37	0.650	0.000	4.00	10.748	6.99	321.1	0.0	509.4
96.75	Bot - Section 3	1.00	0.98	26.248	28.87	269.66	0.650	0.000	1.75	4.580	2.98	137.5	0.0	217.0
100.00	Appurtenance(s)	1.00	0.99	26.497	29.15	262.67	0.650	0.000	3.25	8.410	5.47	254.9	0.0	633.5
100.75	Top - Section 2	1.00	0.99	26.554	29.21	261.04	0.650	0.000	0.75	1.904	1.24	57.8	0.0	143.4
105.00		1.00	1.00	26.869	29.56	255.03	0.650	0.000	4.25	10.532	6.85	323.7	0.0	300.5
110.00		1.00	1.02	27.229	29.95	243.84	0.650	0.000	5.00	11.827	7.69	368.4	0.0	337.4
115.00		1.00	1.03	27.577	30.33	232.42	0.650	0.000	5.00	11.218	7.29	353.9	0.0	319.9
117.00	Appurtenance(s)	1.00	1.03	27.713	30.48	227.79	0.650	0.000	2.00	4.317	2.81	136.9	0.0	123.0
118.00	Top - Section 3	1.00	1.04	27.780	30.56	225.46	0.650	0.000	1.00	2.122	1.38	67.4	0.0	60.5
120.00		1.00	1.04	27.914	30.71	214.27	0.600	0.000	2.00	4.000	2.40	117.9	0.0	152.3
125.00		1.00	1.05	28.242	31.07	215.52	0.600	0.000	5.00	10.000	6.00	298.2	0.0	380.8
128.00	Appurtenance(s)	1.00	1.06	28.434	31.28	216.25	0.600	0.000	3.00	6.000	3.60	180.2	0.0	228.5
Totals:									128.00			11,044.3		23,049.7

Discrete Appurtenance Forces

Structure: CT13556-S-SBA

Code: EIA/TIA-222-G

9/1/2021

Site Name: Norwich

Exposure: B

Height: 128.00 (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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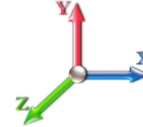


Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60

Iterations 21



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	128.00	RRUS 32 B30	3	28.434	31.277	0.50	0.75	4.13	216.00	0.000	0.000	206.71	0.00	0.00
2	128.00	Low Profile Platform	1	28.434	31.277	1.00	1.00	25.00	1440.00	0.000	0.000	1251.08	0.00	0.00
3	128.00	SBNHH-1D65C	2	28.434	31.277	0.63	0.75	14.35	119.04	0.000	0.000	718.19	0.00	0.00
4	128.00	AM-X-CD-16-65-00T-RET	1	28.434	31.277	0.63	0.75	3.81	39.60	0.000	0.000	190.74	0.00	0.00
5	128.00	HPA-65R-BUU-H8	2	28.434	31.277	0.59	0.75	15.38	163.20	0.000	0.000	769.73	0.00	0.00
6	128.00	HPA-65R-BUU-H6	1	28.434	31.277	0.62	0.75	6.01	61.20	0.000	0.000	300.93	0.00	0.00
7	128.00	RRUS-11	3	28.434	31.277	0.50	0.75	3.80	183.60	0.000	0.000	190.11	0.00	0.00
8	128.00	RRUS 4478 B14	3	28.434	31.277	0.50	0.75	2.49	213.84	0.000	0.000	124.48	0.00	0.00
9	128.00	HRK12-HD	1	28.434	31.277	1.00	1.00	9.75	487.93	0.000	0.000	487.92	0.00	0.00
10	128.00	4449 B5/B12	3	28.434	31.277	0.50	0.75	2.97	255.60	0.000	0.000	148.62	0.00	0.00
11	128.00	Pipe Masts	2	28.434	31.277	1.00	1.00	4.00	174.00	0.000	0.000	200.17	0.00	0.00
12	128.00	DC6-48-60-18-8F	3	28.434	31.277	0.75	0.75	2.07	114.48	0.000	0.000	103.59	0.00	0.00
13	128.00	DMP65R-BU8DA	2	28.434	31.277	0.54	0.75	19.30	198.00	0.000	0.000	965.81	0.00	0.00
14	128.00	DMP65R-BU6DA	1	28.434	31.277	0.54	0.75	6.86	95.28	0.000	0.000	343.47	0.00	0.00
15	117.00	782 11056	3	27.964	30.760	0.52	0.80	0.44	6.48	0.000	3.750	21.50	0.00	80.62
16	117.00	FE15501P77/75	6	27.964	30.760	0.62	0.80	6.47	504.00	0.000	3.750	318.33	0.00	1193.74
17	117.00	Low Profile Platform	1	27.713	30.484	1.00	1.00	22.00	1800.00	0.000	0.000	1073.04	0.00	0.00
18	117.00	MS-H1436 (Heavy Collar	1	27.713	30.484	1.00	1.00	2.25	164.04	0.000	0.000	109.74	0.00	0.00
19	117.00	(3) T-Arm Kit	1	27.713	30.484	1.00	1.00	16.50	600.00	0.000	0.000	804.78	0.00	0.00
20	117.00	pipes	1	27.713	30.484	1.00	1.00	8.75	516.00	0.000	0.000	426.78	0.00	0.00
21	117.00	AIR32	3	27.713	30.484	0.70	0.80	13.59	475.92	0.000	0.000	662.99	0.00	0.00
22	117.00	4415 B25	3	27.713	30.484	0.54	0.80	2.99	166.68	0.000	0.000	145.88	0.00	0.00
23	117.00	4449 B71 + B85	3	27.713	30.484	0.54	0.80	3.17	263.52	0.000	0.000	154.51	0.00	0.00
24	117.00	APXVAALL24-43-U-NA20	3	27.713	30.484	0.58	0.80	35.46	460.80	0.000	0.000	1729.58	0.00	0.00
25	117.00	AIR6449 B41	3	27.713	30.484	0.57	0.80	9.63	370.80	0.000	0.000	469.58	0.00	0.00
26	100.00	Low Profile Platform	1	26.497	29.147	1.00	1.00	22.00	1800.00	0.000	0.000	1025.97	0.00	0.00
27	100.00	BXA 70063 6CF 2	3	26.497	29.147	0.56	0.75	12.77	61.20	0.000	0.000	595.73	0.00	0.00
28	100.00	DB-T1-6Z-8AB-OZ	1	26.497	29.147	1.00	1.00	4.80	22.68	0.000	0.000	223.85	0.00	0.00
29	100.00	JMA Wireless	6	26.497	29.147	0.65	0.75	38.64	432.00	0.000	0.000	1802.03	0.00	0.00
30	100.00	VZS01	3	26.497	29.147	0.52	0.75	6.68	313.56	0.000	0.000	311.32	0.00	0.00
31	100.00	JMA 91900314-02	3	26.497	29.147	1.00	1.00	0.00	100.80	0.000	0.000	0.00	0.00	0.00
32	100.00	Samsung B2/B66A	3	26.497	29.147	0.50	0.75	2.82	303.84	0.000	0.000	131.47	0.00	0.00
33	100.00	B5/B13	3	26.497	29.147	0.50	0.75	2.82	253.08	0.000	0.000	131.47	0.00	0.00
34	100.00	Raycap	1	26.497	29.147	0.62	0.75	1.56	32.28	0.000	0.000	72.58	0.00	0.00
35	100.00	Mount mod	1	26.497	29.147	1.00	1.00	12.25	616.80	0.000	0.000	571.28	0.00	0.00
36	91.00	MC-PK8-DSH	1	25.793	28.372	1.00	1.00	37.59	2072.40	0.000	0.000	1706.41	0.00	0.00
37	91.00	RDIDC-9181-OF-48	1	25.793	28.372	0.50	0.75	1.01	26.28	0.000	0.000	45.85	0.00	0.00
38	91.00	TA08025-B605	3	25.793	28.372	0.50	0.75	2.95	270.00	0.000	0.000	134.13	0.00	0.00
39	91.00	TA08025-B604	3	25.793	28.372	0.50	0.75	2.95	230.04	0.000	0.000	134.13	0.00	0.00
40	91.00	MX08FRO665-21	3	25.793	28.372	0.55	0.75	20.80	232.20	0.000	0.000	944.03	0.00	0.00

Totals: 15,857.17

19,748.50

Total Applied Force Summary

Structure: CT13556-S-SBA	Code: EIA/TIA-222-G	9/1/2021
Site Name: Norwich	Exposure: B	
Height: 128.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

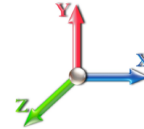


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Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 21

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		519.55	1546.03	0.00	0.00
10.00		506.47	1511.04	0.00	0.00
15.00		493.39	1476.05	0.00	0.00
20.00		480.31	1441.07	0.00	0.00
25.00		467.23	1406.08	0.00	0.00
30.00		454.53	1371.09	0.00	0.00
35.00		461.31	1336.10	0.00	0.00
40.00		465.04	1301.11	0.00	0.00
45.00		466.26	1266.13	0.00	0.00
47.25		207.90	558.34	0.00	0.00
50.00		257.69	1165.30	0.00	0.00
53.00		280.52	1249.11	0.00	0.00
55.00		185.89	411.81	0.00	0.00
60.00		465.25	1009.13	0.00	0.00
65.00		459.69	979.97	0.00	0.00
70.00		452.85	950.81	0.00	0.00
75.00		444.85	921.66	0.00	0.00
80.00		435.81	892.50	0.00	0.00
85.00		425.79	863.34	0.00	0.00
90.00		414.89	834.19	0.00	0.00
91.00	(11) attachments	3045.64	2994.26	0.00	0.00
95.00		321.06	636.89	0.00	0.00
96.75		137.52	272.77	0.00	0.00
100.00	(25) attachments	5120.64	4673.38	0.00	0.00
100.75		57.85	163.60	0.00	0.00
105.00		323.73	415.01	0.00	0.00
110.00		368.41	472.06	0.00	0.00
115.00		353.90	454.57	0.00	0.00
117.00	(28) attachments	6053.57	5505.17	0.00	1274.36
118.00		67.43	64.95	0.00	0.00
120.00		117.91	161.29	0.00	0.00
125.00		298.23	403.22	0.00	0.00
128.00	(28) attachments	6181.69	4003.70	0.00	0.00
Totals:		30,792.78	42,711.72	0.00	1,274.36

Calculated Forces

Structure: CT13556-S-SBA

Code: EIA/TIA-222-G

9/1/2021

Site Name: Norwich

Exposure: B

Height: 128.00 (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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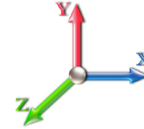


Load Case: 1.2D + 1.6W 105 mph Wind

Iterations 21

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	-42.67	-30.85	0.00	-2983.7	0.00	2983.70	4377.82	2188.91	10363.5	5189.46	0.00	0.000	0.000	0.585
5.00	-41.05	-30.43	0.00	-2829.4	0.00	2829.46	4316.11	2158.05	9960.07	4987.44	0.08	-0.144	0.000	0.577
10.00	-39.46	-30.02	0.00	-2677.3	0.00	2677.31	4251.94	2125.97	9558.48	4786.34	0.31	-0.292	0.000	0.569
15.00	-37.91	-29.62	0.00	-2527.2	0.00	2527.20	4185.32	2092.66	9159.16	4586.39	0.70	-0.443	0.000	0.560
20.00	-36.39	-29.23	0.00	-2379.1	0.00	2379.11	4116.24	2058.12	8762.56	4387.79	1.24	-0.597	0.000	0.551
25.00	-34.91	-28.84	0.00	-2232.9	0.00	2232.98	4044.71	2022.35	8369.11	4190.78	1.95	-0.754	0.000	0.542
30.00	-33.47	-28.46	0.00	-2088.7	0.00	2088.79	3970.72	1985.36	7979.26	3995.56	2.83	-0.914	0.000	0.531
35.00	-32.06	-28.07	0.00	-1946.5	0.00	1946.50	3894.27	1947.14	7593.45	3802.37	3.88	-1.077	0.000	0.520
40.00	-30.69	-27.66	0.00	-1806.1	0.00	1806.17	3815.37	1907.68	7212.11	3611.41	5.09	-1.243	0.000	0.508
45.00	-29.38	-27.23	0.00	-1667.8	0.00	1667.85	3734.01	1867.00	6835.68	3422.92	6.49	-1.412	0.000	0.495
47.25	-28.78	-27.05	0.00	-1606.5	0.00	1606.58	3696.60	1848.30	6668.01	3338.96	7.17	-1.491	0.000	0.489
50.00	-27.58	-26.81	0.00	-1532.1	0.00	1532.18	3650.19	1825.10	6464.60	3237.11	8.06	-1.587	0.000	0.481
53.00	-26.29	-26.54	0.00	-1451.7	0.00	1451.74	2850.91	1425.45	5035.48	2521.48	9.09	-1.693	0.000	0.585
55.00	-25.83	-26.40	0.00	-1398.6	0.00	1398.66	2827.15	1413.58	4926.09	2466.71	9.82	-1.764	0.000	0.577
60.00	-24.74	-25.99	0.00	-1266.6	0.00	1266.66	2766.03	1383.02	4654.68	2330.80	11.77	-1.963	0.000	0.553
65.00	-23.69	-25.58	0.00	-1136.7	0.00	1136.71	2702.46	1351.23	4386.56	2196.54	13.94	-2.161	0.000	0.527
70.00	-22.67	-25.17	0.00	-1008.8	0.00	1008.82	2636.43	1318.22	4122.19	2064.16	16.31	-2.359	0.000	0.498
75.00	-21.69	-24.75	0.00	-883.00	0.00	883.00	2567.95	1283.97	3862.00	1933.87	18.88	-2.554	0.000	0.465
80.00	-20.74	-24.35	0.00	-759.23	0.00	759.23	2497.00	1248.50	3606.43	1805.90	21.66	-2.743	0.000	0.429
85.00	-19.82	-23.94	0.00	-637.51	0.00	637.51	2423.61	1211.80	3355.92	1680.45	24.63	-2.925	0.000	0.388
90.00	-18.97	-23.51	0.00	-517.82	0.00	517.82	2347.75	1173.88	3110.91	1557.76	27.79	-3.096	0.000	0.341
91.00	-16.12	-20.33	0.00	-494.30	0.00	494.30	2332.29	1166.14	3062.60	1533.58	28.44	-3.130	0.000	0.330
95.00	-15.47	-20.00	0.00	-412.97	0.00	412.97	2269.44	1134.72	2871.83	1438.05	31.12	-3.256	0.000	0.294
96.75	-15.18	-19.87	0.00	-377.98	0.00	377.98	2237.32	1118.66	2784.49	1394.32	32.32	-3.309	0.000	0.278
100.00	-10.80	-14.49	0.00	-313.41	0.00	313.41	2168.36	1084.18	2614.63	1309.26	34.61	-3.400	0.000	0.245
100.75	-10.62	-14.44	0.00	-302.54	0.00	302.54	1113.72	556.86	1361.71	681.87	35.14	-3.421	0.000	0.454
105.00	-10.19	-14.11	0.00	-241.19	0.00	241.19	1088.50	544.25	1275.70	638.80	38.24	-3.526	0.000	0.388
110.00	-9.71	-13.74	0.00	-170.63	0.00	170.63	1056.55	528.27	1175.26	588.50	42.02	-3.695	0.000	0.300
115.00	-9.26	-13.37	0.00	-101.93	0.00	101.93	1022.14	511.07	1076.04	538.82	45.97	-3.825	0.000	0.199
117.00	-4.17	-6.96	0.00	-73.91	0.00	73.91	1007.69	503.85	1036.80	519.17	47.58	-3.865	0.000	0.147
118.00	-4.11	-6.89	0.00	-66.95	0.00	66.95	1000.32	500.16	1017.28	509.40	48.39	-3.882	0.000	0.136
118.00	-4.11	-6.89	0.00	-66.95	0.00	66.95	662.26	331.13	648.15	396.94	48.39	-3.882	0.000	0.175
120.00	-3.95	-6.77	0.00	-53.16	0.00	53.16	662.26	331.13	648.15	396.94	50.02	-3.912	0.000	0.140
125.00	-3.57	-6.44	0.00	-19.33	0.00	19.33	662.26	331.13	648.15	396.94	54.14	-3.951	0.000	0.054
128.00	0.00	-6.18	0.00	0.00	0.00	0.00	662.26	331.13	648.15	396.94	56.62	-3.957	0.000	0.000

Wind Loading - Shaft

Structure: CT13556-S-SBA

Code: EIA/TIA-222-G

9/1/2021

Site Name: Norwich

Exposure: B

Height: 128.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

Page: 13



Load Case: 0.9D + 1.6W 105 mph Wind

Iterations 21

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		1.00	0.70	18.769	20.65	430.49	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	18.769	20.65	419.78	0.650	0.000	5.00	24.197	15.73	519.5	0.0	1035.5
10.00		1.00	0.70	18.769	20.65	409.08	0.650	0.000	5.00	23.588	15.33	506.5	0.0	1009.2
15.00		1.00	0.70	18.769	20.65	398.38	0.650	0.000	5.00	22.978	14.94	493.4	0.0	983.0
20.00		1.00	0.70	18.769	20.65	387.67	0.650	0.000	5.00	22.369	14.54	480.3	0.0	956.7
25.00		1.00	0.70	18.769	20.65	376.97	0.650	0.000	5.00	21.760	14.14	467.2	0.0	930.5
30.00		1.00	0.70	18.785	20.66	366.42	0.650	0.000	5.00	21.151	13.75	454.5	0.0	904.3
35.00		1.00	0.73	19.631	21.59	363.63	0.650	0.000	5.00	20.542	13.35	461.3	0.0	878.0
40.00		1.00	0.76	20.394	22.43	359.48	0.650	0.000	5.00	19.933	12.96	465.0	0.0	851.8
45.00		1.00	0.79	21.092	23.20	354.23	0.650	0.000	5.00	19.323	12.56	466.3	0.0	825.5
47.25	Bot - Section 2	1.00	0.80	21.388	23.53	351.57	0.650	0.000	2.25	8.497	5.52	207.9	0.0	362.9
50.00		1.00	0.81	21.737	23.91	348.09	0.650	0.000	2.75	10.363	6.74	257.7	0.0	805.7
53.00	Top - Section 1	1.00	0.82	22.102	24.31	344.03	0.650	0.000	3.00	11.095	7.21	280.5	0.0	862.4
55.00		1.00	0.83	22.337	24.57	346.25	0.650	0.000	2.00	7.275	4.73	185.9	0.0	259.2
60.00		1.00	0.85	22.899	25.19	338.76	0.650	0.000	5.00	17.760	11.54	465.3	0.0	632.8
65.00		1.00	0.87	23.429	25.77	330.70	0.650	0.000	5.00	17.151	11.15	459.7	0.0	610.9
70.00		1.00	0.89	23.930	26.32	322.13	0.650	0.000	5.00	16.542	10.75	452.8	0.0	589.0
75.00		1.00	0.91	24.406	26.85	313.12	0.650	0.000	5.00	15.933	10.36	444.9	0.0	567.2
80.00		1.00	0.93	24.861	27.35	303.70	0.650	0.000	5.00	15.323	9.96	435.8	0.0	545.3
85.00		1.00	0.94	25.295	27.82	293.91	0.650	0.000	5.00	14.714	9.56	425.8	0.0	523.4
90.00		1.00	0.96	25.711	28.28	283.80	0.650	0.000	5.00	14.105	9.17	414.9	0.0	501.6
91.00	Appurtenance(s)	1.00	0.96	25.793	28.37	281.74	0.650	0.000	1.00	2.748	1.79	81.1	0.0	97.7
95.00		1.00	0.97	26.112	28.72	273.37	0.650	0.000	4.00	10.748	6.99	321.1	0.0	382.0
96.75	Bot - Section 3	1.00	0.98	26.248	28.87	269.66	0.650	0.000	1.75	4.580	2.98	137.5	0.0	162.7
100.00	Appurtenance(s)	1.00	0.99	26.497	29.15	262.67	0.650	0.000	3.25	8.410	5.47	254.9	0.0	475.1
100.75	Top - Section 2	1.00	0.99	26.554	29.21	261.04	0.650	0.000	0.75	1.904	1.24	57.8	0.0	107.5
105.00		1.00	1.00	26.869	29.56	255.03	0.650	0.000	4.25	10.532	6.85	323.7	0.0	225.4
110.00		1.00	1.02	27.229	29.95	243.84	0.650	0.000	5.00	11.827	7.69	368.4	0.0	253.0
115.00		1.00	1.03	27.577	30.33	232.42	0.650	0.000	5.00	11.218	7.29	353.9	0.0	239.9
117.00	Appurtenance(s)	1.00	1.03	27.713	30.48	227.79	0.650	0.000	2.00	4.317	2.81	136.9	0.0	92.3
118.00	Top - Section 3	1.00	1.04	27.780	30.56	225.46	0.650	0.000	1.00	2.122	1.38	67.4	0.0	45.4
120.00		1.00	1.04	27.914	30.71	214.27	0.600	0.000	2.00	4.000	2.40	117.9	0.0	114.3
125.00		1.00	1.05	28.242	31.07	215.52	0.600	0.000	5.00	10.000	6.00	298.2	0.0	285.6
128.00	Appurtenance(s)	1.00	1.06	28.434	31.28	216.25	0.600	0.000	3.00	6.000	3.60	180.2	0.0	171.4
Totals:									128.00			11,044.3		17,287.3

Discrete Appurtenance Forces

Structure: CT13556-S-SBA

Code: EIA/TIA-222-G

9/1/2021

Site Name: Norwich

Exposure: B

Height: 128.00 (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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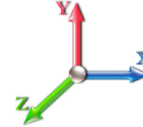


Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60

Iterations 21



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	128.00	RRUS 32 B30	3	28.434	31.277	0.50	0.75	4.13	162.00	0.000	0.000	206.71	0.00	0.00
2	128.00	Low Profile Platform	1	28.434	31.277	1.00	1.00	25.00	1080.00	0.000	0.000	1251.08	0.00	0.00
3	128.00	SBNHH-1D65C	2	28.434	31.277	0.63	0.75	14.35	89.28	0.000	0.000	718.19	0.00	0.00
4	128.00	AM-X-CD-16-65-00T-RET	1	28.434	31.277	0.63	0.75	3.81	29.70	0.000	0.000	190.74	0.00	0.00
5	128.00	HPA-65R-BUU-H8	2	28.434	31.277	0.59	0.75	15.38	122.40	0.000	0.000	769.73	0.00	0.00
6	128.00	HPA-65R-BUU-H6	1	28.434	31.277	0.62	0.75	6.01	45.90	0.000	0.000	300.93	0.00	0.00
7	128.00	RRUS-11	3	28.434	31.277	0.50	0.75	3.80	137.70	0.000	0.000	190.11	0.00	0.00
8	128.00	RRUS 4478 B14	3	28.434	31.277	0.50	0.75	2.49	160.38	0.000	0.000	124.48	0.00	0.00
9	128.00	HRK12-HD	1	28.434	31.277	1.00	1.00	9.75	365.95	0.000	0.000	487.92	0.00	0.00
10	128.00	4449 B5/B12	3	28.434	31.277	0.50	0.75	2.97	191.70	0.000	0.000	148.62	0.00	0.00
11	128.00	Pipe Masts	2	28.434	31.277	1.00	1.00	4.00	130.50	0.000	0.000	200.17	0.00	0.00
12	128.00	DC6-48-60-18-8F	3	28.434	31.277	0.75	0.75	2.07	85.86	0.000	0.000	103.59	0.00	0.00
13	128.00	DMP65R-BU8DA	2	28.434	31.277	0.54	0.75	19.30	148.50	0.000	0.000	965.81	0.00	0.00
14	128.00	DMP65R-BU6DA	1	28.434	31.277	0.54	0.75	6.86	71.46	0.000	0.000	343.47	0.00	0.00
15	117.00	782 11056	3	27.964	30.760	0.52	0.80	0.44	4.86	0.000	3.750	21.50	0.00	80.62
16	117.00	FE15501P77/75	6	27.964	30.760	0.62	0.80	6.47	378.00	0.000	3.750	318.33	0.00	1193.74
17	117.00	Low Profile Platform	1	27.713	30.484	1.00	1.00	22.00	1350.00	0.000	0.000	1073.04	0.00	0.00
18	117.00	MS-H1436 (Heavy Collar	1	27.713	30.484	1.00	1.00	2.25	123.03	0.000	0.000	109.74	0.00	0.00
19	117.00	(3) T-Arm Kit	1	27.713	30.484	1.00	1.00	16.50	450.00	0.000	0.000	804.78	0.00	0.00
20	117.00	pipes	1	27.713	30.484	1.00	1.00	8.75	387.00	0.000	0.000	426.78	0.00	0.00
21	117.00	AIR32	3	27.713	30.484	0.70	0.80	13.59	356.94	0.000	0.000	662.99	0.00	0.00
22	117.00	4415 B25	3	27.713	30.484	0.54	0.80	2.99	125.01	0.000	0.000	145.88	0.00	0.00
23	117.00	4449 B71 + B85	3	27.713	30.484	0.54	0.80	3.17	197.64	0.000	0.000	154.51	0.00	0.00
24	117.00	APXVAALL24-43-U-NA20	3	27.713	30.484	0.58	0.80	35.46	345.60	0.000	0.000	1729.58	0.00	0.00
25	117.00	AIR6449 B41	3	27.713	30.484	0.57	0.80	9.63	278.10	0.000	0.000	469.58	0.00	0.00
26	100.00	Low Profile Platform	1	26.497	29.147	1.00	1.00	22.00	1350.00	0.000	0.000	1025.97	0.00	0.00
27	100.00	BXA 70063 6CF 2	3	26.497	29.147	0.56	0.75	12.77	45.90	0.000	0.000	595.73	0.00	0.00
28	100.00	DB-T1-6Z-8AB-0Z	1	26.497	29.147	1.00	1.00	4.80	17.01	0.000	0.000	223.85	0.00	0.00
29	100.00	JMA Wireless	6	26.497	29.147	0.65	0.75	38.64	324.00	0.000	0.000	1802.03	0.00	0.00
30	100.00	VZS01	3	26.497	29.147	0.52	0.75	6.68	235.17	0.000	0.000	311.32	0.00	0.00
31	100.00	JMA 91900314-02	3	26.497	29.147	1.00	1.00	0.00	75.60	0.000	0.000	0.00	0.00	0.00
32	100.00	Samsung B2/B66A	3	26.497	29.147	0.50	0.75	2.82	227.88	0.000	0.000	131.47	0.00	0.00
33	100.00	B5/B13	3	26.497	29.147	0.50	0.75	2.82	189.81	0.000	0.000	131.47	0.00	0.00
34	100.00	Raycap	1	26.497	29.147	0.62	0.75	1.56	24.21	0.000	0.000	72.58	0.00	0.00
35	100.00	Mount mod	1	26.497	29.147	1.00	1.00	12.25	462.60	0.000	0.000	571.28	0.00	0.00
36	91.00	MC-PK8-DSH	1	25.793	28.372	1.00	1.00	37.59	1554.30	0.000	0.000	1706.41	0.00	0.00
37	91.00	RDIDC-9181-OF-48	1	25.793	28.372	0.50	0.75	1.01	19.71	0.000	0.000	45.85	0.00	0.00
38	91.00	TA08025-B605	3	25.793	28.372	0.50	0.75	2.95	202.50	0.000	0.000	134.13	0.00	0.00
39	91.00	TA08025-B604	3	25.793	28.372	0.50	0.75	2.95	172.53	0.000	0.000	134.13	0.00	0.00
40	91.00	MX08FRO665-21	3	25.793	28.372	0.55	0.75	20.80	174.15	0.000	0.000	944.03	0.00	0.00

Totals: 11,892.88

19,748.50

Total Applied Force Summary

Structure: CT13556-S-SBA	Code: EIA/TIA-222-G	9/1/2021
Site Name: Norwich	Exposure: B	
Height: 128.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

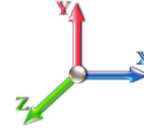


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Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 21

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		519.55	1159.52	0.00	0.00
10.00		506.47	1133.28	0.00	0.00
15.00		493.39	1107.04	0.00	0.00
20.00		480.31	1080.80	0.00	0.00
25.00		467.23	1054.56	0.00	0.00
30.00		454.53	1028.32	0.00	0.00
35.00		461.31	1002.08	0.00	0.00
40.00		465.04	975.84	0.00	0.00
45.00		466.26	949.59	0.00	0.00
47.25		207.90	418.76	0.00	0.00
50.00		257.69	873.97	0.00	0.00
53.00		280.52	936.83	0.00	0.00
55.00		185.89	308.86	0.00	0.00
60.00		465.25	756.85	0.00	0.00
65.00		459.69	734.98	0.00	0.00
70.00		452.85	713.11	0.00	0.00
75.00		444.85	691.24	0.00	0.00
80.00		435.81	669.38	0.00	0.00
85.00		425.79	647.51	0.00	0.00
90.00		414.89	625.64	0.00	0.00
91.00	(11) attachments	3045.64	2245.69	0.00	0.00
95.00		321.06	477.67	0.00	0.00
96.75		137.52	204.58	0.00	0.00
100.00	(25) attachments	5120.64	3505.03	0.00	0.00
100.75		57.85	122.70	0.00	0.00
105.00		323.73	311.25	0.00	0.00
110.00		368.41	354.04	0.00	0.00
115.00		353.90	340.92	0.00	0.00
117.00	(28) attachments	6053.57	4128.88	0.00	1274.36
118.00		67.43	48.71	0.00	0.00
120.00		117.91	120.96	0.00	0.00
125.00		298.23	302.41	0.00	0.00
128.00	(28) attachments	6181.69	3002.78	0.00	0.00
Totals:		30,792.78	32,033.79	0.00	1,274.36

Calculated Forces

Structure: CT13556-S-SBA

Code: EIA/TIA-222-G

9/1/2021

Site Name: Norwich

Exposure: B

Height: 128.00 (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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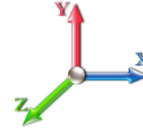


Load Case: 0.9D + 1.6W 105 mph Wind

Iterations 21

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	-31.99	-30.83	0.00	-2961.4	0.00	2961.44	4377.82	2188.91	10363.5	5189.46	0.00	0.000	0.000	0.578
5.00	-30.76	-30.39	0.00	-2807.2	0.00	2807.27	4316.11	2158.05	9960.07	4987.44	0.08	-0.143	0.000	0.570
10.00	-29.55	-29.96	0.00	-2655.3	0.00	2655.32	4251.94	2125.97	9558.48	4786.34	0.31	-0.290	0.000	0.562
15.00	-28.37	-29.53	0.00	-2505.5	0.00	2505.54	4185.32	2092.66	9159.16	4586.39	0.69	-0.439	0.000	0.553
20.00	-27.21	-29.11	0.00	-2357.8	0.00	2357.89	4116.24	2058.12	8762.56	4387.79	1.23	-0.592	0.000	0.544
25.00	-26.09	-28.71	0.00	-2212.3	0.00	2212.32	4044.71	2022.35	8369.11	4190.78	1.94	-0.748	0.000	0.535
30.00	-24.98	-28.31	0.00	-2068.7	0.00	2068.79	3970.72	1985.36	7979.26	3995.56	2.81	-0.906	0.000	0.524
35.00	-23.91	-27.90	0.00	-1927.2	0.00	1927.26	3894.27	1947.14	7593.45	3802.37	3.84	-1.068	0.000	0.513
40.00	-22.87	-27.48	0.00	-1787.7	0.00	1787.78	3815.37	1907.68	7212.11	3611.41	5.05	-1.232	0.000	0.501
45.00	-21.87	-27.04	0.00	-1650.3	0.00	1650.39	3734.01	1867.00	6835.68	3422.92	6.43	-1.399	0.000	0.488
47.25	-21.42	-26.85	0.00	-1589.5	0.00	1589.56	3696.60	1848.30	6668.01	3338.96	7.11	-1.477	0.000	0.482
50.00	-20.50	-26.61	0.00	-1515.7	0.00	1515.72	3650.19	1825.10	6464.60	3237.11	7.99	-1.572	0.000	0.474
53.00	-19.53	-26.33	0.00	-1435.9	0.00	1435.90	2850.91	1425.45	5035.48	2521.48	9.01	-1.677	0.000	0.577
55.00	-19.17	-26.18	0.00	-1383.2	0.00	1383.25	2827.15	1413.58	4926.09	2466.71	9.73	-1.747	0.000	0.568
60.00	-18.34	-25.75	0.00	-1252.3	0.00	1252.36	2766.03	1383.02	4654.68	2330.80	11.67	-1.944	0.000	0.544
65.00	-17.53	-25.33	0.00	-1123.6	0.00	1123.60	2702.46	1351.23	4386.56	2196.54	13.81	-2.140	0.000	0.518
70.00	-16.76	-24.90	0.00	-996.96	0.00	996.96	2636.43	1318.22	4122.19	2064.16	16.16	-2.336	0.000	0.490
75.00	-16.00	-24.48	0.00	-872.45	0.00	872.45	2567.95	1283.97	3862.00	1933.87	18.71	-2.528	0.000	0.458
80.00	-15.28	-24.07	0.00	-750.03	0.00	750.03	2497.00	1248.50	3606.43	1805.90	21.46	-2.715	0.000	0.422
85.00	-14.58	-23.65	0.00	-629.71	0.00	629.71	2423.61	1211.80	3355.92	1680.45	24.40	-2.895	0.000	0.381
90.00	-13.94	-23.23	0.00	-511.44	0.00	511.44	2347.75	1173.88	3110.91	1557.76	27.52	-3.064	0.000	0.335
91.00	-11.83	-20.09	0.00	-488.21	0.00	488.21	2332.29	1166.14	3062.60	1533.58	28.17	-3.097	0.000	0.324
95.00	-11.34	-19.76	0.00	-407.87	0.00	407.87	2269.44	1134.72	2871.83	1438.05	30.82	-3.221	0.000	0.289
96.75	-11.12	-19.62	0.00	-373.30	0.00	373.30	2237.32	1118.66	2784.49	1394.32	32.01	-3.274	0.000	0.273
100.00	-7.90	-14.31	0.00	-309.53	0.00	309.53	2168.36	1084.18	2614.63	1309.26	34.27	-3.364	0.000	0.240
100.75	-7.77	-14.26	0.00	-298.80	0.00	298.80	1113.72	556.86	1361.71	681.87	34.80	-3.384	0.000	0.446
105.00	-7.44	-13.93	0.00	-238.21	0.00	238.21	1088.50	544.25	1275.70	638.80	37.86	-3.488	0.000	0.380
110.00	-7.08	-13.56	0.00	-168.54	0.00	168.54	1056.55	528.27	1175.26	588.50	41.61	-3.655	0.000	0.294
115.00	-6.74	-13.20	0.00	-100.74	0.00	100.74	1022.14	511.07	1076.04	538.82	45.51	-3.784	0.000	0.194
117.00	-3.02	-6.88	0.00	-73.07	0.00	73.07	1007.69	503.85	1036.80	519.17	47.10	-3.823	0.000	0.144
118.00	-2.97	-6.81	0.00	-66.19	0.00	66.19	1000.32	500.16	1017.28	509.40	47.90	-3.840	0.000	0.133
118.00	-2.97	-6.81	0.00	-66.19	0.00	66.19	662.26	331.13	648.15	396.94	47.90	-3.840	0.000	0.172
120.00	-2.86	-6.69	0.00	-52.56	0.00	52.56	662.26	331.13	648.15	396.94	49.52	-3.870	0.000	0.137
125.00	-2.57	-6.37	0.00	-19.12	0.00	19.12	662.26	331.13	648.15	396.94	53.59	-3.908	0.000	0.052
128.00	0.00	-6.18	0.00	0.00	0.00	0.00	662.26	331.13	648.15	396.94	56.05	-3.914	0.000	0.000

Wind Loading - Shaft

Structure: CT13556-S-SBA

Code: EIA/TIA-222-G

9/1/2021

Site Name: Norwich

Exposure: B

Height: 128.00 (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



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

Iterations 20

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		1.00	0.70	4.256	4.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	4.256	4.68	0.00	1.200	1.242	5.00	25.232	30.28	141.8	444.5	1825.1
10.00		1.00	0.70	4.256	4.68	0.00	1.200	1.331	5.00	24.697	29.64	138.7	465.2	1810.8
15.00		1.00	0.70	4.256	4.68	0.00	1.200	1.386	5.00	24.134	28.96	135.6	472.6	1783.2
20.00		1.00	0.70	4.256	4.68	0.00	1.200	1.427	5.00	23.558	28.27	132.3	474.0	1749.6
25.00		1.00	0.70	4.256	4.68	0.00	1.200	1.459	5.00	22.976	27.57	129.1	471.9	1712.6
30.00		1.00	0.70	4.260	4.69	0.00	1.200	1.486	5.00	22.389	26.87	125.9	467.6	1673.2
35.00		1.00	0.73	4.451	4.90	0.00	1.200	1.509	5.00	21.799	26.16	128.1	461.6	1632.3
40.00		1.00	0.76	4.625	5.09	0.00	1.200	1.529	5.00	21.207	25.45	129.5	454.3	1590.0
45.00		1.00	0.79	4.783	5.26	0.00	1.200	1.547	5.00	20.613	24.74	130.1	446.0	1546.7
47.25	Bot - Section 2	1.00	0.80	4.850	5.33	0.00	1.200	1.555	2.25	9.080	10.90	58.1	198.9	682.8
50.00		1.00	0.81	4.929	5.42	0.00	1.200	1.564	2.75	11.080	13.30	72.1	243.7	1318.0
53.00	Top - Section 1	1.00	0.82	5.012	5.51	0.00	1.200	1.573	3.00	11.881	14.26	78.6	262.4	1412.2
55.00		1.00	0.83	5.065	5.57	0.00	1.200	1.579	2.00	7.801	9.36	52.2	173.3	519.0
60.00		1.00	0.85	5.193	5.71	0.00	1.200	1.592	5.00	19.087	22.90	130.8	423.0	1266.7
65.00		1.00	0.87	5.313	5.84	0.00	1.200	1.605	5.00	18.489	22.19	129.7	412.2	1226.7
70.00		1.00	0.89	5.426	5.97	0.00	1.200	1.617	5.00	17.889	21.47	128.1	400.9	1186.3
75.00		1.00	0.91	5.534	6.09	0.00	1.200	1.628	5.00	17.290	20.75	126.3	389.3	1145.5
80.00		1.00	0.93	5.637	6.20	0.00	1.200	1.639	5.00	16.689	20.03	124.2	377.3	1104.4
85.00		1.00	0.94	5.736	6.31	0.00	1.200	1.649	5.00	16.088	19.31	121.8	364.9	1062.9
90.00		1.00	0.96	5.830	6.41	0.00	1.200	1.658	5.00	15.487	18.58	119.2	352.3	1021.1
91.00	Appurtenance(s)	1.00	0.96	5.849	6.43	0.00	1.200	1.660	1.00	3.025	3.63	23.4	70.0	200.2
95.00		1.00	0.97	5.921	6.51	0.00	1.200	1.667	4.00	11.860	14.23	92.7	271.5	780.9
96.75	Bot - Section 3	1.00	0.98	5.952	6.55	0.00	1.200	1.670	1.75	5.067	6.08	39.8	117.2	334.2
100.00	Appurtenance(s)	1.00	0.99	6.008	6.61	0.00	1.200	1.676	3.25	9.318	11.18	73.9	214.6	848.1
100.75	Top - Section 2	1.00	0.99	6.021	6.62	0.00	1.200	1.677	0.75	2.114	2.54	16.8	49.2	192.6
105.00		1.00	1.00	6.093	6.70	0.00	1.200	1.684	4.25	11.725	14.07	94.3	269.3	569.8
110.00		1.00	1.02	6.174	6.79	0.00	1.200	1.692	5.00	13.237	15.88	107.9	303.3	640.7
115.00		1.00	1.03	6.253	6.88	0.00	1.200	1.699	5.00	12.634	15.16	104.3	289.5	609.4
117.00	Appurtenance(s)	1.00	1.03	6.284	6.91	0.00	1.200	1.702	2.00	4.884	5.86	40.5	113.6	236.6
118.00	Top - Section 3	1.00	1.04	6.299	6.93	0.00	1.200	1.704	1.00	2.406	2.89	20.0	56.2	116.7
120.00		1.00	1.04	6.330	6.96	0.00	1.200	1.707	2.00	4.569	5.48	38.2	107.2	259.5
125.00		1.00	1.05	6.404	7.04	0.00	1.200	1.714	5.00	11.428	13.71	96.6	269.2	650.0
128.00	Appurtenance(s)	1.00	1.06	6.448	7.09	0.00	1.200	1.718	3.00	6.859	8.23	58.4	161.9	390.4
Totals:									128.00			3,138.8		33,098.5

Discrete Appurtenance Forces

Structure: CT13556-S-SBA

Code: EIA/TIA-222-G

9/1/2021

Site Name: Norwich

Exposure: B

Height: 128.00 (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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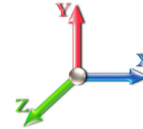


Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00

Iterations 20



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	128.00	RRUS 32 B30	3	6.448	7.092	0.50	0.75	5.55	410.56	0.000	0.000	39.36	0.00	0.00
2	128.00	Low Profile Platform	1	6.448	7.092	1.00	1.00	45.61	2170.65	0.000	0.000	323.50	0.00	0.00
3	128.00	SBHH-1D65C	2	6.448	7.092	0.64	0.75	16.60	518.36	0.000	0.000	117.72	0.00	0.00
4	128.00	AM-X-CD-16-65-00T-RET	1	6.448	7.092	0.65	0.75	5.23	140.61	0.000	0.000	37.13	0.00	0.00
5	128.00	HPA-65R-BUU-H8	2	6.448	7.092	0.61	0.75	17.71	615.03	0.000	0.000	125.61	0.00	0.00
6	128.00	HPA-65R-BUU-H6	1	6.448	7.092	0.64	0.75	7.02	232.49	0.000	0.000	49.77	0.00	0.00
7	128.00	RRUS-11	3	6.448	7.092	0.50	0.75	4.74	349.01	0.000	0.000	33.61	0.00	0.00
8	128.00	RRUS 4478 B14	3	6.448	7.092	0.50	0.75	3.26	308.08	0.000	0.000	23.10	0.00	0.00
9	128.00	HRK12-HD	1	6.448	7.092	1.00	1.00	19.13	1369.49	0.000	0.000	135.67	0.00	0.00
10	128.00	4449 B5/B12	3	6.448	7.092	0.50	0.75	3.78	372.42	0.000	0.000	26.82	0.00	0.00
11	128.00	Pipe Masts	2	6.448	7.092	1.00	1.00	8.95	278.48	0.000	0.000	63.46	0.00	0.00
12	128.00	DC6-48-60-18-8F	3	6.448	7.092	0.75	0.75	3.04	243.94	0.000	0.000	21.56	0.00	0.00
13	128.00	DMP65R-BU8DA	2	6.448	7.092	0.54	0.75	21.21	797.08	0.000	0.000	150.42	0.00	0.00
14	128.00	DMP65R-BU6DA	1	6.448	7.092	0.54	0.75	7.64	317.89	0.000	0.000	54.20	0.00	0.00
15	117.00	782 11056	3	6.341	6.975	0.52	0.80	1.05	11.61	0.000	3.750	7.31	0.00	27.40
16	117.00	FE15501P77/75	6	6.341	6.975	0.62	0.80	8.67	1011.20	0.000	3.750	60.48	0.00	226.78
17	117.00	Low Profile Platform	1	6.284	6.913	1.00	1.00	39.23	2776.79	0.000	0.000	271.17	0.00	0.00
18	117.00	MS-H1436 (Heavy Collar	1	6.284	6.913	1.00	1.00	4.55	290.11	0.000	0.000	31.44	0.00	0.00
19	117.00	(3) T-Arm Kit	1	6.284	6.913	1.00	1.00	32.23	1028.81	0.000	0.000	222.79	0.00	0.00
20	117.00	pipes	1	6.284	6.913	1.00	1.00	17.09	1443.78	0.000	0.000	118.15	0.00	0.00
21	117.00	AIR32	3	6.284	6.913	0.70	0.80	15.87	1009.73	0.000	0.000	109.73	0.00	0.00
22	117.00	4415 B25	3	6.284	6.913	0.54	0.80	3.87	343.30	0.000	0.000	26.78	0.00	0.00
23	117.00	4449 B71 + B85	3	6.284	6.913	0.54	0.80	4.06	257.30	0.000	0.000	28.07	0.00	0.00
24	117.00	APXVAALL24-43-U-NA20	3	6.284	6.913	0.58	0.80	38.70	1708.58	0.000	0.000	267.55	0.00	0.00
25	117.00	AIR6449 B41	3	6.284	6.913	0.57	0.80	11.21	676.96	0.000	0.000	77.47	0.00	0.00
26	100.00	Low Profile Platform	1	6.008	6.609	1.00	1.00	38.96	2756.90	0.000	0.000	257.50	0.00	0.00
27	100.00	BXA 70063 6CF 2	3	6.008	6.609	0.59	0.75	17.94	347.64	0.000	0.000	118.59	0.00	0.00
28	100.00	DB-T1-6Z-8AB-OZ	1	6.008	6.609	1.00	1.00	6.41	111.85	0.000	0.000	42.36	0.00	0.00
29	100.00	JMA Wireless	6	6.008	6.609	0.65	0.75	43.80	1972.29	0.000	0.000	289.50	0.00	0.00
30	100.00	VZS01	3	6.008	6.609	0.52	0.75	7.99	630.67	0.000	0.000	52.81	0.00	0.00
31	100.00	JMA 91900314-02	3	6.008	6.609	1.00	1.00	0.00	161.61	0.000	0.000	0.00	0.00	0.00
32	100.00	Samsung B2/B66A	3	6.008	6.609	0.50	0.75	3.65	522.27	0.000	0.000	24.10	0.00	0.00
33	100.00	B5/B13	3	6.008	6.609	0.50	0.75	3.65	450.86	0.000	0.000	24.10	0.00	0.00
34	100.00	Raycap	1	6.008	6.609	0.62	0.75	1.93	108.38	0.000	0.000	12.77	0.00	0.00
35	100.00	Mount mod	1	6.008	6.609	1.00	1.00	23.75	1716.55	0.000	0.000	156.95	0.00	0.00
36	91.00	MC-PK8-DSH	1	5.849	6.434	1.00	1.00	82.52	3304.95	0.000	0.000	530.91	0.00	0.00
37	91.00	RDIDC-9181-OF-48	1	5.849	6.434	0.50	0.75	1.28	64.23	0.000	0.000	8.25	0.00	0.00
38	91.00	TA08025-B605	3	5.849	6.434	0.50	0.75	3.76	381.46	0.000	0.000	24.18	0.00	0.00
39	91.00	TA08025-B604	3	5.849	6.434	0.50	0.75	3.76	338.22	0.000	0.000	24.18	0.00	0.00
40	91.00	MX08FRO665-21	3	5.849	6.434	0.55	0.75	23.12	860.68	0.000	0.000	148.72	0.00	0.00

Totals: 32,410.82

4,137.74

Total Applied Force Summary

Structure: CT13556-S-SBA	Code: EIA/TIA-222-G	9/1/2021
Site Name: Norwich	Exposure: B	
Height: 128.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



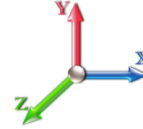
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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00

Iterations 20



Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		141.75	1990.51	0.00	0.00
10.00		138.75	1976.26	0.00	0.00
15.00		135.58	1948.61	0.00	0.00
20.00		132.35	1915.03	0.00	0.00
25.00		129.08	1877.99	0.00	0.00
30.00		125.89	1838.66	0.00	0.00
35.00		128.09	1797.67	0.00	0.00
40.00		129.45	1755.42	0.00	0.00
45.00		130.13	1712.17	0.00	0.00
47.25		58.13	757.26	0.00	0.00
50.00		72.09	1408.96	0.00	0.00
53.00		78.60	1511.47	0.00	0.00
55.00		52.16	585.14	0.00	0.00
60.00		130.83	1432.14	0.00	0.00
65.00		129.65	1392.17	0.00	0.00
70.00		128.14	1351.75	0.00	0.00
75.00		126.31	1310.94	0.00	0.00
80.00		124.19	1269.77	0.00	0.00
85.00		121.81	1228.28	0.00	0.00
90.00		119.19	1186.50	0.00	0.00
91.00	(11) attachments	759.59	5182.84	0.00	0.00
95.00		92.69	908.43	0.00	0.00
96.75		39.81	389.97	0.00	0.00
100.00	(25) attachments	1052.57	9730.77	0.00	0.00
100.75		16.80	212.83	0.00	0.00
105.00		94.30	684.33	0.00	0.00
110.00		107.88	775.36	0.00	0.00
115.00		104.28	744.12	0.00	0.00
117.00	(28) attachments	1261.43	10848.72	0.00	254.18
118.00		20.00	121.19	0.00	0.00
120.00		38.17	268.49	0.00	0.00
125.00		96.60	672.39	0.00	0.00
128.00	(28) attachments	1260.28	8527.92	0.00	0.00
Totals:		7,276.56	69,314.09	0.00	254.18

Calculated Forces

Structure: CT13556-S-SBA

Code: EIA/TIA-222-G

9/1/2021

Site Name: Norwich

Exposure: B

Height: 128.00 (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

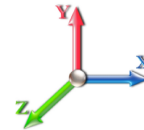


Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 20

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	-69.31	-7.30	0.00	-696.22	0.00	696.22	4377.82	2188.91	10363.5	5189.46	0.00	0.000	0.000	0.150
5.00	-67.32	-7.19	0.00	-659.73	0.00	659.73	4316.11	2158.05	9960.07	4987.44	0.02	-0.034	0.000	0.148
10.00	-65.34	-7.09	0.00	-623.76	0.00	623.76	4251.94	2125.97	9558.48	4786.34	0.07	-0.068	0.000	0.146
15.00	-63.38	-6.99	0.00	-588.29	0.00	588.29	4185.32	2092.66	9159.16	4586.39	0.16	-0.103	0.000	0.143
20.00	-61.46	-6.90	0.00	-553.32	0.00	553.32	4116.24	2058.12	8762.56	4387.79	0.29	-0.139	0.000	0.141
25.00	-59.58	-6.80	0.00	-518.84	0.00	518.84	4044.71	2022.35	8369.11	4190.78	0.46	-0.176	0.000	0.139
30.00	-57.74	-6.71	0.00	-484.83	0.00	484.83	3970.72	1985.36	7979.26	3995.56	0.66	-0.213	0.000	0.136
35.00	-55.94	-6.61	0.00	-451.30	0.00	451.30	3894.27	1947.14	7593.45	3802.37	0.90	-0.251	0.000	0.133
40.00	-54.18	-6.51	0.00	-418.25	0.00	418.25	3815.37	1907.68	7212.11	3611.41	1.19	-0.289	0.000	0.130
45.00	-52.46	-6.39	0.00	-385.72	0.00	385.72	3734.01	1867.00	6835.68	3422.92	1.51	-0.328	0.000	0.127
47.25	-51.71	-6.35	0.00	-371.33	0.00	371.33	3696.60	1848.30	6668.01	3338.96	1.67	-0.346	0.000	0.125
50.00	-50.29	-6.29	0.00	-353.87	0.00	353.87	3650.19	1825.10	6464.60	3237.11	1.88	-0.369	0.000	0.123
53.00	-48.78	-6.22	0.00	-335.00	0.00	335.00	2850.91	1425.45	5035.48	2521.48	2.11	-0.393	0.000	0.150
55.00	-48.19	-6.19	0.00	-322.56	0.00	322.56	2827.15	1413.58	4926.09	2466.71	2.28	-0.409	0.000	0.148
60.00	-46.76	-6.08	0.00	-291.62	0.00	291.62	2766.03	1383.02	4654.68	2330.80	2.74	-0.455	0.000	0.142
65.00	-45.36	-5.98	0.00	-261.20	0.00	261.20	2702.46	1351.23	4386.56	2196.54	3.24	-0.501	0.000	0.136
70.00	-44.01	-5.87	0.00	-231.30	0.00	231.30	2636.43	1318.22	4122.19	2064.16	3.79	-0.546	0.000	0.129
75.00	-42.69	-5.77	0.00	-201.94	0.00	201.94	2567.95	1283.97	3862.00	1933.87	4.38	-0.591	0.000	0.121
80.00	-41.42	-5.66	0.00	-173.10	0.00	173.10	2497.00	1248.50	3606.43	1805.90	5.03	-0.634	0.000	0.112
85.00	-40.19	-5.55	0.00	-144.81	0.00	144.81	2423.61	1211.80	3355.92	1680.45	5.71	-0.676	0.000	0.103
90.00	-39.00	-5.43	0.00	-117.05	0.00	117.05	2347.75	1173.88	3110.91	1557.76	6.44	-0.714	0.000	0.092
91.00	-33.83	-4.62	0.00	-111.61	0.00	111.61	2332.29	1166.14	3062.60	1533.58	6.59	-0.722	0.000	0.087
95.00	-32.92	-4.53	0.00	-93.13	0.00	93.13	2269.44	1134.72	2871.83	1438.05	7.21	-0.750	0.000	0.079
96.75	-32.53	-4.49	0.00	-85.21	0.00	85.21	2237.32	1118.66	2784.49	1394.32	7.49	-0.762	0.000	0.076
100.00	-22.81	-3.31	0.00	-70.61	0.00	70.61	2168.36	1084.18	2614.63	1309.26	8.02	-0.783	0.000	0.064
100.75	-22.60	-3.30	0.00	-68.13	0.00	68.13	1113.72	556.86	1361.71	681.87	8.14	-0.788	0.000	0.120
105.00	-21.91	-3.21	0.00	-54.11	0.00	54.11	1088.50	544.25	1275.70	638.80	8.85	-0.811	0.000	0.105
110.00	-21.14	-3.10	0.00	-38.08	0.00	38.08	1056.55	528.27	1175.26	588.50	9.72	-0.849	0.000	0.085
115.00	-20.40	-2.99	0.00	-22.58	0.00	22.58	1022.14	511.07	1076.04	538.82	10.63	-0.878	0.000	0.062
117.00	-9.57	-1.56	0.00	-16.34	0.00	16.34	1007.69	503.85	1036.80	519.17	11.00	-0.887	0.000	0.041
118.00	-9.45	-1.54	0.00	-14.78	0.00	14.78	1000.32	500.16	1017.28	509.40	11.18	-0.891	0.000	0.038
118.00	-9.45	-1.54	0.00	-14.78	0.00	14.78	662.26	331.13	648.15	396.94	11.18	-0.891	0.000	0.052
120.00	-9.18	-1.50	0.00	-11.69	0.00	11.69	662.26	331.13	648.15	396.94	11.56	-0.897	0.000	0.043
125.00	-8.51	-1.40	0.00	-4.19	0.00	4.19	662.26	331.13	648.15	396.94	12.50	-0.906	0.000	0.023
128.00	0.00	-1.26	0.00	0.00	0.00	0.00	662.26	331.13	648.15	396.94	13.07	-0.907	0.000	0.000

Seismic Segment Forces (Factored)

Structure: CT13556-S-SBA

Code: EIA/TIA-222-G

9/1/2021

Site Name: Norwich

Exposure: B

Height: 128.00 (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 19

Gust Response Factor 1.10

Sds 0.18

Ss 0.17

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

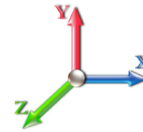
Sd1 0.10

S1 0.06

Wind Load Factor 0.00 **Structure Frequency (f1)** 0.44

SA 0.04

Seismic Importance Factor 1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1150.5	0.00	0.04	0.02	18.28	
10.00		1121.3	0.01	0.06	0.03	25.76	
15.00		1092.2	0.03	0.07	0.04	28.72	
20.00		1063.0	0.05	0.07	0.04	29.75	
25.00		1033.8	0.07	0.07	0.04	30.05	
30.00		1004.7	0.10	0.07	0.04	30.14	
35.00		975.57	0.14	0.07	0.03	30.09	
40.00		946.41	0.18	0.06	0.03	29.66	
45.00		917.26	0.23	0.06	0.02	28.40	
47.25	Bot - Section 2	403.25	0.26	0.05	0.02	12.23	
50.00		895.27	0.29	0.05	0.01	25.97	
53.00	Top - Section 1	958.21	0.32	0.04	0.01	25.63	
55.00		288.04	0.35	0.03	0.01	7.11	
60.00		703.09	0.42	0.01	0.01	12.31	
65.00		678.79	0.49	-0.01	0.01	5.16	
70.00		654.49	0.57	-0.04	0.01	-2.47	
75.00		630.20	0.65	-0.07	0.02	-9.07	
80.00		605.90	0.74	-0.10	0.04	-13.21	
85.00		581.60	0.83	-0.12	0.06	-14.03	
90.00		557.31	0.93	-0.12	0.10	-11.33	
91.00	Appurtenance(s)	2467.6	0.96	-0.12	0.11	-46.38	
95.00		424.46	1.04	-0.10	0.15	-4.25	
96.75	Bot - Section 3	180.81	1.08	-0.08	0.17	-0.88	
100.00	Appurtenance(s)	3808.1	1.15	-0.03	0.22	26.38	
100.75	Top - Section 2	119.50	1.17	-0.02	0.23	1.20	
105.00		250.43	1.27	0.08	0.31	7.65	
110.00		281.13	1.40	0.28	0.43	17.13	
115.00		266.55	1.53	0.57	0.57	26.17	
117.00	Appurtenance(s)	4542.7	1.58	0.72	0.64	522.41	
118.00	Top - Section 3	50.40	1.61	0.80	0.68	6.24	
120.00		126.95	1.66	0.98	0.76	18.07	
125.00		317.36	1.80	1.55	0.98	61.46	
128.00	Appurtenance(s)	3325.2	1.89	1.98	1.14	757.88	
Totals:		32,422.4				1,682.2	
						Total Wind:	30,792.8

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

Calculated Forces

Structure: CT13556-S-SBA **Code:** EIA/TIA-222-G 9/1/2021
Site Name: Norwich **Exposure:** B
Height: 128.00 (ft) **Crest Height:** 0.00
Base Elev: 0.000 (ft) **Site Class:** D - Stiff Soil
Gh: 1.1 **Topography:** 1 **Struct Class:** II Page: 22



Load Case: 1.2D + 1.0E

Iterations 19

Gust Response Factor 1.10

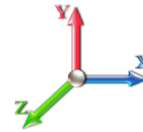
Sds 0.18

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)** 0.44 **SA** 0.04 **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	-42.71	-1.79	0.00	-194.58	0.00	194.58	4377.82	2188.91	10363.5	5189.46		0.00	0.00	0.047
5.00	-41.17	-1.78	0.00	-185.64	0.00	185.64	4316.11	2158.05	9960.07	4987.44		0.01	-0.01	0.047
10.00	-39.65	-1.76	0.00	-176.76	0.00	176.76	4251.94	2125.97	9558.48	4786.34		0.02	-0.02	0.046
15.00	-38.18	-1.73	0.00	-167.98	0.00	167.98	4185.32	2092.66	9159.16	4586.39		0.05	-0.03	0.046
20.00	-36.74	-1.71	0.00	-159.32	0.00	159.32	4116.24	2058.12	8762.56	4387.79		0.08	-0.04	0.045
25.00	-35.33	-1.69	0.00	-150.77	0.00	150.77	4044.71	2022.35	8369.11	4190.78		0.13	-0.05	0.045
30.00	-33.96	-1.66	0.00	-142.34	0.00	142.34	3970.72	1985.36	7979.26	3995.56		0.19	-0.06	0.044
35.00	-32.62	-1.63	0.00	-134.04	0.00	134.04	3894.27	1947.14	7593.45	3802.37		0.26	-0.07	0.044
40.00	-31.32	-1.61	0.00	-125.87	0.00	125.87	3815.37	1907.68	7212.11	3611.41		0.34	-0.08	0.043
45.00	-30.05	-1.58	0.00	-117.82	0.00	117.82	3734.01	1867.00	6835.68	3422.92		0.43	-0.10	0.042
47.25	-29.50	-1.57	0.00	-114.25	0.00	114.25	3696.60	1848.30	6668.01	3338.96		0.48	-0.10	0.042
50.00	-28.33	-1.55	0.00	-109.92	0.00	109.92	3650.19	1825.10	6464.60	3237.11		0.54	-0.11	0.042
53.00	-27.08	-1.52	0.00	-105.28	0.00	105.28	2850.91	1425.45	5035.48	2521.48		0.61	-0.12	0.051
55.00	-26.67	-1.52	0.00	-102.23	0.00	102.23	2827.15	1413.58	4926.09	2466.71		0.66	-0.12	0.051
60.00	-25.66	-1.51	0.00	-94.62	0.00	94.62	2766.03	1383.02	4654.68	2330.80		0.79	-0.14	0.050
65.00	-24.68	-1.51	0.00	-87.05	0.00	87.05	2702.46	1351.23	4386.56	2196.54		0.94	-0.15	0.049
70.00	-23.73	-1.52	0.00	-79.49	0.00	79.49	2636.43	1318.22	4122.19	2064.16		1.11	-0.17	0.048
75.00	-22.81	-1.52	0.00	-71.91	0.00	71.91	2567.95	1283.97	3862.00	1933.87		1.29	-0.18	0.046
80.00	-21.91	-1.52	0.00	-64.31	0.00	64.31	2497.00	1248.50	3606.43	1805.90		1.49	-0.20	0.044
85.00	-21.05	-1.53	0.00	-56.70	0.00	56.70	2423.61	1211.80	3355.92	1680.45		1.70	-0.21	0.042
90.00	-20.21	-1.53	0.00	-49.07	0.00	49.07	2347.75	1173.88	3110.91	1557.76		1.93	-0.23	0.040
91.00	-17.22	-1.52	0.00	-47.55	0.00	47.55	2332.29	1166.14	3062.60	1533.58		1.98	-0.23	0.038
95.00	-16.58	-1.52	0.00	-41.48	0.00	41.48	2269.44	1134.72	2871.83	1438.05		2.18	-0.24	0.036
96.75	-16.31	-1.52	0.00	-38.83	0.00	38.83	2237.32	1118.66	2784.49	1394.32		2.27	-0.25	0.035
100.00	-11.64	-1.47	0.00	-33.90	0.00	33.90	2168.36	1084.18	2614.63	1309.26		2.45	-0.26	0.031
100.75	-11.47	-1.47	0.00	-32.80	0.00	32.80	1113.72	556.86	1361.71	681.87		2.49	-0.26	0.058
105.00	-11.06	-1.46	0.00	-26.55	0.00	26.55	1088.50	544.25	1275.70	638.80		2.72	-0.27	0.052
110.00	-10.59	-1.45	0.00	-19.23	0.00	19.23	1056.55	528.27	1175.26	588.50		3.02	-0.29	0.043
115.00	-10.13	-1.42	0.00	-12.00	0.00	12.00	1022.14	511.07	1076.04	538.82		3.34	-0.31	0.032
117.00	-4.63	-0.87	0.00	-9.15	0.00	9.15	1007.69	503.85	1036.80	519.17		3.46	-0.31	0.022
118.00	-4.56	-0.86	0.00	-8.29	0.00	8.29	1000.32	500.16	1017.28	509.40		3.53	-0.31	0.021
118.00	-4.56	-0.86	0.00	-8.29	0.00	8.29	662.26	331.13	648.15	396.94		3.53	-0.31	0.028
120.00	-4.40	-0.84	0.00	-6.56	0.00	6.56	662.26	331.13	648.15	396.94		3.66	-0.32	0.023
125.00	-4.00	-0.78	0.00	-2.34	0.00	2.34	662.26	331.13	648.15	396.94		4.00	-0.32	0.012
128.00	0.00	-0.76	0.00	0.00	0.00	0.00	662.26	331.13	648.15	396.94		4.20	-0.32	0.000

Seismic Segment Forces (Factored)

Structure: CT13556-S-SBA	Code: EIA/TIA-222-G	9/1/2021
Site Name: Norwich	Exposure: B	
Height: 128.00 (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 19

Gust Response Factor 1.10

Sds 0.18

Ss 0.17

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

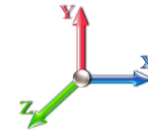
Sd1 0.10

S1 0.06

Wind Load Factor 0.00 **Structure Frequency (f1)** 0.44

SA 0.04

Seismic Importance Factor 1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1150.5	0.00	0.04	0.02	18.28	
10.00		1121.3	0.01	0.06	0.03	25.76	
15.00		1092.2	0.03	0.07	0.04	28.72	
20.00		1063.0	0.05	0.07	0.04	29.75	
25.00		1033.8	0.07	0.07	0.04	30.05	
30.00		1004.7	0.10	0.07	0.04	30.14	
35.00		975.57	0.14	0.07	0.03	30.09	
40.00		946.41	0.18	0.06	0.03	29.66	
45.00		917.26	0.23	0.06	0.02	28.40	
47.25	Bot - Section 2	403.25	0.26	0.05	0.02	12.23	
50.00		895.27	0.29	0.05	0.01	25.97	
53.00	Top - Section 1	958.21	0.32	0.04	0.01	25.63	
55.00		288.04	0.35	0.03	0.01	7.11	
60.00		703.09	0.42	0.01	0.01	12.31	
65.00		678.79	0.49	-0.01	0.01	5.16	
70.00		654.49	0.57	-0.04	0.01	-2.47	
75.00		630.20	0.65	-0.07	0.02	-9.07	
80.00		605.90	0.74	-0.10	0.04	-13.21	
85.00		581.60	0.83	-0.12	0.06	-14.03	
90.00		557.31	0.93	-0.12	0.10	-11.33	
91.00	Appurtenance(s)	2467.6	0.96	-0.12	0.11	-46.38	
95.00		424.46	1.04	-0.10	0.15	-4.25	
96.75	Bot - Section 3	180.81	1.08	-0.08	0.17	-0.88	
100.00	Appurtenance(s)	3808.1	1.15	-0.03	0.22	26.38	
100.75	Top - Section 2	119.50	1.17	-0.02	0.23	1.20	
105.00		250.43	1.27	0.08	0.31	7.65	
110.00		281.13	1.40	0.28	0.43	17.13	
115.00		266.55	1.53	0.57	0.57	26.17	
117.00	Appurtenance(s)	4542.7	1.58	0.72	0.64	522.41	
118.00	Top - Section 3	50.40	1.61	0.80	0.68	6.24	
120.00		126.95	1.66	0.98	0.76	18.07	
125.00		317.36	1.80	1.55	0.98	61.46	
128.00	Appurtenance(s)	3325.2	1.89	1.98	1.14	757.88	
Totals:		32,422.4				1,682.2	
						Total Wind:	30,792.8

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

Calculated Forces

Structure: CT13556-S-SBA **Code:** EIA/TIA-222-G 9/1/2021
Site Name: Norwich **Exposure:** B
Height: 128.00 (ft) **Crest Height:** 0.00
Base Elev: 0.000 (ft) **Site Class:** D - Stiff Soil
Gh: 1.1 **Topography:** 1 **Struct Class:** II Page: 24



Load Case: 0.9D + 1.0E

Iterations 19

Gust Response Factor 1.10

Sds 0.18

Ss 0.17

Dead Load Factor 0.90

Seismic Load Factor 1.00

Sd1 0.10

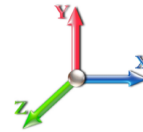
S1 0.06

Wind Load Factor 0.00

Structure Frequency (f1) 0.44

SA 0.04

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	-32.03	-1.79	0.00	-192.98	0.00	192.98	4377.82	2188.91	10363.5	5189.46		0.00	0.00	0.045
5.00	-30.87	-1.77	0.00	-184.05	0.00	184.05	4316.11	2158.05	9960.07	4987.44		0.01	-0.01	0.044
10.00	-29.74	-1.75	0.00	-175.19	0.00	175.19	4251.94	2125.97	9558.48	4786.34		0.02	-0.02	0.044
15.00	-28.63	-1.73	0.00	-166.43	0.00	166.43	4185.32	2092.66	9159.16	4586.39		0.05	-0.03	0.043
20.00	-27.55	-1.70	0.00	-157.79	0.00	157.79	4116.24	2058.12	8762.56	4387.79		0.08	-0.04	0.043
25.00	-26.50	-1.68	0.00	-149.28	0.00	149.28	4044.71	2022.35	8369.11	4190.78		0.13	-0.05	0.042
30.00	-25.47	-1.65	0.00	-140.90	0.00	140.90	3970.72	1985.36	7979.26	3995.56		0.19	-0.06	0.042
35.00	-24.47	-1.62	0.00	-132.65	0.00	132.65	3894.27	1947.14	7593.45	3802.37		0.25	-0.07	0.041
40.00	-23.49	-1.60	0.00	-124.53	0.00	124.53	3815.37	1907.68	7212.11	3611.41		0.34	-0.08	0.041
45.00	-22.54	-1.57	0.00	-116.54	0.00	116.54	3734.01	1867.00	6835.68	3422.92		0.43	-0.09	0.040
47.25	-22.12	-1.56	0.00	-113.01	0.00	113.01	3696.60	1848.30	6668.01	3338.96		0.47	-0.10	0.040
50.00	-21.25	-1.54	0.00	-108.72	0.00	108.72	3650.19	1825.10	6464.60	3237.11		0.53	-0.11	0.039
53.00	-20.31	-1.51	0.00	-104.11	0.00	104.11	2850.91	1425.45	5035.48	2521.48		0.60	-0.11	0.048
55.00	-20.00	-1.51	0.00	-101.09	0.00	101.09	2827.15	1413.58	4926.09	2466.71		0.65	-0.12	0.048
60.00	-19.24	-1.50	0.00	-93.56	0.00	93.56	2766.03	1383.02	4654.68	2330.80		0.79	-0.13	0.047
65.00	-18.51	-1.49	0.00	-86.08	0.00	86.08	2702.46	1351.23	4386.56	2196.54		0.93	-0.15	0.046
70.00	-17.79	-1.50	0.00	-78.60	0.00	78.60	2636.43	1318.22	4122.19	2064.16		1.10	-0.16	0.045
75.00	-17.10	-1.50	0.00	-71.11	0.00	71.11	2567.95	1283.97	3862.00	1933.87		1.28	-0.18	0.043
80.00	-16.43	-1.50	0.00	-63.61	0.00	63.61	2497.00	1248.50	3606.43	1805.90		1.47	-0.19	0.042
85.00	-15.79	-1.50	0.00	-56.10	0.00	56.10	2423.61	1211.80	3355.92	1680.45		1.69	-0.21	0.040
90.00	-15.16	-1.50	0.00	-48.58	0.00	48.58	2347.75	1173.88	3110.91	1557.76		1.92	-0.23	0.038
91.00	-12.91	-1.50	0.00	-47.07	0.00	47.07	2332.29	1166.14	3062.60	1533.58		1.96	-0.23	0.036
95.00	-12.44	-1.50	0.00	-41.08	0.00	41.08	2269.44	1134.72	2871.83	1438.05		2.16	-0.24	0.034
96.75	-12.23	-1.50	0.00	-38.46	0.00	38.46	2237.32	1118.66	2784.49	1394.32		2.25	-0.25	0.033
100.00	-8.73	-1.46	0.00	-33.60	0.00	33.60	2168.36	1084.18	2614.63	1309.26		2.42	-0.26	0.030
100.75	-8.60	-1.46	0.00	-32.50	0.00	32.50	1113.72	556.86	1361.71	681.87		2.46	-0.26	0.055
105.00	-8.29	-1.45	0.00	-26.31	0.00	26.31	1088.50	544.25	1275.70	638.80		2.70	-0.27	0.049
110.00	-7.94	-1.43	0.00	-19.06	0.00	19.06	1056.55	528.27	1175.26	588.50		2.99	-0.29	0.040
115.00	-7.60	-1.41	0.00	-11.90	0.00	11.90	1022.14	511.07	1076.04	538.82		3.30	-0.30	0.030
117.00	-3.47	-0.86	0.00	-9.09	0.00	9.09	1007.69	503.85	1036.80	519.17		3.43	-0.31	0.021
118.00	-3.42	-0.86	0.00	-8.22	0.00	8.22	1000.32	500.16	1017.28	509.40		3.49	-0.31	0.020
118.00	-3.42	-0.86	0.00	-8.22	0.00	8.22	662.26	331.13	648.15	396.94		3.49	-0.31	0.026
120.00	-3.30	-0.84	0.00	-6.51	0.00	6.51	662.26	331.13	648.15	396.94		3.62	-0.31	0.021
125.00	-3.00	-0.77	0.00	-2.32	0.00	2.32	662.26	331.13	648.15	396.94		3.96	-0.32	0.010
128.00	0.00	-0.76	0.00	0.00	0.00	0.00	662.26	331.13	648.15	396.94		4.16	-0.32	0.000

Wind Loading - Shaft

Structure: CT13556-S-SBA

Code: EIA/TIA-222-G

9/1/2021

Site Name: Norwich

Exposure: B

Height: 128.00 (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

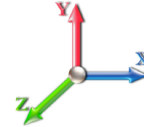


Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 19

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		1.00	0.70	6.129	6.74	245.99	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	6.129	6.74	239.88	0.650	0.000	5.00	24.197	15.73	106.0	0.0	1150.5
10.00		1.00	0.70	6.129	6.74	233.76	0.650	0.000	5.00	23.588	15.33	103.4	0.0	1121.4
15.00		1.00	0.70	6.129	6.74	227.64	0.650	0.000	5.00	22.978	14.94	100.7	0.0	1092.2
20.00		1.00	0.70	6.129	6.74	221.53	0.650	0.000	5.00	22.369	14.54	98.0	0.0	1063.0
25.00		1.00	0.70	6.129	6.74	215.41	0.650	0.000	5.00	21.760	14.14	95.4	0.0	1033.9
30.00		1.00	0.70	6.134	6.75	209.38	0.650	0.000	5.00	21.151	13.75	92.8	0.0	1004.7
35.00		1.00	0.73	6.410	7.05	207.79	0.650	0.000	5.00	20.542	13.35	94.1	0.0	975.6
40.00		1.00	0.76	6.659	7.33	205.42	0.650	0.000	5.00	19.933	12.96	94.9	0.0	946.4
45.00		1.00	0.79	6.887	7.58	202.42	0.650	0.000	5.00	19.323	12.56	95.2	0.0	917.3
47.25	Bot - Section 2	1.00	0.80	6.984	7.68	200.90	0.650	0.000	2.25	8.497	5.52	42.4	0.0	403.3
50.00		1.00	0.81	7.098	7.81	198.91	0.650	0.000	2.75	10.363	6.74	52.6	0.0	895.3
53.00	Top - Section 1	1.00	0.82	7.217	7.94	196.59	0.650	0.000	3.00	11.095	7.21	57.2	0.0	958.2
55.00		1.00	0.83	7.294	8.02	197.86	0.650	0.000	2.00	7.275	4.73	37.9	0.0	288.0
60.00		1.00	0.85	7.477	8.22	193.58	0.650	0.000	5.00	17.760	11.54	94.9	0.0	703.1
65.00		1.00	0.87	7.650	8.42	188.97	0.650	0.000	5.00	17.151	11.15	93.8	0.0	678.8
70.00		1.00	0.89	7.814	8.60	184.07	0.650	0.000	5.00	16.542	10.75	92.4	0.0	654.5
75.00		1.00	0.91	7.969	8.77	178.92	0.650	0.000	5.00	15.933	10.36	90.8	0.0	630.2
80.00		1.00	0.93	8.118	8.93	173.54	0.650	0.000	5.00	15.323	9.96	88.9	0.0	605.9
85.00		1.00	0.94	8.260	9.09	167.95	0.650	0.000	5.00	14.714	9.56	86.9	0.0	581.6
90.00		1.00	0.96	8.396	9.24	162.17	0.650	0.000	5.00	14.105	9.17	84.7	0.0	557.3
91.00	Appurtenance(s)	1.00	0.96	8.422	9.26	160.99	0.650	0.000	1.00	2.748	1.79	16.5	0.0	108.5
95.00		1.00	0.97	8.526	9.38	156.21	0.650	0.000	4.00	10.748	6.99	65.5	0.0	424.5
96.75	Bot - Section 3	1.00	0.98	8.571	9.43	154.09	0.650	0.000	1.75	4.580	2.98	28.1	0.0	180.8
100.00	Appurtenance(s)	1.00	0.99	8.652	9.52	150.09	0.650	0.000	3.25	8.410	5.47	52.0	0.0	527.9
100.75	Top - Section 2	1.00	0.99	8.671	9.54	149.16	0.650	0.000	0.75	1.904	1.24	11.8	0.0	119.5
105.00		1.00	1.00	8.774	9.65	145.73	0.650	0.000	4.25	10.532	6.85	66.1	0.0	250.4
110.00		1.00	1.02	8.891	9.78	139.34	0.650	0.000	5.00	11.827	7.69	75.2	0.0	281.1
115.00		1.00	1.03	9.005	9.91	132.81	0.650	0.000	5.00	11.218	7.29	72.2	0.0	266.6
117.00	Appurtenance(s)	1.00	1.03	9.049	9.95	130.17	0.650	0.000	2.00	4.317	2.81	27.9	0.0	102.5
118.00	Top - Section 3	1.00	1.04	9.071	9.98	128.84	0.650	0.000	1.00	2.122	1.38	13.8	0.0	50.4
120.00		1.00	1.04	9.115	10.03	122.44	0.600	0.000	2.00	4.000	2.40	24.1	0.0	126.9
125.00		1.00	1.05	9.222	10.14	123.16	0.600	0.000	5.00	10.000	6.00	60.9	0.0	317.4
128.00	Appurtenance(s)	1.00	1.06	9.284	10.21	123.57	0.600	0.000	3.00	6.000	3.60	36.8	0.0	190.4
Totals:									128.00			2,253.9		19,208.1

Discrete Appurtenance Forces

Structure: CT13556-S-SBA

Code: EIA/TIA-222-G

9/1/2021

Site Name: Norwich

Exposure: B

Height: 128.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

Page: 26

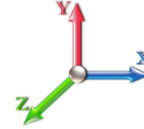


Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 19

Dead Load Factor 1.00

Wind Load Factor 1.00



No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	128.00	RRUS 32 B30	3	9.284	10.213	0.50	0.75	4.13	180.00	0.000	0.000	42.18	0.00	0.00
2	128.00	Low Profile Platform	1	9.284	10.213	1.00	1.00	25.00	1200.00	0.000	0.000	255.32	0.00	0.00
3	128.00	SBNHH-1D65C	2	9.284	10.213	0.63	0.75	14.35	99.20	0.000	0.000	146.57	0.00	0.00
4	128.00	AM-X-CD-16-65-00T-RET	1	9.284	10.213	0.63	0.75	3.81	33.00	0.000	0.000	38.93	0.00	0.00
5	128.00	HPA-65R-BUU-H8	2	9.284	10.213	0.59	0.75	15.38	136.00	0.000	0.000	157.09	0.00	0.00
6	128.00	HPA-65R-BUU-H6	1	9.284	10.213	0.62	0.75	6.01	51.00	0.000	0.000	61.41	0.00	0.00
7	128.00	RRUS-11	3	9.284	10.213	0.50	0.75	3.80	153.00	0.000	0.000	38.80	0.00	0.00
8	128.00	RRUS 4478 B14	3	9.284	10.213	0.50	0.75	2.49	178.20	0.000	0.000	25.40	0.00	0.00
9	128.00	HRK12-HD	1	9.284	10.213	1.00	1.00	9.75	406.61	0.000	0.000	99.58	0.00	0.00
10	128.00	4449 B5/B12	3	9.284	10.213	0.50	0.75	2.97	213.00	0.000	0.000	30.33	0.00	0.00
11	128.00	Pipe Masts	2	9.284	10.213	1.00	1.00	4.00	145.00	0.000	0.000	40.85	0.00	0.00
12	128.00	DC6-48-60-18-8F	3	9.284	10.213	0.75	0.75	2.07	95.40	0.000	0.000	21.14	0.00	0.00
13	128.00	DMP65R-BU8DA	2	9.284	10.213	0.54	0.75	19.30	165.00	0.000	0.000	197.10	0.00	0.00
14	128.00	DMP65R-BU6DA	1	9.284	10.213	0.54	0.75	6.86	79.40	0.000	0.000	70.10	0.00	0.00
15	117.00	782 11056	3	9.131	10.044	0.52	0.80	0.44	5.40	0.000	3.750	4.39	0.00	16.45
16	117.00	FE15501P77/75	6	9.131	10.044	0.62	0.80	6.47	420.00	0.000	3.750	64.97	0.00	243.62
17	117.00	Low Profile Platform	1	9.049	9.954	1.00	1.00	22.00	1500.00	0.000	0.000	218.99	0.00	0.00
18	117.00	MS-H1436 (Heavy Collar	1	9.049	9.954	1.00	1.00	2.25	136.70	0.000	0.000	22.40	0.00	0.00
19	117.00	(3) T-Arm Kit	1	9.049	9.954	1.00	1.00	16.50	500.00	0.000	0.000	164.24	0.00	0.00
20	117.00	pipes	1	9.049	9.954	1.00	1.00	8.75	430.00	0.000	0.000	87.10	0.00	0.00
21	117.00	AIR32	3	9.049	9.954	0.70	0.80	13.59	396.60	0.000	0.000	135.30	0.00	0.00
22	117.00	4415 B25	3	9.049	9.954	0.54	0.80	2.99	138.90	0.000	0.000	29.77	0.00	0.00
23	117.00	4449 B71 + B85	3	9.049	9.954	0.54	0.80	3.17	219.60	0.000	0.000	31.53	0.00	0.00
24	117.00	APXVAALL24-43-U-NA20	3	9.049	9.954	0.58	0.80	35.46	384.00	0.000	0.000	352.97	0.00	0.00
25	117.00	AIR6449 B41	3	9.049	9.954	0.57	0.80	9.63	309.00	0.000	0.000	95.83	0.00	0.00
26	100.00	Low Profile Platform	1	8.652	9.517	1.00	1.00	22.00	1500.00	0.000	0.000	209.38	0.00	0.00
27	100.00	BXA 70063 6CF 2	3	8.652	9.517	0.56	0.75	12.77	51.00	0.000	0.000	121.58	0.00	0.00
28	100.00	DB-T1-6Z-8AB-OZ	1	8.652	9.517	1.00	1.00	4.80	18.90	0.000	0.000	45.68	0.00	0.00
29	100.00	JMA Wireless	6	8.652	9.517	0.65	0.75	38.64	360.00	0.000	0.000	367.76	0.00	0.00
30	100.00	VZS01	3	8.652	9.517	0.52	0.75	6.68	261.30	0.000	0.000	63.54	0.00	0.00
31	100.00	JMA 91900314-02	3	8.652	9.517	1.00	1.00	0.00	84.00	0.000	0.000	0.00	0.00	0.00
32	100.00	Samsung B2/B66A	3	8.652	9.517	0.50	0.75	2.82	253.20	0.000	0.000	26.83	0.00	0.00
33	100.00	B5/B13	3	8.652	9.517	0.50	0.75	2.82	210.90	0.000	0.000	26.83	0.00	0.00
34	100.00	Raycap	1	8.652	9.517	0.62	0.75	1.56	26.90	0.000	0.000	14.81	0.00	0.00
35	100.00	Mount mod	1	8.652	9.517	1.00	1.00	12.25	514.00	0.000	0.000	116.59	0.00	0.00
36	91.00	MC-PK8-DSH	1	8.422	9.264	1.00	1.00	37.59	1727.00	0.000	0.000	348.25	0.00	0.00
37	91.00	RDIDC-9181-OF-48	1	8.422	9.264	0.50	0.75	1.01	21.90	0.000	0.000	9.36	0.00	0.00
38	91.00	TA08025-B605	3	8.422	9.264	0.50	0.75	2.95	225.00	0.000	0.000	27.37	0.00	0.00
39	91.00	TA08025-B604	3	8.422	9.264	0.50	0.75	2.95	191.70	0.000	0.000	27.37	0.00	0.00
40	91.00	MX08FRO665-21	3	8.422	9.264	0.55	0.75	20.80	193.50	0.000	0.000	192.66	0.00	0.00

Totals: 13,214.31

4,030.31

Total Applied Force Summary

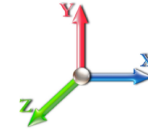
Structure: CT13556-S-SBA	Code: EIA/TIA-222-G	9/1/2021
Site Name: Norwich	Exposure: B	
Height: 128.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 27



Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 19

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		106.03	1288.36	0.00	0.00
10.00		103.36	1259.20	0.00	0.00
15.00		100.69	1230.05	0.00	0.00
20.00		98.02	1200.89	0.00	0.00
25.00		95.35	1171.73	0.00	0.00
30.00		92.76	1142.58	0.00	0.00
35.00		94.15	1113.42	0.00	0.00
40.00		94.91	1084.26	0.00	0.00
45.00		95.15	1055.11	0.00	0.00
47.25		42.43	465.29	0.00	0.00
50.00		52.59	971.08	0.00	0.00
53.00		57.25	1040.92	0.00	0.00
55.00		37.94	343.18	0.00	0.00
60.00		94.95	840.94	0.00	0.00
65.00		93.81	816.64	0.00	0.00
70.00		92.42	792.34	0.00	0.00
75.00		90.79	768.05	0.00	0.00
80.00		88.94	743.75	0.00	0.00
85.00		86.90	719.45	0.00	0.00
90.00		84.67	695.16	0.00	0.00
91.00	(11) attachments	621.56	2495.22	0.00	0.00
95.00		65.52	530.74	0.00	0.00
96.75		28.06	227.31	0.00	0.00
100.00	(25) attachments	1045.03	3894.48	0.00	0.00
100.75		11.81	136.33	0.00	0.00
105.00		66.07	345.84	0.00	0.00
110.00		75.19	393.38	0.00	0.00
115.00		72.22	378.80	0.00	0.00
117.00	(28) attachments	1235.42	4587.64	0.00	260.07
118.00		13.76	54.13	0.00	0.00
120.00		24.06	134.41	0.00	0.00
125.00		60.86	336.01	0.00	0.00
128.00	(28) attachments	1261.57	3336.42	0.00	0.00
Totals:		6,284.24	35,593.10	0.00	260.07

Calculated Forces

Structure: CT13556-S-SBA

Code: EIA/TIA-222-G

9/1/2021

Site Name: Norwich

Exposure: B

Height: 128.00 (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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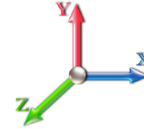


Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 19

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	-35.59	-6.29	0.00	-606.15	0.00	606.15	4377.82	2188.91	10363.5	5189.46	0.00	0.000	0.000	0.125
5.00	-34.30	-6.20	0.00	-574.69	0.00	574.69	4316.11	2158.05	9960.07	4987.44	0.02	-0.029	0.000	0.123
10.00	-33.04	-6.12	0.00	-543.67	0.00	543.67	4251.94	2125.97	9558.48	4786.34	0.06	-0.059	0.000	0.121
15.00	-31.80	-6.03	0.00	-513.08	0.00	513.08	4185.32	2092.66	9159.16	4586.39	0.14	-0.090	0.000	0.119
20.00	-30.60	-5.95	0.00	-482.93	0.00	482.93	4116.24	2058.12	8762.56	4387.79	0.25	-0.121	0.000	0.118
25.00	-29.43	-5.87	0.00	-453.18	0.00	453.18	4044.71	2022.35	8369.11	4190.78	0.40	-0.153	0.000	0.115
30.00	-28.28	-5.79	0.00	-423.85	0.00	423.85	3970.72	1985.36	7979.26	3995.56	0.57	-0.186	0.000	0.113
35.00	-27.16	-5.70	0.00	-394.92	0.00	394.92	3894.27	1947.14	7593.45	3802.37	0.79	-0.219	0.000	0.111
40.00	-26.08	-5.62	0.00	-366.39	0.00	366.39	3815.37	1907.68	7212.11	3611.41	1.03	-0.252	0.000	0.108
45.00	-25.02	-5.53	0.00	-338.29	0.00	338.29	3734.01	1867.00	6835.68	3422.92	1.32	-0.287	0.000	0.106
47.25	-24.55	-5.49	0.00	-325.85	0.00	325.85	3696.60	1848.30	6668.01	3338.96	1.46	-0.303	0.000	0.104
50.00	-23.58	-5.44	0.00	-310.74	0.00	310.74	3650.19	1825.10	6464.60	3237.11	1.64	-0.322	0.000	0.102
53.00	-22.54	-5.39	0.00	-294.40	0.00	294.40	2850.91	1425.45	5035.48	2521.48	1.85	-0.344	0.000	0.125
55.00	-22.19	-5.36	0.00	-283.63	0.00	283.63	2827.15	1413.58	4926.09	2466.71	1.99	-0.358	0.000	0.123
60.00	-21.35	-5.27	0.00	-256.83	0.00	256.83	2766.03	1383.02	4654.68	2330.80	2.39	-0.398	0.000	0.118
65.00	-20.53	-5.19	0.00	-230.46	0.00	230.46	2702.46	1351.23	4386.56	2196.54	2.83	-0.439	0.000	0.113
70.00	-19.73	-5.10	0.00	-204.52	0.00	204.52	2636.43	1318.22	4122.19	2064.16	3.31	-0.479	0.000	0.107
75.00	-18.96	-5.02	0.00	-179.00	0.00	179.00	2567.95	1283.97	3862.00	1933.87	3.83	-0.518	0.000	0.100
80.00	-18.22	-4.94	0.00	-153.91	0.00	153.91	2497.00	1248.50	3606.43	1805.90	4.40	-0.557	0.000	0.093
85.00	-17.50	-4.85	0.00	-129.23	0.00	129.23	2423.61	1211.80	3355.92	1680.45	5.00	-0.593	0.000	0.084
90.00	-16.80	-4.77	0.00	-104.97	0.00	104.97	2347.75	1173.88	3110.91	1557.76	5.64	-0.628	0.000	0.075
91.00	-14.31	-4.12	0.00	-100.21	0.00	100.21	2332.29	1166.14	3062.60	1533.58	5.77	-0.635	0.000	0.071
95.00	-13.78	-4.05	0.00	-83.72	0.00	83.72	2269.44	1134.72	2871.83	1438.05	6.32	-0.660	0.000	0.064
96.75	-13.55	-4.03	0.00	-76.63	0.00	76.63	2237.32	1118.66	2784.49	1394.32	6.56	-0.671	0.000	0.061
100.00	-9.67	-2.94	0.00	-63.54	0.00	63.54	2168.36	1084.18	2614.63	1309.26	7.02	-0.690	0.000	0.053
100.75	-9.53	-2.93	0.00	-61.34	0.00	61.34	1113.72	556.86	1361.71	681.87	7.13	-0.694	0.000	0.099
105.00	-9.18	-2.86	0.00	-48.91	0.00	48.91	1088.50	544.25	1275.70	638.80	7.76	-0.715	0.000	0.085
110.00	-8.79	-2.78	0.00	-34.60	0.00	34.60	1056.55	528.27	1175.26	588.50	8.53	-0.749	0.000	0.067
115.00	-8.41	-2.71	0.00	-20.68	0.00	20.68	1022.14	511.07	1076.04	538.82	9.33	-0.776	0.000	0.047
117.00	-3.84	-1.41	0.00	-15.00	0.00	15.00	1007.69	503.85	1036.80	519.17	9.66	-0.784	0.000	0.033
118.00	-3.79	-1.40	0.00	-13.59	0.00	13.59	1000.32	500.16	1017.28	509.40	9.82	-0.787	0.000	0.030
118.00	-3.79	-1.40	0.00	-13.59	0.00	13.59	662.26	331.13	648.15	396.94	9.82	-0.787	0.000	0.040
120.00	-3.65	-1.37	0.00	-10.79	0.00	10.79	662.26	331.13	648.15	396.94	10.15	-0.793	0.000	0.033
125.00	-3.32	-1.31	0.00	-3.92	0.00	3.92	662.26	331.13	648.15	396.94	10.99	-0.801	0.000	0.015
128.00	0.00	-1.26	0.00	0.00	0.00	0.00	662.26	331.13	648.15	396.94	11.49	-0.803	0.000	0.000

Final Analysis Summary

Structure: CT13556-S-SBA	Code: EIA/TIA-222-G	9/1/2021
Site Name: Norwich	Exposure: B	
Height: 128.00 (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	30.8	0.00	42.67	0.00	0.00	2983.70
0.9D + 1.6W 105 mph Wind	30.8	0.00	31.99	0.00	0.00	2961.44
1.2D + 1.0Di + 1.0Wi 50 mph Wind	7.3	0.00	69.31	0.00	0.00	696.22
1.2D + 1.0E	1.8	0.00	42.71	0.00	0.00	194.58
0.9D + 1.0E	1.8	0.00	32.03	0.00	0.00	192.98
1.0D + 1.0W 60 mph Wind	6.3	0.00	35.59	0.00	0.00	606.15

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	-26.29	-26.54	0.00	-1451.7	0.00	-1451.7	2850.91	1425.4	5035.48	2521.48	53.00	0.585
0.9D + 1.6W 105 mph Wind	-31.99	-30.83	0.00	-2961.4	0.00	-2961.4	4377.82	2188.9	10363.5	5189.46	0.00	0.578
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-69.31	-7.30	0.00	-696.22	0.00	-696.22	4377.82	2188.9	10363.5	5189.46	0.00	0.150
1.2D + 1.0E	-11.47	-1.47	0.00	-32.80	0.00	-32.80	1113.72	556.86	1361.71	681.87	100.75	0.058
0.9D + 1.0E	-8.60	-1.46	0.00	-32.50	0.00	-32.50	1113.72	556.86	1361.71	681.87	100.75	0.055
1.0D + 1.0W 60 mph Wind	-35.59	-6.29	0.00	-606.15	0.00	-606.15	4377.82	2188.9	10363.5	5189.46	0.00	0.125

Base Plate Summary

Structure: CT13556-S-SB	Code: EIA/TIA-222-G	9/1/2021
Site Name: Norwich	Exposure: B	
Height: 128.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 30



Reactions	Base Plate	Anchor Bolts
Original Design	Yield (ksi): 50.00	Bolt Circle: 64.50
Moment (kip-ft): 4750.83	Width (in): 62.50	Number Bolts: 16.00
Axial (kip): 48.75	Style: Clipped	Bolt Type: 2.25" 18J
Shear (kip): 48.83	Polygon Sides: 0.00	Bolt Diameter (in): 2.25
Analysis (1.2D + 1.6W)	Clip Length (in): 12.00	Yield (ksi): 75.00
Moment (kip-ft): 2983.70	Effective Len (in): 8.55	Ultimate (ksi): 100.00
Axial (kip): 42.67	Moment (kip-in): 471.54	Arrangement: Clustered
Shear (kip): 30.85	Allow Stress (ksi): 67.50	Cluster Dist (in): 6.00
	Applied Stress (ksi): 31.05	Start Angle (deg): 45.00
	Stress Ratio: 0.46	Compression
		Force (kip): 143.11
		Allowable (kip): 260.00
		Ratio: 0.57
		Tension
		Force (kip): 134.44
		Allowable (kip): 260.00
		Ratio: 0.53

	Monopole Mat Foundation Design		Date
			9/1/2021
	Customer Name:	Dish Wireless	EIA/TIA Standard:
	Site Name:		Structure Height (Ft.):
	Site Number:	CT13556-S-SBA	Engineer Name:
Engr. Number:	114575	Engineer Login ID:	

Foundation Info Obtained from:

Structure Type:

Analysis or Design?

Base Reactions (Factored):

Axial Load (Kips):	42.7	Shear Force (Kips):	30.8
Uplift Force (Kips):	0.0	Moment (Kips-ft):	2983.7

Allowable overstress %: 5.0%

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	7.0	Depth of Base BG (ft.):	5.5
Pier Height A. G. (ft.):	1.00	Thickness of Pad (ft):	2.00
Length of Pad (ft.):	26.5	Width of Pad (ft.):	26.5

Final Length of pad (ft)	26.5	Final width of pad (ft):	26.5
--------------------------	------	--------------------------	------

Material Properties and Rebar Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	8	Tie / Stirrup Size #:	5	
Qty. of Vertical Rebars:	38	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	8	
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):	36	Qty. of Rebar in Pad (W):	36
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Rebar at the top of the concrete pad:

Qty. of Rebar in Pad (L):	36	Qty. of Rebar in Pad (W):	36
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Apply 1.35 factor for e/w Per G: 1.35

Soil Design Parameters:

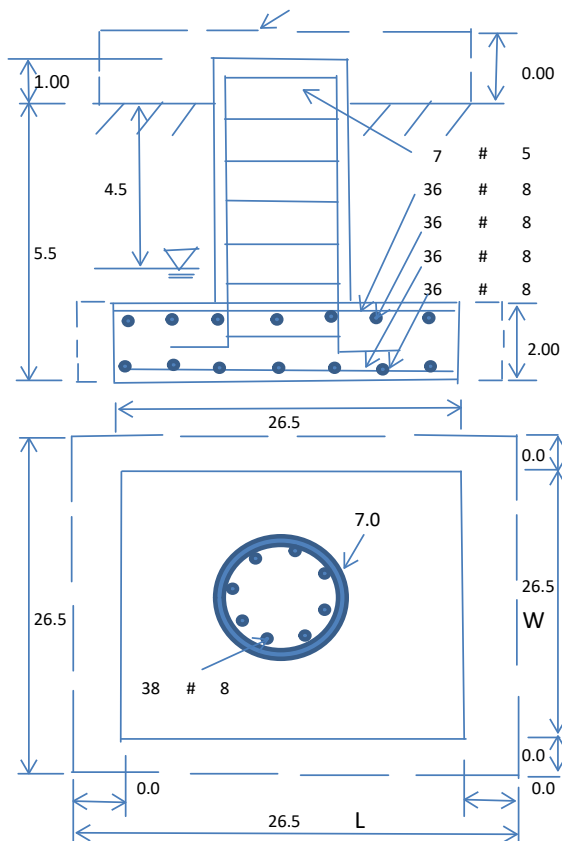
Soil Unit Weight (pcf):	135.0	Soil Buoyant Weight:	50.0	Pcf
Water Table B.G.S. (ft):	4.5	Unit Weight of Water:	62.4	pcf
Ultimate Bearing Pressure (psf):	20000	Ultimate Skin Friction:	400	Psf
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	Yes	
Consider soil hor. resist. for OTM.:	Yes	Reduction factor on the maximum soil bearing pressure:	1.00	
		Angle from Top of Pad:	30	
		Angle from Botm of Pad:	25	
		Angle from Botm 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.):	2323.18	Total Dry Soil Weight (Kips):	313.63
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	313.63	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	875.43	Total Dry Concrete Weight (Kips):	131.31
Total Buoyant Concrete Volume (cu. Ft.):	702.25	Total Buoyant Concrete Weight (Kips):	61.52
Total Effective Concrete Weight (Kips):	192.83	Total Vertical Load on Base (Kips):	549.16

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	1908	< Allowable Factored Soil Bearing (psf):	15000	0.13	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	6605.3	> Design Factored Momont (kips-ft):	3083	0.47	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	2.14				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):

0.79

Tie / Stirrup Area (sq. in./each):

0.31

Calculated Moment Capacity (Mn,Kips-Ft):

5163.1

>

Design Factored Moment (Mu, Kips-F

3122.3

0.60

OK!

Calculated Shear Capacity (Kips):

734.1

>

Design Factored Shear (Kips):

30.8

0.04

OK!

Calculated Tension Capacity (Tn, Kips):

1621.1

>

Design Factored Tension (Tu Kips):

0.0

0.00

OK!

Calculated Compression Capacity (Pn, Kips):

9744.8

>

Design Factored Axial Load (Pu Kips):

42.7

0.00

OK!

Moment & Axial Strength Combination:

0.60

OK!

Check Tie Spacing (Design/Required):

1

OK!

Pier Reinforcement Ratio:

0.005

Reinforcement Ratio is satisfied per ACI

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):

618.4

>

One-Way Factored Shear (L-D. Kips):

271.7

0.44

OK!

One-Way Design Shear Capacity (W-Direction, Kips):

618.4

>

One-Way Factored Shear (W-D., Kips)

271.7

0.44

OK!

One-Way Design Shear Capacity (Corner-Corner. Kips):

631.5

>

One-Way Factored Shear (C-C, Kips):

261.2

0.41

OK!

Lower Steel Pad Reinforcement Ratio (L-Direct.):

0.0044

OK!

Lower Steel Pad Reinf. Ratio (W-Direc

0.0044

Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):

2522.6

>

Moment at Bottom (L-Dir. K-Ft):

1497.9

0.59

OK!

Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):

2522.6

>

Moment at Bottom (W-Dir. K-Ft):

1497.9

0.59

OK!

Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):

3534.7

>

Moment at Bottom (C-C Dir. K-Ft):

2118.3

0.60

OK!

Upper Steel Pad Reinforcement Ratio (L-Direct.):

0.0044

OK!

Upper Steel Reinf. Ratio (W-Dir.):

0.0044

Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):

2522.6

>

Moment at the top (L-Dir K-Ft):

474.4

0.19

OK!

Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):

2522.6

>

Moment at the top (W-Dir K-Ft):

474.4

0.19

OK!

Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):

3534.7

>

Moment at the top (C-C Dir. K-Ft):

444.3

0.13

OK!

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

Moment transferred by punching shear:

1193.5

k-ft.

Max. factored shear stress v_{u_CD} :

2.9

Psi

Max. factored shear stress v_{u_AB} :

13.5

Psi

Factored shear Strength ϕv_n :

189.7

Psi

Max. factored shear stress v_u :

13.5

Psi

Check Usage of Punching Shear Capacity:

0.07

OK!

Exhibit E

Mount Analysis

July 23, 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: BOBOS00060A
Site Name: N/A

SBA Network Services Designation: **Site Number:** CT13556-S
Site Name: Norwich
Application Number: 163462, v1

Engineering Firm Designation: **B+T Group Project Number:** 149470.003.01

Site Data: 39 Maennerchor Avenue, Norwich, CT, 06380, New London County
Latitude 41.558472°, Longitude -72.051277°
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

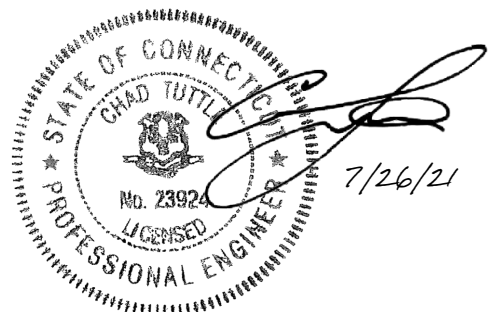
Sufficient Capacity
(Passing at 57.1%)

"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 TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category B and Risk Category II was/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: Matthew Williams

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



Chad E. Tuttle, P.E.

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1) INTRODUCTION

The appurtenance mount consists of Commscope platform mount part# MC-PK8-DSH at 107 ft., attached to monopole at 39 Maennerchor Avenue, Norwich, CT, 06380, 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 B, 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	107	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: 06/24/2021	SBA Communications Corporation
RFDS		Date: 06/09/2021	

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

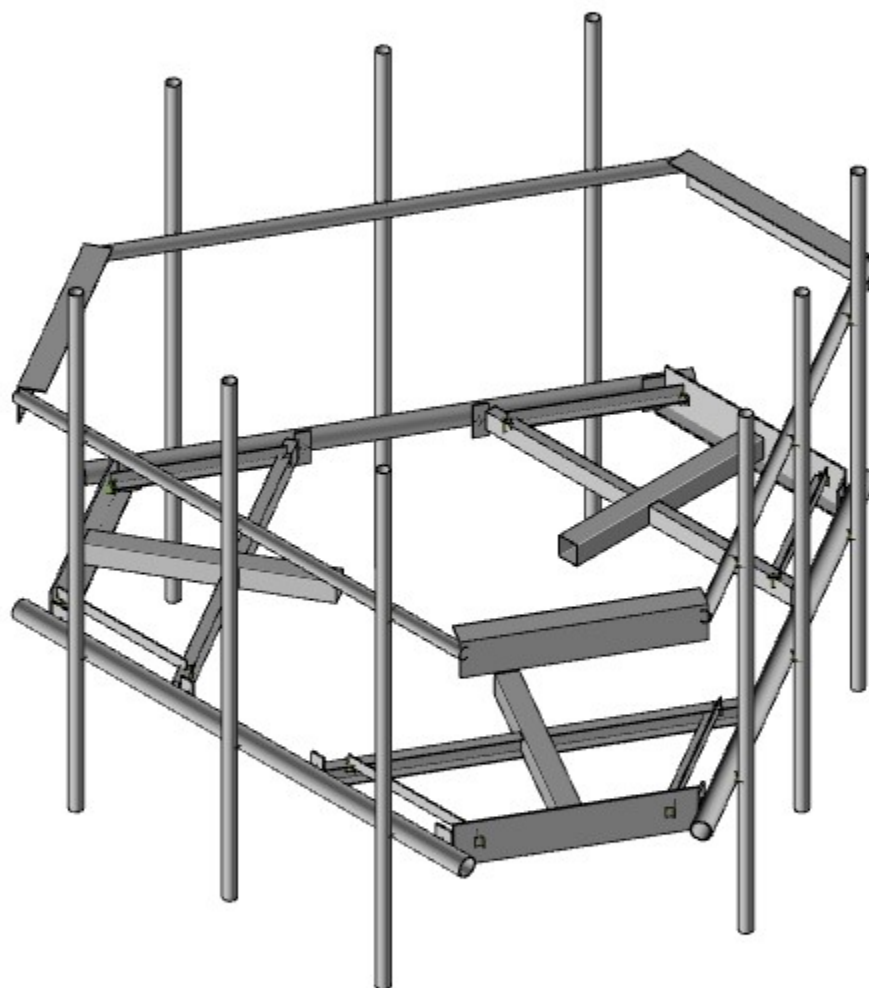
Notes	Component	Elevation (ft.)	% Capacity	Pass / Fail
-	Main Horizontals	107	10.4	Pass
-	Support Rails	107	54.1	Pass
-	Support Tubes	107	57.1	Pass
-	Support Channel	107	37.5	Pass
-	Support Angle	107	42.0	Pass
-	Mount Pipes	107	43.4	Pass
-	Connection Plates	107	20.6	Pass
-	Connection Angles	107	25.6	Pass
-	Connection Bolts	107	30.3	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

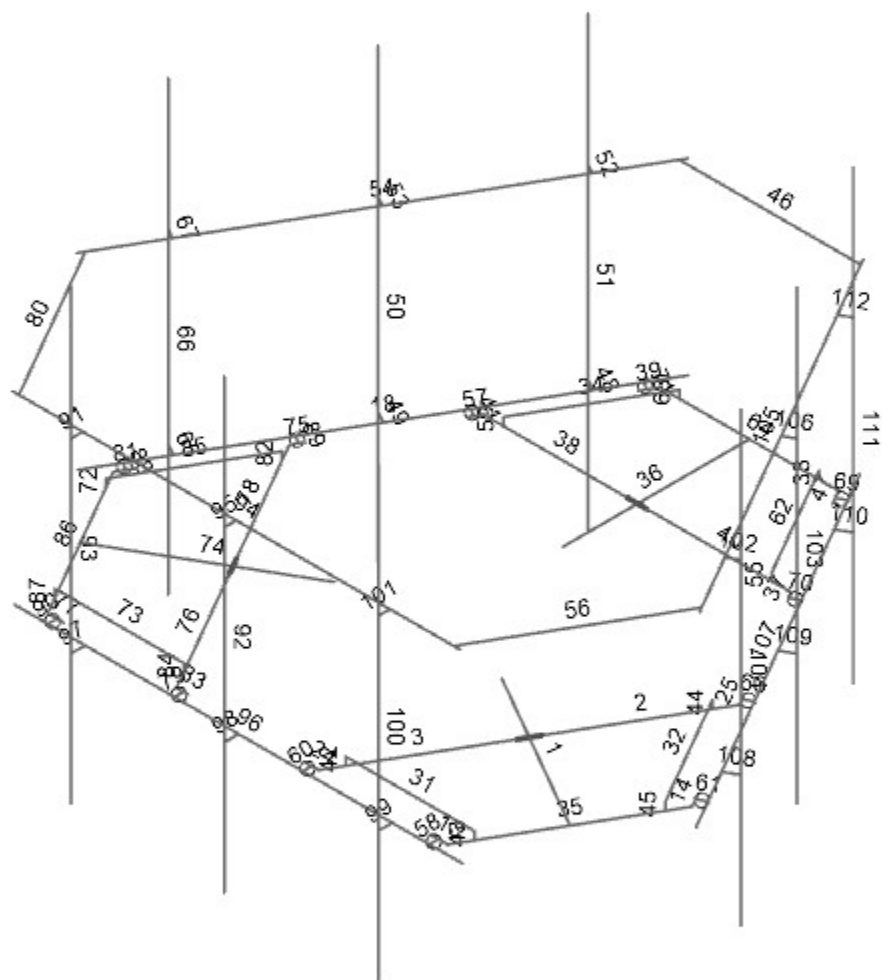
149470.003.01

CT13556-S - Norwich

SK-1

Jul 23, 2021

149470_003_01_Norwich_CT.r3d



Envelope Only Solution

B+T Group

SV

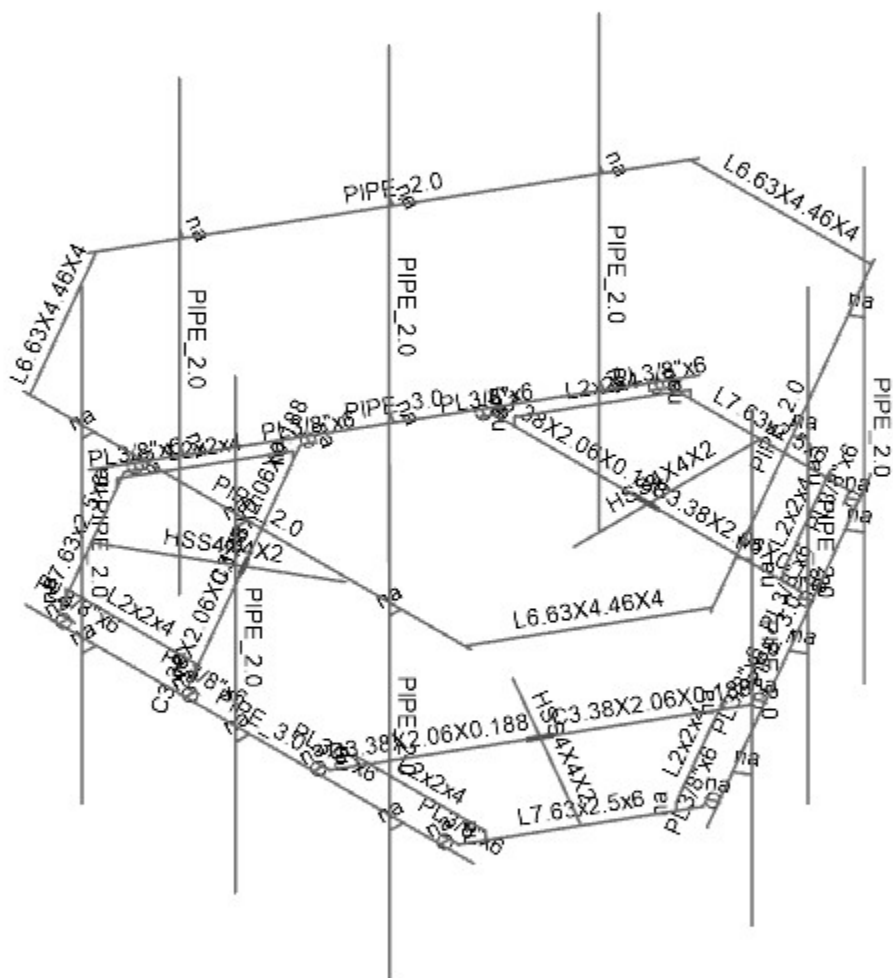
149470.003.01

CT13556-S - Norwich

SK-2

Jul 23, 2021

149470_003_01_Norwich_CT.r3d



Envelope Only Solution

B+T Group

SV

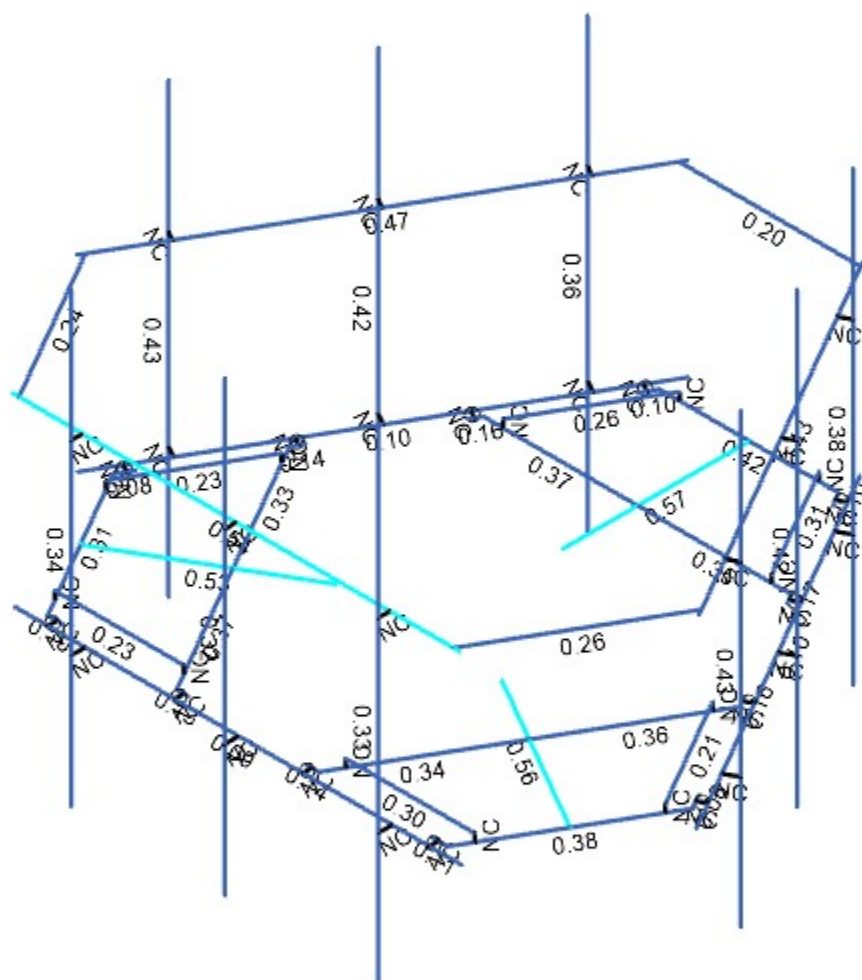
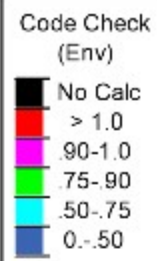
149470.003.01

CT13556-S - Norwich

SK-3

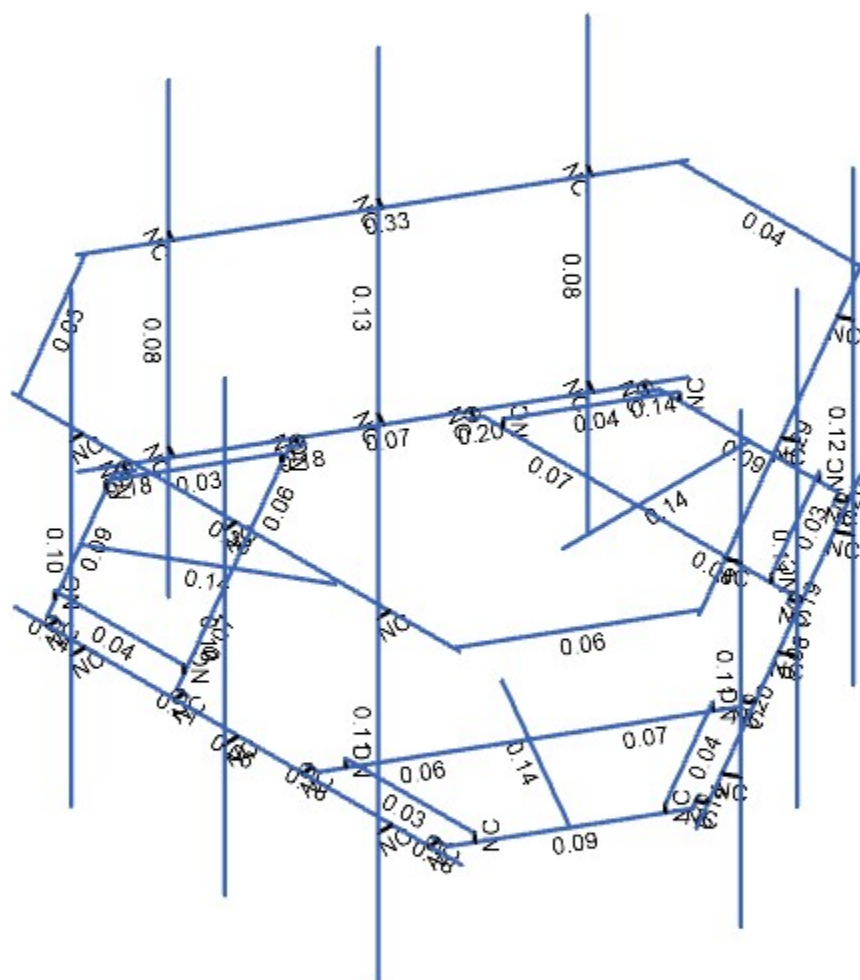
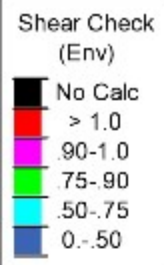
Jul 23, 2021

149470_003_01_Norwich_CT.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	CT13556-S - Norwich	SK-4
SV		Jul 23, 2021
149470.003.01		149470_003_01_Norwich_CT.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	CT13556-S - Norwich	SK-5
SV		Jul 23, 2021
149470.003.01		149470_003_01_Norwich_CT.r3d

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 3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
2	MF-H2	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
3	SF-H1	HSS4X4X2	Beam	Tube	A500 Gr.B Rect	Typical	1.77	4.4	4.4	6.91
4	SF-H2	C3.38X2.06X0.188	Beam	Channel	A36 Gr.36	Typical	1.339	0.562	2.4	0.015
5	SF-H3	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical	0.944	0.346	0.346	0.021
6	SF-H4	L7.63x2.5x6	Beam	Single Angle	A36 Gr.36	Typical	3.658	1.307	22.092	0.163
7	MF-P1	PIPE 2.0	Column	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
8	MF-CP1	PL3/8"x6	Beam	RECT	A36 Gr.36	Typical	2.25	0.026	6.75	0.101
9	MF-H3	L6.63X4.46X4	Beam	Single Angle	A36 Gr.36	Typical	2.71	4.764	12.628	0.055

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	A53 Gr.B	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	48	86	84		RIGID	None	None	RIGID	Typical
17	49	87	85		RIGID	None	None	RIGID	Typical
18	50	89	91		MF-P1	Column	Pipe	A53 Gr.B	Typical
19	51	88	90		MF-P1	Column	Pipe	A53 Gr.B	Typical
20	52	92	94		RIGID	None	None	RIGID	Typical
21	53	93	95		RIGID	None	None	RIGID	Typical
22	54	96	97		MF-H2	Beam	Pipe	A53 Gr.B	Typical
23	56	100	101	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
24	58	35	33		RIGID	None	None	RIGID	Typical
25	60	53	51		RIGID	None	None	RIGID	Typical
26	61	38	36		RIGID	None	None	RIGID	Typical
27	63	58	56		RIGID	None	None	RIGID	Typical
28	65	103	102		RIGID	None	None	RIGID	Typical
29	66	104	105		MF-P1	Column	Pipe	A53 Gr.B	Typical
30	67	106	107		RIGID	None	None	RIGID	Typical
31	33	57	111		RIGID	None	None	RIGID	Typical
32	34	109	108		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
33	36	62	66		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
34	37	61	67		MF-CP1	Beam	RECT	A36 Gr.36	Typical
35	38	59	63	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
36	39	69	74		MF-CP1	Beam	RECT	A36 Gr.36	Typical
37	40	63	67	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
38	41	99	73		RIGID	None	None	RIGID	Typical
39	46	114	115	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
40	47	70	68		MF-CP1	Beam	RECT	A36 Gr.36	Typical
41	55	55	110		RIGID	None	None	RIGID	Typical
42	57	59	98		MF-CP1	Beam	RECT	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
43	59	113	109		RIGID	None	None	RIGID	Typical
44	62	111	110		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
45	64	69	70		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
46	68	112	108		RIGID	None	None	RIGID	Typical
47	69	78	75		RIGID	None	None	RIGID	Typical
48	70	82	79		RIGID	None	None	RIGID	Typical
49	71	81	80		RIGID	None	None	RIGID	Typical
50	72	117	140		RIGID	None	None	RIGID	Typical
51	73	138	137		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
52	74	120	122		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
53	75	119	123		MF-CP1	Beam	RECT	A36 Gr.36	Typical
54	76	118	121	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
55	77	125	128		MF-CP1	Beam	RECT	A36 Gr.36	Typical
56	78	121	123	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
57	79	136	127		RIGID	None	None	RIGID	Typical
58	80	143	144	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
59	81	126	124		MF-CP1	Beam	RECT	A36 Gr.36	Typical
60	82	116	139		RIGID	None	None	RIGID	Typical
61	83	118	135		MF-CP1	Beam	RECT	A36 Gr.36	Typical
62	84	142	138		RIGID	None	None	RIGID	Typical
63	85	140	139		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
64	86	125	126		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
65	87	141	137		RIGID	None	None	RIGID	Typical
66	88	130	129		RIGID	None	None	RIGID	Typical
67	89	134	131		RIGID	None	None	RIGID	Typical
68	90	133	132		RIGID	None	None	RIGID	Typical
69	91	157	159		RIGID	None	None	RIGID	Typical
70	92	152	156		MF-P1	Column	Pipe	A53 Gr.B	Typical
71	93	151	153		MF-P1	Column	Pipe	A53 Gr.B	Typical
72	94	165	166		MF-H2	Beam	Pipe	A53 Gr.B	Typical
73	95	158	160		RIGID	None	None	RIGID	Typical
74	96	167	168		MF-H1	Beam	Pipe	A53 Gr.B	Typical
75	97	149	147		RIGID	None	None	RIGID	Typical
76	98	150	148		RIGID	None	None	RIGID	Typical
77	99	161	146		RIGID	None	None	RIGID	Typical
78	100	162	163		MF-P1	Column	Pipe	A53 Gr.B	Typical
79	101	164	145		RIGID	None	None	RIGID	Typical
80	102	179	181		RIGID	None	None	RIGID	Typical
81	103	176	178		MF-P1	Column	Pipe	A53 Gr.B	Typical
82	104	175	177		MF-P1	Column	Pipe	A53 Gr.B	Typical
83	105	187	188		MF-H2	Beam	Pipe	A53 Gr.B	Typical
84	106	180	182		RIGID	None	None	RIGID	Typical
85	107	189	190		MF-H1	Beam	Pipe	A53 Gr.B	Typical
86	108	173	171		RIGID	None	None	RIGID	Typical
87	109	174	172		RIGID	None	None	RIGID	Typical
88	110	183	170		RIGID	None	None	RIGID	Typical
89	111	184	185		MF-P1	Column	Pipe	A53 Gr.B	Typical
90	112	186	169		RIGID	None	None	RIGID	Typical

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
1	Dead	DL	-1		20		3
2	0 Wind - No Ice	WLZ			20	48	
3	90 Wind - No Ice	WLX			20	48	
4	0 Wind - Ice	WLZ			20	48	

Basic Load Cases (Continued)

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
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		
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

Load Combinations (Continued)

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

Load Combinations (Continued)

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

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	-0.169	%15
2	66	Z	-0.169	%85
3	66	Z	-0.053	%15
4	66	Z	-0.053	%50
5	66	Z	0	0
6	36	Z	-0.054	%20
7	36	Z	0	0
8	36	Z	0	0
9	36	Z	0	0
10	36	Z	0	0
11	111	Z	-0.169	%15
12	111	Z	-0.169	%85
13	111	Z	-0.053	%15
14	111	Z	-0.053	%50
15	111	Z	0	0
16	100	Z	-0.169	%15
17	100	Z	-0.169	%85
18	100	Z	-0.053	%15
19	100	Z	-0.053	%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	-0.068	%15
2	66	X	-0.068	%85
3	66	X	-0.028	%15
4	66	X	-0.032	%50
5	66	X	0	0
6	36	X	-0.03	%20
7	36	X	0	0
8	36	X	0	0
9	36	X	0	0
10	36	X	0	0
11	111	X	-0.068	%15
12	111	X	-0.068	%85
13	111	X	-0.028	%15
14	111	X	-0.032	%50
15	111	X	0	0
16	100	X	-0.068	%15
17	100	X	-0.068	%85
18	100	X	-0.028	%15
19	100	X	-0.032	%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	-0.046	%15
2	66	Z	-0.046	%85
3	66	Z	-0.018	%15
4	66	Z	-0.018	%50
5	66	Z	0	0
6	36	Z	-0.018	%20

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
7	36	Z	0	0
8	36	Z	0	0
9	36	Z	0	0
10	36	Z	0	0
11	111	Z	-0.046	%15
12	111	Z	-0.046	%85
13	111	Z	-0.018	%15
14	111	Z	-0.018	%50
15	111	Z	0	0
16	100	Z	-0.046	%15
17	100	Z	-0.046	%85
18	100	Z	-0.018	%15
19	100	Z	-0.018	%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	-0.023	%15
2	66	X	-0.023	%85
3	66	X	-0.011	%15
4	66	X	-0.012	%50
5	66	X	0	0
6	36	X	-0.012	%20
7	36	X	0	0
8	36	X	0	0
9	36	X	0	0
10	36	X	0	0
11	111	X	-0.023	%15
12	111	X	-0.023	%85
13	111	X	-0.011	%15
14	111	X	-0.012	%50
15	111	X	0	0
16	100	X	-0.023	%15
17	100	X	-0.023	%85
18	100	X	-0.011	%15
19	100	X	-0.012	%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	-0.014	%15
2	66	Z	-0.014	%85
3	66	Z	-0.004	%15
4	66	Z	-0.004	%50
5	66	Z	0	0
6	36	Z	-0.004	%20
7	36	Z	0	0
8	36	Z	0	0
9	36	Z	0	0
10	36	Z	0	0
11	111	Z	-0.014	%15
12	111	Z	-0.014	%85
13	111	Z	-0.004	%15

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
14	111	Z	-0.004	%50
15	111	Z	0	0
16	100	Z	-0.014	%15
17	100	Z	-0.014	%85
18	100	Z	-0.004	%15
19	100	Z	-0.004	%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	-0.006	%15
2	66	X	-0.006	%85
3	66	X	-0.002	%15
4	66	X	-0.003	%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	-0.006	%15
12	111	X	-0.006	%85
13	111	X	-0.002	%15
14	111	X	-0.003	%50
15	111	X	0	0
16	100	X	-0.006	%15
17	100	X	-0.006	%85
18	100	X	-0.002	%15
19	100	X	-0.003	%50
20	100	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	66	Y	-0.144	%15
2	66	Y	-0.144	%85
3	66	Y	-0.05	%15
4	66	Y	-0.052	%50
5	66	Y	0	0
6	36	Y	-0.052	%20
7	36	Y	0	0
8	36	Y	0	0
9	36	Y	0	0
10	36	Y	0	0
11	111	Y	-0.144	%15
12	111	Y	-0.144	%85
13	111	Y	-0.05	%15
14	111	Y	-0.052	%50
15	111	Y	0	0
16	100	Y	-0.144	%15
17	100	Y	-0.144	%85
18	100	Y	-0.05	%15
19	100	Y	-0.052	%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	-0.013	-0.013	0	%100
2	2	Z	-0.011	-0.011	0	%100
3	3	Z	-0.011	-0.011	0	%100
4	13	Z	-0.016	-0.016	0	%100
5	14	Z	-0.016	-0.016	0	%100
6	18	Z	-0.01	-0.01	0	%100
7	24	Z	-0.016	-0.016	0	%100
8	25	Z	-0.016	-0.016	0	%100
9	31	Z	-0.007	-0.007	0	%100
10	32	Z	-0.007	-0.007	0	%100
11	35	Z	-0.022	-0.022	0	%100
12	50	Z	-0.006	-0.006	0	%100
13	51	Z	-0.006	-0.006	0	%100
14	54	Z	-0.006	-0.006	0	%100
15	56	Z	-0.02	-0.02	0	%100
16	66	Z	-0.006	-0.006	0	%100
17	34	Z	-0.007	-0.007	0	%100
18	36	Z	-0.013	-0.013	0	%100
19	37	Z	-0.016	-0.016	0	%100
20	38	Z	-0.011	-0.011	0	%100
21	39	Z	-0.016	-0.016	0	%100
22	40	Z	-0.011	-0.011	0	%100
23	46	Z	-0.02	-0.02	0	%100
24	47	Z	-0.016	-0.016	0	%100
25	57	Z	-0.016	-0.016	0	%100
26	62	Z	-0.007	-0.007	0	%100
27	64	Z	-0.022	-0.022	0	%100
28	73	Z	-0.007	-0.007	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, %)]
29	74	Z	-0.013	-0.013	0	%100
30	75	Z	-0.016	-0.016	0	%100
31	76	Z	-0.011	-0.011	0	%100
32	77	Z	-0.016	-0.016	0	%100
33	78	Z	-0.011	-0.011	0	%100
34	80	Z	-0.02	-0.02	0	%100
35	81	Z	-0.016	-0.016	0	%100
36	83	Z	-0.016	-0.016	0	%100
37	85	Z	-0.007	-0.007	0	%100
38	86	Z	-0.022	-0.022	0	%100
39	92	Z	-0.006	-0.006	0	%100
40	93	Z	-0.006	-0.006	0	%100
41	94	Z	-0.006	-0.006	0	%100
42	96	Z	-0.01	-0.01	0	%100
43	100	Z	-0.006	-0.006	0	%100
44	103	Z	-0.006	-0.006	0	%100
45	104	Z	-0.006	-0.006	0	%100
46	105	Z	-0.006	-0.006	0	%100
47	107	Z	-0.01	-0.01	0	%100
48	111	Z	-0.006	-0.006	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	-0.013	-0.013	0	%100
2	2	X	-0.011	-0.011	0	%100
3	3	X	-0.011	-0.011	0	%100
4	13	X	-0.016	-0.016	0	%100
5	14	X	-0.016	-0.016	0	%100
6	18	X	-0.01	-0.01	0	%100
7	24	X	-0.016	-0.016	0	%100
8	25	X	-0.016	-0.016	0	%100
9	31	X	-0.007	-0.007	0	%100
10	32	X	-0.007	-0.007	0	%100
11	35	X	-0.022	-0.022	0	%100
12	50	X	-0.006	-0.006	0	%100
13	51	X	-0.006	-0.006	0	%100
14	54	X	-0.006	-0.006	0	%100
15	56	X	-0.02	-0.02	0	%100
16	66	X	-0.006	-0.006	0	%100
17	34	X	-0.007	-0.007	0	%100
18	36	X	-0.013	-0.013	0	%100
19	37	X	-0.016	-0.016	0	%100
20	38	X	-0.011	-0.011	0	%100
21	39	X	-0.016	-0.016	0	%100
22	40	X	-0.011	-0.011	0	%100
23	46	X	-0.02	-0.02	0	%100
24	47	X	-0.016	-0.016	0	%100
25	57	X	-0.016	-0.016	0	%100
26	62	X	-0.007	-0.007	0	%100
27	64	X	-0.022	-0.022	0	%100
28	73	X	-0.007	-0.007	0	%100
29	74	X	-0.013	-0.013	0	%100
30	75	X	-0.016	-0.016	0	%100
31	76	X	-0.011	-0.011	0	%100
32	77	X	-0.016	-0.016	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, %)]
33	78	X	-0.011	-0.011	0	%100
34	80	X	-0.02	-0.02	0	%100
35	81	X	-0.016	-0.016	0	%100
36	83	X	-0.016	-0.016	0	%100
37	85	X	-0.007	-0.007	0	%100
38	86	X	-0.022	-0.022	0	%100
39	92	X	-0.006	-0.006	0	%100
40	93	X	-0.006	-0.006	0	%100
41	94	X	-0.006	-0.006	0	%100
42	96	X	-0.01	-0.01	0	%100
43	100	X	-0.006	-0.006	0	%100
44	103	X	-0.006	-0.006	0	%100
45	104	X	-0.006	-0.006	0	%100
46	105	X	-0.006	-0.006	0	%100
47	107	X	-0.01	-0.01	0	%100
48	111	X	-0.006	-0.006	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	-0.007	-0.007	0	%100
2	2	Z	-0.006	-0.006	0	%100
3	3	Z	-0.006	-0.006	0	%100
4	13	Z	-0.013	-0.013	0	%100
5	14	Z	-0.013	-0.013	0	%100
6	18	Z	-0.003	-0.003	0	%100
7	24	Z	-0.015	-0.015	0	%100
8	25	Z	-0.015	-0.015	0	%100
9	31	Z	-0.006	-0.006	0	%100
10	32	Z	-0.006	-0.006	0	%100
11	35	Z	-0.009	-0.009	0	%100
12	50	Z	-0.002	-0.002	0	%100
13	51	Z	-0.002	-0.002	0	%100
14	54	Z	-0.002	-0.002	0	%100
15	56	Z	-0.008	-0.008	0	%100
16	66	Z	-0.002	-0.002	0	%100
17	34	Z	-0.006	-0.006	0	%100
18	36	Z	-0.007	-0.007	0	%100
19	37	Z	-0.015	-0.015	0	%100
20	38	Z	-0.006	-0.006	0	%100
21	39	Z	-0.013	-0.013	0	%100
22	40	Z	-0.006	-0.006	0	%100
23	46	Z	-0.008	-0.008	0	%100
24	47	Z	-0.013	-0.013	0	%100
25	57	Z	-0.015	-0.015	0	%100
26	62	Z	-0.006	-0.006	0	%100
27	64	Z	-0.009	-0.009	0	%100
28	73	Z	-0.006	-0.006	0	%100
29	74	Z	-0.007	-0.007	0	%100
30	75	Z	-0.015	-0.015	0	%100
31	76	Z	-0.006	-0.006	0	%100
32	77	Z	-0.013	-0.013	0	%100
33	78	Z	-0.006	-0.006	0	%100
34	80	Z	-0.008	-0.008	0	%100
35	81	Z	-0.013	-0.013	0	%100
36	83	Z	-0.015	-0.015	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, %)]
37	85	Z	-0.006	-0.006	0	%100
38	86	Z	-0.009	-0.009	0	%100
39	92	Z	-0.002	-0.002	0	%100
40	93	Z	-0.002	-0.002	0	%100
41	94	Z	-0.002	-0.002	0	%100
42	96	Z	-0.003	-0.003	0	%100
43	100	Z	-0.002	-0.002	0	%100
44	103	Z	-0.002	-0.002	0	%100
45	104	Z	-0.002	-0.002	0	%100
46	105	Z	-0.002	-0.002	0	%100
47	107	Z	-0.003	-0.003	0	%100
48	111	Z	-0.002	-0.002	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	-0.006	-0.006	0	%100
2	2	X	-0.006	-0.006	0	%100
3	3	X	-0.006	-0.006	0	%100
4	13	X	-0.011	-0.011	0	%100
5	14	X	-0.011	-0.011	0	%100
6	18	X	-0.002	-0.002	0	%100
7	24	X	-0.014	-0.014	0	%100
8	25	X	-0.014	-0.014	0	%100
9	31	X	-0.005	-0.005	0	%100
10	32	X	-0.005	-0.005	0	%100
11	35	X	-0.008	-0.008	0	%100
12	50	X	-0.002	-0.002	0	%100
13	51	X	-0.002	-0.002	0	%100
14	54	X	-0.002	-0.002	0	%100
15	56	X	-0.007	-0.007	0	%100
16	66	X	-0.002	-0.002	0	%100
17	34	X	-0.005	-0.005	0	%100
18	36	X	-0.006	-0.006	0	%100
19	37	X	-0.014	-0.014	0	%100
20	38	X	-0.006	-0.006	0	%100
21	39	X	-0.011	-0.011	0	%100
22	40	X	-0.006	-0.006	0	%100
23	46	X	-0.007	-0.007	0	%100
24	47	X	-0.011	-0.011	0	%100
25	57	X	-0.014	-0.014	0	%100
26	62	X	-0.005	-0.005	0	%100
27	64	X	-0.008	-0.008	0	%100
28	73	X	-0.005	-0.005	0	%100
29	74	X	-0.006	-0.006	0	%100
30	75	X	-0.014	-0.014	0	%100
31	76	X	-0.006	-0.006	0	%100
32	77	X	-0.011	-0.011	0	%100
33	78	X	-0.006	-0.006	0	%100
34	80	X	-0.007	-0.007	0	%100
35	81	X	-0.011	-0.011	0	%100
36	83	X	-0.014	-0.014	0	%100
37	85	X	-0.005	-0.005	0	%100
38	86	X	-0.008	-0.008	0	%100
39	92	X	-0.002	-0.002	0	%100
40	93	X	-0.002	-0.002	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, %)]
41	94	X	-0.002	-0.002	0	%100
42	96	X	-0.002	-0.002	0	%100
43	100	X	-0.002	-0.002	0	%100
44	103	X	-0.002	-0.002	0	%100
45	104	X	-0.002	-0.002	0	%100
46	105	X	-0.002	-0.002	0	%100
47	107	X	-0.002	-0.002	0	%100
48	111	X	-0.002	-0.002	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	-0.0009	-0.0009	0	%100
3	3	Z	-0.0009	-0.0009	0	%100
4	13	Z	-0.001	-0.001	0	%100
5	14	Z	-0.001	-0.001	0	%100
6	18	Z	-0.0004	-0.0004	0	%100
7	24	Z	-0.001	-0.001	0	%100
8	25	Z	-0.001	-0.001	0	%100
9	31	Z	-0.0006	-0.0006	0	%100
10	32	Z	-0.0006	-0.0006	0	%100
11	35	Z	-0.002	-0.002	0	%100
12	50	Z	-0.0003	-0.0003	0	%100
13	51	Z	-0.0003	-0.0003	0	%100
14	54	Z	-0.0003	-0.0003	0	%100
15	56	Z	-0.002	-0.002	0	%100
16	66	Z	-0.0003	-0.0003	0	%100
17	34	Z	-0.0006	-0.0006	0	%100
18	36	Z	-0.001	-0.001	0	%100
19	37	Z	-0.001	-0.001	0	%100
20	38	Z	-0.0009	-0.0009	0	%100
21	39	Z	-0.001	-0.001	0	%100
22	40	Z	-0.0009	-0.0009	0	%100
23	46	Z	-0.002	-0.002	0	%100
24	47	Z	-0.001	-0.001	0	%100
25	57	Z	-0.001	-0.001	0	%100
26	62	Z	-0.0006	-0.0006	0	%100
27	64	Z	-0.002	-0.002	0	%100
28	73	Z	-0.0006	-0.0006	0	%100
29	74	Z	-0.001	-0.001	0	%100
30	75	Z	-0.001	-0.001	0	%100
31	76	Z	-0.0009	-0.0009	0	%100
32	77	Z	-0.001	-0.001	0	%100
33	78	Z	-0.0009	-0.0009	0	%100
34	80	Z	-0.002	-0.002	0	%100
35	81	Z	-0.001	-0.001	0	%100
36	83	Z	-0.001	-0.001	0	%100
37	85	Z	-0.0006	-0.0006	0	%100
38	86	Z	-0.002	-0.002	0	%100
39	92	Z	-0.0003	-0.0003	0	%100
40	93	Z	-0.0003	-0.0003	0	%100
41	94	Z	-0.0003	-0.0003	0	%100
42	96	Z	-0.0004	-0.0004	0	%100
43	100	Z	-0.0003	-0.0003	0	%100
44	103	Z	-0.0003	-0.0003	0	%100

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

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
45	104	Z	-0.0003	-0.0003	0	%100
46	105	Z	-0.0003	-0.0003	0	%100
47	107	Z	-0.0004	-0.0004	0	%100
48	111	Z	-0.0003	-0.0003	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	-0.0009	-0.0009	0	%100
3	3	X	-0.0009	-0.0009	0	%100
4	13	X	-0.001	-0.001	0	%100
5	14	X	-0.001	-0.001	0	%100
6	18	X	-0.0004	-0.0004	0	%100
7	24	X	-0.001	-0.001	0	%100
8	25	X	-0.001	-0.001	0	%100
9	31	X	-0.0006	-0.0006	0	%100
10	32	X	-0.0006	-0.0006	0	%100
11	35	X	-0.002	-0.002	0	%100
12	50	X	-0.0003	-0.0003	0	%100
13	51	X	-0.0003	-0.0003	0	%100
14	54	X	-0.0003	-0.0003	0	%100
15	56	X	-0.002	-0.002	0	%100
16	66	X	-0.0003	-0.0003	0	%100
17	34	X	-0.0006	-0.0006	0	%100
18	36	X	-0.001	-0.001	0	%100
19	37	X	-0.001	-0.001	0	%100
20	38	X	-0.0009	-0.0009	0	%100
21	39	X	-0.001	-0.001	0	%100
22	40	X	-0.0009	-0.0009	0	%100
23	46	X	-0.002	-0.002	0	%100
24	47	X	-0.001	-0.001	0	%100
25	57	X	-0.001	-0.001	0	%100
26	62	X	-0.0006	-0.0006	0	%100
27	64	X	-0.002	-0.002	0	%100
28	73	X	-0.0006	-0.0006	0	%100
29	74	X	-0.001	-0.001	0	%100
30	75	X	-0.001	-0.001	0	%100
31	76	X	-0.0009	-0.0009	0	%100
32	77	X	-0.001	-0.001	0	%100
33	78	X	-0.0009	-0.0009	0	%100
34	80	X	-0.002	-0.002	0	%100
35	81	X	-0.001	-0.001	0	%100
36	83	X	-0.001	-0.001	0	%100
37	85	X	-0.0006	-0.0006	0	%100
38	86	X	-0.002	-0.002	0	%100
39	92	X	-0.0003	-0.0003	0	%100
40	93	X	-0.0003	-0.0003	0	%100
41	94	X	-0.0003	-0.0003	0	%100
42	96	X	-0.0004	-0.0004	0	%100
43	100	X	-0.0003	-0.0003	0	%100
44	103	X	-0.0003	-0.0003	0	%100
45	104	X	-0.0003	-0.0003	0	%100
46	105	X	-0.0003	-0.0003	0	%100
47	107	X	-0.0004	-0.0004	0	%100
48	111	X	-0.0003	-0.0003	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	-0.014	-0.014	0	%100
2	2	Y	-0.011	-0.011	0	%100
3	3	Y	-0.011	-0.011	0	%100
4	13	Y	-0.015	-0.015	0	%100
5	14	Y	-0.015	-0.015	0	%100
6	18	Y	-0.01	-0.01	0	%100
7	24	Y	-0.015	-0.015	0	%100
8	25	Y	-0.015	-0.015	0	%100
9	31	Y	-0.009	-0.009	0	%100
10	32	Y	-0.009	-0.009	0	%100
11	35	Y	-0.019	-0.019	0	%100
12	50	Y	-0.008	-0.008	0	%100
13	51	Y	-0.008	-0.008	0	%100
14	54	Y	-0.008	-0.008	0	%100
15	56	Y	-0.019	-0.019	0	%100
16	66	Y	-0.008	-0.008	0	%100
17	34	Y	-0.009	-0.009	0	%100
18	36	Y	-0.014	-0.014	0	%100
19	37	Y	-0.015	-0.015	0	%100
20	38	Y	-0.011	-0.011	0	%100
21	39	Y	-0.015	-0.015	0	%100
22	40	Y	-0.011	-0.011	0	%100
23	46	Y	-0.019	-0.019	0	%100
24	47	Y	-0.015	-0.015	0	%100
25	57	Y	-0.015	-0.015	0	%100
26	62	Y	-0.009	-0.009	0	%100
27	64	Y	-0.019	-0.019	0	%100
28	73	Y	-0.009	-0.009	0	%100
29	74	Y	-0.014	-0.014	0	%100
30	75	Y	-0.015	-0.015	0	%100
31	76	Y	-0.011	-0.011	0	%100
32	77	Y	-0.015	-0.015	0	%100
33	78	Y	-0.011	-0.011	0	%100
34	80	Y	-0.019	-0.019	0	%100
35	81	Y	-0.015	-0.015	0	%100
36	83	Y	-0.015	-0.015	0	%100
37	85	Y	-0.009	-0.009	0	%100
38	86	Y	-0.019	-0.019	0	%100
39	92	Y	-0.008	-0.008	0	%100
40	93	Y	-0.008	-0.008	0	%100
41	94	Y	-0.008	-0.008	0	%100
42	96	Y	-0.01	-0.01	0	%100
43	100	Y	-0.008	-0.008	0	%100
44	103	Y	-0.008	-0.008	0	%100
45	104	Y	-0.008	-0.008	0	%100
46	105	Y	-0.008	-0.008	0	%100
47	107	Y	-0.01	-0.01	0	%100
48	111	Y	-0.008	-0.008	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

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, %)]
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
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	-0.027	-0.012	0	1.155
2 31	Y	-0.012	0.0004759	1.155	2.309
3 32	Y	-0.014	-0.012	0.231	2.309
4 34	Y	-0.015	-0.012	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
3 146	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 84	L	Y	-0.5
2 171	L	Y	-0.5

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

Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s ² /ft, k*s ² *ft)]
3 147	L	Y	-0.5

Envelope Node Reactions

Node Label	X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1 2 max	1.189	17	1.93	46	1.803	14	0.674	3	1.632	7	3.262	46
2 min	-1.105	11	-0.294	4	-1.76	8	-2.264	45	-1.634	25	-0.982	4
3 62 max	1.315	5	2.062	38	1.582	2	4.222	14	1.299	11	0.482	61
4 min	-1.319	23	-0.522	8	-1.679	20	-1.77	8	-1.302	17	-0.251	79
5 120 max	1.214	5	1.933	42	1.565	14	0.611	13	1.573	3	0.927	12
6 min	-1.294	23	-0.287	12	-1.511	8	-1.736	79	-1.573	21	-3.575	42
7 Totals: max	3.706	17	5.371	46	4.937	14						
8 min	-3.706	11	1.59	4	-4.937	8						

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

Member	Shape	Code	Check	Loc[ft]	LC	Shear	Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	1	HSS4X4X2	0.562	0	21	0.139	0	y	45	70.173	73.278	8.24	8.24	1.943	H1-1b	
2	2	C3.38X2.06X0.188	0.364	2.592	47	0.066	0.351	y	49	38.433	43.394	1.694	4.483	1.636	H1-1b	
3	3	C3.38X2.06X0.188	0.343	0	21	0.064	2.241	z	15	38.433	43.394	1.694	4.483	1.59	H1-1b	
4	13	PL3/8"x6	0.109	0.164	15	0.179	0	y	58	68.856	72.9	0.57	9.113	2.726	H1-1b	
5	14	PL3/8"x6	0.078	0	23	0.139	0	y	81	68.856	72.9	0.57	9.113	1.836	H1-1b	
6	18	PIPE 3.0	0.099	4	14	0.073	2.917	25	46.291	65.205	5.749	5.749	1.464	H1-1b		
7	24	PL3/8"x6	0.136	0.085	2	0.184	0.208	y	45	70.733	72.9	0.57	9.113	1.388	H1-1b	
8	25	PL3/8"x6	0.163	0	21	0.201	0	y	47	70.733	72.9	0.57	9.113	2.902	H1-1b	
9	31	L2x2x4	0.304	0	15	0.031	0	y	79	23.349	30.586	0.691	1.577	1.5	H2-1	
10	32	L2x2x4	0.213	2.309	16	0.04	0	y	49	23.349	30.586	0.691	1.577	1.5	H2-1	
11	35	L7.63x2.5x6	0.377	1.604	3	0.088	1.604	y	59	73.845	118.523	1.798	14.121	1.334	H2-1	
12	50	PIPE 2.0	0.419	5.667	25	0.13	5.667	14	14.916	32.13	1.872	1.872	3	H1-1b		
13	51	PIPE 2.0	0.365	5.667	19	0.076	5.667	17	14.916	32.13	1.872	1.872	3	H1-1b		
14	54	PIPE 2.0	0.47	6.75	21	0.333	7.833	21	14.916	32.13	1.872	1.872	2.571	H3-6		
15	56	L6.63X4.46X4	0.256	3.25	2	0.057	3.25	z	20	50.727	87.804	2.444	7.106	1.5	H2-1	
16	66	PIPE 2.0	0.433	5.667	14	0.085	5.667	18	14.916	32.13	1.872	1.872	3	H1-1b		
17	34	L2x2x4	0.26	2.309	20	0.04	0	y	40	23.349	30.586	0.691	1.577	1.5	H2-1	
18	36	HSS4X4X2	0.571	0	25	0.143	0	y	49	70.173	73.278	8.24	8.24	1.949	H1-1b	
19	37	PL3/8"x6	0.165	0.208	14	0.186	0.208	y	38	70.733	72.9	0.57	9.113	2.276	H1-1b	
20	38	C3.38X2.06X0.188	0.375	2.592	39	0.066	0.351	y	41	38.433	43.394	1.694	4.483	1.634	H1-1b	
21	39	PL3/8"x6	0.1	0	15	0.14	0	y	74	68.856	72.9	0.57	9.113	1.961	H1-1b	
22	40	C3.38X2.06X0.188	0.349	0	25	0.077	2.241	z	20	38.433	43.394	1.694	4.483	1.59	H1-1b	
23	46	L6.63X4.46X4	0.204	3.25	6	0.042	3.25	z	24	50.726	87.804	2.444	7.106	1.5	H2-1	
24	47	PL3/8"x6	0.098	0.164	19	0.2	0	y	14	68.856	72.9	0.57	9.113	2.856	H1-1b	
25	57	PL3/8"x6	0.16	0	25	0.205	0	y	39	70.733	72.9	0.57	9.113	2.915	H1-1b	
26	62	L2x2x4	0.311	0	20	0.031	2.309	z	80	23.349	30.586	0.691	1.577	1.5	H2-1	
27	64	L7.63x2.5x6	0.42	1.604	8	0.088	1.604	y	51	73.845	118.523	1.798	13.733	1.245	H2-1	
28	73	L2x2x4	0.229	2.309	25	0.041	2.309	y	44	23.349	30.586	0.691	1.577	1.5	H2-1	
29	74	HSS4X4X2	0.526	0	19	0.136	0	y	53	70.173	73.278	8.24	8.24	1.975	H1-1b	
30	75	PL3/8"x6	0.141	0.208	19	0.18	0.208	y	42	70.733	72.9	0.57	9.113	2.533	H1-1b	
31	76	C3.38X2.06X0.188	0.373	2.592	43	0.067	0.351	y	45	38.433	43.394	1.694	4.483	1.632	H1-1b	
32	77	PL3/8"x6	0.101	0	19	0.137	0	y	78	68.856	72.9	0.57	9.113	1.846	H1-1b	
33	78	C3.38X2.06X0.188	0.326	0	45	0.064	2.241	y	84	38.433	43.394	1.703	4.483	1.647	H1-1b	
34	80	L6.63X4.46X4	0.245	0	2	0.045	0	y	15	50.726	87.804	2.444	7.106	1.5	H2-1	
35	81	PL3/8"x6	0.076	0.164	22	0.181	0	y	55	68.856	72.9	0.57	9.113	2.411	H1-1b	
36	83	PL3/8"x6	0.125	0	17	0.206	0	y	43	70.733	72.9	0.57	9.113	2.982	H1-1b	
37	85	L2x2x4	0.232	0	23	0.031	2.309	y	75	23.349	30.586	0.691	1.577	1.5	H2-1	
38	86	L7.63x2.5x6	0.311	1.604	12	0.088	1.604	y	56	73.845	118.523	1.798	13.78	1.255	H2-1	

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
39	92	PIPE 2.0	0.319	5.667	17	0.098	5.667	18	14.916	32.13	1.872	1.872	3	H1-1b	
40	93	PIPE 2.0	0.337	2.333	22	0.103	5.667	21	14.916	32.13	1.872	1.872	3	H1-1b	
41	94	PIPE 2.0	0.541	6.75	14	0.378	7.833	14	14.916	32.13	1.872	1.872	2.584	H3-6	
42	96	PIPE 3.0	0.089	2.833	21	0.056	4	17	46.291	65.205	5.749	5.749	1.743	H1-1b	
43	100	PIPE 2.0	0.332	2.333	19	0.112	2.333	20	14.916	32.13	1.872	1.872	3	H1-1b	
44	103	PIPE 2.0	0.424	5.667	21	0.108	5.667	21	14.916	32.13	1.872	1.872	3	H1-1b	
45	104	PIPE 2.0	0.433	2.333	14	0.106	5.667	25	14.916	32.13	1.872	1.872	3	H1-1b	
46	105	PIPE 2.0	0.435	1.25	25	0.287	1.25	25	14.916	32.13	1.872	1.872	2.236	H3-6	
47	107	PIPE 3.0	0.104	4	14	0.077	4	21	46.291	65.205	5.749	5.749	1.674	H1-1b	
48	111	PIPE 2.0	0.376	5.667	21	0.122	2.333	25	14.916	32.13	1.872	1.872	3	H1-1b	

APPENDIX B

(Additional Calculations)

PROJECT	149470.003.01 - Norwich, CT		KSC
SUBJECT	Platform Mount Analysis		
DATE	07/23/21	PAGE	OF



B+T GRP
 1717 S. Boulder, Suite 300
 Tulsa, OK 74159
 (918) 587-4630

Tower Type	:	Monopole	
Ground Elevation	Z_s	157 ft	[ASCE7 Hazard Tool]
Tower Height	:	128.00 ft	
Mount Elevation	:	107.00 ft	
Antenna Elevation	:	107.00 ft	
Crest Height	:	0 ft	
Risk Category	:	II	[Table 2-1]
Exposure Category	:	B	[Sec. 2.6.5.1.2]
Topography Category	:	1.00	[Sec. 2.6.6.2]
Wind Velocity	V	105 mph	[ASCE7 Hazard Tool]
Ice wind Velocity	V_i	50 mph	[ASCE7 Hazard Tool]
Service Velocity	V_s	30 mph	[ASCE7 Hazard Tool]
Base Ice thickness	t_i	1.00 in	[ASCE7 Hazard Tool]
Seismic Design Cat.	:	B	[ASCE7 Hazard Tool]
	S_s	0.17	
	S_1	0.06	
	S_{DS}	0.18	
	S_{D1}	0.10	
Gust Factor	G_h	1.00	[Sec. 16.6]
Pressure Coefficient	K_z	1.01	[Sec. 2.6.5.2]
Topography Factor	K_{zt}	1.00	[Sec. 2.6.6]
Elevation Factor	K_e	0.99	[Sec. 2.6.8]
Directionality Factor	K_d	0.95	[Sec. 16.6]
Shielding Factor	K_a	0.90	[Sec. 16.6]
Design Ice Thickness	t_{iz}	1.12 in	[Sec. 2.6.10]
Importance Factor	I_e	1	[Table 2-3]
Response Coefficient	C_s	0.090	[Sec. 2.7.7.1]
Amplification	A_s	2.34375	[Sec. 16.7]
	q_z	26.86 psf	

PROJECT	149470.003.01 - Norwich, CT		KSC
SUBJECT	Platform Mount Analysis		
DATE	07/23/21	PAGE	OF

Manufacturer	Model	Qty	Aspect Ratio	C _a flat/round	EPA _N (ft ²)	EPA _T (ft ²)	EPA _{N-Ice} (ft ²)	EPA _{T-Ice} (ft ²)	F _A No Ice (N)	F _A No Ice (T)	F _A Ice (N)	F _A Ice (T)
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.11	0.04	0.03	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.11	0.04	0.03	0.01
FUJITSU	TA08025-B604	1	1.05	1.20	1.64	0.86	2.15	1.26	0.05	0.02	0.01	0.01
FUJITSU	TA08025-B605	1	1.05	1.20	1.64	0.99	2.15	1.41	0.05	0.03	0.01	0.01
RAYCAP	RDIDC-9181-PF-48	1	1.14	1.20	1.68	0.94	2.20	1.36	0.05	0.03	0.01	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.11	0.04	0.03	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.11	0.04	0.03	0.01
FUJITSU	TA08025-B604	1	1.05	1.20	1.64	0.86	2.15	1.26	0.05	0.02	0.01	0.01
FUJITSU	TA08025-B605	1	1.05	1.20	1.64	0.99	2.15	1.41	0.05	0.03	0.01	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.11	0.04	0.03	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.11	0.04	0.03	0.01
FUJITSU	TA08025-B604	1	1.05	1.20	1.64	0.86	2.15	1.26	0.05	0.02	0.01	0.01
FUJITSU	TA08025-B605	1	1.05	1.20	1.64	0.99	2.15	1.41	0.05	0.03	0.01	0.01

PROJECT	149470.003.01 - Norwich, CT			KSC
SUBJECT	Platform Mount Analysis			
DATE	07/23/21	PAGE	1	OF 1



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

[REF: AISC 360-05]

Reactions at Bolted Connection

Tension	:	1.582	k
Vertical Shear	:	2.062	k
Horizontal Shear	:	1.315	k
Torsion	:	0.482	k.ft
Moment from Horizontal Forces	:	1.299	k.ft
Moment from Vertical Forces	:	4.222	k.ft

Bolt Parameters

Bolt Grade	:	A325	
Bolt Diameter	:	0.625	in
Nominal Bolt Area	:	0.307	in ²
Bolt spacing, Horizontal	:	6	in
Bolt spacing, Vertical	:	6	in
Bolt edge distance, plate height	:	1.5	in
Bolt edge distance, plate width	:	1.5	in
Total Number of Bolts	:	4	bolts

Summary of Forces

Shear Resultant Force	:	2.45	k
Force from Horz. Moment	:	2.35	k
Force from Vert. Moment	:	7.65	k
Shear Load / Bolt	:	0.61	k
Tension Load / Bolt	:	0.40	k
Resultant from Moments / Bolt	:	4.00	k

Bolt Checks

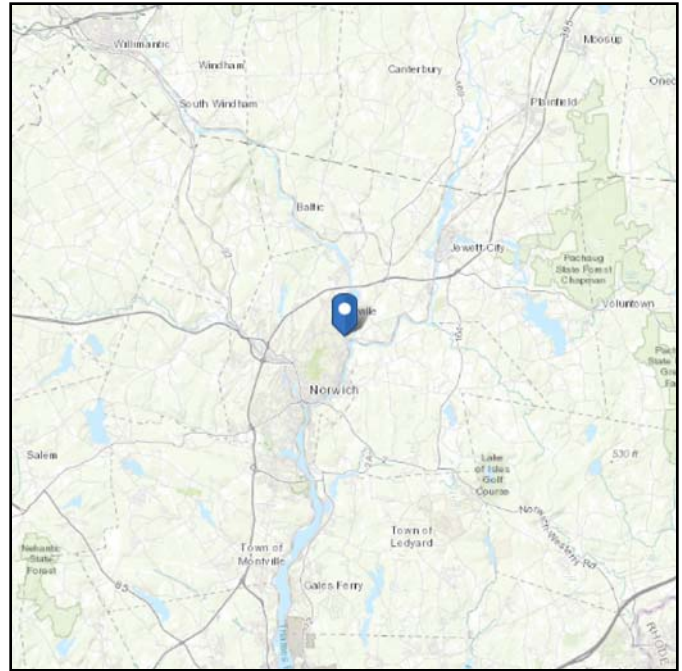
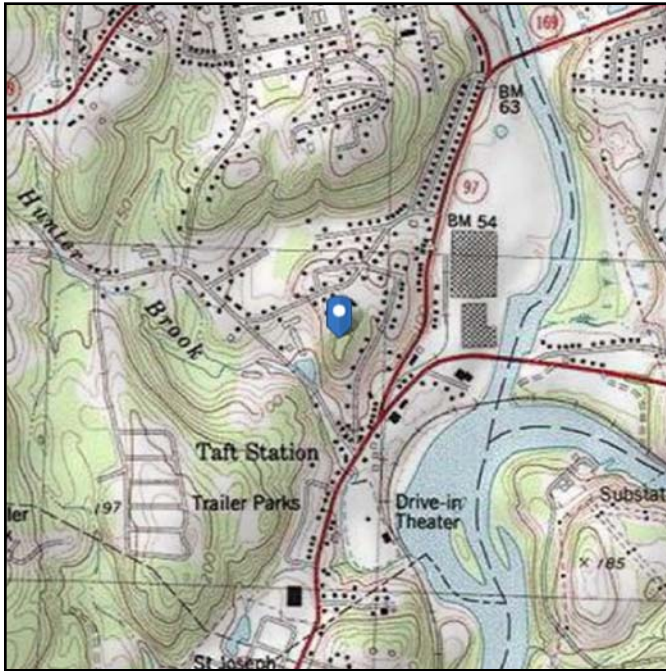
Nominal Tensile Stress, F_{nt}	:	90.00	ksi	[AISC Table J3.2]
Available Tensile Stress, ΦR_{nt}	:	20.72	k/bolt	[Eq. J3-1]
Unity Check, Bolt Tension	:	21.21%		OKAY
Nominal Shear Stress, F_{nv}	:	48.00	ksi	[AISC Table J3.2]
Available Shear Stress, ΦR_{nv}	:	11.05	k/bolt	[Eq. J3-1]
Unity Check, Bolt Shear	:	9.11%		OKAY
Unity Check, Combined	:	30.32%		OKAY
Available Bearing Strength, ΦR_n	:	34.66	k/bolt	
Unity Check, Bolt Bearing	:	1.76%		OKAY

ASCE 7 Hazards Report

Address:
No Address at This
Location

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

Elevation: 156.72 ft (NAVD 88)
Latitude: 41.558472
Longitude: -72.051278

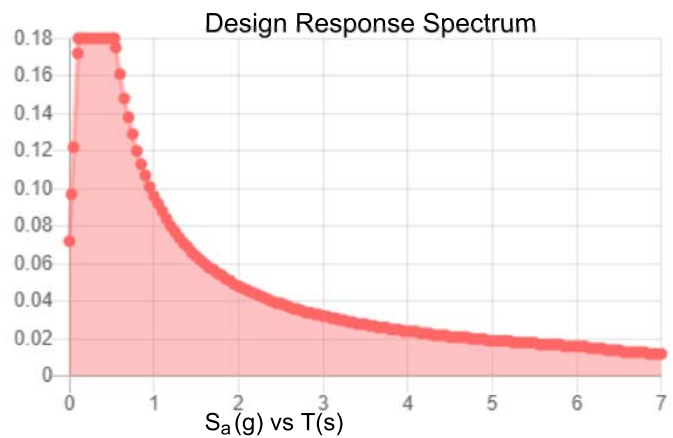
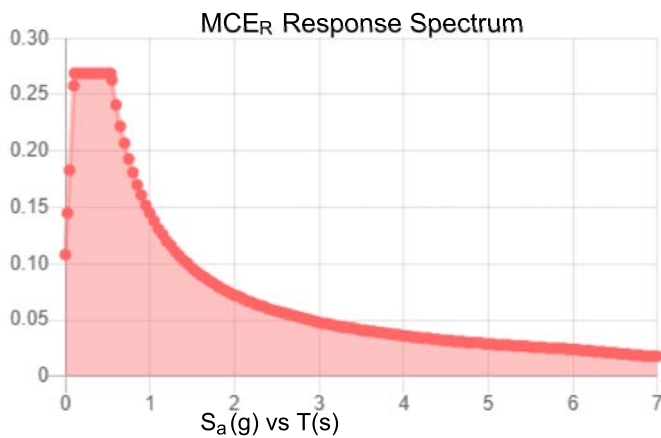


Site Soil Class: D - Stiff Soil

Results:

S_s :	0.168	S_{DS} :	0.18
S_1 :	0.06	S_{D1} :	0.096
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.084
S_{MS} :	0.269	PGA _M :	0.135
S_{M1} :	0.145	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B



Data Accessed:

Thu Jul 22 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: Thu Jul 22 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.

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Exhibit F

Power Density/RF Emissions Report



Fox Hill Telecom

Radio Frequency Emissions Analysis Report



Site ID: BOBOS00060A

SBA - Maennerchor Avenue
39 Maennerchor Avenue
Norwich, CT 06380

May 4, 2022

Fox Hill Telecom Project Number: 220986

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	38.46 %



May 4, 2022

Dish Wireless
5701 South Santa Fe Drive
Littleton, CO 80120

Emissions Analysis for Site: **BOBOS00060A – SBA - Maennerchor Avenue**

Fox Hill Telecom, Inc (“Fox Hill”) was directed to analyze the proposed radio installation for Dish Wireless, LLC (Dish) facility located at **39 Maennerchor Avenue, Norwich, CT**, for the purpose of determining whether the emissions from the Proposed Dish radio and 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.

Population 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 & 700 MHz 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) and 2100 MHz (AWS / AWS-4) 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 performed for the proposed radio system installation for **Dish** on the subject site located at **39 Maennerchor Avenue, Norwich, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since **Dish** is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

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

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

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
5G	n71 (600 MHz)	4	61.5
5G	n70 (AWS-4 / 1995-2020)	4	40
5G	n66 (AWS-4 / 2180-2200)	4	40

Table 1: Channel Data Table



The following antennas listed in *Table 2* were used in the modeling for transmission in the 600 MHz (n71) frequency band, and the 2100 MHz (AWS 4) frequency bands at 1995-2020 MHz (n70) and 2180-2200 MHz (n66). This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Commscope FFVV-65B-R2	91
B	1	Commscope FFVV-65B-R2	91
C	1	Commscope FFVV-65B-R2	91

Table 2: Antenna Data

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



RESULTS

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

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	Commscope FFVV-65B-R2	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	12.15 / 15.95 / 16.25	12	566	17,079.80	11.51
Sector A Composite MPE%							11.51
Antenna B1	Commscope FFVV-65B-R2	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	12.15 / 15.95 / 16.25	12	566	17,079.80	11.51
Sector B Composite MPE%							11.51
Antenna C1	Commscope FFVV-65B-R2	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	12.15 / 15.95 / 16.25	12	566	17,079.80	11.51
Sector C Composite MPE%							11.51

Table 3: Dish Emissions Levels



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

Site Composite MPE %	
Carrier	MPE %
Dish – Max Per Sector Value	11.51 %
T-Mobile	19.09 %
MetroPCS	0.44 %
AT&T	5.79 %
Verizon Wireless	1.63 %
Site Total MPE %:	38.46 %

Table 4: All Carrier MPE Contributions

Dish Sector A Total:	11.51 %
Dish Sector B Total:	11.51 %
Dish Sector C Total:	11.51 %
Site Total:	38.46 %

Table 5: Site MPE Summary



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

Dish _ Frequency Band / Technology Max Power Values (Per Sector)	# 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 n71 (600 MHz) 5G	4	1,008.96	91	20.08	n71 (600 MHz)	400	5.02%
Dish n70 (AWS-4 / 1995-2020) 5G	4	1,574.20	91	31.33	n70 (AWS-4 / 1995-2020)	1000	3.13%
Dish n66 (AWS-4 / 2180-2200) 5G	4	1,686.79	91	33.57	n66 (AWS-4 / 2180-2200)	1000	3.36%
						Total:	11.51%

Table 6: Dish Maximum Sector MPE Power Values



Summary

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

The anticipated maximum composite contributions from the Dish 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 Sector	Power Density Value (%)
Sector A:	11.51 %
Sector B:	11.51 %
Sector C:	11.51 %
Dish Maximum Total (per sector):	11.51 %
Site Total:	38.46 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **38.46 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

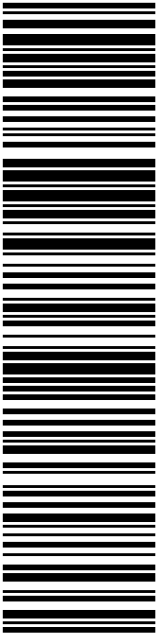
Scott Heffernan
Principal RF Engineer
Fox Hill Telecom, Inc
Holden, MA 01520
(978)660-3998

Exhibit G

Letter of Authorization

Exhibit H

Recipient Mailings

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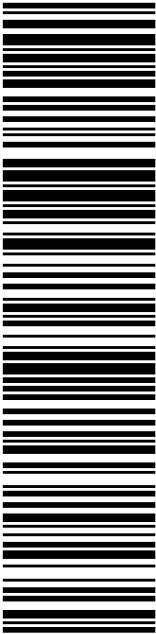
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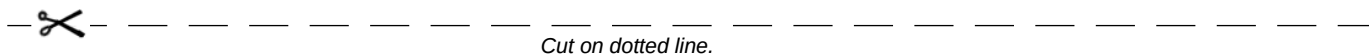
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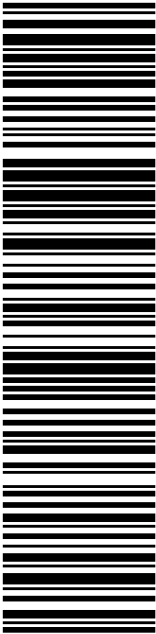
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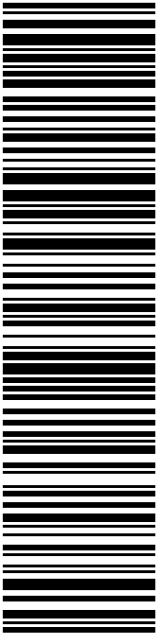
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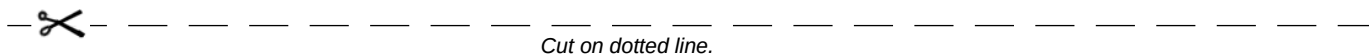
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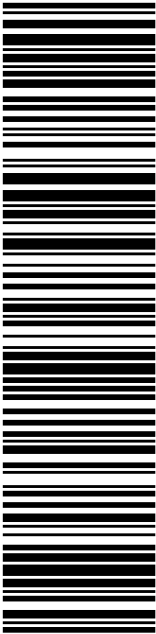
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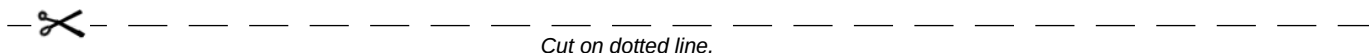
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