



Filed by:

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

December 27, 2021

Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Tower Share Application
1214 Farmington Ave., Bristol, CT 06010
Latitude: 41.695472
Longitude: -72.901658
Dish Wireless Site# BOBDL00137A

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 1214 Farmington Ave., Bristol, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900/2100 MHz antennas and six (6) RRUs, at the 150-foot level of the existing 150-foot monopole tower, one (1) Fiber cables will also be installed. Dish Wireless LLC equipment cabinets will be placed within 7' x 5' lease area. Included are plans by B+T Group, dated December 20, 2021 Exhibit 10. Also included is a structural analysis prepared by TES, dated September 2, 2021, confirming that the existing tower is structurally capable of supporting the proposed equipment attached as Exhibit 8. This facility was approved by the Town of Bristol's Zoning Commission on October 20, 2000. Please see attached Exhibit 6.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of Dish Wireless LLC intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Jeffrey Caggiano, Mayor for the Town of Bristol, Robert M. Flanagan, AICP, City Planner, as well as the property owner Route 6 Developers, LLC. Separate notice is not being sent to the tower owner, as it belongs to SBA.

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

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the tower is 150-feet; Dish Wireless LLC proposed antennas will be located at a center line height of 150-feet.
2. The proposed modifications will not result in the increase of the site boundary as depicted on the attached site plan.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed local and state criteria. The incremental effect of the proposed changes will be negligent.
4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. As indicated in the attached power density calculations, the combined site operations will result in a total power density of 20.24% as evidenced by Exhibit 7.

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

- A. Technical Feasibility. The existing monopole has been deemed structurally capable of supporting Dish Wireless LLC proposed loading. The structural analysis is included as Exhibit 8.
- B. Legal Feasibility. As referenced above, C.G.S. 16-50aa has been authorized to issue orders approving the shared use of an existing tower such as this support tower in Bristol. 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 2, authorizing Dish Wireless LLC to file this application for shared use.
- C. Environmental Feasibility. The proposed shared use of this facility would have a minimal environmental impact. The installation of Dish Wireless LLC equipment at the 150-foot level of the existing 150-foot tower would have an insignificant visual impact on the area around the tower. Dish Wireless LLC ground equipment would be installed within the existing facility compound. Dish Wireless LLC shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit 7, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.
- D. Economic Feasibility. Dish Wireless LLC will be entering into an agreement with the owner of this facility to mutually agreeable terms. As previously mentioned, the Letter of 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 guyed tower. Dish Wireless LLC intentions of providing new and improved wireless service



through the shared use of this facility is expected to enhance the safety and welfare of local residents and individuals traveling through Westbrook.

Sincerely,

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

Attachments:

cc: *Jeffrey Caggiano, Mayor / with attachments*
City of Bristol, Mayor's Office, 3rd Fl. 111 North Main St., Bristol, CT 06010
Robert M. Flanagan, AICP, City Planner / with attachments
City of Bristol, 111 North Main St., Bristol, CT 06010
Route 6 Developers, LLC / with attachments
1224 Mill Street Building D, Suite 103 East Berlin, CT 06023

EXHIBIT LIST

Exhibit 1	Copy of Check	X
Exhibit 2	Letter of Intent to Allow Shared Use of the Existing SBA Telecommunications Site	X
Exhibit 3	Notification Receipts	x
Exhibit 4	Property Card	x
Exhibit 5	Property Map	x
Exhibit 6	Original Zoning Approval	City of Bristol Zoning Commission (10/20/00)
Exhibit 7	EME Report	EBI Consulting 12/21/21
Exhibit 8	Structural Analysis	TES 9/2/21
Exhibit 9	Mount Analysis	B+T Group September 3, 2021
Exhibit 10	Construction Drawings	B+T Group 12/20/21

EXHIBIT 1

Copy of check

EXHIBIT 2

Letter of Intent

December 27, 2021

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

RE: **Notice of Intent to Allow Shared Use of the Existing SBA Telecommunications Site**
Location: **1214 Farmington Ave., Bristol, CT**
Dish Wireless Site No: BOBDL00137A
Site No: CT46136-A

Dear Ms. Bachman:

Please let the following serve as Evidence of Intent to allow Dish Wireless' shared use of the existing SBA telecommunications site at **1214 Farmington Ave., Bristol, CT.**

SBA Steel II, LLC ("Owner") and Dish Wireless ("Tenant") are entering into a Site Lease Agreement. Tenant will be provided ground space within the existing site compound for its base station equipment and space at the height of 150' for antennas and associated equipment.

Thank you,

Rick Woods

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

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

EXHIBIT 3

Fedex Labels



Shipping

Tracking

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Support

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

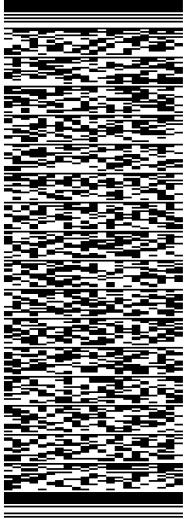

SHIP DATE: 27DEC21
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BILL SENDER

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

NEW BRITAIN CT 06051
 (508) 251-0720 X-3807
 INV
 F.O.

REF: 10-56-92009-6009
 DEPT.


J212321121681uv

TRK# 7756 0654 1598
 0201

EB BDLA

CT-US BDL 06051

TUE - 28 DEC 11:30A
 PRIORITY OVERNIGHT



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Rick Woods
134 Flanders Rd
Suite 125
WESTBOROUGH, MA US 01581
508-614-0389

TO
Melanie A. Bachman Exec. Dir
Connecticut Siting Council
Ten Franklin Square
NEW BRITAIN, CT US 06051
508-251-0720

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TOTAL PIECES

1

TOTAL SHIPMENT WEIGHT

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TO **JEFFREY CAGGIANO**
CITY OF BRISTOL
MAYOR
111 NORTH MAIN ST, 3RD FL
BRISTOL CT 06010

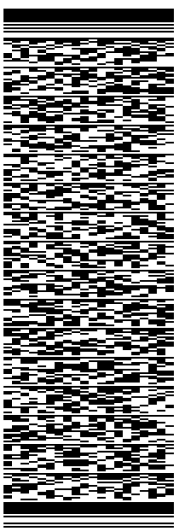

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SBA COMMUNICATIONS CORPORATION
Rick Woods
134 Flanders Rd
Suite 125
WESTBOROUGH, MA US 01581
508-614-0389

TO
Jeffrey Caggiano
City of Bristol
Mayor
111 North Main St, 3rd Fl
BRISTOL, CT US 06010
508-251-0720

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WEIGHT
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TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
0.5 lbs / 0.23 kgs

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TO **ROBERT M. FLANAGAN**
CITY OF BRISTOL
CITY PLANNER, AICP
111 NORTH MAIN ST, 3RD FL
BRISTOL CT 06010

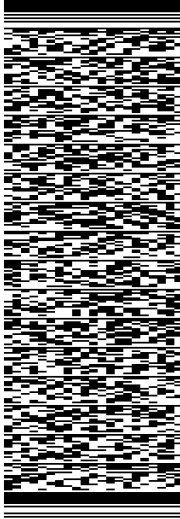

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FROM
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Rick Woods
134 Flanders Rd
Suite 125
WESTBOROUGH, MA US 01581
508-614-0389

TO
Robert M. Flanagan
City of Bristol
City Planner, AICP
111 North Main St, 3rd Fl
BRISTOL, CT US 06010
508-251-0720

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SERVICE

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WEIGHT

0.5 lbs / 0.23 kgs

TOTAL PIECES

1

TOTAL SHIPMENT WEIGHT

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 RICK WOODS
 SBA COMMUNICATIONS CORPORATION
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 SUITE 125
 WESTBOROUGH, MA 01581
 UNITED STATES US

SHIP DATE: 27DEC21
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 CAD: 105843304/NET14400
 BILL SENDER

TO

ROUTE 6 DEVELOPERS, LLC
1224 MILL ST
SUITE 103
EAST BERLIN CT 06023

(508) 251-0120 X-3807 REF: 10-56-92009-6009
 NY DEPT

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FROM
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Rick Woods
134 Flanders Rd
Suite 125
WESTBOROUGH, MA US 01581
508-614-0389

TO
Route 6 Developers, LLC
1224 Mill St
Suite 103
EAST BERLIN, CT US 06023
508-251-0720

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Shipment Facts

TRACKING NUMBER
775606648194

SERVICE
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WEIGHT
0.5 lbs / 0.23 kgs

TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
0.5 lbs / 0.23 kgs

TERMS
Shipper

EXHIBIT 4

Property Card

1214 FARMINGTON AVE

Location 1214 FARMINGTON AVE

Mblu 46 / 72A-3 / 1

Acct# 0054445

Owner ROUTE 6 DEVELOPERS LLC

Assessment \$9,513,000

Appraisal \$13,590,000

PID 1763

Building Count 3

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2017	\$11,125,500	\$2,464,500	\$13,590,000

Assessment			
Valuation Year	Improvements	Land	Total
2017	\$7,787,850	\$1,725,150	\$9,513,000

Owner of Record

Owner ROUTE 6 DEVELOPERS LLC
Co-Owner
Address 1224 MILL ST BLDG D STE 103
EAST BERLIN, CT 06023-1159

Sale Price \$0
Certificate 1
Book & Page 1514/1092
Sale Date 09/08/2003
Instrument 00

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
ROUTE 6 DEVELOPERS LLC	\$0	1	1514/1092	00	09/08/2003
EISENBAUM WAYNE+ ALLAN+ MARLA	\$0		1448/1117		10/31/2002
EISENBAUM WAYNE+ ALLAN+ MARLA	\$0		1044/0346		03/02/1992
EISENBAUM WAYNE + MARLA	\$0		1023/0480		06/10/1991
EISENBAUM ALAN+WAYNE+MARLA	\$0		1023/0478		06/07/1991

Building Information

Building 1 : Section 1

Year Built: 1964

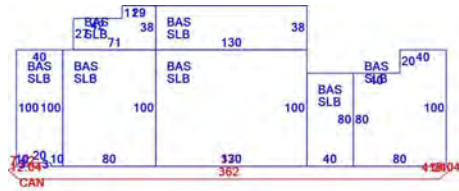
Building Photo

Living Area: 42,516
Replacement Cost: \$4,602,769
Building Percent Good: 67
Replacement Cost
Less Depreciation: \$3,083,900



(http://images.vgsi.com/photos2/BristolCTPhotos/\00\05\72\42.jpg)

Building Layout



(ParcelSketch.ashx?pid=1763&bid=1763)

Building Attributes	
Field	Description
Style:	Shop Center
Model	Comm/Ind
Grade	
Stories:	1
Occupancy	6.00
Exterior Wall 1	Stucco/Masonry
Exterior Wall 2	Concr/Cinder
Roof Structure	Flat
Roof Cover	T+G/Rubber
Interior Wall 1	Drywall/Sheetr
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	Vinyl/Asphalt
Heating Fuel	Propane Gas
Heating Type	Forced Air-Duc
AC Type	Central
Struct Class	
Bldg Use	Shopping Ctr
Bedrooms	
Full Baths	
Half Baths	
1st Floor Use:	
Heat/AC	Heat/AC Pkgs
Frame Type	Masonry
Baths/Plumbing	Average
Ceiling/Wall	Sus-Ceil & WL
Rooms/Prtns	Average
Wall Height	18.00
% Comn Wall	

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	42,516	42,516
CAN	Canopy	4,093	0
SLB	Slab	42,516	0
		89,125	42,516

Building 2 : Section 1

Year Built: 1964
Living Area: 70,720
Replacement Cost: \$8,826,079
Building Percent Good: 57
Replacement Cost
Less Depreciation: \$5,030,900

Building Attributes : Bldg 2 of 3

Field	Description
Style:	Supermarket
Model	Comm/Ind
Grade	
Stories:	1
Occupancy	2.00
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	T+G/Rubber
Interior Wall 1	Drywall/Sheetr
Interior Wall 2	
Interior Floor 1	Vinyl/Asphalt
Interior Floor 2	
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	Central
Struct Class	
Bldg Use	Shopping Ctr
Bedrooms	
Full Baths	
Half Baths	
1st Floor Use:	
Heat/AC	Heat/AC Pkgs
Frame Type	Masonry
Baths/Plumbing	Average
Ceiling/Wall	Sus-Ceil & WL
Rooms/Prtns	Average
Wall Height	20.00
% Comn Wall	

Building Photo



(<http://images.vgsi.com/photos2/BristolCTPhotos/\00\05\72\43.jpg>)

Building Layout



(ParcelSketch.ashx?pid=1763&bid=40095)

Building Sub-Areas (sq ft)			<u>Legend</u>
Code	Description	Gross Area	Living Area
BAS	First Floor	70,720	70,720
CAN	Canopy	2,916	0
SLB	Slab	69,960	0
UEP	Porch, Enclosed, Unfinished	900	0
		144,496	70,720

Building 3 : Section 1

Year Built: 2003
Living Area: 20,772
Replacement Cost: \$2,573,520
Building Percent Good: 92
Replacement Cost Less Depreciation: \$2,367,600

Building Attributes : Bldg 3 of 3

Field	Description
Style:	Shop Center

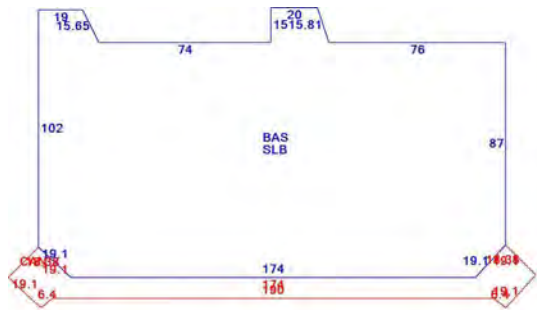
Model	Comm/Ind
Grade	
Stories:	1
Occupancy	9.00
Exterior Wall 1	Stucco/Masonry
Exterior Wall 2	Concr/Cinder
Roof Structure	Flat
Roof Cover	T+G/Rubber
Interior Wall 1	Drywall/Sheetr
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	Ceram Clay Til
Heating Fuel	Propane Gas
Heating Type	Forced Air-Duc
AC Type	Central
Struct Class	
Bldg Use	Shopping Ctr
Bedrooms	
Full Baths	
Half Baths	
1st Floor Use:	
Heat/AC	Heat/AC Pkgs
Frame Type	Masonry
Baths/Plumbing	Average
Ceiling/Wall	Sus-Ceil & WL
Rooms/Prtns	Average
Wall Height	18.00
% Comn Wall	

Building Photo



(<http://images.vgsi.com/photos2/BristolCTPhotos/\00\05\72\44.jpg>)

Building Layout



(ParcelSketch.ashx?pid=1763&bid=40096)

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	20,772	20,772
CAN	Canopy	2,353	0
SLB	Slab	20,772	0
		43,897	20,772

Extra Features

Extra Features				Legend
Code	Description	Size	Value	Bldg #
CNP3	Bank Canopy	96.00 S.F	\$2,200	1
SPR	Sprinklers	20772.00 S.F.	\$49,700	3
OHD	Overhead Door	6.00 Units	\$0	1
LDL1	Load Leveler	3.00 Units	\$5,300	2
SPR	Sprinklers	42516.00 S.F.	\$74,100	1
NDP	Night Dep Box	1.00 Units	\$10,700	1
OHD	Overhead Door	4.00 Units	\$0	2
SPR	Sprinklers	70720.00 S.F.	\$112,900	2

Land

Land Use

Use Code 328
Description Shopping Ctr
Zone BG
Neighborhood
Alt Land Appr Category No

Land Line Valuation

Size (Acres) 10.4
Frontage 483
Depth
Assessed Value \$1,725,150
Appraised Value \$2,464,500

Outbuildings

Outbuildings						<u>Legend</u>
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
PAV1	Paving Asph.			325000.00 S.F.	\$341,300	1
CELL	Cell Tower/Site			1.00 UNITS	\$0	1
CB3	PreCastConcCel			240.00 S.F.	\$43,200	2
FN3	Fence 6'			250.00 L.F.	\$1,900	2
PAV2	Paving Concrct			900.00 S.F.	\$1,800	2

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2020	\$11,125,500	\$2,464,500	\$13,590,000
2019	\$11,125,500	\$2,464,500	\$13,590,000
19	\$11,125,500	\$2,464,500	\$13,590,000

Assessment			
Valuation Year	Improvements	Land	Total
2020	\$7,787,850	\$1,725,150	\$9,513,000
2019	\$7,787,850	\$1,725,150	\$9,513,000
19	\$7,787,850	\$1,725,150	\$9,513,000

EXHIBIT 5

Property Map

Google Maps 1214 Farmington Ave



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

Full Town View Reset Map Search Print Map Layer



Full Extent Zoom In Zoom Out Prev Extent Next Extent Pan Parcel Information Simple M

MapXpress v1.2

EXHIBIT 6

Zoning Approval

Fee Received: \$15.00

No ZP-14412



ZONING PERMIT

CITY OF BRISTOL ZONING COMMISSION

THIS IS TO CERTIFY that in accordance with Section XII.D of the Zoning Regulations, this Permit is hereby granted.

PROPERTY INFORMATION

Location: 1214 FARMINGTON AVE

Zoning District: BG, Property Use: BUSINESS - RETAIL

TYPE OF PERMIT

- New Construction
- Addition
- Accessory Structure
- Fence
- Deck
- Swimming Pool
- Home Business/Office
- Change of Use
- Other: _____

SIGNS					
Classification:	<input type="checkbox"/> Permanent	<input type="checkbox"/> Temporary (30-Day)	<input type="checkbox"/> Portable (1-Year)		
Type:	<input type="checkbox"/> Wall	<input type="checkbox"/> Freestanding	<input type="checkbox"/> A-Frame	<input type="checkbox"/> Sandwich	Other: _____

DESCRIPTION OF ACTIVITY

INSTALL TELECOMMUNICATIONS FACILITY WITH A 150' MONOPOLE TOWER

OTHER APPROVALS

Description: SITE PLAN - 9/13/00

APPLICANT INFORMATION

Applicant Name(s): ARTHUR G. SIMONIAN

Business Name: DIVERSIFIED TECHNOLOGIES

This permit is based upon the plan submitted. Falsification, by misrepresentation or omission, or failure to comply with the conditions of approval of this permit shall constitute a violation of the City of Bristol Zoning Regulations.

Approved By:

Zoning Enforcement Officer

10-20-00

Date Issued

**BUILDING DEPARTMENT
REQUIRED INSPECTIONS**

IT IS THE RESPONSIBILITY OF THE PERMIT HOLDER TO NOTIFY THE BUILDING DEPT. WHEN A REQUIRED INSPECTION IS NEEDED.

(** Minimum 48 hours notice **)

FOOTINGS - BEFORE CONCRETE IS POURED

PIERS - BEFORE CONCRETE IS POURED

DAMP PROOFING/CURTAIN DRAIN - BEFORE BACKFILL

ROOFING - APPROXIMATELY AT 50% COMPLETION

ROUGH - IN:

ELECTRICAL (includes all underground piping)

PLUMBING (includes all underground piping)

HEATING/COOLING (includes underground tanks and piping)

FRAMING/FIRE STOPPING: (after approval of mechanical & electrical)

INSULATION: (after approval of framing/fire stopping)

CHIMNEY/FIREPLACE

FIRE BOX/THROAT

CHIMNEY HEIGHT AT MIDPOINT

CHIMNEY HEIGHT AT COMPLETION

CERTIFICATE OF OCCUPANCY/FINAL INSPECTION

STRUCTURAL (As-Built plot plans must be submitted prior to inspection)

ELECTRICAL

PLUMBING

HEATING/COOLING

OTHER INSPECTIONS: ANY INSPECTION DEEMED NECESSARY TO DETERMINE COMPLIANCE WITH THE BUILDING CODE AND OTHER LAWS AND ORDINANCES ENFORCED BY THE BUILDING DEPT.

OCCUPANCY OR USE OF ANY NEW STRUCTURE OR ADDITION PRIOR TO ISSUANCE OF A CERTIFICATE OF USE & OCCUPANCY IS A VIOLATION OF THE BASIC BUILDING CODE AND IS PUNISHABLE BY FINES OF UP TO \$500.00 PER DAY

REINSPECTION FEE - \$15.00 WILL BE ASSESSED FOR REPETITIVE INSPECTION

CONTACT THE BUILDING DEPT. WITH ANY QUESTIONS.

FRONT DESK (860) 584-7608

FAX (860) 584-3827

COMMERCIAL (860) 584-7784

RESIDENTIAL (860) 584-7783

MECHANICAL (860) 584-7655

ELECTRICAL (860) 584-7609

Fee Received: \$15.00

No ZP-14412



ZONING PERMIT
CITY OF BRISTOL ZONING COMMISSION

THIS IS TO CERTIFY that in accordance with Section XII.D of the Zoning Regulations, this Permit is hereby granted.

PROPERTY INFORMATION

Location: 1214 FARMINGTON AVE

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TYPE OF PERMIT

- New Construction
- Addition
- Accessory Structure
- Fence
- Deck
- Swimming Pool
- Home Business/Office
- Change of Use
- Other: _____

SIGNS					
Classification:	<input type="checkbox"/> Permanent	<input type="checkbox"/> Temporary (30-Day)	<input type="checkbox"/> Portable (1-Year)		
Type:	<input type="checkbox"/> Wall	<input type="checkbox"/> Freestanding	<input type="checkbox"/> A-Frame	<input type="checkbox"/> Sandwich	Other: _____

DESCRIPTION OF ACTIVITY

INSTALL TELECOMMUNICATIONS FACILITY WITH A 150' MONOPOLE TOWER

OTHER APPROVALS

Description: SITE PLAN - 9/13/00

APPLICANT INFORMATION

Applicant Name(s): ARTHUR G. SIMONIAN

Business Name: DIVERSIFIED TECHNOLOGIES

This permit is based upon the plan submitted. Falsification, by misrepresentation or omission, or failure to comply with the conditions of approval of this permit shall constitute a violation of the City of Bristol Zoning Regulations.

Approved By:  _____

Zoning Enforcement Officer

Date Issued: 10-20-00

DATE 10-23-50 1950

PERMIT

ISSUED TO A. Simonian
 TO Install tower
 AT LOCATION 1214 Farmington Ave

CITY OF BRISTOL, CONN. BUILDING DEPARTMENT

THIS CARD MUST BE CONSPICUOUSLY DISPLAYED AT ALL TIMES DURING
 THE PROGRESS OF OPERATIONS

DATE OF INSPECTION

INSPECTOR

EXHIBIT 7

EME Report



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

Dish Wireless Existing Facility

Site ID: BOBDL00137A

BOBDL00137A
1214 Farmington Avenue
Bristol, Connecticut 06010

December 21, 2021

EBI Project Number: 6221007658

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	20.24%

December 21, 2021

Dish Wireless

Emissions Analysis for Site: BOBDL00137A - BOBDL00137A

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **1214 Farmington Avenue in Bristol, Connecticut** for the purpose of determining whether the emissions from the Proposed Dish Wireless Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed Dish Wireless Wireless antenna facility located at 1214 Farmington Avenue in Bristol, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since Dish Wireless is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

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

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

- 6) A conservative roof attenuation factor of 10 dB, in which a radiofrequency signal is reduced by a factor of 10 due to intervening roof building materials, was also included. For purposes of this analysis, it is assumed that the roof building material is comprised of a poured concrete and steel underlayment with a rubber fabric roof membrane.
- 7) The antennas used in this modeling are the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector A, the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector B, the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector C. **(IF MW Present)** Modeling also included calculations for the proposed ____ GHz microwave backhaul antennas. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 8) The antenna mounting height centerline of the proposed antennas is 150 feet above ground level (AGL).
- 9) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.
- 10) Emissions from additional carriers were not included because emissions data for the site location are not available.
- 11) All calculations were done with respect to uncontrolled / general population threshold limits.

Dish Wireless Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	I	Antenna #:	I	Antenna #:	I
Make / Model:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21
Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz	Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz	Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz
Gain:	17.45 dBd / 22.65 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd / 22.65 dBd
Height (AGL):	150 feet	Height (AGL):	150 feet	Height (AGL):	150 feet
Channel Count:	12	Channel Count:	12	Channel Count:	12
Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts
ERP (W):	5,236.31	ERP (W):	5,236.31	ERP (W):	5,236.31
Antenna AI MPE %:	1.14%	Antenna BI MPE %:	1.14%	Antenna CI MPE %:	1.14%

Site Composite MPE %	
Carrier	MPE %
Dish Wireless (Max at Sector A):	1.14%
T-Mobile	19%
Sprint	0.1%
Site Total MPE % :	20.24%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	1.14%
Dish Wireless Sector B Total:	1.14%
Dish Wireless Sector C Total:	1.14%
Site Total MPE % :	20.24%

Dish Wireless Maximum MPE Power Values (Sector A)							
Dish Wireless Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
Dish Wireless 600 MHz n71	4	223.68	150.0	1.55	600 MHz n71	400	0.39%
Dish Wireless 1900 MHz n70	4	542.70	150.0	3.76	1900 MHz n70	1000	0.38%
Dish Wireless 2190 MHz n66	4	542.70	150.0	3.76	2190 MHz n66	1000	0.38%
						Total:	1.14%

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

Summary

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

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

Dish Wireless Sector	Power Density Value (%)
Sector A:	1.14%
Sector B:	1.14%
Sector C:	1.14%
Dish Wireless Maximum MPE % (Sector A):	1.14%
Site Total:	20.24%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **20.24%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

EXHIBIT 8

Structural Analysis



Tower Engineering Solutions

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

Structural Analysis Report

Existing 150 ft SUMMIT Monopole
Customer Name: SBA Communications Corp
Customer Site Number: CT46136-A
Customer Site Name: Bristol-east
Carrier Name: Dish Wireless (App#: 168266, V1)
Carrier Site ID / Name: BOBDL00137A / 0
Site Location: 1214 Farmington Ave.
Bristol, Connecticut
Hartford County
Latitude: 41.695472
Longitude: -72.901658

Analysis Result:

Max Structural Usage: 43.3% [Pass]

Max Foundation Usage: 41.0% [Pass]

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

Report Prepared By: Mojdeh Sadeghzadeh



Introduction

The purpose of this report is to summarize the analysis results on the 150 ft SUMMIT Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	PJF, Job#: 29200-1543. Summit job#: 11622. dated 10/16/2000.
Foundation Drawing	PJF, Job#: 29200-1543. Summit job#: 11622. dated 10/16/2000.
Geotechnical Report	Diversified Technology Consultants. Dated 09/14/2000.
Modification Drawings	N/A

Analysis Criteria

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

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed $V_{ult} = 120.0$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 93.0$ mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 1" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	$S_5 = 0.184, S_1 = 0.064$

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
5	140.0	3	Ericsson AIR32 KRD901146-1_B66A_B2A (Octo)- Panel	(1) Platform w/ Handrail (RMQR-4096-HK) W/ Site Pro 1 SFR-K V-Brace	(3) 2" Hybrid (1) 1.689" Fiber	T-Mobile Sprint
6		3	RFS APXVAALL24_43-U-NA20- Panel			
7		3	Ericsson AIR6449 B41- Panel			
8		3	DragonWave VHLPX3-11W-4GR - Dish			
9		3	ALU 1900MHz RRH			
10		3	Ericsson 4449 B71 + B85- RRU			
11		3	Ericsson 4415 B25 - RRU			
12	130.0	3	RFS APXVAA24_43-U-A20 - Panel	(1) SitePro Platform FSP-10W w/ SitePro f#P-HRK10 Handrail Kit	(3) 1 5/8" Fiber (1) 1/2"	T-Mobile
13		3	RFS APX16DWV-16DWV-S-EA20 (Quad) Panel			
14		3	Ericsson AIR3246 B66 (Octa) - Panel			
15		3	Ericsson AIR 5122 28GHz - Panel			
16		1	Commscope SHP2-13 - Dish			
17		3	Ericsson Radio 4415 B25			
18		3	Ericsson Radio 4449 B71 + B12			
19		3	Ericsson Radio 2217 B66A			

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
1	150.0	3	JMA -Wireless MX08FRO665-21 - Panel	(1) Platform w/handrail Commscope MC-PK8-DSH	(1) 1.619" Hybrid	Dish Wireless
2		3	Fujitsu- TA08025-B605 -RRU			
3		3	Fujitsu -TA08025-B604 -RRU			
4		1	Raycap- RDIDC-9181-PF-48 -OVP			

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

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	42.0%	42.9%	43.3%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	3715.7	33.7	58.5

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 0.7072 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 42.08% at 0.0ft

Structure: CT46136-A-SBA
Site Name: Bristol-east
Height: 150.00 (ft)
Base Elev: 0.000 (ft)

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

9/2/2021



Page: 1

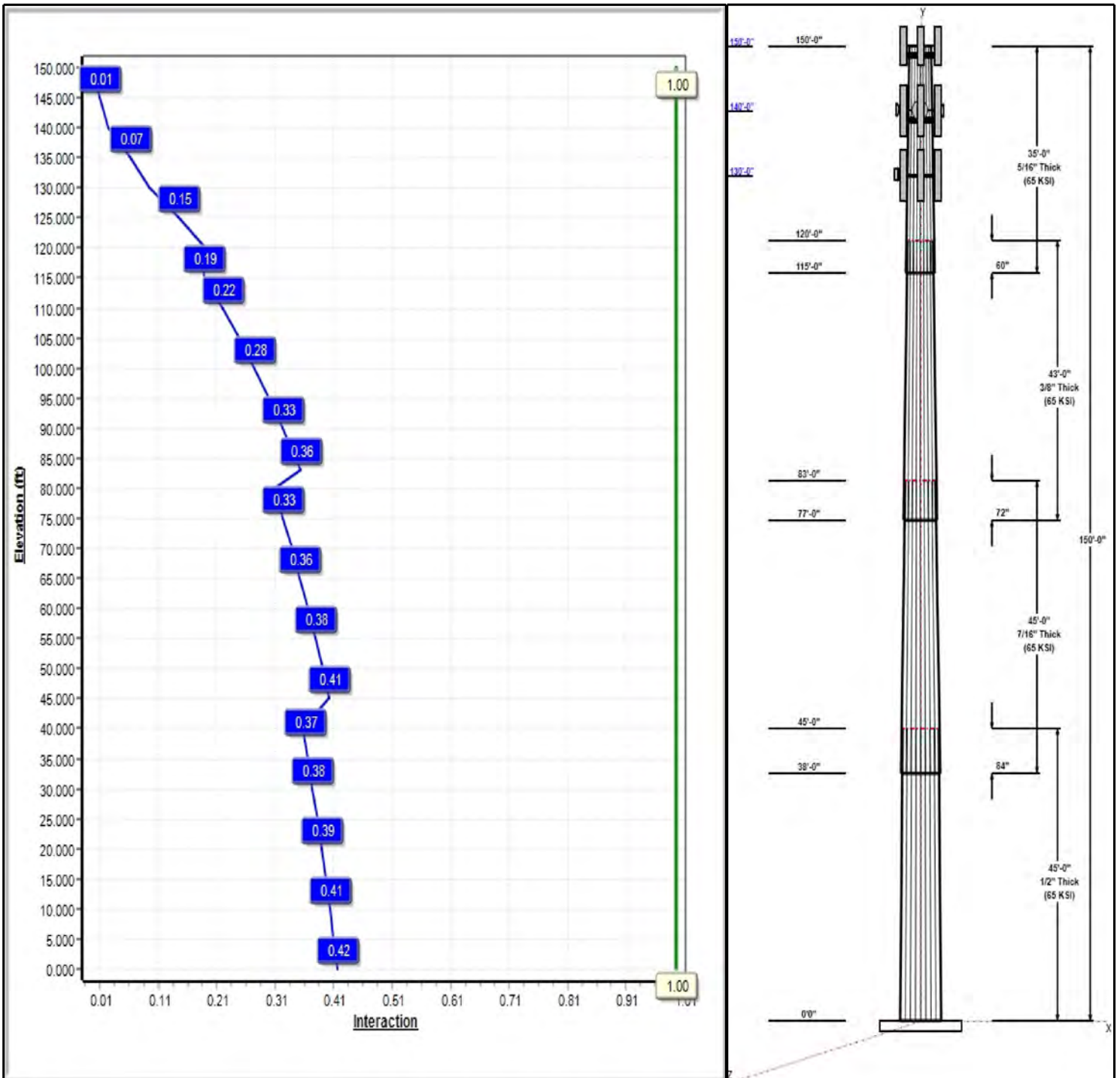
Dead Load Factor: 1.20
 Wind Load Factor: 1.60

Iterations: 19

Load Case : 1.2D + 1.6W 93 mph Wind



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Structure: CT46136-A-SBA

Type: Tapered
Site Name: Bristol-east
Height: 150.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.23607

9/2/2021

Page: 2



Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	45.00	53.15	63.77	0.500		0.23607	65
2	45.00	45.05	55.67	0.438	Slip	0.23607	65
3	43.00	37.07	47.22	0.375	Slip	0.23607	65
4	35.00	30.61	38.87	0.313	Slip	0.23607	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
150.00	150.00	3	MX08FRO665-21	Dish Wireless
150.00	150.00	1	MC-PK8-DSH	Dish Wireless
150.00	150.00	3	TA08025-B605	Dish Wireless
150.00	150.00	3	TA08025-B604	Dish Wireless
150.00	150.00	1	RDIDC-9181-PF-48	Dish Wireless
140.00	140.00	3	Dragonwave	T-Mobile Sprint
140.00	140.00	3	ALU 1900 Mhz RRUs	T-Mobile Sprint
140.00	140.00	3	AIR32 KRD901146-	T-Mobile Sprint
140.00	140.00	3	APXVAA24_43-U-NA20	T-Mobile Sprint
140.00	140.00	3	AIR6449 B41	T-Mobile Sprint
140.00	140.00	3	4449 B71 + B85	T-Mobile Sprint
140.00	140.00	3	4415 B25	T-Mobile Sprint
140.00	140.00	1	SFR-K-V-Brace	T-Mobile Sprint
140.00	140.00	1	RMQP-496-HK	T-Mobile Sprint
130.00	130.00	3	APXVAA24_43-U-A20	T-Mobile
130.00	130.00	3	APX16DWV-16DWV-S-EA	T-Mobile
130.00	130.00	3	AIR3246 B66	T-Mobile
130.00	130.00	3	AIR 5122 28GHz	T-Mobile
130.00	130.00	1	SHP2-13	T-Mobile
130.00	130.00	3	Radio 4415 B25	T-Mobile
130.00	130.00	3	Radio 4449 B71 + B12	T-Mobile
130.00	130.00	3	Radio 2217 B66A	T-Mobile
130.00	130.00	1	FSP-10W	T-Mobile
130.00	130.00	1	#P-HRK10	T-Mobile

Linear Appurtenances

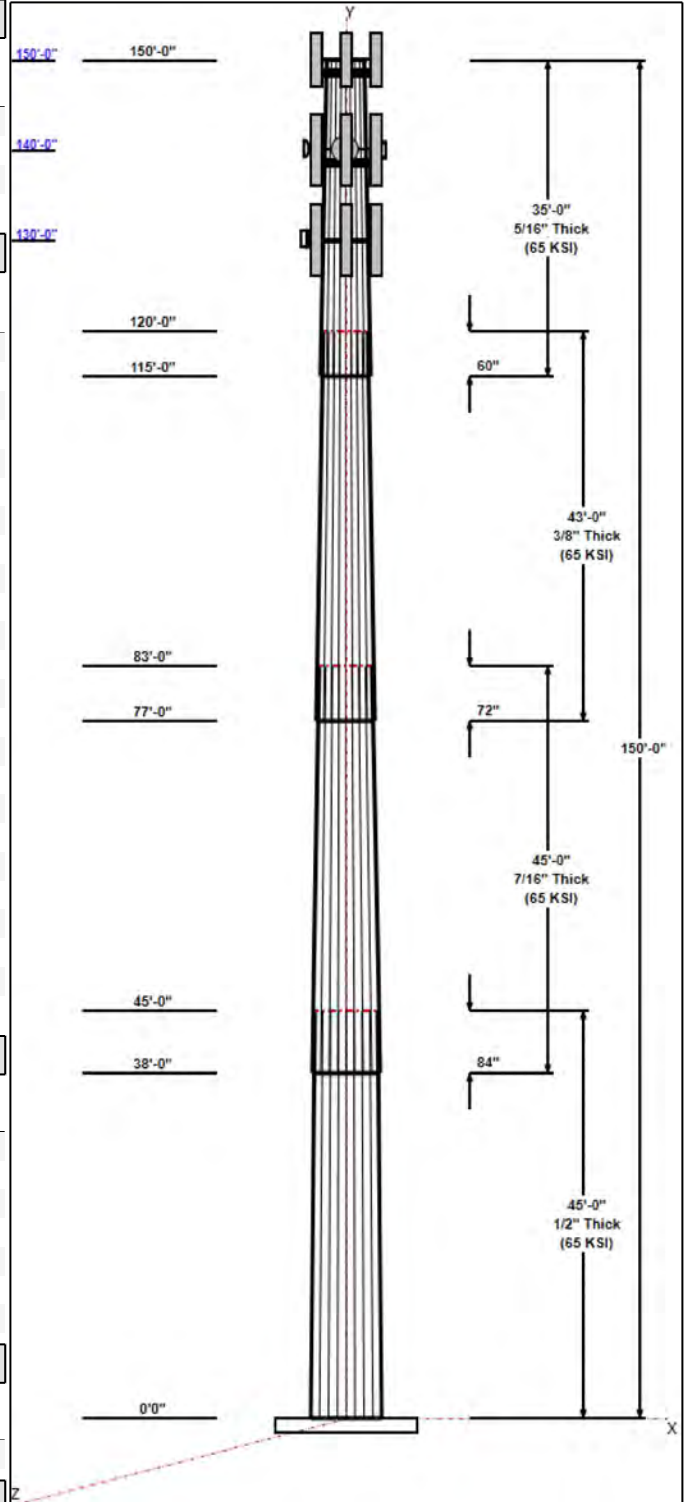
Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	150.00	Inside	1.619" Hybrid	Dish Wireless
0.00	150.00	Outside	Safety Cable	
0.00	150.00	Outside	Step bolts (ladder)	
0.00	140.00	Inside	1.689" Fiber	T-Mobile Sprint
0.00	140.00	Inside	2" Hybrid	T-Mobile Sprint
0.00	130.00	Inside	1 5/8" Fiber	T-Mobile
0.00	130.00	Inside	1/2" Coax	T-Mobile

Anchor Bolts

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

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
3.0000	71.0	55.0	Clipped



Structure: CT46136-A-SBA

Type: Tapered
Site Name: Bristol-east
Height: 150.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.23607

9/2/2021

Page: 3



Reactions

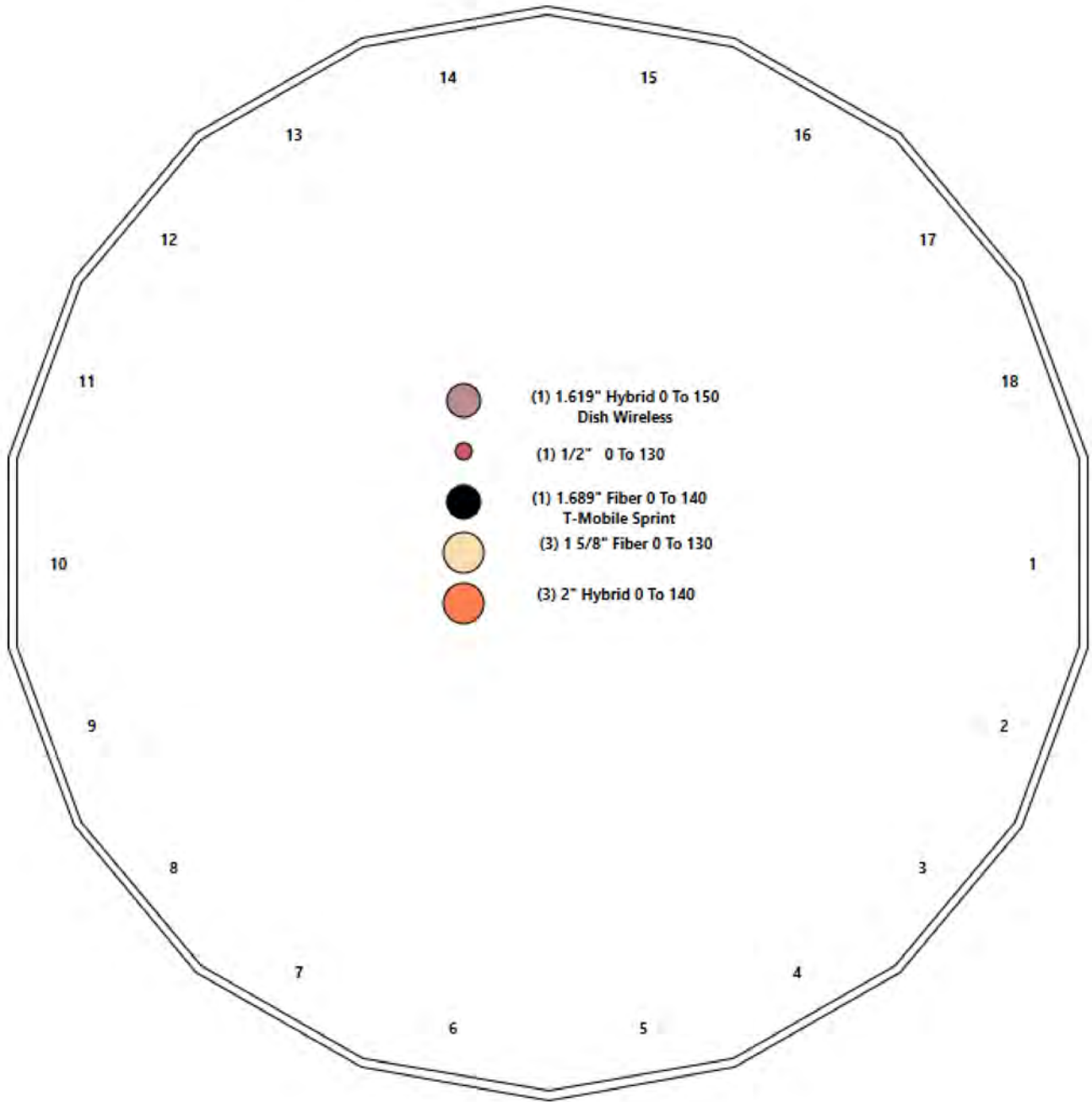
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 93 mph Wind	3715.6	33.7	58.5
0.9D + 1.6W 93 mph Wind	3691.3	33.7	43.9
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1286.4	11.6	97.8
1.2D + 1.0E	325.9	2.7	58.5
0.9D + 1.0E	323.6	2.7	43.9
1.0D + 1.0W 60 mph Wind	962.7	8.8	48.8

Structure: CT46136-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Bristol-east
Height: 150.00 (ft)

9/2/2021

Page: 4



Shaft Properties

Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 5

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	45.000	0.5000	65		0.00	14,084
2	18	45.000	0.4375	65	Slip	84.00	10,615
3	18	43.000	0.3750	65	Slip	72.00	7,274
4	18	35.000	0.3125	65	Slip	60.00	4,067
Total Shaft Weight:							36,040

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	63.77	0.00	100.4	50781.78	21.08	127.54	53.15	45.00	83.55	29257.3	17.33	106.2	0.236067
2	55.67	38.00	76.70	29567.32	21.03	127.26	45.05	83.00	61.95	15578.8	16.75	102.9	0.236067
3	47.22	77.00	55.75	15456.32	20.79	125.91	37.07	120.00	43.67	7428.31	16.02	98.85	0.236067
4	38.87	115.0	38.25	7184.55	20.52	124.39	30.61	150.00	30.05	3485.10	15.86	97.95	0.236067

Load Summary

Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 6

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	150.00	MX08FRO665-21	3	64.50	12.49	0.74	452.33	14.443	0.74	0.00	0.00
2	150.00	MC-PK8-DSH	1	1727.00	37.59	1.00	3977.44	00.569	1.00	0.00	0.00
3	150.00	TA08025-B605	3	74.95	1.96	0.67	144.64	2.708	0.67	0.00	0.00
4	150.00	TA08025-B604	3	63.93	1.96	0.67	131.47	2.708	0.67	0.00	0.00
5	150.00	RDIDC-9181-PF-48	1	21.85	2.01	1.00	92.69	2.768	1.00	0.00	0.00
6	140.00	Dragonwave	3	27.10	4.68	1.00	156.69	6.367	1.00	0.10	0.00
7	140.00	ALU 1900 Mhz RRU's	3	60.00	2.77	0.67	170.48	4.450	0.67	0.00	0.00
8	140.00	AIR32 KRD901146-	3	132.20	6.51	0.87	389.47	8.026	0.87	0.00	0.00
9	140.00	APXVAALL24_43-U-NA20	3	122.80	20.24	0.73	712.29	22.787	0.73	0.00	0.00
10	140.00	AIR6449 B41	3	103.00	5.65	0.71	284.57	6.909	0.71	0.00	0.00
11	140.00	4449 B71 + B85	3	73.20	1.97	0.67	149.66	2.724	0.67	0.00	0.00
12	140.00	4415 B25	3	46.30	1.86	0.67	134.23	2.634	0.67	0.00	0.00
13	140.00	SFR-K-V-Brace	1	394.00	16.60	1.00	1352.59	32.712	1.00	0.00	0.00
14	140.00	RMQP-496-HK	1	2449.00	48.00	1.00	5844.72	92.370	1.00	0.00	0.00
15	130.00	APXVAA24_43-U-A20	3	99.00	20.24	0.73	683.43	22.767	0.73	0.00	0.00
16	130.00	APX16DWW-16DWW-S-EA20	3	40.70	6.46	0.62	233.83	7.954	0.62	0.00	0.00
17	130.00	AIR3246 B66	3	132.20	6.51	0.87	387.12	8.014	0.87	0.00	0.00
18	130.00	AIR 5122 28GHz	3	24.30	1.89	0.76	89.58	3.147	0.76	0.00	0.00
19	130.00	SHP2-13	1	152.00	3.96	1.00	165.95	4.323	1.00	1.00	0.00
20	130.00	Radio 4415 B25	3	46.00	1.64	0.67	100.03	2.317	0.67	0.00	0.00
21	130.00	Radio 4449 B71 + B12	3	70.00	1.65	0.67	167.14	2.381	0.67	0.00	0.00
22	130.00	Radio 2217 B66A	3	27.00	1.35	0.67	72.11	1.974	0.67	0.00	0.00
23	130.00	FSP-10W	1	2396.00	58.98	1.00	5473.85	50.980	1.00	0.00	0.00
24	130.00	#P-HRK10	1	478.27	9.00	1.00	1092.65	23.039	1.00	0.00	0.00
Totals:			58	11,239.66			31,377.10				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	150.00	(1) 1.619" Hybrid	0.00	Inside
0.00	150.00	(1) Safety Cable	0.38	Outside
0.00	150.00	(2) Step bolts (ladder)	0.63	Outside
0.00	140.00	(1) 1.689" Fiber	0.00	Inside
0.00	140.00	(3) 2" Hybrid	0.00	Inside
0.00	130.00	(3) 1 5/8" Fiber	0.00	Inside
0.00	130.00	(1) 1/2" Coax	0.00	Inside

Shaft Section Properties

Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 7

Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in ³)	Weight (lb)
0.00		0.5000	63.770	100.406	50781.8	21.08	127.54	76.6	1568.	0.0
5.00		0.5000	62.590	98.533	47992.4	20.66	125.18	77.1	1510.	1692.4
10.00		0.5000	61.409	96.660	45307.1	20.25	122.82	77.6	1453.	1660.5
15.00		0.5000	60.229	94.787	42723.8	19.83	120.46	78.1	1397.	1628.6
20.00		0.5000	59.049	92.913	40240.7	19.41	118.10	78.6	1342.	1596.8
25.00		0.5000	57.868	91.040	37855.7	19.00	115.74	79.1	1288.	1564.9
30.00		0.5000	56.688	89.167	35566.8	18.58	113.38	79.5	1235.	1533.0
35.00		0.5000	55.508	87.294	33372.1	18.16	111.02	80.0	1184.	1501.1
38.00	Bot - Section 2	0.5000	54.799	86.170	32099.7	17.91	109.60	80.3	1153.	885.4
40.00		0.5000	54.327	85.421	31269.6	17.75	108.65	80.5	1133.	1103.6
45.00	Top - Section 1	0.4375	54.022	74.406	26992.3	20.36	123.48	0.0	0.0	2717.3
50.00		0.4375	52.842	72.767	25247.6	19.89	120.78	78.0	941.1	1252.0
55.00		0.4375	51.661	71.128	23579.7	19.41	118.08	78.6	899.0	1224.1
60.00		0.4375	50.481	69.489	21987.0	18.93	115.39	79.1	857.9	1196.2
65.00		0.4375	49.301	67.850	20467.6	18.46	112.69	79.7	817.7	1168.3
70.00		0.4375	48.120	66.211	19019.9	17.98	109.99	80.2	778.5	1140.5
75.00		0.4375	46.940	64.572	17642.1	17.51	107.29	80.8	740.3	1112.6
77.00	Bot - Section 3	0.4375	46.468	63.917	17110.2	17.32	106.21	81.0	725.2	437.2
80.00		0.4375	45.760	62.933	16332.6	17.03	104.59	81.4	703.0	1212.3
83.00	Top - Section 2	0.3750	45.801	54.067	14096.2	20.13	122.14	0.0	0.0	1193.7
85.00		0.3750	45.329	53.505	13661.2	19.90	120.88	78.0	593.6	366.0
90.00		0.3750	44.149	52.100	12613.2	19.35	117.73	78.6	562.7	898.4
95.00		0.3750	42.969	50.695	11620.1	18.79	114.58	79.3	532.6	874.5
100.00		0.3750	41.788	49.290	10680.6	18.24	111.44	79.9	503.4	850.6
105.00		0.3750	40.608	47.886	9793.2	17.68	108.29	80.6	475.0	826.7
110.00		0.3750	39.428	46.481	8956.3	17.13	105.14	81.3	447.4	802.8
115.00	Bot - Section 4	0.3750	38.247	45.076	8168.5	16.57	101.99	81.9	420.7	778.9
120.00	Top - Section 3	0.3125	37.692	37.074	6544.8	19.86	120.61	0.0	0.0	1395.7
125.00		0.3125	36.512	35.904	5944.2	19.19	116.84	78.8	320.7	620.8
130.00		0.3125	35.331	34.733	5381.5	18.52	113.06	79.6	300.0	600.9
135.00		0.3125	34.151	33.562	4855.4	17.86	109.28	80.4	280.0	581.0
140.00		0.3125	32.971	32.392	4364.9	17.19	105.51	81.2	260.7	561.1
145.00		0.3125	31.790	31.221	3908.5	16.53	101.73	82.0	242.2	541.1
150.00		0.3125	30.610	30.050	3485.1	15.86	97.95	82.5	224.3	521.2
										36040.1

Wind Loading - Shaft

Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 8
	Struct Class: II	



Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 19

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	17.879	19.67	462.68	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	17.879	19.67	454.11	0.650	0.000	5.00	26.731	17.38	546.8	0.0	2030.8
10.00		1.00	0.85	17.879	19.67	445.55	0.650	0.000	5.00	26.232	17.05	536.5	0.0	1992.6
15.00		1.00	0.85	17.879	19.67	436.98	0.650	0.000	5.00	25.732	16.73	526.3	0.0	1954.3
20.00		1.00	0.90	18.971	20.87	441.30	0.650	0.000	5.00	25.233	16.40	547.6	0.0	1916.1
25.00		1.00	0.95	19.883	21.87	442.76	0.650	0.000	5.00	24.733	16.08	562.6	0.0	1877.9
30.00		1.00	0.98	20.661	22.73	442.13	0.650	0.000	5.00	24.234	15.75	572.8	0.0	1839.6
35.00		1.00	1.01	21.343	23.48	440.01	0.650	0.000	5.00	23.735	15.43	579.5	0.0	1801.4
38.00 Bot - Section 2		1.00	1.03	21.715	23.89	438.17	0.650	0.000	3.00	14.001	9.10	347.8	0.0	1062.5
40.00		1.00	1.04	21.951	24.15	436.75	0.650	0.000	2.00	9.382	6.10	235.6	0.0	1324.4
45.00 Top - Section 1		1.00	1.07	22.502	24.75	432.59	0.650	0.000	5.00	23.106	15.02	594.8	0.0	3260.7
50.00		1.00	1.09	23.007	25.31	434.90	0.650	0.000	5.00	22.607	14.69	595.0	0.0	1502.4
55.00		1.00	1.12	23.473	25.82	429.47	0.650	0.000	5.00	22.107	14.37	593.7	0.0	1468.9
60.00		1.00	1.14	23.907	26.30	423.52	0.650	0.000	5.00	21.608	14.05	591.0	0.0	1435.5
65.00		1.00	1.16	24.313	26.74	417.12	0.650	0.000	5.00	21.109	13.72	587.1	0.0	1402.0
70.00		1.00	1.17	24.696	27.17	410.32	0.650	0.000	5.00	20.609	13.40	582.2	0.0	1368.5
75.00		1.00	1.19	25.057	27.56	403.17	0.650	0.000	5.00	20.110	13.07	576.5	0.0	1335.1
77.00 Bot - Section 3		1.00	1.20	25.196	27.72	400.23	0.650	0.000	2.00	7.904	5.14	227.8	0.0	524.7
80.00		1.00	1.21	25.400	27.94	395.72	0.650	0.000	3.00	11.897	7.73	345.7	0.0	1454.8
83.00 Top - Section 2		1.00	1.22	25.597	28.16	391.10	0.650	0.000	3.00	11.717	7.62	343.1	0.0	1432.4
85.00		1.00	1.22	25.726	28.30	394.50	0.650	0.000	2.00	7.711	5.01	227.0	0.0	439.3
90.00		1.00	1.24	26.037	28.64	386.55	0.650	0.000	5.00	18.929	12.30	563.8	0.0	1078.1
95.00		1.00	1.25	26.336	28.97	378.36	0.650	0.000	5.00	18.429	11.98	555.2	0.0	1049.4
100.00		1.00	1.27	26.621	29.28	369.96	0.650	0.000	5.00	17.930	11.65	546.1	0.0	1020.7
105.00		1.00	1.28	26.896	29.59	361.36	0.650	0.000	5.00	17.431	11.33	536.3	0.0	992.0
110.00		1.00	1.29	27.161	29.88	352.58	0.650	0.000	5.00	16.931	11.01	526.1	0.0	963.3
115.00 Bot - Section 4		1.00	1.30	27.416	30.16	343.63	0.650	0.000	5.00	16.432	10.68	515.4	0.0	934.6
120.00 Top - Section 3		1.00	1.32	27.663	30.43	334.52	0.650	0.000	5.00	16.197	10.53	512.6	0.0	1674.8
125.00		1.00	1.33	27.902	30.69	330.93	0.650	0.000	5.00	15.698	10.20	501.1	0.0	745.0
130.00 Appurtenance(s)		1.00	1.34	28.133	30.95	321.56	0.650	0.000	5.00	15.198	9.88	489.1	0.0	721.1
135.00		1.00	1.35	28.358	31.19	312.05	0.650	0.000	5.00	14.699	9.55	476.8	0.0	697.2
140.00 Appurtenance(s)		1.00	1.36	28.576	31.43	302.42	0.650	0.000	5.00	14.199	9.23	464.2	0.0	673.3
145.00		1.00	1.37	28.788	31.67	292.67	0.650	0.000	5.00	13.700	8.91	451.2	0.0	649.4
150.00 Appurtenance(s)		1.00	1.38	28.994	31.89	282.81	0.650	0.000	5.00	13.201	8.58	437.8	0.0	625.5
Totals:									150.00			16,295.2		43,248.1

Discrete Appurtenance Forces

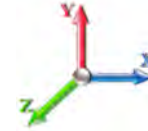
Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 9

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 19

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	150.00	TA08025-B604	3	28.994	31.893	0.50	0.75	2.95	230.15	0.000	0.000	150.78	0.00	0.00
2	150.00	TA08025-B605	3	28.994	31.893	0.50	0.75	2.95	269.82	0.000	0.000	150.78	0.00	0.00
3	150.00	MC-PK8-DSH	1	28.994	31.893	1.00	1.00	37.59	2072.40	0.000	0.000	1918.18	0.00	0.00
4	150.00	MX08FRO665-21	3	28.994	31.893	0.55	0.75	20.80	232.20	0.000	0.000	1061.19	0.00	0.00
5	150.00	RDIDC-9181-PF-48	1	28.994	31.893	1.00	1.00	2.01	26.22	0.000	0.000	102.57	0.00	0.00
6	140.00	AIR6449 B41	3	28.576	31.433	0.53	0.75	9.03	370.80	0.000	0.000	453.94	0.00	0.00
7	140.00	AIR32 KRD901146-	3	28.576	31.433	0.65	0.75	12.74	475.92	0.000	0.000	640.90	0.00	0.00
8	140.00	APXVAALL24_43-U-NA20	3	28.576	31.433	0.55	0.75	33.24	442.08	0.000	0.000	1671.96	0.00	0.00
9	140.00	RMQP-496-HK	1	28.576	31.433	1.00	1.00	48.00	2938.80	0.000	0.000	2414.07	0.00	0.00
10	140.00	4449 B71 + B85	3	28.576	31.433	0.50	0.75	2.97	263.52	0.000	0.000	149.36	0.00	0.00
11	140.00	4415 B25	3	28.576	31.433	0.50	0.75	2.80	166.68	0.000	0.000	141.02	0.00	0.00
12	140.00	SFR-K-V-Brace	1	28.576	31.433	1.00	1.00	16.60	472.80	0.000	0.000	834.87	0.00	0.00
13	140.00	ALU 1900 Mhz RRU's	3	28.576	31.433	0.50	0.75	4.18	216.00	0.000	0.000	210.01	0.00	0.00
14	140.00	Dragonwave	3	28.576	31.433	1.00	1.00	14.04	97.56	1.495	0.000	706.12	659.76	0.00
15	130.00	SHP2-13	1	28.133	30.947	1.00	1.00	3.96	182.40	2.495	0.000	196.08	305.74	0.00
16	130.00	APXVAA24_43-U-A20	3	28.133	30.947	0.55	0.75	33.24	356.40	0.000	0.000	1646.07	0.00	0.00
17	130.00	APX16DWV-16DWV-S-EA	3	28.133	30.947	0.46	0.75	9.01	146.52	0.000	0.000	446.21	0.00	0.00
18	130.00	AIR3246 B66	3	28.133	30.947	0.65	0.75	12.74	475.92	0.000	0.000	630.98	0.00	0.00
19	130.00	AIR 5122 28GHz	3	28.133	30.947	0.57	0.75	3.23	87.48	0.000	0.000	160.03	0.00	0.00
20	130.00	Radio 4415 B25	3	28.133	30.947	0.50	0.75	2.47	165.60	0.000	0.000	122.41	0.00	0.00
21	130.00	Radio 4449 B71 + B12	3	28.133	30.947	0.50	0.75	2.49	252.00	0.000	0.000	123.16	0.00	0.00
22	130.00	Radio 2217 B66A	3	28.133	30.947	0.50	0.75	2.04	97.20	0.000	0.000	100.77	0.00	0.00
23	130.00	FSP-10W	1	28.133	30.947	1.00	1.00	58.98	2875.20	0.000	0.000	2920.37	0.00	0.00
24	130.00	##P-HRK10	1	28.133	30.947	1.00	1.00	9.00	573.92	0.000	0.000	445.63	0.00	0.00
Totals:									13,487.59			17,397.44		

Total Applied Force Summary

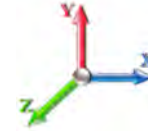
Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 10

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



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		546.75	2094.51	0.00	0.00
10.00		536.54	2056.27	0.00	0.00
15.00		526.32	2018.02	0.00	0.00
20.00		547.61	1979.78	0.00	0.00
25.00		562.59	1941.54	0.00	0.00
30.00		572.80	1903.30	0.00	0.00
35.00		579.50	1865.05	0.00	0.00
38.00		347.82	1100.67	0.00	0.00
40.00		235.61	1349.85	0.00	0.00
45.00		594.81	3324.42	0.00	0.00
50.00		595.01	1566.07	0.00	0.00
55.00		593.65	1532.61	0.00	0.00
60.00		590.97	1499.15	0.00	0.00
65.00		587.12	1465.68	0.00	0.00
70.00		582.25	1432.22	0.00	0.00
75.00		576.45	1398.76	0.00	0.00
77.00		227.83	550.13	0.00	0.00
80.00		345.69	1492.97	0.00	0.00
83.00		343.11	1470.60	0.00	0.00
85.00		226.95	464.72	0.00	0.00
90.00		563.83	1141.73	0.00	0.00
95.00		555.24	1113.05	0.00	0.00
100.00		546.06	1084.37	0.00	0.00
105.00		536.33	1055.68	0.00	0.00
110.00		526.09	1027.00	0.00	0.00
115.00		515.38	998.32	0.00	0.00
120.00		512.58	1738.52	0.00	0.00
125.00		501.06	808.66	0.00	0.00
130.00	(24) attachments	7280.86	5997.41	305.74	0.00
135.00		476.85	740.10	0.00	0.00
140.00	(23) attachments	7686.43	6160.36	659.76	0.00
145.00		451.18	669.50	0.00	0.00
150.00	(11) attachments	3821.34	3476.38	0.00	0.00
	Totals:	33,692.63	58,517.41	965.50	0.00

Linear Appurtenance Segment Forces (Factored)

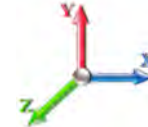
Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 11

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 19

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.016	0.000	17.879	0.00	1.64
5.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.016	0.000	17.879	0.00	12.48
10.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.016	0.000	17.879	0.00	1.64
10.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.016	0.000	17.879	0.00	12.48
15.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.016	0.000	17.879	0.00	1.64
15.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.016	0.000	17.879	0.00	12.48
20.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.017	0.000	18.971	0.00	1.64
20.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.017	0.000	18.971	0.00	12.48
25.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.017	0.000	19.883	0.00	1.64
25.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.017	0.000	19.883	0.00	12.48
30.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.017	0.000	20.661	0.00	1.64
30.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.017	0.000	20.661	0.00	12.48
35.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.018	0.000	21.343	0.00	1.64
35.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.018	0.000	21.343	0.00	12.48
38.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.018	0.000	21.715	0.00	0.98
38.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.018	0.000	21.715	0.00	7.49
40.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.018	0.000	21.951	0.00	0.66
40.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	21.951	0.00	4.99
45.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.019	0.000	22.502	0.00	1.64
45.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	22.502	0.00	12.48
50.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.019	0.000	23.007	0.00	1.64
50.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	23.007	0.00	12.48
55.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.019	0.000	23.473	0.00	1.64
55.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	23.473	0.00	12.48
60.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.019	0.000	23.907	0.00	1.64
60.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	23.907	0.00	12.48
65.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.020	0.000	24.313	0.00	1.64
65.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.020	0.000	24.313	0.00	12.48
70.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.020	0.000	24.696	0.00	1.64
70.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.020	0.000	24.696	0.00	12.48
75.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.021	0.000	25.057	0.00	1.64
75.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	25.057	0.00	12.48
77.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.021	0.000	25.196	0.00	0.66
77.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.021	0.000	25.196	0.00	4.99
80.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.022	0.000	25.400	0.00	0.98
80.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.022	0.000	25.400	0.00	7.49
83.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.022	0.000	25.597	0.00	0.98
83.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.022	0.000	25.597	0.00	7.49
85.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.022	0.000	25.726	0.00	0.66
85.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.022	0.000	25.726	0.00	4.99
90.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.022	0.000	26.037	0.00	1.64
90.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.022	0.000	26.037	0.00	12.48
95.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.023	0.000	26.336	0.00	1.64
95.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.023	0.000	26.336	0.00	12.48
100.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.023	0.000	26.621	0.00	1.64
100.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.023	0.000	26.621	0.00	12.48
105.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.024	0.000	26.896	0.00	1.64

Linear Appurtenance Segment Forces (Factored)

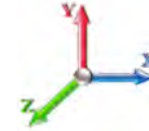
Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 12

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 19

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	26.896	0.00	12.48
110.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.025	0.000	27.161	0.00	1.64
110.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.025	0.000	27.161	0.00	12.48
115.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.026	0.000	27.416	0.00	1.64
115.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.026	0.000	27.416	0.00	12.48
120.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.026	0.000	27.663	0.00	1.64
120.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.026	0.000	27.663	0.00	12.48
125.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.027	0.000	27.902	0.00	1.64
125.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	27.902	0.00	12.48
130.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.028	0.000	28.133	0.00	1.64
130.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.028	0.000	28.133	0.00	12.48
135.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.029	0.000	28.358	0.00	1.64
135.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.029	0.000	28.358	0.00	12.48
140.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.030	0.000	28.576	0.00	1.64
140.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	28.576	0.00	12.48
145.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.031	0.000	28.788	0.00	1.64
145.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.031	0.000	28.788	0.00	12.48
150.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.032	0.000	28.994	0.00	1.64
150.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.032	0.000	28.994	0.00	12.48
Totals:											0.0	423.5

Calculated Forces

Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



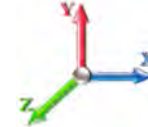
Page: 13

Load Case: 1.2D + 1.6W 93 mph Wind

Iterations 19

Dead Load Factor 1.20

Wind Load Factor 1.60



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-58.49	-33.75	-0.96	-3715.6	-0.01	3715.63	6922.80	3461.40	17996.9	9011.85	0.00	0.000	0.000	0.421
5.00	-56.33	-33.30	-0.96	-3546.9	-0.01	3546.91	6837.06	3418.53	17439.8	8732.91	0.06	-0.102	0.000	0.414
10.00	-54.22	-32.85	-0.96	-3380.4	-0.01	3380.43	6749.68	3374.84	16887.0	8456.09	0.22	-0.204	0.000	0.408
15.00	-52.14	-32.41	-0.96	-3216.1	-0.01	3216.16	6660.64	3330.32	16338.7	8181.53	0.49	-0.308	0.000	0.401
20.00	-50.11	-31.94	-0.96	-3054.1	-0.01	3054.10	6569.96	3284.98	15795.1	7909.33	0.87	-0.412	0.000	0.394
25.00	-48.12	-31.45	-0.96	-2894.3	-0.01	2894.39	6477.62	3238.81	15256.5	7639.63	1.36	-0.517	0.000	0.386
30.00	-46.16	-30.95	-0.96	-2737.1	-0.01	2737.12	6383.64	3191.82	14723.2	7372.54	1.95	-0.623	0.000	0.379
35.00	-44.26	-30.41	-0.96	-2582.3	-0.01	2582.38	6288.00	3144.00	14195.2	7108.19	2.66	-0.730	0.000	0.370
38.00	-43.13	-30.09	-0.96	-2491.1	-0.01	2491.14	6229.82	3114.91	13881.2	6950.95	3.14	-0.795	0.000	0.365
40.00	-41.75	-29.89	-0.96	-2430.9	-0.01	2430.96	6190.71	3095.36	13673.0	6846.70	3.49	-0.838	0.000	0.362
45.00	-38.38	-29.32	-0.96	-2281.5	-0.01	2281.51	5186.56	2593.28	11416.3	5716.63	4.42	-0.945	0.000	0.407
50.00	-36.77	-28.77	-0.96	-2134.9	-0.01	2134.93	5108.96	2554.48	10995.7	5506.06	5.47	-1.053	0.000	0.395
55.00	-35.19	-28.21	-0.96	-1991.1	-0.01	1991.10	5029.70	2514.85	10579.3	5297.54	6.64	-1.169	0.000	0.383
60.00	-33.65	-27.66	-0.96	-1850.0	-0.01	1850.03	4948.79	2474.40	10167.2	5091.20	7.92	-1.285	0.000	0.370
65.00	-32.14	-27.10	-0.96	-1711.7	-0.01	1711.74	4866.24	2433.12	9759.82	4887.17	9.33	-1.400	-0.001	0.357
70.00	-30.67	-26.54	-0.96	-1576.2	-0.01	1576.23	4782.03	2391.02	9357.20	4685.56	10.86	-1.514	-0.001	0.343
75.00	-29.25	-25.97	-0.96	-1443.5	-0.01	1443.50	4696.17	2348.09	8959.67	4486.49	12.51	-1.627	-0.001	0.328
77.00	-28.68	-25.76	-0.96	-1391.5	-0.02	1391.56	4661.37	2330.68	8802.13	4407.61	13.20	-1.673	-0.001	0.322
80.00	-27.17	-25.40	-0.96	-1314.3	-0.02	1314.30	4608.66	2304.33	8567.45	4290.09	14.27	-1.740	-0.001	0.312
83.00	-25.69	-25.03	-0.96	-1238.1	-0.02	1238.11	3782.33	1891.17	7057.27	3533.88	15.39	-1.807	-0.001	0.357
85.00	-25.20	-24.83	-0.96	-1188.0	-0.02	1188.04	3755.60	1877.80	6933.95	3472.13	16.15	-1.851	-0.001	0.349
90.00	-24.03	-24.27	-0.96	-1063.9	-0.02	1063.91	3687.60	1843.80	6628.16	3319.01	18.16	-1.969	-0.001	0.327
95.00	-22.89	-23.72	-0.96	-942.54	-0.02	942.54	3617.94	1808.97	6326.13	3167.77	20.28	-2.082	-0.001	0.304
100.00	-21.78	-23.18	-0.96	-823.92	-0.02	823.92	3546.64	1773.32	6028.11	3018.53	22.52	-2.190	-0.001	0.279
105.00	-20.71	-22.64	-0.96	-708.03	-0.03	708.03	3473.69	1736.85	5734.33	2871.43	24.87	-2.292	-0.001	0.253
110.00	-19.67	-22.10	-0.96	-594.84	-0.03	594.84	3399.09	1699.54	5445.04	2726.57	27.32	-2.387	-0.001	0.224
115.00	-18.66	-21.57	-0.96	-484.35	-0.03	484.35	3322.84	1661.42	5160.48	2584.08	29.87	-2.472	-0.002	0.193
120.00	-16.92	-21.00	-0.96	-376.50	-0.03	376.50	2604.14	1302.07	3997.79	2001.87	32.50	-2.547	-0.002	0.195
125.00	-16.12	-20.48	-0.96	-271.50	-0.04	271.50	2547.22	1273.61	3785.91	1895.77	35.20	-2.609	-0.002	0.150
130.00	-10.45	-12.94	-0.66	-169.10	-0.03	169.10	2488.65	1244.32	3577.22	1791.27	37.97	-2.662	-0.002	0.099
135.00	-9.73	-12.43	-0.66	-104.40	-0.03	104.40	2428.43	1214.21	3371.96	1688.49	40.77	-2.698	-0.002	0.066
140.00	-3.94	-4.46	0.00	-42.24	0.00	42.24	2366.56	1183.28	3170.38	1587.54	43.61	-2.720	-0.003	0.028
145.00	-3.29	-3.98	0.00	-19.91	0.00	19.91	2303.03	1151.52	2972.71	1488.57	46.47	-2.730	-0.003	0.015
150.00	0.00	-3.82	0.00	0.00	0.00	0.00	2232.58	1116.29	2772.66	1388.39	49.33	-2.733	-0.003	0.000

Wind Loading - Shaft

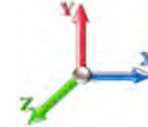
Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 14

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 19

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	17.879	19.67	462.68	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	17.879	19.67	454.11	0.650	0.000	5.00	26.731	17.38	546.8	0.0	1523.1
10.00		1.00	0.85	17.879	19.67	445.55	0.650	0.000	5.00	26.232	17.05	536.5	0.0	1494.4
15.00		1.00	0.85	17.879	19.67	436.98	0.650	0.000	5.00	25.732	16.73	526.3	0.0	1465.8
20.00		1.00	0.90	18.971	20.87	441.30	0.650	0.000	5.00	25.233	16.40	547.6	0.0	1437.1
25.00		1.00	0.95	19.883	21.87	442.76	0.650	0.000	5.00	24.733	16.08	562.6	0.0	1408.4
30.00		1.00	0.98	20.661	22.73	442.13	0.650	0.000	5.00	24.234	15.75	572.8	0.0	1379.7
35.00		1.00	1.01	21.343	23.48	440.01	0.650	0.000	5.00	23.735	15.43	579.5	0.0	1351.0
38.00 Bot - Section 2		1.00	1.03	21.715	23.89	438.17	0.650	0.000	3.00	14.001	9.10	347.8	0.0	796.9
40.00		1.00	1.04	21.951	24.15	436.75	0.650	0.000	2.00	9.382	6.10	235.6	0.0	993.3
45.00 Top - Section 1		1.00	1.07	22.502	24.75	432.59	0.650	0.000	5.00	23.106	15.02	594.8	0.0	2445.6
50.00		1.00	1.09	23.007	25.31	434.90	0.650	0.000	5.00	22.607	14.69	595.0	0.0	1126.8
55.00		1.00	1.12	23.473	25.82	429.47	0.650	0.000	5.00	22.107	14.37	593.7	0.0	1101.7
60.00		1.00	1.14	23.907	26.30	423.52	0.650	0.000	5.00	21.608	14.05	591.0	0.0	1076.6
65.00		1.00	1.16	24.313	26.74	417.12	0.650	0.000	5.00	21.109	13.72	587.1	0.0	1051.5
70.00		1.00	1.17	24.696	27.17	410.32	0.650	0.000	5.00	20.609	13.40	582.2	0.0	1026.4
75.00		1.00	1.19	25.057	27.56	403.17	0.650	0.000	5.00	20.110	13.07	576.5	0.0	1001.3
77.00 Bot - Section 3		1.00	1.20	25.196	27.72	400.23	0.650	0.000	2.00	7.904	5.14	227.8	0.0	393.5
80.00		1.00	1.21	25.400	27.94	395.72	0.650	0.000	3.00	11.897	7.73	345.7	0.0	1091.1
83.00 Top - Section 2		1.00	1.22	25.597	28.16	391.10	0.650	0.000	3.00	11.717	7.62	343.1	0.0	1074.3
85.00		1.00	1.22	25.726	28.30	394.50	0.650	0.000	2.00	7.711	5.01	227.0	0.0	329.4
90.00		1.00	1.24	26.037	28.64	386.55	0.650	0.000	5.00	18.929	12.30	563.8	0.0	808.5
95.00		1.00	1.25	26.336	28.97	378.36	0.650	0.000	5.00	18.429	11.98	555.2	0.0	787.0
100.00		1.00	1.27	26.621	29.28	369.96	0.650	0.000	5.00	17.930	11.65	546.1	0.0	765.5
105.00		1.00	1.28	26.896	29.59	361.36	0.650	0.000	5.00	17.431	11.33	536.3	0.0	744.0
110.00		1.00	1.29	27.161	29.88	352.58	0.650	0.000	5.00	16.931	11.01	526.1	0.0	722.5
115.00 Bot - Section 4		1.00	1.30	27.416	30.16	343.63	0.650	0.000	5.00	16.432	10.68	515.4	0.0	701.0
120.00 Top - Section 3		1.00	1.32	27.663	30.43	334.52	0.650	0.000	5.00	16.197	10.53	512.6	0.0	1256.1
125.00		1.00	1.33	27.902	30.69	330.93	0.650	0.000	5.00	15.698	10.20	501.1	0.0	558.7
130.00 Appurtenance(s)		1.00	1.34	28.133	30.95	321.56	0.650	0.000	5.00	15.198	9.88	489.1	0.0	540.8
135.00		1.00	1.35	28.358	31.19	312.05	0.650	0.000	5.00	14.699	9.55	476.8	0.0	522.9
140.00 Appurtenance(s)		1.00	1.36	28.576	31.43	302.42	0.650	0.000	5.00	14.199	9.23	464.2	0.0	505.0
145.00		1.00	1.37	28.788	31.67	292.67	0.650	0.000	5.00	13.700	8.91	451.2	0.0	487.0
150.00 Appurtenance(s)		1.00	1.38	28.994	31.89	282.81	0.650	0.000	5.00	13.201	8.58	437.8	0.0	469.1
Totals:									150.00			16,295.2		32,436.1

Discrete Appurtenance Forces

Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 15

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 19

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	150.00	TA08025-B604	3	28.994	31.893	0.50	0.75	2.95	172.61	0.000	0.000	150.78	0.00	0.00
2	150.00	TA08025-B605	3	28.994	31.893	0.50	0.75	2.95	202.37	0.000	0.000	150.78	0.00	0.00
3	150.00	MC-PK8-DSH	1	28.994	31.893	1.00	1.00	37.59	1554.30	0.000	0.000	1918.18	0.00	0.00
4	150.00	MX08FRO665-21	3	28.994	31.893	0.55	0.75	20.80	174.15	0.000	0.000	1061.19	0.00	0.00
5	150.00	RDIDC-9181-PF-48	1	28.994	31.893	1.00	1.00	2.01	19.67	0.000	0.000	102.57	0.00	0.00
6	140.00	AIR6449 B41	3	28.576	31.433	0.53	0.75	9.03	278.10	0.000	0.000	453.94	0.00	0.00
7	140.00	AIR32 KRD901146-	3	28.576	31.433	0.65	0.75	12.74	356.94	0.000	0.000	640.90	0.00	0.00
8	140.00	APXVAALL24_43-U-NA20	3	28.576	31.433	0.55	0.75	33.24	331.56	0.000	0.000	1671.96	0.00	0.00
9	140.00	RMQP-496-HK	1	28.576	31.433	1.00	1.00	48.00	2204.10	0.000	0.000	2414.07	0.00	0.00
10	140.00	4449 B71 + B85	3	28.576	31.433	0.50	0.75	2.97	197.64	0.000	0.000	149.36	0.00	0.00
11	140.00	4415 B25	3	28.576	31.433	0.50	0.75	2.80	125.01	0.000	0.000	141.02	0.00	0.00
12	140.00	SFR-K-V-Brace	1	28.576	31.433	1.00	1.00	16.60	354.60	0.000	0.000	834.87	0.00	0.00
13	140.00	ALU 1900 Mhz RRU's	3	28.576	31.433	0.50	0.75	4.18	162.00	0.000	0.000	210.01	0.00	0.00
14	140.00	Dragonwave	3	28.576	31.433	1.00	1.00	14.04	73.17	1.495	0.000	706.12	659.76	0.00
15	130.00	SHP2-13	1	28.133	30.947	1.00	1.00	3.96	136.80	2.495	0.000	196.08	305.74	0.00
16	130.00	APXVAA24_43-U-A20	3	28.133	30.947	0.55	0.75	33.24	267.30	0.000	0.000	1646.07	0.00	0.00
17	130.00	APX16DWV-16DWV-S-EA	3	28.133	30.947	0.46	0.75	9.01	109.89	0.000	0.000	446.21	0.00	0.00
18	130.00	AIR3246 B66	3	28.133	30.947	0.65	0.75	12.74	356.94	0.000	0.000	630.98	0.00	0.00
19	130.00	AIR 5122 28GHz	3	28.133	30.947	0.57	0.75	3.23	65.61	0.000	0.000	160.03	0.00	0.00
20	130.00	Radio 4415 B25	3	28.133	30.947	0.50	0.75	2.47	124.20	0.000	0.000	122.41	0.00	0.00
21	130.00	Radio 4449 B71 + B12	3	28.133	30.947	0.50	0.75	2.49	189.00	0.000	0.000	123.16	0.00	0.00
22	130.00	Radio 2217 B66A	3	28.133	30.947	0.50	0.75	2.04	72.90	0.000	0.000	100.77	0.00	0.00
23	130.00	FSP-10W	1	28.133	30.947	1.00	1.00	58.98	2156.40	0.000	0.000	2920.37	0.00	0.00
24	130.00	##P-HRK10	1	28.133	30.947	1.00	1.00	9.00	430.44	0.000	0.000	445.63	0.00	0.00
Totals:									10,115.69			17,397.44		

Total Applied Force Summary

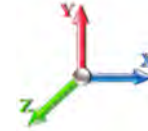
Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 16

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



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		546.75	1570.88	0.00	0.00
10.00		536.54	1542.20	0.00	0.00
15.00		526.32	1513.52	0.00	0.00
20.00		547.61	1484.84	0.00	0.00
25.00		562.59	1456.15	0.00	0.00
30.00		572.80	1427.47	0.00	0.00
35.00		579.50	1398.79	0.00	0.00
38.00		347.82	825.51	0.00	0.00
40.00		235.61	1012.38	0.00	0.00
45.00		594.81	2493.32	0.00	0.00
50.00		595.01	1174.55	0.00	0.00
55.00		593.65	1149.46	0.00	0.00
60.00		590.97	1124.36	0.00	0.00
65.00		587.12	1099.26	0.00	0.00
70.00		582.25	1074.17	0.00	0.00
75.00		576.45	1049.07	0.00	0.00
77.00		227.83	412.60	0.00	0.00
80.00		345.69	1119.73	0.00	0.00
83.00		343.11	1102.95	0.00	0.00
85.00		226.95	348.54	0.00	0.00
90.00		563.83	856.30	0.00	0.00
95.00		555.24	834.79	0.00	0.00
100.00		546.06	813.27	0.00	0.00
105.00		536.33	791.76	0.00	0.00
110.00		526.09	770.25	0.00	0.00
115.00		515.38	748.74	0.00	0.00
120.00		512.58	1303.89	0.00	0.00
125.00		501.06	606.50	0.00	0.00
130.00	(24) attachments	7280.86	4498.05	305.74	0.00
135.00		476.85	555.08	0.00	0.00
140.00	(23) attachments	7686.43	4620.27	659.76	0.00
145.00		451.18	502.12	0.00	0.00
150.00	(11) attachments	3821.34	2607.29	0.00	0.00
	Totals:	33,692.63	43,888.05	965.50	0.00

Linear Appurtenance Segment Forces (Factored)

Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



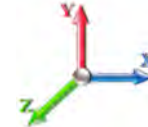
Page: 17

Load Case: 0.9D + 1.6W 93 mph Wind

Iterations 19

Dead Load Factor 0.90

Wind Load Factor 1.60



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.016	0.000	17.879	0.00	1.23
5.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.016	0.000	17.879	0.00	9.36
10.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.016	0.000	17.879	0.00	1.23
10.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.016	0.000	17.879	0.00	9.36
15.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.016	0.000	17.879	0.00	1.23
15.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.016	0.000	17.879	0.00	9.36
20.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.017	0.000	18.971	0.00	1.23
20.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.017	0.000	18.971	0.00	9.36
25.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.017	0.000	19.883	0.00	1.23
25.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.017	0.000	19.883	0.00	9.36
30.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.017	0.000	20.661	0.00	1.23
30.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.017	0.000	20.661	0.00	9.36
35.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.018	0.000	21.343	0.00	1.23
35.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.018	0.000	21.343	0.00	9.36
38.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.018	0.000	21.715	0.00	0.74
38.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.018	0.000	21.715	0.00	5.62
40.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.018	0.000	21.951	0.00	0.49
40.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	21.951	0.00	3.74
45.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.019	0.000	22.502	0.00	1.23
45.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	22.502	0.00	9.36
50.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.019	0.000	23.007	0.00	1.23
50.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	23.007	0.00	9.36
55.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.019	0.000	23.473	0.00	1.23
55.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	23.473	0.00	9.36
60.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.019	0.000	23.907	0.00	1.23
60.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	23.907	0.00	9.36
65.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.020	0.000	24.313	0.00	1.23
65.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.020	0.000	24.313	0.00	9.36
70.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.020	0.000	24.696	0.00	1.23
70.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.020	0.000	24.696	0.00	9.36
75.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.021	0.000	25.057	0.00	1.23
75.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	25.057	0.00	9.36
77.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.021	0.000	25.196	0.00	0.49
77.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.021	0.000	25.196	0.00	3.74
80.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.022	0.000	25.400	0.00	0.74
80.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.022	0.000	25.400	0.00	5.62
83.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.022	0.000	25.597	0.00	0.74
83.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.022	0.000	25.597	0.00	5.62
85.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.022	0.000	25.726	0.00	0.49
85.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.022	0.000	25.726	0.00	3.74
90.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.022	0.000	26.037	0.00	1.23
90.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.022	0.000	26.037	0.00	9.36
95.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.023	0.000	26.336	0.00	1.23
95.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.023	0.000	26.336	0.00	9.36
100.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.023	0.000	26.621	0.00	1.23
100.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.023	0.000	26.621	0.00	9.36
105.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.024	0.000	26.896	0.00	1.23

Linear Appurtenance Segment Forces (Factored)

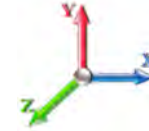
Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 18

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 19

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	26.896	0.00	9.36
110.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.025	0.000	27.161	0.00	1.23
110.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.025	0.000	27.161	0.00	9.36
115.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.026	0.000	27.416	0.00	1.23
115.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.026	0.000	27.416	0.00	9.36
120.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.026	0.000	27.663	0.00	1.23
120.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.026	0.000	27.663	0.00	9.36
125.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.027	0.000	27.902	0.00	1.23
125.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	27.902	0.00	9.36
130.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.028	0.000	28.133	0.00	1.23
130.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.028	0.000	28.133	0.00	9.36
135.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.029	0.000	28.358	0.00	1.23
135.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.029	0.000	28.358	0.00	9.36
140.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.030	0.000	28.576	0.00	1.23
140.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	28.576	0.00	9.36
145.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.031	0.000	28.788	0.00	1.23
145.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.031	0.000	28.788	0.00	9.36
150.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.032	0.000	28.994	0.00	1.23
150.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.032	0.000	28.994	0.00	9.36
Totals:											0.0	317.7

Calculated Forces

Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

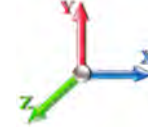


Page: 19

Load Case: 0.9D + 1.6W 93 mph Wind

Iterations 19

Dead Load Factor 0.90
Wind Load Factor 1.60



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-43.86	-33.73	-0.96	-3691.3	0.00	3691.35	6922.80	3461.40	17996.9	9011.85	0.00	0.000	0.000	0.416
5.00	-42.23	-33.26	-0.96	-3522.6	0.00	3522.69	6837.06	3418.53	17439.8	8732.91	0.05	-0.101	0.000	0.410
10.00	-40.63	-32.79	-0.96	-3356.4	0.00	3356.40	6749.68	3374.84	16887.0	8456.09	0.22	-0.203	0.000	0.403
15.00	-39.06	-32.33	-0.96	-3192.4	0.00	3192.45	6660.64	3330.32	16338.7	8181.53	0.48	-0.306	0.000	0.396
20.00	-37.52	-31.84	-0.96	-3030.8	0.00	3030.81	6569.96	3284.98	15795.1	7909.33	0.86	-0.409	0.000	0.389
25.00	-36.01	-31.33	-0.96	-2871.6	-0.01	2871.61	6477.62	3238.81	15256.5	7639.63	1.35	-0.514	0.000	0.382
30.00	-34.53	-30.81	-0.96	-2714.9	-0.01	2714.96	6383.64	3191.82	14723.2	7372.54	1.94	-0.619	0.000	0.374
35.00	-33.10	-30.26	-0.96	-2560.9	-0.01	2560.93	6288.00	3144.00	14195.2	7108.19	2.65	-0.724	0.000	0.366
38.00	-32.25	-29.93	-0.96	-2470.1	-0.01	2470.15	6229.82	3114.91	13881.2	6950.95	3.12	-0.789	0.000	0.361
40.00	-31.20	-29.72	-0.96	-2410.2	-0.01	2410.28	6190.71	3095.36	13673.0	6846.70	3.46	-0.832	0.000	0.357
45.00	-28.66	-29.14	-0.96	-2261.6	-0.01	2261.67	5186.56	2593.28	11416.3	5716.63	4.39	-0.938	0.000	0.401
50.00	-27.44	-28.58	-0.96	-2115.9	-0.01	2115.96	5108.96	2554.48	10995.7	5506.06	5.43	-1.044	0.000	0.390
55.00	-26.25	-28.02	-0.96	-1973.0	-0.01	1973.06	5029.70	2514.85	10579.3	5297.54	6.59	-1.160	0.000	0.378
60.00	-25.08	-27.45	-0.96	-1832.9	-0.01	1832.97	4948.79	2474.40	10167.2	5091.20	7.86	-1.274	0.000	0.365
65.00	-23.94	-26.89	-0.96	-1695.7	-0.01	1695.70	4866.24	2433.12	9759.82	4887.17	9.26	-1.389	-0.001	0.352
70.00	-22.83	-26.32	-0.96	-1561.2	-0.01	1561.26	4782.03	2391.02	9357.20	4685.56	10.78	-1.502	-0.001	0.338
75.00	-21.77	-25.75	-0.96	-1429.6	-0.01	1429.64	4696.17	2348.09	8959.67	4486.49	12.41	-1.614	-0.001	0.323
77.00	-21.33	-25.53	-0.96	-1378.1	-0.01	1378.14	4661.37	2330.68	8802.13	4407.61	13.10	-1.659	-0.001	0.317
80.00	-20.20	-25.18	-0.96	-1301.5	-0.02	1301.55	4608.66	2304.33	8567.45	4290.09	14.16	-1.726	-0.001	0.308
83.00	-19.08	-24.82	-0.96	-1226.0	-0.02	1226.03	3782.33	1891.17	7057.27	3533.88	15.27	-1.792	-0.001	0.352
85.00	-18.70	-24.61	-0.96	-1176.4	-0.02	1176.40	3755.60	1877.80	6933.95	3472.13	16.03	-1.836	-0.001	0.344
90.00	-17.82	-24.05	-0.96	-1053.3	-0.02	1053.37	3687.60	1843.80	6628.16	3319.01	18.01	-1.952	-0.001	0.322
95.00	-16.96	-23.50	-0.96	-933.13	-0.02	933.13	3617.94	1808.97	6326.13	3167.77	20.12	-2.064	-0.001	0.299
100.00	-16.13	-22.95	-0.96	-815.64	-0.02	815.64	3546.64	1773.32	6028.11	3018.53	22.34	-2.171	-0.001	0.275
105.00	-15.32	-22.41	-0.96	-700.89	-0.02	700.89	3473.69	1736.85	5734.33	2871.43	24.67	-2.272	-0.001	0.249
110.00	-14.53	-21.88	-0.96	-588.84	-0.03	588.84	3399.09	1699.54	5445.04	2726.57	27.10	-2.365	-0.001	0.220
115.00	-13.78	-21.35	-0.96	-479.46	-0.03	479.46	3322.84	1661.42	5160.48	2584.08	29.62	-2.450	-0.002	0.190
120.00	-12.47	-20.80	-0.96	-372.71	-0.03	372.71	2604.14	1302.07	3997.79	2001.87	32.23	-2.525	-0.002	0.191
125.00	-11.87	-20.28	-0.96	-268.74	-0.04	268.74	2547.22	1273.61	3785.91	1895.77	34.91	-2.586	-0.002	0.147
130.00	-7.70	-12.81	-0.66	-167.34	-0.02	167.34	2488.65	1244.32	3577.22	1791.27	37.65	-2.638	-0.002	0.097
135.00	-7.16	-12.31	-0.66	-103.31	-0.03	103.31	2428.43	1214.21	3371.96	1688.49	40.43	-2.674	-0.002	0.064
140.00	-2.90	-4.41	0.00	-41.77	0.00	41.77	2366.56	1183.28	3170.38	1587.54	43.24	-2.695	-0.003	0.028
145.00	-2.42	-3.94	0.00	-19.70	0.00	19.70	2303.03	1151.52	2972.71	1488.57	46.07	-2.705	-0.003	0.014
150.00	0.00	-3.82	0.00	0.00	0.00	0.00	2232.58	1116.29	2772.66	1388.39	48.91	-2.709	-0.003	0.000

Wind Loading - Shaft

Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

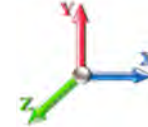


Page: 20

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

Iterations 19

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	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.656	5.00	28.111	33.73	191.8	666.5	2697.3
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.775	5.00	27.711	33.25	189.0	702.5	2695.1
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.848	5.00	27.273	32.73	186.0	718.7	2673.1
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.902	5.00	26.818	32.18	194.1	726.3	2642.4
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.945	5.00	26.354	31.63	199.9	728.8	2606.6
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.981	5.00	25.885	31.06	204.1	728.0	2567.6
35.00		1.00	1.01	6.169	6.79	0.00	1.200	2.012	5.00	25.411	30.49	206.9	724.8	2526.2
38.00 Bot - Section 2		1.00	1.03	6.277	6.90	0.00	1.200	2.028	3.00	15.015	18.02	124.4	433.2	1495.6
40.00		1.00	1.04	6.345	6.98	0.00	1.200	2.039	2.00	10.062	12.07	84.3	292.4	1616.8
45.00 Top - Section 1		1.00	1.07	6.504	7.15	0.00	1.200	2.063	5.00	24.825	29.79	213.1	724.7	3985.4
50.00		1.00	1.09	6.650	7.32	0.00	1.200	2.085	5.00	24.344	29.21	213.7	717.2	2219.6
55.00		1.00	1.12	6.785	7.46	0.00	1.200	2.105	5.00	23.861	28.63	213.7	708.8	2177.7
60.00		1.00	1.14	6.910	7.60	0.00	1.200	2.123	5.00	23.377	28.05	213.2	699.5	2135.0
65.00		1.00	1.16	7.028	7.73	0.00	1.200	2.140	5.00	22.892	27.47	212.4	689.5	2091.5
70.00		1.00	1.17	7.138	7.85	0.00	1.200	2.156	5.00	22.406	26.89	211.1	678.9	2047.4
75.00		1.00	1.19	7.243	7.97	0.00	1.200	2.171	5.00	21.919	26.30	209.6	667.7	2002.8
77.00 Bot - Section 3		1.00	1.20	7.283	8.01	0.00	1.200	2.177	2.00	8.630	10.36	83.0	265.3	789.9
80.00		1.00	1.21	7.342	8.08	0.00	1.200	2.185	3.00	12.989	15.59	125.9	399.8	1854.6
83.00 Top - Section 2		1.00	1.22	7.399	8.14	0.00	1.200	2.193	3.00	12.814	15.38	125.1	395.5	1827.9
85.00		1.00	1.22	7.436	8.18	0.00	1.200	2.198	2.00	8.444	10.13	82.9	261.7	701.0
90.00		1.00	1.24	7.526	8.28	0.00	1.200	2.211	5.00	20.771	24.93	206.4	641.9	1720.0
95.00		1.00	1.25	7.612	8.37	0.00	1.200	2.223	5.00	20.282	24.34	203.8	629.1	1678.5
100.00		1.00	1.27	7.695	8.46	0.00	1.200	2.234	5.00	19.792	23.75	201.0	616.0	1636.7
105.00		1.00	1.28	7.774	8.55	0.00	1.200	2.245	5.00	19.302	23.16	198.1	602.5	1594.5
110.00		1.00	1.29	7.851	8.64	0.00	1.200	2.256	5.00	18.811	22.57	194.9	588.8	1552.1
115.00 Bot - Section 4		1.00	1.30	7.925	8.72	0.00	1.200	2.266	5.00	18.320	21.98	191.6	574.8	1509.4
120.00 Top - Section 3		1.00	1.32	7.996	8.80	0.00	1.200	2.276	5.00	18.093	21.71	191.0	569.5	2244.3
125.00		1.00	1.33	8.065	8.87	0.00	1.200	2.285	5.00	17.602	21.12	187.4	555.0	1300.0
130.00 Appurtenance(s)		1.00	1.34	8.132	8.95	0.00	1.200	2.294	5.00	17.110	20.53	183.7	540.4	1261.4
135.00		1.00	1.35	8.197	9.02	0.00	1.200	2.303	5.00	16.618	19.94	179.8	525.5	1222.7
140.00 Appurtenance(s)		1.00	1.36	8.260	9.09	0.00	1.200	2.311	5.00	16.125	19.35	175.8	510.4	1183.7
145.00		1.00	1.37	8.321	9.15	0.00	1.200	2.319	5.00	15.633	18.76	171.7	495.2	1144.6
150.00 Appurtenance(s)		1.00	1.38	8.381	9.22	0.00	1.200	2.327	5.00	15.140	18.17	167.5	479.8	1105.3
Totals:									150.00			5,936.9		62,506.6

Discrete Appurtenance Forces

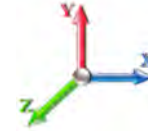
Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 21

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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 19

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	150.00	TA08025-B604	3	8.381	9.219	0.50	0.75	4.08	396.55	0.000	0.000	37.63	0.00	0.00
2	150.00	TA08025-B605	3	8.381	9.219	0.50	0.75	4.08	440.95	0.000	0.000	37.63	0.00	0.00
3	150.00	MC-PK8-DSH	1	8.381	9.219	1.00	1.00	100.57	3949.84	0.000	0.000	927.11	0.00	0.00
4	150.00	MX08FRO665-21	3	8.381	9.219	0.55	0.75	24.05	1194.09	0.000	0.000	221.69	0.00	0.00
5	150.00	RDIDC-9181-PF-48	1	8.381	9.219	1.00	1.00	2.77	84.31	0.000	0.000	25.51	0.00	0.00
6	140.00	AIR6449 B41	3	8.260	9.086	0.53	0.75	11.04	820.40	0.000	0.000	100.28	0.00	0.00
7	140.00	AIR32 KRD901146-	3	8.260	9.086	0.65	0.75	15.71	1247.72	0.000	0.000	142.75	0.00	0.00
8	140.00	APXVAALL24_43-U-NA20	3	8.260	9.086	0.55	0.75	37.43	2210.54	0.000	0.000	340.05	0.00	0.00
9	140.00	RMQP-496-HK	1	8.260	9.086	1.00	1.00	92.37	5544.52	0.000	0.000	839.26	0.00	0.00
10	140.00	4449 B71 + B85	3	8.260	9.086	0.50	0.75	4.11	317.70	0.000	0.000	37.31	0.00	0.00
11	140.00	4415 B25	3	8.260	9.086	0.50	0.75	3.97	430.47	0.000	0.000	36.08	0.00	0.00
12	140.00	SFR-K-V-Brace	1	8.260	9.086	1.00	1.00	32.71	1251.39	0.000	0.000	297.21	0.00	0.00
13	140.00	ALU 1900 Mhz RRU's	3	8.260	9.086	0.50	0.75	6.71	475.75	0.000	0.000	60.95	0.00	0.00
14	140.00	Dragonwave	3	8.260	9.086	1.00	1.00	19.10	402.32	1.495	0.000	173.55	259.46	0.00
15	130.00	SHP2-13	1	8.132	8.945	1.00	1.00	4.32	348.35	2.495	0.000	38.67	96.48	0.00
16	130.00	APXVAA24_43-U-A20	3	8.132	8.945	0.55	0.75	37.39	2109.70	0.000	0.000	334.50	0.00	0.00
17	130.00	APX16DWV-16DWV-S-EA	3	8.132	8.945	0.46	0.75	11.10	725.92	0.000	0.000	99.26	0.00	0.00
18	130.00	AIR3246 B66	3	8.132	8.945	0.65	0.75	15.69	1240.69	0.000	0.000	140.33	0.00	0.00
19	130.00	AIR 5122 28GHz	3	8.132	8.945	0.57	0.75	5.38	240.73	0.000	0.000	48.14	0.00	0.00
20	130.00	Radio 4415 B25	3	8.132	8.945	0.50	0.75	3.49	299.48	0.000	0.000	31.25	0.00	0.00
21	130.00	Radio 4449 B71 + B12	3	8.132	8.945	0.50	0.75	3.59	543.42	0.000	0.000	32.11	0.00	0.00
22	130.00	Radio 2217 B66A	3	8.132	8.945	0.50	0.75	2.98	208.84	0.000	0.000	26.62	0.00	0.00
23	130.00	FSP-10W	1	8.132	8.945	1.00	1.00	150.98	5262.05	0.000	0.000	1350.54	0.00	0.00
24	130.00	##P-HRK10	1	8.132	8.945	1.00	1.00	23.04	1666.57	0.000	0.000	206.08	0.00	0.00
Totals:									31,412.30			5,584.53		

Total Applied Force Summary

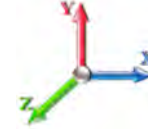
Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 22

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

Dead Load Factor 1.20
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		191.77	2805.34	0.00	0.00
10.00		189.04	2808.84	0.00	0.00
15.00		186.05	2790.55	0.00	0.00
20.00		194.11	2762.66	0.00	0.00
25.00		199.93	2729.22	0.00	0.00
30.00		204.06	2692.11	0.00	0.00
35.00		206.93	2652.38	0.00	0.00
38.00		124.41	1571.94	0.00	0.00
40.00		84.27	1667.85	0.00	0.00
45.00		213.14	4114.51	0.00	0.00
50.00		213.70	2349.94	0.00	0.00
55.00		213.70	2309.18	0.00	0.00
60.00		213.24	2267.52	0.00	0.00
65.00		212.36	2225.07	0.00	0.00
70.00		211.12	2181.93	0.00	0.00
75.00		209.56	2138.19	0.00	0.00
77.00		82.96	844.20	0.00	0.00
80.00		125.88	1936.31	0.00	0.00
83.00		125.14	1909.92	0.00	0.00
85.00		82.89	755.79	0.00	0.00
90.00		206.35	1857.72	0.00	0.00
95.00		203.80	1816.96	0.00	0.00
100.00		201.04	1775.84	0.00	0.00
105.00		198.08	1734.38	0.00	0.00
110.00		194.94	1692.61	0.00	0.00
115.00		191.64	1650.55	0.00	0.00
120.00		190.97	2386.02	0.00	0.00
125.00		187.39	1442.29	0.00	0.00
130.00	(24) attachments	2491.16	14050.05	96.48	0.00
135.00		179.80	1345.31	0.00	0.00
140.00	(23) attachments	2203.25	14007.68	259.46	0.00
145.00		171.71	1245.44	0.00	0.00
150.00	(11) attachments	1417.07	7272.35	0.00	0.00
	Totals:	11,521.46	97,790.63	355.94	0.00

Linear Appurtenance Segment Forces (Factored)

Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



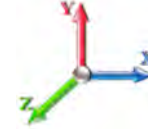
Page: 23

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

Iterations 19

Dead Load Factor 1.20

Wind Load Factor 1.00



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Safety Cable	Yes	5.00	0.000	0.38	1.54	0.00	0.016	0.000	5.168	0.00	20.86
5.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.64	0.00	0.016	0.000	5.168	0.00	37.61
10.00	Safety Cable	Yes	5.00	0.000	0.38	1.64	0.00	0.016	0.000	5.168	0.00	23.53
10.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.74	0.00	0.016	0.000	5.168	0.00	40.68
15.00	Safety Cable	Yes	5.00	0.000	0.38	1.70	0.00	0.016	0.000	5.168	0.00	25.26
15.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.80	0.00	0.016	0.000	5.168	0.00	42.66
20.00	Safety Cable	Yes	5.00	0.000	0.38	1.74	0.00	0.017	0.000	5.483	0.00	26.58
20.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.85	0.00	0.017	0.000	5.483	0.00	44.16
25.00	Safety Cable	Yes	5.00	0.000	0.38	1.78	0.00	0.017	0.000	5.747	0.00	27.65
25.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.88	0.00	0.017	0.000	5.747	0.00	45.38
30.00	Safety Cable	Yes	5.00	0.000	0.38	1.81	0.00	0.017	0.000	5.972	0.00	28.56
30.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.91	0.00	0.017	0.000	5.972	0.00	46.41
35.00	Safety Cable	Yes	5.00	0.000	0.38	1.83	0.00	0.018	0.000	6.169	0.00	29.35
35.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.94	0.00	0.018	0.000	6.169	0.00	47.31
38.00	Safety Cable	Yes	3.00	0.000	0.38	1.11	0.00	0.018	0.000	6.277	0.00	17.87
38.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	1.17	0.00	0.018	0.000	6.277	0.00	28.68
40.00	Safety Cable	Yes	2.00	0.000	0.38	0.74	0.00	0.018	0.000	6.345	0.00	12.03
40.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.78	0.00	0.018	0.000	6.345	0.00	19.24
45.00	Safety Cable	Yes	5.00	0.000	0.38	1.88	0.00	0.019	0.000	6.504	0.00	30.70
45.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.98	0.00	0.019	0.000	6.504	0.00	48.83
50.00	Safety Cable	Yes	5.00	0.000	0.38	1.90	0.00	0.019	0.000	6.650	0.00	31.29
50.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.00	0.00	0.019	0.000	6.650	0.00	49.49
55.00	Safety Cable	Yes	5.00	0.000	0.38	1.91	0.00	0.019	0.000	6.785	0.00	31.83
55.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.02	0.00	0.019	0.000	6.785	0.00	50.10
60.00	Safety Cable	Yes	5.00	0.000	0.38	1.93	0.00	0.019	0.000	6.910	0.00	32.33
60.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.03	0.00	0.019	0.000	6.910	0.00	50.67
65.00	Safety Cable	Yes	5.00	0.000	0.38	1.94	0.00	0.020	0.000	7.028	0.00	32.80
65.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.05	0.00	0.020	0.000	7.028	0.00	51.19
70.00	Safety Cable	Yes	5.00	0.000	0.38	1.96	0.00	0.020	0.000	7.138	0.00	33.24
70.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.06	0.00	0.020	0.000	7.138	0.00	51.69
75.00	Safety Cable	Yes	5.00	0.000	0.38	1.97	0.00	0.021	0.000	7.243	0.00	33.66
75.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.07	0.00	0.021	0.000	7.243	0.00	52.15
77.00	Safety Cable	Yes	2.00	0.000	0.38	0.79	0.00	0.021	0.000	7.283	0.00	13.53
77.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.83	0.00	0.021	0.000	7.283	0.00	20.93
80.00	Safety Cable	Yes	3.00	0.000	0.38	1.19	0.00	0.022	0.000	7.342	0.00	20.43
80.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	1.25	0.00	0.022	0.000	7.342	0.00	31.56
83.00	Safety Cable	Yes	3.00	0.000	0.38	1.19	0.00	0.022	0.000	7.399	0.00	20.57
83.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	1.25	0.00	0.022	0.000	7.399	0.00	31.71
85.00	Safety Cable	Yes	2.00	0.000	0.38	0.80	0.00	0.022	0.000	7.436	0.00	13.77
85.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.84	0.00	0.022	0.000	7.436	0.00	21.21
90.00	Safety Cable	Yes	5.00	0.000	0.38	2.00	0.00	0.022	0.000	7.526	0.00	34.79
90.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.11	0.00	0.022	0.000	7.526	0.00	53.42
95.00	Safety Cable	Yes	5.00	0.000	0.38	2.01	0.00	0.023	0.000	7.612	0.00	35.13
95.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.12	0.00	0.023	0.000	7.612	0.00	53.80
100.00	Safety Cable	Yes	5.00	0.000	0.38	2.02	0.00	0.023	0.000	7.695	0.00	35.46
100.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.12	0.00	0.023	0.000	7.695	0.00	54.17
105.00	Safety Cable	Yes	5.00	0.000	0.38	2.03	0.00	0.024	0.000	7.774	0.00	35.77

Linear Appurtenance Segment Forces (Factored)

Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



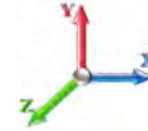
Page: 24

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

Iterations 19

Dead Load Factor 1.20

Wind Load Factor 1.00



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.13	0.00	0.024	0.000	7.774	0.00	54.52
110.00	Safety Cable	Yes	5.00	0.000	0.38	2.04	0.00	0.025	0.000	7.851	0.00	36.07
110.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.14	0.00	0.025	0.000	7.851	0.00	54.86
115.00	Safety Cable	Yes	5.00	0.000	0.38	2.05	0.00	0.026	0.000	7.925	0.00	36.37
115.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.15	0.00	0.026	0.000	7.925	0.00	55.19
120.00	Safety Cable	Yes	5.00	0.000	0.38	2.05	0.00	0.026	0.000	7.996	0.00	36.65
120.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.16	0.00	0.026	0.000	7.996	0.00	55.50
125.00	Safety Cable	Yes	5.00	0.000	0.38	2.06	0.00	0.027	0.000	8.065	0.00	36.92
125.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.17	0.00	0.027	0.000	8.065	0.00	55.81
130.00	Safety Cable	Yes	5.00	0.000	0.38	2.07	0.00	0.028	0.000	8.132	0.00	37.19
130.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.17	0.00	0.028	0.000	8.132	0.00	56.10
135.00	Safety Cable	Yes	5.00	0.000	0.38	2.08	0.00	0.029	0.000	8.197	0.00	37.44
135.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.18	0.00	0.029	0.000	8.197	0.00	56.39
140.00	Safety Cable	Yes	5.00	0.000	0.38	2.08	0.00	0.030	0.000	8.260	0.00	37.69
140.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.19	0.00	0.030	0.000	8.260	0.00	56.66
145.00	Safety Cable	Yes	5.00	0.000	0.38	2.09	0.00	0.031	0.000	8.321	0.00	37.93
145.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.20	0.00	0.031	0.000	8.321	0.00	56.93
150.00	Safety Cable	Yes	5.00	0.000	0.38	2.10	0.00	0.032	0.000	8.381	0.00	38.17
150.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.20	0.00	0.032	0.000	8.381	0.00	57.19
Totals:											0.0	2,513.6

Calculated Forces

Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

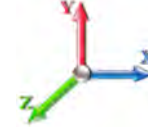


Page: 25

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

Iterations 19

Dead Load Factor 1.20
Wind Load Factor 1.00



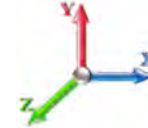
Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-97.79	-11.55	-0.36	-1286.3	0.00	1286.38	6922.80	3461.40	17996.9	9011.85	0.00	0.000	0.000	0.157
5.00	-94.97	-11.42	-0.36	-1228.6	0.00	1228.62	6837.06	3418.53	17439.8	8732.91	0.02	-0.035	0.000	0.155
10.00	-92.16	-11.28	-0.36	-1171.5	0.00	1171.53	6749.68	3374.84	16887.0	8456.09	0.08	-0.071	0.000	0.152
15.00	-89.36	-11.15	-0.36	-1115.1	0.00	1115.12	6660.64	3330.32	16338.7	8181.53	0.17	-0.107	0.000	0.150
20.00	-86.59	-11.00	-0.36	-1059.3	0.00	1059.37	6569.96	3284.98	15795.1	7909.33	0.30	-0.143	0.000	0.147
25.00	-83.86	-10.85	-0.36	-1004.3	0.00	1004.35	6477.62	3238.81	15256.5	7639.63	0.47	-0.179	0.000	0.144
30.00	-81.16	-10.69	-0.36	-950.09	0.00	950.09	6383.64	3191.82	14723.2	7372.54	0.68	-0.216	0.000	0.142
35.00	-78.50	-10.51	-0.36	-896.65	0.00	896.65	6288.00	3144.00	14195.2	7108.19	0.92	-0.253	0.000	0.139
38.00	-76.93	-10.41	-0.36	-865.11	0.00	865.11	6229.82	3114.91	13881.2	6950.95	1.09	-0.276	0.000	0.137
40.00	-75.25	-10.35	-0.36	-844.30	0.00	844.30	6190.71	3095.36	13673.0	6846.70	1.21	-0.291	0.000	0.135
45.00	-71.13	-10.16	-0.36	-792.56	0.00	792.56	5186.56	2593.28	11416.3	5716.63	1.53	-0.328	0.000	0.152
50.00	-68.78	-9.98	-0.36	-741.77	0.00	741.77	5108.96	2554.48	10995.7	5506.06	1.90	-0.365	0.000	0.148
55.00	-66.47	-9.80	-0.36	-691.88	0.00	691.88	5029.70	2514.85	10579.3	5297.54	2.30	-0.406	0.000	0.144
60.00	-64.19	-9.61	-0.36	-642.91	0.00	642.91	4948.79	2474.40	10167.2	5091.20	2.75	-0.446	0.000	0.139
65.00	-61.96	-9.42	-0.36	-594.86	0.00	594.86	4866.24	2433.12	9759.82	4887.17	3.24	-0.486	0.000	0.134
70.00	-59.78	-9.23	-0.36	-547.75	0.00	547.75	4782.03	2391.02	9357.20	4685.56	3.77	-0.526	0.000	0.129
75.00	-57.64	-9.03	-0.36	-501.58	0.00	501.58	4696.17	2348.09	8959.67	4486.49	4.34	-0.565	0.000	0.124
77.00	-56.79	-8.96	-0.36	-483.52	0.00	483.52	4661.37	2330.68	8802.13	4407.61	4.58	-0.581	0.000	0.122
80.00	-54.85	-8.84	-0.36	-456.64	0.00	456.64	4608.66	2304.33	8567.45	4290.09	4.95	-0.604	0.000	0.118
83.00	-52.94	-8.71	-0.36	-430.14	0.00	430.14	3782.33	1891.17	7057.27	3533.88	5.34	-0.627	0.000	0.136
85.00	-52.18	-8.64	-0.36	-412.72	0.00	412.72	3755.60	1877.80	6933.95	3472.13	5.61	-0.643	0.000	0.133
90.00	-50.32	-8.45	-0.36	-369.51	0.00	369.51	3687.60	1843.80	6628.16	3319.01	6.30	-0.683	0.000	0.125
95.00	-48.50	-8.26	-0.36	-327.26	0.00	327.26	3617.94	1808.97	6326.13	3167.77	7.04	-0.723	0.000	0.117
100.00	-46.72	-8.06	-0.36	-285.98	0.00	285.98	3546.64	1773.32	6028.11	3018.53	7.82	-0.760	0.000	0.108
105.00	-44.99	-7.87	-0.36	-245.68	0.00	245.68	3473.69	1736.85	5734.33	2871.43	8.63	-0.796	0.000	0.099
110.00	-43.29	-7.67	-0.36	-206.34	0.00	206.34	3399.09	1699.54	5445.04	2726.57	9.48	-0.829	-0.001	0.088
115.00	-41.64	-7.48	-0.36	-167.98	0.00	167.98	3322.84	1661.42	5160.48	2584.08	10.37	-0.858	-0.001	0.078
120.00	-39.25	-7.27	-0.36	-130.60	0.00	130.60	2604.14	1302.07	3997.79	2001.87	11.28	-0.884	-0.001	0.080
125.00	-37.81	-7.07	-0.36	-94.28	0.00	94.28	2547.22	1273.61	3785.91	1895.77	12.22	-0.906	-0.001	0.065
130.00	-23.80	-4.36	-0.26	-58.94	0.00	58.94	2488.65	1244.32	3577.22	1791.27	13.18	-0.924	-0.001	0.042
135.00	-22.46	-4.16	-0.26	-37.14	0.00	37.14	2428.43	1214.21	3371.96	1688.49	14.15	-0.937	-0.001	0.031
140.00	-8.49	-1.73	0.00	-16.33	0.00	16.33	2366.56	1183.28	3170.38	1587.54	15.14	-0.945	-0.001	0.014
145.00	-7.25	-1.54	0.00	-7.69	0.00	7.69	2303.03	1151.52	2972.71	1488.57	16.13	-0.949	-0.001	0.008
150.00	0.00	-1.42	0.00	0.00	0.00	0.00	2232.58	1116.29	2772.66	1388.39	17.13	-0.950	-0.001	0.000

Seismic Segment Forces (Factored)

Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (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: 1.2D + 1.0E					Iterations 17
Gust Response Factor	1.10	Sds	0.20	Ss	0.18
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1	0.10
Wind Load Factor	0.00	Structure Frequency (f1)	0.45	SA	0.05
				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		1692.3	0.00	0.03	0.02	26.92	
10.00		1660.4	0.01	0.05	0.03	39.47	
15.00		1628.6	0.02	0.06	0.04	45.34	
20.00		1596.7	0.03	0.07	0.04	47.93	
25.00		1564.8	0.05	0.07	0.04	49.00	
30.00		1533.0	0.08	0.07	0.04	49.47	
35.00		1501.1	0.10	0.07	0.04	49.75	
38.00	Bot - Section 2	885.39	0.12	0.07	0.03	29.78	
40.00		1103.6	0.13	0.07	0.03	37.46	
45.00	Top - Section 1	2717.2	0.17	0.07	0.03	93.80	
50.00		1251.9	0.21	0.06	0.02	43.26	
55.00		1224.1	0.25	0.05	0.02	41.11	
60.00		1196.2	0.30	0.04	0.01	37.17	
65.00		1168.3	0.35	0.03	0.01	30.97	
70.00		1140.4	0.41	0.01	0.01	22.29	
75.00		1112.5	0.47	-0.01	0.01	11.48	
77.00	Bot - Section 3	437.22	0.50	-0.02	0.01	2.68	
80.00		1212.3	0.54	-0.03	0.01	-0.49	
83.00	Top - Section 2	1193.6	0.58	-0.05	0.01	-8.31	
85.00		366.04	0.61	-0.06	0.02	-4.09	
90.00		898.38	0.68	-0.08	0.03	-18.15	
95.00		874.47	0.76	-0.10	0.04	-22.70	
100.00		850.57	0.84	-0.12	0.07	-23.24	
105.00		826.67	0.93	-0.12	0.10	-19.62	
110.00		802.77	1.02	-0.11	0.14	-11.99	
115.00	Bot - Section 4	778.87	1.11	-0.06	0.19	-0.67	
120.00	Top - Section 3	1395.7	1.21	0.01	0.26	25.85	
125.00		620.82	1.31	0.14	0.35	26.85	
130.00	Appurtenance(s)	4944.7	1.42	0.32	0.45	362.74	
135.00		580.99	1.53	0.58	0.58	63.29	
140.00	Appurtenance(s)	5097.8	1.65	0.93	0.73	764.92	
145.00		541.15	1.77	1.39	0.92	106.51	
150.00	Appurtenance(s)	2880.2	1.89	1.98	1.14	718.18	
Totals:		47,279.8				2,616.9	Total Wind: 33,692.6

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

Calculated Forces

Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (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: 1.2D + 1.0E										Iterations 17
Gust Response Factor 1.10					Sds 0.20					Ss 0.18
Dead Load Factor 1.20			Seismic Load Factor 1.00			Sd1 0.10			S1 0.06	
Wind Load Factor 0.00		Structure Frequency (f1) 0.45		SA 0.05		Seismic Importance Factor 1.00				



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-58.52	-2.73	0.00	-325.88	0.00	325.88	6922.80	3461.40	17996.9	9011.85	0.00	0.00	0.00	0.045
5.00	-56.42	-2.71	0.00	-312.23	0.00	312.23	6837.06	3418.53	17439.8	8732.91	0.00	-0.01	0.044	
10.00	-54.37	-2.68	0.00	-298.67	0.00	298.67	6749.68	3374.84	16887.0	8456.09	0.02	-0.02	0.043	
15.00	-52.35	-2.64	0.00	-285.27	0.00	285.27	6660.64	3330.32	16338.7	8181.53	0.04	-0.03	0.043	
20.00	-50.37	-2.60	0.00	-272.06	0.00	272.06	6569.96	3284.98	15795.1	7909.33	0.08	-0.04	0.042	
25.00	-48.43	-2.56	0.00	-259.05	0.00	259.05	6477.62	3238.81	15256.5	7639.63	0.12	-0.05	0.041	
30.00	-46.52	-2.52	0.00	-246.25	0.00	246.25	6383.64	3191.82	14723.2	7372.54	0.17	-0.06	0.041	
35.00	-44.66	-2.47	0.00	-233.67	0.00	233.67	6288.00	3144.00	14195.2	7108.19	0.24	-0.06	0.040	
38.00	-43.56	-2.44	0.00	-226.26	0.00	226.26	6229.82	3114.91	13881.2	6950.95	0.28	-0.07	0.040	
40.00	-42.21	-2.41	0.00	-221.38	0.00	221.38	6190.71	3095.36	13673.0	6846.70	0.31	-0.07	0.039	
45.00	-38.88	-2.32	0.00	-209.33	0.00	209.33	5186.56	2593.28	11416.3	5716.63	0.39	-0.08	0.044	
50.00	-37.31	-2.28	0.00	-197.75	0.00	197.75	5108.96	2554.48	10995.7	5506.06	0.49	-0.09	0.043	
55.00	-35.78	-2.24	0.00	-186.36	0.00	186.36	5029.70	2514.85	10579.3	5297.54	0.59	-0.11	0.042	
60.00	-34.28	-2.21	0.00	-175.15	0.00	175.15	4948.79	2474.40	10167.2	5091.20	0.71	-0.12	0.041	
65.00	-32.82	-2.18	0.00	-164.12	0.00	164.12	4866.24	2433.12	9759.82	4887.17	0.84	-0.13	0.040	
70.00	-31.38	-2.16	0.00	-153.22	0.00	153.22	4782.03	2391.02	9357.20	4685.56	0.97	-0.14	0.039	
75.00	-29.98	-2.15	0.00	-142.42	0.00	142.42	4696.17	2348.09	8959.67	4486.49	1.12	-0.15	0.038	
77.00	-29.43	-2.15	0.00	-138.12	0.00	138.12	4661.37	2330.68	8802.13	4407.61	1.19	-0.15	0.038	
80.00	-27.94	-2.15	0.00	-131.67	0.00	131.67	4608.66	2304.33	8567.45	4290.09	1.29	-0.16	0.037	
83.00	-26.47	-2.15	0.00	-125.23	0.00	125.23	3782.33	1891.17	7057.27	3533.88	1.39	-0.17	0.042	
85.00	-26.00	-2.15	0.00	-120.94	0.00	120.94	3755.60	1877.80	6933.95	3472.13	1.46	-0.17	0.042	
90.00	-24.86	-2.15	0.00	-110.20	0.00	110.20	3687.60	1843.80	6628.16	3319.01	1.65	-0.18	0.040	
95.00	-23.75	-2.15	0.00	-99.45	0.00	99.45	3617.94	1808.97	6326.13	3167.77	1.85	-0.20	0.038	
100.00	-22.66	-2.15	0.00	-88.70	0.00	88.70	3546.64	1773.32	6028.11	3018.53	2.06	-0.21	0.036	
105.00	-21.61	-2.15	0.00	-77.94	0.00	77.94	3473.69	1736.85	5734.33	2871.43	2.28	-0.22	0.033	
110.00	-20.58	-2.15	0.00	-67.18	0.00	67.18	3399.09	1699.54	5445.04	2726.57	2.51	-0.23	0.031	
115.00	-19.58	-2.15	0.00	-56.42	0.00	56.42	3322.84	1661.42	5160.48	2584.08	2.76	-0.24	0.028	
120.00	-17.84	-2.12	0.00	-45.66	0.00	45.66	2604.14	1302.07	3997.79	2001.87	3.01	-0.25	0.030	
125.00	-17.03	-2.09	0.00	-35.06	0.00	35.06	2547.22	1273.61	3785.91	1895.77	3.28	-0.26	0.025	
130.00	-11.04	-1.70	0.00	-24.60	0.00	24.60	2488.65	1244.32	3577.22	1791.27	3.55	-0.26	0.018	
135.00	-10.30	-1.64	0.00	-16.08	0.00	16.08	2428.43	1214.21	3371.96	1688.49	3.83	-0.27	0.014	
140.00	-4.14	-0.84	0.00	-7.89	0.00	7.89	2366.56	1183.28	3170.38	1587.54	4.11	-0.27	0.007	
145.00	-3.47	-0.73	0.00	-3.67	0.00	3.67	2303.03	1151.52	2972.71	1488.57	4.40	-0.27	0.004	
150.00	0.00	-0.72	0.00	0.00	0.00	0.00	2232.58	1116.29	2772.66	1388.39	4.68	-0.27	0.000	

Seismic Segment Forces (Factored)

Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 28

Load Case: 0.9D + 1.0E

Iterations 17

Gust Response Factor 1.10	Sds 0.20	Ss 0.18	
Dead Load Factor 0.90	Seismic Load Factor 1.00	Sd1 0.10	
Wind Load Factor 0.00	Structure Frequency (f1) 0.45	SA 0.05	

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		1692.3	0.00	0.03	0.02	26.92	
10.00		1660.4	0.01	0.05	0.03	39.47	
15.00		1628.6	0.02	0.06	0.04	45.34	
20.00		1596.7	0.03	0.07	0.04	47.93	
25.00		1564.8	0.05	0.07	0.04	49.00	
30.00		1533.0	0.08	0.07	0.04	49.47	
35.00		1501.1	0.10	0.07	0.04	49.75	
38.00	Bot - Section 2	885.39	0.12	0.07	0.03	29.78	
40.00		1103.6	0.13	0.07	0.03	37.46	
45.00	Top - Section 1	2717.2	0.17	0.07	0.03	93.80	
50.00		1251.9	0.21	0.06	0.02	43.26	
55.00		1224.1	0.25	0.05	0.02	41.11	
60.00		1196.2	0.30	0.04	0.01	37.17	
65.00		1168.3	0.35	0.03	0.01	30.97	
70.00		1140.4	0.41	0.01	0.01	22.29	
75.00		1112.5	0.47	-0.01	0.01	11.48	
77.00	Bot - Section 3	437.22	0.50	-0.02	0.01	2.68	
80.00		1212.3	0.54	-0.03	0.01	-0.49	
83.00	Top - Section 2	1193.6	0.58	-0.05	0.01	-8.31	
85.00		366.04	0.61	-0.06	0.02	-4.09	
90.00		898.38	0.68	-0.08	0.03	-18.15	
95.00		874.47	0.76	-0.10	0.04	-22.70	
100.00		850.57	0.84	-0.12	0.07	-23.24	
105.00		826.67	0.93	-0.12	0.10	-19.62	
110.00		802.77	1.02	-0.11	0.14	-11.99	
115.00	Bot - Section 4	778.87	1.11	-0.06	0.19	-0.67	
120.00	Top - Section 3	1395.7	1.21	0.01	0.26	25.85	
125.00		620.82	1.31	0.14	0.35	26.85	
130.00	Appurtenance(s)	4944.7	1.42	0.32	0.45	362.74	
135.00		580.99	1.53	0.58	0.58	63.29	
140.00	Appurtenance(s)	5097.8	1.65	0.93	0.73	764.92	
145.00		541.15	1.77	1.39	0.92	106.51	
150.00	Appurtenance(s)	2880.2	1.89	1.98	1.14	718.18	
Totals:		47,279.8				2,616.9	Total Wind: 33,692.6

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

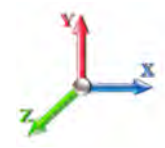
Calculated Forces

Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 29

Load Case: 0.9D + 1.0E							Iterations 17
Gust Response Factor	1.10				Sds	0.20	Ss 0.18
Dead Load Factor	0.90	Seismic Load Factor	1.00	Sd1	0.10		S1 0.06
Wind Load Factor	0.00	Structure Frequency (f1)	0.45	SA	0.05	Seismic Importance Factor	1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-43.89	-2.73	0.00	-323.62	0.00	323.62	6922.80	3461.40	17996.9	9011.85	0.00	0.00	0.00	0.042
5.00	-42.32	-2.71	0.00	-309.98	0.00	309.98	6837.06	3418.53	17439.8	8732.91	0.00	-0.01	0.042	
10.00	-40.77	-2.67	0.00	-296.44	0.00	296.44	6749.68	3374.84	16887.0	8456.09	0.02	-0.02	0.041	
15.00	-39.26	-2.64	0.00	-283.06	0.00	283.06	6660.64	3330.32	16338.7	8181.53	0.04	-0.03	0.040	
20.00	-37.77	-2.59	0.00	-269.89	0.00	269.89	6569.96	3284.98	15795.1	7909.33	0.08	-0.04	0.040	
25.00	-36.32	-2.55	0.00	-256.92	0.00	256.92	6477.62	3238.81	15256.5	7639.63	0.12	-0.05	0.039	
30.00	-34.89	-2.50	0.00	-244.18	0.00	244.18	6383.64	3191.82	14723.2	7372.54	0.17	-0.05	0.039	
35.00	-33.49	-2.46	0.00	-231.67	0.00	231.67	6288.00	3144.00	14195.2	7108.19	0.23	-0.06	0.038	
38.00	-32.67	-2.43	0.00	-224.30	0.00	224.30	6229.82	3114.91	13881.2	6950.95	0.28	-0.07	0.038	
40.00	-31.65	-2.39	0.00	-219.44	0.00	219.44	6190.71	3095.36	13673.0	6846.70	0.31	-0.07	0.037	
45.00	-29.16	-2.30	0.00	-207.47	0.00	207.47	5186.56	2593.28	11416.3	5716.63	0.39	-0.08	0.042	
50.00	-27.98	-2.26	0.00	-195.96	0.00	195.96	5108.96	2554.48	10995.7	5506.06	0.48	-0.09	0.041	
55.00	-26.83	-2.22	0.00	-184.66	0.00	184.66	5029.70	2514.85	10579.3	5297.54	0.59	-0.10	0.040	
60.00	-25.71	-2.19	0.00	-173.54	0.00	173.54	4948.79	2474.40	10167.2	5091.20	0.70	-0.12	0.039	
65.00	-24.61	-2.16	0.00	-162.60	0.00	162.60	4866.24	2433.12	9759.82	4887.17	0.83	-0.13	0.038	
70.00	-23.54	-2.14	0.00	-151.79	0.00	151.79	4782.03	2391.02	9357.20	4685.56	0.97	-0.14	0.037	
75.00	-22.49	-2.13	0.00	-141.09	0.00	141.09	4696.17	2348.09	8959.67	4486.49	1.12	-0.15	0.036	
77.00	-22.07	-2.13	0.00	-136.84	0.00	136.84	4661.37	2330.68	8802.13	4407.61	1.18	-0.15	0.036	
80.00	-20.95	-2.13	0.00	-130.45	0.00	130.45	4608.66	2304.33	8567.45	4290.09	1.28	-0.16	0.035	
83.00	-19.85	-2.13	0.00	-124.07	0.00	124.07	3782.33	1891.17	7057.27	3533.88	1.38	-0.17	0.040	
85.00	-19.50	-2.13	0.00	-119.82	0.00	119.82	3755.60	1877.80	6933.95	3472.13	1.45	-0.17	0.040	
90.00	-18.65	-2.13	0.00	-109.18	0.00	109.18	3687.60	1843.80	6628.16	3319.01	1.63	-0.18	0.038	
95.00	-17.81	-2.13	0.00	-98.54	0.00	98.54	3617.94	1808.97	6326.13	3167.77	1.83	-0.19	0.036	
100.00	-17.00	-2.13	0.00	-87.89	0.00	87.89	3546.64	1773.32	6028.11	3018.53	2.04	-0.21	0.034	
105.00	-16.20	-2.13	0.00	-77.24	0.00	77.24	3473.69	1736.85	5734.33	2871.43	2.26	-0.22	0.032	
110.00	-15.43	-2.13	0.00	-66.59	0.00	66.59	3399.09	1699.54	5445.04	2726.57	2.49	-0.23	0.029	
115.00	-14.68	-2.13	0.00	-55.94	0.00	55.94	3322.84	1661.42	5160.48	2584.08	2.74	-0.24	0.026	
120.00	-13.38	-2.10	0.00	-45.29	0.00	45.29	2604.14	1302.07	3997.79	2001.87	2.99	-0.25	0.028	
125.00	-12.77	-2.07	0.00	-34.79	0.00	34.79	2547.22	1273.61	3785.91	1895.77	3.25	-0.25	0.023	
130.00	-8.28	-1.69	0.00	-24.43	0.00	24.43	2488.65	1244.32	3577.22	1791.27	3.52	-0.26	0.017	
135.00	-7.72	-1.63	0.00	-15.97	0.00	15.97	2428.43	1214.21	3371.96	1688.49	3.79	-0.27	0.013	
140.00	-3.11	-0.84	0.00	-7.85	0.00	7.85	2366.56	1183.28	3170.38	1587.54	4.07	-0.27	0.006	
145.00	-2.60	-0.73	0.00	-3.65	0.00	3.65	2303.03	1151.52	2972.71	1488.57	4.36	-0.27	0.004	
150.00	0.00	-0.72	0.00	0.00	0.00	0.00	2232.58	1116.29	2772.66	1388.39	4.64	-0.27	0.000	

Wind Loading - Shaft

Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

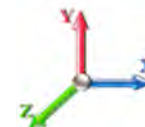


Page: 30

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 18

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	298.50	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	292.98	0.650	0.000	5.00	26.731	17.38	142.2	0.0	1692.4
10.00		1.00	0.85	7.442	8.19	287.45	0.650	0.000	5.00	26.232	17.05	139.6	0.0	1660.5
15.00		1.00	0.85	7.442	8.19	281.93	0.650	0.000	5.00	25.732	16.73	136.9	0.0	1628.6
20.00		1.00	0.90	7.896	8.69	284.71	0.650	0.000	5.00	25.233	16.40	142.5	0.0	1596.8
25.00		1.00	0.95	8.276	9.10	285.65	0.650	0.000	5.00	24.733	16.08	146.4	0.0	1564.9
30.00		1.00	0.98	8.600	9.46	285.25	0.650	0.000	5.00	24.234	15.75	149.0	0.0	1533.0
35.00		1.00	1.01	8.883	9.77	283.88	0.650	0.000	5.00	23.735	15.43	150.8	0.0	1501.1
38.00 Bot - Section 2		1.00	1.03	9.039	9.94	282.69	0.650	0.000	3.00	14.001	9.10	90.5	0.0	885.4
40.00		1.00	1.04	9.137	10.05	281.77	0.650	0.000	2.00	9.382	6.10	61.3	0.0	1103.6
45.00 Top - Section 1		1.00	1.07	9.366	10.30	279.09	0.650	0.000	5.00	23.106	15.02	154.7	0.0	2717.3
50.00		1.00	1.09	9.576	10.53	280.58	0.650	0.000	5.00	22.607	14.69	154.8	0.0	1252.0
55.00		1.00	1.12	9.770	10.75	277.08	0.650	0.000	5.00	22.107	14.37	154.4	0.0	1224.1
60.00		1.00	1.14	9.951	10.95	273.24	0.650	0.000	5.00	21.608	14.05	153.7	0.0	1196.2
65.00		1.00	1.16	10.120	11.13	269.11	0.650	0.000	5.00	21.109	13.72	152.7	0.0	1168.3
70.00		1.00	1.17	10.279	11.31	264.72	0.650	0.000	5.00	20.609	13.40	151.5	0.0	1140.5
75.00		1.00	1.19	10.430	11.47	260.11	0.650	0.000	5.00	20.110	13.07	150.0	0.0	1112.6
77.00 Bot - Section 3		1.00	1.20	10.488	11.54	258.21	0.650	0.000	2.00	7.904	5.14	59.3	0.0	437.2
80.00		1.00	1.21	10.572	11.63	255.30	0.650	0.000	3.00	11.897	7.73	89.9	0.0	1212.3
83.00 Top - Section 2		1.00	1.22	10.654	11.72	252.33	0.650	0.000	3.00	11.717	7.62	89.3	0.0	1193.7
85.00		1.00	1.22	10.708	11.78	254.52	0.650	0.000	2.00	7.711	5.01	59.0	0.0	366.0
90.00		1.00	1.24	10.838	11.92	249.39	0.650	0.000	5.00	18.929	12.30	146.7	0.0	898.4
95.00		1.00	1.25	10.962	12.06	244.11	0.650	0.000	5.00	18.429	11.98	144.4	0.0	874.5
100.00		1.00	1.27	11.081	12.19	238.68	0.650	0.000	5.00	17.930	11.65	142.1	0.0	850.6
105.00		1.00	1.28	11.195	12.31	233.14	0.650	0.000	5.00	17.431	11.33	139.5	0.0	826.7
110.00		1.00	1.29	11.305	12.44	227.47	0.650	0.000	5.00	16.931	11.01	136.9	0.0	802.8
115.00 Bot - Section 4		1.00	1.30	11.412	12.55	221.70	0.650	0.000	5.00	16.432	10.68	134.1	0.0	778.9
120.00 Top - Section 3		1.00	1.32	11.514	12.67	215.82	0.650	0.000	5.00	16.197	10.53	133.3	0.0	1395.7
125.00		1.00	1.33	11.614	12.78	213.50	0.650	0.000	5.00	15.698	10.20	130.3	0.0	620.8
130.00 Appurtenance(s)		1.00	1.34	11.710	12.88	207.46	0.650	0.000	5.00	15.198	9.88	127.2	0.0	600.9
135.00		1.00	1.35	11.803	12.98	201.32	0.650	0.000	5.00	14.699	9.55	124.0	0.0	581.0
140.00 Appurtenance(s)		1.00	1.36	11.894	13.08	195.11	0.650	0.000	5.00	14.199	9.23	120.8	0.0	561.1
145.00		1.00	1.37	11.982	13.18	188.82	0.650	0.000	5.00	13.700	8.91	117.4	0.0	541.1
150.00 Appurtenance(s)		1.00	1.38	12.068	13.27	182.46	0.650	0.000	5.00	13.201	8.58	113.9	0.0	521.2
Totals:									150.00			4,239.1		36,040.1

Discrete Appurtenance Forces

Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 31

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 18

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	150.00	TA08025-B604	3	12.068	13.275	0.50	0.75	2.95	191.79	0.000	0.000	39.22	0.00	0.00
2	150.00	TA08025-B605	3	12.068	13.275	0.50	0.75	2.95	224.85	0.000	0.000	39.22	0.00	0.00
3	150.00	MC-PK8-DSH	1	12.068	13.275	1.00	1.00	37.59	1727.00	0.000	0.000	499.01	0.00	0.00
4	150.00	MX08FRO665-21	3	12.068	13.275	0.55	0.75	20.80	193.50	0.000	0.000	276.06	0.00	0.00
5	150.00	RDIDC-9181-PF-48	1	12.068	13.275	1.00	1.00	2.01	21.85	0.000	0.000	26.68	0.00	0.00
6	140.00	AIR6449 B41	3	11.894	13.084	0.53	0.75	9.03	309.00	0.000	0.000	118.09	0.00	0.00
7	140.00	AIR32 KRD901146-	3	11.894	13.084	0.65	0.75	12.74	396.60	0.000	0.000	166.73	0.00	0.00
8	140.00	APXVAALL24_43-U-NA20	3	11.894	13.084	0.55	0.75	33.24	368.40	0.000	0.000	434.95	0.00	0.00
9	140.00	RMQP-496-HK	1	11.894	13.084	1.00	1.00	48.00	2449.00	0.000	0.000	628.01	0.00	0.00
10	140.00	4449 B71 + B85	3	11.894	13.084	0.50	0.75	2.97	219.60	0.000	0.000	38.86	0.00	0.00
11	140.00	4415 B25	3	11.894	13.084	0.50	0.75	2.80	138.90	0.000	0.000	36.69	0.00	0.00
12	140.00	SFR-K-V-Brace	1	11.894	13.084	1.00	1.00	16.60	394.00	0.000	0.000	217.19	0.00	0.00
13	140.00	ALU 1900 Mhz RRU's	3	11.894	13.084	0.50	0.75	4.18	180.00	0.000	0.000	54.63	0.00	0.00
14	140.00	Dragonwave	3	11.894	13.084	1.00	1.00	14.04	81.30	1.495	0.000	183.69	274.62	0.00
15	130.00	SHP2-13	1	11.710	12.881	1.00	1.00	3.96	152.00	2.495	0.000	51.01	127.26	0.00
16	130.00	APXVAA24_43-U-A20	3	11.710	12.881	0.55	0.75	33.24	297.00	0.000	0.000	428.22	0.00	0.00
17	130.00	APX16DWV-16DWV-S-EA	3	11.710	12.881	0.46	0.75	9.01	122.10	0.000	0.000	116.08	0.00	0.00
18	130.00	AIR3246 B66	3	11.710	12.881	0.65	0.75	12.74	396.60	0.000	0.000	164.15	0.00	0.00
19	130.00	AIR 5122 28GHz	3	11.710	12.881	0.57	0.75	3.23	72.90	0.000	0.000	41.63	0.00	0.00
20	130.00	Radio 4415 B25	3	11.710	12.881	0.50	0.75	2.47	138.00	0.000	0.000	31.85	0.00	0.00
21	130.00	Radio 4449 B71 + B12	3	11.710	12.881	0.50	0.75	2.49	210.00	0.000	0.000	32.04	0.00	0.00
22	130.00	Radio 2217 B66A	3	11.710	12.881	0.50	0.75	2.04	81.00	0.000	0.000	26.21	0.00	0.00
23	130.00	FSP-10W	1	11.710	12.881	1.00	1.00	58.98	2396.00	0.000	0.000	759.72	0.00	0.00
24	130.00	##P-HRK10	1	11.710	12.881	1.00	1.00	9.00	478.27	0.000	0.000	115.93	0.00	0.00
Totals:									11,239.66			4,525.87		

Total Applied Force Summary

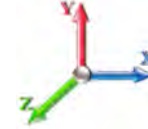
Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 32

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 18

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		142.24	1745.42	0.00	0.00
10.00		139.58	1713.56	0.00	0.00
15.00		136.92	1681.69	0.00	0.00
20.00		142.46	1649.82	0.00	0.00
25.00		146.36	1617.95	0.00	0.00
30.00		149.01	1586.08	0.00	0.00
35.00		150.76	1554.21	0.00	0.00
38.00		90.48	917.23	0.00	0.00
40.00		61.29	1124.87	0.00	0.00
45.00		154.74	2770.35	0.00	0.00
50.00		154.79	1305.06	0.00	0.00
55.00		154.44	1277.17	0.00	0.00
60.00		153.74	1249.29	0.00	0.00
65.00		152.74	1221.40	0.00	0.00
70.00		151.47	1193.52	0.00	0.00
75.00		149.96	1165.63	0.00	0.00
77.00		59.27	458.44	0.00	0.00
80.00		89.93	1244.14	0.00	0.00
83.00		89.26	1225.50	0.00	0.00
85.00		59.04	387.27	0.00	0.00
90.00		146.68	951.44	0.00	0.00
95.00		144.44	927.54	0.00	0.00
100.00		142.06	903.64	0.00	0.00
105.00		139.52	879.74	0.00	0.00
110.00		136.86	855.83	0.00	0.00
115.00		134.07	831.93	0.00	0.00
120.00		133.35	1448.77	0.00	0.00
125.00		130.35	673.89	0.00	0.00
130.00	(24) attachments	1894.08	4997.84	127.26	0.00
135.00		124.05	616.75	0.00	0.00
140.00	(23) attachments	1999.59	5133.63	274.62	0.00
145.00		117.37	557.91	0.00	0.00
150.00	(11) attachments	994.10	2896.99	0.00	0.00
	Totals:	8,764.99	48,764.50	401.87	0.00

Linear Appurtenance Segment Forces (Factored)

Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 33

Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 18

Dead Load Factor 1.00
Wind Load Factor 1.00



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.016	0.000	7.442	0.00	1.37
5.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.016	0.000	7.442	0.00	10.40
10.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.016	0.000	7.442	0.00	1.37
10.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.016	0.000	7.442	0.00	10.40
15.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.016	0.000	7.442	0.00	1.37
15.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.016	0.000	7.442	0.00	10.40
20.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.017	0.000	7.896	0.00	1.37
20.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.017	0.000	7.896	0.00	10.40
25.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.017	0.000	8.276	0.00	1.37
25.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.017	0.000	8.276	0.00	10.40
30.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.017	0.000	8.600	0.00	1.37
30.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.017	0.000	8.600	0.00	10.40
35.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.018	0.000	8.883	0.00	1.37
35.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.018	0.000	8.883	0.00	10.40
38.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.018	0.000	9.039	0.00	0.82
38.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.018	0.000	9.039	0.00	6.24
40.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.018	0.000	9.137	0.00	0.55
40.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	9.137	0.00	4.16
45.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.019	0.000	9.366	0.00	1.37
45.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	9.366	0.00	10.40
50.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.019	0.000	9.576	0.00	1.37
50.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	9.576	0.00	10.40
55.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.019	0.000	9.770	0.00	1.37
55.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	9.770	0.00	10.40
60.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.019	0.000	9.951	0.00	1.37
60.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	9.951	0.00	10.40
65.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.020	0.000	10.120	0.00	1.37
65.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.020	0.000	10.120	0.00	10.40
70.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.020	0.000	10.279	0.00	1.37
70.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.020	0.000	10.279	0.00	10.40
75.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.021	0.000	10.430	0.00	1.37
75.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	10.430	0.00	10.40
77.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.021	0.000	10.488	0.00	0.55
77.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.021	0.000	10.488	0.00	4.16
80.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.022	0.000	10.572	0.00	0.82
80.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.022	0.000	10.572	0.00	6.24
83.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.022	0.000	10.654	0.00	0.82
83.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.022	0.000	10.654	0.00	6.24
85.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.022	0.000	10.708	0.00	0.55
85.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.022	0.000	10.708	0.00	4.16
90.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.022	0.000	10.838	0.00	1.37
90.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.022	0.000	10.838	0.00	10.40
95.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.023	0.000	10.962	0.00	1.37
95.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.023	0.000	10.962	0.00	10.40
100.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.023	0.000	11.081	0.00	1.37
100.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.023	0.000	11.081	0.00	10.40
105.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.024	0.000	11.195	0.00	1.37

Linear Appurtenance Segment Forces (Factored)

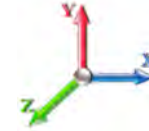
Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 34

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 18

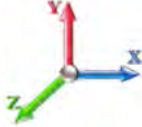
Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	11.195	0.00	10.40
110.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.025	0.000	11.305	0.00	1.37
110.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.025	0.000	11.305	0.00	10.40
115.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.026	0.000	11.412	0.00	1.37
115.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.026	0.000	11.412	0.00	10.40
120.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.026	0.000	11.514	0.00	1.37
120.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.026	0.000	11.514	0.00	10.40
125.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.027	0.000	11.614	0.00	1.37
125.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	11.614	0.00	10.40
130.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.028	0.000	11.710	0.00	1.37
130.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.028	0.000	11.710	0.00	10.40
135.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.029	0.000	11.803	0.00	1.37
135.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.029	0.000	11.803	0.00	10.40
140.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.030	0.000	11.894	0.00	1.37
140.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	11.894	0.00	10.40
145.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.031	0.000	11.982	0.00	1.37
145.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.031	0.000	11.982	0.00	10.40
150.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.032	0.000	12.068	0.00	1.37
150.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.032	0.000	12.068	0.00	10.40
Totals:											0.0	352.9

Calculated Forces

Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 35

Load Case: 1.0D + 1.0W 60 mph Wind	Iterations 18
Dead Load Factor 1.00	
Wind Load Factor 1.00	

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-48.76	-8.78	-0.40	-962.66	0.00	962.66	6922.80	3461.40	17996.9	9011.85	0.00	0.000	0.000	0.114
5.00	-47.01	-8.65	-0.40	-918.78	0.00	918.78	6837.06	3418.53	17439.8	8732.91	0.01	-0.026	0.000	0.112
10.00	-45.30	-8.54	-0.40	-875.50	0.00	875.50	6749.68	3374.84	16887.0	8456.09	0.06	-0.053	0.000	0.110
15.00	-43.61	-8.42	-0.40	-832.83	0.00	832.83	6660.64	3330.32	16338.7	8181.53	0.13	-0.080	0.000	0.108
20.00	-41.96	-8.29	-0.40	-790.74	0.00	790.74	6569.96	3284.98	15795.1	7909.33	0.22	-0.107	0.000	0.106
25.00	-40.34	-8.16	-0.40	-749.29	0.00	749.29	6477.62	3238.81	15256.5	7639.63	0.35	-0.134	0.000	0.104
30.00	-38.75	-8.03	-0.40	-708.48	0.00	708.48	6383.64	3191.82	14723.2	7372.54	0.51	-0.161	0.000	0.102
35.00	-37.19	-7.89	-0.40	-668.35	0.00	668.35	6288.00	3144.00	14195.2	7108.19	0.69	-0.189	0.000	0.100
38.00	-36.27	-7.80	-0.40	-644.69	0.00	644.69	6229.82	3114.91	13881.2	6950.95	0.81	-0.206	0.000	0.099
40.00	-35.14	-7.75	-0.40	-629.09	0.00	629.09	6190.71	3095.36	13673.0	6846.70	0.90	-0.217	0.000	0.098
45.00	-32.37	-7.60	-0.40	-590.36	0.00	590.36	5186.56	2593.28	11416.3	5716.63	1.15	-0.245	0.000	0.110
50.00	-31.06	-7.45	-0.40	-552.37	0.00	552.37	5108.96	2554.48	10995.7	5506.06	1.42	-0.273	0.000	0.106
55.00	-29.78	-7.31	-0.40	-515.11	0.00	515.11	5029.70	2514.85	10579.3	5297.54	1.72	-0.303	0.000	0.103
60.00	-28.53	-7.16	-0.40	-478.58	0.00	478.58	4948.79	2474.40	10167.2	5091.20	2.05	-0.333	0.000	0.100
65.00	-27.30	-7.01	-0.40	-442.78	0.00	442.78	4866.24	2433.12	9759.82	4887.17	2.42	-0.362	0.000	0.096
70.00	-26.11	-6.87	-0.40	-407.70	0.00	407.70	4782.03	2391.02	9357.20	4685.56	2.81	-0.392	0.000	0.092
75.00	-24.94	-6.72	-0.40	-373.36	0.00	373.36	4696.17	2348.09	8959.67	4486.49	3.24	-0.421	0.000	0.089
77.00	-24.48	-6.66	-0.40	-359.92	0.00	359.92	4661.37	2330.68	8802.13	4407.61	3.42	-0.433	0.000	0.087
80.00	-23.24	-6.57	-0.40	-339.93	0.00	339.93	4608.66	2304.33	8567.45	4290.09	3.70	-0.450	0.000	0.084
83.00	-22.01	-6.48	-0.40	-320.22	0.00	320.22	3782.33	1891.17	7057.27	3533.88	3.98	-0.468	0.000	0.096
85.00	-21.62	-6.42	-0.40	-307.26	0.00	307.26	3755.60	1877.80	6933.95	3472.13	4.18	-0.479	0.000	0.094
90.00	-20.67	-6.28	-0.40	-275.15	0.00	275.15	3687.60	1843.80	6628.16	3319.01	4.70	-0.509	0.000	0.089
95.00	-19.74	-6.14	-0.40	-243.75	0.00	243.75	3617.94	1808.97	6326.13	3167.77	5.25	-0.539	0.000	0.082
100.00	-18.83	-5.99	-0.40	-213.08	0.00	213.08	3546.64	1773.32	6028.11	3018.53	5.83	-0.567	0.000	0.076
105.00	-17.95	-5.85	-0.40	-183.11	0.00	183.11	3473.69	1736.85	5734.33	2871.43	6.44	-0.593	-0.001	0.069
110.00	-17.10	-5.71	-0.40	-153.84	0.00	153.84	3399.09	1699.54	5445.04	2726.57	7.07	-0.618	-0.001	0.061
115.00	-16.26	-5.58	-0.40	-125.26	0.00	125.26	3322.84	1661.42	5160.48	2584.08	7.73	-0.640	-0.001	0.053
120.00	-14.81	-5.43	-0.40	-97.38	0.00	97.38	2604.14	1302.07	3997.79	2001.87	8.41	-0.659	-0.001	0.054
125.00	-14.14	-5.30	-0.40	-70.22	0.00	70.22	2547.22	1273.61	3785.91	1895.77	9.11	-0.675	-0.001	0.043
130.00	-9.17	-3.35	-0.27	-43.73	0.00	43.73	2488.65	1244.32	3577.22	1791.27	9.83	-0.689	-0.001	0.028
135.00	-8.55	-3.22	-0.27	-27.00	0.00	27.00	2428.43	1214.21	3371.96	1688.49	10.55	-0.698	-0.001	0.020
140.00	-3.44	-1.15	0.00	-10.92	0.00	10.92	2366.56	1183.28	3170.38	1587.54	11.29	-0.704	-0.001	0.008
145.00	-2.88	-1.03	0.00	-5.15	0.00	5.15	2303.03	1151.52	2972.71	1488.57	12.03	-0.706	-0.001	0.005
150.00	0.00	-0.99	0.00	0.00	0.00	0.00	2232.58	1116.29	2772.66	1388.39	12.77	-0.707	-0.001	0.000

Final Analysis Summary

Structure: CT46136-A-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 36

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 93 mph Wind	33.7	0.00	58.49	0.01	0.96	3715.63
0.9D + 1.6W 93 mph Wind	33.7	0.00	43.86	0.00	0.96	3691.35
1.2D + 1.0Di + 1.0Wi 50 mph Wind	11.6	0.00	97.79	0.00	0.36	1286.38
1.2D + 1.0E	2.7	0.00	58.52	0.00	0.00	325.88
0.9D + 1.0E	2.7	0.00	43.89	0.00	0.00	323.62
1.0D + 1.0W 60 mph Wind	8.8	0.00	48.76	0.00	0.40	962.66

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 93 mph Wind	-58.49	-33.75	-0.96	-3715.6	-0.01	-3715.6	6922.80	3461.4	17996.9	9011.85	0.00	0.421
0.9D + 1.6W 93 mph Wind	-43.86	-33.73	-0.96	-3691.3	0.00	-3691.3	6922.80	3461.4	17996.9	9011.85	0.00	0.416
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-97.79	-11.55	-0.36	-1286.3	0.00	-1286.3	6922.80	3461.4	17996.9	9011.85	0.00	0.157
1.2D + 1.0E	-58.52	-2.73	0.00	-325.88	0.00	-325.88	6922.80	3461.4	17996.9	9011.85	0.00	0.045
0.9D + 1.0E	-43.89	-2.73	0.00	-323.62	0.00	-323.62	6922.80	3461.4	17996.9	9011.85	0.00	0.042
1.0D + 1.0W 60 mph Wind	-48.76	-8.78	-0.40	-962.66	0.00	-962.66	6922.80	3461.4	17996.9	9011.85	0.00	0.114

Base Plate Summary

Structure: CT46136-A-SB	Code: EIA/TIA-222-G	9/2/2021
Site Name: Bristol-east	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 37



Reactions	Base Plate	Anchor Bolts
Original Design	Yield (ksi): 55.00	Bolt Circle: 71.00
Moment (kip-ft): 6300.00	Width (in): 71.00	Number Bolts: 24.00
Axial (kip): 52.00	Style: Clipped	Bolt Type: 2.25" 18J
Shear (kip): 48.00	Polygon Sides: 4.00	Bolt Diameter (in): 2.25
Analysis (1.2D + 1.6W)	Clip Length (in): 6.00	Yield (ksi): 75.00
Moment (kip-ft): 3715.63	Effective Len (in): 8.14	Ultimate (ksi): 100.00
Axial (kip): 58.49	Moment (kip-in): 393.10	Arrangement: Clustered
Shear (kip): 33.75	Allow Stress (ksi): 74.25	Cluster Dist (in): 6.00
	Applied Stress (ksi): 31.93	Start Angle (deg): 45.00
	Stress Ratio: 0.43	Compression
		Force (kip): 108.74
		Allowable (kip): 260.00
		Ratio: 0.43
		Tension
		Force (kip): 100.59
		Allowable (kip): 260.00
		Ratio: 0.40



Monopole Mat Foundation Design

Date

7/30/2020

Customer Name:		EIA/TIA Standard:	EIA-222-G
Site Name:		Structure Height (Ft.):	300
Site Number:	194213-VZW	Engineer Name:	Rama K.
Engr. Number:		Engineer Login ID:	

Foundation Info Obtained from:

Mapping Operation
Monopole
Analysis

Structure Type:

Analysis or Design?

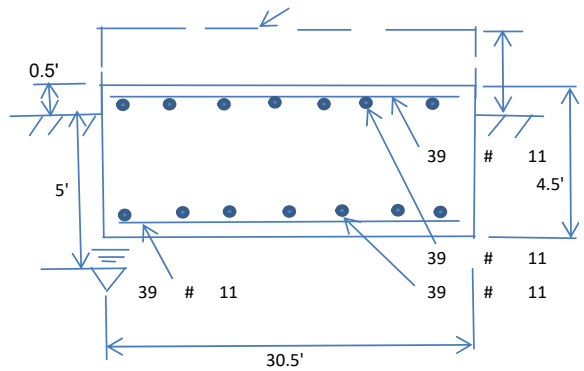
Base Reactions (Factored):

Axial Load (Kips):	58.5	Shear Force (Kips):	33.8
Uplift Force (Kips):	0.0	Moment (Kips-ft):	3715.7

Allowable overstress %: 5.0%

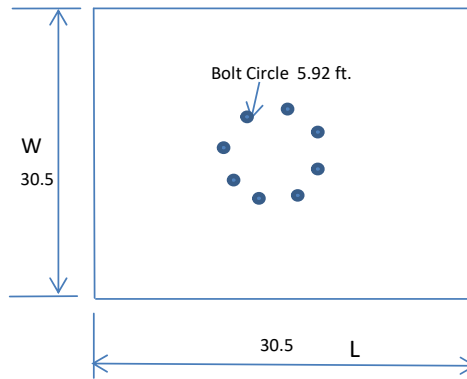
Foundation Geometries:

Anchor Bolt Circle (ft.):	5.92	Depth of Base BG (ft.):	4.00
Thickness of Pad (ft.):	4.50	Width of Pad (ft.):	30.5
Length of Pad (ft.):	30.5	Final Length of pad (ft)	30.5
		Final width of pad (ft):	30.5



Material Properties and Rebar Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Pad Rebar Yield (Ksi):	60	Tie Spacing (in):	12.0	
Pad Steel Rebar Size (#):	11	Unit Weight of Concrete:	150.0	pcf
Concrete Cover (in.):	3			
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	39	Qty. of Rebar in Pad (W):	39	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	39	Qty. of Rebar in Pad (W):	39	



Apply 1.35 factor for e/w Per G: 1.35

Soil Design Parameters:

Water Table B.G.S. (ft):	5.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	12000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	Yes		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:	1.00			

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):	0.00	Total Dry Soil Weight (Kips):	0.00
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	0.00	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	4186.13	Total Dry Concrete Weight (Kips):	627.92
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	627.92	Total Vertical Load on Base (Kips):	686.42

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	1915	<	Allowable Factored Soil Bearing (psf):	9000	0.21	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	9510.3	>	Design Factored Momnt (kips-ft):	3870	0.41	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	2.46					OK!

Load/
Capacity
Ratio

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

Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	1512.9	>	One-Way Factored Shear (L-D. Kips):	309.8	0.20	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1512.9	>	One-Way Factored Shear (W-D., Kips)	309.8	0.20	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	1821.1	>	One-Way Factored Shear (C-C, Kips):	513.7	0.28	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0033	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0033		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	13239.1	>	Moment at Bottom (L-Direct. K-Ft):	1215.7	0.09	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	13239.1	>	Moment at Bottom (W-Direct. K-Ft):	1215.7	0.09	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	18590.6	>	Moment at Bottom (C-C Dir. K-Ft):	1719.3	0.09	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0033	OK!	Upper Steel Reinf. Ratio (W-Direct.):	0.0033		
Upper Steel Pad Moment Capacity (L-Direction. Kips-ft):	13239.1	>	Moment at the top (L-Dir Kips-Ft):	317.6	0.02	OK!
Upper Steel Pad Moment Capacity (W-Direction. Kips-ft):	13239.1	>	Moment at the top (W-Dir Kips-Ft):	317.6	0.02	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	18590.6	>	Moment at the top (C-C Direc. K-Ft):	566.5	0.03	OK!

EXHIBIT 9

Antenna Mount Analysis



September 3, 2021

Sherri Knapik
SBA Network Services, LLC
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
towersupport@btgrp.com

Subject: **Appurtenance Mount Analysis Report**

Carrier Designation: **Dish Wireless Co-Locate**
Site Number: BOBDL00137A
Site Name: N/A

SBA Network Services Designation: **Site Number:** CT46136-A
Site Name: Bristol-east
Application Number: 168266, v1

Engineering Firm Designation: **B+T Group Project Number:** 149487.003.01

Site Data: **1214 Farmington Ave., Bristol, CT, 06010, Hartford County**
Latitude 41.69550°, Longitude -72.90166°
Monopole
8' 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	Sufficient Capacity
Note: See Table 1 for the final loading configuration	(Passing at 74.2%)

This analysis has been performed in accordance with the 2018 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 120 mph converted to a nominal 3-second gust wind speed of 93 mph per Section 1609.3 and Appendix N as required for use in the ANSI/TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category C and Risk Category II were used in this analysis.

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

Mount structural analysis prepared by: Krista Loyd, E.I.T.

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

Chad E. Tuttle, P.E.

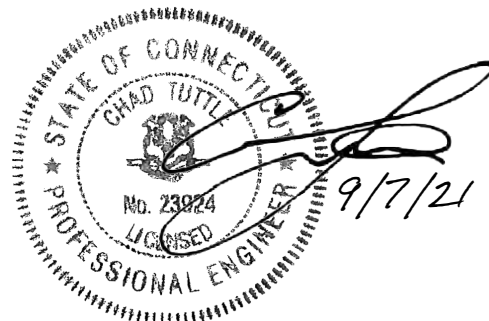


TABLE OF CONTENTS

1) INTRODUCTION

2) ANALYSIS CRITERIA

Table 1 - Proposed Equipment Information

Table 2 - Documents Provided

3) ANALYSIS PROCEDURE

3.1) Analysis Method

3.2) Assumptions

4) ANALYSIS RESULTS

Table 3 – Mount Component Stresses vs. Capacity

5) RECOMMENDATIONS

6) APPENDIX A

RISA-3D Output

7) APPENDIX B

Additional Calculations

1) INTRODUCTION

The appurtenance mount consists of Commscope Platform mounts (Part #MC-PK8-DSH) at 150ft., attached to monopole at 1214 Farmington Ave., Bristol, CT, 06010, Hartford County. The proposed antenna loading information was obtained from SBA Network Services, LLC. All information provided to B+T Group was assumed accurate and complete.

2) ANALYSIS CRITERIA

The structural analysis was performed for this mount in accordance with the ANSI/TIA-222-G-2-2005 Structural Standard for Antenna Supporting Structures and Antennas – Addendum 2 using a 3-second gust wind speed of 93 mph with no ice and 50 mph with 1 inch escalated ice thickness. Exposure Category C, Topographic Category 1 and Risk Category II were used in this analysis. In addition, the platform mount has been analyzed for various live loading conditions consisting of a 250-lb man live load applied individually at the midpoint and cantilevered ends of horizontal members as well as a 500-pound man live load applied individually at mount pipe locations using a 3-second gust of 30 mph. The mount was analyzed under 30° increments in the wind direction. The analyzed loading is detailed in Table 1.

Table 1 – Proposed Equipment Information

Loading	RAD Center Elev. (ft.)	Position	Qty.	Description	Note
Proposed	150	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 Mount Pipe.
- (2) Proposed Equipment to be installed directly behind the Antenna.
- (3) Proposed Equipment to be installed on the Mount.

Table 2 - Documents Provided

Documents	Remarks	Reference	Source
Collo App	Proposed Loading	Date: 08/04/2021	SBA Network Services, LLC.
RFDS		Date: 07/23/2021	

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.

Manufacturers drawing were used to create the model.

3.2) Assumptions

1. The mount was built in accordance with the manufacturer's specifications.
2. The mount has been maintained in accordance with the manufacturer's specifications and is free of damage.
3. The configuration of antennas and other appurtenances are as specified in Table 1.
4. All mount components have been assumed to be in sufficient condition to carry their full design capacity for the analysis.

5. Mount 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

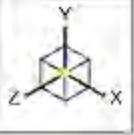
Notes	Component	Elevation (ft.)	% Capacity	Pass / Fail
-	Main Horizontals	150	10.1	Pass
-	Support Rails	150	18.1	Pass
-	Support Tubes	150	74.2	Pass
-	Support Channels	150	55.6	Pass
-	Support Angles	150	48.9	Pass
-	Mount Pipes	150	20.0	Pass
-	Connection Plates	150	30.1	Pass
-	Connection Angles	150	31.3	Pass
-	Connection Bolts	150	39.5	Pass

5) RECOMMENDATIONS

The Commscope platform mounts (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).

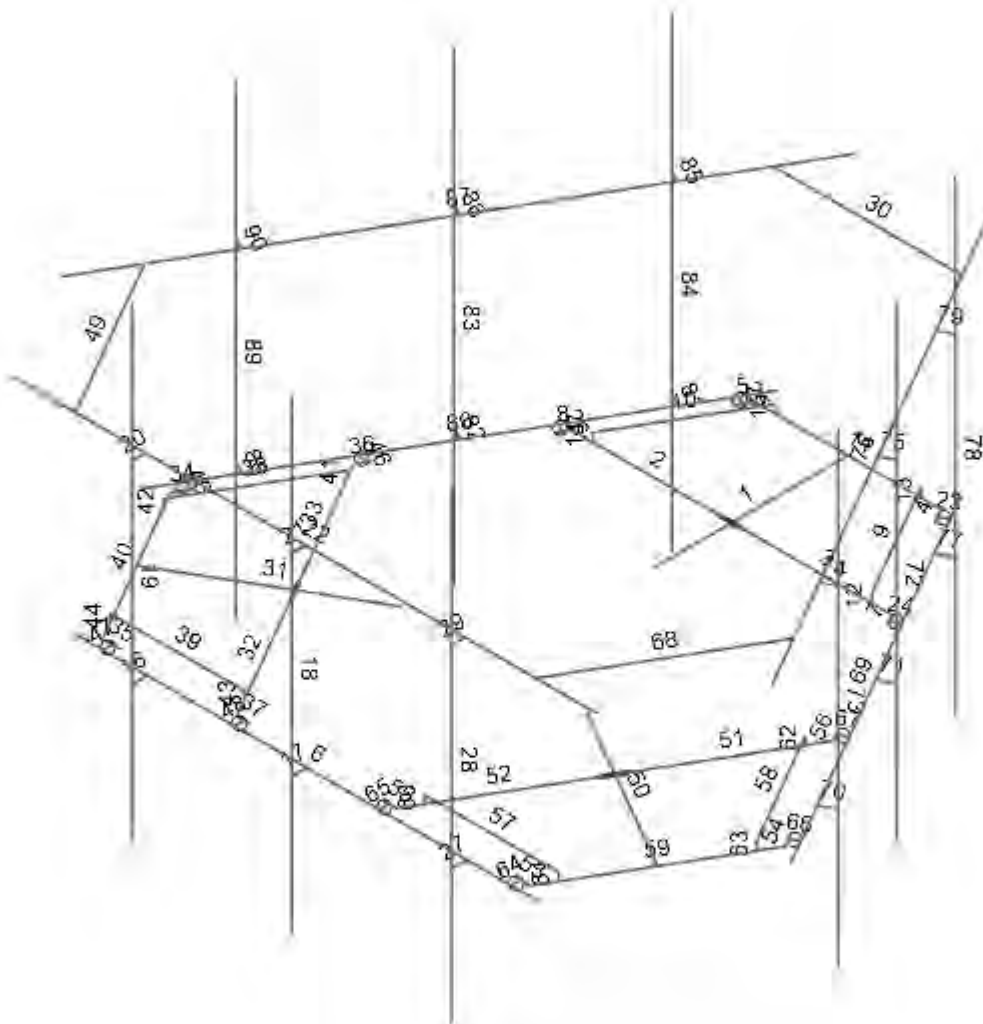
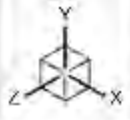
APPENDIX A

(RISA-3D Output)



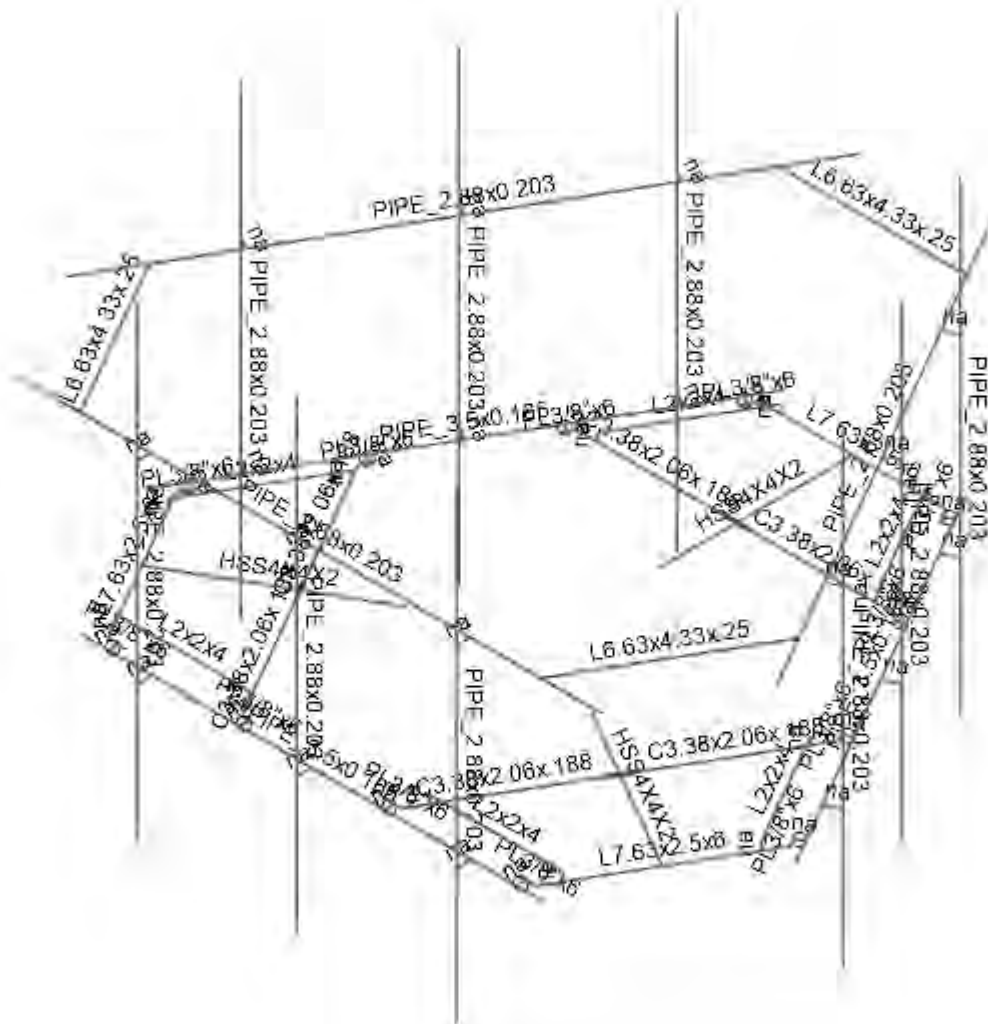
Envelope Only Solution

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VP		Sep 03, 2021
149487.003.01		149487_003_01_Bristol-east_CT....



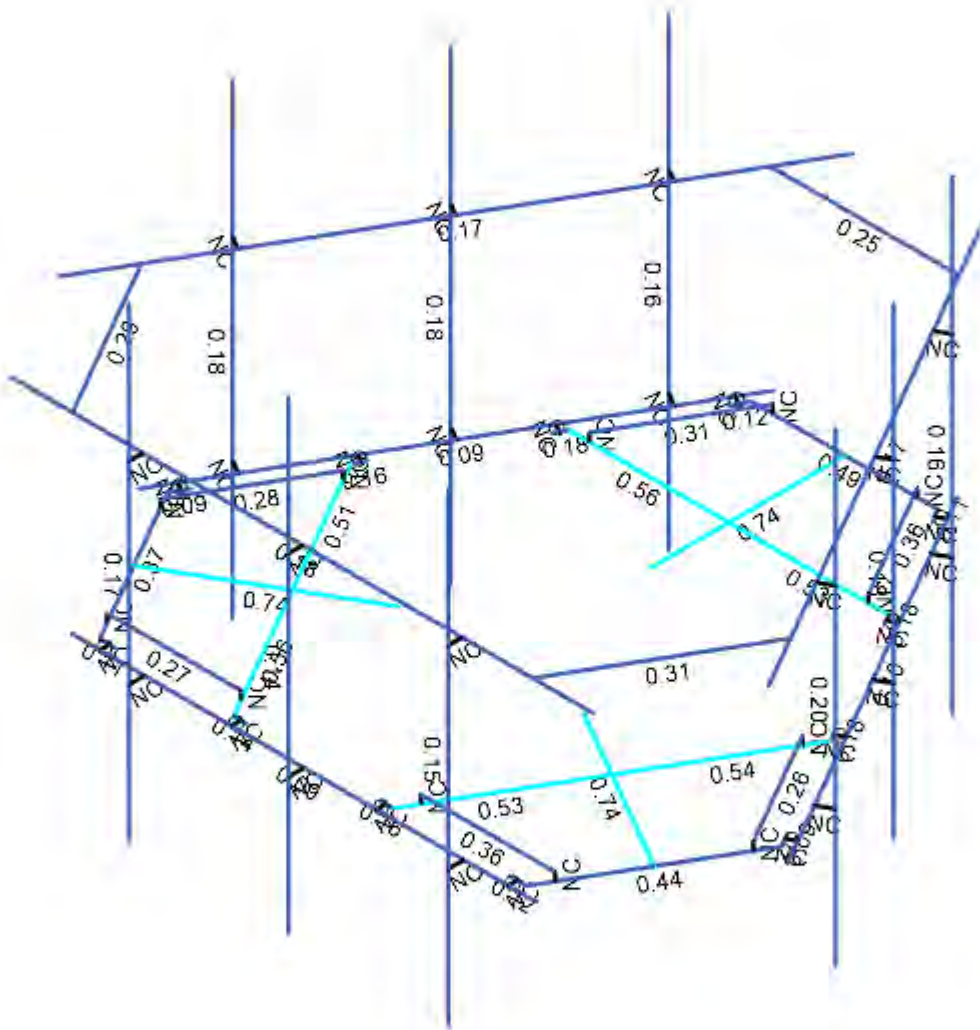
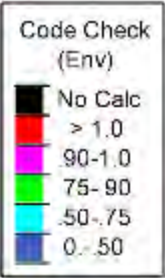
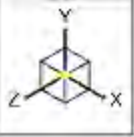
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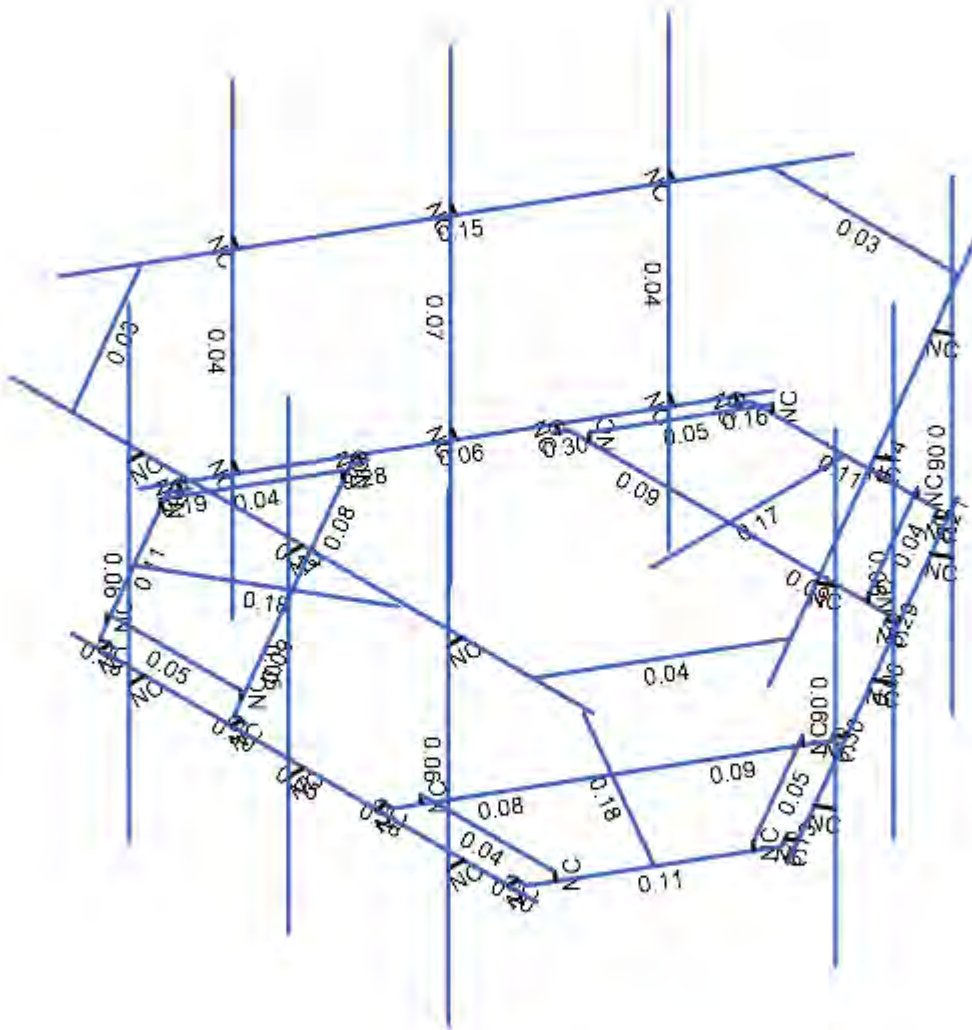
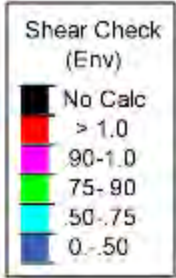
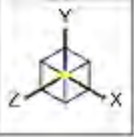
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Envelope Only Solution

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149487.003.01		149487_003_01_Bristol-east_CT...



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	CT46136-A - Bristol-east	SK-5
VP		Sep 03, 2021
149487.003.01		149487_003_01_Bristol-east_CT...

Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	1	0	0	-1.846255	
2	2	0	0	-5.179588	
3	3	0	0	-3.179588	
4	4	2.758333	0	-3.179588	
5	5	-2.758333	0	-3.179588	
6	6	-1.603633	0	-5.179588	
7	7	1.603633	0	-5.179588	
8	8	1.749466	0	-4.926997	
9	9	-1.749466	0	-4.926997	
10	10	1.686966	0	-5.03525	
11	11	1.826813	0	-5.115991	
12	12	-1.686966	0	-5.03525	
13	13	-1.826813	0	-5.115991	
14	14	-3.999998	0	4.140062	
15	15	3.999998	0	4.140062	
16	16	2.8625	0	-2.999166	
17	17	2.820833	0	-3.071336	
18	18	2.960679	0	-3.152076	
19	19	-2.8625	0	-2.999166	
20	20	-2.820833	0	-3.071336	
21	21	-2.960679	0	-3.152076	
22	22	-1.25	0.140833	-5.179588	
23	23	-2.404701	0.140833	-3.179588	
24	24	2.404701	0.140833	-3.179588	
25	25	1.25	0.140833	-5.179588	
26	26	-1.25	0	-5.179588	
27	27	-2.404701	0	-3.179588	
28	28	2.404701	0	-3.179588	
29	29	1.25	0	-5.179588	
30	30	-2.749998	0	4.140062	
31	31	0.000002	0	4.140062	
32	32	-2.749998	0	4.405687	
33	33	0.000002	0	4.405687	
34	34	-2.749998	-2.333337	4.405687	
35	35	0.000002	-2.333337	4.405687	
36	36	-2.749998	5.666665	4.405687	
37	37	0.000002	5.666665	4.405687	
38	38	-2.749998	3.333337	4.405687	
39	39	0.000002	3.333337	4.405687	
40	40	-2.749998	3.333337	4.166103	
41	41	0.000002	3.333337	4.166103	
42	42	-5	3.333337	4.166103	
43	43	5	3.333337	4.166103	
44	44	2.749998	0	4.140062	
45	45	2.749998	0	4.405687	
46	46	2.749998	-2.333337	4.405687	
47	47	2.749998	5.666665	4.405687	
48	48	2.749998	3.333337	4.405687	
49	49	2.749998	3.333337	4.166103	
50	50	0	0	0	
51	51	1.625027	3.333337	-5.517577	
52	52	-1.625027	3.333337	-5.517577	
53	53	-1.598903	0	0.923127	
54	54	-4.485655	0	2.589794	
55	55	-2.753604	0	1.589794	
56	56	-4.132771	0	-0.798993	
57	57	-1.374437	0	3.978581	
58	58	-3.683838	0	3.978581	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
59	59	-5.287471	0	1.201007	
60	60	-5.141638	0	0.948416	
61	61	-3.392172	0	3.978581	
62	62	-5.204138	0	1.05667	
63	63	-5.343984	0	0.975929	
64	64	-3.517172	0	3.978581	
65	65	-3.517172	0	4.140062	
66	66	-4.028604	0	-0.979415	
67	67	-4.070271	0	-0.907245	
68	68	-4.210118	0	-0.987986	
69	69	-1.166104	0	3.978581	
70	70	-1.249438	0	3.978581	
71	71	-1.249438	0	4.140062	
72	72	-3.860655	0.140833	3.672326	
73	73	-1.551254	0.140833	3.672326	
74	74	-3.955954	0.140833	-0.492738	
75	75	-5.110655	0.140833	1.507262	
76	76	-3.860655	0	3.672326	
77	77	-1.551254	0	3.672326	
78	78	-3.955954	0	-0.492738	
79	79	-5.110655	0	1.507262	
80	80	-5.590876	3.333337	1.351474	
81	81	-3.965848	3.333337	4.166103	
82	82	1.598903	0	0.923127	
83	83	4.485655	0	2.589794	
84	84	2.753604	0	1.589794	
85	85	1.374437	0	3.978581	
86	86	4.132771	0	-0.798993	
87	87	5.287471	0	1.201007	
88	88	3.683838	0	3.978581	
89	89	3.392172	0	3.978581	
90	90	5.141638	0	0.948416	
91	91	3.517172	0	3.978581	
92	92	3.517172	0	4.140062	
93	93	5.204138	0	1.05667	
94	94	5.343984	0	0.975929	
95	95	1.166104	0	3.978581	
96	96	1.249438	0	3.978581	
97	97	1.249438	0	4.140062	
98	98	4.028604	0	-0.979415	
99	99	4.070271	0	-0.907245	
100	100	4.210118	0	-0.987986	
101	101	5.110655	0.140833	1.507262	
102	102	3.955954	0.140833	-0.492738	
103	103	1.551254	0.140833	3.672326	
104	104	3.860655	0.140833	3.672326	
105	105	5.110655	0	1.507262	
106	106	3.955954	0	-0.492738	
107	107	1.551254	0	3.672326	
108	108	3.860655	0	3.672326	
109	109	3.965848	3.333337	4.166103	
110	110	5.590876	3.333337	1.351474	
111	111	5.585398	0	1.394069	
112	112	1.5854	0	-5.534131	
113	113	4.960398	0	0.311537	
114	114	3.585398	0	-2.070033	
115	115	5.190436	0	0.178725	
116	116	3.815436	0	-2.202845	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
117	117	5.190436	-2.333337	0.178725	
118	118	3.815436	-2.333337	-2.202845	
119	119	5.190436	5.666665	0.178725	
120	120	3.815436	5.666665	-2.202845	
121	121	5.190436	3.333337	0.178725	
122	122	3.815436	3.333337	-2.202845	
123	123	4.98295	3.333337	0.298516	
124	124	3.60795	3.333337	-2.083053	
125	125	6.107951	3.333337	2.247075	
126	126	1.107951	3.333337	-6.413179	
127	127	2.2104	0	-4.451599	
128	128	2.440438	0	-4.584412	
129	129	2.440438	-2.333337	-4.584412	
130	130	2.440438	5.666665	-4.584412	
131	131	2.440438	3.333337	-4.584412	
132	132	2.232952	3.333337	-4.46462	
133	133	-1.5854	0	-5.534131	
134	134	-5.585398	0	1.394069	
135	135	-2.2104	0	-4.451599	
136	136	-3.5854	0	-2.070029	
137	137	-2.440438	0	-4.584412	
138	138	-3.815438	0	-2.202842	
139	139	-2.440438	-2.333337	-4.584412	
140	140	-3.815438	-2.333337	-2.202842	
141	141	-2.440438	5.666665	-4.584412	
142	142	-3.815438	5.666665	-2.202842	
143	143	-2.440438	3.333337	-4.584412	
144	144	-3.815438	3.333337	-2.202842	
145	145	-2.232952	3.333337	-4.46462	
146	146	-3.607952	3.333337	-2.08305	
147	147	-1.107951	3.333337	-6.413179	
148	148	-6.107951	3.333337	2.247075	
149	149	-4.960398	0	0.311537	
150	150	-5.190436	0	0.178725	
151	151	-5.190436	-2.333337	0.178725	
152	152	-5.190436	5.666665	0.178725	
153	153	-5.190436	3.333337	0.178725	
154	154	-4.98295	3.333337	0.298516	

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	2						
3	3						
4	4						
5	5						
6	16						
7	17						
8	19						
9	20						
10	22						
11	25						
12	26						
13	29						
14	53	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
15	54						
16	55						
17	56						

Node Boundary Conditions (Continued)

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
18	57						
19	66						
20	67						
21	69						
22	70						
23	72						
24	75						
25	76						
26	79						
27	82	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
28	83						
29	84						
30	85						
31	86						
32	95						
33	96						
34	98						
35	99						
36	101						
37	104						
38	105						
39	108						

Hot Rolled Steel Properties

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

Hot Rolled Steel Section Sets

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

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	1	1	2		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
2	2	5	3	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
3	3	3	4	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
4	4	7	8		MF-CP1	Beam	RECT	A36 Gr.36	Typical
5	5	6	9		MF-CP1	Beam	RECT	A36 Gr.36	Typical
6	6	14	15		MF-H1	Beam	Pipe	A500 Gr.C	Typical
7	7	16	4		MF-CP1	Beam	RECT	A36 Gr.36	Typical
8	8	5	19		MF-CP1	Beam	RECT	A36 Gr.36	Typical
9	9	25	24		SF-H3	Beam	Single Angle	A36 Gr.36	Typical

Member Primary Data (Continued)

Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule	
10	10	23	22	SF-H3	Beam	Single Angle	A36 Gr.36	Typical	
11	11	6	7	SF-H4	Beam	Single Angle	A36 Gr.36	Typical	
12	12	28	24	RIGID	None	None	RIGID	Typical	
13	13	29	25	RIGID	None	None	RIGID	Typical	
14	14	27	23	RIGID	None	None	RIGID	Typical	
15	15	26	22	RIGID	None	None	RIGID	Typical	
16	16	32	30	RIGID	None	None	RIGID	Typical	
17	17	33	31	RIGID	None	None	RIGID	Typical	
18	18	37	35	MF-P1	Column	Pipe	A500 Gr.C	Typical	
19	19	36	34	MF-P1	Column	Pipe	A500 Gr.C	Typical	
20	20	38	40	RIGID	None	None	RIGID	Typical	
21	21	39	41	RIGID	None	None	RIGID	Typical	
22	22	42	43	MF-H2	Beam	Pipe	A500 Gr.C	Typical	
23	23	11	10	RIGID	None	None	RIGID	Typical	
24	24	18	17	RIGID	None	None	RIGID	Typical	
25	25	13	12	RIGID	None	None	RIGID	Typical	
26	26	21	20	RIGID	None	None	RIGID	Typical	
27	27	45	44	RIGID	None	None	RIGID	Typical	
28	28	47	46	MF-P1	Column	Pipe	A500 Gr.C	Typical	
29	29	48	49	RIGID	None	None	RIGID	Typical	
30	30	51	52	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
31	31	53	54	SF-H1	Beam	Tube	A500 Gr.B Rect	Typical	
32	32	57	55	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
33	33	55	56	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
34	34	59	60	MF-CP1	Beam	RECT	A36 Gr.36	Typical	
35	35	58	61	MF-CP1	Beam	RECT	A36 Gr.36	Typical	
36	36	66	56	MF-CP1	Beam	RECT	A36 Gr.36	Typical	
37	37	57	69	MF-CP1	Beam	RECT	A36 Gr.36	Typical	
38	38	75	74	SF-H3	Beam	Single Angle	A36 Gr.36	Typical	
39	39	73	72	SF-H3	Beam	Single Angle	A36 Gr.36	Typical	
40	40	58	59	SF-H4	Beam	Single Angle	A36 Gr.36	Typical	
41	41	78	74	RIGID	None	None	RIGID	Typical	
42	42	79	75	RIGID	None	None	RIGID	Typical	
43	43	77	73	RIGID	None	None	RIGID	Typical	
44	44	76	72	RIGID	None	None	RIGID	Typical	
45	45	63	62	RIGID	None	None	RIGID	Typical	
46	46	68	67	RIGID	None	None	RIGID	Typical	
47	47	65	64	RIGID	None	None	RIGID	Typical	
48	48	71	70	RIGID	None	None	RIGID	Typical	
49	49	80	81	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
50	50	82	83	SF-H1	Beam	Tube	A500 Gr.B Rect	Typical	
51	51	86	84	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
52	52	84	85	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
53	53	88	89	MF-CP1	Beam	RECT	A36 Gr.36	Typical	
54	54	87	90	MF-CP1	Beam	RECT	A36 Gr.36	Typical	
55	55	95	85	MF-CP1	Beam	RECT	A36 Gr.36	Typical	
56	56	86	98	MF-CP1	Beam	RECT	A36 Gr.36	Typical	
57	57	104	103	SF-H3	Beam	Single Angle	A36 Gr.36	Typical	
58	58	102	101	SF-H3	Beam	Single Angle	A36 Gr.36	Typical	
59	59	87	88	SF-H4	Beam	Single Angle	A36 Gr.36	Typical	
60	60	107	103	RIGID	None	None	RIGID	Typical	
61	61	108	104	RIGID	None	None	RIGID	Typical	
62	62	106	102	RIGID	None	None	RIGID	Typical	
63	63	105	101	RIGID	None	None	RIGID	Typical	
64	64	92	91	RIGID	None	None	RIGID	Typical	
65	65	97	96	RIGID	None	None	RIGID	Typical	
66	66	94	93	RIGID	None	None	RIGID	Typical	
67	67	100	99	RIGID	None	None	RIGID	Typical	

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
68	68	109	110	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
69	69	111	112		MF-H1	Beam	Pipe	A500 Gr.C	Typical
70	70	115	113		RIGID	None	None	RIGID	Typical
71	71	116	114		RIGID	None	None	RIGID	Typical
72	72	120	118		MF-P1	Column	Pipe	A500 Gr.C	Typical
73	73	119	117		MF-P1	Column	Pipe	A500 Gr.C	Typical
74	74	121	123		RIGID	None	None	RIGID	Typical
75	75	122	124		RIGID	None	None	RIGID	Typical
76	76	125	126		MF-H2	Beam	Pipe	A500 Gr.C	Typical
77	77	128	127		RIGID	None	None	RIGID	Typical
78	78	130	129		MF-P1	Column	Pipe	A500 Gr.C	Typical
79	79	131	132		RIGID	None	None	RIGID	Typical
80	80	133	134		MF-H1	Beam	Pipe	A500 Gr.C	Typical
81	81	137	135		RIGID	None	None	RIGID	Typical
82	82	138	136		RIGID	None	None	RIGID	Typical
83	83	142	140		MF-P1	Column	Pipe	A500 Gr.C	Typical
84	84	141	139		MF-P1	Column	Pipe	A500 Gr.C	Typical
85	85	143	145		RIGID	None	None	RIGID	Typical
86	86	144	146		RIGID	None	None	RIGID	Typical
87	87	147	148		MF-H2	Beam	Pipe	A500 Gr.C	Typical
88	88	150	149		RIGID	None	None	RIGID	Typical
89	89	152	151		MF-P1	Column	Pipe	A500 Gr.C	Typical
90	90	153	154		RIGID	None	None	RIGID	Typical

Member Advanced Data

	Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
1	1				Yes		None
2	2			2	Yes		None
3	3		2		Yes		None
4	4				Yes		None
5	5				Yes		None
6	6				Yes		None
7	7				Yes		None
8	8				Yes		None
9	9				Yes		None
10	10				Yes		None
11	11				Yes		None
12	12				Yes	** NA **	None
13	13				Yes	** NA **	None
14	14				Yes	** NA **	None
15	15				Yes	** NA **	None
16	16				Yes	** NA **	None
17	17				Yes	** NA **	None
18	18				Yes	** NA **	None
19	19				Yes	** NA **	None
20	20				Yes	** NA **	None
21	21				Yes	** NA **	None
22	22				Yes		None
23	23	O O O O O X			Yes	** NA **	None
24	24	O O O O O X			Yes	** NA **	None
25	25	O O O O O X			Yes	** NA **	None
26	26	O O O O O X			Yes	** NA **	None
27	27				Yes	** NA **	None
28	28				Yes	** NA **	None
29	29				Yes	** NA **	None
30	30				Yes		None
31	31				Yes		None
32	32			2	Yes		None

Member Advanced Data (Continued)

	Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
33	33		2		Yes		None
34	34				Yes		None
35	35				Yes		None
36	36				Yes		None
37	37				Yes		None
38	38				Yes		None
39	39				Yes		None
40	40				Yes		None
41	41				Yes	** NA **	None
42	42				Yes	** NA **	None
43	43				Yes	** NA **	None
44	44				Yes	** NA **	None
45	45	O O O O O X			Yes	** NA **	None
46	46	O O O O O X			Yes	** NA **	None
47	47	O O O O O X			Yes	** NA **	None
48	48	O O O O O X			Yes	** NA **	None
49	49				Yes		None
50	50				Yes		None
51	51			2	Yes		None
52	52		2		Yes		None
53	53				Yes		None
54	54				Yes		None
55	55				Yes		None
56	56				Yes		None
57	57				Yes		None
58	58				Yes		None
59	59				Yes		None
60	60				Yes	** NA **	None
61	61				Yes	** NA **	None
62	62				Yes	** NA **	None
63	63				Yes	** NA **	None
64	64	O O O O O X			Yes	** NA **	None
65	65	O O O O O X			Yes	** NA **	None
66	66	O O O O O X			Yes	** NA **	None
67	67	O O O O O X			Yes	** NA **	None
68	68				Yes		None
69	69				Yes		None
70	70				Yes	** NA **	None
71	71				Yes	** NA **	None
72	72				Yes	** NA **	None
73	73				Yes	** NA **	None
74	74				Yes	** NA **	None
75	75				Yes	** NA **	None
76	76				Yes		None
77	77				Yes	** NA **	None
78	78				Yes	** NA **	None
79	79				Yes	** NA **	None
80	80				Yes		None
81	81				Yes	** NA **	None
82	82				Yes	** NA **	None
83	83				Yes	** NA **	None
84	84				Yes	** NA **	None
85	85				Yes	** NA **	None
86	86				Yes	** NA **	None
87	87				Yes		None
88	88				Yes	** NA **	None
89	89				Yes	** NA **	None
90	90				Yes	** NA **	None



Company : B+T Group
Designer : VP
Job Number : 149487.003.01
Model Name : CT46136-A - Bristol-east

9/3/2021
4:47:36 PM
Checked By : _____

Member Advanced Data (Continued)

Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
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Hot Rolled Steel Design Parameters

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
1	1	SF-H1	3.333	Lbyy	Lateral
2	2	SF-H2	2.758	Lbyy	Lateral
3	3	SF-H2	2.758	Lbyy	Lateral
4	4	MF-CP1	0.292	Lbyy	Lateral
5	5	MF-CP1	0.292	Lbyy	Lateral
6	6	MF-H1	8	Lbyy	Lateral
7	7	MF-CP1	0.208	Lbyy	Lateral
8	8	MF-CP1	0.208	Lbyy	Lateral
9	9	SF-H3	2.309	Lbyy	Lateral
10	10	SF-H3	2.309	Lbyy	Lateral
11	11	SF-H4	3.207	Lbyy	Lateral
12	18	MF-P1	8	Lbyy	Lateral
13	19	MF-P1	8	Lbyy	Lateral
14	22	MF-H2	10	Lbyy	Lateral
15	28	MF-P1	8	Lbyy	Lateral
16	30	MF-H3	3.25	Lbyy	Lateral
17	31	SF-H1	3.333	Lbyy	Lateral
18	32	SF-H2	2.758	Lbyy	Lateral
19	33	SF-H2	2.758	Lbyy	Lateral
20	34	MF-CP1	0.292	Lbyy	Lateral
21	35	MF-CP1	0.292	Lbyy	Lateral
22	36	MF-CP1	0.208	Lbyy	Lateral
23	37	MF-CP1	0.208	Lbyy	Lateral
24	38	SF-H3	2.309	Lbyy	Lateral
25	39	SF-H3	2.309	Lbyy	Lateral
26	40	SF-H4	3.207	Lbyy	Lateral
27	49	MF-H3	3.25	Lbyy	Lateral
28	50	SF-H1	3.333	Lbyy	Lateral
29	51	SF-H2	2.758	Lbyy	Lateral
30	52	SF-H2	2.758	Lbyy	Lateral
31	53	MF-CP1	0.292	Lbyy	Lateral
32	54	MF-CP1	0.292	Lbyy	Lateral
33	55	MF-CP1	0.208	Lbyy	Lateral
34	56	MF-CP1	0.208	Lbyy	Lateral
35	57	SF-H3	2.309	Lbyy	Lateral
36	58	SF-H3	2.309	Lbyy	Lateral
37	59	SF-H4	3.207	Lbyy	Lateral
38	68	MF-H3	3.25	Lbyy	Lateral
39	69	MF-H1	8	Lbyy	Lateral
40	72	MF-P1	8	Lbyy	Lateral
41	73	MF-P1	8	Lbyy	Lateral
42	76	MF-H2	10	Lbyy	Lateral
43	78	MF-P1	8	Lbyy	Lateral
44	80	MF-H1	8	Lbyy	Lateral
45	83	MF-P1	8	Lbyy	Lateral
46	84	MF-P1	8	Lbyy	Lateral
47	87	MF-H2	10	Lbyy	Lateral
48	89	MF-P1	8	Lbyy	Lateral

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Y	-0.032	%15
2	28	Y	-0.032	%85
3	28	Y	-0.075	%20
4	28	Y	-0.064	%50
5	28	Y	0	0
6	89	Y	-0.032	%15
7	89	Y	-0.032	%85

Member Point Loads (BLC 1 : Dead) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
8	89	Y	-0.075	%20
9	89	Y	-0.064	%50
10	89	Y	0	0
11	78	Y	-0.032	%15
12	78	Y	-0.032	%85
13	78	Y	-0.075	%20
14	78	Y	-0.064	%50
15	78	Y	0	0
16	31	Y	-0.022	%20
17	31	Y	0	0
18	31	Y	0	0
19	31	Y	0	0
20	31	Y	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Z	-0.181	%15
2	28	Z	-0.181	%85
3	28	Z	-0.057	%20
4	28	Z	-0.057	%50
5	28	Z	0	0
6	89	Z	-0.181	%15
7	89	Z	-0.181	%85
8	89	Z	-0.057	%20
9	89	Z	-0.057	%50
10	89	Z	0	0
11	78	Z	-0.181	%15
12	78	Z	-0.181	%85
13	78	Z	-0.057	%20
14	78	Z	-0.057	%50
15	78	Z	0	0
16	31	Z	-0.058	%20
17	31	Z	0	0
18	31	Z	0	0
19	31	Z	0	0
20	31	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	X	-0.072	%15
2	28	X	-0.072	%85
3	28	X	-0.034	%20
4	28	X	-0.03	%50
5	28	X	0	0
6	89	X	-0.072	%15
7	89	X	-0.072	%85
8	89	X	-0.034	%20
9	89	X	-0.03	%50
10	89	X	0	0
11	78	X	-0.072	%15
12	78	X	-0.072	%85
13	78	X	-0.034	%20
14	78	X	-0.03	%50
15	78	X	0	0
16	31	X	-0.033	%20
17	31	X	0	0
18	31	X	0	0



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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
19	31	X	0	0
20	31	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Z	-0.068	%15
2	28	Z	-0.068	%85
3	28	Z	-0.028	%20
4	28	Z	-0.028	%50
5	28	Z	0	0
6	89	Z	-0.068	%15
7	89	Z	-0.068	%85
8	89	Z	-0.028	%20
9	89	Z	-0.028	%50
10	89	Z	0	0
11	78	Z	-0.068	%15
12	78	Z	-0.068	%85
13	78	Z	-0.028	%20
14	78	Z	-0.028	%50
15	78	Z	0	0
16	31	Z	-0.029	%20
17	31	Z	0	0
18	31	Z	0	0
19	31	Z	0	0
20	31	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	X	-0.035	%15
2	28	X	-0.035	%85
3	28	X	-0.02	%20
4	28	X	-0.018	%50
5	28	X	0	0
6	89	X	-0.035	%15
7	89	X	-0.035	%85
8	89	X	-0.02	%20
9	89	X	-0.018	%50
10	89	X	0	0
11	78	X	-0.035	%15
12	78	X	-0.035	%85
13	78	X	-0.02	%20
14	78	X	-0.018	%50
15	78	X	0	0
16	31	X	-0.019	%20
17	31	X	0	0
18	31	X	0	0
19	31	X	0	0
20	31	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Z	-0.019	%15
2	28	Z	-0.019	%85
3	28	Z	-0.006	%20
4	28	Z	-0.006	%50
5	28	Z	0	0
6	89	Z	-0.019	%15

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
7	89	Z	-0.019	%85
8	89	Z	-0.006	%20
9	89	Z	-0.006	%50
10	89	Z	0	0
11	78	Z	-0.019	%15
12	78	Z	-0.019	%85
13	78	Z	-0.006	%20
14	78	Z	-0.006	%50
15	78	Z	0	0
16	31	Z	-0.006	%20
17	31	Z	0	0
18	31	Z	0	0
19	31	Z	0	0
20	31	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	X	-0.008	%15
2	28	X	-0.008	%85
3	28	X	-0.004	%20
4	28	X	-0.003	%50
5	28	X	0	0
6	89	X	-0.008	%15
7	89	X	-0.008	%85
8	89	X	-0.004	%20
9	89	X	-0.003	%50
10	89	X	0	0
11	78	X	-0.008	%15
12	78	X	-0.008	%85
13	78	X	-0.004	%20
14	78	X	-0.003	%50
15	78	X	0	0
16	31	X	-0.003	%20
17	31	X	0	0
18	31	X	0	0
19	31	X	0	0
20	31	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Y	-0.204	%15
2	28	Y	-0.204	%85
3	28	Y	-0.074	%20
4	28	Y	-0.072	%50
5	28	Y	0	0
6	89	Y	-0.204	%15
7	89	Y	-0.204	%85
8	89	Y	-0.074	%20
9	89	Y	-0.072	%50
10	89	Y	0	0
11	78	Y	-0.204	%15
12	78	Y	-0.204	%85
13	78	Y	-0.074	%20
14	78	Y	-0.072	%50
15	78	Y	0	0
16	31	Y	-0.075	%20
17	31	Y	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
18	31	Y	0	0
19	31	Y	0	0
20	31	Y	0	0

Member Point Loads (BLC 13 : Maint LL 1)

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

Member Point Loads (BLC 14 : Maint LL 2)

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

Member Point Loads (BLC 15 : Maint LL 3)

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

Member Point Loads (BLC 16 : Maint LL 4)

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

Member Point Loads (BLC 17 : Maint LL 5)

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

Member Point Loads (BLC 18 : Maint LL 6)

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

Member Point Loads (BLC 19 : Maint LL 7)

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

Member Point Loads (BLC 20 : Maint LL 8)

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

Member Point Loads (BLC 21 : Maint LL 9)

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

Member Point Loads (BLC 22 : Maint LL 10)

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

Member Point Loads (BLC 23 : Maint LL 11)

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

Member Point Loads (BLC 24 : Maint LL 12)

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



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 Designer : VP
 Job Number : 149487.003.01
 Model Name : CT46136-A - Bristol-east

9/3/2021
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Member Point Loads (BLC 25 : Maint LL 13)

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

Member Point Loads (BLC 26 : Maint LL 14)

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

Member Point Loads (BLC 27 : Maint LL 15)

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

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.014	-0.014	0	%100
2	2	Z	-0.012	-0.012	0	%100
3	3	Z	-0.012	-0.012	0	%100
4	4	Z	-0.017	-0.017	0	%100
5	5	Z	-0.017	-0.017	0	%100
6	6	Z	-0.01	-0.01	0	%100
7	7	Z	-0.017	-0.017	0	%100
8	8	Z	-0.017	-0.017	0	%100
9	9	Z	-0.008	-0.008	0	%100
10	10	Z	-0.008	-0.008	0	%100
11	11	Z	-0.024	-0.024	0	%100
12	18	Z	-0.008	-0.008	0	%100
13	19	Z	-0.008	-0.008	0	%100
14	22	Z	-0.008	-0.008	0	%100
15	28	Z	-0.008	-0.008	0	%100
16	30	Z	-0.021	-0.021	0	%100
17	31	Z	-0.014	-0.014	0	%100
18	32	Z	-0.012	-0.012	0	%100
19	33	Z	-0.012	-0.012	0	%100
20	34	Z	-0.017	-0.017	0	%100
21	35	Z	-0.017	-0.017	0	%100
22	36	Z	-0.017	-0.017	0	%100
23	37	Z	-0.017	-0.017	0	%100
24	38	Z	-0.008	-0.008	0	%100
25	39	Z	-0.008	-0.008	0	%100
26	40	Z	-0.024	-0.024	0	%100
27	49	Z	-0.021	-0.021	0	%100
28	50	Z	-0.014	-0.014	0	%100
29	51	Z	-0.012	-0.012	0	%100
30	52	Z	-0.012	-0.012	0	%100
31	53	Z	-0.017	-0.017	0	%100
32	54	Z	-0.017	-0.017	0	%100
33	55	Z	-0.017	-0.017	0	%100
34	56	Z	-0.017	-0.017	0	%100
35	57	Z	-0.008	-0.008	0	%100
36	58	Z	-0.008	-0.008	0	%100
37	59	Z	-0.024	-0.024	0	%100
38	68	Z	-0.021	-0.021	0	%100
39	69	Z	-0.01	-0.01	0	%100
40	72	Z	-0.008	-0.008	0	%100
41	73	Z	-0.008	-0.008	0	%100
42	76	Z	-0.008	-0.008	0	%100
43	78	Z	-0.008	-0.008	0	%100
44	80	Z	-0.01	-0.01	0	%100
45	83	Z	-0.008	-0.008	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, %)]
46	84	Z	-0.008	-0.008	0	%100
47	87	Z	-0.008	-0.008	0	%100
48	89	Z	-0.008	-0.008	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	-0.014	-0.014	0	%100
2	2	X	-0.012	-0.012	0	%100
3	3	X	-0.012	-0.012	0	%100
4	4	X	-0.017	-0.017	0	%100
5	5	X	-0.017	-0.017	0	%100
6	6	X	-0.01	-0.01	0	%100
7	7	X	-0.017	-0.017	0	%100
8	8	X	-0.017	-0.017	0	%100
9	9	X	-0.008	-0.008	0	%100
10	10	X	-0.008	-0.008	0	%100
11	11	X	-0.024	-0.024	0	%100
12	18	X	-0.008	-0.008	0	%100
13	19	X	-0.008	-0.008	0	%100
14	22	X	-0.008	-0.008	0	%100
15	28	X	-0.008	-0.008	0	%100
16	30	X	-0.021	-0.021	0	%100
17	31	X	-0.014	-0.014	0	%100
18	32	X	-0.012	-0.012	0	%100
19	33	X	-0.012	-0.012	0	%100
20	34	X	-0.017	-0.017	0	%100
21	35	X	-0.017	-0.017	0	%100
22	36	X	-0.017	-0.017	0	%100
23	37	X	-0.017	-0.017	0	%100
24	38	X	-0.008	-0.008	0	%100
25	39	X	-0.008	-0.008	0	%100
26	40	X	-0.024	-0.024	0	%100
27	49	X	-0.021	-0.021	0	%100
28	50	X	-0.014	-0.014	0	%100
29	51	X	-0.012	-0.012	0	%100
30	52	X	-0.012	-0.012	0	%100
31	53	X	-0.017	-0.017	0	%100
32	54	X	-0.017	-0.017	0	%100
33	55	X	-0.017	-0.017	0	%100
34	56	X	-0.017	-0.017	0	%100
35	57	X	-0.008	-0.008	0	%100
36	58	X	-0.008	-0.008	0	%100
37	59	X	-0.024	-0.024	0	%100
38	68	X	-0.021	-0.021	0	%100
39	69	X	-0.01	-0.01	0	%100
40	72	X	-0.008	-0.008	0	%100
41	73	X	-0.008	-0.008	0	%100
42	76	X	-0.008	-0.008	0	%100
43	78	X	-0.008	-0.008	0	%100
44	80	X	-0.01	-0.01	0	%100
45	83	X	-0.008	-0.008	0	%100
46	84	X	-0.008	-0.008	0	%100
47	87	X	-0.008	-0.008	0	%100
48	89	X	-0.008	-0.008	0	%100



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

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.01	-0.01	0	%100
2	2	Z	-0.009	-0.009	0	%100
3	3	Z	-0.009	-0.009	0	%100
4	4	Z	-0.021	-0.021	0	%100
5	5	Z	-0.021	-0.021	0	%100
6	6	Z	-0.004	-0.004	0	%100
7	7	Z	-0.026	-0.026	0	%100
8	8	Z	-0.026	-0.026	0	%100
9	9	Z	-0.009	-0.009	0	%100
10	10	Z	-0.009	-0.009	0	%100
11	11	Z	-0.012	-0.012	0	%100
12	18	Z	-0.003	-0.003	0	%100
13	19	Z	-0.003	-0.003	0	%100
14	22	Z	-0.003	-0.003	0	%100
15	28	Z	-0.003	-0.003	0	%100
16	30	Z	-0.012	-0.012	0	%100
17	31	Z	-0.01	-0.01	0	%100
18	32	Z	-0.009	-0.009	0	%100
19	33	Z	-0.009	-0.009	0	%100
20	34	Z	-0.021	-0.021	0	%100
21	35	Z	-0.021	-0.021	0	%100
22	36	Z	-0.026	-0.026	0	%100
23	37	Z	-0.026	-0.026	0	%100
24	38	Z	-0.009	-0.009	0	%100
25	39	Z	-0.009	-0.009	0	%100
26	40	Z	-0.012	-0.012	0	%100
27	49	Z	-0.012	-0.012	0	%100
28	50	Z	-0.01	-0.01	0	%100
29	51	Z	-0.009	-0.009	0	%100
30	52	Z	-0.009	-0.009	0	%100
31	53	Z	-0.021	-0.021	0	%100
32	54	Z	-0.021	-0.021	0	%100
33	55	Z	-0.026	-0.026	0	%100
34	56	Z	-0.026	-0.026	0	%100
35	57	Z	-0.009	-0.009	0	%100
36	58	Z	-0.009	-0.009	0	%100
37	59	Z	-0.012	-0.012	0	%100
38	68	Z	-0.012	-0.012	0	%100
39	69	Z	-0.004	-0.004	0	%100
40	72	Z	-0.003	-0.003	0	%100
41	73	Z	-0.003	-0.003	0	%100
42	76	Z	-0.003	-0.003	0	%100
43	78	Z	-0.003	-0.003	0	%100
44	80	Z	-0.004	-0.004	0	%100
45	83	Z	-0.003	-0.003	0	%100
46	84	Z	-0.003	-0.003	0	%100
47	87	Z	-0.003	-0.003	0	%100
48	89	Z	-0.003	-0.003	0	%100

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

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.01	-0.01	0	%100
2	2	X	-0.009	-0.009	0	%100
3	3	X	-0.009	-0.009	0	%100
4	4	X	-0.021	-0.021	0	%100
5	5	X	-0.021	-0.021	0	%100
6	6	X	-0.004	-0.004	0	%100
7	7	X	-0.026	-0.026	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, %)]
8	8	X	-0.026	-0.026	0	%100
9	9	X	-0.009	-0.009	0	%100
10	10	X	-0.009	-0.009	0	%100
11	11	X	-0.012	-0.012	0	%100
12	18	X	-0.003	-0.003	0	%100
13	19	X	-0.003	-0.003	0	%100
14	22	X	-0.003	-0.003	0	%100
15	28	X	-0.003	-0.003	0	%100
16	30	X	-0.012	-0.012	0	%100
17	31	X	-0.01	-0.01	0	%100
18	32	X	-0.009	-0.009	0	%100
19	33	X	-0.009	-0.009	0	%100
20	34	X	-0.021	-0.021	0	%100
21	35	X	-0.021	-0.021	0	%100
22	36	X	-0.026	-0.026	0	%100
23	37	X	-0.026	-0.026	0	%100
24	38	X	-0.009	-0.009	0	%100
25	39	X	-0.009	-0.009	0	%100
26	40	X	-0.012	-0.012	0	%100
27	49	X	-0.012	-0.012	0	%100
28	50	X	-0.01	-0.01	0	%100
29	51	X	-0.009	-0.009	0	%100
30	52	X	-0.009	-0.009	0	%100
31	53	X	-0.021	-0.021	0	%100
32	54	X	-0.021	-0.021	0	%100
33	55	X	-0.026	-0.026	0	%100
34	56	X	-0.026	-0.026	0	%100
35	57	X	-0.009	-0.009	0	%100
36	58	X	-0.009	-0.009	0	%100
37	59	X	-0.012	-0.012	0	%100
38	68	X	-0.012	-0.012	0	%100
39	69	X	-0.004	-0.004	0	%100
40	72	X	-0.003	-0.003	0	%100
41	73	X	-0.003	-0.003	0	%100
42	76	X	-0.003	-0.003	0	%100
43	78	X	-0.003	-0.003	0	%100
44	80	X	-0.004	-0.004	0	%100
45	83	X	-0.003	-0.003	0	%100
46	84	X	-0.003	-0.003	0	%100
47	87	X	-0.003	-0.003	0	%100
48	89	X	-0.003	-0.003	0	%100

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

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



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, %)]
15	28	Z	-0.0004	-0.0004	0	%100
16	30	Z	-0.002	-0.002	0	%100
17	31	Z	-0.002	-0.002	0	%100
18	32	Z	-0.001	-0.001	0	%100
19	33	Z	-0.001	-0.001	0	%100
20	34	Z	-0.002	-0.002	0	%100
21	35	Z	-0.002	-0.002	0	%100
22	36	Z	-0.002	-0.002	0	%100
23	37	Z	-0.002	-0.002	0	%100
24	38	Z	-0.0008	-0.0008	0	%100
25	39	Z	-0.0008	-0.0008	0	%100
26	40	Z	-0.003	-0.003	0	%100
27	49	Z	-0.002	-0.002	0	%100
28	50	Z	-0.002	-0.002	0	%100
29	51	Z	-0.001	-0.001	0	%100
30	52	Z	-0.001	-0.001	0	%100
31	53	Z	-0.002	-0.002	0	%100
32	54	Z	-0.002	-0.002	0	%100
33	55	Z	-0.002	-0.002	0	%100
34	56	Z	-0.002	-0.002	0	%100
35	57	Z	-0.0008	-0.0008	0	%100
36	58	Z	-0.0008	-0.0008	0	%100
37	59	Z	-0.003	-0.003	0	%100
38	68	Z	-0.002	-0.002	0	%100
39	69	Z	-0.0005	-0.0005	0	%100
40	72	Z	-0.0004	-0.0004	0	%100
41	73	Z	-0.0004	-0.0004	0	%100
42	76	Z	-0.0004	-0.0004	0	%100
43	78	Z	-0.0004	-0.0004	0	%100
44	80	Z	-0.0005	-0.0005	0	%100
45	83	Z	-0.0004	-0.0004	0	%100
46	84	Z	-0.0004	-0.0004	0	%100
47	87	Z	-0.0004	-0.0004	0	%100
48	89	Z	-0.0004	-0.0004	0	%100

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

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



Company : B+T Group
 Designer : VP
 Job Number : 149487.003.01
 Model Name : CT46136-A - Bristol-east

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

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

Member Distributed Loads (BLC 8 : Ice)

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

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

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
29	51	Y	-0.018	-0.018	0 %100
30	52	Y	-0.018	-0.018	0 %100
31	53	Y	-0.024	-0.024	0 %100
32	54	Y	-0.024	-0.024	0 %100
33	55	Y	-0.024	-0.024	0 %100
34	56	Y	-0.024	-0.024	0 %100
35	57	Y	-0.015	-0.015	0 %100
36	58	Y	-0.015	-0.015	0 %100
37	59	Y	-0.029	-0.029	0 %100
38	68	Y	-0.029	-0.029	0 %100
39	69	Y	-0.017	-0.017	0 %100
40	72	Y	-0.015	-0.015	0 %100
41	73	Y	-0.015	-0.015	0 %100
42	76	Y	-0.015	-0.015	0 %100
43	78	Y	-0.015	-0.015	0 %100
44	80	Y	-0.017	-0.017	0 %100
45	83	Y	-0.015	-0.015	0 %100
46	84	Y	-0.015	-0.015	0 %100
47	87	Y	-0.015	-0.015	0 %100
48	89	Y	-0.015	-0.015	0 %100

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

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

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

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	9	Y	-0.017	-0.017	0 2.078
2	10	Y	-0.016	-0.022	0.231 1.27
3	10	Y	-0.022	-0.029	1.27 2.309
4	38	Y	-0.039	-0.018	0 1.155
5	38	Y	-0.018	0.0006845	1.155 2.309
6	39	Y	-0.02	-0.018	0.231 2.309
7	57	Y	-0.02	-0.018	0 2.078
8	58	Y	0.0006846	-0.018	0 1.155
9	58	Y	-0.018	-0.039	1.155 2.309

Member Area Loads (BLC 1 : Dead)

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

Member Area Loads (BLC 8 : Ice)

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

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

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

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

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

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

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

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
1	Dead	DL	-1		20		3
2	0 Wind - No Ice	WLZ			20	48	
3	90 Wind - No Ice	WLX			20	48	
4	0 Wind - Ice	WLZ			20	48	
5	90 Wind - Ice	WLX			20	48	
6	0 Wind - Service	WLZ			20	48	
7	90 Wind - Service	WLX			20	48	
8	Ice	OL1			20	48	3
9	Live Load a	LL		3			
10	Live Load b	LL		3			
11	Live Load c	LL		3			
12	Live Load d	LL					
13	Maint LL 1	LL			1		
14	Maint LL 2	LL			1		
15	Maint LL 3	LL			1		
16	Maint LL 4	LL			1		
17	Maint LL 5	LL			1		
18	Maint LL 6	LL			1		
19	Maint LL 7	LL			1		
20	Maint LL 8	LL			1		
21	Maint LL 9	LL			1		
22	Maint LL 10	LL			1		
23	Maint LL 11	LL			1		
24	Maint LL 12	LL			1		
25	Maint LL 13	LL			1		
26	Maint LL 14	LL			1		
27	Maint LL 15	LL			1		
31	BLC 1 Transient Area Loads	None				9	
32	BLC 8 Transient Area Loads	None				9	

Load Combinations

	Description	Solve	PDelta	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		



Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
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/lce	Yes	Y	1	0.9	4	1.6			8	1
27	0.9 D + 1.6 - 30 W/lce	Yes	Y	1	0.9	4	1.386	5	0.8	8	1
28	0.9 D + 1.6 - 60 W/lce	Yes	Y	1	0.9	5	1.386	4	0.8	8	1
29	0.9 D + 1.6 - 90 W/lce	Yes	Y	1	0.9	5	1.6			8	1
30	0.9 D + 1.6 - 120 W/lce	Yes	Y	1	0.9	5	1.386	4	-0.8	8	1
31	0.9 D + 1.6 - 150 W/lce	Yes	Y	1	0.9	4	-1.386	5	0.8	8	1
32	0.9 D + 1.6 - 180 W/lce	Yes	Y	1	0.9	4	-1.6			8	1
33	0.9 D + 1.6 - 210 W/lce	Yes	Y	1	0.9	4	-1.386	5	-0.8	8	1
34	0.9 D + 1.6 - 240 W/lce	Yes	Y	1	0.9	5	-1.386	4	-0.8	8	1
35	0.9 D + 1.6 - 270 W/lce	Yes	Y	1	0.9	5	-1.6			8	1
36	0.9 D + 1.6 - 300 W/lce	Yes	Y	1	0.9	5	-1.386	4	0.8	8	1
37	0.9 D + 1.6 - 330 W/lce	Yes	Y	1	0.9	4	1.386	5	-0.8	8	1
38	1.2 D + 1.0 - 0 W/lce	Yes	Y	1	1.2	4	1			8	1
39	1.2 D + 1.0 - 30 W/lce	Yes	Y	1	1.2	4	0.866	5	0.5	8	1
40	1.2 D + 1.0 - 60 W/lce	Yes	Y	1	1.2	5	0.866	4	0.5	8	1
41	1.2 D + 1.0 - 90 W/lce	Yes	Y	1	1.2	5	1			8	1
42	1.2 D + 1.0 - 120 W/lce	Yes	Y	1	1.2	5	0.866	4	-0.5	8	1
43	1.2 D + 1.0 - 150 W/lce	Yes	Y	1	1.2	4	-0.866	5	0.5	8	1
44	1.2 D + 1.0 - 180 W/lce	Yes	Y	1	1.2	4	-1			8	1
45	1.2 D + 1.0 - 210 W/lce	Yes	Y	1	1.2	4	-0.866	5	-0.5	8	1
46	1.2 D + 1.0 - 240 W/lce	Yes	Y	1	1.2	5	-0.866	4	-0.5	8	1
47	1.2 D + 1.0 - 270 W/lce	Yes	Y	1	1.2	5	-1			8	1
48	1.2 D + 1.0 - 300 W/lce	Yes	Y	1	1.2	5	-0.866	4	0.5	8	1
49	1.2 D + 1.0 - 330 W/lce	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

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
65	1.2 D + 1.5 LL b + Service - 90 W	Yes	Y	1	1.2	7	1			10	1.5
66	1.2 D + 1.5 LL b + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	10	1.5
67	1.2 D + 1.5 LL b + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	10	1.5
68	1.2 D + 1.5 LL b + Service - 180 W	Yes	Y	1	1.2	6	-1			10	1.5
69	1.2 D + 1.5 LL b + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	10	1.5
70	1.2 D + 1.5 LL b + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	10	1.5
71	1.2 D + 1.5 LL b + Service - 270 W	Yes	Y	1	1.2	7	-1			10	1.5
72	1.2 D + 1.5 LL b + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	10	1.5
73	1.2 D + 1.5 LL b + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	10	1.5
74	1.2 D + 1.5 LL c + Service - 0 W	Yes	Y	1	1.2	6	1			11	1.5
75	1.2 D + 1.5 LL c + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	11	1.5
76	1.2 D + 1.5 LL c + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	11	1.5
77	1.2 D + 1.5 LL c + Service - 90 W	Yes	Y	1	1.2	7	1			11	1.5
78	1.2 D + 1.5 LL c + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	11	1.5
79	1.2 D + 1.5 LL c + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	11	1.5
80	1.2 D + 1.5 LL c + Service - 180 W	Yes	Y	1	1.2	6	-1			11	1.5
81	1.2 D + 1.5 LL c + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	11	1.5
82	1.2 D + 1.5 LL c + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	11	1.5
83	1.2 D + 1.5 LL c + Service - 270 W	Yes	Y	1	1.2	7	-1			11	1.5
84	1.2 D + 1.5 LL c + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	11	1.5
85	1.2 D + 1.5 LL c + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	11	1.5
86	1.2 D + 1.5 LL d + Service - 0 W	Yes	Y	1	1.2	6	1			12	1.5
87	1.2 D + 1.5 LL d + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	12	1.5
88	1.2 D + 1.5 LL d + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	12	1.5
89	1.2 D + 1.5 LL d + Service - 90 W	Yes	Y	1	1.2	7	1			12	1.5
90	1.2 D + 1.5 LL d + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	12	1.5
91	1.2 D + 1.5 LL d + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	12	1.5
92	1.2 D + 1.5 LL d + Service - 180 W	Yes	Y	1	1.2	6	-1			12	1.5
93	1.2 D + 1.5 LL d + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	12	1.5
94	1.2 D + 1.5 LL d + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	12	1.5
95	1.2 D + 1.5 LL d + Service - 270 W	Yes	Y	1	1.2	7	-1			12	1.5
96	1.2 D + 1.5 LL d + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	12	1.5
97	1.2 D + 1.5 LL d + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	12	1.5
98	1.2 D + 1.5 LL Maint (1)	Yes	Y	1	1.2					13	1.5
99	1.2 D + 1.5 LL Maint (2)	Yes	Y	1	1.2					14	1.5
100	1.2 D + 1.5 LL Maint (3)	Yes	Y	1	1.2					15	1.5
101	1.2 D + 1.5 LL Maint (4)	Yes	Y	1	1.2					16	1.5
102	1.2 D + 1.5 LL Maint (5)	Yes	Y	1	1.2					17	1.5
103	1.2 D + 1.5 LL Maint (6)	Yes	Y	1	1.2					18	1.5
104	1.2 D + 1.5 LL Maint (7)	Yes	Y	1	1.2					19	1.5
105	1.2 D + 1.5 LL Maint (8)	Yes	Y	1	1.2					20	1.5
106	1.2 D + 1.5 LL Maint (9)	Yes	Y	1	1.2					21	1.5
107	1.2 D + 1.5 LL Maint (10)	Yes	Y	1	1.2					22	1.5
108	1.2 D + 1.5 LL Maint (11)	Yes	Y	1	1.2					23	1.5
109	1.2 D + 1.5 LL Maint (12)	Yes	Y	1	1.2					24	1.5
110	1.2 D + 1.5 LL Maint (13)	Yes	Y	1	1.2					25	1.5
111	1.2 D + 1.5 LL Maint (14)	Yes	Y	1	1.2					26	1.5
112	1.2 D + 1.5 LL Maint (15)	Yes	Y	1	1.2					27	1.5
113	1.2 D + 1.5 LL Maint (16)	Yes	Y	1	1.2					28	1.5
114	1.2 D + 1.5 LL Maint (17)	Yes	Y	1	1.2					29	1.5
115	1.2 D + 1.5 LL Maint (18)	Yes	Y	1	1.2					30	1.5

Envelope Node Reactions

Node Label	X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC		
1	1	max	1.411	5	2.839	38	1.769	2	5.825	26	1.429	11	0.355	24
2		min	-1.414	23	-0.603	8	-1.881	20	-1.903	8	-1.431	17	-0.237	6
3	53	max	1.476	5	2.895	42	1.822	14	0.743	13	1.785	3	1.035	12
4		min	-1.571	23	-0.327	12	-1.763	8	-2.66	31	-1.785	21	-5.047	30



Company : B+T Group
 Designer : VP
 Job Number : 149487.003.01
 Model Name : CT46136-A - Bristol-east

9/3/2021
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 Checked By : _____

Envelope Node Reactions (Continued)

Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC	
5	82	max	1.397	17	2.789	46	2.017	14	0.79	3	1.805	7	4.744	34
6		min	-1.3	11	-0.353	4	-1.963	8	-3.081	33	-1.807	25	-1.082	4
7	Totals:	max	4.271	17	7.662	45	5.593	14						
8		min	-4.271	11	1.797	3	-5.593	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	0.742	0	37	0.174	0	y	37	70.173	73.278	8.24	8.24	2.141	H1-1b
2	2	C3.38x2.06x.188	0.556	2.592	27	0.088	0.351	y	41	38.433	43.394	1.694	4.483	1.626	H1-1b
3	3	C3.38x2.06x.188	0.53	0	37	0.09	2.241	z	20	38.433	43.394	1.694	4.483	1.626	H1-1b
4	4	PL3/8"x6	0.109	0	14	0.208	0	y	26	68.802	72.9	0.57	9.113	2.387	H1-1b
5	5	PL3/8"x6	0.116	0	15	0.16	0	y	14	68.802	72.9	0.57	9.113	1.994	H1-1b
6	6	PIPE 3.5x0.165	0.093	6.75	31	0.048	4		16	45.872	71.57	6.336	6.336	2.346	H1-1b
7	7	PL3/8"x6	0.181	0.208	20	0.286	0.208	y	38	70.705	72.9	0.57	9.113	1.382	H1-1b
8	8	PL3/8"x6	0.181	0	25	0.301	0	y	39	70.705	72.9	0.57	9.113	2.818	H1-1b
9	9	L2x2x4	0.365	0	20	0.038	2.309	z	31	23.349	30.586	0.691	1.577	1.5	H2-1
10	10	L2x2x4	0.313	2.309	20	0.052	0	y	40	23.349	30.586	0.691	1.577	1.5	H2-1
11	11	L7.63x2.5x6	0.489	1.604	8	0.109	0.334	y	38	73.845	118.523	1.798	13.648	1.226	H2-1
12	18	PIPE 2.88x0.203	0.142	5.667	17	0.052	5.667		18	35.519	70.68	5.029	5.029	3	H1-1b
13	19	PIPE 2.88x0.203	0.167	2.333	21	0.058	5.667	21	35.519	70.68	5.029	5.029	5.029	3	H1-1b
14	22	PIPE 2.88x0.203	0.181	7.813	25	0.171	8.958	14	24.131	70.68	5.029	5.029	2.496	H1-1b	
15	28	PIPE 2.88x0.203	0.153	2.333	19	0.058	2.333	20	35.519	70.68	5.029	5.029	5.029	3	H1-1b
16	30	L6.63x4.33x.25	0.251	3.25	6	0.03	3.25	z	24	49.975	86.751	2.311	6.976	1.5	H2-1
17	31	HSS4X4X2	0.739	0	31	0.177	0	y	41	70.173	73.278	8.24	8.24	2.165	H1-1b
18	32	C3.38x2.06x.188	0.555	2.592	31	0.088	0.351	y	45	38.433	43.394	1.694	4.483	1.626	H1-1b
19	33	C3.38x2.06x.188	0.509	0	29	0.085	2.241	y	48	38.433	43.394	1.694	4.483	1.627	H1-1b
20	34	PL3/8"x6	0.092	0	18	0.194	0	y	30	68.802	72.9	0.57	9.113	2.382	H1-1b
21	35	PL3/8"x6	0.115	0	19	0.132	0	y	18	68.802	72.9	0.57	9.113	1.912	H1-1b
22	36	PL3/8"x6	0.157	0.208	25	0.284	0.208	y	42	70.705	72.9	0.57	9.113	1.754	H1-1b
23	37	PL3/8"x6	0.144	0	17	0.301	0	y	43	70.705	72.9	0.57	9.113	2.901	H1-1b
24	38	L2x2x4	0.278	0	23	0.037	2.309	z	47	23.349	30.586	0.691	1.577	1.5	H2-1
25	39	L2x2x4	0.268	2.309	25	0.052	0	y	44	23.349	30.586	0.691	1.577	1.5	H2-1
26	40	L7.63x2.5x6	0.37	1.604	12	0.11	0.334	y	43	73.845	118.523	1.798	13.697	1.237	H2-1
27	49	L6.63x4.33x.25	0.287	0	2	0.034	3.25	y	21	49.975	86.751	2.311	6.976	1.5	H2-1
28	50	HSS4X4X2	0.741	0	33	0.177	0	y	33	70.173	73.278	8.24	8.24	2.143	H1-1b
29	51	C3.38x2.06x.188	0.537	2.592	35	0.088	0.351	y	49	38.433	43.394	1.694	4.483	1.626	H1-1b
30	52	C3.38x2.06x.188	0.528	0	33	0.085	2.241	y	39	38.433	43.394	1.694	4.483	1.627	H1-1b
31	53	PL3/8"x6	0.117	0.164	15	0.197	0	y	34	68.802	72.9	0.57	9.113	2.499	H1-1b
32	54	PL3/8"x6	0.092	0	23	0.134	0	y	21	68.802	72.9	0.57	9.113	1.899	H1-1b
33	55	PL3/8"x6	0.163	0.085	14	0.284	0.208	y	45	70.705	72.9	0.57	9.113	1.414	H1-1b
34	56	PL3/8"x6	0.183	0	21	0.298	0	y	47	70.705	72.9	0.57	9.113	2.825	H1-1b
35	57	L2x2x4	0.355	0	15	0.038	2.309	z	27	23.349	30.586	0.691	1.577	1.5	H2-1
36	58	L2x2x4	0.259	2.309	16	0.051	2.309	y	48	23.349	30.586	0.691	1.577	1.5	H2-1
37	59	L7.63x2.5x6	0.437	1.604	3	0.107	0.334	y	46	73.845	118.523	1.798	13.911	1.284	H2-1
38	68	L6.63x4.33x.25	0.313	3.25	2	0.038	3.25	z	20	49.975	86.751	2.311	6.976	1.5	H2-1
39	69	PIPE 3.5x0.165	0.101	1.25	14	0.063	4		20	45.872	71.57	6.336	6.336	1.739	H1-1b
40	72	PIPE 2.88x0.203	0.179	5.667	21	0.06	5.667		21	35.519	70.68	5.029	5.029	3	H1-1b
41	73	PIPE 2.88x0.203	0.2	2.333	14	0.059	5.667	25	35.519	70.68	5.029	5.029	5.029	3	H1-1b
42	76	PIPE 2.88x0.203	0.171	2.188	25	0.14	2.188	25	24.131	70.68	5.029	5.029	2.208	H1-1b	
43	78	PIPE 2.88x0.203	0.16	5.667	21	0.06	2.333	25	35.519	70.68	5.029	5.029	5.029	3	H1-1b
44	80	PIPE 3.5x0.165	0.092	6.75	26	0.06	2.833	25	45.872	71.57	6.336	6.336	2.081	H1-1b	
45	83	PIPE 2.88x0.203	0.178	5.667	25	0.067	5.667	25	35.519	70.68	5.029	5.029	5.029	3	H1-1b
46	84	PIPE 2.88x0.203	0.159	2.333	18	0.044	5.667	17	35.519	70.68	5.029	5.029	5.029	3	H1-1b
47	87	PIPE 2.88x0.203	0.168	7.813	21	0.154	8.958	21	24.131	70.68	5.029	5.029	2.463	H1-1b	
48	89	PIPE 2.88x0.203	0.184	5.667	14	0.041	2.333	17	35.519	70.68	5.029	5.029	5.029	3	H1-1b

APPENDIX B

(Additional Calculations)

PROJECT	KSC			
SUBJECT	Platform Mount Analysis			
DATE	09/03/21	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	:	1.769	k
Vertical Shear	:	2.839	k
Horizontal Shear	:	1.411	k
Torsion	:	0.355	k.ft
Moment from Horizontal Forces	:	1.429	k.ft
Moment from Vertical Forces	:	5.825	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	:	3.17	k
Force from Horz. Moment	:	2.59	k
Force from Vert. Moment	:	10.55	k
Shear Load / Bolt	:	0.79	k
Tension Load / Bolt	:	0.44	k
Resultant from Moments / Bolt	:	5.43	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	:	28.35%		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	:	11.17%		OKAY
Unity Check, Combined	:	39.52%		OKAY
Available Bearing Strength, ΦR_n	:	34.66	k/bolt	
Unity Check, Bolt Bearing	:	2.29%		OKAY

PROJECT					KSC
SUBJECT	Platform Mount Analysis				
DATE	09/03/21	PAGE	1	OF	1



B+T Group
 1717 S. Boulder, Suite 300
 Tulsa, OK 74119
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[REF: AISC 360-05]

Connecting Member Parameters

Plate Yield Strength, F_y	:	36.00	ksi	[AISC Table 2-5]
Plate Tensile Strength, F_u	:	58.00	ksi	[AISC Table 2-5]
Plate Height	:	9.00	in	
Plate Width	:	9.00	in	
Plate Thickness	:	0.50	in	
Edge Distance	:	1.06	in	
Gross Tension Area, A_{gt}	:	4.50	in ²	
Gross Shear Area, A_{gv}	:	0.75	in ²	
Net Area for tension, A_{nt}	:	4.16	in ²	
Net Area for shear, A_{nt}	:	3.00	in ²	

Plate Check

Available Tensile Yield	:	145.80	k	[Eq. J4-1]
Available Tensile Rupture	:	180.80	k	[Eq. J4-2]
Unity Check, Plate Tension	:	4.03%		OKAY
Available Shear Yield	:	16.20	k	[Eq. J4-3]
Available Shear Rupture	:	104.40	k	[Eq. J4-4]
Unity Check, Plate Shear	:	19.57%		OKAY
Available Block Shear, ΦR_n	:	77.40	k	[Eq. J4-5]
Unity Check, Block Shear	:	4.10%		OKAY

EXHIBIT 10

Construction Drawings



DISH Wireless L.L.C. SITE ID:

BOBDL00137A

DISH Wireless L.L.C. SITE ADDRESS:

**1214 FARMINGTON AVE
BRISTOL, CT 06010**

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:**
- REMOVE OLD NEXTEL MOUNT
 - INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR)
 - INSTALL (1) PROPOSED ANTENNA PLATFORM MOUNT
 - INSTALL PROPOSED JUMPERS
 - INSTALL (6) PROPOSED RRUS (2 PER SECTOR)
 - INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP)
 - INSTALL (1) PROPOSED HYBRID CABLE

- GROUND SCOPE OF WORK:**
- INSTALL (1) PROPOSED 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 SAFETY SWITCH (IF REQUIRED)
 - INSTALL (1) PROPOSED FIBER NID (IF REQUIRED)
 - INSTALL (1) PROPOSED METER SOCKET

SITE INFORMATION

PROPERTY OWNER: ROUTE 6 DEVELOPERS LLC
 ADDRESS: 1224 MILL ST BLDG D STE 103
 EAST BERLIN, CT 06023-1159

TOWER TYPE: MONOPOLE

TOWER CO SITE ID: CT46136-A

TOWER APP NUMBER: 168266

COUNTY: HARTFORD

LATITUDE (NAD 83): 41° 41' 43.8" N
 41.69549967 N

LONGITUDE (NAD 83): 72° 54' 6" W
 72.90166667 W

ZONING JURISDICTION: CITY OF HARTFORD

ZONING DISTRICT: 46-72A-3

PARCEL NUMBER: 46-72A-3

OCCUPANCY GROUP: U

CONSTRUCTION TYPE: II-B

POWER COMPANY: T.B.D

TELEPHONE COMPANY: T.B.D

PROJECT DIRECTORY

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

TOWER OWNER: SBA COMMUNICATIIONS 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
 RyanLynch@dishmarket

CONST. MANAGER: JAVIER SOTO
 JavierSoto@dishmarket

RF ENGINEER: BOSSENER CHARLES
 BossenerCharles@dishmarket



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



8051 CONGRESS AVENUE
BOCA RATON, FL 33487



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



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:	CHECKED BY:	APPROVED BY:
CDD	CDD	CDD

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	12/13/21	ISSUED FOR REVIEW
0	12/20/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149487.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00137A
1214 FARMINGTON AVE
BRISTOL, CT 06010

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

CONNECTICUT CODE OF COMPLIANCE

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

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

SITE PHOTO



DIRECTIONS

DIRECTIONS FROM ROBERTSON AIRPORT:
 HEAD NORTH TURN LEFT ONTO JOHNSON AVE TURN RIGHT AT THE 1ST CROSS STREET ONTO PERRON RD CONTINUE ON NORTHWEST DR TO BRISTOL TURN LEFT ONTO NORTHWEST DR TURN RIGHT ONTO CAMP ST TAKE BETHS AVE TO YOUR DESTINATION TURN LEFT ONTO QUAIL HOLLOW LN TURN RIGHT ONTO PHEASANT RUN RD TURN LEFT ONTO BETHS AVE TURN RIGHT AT KATHERN ST TURN RIGHT ARRIVE AT BOBDL00137A

VICINITY MAP



UNDERGROUND SERVICE ALERT CBYD 811
UTILITY NOTIFICATION CENTER OF CONNECTICUT
 (800) 922-4455
 WWW.CBYD.COM

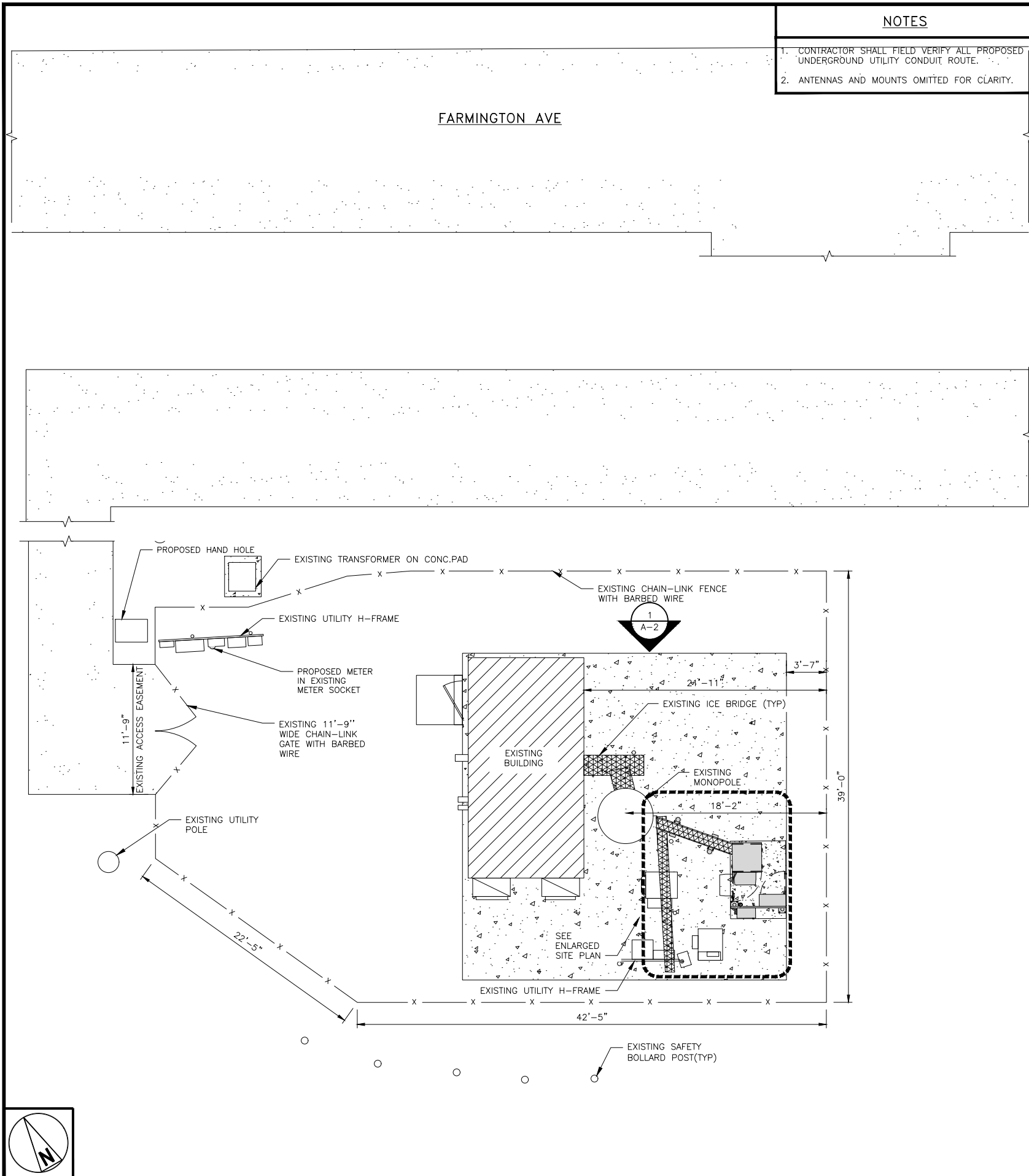
CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

GENERAL NOTES

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

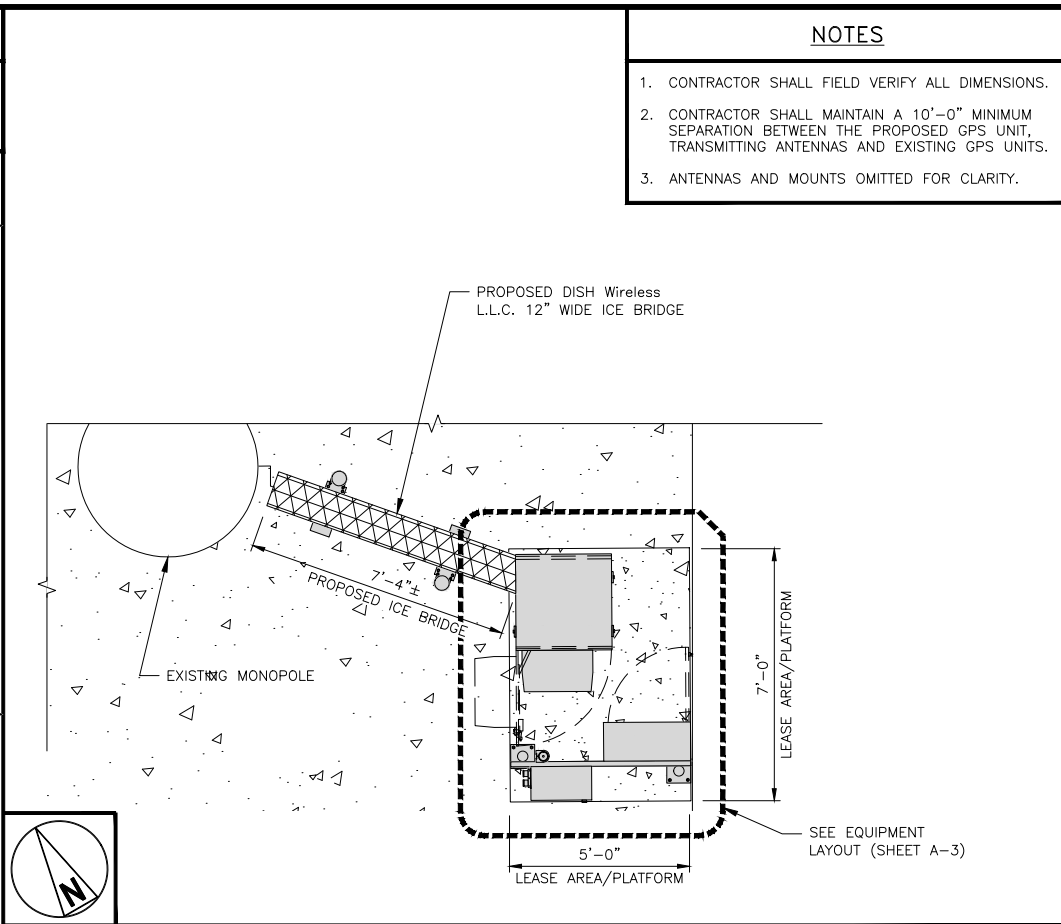
11"x17" PLOT WILL BE HALF SCALE UNLESS OTHERWISE NOTED

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



NOTES

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



NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.

ENLARGED SITE PLAN

Scale: 12" = 6'-0", 1", 2", 3", 4", 5", 6", 7", 3/8" = 1'-0"

2

OVERALL SITE PLAN

Scale: 6", 4", 2", 0, 5", 10", 3/16" = 1'-0"

1

NOT USED

3



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



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RFDS REV #:	1	

CONSTRUCTION DOCUMENTS

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A&E PROJECT NUMBER
149487.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00137A
1214 FARMINGTON AVE
BRISTOL, CT 06010

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.

REMOVE OLD NEXTEL MOUNT, ANTENNAS AND OTHER EQUIPMENT @RAD CENTER 150' BEFORE INSTALLING DISH EQUIPMENT

- (3) PROPOSED DISH Wireless L.L.C. ANTENNAS
RAD CENTER @ 150'-0" AGL
PROPOSED MONOPOLE
TOP EL. @ 150'-0" AGL
- EXISTING ENTRY PORT
RAD CENTER @ ±147'-0" AGL
- EXISTING MONOPOLE
TOP EL. @ 140'-0" AGL
- EXISTING PANEL ANTENNAS
RAD CENTER @ 140'-0" AGL
- EXISTING PANEL ANTENNAS
RAD CENTER @ 130'-0" AGL

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

EXISTING MONOPOLE

PROPOSED DISH Wireless L.L.C. ICE BRIDGE

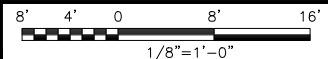
PROPOSED DISH Wireless L.L.C. EQUIPMENT ON EXISTING CONC. PAD

PROPOSED DISH Wireless L.L.C. GPS UNIT

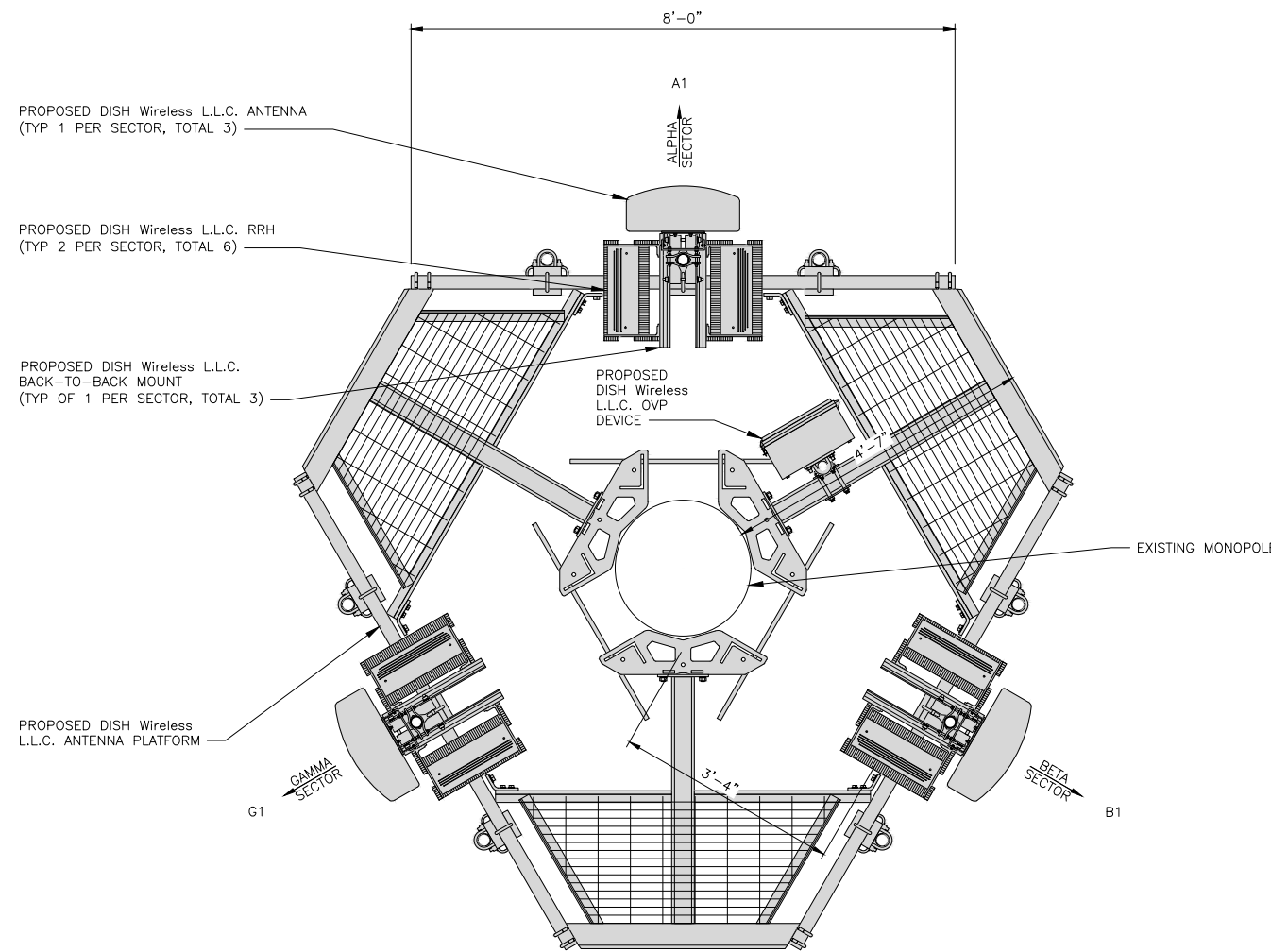
EXISTING ENTRY PORT

EXISTING MONOPOLE
BOTTOM EL. @ 6" AGL

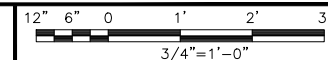
PROPOSED NORTH ELEVATION



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-MX08FR0665-21	5G	72" x 20"	0°	150'-0"	(1) HIGH-CAPACITY HYBRID CABLE (181' LONG)
BETA	B1	PROPOSED	JMA WIRELESS-MX08FR0665-21	5G	72" x 20"	120°	150'-0"	
GAMMA	C1	PROPOSED	JMA WIRELESS-MX08FR0665-21	5G	72" x 20"	240°	150'-0"	

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

EXISTING OR PROPOSED	OVP	
	MANUFACTURER - MODEL NUMBER	SIZE (HxWxD)
PROPOSED	RAYCAP-RDIDC-9181-PF-48	18.98"x14.39"x8.15"

ANTENNA SCHEDULE

NO SCALE

3



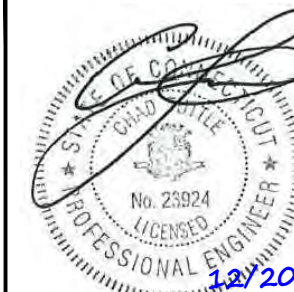
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RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	12/13/21	ISSUED FOR REVIEW
0	12/20/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149487.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00137A
1214 FARMINGTON AVE
BRISTOL, CT 06010

SHEET TITLE
ELEVATION, ANTENNA
LAYOUT AND SCHEDULE

SHEET NUMBER

A-2



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



8051 CONGRESS AVENUE
BOCA RATON, FL 33487



1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
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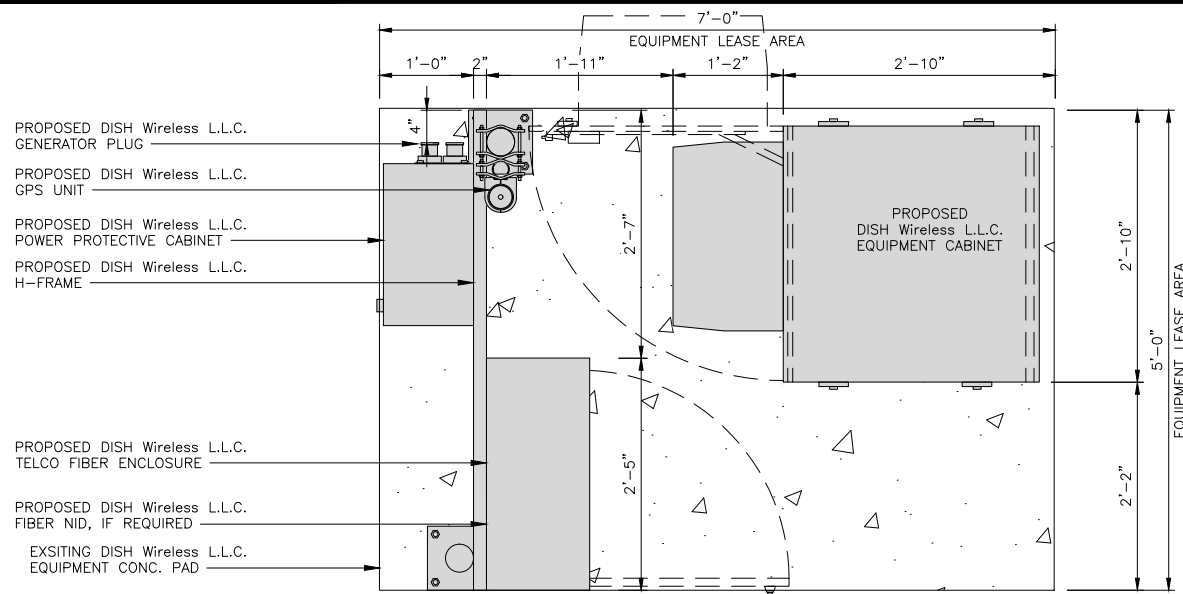
SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

SHEET NUMBER

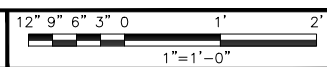
A-3

NOTES

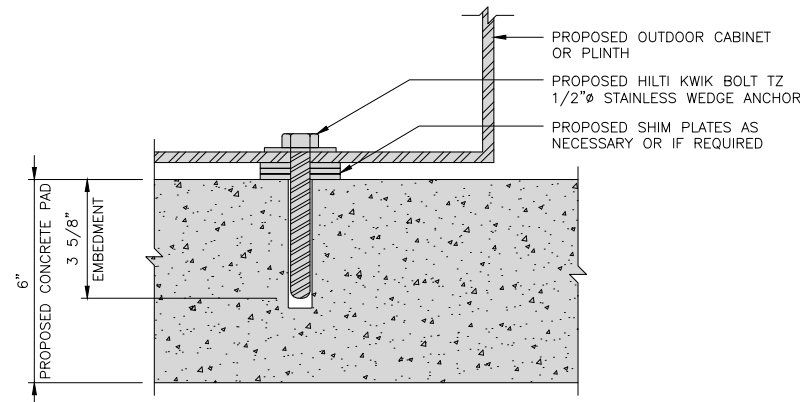
- CONTRACTOR TO BURY PLATFORM FEET WITH A MINIMUM OF 2" OF FILL PER EXISTING SITE SURFACE
- WEED BARRIER FABRIC TO BE ADDED AT DISCRETION OF DISH Wireless L.L.C. CONSTRUCTION MANAGER AT TIME OF CONSTRUCTION. ONE SHEET 8'x8' INSTALLED UNDER ALL FOUR FEET OF THE PLATFORM (4 MIL BLACK PLASTIC)
- EQUIPMENT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



PLATFORM EQUIPMENT PLAN



1

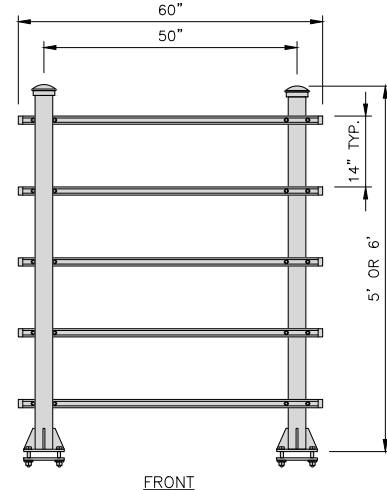
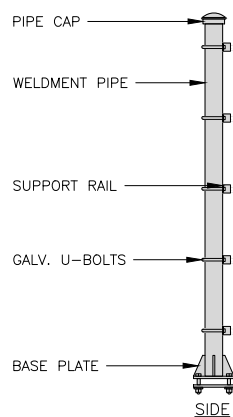


TYPICAL OUTDOOR EQUIPMENT TO CONCRETE SLAB ANCHORAGE

2

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

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

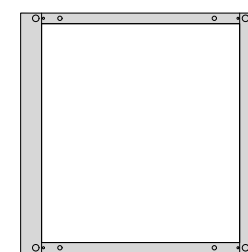


H-FRAME DETAIL

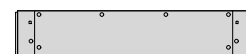
NO SCALE

3

CHARLES INDUSTRY LT-97-002422 PLINTH KIT	
DIMENSIONS (HxWxD):	6"x 32"x 32"
NOTE: GASKET AND MOUNTING HARDWARE INCLUDED	



PLAN



FRONT/BACK

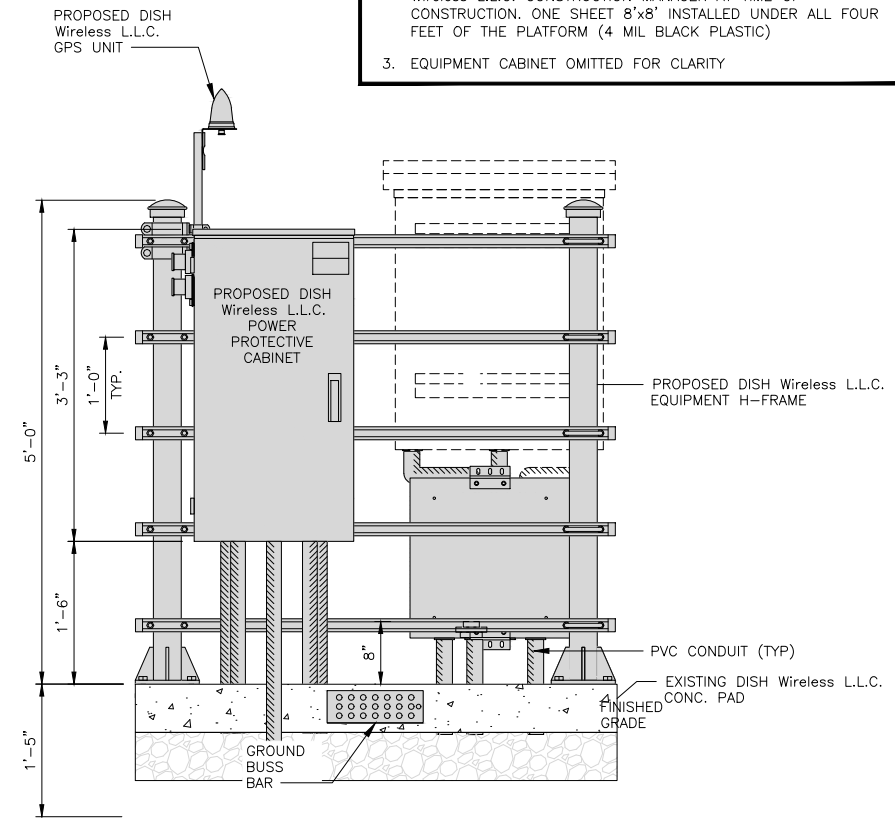


SIDE

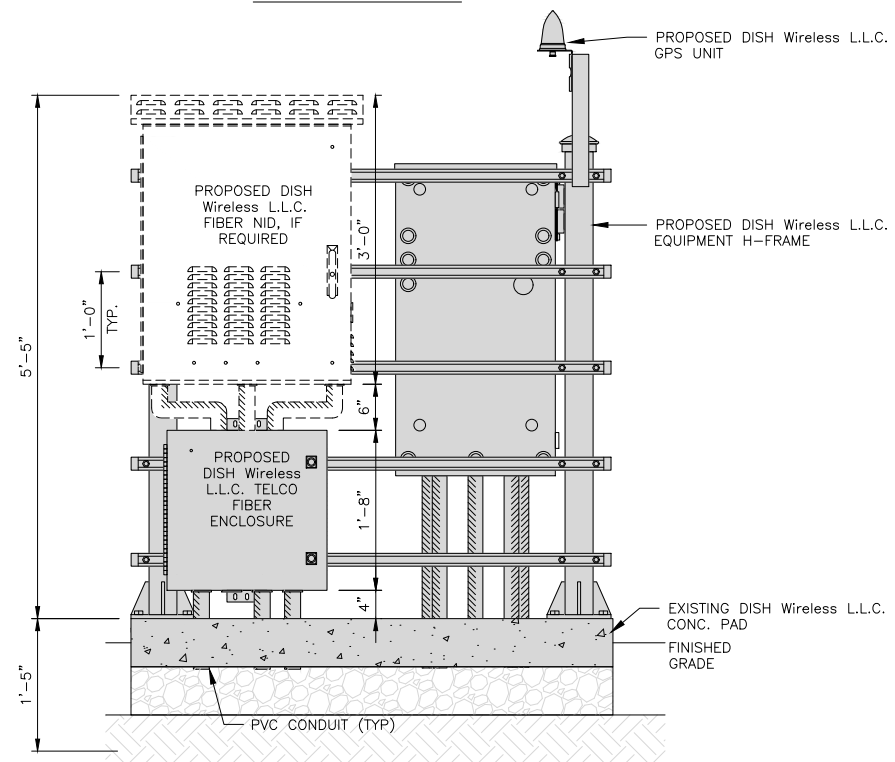
PLINTH KIT DETAIL

NO SCALE

4

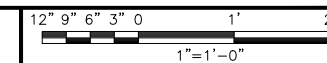


FRONT ELEVATION

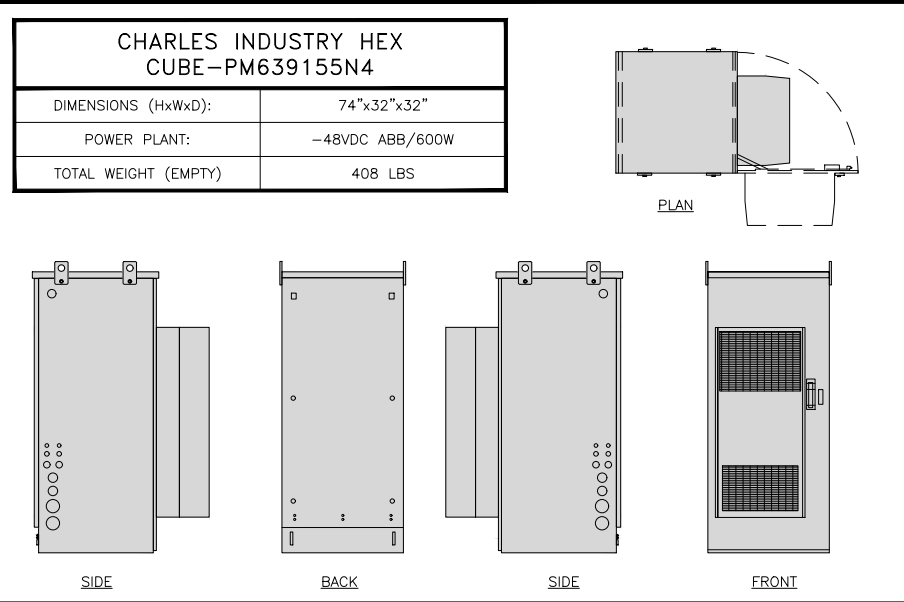


BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION



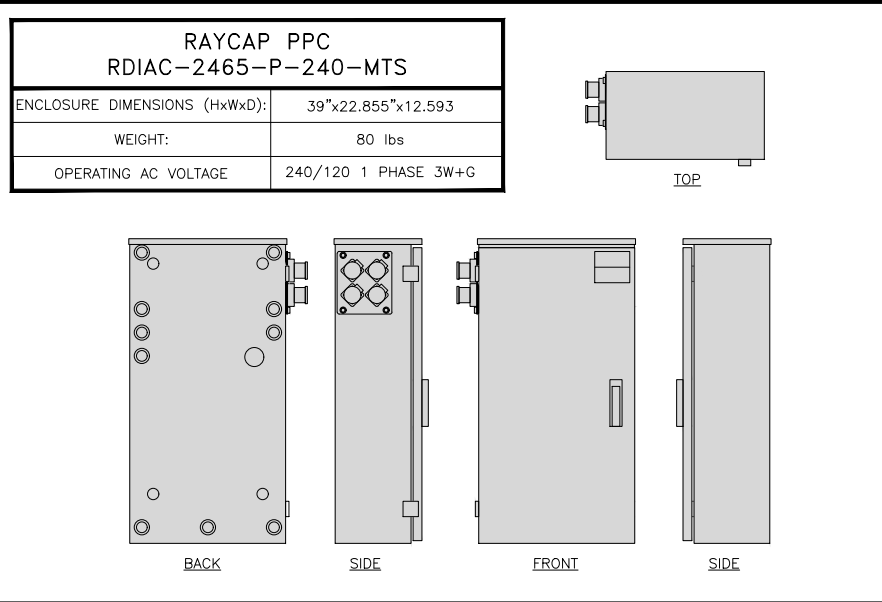
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CABINET DETAIL

NO SCALE

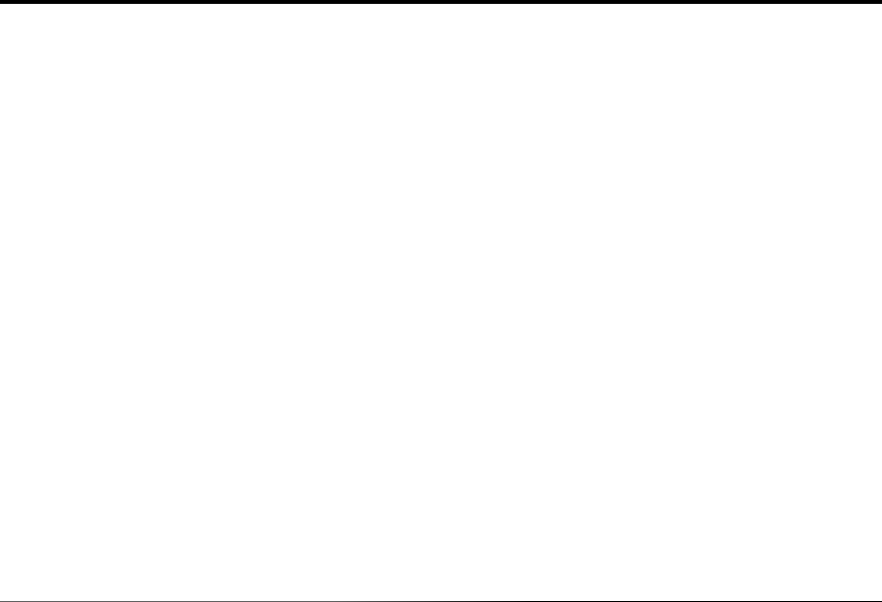
1



POWER PROTECTION CABINET (PPC) DETAIL

NO SCALE

2



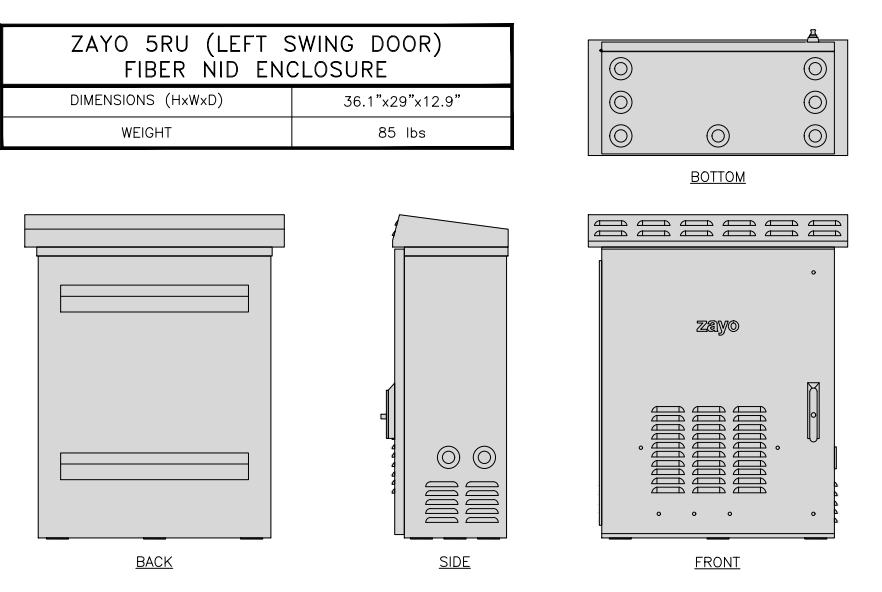
NO SCALE

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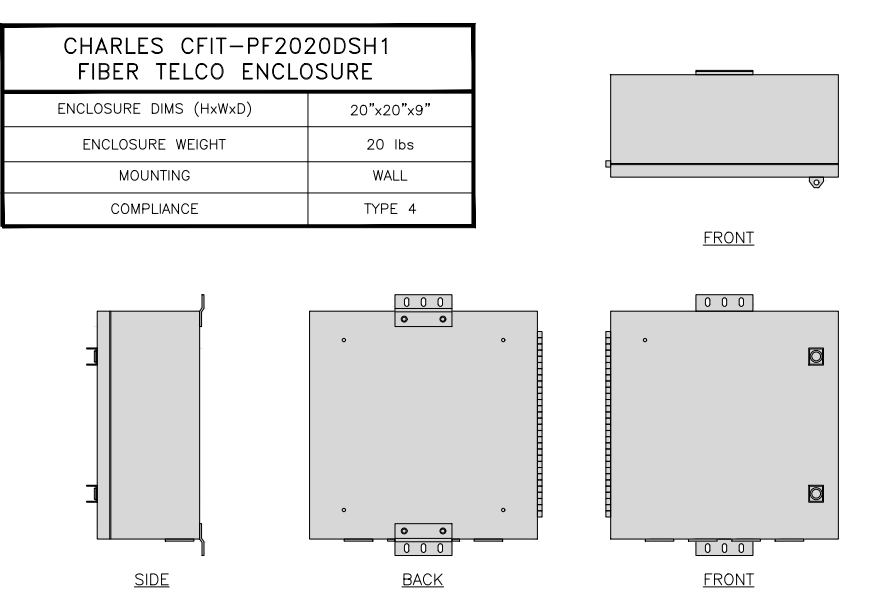
NO SCALE

4



NO SCALE

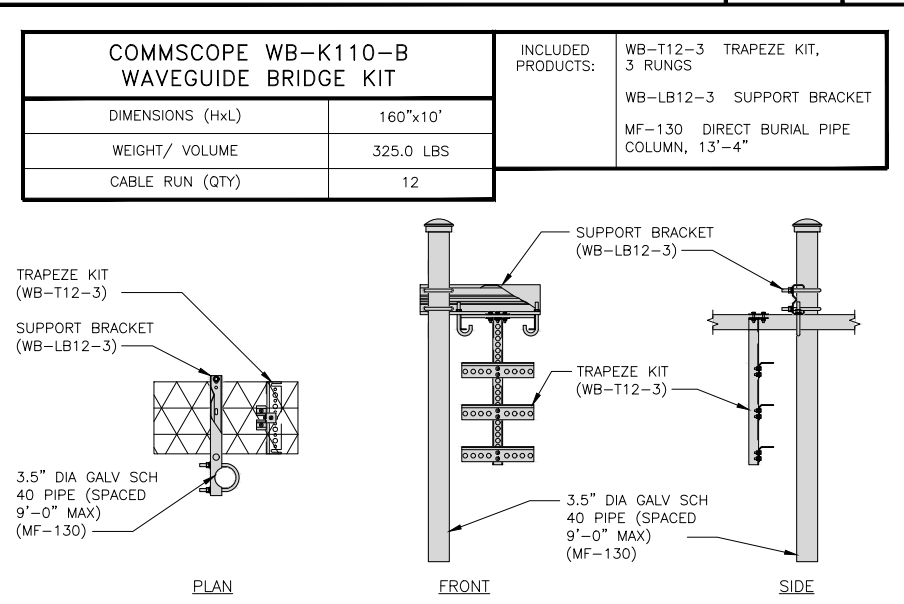
5



FIBER TELCO ENCLOSURE DETAIL

NO SCALE

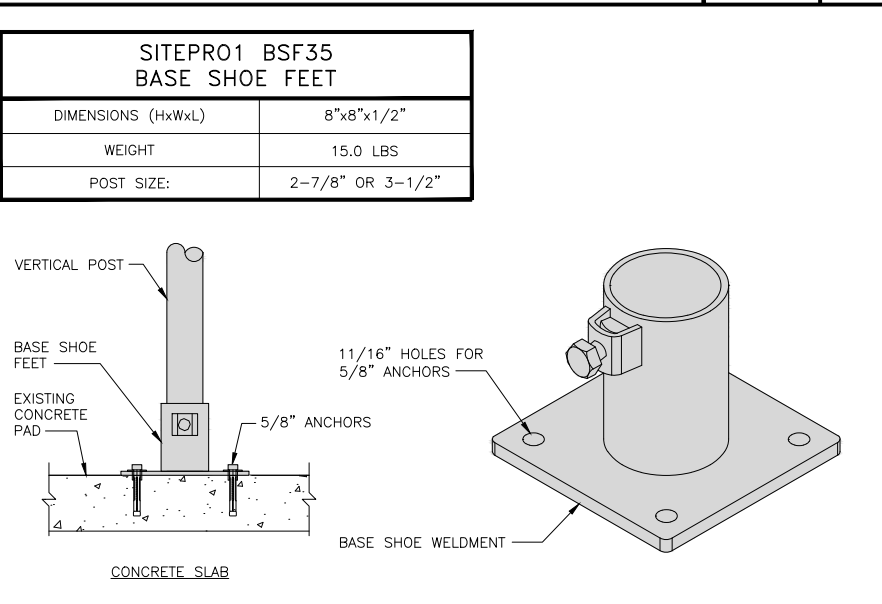
6



ICE BRIDGE DETAIL

NO SCALE

7



HYBRID CABLE RUN

NO SCALE

9

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PH: (918) 587-4630
www.blgrp.com

No. 23924
LICENSED PROFESSIONAL ENGINEER
12/20/21

B&T ENGINEERING, INC.
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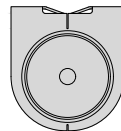
DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00137A
1214 FARMINGTON AVE
BRISTOL, CT 06010

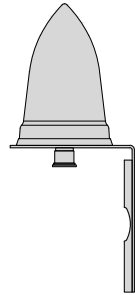
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-4

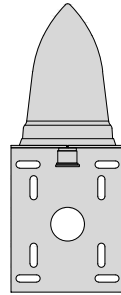
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



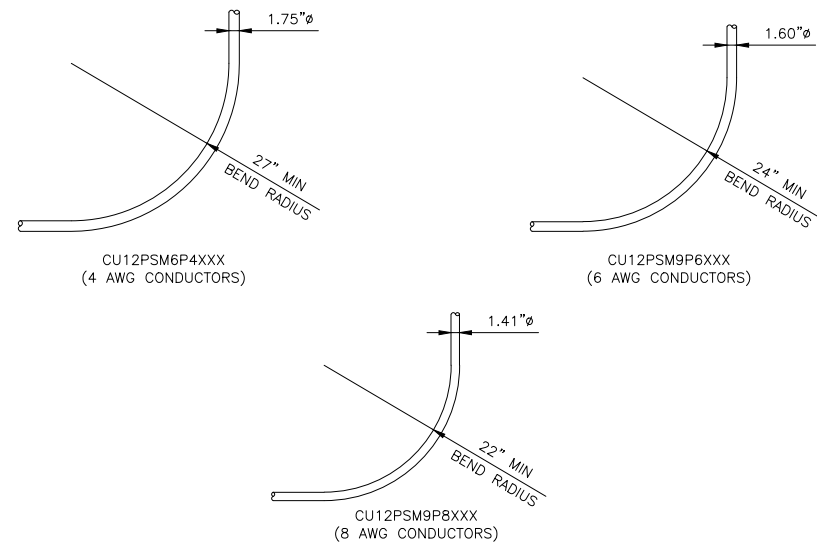
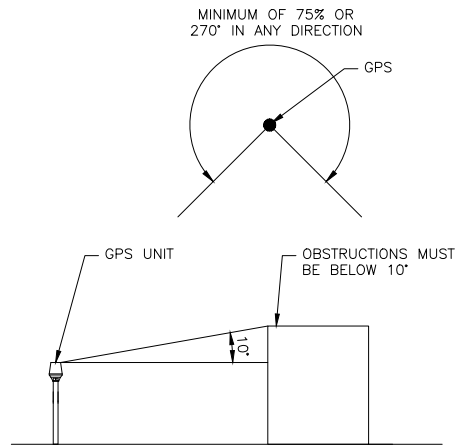
TOP



BACK



SIDE



GPS DETAIL

NO SCALE

1

GPS MINIMUM SKY VIEW REQUIREMENTS

NO SCALE

2

CABLES UNLIMITED HYBRID CABLE
MINIMUM BEND RADIUS

NO SCALE

3

NOT USED

NO SCALE

4

NOT USED

NO SCALE

5

NOT USED

NO SCALE

6

NOT USED

NO SCALE

7

NOT USED

NO SCALE

8

NOT USED

NO SCALE

9



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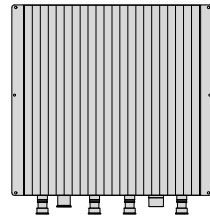
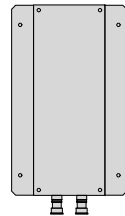
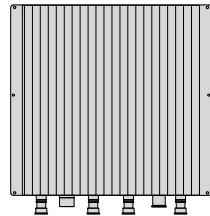
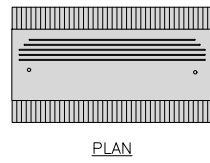
DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00137A
1214 FARMINGTON AVE
BRISTOL, CT 06010

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-5

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

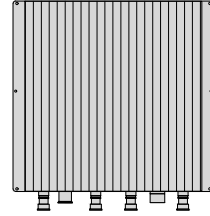
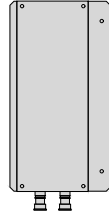
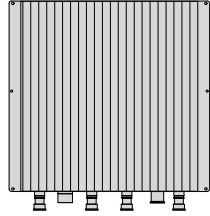
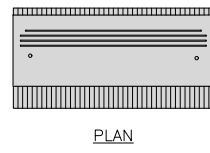


BACK

SIDE

FRONT

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



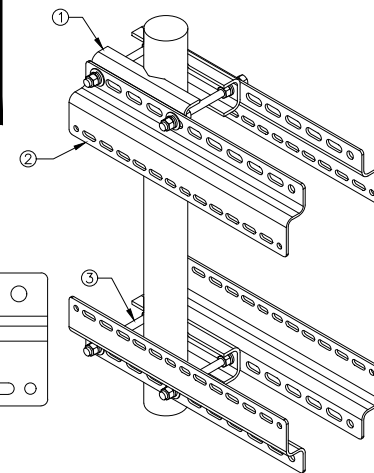
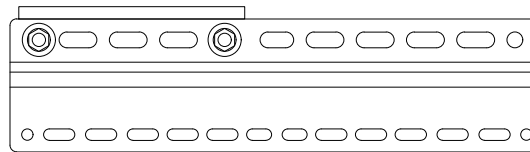
BACK

SIDE

FRONT

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

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



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

RRH DETAIL

NO SCALE

1

RRH DETAIL

NO SCALE

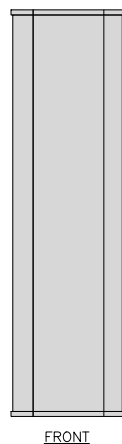
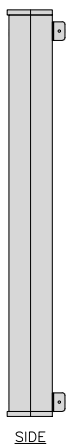
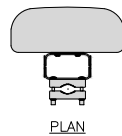
2

RRH MOUNT DETAIL

NO SCALE

3

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



SIDE

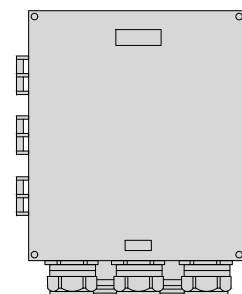
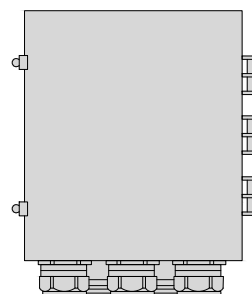
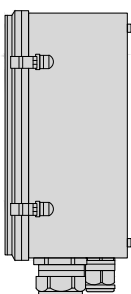
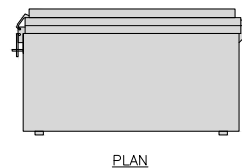
FRONT

ANTENNA DETAIL

NO SCALE

4

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



SIDE

BACK

FRONT

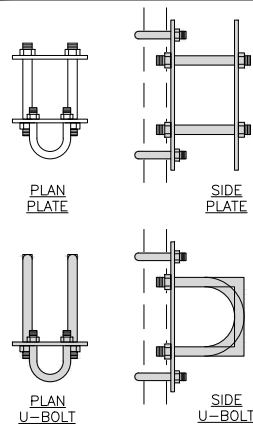
SURGE SUPPRESSION DETAIL (OVP)

NO SCALE

7

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

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



PLAN
U-BOLT

SIDE
U-BOLT

PLAN
U-BOLT

SIDE
U-BOLT

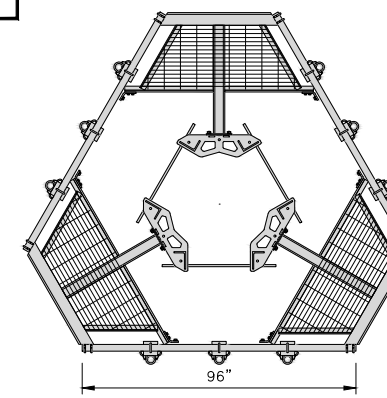
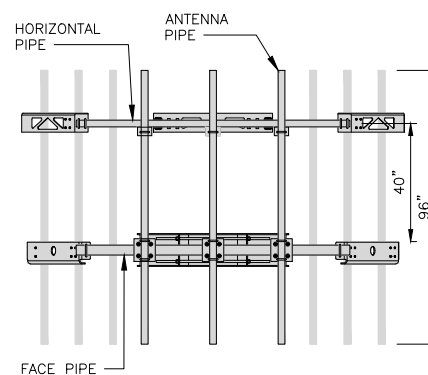
RRH/OVP MOUNT DETAIL

NO SCALE

8

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

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



FACE PIPE

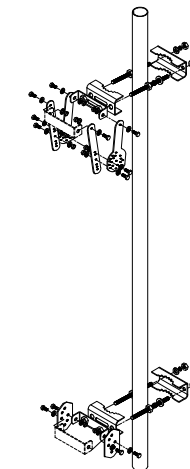
ANTENNA PLATFORM DETAIL

NO SCALE

9

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

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



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

ANTENNA BRACKET DETAIL

NO SCALE

6

NOT USED

NOT USED

NO SCALE

5



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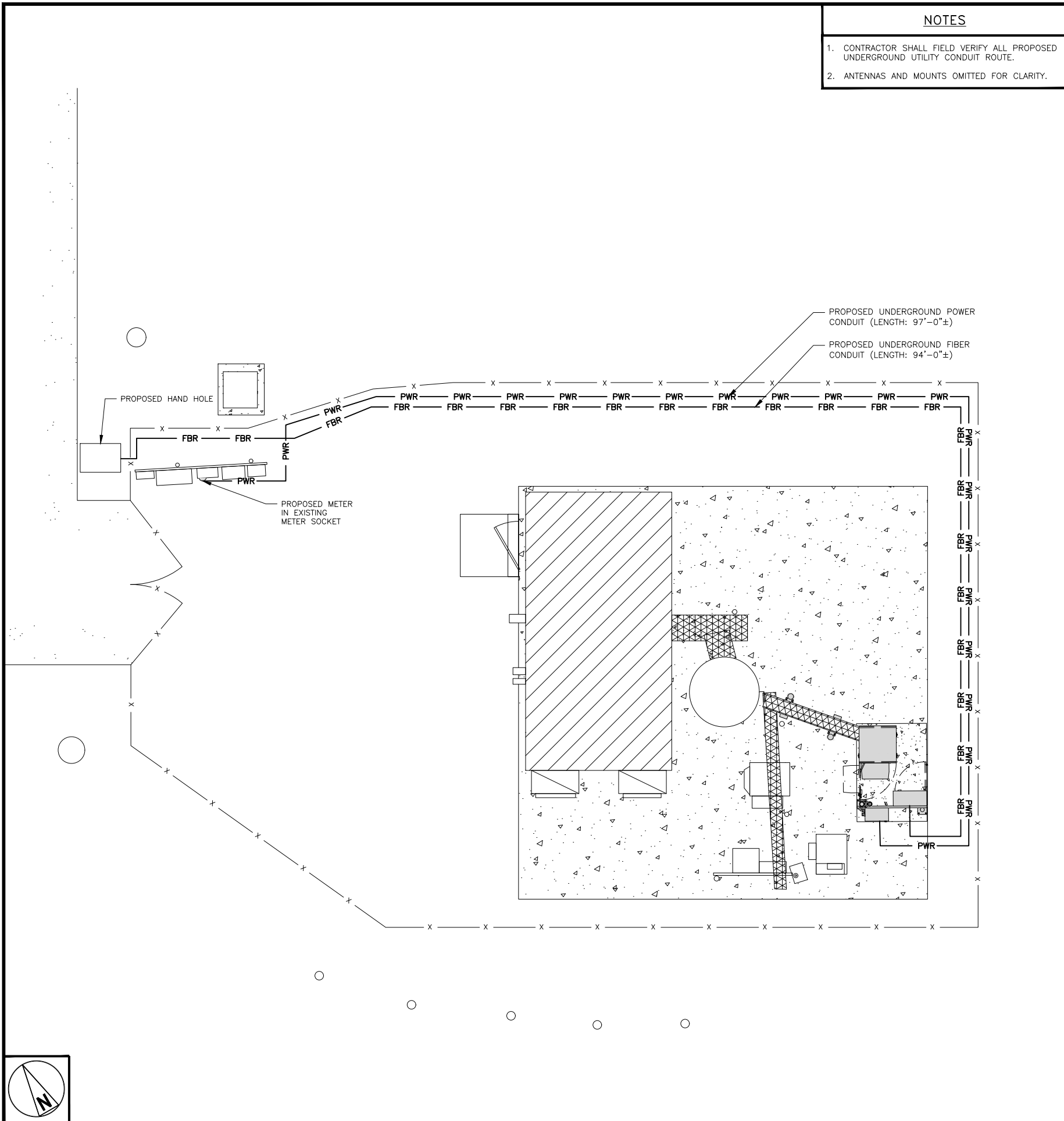
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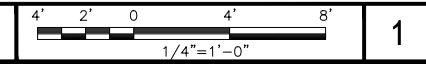
A-6



UTILITY ROUTE PLAN

NOTES

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



DC POWER WIRING SHALL BE COLOR CODED AT EACH END FOR IDENTIFYING +24V AND -48V CONDUCTORS. RED MARKINGS SHALL IDENTIFY +24V AND BLUE MARKINGS SHALL IDENTIFY -48V.

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

ELECTRICAL NOTES

NO SCALE 2



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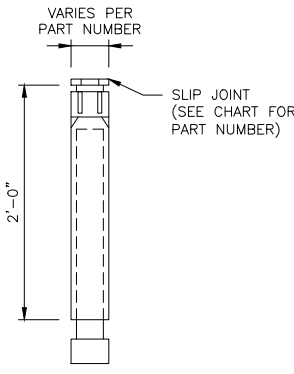
A&E PROJECT NUMBER
149487.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00137A
1214 FARMINGTON AVE
BRISTOL, CT 06010

SHEET TITLE
**ELECTRICAL/FIBER ROUTE
PLAN AND NOTES**

SHEET NUMBER
E-1

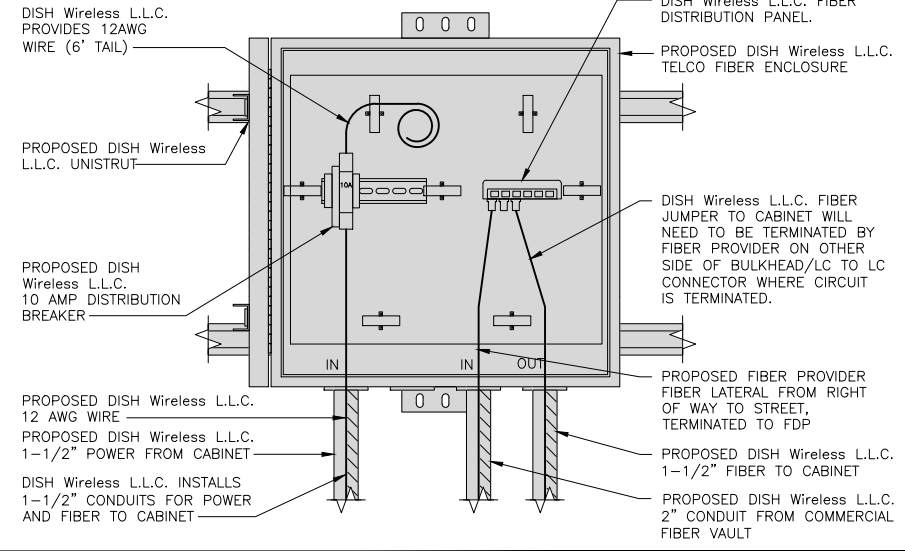
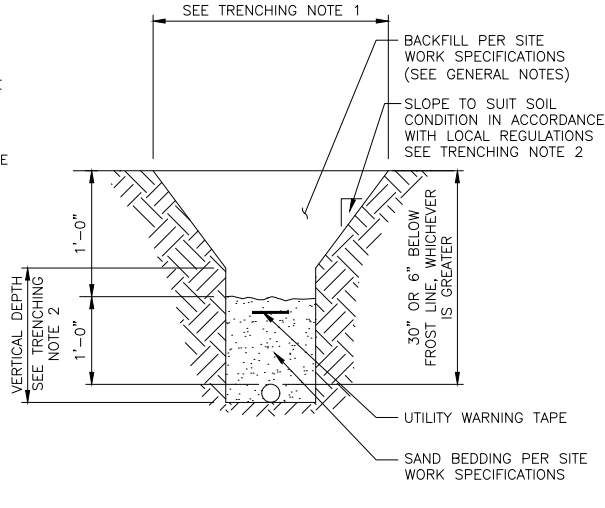
CARLON EXPANSION FITTINGS				
COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD CTN QTY.	TRAVEL LENGTH
E945D	E945DX	1/2"	20	4"
E945E	E945EX	3/4"	15	4"
E945F	E945FX	1"	10	4"
E945G	E945GX	1 1/4"	5	4"
E945H	E945HX	1 1/2"	5	4"
E945J	E945JX	2"	15	8"
E945K	E945KX	2 1/2"	10	8"
E945L	E945LX	3"	10	8"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



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

TRENCHING NOTES

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



EXPANSION JOINT DETAIL

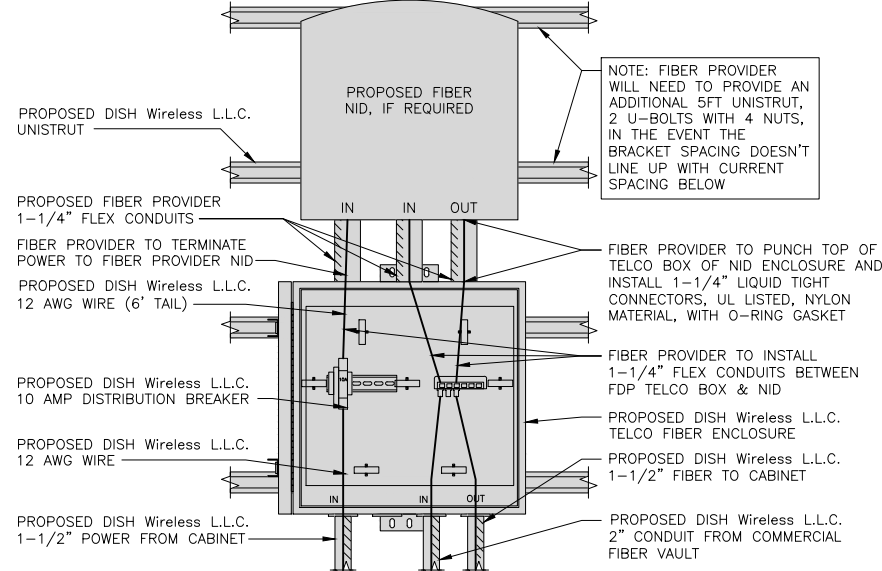
NO SCALE 1

TYPICAL UNDERGROUND TRENCH DETAIL

NO SCALE 2

DARK TELCO BOX – INTERIOR WIRING LAYOUT

NO SCALE 3



LIT TELCO BOX – INTERIOR WIRING LAYOUT (OPTIONAL)

NO SCALE 4

NOT USED

NO SCALE 5

NOT USED

NO SCALE 6

NOT USED

NO SCALE 7

NOT USED

NO SCALE 8

NOT USED

NO SCALE 9



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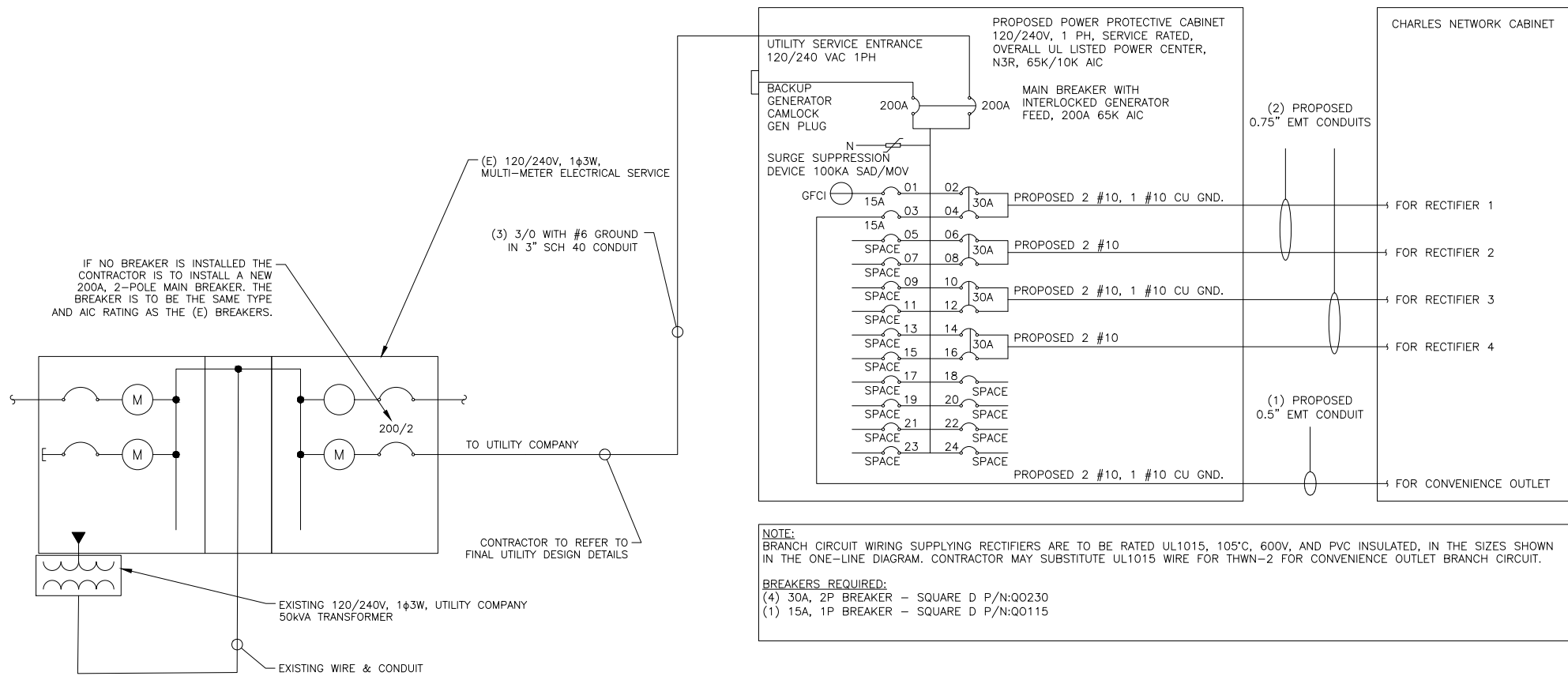
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DISH Wireless L.L.C.
PROJECT INFORMATION
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1214 FARMINGTON AVE
BRISTOL, CT 06010

SHEET TITLE
ELECTRICAL
DETAILS

SHEET NUMBER

E-2



NOTES

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

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

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

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

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

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

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

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

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

PPC ONE-LINE DIAGRAM

NO SCALE 1

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

PANEL SCHEDULE

NO SCALE 2

NOT USED

NO SCALE 3



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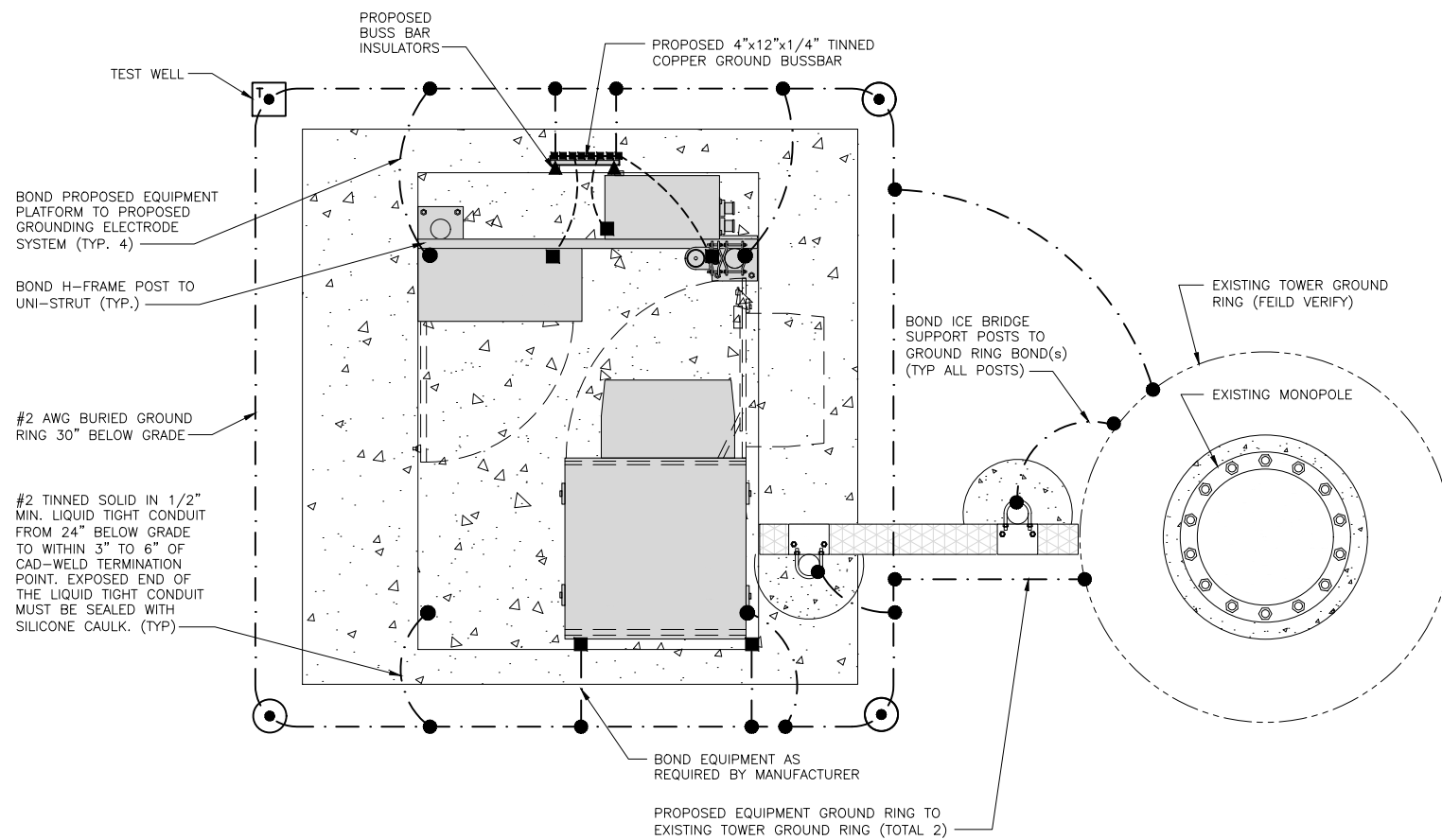
DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00137A
1214 FARMINGTON AVE
BRISTOL, CT 06010

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

SHEET NUMBER

E-3

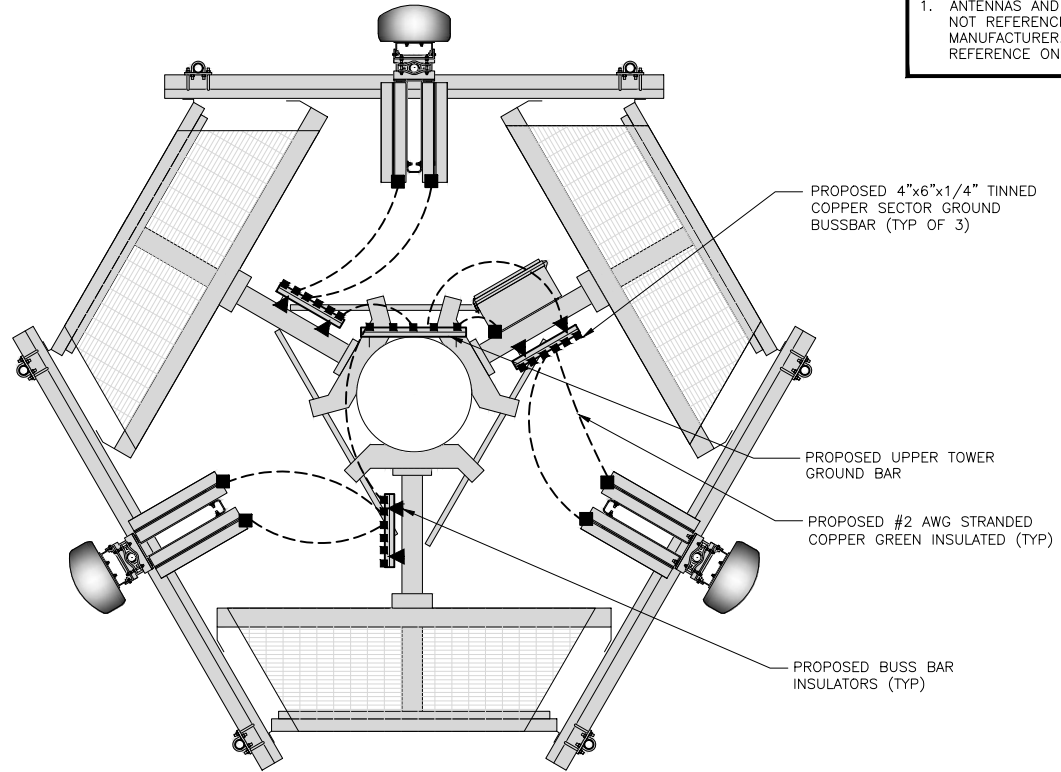


TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE 1

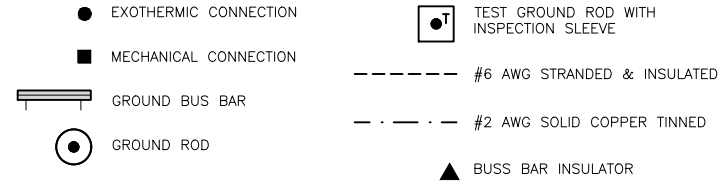
NOTES

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



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE 2



GROUNDING LEGEND

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

GROUNDING KEY NOTES

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

GROUNDING KEY NOTES

NO SCALE 3



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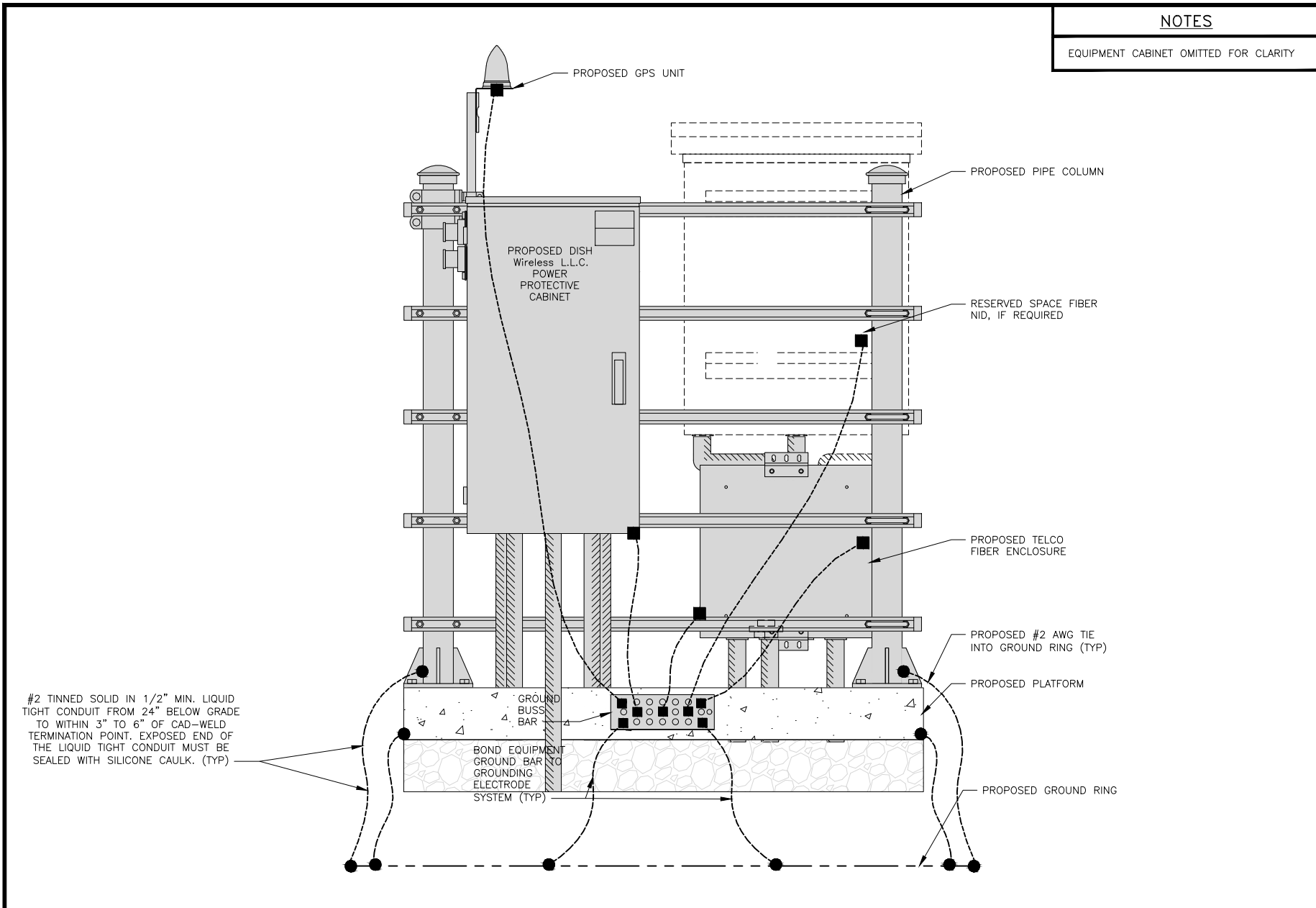
DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00137A
1214 FARMINGTON AVE
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SHEET TITLE
GROUNDING PLANS
AND NOTES

SHEET NUMBER

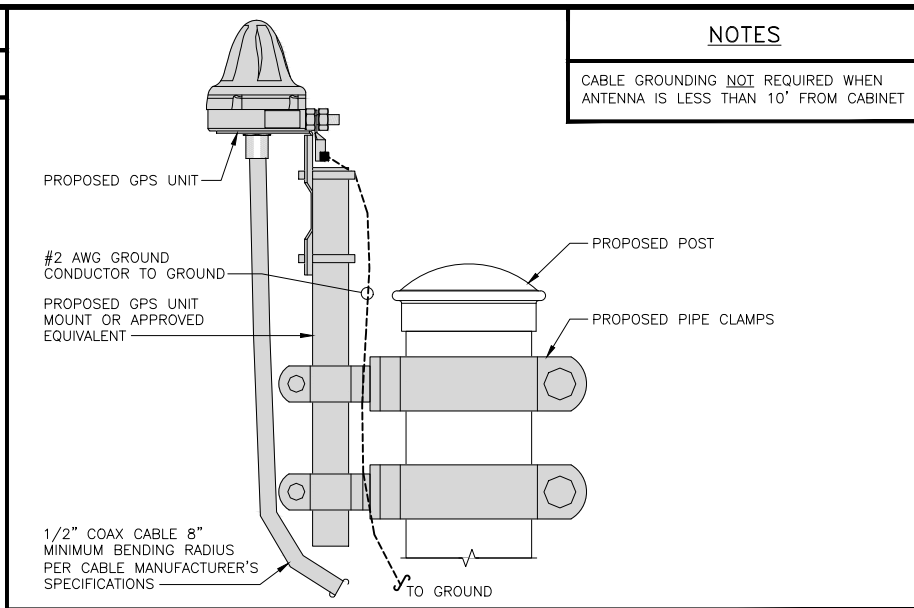
G-1



H-FRAME GROUNDING DETAIL

NO SCALE 1

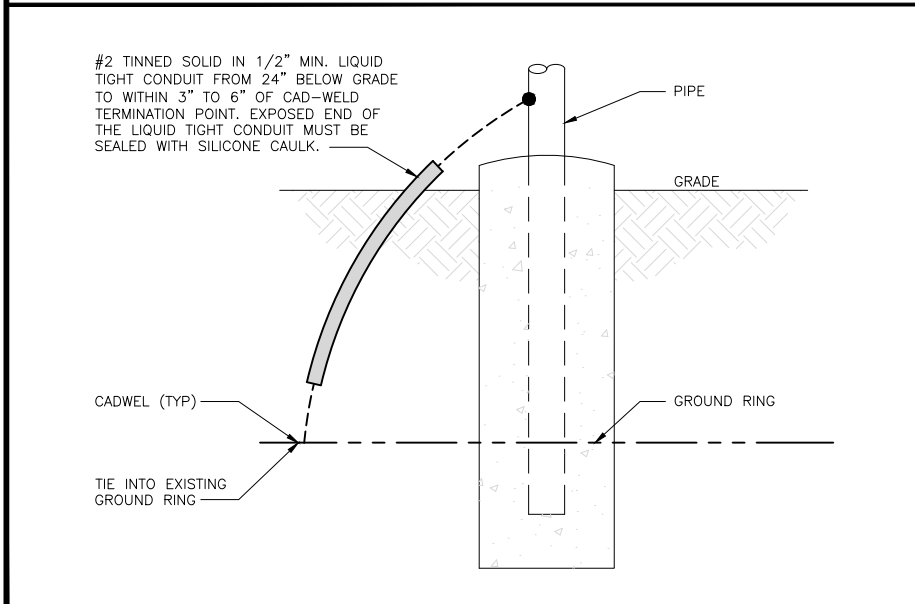
NOTES
EQUIPMENT CABINET OMITTED FOR CLARITY



TYPICAL GPS UNIT GROUNDING

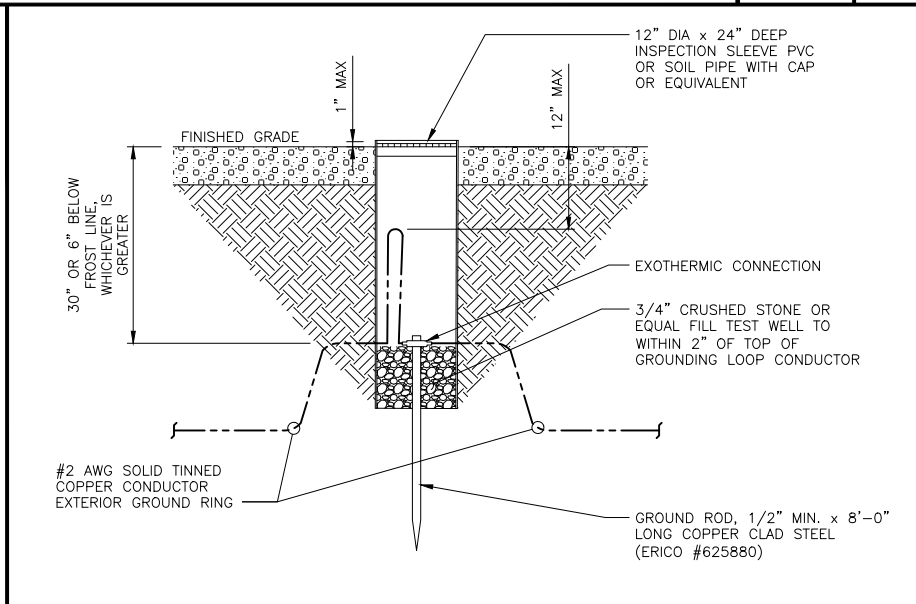
NO SCALE 2

NOTES
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET



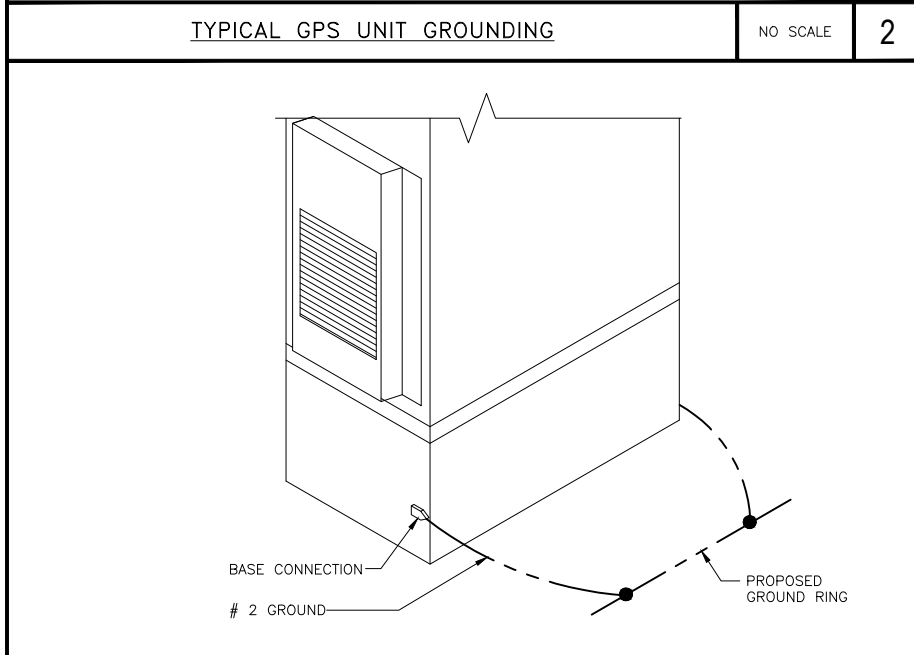
TRANSITIONING GROUND DETAIL

NO SCALE 4



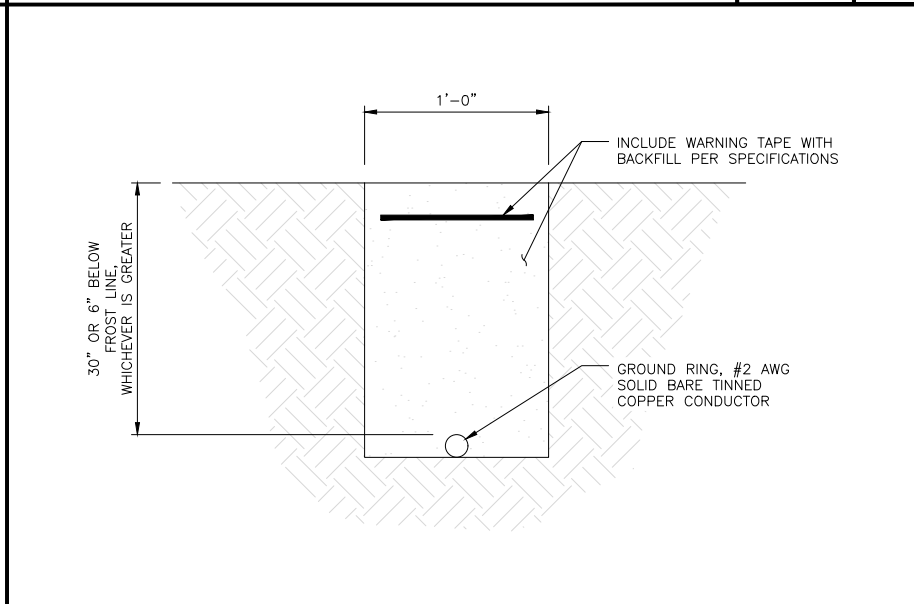
TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE

NO SCALE 5



OUTDOOR CABINET GROUNDING

NO SCALE 3



TYPICAL GROUND RING TRENCH

NO SCALE 6



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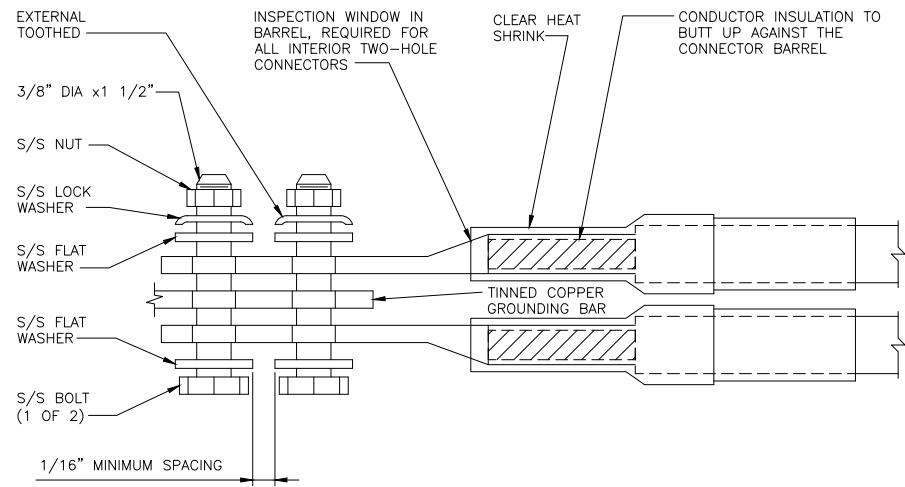
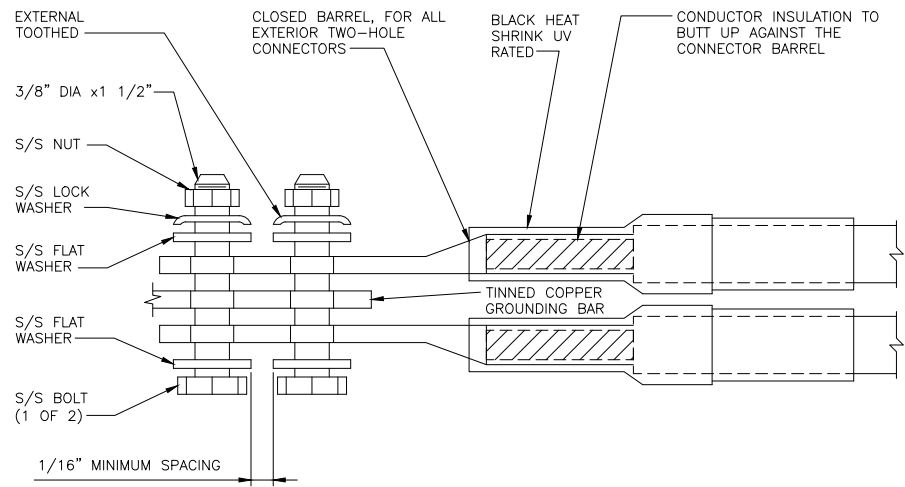
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SHEET TITLE
GROUNDING DETAILS

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

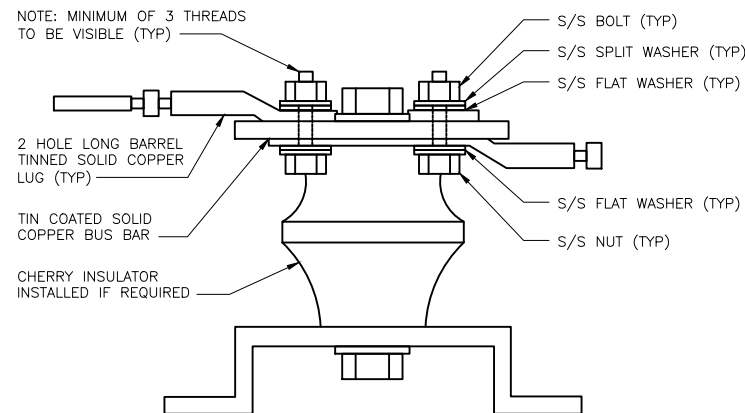
NO SCALE

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

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

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

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

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

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

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	BLUE
GREEN	GREEN	ORANGE
ORANGE	YELLOW	PURPLE
PURPLE		

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

FIBER JUMPERS TO RRHs

LOW-BAND RRH FIBER CABLES HAVE SECTOR STRIPE ONLY

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

POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY

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

RET MOTORS AT ANTENNAS

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

MICROWAVE RADIO LINKS

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

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

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

RF CABLE COLOR CODES

NO SCALE

1

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



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



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CDD	CDD	CDD

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

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REV	DATE	DESCRIPTION
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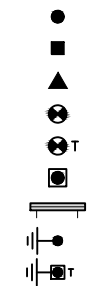
A&E PROJECT NUMBER
149487.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00137A
1214 FARMINGTON AVE
BRISTOL, CT 06010

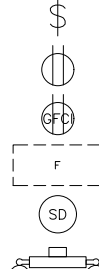
SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER
RF-1

EXOTHERMIC CONNECTION
 MECHANICAL CONNECTION
 BUSS BAR INSULATOR
 CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
 TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
 EXOTHERMIC WITH INSPECTION SLEEVE
 GROUNDING BAR
 GROUND ROD
 TEST GROUND ROD WITH INSPECTION SLEEVE



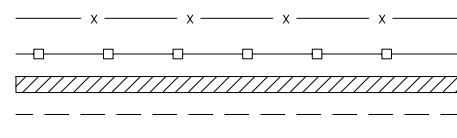
SINGLE POLE SWITCH
 DUPLEX RECEPTACLE
 DUPLEX GFCI RECEPTACLE
 FLUORESCENT LIGHTING FIXTURE (2) TWO LAMPS 48-T8
 SMOKE DETECTION (DC)
 EMERGENCY LIGHTING (DC)



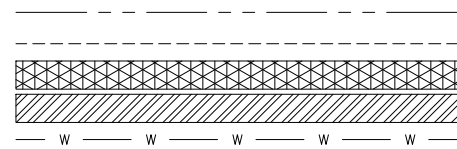
SECURITY LIGHT W/PHOTOCELL LITHONIA ALXW
 LED-1-25A400/51K-SR4-120-PE-DOBXTD



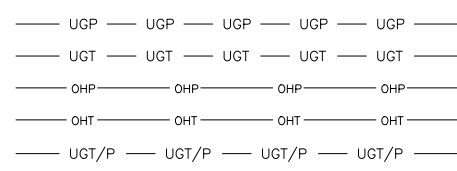
CHAIN LINK FENCE
 WOOD/WROUGHT IRON FENCE
 WALL STRUCTURE
 LEASE AREA



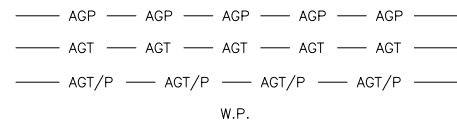
PROPERTY LINE (PL)
 SETBACKS
 ICE BRIDGE
 CABLE TRAY



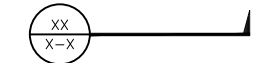
WATER LINE
 UNDERGROUND POWER
 UNDERGROUND TELCO
 OVERHEAD POWER
 OVERHEAD TELCO



UNDERGROUND TELCO/POWER
 ABOVE GROUND POWER
 ABOVE GROUND TELCO
 ABOVE GROUND TELCO/POWER
 WORKPOINT



SECTION REFERENCE



DETAIL REFERENCE



LEGEND

AB ANCHOR BOLT
 ABV ABOVE
 AC ALTERNATING CURRENT
 ADDL ADDITIONAL
 AFF ABOVE FINISHED FLOOR
 AFG ABOVE FINISHED GRADE
 AGL ABOVE GROUND LEVEL
 AIC AMPERAGE INTERRUPTION CAPACITY
 ALUM ALUMINUM
 ALT ALTERNATE
 ANT ANTENNA
 APPROX APPROXIMATE
 ARCH ARCHITECTURAL
 ATS AUTOMATIC TRANSFER SWITCH
 AWG AMERICAN WIRE GAUGE
 BATT BATTERY
 BLDG BUILDING
 BLK BLOCK
 BLKG BLOCKING
 BM BEAM
 BTC BARE TINNED COPPER CONDUCTOR
 BOF BOTTOM OF FOOTING
 CAB CABINET
 CANT CANTILEVERED
 CHG CHARGING
 CLG CEILING
 CLR CLEAR
 COL COLUMN
 COMM COMMON
 CONC CONCRETE
 CONSTR CONSTRUCTION
 DBL DOUBLE
 DC DIRECT CURRENT
 DEPT DEPARTMENT
 DF DOUGLAS FIR
 DIA DIAMETER
 DIAG DIAGONAL
 DIM DIMENSION
 DWG DRAWING
 DWL DOWEL
 EA EACH
 EC ELECTRICAL CONDUCTOR
 EL ELEVATION
 ELEC ELECTRICAL
 EMT ELECTRICAL METALLIC TUBING
 ENG ENGINEER
 EQ EQUAL
 EXP EXPANSION
 EXT EXTERIOR
 EW EACH WAY
 FAB FABRICATION
 FF FINISH FLOOR
 FG FINISH GRADE
 FIF FACILITY INTERFACE FRAME
 FIN FINISH(ED)
 FLR FLOOR
 FDN FOUNDATION
 FOC FACE OF CONCRETE
 FOM FACE OF MASONRY
 FOS FACE OF STUD
 FOW FACE OF WALL
 FS FINISH SURFACE
 FT FOOT
 FTG FOOTING
 GA GAUGE
 GEN GENERATOR
 GFCI GROUND FAULT CIRCUIT INTERRUPTER
 GLB GLUE LAMINATED BEAM
 GLV GALVANIZED
 GPS GLOBAL POSITIONING SYSTEM
 GND GROUND
 GSM GLOBAL SYSTEM FOR MOBILE
 HDG HOT DIPPED GALVANIZED
 HDR HEADER
 HGR HANGER
 HVAC HEAT/VENTILATION/AIR CONDITIONING
 HT HEIGHT
 IGR INTERIOR GROUND RING

IN INCH
 INT INTERIOR
 LB(S) POUND(S)
 LF LINEAR FEET
 LTE LONG TERM EVOLUTION
 MAS MASONRY
 MAX MAXIMUM
 MB MACHINE BOLT
 MECH MECHANICAL
 MFR MANUFACTURER
 MGB MASTER GROUND BAR
 MIN MINIMUM
 MISC MISCELLANEOUS
 MTL METAL
 MTS MANUAL TRANSFER SWITCH
 MW MICROWAVE
 NEC NATIONAL ELECTRIC CODE
 NM NEWTON METERS
 NO. NUMBER
 # NUMBER
 NTS NOT TO SCALE
 OC ON-CENTER
 OSHA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
 OPNG OPENING
 P/C PRECAST CONCRETE
 PCS PERSONAL COMMUNICATION SERVICES
 PCU PRIMARY CONTROL UNIT
 PRC PRIMARY RADIO CABINET
 PP POLARIZING PRESERVING
 PSF POUNDS PER SQUARE FOOT
 PSI POUNDS PER SQUARE INCH
 PT PRESSURE TREATED
 PWR POWER CABINET
 QTY QUANTITY
 RAD RADIUS
 RECT RECTIFIER
 REF REFERENCE
 REINF REINFORCEMENT
 REQ'D REQUIRED
 RET REMOTE ELECTRIC TILT
 RF RADIO FREQUENCY
 RMC RIGID METALLIC CONDUIT
 RRH REMOTE RADIO HEAD
 RRU REMOTE RADIO UNIT
 RWY RACEWAY
 SCH SCHEDULE
 SHT SHEET
 SIAD SMART INTEGRATED ACCESS DEVICE
 SIM SIMILAR
 SPEC SPECIFICATION
 SQ SQUARE
 SS STAINLESS STEEL
 STD STANDARD
 STL STEEL
 TEMP TEMPORARY
 THK THICKNESS
 TMA TOWER MOUNTED AMPLIFIER
 TN TOE NAIL
 TOA TOP OF ANTENNA
 TOC TOP OF CURB
 TOF TOP OF FOUNDATION
 TOP TOP OF PLATE (PARAPET)
 TOS TOP OF STEEL
 TOW TOP OF WALL
 TVSS TRANSIENT VOLTAGE SURGE SUPPRESSION
 TYP TYPICAL
 UG UNDERGROUND
 UL UNDERWRITERS LABORATORY
 UNO UNLESS NOTED OTHERWISE
 UMTS UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
 UPS UNINTERRUPTIBLE POWER SYSTEM (DC POWER PLANT)
 VIF VERIFIED IN FIELD
 W WIDE
 W/ WITH
 WD WOOD
 WP WEATHERPROOF
 WT WEIGHT

ABBREVIATIONS



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DISH Wireless L.L.C.
 PROJECT INFORMATION
 BOBDL00137A
 1214 FARMINGTON AVE
 BRISTOL, CT 06010

SHEET TITLE
 LEGEND AND ABBREVIATIONS

SHEET NUMBER
 GN-1

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

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RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	12/13/21	ISSUED FOR REVIEW
0	12/20/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149487.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00137A
1214 FARMINGTON AVE
BRISTOL, CT 06010

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-3

GROUNDING NOTES:

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



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