



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

June 2, 2022

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

RE: Tower Share Application
1605 Durham Road, Wallingford, CT 06492
Latitude: 41.469444
Longitude: -72.742222
Site #: CT01698-S_BOHVN00038A_SBA_DISH

Dear Ms. Bachman:

This letter and attachments are submitted on behalf of Dish Wireless LLC. Dish Wireless LLC plans to install antennas and related equipment to the tower site located at 1605 Durham Road, Wallingford, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900 MHz 5G antennas and six (6) RRUs, at the 110-foot level of the existing 162-foot monopole tower, one (1) Fiber cable will also be installed. Dish Wireless LLC equipment cabinets will be placed within a 7' x 5' lease area within the fenced compound. Included are plans by B+T, dated June 1, 2022, Exhibit C. Also included is a structural analysis prepared by TES, dated November 16, 2021, confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit D. The facility was originally approved by the Town of Wallingford Planning & Zoning Commission on December 13, 1999. Please see attached Exhibit A.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of Dish Wireless LLC intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Mayor William Dickinson and Amy Torre, Zoning Enforcement Officer for the Town of Wallingford, as well as the tower owner (SBA) and property owner (Tilcon Minerals Inc.).

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

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the existing tower is 162-feet and the Dish Wireless LLC antennas will be located at a center line height of 110-feet.
2. The proposed modifications will not result in an increase of the site boundary as depicted on the attached site plan.



NSS **NORTHEAST**
SITE SOLUTIONS

Turnkey Wireless Development

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed local and state criteria. The incremental effect of the proposed changes will be negligent.

4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. The combined site operations will result in a total power density of 16.26% as evidenced by Exhibit F.

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

A. Technical Feasibility. The existing monopole has been deemed structurally capable of supporting Dish Wireless LLC proposed loading. The structural analysis is included as Exhibit D.

B. Legal Feasibility. As referenced above, C.G.S. 16-50aa has been authorized to issue orders approving the shared use of an existing tower such as this monopole tower in Wallingford. Under the authority granted to the Council, an order of the Council approving the requested shared use would permit Dish Wireless LLC to obtain a building permit for the proposed installation. Further, a Letter of Authorization is included as Exhibit G, authorizing Dish Wireless LLC to file this application for shared use.

C. Environmental Feasibility. The proposed shared use of this facility would have a minimal environmental impact. The installation of Dish Wireless LLC equipment at the 110-foot level of the existing 162-foot tower would have an insignificant visual impact on the area around the tower. Dish Wireless LLC ground equipment would be installed within the existing facility compound. Dish Wireless LLC shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit F, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.

D. Economic Feasibility. Dish Wireless LLC will be entering into an agreement with the owner of this facility to mutually agreeable terms. As previously mentioned, the Letter of Authorization has been provided by the owner to assist Dish Wireless LLC with this tower sharing application.

E. Public Safety Concerns. As discussed above, the tower is structurally capable of supporting Dish Wireless LLC proposed loading. Dish Wireless LLC is not aware of any public safety concerns relative to the proposed sharing of the existing tower. Dish Wireless LLC intentions of providing new and improved wireless service through the shared use of this facility is expected to enhance the safety and welfare of local residents and individuals traveling through Wallingford.

Sincerely,

Denise Sabo

Denise Sabo

Mobile: 203-435-3640

Fax: 413-521-0558

Office: 4 Angela's Way, Burlington CT 06013

Email: denise@northeastsitesolutions.com



NSS **NORTHEAST**
SITE SOLUTIONS
Turnkey Wireless Development

Attachments

Cc: Mayor William Dickinson
Wallingford Town Hall
45 South Main Street
Wallingford, CT 06492

Amy Torre, Zoning Enforcement Officer
Wallingford Town Hall
45 South Main Street
Wallingford, CT 06492

Tilcon Minerals Inc. – Property Owner
PO Box 310903
Newington, CT 06131-0903

SBA - Tower Owner

Exhibit A

Original Facility Approval



Town of Wallingford, Connecticut

CT 1298

WILLIAM E. AUSTIN
CHAIRMAN-PLANNING & ZONING COMMISSION
LINDA A. BUSH, AICP *Zoning*
TOWN PLANNER
WALLINGFORD TOWN HALL
45 SOUTH MAIN STREET
WALLINGFORD, CT 06492
TELEPHONE (203) 294-2090

CERTIFIED LETTER

#Z 483 770 392

December 16, 1999

Scanned

Ms. Esther McNany
SBA, Inc./Sprint PCS
125 Shaw Street
New London, CT 06335

RE: Special Permit #418-99
1605 Durham Road

Dear Ms. McNany:

Enclosed is a Legal Notice of Action taken by the Planning and Zoning Commission at their meeting held on December 13, 1999, on the above-referenced application.

Your application for:

A 165 ft. telecommunications tower

has been approved with the conditions listed on the enclosed Zoning Permit. A Special Permit is also enclosed.

A \$10.00 fee is required for the filing of each Special Permit on the Land Records. Please make your check payable to the "Town Clerk" and forward to this office. Also forward to this office two (2) copies of your final plans.

Should you have any questions regarding this matter, please contact this office.

Sincerely,

Thomas M. Talbot
Assistant Town Planner

Enclosures
TMT:ss



Town of Wallingford, Connecticut

418-99

ZONING PERMIT

DATE: December 16, 1999

ISSUED TO:

NAME SBA, Inc./Sprint PCS

ADDRESS 125 Shaw Street - New London, CT 06335

ISSUED FOR: 165 ft. telecommunications tower

LOCATION OF PREMISES: 1605 Durham Road

CONDITIONS OF PERMIT:

1. Comments of the Assistant Manager of the Electric Division, dated 11/24/99.
2. *Posting of \$1,000.00 sedimentation and erosion control bond.*
3. Color of proposed facility to be battleship gray.
4. No landscaping required as per recommendation of the Town Planner.
5. Telecommunications tower to be constructed to support at least four (4) other cell locations.
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____

ALL WORK CONNECTED WITH A SITE PLAN APPROVAL SHALL BE COMPLETED WITHIN FIVE YEARS AFTER SAID APPROVAL.

WALLINGFORD PLANNING AND ZONING COMMISSION

BY: [Signature]
Assistant Town Planner

* BUILDING PERMIT WILL NOT BE ISSUED UNTIL CONDITIONS ARE MET.

Exhibit B

Property Card

CURRENT OWNER				TOPO.	UTILITIES	STRT./ROAD	LOCATION	CURRENT ASSESSMENT				
TILCON MINERALS INC				2 Above Street	2 Public Water	1 Paved	2 Suburban	Description	Code	Appraised Value	Assessed Value	6148 WALLINGFORD, CT
301 HARTFORD AVE PO BOX 310903 NEWINGTON, CT 06131-0903 Additional Owners:				7 Swampy				IND LAND	3-1	1,504,900	1,053,400	
				8 Ledge				IND BLDG	3-2	561,600	393,200	
				SUPPLEMENTAL DATA				IND IMPR	3-3	1,337,100	936,100	
Other ID: 203002010 Census: 1760 Old MBLU TC MAP # TC MAP # Record Lot GIS ID: 98/3				P/Z MAP # ENG MAP # Easement Town Line? TL1 IND PARKS ASSOC PID#		UTL LAND	4-1	200,000	140,000	Total: 3,603,600 / 2,522,700		VISION

RECORD OF OWNERSHIP		BK-VOL/PAGE	SALE DATE	q/u	v/i	SALE PRICE	V.C.	PREVIOUS ASSESSMENTS (HISTORY)								
TILCON MINERALS INC		507/ 608	07/30/1981			0		Yr.	Code	Assessed Value	Yr.	Code	Assessed Value	Yr.	Code	Assessed Value
								2018	3-1	1,053,400	2017	3-1	1,053,400	2016	3-1	1,053,400
								2018	3-2	393,200	2017	3-2	393,200	2016	3-2	393,200
								2018	3-3	936,100	2017	3-3	936,100	2016	3-3	936,100
								2018	4-1	140,000	2017	4-1	140,000	2016	4-1	140,000
								Total:		2,522,700	Total:		2,522,700	Total:		2,522,700

EXEMPTIONS				OTHER ASSESSMENTS				APPRAISED VALUE SUMMARY				
Year	Type	Description	Amount	Code	Description	Number	Amount	Comm. Int.	This signature acknowledges a visit by a Data Collector or Assessor			
Total:								Appraised Bldg. Value (Card) 181,400				
								Appraised XF (B) Value (Bldg) 9,900				
								Appraised OB (L) Value (Bldg) 1,209,300				
								Appraised Land Value (Bldg) 1,704,900				
								Special Land Value 0				
								Total Appraised Parcel Value 3,603,600				
								Valuation Method: C				
								Adjustment: 0				
								Net Total Appraised Parcel Value 3,603,600				

ASSESSING NEIGHBORHOOD			NOTES		
NBHD/ SUB	NBHD Name	Street Index Name	Tracing	Batch	
I3/A					

NOTES

COURT JUDGEMENT 1/21/04
SEE NO. CV-02-0464833S
PERMIT 19378-EQUIPMENT BLDG & PERMIT
17813-TRUCK SCALE ASSESSED AS P/P
PERMIT 22849-NEW TANKS & PUMPS ASSESSED AS PERSONAL PROPERTY

BUILDING PERMIT RECORD										VISIT/ CHANGE HISTORY					
Permit ID	Issue Date	Type	Description	Amount	Insp. Date	% Comp.	Date Comp.	Comments	Date	Type	IS	ID	Cd.	Purpose/Result	
22849	06/17/2008	CM	Commercial	26,200	04/08/2009	100	04/08/2009	storage tanks & pads	08/14/2015	07	7	KC	19	Map Correction-No Value	
21442	02/28/2007	CM	Commercial	135,000	05/14/2007	100	05/14/2007	Machinery Foundations	01/04/2011			DT	40	No change	
19378	07/08/2005	CM	Commercial	100,000	09/28/2005	100	09/28/2005	New Equipment Room (105/20/2010		03		DT	29	Field Review	
17813	05/21/2004	CM	Commercial	26,200	09/28/2005	100	09/28/2005	Truck Scale/1000 gal Sep	11/25/2009	03		TH	00	Measur+Listed	
17568	03/26/2004	CM	Commercial	53,488	06/28/2004	100	06/14/2004	New Bldg-Test Lab 15x2	04/08/2009	02		DH	63	Permit Check - No Measu	
17568	03/24/2004	CC	C of C	0	06/28/2004	100	06/14/2004	Certificate of Completion							
16621	06/11/2003	CM	Commercial	18,900	07/25/2003	100	07/25/2003	Footings for Conveyor							

LAND LINE VALUATION SECTION																			
B #	Use Code	Use Description	Zone	D	Front	Depth	Units	Unit Price	I. Factor	S.A.	Acre Disc	C. Factor	ST. Idx	Adj.	Notes- Adj	Special Pricing	S Adj Fact	Adj. Unit Price	Land Value
1	4100	SAND&GRAVL M96	RU40				43,560 SF	2.76	1.0000	C	1.0000	1.00	C50	0.75			1.00	2.07	90,200
1	4100	SAND&GRAVL M96	RU40				10.92 AC	120,200.00	1.0000	0	1.0000	0.40	C50	0.75			1.00	36,060.00	393,800
1	4100	SAND&GRAVL M96	RU40				255.22 AC	10,000.00	1.0000	0	1.0000	0.40		0.00			1.00	4,000.00	1,020,900
1	4310	TEL REL TW M96	RU40				1.00 BL	200,000.00	1.0000	0	1.0000	1.00		0.00	3500 SQ FT		1.00	200,000.00	200,000
1	4310	TEL REL TW M96					3,500 SF	0.00	1.0000	0	1.0000	1.00		0.00	CELL SITE AREA		.00	0.00	0
Total Card Land Units: 267.22 AC Parcel Total Land Area: 267.22 AC																		Total Land Value:	1,704,900

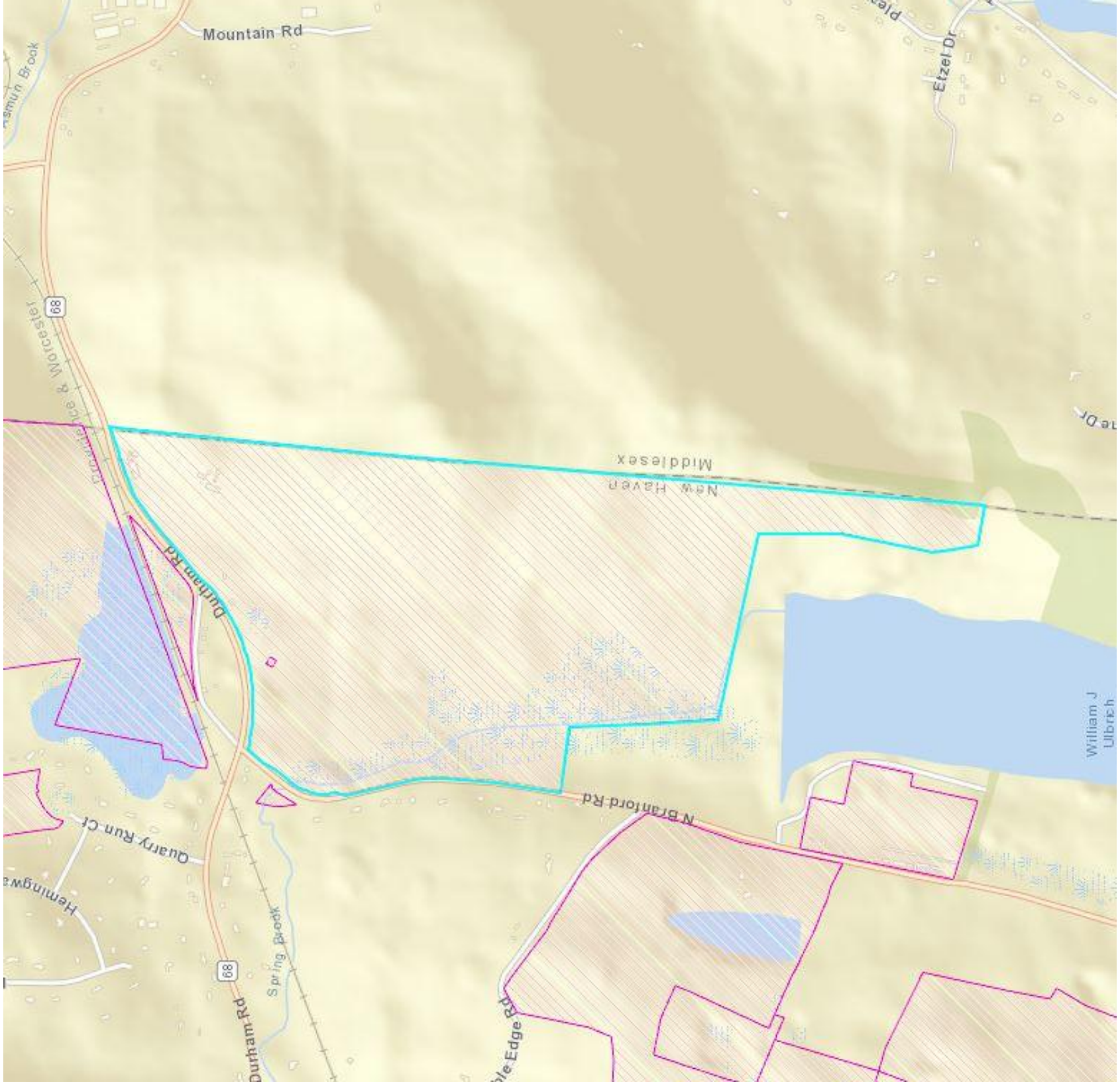


Exhibit C

Construction Drawings



DISH Wireless L.L.C. SITE ID:

BOHVN00038A

DISH Wireless L.L.C. SITE ADDRESS:

**1605 DURHAM RD, CT ROUTE 68
WALLINGFORD, CT 06492**

SCOPE OF WORK

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

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

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

SITE INFORMATION

PROPERTY OWNER: TILCON MINERAL, INC.
ADDRESS: P.O. BOX 32411
HARTFORD, CT 06150

TOWER TYPE: MONOPOLE

TOWER CO SITE ID: CT01698-S

TOWER APP NUMBER: 168273

COUNTY: NEW HAVEN

LATITUDE (NAD 83): 41° 28' 10.47" N
41.46957433

LONGITUDE (NAD 83): 72° 44' 32.1" W
-72.74224967

ZONING JURISDICTION: TEL REL TW M96

ZONING DISTRICT: 140

PARCEL NUMBER: 98/3/4

OCCUPANCY GROUP: U

CONSTRUCTION TYPE: II-B

POWER COMPANY: WALLINGFORD ELECTRIC

TELEPHONE COMPANY: AT&T

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: DAVE EVANS
devans@sbasite.com

CONST. MANAGER: CHAD WILCOX
chad.wilcox@dish.com

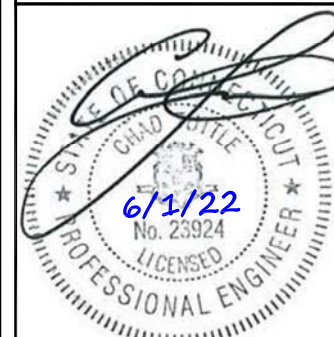
RF ENGINEER: JARED ROBINSON
jared.robinson@dish.com



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



8051 CONGRESS AVENUE
BOCA RATON, FL 33487



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

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

DRAWN BY: ANS
CHECKED BY: RMC
APPROVED BY: BLJ

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	11/11/21	ISSUED FOR REVIEW
0	5/23/22	ISSUED FOR CONSTRUCTION
1	6/1/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149433.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00038A
1605 DURHAM ROAD,
CT ROUTE 68
WALLINGFORD, CT 06492

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 BRADLEY INTERNATIONAL AIRPORT:
HEAD NORTH TOWARD BRADLEY INTERNATIONAL AIRPORT. SLIGHT LEFT ONTO BRADLEY INTERNATIONAL AIRPORT. CONTINUE STRAIGHT. CONTINUE ONTO BRADLEY INTERNATIONAL AIRPORT CON. CONTINUE ONTO CT-20 E/ BRADLEY INTERNATIONAL AIRPORT CON. TAKE THE EXIT ONTO I-91 S TOWARD HARTFORD. KEEP RIGHT TO STAY ON I-91 S. TAKE EXIT 15 FOR CT-68 TOWARD DURHAM/YALESVILLE. USE THE LEFT 2 LANES TO TURN LEFT ONTO CT-68 E. TURN LEFT ONTO DURHAM RD. TURN RIGHT AT TILCON AND FOLLOW ROAD AROUND TO REEDS GAP HELIPORT ON THE RIGHT. ARRIVE AT BOHVN00038A.

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

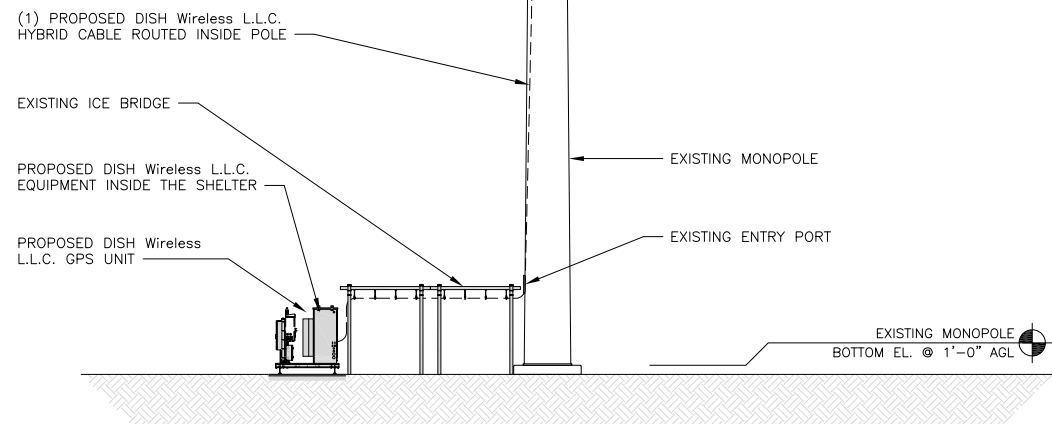
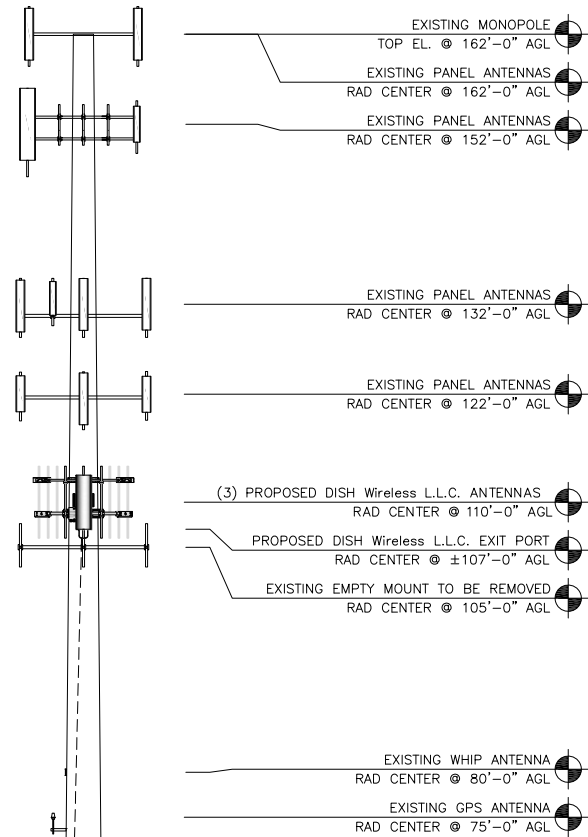
THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE. NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE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

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

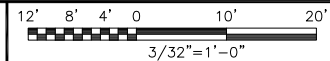
CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON THE JOB SITE, AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

NOTES

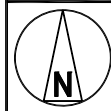
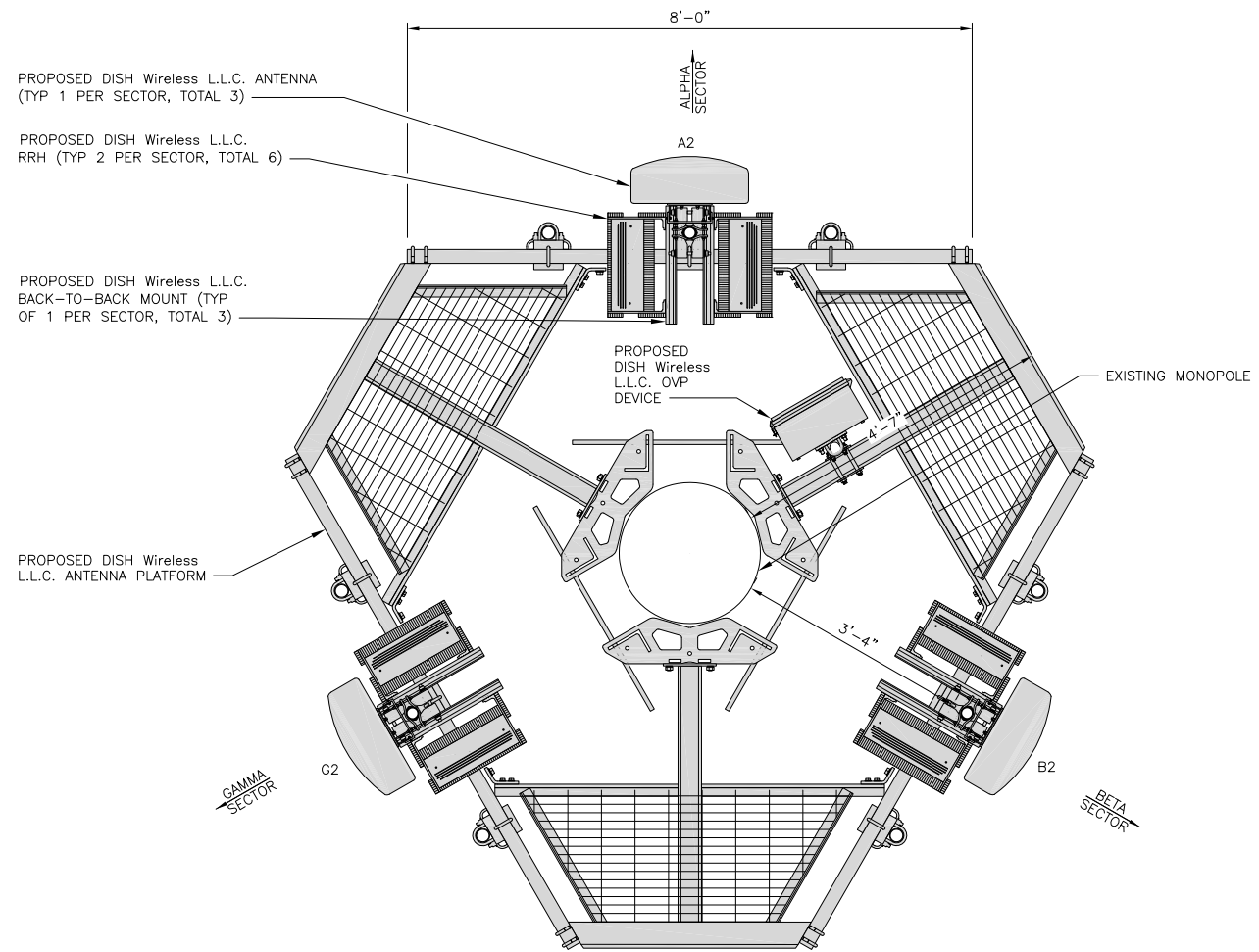
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



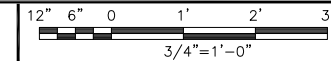
PROPOSED NORTH-EAST ELEVATION



1



ANTENNA LAYOUT



2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE	
		EXISTING OR PROPOSED	MANUFACTURER - MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH	
ALPHA	A2	PROPOSED	JMA WIRELESS-MX08FR0665-21	5G	72.0" x 20.0"	0°	110'-0"	(1) HIGH-CAPACITY HYBRID CABLE (175' LONG)	
BETA	B2	PROPOSED	JMA WIRELESS-MX08FR0665-21	5G	72.0" x 20.0"	120°	110'-0"		
GAMMA	G2	PROPOSED	JMA WIRELESS-MX08FR0665-21	5G	72.0" x 20.0"	240°	110'-0"		

SECTOR	POSITION	RRH		NOTES
		MANUFACTURER - MODEL NUMBER	TECHNOLOGY	
ALPHA	A2	FUJITSU - TA08025-B605	5G	1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS. 2. ANTENNA AND RRH MODELS MAY CHANGE DUE TO EQUIPMENT AVAILABILITY. ALL EQUIPMENT CHANGES MUST BE APPROVED AND REMAIN IN COMPLIANCE WITH THE PROPOSED DESIGN AND STRUCTURAL ANALYSES.
	A2	FUJITSU - TA08025-B604	5G	
BETA	B2	FUJITSU - TA08025-B605	5G	
	B2	FUJITSU - TA08025-B604	5G	
GAMMA	G2	FUJITSU - TA08025-B605	5G	
	G2	FUJITSU - TA08025-B604	5G	

ANTENNA SCHEDULE

NO SCALE

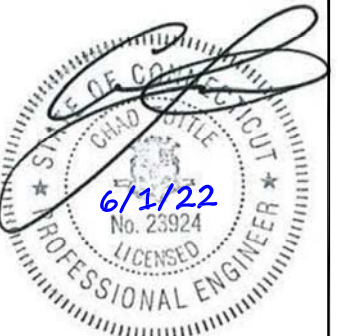
3



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DISH Wireless L.L.C.
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BOHVN00038A
1605 DURHAM ROAD,
CT ROUTE 68
WALLINGFORD, CT 06492

SHEET TITLE
ELEVATION, ANTENNA
LAYOUT AND SCHEDULE

SHEET NUMBER

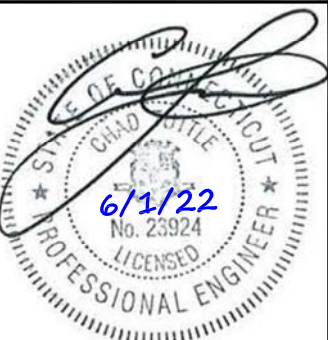
A-2



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



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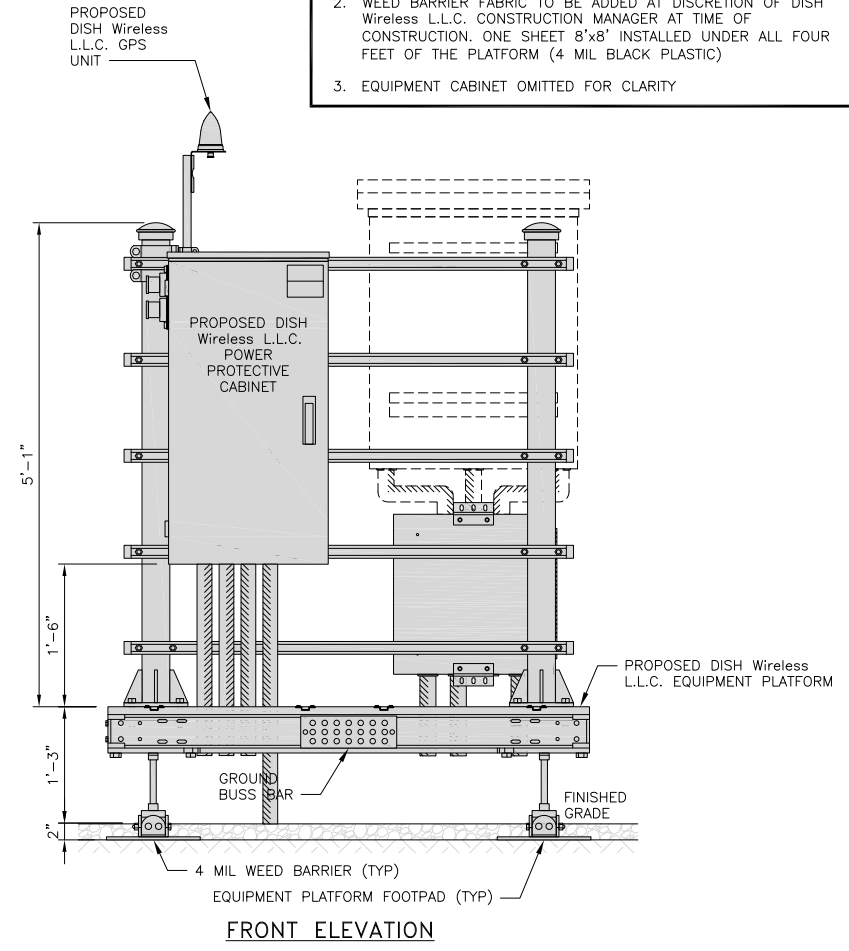
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SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

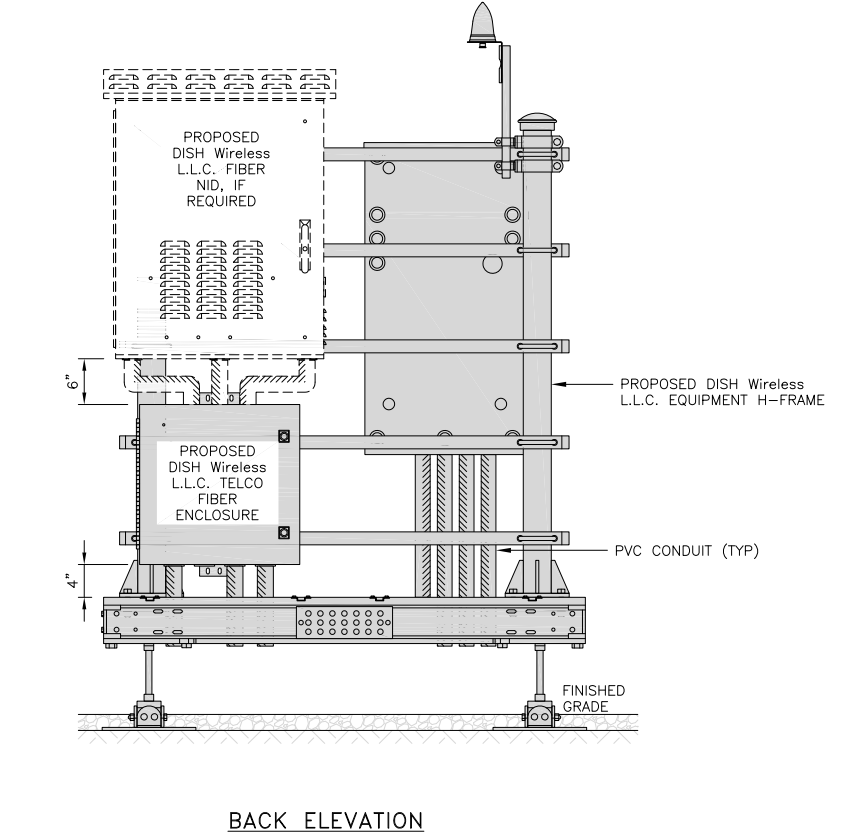
SHEET NUMBER
A-3

NOTES

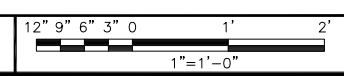
- CONTRACTOR TO BURY PLATFORM FEET WITH A MINIMUM OF 2" OF FILL PER EXISTING SITE SURFACE
- WEED BARRIER FABRIC TO BE ADDED AT DISCRETION OF DISH Wireless L.L.C. CONSTRUCTION MANAGER AT TIME OF CONSTRUCTION. ONE SHEET 8'x8' INSTALLED UNDER ALL FOUR FEET OF THE PLATFORM (4 MIL BLACK PLASTIC)
- EQUIPMENT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



FRONT ELEVATION

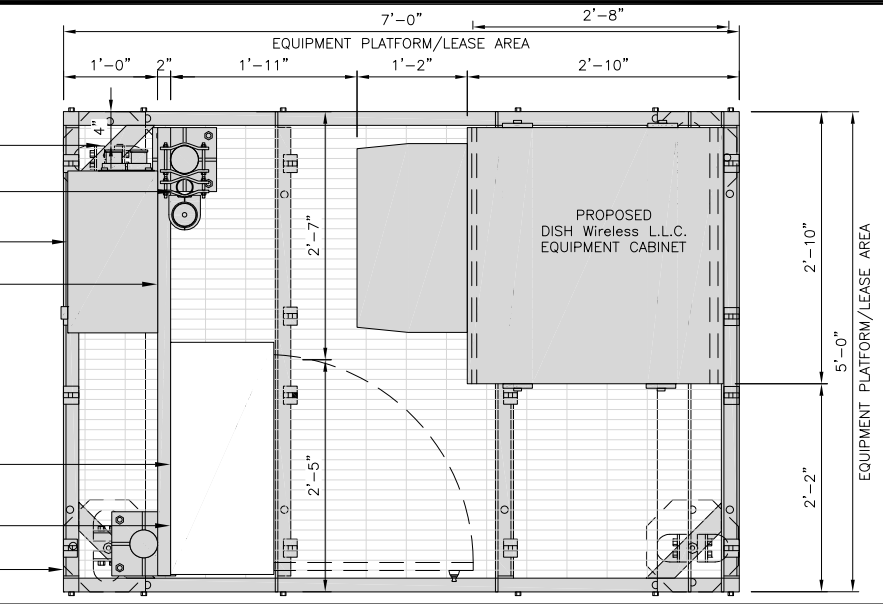


BACK ELEVATION

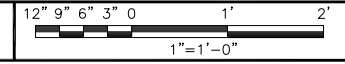


5

H-FRAME EQUIPMENT ELEVATION



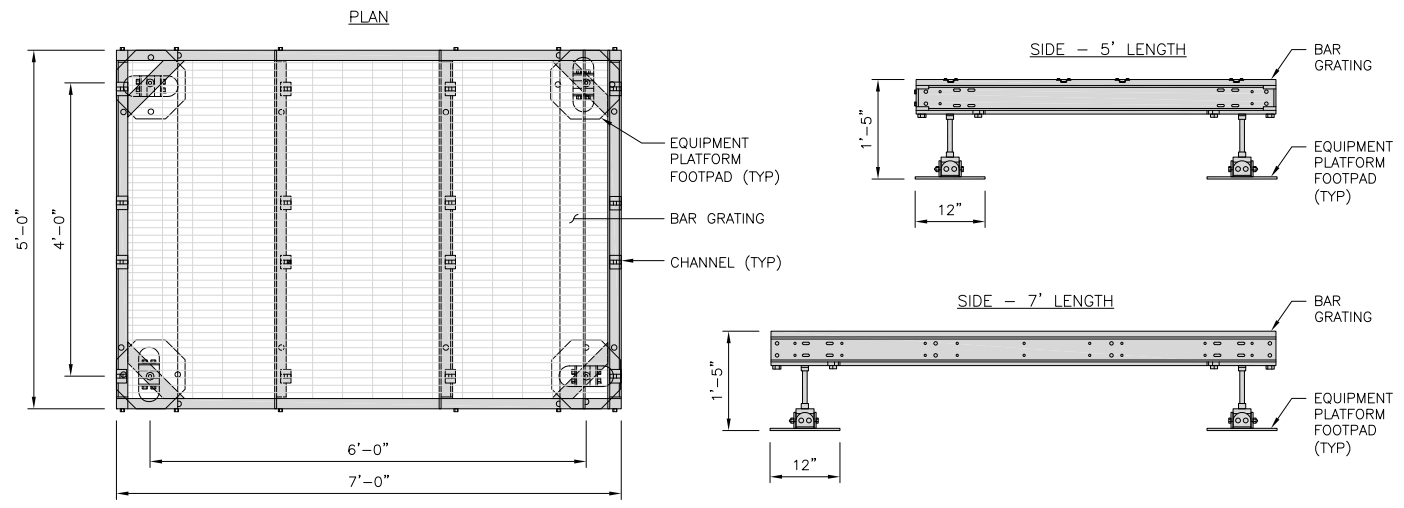
PLATFORM EQUIPMENT PLAN



1

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

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

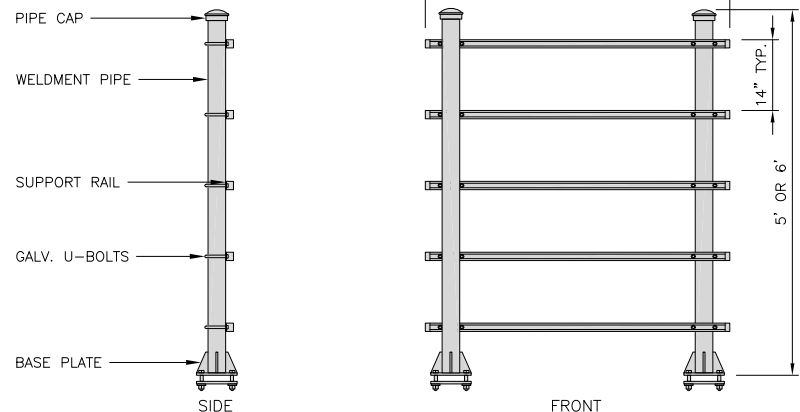


PLATFORM DETAIL

NO SCALE **2**

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

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



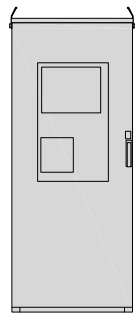
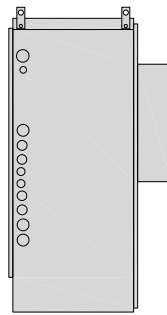
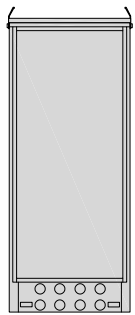
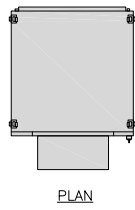
H-FRAME DETAIL

NO SCALE **3**

NOT USED

NO SCALE **4**

ENERSYS HVAC 2000005995	
DIMENSIONS (HxWxD)	73"x30"x32"
POWER SYSTEM	-48V ALPHA/600A
HVAC	600W
TOTAL WEIGHT (EMPTY)	371 lbs



BACK

SIDE

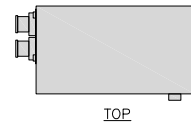
FRONT

CABINET DETAIL

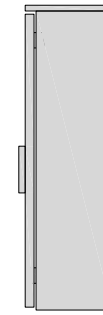
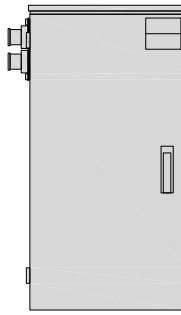
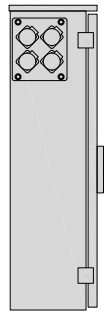
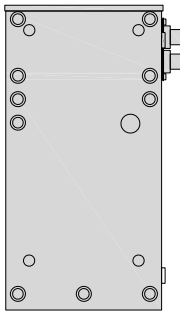
NO SCALE

1

RAYCAP PPC RDIAC-2465-P-240-MTS	
ENCLOSURE DIMENSIONS (HxWxD):	39"x22.855"x12.593
WEIGHT:	80 lbs
OPERATING AC VOLTAGE	240/120 1 PHASE 3W+G



TOP



BACK

SIDE

FRONT

SIDE

POWER PROTECTION CABINET (PPC) DETAIL

NO SCALE

2

NOT USED

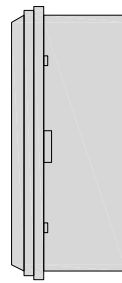
NO SCALE

3

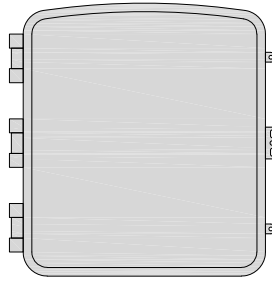
CIENA 3931 FIBER NID ENCLOSURE	
DIMENSIONS (HxWxD)	17"x16.8"x7"
WEIGHT	28.6 lbs



TOP



SIDE



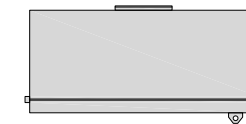
FRONT

FIBER NID ENCLOSURE DETAIL

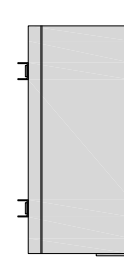
NO SCALE

5

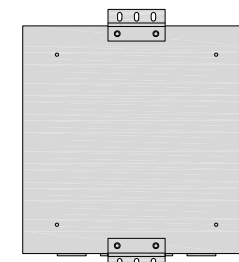
CHARLES CFIT-PF2020DSH1 FIBER TELCO ENCLOSURE	
ENCLOSURE DIMS (HxWxD)	20"x20"x9"
ENCLOSURE WEIGHT	20 lbs
MOUNTING	WALL
COMPLIANCE	TYPE 4



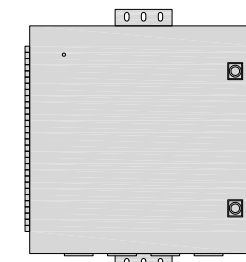
FRONT



SIDE



BACK



FRONT

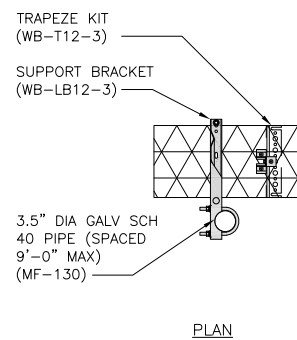
FIBER TELCO ENCLOSURE DETAIL

NO SCALE

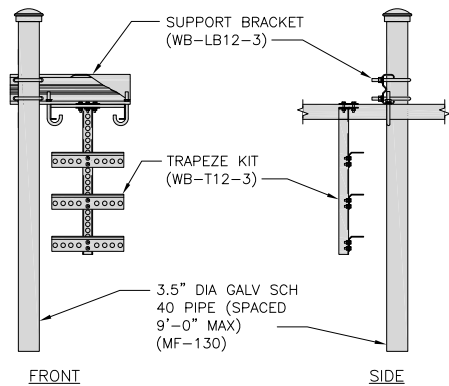
6

COMMSCOPE WB-K110-B WAVEGUIDE BRIDGE KIT	
DIMENSIONS (HxL)	160"x10"
WEIGHT/ VOLUME	325.0 LBS
CABLE RUN (QTY)	12

INCLUDED PRODUCTS:	WB-T12-3 TRAPEZE KIT, 3 RUNGS
	WB-LB12-3 SUPPORT BRACKET
	MF-130 DIRECT BURIAL PIPE COLUMN, 13'-4"



PLAN



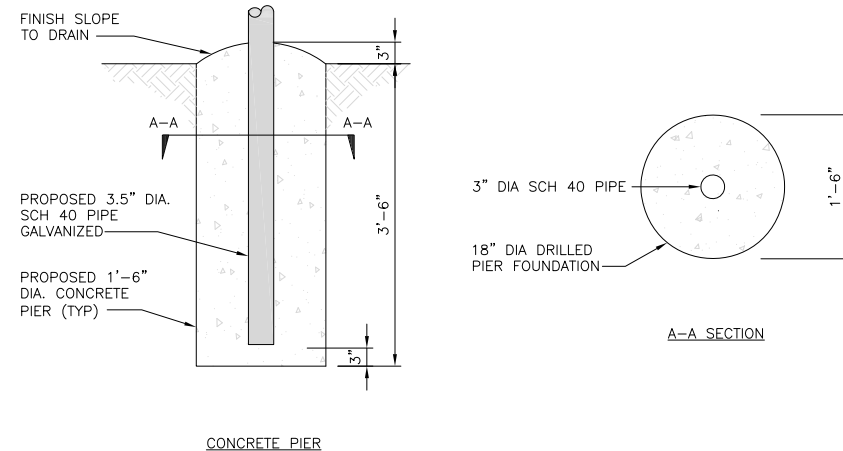
FRONT

SIDE

ICE BRIDGE DETAIL

NO SCALE

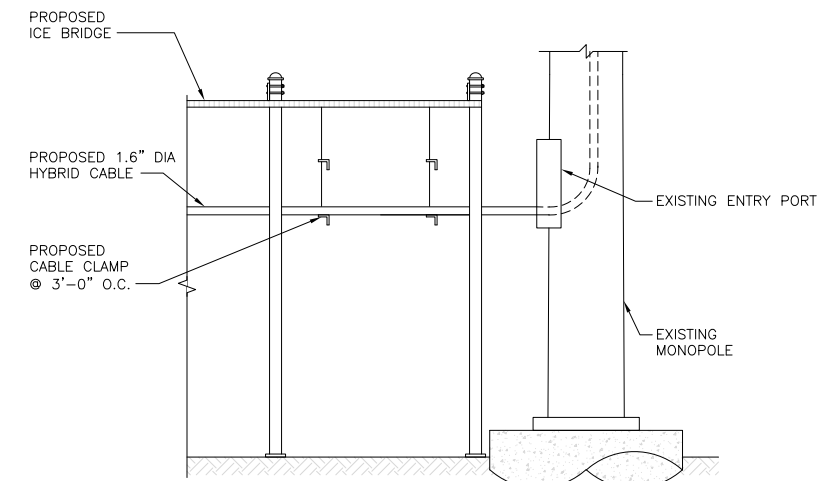
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TYPICAL ICE BRIDGE CONCRETE PIER DETAIL

NO SCALE

8



HYBRID CABLE RUN

NO SCALE

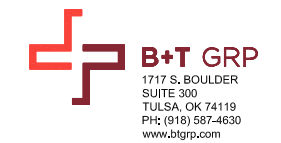
9

dish
wireless.

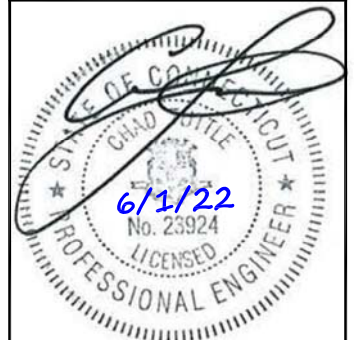
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LITTLETON, CO 80120



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BOCA RATON, FL 33487



1717 S. BOULDER
SUITE 300
TULSA, OK 74119
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www.btgrp.com



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RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	11/11/21	ISSUED FOR REVIEW
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1	6/1/22	ISSUED FOR CONSTRUCTION

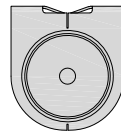
A&E PROJECT NUMBER
149433.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00038A
1605 DURHAM ROAD,
CT ROUTE 68
WALLINGFORD, CT 06492

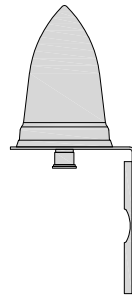
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-4

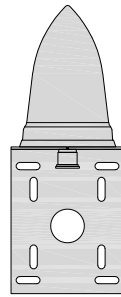
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



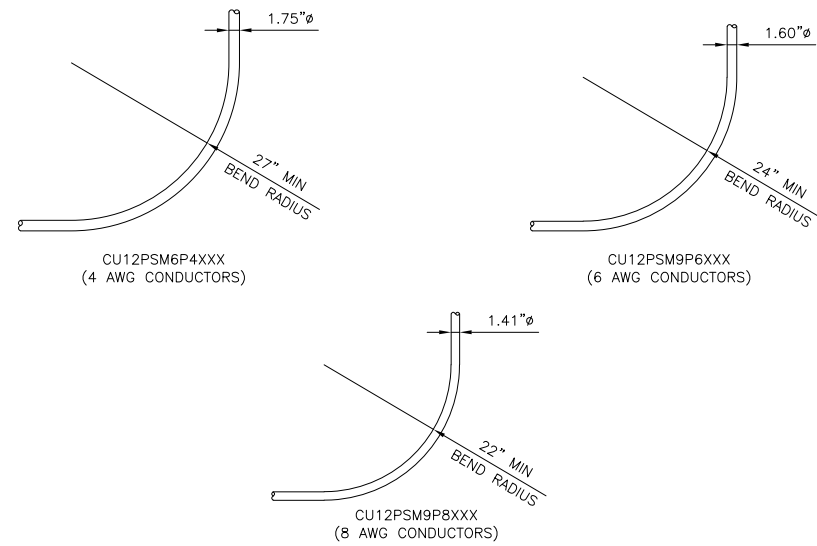
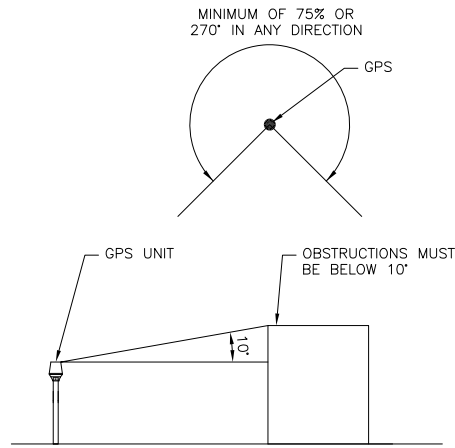
TOP



BACK



SIDE



GPS DETAIL

NO SCALE

1

GPS MINIMUM SKY VIEW REQUIREMENTS

NO SCALE

2

CABLES UNLIMITED HYBRID CABLE
MINIMUM BEND RADIUSES

NO SCALE

3

NOT USED

NO SCALE

4

NOT USED

NO SCALE

5

NOT USED

NO SCALE

6

NOT USED

NO SCALE

7

NOT USED

NO SCALE

8

NOT USED

NO SCALE

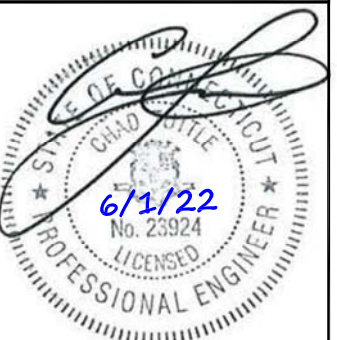
9

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wireless.

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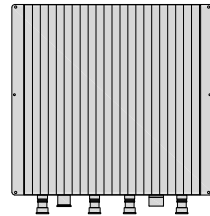
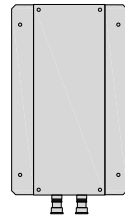
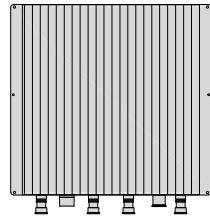
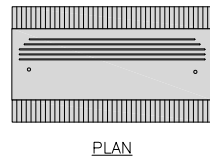
A&E PROJECT NUMBER
149433.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00038A
1605 DURHAM ROAD,
CT ROUTE 68
WALLINGFORD, CT 06492

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

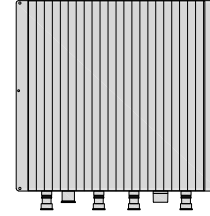
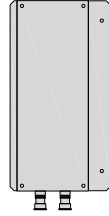
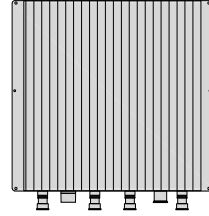
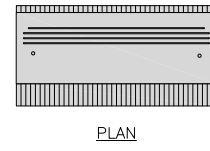


BACK

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

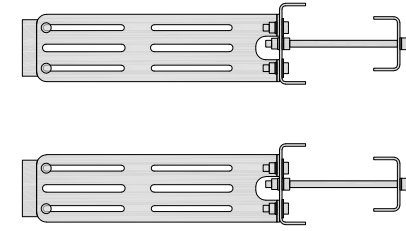
FRONT

COMMSCOPE RR-FA2 LARGE STABILIZER	
DIMENSIONS (HxWxD)	16.4"x8.5"x18"
WEIGHT	39.2 lbs

DESIGN NOTES:
MOUNT WILL FIT LEGS UP TO:
- 5.6" ROUND
- 6.0" 60° ANGLE
- 4.5" 90° ANGLE



PLAN



SIDE

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

RRH DETAIL

NO SCALE

1

RRH DETAIL

NO SCALE

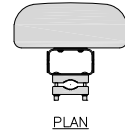
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RRH MOUNT DETAIL

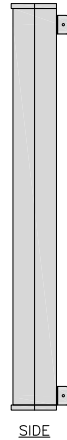
NO SCALE

3

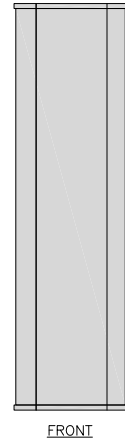
JMA MX08FRO665-21	
DIMENSIONS (HxWxD)	72"x20.0"x8.0"
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE
WEIGHT	64.5 lbs
WEIGHT WITH BRACKETS	82.5 lbs



PLAN



SIDE



FRONT

ANTENNA DETAIL

NO SCALE

4

NOT USED

NO SCALE

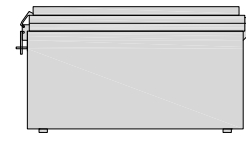
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ANTENNA BRACKET DETAIL

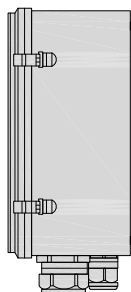
NO SCALE

6

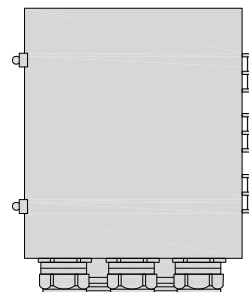
RAYCAP RDIDC-9181-PF-48 DC SURGE PROTECTION (OVP)	
DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 LBS



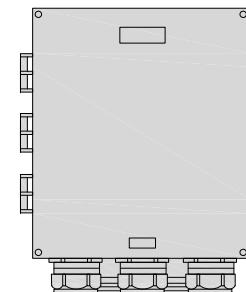
PLAN



SIDE



BACK



FRONT

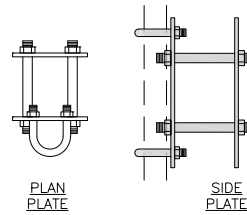
SURGE SUPPRESSION DETAIL (OVP)

NO SCALE

7

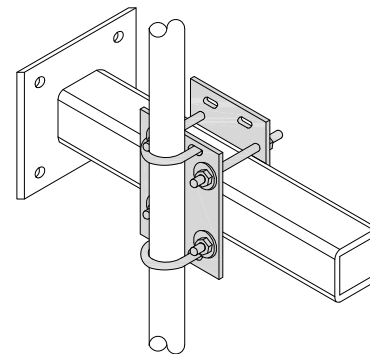
COMMSCOPE XP-2040 CROSSOVER PLATE	
DIMENSIONS (HxW)	10"x12"
WEIGHT	11 lbs

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



PLAN
U-BOLT

SIDE
U-BOLT



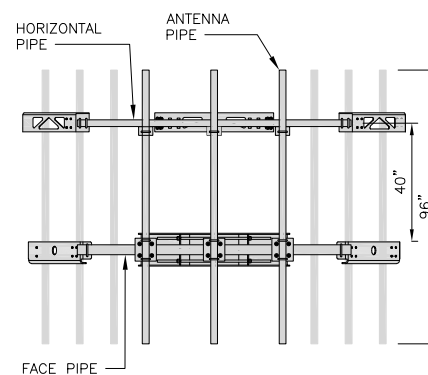
RRH/OVP MOUNT DETAIL

NO SCALE

8

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

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



FACE PIPE

HORIZONTAL
PIPE

ANTENNA
PIPE

ANTENNA
PIPE

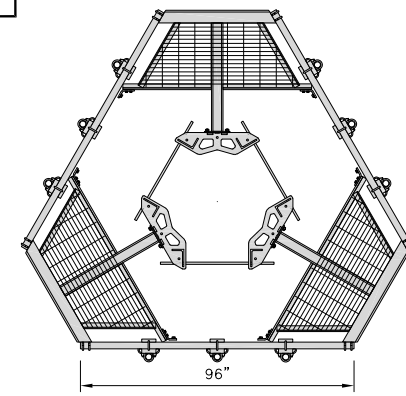
ANTENNA
PIPE

ANTENNA
PIPE

ANTENNA
PIPE

ANTENNA
PIPE

ANTENNA
PIPE



ANTENNA PLATFORM DETAIL

NO SCALE

9



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



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DISH Wireless L.L.C.
PROJECT INFORMATION
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1605 DURHAM ROAD,
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WALLINGFORD, CT 06492

SHEET TITLE
EQUIPMENT DETAILS

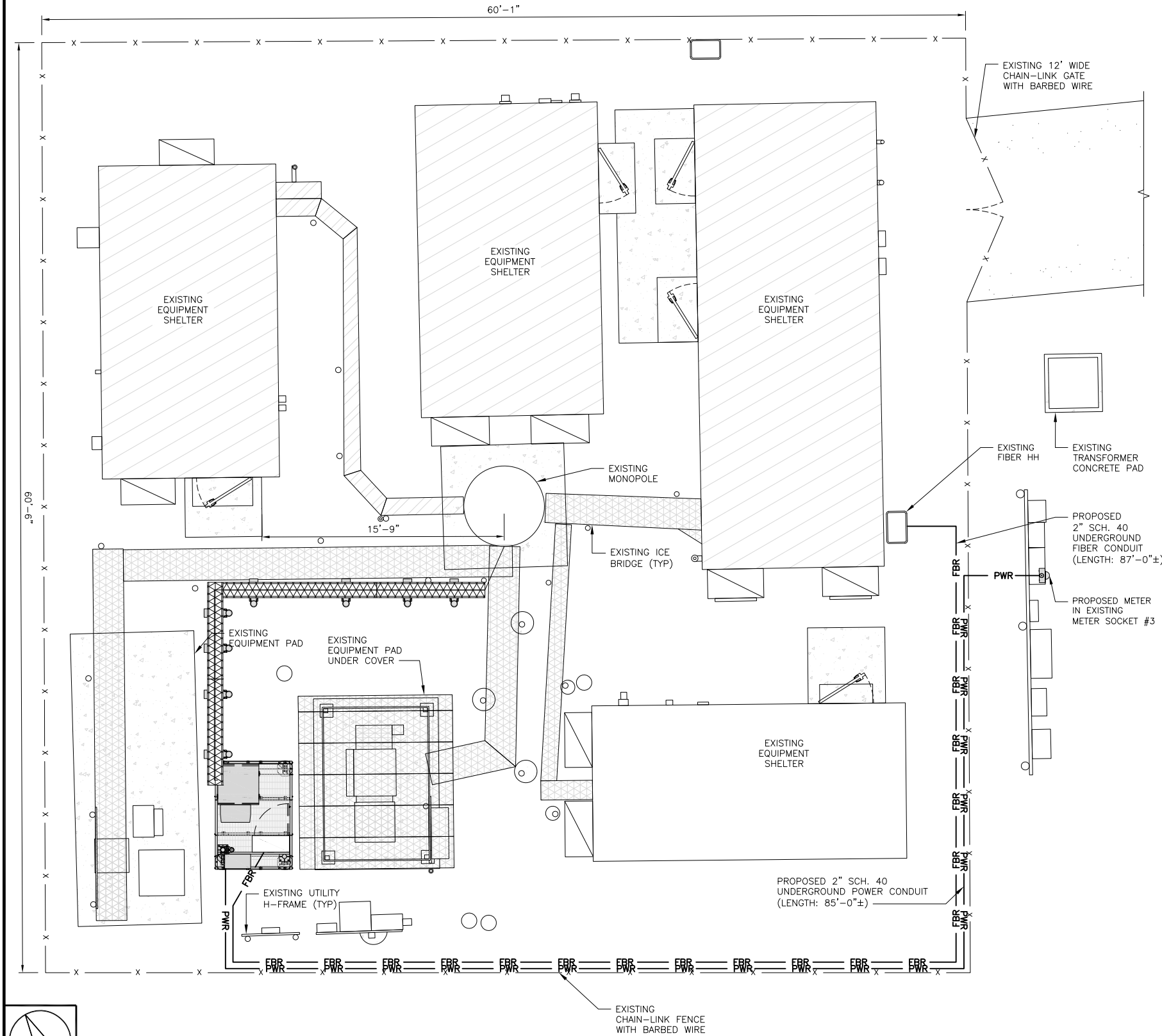
SHEET NUMBER
A-6

NOTES

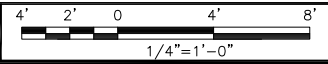
1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
3. THE GROUND LEASE PROVIDES BROAD/BLANKET UTILITY RIGHTS. "PWR" AND "FBR" PATH DEPICTED ON A-1 AND E-1 ARE BASED ON BEST AVAILABLE INFORMATION INCLUDING BUT NOT LIMITED TO FIELD VERIFICATION, PRIOR PROJECT DOCUMENTATION AND OTHER REAL PROPERTY RIGHTS DOCUMENTS. WHEN INSTALLING THE UTILITIES PLEASE LOCATE AND FOLLOW EXISTING PATH. IF EXISTING PATH IS NOT AN OPTION, PLEASE NOTIFY TOWER OWNER AS FURTHER COORDINATION MAY BE NEEDED.

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



UTILITY ROUTE PLAN



1

ELECTRICAL NOTES

NO SCALE

2



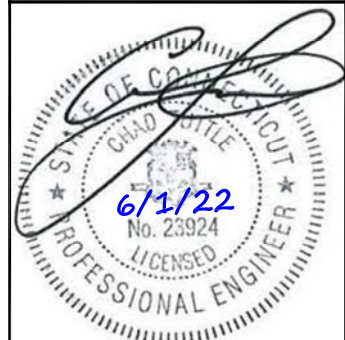
5701 SOUTH SANTA FE DRIVE
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A&E PROJECT NUMBER
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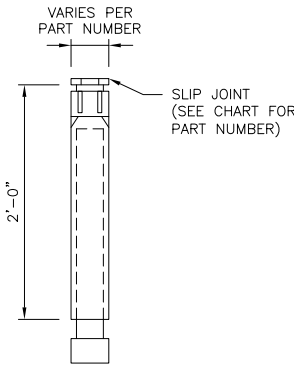
DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00038A
1605 DURHAM ROAD,
CT ROUTE 68
WALLINGFORD, CT 06492

SHEET TITLE
ELECTRICAL/FIBER ROUTE
PLAN AND NOTES

SHEET NUMBER
E-1

CARLON EXPANSION FITTINGS

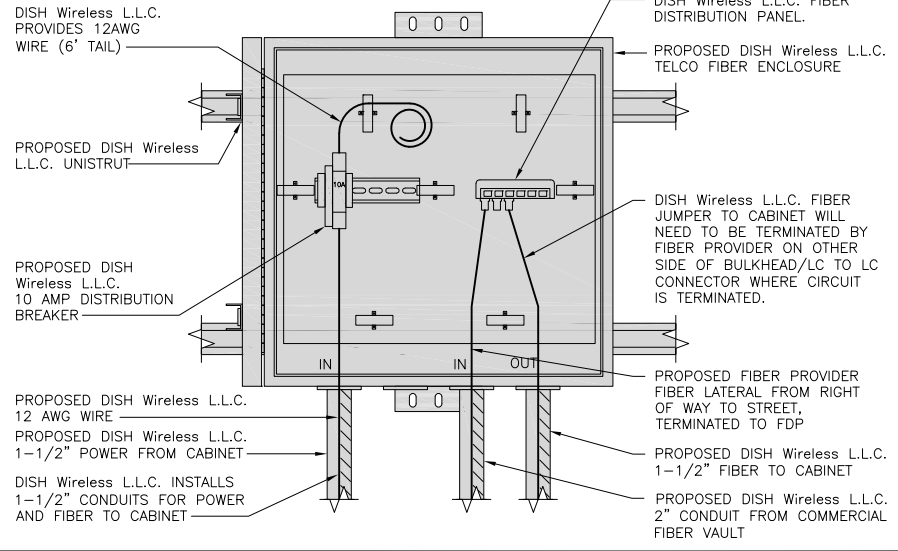
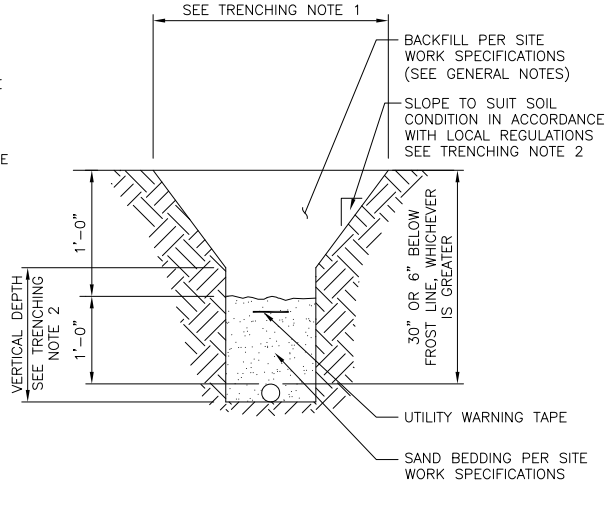
COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD CTN QTY.	TRAVEL LENGTH
E945D	E945DX	1/2"	20	4"
E945E	E945EX	3/4"	15	4"
E945F	E945FX	1"	10	4"
E945G	E945GX	1 1/4"	5	4"
E945H	E945HX	1 1/2"	5	4"
E945J	E945JX	2"	15	8"
E945K	E945KX	2 1/2"	10	8"
E945L	E945LX	3"	10	8"
E945M	E945MX	3 1/2"	5	8"
E945N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

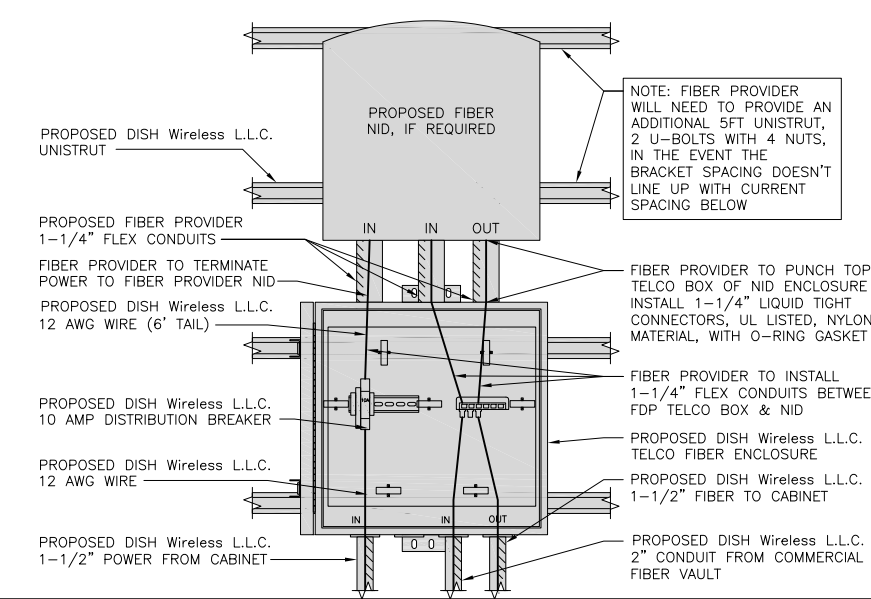
- CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
- TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT 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

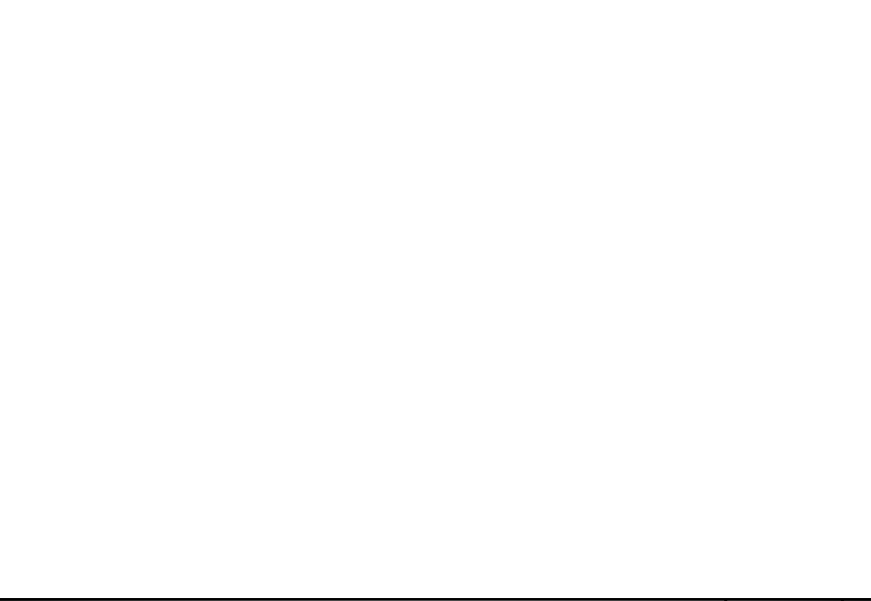
DARK TELCO BOX – INTERIOR WIRING LAYOUT NO SCALE 3



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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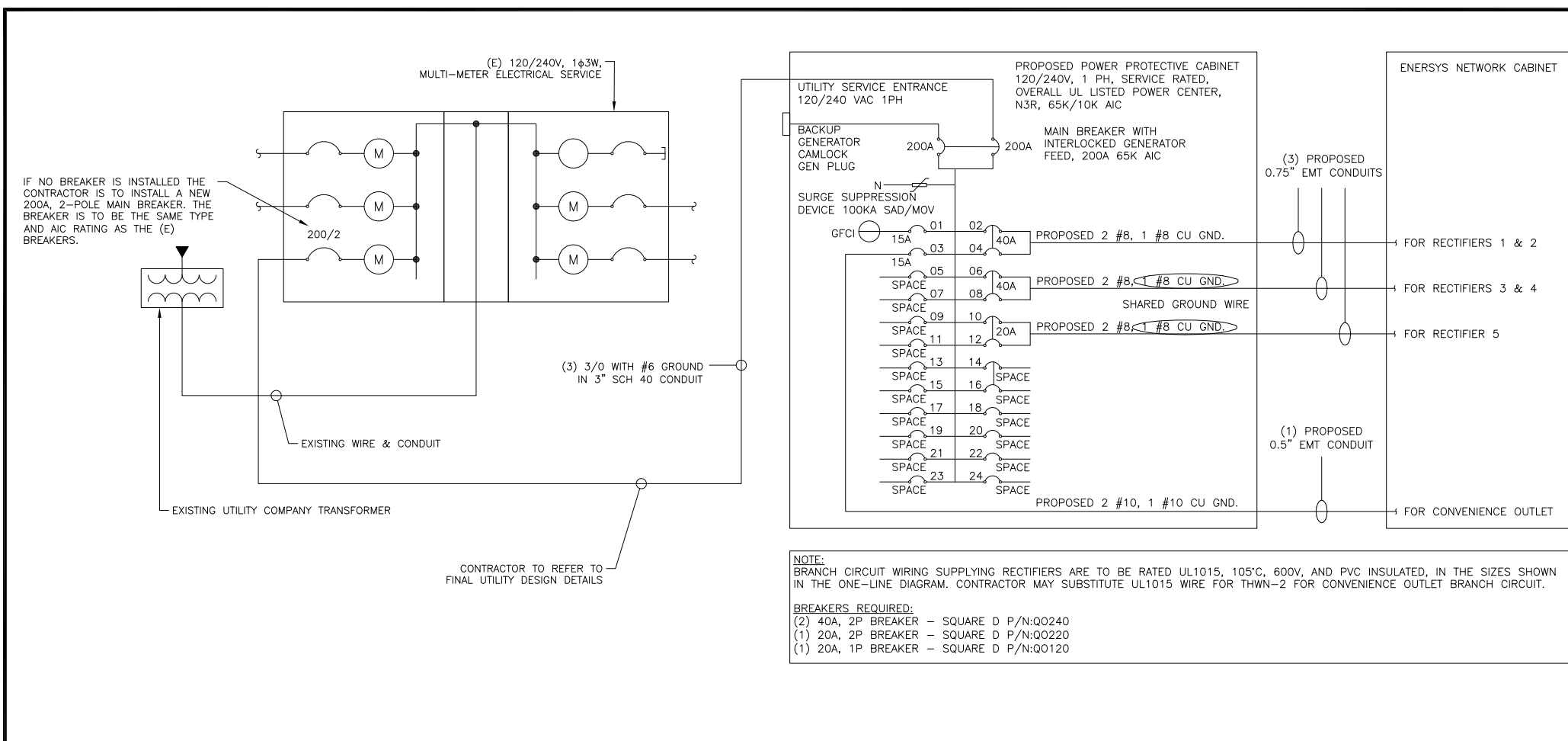
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PROJECT INFORMATION
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1605 DURHAM ROAD,
CT ROUTE 68
WALLINGFORD, CT 06492

SHEET TITLE
**ELECTRICAL
DETAILS**

SHEET NUMBER
E-2



NOTES

THE ENGINEER OF RECORD HAS PERFORMED ALL REQUIRED SHORT CIRCUIT CALCULATIONS AND THE AIC RATINGS FOR EACH DEVICE IS ADEQUATE TO PROTECT THE EQUIPMENT AND THE ELECTRICAL SYSTEM.

THE ENGINEER OF RECORD HAS PERFORMED ALL REQUIRED VOLTAGE DROP CALCULATIONS AND ALL BRANCH CIRCUIT AND FEEDERS COMPLY WITH THE NEC (LISTED ON T-1) ARTICLE 210.19(A)(1) FPN NO. 4.

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 (3 CONDUITS): USING UL1015, CU.
 #8 - 0.0552 SQ. IN X 2 = 0.1103 SQ. IN
 #8 - 0.0131 SQ. IN X 1 = 0.0131 SQ. IN <BARE GROUND
 TOTAL = 0.1234 SQ. IN

0.75" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (3) 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.

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STATE OF CALIFORNIA
 CHAD STITTLE
 No. 23924
 LICENSED PROFESSIONAL ENGINEER
 6/1/22

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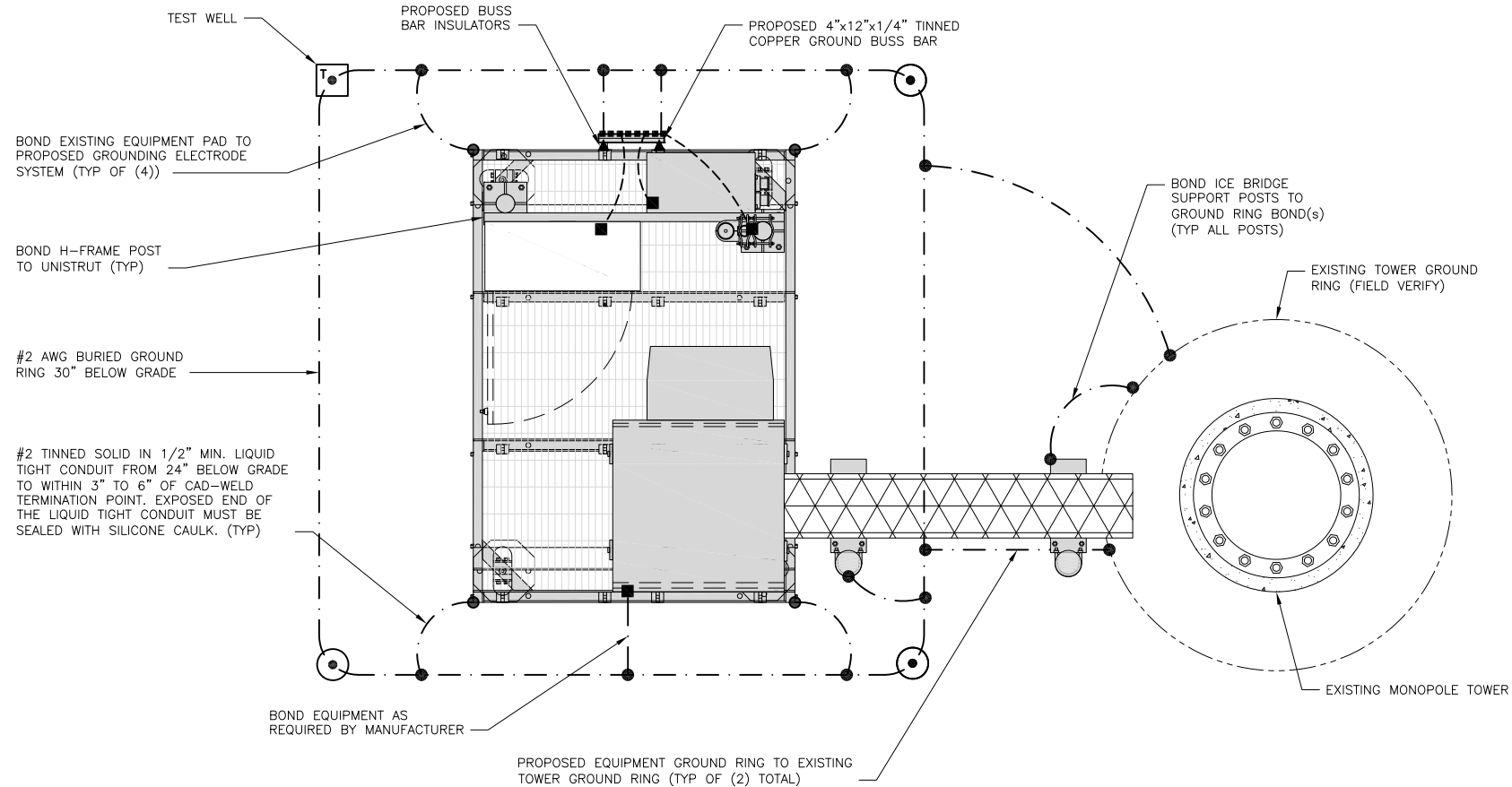
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DISH Wireless L.L.C.
 PROJECT INFORMATION
 BOHVN00038A
 1605 DURHAM ROAD,
 CT ROUTE 68
 WALLINGFORD, CT 06492

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

SHEET NUMBER
E-3

PROPOSED ENERSYS 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	40A	3840	3840	ENERSYS ALPHA CORDEX RECTIFIERS 1 & 2
ENERSYS GFCI OUTLET			15A	3	B	4	40A	3840	3840	ENERSYS ALPHA CORDEX RECTIFIER 3 & 4
--SPACE--				5	A	6	40A	3840	3840	ENERSYS ALPHA CORDEX RECTIFIER 3 & 4
--SPACE--				7	B	8	20A	1920	1920	ENERSYS ALPHA CORDEX RECTIFIER 5
--SPACE--				9	A	10				
--SPACE--				11	B	12				
--SPACE--				13	A	14				
--SPACE--				15	B	16				
--SPACE--				17	A	18				
--SPACE--				19	B	20				
--SPACE--				21	A	22				
--SPACE--				23	B	24				
VOLTAGE AMPS	180	180						9500	9500	
200A MCB, 1φ, 24 SPACE, 120/240V				L1	L2					
MB RATING: 65,000 AIC				9680	9680					
				81	81					
				81						
				102						

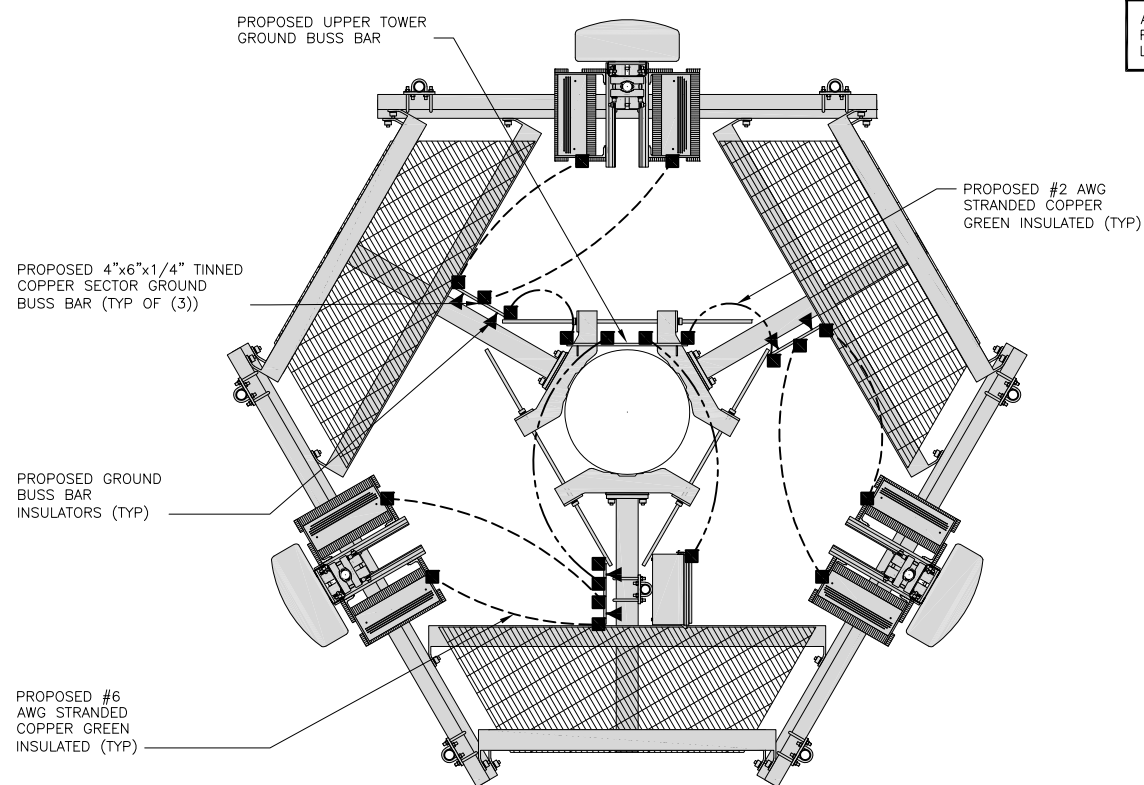


TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE 1

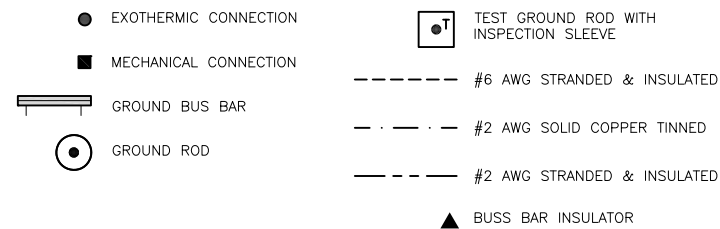
NOTES

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



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE 2



GROUNDING LEGEND

- GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.
- 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.
- ALL GROUND CONDUCTORS SHALL BE COPPER; NO ALUMINUM CONDUCTORS SHALL BE USED.

GROUNDING KEY NOTES

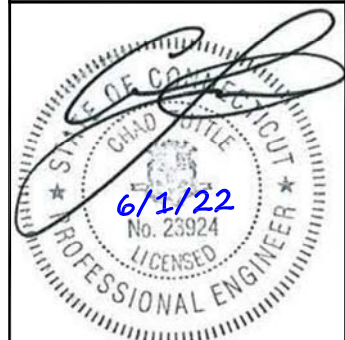
- (A) EXTERIOR GROUND RING: #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING.
- (B) TOWER GROUND RING: THE GROUND RING SYSTEM SHALL BE INSTALLED AROUND AN ANTENNA TOWER'S LEGS, AND/OR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

GROUNDING KEY NOTES

NO SCALE 3



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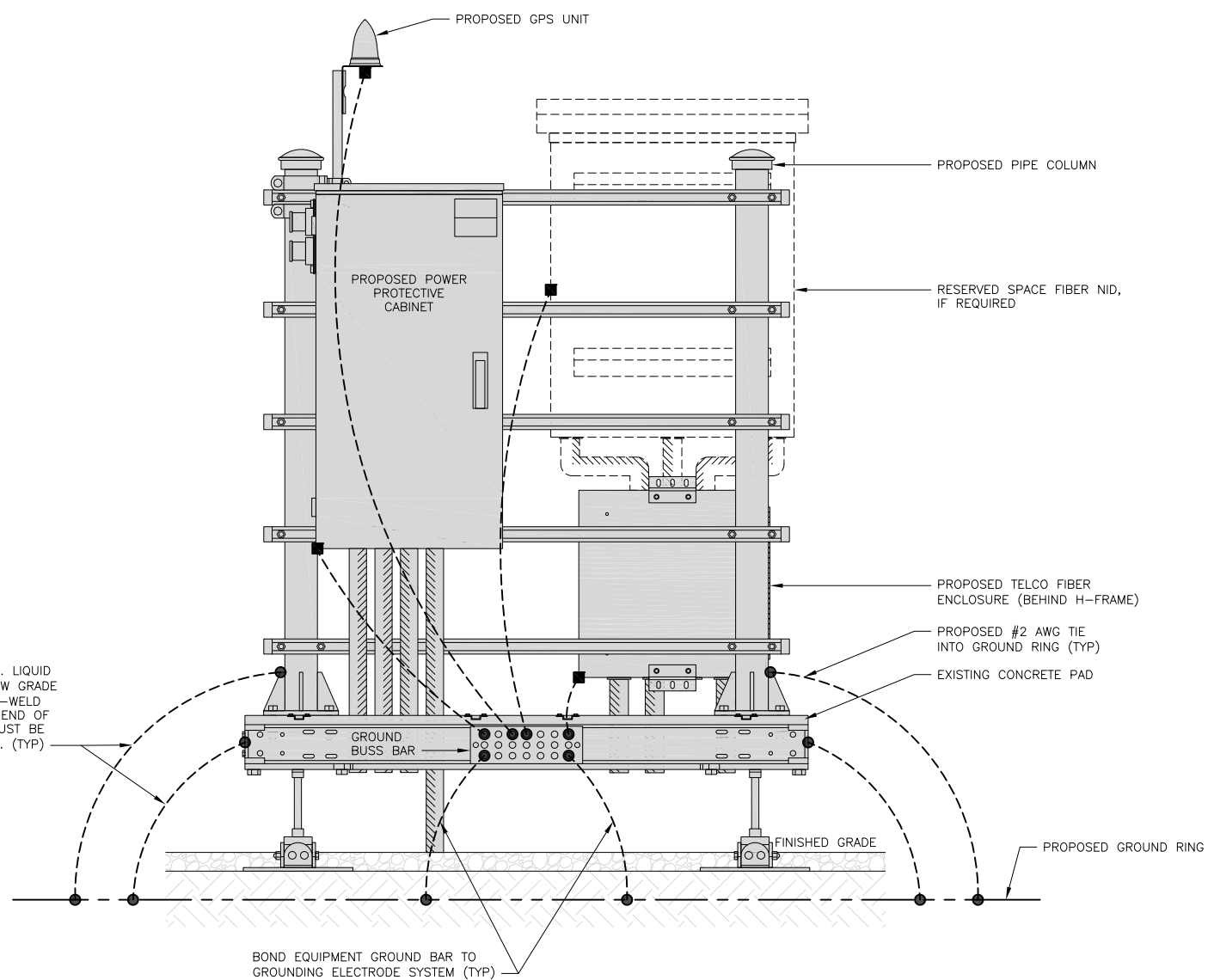
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CT ROUTE 68
WALLINGFORD, CT 06492

SHEET TITLE
GROUNDING PLANS
AND NOTES

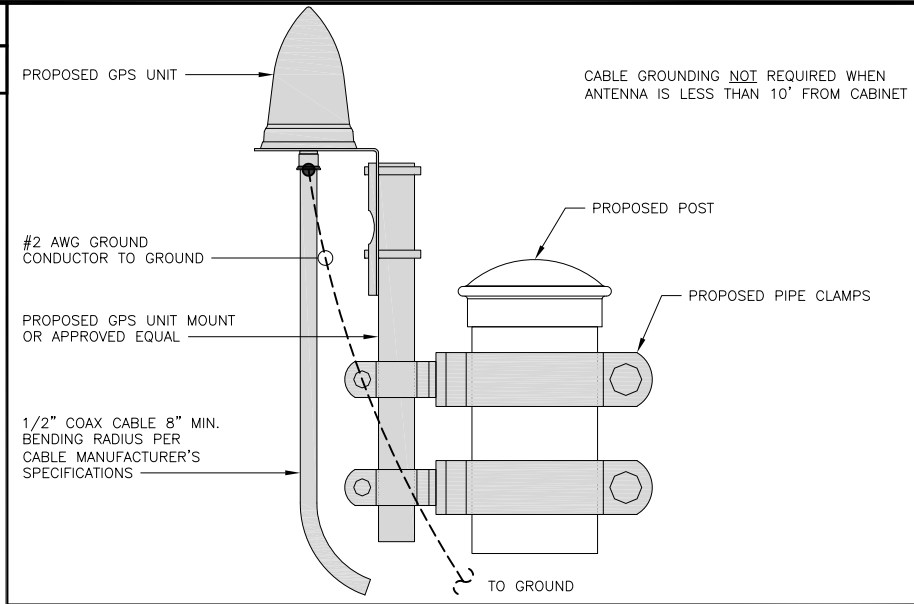
SHEET NUMBER
G-1

NOTES
EQUIPMENT CABINET OMITTED FOR CLARITY



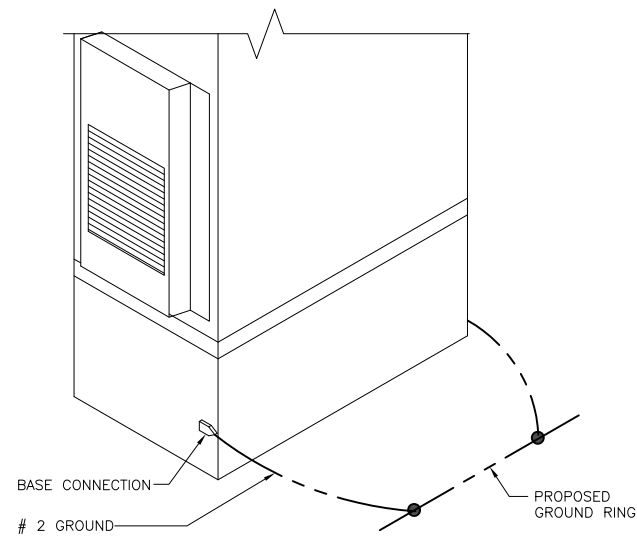
H-FRAME GROUNDING DETAIL

NO SCALE 1



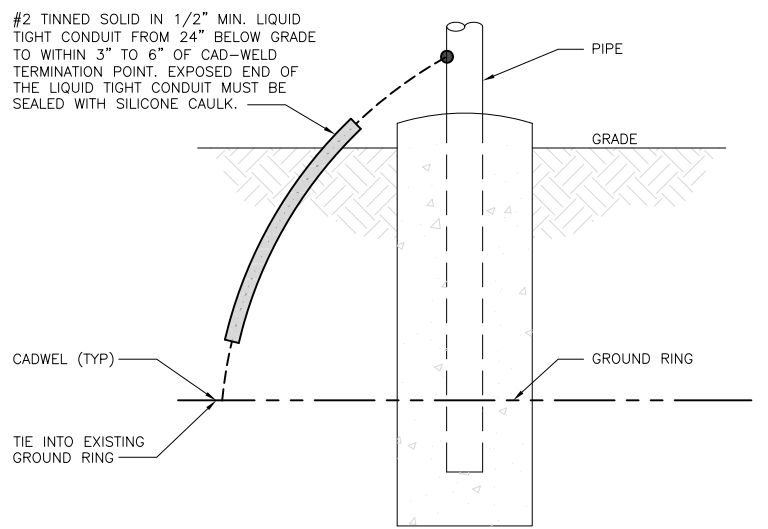
TYPICAL GPS UNIT GROUNDING

NO SCALE 2



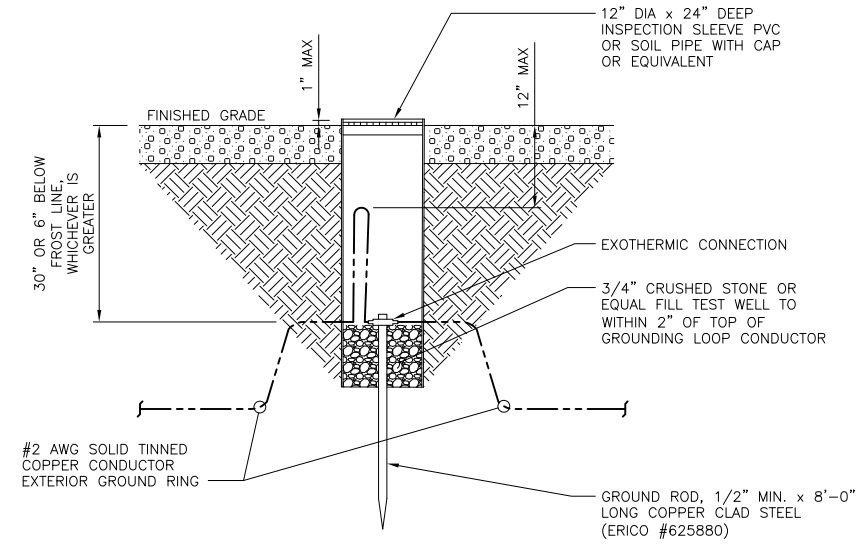
OUTDOOR CABINET GROUNDING

NO SCALE 3



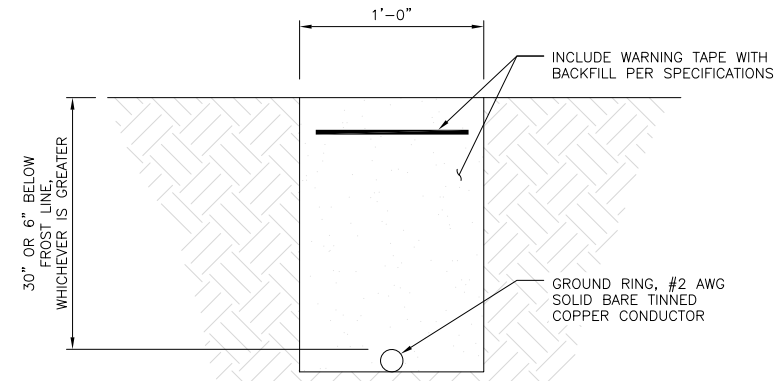
TRANSITIONING GROUND DETAIL

NO SCALE 4



TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE

NO SCALE 5



TYPICAL GROUND RING TRENCH

NO SCALE 6



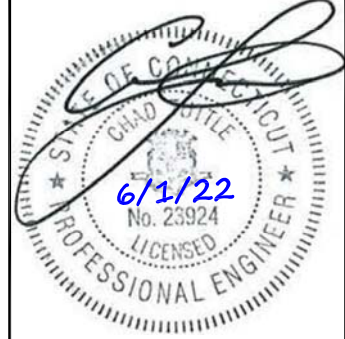
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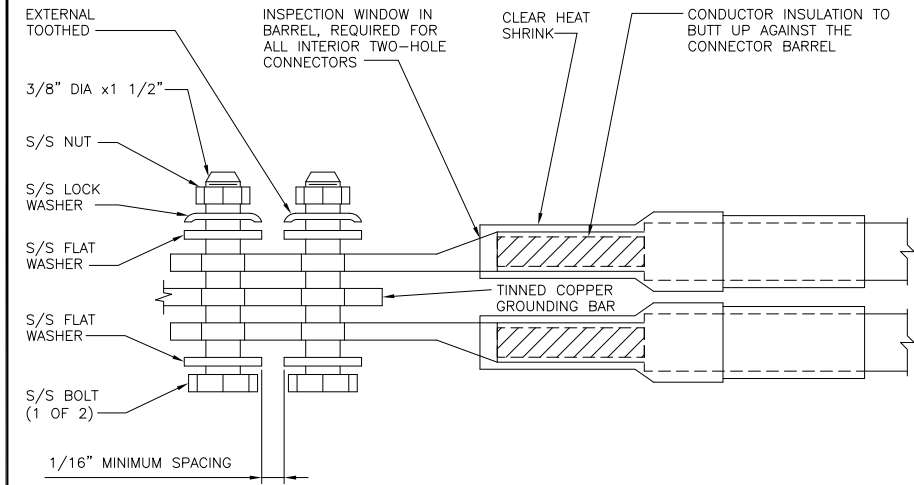
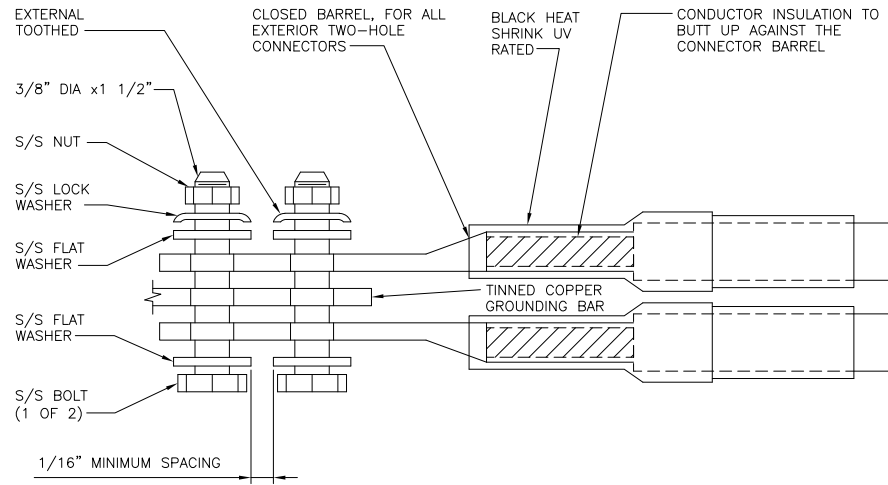
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SHEET TITLE
GROUNDING DETAILS

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

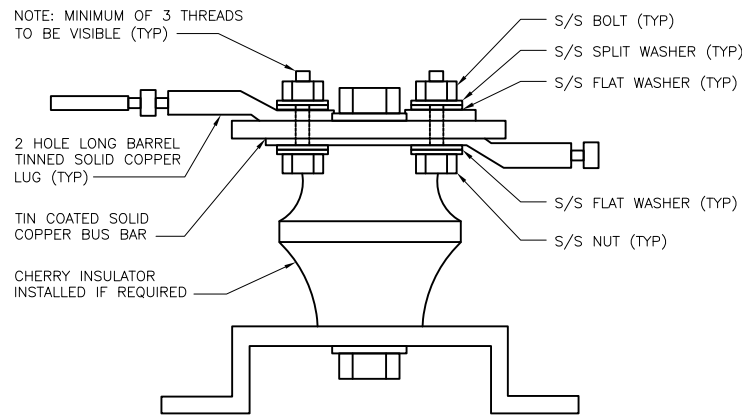
NO SCALE

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

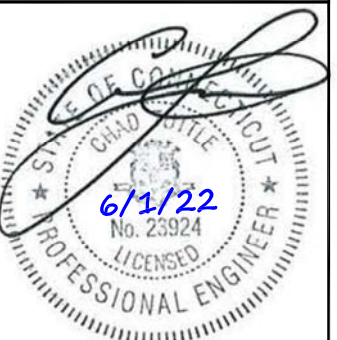
9

dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



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BOCA RATON, FL 33487



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CONSTRUCTION DOCUMENTS

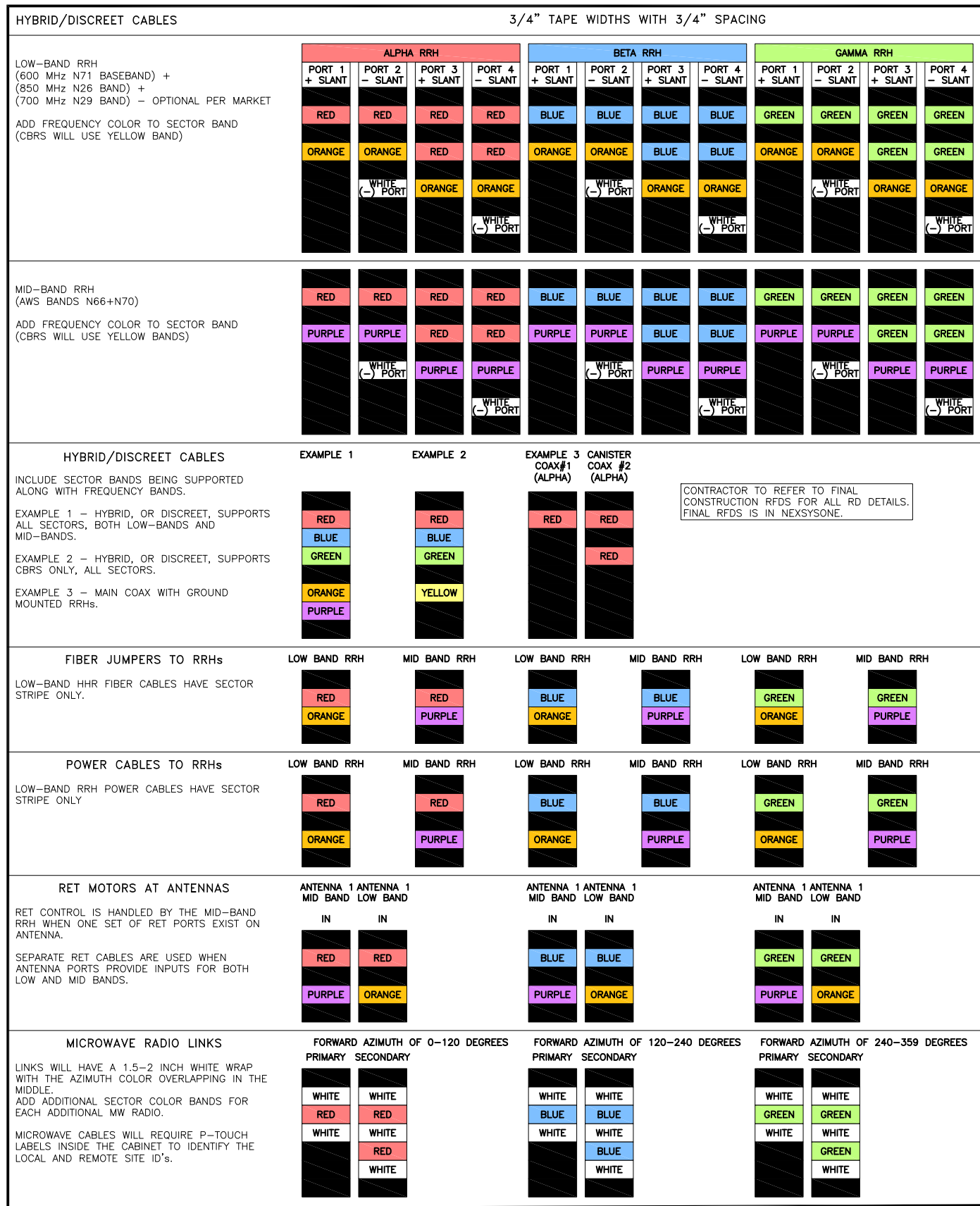
SUBMITTALS		
REV	DATE	DESCRIPTION
A	11/11/21	ISSUED FOR REVIEW
0	5/23/22	ISSUED FOR CONSTRUCTION
1	6/1/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149433.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00038A
1605 DURHAM ROAD,
CT ROUTE 68
WALLINGFORD, CT 06492

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-3



RF CABLE COLOR CODES

NO SCALE

1

NOT USED

NO SCALE

4

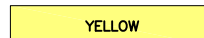
LOW BANDS (N71+N26) OPTIONAL - (N29)



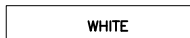
AWS (N66+N70+H-BLOCK)



CBRS TECH (3 GHz)



NEGATIVE SLANT PORT ON ANT/RRH



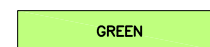
ALPHA SECTOR



BETA SECTOR



GAMMA SECTOR



COLOR IDENTIFIER

NO SCALE

2

NOT USED

NO SCALE

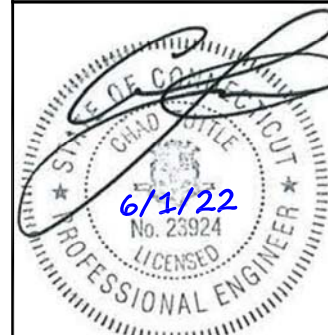
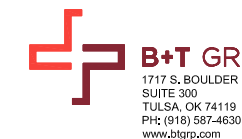
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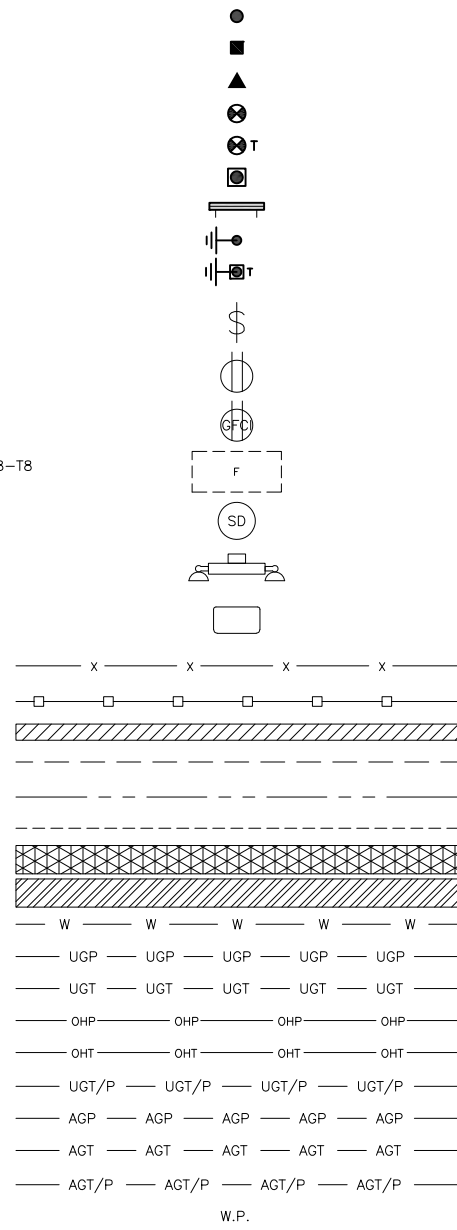
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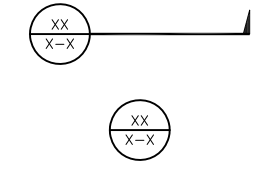
SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER
RF-1

EXOTHERMIC CONNECTION
 MECHANICAL CONNECTION
 BUSS BAR INSULATOR
 CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
 TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
 EXOTHERMIC WITH INSPECTION SLEEVE
 GROUNDING BAR
 GROUND ROD
 TEST GROUND ROD WITH INSPECTION SLEEVE
 SINGLE POLE SWITCH
 DUPLEX RECEPTACLE
 DUPLEX GFCI RECEPTACLE
 FLUORESCENT LIGHTING FIXTURE (2) TWO LAMPS 48-T8
 SMOKE DETECTION (DC)
 EMERGENCY LIGHTING (DC)
 SECURITY LIGHT W/PHOTOCELL LITHONIA ALXW
 LED-1-25A400/51K-SR4-120-PE-DDBTXD
 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
BOHVN00038A
 1605 DURHAM ROAD,
 CT ROUTE 68
 WALLINGFORD, CT 06492

SHEET TITLE
LEGEND AND ABBREVIATIONS

SHEET NUMBER
GN-1

SITE ACTIVITY REQUIREMENTS:

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

GENERAL NOTES:

- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION
CARRIER:DISH Wireless L.L.C.
TOWER OWNER:TOWER OWNER
- THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
- THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
- NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
- SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.
- PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CARRIER POC AND TOWER OWNER.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
- CONTRACTOR IS TO PERFORM A SITE INVESTIGATION, BEFORE SUBMITTING BIDS, TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.
- THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF DISH Wireless L.L.C. AND TOWER OWNER
- CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
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CT ROUTE 68
WALLINGFORD, CT 06492

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-2

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

- 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.
- UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
- 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.
- 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.
- 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
- 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"
- 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:

- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
- CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
- WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
- ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
 - ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
 - 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.
- 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.
- 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).
- PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
- TIE WRAPS ARE NOT ALLOWED.
- 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.
- 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.
- POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
- 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.
- 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).
- RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
- ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

- ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
- SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
- LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
- CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.
- WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).
- SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "DISH Wireless L.L.C."
- 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.
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ANS	RMC	BLJ

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	11/11/21	ISSUED FOR REVIEW
0	5/23/22	ISSUED FOR CONSTRUCTION
1	6/1/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149433.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00038A
1605 DURHAM ROAD,
CT ROUTE 68
WALLINGFORD, CT 06492

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-3

GROUNDING NOTES:

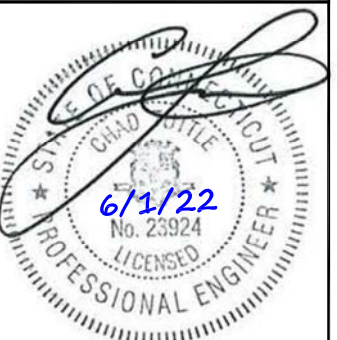
1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (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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CONSTRUCTION DOCUMENTS

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A&E PROJECT NUMBER
149433.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00038A
1605 DURHAM ROAD,
CT ROUTE 68
WALLINGFORD, CT 06492

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-4

Exhibit D

Structural Analysis Report



Tower Engineering Solutions

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

Structural Analysis Report

Existing 162 ft SUMMIT Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT01698-S

Customer Site Name: Durham

Carrier Name: Dish Wireless (App#: 168273-1)

Carrier Site ID / Name: BOHVN00038A / 0

Site Location: 1605 Durham Road, CT Route 68

Wallingford, Connecticut

New Haven County

Latitude: 41.469574

Longitude: -72.742250

Analysis Result:

Max Structural Usage: 84.7% [Pass]

Max Foundation Usage: 88.0% [Pass]

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

Report Prepared By : Changzhi Zang





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Introduction

The purpose of this report is to summarize the analysis results on the 162 ft SUMMIT Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Paul J. Ford and Company Job #29299-949 dated December 22, 1999
Foundation Drawing	Paul J. Ford and Company Job #29299-949 dated December 22, 1999
Geotechnical Report	Jaworski Geotech, Inc., Project #99407G dated September 2, 1999
Mount Modification	MASER Consulting, PROJECT #: 21777084A, dated June 24, 2021
Mount Analysis	TES, Job #82795, dated August 2, 2019 MASER Consulting, PROJECT #: 21777084A, dated June 24, 2021

Analysis Criteria

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

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed $V_{ult} = 125.0$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 97.0$ mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	$S_5 = 0.181$, $S_1 = 0.062$

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

Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	162.5	3	RFS APXVTM14-C-120 - Panel	Low Profile Platform	(3) 1 1/4" (1) 1 5/8" Fiber	Sprint*
2		3	RFS APXVSP18-C-A20 - Panel			
3		4	RFS ACU-A20-N RET			
4	162.0	3	Alcatel Lucent 800 MHz Filter	Collar Mount		
5		3	Alcatel Lucent 800 MHz RRU			
6		3	TD-RRH8x20-25 - RRH			
7		3	Alcatel Lucent 1900MHz RRH			
8	152.0	3	RFS - APXV18-206516S-A20 - Panel	Modified Platform w/ Hand Rails (Commscope MT-195-14 and VSR-MS-B) (1) METROSITE SUPPORT RAIL CENTER PIPE KIT: MS-HRCP-35 (1) METROSITE LIGHT COLLAR MOUNT ASSEMBLY: MS-1436 (6) 2" PST (2.375" O.D. X 0.154" THK) X 6'-0" A53 GR-B: PST2375-6 (6) L 2 1/2" X 2 1/2" X 1/4" X 8'-0" A36: L252525-8	(11) 1 5/8" (1) 1 5/8" Fiber	T-Mobile**
9		3	RFS - APXVAARR24_43-U-NA20 - Panel			
10		6	EMS - RR90-17-02DP - Panel			
11		3	Allen Telecom FE15501P77/75 - TMA			
12		3	Ericsson KRY 112 144/1 - TMA			
13		3	Ericsson Radio 4449 B71+B12			
14	132.0	3	Kathrein 782 11056 - Bias T	Low Profile Platform (1) VZWSMART-PLK1 [Support Rail Kit] (3) VZWSMART-MSK2 [CROSSOVER PLATE] (1) SITE PRO1 SQCX4-K [CROSSOVER PLATE KIT] Mount pipes	(10) 1 5/8" (1) 2" Hybrid	Verizon
15		6	JMA Wireless MX06FRO660-02 - Panel			
16		4	Andrew DB846F65ZAXY - Panel			
17		2	Antel LPA-80080-4CF-EDIN-0 - Panel			
18		3	Samsung MT6407-77A - Panel			
19		6	RFS FD9R6004 - Diplexer			
20		3	Samsung RFV01U-D1A - RRU			
21		3	Samsung RFV01U-D2A - RRU			
22	1	Raycap RCMDC-6627-PF-48 - COVP	Low Profile Platform	(12) 1 5/8" (1) 10 mm (1) 3" Conduit (2) DC	AT&T**	
23	124.5	1				Raycap DC6-48-60-18-8F - Surge Arrestors
24	122.0	6				Ericsson RRUS-11 RRU
25		6				Powerwave 7770.00 - Panel
26		3				KMW AM-X-CD-16-65-00T
27		6				Powerwave LGP21401 TMA
28	6	Powerwave LGP21903 - Diplexer	Low Profile Platform	-	-	
-	105.0	-	-	Low Profile Platform	-	-
33	80.0	1	Kathrein 738-449 - Whip	Flush Mount	(1) 1/2"	AT&T
34	75.0	1	GPS	Flush Mount	(1) 1/2"	Verizon**

*Sprint is terminated but remains installed at top rad.

**Lines installed outside of pole shaft. The T-Mobile existing transmission lines can be installed inside or outside of the pole shafts. If installed outside, the lines shall be strapped tightly to the face of the pole shafts. Stacking lines is not allowed.

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
29	110.0	3	JMA Wireless MX08FRO665-21 - Panel	Platform w/ Hand Rails [(1) Commscope MC-PK8-DSH]	(1) 1.6" Hybrid	Dish Wireless*
30		3	Fujitsu TA08025-B605 - RRU			
31		3	Fujitsu TA08025-B604 - RRU			
32		1	Raycap RDIDC-9181-PF-48 - COVP			

* Coaxes installed outside pole

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:	84.7%	77.0%	77.4%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	5163.2	43.6	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 1.3069 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 84.67% at 45.0ft

Structure: CT01698-S-SBA
Site Name: Durham
Height: 162.00 (ft)
Base Elev: 0.000 (ft)

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

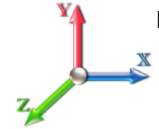
11/16/2021



Page: 1

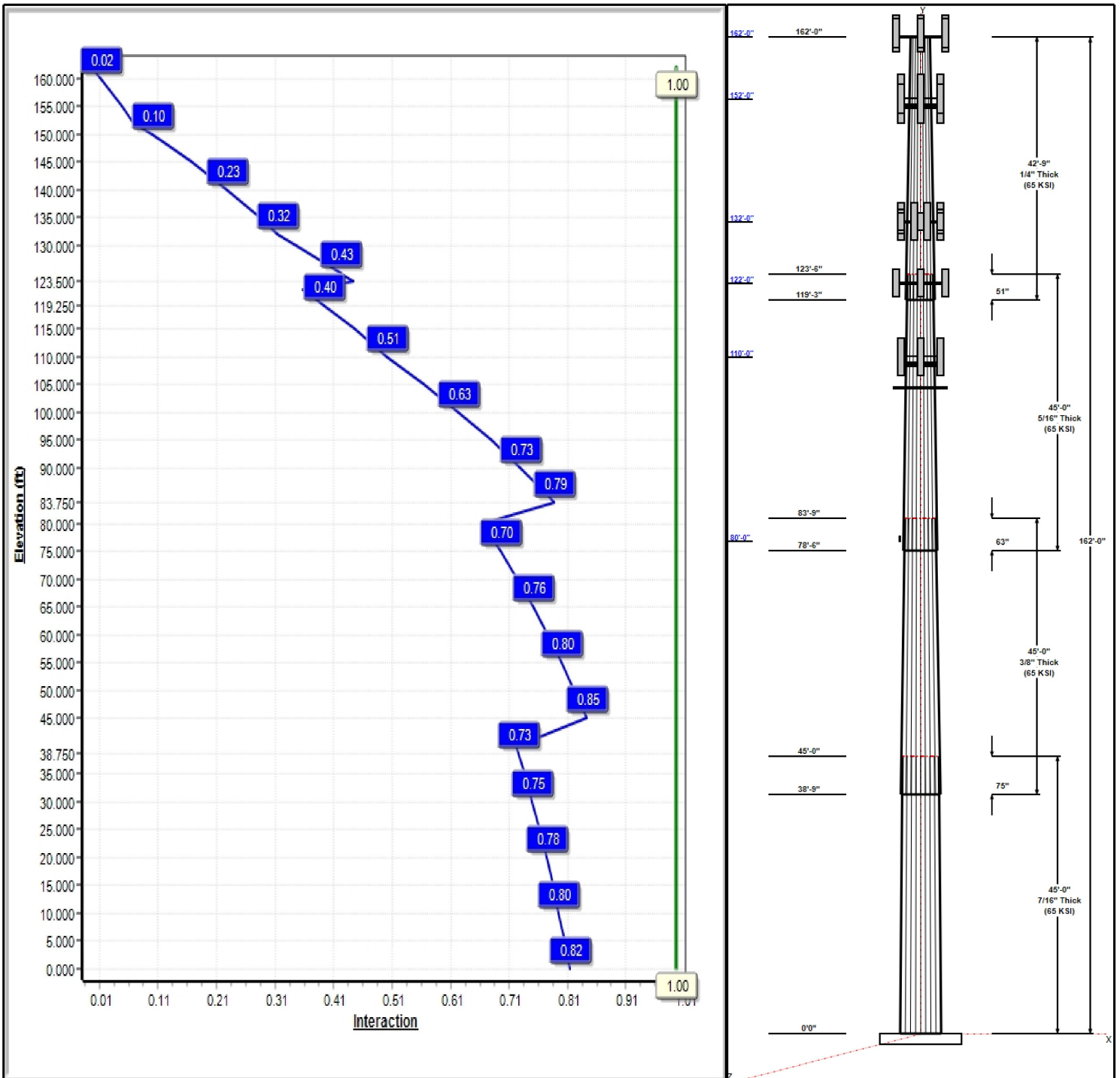
Dead Load Factor: 1.20
 Wind Load Factor: 1.60

Load Case : 1.2D + 1.6W 97 mph Wind



Iterations: 25

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Structure: CT01698-S-SBA

Type: Tapered
Site Name: Durham
Height: 162.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.22003

11/16/2021



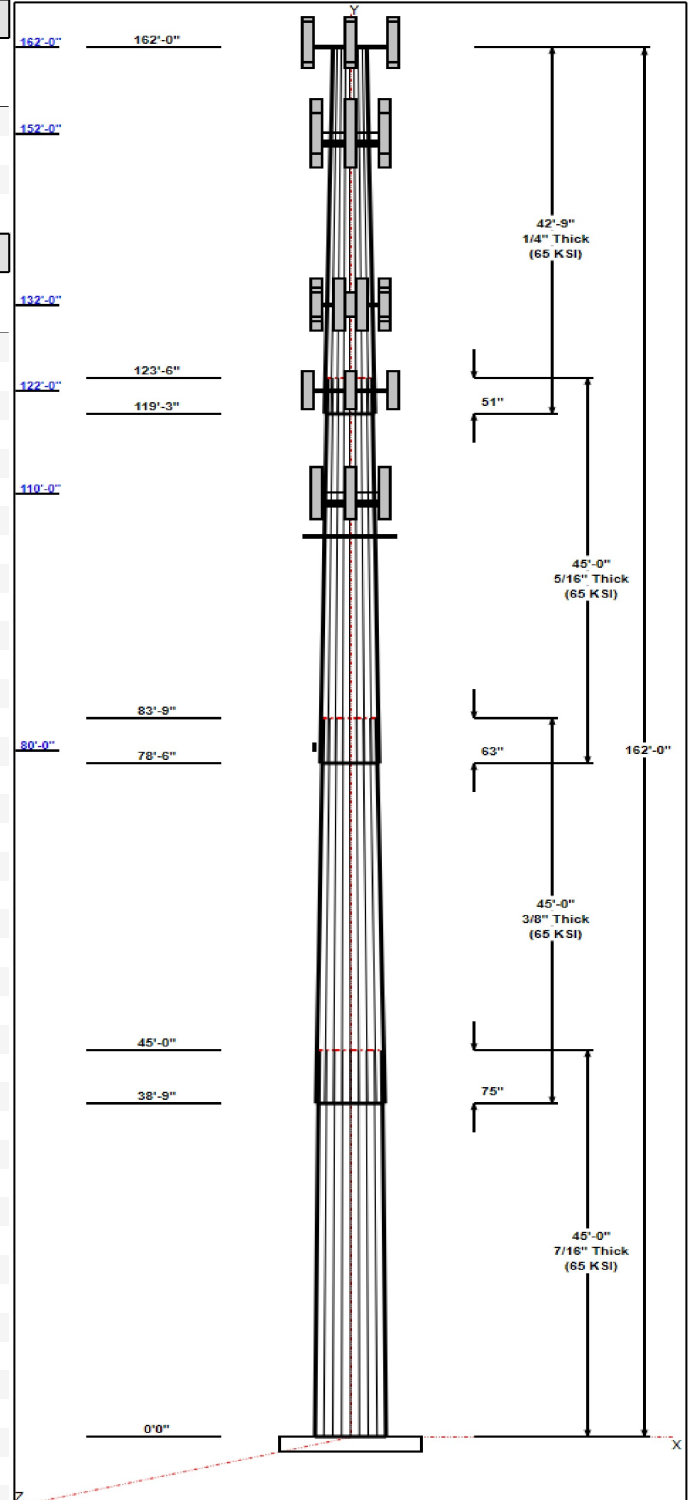
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Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	45.00	47.87	57.77	0.438		0.22003	65
2	45.00	40.09	49.99	0.375	Slip	0.22003	65
3	45.00	31.97	41.87	0.313	Slip	0.22003	65
4	42.75	24.00	33.41	0.250	Slip	0.22003	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
162.00	162.50	3	APXVTM14-C-120	Sprint
162.00	162.00	3	TD-RRHx20-25	Sprint
162.00	162.50	3	APXVSP18-C-A20	Sprint
162.00	162.00	3	1900MHz RRH	Sprint
162.00	162.00	3	800 MHz RRU	Sprint
162.00	162.00	3	800 MHz Ext. Filter	Sprint
162.00	162.50	4	ACU-A20-N	Sprint
162.00	162.00	1	Low Profile Platform-flat	Sprint
162.00	160.00	1	Flush Mount	Sprint
152.00	152.00	3	APXVAARR24_43-U-NA20	T-Mobile
152.00	152.00	3	Radio 4449 B71+B12	T-Mobile
152.00	152.00	1	Platform w/ Hand Rail	T-Mobile
152.00	152.00	3	APXV18-206516S-A20	T-Mobile
152.00	152.00	3	KRY 112 144/1	T-Mobile
152.00	152.00	3	782 11056	T-Mobile
152.00	152.00	3	FE15501P77/75	T-Mobile
152.00	152.00	6	RR90-17-02DP	T-Mobile
132.00	132.00	1	Low Profile	Verizon
132.00	132.00	2	LPA-80080-4CF-EDIN-0	Verizon
132.00	132.00	4	DB846F65ZAXY	Verizon
132.00	132.00	6	JMA Wireless	Verizon
132.00	132.00	3	Samsung MT6407-77A	Verizon
132.00	132.00	3	Samsung RFV01U-D1A	Verizon
132.00	132.00	3	Samsung RFV01U-D2A	Verizon
132.00	132.00	1	Raycap	Verizon
132.00	132.00	1	HRK12 (Handrail Kit)	Verizon
132.00	132.00	6	FD9R6004/2C-3L	Verizon
124.50	124.50	1	Flush Mount	Verizon
124.50	124.50	6	RRUS-11	AT&T
124.50	124.50	1	DC6-48-60-18-8F	AT&T
122.00	122.00	6	7770.00	AT&T
122.00	122.00	6	LGP21401	AT&T
122.00	122.00	6	LGP21903	AT&T
122.00	122.00	3	AM-X-CD-16-65-00T-RET	AT&T
122.00	122.00	1	Low Profile Platform-flat	
110.00	110.00	3	JMA Wireless	Dish Wireless
110.00	110.00	3	Fujitsu TA08025-B605	Dish Wireless
110.00	110.00	3	Fujitsu TA08025-B604	Dish Wireless
110.00	110.00	1	Raycap	Dish Wireless
110.00	110.00	1	MC-PK8-DSH	Dish Wireless
105.00	105.00	1	Low Profile Platform-flat	
80.00	80.35	1	738-449	AT&T
75.00	75.00	1	GPS	Verizon



Linear Appurtenances

Structure: CT01698-S-SBA

Type: Tapered
Site Name: Durham
Height: 162.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.22003

11/16/2021



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Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	162.00	Inside	1 1/4" Coax	Sprint
0.00	162.00	Inside	1 5/8" Fiber	Sprint
0.00	162.00	Outside	Safety Cable	
0.00	152.00	Outside	1 5/8" Coax	T-Mobile
0.00	152.00	Outside	1 5/8" Fiber	T-Mobile
0.00	132.00	Inside	1 5/8" Coax	Verizon
0.00	132.00	Inside	2" Hybrid	Verizon
0.00	122.00	Outside	1 5/8" Coax	AT&T
0.00	122.00	Outside	10 mm	AT&T
0.00	122.00	Outside	3" Coax	AT&T
0.00	122.00	Outside	DC	AT&T
0.00	110.00	Outside	1.6" Hybrid	Dish Network
0.00	80.00	Inside	1/2" Coax	AT&T
0.00	75.00	Outside	1/2" Coax	Verizon

Anchor Bolts

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

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
3.0000	64.0	50.0	Clipped

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 97 mph Wind	5163.2	43.6	58.5
0.9D + 1.6W 97 mph Wind	5101.1	43.5	43.9
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1496.2	12.4	105.0
1.2D + 1.0E	259.5	2.1	58.6
0.9D + 1.0E	256.0	2.0	43.9
1.0D + 1.0W 60 mph Wind	1227.1	10.4	48.8

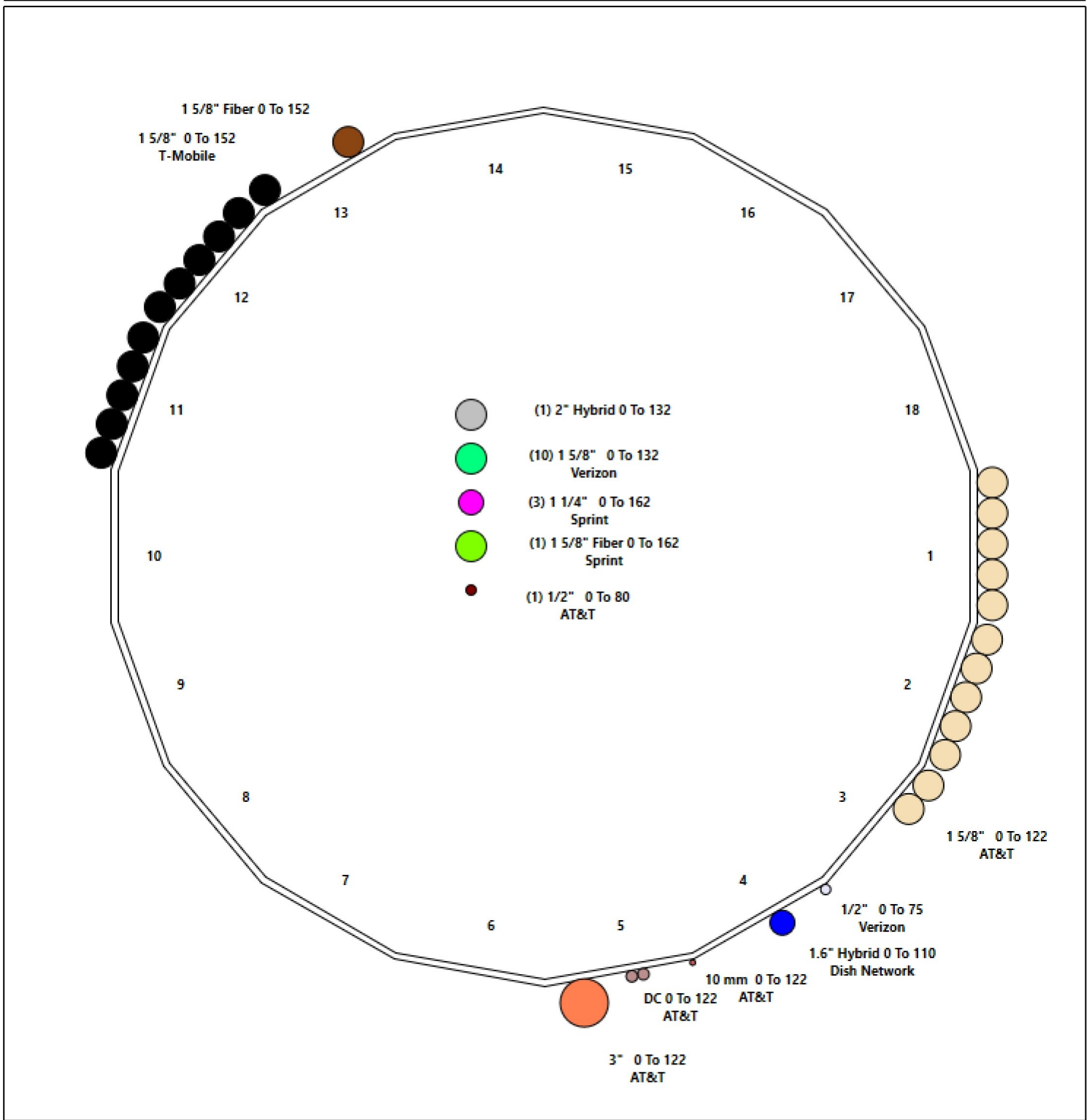
Structure: CT01698-S-SBA - Coax Line Placement

Type: Monopole
Site Name: Durham
Height: 162.00 (ft)

11/16/2021



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Shaft Properties

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	45.000	0.4375	65		0.00	11,138
2	18	45.000	0.3750	65	Slip	75.00	8,141
3	18	45.000	0.3125	65	Slip	63.00	5,560
4	18	42.750	0.2500	65	Slip	51.00	3,284
Total Shaft Weight:							28,123

Bottom

Top

Sec. No.	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Taper
1	57.77	0.00	79.61	33061.69	21.87	132.05	47.87	45.00	65.86	18720.2	17.88	109.4	0.220031
2	49.99	38.75	59.06	18370.23	22.10	133.32	40.09	83.75	47.27	9421.47	17.44	106.9	0.220031
3	41.87	78.50	41.22	8995.46	22.22	133.99	31.97	123.50	31.40	3976.25	16.63	102.3	0.220031
4	33.41	119.2	26.31	3654.12	22.15	133.63	24.00	162.00	18.84	1343.00	15.52	96.00	0.220031

Load Summary

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
1	162.00	APXVTM14-C-120	3	56.00	6.34	0.79	217.90	7.463	0.79	0.00	0.50
2	162.00	TD-RRH8x20-25	3	70.00	4.05	0.69	181.50	4.870	0.69	0.00	0.00
3	162.00	APXVSP18-C-A20	3	57.00	8.02	0.83	231.19	10.835	0.83	0.00	0.50
4	162.00	1900MHz RRH	3	44.00	3.80	0.88	154.01	5.201	0.88	0.00	0.00
5	162.00	800 MHz RRU	3	53.00	2.49	0.75	127.53	3.643	0.75	0.00	0.00
6	162.00	800 MHz Ext. Filter	3	6.60	1.19	0.63	31.03	1.983	0.63	0.00	0.00
7	162.00	ACU-A20-N	4	1.00	0.14	0.75	5.33	0.439	0.75	0.00	0.50
8	162.00	Low Profile Platform-flat	1	1200.00	25.00	1.00	2255.22	46.104	1.00	0.00	0.00
9	162.00	Flush Mount	1	175.00	5.00	1.00	322.73	8.517	1.00	0.00	-2.00
10	152.00	APXVAARR24_43-U-NA20	3	128.00	20.24	0.70	546.56	22.143	0.70	0.00	0.00
11	152.00	Radio 4449 B71+B12	3	71.00	1.97	0.86	124.45	2.518	0.86	0.00	0.00
12	152.00	Platform w/ Hand Rail (Modified)	1	2796.50	49.30	1.00	6471.50	92.377	1.00	0.00	0.00
13	152.00	APXV18-206516S-A20	3	18.50	4.36	0.76	87.92	6.606	0.78	0.00	0.00
14	152.00	KRY 112 144/1	3	11.00	0.35	0.73	21.80	0.756	0.78	0.00	0.00
15	152.00	782 11056	3	1.80	0.15	0.67	6.33	0.365	0.67	0.00	0.00
16	152.00	FE15501P77/75	3	17.50	0.54	0.65	23.40	0.874	0.65	0.00	0.00
17	152.00	RR90-17-02DP	6	13.50	4.36	0.73	112.37	5.347	0.73	0.00	0.00
18	132.00	Low Profile Platform-Round	1	1500.00	22.00	1.00	2792.29	39.437	1.00	0.00	0.00
19	132.00	LPA-80080-4CF-EDIN-0	2	12.00	2.61	1.70	126.15	3.497	1.70	0.00	0.00
20	132.00	DB846F65ZAXY	4	21.00	7.05	0.93	215.40	8.264	0.93	0.00	0.00
21	132.00	JMA Wireless MX06FRO660-02	6	46.00	9.87	0.87	311.04	11.227	0.87	0.00	0.00
22	132.00	Samsung MT6407-77A	3	79.40	4.69	0.70	197.11	5.625	0.75	0.00	0.00
23	132.00	Samsung RFV01U-D1A	3	84.40	1.88	0.67	135.01	2.424	0.67	0.00	0.00
24	132.00	Samsung RFV01U-D2A	3	70.30	1.88	0.67	118.32	2.424	0.67	0.00	0.00
25	132.00	Raycap RCMDC-6627-PF-48	1	32.00	4.06	0.67	144.48	4.872	0.67	0.00	0.00
26	132.00	HRK12 (Handrail Kit)	1	261.72	6.75	1.00	568.37	13.263	1.00	0.00	0.00
27	132.00	FD9R6004/2C-3L	6	3.10	0.36	0.75	11.02	0.798	0.75	0.00	0.00
28	124.50	Flush Mount	1	175.00	5.00	1.00	318.89	8.426	1.00	0.00	0.00
29	124.50	RRUS-11	6	55.00	4.42	0.68	143.30	5.892	0.68	0.00	0.00
30	124.50	DC6-48-60-18-8F	1	31.80	1.47	1.00	92.48	2.157	1.00	0.00	0.00
31	122.00	7770.00	6	35.00	5.50	0.73	166.79	6.542	0.73	0.00	0.00
32	122.00	LGP21401	6	14.10	1.29	0.75	38.59	2.109	0.75	0.00	0.00
33	122.00	LGP21903	6	5.50	0.27	0.75	13.76	0.660	0.75	0.00	0.00
34	122.00	AM-X-CD-16-65-00T-RET	3	33.00	6.05	0.81	174.83	8.106	0.81	0.00	0.00
35	122.00	Low Profile Platform-flat	1	1200.00	25.00	1.00	2225.72	45.514	1.00	0.00	0.00
36	110.00	JMA Wireless MX08FRO665-21	3	64.50	12.49	0.74	346.49	13.910	0.74	0.00	0.00
37	110.00	Fujitsu TA08025-B605	3	75.00	1.96	0.67	125.71	2.504	0.67	0.00	0.00
38	110.00	Fujitsu TA08025-B604	3	63.90	1.96	0.67	112.98	2.504	0.67	0.00	0.00
39	110.00	Raycap RDIDC-9181-PF-48	1	21.90	2.01	1.00	73.52	2.561	1.00	0.00	0.00
40	110.00	MC-PK8-DSH	1	1727.00	37.59	1.00	3363.29	83.381	1.00	0.00	0.00
41	105.00	Low Profile Platform-flat	1	1200.00	25.00	1.00	2210.44	45.209	1.00	0.00	0.00
42	80.00	738-449	1	0.50	0.01	1.00	2.38	0.068	1.00	0.00	0.35
43	75.00	GPS	1	10.00	1.00	1.00	37.36	1.664	1.00	0.00	0.00
Totals:			123	14,491.32			35,687.22				

Linear Appurtenances

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		
Bottom	Top										
Elev.	Elev.	Description		Exposed	Exposed						
(ft)	(ft)			Width	Exposed						
0.00	162.00	(3) 1 1/4" Coax		0.00	Inside						
0.00	162.00	(1) 1 5/8" Fiber		0.00	Inside						
0.00	162.00	(1) Safety Cable		0.00	Outside						
0.00	152.00	(11) 1 5/8" Coax		1.98	Outside						
0.00	152.00	(1) 1 5/8" Fiber		0.00	Outside						
0.00	132.00	(10) 1 5/8" Coax		0.00	Inside						
0.00	132.00	(1) 2" Hybrid		0.00	Inside						
0.00	122.00	(12) 1 5/8" Coax		0.00	Outside						
0.00	122.00	(1) 10 mm		0.00	Outside						
0.00	122.00	(1) 3" Coax		3.00	Outside						
0.00	122.00	(2) DC		0.00	Outside						
0.00	110.00	(1) 1.6" Hybrid		0.00	Outside						
0.00	80.00	(1) 1/2" Coax		0.00	Inside						
0.00	75.00	(1) 1/2" Coax		0.00	Outside						

Shaft Section Properties

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in ³)	Weight (lb)
0.00		0.4375	57.770	79.610	33061.7	21.87	132.05	75.7	1127.	0.0
5.00		0.4375	56.670	78.083	31194.7	21.43	129.53	76.2	1084.	1341.5
10.00		0.4375	55.570	76.555	29399.4	20.99	127.02	76.7	1042.	1315.5
15.00		0.4375	54.470	75.028	27674.3	20.54	124.50	77.2	1000.	1289.5
20.00		0.4375	53.369	73.500	26018.0	20.10	121.99	77.8	960.2	1263.5
25.00		0.4375	52.269	71.972	24429.2	19.66	119.47	78.3	920.5	1237.5
30.00		0.4375	51.169	70.445	22906.4	19.21	116.96	78.8	881.7	1211.5
35.00		0.4375	50.069	68.917	21448.3	18.77	114.44	79.3	843.7	1185.5
38.75	Bot - Section 2	0.4375	49.244	67.771	20396.2	18.44	112.56	79.7	815.8	872.1
40.00		0.4375	48.969	67.389	20053.4	18.33	111.93	79.8	806.6	538.0
45.00	Top - Section 1	0.3750	48.619	57.420	16884.8	21.45	129.65	0.0	0.0	2121.6
50.00		0.3750	47.518	56.110	15755.8	20.93	126.72	76.8	653.1	965.8
55.00		0.3750	46.418	54.801	14678.3	20.42	123.78	77.4	622.8	943.5
60.00		0.3750	45.318	53.492	13651.1	19.90	120.85	78.0	593.3	921.2
65.00		0.3750	44.218	52.182	12672.9	19.38	117.91	78.6	564.5	899.0
70.00		0.3750	43.118	50.873	11742.6	18.86	114.98	79.2	536.4	876.7
75.00		0.3750	42.018	49.563	10859.0	18.35	112.05	79.8	509.0	854.4
78.50	Bot - Section 3	0.3750	41.248	48.647	10267.7	17.98	109.99	80.2	490.3	584.8
80.00		0.3750	40.918	48.254	10020.9	17.83	109.11	80.4	482.4	456.9
83.75	Top - Section 2	0.3125	40.717	40.075	8266.0	21.56	130.30	0.0	0.0	1126.1
85.00		0.3125	40.442	39.802	8098.4	21.41	129.42	76.2	394.4	169.9
90.00		0.3125	39.342	38.711	7450.4	20.79	125.90	77.0	373.0	667.9
95.00		0.3125	38.242	37.620	6838.0	20.17	122.37	77.7	352.2	649.3
100.00		0.3125	37.142	36.529	6260.1	19.55	118.85	78.4	332.0	630.8
105.00		0.3125	36.042	35.438	5715.7	18.93	115.33	79.1	312.4	612.2
110.00		0.3125	34.942	34.347	5203.8	18.31	111.81	79.9	293.3	593.7
115.00		0.3125	33.841	33.255	4723.4	17.68	108.29	80.6	274.9	575.1
119.25	Bot - Section 4	0.3125	32.906	32.328	4339.1	17.16	105.30	81.2	259.7	474.2
120.00		0.3125	32.741	32.164	4273.5	17.06	104.77	81.3	257.1	149.3
122.00		0.3125	32.301	31.728	4101.9	16.82	103.36	81.6	250.1	394.4
123.50	Top - Section 3	0.2500	32.471	25.567	3353.6	21.49	129.88	0.0	0.0	292.3
124.50		0.2500	32.251	25.392	3285.3	21.34	129.00	76.3	200.6	86.7
125.00		0.2500	32.141	25.305	3251.6	21.26	128.56	76.4	199.3	43.1
130.00		0.2500	31.041	24.432	2926.5	20.48	124.16	77.3	185.7	423.1
132.00		0.2500	30.601	24.083	2802.9	20.17	122.40	77.7	180.4	165.1
135.00		0.2500	29.941	23.559	2623.9	19.71	119.76	78.2	172.6	243.2
140.00		0.2500	28.841	22.686	2342.9	18.93	115.36	79.1	160.0	393.4
145.00		0.2500	27.741	21.813	2082.7	18.15	110.96	80.0	147.9	378.5
150.00		0.2500	26.640	20.940	1842.6	17.38	106.56	81.0	136.2	363.7
152.00		0.2500	26.200	20.591	1751.9	17.07	104.80	81.3	131.7	141.3
155.00		0.2500	25.540	20.067	1621.6	16.60	102.16	81.9	125.1	207.5
160.00		0.2500	24.440	19.194	1419.0	15.83	97.76	82.5	114.4	334.0
162.00		0.2500	24.000	18.845	1343.0	15.52	96.00	82.5	110.2	129.4

28122.8

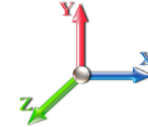
Wind Loading - Shaft

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	19.450	21.40	437.17	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	19.450	21.40	428.85	0.650	0.000	5.00	24.209	15.74	538.7	0.0	1609.8
10.00		1.00	0.85	19.450	21.40	420.52	0.650	0.000	5.00	23.744	15.43	528.3	0.0	1578.6
15.00		1.00	0.85	19.450	21.40	412.19	0.650	0.000	5.00	23.278	15.13	518.0	0.0	1547.4
20.00		1.00	0.90	20.638	22.70	416.01	0.650	0.000	5.00	22.813	14.83	538.6	0.0	1516.2
25.00		1.00	0.95	21.630	23.79	417.12	0.650	0.000	5.00	22.348	14.53	553.0	0.0	1485.0
30.00		1.00	0.98	22.477	24.72	416.25	0.650	0.000	5.00	21.882	14.22	562.7	0.0	1453.8
35.00		1.00	1.01	23.218	25.54	413.97	0.650	0.000	5.00	21.417	13.92	568.9	0.0	1422.6
38.75 Bot - Section 2		1.00	1.04	23.721	26.09	411.53	0.650	0.000	3.75	15.757	10.24	427.6	0.0	1046.5
40.00		1.00	1.04	23.880	26.27	410.60	0.650	0.000	1.25	5.273	3.43	144.1	0.0	645.5
45.00 Top - Section 1		1.00	1.07	24.479	26.93	406.38	0.653 *	0.000	5.00	20.803	13.57	584.8	0.0	2546.0
50.00		1.00	1.09	25.029	27.53	407.91	0.654 *	0.000	5.00	20.338	13.30	585.9	0.0	1159.0
55.00		1.00	1.12	25.536	28.09	402.48	0.659 *	0.000	5.00	19.872	13.09	588.2	0.0	1132.2
60.00		1.00	1.14	26.008	28.61	396.56	0.663 *	0.000	5.00	19.407	12.88	589.4	0.0	1105.5
65.00		1.00	1.16	26.450	29.09	390.21	0.669 *	0.000	5.00	18.941	12.66	589.6	0.0	1078.8
70.00		1.00	1.17	26.866	29.55	383.48	0.674 *	0.000	5.00	18.476	12.45	588.8	0.0	1052.0
75.00 Appurtenance(s)		1.00	1.19	27.259	29.98	376.42	0.680 *	0.000	5.00	18.010	12.24	587.3	0.0	1025.3
78.50 Bot - Section 3		1.00	1.20	27.522	30.27	371.30	0.685 *	0.000	3.50	12.330	8.44	408.9	0.0	701.8
80.00 Appurtenance(s)		1.00	1.21	27.632	30.39	369.06	0.688 *	0.000	1.50	5.294	3.64	177.1	0.0	548.2
83.75 Top - Section 2		1.00	1.22	27.899	30.69	363.37	0.691 *	0.000	3.75	13.051	9.02	442.9	0.0	1351.3
85.00		1.00	1.22	27.987	30.79	367.11	0.691 *	0.000	1.25	4.292	2.96	146.0	0.0	203.9
90.00		1.00	1.24	28.325	31.16	359.28	0.695 *	0.000	5.00	16.878	11.73	584.6	0.0	801.5
95.00		1.00	1.25	28.650	31.51	351.23	0.702 *	0.000	5.00	16.413	11.51	580.6	0.0	779.2
100.00		1.00	1.27	28.961	31.86	342.97	0.709 *	0.000	5.00	15.947	11.30	576.1	0.0	756.9
105.00 Appurtenance(s)		1.00	1.28	29.260	32.19	334.52	0.716 *	0.000	5.00	15.482	11.09	571.1	0.0	734.7
110.00 Appurtenance(s)		1.00	1.29	29.548	32.50	325.90	0.724 *	0.000	5.00	15.016	10.88	565.7	0.0	712.4
115.00		1.00	1.30	29.826	32.81	317.12	0.733 *	0.000	5.00	14.551	10.67	559.9	0.0	690.1
119.25 Bot - Section 4		1.00	1.31	30.054	33.06	309.54	0.742 *	0.000	4.25	12.002	8.90	470.8	0.0	569.1
120.00		1.00	1.32	30.094	33.10	308.19	0.746 *	0.000	0.75	2.115	1.58	83.6	0.0	179.1
122.00 Appurtenance(s)		1.00	1.32	30.199	33.22	304.58	0.749 *	0.000	2.00	5.588	4.19	222.5	0.0	473.3
123.50 Top - Section 3		1.00	1.32	30.277	33.30	301.86	0.650	0.000	1.50	4.142	2.69	143.5	0.0	350.7
124.50 Appurtenance(s)		1.00	1.33	30.328	33.36	304.76	0.650	0.000	1.00	2.738	1.78	95.0	0.0	104.0
125.00		1.00	1.33	30.354	33.39	303.85	0.650	0.000	0.50	1.362	0.89	47.3	0.0	51.8
130.00		1.00	1.34	30.605	33.67	294.66	0.650	0.000	5.00	13.366	8.69	468.0	0.0	507.7
132.00 Appurtenance(s)		1.00	1.34	30.704	33.77	290.95	0.650	0.000	2.00	5.216	3.39	183.2	0.0	198.1
135.00		1.00	1.35	30.850	33.93	285.35	0.650	0.000	3.00	7.684	4.99	271.2	0.0	291.8
140.00		1.00	1.36	31.087	34.20	275.92	0.650	0.000	5.00	12.435	8.08	442.2	0.0	472.1
145.00		1.00	1.37	31.317	34.45	266.37	0.650	0.000	5.00	11.970	7.78	428.8	0.0	454.3
150.00		1.00	1.38	31.541	34.70	256.72	0.650	0.000	5.00	11.504	7.48	415.1	0.0	436.4
152.00 Appurtenance(s)		1.00	1.38	31.630	34.79	252.84	0.650	0.000	2.00	4.471	2.91	161.8	0.0	169.6
155.00		1.00	1.39	31.760	34.94	246.97	0.650	0.000	3.00	6.567	4.27	238.6	0.0	249.0
160.00		1.00	1.40	31.973	35.17	237.13	0.650	0.000	5.00	10.573	6.87	386.7	0.0	400.8
162.00 Appurtenance(s)		1.00	1.40	32.057	35.26	233.16	0.650	0.000	2.00	4.099	2.66	150.3	0.0	155.3
Totals:									162.00			17,315.4		33,747.3

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	162.00	1900MHz RRH	3	32.057	35.262	0.88	1.00	10.03	158.40	0.000	0.000	566.00	0.00	0.00
2	162.00	APXVTM14-C-120	3	32.077	35.285	0.63	0.80	12.02	201.60	0.000	0.500	678.64	0.00	339.32
3	162.00	TD-RRH8x20-25	3	32.057	35.262	0.69	1.00	8.38	252.00	0.000	0.000	472.99	0.00	0.00
4	162.00	APXVSP18-C-A20	3	32.077	35.285	0.66	0.80	15.98	205.20	0.000	0.500	901.94	0.00	450.97
5	162.00	Flush Mount	1	31.973	35.170	1.00	1.00	5.00	210.00	0.000	-2.000	281.36	0.00	-562.72
6	162.00	800 MHz RRU	3	32.057	35.262	0.75	1.00	5.60	190.80	0.000	0.000	316.09	0.00	0.00
7	162.00	800 MHz Ext. Filter	3	32.057	35.262	0.63	1.00	2.25	23.76	0.000	0.000	126.89	0.00	0.00
8	162.00	ACU-A20-N	4	32.077	35.285	0.75	1.00	0.42	4.80	0.000	0.500	23.71	0.00	11.86
9	162.00	Low Profile Platform-flat	1	32.057	35.262	1.00	1.00	25.00	1440.00	0.000	0.000	1410.49	0.00	0.00
10	152.00	Platform w/ Hand Rail	1	31.630	34.792	1.00	1.00	49.30	3355.80	0.000	0.000	2744.43	0.00	0.00
11	152.00	Radio 4449 B71+B12	3	31.630	34.792	0.65	0.75	3.81	255.60	0.000	0.000	212.20	0.00	0.00
12	152.00	APXV18-206516S-A20	3	31.630	34.792	0.57	0.75	7.46	66.60	0.000	0.000	415.04	0.00	0.00
13	152.00	APXVAARR24_43-U-NA2	3	31.630	34.792	0.52	0.75	31.88	460.80	0.000	0.000	1774.58	0.00	0.00
14	152.00	FE15501P77/75	3	31.630	34.792	0.49	0.75	0.79	63.00	0.000	0.000	43.96	0.00	0.00
15	152.00	KRY 112 144/1	3	31.630	34.792	0.55	0.75	0.57	39.60	0.000	0.000	32.00	0.00	0.00
16	152.00	782 11056	3	31.630	34.792	0.50	0.75	0.23	6.48	0.000	0.000	12.59	0.00	0.00
17	152.00	RR90-17-02DP	6	31.630	34.792	0.55	0.75	14.32	97.20	0.000	0.000	797.31	0.00	0.00
18	132.00	FD9R6004/2C-3L	6	30.704	33.774	0.56	0.75	1.22	22.32	0.000	0.000	65.66	0.00	0.00
19	132.00	HRK12 (Handrail Kit)	1	30.704	33.774	1.00	1.00	6.75	314.06	0.000	0.000	364.76	0.00	0.00
20	132.00	Raycap	1	30.704	33.774	0.50	0.75	2.04	38.40	0.000	0.000	110.25	0.00	0.00
21	132.00	Samsung RFV01U-D2A	3	30.704	33.774	0.50	0.75	2.83	253.08	0.000	0.000	153.15	0.00	0.00
22	132.00	Samsung RFV01U-D1A	3	30.704	33.774	0.50	0.75	2.83	303.84	0.000	0.000	153.15	0.00	0.00
23	132.00	Samsung MT6407-77A	3	30.704	33.774	0.52	0.75	7.39	285.84	0.000	0.000	399.17	0.00	0.00
24	132.00	JMA Wireless	6	30.704	33.774	0.65	0.75	38.64	331.20	0.000	0.000	2088.12	0.00	0.00
25	132.00	DB846F65ZAXY	4	30.704	33.774	0.70	0.75	19.67	100.80	0.000	0.000	1062.92	0.00	0.00
26	132.00	LPA-80080-4CF-EDIN-0	2	30.704	33.774	1.27	0.75	6.66	28.80	0.000	0.000	359.66	0.00	0.00
27	132.00	Low Profile	1	30.704	33.774	1.00	1.00	22.00	1800.00	0.000	0.000	1188.86	0.00	0.00
28	124.50	DC6-48-60-18-8F	1	30.328	33.361	1.00	1.00	1.47	38.16	0.000	0.000	78.46	0.00	0.00
29	124.50	RRUS-11	6	30.328	33.361	0.68	1.00	18.03	396.00	0.000	0.000	962.59	0.00	0.00
30	124.50	Flush Mount	1	30.328	33.361	1.00	1.00	5.00	210.00	0.000	0.000	266.89	0.00	0.00
31	122.00	7770.00	6	30.199	33.219	0.58	0.80	19.27	252.00	0.000	0.000	1024.31	0.00	0.00
32	122.00	LGP21401	6	30.199	33.219	0.60	0.80	4.64	101.52	0.000	0.000	246.83	0.00	0.00
33	122.00	LGP21903	6	30.199	33.219	0.60	0.80	0.97	39.60	0.000	0.000	51.66	0.00	0.00
34	122.00	AM-X-CD-16-65-00T-RET	3	30.199	33.219	0.65	0.80	11.76	118.80	0.000	0.000	625.11	0.00	0.00
35	122.00	Low Profile Platform-flat	1	30.199	33.219	1.00	1.00	25.00	1440.00	0.000	0.000	1328.75	0.00	0.00
36	110.00	MC-PK8-DSH	1	29.548	32.503	1.00	1.00	37.59	2072.40	0.000	0.000	1954.83	0.00	0.00
37	110.00	Raycap	1	29.548	32.503	1.00	1.00	2.01	26.28	0.000	0.000	104.53	0.00	0.00
38	110.00	Fujitsu TA08025-B604	3	29.548	32.503	0.50	0.75	2.95	230.04	0.000	0.000	153.66	0.00	0.00
39	110.00	Fujitsu TA08025-B605	3	29.548	32.503	0.50	0.75	2.95	270.00	0.000	0.000	153.66	0.00	0.00
40	110.00	JMA Wireless	3	29.548	32.503	0.55	0.75	20.80	232.20	0.000	0.000	1081.47	0.00	0.00
41	105.00	Low Profile Platform-flat	1	29.260	32.186	1.00	1.00	25.00	1440.00	0.000	0.000	1287.43	0.00	0.00
42	80.00	738-449	1	27.657	30.423	1.00	1.00	0.01	0.60	0.000	0.350	0.49	0.00	0.17
43	75.00	GPS	1	27.259	29.985	1.00	1.00	1.00	12.00	0.000	0.000	47.98	0.00	0.00

Totals: 17,389.58

26,124.57

Total Applied Force Summary

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		538.69	1885.98	0.00	0.00
10.00		528.33	1854.79	0.00	0.00
15.00		517.97	1823.60	0.00	0.00
20.00		538.60	1792.42	0.00	0.00
25.00		552.99	1761.23	0.00	0.00
30.00		562.66	1730.04	0.00	0.00
35.00		568.85	1698.85	0.00	0.00
38.75		427.59	1253.67	0.00	0.00
40.00		144.06	714.59	0.00	0.00
45.00		584.83	2822.16	0.00	0.00
50.00		585.86	1435.15	0.00	0.00
55.00		588.22	1408.42	0.00	0.00
60.00		589.40	1381.69	0.00	0.00
65.00		589.55	1354.95	0.00	0.00
70.00		588.81	1328.22	0.00	0.00
75.00	(1) attachments	635.24	1313.48	0.00	0.00
78.50		408.95	894.46	0.00	0.00
80.00	(1) attachments	177.56	631.41	0.00	0.17
83.75		442.90	1557.00	0.00	0.00
85.00		146.02	272.42	0.00	0.00
90.00		584.57	1075.77	0.00	0.00
95.00		580.58	1053.49	0.00	0.00
100.00		576.09	1031.21	0.00	0.00
105.00	(1) attachments	1858.56	2448.94	0.00	0.00
110.00	(11) attachments	4013.87	3817.58	0.00	0.00
115.00		559.94	953.46	0.00	0.00
119.25		470.79	792.92	0.00	0.00
120.00		83.60	218.63	0.00	0.00
122.00	(22) attachments	3499.15	2530.51	0.00	0.00
123.50		143.48	402.52	0.00	0.00
124.50	(8) attachments	1402.95	782.73	0.00	0.00
125.00		47.30	69.02	0.00	0.00
130.00		467.98	680.36	0.00	0.00
132.00	(30) attachments	6128.91	3745.50	0.00	0.00
135.00		271.20	349.02	0.00	0.00
140.00		442.23	567.44	0.00	0.00
145.00		428.83	549.62	0.00	0.00
150.00		415.11	531.79	0.00	0.00
152.00	(25) attachments	6193.91	4552.81	0.00	0.00
155.00		238.61	261.10	0.00	0.00
160.00		386.74	420.91	0.00	0.00
162.00	(24) attachments	4928.45	2849.93	0.00	239.42
Totals:		43,439.93	58,599.79	0.00	239.59

Linear Appurtenance Segment Forces (Factored)

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



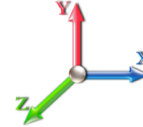
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Load Case: 1.2D + 1.6W 97 mph Wind

Iterations 25

Dead Load Factor 1.20

Wind Load Factor 1.60



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	19.450	0.00	1.64
5.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.086	0.000	19.450	0.00	68.64
5.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	19.450	0.00	6.60
5.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	19.450	0.00	74.88
5.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	19.450	0.00	0.36
5.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.086	0.000	19.450	0.00	10.68
5.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	19.450	0.00	4.80
5.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	19.450	0.00	10.92
5.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	19.450	0.00	0.96
10.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	19.450	0.00	1.64
10.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.087	0.000	19.450	0.00	68.64
10.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	19.450	0.00	6.60
10.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	19.450	0.00	74.88
10.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	19.450	0.00	0.36
10.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.087	0.000	19.450	0.00	10.68
10.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	19.450	0.00	4.80
10.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	19.450	0.00	10.92
10.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	19.450	0.00	0.96
15.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	19.450	0.00	1.64
15.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.089	0.000	19.450	0.00	68.64
15.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	19.450	0.00	6.60
15.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	19.450	0.00	74.88
15.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	19.450	0.00	0.36
15.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.089	0.000	19.450	0.00	10.68
15.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	19.450	0.00	4.80
15.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	19.450	0.00	10.92
15.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	19.450	0.00	0.96
20.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	20.638	0.00	1.64
20.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.091	0.000	20.638	0.00	68.64
20.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	20.638	0.00	6.60
20.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	20.638	0.00	74.88
20.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	20.638	0.00	0.36
20.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.091	0.000	20.638	0.00	10.68
20.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	20.638	0.00	4.80
20.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	20.638	0.00	10.92
20.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	20.638	0.00	0.96
25.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	21.630	0.00	1.64
25.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.093	0.000	21.630	0.00	68.64
25.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	21.630	0.00	6.60
25.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	21.630	0.00	74.88
25.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	21.630	0.00	0.36
25.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.093	0.000	21.630	0.00	10.68
25.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	21.630	0.00	4.80
25.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	21.630	0.00	10.92
25.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	21.630	0.00	0.96
30.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	22.477	0.00	1.64
30.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.095	0.000	22.477	0.00	68.64

Linear Appurtenance Segment Forces (Factored)

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

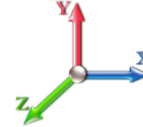


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Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60

Iterations 25



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
30.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	22.477	0.00	6.60
30.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	22.477	0.00	74.88
30.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	22.477	0.00	0.36
30.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.095	0.000	22.477	0.00	10.68
30.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	22.477	0.00	4.80
30.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	22.477	0.00	10.92
30.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	22.477	0.00	0.96
35.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	1.64
35.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.097	0.000	23.218	0.00	68.64
35.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	6.60
35.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	74.88
35.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	0.36
35.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.097	0.000	23.218	0.00	10.68
35.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	4.80
35.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	10.92
35.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	0.96
38.75	Safety Cable	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	1.23
38.75	1 5/8" Coax	Yes	3.75	0.000	1.98	0.62	0.00	0.099	0.000	23.721	0.00	51.48
38.75	1 5/8" Fiber	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	4.95
38.75	1 5/8" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	56.16
38.75	10 mm	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	0.27
38.75	3" Coax	Yes	3.75	0.000	3.00	0.94	0.00	0.099	0.000	23.721	0.00	8.01
38.75	DC	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	3.60
38.75	1.6" Hybrid	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	8.19
38.75	1/2" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	0.72
40.00	Safety Cable	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	0.41
40.00	1 5/8" Coax	Yes	1.25	0.000	1.98	0.21	0.00	0.100	0.000	23.880	0.00	17.16
40.00	1 5/8" Fiber	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	1.65
40.00	1 5/8" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	18.72
40.00	10 mm	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	0.09
40.00	3" Coax	Yes	1.25	0.000	3.00	0.31	0.00	0.100	0.000	23.880	0.00	2.67
40.00	DC	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	1.20
40.00	1.6" Hybrid	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	2.73
40.00	1/2" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	0.24
45.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	1.64
45.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.101	1.004	24.479	0.00	68.64
45.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	6.60
45.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	74.88
45.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	0.36
45.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.101	1.004	24.479	0.00	10.68
45.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	4.80
45.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	10.92
45.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	0.96
50.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	1.64
50.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.102	1.006	25.029	0.00	68.64
50.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	6.60
50.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	74.88

Linear Appurtenance Segment Forces (Factored)

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 97 mph Wind

Iterations 25

Dead Load Factor 1.20

Wind Load Factor 1.60



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
50.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	0.36
50.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.102	1.006	25.029	0.00	10.68
50.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	4.80
50.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	10.92
50.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	0.96
55.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	1.64
55.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.104	1.013	25.536	0.00	68.64
55.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	6.60
55.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	74.88
55.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	0.36
55.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.104	1.013	25.536	0.00	10.68
55.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	4.80
55.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	10.92
55.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	0.96
60.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	1.64
60.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.107	1.021	26.008	0.00	68.64
60.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	6.60
60.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	74.88
60.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	0.36
60.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.107	1.021	26.008	0.00	10.68
60.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	4.80
60.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	10.92
60.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	0.96
65.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	1.64
65.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.110	1.029	26.450	0.00	68.64
65.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	6.60
65.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	74.88
65.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	0.36
65.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.110	1.029	26.450	0.00	10.68
65.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	4.80
65.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	10.92
65.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	0.96
70.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	1.64
70.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.112	1.037	26.866	0.00	68.64
70.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	6.60
70.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	74.88
70.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	0.36
70.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.112	1.037	26.866	0.00	10.68
70.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	4.80
70.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	10.92
70.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	0.96
75.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	1.64
75.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.115	1.046	27.259	0.00	68.64
75.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	6.60
75.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	74.88
75.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	0.36
75.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.115	1.046	27.259	0.00	10.68

Linear Appurtenance Segment Forces (Factored)

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

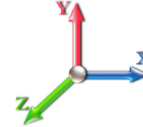


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Load Case: 1.2D + 1.6W 97 mph Wind

Iterations 25

Dead Load Factor 1.20
Wind Load Factor 1.60



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
75.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	4.80
75.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	10.92
75.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	0.96
78.50	Safety Cable	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	27.522	0.00	1.15
78.50	1 5/8" Coax	Yes	3.50	0.000	1.98	0.58	0.00	0.118	1.053	27.522	0.00	48.05
78.50	1 5/8" Fiber	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	27.522	0.00	4.62
78.50	1 5/8" Coax	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	27.522	0.00	52.42
78.50	10 mm	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	27.522	0.00	0.25
78.50	3" Coax	Yes	3.50	0.000	3.00	0.88	0.00	0.118	1.053	27.522	0.00	7.48
78.50	DC	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	27.522	0.00	3.36
78.50	1.6" Hybrid	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	27.522	0.00	7.64
80.00	Safety Cable	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	27.632	0.00	0.49
80.00	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.119	1.058	27.632	0.00	20.59
80.00	1 5/8" Fiber	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	27.632	0.00	1.98
80.00	1 5/8" Coax	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	27.632	0.00	22.46
80.00	10 mm	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	27.632	0.00	0.11
80.00	3" Coax	Yes	1.50	0.000	3.00	0.38	0.00	0.119	1.058	27.632	0.00	3.20
80.00	DC	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	27.632	0.00	1.44
80.00	1.6" Hybrid	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	27.632	0.00	3.28
83.75	Safety Cable	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	27.899	0.00	1.23
83.75	1 5/8" Coax	Yes	3.75	0.000	1.98	0.62	0.00	0.121	1.063	27.899	0.00	51.48
83.75	1 5/8" Fiber	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	27.899	0.00	4.95
83.75	1 5/8" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	27.899	0.00	56.16
83.75	10 mm	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	27.899	0.00	0.27
83.75	3" Coax	Yes	3.75	0.000	3.00	0.94	0.00	0.121	1.063	27.899	0.00	8.01
83.75	DC	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	27.899	0.00	3.60
83.75	1.6" Hybrid	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	27.899	0.00	8.19
85.00	Safety Cable	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	27.987	0.00	0.41
85.00	1 5/8" Coax	Yes	1.25	0.000	1.98	0.21	0.00	0.121	1.063	27.987	0.00	17.16
85.00	1 5/8" Fiber	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	27.987	0.00	1.65
85.00	1 5/8" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	27.987	0.00	18.72
85.00	10 mm	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	27.987	0.00	0.09
85.00	3" Coax	Yes	1.25	0.000	3.00	0.31	0.00	0.121	1.063	27.987	0.00	2.67
85.00	DC	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	27.987	0.00	1.20
85.00	1.6" Hybrid	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	27.987	0.00	2.73
90.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	28.325	0.00	1.64
90.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.123	1.069	28.325	0.00	68.64
90.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	28.325	0.00	6.60
90.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	28.325	0.00	74.88
90.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	28.325	0.00	0.36
90.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.123	1.069	28.325	0.00	10.68
90.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	28.325	0.00	4.80
90.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	28.325	0.00	10.92
95.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	28.650	0.00	1.64
95.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.126	1.079	28.650	0.00	68.64
95.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	28.650	0.00	6.60
95.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	28.650	0.00	74.88

Linear Appurtenance Segment Forces (Factored)

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



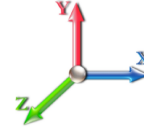
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Load Case: 1.2D + 1.6W 97 mph Wind

Iterations 25

Dead Load Factor 1.20

Wind Load Factor 1.60



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
95.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	28.650	0.00	0.36
95.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.126	1.079	28.650	0.00	10.68
95.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	28.650	0.00	4.80
95.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	28.650	0.00	10.92
100.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	28.961	0.00	1.64
100.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.130	1.090	28.961	0.00	68.64
100.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	28.961	0.00	6.60
100.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	28.961	0.00	74.88
100.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	28.961	0.00	0.36
100.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.130	1.090	28.961	0.00	10.68
100.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	28.961	0.00	4.80
100.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	28.961	0.00	10.92
105.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	29.260	0.00	1.64
105.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.134	1.102	29.260	0.00	68.64
105.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	29.260	0.00	6.60
105.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	29.260	0.00	74.88
105.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	29.260	0.00	0.36
105.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.134	1.102	29.260	0.00	10.68
105.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	29.260	0.00	4.80
105.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	29.260	0.00	10.92
110.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	29.548	0.00	1.64
110.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.138	1.115	29.548	0.00	68.64
110.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	29.548	0.00	6.60
110.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	29.548	0.00	74.88
110.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	29.548	0.00	0.36
110.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.138	1.115	29.548	0.00	10.68
110.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	29.548	0.00	4.80
110.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	29.548	0.00	10.92
115.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	29.826	0.00	1.64
115.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.143	1.128	29.826	0.00	68.64
115.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	29.826	0.00	6.60
115.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	29.826	0.00	74.88
115.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	29.826	0.00	0.36
115.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.143	1.128	29.826	0.00	10.68
115.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	29.826	0.00	4.80
119.25	Safety Cable	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	30.054	0.00	1.39
119.25	1 5/8" Coax	Yes	4.25	0.000	1.98	0.70	0.00	0.147	1.141	30.054	0.00	58.34
119.25	1 5/8" Fiber	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	30.054	0.00	5.61
119.25	1 5/8" Coax	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	30.054	0.00	63.65
119.25	10 mm	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	30.054	0.00	0.31
119.25	3" Coax	Yes	4.25	0.000	3.00	1.06	0.00	0.147	1.141	30.054	0.00	9.08
119.25	DC	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	30.054	0.00	4.08
120.00	Safety Cable	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	30.094	0.00	0.25
120.00	1 5/8" Coax	Yes	0.75	0.000	1.98	0.12	0.00	0.149	1.148	30.094	0.00	10.30
120.00	1 5/8" Fiber	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	30.094	0.00	0.99
120.00	1 5/8" Coax	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	30.094	0.00	11.23
120.00	10 mm	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	30.094	0.00	0.05

Linear Appurtenance Segment Forces (Factored)

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
120.00	3" Coax	Yes	0.75	0.000	3.00	0.19	0.00	0.149	1.148	30.094	0.00	1.60
120.00	DC	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	30.094	0.00	0.72
122.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	30.199	0.00	0.66
122.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.151	1.152	30.199	0.00	27.46
122.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	30.199	0.00	2.64
122.00	1 5/8" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	30.199	0.00	29.95
122.00	10 mm	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	30.199	0.00	0.14
122.00	3" Coax	Yes	2.00	0.000	3.00	0.50	0.00	0.151	1.152	30.199	0.00	4.27
122.00	DC	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	30.199	0.00	1.92
123.50	Safety Cable	Yes	1.50	0.000	0.00	0.00	0.00	0.061	0.000	30.277	0.00	0.49
123.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.061	0.000	30.277	0.00	20.59
123.50	1 5/8" Fiber	Yes	1.50	0.000	0.00	0.00	0.00	0.061	0.000	30.277	0.00	1.98
124.50	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	30.328	0.00	0.33
124.50	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.060	0.000	30.328	0.00	13.73
124.50	1 5/8" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	30.328	0.00	1.32
125.00	Safety Cable	Yes	0.50	0.000	0.00	0.00	0.00	0.061	0.000	30.354	0.00	0.16
125.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.061	0.000	30.354	0.00	6.86
125.00	1 5/8" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.061	0.000	30.354	0.00	0.66
130.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.062	0.000	30.605	0.00	1.64
130.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.062	0.000	30.605	0.00	68.64
130.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.062	0.000	30.605	0.00	6.60
132.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	30.704	0.00	0.66
132.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.063	0.000	30.704	0.00	27.46
132.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	30.704	0.00	2.64
135.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.064	0.000	30.850	0.00	0.98
135.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.49	0.00	0.064	0.000	30.850	0.00	41.18
135.00	1 5/8" Fiber	Yes	3.00	0.000	0.00	0.00	0.00	0.064	0.000	30.850	0.00	3.96
140.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.066	0.000	31.087	0.00	1.64
140.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.066	0.000	31.087	0.00	68.64
140.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.066	0.000	31.087	0.00	6.60
145.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	31.317	0.00	1.64
145.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.069	0.000	31.317	0.00	68.64
145.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	31.317	0.00	6.60
150.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	31.541	0.00	1.64
150.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.072	0.000	31.541	0.00	68.64
150.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	31.541	0.00	6.60
152.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.074	0.000	31.630	0.00	0.66
152.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.074	0.000	31.630	0.00	27.46
152.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.074	0.000	31.630	0.00	2.64
155.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	31.760	0.00	0.98
160.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	31.973	0.00	1.64
162.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	32.057	0.00	0.66
Totals:											0.0	4,808.6

Calculated Forces

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

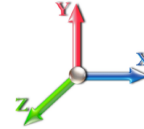


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Load Case: 1.2D + 1.6W 97 mph Wind

Iterations 25

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	-58.51	-43.55	0.00	-5163.2	0.00	5163.21	5422.04	2711.02	12776.1	6397.58	0.00	0.000	0.000	0.818
5.00	-56.47	-43.23	0.00	-4945.4	0.00	4945.45	5354.65	2677.32	12373.4	6195.90	0.12	-0.217	0.000	0.809
10.00	-54.45	-42.90	0.00	-4729.3	0.00	4729.32	5285.82	2642.91	11973.5	5995.67	0.46	-0.438	0.000	0.799
15.00	-52.46	-42.57	0.00	-4514.8	0.00	4514.82	5215.55	2607.78	11576.7	5796.99	1.04	-0.662	0.000	0.789
20.00	-50.51	-42.21	0.00	-4301.9	0.00	4301.97	5143.86	2571.93	11183.2	5599.96	1.86	-0.888	0.000	0.778
25.00	-48.59	-41.82	0.00	-4090.9	0.00	4090.93	5070.72	2535.36	10793.2	5404.66	2.91	-1.118	0.000	0.767
30.00	-46.70	-41.41	0.00	-3881.8	0.00	3881.83	4996.16	2498.08	10406.9	5211.21	4.21	-1.350	0.000	0.755
35.00	-44.87	-40.96	0.00	-3674.7	0.00	3674.77	4920.16	2460.08	10024.5	5019.70	5.75	-1.585	0.000	0.741
38.75	-43.55	-40.59	0.00	-3521.1	0.00	3521.16	4862.22	2431.11	9740.32	4877.40	7.06	-1.763	0.000	0.731
40.00	-42.73	-40.54	0.00	-3470.4	0.00	3470.43	4842.73	2421.36	9646.11	4830.22	7.53	-1.824	0.000	0.728
45.00	-39.76	-40.02	0.00	-3267.7	0.00	3267.76	3936.38	1968.19	7803.92	3907.76	9.57	-2.063	0.000	0.847
50.00	-38.18	-39.55	0.00	-3067.6	0.00	3067.65	3877.34	1938.67	7510.22	3760.69	11.86	-2.304	0.000	0.826
55.00	-36.61	-39.08	0.00	-2869.9	0.00	2869.90	3816.87	1908.43	7219.20	3614.96	14.42	-2.572	0.000	0.804
60.00	-35.08	-38.59	0.00	-2674.5	0.00	2674.52	3754.96	1877.48	6931.04	3470.67	17.26	-2.841	0.000	0.780
65.00	-33.58	-38.09	0.00	-2481.5	0.00	2481.59	3691.62	1845.81	6645.93	3327.91	20.38	-3.109	0.000	0.755
70.00	-32.11	-37.57	0.00	-2291.1	0.00	2291.16	3626.84	1813.42	6364.09	3186.77	23.78	-3.377	0.000	0.728
75.00	-30.69	-36.98	0.00	-2103.3	0.00	2103.31	3560.63	1780.31	6085.69	3047.37	27.45	-3.644	0.000	0.699
78.50	-29.74	-36.58	0.00	-1973.8	0.00	1973.88	3513.43	1756.71	5892.98	2950.87	30.19	-3.830	0.000	0.678
80.00	-29.04	-36.43	0.00	-1919.0	0.00	1919.01	3492.98	1746.49	5810.95	2909.79	31.41	-3.911	0.000	0.668
83.75	-27.43	-35.95	0.00	-1782.3	0.00	1782.39	2742.50	1371.25	4553.78	2280.28	34.56	-4.108	0.000	0.792
85.00	-27.06	-35.87	0.00	-1737.4	0.00	1737.46	2730.37	1365.18	4502.54	2254.62	35.64	-4.175	0.000	0.781
90.00	-25.85	-35.33	0.00	-1558.1	0.00	1558.13	2680.95	1340.47	4298.92	2152.65	40.17	-4.464	0.000	0.734
95.00	-24.68	-34.79	0.00	-1381.4	0.00	1381.48	2630.10	1315.05	4097.56	2051.82	44.99	-4.745	0.000	0.683
100.00	-23.55	-34.23	0.00	-1207.5	0.00	1207.56	2577.82	1288.91	3898.66	1952.23	50.10	-5.014	0.000	0.628
105.00	-21.14	-32.25	0.00	-1036.4	0.00	1036.40	2524.10	1262.05	3702.43	1853.97	55.49	-5.269	0.000	0.568
110.00	-17.60	-27.97	0.00	-875.14	0.00	875.14	2468.95	1234.47	3509.05	1757.13	61.13	-5.507	0.000	0.506
115.00	-16.61	-27.37	0.00	-735.30	0.00	735.30	2412.36	1206.18	3318.73	1661.83	67.01	-5.727	0.000	0.450
119.25	-15.83	-26.85	0.00	-618.96	0.00	618.96	2363.14	1181.57	3159.50	1582.10	72.18	-5.900	0.000	0.398
120.00	-15.59	-26.76	0.00	-598.82	0.00	598.82	2354.34	1177.17	3131.65	1568.15	73.11	-5.930	0.000	0.389
122.00	-13.41	-23.03	0.00	-545.30	0.00	545.30	2330.73	1165.37	3057.78	1531.16	75.60	-6.007	0.000	0.362
123.50	-13.01	-22.86	0.00	-510.74	0.00	510.74	1751.58	875.79	2319.28	1161.36	77.50	-6.062	0.000	0.448
124.50	-12.37	-21.39	0.00	-487.89	0.00	487.89	1743.79	871.89	2293.08	1148.24	78.77	-6.097	0.000	0.433
125.00	-12.27	-21.36	0.00	-477.19	0.00	477.19	1739.87	869.94	2280.00	1141.69	79.41	-6.118	0.000	0.426
130.00	-11.60	-20.84	0.00	-370.41	0.00	370.41	1699.92	849.96	2150.20	1076.70	85.91	-6.304	0.000	0.351
132.00	-8.53	-14.35	0.00	-328.73	0.00	328.73	1683.54	841.77	2098.80	1050.96	88.56	-6.372	0.000	0.318
135.00	-8.19	-14.06	0.00	-285.68	0.00	285.68	1658.53	829.27	2022.29	1012.65	92.58	-6.465	0.000	0.287
140.00	-7.64	-13.57	0.00	-215.40	0.00	215.40	1615.71	807.86	1896.47	949.64	99.42	-6.601	0.000	0.232
145.00	-7.13	-13.09	0.00	-147.55	0.00	147.55	1571.46	785.73	1772.93	887.78	106.38	-6.711	0.000	0.171
150.00	-6.64	-12.62	0.00	-82.09	0.00	82.09	1525.77	762.88	1651.87	827.16	113.44	-6.789	0.000	0.104
152.00	-2.85	-5.93	0.00	-56.84	0.00	56.84	1507.09	753.54	1604.19	803.29	116.28	-6.811	0.000	0.073
155.00	-2.61	-5.67	0.00	-39.04	0.00	39.04	1478.64	739.32	1533.49	767.89	120.56	-6.834	0.000	0.053
160.00	-2.24	-5.23	0.00	-10.71	0.00	10.71	1426.03	713.01	1413.96	708.03	127.71	-6.856	0.000	0.017
162.00	0.00	-4.93	0.00	-0.24	0.00	0.24	1400.09	700.04	1362.73	682.38	130.58	-6.858	0.000	0.000

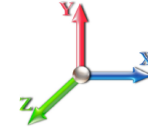
Wind Loading - Shaft

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	19.450	21.40	437.17	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	19.450	21.40	428.85	0.650	0.000	5.00	24.209	15.74	538.7	0.0	1207.3
10.00		1.00	0.85	19.450	21.40	420.52	0.650	0.000	5.00	23.744	15.43	528.3	0.0	1183.9
15.00		1.00	0.85	19.450	21.40	412.19	0.650	0.000	5.00	23.278	15.13	518.0	0.0	1160.6
20.00		1.00	0.90	20.638	22.70	416.01	0.650	0.000	5.00	22.813	14.83	538.6	0.0	1137.2
25.00		1.00	0.95	21.630	23.79	417.12	0.650	0.000	5.00	22.348	14.53	553.0	0.0	1113.8
30.00		1.00	0.98	22.477	24.72	416.25	0.650	0.000	5.00	21.882	14.22	562.7	0.0	1090.4
35.00		1.00	1.01	23.218	25.54	413.97	0.650	0.000	5.00	21.417	13.92	568.9	0.0	1067.0
38.75 Bot - Section 2		1.00	1.04	23.721	26.09	411.53	0.650	0.000	3.75	15.757	10.24	427.6	0.0	784.9
40.00		1.00	1.04	23.880	26.27	410.60	0.650	0.000	1.25	5.273	3.43	144.1	0.0	484.2
45.00 Top - Section 1		1.00	1.07	24.479	26.93	406.38	0.653 *	0.000	5.00	20.803	13.57	584.8	0.0	1909.5
50.00		1.00	1.09	25.029	27.53	407.91	0.654 *	0.000	5.00	20.338	13.30	585.9	0.0	869.2
55.00		1.00	1.12	25.536	28.09	402.48	0.659 *	0.000	5.00	19.872	13.09	588.2	0.0	849.2
60.00		1.00	1.14	26.008	28.61	396.56	0.663 *	0.000	5.00	19.407	12.88	589.4	0.0	829.1
65.00		1.00	1.16	26.450	29.09	390.21	0.669 *	0.000	5.00	18.941	12.66	589.6	0.0	809.1
70.00		1.00	1.17	26.866	29.55	383.48	0.674 *	0.000	5.00	18.476	12.45	588.8	0.0	789.0
75.00 Appurtenance(s)		1.00	1.19	27.259	29.98	376.42	0.680 *	0.000	5.00	18.010	12.24	587.3	0.0	769.0
78.50 Bot - Section 3		1.00	1.20	27.522	30.27	371.30	0.685 *	0.000	3.50	12.330	8.44	408.9	0.0	526.3
80.00 Appurtenance(s)		1.00	1.21	27.632	30.39	369.06	0.688 *	0.000	1.50	5.294	3.64	177.1	0.0	411.2
83.75 Top - Section 2		1.00	1.22	27.899	30.69	363.37	0.691 *	0.000	3.75	13.051	9.02	442.9	0.0	1013.5
85.00		1.00	1.22	27.987	30.79	367.11	0.691 *	0.000	1.25	4.292	2.96	146.0	0.0	152.9
90.00		1.00	1.24	28.325	31.16	359.28	0.695 *	0.000	5.00	16.878	11.73	584.6	0.0	601.1
95.00		1.00	1.25	28.650	31.51	351.23	0.702 *	0.000	5.00	16.413	11.51	580.6	0.0	584.4
100.00		1.00	1.27	28.961	31.86	342.97	0.709 *	0.000	5.00	15.947	11.30	576.1	0.0	567.7
105.00 Appurtenance(s)		1.00	1.28	29.260	32.19	334.52	0.716 *	0.000	5.00	15.482	11.09	571.1	0.0	551.0
110.00 Appurtenance(s)		1.00	1.29	29.548	32.50	325.90	0.724 *	0.000	5.00	15.016	10.88	565.7	0.0	534.3
115.00		1.00	1.30	29.826	32.81	317.12	0.733 *	0.000	5.00	14.551	10.67	559.9	0.0	517.6
119.25 Bot - Section 4		1.00	1.31	30.054	33.06	309.54	0.742 *	0.000	4.25	12.002	8.90	470.8	0.0	426.8
120.00		1.00	1.32	30.094	33.10	308.19	0.746 *	0.000	0.75	2.115	1.58	83.6	0.0	134.3
122.00 Appurtenance(s)		1.00	1.32	30.199	33.22	304.58	0.749 *	0.000	2.00	5.588	4.19	222.5	0.0	354.9
123.50 Top - Section 3		1.00	1.32	30.277	33.30	301.86	0.650	0.000	1.50	4.142	2.69	143.5	0.0	263.0
124.50 Appurtenance(s)		1.00	1.33	30.328	33.36	304.76	0.650	0.000	1.00	2.738	1.78	95.0	0.0	78.0
125.00		1.00	1.33	30.354	33.39	303.85	0.650	0.000	0.50	1.362	0.89	47.3	0.0	38.8
130.00		1.00	1.34	30.605	33.67	294.66	0.650	0.000	5.00	13.366	8.69	468.0	0.0	380.8
132.00 Appurtenance(s)		1.00	1.34	30.704	33.77	290.95	0.650	0.000	2.00	5.216	3.39	183.2	0.0	148.6
135.00		1.00	1.35	30.850	33.93	285.35	0.650	0.000	3.00	7.684	4.99	271.2	0.0	218.9
140.00		1.00	1.36	31.087	34.20	275.92	0.650	0.000	5.00	12.435	8.08	442.2	0.0	354.1
145.00		1.00	1.37	31.317	34.45	266.37	0.650	0.000	5.00	11.970	7.78	428.8	0.0	340.7
150.00		1.00	1.38	31.541	34.70	256.72	0.650	0.000	5.00	11.504	7.48	415.1	0.0	327.3
152.00 Appurtenance(s)		1.00	1.38	31.630	34.79	252.84	0.650	0.000	2.00	4.471	2.91	161.8	0.0	127.2
155.00		1.00	1.39	31.760	34.94	246.97	0.650	0.000	3.00	6.567	4.27	238.6	0.0	186.8
160.00		1.00	1.40	31.973	35.17	237.13	0.650	0.000	5.00	10.573	6.87	386.7	0.0	300.6
162.00 Appurtenance(s)		1.00	1.40	32.057	35.26	233.16	0.650	0.000	2.00	4.099	2.66	150.3	0.0	116.5
Totals:									162.00			17,315.4		25,310.5

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 24

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	162.00	1900MHz RRH	3	32.057	35.262	0.88	1.00	10.03	118.80	0.000	0.000	566.00	0.00	0.00
2	162.00	APXVTM14-C-120	3	32.077	35.285	0.63	0.80	12.02	151.20	0.000	0.500	678.64	0.00	339.32
3	162.00	TD-RRH8x20-25	3	32.057	35.262	0.69	1.00	8.38	189.00	0.000	0.000	472.99	0.00	0.00
4	162.00	APXVSP18-C-A20	3	32.077	35.285	0.66	0.80	15.98	153.90	0.000	0.500	901.94	0.00	450.97
5	162.00	Flush Mount	1	31.973	35.170	1.00	1.00	5.00	157.50	0.000	-2.000	281.36	0.00	-562.72
6	162.00	800 MHz RRU	3	32.057	35.262	0.75	1.00	5.60	143.10	0.000	0.000	316.09	0.00	0.00
7	162.00	800 MHz Ext. Filter	3	32.057	35.262	0.63	1.00	2.25	17.82	0.000	0.000	126.89	0.00	0.00
8	162.00	ACU-A20-N	4	32.077	35.285	0.75	1.00	0.42	3.60	0.000	0.500	23.71	0.00	11.86
9	162.00	Low Profile Platform-flat	1	32.057	35.262	1.00	1.00	25.00	1080.00	0.000	0.000	1410.49	0.00	0.00
10	152.00	Platform w/ Hand Rail	1	31.630	34.792	1.00	1.00	49.30	2516.85	0.000	0.000	2744.43	0.00	0.00
11	152.00	Radio 4449 B71+B12	3	31.630	34.792	0.65	0.75	3.81	191.70	0.000	0.000	212.20	0.00	0.00
12	152.00	APXV18-206516S-A20	3	31.630	34.792	0.57	0.75	7.46	49.95	0.000	0.000	415.04	0.00	0.00
13	152.00	APXVAARR24_43-U-NA2	3	31.630	34.792	0.52	0.75	31.88	345.60	0.000	0.000	1774.58	0.00	0.00
14	152.00	FE15501P77/75	3	31.630	34.792	0.49	0.75	0.79	47.25	0.000	0.000	43.96	0.00	0.00
15	152.00	KRY 112 144/1	3	31.630	34.792	0.55	0.75	0.57	29.70	0.000	0.000	32.00	0.00	0.00
16	152.00	782 11056	3	31.630	34.792	0.50	0.75	0.23	4.86	0.000	0.000	12.59	0.00	0.00
17	152.00	RR90-17-02DP	6	31.630	34.792	0.55	0.75	14.32	72.90	0.000	0.000	797.31	0.00	0.00
18	132.00	FD9R6004/2C-3L	6	30.704	33.774	0.56	0.75	1.22	16.74	0.000	0.000	65.66	0.00	0.00
19	132.00	HRK12 (Handrail Kit)	1	30.704	33.774	1.00	1.00	6.75	235.55	0.000	0.000	364.76	0.00	0.00
20	132.00	Raycap	1	30.704	33.774	0.50	0.75	2.04	28.80	0.000	0.000	110.25	0.00	0.00
21	132.00	Samsung RFV01U-D2A	3	30.704	33.774	0.50	0.75	2.83	189.81	0.000	0.000	153.15	0.00	0.00
22	132.00	Samsung RFV01U-D1A	3	30.704	33.774	0.50	0.75	2.83	227.88	0.000	0.000	153.15	0.00	0.00
23	132.00	Samsung MT6407-77A	3	30.704	33.774	0.52	0.75	7.39	214.38	0.000	0.000	399.17	0.00	0.00
24	132.00	JMA Wireless	6	30.704	33.774	0.65	0.75	38.64	248.40	0.000	0.000	2088.12	0.00	0.00
25	132.00	DB846F65ZAXY	4	30.704	33.774	0.70	0.75	19.67	75.60	0.000	0.000	1062.92	0.00	0.00
26	132.00	LPA-80080-4CF-EDIN-0	2	30.704	33.774	1.27	0.75	6.66	21.60	0.000	0.000	359.66	0.00	0.00
27	132.00	Low Profile	1	30.704	33.774	1.00	1.00	22.00	1350.00	0.000	0.000	1188.86	0.00	0.00
28	124.50	DC6-48-60-18-8F	1	30.328	33.361	1.00	1.00	1.47	28.62	0.000	0.000	78.46	0.00	0.00
29	124.50	RRUS-11	6	30.328	33.361	0.68	1.00	18.03	297.00	0.000	0.000	962.59	0.00	0.00
30	124.50	Flush Mount	1	30.328	33.361	1.00	1.00	5.00	157.50	0.000	0.000	266.89	0.00	0.00
31	122.00	7770.00	6	30.199	33.219	0.58	0.80	19.27	189.00	0.000	0.000	1024.31	0.00	0.00
32	122.00	LGP21401	6	30.199	33.219	0.60	0.80	4.64	76.14	0.000	0.000	246.83	0.00	0.00
33	122.00	LGP21903	6	30.199	33.219	0.60	0.80	0.97	29.70	0.000	0.000	51.66	0.00	0.00
34	122.00	AM-X-CD-16-65-00T-RET	3	30.199	33.219	0.65	0.80	11.76	89.10	0.000	0.000	625.11	0.00	0.00
35	122.00	Low Profile Platform-flat	1	30.199	33.219	1.00	1.00	25.00	1080.00	0.000	0.000	1328.75	0.00	0.00
36	110.00	MC-PK8-DSH	1	29.548	32.503	1.00	1.00	37.59	1554.30	0.000	0.000	1954.83	0.00	0.00
37	110.00	Raycap	1	29.548	32.503	1.00	1.00	2.01	19.71	0.000	0.000	104.53	0.00	0.00
38	110.00	Fujitsu TA08025-B604	3	29.548	32.503	0.50	0.75	2.95	172.53	0.000	0.000	153.66	0.00	0.00
39	110.00	Fujitsu TA08025-B605	3	29.548	32.503	0.50	0.75	2.95	202.50	0.000	0.000	153.66	0.00	0.00
40	110.00	JMA Wireless	3	29.548	32.503	0.55	0.75	20.80	174.15	0.000	0.000	1081.47	0.00	0.00
41	105.00	Low Profile Platform-flat	1	29.260	32.186	1.00	1.00	25.00	1080.00	0.000	0.000	1287.43	0.00	0.00
42	80.00	738-449	1	27.657	30.423	1.00	1.00	0.01	0.45	0.000	0.350	0.49	0.00	0.17
43	75.00	GPS	1	27.259	29.985	1.00	1.00	1.00	9.00	0.000	0.000	47.98	0.00	0.00

Totals: 13,042.19

26,124.57

Total Applied Force Summary

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		538.69	1414.49	0.00	0.00
10.00		528.33	1391.10	0.00	0.00
15.00		517.97	1367.70	0.00	0.00
20.00		538.60	1344.31	0.00	0.00
25.00		552.99	1320.92	0.00	0.00
30.00		562.66	1297.53	0.00	0.00
35.00		568.85	1274.14	0.00	0.00
38.75		427.59	940.25	0.00	0.00
40.00		144.06	535.94	0.00	0.00
45.00		584.83	2116.62	0.00	0.00
50.00		585.86	1076.37	0.00	0.00
55.00		588.22	1056.32	0.00	0.00
60.00		589.40	1036.26	0.00	0.00
65.00		589.55	1016.21	0.00	0.00
70.00		588.81	996.16	0.00	0.00
75.00	(1) attachments	635.24	985.11	0.00	0.00
78.50		408.95	670.85	0.00	0.00
80.00	(1) attachments	177.56	473.55	0.00	0.17
83.75		442.90	1167.75	0.00	0.00
85.00		146.02	204.32	0.00	0.00
90.00		584.57	806.83	0.00	0.00
95.00		580.58	790.12	0.00	0.00
100.00		576.09	773.41	0.00	0.00
105.00	(1) attachments	1858.56	1836.70	0.00	0.00
110.00	(11) attachments	4013.87	2863.18	0.00	0.00
115.00		559.94	715.10	0.00	0.00
119.25		470.79	594.69	0.00	0.00
120.00		83.60	163.97	0.00	0.00
122.00	(22) attachments	3499.15	1897.88	0.00	0.00
123.50		143.48	301.89	0.00	0.00
124.50	(8) attachments	1402.95	587.05	0.00	0.00
125.00		47.30	51.76	0.00	0.00
130.00		467.98	510.27	0.00	0.00
132.00	(30) attachments	6128.91	2809.12	0.00	0.00
135.00		271.20	261.76	0.00	0.00
140.00		442.23	425.58	0.00	0.00
145.00		428.83	412.21	0.00	0.00
150.00		415.11	398.85	0.00	0.00
152.00	(25) attachments	6193.91	3414.61	0.00	0.00
155.00		238.61	195.83	0.00	0.00
160.00		386.74	315.68	0.00	0.00
162.00	(24) attachments	4928.45	2137.45	0.00	239.42
Totals:		43,439.93	43,949.84	0.00	239.59

Linear Appurtenance Segment Forces (Factored)

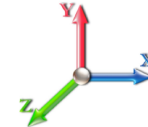
Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 24

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	0.00	0.00	0.00	0.086	0.000	19.450	0.00	1.23
5.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.086	0.000	19.450	0.00	51.48
5.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	19.450	0.00	4.95
5.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	19.450	0.00	56.16
5.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	19.450	0.00	0.27
5.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.086	0.000	19.450	0.00	8.01
5.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	19.450	0.00	3.60
5.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	19.450	0.00	8.19
5.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	19.450	0.00	0.72
10.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	19.450	0.00	1.23
10.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.087	0.000	19.450	0.00	51.48
10.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	19.450	0.00	4.95
10.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	19.450	0.00	56.16
10.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	19.450	0.00	0.27
10.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.087	0.000	19.450	0.00	8.01
10.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	19.450	0.00	3.60
10.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	19.450	0.00	8.19
10.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	19.450	0.00	0.72
15.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	19.450	0.00	1.23
15.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.089	0.000	19.450	0.00	51.48
15.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	19.450	0.00	4.95
15.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	19.450	0.00	56.16
15.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	19.450	0.00	0.27
15.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.089	0.000	19.450	0.00	8.01
15.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	19.450	0.00	3.60
15.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	19.450	0.00	8.19
15.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	19.450	0.00	0.72
20.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	20.638	0.00	1.23
20.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.091	0.000	20.638	0.00	51.48
20.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	20.638	0.00	4.95
20.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	20.638	0.00	56.16
20.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	20.638	0.00	0.27
20.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.091	0.000	20.638	0.00	8.01
20.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	20.638	0.00	3.60
20.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	20.638	0.00	8.19
20.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	20.638	0.00	0.72
25.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	21.630	0.00	1.23
25.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.093	0.000	21.630	0.00	51.48
25.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	21.630	0.00	4.95
25.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	21.630	0.00	56.16
25.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	21.630	0.00	0.27
25.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.093	0.000	21.630	0.00	8.01
25.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	21.630	0.00	3.60
25.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	21.630	0.00	8.19
25.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	21.630	0.00	0.72
30.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	22.477	0.00	1.23
30.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.095	0.000	22.477	0.00	51.48

Linear Appurtenance Segment Forces (Factored)

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 24

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)
30.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	22.477	0.00	4.95
30.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	22.477	0.00	56.16
30.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	22.477	0.00	0.27
30.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.095	0.000	22.477	0.00	8.01
30.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	22.477	0.00	3.60
30.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	22.477	0.00	8.19
30.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	22.477	0.00	0.72
35.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	1.23
35.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.097	0.000	23.218	0.00	51.48
35.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	4.95
35.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	56.16
35.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	0.27
35.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.097	0.000	23.218	0.00	8.01
35.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	3.60
35.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	8.19
35.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	23.218	0.00	0.72
38.75	Safety Cable	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	0.92
38.75	1 5/8" Coax	Yes	3.75	0.000	1.98	0.62	0.00	0.099	0.000	23.721	0.00	38.61
38.75	1 5/8" Fiber	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	3.71
38.75	1 5/8" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	42.12
38.75	10 mm	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	0.20
38.75	3" Coax	Yes	3.75	0.000	3.00	0.94	0.00	0.099	0.000	23.721	0.00	6.01
38.75	DC	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	2.70
38.75	1.6" Hybrid	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	6.14
38.75	1/2" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	23.721	0.00	0.54
40.00	Safety Cable	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	0.31
40.00	1 5/8" Coax	Yes	1.25	0.000	1.98	0.21	0.00	0.100	0.000	23.880	0.00	12.87
40.00	1 5/8" Fiber	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	1.24
40.00	1 5/8" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	14.04
40.00	10 mm	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	0.07
40.00	3" Coax	Yes	1.25	0.000	3.00	0.31	0.00	0.100	0.000	23.880	0.00	2.00
40.00	DC	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	0.90
40.00	1.6" Hybrid	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	2.05
40.00	1/2" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	23.880	0.00	0.18
45.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	1.23
45.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.101	1.004	24.479	0.00	51.48
45.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	4.95
45.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	56.16
45.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	0.27
45.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.101	1.004	24.479	0.00	8.01
45.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	3.60
45.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	8.19
45.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	24.479	0.00	0.72
50.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	1.23
50.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.102	1.006	25.029	0.00	51.48
50.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	4.95
50.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	56.16

Linear Appurtenance Segment Forces (Factored)

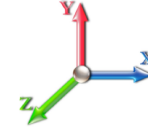
Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 24

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 24

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)
50.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	0.27
50.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.102	1.006	25.029	0.00	8.01
50.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	3.60
50.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	8.19
50.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	25.029	0.00	0.72
55.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	1.23
55.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.104	1.013	25.536	0.00	51.48
55.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	4.95
55.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	56.16
55.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	0.27
55.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.104	1.013	25.536	0.00	8.01
55.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	3.60
55.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	8.19
55.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	25.536	0.00	0.72
60.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	1.23
60.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.107	1.021	26.008	0.00	51.48
60.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	4.95
60.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	56.16
60.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	0.27
60.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.107	1.021	26.008	0.00	8.01
60.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	3.60
60.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	8.19
60.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	26.008	0.00	0.72
65.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	1.23
65.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.110	1.029	26.450	0.00	51.48
65.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	4.95
65.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	56.16
65.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	0.27
65.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.110	1.029	26.450	0.00	8.01
65.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	3.60
65.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	8.19
65.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	26.450	0.00	0.72
70.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	1.23
70.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.112	1.037	26.866	0.00	51.48
70.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	4.95
70.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	56.16
70.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	0.27
70.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.112	1.037	26.866	0.00	8.01
70.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	3.60
70.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	8.19
70.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	26.866	0.00	0.72
75.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	1.23
75.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.115	1.046	27.259	0.00	51.48
75.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	4.95
75.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	56.16
75.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	0.27
75.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.115	1.046	27.259	0.00	8.01

Linear Appurtenance Segment Forces (Factored)

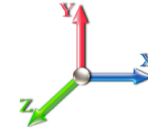
Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 24

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)
75.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	3.60
75.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	8.19
75.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	27.259	0.00	0.72
78.50	Safety Cable	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	27.522	0.00	0.86
78.50	1 5/8" Coax	Yes	3.50	0.000	1.98	0.58	0.00	0.118	1.053	27.522	0.00	36.04
78.50	1 5/8" Fiber	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	27.522	0.00	3.47
78.50	1 5/8" Coax	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	27.522	0.00	39.31
78.50	10 mm	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	27.522	0.00	0.19
78.50	3" Coax	Yes	3.50	0.000	3.00	0.88	0.00	0.118	1.053	27.522	0.00	5.61
78.50	DC	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	27.522	0.00	2.52
78.50	1.6" Hybrid	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	27.522	0.00	5.73
80.00	Safety Cable	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	27.632	0.00	0.37
80.00	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.119	1.058	27.632	0.00	15.44
80.00	1 5/8" Fiber	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	27.632	0.00	1.49
80.00	1 5/8" Coax	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	27.632	0.00	16.85
80.00	10 mm	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	27.632	0.00	0.08
80.00	3" Coax	Yes	1.50	0.000	3.00	0.38	0.00	0.119	1.058	27.632	0.00	2.40
80.00	DC	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	27.632	0.00	1.08
80.00	1.6" Hybrid	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	27.632	0.00	2.46
83.75	Safety Cable	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	27.899	0.00	0.92
83.75	1 5/8" Coax	Yes	3.75	0.000	1.98	0.62	0.00	0.121	1.063	27.899	0.00	38.61
83.75	1 5/8" Fiber	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	27.899	0.00	3.71
83.75	1 5/8" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	27.899	0.00	42.12
83.75	10 mm	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	27.899	0.00	0.20
83.75	3" Coax	Yes	3.75	0.000	3.00	0.94	0.00	0.121	1.063	27.899	0.00	6.01
83.75	DC	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	27.899	0.00	2.70
83.75	1.6" Hybrid	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	27.899	0.00	6.14
85.00	Safety Cable	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	27.987	0.00	0.31
85.00	1 5/8" Coax	Yes	1.25	0.000	1.98	0.21	0.00	0.121	1.063	27.987	0.00	12.87
85.00	1 5/8" Fiber	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	27.987	0.00	1.24
85.00	1 5/8" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	27.987	0.00	14.04
85.00	10 mm	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	27.987	0.00	0.07
85.00	3" Coax	Yes	1.25	0.000	3.00	0.31	0.00	0.121	1.063	27.987	0.00	2.00
85.00	DC	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	27.987	0.00	0.90
85.00	1.6" Hybrid	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	27.987	0.00	2.05
90.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	28.325	0.00	1.23
90.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.123	1.069	28.325	0.00	51.48
90.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	28.325	0.00	4.95
90.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	28.325	0.00	56.16
90.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	28.325	0.00	0.27
90.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.123	1.069	28.325	0.00	8.01
90.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	28.325	0.00	3.60
90.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	28.325	0.00	8.19
95.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	28.650	0.00	1.23
95.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.126	1.079	28.650	0.00	51.48
95.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	28.650	0.00	4.95
95.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	28.650	0.00	56.16

Linear Appurtenance Segment Forces (Factored)

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 97 mph Wind

Iterations 24

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)
95.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	28.650	0.00	0.27
95.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.126	1.079	28.650	0.00	8.01
95.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	28.650	0.00	3.60
95.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	28.650	0.00	8.19
100.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	28.961	0.00	1.23
100.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.130	1.090	28.961	0.00	51.48
100.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	28.961	0.00	4.95
100.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	28.961	0.00	56.16
100.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	28.961	0.00	0.27
100.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.130	1.090	28.961	0.00	8.01
100.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	28.961	0.00	3.60
100.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	28.961	0.00	8.19
105.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	29.260	0.00	1.23
105.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.134	1.102	29.260	0.00	51.48
105.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	29.260	0.00	4.95
105.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	29.260	0.00	56.16
105.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	29.260	0.00	0.27
105.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.134	1.102	29.260	0.00	8.01
105.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	29.260	0.00	3.60
105.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	29.260	0.00	8.19
110.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	29.548	0.00	1.23
110.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.138	1.115	29.548	0.00	51.48
110.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	29.548	0.00	4.95
110.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	29.548	0.00	56.16
110.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	29.548	0.00	0.27
110.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.138	1.115	29.548	0.00	8.01
110.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	29.548	0.00	3.60
110.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	29.548	0.00	8.19
115.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	29.826	0.00	1.23
115.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.143	1.128	29.826	0.00	51.48
115.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	29.826	0.00	4.95
115.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	29.826	0.00	56.16
115.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	29.826	0.00	0.27
115.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.143	1.128	29.826	0.00	8.01
115.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	29.826	0.00	3.60
119.25	Safety Cable	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	30.054	0.00	1.04
119.25	1 5/8" Coax	Yes	4.25	0.000	1.98	0.70	0.00	0.147	1.141	30.054	0.00	43.76
119.25	1 5/8" Fiber	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	30.054	0.00	4.21
119.25	1 5/8" Coax	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	30.054	0.00	47.74
119.25	10 mm	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	30.054	0.00	0.23
119.25	3" Coax	Yes	4.25	0.000	3.00	1.06	0.00	0.147	1.141	30.054	0.00	6.81
119.25	DC	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	30.054	0.00	3.06
120.00	Safety Cable	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	30.094	0.00	0.18
120.00	1 5/8" Coax	Yes	0.75	0.000	1.98	0.12	0.00	0.149	1.148	30.094	0.00	7.72
120.00	1 5/8" Fiber	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	30.094	0.00	0.74
120.00	1 5/8" Coax	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	30.094	0.00	8.42
120.00	10 mm	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	30.094	0.00	0.04

Linear Appurtenance Segment Forces (Factored)

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 24

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)
120.00	3" Coax	Yes	0.75	0.000	3.00	0.19	0.00	0.149	1.148	30.094	0.00	1.20
120.00	DC	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	30.094	0.00	0.54
122.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	30.199	0.00	0.49
122.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.151	1.152	30.199	0.00	20.59
122.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	30.199	0.00	1.98
122.00	1 5/8" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	30.199	0.00	22.46
122.00	10 mm	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	30.199	0.00	0.11
122.00	3" Coax	Yes	2.00	0.000	3.00	0.50	0.00	0.151	1.152	30.199	0.00	3.20
122.00	DC	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	30.199	0.00	1.44
123.50	Safety Cable	Yes	1.50	0.000	0.00	0.00	0.00	0.061	0.000	30.277	0.00	0.37
123.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.061	0.000	30.277	0.00	15.44
123.50	1 5/8" Fiber	Yes	1.50	0.000	0.00	0.00	0.00	0.061	0.000	30.277	0.00	1.49
124.50	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	30.328	0.00	0.25
124.50	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.060	0.000	30.328	0.00	10.30
124.50	1 5/8" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	30.328	0.00	0.99
125.00	Safety Cable	Yes	0.50	0.000	0.00	0.00	0.00	0.061	0.000	30.354	0.00	0.12
125.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.061	0.000	30.354	0.00	5.15
125.00	1 5/8" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.061	0.000	30.354	0.00	0.50
130.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.062	0.000	30.605	0.00	1.23
130.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.062	0.000	30.605	0.00	51.48
130.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.062	0.000	30.605	0.00	4.95
132.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	30.704	0.00	0.49
132.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.063	0.000	30.704	0.00	20.59
132.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	30.704	0.00	1.98
135.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.064	0.000	30.850	0.00	0.74
135.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.49	0.00	0.064	0.000	30.850	0.00	30.89
135.00	1 5/8" Fiber	Yes	3.00	0.000	0.00	0.00	0.00	0.064	0.000	30.850	0.00	2.97
140.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.066	0.000	31.087	0.00	1.23
140.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.066	0.000	31.087	0.00	51.48
140.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.066	0.000	31.087	0.00	4.95
145.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	31.317	0.00	1.23
145.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.069	0.000	31.317	0.00	51.48
145.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	31.317	0.00	4.95
150.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	31.541	0.00	1.23
150.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.072	0.000	31.541	0.00	51.48
150.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	31.541	0.00	4.95
152.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.074	0.000	31.630	0.00	0.49
152.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.074	0.000	31.630	0.00	20.59
152.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.074	0.000	31.630	0.00	1.98
155.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	31.760	0.00	0.74
160.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	31.973	0.00	1.23
162.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	32.057	0.00	0.49
Totals:											0.0	3,606.4

Calculated Forces

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 97 mph Wind

Iterations 24

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	-43.87	-43.52	0.00	-5101.1	0.00	5101.11	5422.04	2711.02	12776.1	6397.58	0.00	0.000	0.000	0.806
5.00	-42.29	-43.14	0.00	-4883.5	0.00	4883.50	5354.65	2677.32	12373.4	6195.90	0.12	-0.215	0.000	0.796
10.00	-40.74	-42.76	0.00	-4667.7	0.00	4667.79	5285.82	2642.91	11973.5	5995.67	0.46	-0.433	0.000	0.786
15.00	-39.21	-42.38	0.00	-4453.9	0.00	4453.99	5215.55	2607.78	11576.7	5796.99	1.03	-0.653	0.000	0.776
20.00	-37.71	-41.97	0.00	-4242.0	0.00	4242.08	5143.86	2571.93	11183.2	5599.96	1.83	-0.877	0.000	0.765
25.00	-36.23	-41.54	0.00	-4032.2	0.00	4032.21	5070.72	2535.36	10793.2	5404.66	2.87	-1.103	0.000	0.753
30.00	-34.78	-41.09	0.00	-3824.5	0.00	3824.50	4996.16	2498.08	10406.9	5211.21	4.15	-1.332	0.000	0.741
35.00	-33.38	-40.61	0.00	-3619.0	0.00	3619.03	4920.16	2460.08	10024.5	5019.70	5.67	-1.563	0.000	0.728
38.75	-32.37	-40.22	0.00	-3466.7	0.00	3466.75	4862.22	2431.11	9740.32	4877.40	6.97	-1.739	0.000	0.718
40.00	-31.74	-40.14	0.00	-3416.4	0.00	3416.47	4842.73	2421.36	9646.11	4830.22	7.43	-1.799	0.000	0.714
45.00	-29.48	-39.61	0.00	-3215.7	0.00	3215.75	3936.38	1968.19	7803.92	3907.76	9.44	-2.034	0.000	0.831
50.00	-28.25	-39.11	0.00	-3017.7	0.00	3017.70	3877.34	1938.67	7510.22	3760.69	11.70	-2.271	0.000	0.810
55.00	-27.04	-38.60	0.00	-2822.1	0.00	2822.15	3816.87	1908.43	7219.20	3614.96	14.22	-2.535	0.000	0.788
60.00	-25.86	-38.08	0.00	-2629.1	0.00	2629.15	3754.96	1877.48	6931.04	3470.67	17.02	-2.799	0.000	0.765
65.00	-24.70	-37.56	0.00	-2438.7	0.00	2438.73	3691.62	1845.81	6645.93	3327.91	20.09	-3.063	0.000	0.740
70.00	-23.57	-37.02	0.00	-2250.9	0.00	2250.94	3626.84	1813.42	6364.09	3186.77	23.44	-3.326	0.000	0.713
75.00	-22.49	-36.42	0.00	-2065.8	0.00	2065.83	3560.63	1780.31	6085.69	3047.37	27.06	-3.588	0.000	0.685
78.50	-21.76	-36.02	0.00	-1938.3	0.00	1938.37	3513.43	1756.71	5892.98	2950.87	29.76	-3.771	0.000	0.663
80.00	-21.22	-35.86	0.00	-1884.3	0.00	1884.35	3492.98	1746.49	5810.95	2909.79	30.96	-3.851	0.000	0.654
83.75	-20.00	-35.38	0.00	-1749.8	0.00	1749.88	2742.50	1371.25	4553.78	2280.28	34.06	-4.044	0.000	0.775
85.00	-19.70	-35.28	0.00	-1705.6	0.00	1705.66	2730.37	1365.18	4502.54	2254.62	35.12	-4.109	0.000	0.764
90.00	-18.77	-34.73	0.00	-1529.2	0.00	1529.26	2680.95	1340.47	4298.92	2152.65	39.58	-4.393	0.000	0.718
95.00	-17.87	-34.17	0.00	-1355.6	0.00	1355.61	2630.10	1315.05	4097.56	2051.82	44.33	-4.669	0.000	0.668
100.00	-16.99	-33.61	0.00	-1184.7	0.00	1184.74	2577.82	1288.91	3898.66	1952.23	49.35	-4.933	0.000	0.614
105.00	-15.19	-31.66	0.00	-1016.6	0.00	1016.68	2524.10	1262.05	3702.43	1853.97	54.65	-5.183	0.000	0.555
110.00	-12.61	-27.45	0.00	-858.37	0.00	858.37	2468.95	1234.47	3509.05	1757.13	60.20	-5.417	0.000	0.494
115.00	-11.86	-26.86	0.00	-721.12	0.00	721.12	2412.36	1206.18	3318.73	1661.83	65.98	-5.632	0.000	0.439
119.25	-11.27	-26.36	0.00	-606.95	0.00	606.95	2363.14	1181.57	3159.50	1582.10	71.07	-5.802	0.000	0.389
120.00	-11.09	-26.27	0.00	-587.18	0.00	587.18	2354.34	1177.17	3131.65	1568.15	71.98	-5.832	0.000	0.380
122.00	-9.54	-22.60	0.00	-534.65	0.00	534.65	2330.73	1165.37	3057.78	1531.16	74.44	-5.906	0.000	0.354
123.50	-9.23	-22.44	0.00	-500.74	0.00	500.74	1751.58	875.79	2319.28	1161.36	76.30	-5.960	0.000	0.437
124.50	-8.78	-20.98	0.00	-478.31	0.00	478.31	1743.79	871.89	2293.08	1148.24	77.55	-5.995	0.000	0.422
125.00	-8.70	-20.95	0.00	-467.82	0.00	467.82	1739.87	869.94	2280.00	1141.69	78.18	-6.016	0.000	0.415
130.00	-8.20	-20.44	0.00	-363.08	0.00	363.08	1699.92	849.96	2150.20	1076.70	84.57	-6.198	0.000	0.343
132.00	-6.05	-14.06	0.00	-322.19	0.00	322.19	1683.54	841.77	2098.80	1050.96	87.17	-6.264	0.000	0.310
135.00	-5.80	-13.77	0.00	-280.03	0.00	280.03	1658.53	829.27	2022.29	1012.65	91.13	-6.356	0.000	0.280
140.00	-5.39	-13.29	0.00	-211.19	0.00	211.19	1615.71	807.86	1896.47	949.64	97.85	-6.489	0.000	0.226
145.00	-5.01	-12.83	0.00	-144.72	0.00	144.72	1571.46	785.73	1772.93	887.78	104.69	-6.597	0.000	0.166
150.00	-4.65	-12.37	0.00	-80.58	0.00	80.58	1525.77	762.88	1651.87	827.16	111.63	-6.674	0.000	0.101
152.00	-1.98	-5.82	0.00	-55.83	0.00	55.83	1507.09	753.54	1604.19	803.29	114.43	-6.695	0.000	0.071
155.00	-1.81	-5.57	0.00	-38.36	0.00	38.36	1478.64	739.32	1533.49	767.89	118.63	-6.718	0.000	0.051
160.00	-1.54	-5.15	0.00	-10.53	0.00	10.53	1426.03	713.01	1413.96	708.03	125.67	-6.739	0.000	0.016
162.00	0.00	-4.93	0.00	-0.24	0.00	0.24	1400.09	700.04	1362.73	682.38	128.48	-6.742	0.000	0.000

Wind Loading - Shaft

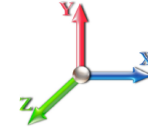
Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.242	5.00	25.244	30.29	172.2	450.6	2060.4
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	5.00	24.853	29.82	169.5	474.5	2053.1
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	5.00	24.434	29.32	166.7	485.1	2032.5
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	5.00	24.002	28.80	173.7	489.7	2005.9
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	5.00	23.563	28.28	178.8	491.0	1976.0
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	5.00	23.120	27.74	182.3	490.0	1943.9
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	5.00	22.674	27.21	184.6	487.5	1910.1
38.75 Bot - Section 2		1.00	1.04	6.303	6.93	0.00	1.200	1.524	3.75	16.710	20.05	139.0	363.5	1410.1
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	1.25	5.592	6.71	46.8	122.7	768.3
45.00 Top - Section 1		1.00	1.07	6.504	7.15	0.00	1.205 *	1.547	5.00	22.092	26.61	190.4	486.2	3032.1
50.00		1.00	1.09	6.650	7.32	0.00	1.207 *	1.564	5.00	21.641	26.13	191.1	480.7	1639.7
55.00		1.00	1.12	6.785	7.46	0.00	1.216 *	1.579	5.00	21.188	25.76	192.3	474.6	1606.8
60.00		1.00	1.14	6.910	7.60	0.00	1.225 *	1.592	5.00	20.734	25.40	193.1	467.9	1573.4
65.00		1.00	1.16	7.028	7.73	0.00	1.234 *	1.605	5.00	20.279	25.03	193.5	460.7	1539.5
70.00		1.00	1.17	7.138	7.85	0.00	1.244 *	1.617	5.00	19.823	24.67	193.7	453.1	1505.1
75.00 Appurtenance(s)		1.00	1.19	7.243	7.97	0.00	1.255 *	1.628	5.00	19.367	24.30	193.6	445.1	1470.4
78.50 Bot - Section 3		1.00	1.20	7.313	8.04	0.00	1.264 *	1.636	3.50	13.284	16.79	135.1	307.5	1009.3
80.00 Appurtenance(s)		1.00	1.21	7.342	8.08	0.00	1.270 *	1.639	1.50	5.704	7.24	58.5	133.0	681.2
83.75 Top - Section 2		1.00	1.22	7.413	8.15	0.00	1.276 *	1.646	3.75	14.080	17.97	146.5	327.6	1678.9
85.00		1.00	1.22	7.436	8.18	0.00	1.275 *	1.649	1.25	4.636	5.91	48.4	108.7	312.5
90.00		1.00	1.24	7.526	8.28	0.00	1.283 *	1.658	5.00	18.260	23.42	193.9	425.8	1227.3
95.00		1.00	1.25	7.612	8.37	0.00	1.295 *	1.667	5.00	17.802	23.06	193.1	416.7	1195.9
100.00		1.00	1.27	7.695	8.46	0.00	1.308 *	1.676	5.00	17.344	22.69	192.1	407.4	1164.3
105.00 Appurtenance(s)		1.00	1.28	7.774	8.55	0.00	1.323 *	1.684	5.00	16.885	22.33	191.0	397.9	1132.5
110.00 Appurtenance(s)		1.00	1.29	7.851	8.64	0.00	1.337 *	1.692	5.00	16.426	21.97	189.7	388.1	1100.5
115.00		1.00	1.30	7.925	8.72	0.00	1.353 *	1.699	5.00	15.967	21.61	188.4	378.2	1068.3
119.25 Bot - Section 4		1.00	1.31	7.986	8.78	0.00	1.369 *	1.706	4.25	13.210	18.09	158.9	314.2	883.3
120.00		1.00	1.32	7.996	8.80	0.00	1.378 *	1.707	0.75	2.328	3.21	28.2	56.0	235.1
122.00 Appurtenance(s)		1.00	1.32	8.024	8.83	0.00	1.383 *	1.710	2.00	6.158	8.52	75.2	147.8	621.0
123.50 Top - Section 3		1.00	1.32	8.045	8.85	0.00	1.200	1.712	1.50	4.570	5.48	48.5	109.9	460.6
124.50 Appurtenance(s)		1.00	1.33	8.058	8.86	0.00	1.200	1.713	1.00	3.024	3.63	32.2	72.9	176.9
125.00		1.00	1.33	8.065	8.87	0.00	1.200	1.714	0.50	1.505	1.81	16.0	36.3	88.1
130.00		1.00	1.34	8.132	8.95	0.00	1.200	1.720	5.00	14.800	17.76	158.9	352.9	860.7
132.00 Appurtenance(s)		1.00	1.34	8.158	8.97	0.00	1.200	1.723	2.00	5.790	6.95	62.4	139.5	337.6
135.00		1.00	1.35	8.197	9.02	0.00	1.200	1.727	3.00	8.548	10.26	92.5	205.5	497.3
140.00		1.00	1.36	8.260	9.09	0.00	1.200	1.733	5.00	13.879	16.66	151.3	331.8	803.9
145.00		1.00	1.37	8.321	9.15	0.00	1.200	1.739	5.00	13.419	16.10	147.4	321.0	775.3
150.00		1.00	1.38	8.381	9.22	0.00	1.200	1.745	5.00	12.958	15.55	143.4	310.2	746.6
152.00 Appurtenance(s)		1.00	1.38	8.404	9.24	0.00	1.200	1.748	2.00	5.054	6.06	56.1	122.3	291.9
155.00		1.00	1.39	8.439	9.28	0.00	1.200	1.751	3.00	7.443	8.93	82.9	179.5	428.5
160.00		1.00	1.40	8.495	9.34	0.00	1.200	1.757	5.00	12.037	14.44	135.0	288.1	688.9
162.00 Appurtenance(s)		1.00	1.40	8.518	9.37	0.00	1.200	1.759	2.00	4.685	5.62	52.7	113.4	268.8
Totals:									162.00			5,739.2	47,262.6	

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 24

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	162.00	1900MHz RRH	3	8.518	9.369	0.88	1.00	13.73	394.82	0.000	0.000	128.64	0.00	0.00
2	162.00	APXVTM14-C-120	3	8.523	9.375	0.63	0.80	14.15	687.31	0.000	0.500	132.65	0.00	66.33
3	162.00	TD-RRH8x20-25	3	8.518	9.369	0.69	1.00	10.08	586.49	0.000	0.000	94.45	0.00	0.00
4	162.00	APXVSP18-C-A20	3	8.523	9.375	0.66	0.80	21.58	579.26	0.000	0.500	202.36	0.00	101.18
5	162.00	Flush Mount	1	8.495	9.345	1.00	1.00	8.52	307.73	0.000	-2.000	79.59	0.00	-159.19
6	162.00	800 MHz RRU	3	8.518	9.369	0.75	1.00	8.20	351.09	0.000	0.000	76.79	0.00	0.00
7	162.00	800 MHz Ext. Filter	3	8.518	9.369	0.63	1.00	3.75	76.34	0.000	0.000	35.11	0.00	0.00
8	162.00	ACU-A20-N	4	8.523	9.375	0.75	1.00	1.32	16.92	0.000	0.500	12.35	0.00	6.17
9	162.00	Low Profile Platform-flat	1	8.518	9.369	1.00	1.00	46.10	2195.22	0.000	0.000	431.97	0.00	0.00
10	152.00	Platform w/ Hand Rail	1	8.404	9.244	1.00	1.00	92.38	7627.30	0.000	0.000	853.97	0.00	0.00
11	152.00	Radio 4449 B71+B12	3	8.404	9.244	0.65	0.75	4.87	375.15	0.000	0.000	45.04	0.00	0.00
12	152.00	APXV18-206516S-A20	3	8.404	9.244	0.58	0.75	11.59	214.25	0.000	0.000	107.18	0.00	0.00
13	152.00	APXVAARR24_43-U-NA2	3	8.404	9.244	0.52	0.75	34.87	1716.47	0.000	0.000	322.40	0.00	0.00
14	152.00	FE15501P77/75	3	8.404	9.244	0.49	0.75	1.28	119.69	0.000	0.000	11.81	0.00	0.00
15	152.00	KRY 112 144/1	3	8.404	9.244	0.58	0.75	1.33	62.69	0.000	0.000	12.27	0.00	0.00
16	152.00	782 11056	3	8.404	9.244	0.50	0.75	0.55	11.97	0.000	0.000	5.09	0.00	0.00
17	152.00	RR90-17-02DP	6	8.404	9.244	0.55	0.75	17.57	690.41	0.000	0.000	162.39	0.00	0.00
18	132.00	FD9R6004/2C-3L	6	8.158	8.974	0.56	0.75	2.69	56.07	0.000	0.000	24.16	0.00	0.00
19	132.00	HRK12 (Handrail Kit)	1	8.158	8.974	1.00	1.00	13.26	882.43	0.000	0.000	119.02	0.00	0.00
20	132.00	Raycap	1	8.158	8.974	0.50	0.75	2.45	125.68	0.000	0.000	21.97	0.00	0.00
21	132.00	Samsung RFV01U-D2A	3	8.158	8.974	0.50	0.75	3.65	362.33	0.000	0.000	32.80	0.00	0.00
22	132.00	Samsung RFV01U-D1A	3	8.158	8.974	0.50	0.75	3.65	350.06	0.000	0.000	32.80	0.00	0.00
23	132.00	Samsung MT6407-77A	3	8.158	8.974	0.56	0.75	9.49	638.96	0.000	0.000	85.18	0.00	0.00
24	132.00	JMA Wireless	6	8.158	8.974	0.65	0.75	43.96	1921.44	0.000	0.000	394.45	0.00	0.00
25	132.00	DB846F65ZAXY	4	8.158	8.974	0.70	0.75	23.06	878.42	0.000	0.000	206.91	0.00	0.00
26	132.00	LPA-80080-4CF-EDIN-0	2	8.158	8.974	1.27	0.75	8.92	190.90	0.000	0.000	80.02	0.00	0.00
27	132.00	Low Profile	1	8.158	8.974	1.00	1.00	39.44	2792.29	0.000	0.000	353.91	0.00	0.00
28	124.50	DC6-48-60-18-8F	1	8.058	8.864	1.00	1.00	2.16	81.14	0.000	0.000	19.12	0.00	0.00
29	124.50	RRUS-11	6	8.058	8.864	0.68	1.00	24.04	771.59	0.000	0.000	213.08	0.00	0.00
30	124.50	Flush Mount	1	8.058	8.864	1.00	1.00	8.43	303.89	0.000	0.000	74.69	0.00	0.00
31	122.00	7770.00	6	8.024	8.826	0.58	0.80	22.92	1042.76	0.000	0.000	202.33	0.00	0.00
32	122.00	LGP21401	6	8.024	8.826	0.60	0.80	7.59	205.86	0.000	0.000	67.00	0.00	0.00
33	122.00	LGP21903	6	8.024	8.826	0.60	0.80	2.37	74.73	0.000	0.000	20.96	0.00	0.00
34	122.00	AM-X-CD-16-65-00T-RET	3	8.024	8.826	0.65	0.80	15.76	419.78	0.000	0.000	139.09	0.00	0.00
35	122.00	Low Profile Platform-flat	1	8.024	8.826	1.00	1.00	45.51	2165.72	0.000	0.000	401.72	0.00	0.00
36	110.00	MC-PK8-DSH	1	7.851	8.636	1.00	1.00	83.38	3335.69	0.000	0.000	720.08	0.00	0.00
37	110.00	Raycap	1	7.851	8.636	1.00	1.00	2.56	65.20	0.000	0.000	22.12	0.00	0.00
38	110.00	Fujitsu TA08025-B604	3	7.851	8.636	0.50	0.75	3.77	340.99	0.000	0.000	32.60	0.00	0.00
39	110.00	Fujitsu TA08025-B605	3	7.851	8.636	0.50	0.75	3.77	384.32	0.000	0.000	32.60	0.00	0.00
40	110.00	JMA Wireless	3	7.851	8.636	0.55	0.75	23.16	876.57	0.000	0.000	200.01	0.00	0.00
41	105.00	Low Profile Platform-flat	1	7.774	8.552	1.00	1.00	45.21	2150.44	0.000	0.000	386.62	0.00	0.00
42	80.00	738-449	1	7.349	8.083	1.00	1.00	0.07	1.84	0.000	0.350	0.55	0.00	0.19
43	75.00	GPS	1	7.243	7.967	1.00	1.00	1.66	31.36	0.000	0.000	13.26	0.00	0.00

Totals: 36,463.56

6,611.09

Total Applied Force Summary

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		172.21	2732.31	0.00	0.00
10.00		169.54	2756.72	0.00	0.00
15.00		166.68	2756.10	0.00	0.00
20.00		173.73	2744.51	0.00	0.00
25.00		178.76	2726.61	0.00	0.00
30.00		182.26	2704.55	0.00	0.00
35.00		184.64	2679.53	0.00	0.00
38.75		139.02	1991.53	0.00	0.00
40.00		46.84	962.54	0.00	0.00
45.00		190.41	3816.22	0.00	0.00
50.00		191.12	2430.06	0.00	0.00
55.00		192.27	2402.99	0.00	0.00
60.00		193.05	2374.92	0.00	0.00
65.00		193.51	2345.99	0.00	0.00
70.00		193.68	2316.33	0.00	0.00
75.00	(1) attachments	206.87	2317.37	0.00	0.00
78.50		135.08	1567.17	0.00	0.00
80.00	(1) attachments	59.04	922.47	0.00	0.19
83.75		146.49	2278.84	0.00	0.00
85.00		48.35	512.72	0.00	0.00
90.00		193.89	2031.65	0.00	0.00
95.00		193.06	2003.65	0.00	0.00
100.00		192.08	1975.26	0.00	0.00
105.00	(1) attachments	577.59	4096.97	0.00	0.00
110.00	(11) attachments	1197.13	6920.25	0.00	0.00
115.00		188.37	1847.93	0.00	0.00
119.25		158.86	1547.80	0.00	0.00
120.00		28.22	352.47	0.00	0.00
122.00	(22) attachments	906.26	4843.12	0.00	0.00
123.50		48.53	582.69	0.00	0.00
124.50	(8) attachments	339.06	1414.94	0.00	0.00
125.00		16.02	128.80	0.00	0.00
130.00		158.86	1268.87	0.00	0.00
132.00	(30) attachments	1413.56	8699.63	0.00	0.00
135.00		92.49	696.43	0.00	0.00
140.00		151.33	1136.82	0.00	0.00
145.00		147.39	1109.19	0.00	0.00
150.00		143.35	1081.43	0.00	0.00
152.00	(25) attachments	1576.22	11243.89	0.00	0.00
155.00		82.91	453.40	0.00	0.00
160.00		134.98	730.44	0.00	0.00
162.00	(24) attachments	1246.59	5480.60	0.00	14.49
Totals:		12,350.32	104,985.70	0.00	14.68

Linear Appurtenance Segment Forces (Factored)

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

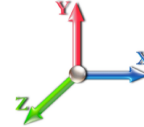


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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 24

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	0.00	0.00	0.00	0.086	0.000	5.168	0.00	12.93
5.00	1 5/8" Coax	Yes	5.00	0.000	1.98	1.86	0.00	0.086	0.000	5.168	0.00	201.26
5.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	5.168	0.00	27.35
5.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	5.168	0.00	218.70
5.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	5.168	0.00	11.68
5.00	3" Coax	Yes	5.00	0.000	3.00	2.29	0.00	0.086	0.000	5.168	0.00	38.50
5.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	5.168	0.00	21.94
5.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	5.168	0.00	29.14
5.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	5.168	0.00	13.70
10.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	5.168	0.00	14.46
10.00	1 5/8" Coax	Yes	5.00	0.000	1.98	1.93	0.00	0.087	0.000	5.168	0.00	210.21
10.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	5.168	0.00	29.45
10.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	5.168	0.00	228.34
10.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	5.168	0.00	13.21
10.00	3" Coax	Yes	5.00	0.000	3.00	2.36	0.00	0.087	0.000	5.168	0.00	40.94
10.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	5.168	0.00	23.86
10.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	5.168	0.00	31.10
10.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	5.168	0.00	15.33
15.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	5.168	0.00	15.46
15.00	1 5/8" Coax	Yes	5.00	0.000	1.98	1.98	0.00	0.089	0.000	5.168	0.00	215.79
15.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	5.168	0.00	30.79
15.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	5.168	0.00	234.34
15.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	5.168	0.00	14.21
15.00	3" Coax	Yes	5.00	0.000	3.00	2.41	0.00	0.089	0.000	5.168	0.00	42.51
15.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	5.168	0.00	25.10
15.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	5.168	0.00	32.35
15.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	5.168	0.00	16.38
20.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	5.483	0.00	16.21
20.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.01	0.00	0.091	0.000	5.483	0.00	219.91
20.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	5.483	0.00	31.80
20.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	5.483	0.00	238.78
20.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	5.483	0.00	14.96
20.00	3" Coax	Yes	5.00	0.000	3.00	2.44	0.00	0.091	0.000	5.483	0.00	43.68
20.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	5.483	0.00	26.03
20.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	5.483	0.00	33.30
20.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	5.483	0.00	17.18
25.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	5.747	0.00	16.83
25.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.04	0.00	0.093	0.000	5.747	0.00	223.21
25.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	5.747	0.00	32.62
25.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	5.747	0.00	242.32
25.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	5.747	0.00	15.58
25.00	3" Coax	Yes	5.00	0.000	3.00	2.47	0.00	0.093	0.000	5.747	0.00	44.62
25.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	5.747	0.00	26.78
25.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	5.747	0.00	34.07
25.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	5.747	0.00	17.83
30.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	5.972	0.00	17.35
30.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.06	0.00	0.095	0.000	5.972	0.00	225.96

Linear Appurtenance Segment Forces (Factored)

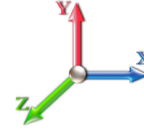
Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Iterations 24

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)
30.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	5.972	0.00	33.31
30.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	5.972	0.00	245.28
30.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	5.972	0.00	16.10
30.00	3" Coax	Yes	5.00	0.000	3.00	2.49	0.00	0.095	0.000	5.972	0.00	45.42
30.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	5.972	0.00	27.42
30.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	5.972	0.00	34.72
30.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	5.972	0.00	18.38
35.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	6.169	0.00	17.80
35.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.08	0.00	0.097	0.000	6.169	0.00	228.34
35.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	6.169	0.00	33.91
35.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	6.169	0.00	247.84
35.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	6.169	0.00	16.56
35.00	3" Coax	Yes	5.00	0.000	3.00	2.51	0.00	0.097	0.000	6.169	0.00	46.11
35.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	6.169	0.00	27.98
35.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	6.169	0.00	35.28
35.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	6.169	0.00	18.86
38.75	Safety Cable	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	6.303	0.00	13.58
38.75	1 5/8" Coax	Yes	3.75	0.000	1.98	1.57	0.00	0.099	0.000	6.303	0.00	172.45
38.75	1 5/8" Fiber	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	6.303	0.00	25.74
38.75	1 5/8" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	6.303	0.00	187.16
38.75	10 mm	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	6.303	0.00	12.65
38.75	3" Coax	Yes	3.75	0.000	3.00	1.89	0.00	0.099	0.000	6.303	0.00	34.94
38.75	DC	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	6.303	0.00	21.27
38.75	1.6" Hybrid	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	6.303	0.00	26.75
38.75	1/2" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	6.303	0.00	14.39
40.00	Safety Cable	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	6.345	0.00	4.55
40.00	1 5/8" Coax	Yes	1.25	0.000	1.98	0.52	0.00	0.100	0.000	6.345	0.00	57.61
40.00	1 5/8" Fiber	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	6.345	0.00	8.61
40.00	1 5/8" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	6.345	0.00	62.52
40.00	10 mm	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	6.345	0.00	4.24
40.00	3" Coax	Yes	1.25	0.000	3.00	0.63	0.00	0.100	0.000	6.345	0.00	11.68
40.00	DC	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	6.345	0.00	7.12
40.00	1.6" Hybrid	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	6.345	0.00	8.95
40.00	1/2" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	6.345	0.00	4.82
45.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	6.504	0.00	18.58
45.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.11	0.00	0.101	1.004	6.504	0.00	232.31
45.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	6.504	0.00	34.93
45.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	6.504	0.00	252.10
45.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	6.504	0.00	17.33
45.00	3" Coax	Yes	5.00	0.000	3.00	2.54	0.00	0.101	1.004	6.504	0.00	47.28
45.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	6.504	0.00	28.92
45.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	6.504	0.00	36.24
45.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	6.504	0.00	19.67
50.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	6.650	0.00	18.91
50.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.13	0.00	0.102	1.006	6.650	0.00	234.01
50.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	6.650	0.00	35.37
50.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	6.650	0.00	253.93

Linear Appurtenance Segment Forces (Factored)

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 24

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)
50.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	6.650	0.00	17.67
50.00	3" Coax	Yes	5.00	0.000	3.00	2.55	0.00	0.102	1.006	6.650	0.00	47.79
50.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	6.650	0.00	29.33
50.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	6.650	0.00	36.65
50.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	6.650	0.00	20.02
55.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	6.785	0.00	19.22
55.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.14	0.00	0.104	1.013	6.785	0.00	235.57
55.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	6.785	0.00	35.77
55.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	6.785	0.00	255.60
55.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	6.785	0.00	17.98
55.00	3" Coax	Yes	5.00	0.000	3.00	2.57	0.00	0.104	1.013	6.785	0.00	48.25
55.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	6.785	0.00	29.70
55.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	6.785	0.00	37.03
55.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	6.785	0.00	20.35
60.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	6.910	0.00	19.51
60.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.15	0.00	0.107	1.021	6.910	0.00	237.00
60.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	6.910	0.00	36.14
60.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	6.910	0.00	257.14
60.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	6.910	0.00	18.26
60.00	3" Coax	Yes	5.00	0.000	3.00	2.58	0.00	0.107	1.021	6.910	0.00	48.68
60.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	6.910	0.00	30.05
60.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	6.910	0.00	37.39
60.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	6.910	0.00	20.65
65.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	7.028	0.00	19.78
65.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.16	0.00	0.110	1.029	7.028	0.00	238.34
65.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	7.028	0.00	36.49
65.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	7.028	0.00	258.57
65.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	7.028	0.00	18.53
65.00	3" Coax	Yes	5.00	0.000	3.00	2.59	0.00	0.110	1.029	7.028	0.00	49.08
65.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	7.028	0.00	30.37
65.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	7.028	0.00	37.72
65.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	7.028	0.00	20.93
70.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	7.138	0.00	20.03
70.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.17	0.00	0.112	1.037	7.138	0.00	239.58
70.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	7.138	0.00	36.82
70.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	7.138	0.00	259.91
70.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	7.138	0.00	18.79
70.00	3" Coax	Yes	5.00	0.000	3.00	2.60	0.00	0.112	1.037	7.138	0.00	49.45
70.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	7.138	0.00	30.68
70.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	7.138	0.00	38.03
70.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	7.138	0.00	21.20
75.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	7.243	0.00	20.27
75.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.18	0.00	0.115	1.046	7.243	0.00	240.75
75.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	7.243	0.00	37.13
75.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	7.243	0.00	261.17
75.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	7.243	0.00	19.02
75.00	3" Coax	Yes	5.00	0.000	3.00	2.61	0.00	0.115	1.046	7.243	0.00	49.81

Linear Appurtenance Segment Forces (Factored)

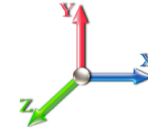
Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 24

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)
75.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	7.243	0.00	30.97
75.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	7.243	0.00	38.32
75.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	7.243	0.00	21.45
78.50	Safety Cable	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	7.313	0.00	14.30
78.50	1 5/8" Coax	Yes	3.50	0.000	1.98	1.53	0.00	0.118	1.053	7.313	0.00	169.07
78.50	1 5/8" Fiber	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	7.313	0.00	26.14
78.50	1 5/8" Coax	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	7.313	0.00	183.40
78.50	10 mm	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	7.313	0.00	13.43
78.50	3" Coax	Yes	3.50	0.000	3.00	1.83	0.00	0.118	1.053	7.313	0.00	35.03
78.50	DC	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	7.313	0.00	21.81
78.50	1.6" Hybrid	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	7.313	0.00	26.96
80.00	Safety Cable	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	7.342	0.00	6.15
80.00	1 5/8" Coax	Yes	1.50	0.000	1.98	0.66	0.00	0.119	1.058	7.342	0.00	72.56
80.00	1 5/8" Fiber	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	7.342	0.00	11.23
80.00	1 5/8" Coax	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	7.342	0.00	78.71
80.00	10 mm	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	7.342	0.00	5.77
80.00	3" Coax	Yes	1.50	0.000	3.00	0.78	0.00	0.119	1.058	7.342	0.00	15.04
80.00	DC	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	7.342	0.00	9.37
80.00	1.6" Hybrid	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	7.342	0.00	11.58
83.75	Safety Cable	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	7.413	0.00	15.49
83.75	1 5/8" Coax	Yes	3.75	0.000	1.98	1.65	0.00	0.121	1.063	7.413	0.00	181.98
83.75	1 5/8" Fiber	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	7.413	0.00	28.22
83.75	1 5/8" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	7.413	0.00	197.40
83.75	10 mm	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	7.413	0.00	14.56
83.75	3" Coax	Yes	3.75	0.000	3.00	1.97	0.00	0.121	1.063	7.413	0.00	37.79
83.75	DC	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	7.413	0.00	23.57
83.75	1.6" Hybrid	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	7.413	0.00	29.09
85.00	Safety Cable	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	7.436	0.00	5.18
85.00	1 5/8" Coax	Yes	1.25	0.000	1.98	0.55	0.00	0.121	1.063	7.436	0.00	60.73
85.00	1 5/8" Fiber	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	7.436	0.00	9.43
85.00	1 5/8" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	7.436	0.00	65.87
85.00	10 mm	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	7.436	0.00	4.87
85.00	3" Coax	Yes	1.25	0.000	3.00	0.66	0.00	0.121	1.063	7.436	0.00	12.61
85.00	DC	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	7.436	0.00	7.87
85.00	1.6" Hybrid	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	7.436	0.00	9.71
90.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	7.526	0.00	20.91
90.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.21	0.00	0.123	1.069	7.526	0.00	243.89
90.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	7.526	0.00	37.97
90.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	7.526	0.00	264.54
90.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	7.526	0.00	19.67
90.00	3" Coax	Yes	5.00	0.000	3.00	2.63	0.00	0.123	1.069	7.526	0.00	50.76
90.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	7.526	0.00	31.74
90.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	7.526	0.00	39.11
95.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	7.612	0.00	21.11
95.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.21	0.00	0.126	1.079	7.612	0.00	244.84
95.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	7.612	0.00	38.22
95.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	7.612	0.00	265.55

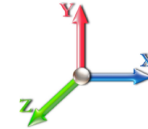
Linear Appurtenance Segment Forces (Factored)

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021	
Site Name: Durham	Exposure: C		
Height: 162.00 (ft)	Crest Height: 0.00		
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil		
Gh: 1.1	Topography: 1	Struct Class: II	Page: 36



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 24

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)
95.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	7.612	0.00	19.87
95.00	3" Coax	Yes	5.00	0.000	3.00	2.64	0.00	0.126	1.079	7.612	0.00	51.05
95.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	7.612	0.00	31.98
95.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	7.612	0.00	39.34
100.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	7.695	0.00	21.30
100.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.22	0.00	0.130	1.090	7.695	0.00	245.74
100.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	7.695	0.00	38.46
100.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	7.695	0.00	266.52
100.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	7.695	0.00	20.05
100.00	3" Coax	Yes	5.00	0.000	3.00	2.65	0.00	0.130	1.090	7.695	0.00	51.32
100.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	7.695	0.00	32.20
100.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	7.695	0.00	39.57
105.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	7.774	0.00	21.48
105.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.23	0.00	0.134	1.102	7.774	0.00	246.60
105.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	7.774	0.00	38.69
105.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	7.774	0.00	267.44
105.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	7.774	0.00	20.23
105.00	3" Coax	Yes	5.00	0.000	3.00	2.65	0.00	0.134	1.102	7.774	0.00	51.59
105.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	7.774	0.00	32.42
105.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	7.774	0.00	39.79
110.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	7.851	0.00	21.65
110.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.23	0.00	0.138	1.115	7.851	0.00	247.43
110.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	7.851	0.00	38.92
110.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	7.851	0.00	268.33
110.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	7.851	0.00	20.41
110.00	3" Coax	Yes	5.00	0.000	3.00	2.66	0.00	0.138	1.115	7.851	0.00	51.84
110.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	7.851	0.00	32.63
110.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	7.851	0.00	40.00
115.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	7.925	0.00	21.82
115.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.24	0.00	0.143	1.128	7.925	0.00	248.22
115.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	7.925	0.00	39.13
115.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	7.925	0.00	269.18
115.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	7.925	0.00	20.57
115.00	3" Coax	Yes	5.00	0.000	3.00	2.67	0.00	0.143	1.128	7.925	0.00	52.09
115.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	7.925	0.00	32.83
119.25	Safety Cable	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	7.986	0.00	18.66
119.25	1 5/8" Coax	Yes	4.25	0.000	1.98	1.91	0.00	0.147	1.141	7.986	0.00	211.54
119.25	1 5/8" Fiber	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	7.986	0.00	33.41
119.25	1 5/8" Coax	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	7.986	0.00	229.40
119.25	10 mm	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	7.986	0.00	17.61
119.25	3" Coax	Yes	4.25	0.000	3.00	2.27	0.00	0.147	1.141	7.986	0.00	44.45
119.25	DC	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	7.986	0.00	28.04
120.00	Safety Cable	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	7.996	0.00	3.30
120.00	1 5/8" Coax	Yes	0.75	0.000	1.98	0.34	0.00	0.149	1.148	7.996	0.00	37.35
120.00	1 5/8" Fiber	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	7.996	0.00	5.90
120.00	1 5/8" Coax	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	7.996	0.00	40.50
120.00	10 mm	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	7.996	0.00	3.11

Linear Appurtenance Segment Forces (Factored)

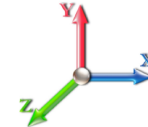
Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 24

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)
120.00	3" Coax	Yes	0.75	0.000	3.00	0.40	0.00	0.149	1.148	7.996	0.00	7.85
120.00	DC	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	7.996	0.00	4.95
122.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	8.024	0.00	8.82
122.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.90	0.00	0.151	1.152	8.024	0.00	99.71
122.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	8.024	0.00	15.77
122.00	1 5/8" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	8.024	0.00	108.13
122.00	10 mm	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	8.024	0.00	8.32
122.00	3" Coax	Yes	2.00	0.000	3.00	1.07	0.00	0.151	1.152	8.024	0.00	20.97
122.00	DC	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	8.024	0.00	13.24
123.50	Safety Cable	Yes	1.50	0.000	0.00	0.00	0.00	0.061	0.000	8.045	0.00	6.63
123.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.68	0.00	0.061	0.000	8.045	0.00	74.85
123.50	1 5/8" Fiber	Yes	1.50	0.000	0.00	0.00	0.00	0.061	0.000	8.045	0.00	11.84
124.50	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	8.058	0.00	4.42
124.50	1 5/8" Coax	Yes	1.00	0.000	1.98	0.45	0.00	0.060	0.000	8.058	0.00	49.93
124.50	1 5/8" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	8.058	0.00	7.90
125.00	Safety Cable	Yes	0.50	0.000	0.00	0.00	0.00	0.061	0.000	8.065	0.00	2.21
125.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.23	0.00	0.061	0.000	8.065	0.00	24.97
125.00	1 5/8" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.061	0.000	8.065	0.00	3.95
130.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.062	0.000	8.132	0.00	22.29
130.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.26	0.00	0.062	0.000	8.132	0.00	250.44
130.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.062	0.000	8.132	0.00	39.73
132.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	8.158	0.00	8.94
132.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.90	0.00	0.063	0.000	8.158	0.00	100.29
132.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	8.158	0.00	15.92
135.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.064	0.000	8.197	0.00	13.46
135.00	1 5/8" Coax	Yes	3.00	0.000	1.98	1.36	0.00	0.064	0.000	8.197	0.00	150.67
135.00	1 5/8" Fiber	Yes	3.00	0.000	0.00	0.00	0.00	0.064	0.000	8.197	0.00	23.95
140.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.066	0.000	8.260	0.00	22.57
140.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.27	0.00	0.066	0.000	8.260	0.00	251.79
140.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.066	0.000	8.260	0.00	40.10
145.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	8.321	0.00	22.71
145.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.27	0.00	0.069	0.000	8.321	0.00	252.43
145.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	8.321	0.00	40.28
150.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	8.381	0.00	22.85
150.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.28	0.00	0.072	0.000	8.381	0.00	253.06
150.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	8.381	0.00	40.45
152.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.074	0.000	8.404	0.00	9.16
152.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.91	0.00	0.074	0.000	8.404	0.00	101.32
152.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.074	0.000	8.404	0.00	16.21
155.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	8.439	0.00	13.79
160.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.495	0.00	23.11
162.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	8.518	0.00	9.26
Totals:											0.0	18,605.3

Calculated Forces

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

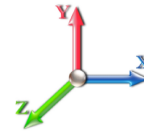


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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 24

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	-104.9	-12.41	0.00	-1496.2	0.00	1496.24	5422.04	2711.02	12776.1	6397.58	0.00	0.000	0.000	0.253
5.00	-102.2	-12.35	0.00	-1434.2	0.00	1434.20	5354.65	2677.32	12373.4	6195.90	0.03	-0.063	0.000	0.251
10.00	-99.46	-12.29	0.00	-1372.4	0.00	1372.46	5285.82	2642.91	11973.5	5995.67	0.13	-0.127	0.000	0.248
15.00	-96.69	-12.22	0.00	-1311.0	0.00	1311.03	5215.55	2607.78	11576.7	5796.99	0.30	-0.192	0.000	0.245
20.00	-93.94	-12.15	0.00	-1249.9	0.00	1249.92	5143.86	2571.93	11183.2	5599.96	0.54	-0.258	0.000	0.241
25.00	-91.20	-12.06	0.00	-1189.1	0.00	1189.19	5070.72	2535.36	10793.2	5404.66	0.84	-0.324	0.000	0.238
30.00	-88.48	-11.97	0.00	-1128.8	0.00	1128.89	4996.16	2498.08	10406.9	5211.21	1.22	-0.392	0.000	0.234
35.00	-85.79	-11.85	0.00	-1069.0	0.00	1069.06	4920.16	2460.08	10024.5	5019.70	1.67	-0.460	0.000	0.230
38.75	-83.79	-11.75	0.00	-1024.6	0.00	1024.62	4862.22	2431.11	9740.32	4877.40	2.05	-0.512	0.000	0.227
40.00	-82.82	-11.75	0.00	-1009.9	0.00	1009.94	4842.73	2421.36	9646.11	4830.22	2.19	-0.530	0.000	0.226
45.00	-78.99	-11.62	0.00	-951.17	0.00	951.17	3936.38	1968.19	7803.92	3907.76	2.78	-0.600	0.000	0.264
50.00	-76.55	-11.50	0.00	-893.06	0.00	893.06	3877.34	1938.67	7510.22	3760.69	3.45	-0.670	0.000	0.257
55.00	-74.13	-11.38	0.00	-835.54	0.00	835.54	3816.87	1908.43	7219.20	3614.96	4.19	-0.748	0.000	0.251
60.00	-71.75	-11.26	0.00	-778.63	0.00	778.63	3754.96	1877.48	6931.04	3470.67	5.01	-0.826	0.000	0.243
65.00	-69.39	-11.12	0.00	-722.36	0.00	722.36	3691.62	1845.81	6645.93	3327.91	5.92	-0.904	0.000	0.236
70.00	-67.06	-10.98	0.00	-666.75	0.00	666.75	3626.84	1813.42	6364.09	3186.77	6.91	-0.982	0.000	0.228
75.00	-64.73	-10.81	0.00	-611.86	0.00	611.86	3560.63	1780.31	6085.69	3047.37	7.98	-1.059	0.000	0.219
78.50	-63.16	-10.68	0.00	-574.04	0.00	574.04	3513.43	1756.71	5892.98	2950.87	8.78	-1.114	0.000	0.213
80.00	-62.23	-10.65	0.00	-558.01	0.00	558.01	3492.98	1746.49	5810.95	2909.79	9.13	-1.137	0.000	0.210
83.75	-59.95	-10.50	0.00	-518.07	0.00	518.07	2742.50	1371.25	4553.78	2280.28	10.05	-1.195	0.000	0.249
85.00	-59.43	-10.49	0.00	-504.95	0.00	504.95	2730.37	1365.18	4502.54	2254.62	10.36	-1.214	0.000	0.246
90.00	-57.39	-10.34	0.00	-452.49	0.00	452.49	2680.95	1340.47	4298.92	2152.65	11.68	-1.298	0.000	0.232
95.00	-55.38	-10.18	0.00	-400.80	0.00	400.80	2630.10	1315.05	4097.56	2051.82	13.08	-1.380	0.000	0.216
100.00	-53.39	-10.01	0.00	-349.93	0.00	349.93	2577.82	1288.91	3898.66	1952.23	14.57	-1.458	0.000	0.200
105.00	-49.30	-9.38	0.00	-299.90	0.00	299.90	2524.10	1262.05	3702.43	1853.97	16.14	-1.531	0.000	0.181
110.00	-42.41	-8.04	0.00	-253.00	0.00	253.00	2468.95	1234.47	3509.05	1757.13	17.78	-1.600	0.000	0.161
115.00	-40.56	-7.84	0.00	-212.77	0.00	212.77	2412.36	1206.18	3318.73	1661.83	19.49	-1.664	0.000	0.145
119.25	-39.01	-7.66	0.00	-179.44	0.00	179.44	2363.14	1181.57	3159.50	1582.10	21.00	-1.714	0.000	0.130
120.00	-38.66	-7.63	0.00	-173.69	0.00	173.69	2354.34	1177.17	3131.65	1568.15	21.27	-1.723	0.000	0.127
122.00	-33.84	-6.59	0.00	-158.43	0.00	158.43	2330.73	1165.37	3057.78	1531.16	21.99	-1.745	0.000	0.118
123.50	-33.26	-6.53	0.00	-148.55	0.00	148.55	1751.58	875.79	2319.28	1161.36	22.54	-1.761	0.000	0.147
124.50	-31.85	-6.15	0.00	-142.02	0.00	142.02	1743.79	871.89	2293.08	1148.24	22.91	-1.771	0.000	0.142
125.00	-31.72	-6.15	0.00	-138.94	0.00	138.94	1739.87	869.94	2280.00	1141.69	23.10	-1.777	0.000	0.140
130.00	-30.46	-5.97	0.00	-108.19	0.00	108.19	1699.92	849.96	2150.20	1076.70	24.99	-1.831	0.000	0.118
132.00	-21.80	-4.29	0.00	-96.25	0.00	96.25	1683.54	841.77	2098.80	1050.96	25.76	-1.851	0.000	0.105
135.00	-21.11	-4.18	0.00	-83.39	0.00	83.39	1658.53	829.27	2022.29	1012.65	26.93	-1.879	0.000	0.095
140.00	-19.97	-4.01	0.00	-62.46	0.00	62.46	1615.71	807.86	1896.47	949.64	28.92	-1.918	0.000	0.078
145.00	-18.87	-3.83	0.00	-42.42	0.00	42.42	1571.46	785.73	1772.93	887.78	30.95	-1.950	0.000	0.060
150.00	-17.79	-3.66	0.00	-23.26	0.00	23.26	1525.77	762.88	1651.87	827.16	33.01	-1.972	0.000	0.040
152.00	-6.61	-1.69	0.00	-15.95	0.00	15.95	1507.09	753.54	1604.19	803.29	33.83	-1.979	0.000	0.024
155.00	-6.16	-1.60	0.00	-10.87	0.00	10.87	1478.64	739.32	1533.49	767.89	35.08	-1.985	0.000	0.018
160.00	-5.43	-1.44	0.00	-2.89	0.00	2.89	1426.03	713.01	1413.96	708.03	37.16	-1.991	0.000	0.008
162.00	0.00	-1.25	0.00	-0.01	0.00	0.01	1400.09	700.04	1362.73	682.38	37.99	-1.992	0.000	0.000

Seismic Segment Forces (Factored)

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0E						Iterations 22
Gust Response Factor	1.10			Sds	0.19	Ss 0.18
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1	0.10	S1 0.06
Wind Load Factor	0.00	Structure Frequency (f1)	0.31	SA	0.03	Seismic Importance Factor 1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1341.4	0.00	0.03	0.02	25.64	
10.00		1315.5	0.01	0.05	0.03	36.41	
15.00		1289.5	0.02	0.06	0.04	41.27	
20.00		1263.5	0.03	0.07	0.04	43.31	
25.00		1237.5	0.05	0.07	0.04	44.03	
30.00		1211.5	0.06	0.07	0.04	44.21	
35.00		1185.5	0.09	0.07	0.04	44.25	
38.75	Bot - Section 2	872.10	0.11	0.07	0.04	33.10	
40.00		537.95	0.12	0.07	0.04	20.53	
45.00	Top - Section 1	2121.6	0.15	0.07	0.03	82.64	
50.00		965.80	0.18	0.07	0.03	38.11	
55.00		943.52	0.22	0.06	0.02	37.07	
60.00		921.24	0.26	0.05	0.02	34.91	
65.00		898.96	0.30	0.04	0.01	31.08	
70.00		876.68	0.35	0.03	0.01	25.03	
75.00	Appurtenance(s)	864.41	0.41	0.02	0.01	16.70	
78.50	Bot - Section 3	584.83	0.44	0.00	0.01	6.43	
80.00	Appurtenance(s)	457.36	0.46	0.00	0.01	3.22	
83.75	Top - Section 2	1126.0	0.51	-0.02	0.01	-3.92	
85.00		169.88	0.52	-0.02	0.01	-1.20	
90.00		667.91	0.58	-0.05	0.01	-13.88	
95.00		649.35	0.65	-0.07	0.02	-20.73	
100.00		630.78	0.72	-0.09	0.03	-24.63	
105.00	Appurtenance(s)	1812.2	0.79	-0.11	0.05	-75.35	
110.00	Appurtenance(s)	2952.7	0.87	-0.12	0.08	-116.62	
115.00		575.09	0.95	-0.12	0.11	-18.94	
119.25	Bot - Section 4	474.23	1.02	-0.10	0.14	-11.35	
120.00		149.27	1.04	-0.10	0.15	-3.29	
122.00	Appurtenance(s)	2020.9	1.07	-0.08	0.17	-33.28	
123.50	Top - Section 3	292.27	1.10	-0.07	0.19	-3.46	
124.50	Appurtenance(s)	623.50	1.12	-0.06	0.20	-5.34	
125.00		43.13	1.13	-0.05	0.20	-0.30	
130.00		423.11	1.22	0.02	0.27	5.32	
132.00	Appurtenance(s)	3063.7	1.25	0.06	0.30	65.98	
135.00		243.17	1.31	0.14	0.35	8.82	
140.00		393.40	1.41	0.31	0.44	25.31	
145.00		378.55	1.51	0.54	0.56	36.66	
150.00		363.70	1.62	0.84	0.70	48.68	
152.00	Appurtenance(s)	3762.2	1.66	0.99	0.76	564.20	
155.00		207.52	1.73	1.24	0.86	36.43	
160.00		333.99	1.84	1.74	1.05	74.13	
162.00	Appurtenance(s)	2368.2	1.89	1.98	1.14	572.77	
Totals:		42,614.1				1,713.9	Total Wind: 43,439.9

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

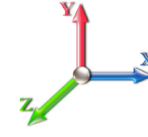
Calculated Forces

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0E										Iterations 22
Gust Response Factor	1.10						Sds	0.19		Ss 0.18
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1	0.10					S1 0.06
Wind Load Factor	0.00	Structure Frequency (f1)	0.31	SA	0.03	Seismic Importance Factor	1.00			



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-58.60	-2.05	0.00	-259.45	0.00	259.45	5422.04	2711.02	12776.1	6397.58	0.00	0.00	0.00	0.051
5.00	-56.71	-2.04	0.00	-249.20	0.00	249.20	5354.65	2677.32	12373.4	6195.90	0.01	-0.01	0.051	
10.00	-54.86	-2.01	0.00	-239.02	0.00	239.02	5285.82	2642.91	11973.5	5995.67	0.02	-0.02	0.050	
15.00	-53.03	-1.98	0.00	-228.97	0.00	228.97	5215.55	2607.78	11576.7	5796.99	0.05	-0.03	0.050	
20.00	-51.24	-1.94	0.00	-219.08	0.00	219.08	5143.86	2571.93	11183.2	5599.96	0.09	-0.04	0.049	
25.00	-49.48	-1.91	0.00	-209.36	0.00	209.36	5070.72	2535.36	10793.2	5404.66	0.15	-0.06	0.048	
30.00	-47.75	-1.87	0.00	-199.81	0.00	199.81	4996.16	2498.08	10406.9	5211.21	0.21	-0.07	0.048	
35.00	-46.05	-1.83	0.00	-190.45	0.00	190.45	4920.16	2460.08	10024.5	5019.70	0.29	-0.08	0.047	
38.75	-44.80	-1.80	0.00	-183.57	0.00	183.57	4862.22	2431.11	9740.32	4877.40	0.36	-0.09	0.047	
40.00	-44.08	-1.79	0.00	-181.31	0.00	181.31	4842.73	2421.36	9646.11	4830.22	0.38	-0.09	0.047	
45.00	-41.26	-1.71	0.00	-172.37	0.00	172.37	3936.38	1968.19	7803.92	3907.76	0.49	-0.11	0.055	
50.00	-39.82	-1.68	0.00	-163.82	0.00	163.82	3877.34	1938.67	7510.22	3760.69	0.60	-0.12	0.054	
55.00	-38.41	-1.65	0.00	-155.42	0.00	155.42	3816.87	1908.43	7219.20	3614.96	0.74	-0.13	0.053	
60.00	-37.03	-1.62	0.00	-147.18	0.00	147.18	3754.96	1877.48	6931.04	3470.67	0.88	-0.15	0.052	
65.00	-35.68	-1.59	0.00	-139.08	0.00	139.08	3691.62	1845.81	6645.93	3327.91	1.05	-0.16	0.051	
70.00	-34.35	-1.57	0.00	-131.10	0.00	131.10	3626.84	1813.42	6364.09	3186.77	1.22	-0.18	0.051	
75.00	-33.04	-1.56	0.00	-123.23	0.00	123.23	3560.63	1780.31	6085.69	3047.37	1.42	-0.19	0.050	
78.50	-32.14	-1.56	0.00	-117.76	0.00	117.76	3513.43	1756.71	5892.98	2950.87	1.56	-0.20	0.049	
80.00	-31.51	-1.56	0.00	-115.43	0.00	115.43	3492.98	1746.49	5810.95	2909.79	1.63	-0.21	0.049	
83.75	-29.95	-1.55	0.00	-109.59	0.00	109.59	2742.50	1371.25	4553.78	2280.28	1.80	-0.22	0.059	
85.00	-29.68	-1.56	0.00	-107.65	0.00	107.65	2730.37	1365.18	4502.54	2254.62	1.86	-0.22	0.059	
90.00	-28.60	-1.56	0.00	-99.86	0.00	99.86	2680.95	1340.47	4298.92	2152.65	2.10	-0.24	0.057	
95.00	-27.55	-1.57	0.00	-92.04	0.00	92.04	2630.10	1315.05	4097.56	2051.82	2.37	-0.26	0.055	
100.00	-26.52	-1.57	0.00	-84.20	0.00	84.20	2577.82	1288.91	3898.66	1952.23	2.65	-0.28	0.053	
105.00	-24.07	-1.57	0.00	-76.34	0.00	76.34	2524.10	1262.05	3702.43	1853.97	2.95	-0.30	0.051	
110.00	-20.25	-1.55	0.00	-68.51	0.00	68.51	2468.95	1234.47	3509.05	1757.13	3.27	-0.32	0.047	
115.00	-19.30	-1.55	0.00	-60.75	0.00	60.75	2412.36	1206.18	3318.73	1661.83	3.61	-0.33	0.045	
119.25	-18.50	-1.55	0.00	-54.15	0.00	54.15	2363.14	1181.57	3159.50	1582.10	3.92	-0.35	0.042	
120.00	-18.28	-1.55	0.00	-52.99	0.00	52.99	2354.34	1177.17	3131.65	1568.15	3.97	-0.35	0.042	
122.00	-15.75	-1.54	0.00	-49.88	0.00	49.88	2330.73	1165.37	3057.78	1531.16	4.12	-0.36	0.039	
123.50	-15.35	-1.54	0.00	-47.58	0.00	47.58	1751.58	875.79	2319.28	1161.36	4.24	-0.36	0.050	
124.50	-14.57	-1.53	0.00	-46.04	0.00	46.04	1743.79	871.89	2293.08	1148.24	4.31	-0.37	0.048	
125.00	-14.50	-1.53	0.00	-45.28	0.00	45.28	1739.87	869.94	2280.00	1141.69	4.35	-0.37	0.048	
130.00	-13.82	-1.53	0.00	-37.61	0.00	37.61	1699.92	849.96	2150.20	1076.70	4.75	-0.39	0.043	
132.00	-10.07	-1.44	0.00	-34.56	0.00	34.56	1683.54	841.77	2098.80	1050.96	4.91	-0.39	0.039	
135.00	-9.72	-1.43	0.00	-30.25	0.00	30.25	1658.53	829.27	2022.29	1012.65	5.16	-0.40	0.036	
140.00	-9.16	-1.40	0.00	-23.11	0.00	23.11	1615.71	807.86	1896.47	949.64	5.59	-0.42	0.030	
145.00	-8.61	-1.36	0.00	-16.11	0.00	16.11	1571.46	785.73	1772.93	887.78	6.04	-0.43	0.024	
150.00	-8.07	-1.31	0.00	-9.30	0.00	9.30	1525.77	762.88	1651.87	827.16	6.49	-0.44	0.017	
152.00	-3.53	-0.71	0.00	-6.68	0.00	6.68	1507.09	753.54	1604.19	803.29	6.68	-0.44	0.011	
155.00	-3.27	-0.67	0.00	-4.55	0.00	4.55	1478.64	739.32	1533.49	767.89	6.95	-0.44	0.008	
160.00	-2.85	-0.59	0.00	-1.19	0.00	1.19	1426.03	713.01	1413.96	708.03	7.42	-0.45	0.004	
162.00	0.00	-0.57	0.00	0.00	0.00	0.00	1400.09	700.04	1362.73	682.38	7.61	-0.45	0.000	

Seismic Segment Forces (Factored)

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0E						Iterations 22
Gust Response Factor	1.10			Sds	0.19	Ss 0.18
Dead Load Factor	0.90	Seismic Load Factor	1.00	Sd1	0.10	S1 0.06
Wind Load Factor	0.00	Structure Frequency (f1)	0.31	SA	0.03	Seismic Importance Factor 1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1341.4	0.00	0.03	0.02	25.64	
10.00		1315.5	0.01	0.05	0.03	36.41	
15.00		1289.5	0.02	0.06	0.04	41.27	
20.00		1263.5	0.03	0.07	0.04	43.31	
25.00		1237.5	0.05	0.07	0.04	44.03	
30.00		1211.5	0.06	0.07	0.04	44.21	
35.00		1185.5	0.09	0.07	0.04	44.25	
38.75	Bot - Section 2	872.10	0.11	0.07	0.04	33.10	
40.00		537.95	0.12	0.07	0.04	20.53	
45.00	Top - Section 1	2121.6	0.15	0.07	0.03	82.64	
50.00		965.80	0.18	0.07	0.03	38.11	
55.00		943.52	0.22	0.06	0.02	37.07	
60.00		921.24	0.26	0.05	0.02	34.91	
65.00		898.96	0.30	0.04	0.01	31.08	
70.00		876.68	0.35	0.03	0.01	25.03	
75.00	Appurtenance(s)	864.41	0.41	0.02	0.01	16.70	
78.50	Bot - Section 3	584.83	0.44	0.00	0.01	6.43	
80.00	Appurtenance(s)	457.36	0.46	0.00	0.01	3.22	
83.75	Top - Section 2	1126.0	0.51	-0.02	0.01	-3.92	
85.00		169.88	0.52	-0.02	0.01	-1.20	
90.00		667.91	0.58	-0.05	0.01	-13.88	
95.00		649.35	0.65	-0.07	0.02	-20.73	
100.00		630.78	0.72	-0.09	0.03	-24.63	
105.00	Appurtenance(s)	1812.2	0.79	-0.11	0.05	-75.35	
110.00	Appurtenance(s)	2952.7	0.87	-0.12	0.08	-116.62	
115.00		575.09	0.95	-0.12	0.11	-18.94	
119.25	Bot - Section 4	474.23	1.02	-0.10	0.14	-11.35	
120.00		149.27	1.04	-0.10	0.15	-3.29	
122.00	Appurtenance(s)	2020.9	1.07	-0.08	0.17	-33.28	
123.50	Top - Section 3	292.27	1.10	-0.07	0.19	-3.46	
124.50	Appurtenance(s)	623.50	1.12	-0.06	0.20	-5.34	
125.00		43.13	1.13	-0.05	0.20	-0.30	
130.00		423.11	1.22	0.02	0.27	5.32	
132.00	Appurtenance(s)	3063.7	1.25	0.06	0.30	65.98	
135.00		243.17	1.31	0.14	0.35	8.82	
140.00		393.40	1.41	0.31	0.44	25.31	
145.00		378.55	1.51	0.54	0.56	36.66	
150.00		363.70	1.62	0.84	0.70	48.68	
152.00	Appurtenance(s)	3762.2	1.66	0.99	0.76	564.20	
155.00		207.52	1.73	1.24	0.86	36.43	
160.00		333.99	1.84	1.74	1.05	74.13	
162.00	Appurtenance(s)	2368.2	1.89	1.98	1.14	572.77	
Totals:		42,614.1				1,713.9	Total Wind: 43,439.9

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

Calculated Forces

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0E		Iterations 22
Gust Response Factor 1.10	Sds 0.19	Ss 0.18
Dead Load Factor 0.90	Seismic Load Factor 1.00	S1 0.06
Wind Load Factor 0.00	Structure Frequency (f1) 0.31	SA 0.03
	Seismic Importance Factor 1.00	



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-43.95	-2.05	0.00	-256.01	0.00	256.01	5422.04	2711.02	12776.1	6397.58	0.00	0.00	0.00	0.048
5.00	-42.53	-2.03	0.00	-245.77	0.00	245.77	5354.65	2677.32	12373.4	6195.90	0.01	-0.01	0.048	
10.00	-41.14	-2.00	0.00	-235.61	0.00	235.61	5285.82	2642.91	11973.5	5995.67	0.02	-0.02	0.047	
15.00	-39.78	-1.97	0.00	-225.59	0.00	225.59	5215.55	2607.78	11576.7	5796.99	0.05	-0.03	0.047	
20.00	-38.43	-1.93	0.00	-215.75	0.00	215.75	5143.86	2571.93	11183.2	5599.96	0.09	-0.04	0.046	
25.00	-37.11	-1.89	0.00	-206.09	0.00	206.09	5070.72	2535.36	10793.2	5404.66	0.14	-0.06	0.045	
30.00	-35.81	-1.86	0.00	-196.61	0.00	196.61	4996.16	2498.08	10406.9	5211.21	0.21	-0.07	0.045	
35.00	-34.54	-1.82	0.00	-187.33	0.00	187.33	4920.16	2460.08	10024.5	5019.70	0.29	-0.08	0.044	
38.75	-33.60	-1.79	0.00	-180.52	0.00	180.52	4862.22	2431.11	9740.32	4877.40	0.35	-0.09	0.044	
40.00	-33.06	-1.77	0.00	-178.28	0.00	178.28	4842.73	2421.36	9646.11	4830.22	0.38	-0.09	0.044	
45.00	-30.94	-1.69	0.00	-169.44	0.00	169.44	3936.38	1968.19	7803.92	3907.76	0.48	-0.10	0.051	
50.00	-29.87	-1.66	0.00	-160.99	0.00	160.99	3877.34	1938.67	7510.22	3760.69	0.59	-0.12	0.051	
55.00	-28.81	-1.62	0.00	-152.71	0.00	152.71	3816.87	1908.43	7219.20	3614.96	0.72	-0.13	0.050	
60.00	-27.77	-1.59	0.00	-144.59	0.00	144.59	3754.96	1877.48	6931.04	3470.67	0.87	-0.15	0.049	
65.00	-26.76	-1.57	0.00	-136.62	0.00	136.62	3691.62	1845.81	6645.93	3327.91	1.03	-0.16	0.048	
70.00	-25.76	-1.55	0.00	-128.78	0.00	128.78	3626.84	1813.42	6364.09	3186.77	1.20	-0.17	0.048	
75.00	-24.78	-1.53	0.00	-121.05	0.00	121.05	3560.63	1780.31	6085.69	3047.37	1.40	-0.19	0.047	
78.50	-24.10	-1.53	0.00	-115.69	0.00	115.69	3513.43	1756.71	5892.98	2950.87	1.54	-0.20	0.046	
80.00	-23.63	-1.52	0.00	-113.40	0.00	113.40	3492.98	1746.49	5810.95	2909.79	1.60	-0.21	0.046	
83.75	-22.46	-1.52	0.00	-107.69	0.00	107.69	2742.50	1371.25	4553.78	2280.28	1.77	-0.22	0.055	
85.00	-22.26	-1.53	0.00	-105.78	0.00	105.78	2730.37	1365.18	4502.54	2254.62	1.83	-0.22	0.055	
90.00	-21.45	-1.53	0.00	-98.15	0.00	98.15	2680.95	1340.47	4298.92	2152.65	2.07	-0.24	0.054	
95.00	-20.66	-1.53	0.00	-90.49	0.00	90.49	2630.10	1315.05	4097.56	2051.82	2.33	-0.26	0.052	
100.00	-19.89	-1.54	0.00	-82.83	0.00	82.83	2577.82	1288.91	3898.66	1952.23	2.61	-0.28	0.050	
105.00	-18.05	-1.53	0.00	-75.14	0.00	75.14	2524.10	1262.05	3702.43	1853.97	2.90	-0.29	0.048	
110.00	-15.19	-1.52	0.00	-67.48	0.00	67.48	2468.95	1234.47	3509.05	1757.13	3.22	-0.31	0.045	
115.00	-14.47	-1.52	0.00	-59.87	0.00	59.87	2412.36	1206.18	3318.73	1661.83	3.56	-0.33	0.042	
119.25	-13.88	-1.52	0.00	-53.40	0.00	53.40	2363.14	1181.57	3159.50	1582.10	3.86	-0.34	0.040	
120.00	-13.71	-1.52	0.00	-52.26	0.00	52.26	2354.34	1177.17	3131.65	1568.15	3.91	-0.35	0.039	
122.00	-11.81	-1.51	0.00	-49.21	0.00	49.21	2330.73	1165.37	3057.78	1531.16	4.06	-0.35	0.037	
123.50	-11.51	-1.51	0.00	-46.95	0.00	46.95	1751.58	875.79	2319.28	1161.36	4.17	-0.36	0.047	
124.50	-10.92	-1.51	0.00	-45.44	0.00	45.44	1743.79	871.89	2293.08	1148.24	4.24	-0.36	0.046	
125.00	-10.87	-1.51	0.00	-44.68	0.00	44.68	1739.87	869.94	2280.00	1141.69	4.28	-0.36	0.045	
130.00	-10.36	-1.50	0.00	-37.14	0.00	37.14	1699.92	849.96	2150.20	1076.70	4.67	-0.38	0.041	
132.00	-7.55	-1.42	0.00	-34.14	0.00	34.14	1683.54	841.77	2098.80	1050.96	4.83	-0.39	0.037	
135.00	-7.29	-1.41	0.00	-29.88	0.00	29.88	1658.53	829.27	2022.29	1012.65	5.08	-0.40	0.034	
140.00	-6.86	-1.38	0.00	-22.84	0.00	22.84	1615.71	807.86	1896.47	949.64	5.50	-0.41	0.028	
145.00	-6.45	-1.34	0.00	-15.92	0.00	15.92	1571.46	785.73	1772.93	887.78	5.94	-0.42	0.022	
150.00	-6.05	-1.29	0.00	-9.20	0.00	9.20	1525.77	762.88	1651.87	827.16	6.39	-0.43	0.015	
152.00	-2.64	-0.70	0.00	-6.62	0.00	6.62	1507.09	753.54	1604.19	803.29	6.57	-0.43	0.010	
155.00	-2.45	-0.67	0.00	-4.51	0.00	4.51	1478.64	739.32	1533.49	767.89	6.84	-0.44	0.008	
160.00	-2.13	-0.59	0.00	-1.18	0.00	1.18	1426.03	713.01	1413.96	708.03	7.30	-0.44	0.003	
162.00	0.00	-0.57	0.00	0.00	0.00	0.00	1400.09	700.04	1362.73	682.38	7.49	-0.44	0.000	

Wind Loading - Shaft

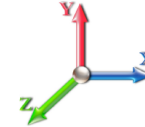
Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 23

Dead Load Factor 1.00
Wind Load Factor 1.00



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	270.41	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	265.27	0.650	0.000	5.00	24.209	15.74	128.8	0.0	1341.5
10.00		1.00	0.85	7.442	8.19	260.12	0.650	0.000	5.00	23.744	15.43	126.3	0.0	1315.5
15.00		1.00	0.85	7.442	8.19	254.97	0.650	0.000	5.00	23.278	15.13	123.9	0.0	1289.5
20.00		1.00	0.90	7.896	8.69	257.33	0.650	0.000	5.00	22.813	14.83	128.8	0.0	1263.5
25.00		1.00	0.95	8.276	9.10	258.01	0.650	0.000	5.00	22.348	14.53	132.2	0.0	1237.5
30.00		1.00	0.98	8.600	9.46	257.48	0.650	0.000	5.00	21.882	14.22	134.6	0.0	1211.5
35.00		1.00	1.01	8.883	9.77	256.06	0.650	0.000	5.00	21.417	13.92	136.0	0.0	1185.5
38.75 Bot - Section 2		1.00	1.04	9.076	9.98	254.56	0.650	0.000	3.75	15.757	10.24	102.3	0.0	872.1
40.00		1.00	1.04	9.137	10.05	253.98	0.650	0.000	1.25	5.273	3.43	34.5	0.0	538.0
45.00 Top - Section 1		1.00	1.07	9.366	10.30	251.37	0.653 *	0.000	5.00	20.803	13.57	139.9	0.0	2121.6
50.00		1.00	1.09	9.576	10.53	252.32	0.654 *	0.000	5.00	20.338	13.30	140.1	0.0	965.8
55.00		1.00	1.12	9.770	10.75	248.96	0.659 *	0.000	5.00	19.872	13.09	140.7	0.0	943.5
60.00		1.00	1.14	9.951	10.95	245.30	0.663 *	0.000	5.00	19.407	12.88	140.9	0.0	921.2
65.00		1.00	1.16	10.120	11.13	241.37	0.669 *	0.000	5.00	18.941	12.66	141.0	0.0	899.0
70.00		1.00	1.17	10.279	11.31	237.20	0.674 *	0.000	5.00	18.476	12.45	140.8	0.0	876.7
75.00 Appurtenance(s)		1.00	1.19	10.430	11.47	232.84	0.680 *	0.000	5.00	18.010	12.24	140.4	0.0	854.4
78.50 Bot - Section 3		1.00	1.20	10.530	11.58	229.67	0.685 *	0.000	3.50	12.330	8.44	97.8	0.0	584.8
80.00 Appurtenance(s)		1.00	1.21	10.572	11.63	228.29	0.688 *	0.000	1.50	5.294	3.64	42.3	0.0	456.9
83.75 Top - Section 2		1.00	1.22	10.675	11.74	224.76	0.691 *	0.000	3.75	13.051	9.02	105.9	0.0	1126.1
85.00		1.00	1.22	10.708	11.78	227.08	0.691 *	0.000	1.25	4.292	2.96	34.9	0.0	169.9
90.00		1.00	1.24	10.838	11.92	222.23	0.695 *	0.000	5.00	16.878	11.73	139.8	0.0	667.9
95.00		1.00	1.25	10.962	12.06	217.25	0.702 *	0.000	5.00	16.413	11.51	138.8	0.0	649.3
100.00		1.00	1.27	11.081	12.19	212.15	0.709 *	0.000	5.00	15.947	11.30	137.8	0.0	630.8
105.00 Appurtenance(s)		1.00	1.28	11.195	12.31	206.92	0.716 *	0.000	5.00	15.482	11.09	136.6	0.0	612.2
110.00 Appurtenance(s)		1.00	1.29	11.305	12.44	201.59	0.724 *	0.000	5.00	15.016	10.88	135.3	0.0	593.7
115.00		1.00	1.30	11.412	12.55	196.16	0.733 *	0.000	5.00	14.551	10.67	133.9	0.0	575.1
119.25 Bot - Section 4		1.00	1.31	11.499	12.65	191.47	0.742 *	0.000	4.25	12.002	8.90	112.6	0.0	474.2
120.00		1.00	1.32	11.514	12.67	190.63	0.746 *	0.000	0.75	2.115	1.58	20.0	0.0	149.3
122.00 Appurtenance(s)		1.00	1.32	11.554	12.71	188.40	0.749 *	0.000	2.00	5.588	4.19	53.2	0.0	394.4
123.50 Top - Section 3		1.00	1.32	11.584	12.74	186.71	0.650	0.000	1.50	4.142	2.69	34.3	0.0	292.3
124.50 Appurtenance(s)		1.00	1.33	11.604	12.76	188.51	0.650	0.000	1.00	2.738	1.78	22.7	0.0	86.7
125.00		1.00	1.33	11.614	12.78	187.95	0.650	0.000	0.50	1.362	0.89	11.3	0.0	43.1
130.00		1.00	1.34	11.710	12.88	182.26	0.650	0.000	5.00	13.366	8.69	111.9	0.0	423.1
132.00 Appurtenance(s)		1.00	1.34	11.748	12.92	179.97	0.650	0.000	2.00	5.216	3.39	43.8	0.0	165.1
135.00		1.00	1.35	11.803	12.98	176.50	0.650	0.000	3.00	7.684	4.99	64.9	0.0	243.2
140.00		1.00	1.36	11.894	13.08	170.67	0.650	0.000	5.00	12.435	8.08	105.8	0.0	393.4
145.00		1.00	1.37	11.982	13.18	164.77	0.650	0.000	5.00	11.970	7.78	102.5	0.0	378.5
150.00		1.00	1.38	12.068	13.27	158.80	0.650	0.000	5.00	11.504	7.48	99.3	0.0	363.7
152.00 Appurtenance(s)		1.00	1.38	12.102	13.31	156.39	0.650	0.000	2.00	4.471	2.91	38.7	0.0	141.3
155.00		1.00	1.39	12.152	13.37	152.77	0.650	0.000	3.00	6.567	4.27	57.1	0.0	207.5
160.00		1.00	1.40	12.233	13.46	146.68	0.650	0.000	5.00	10.573	6.87	92.5	0.0	334.0
162.00 Appurtenance(s)		1.00	1.40	12.265	13.49	144.22	0.650	0.000	2.00	4.099	2.66	35.9	0.0	129.4
Totals:									162.00			4,140.7		28,122.8

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 23

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	162.00	1900MHz RRH	3	12.265	13.492	0.88	1.00	10.03	132.00	0.000	0.000	135.35	0.00	0.00
2	162.00	APXVTM14-C-120	3	12.273	13.501	0.63	0.80	12.02	168.00	0.000	0.500	162.29	0.00	81.14
3	162.00	TD-RRH8x20-25	3	12.265	13.492	0.69	1.00	8.38	210.00	0.000	0.000	113.11	0.00	0.00
4	162.00	APXVSP18-C-A20	3	12.273	13.501	0.66	0.80	15.98	171.00	0.000	0.500	215.68	0.00	107.84
5	162.00	Flush Mount	1	12.233	13.457	1.00	1.00	5.00	175.00	0.000	-2.000	67.28	0.00	-134.57
6	162.00	800 MHz RRU	3	12.265	13.492	0.75	1.00	5.60	159.00	0.000	0.000	75.59	0.00	0.00
7	162.00	800 MHz Ext. Filter	3	12.265	13.492	0.63	1.00	2.25	19.80	0.000	0.000	30.34	0.00	0.00
8	162.00	ACU-A20-N	4	12.273	13.501	0.75	1.00	0.42	4.00	0.000	0.500	5.67	0.00	2.84
9	162.00	Low Profile Platform-flat	1	12.265	13.492	1.00	1.00	25.00	1200.00	0.000	0.000	337.30	0.00	0.00
10	152.00	Platform w/ Hand Rail	1	12.102	13.312	1.00	1.00	49.30	2796.50	0.000	0.000	656.28	0.00	0.00
11	152.00	Radio 4449 B71+B12	3	12.102	13.312	0.65	0.75	3.81	213.00	0.000	0.000	50.74	0.00	0.00
12	152.00	APXV18-206516S-A20	3	12.102	13.312	0.57	0.75	7.46	55.50	0.000	0.000	99.25	0.00	0.00
13	152.00	APXVAARR24_43-U-NA2	3	12.102	13.312	0.52	0.75	31.88	384.00	0.000	0.000	424.36	0.00	0.00
14	152.00	FE15501P77/75	3	12.102	13.312	0.49	0.75	0.79	52.50	0.000	0.000	10.51	0.00	0.00
15	152.00	KRY 112 144/1	3	12.102	13.312	0.55	0.75	0.57	33.00	0.000	0.000	7.65	0.00	0.00
16	152.00	782 11056	3	12.102	13.312	0.50	0.75	0.23	5.40	0.000	0.000	3.01	0.00	0.00
17	152.00	RR90-17-02DP	6	12.102	13.312	0.55	0.75	14.32	81.00	0.000	0.000	190.66	0.00	0.00
18	132.00	FD9R6004/2C-3L	6	11.748	12.922	0.56	0.75	1.22	18.60	0.000	0.000	15.70	0.00	0.00
19	132.00	HRK12 (Handrail Kit)	1	11.748	12.922	1.00	1.00	6.75	261.72	0.000	0.000	87.23	0.00	0.00
20	132.00	Raycap	1	11.748	12.922	0.50	0.75	2.04	32.00	0.000	0.000	26.36	0.00	0.00
21	132.00	Samsung RFV01U-D2A	3	11.748	12.922	0.50	0.75	2.83	210.90	0.000	0.000	36.62	0.00	0.00
22	132.00	Samsung RFV01U-D1A	3	11.748	12.922	0.50	0.75	2.83	253.20	0.000	0.000	36.62	0.00	0.00
23	132.00	Samsung MT6407-77A	3	11.748	12.922	0.52	0.75	7.39	238.20	0.000	0.000	95.46	0.00	0.00
24	132.00	JMA Wireless	6	11.748	12.922	0.65	0.75	38.64	276.00	0.000	0.000	499.34	0.00	0.00
25	132.00	DB846F65ZAXY	4	11.748	12.922	0.70	0.75	19.67	84.00	0.000	0.000	254.18	0.00	0.00
26	132.00	LPA-80080-4CF-EDIN-0	2	11.748	12.922	1.27	0.75	6.66	24.00	0.000	0.000	86.01	0.00	0.00
27	132.00	Low Profile	1	11.748	12.922	1.00	1.00	22.00	1500.00	0.000	0.000	284.29	0.00	0.00
28	124.50	DC6-48-60-18-8F	1	11.604	12.764	1.00	1.00	1.47	31.80	0.000	0.000	18.76	0.00	0.00
29	124.50	RRUS-11	6	11.604	12.764	0.68	1.00	18.03	330.00	0.000	0.000	230.19	0.00	0.00
30	124.50	Flush Mount	1	11.604	12.764	1.00	1.00	5.00	175.00	0.000	0.000	63.82	0.00	0.00
31	122.00	7770.00	6	11.554	12.710	0.58	0.80	19.27	210.00	0.000	0.000	244.95	0.00	0.00
32	122.00	LGP21401	6	11.554	12.710	0.60	0.80	4.64	84.60	0.000	0.000	59.02	0.00	0.00
33	122.00	LGP21903	6	11.554	12.710	0.60	0.80	0.97	33.00	0.000	0.000	12.35	0.00	0.00
34	122.00	AM-X-CD-16-65-00T-RET	3	11.554	12.710	0.65	0.80	11.76	99.00	0.000	0.000	149.48	0.00	0.00
35	122.00	Low Profile Platform-flat	1	11.554	12.710	1.00	1.00	25.00	1200.00	0.000	0.000	317.75	0.00	0.00
36	110.00	MC-PK8-DSH	1	11.305	12.436	1.00	1.00	37.59	1727.00	0.000	0.000	467.46	0.00	0.00
37	110.00	Raycap	1	11.305	12.436	1.00	1.00	2.01	21.90	0.000	0.000	25.00	0.00	0.00
38	110.00	Fujitsu TA08025-B604	3	11.305	12.436	0.50	0.75	2.95	191.70	0.000	0.000	36.74	0.00	0.00
39	110.00	Fujitsu TA08025-B605	3	11.305	12.436	0.50	0.75	2.95	225.00	0.000	0.000	36.74	0.00	0.00
40	110.00	JMA Wireless	3	11.305	12.436	0.55	0.75	20.80	193.50	0.000	0.000	258.61	0.00	0.00
41	105.00	Low Profile Platform-flat	1	11.195	12.315	1.00	1.00	25.00	1200.00	0.000	0.000	307.87	0.00	0.00
42	80.00	738-449	1	10.582	11.640	1.00	1.00	0.01	0.50	0.000	0.350	0.12	0.00	0.04
43	75.00	GPS	1	10.430	11.473	1.00	1.00	1.00	10.00	0.000	0.000	11.47	0.00	0.00

Totals: 14,491.32

6,247.24

Total Applied Force Summary

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

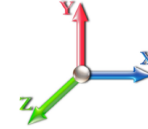


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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		128.82	1571.65	0.00	0.00
10.00		126.34	1545.66	0.00	0.00
15.00		123.86	1519.67	0.00	0.00
20.00		128.80	1493.68	0.00	0.00
25.00		132.24	1467.69	0.00	0.00
30.00		134.55	1441.70	0.00	0.00
35.00		136.03	1415.71	0.00	0.00
38.75		102.25	1044.72	0.00	0.00
40.00		34.45	595.49	0.00	0.00
45.00		139.85	2351.80	0.00	0.00
50.00		140.10	1195.96	0.00	0.00
55.00		140.66	1173.68	0.00	0.00
60.00		140.94	1151.41	0.00	0.00
65.00		140.98	1129.13	0.00	0.00
70.00		140.80	1106.85	0.00	0.00
75.00	(1) attachments	151.91	1094.57	0.00	0.00
78.50		97.79	745.38	0.00	0.00
80.00	(1) attachments	42.46	526.17	0.00	0.04
83.75		105.91	1297.50	0.00	0.00
85.00		34.92	227.02	0.00	0.00
90.00		139.79	896.48	0.00	0.00
95.00		138.84	877.91	0.00	0.00
100.00		137.76	859.35	0.00	0.00
105.00	(1) attachments	444.44	2040.78	0.00	0.00
110.00	(11) attachments	959.85	3181.32	0.00	0.00
115.00		133.90	794.55	0.00	0.00
119.25		112.58	660.77	0.00	0.00
120.00		19.99	182.19	0.00	0.00
122.00	(22) attachments	836.76	2108.76	0.00	0.00
123.50		34.31	335.43	0.00	0.00
124.50	(8) attachments	335.49	652.27	0.00	0.00
125.00		11.31	57.51	0.00	0.00
130.00		111.91	566.97	0.00	0.00
132.00	(30) attachments	1465.62	3121.25	0.00	0.00
135.00		64.85	290.85	0.00	0.00
140.00		105.75	472.87	0.00	0.00
145.00		102.55	458.01	0.00	0.00
150.00		99.27	443.16	0.00	0.00
152.00	(25) attachments	1481.17	3794.01	0.00	0.00
155.00		57.06	217.58	0.00	0.00
160.00		92.48	350.76	0.00	0.00
162.00	(24) attachments	1178.55	2374.94	0.00	57.25
Totals:		10,387.91	48,833.16	0.00	57.29

Linear Appurtenance Segment Forces (Factored)

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

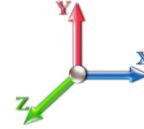


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Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 23

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	0.00	0.00	0.00	0.086	0.000	7.442	0.00	1.37
5.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.086	0.000	7.442	0.00	57.20
5.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	7.442	0.00	5.50
5.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	7.442	0.00	62.40
5.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	7.442	0.00	0.30
5.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.086	0.000	7.442	0.00	8.90
5.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	7.442	0.00	4.00
5.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	7.442	0.00	9.10
5.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	7.442	0.00	0.80
10.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	7.442	0.00	1.37
10.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.087	0.000	7.442	0.00	57.20
10.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	7.442	0.00	5.50
10.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	7.442	0.00	62.40
10.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	7.442	0.00	0.30
10.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.087	0.000	7.442	0.00	8.90
10.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	7.442	0.00	4.00
10.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	7.442	0.00	9.10
10.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.087	0.000	7.442	0.00	0.80
15.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	7.442	0.00	1.37
15.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.089	0.000	7.442	0.00	57.20
15.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	7.442	0.00	5.50
15.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	7.442	0.00	62.40
15.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	7.442	0.00	0.30
15.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.089	0.000	7.442	0.00	8.90
15.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	7.442	0.00	4.00
15.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	7.442	0.00	9.10
15.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.089	0.000	7.442	0.00	0.80
20.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	7.896	0.00	1.37
20.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.091	0.000	7.896	0.00	57.20
20.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	7.896	0.00	5.50
20.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	7.896	0.00	62.40
20.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	7.896	0.00	0.30
20.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.091	0.000	7.896	0.00	8.90
20.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	7.896	0.00	4.00
20.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	7.896	0.00	9.10
20.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	7.896	0.00	0.80
25.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	8.276	0.00	1.37
25.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.093	0.000	8.276	0.00	57.20
25.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	8.276	0.00	5.50
25.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	8.276	0.00	62.40
25.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	8.276	0.00	0.30
25.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.093	0.000	8.276	0.00	8.90
25.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	8.276	0.00	4.00
25.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	8.276	0.00	9.10
25.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	8.276	0.00	0.80
30.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	8.600	0.00	1.37
30.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.095	0.000	8.600	0.00	57.20

Linear Appurtenance Segment Forces (Factored)

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 23

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)
30.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	8.600	0.00	5.50
30.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	8.600	0.00	62.40
30.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	8.600	0.00	0.30
30.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.095	0.000	8.600	0.00	8.90
30.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	8.600	0.00	4.00
30.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	8.600	0.00	9.10
30.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.095	0.000	8.600	0.00	0.80
35.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	8.883	0.00	1.37
35.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.097	0.000	8.883	0.00	57.20
35.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	8.883	0.00	5.50
35.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	8.883	0.00	62.40
35.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	8.883	0.00	0.30
35.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.097	0.000	8.883	0.00	8.90
35.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	8.883	0.00	4.00
35.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	8.883	0.00	9.10
35.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	8.883	0.00	0.80
38.75	Safety Cable	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	9.076	0.00	1.02
38.75	1 5/8" Coax	Yes	3.75	0.000	1.98	0.62	0.00	0.099	0.000	9.076	0.00	42.90
38.75	1 5/8" Fiber	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	9.076	0.00	4.13
38.75	1 5/8" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	9.076	0.00	46.80
38.75	10 mm	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	9.076	0.00	0.22
38.75	3" Coax	Yes	3.75	0.000	3.00	0.94	0.00	0.099	0.000	9.076	0.00	6.67
38.75	DC	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	9.076	0.00	3.00
38.75	1.6" Hybrid	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	9.076	0.00	6.83
38.75	1/2" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.099	0.000	9.076	0.00	0.60
40.00	Safety Cable	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	9.137	0.00	0.34
40.00	1 5/8" Coax	Yes	1.25	0.000	1.98	0.21	0.00	0.100	0.000	9.137	0.00	14.30
40.00	1 5/8" Fiber	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	9.137	0.00	1.38
40.00	1 5/8" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	9.137	0.00	15.60
40.00	10 mm	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	9.137	0.00	0.07
40.00	3" Coax	Yes	1.25	0.000	3.00	0.31	0.00	0.100	0.000	9.137	0.00	2.23
40.00	DC	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	9.137	0.00	1.00
40.00	1.6" Hybrid	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	9.137	0.00	2.27
40.00	1/2" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.100	0.000	9.137	0.00	0.20
45.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	9.366	0.00	1.37
45.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.101	1.004	9.366	0.00	57.20
45.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	9.366	0.00	5.50
45.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	9.366	0.00	62.40
45.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	9.366	0.00	0.30
45.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.101	1.004	9.366	0.00	8.90
45.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	9.366	0.00	4.00
45.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	9.366	0.00	9.10
45.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	9.366	0.00	0.80
50.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	9.576	0.00	1.37
50.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.102	1.006	9.576	0.00	57.20
50.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	9.576	0.00	5.50
50.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	9.576	0.00	62.40

Linear Appurtenance Segment Forces (Factored)

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 23

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)
50.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	9.576	0.00	0.30
50.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.102	1.006	9.576	0.00	8.90
50.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	9.576	0.00	4.00
50.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	9.576	0.00	9.10
50.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.102	1.006	9.576	0.00	0.80
55.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	9.770	0.00	1.37
55.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.104	1.013	9.770	0.00	57.20
55.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	9.770	0.00	5.50
55.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	9.770	0.00	62.40
55.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	9.770	0.00	0.30
55.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.104	1.013	9.770	0.00	8.90
55.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	9.770	0.00	4.00
55.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	9.770	0.00	9.10
55.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.104	1.013	9.770	0.00	0.80
60.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	9.951	0.00	1.37
60.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.107	1.021	9.951	0.00	57.20
60.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	9.951	0.00	5.50
60.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	9.951	0.00	62.40
60.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	9.951	0.00	0.30
60.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.107	1.021	9.951	0.00	8.90
60.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	9.951	0.00	4.00
60.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	9.951	0.00	9.10
60.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	9.951	0.00	0.80
65.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	10.120	0.00	1.37
65.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.110	1.029	10.120	0.00	57.20
65.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	10.120	0.00	5.50
65.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	10.120	0.00	62.40
65.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	10.120	0.00	0.30
65.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.110	1.029	10.120	0.00	8.90
65.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	10.120	0.00	4.00
65.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	10.120	0.00	9.10
65.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	10.120	0.00	0.80
70.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	10.279	0.00	1.37
70.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.112	1.037	10.279	0.00	57.20
70.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	10.279	0.00	5.50
70.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	10.279	0.00	62.40
70.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	10.279	0.00	0.30
70.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.112	1.037	10.279	0.00	8.90
70.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	10.279	0.00	4.00
70.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	10.279	0.00	9.10
70.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.037	10.279	0.00	0.80
75.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	10.430	0.00	1.37
75.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.115	1.046	10.430	0.00	57.20
75.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	10.430	0.00	5.50
75.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	10.430	0.00	62.40
75.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	10.430	0.00	0.30
75.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.115	1.046	10.430	0.00	8.90

Linear Appurtenance Segment Forces (Factored)

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

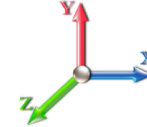


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Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 23

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)
75.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	10.430	0.00	4.00
75.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	10.430	0.00	9.10
75.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.046	10.430	0.00	0.80
78.50	Safety Cable	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	10.530	0.00	0.96
78.50	1 5/8" Coax	Yes	3.50	0.000	1.98	0.58	0.00	0.118	1.053	10.530	0.00	40.04
78.50	1 5/8" Fiber	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	10.530	0.00	3.85
78.50	1 5/8" Coax	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	10.530	0.00	43.68
78.50	10 mm	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	10.530	0.00	0.21
78.50	3" Coax	Yes	3.50	0.000	3.00	0.88	0.00	0.118	1.053	10.530	0.00	6.23
78.50	DC	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	10.530	0.00	2.80
78.50	1.6" Hybrid	Yes	3.50	0.000	0.00	0.00	0.00	0.118	1.053	10.530	0.00	6.37
80.00	Safety Cable	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	10.572	0.00	0.41
80.00	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.119	1.058	10.572	0.00	17.16
80.00	1 5/8" Fiber	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	10.572	0.00	1.65
80.00	1 5/8" Coax	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	10.572	0.00	18.72
80.00	10 mm	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	10.572	0.00	0.09
80.00	3" Coax	Yes	1.50	0.000	3.00	0.38	0.00	0.119	1.058	10.572	0.00	2.67
80.00	DC	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	10.572	0.00	1.20
80.00	1.6" Hybrid	Yes	1.50	0.000	0.00	0.00	0.00	0.119	1.058	10.572	0.00	2.73
83.75	Safety Cable	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	10.675	0.00	1.02
83.75	1 5/8" Coax	Yes	3.75	0.000	1.98	0.62	0.00	0.121	1.063	10.675	0.00	42.90
83.75	1 5/8" Fiber	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	10.675	0.00	4.13
83.75	1 5/8" Coax	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	10.675	0.00	46.80
83.75	10 mm	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	10.675	0.00	0.22
83.75	3" Coax	Yes	3.75	0.000	3.00	0.94	0.00	0.121	1.063	10.675	0.00	6.67
83.75	DC	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	10.675	0.00	3.00
83.75	1.6" Hybrid	Yes	3.75	0.000	0.00	0.00	0.00	0.121	1.063	10.675	0.00	6.83
85.00	Safety Cable	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	10.708	0.00	0.34
85.00	1 5/8" Coax	Yes	1.25	0.000	1.98	0.21	0.00	0.121	1.063	10.708	0.00	14.30
85.00	1 5/8" Fiber	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	10.708	0.00	1.38
85.00	1 5/8" Coax	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	10.708	0.00	15.60
85.00	10 mm	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	10.708	0.00	0.07
85.00	3" Coax	Yes	1.25	0.000	3.00	0.31	0.00	0.121	1.063	10.708	0.00	2.23
85.00	DC	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	10.708	0.00	1.00
85.00	1.6" Hybrid	Yes	1.25	0.000	0.00	0.00	0.00	0.121	1.063	10.708	0.00	2.27
90.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	10.838	0.00	1.37
90.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.123	1.069	10.838	0.00	57.20
90.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	10.838	0.00	5.50
90.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	10.838	0.00	62.40
90.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	10.838	0.00	0.30
90.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.123	1.069	10.838	0.00	8.90
90.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	10.838	0.00	4.00
90.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.069	10.838	0.00	9.10
95.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	10.962	0.00	1.37
95.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.126	1.079	10.962	0.00	57.20
95.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	10.962	0.00	5.50
95.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	10.962	0.00	62.40

Linear Appurtenance Segment Forces (Factored)

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

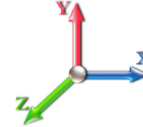


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Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 23

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)
95.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	10.962	0.00	0.30
95.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.126	1.079	10.962	0.00	8.90
95.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	10.962	0.00	4.00
95.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.126	1.079	10.962	0.00	9.10
100.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	11.081	0.00	1.37
100.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.130	1.090	11.081	0.00	57.20
100.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	11.081	0.00	5.50
100.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	11.081	0.00	62.40
100.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	11.081	0.00	0.30
100.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.130	1.090	11.081	0.00	8.90
100.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	11.081	0.00	4.00
100.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.130	1.090	11.081	0.00	9.10
105.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	11.195	0.00	1.37
105.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.134	1.102	11.195	0.00	57.20
105.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	11.195	0.00	5.50
105.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	11.195	0.00	62.40
105.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	11.195	0.00	0.30
105.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.134	1.102	11.195	0.00	8.90
105.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	11.195	0.00	4.00
105.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.134	1.102	11.195	0.00	9.10
110.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	11.305	0.00	1.37
110.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.138	1.115	11.305	0.00	57.20
110.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	11.305	0.00	5.50
110.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	11.305	0.00	62.40
110.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	11.305	0.00	0.30
110.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.138	1.115	11.305	0.00	8.90
110.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	11.305	0.00	4.00
110.00	1.6" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.138	1.115	11.305	0.00	9.10
115.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	11.412	0.00	1.37
115.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.143	1.128	11.412	0.00	57.20
115.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	11.412	0.00	5.50
115.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	11.412	0.00	62.40
115.00	10 mm	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	11.412	0.00	0.30
115.00	3" Coax	Yes	5.00	0.000	3.00	1.25	0.00	0.143	1.128	11.412	0.00	8.90
115.00	DC	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	11.412	0.00	4.00
119.25	Safety Cable	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	11.499	0.00	1.16
119.25	1 5/8" Coax	Yes	4.25	0.000	1.98	0.70	0.00	0.147	1.141	11.499	0.00	48.62
119.25	1 5/8" Fiber	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	11.499	0.00	4.68
119.25	1 5/8" Coax	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	11.499	0.00	53.04
119.25	10 mm	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	11.499	0.00	0.26
119.25	3" Coax	Yes	4.25	0.000	3.00	1.06	0.00	0.147	1.141	11.499	0.00	7.57
119.25	DC	Yes	4.25	0.000	0.00	0.00	0.00	0.147	1.141	11.499	0.00	3.40
120.00	Safety Cable	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	11.514	0.00	0.20
120.00	1 5/8" Coax	Yes	0.75	0.000	1.98	0.12	0.00	0.149	1.148	11.514	0.00	8.58
120.00	1 5/8" Fiber	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	11.514	0.00	0.83
120.00	1 5/8" Coax	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	11.514	0.00	9.36
120.00	10 mm	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	11.514	0.00	0.04

Linear Appurtenance Segment Forces (Factored)

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 23

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)
120.00	3" Coax	Yes	0.75	0.000	3.00	0.19	0.00	0.149	1.148	11.514	0.00	1.33
120.00	DC	Yes	0.75	0.000	0.00	0.00	0.00	0.149	1.148	11.514	0.00	0.60
122.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	11.554	0.00	0.55
122.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.151	1.152	11.554	0.00	22.88
122.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	11.554	0.00	2.20
122.00	1 5/8" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	11.554	0.00	24.96
122.00	10 mm	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	11.554	0.00	0.12
122.00	3" Coax	Yes	2.00	0.000	3.00	0.50	0.00	0.151	1.152	11.554	0.00	3.56
122.00	DC	Yes	2.00	0.000	0.00	0.00	0.00	0.151	1.152	11.554	0.00	1.60
123.50	Safety Cable	Yes	1.50	0.000	0.00	0.00	0.00	0.061	0.000	11.584	0.00	0.41
123.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.061	0.000	11.584	0.00	17.16
123.50	1 5/8" Fiber	Yes	1.50	0.000	0.00	0.00	0.00	0.061	0.000	11.584	0.00	1.65
124.50	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	11.604	0.00	0.27
124.50	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.060	0.000	11.604	0.00	11.44
124.50	1 5/8" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	11.604	0.00	1.10
125.00	Safety Cable	Yes	0.50	0.000	0.00	0.00	0.00	0.061	0.000	11.614	0.00	0.14
125.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.061	0.000	11.614	0.00	5.72
125.00	1 5/8" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.061	0.000	11.614	0.00	0.55
130.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.062	0.000	11.710	0.00	1.37
130.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.062	0.000	11.710	0.00	57.20
130.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.062	0.000	11.710	0.00	5.50
132.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	11.748	0.00	0.55
132.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.063	0.000	11.748	0.00	22.88
132.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	11.748	0.00	2.20
135.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.064	0.000	11.803	0.00	0.82
135.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.49	0.00	0.064	0.000	11.803	0.00	34.32
135.00	1 5/8" Fiber	Yes	3.00	0.000	0.00	0.00	0.00	0.064	0.000	11.803	0.00	3.30
140.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.066	0.000	11.894	0.00	1.37
140.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.066	0.000	11.894	0.00	57.20
140.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.066	0.000	11.894	0.00	5.50
145.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	11.982	0.00	1.37
145.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.069	0.000	11.982	0.00	57.20
145.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	11.982	0.00	5.50
150.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	12.068	0.00	1.37
150.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.072	0.000	12.068	0.00	57.20
150.00	1 5/8" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	12.068	0.00	5.50
152.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.074	0.000	12.102	0.00	0.55
152.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.074	0.000	12.102	0.00	22.88
152.00	1 5/8" Fiber	Yes	2.00	0.000	0.00	0.00	0.00	0.074	0.000	12.102	0.00	2.20
155.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	12.152	0.00	0.82
160.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	12.233	0.00	1.37
162.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	12.265	0.00	0.55
Totals:											0.0	4,007.1

Calculated Forces

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.0D + 1.0W 60 mph Wind	Iterations 23
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	-48.83	-10.41	0.00	-1227.0	0.00	1227.08	5422.04	2711.02	12776.1	6397.58	0.00	0.000	0.000	0.201
5.00	-47.25	-10.32	0.00	-1175.0	0.00	1175.03	5354.65	2677.32	12373.4	6195.90	0.03	-0.052	0.000	0.198
10.00	-45.69	-10.24	0.00	-1123.4	0.00	1123.42	5285.82	2642.91	11973.5	5995.67	0.11	-0.104	0.000	0.196
15.00	-44.16	-10.15	0.00	-1072.2	0.00	1072.24	5215.55	2607.78	11576.7	5796.99	0.25	-0.157	0.000	0.193
20.00	-42.66	-10.06	0.00	-1021.4	0.00	1021.49	5143.86	2571.93	11183.2	5599.96	0.44	-0.211	0.000	0.191
25.00	-41.18	-9.96	0.00	-971.21	0.00	971.21	5070.72	2535.36	10793.2	5404.66	0.69	-0.265	0.000	0.188
30.00	-39.73	-9.85	0.00	-921.42	0.00	921.42	4996.16	2498.08	10406.9	5211.21	1.00	-0.321	0.000	0.185
35.00	-38.31	-9.74	0.00	-872.15	0.00	872.15	4920.16	2460.08	10024.5	5019.70	1.36	-0.376	0.000	0.182
38.75	-37.26	-9.65	0.00	-835.61	0.00	835.61	4862.22	2431.11	9740.32	4877.40	1.68	-0.419	0.000	0.179
40.00	-36.66	-9.64	0.00	-823.55	0.00	823.55	4842.73	2421.36	9646.11	4830.22	1.79	-0.433	0.000	0.178
45.00	-34.30	-9.51	0.00	-775.37	0.00	775.37	3936.38	1968.19	7803.92	3907.76	2.27	-0.490	0.000	0.207
50.00	-33.10	-9.39	0.00	-727.82	0.00	727.82	3877.34	1938.67	7510.22	3760.69	2.82	-0.547	0.000	0.202
55.00	-31.91	-9.28	0.00	-680.84	0.00	680.84	3816.87	1908.43	7219.20	3614.96	3.42	-0.611	0.000	0.197
60.00	-30.75	-9.16	0.00	-634.46	0.00	634.46	3754.96	1877.48	6931.04	3470.67	4.10	-0.674	0.000	0.191
65.00	-29.62	-9.04	0.00	-588.67	0.00	588.67	3691.62	1845.81	6645.93	3327.91	4.84	-0.738	0.000	0.185
70.00	-28.50	-8.91	0.00	-543.49	0.00	543.49	3626.84	1813.42	6364.09	3186.77	5.65	-0.802	0.000	0.178
75.00	-27.40	-8.77	0.00	-498.93	0.00	498.93	3560.63	1780.31	6085.69	3047.37	6.52	-0.865	0.000	0.171
78.50	-26.65	-8.68	0.00	-468.23	0.00	468.23	3513.43	1756.71	5892.98	2950.87	7.17	-0.909	0.000	0.166
80.00	-26.12	-8.64	0.00	-455.22	0.00	455.22	3492.98	1746.49	5810.95	2909.79	7.46	-0.928	0.000	0.164
83.75	-24.82	-8.53	0.00	-422.82	0.00	422.82	2742.50	1371.25	4553.78	2280.28	8.21	-0.975	0.000	0.195
85.00	-24.59	-8.51	0.00	-412.17	0.00	412.17	2730.37	1365.18	4502.54	2254.62	8.47	-0.991	0.000	0.192
90.00	-23.69	-8.38	0.00	-369.64	0.00	369.64	2680.95	1340.47	4298.92	2152.65	9.54	-1.059	0.000	0.181
95.00	-22.80	-8.25	0.00	-327.76	0.00	327.76	2630.10	1315.05	4097.56	2051.82	10.69	-1.126	0.000	0.168
100.00	-21.94	-8.12	0.00	-286.52	0.00	286.52	2577.82	1288.91	3898.66	1952.23	11.90	-1.190	0.000	0.155
105.00	-19.90	-7.65	0.00	-245.94	0.00	245.94	2524.10	1262.05	3702.43	1853.97	13.18	-1.250	0.000	0.141
110.00	-16.73	-6.63	0.00	-207.69	0.00	207.69	2468.95	1234.47	3509.05	1757.13	14.52	-1.307	0.000	0.125
115.00	-15.94	-6.49	0.00	-174.52	0.00	174.52	2412.36	1206.18	3318.73	1661.83	15.92	-1.359	0.000	0.112
119.25	-15.27	-6.37	0.00	-146.92	0.00	146.92	2363.14	1181.57	3159.50	1582.10	17.15	-1.400	0.000	0.099
120.00	-15.09	-6.35	0.00	-142.14	0.00	142.14	2354.34	1177.17	3131.65	1568.15	17.37	-1.407	0.000	0.097
122.00	-13.00	-5.47	0.00	-129.44	0.00	129.44	2330.73	1165.37	3057.78	1531.16	17.96	-1.425	0.000	0.090
123.50	-12.67	-5.43	0.00	-121.24	0.00	121.24	1751.58	875.79	2319.28	1161.36	18.41	-1.439	0.000	0.112
124.50	-12.02	-5.08	0.00	-115.81	0.00	115.81	1743.79	871.89	2293.08	1148.24	18.71	-1.447	0.000	0.108
125.00	-11.96	-5.07	0.00	-113.28	0.00	113.28	1739.87	869.94	2280.00	1141.69	18.87	-1.452	0.000	0.106
130.00	-11.40	-4.95	0.00	-87.93	0.00	87.93	1699.92	849.96	2150.20	1076.70	20.41	-1.496	0.000	0.088
132.00	-8.31	-3.40	0.00	-78.04	0.00	78.04	1683.54	841.77	2098.80	1050.96	21.04	-1.512	0.000	0.079
135.00	-8.02	-3.33	0.00	-67.83	0.00	67.83	1658.53	829.27	2022.29	1012.65	22.00	-1.534	0.000	0.072
140.00	-7.55	-3.22	0.00	-51.15	0.00	51.15	1615.71	807.86	1896.47	949.64	23.62	-1.567	0.000	0.059
145.00	-7.10	-3.11	0.00	-35.05	0.00	35.05	1571.46	785.73	1772.93	887.78	25.28	-1.593	0.000	0.044
150.00	-6.66	-3.00	0.00	-19.51	0.00	19.51	1525.77	762.88	1651.87	827.16	26.96	-1.611	0.000	0.028
152.00	-2.90	-1.41	0.00	-13.52	0.00	13.52	1507.09	753.54	1604.19	803.29	27.63	-1.616	0.000	0.019
155.00	-2.69	-1.35	0.00	-9.29	0.00	9.29	1478.64	739.32	1533.49	767.89	28.65	-1.622	0.000	0.014
160.00	-2.34	-1.25	0.00	-2.55	0.00	2.55	1426.03	713.01	1413.96	708.03	30.35	-1.627	0.000	0.005
162.00	0.00	-1.18	0.00	-0.06	0.00	0.06	1400.09	700.04	1362.73	682.38	31.03	-1.628	0.000	0.000

Final Analysis Summary

Structure: CT01698-S-SBA	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 97 mph Wind	43.6	0.00	58.51	0.00	0.00	5163.21
0.9D + 1.6W 97 mph Wind	43.5	0.00	43.87	0.00	0.00	5101.11
1.2D + 1.0Di + 1.0Wi 50 mph Wind	12.4	0.00	104.98	0.00	0.00	1496.24
1.2D + 1.0E	2.1	0.00	58.60	0.00	0.00	259.45
0.9D + 1.0E	2.0	0.00	43.95	0.00	0.00	256.01
1.0D + 1.0W 60 mph Wind	10.4	0.00	48.83	0.00	0.00	1227.08

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 97 mph Wind	-39.76	-40.02	0.00	-3267.7	0.00	-3267.7	3936.38	1968.1	7803.92	3907.76	45.00	0.847
0.9D + 1.6W 97 mph Wind	-29.48	-39.61	0.00	-3215.7	0.00	-3215.7	3936.38	1968.1	7803.92	3907.76	45.00	0.831
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-78.99	-11.62	0.00	-951.17	0.00	-951.17	3936.38	1968.1	7803.92	3907.76	45.00	0.264
1.2D + 1.0E	-29.95	-1.55	0.00	-109.59	0.00	-109.59	2742.50	1371.2	4553.78	2280.28	83.75	0.059
0.9D + 1.0E	-22.46	-1.52	0.00	-107.69	0.00	-107.69	2742.50	1371.2	4553.78	2280.28	83.75	0.055
1.0D + 1.0W 60 mph Wind	-34.30	-9.51	0.00	-775.37	0.00	-775.37	3936.38	1968.1	7803.92	3907.76	45.00	0.207

Base Plate Summary

Structure: CT01698-S-SB	Code: EIA/TIA-222-G	11/16/2021
Site Name: Durham	Exposure: C	
Height: 162.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
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Reactions	Base Plate	Anchor Bolts
Original Design	Yield (ksi): 50.00	Bolt Circle: 65.00
Moment (kip-ft): 4550.00	Width (in): 64.00	Number Bolts: 20.00
Axial (kip): 36.00	Style: Clipped	Bolt Type: 2.25" 18J
Shear (kip): 37.00	Polygon Sides: 0.00	Bolt Diameter (in): 2.25
Analysis (1.2D + 1.6W)	Clip Length (in): 14.00	Yield (ksi): 75.00
Moment (kip-ft): 5163.21	Effective Len (in): 9.03	Ultimate (ksi): 100.00
Axial (kip): 58.51	Moment (kip-in): 708.14	Arrangement: Clustered
Shear (kip): 43.55	Allow Stress (ksi): 67.50	Cluster Dist (in): 6.00
	Applied Stress (ksi): 51.98	Start Angle (deg): 45.00
	Stress Ratio: 0.77	Compression
		Force (kip): 195.89
		Allowable (kip): 260.00
		Ratio: 0.77
		Tension
		Force (kip): 185.39
		Allowable (kip): 260.00
		Ratio: 0.73



Monopole Mat Foundation Design

Date

11/16/2021

Customer Name:	Dish Wireless	EIA/TIA Standard:	EIA-222-G
Site Name:		Structure Height (Ft.):	162
Site Number:	CT01698-S-SBA	Engineer Name:	S. Hesselbeir
Engr. Number:	119213	Engineer Login ID:	

Foundation Info Obtained from:

Drawings/Calculations
Monopole
Analysis

Structure Type:

Analysis or Design?

Base Reactions (Factored):

Axial Load (Kips):	58.5	Shear Force (Kips):	43.6
Uplift Force (Kips):	0.0	Moment (Kips-ft):	5163.2

Allowable overstress %: 5.0%

Foundation Geometries:

Diameter of Pier (ft.):	8.0	Mods required -Yes/No ?:	No
Pier Height A. G. (ft.):	0.50	Depth of Base BG (ft.):	10.0
Length of Pad (ft.):	29	Thickness of Pad (ft.):	4.00
		Width of Pad (ft.):	29

Final Length of pad (ft)	29.0	Final width of pad (ft):	29.0
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Material Properties and Rebar Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	40	
Vertical Rebar Size #:	10	Tie / Stirrup Size #:	5	
Qty. of Vertical Rebars:	44	Tie Spacing (in):	6.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	10	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf

Rebar at the bottom of the concrete pad:

Qty. of Rebar in Pad (L):	33	Qty. of Rebar in Pad (W):	33
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Rebar at the top of the concrete pad:

Qty. of Rebar in Pad (L):	33	Qty. of Rebar in Pad (W):	33
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Apply 1.35 factor for e/w Per G: 1.35

Soil Design Parameters:

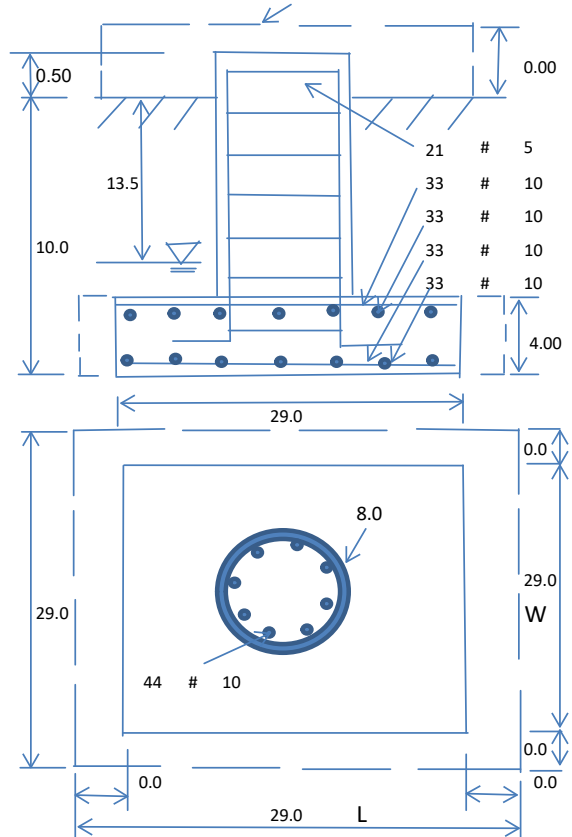
Soil Unit Weight (pcf):	120.0	Soil Buoyant Weight:	50.0	Pcf	Angle from Top of Pad:	30
Water Table B.G.S. (ft):	13.5	Unit Weight of Water:	62.4	pcf	Angle from Bottm of Pad:	25
Ultimate Bearing Pressure (psf):	4000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Reduction factor on the maximum soil bearing pressure:	1.00
Consider soil hor. resist. for OTM.:	No					

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):	4744.41	Total Dry Soil Weight (Kips):	569.33
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	569.33	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	3690.73	Total Dry Concrete Weight (Kips):	553.61
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	553.61	Total Vertical Load on Base (Kips):	1181.44

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	2640	< Allowable Factored Soil Bearing (psf):	3000	0.88	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	15502.6	> Design Factored Momont (kips-ft):	5621	0.36	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	2.76				OK!



Check the capacities of Reinforcing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75		
Strength reduction factor (Axial compression):	0.65	Wind Load Factor on Concrete Design:	1.00		
				Load/ Capacity Ratio	
(1) Concrete Pier:					
Vertical Steel Rebar Area (sq. in./each):	1.27	Tie / Stirrup Area (sq. in./each):	0.31		
Calculated Moment Capacity (Mn,Kips-Ft):	10399.3	> Design Factored Moment (Mu, Kips-F	5446.6	0.52	OK!
Calculated Shear Capacity (Kips):	912.1	> Design Factored Shear (Kips):	43.6	0.05	OK!
Calculated Tension Capacity (Tn, Kips):	3017.5	> Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	9523.8	> Design Factored Axial Load (Pu Kips):	58.5	0.01	OK!
Moment & Axial Strength Combination:	0.52	OK! Check Tie Spacing (Design/Required):		0.5	OK!
Pier Reinforcement Ratio:	0.008	Reinforcement Ratio is satisfied per ACI			
(2).Concrete Pad:					
One-Way Design Shear Capacity (L-Direction, Kips):	1268.7	> One-Way Factored Shear (L-D. Kips):	319.1	0.25	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1268.7	> One-Way Factored Shear (W-D., Kips)	319.1	0.25	OK!
One-Way Design Shear Capacity (Corner-Corner, Kips):	1120.7	> One-Way Factored Shear (C-C, Kips):	300.6	0.27	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0027	OK! Lower Steel Pad Reinf. Ratio (W-Direc	0.0027		
Lower Steel Pad Moment Capacity (L-Direction, Kips-ft):	8101.7	> Moment at Bottom (L-Dir. K-Ft):	2200.3	0.27	OK!
Lower Steel Pad Moment Capacity (W-Direction, Kips-ft):	8101.7	> Moment at Bottom (W-Dir. K-Ft):	2200.3	0.27	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	11366.0	> Moment at Bottom (C-C Dir. K-Ft):	3111.6	0.27	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0027	OK! Upper Steel Reinf. Ratio (W-Dir.):	0.0027		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	8101.7	> Moment at the top (L-Dir K-Ft):	918.1	0.11	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	8101.7	> Moment at the top (W-Dir K-Ft):	918.1	0.11	OK!
Upper Steel Pad Moment Capacity (Corner-Corner, K-ft):	11366.0	> Moment at the top (C-C Dir. K-Ft):	860.9	0.08	OK!
(3).Check Punching Shear Capacity due to Moment in the Pier:					
Moment transferred by punching shear:	2065.3	k-ft. Max. factored shear stress $v_{u,CD}$:		3.4	Psi
Max. factored shear stress $v_{u,AB}$:	7.9	Psi Factored shear Strength ϕv_n :		164.3	Psi
Max. factored shear stress v_u :	7.9	Psi Check Usage of Punching Shear Capacity:		0.05	OK!

Exhibit E

Mount Analysis



November 9, 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: BOHVN00038A
Site Name: N/A

SBA Network Services Designation: **Site Number:** CT01698-S
Site Name: Durham
Application Number: 168273, v1

Engineering Firm Designation: **B+T Group Project Number:** 149433.003.01

Site Data: 1605 Durham Road, CT Route 68, Wallingford, CT, 06492, New Haven County
Latitude 41.46957°, Longitude -72.74224°
Monopole
8 ft. Platform Mount

Dear Ms. Knapik,

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

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

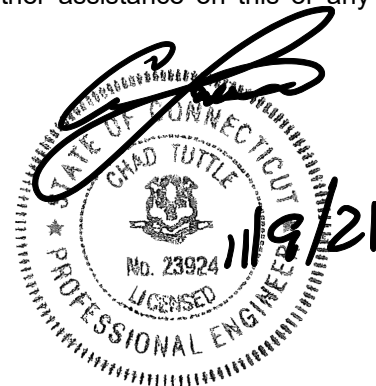
Proposed Equipment **Sufficient Capacity**
Note: See Table 1 for the final loading configuration **(Passing at 55.0%)**

This analysis utilizes an ultimate 3-second gust wind speed of 120 mph as required by the 2018 Connecticut State Building Code(2018 IBC). Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

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: Matthew Williams

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



Chad E. Tuttle, P.E.

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7) APPENDIX B

Additional Calculations

1) INTRODUCTION

The mount consists of Commscope Platform mounts (Part# MC-PK8-DSH) at 110 ft., attached to monopole at 1605 Durham Road, CT Route 68, Wallingford, CT, 06492, New Haven 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-H-2017 Structural Standard for Antenna Supporting Structures and Antennas and Small Wind Turbine Support Structures using a 3-second gust wind speed of 120 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	110	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
SBA Application	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	110	8.5	Pass
-	Support Rails	110	16.1	Pass
-	Support Tubes	110	55.0	Pass
-	Support Channels	110	37.4	Pass
-	Support Angles	110	39.1	Pass
-	Mount Pipes	110	17.4	Pass
-	Connection Plates	110	19.8	Pass
-	Connection Angles	110	26.8	Pass
-	Connection Bolts	110	28.8	Pass

5) RECOMMENDATIONS

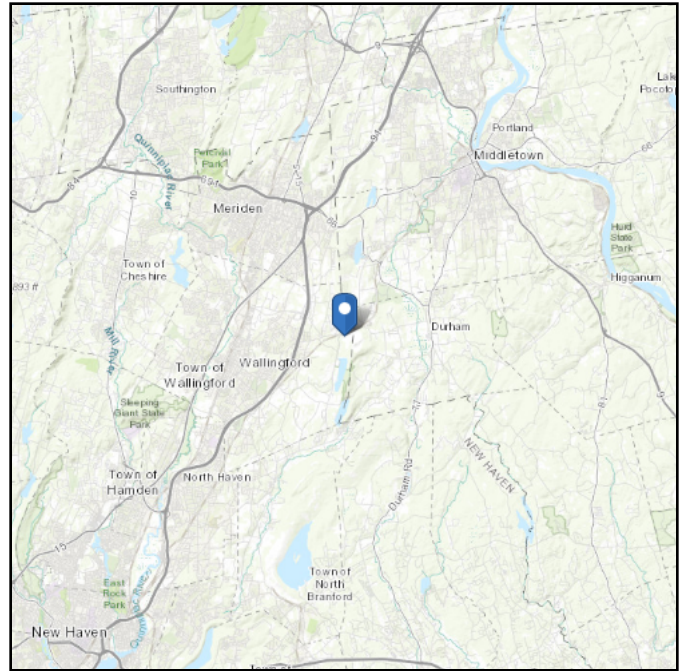
The Commscope Platform mounts (Part# MC-PK8-DSH) has sufficient capacity to carry the proposed loads and is in compliance with the ANSI/TIA-222-H standard for the proposed loading. (Refer to the RISA output for the specific members).

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see Section 11.4.3)

Elevation: 322.67 ft (NAVD 88)
Latitude: 41.469574
Longitude: -72.74225



Wind

Results:

Wind Speed:	120 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	91 Vmph
100-year MRI	98 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Tue Nov 09 2021

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

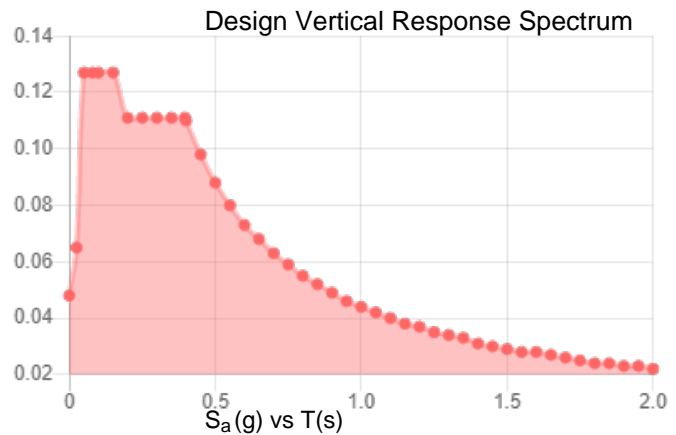
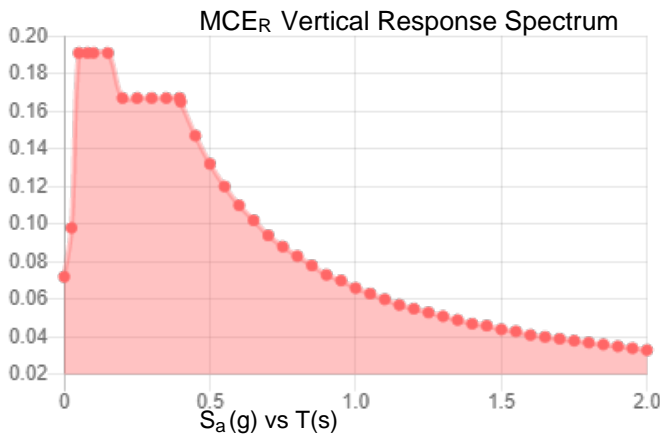
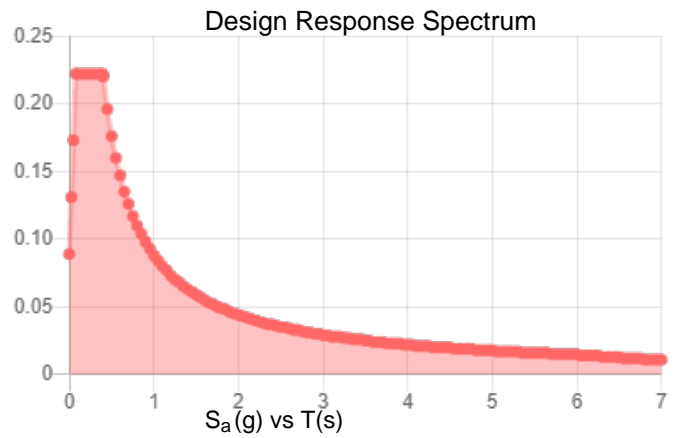
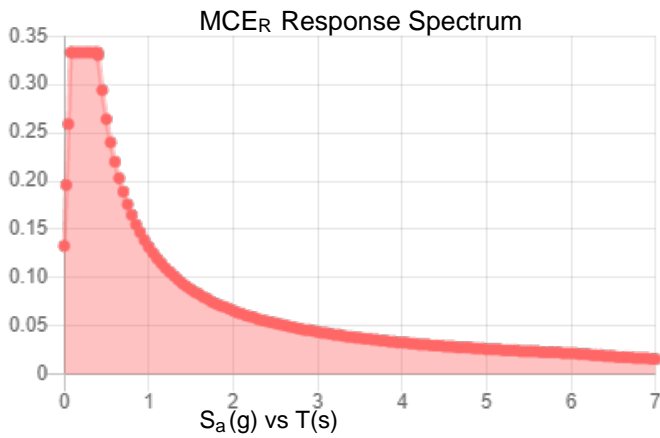
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Site Soil Class: D - Default (see Section 11.4.3)

Results:

S_s :	0.208	S_{D1} :	0.088
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.116
F_v :	2.4	PGA _M :	0.182
S_{MS} :	0.333	F_{PGA} :	1.567
S_{M1} :	0.132	I_e :	1
S_{DS} :	0.222	C_v :	0.717

Seismic Design Category B



Data Accessed:

Tue Nov 09 2021

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness: 1.00 in.
Concurrent Temperature: 15 F
Gust Speed: 50 mph

Data Source: Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

Date Accessed: Tue Nov 09 2021

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

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

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PROJECT	149433.003.01 - Durham, CT		KSC
SUBJECT	Platform Mount Analysis		
DATE	11/09/21	PAGE	OF



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

Tower Type	:	Monopole	
Ground Elevation	z_s :	323	ft [ASCE7 Hazard Tool]
Tower Height	:	162.00	ft
Mount Elevation	:	110.00	ft
Antenna Elevation	:	110.00	ft
Crest Height	:	0	ft
Risk Category	:	II	[Table 2-1]
Exposure Category	:	C	[Sec. 2.6.5.1.2]
Topography Category	:	1.00	[Sec. 2.6.6.2]
Wind Velocity	V :	120	mph [ASCE7 Hazard Tool]
Ice wind Velocity	V_i :	50	mph [ASCE7 Hazard Tool]
Service Velocity	V_s :	30	mph [ASCE7 Hazard Tool]
Base Ice thickness	t_i :	1.00	in [ASCE7 Hazard Tool]
Seismic Design Cat.	:	B	[ASCE7 Hazard Tool]
	S_S :	0.21	
	S_1 :	0.06	
	S_{DS} :	0.22	
	S_{D1} :	0.09	
Gust Factor	G_h :	1.00	[Sec. 16.6]
Pressure Coefficient	K_z :	1.29	[Sec. 2.6.5.2]
Topography Factor	K_{zt} :	1.00	[Sec. 2.6.6]
Elevation Factor	K_e :	0.99	[Sec. 2.6.8]
Directionality Factor	K_d :	0.95	[Sec. 16.6]
Shielding Factor	K_a :	0.90	[Sec. 16.6]
Design Ice Thickness	t_{iz} :	1.13	in [Sec. 2.6.10]
Importance Factor	I_e :	1	[Table 2-3]
Response Coefficient	C_s :	0.111	[Sec. 2.7.7.1]
Amplification	A_s :	1.716049	[Sec. 16.7]
	q_z :	44.70	psf

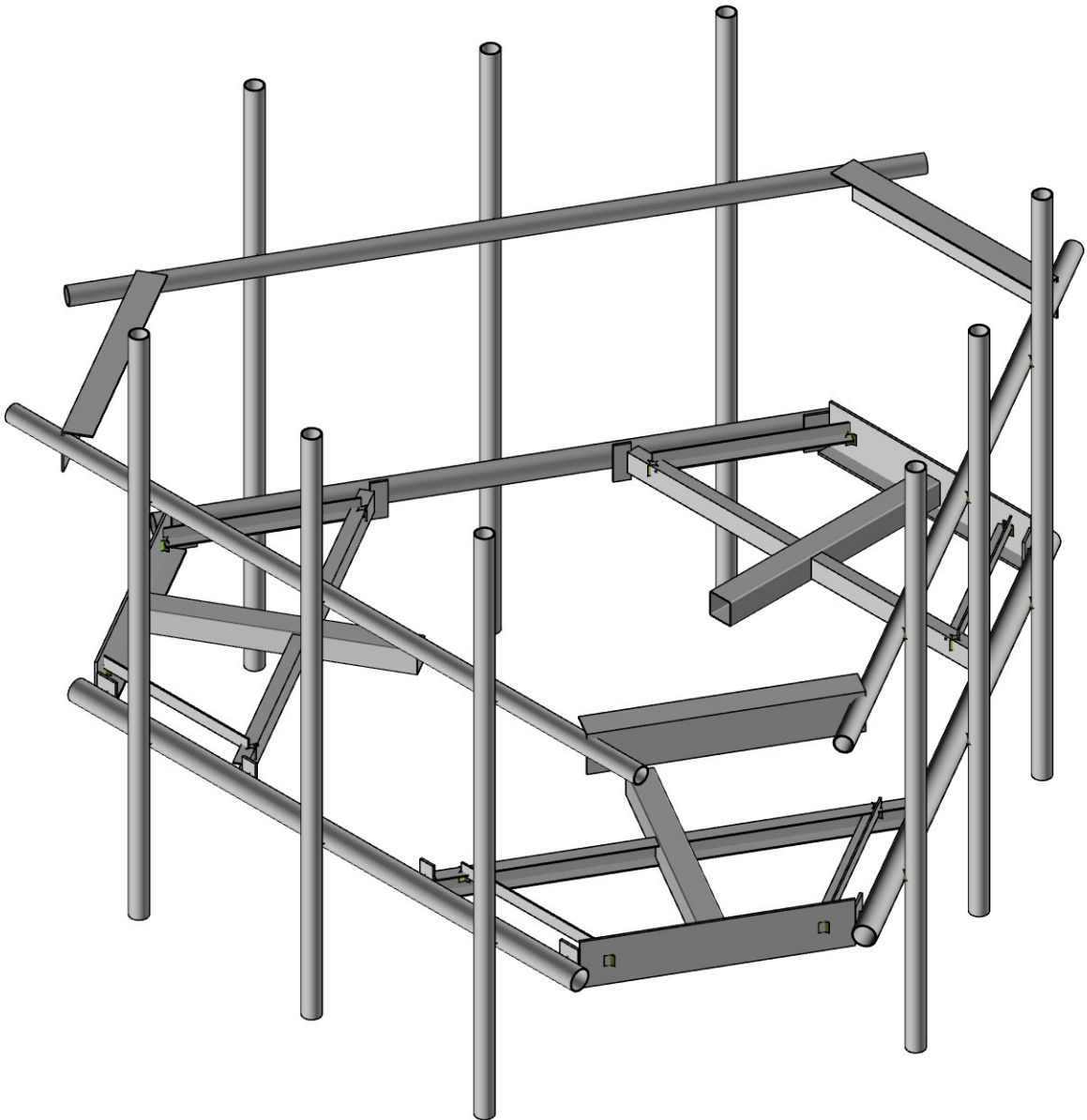
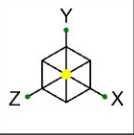
PROJECT	149433.003.01 - Durham, CT	KSC
SUBJECT	Platform Mount Analysis	
DATE	11/09/21	PAGE OF



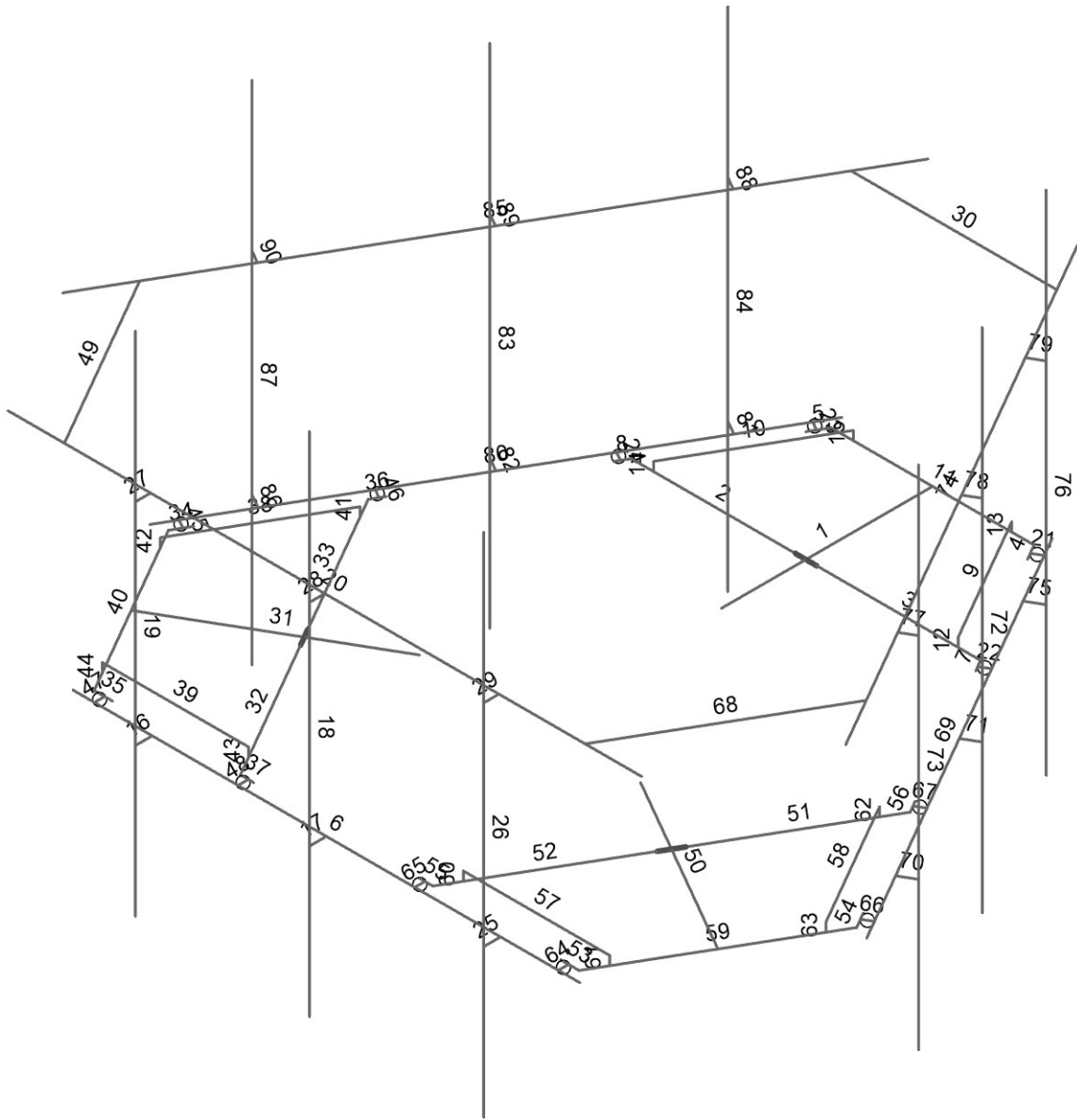
Manufacturer	Model	Qty	Aspect Ratio	C_a	EPA_N (ft ²)	EPA_T (ft ²)	EPA_{N-Ice} (ft ²)	EPA_{T-Ice} (ft ²)	$F_{A \text{ No Ice (N)}}$	$F_{A \text{ No Ice (T)}}$	$F_{A \text{ Ice (N)}}$	$F_{A \text{ Ice (T)}}$
				flat/round								
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.18	0.07	0.04	0.02
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.18	0.07	0.04	0.02
FUJITSU	TA08025-B605	1	1.05	1.20	1.64	0.99	2.15	1.41	0.08	0.05	0.01	0.01
FUJITSU	TA08025-B604	1	1.05	1.20	1.64	0.86	2.15	1.27	0.08	0.04	0.01	0.01
RAYCAP	RDIDC-9181-PF-48	1	2.03	1.20	0.94	1.68	1.36	2.20	0.05	0.08	0.01	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.18	0.07	0.04	0.02
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.18	0.07	0.04	0.02
FUJITSU	TA08025-B605	1	1.05	1.20	1.64	0.99	2.15	1.41	0.08	0.05	0.01	0.01
FUJITSU	TA08025-B604	1	1.05	1.20	1.64	0.86	2.15	1.27	0.08	0.04	0.01	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.18	0.07	0.04	0.02
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.18	0.07	0.04	0.02
FUJITSU	TA08025-B605	1	1.05	1.20	1.64	0.99	2.15	1.41	0.08	0.05	0.01	0.01
FUJITSU	TA08025-B604	1	1.05	1.20	1.64	0.86	2.15	1.27	0.08	0.04	0.01	0.01

APPENDIX A

(RISA-3D Output)



Envelope Only Solution		
B+T Group	CT01698-S - Durham	SK-1
APK		Nov 09, 2021
149433.003.01		149433_003_01_Durham_CT.R3D



Envelope Only Solution

B+T Group

APK

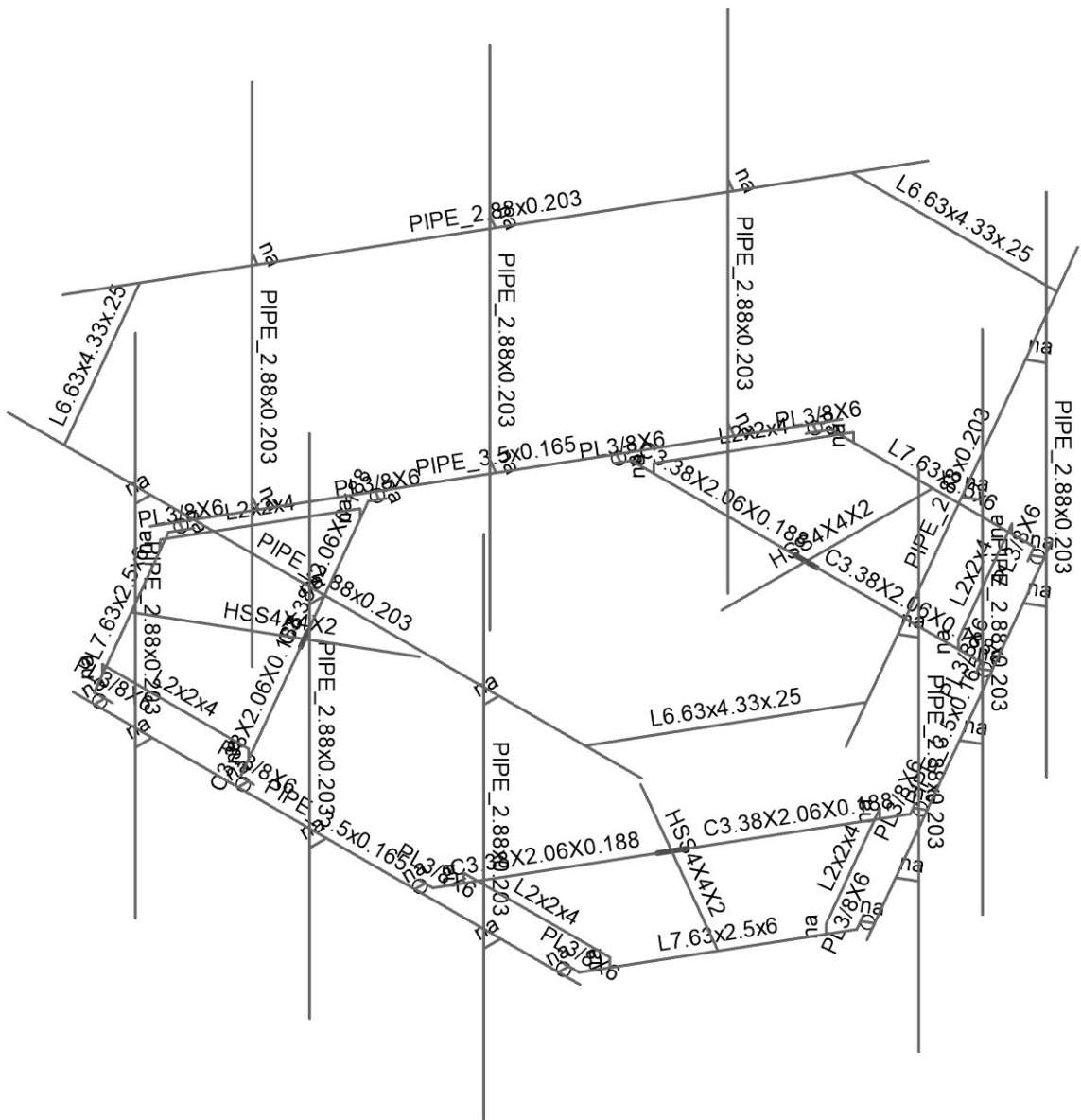
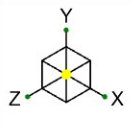
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CT01698-S - Durham

SK-2

Nov 09, 2021

149433_003_01_Durham_CT.R3D

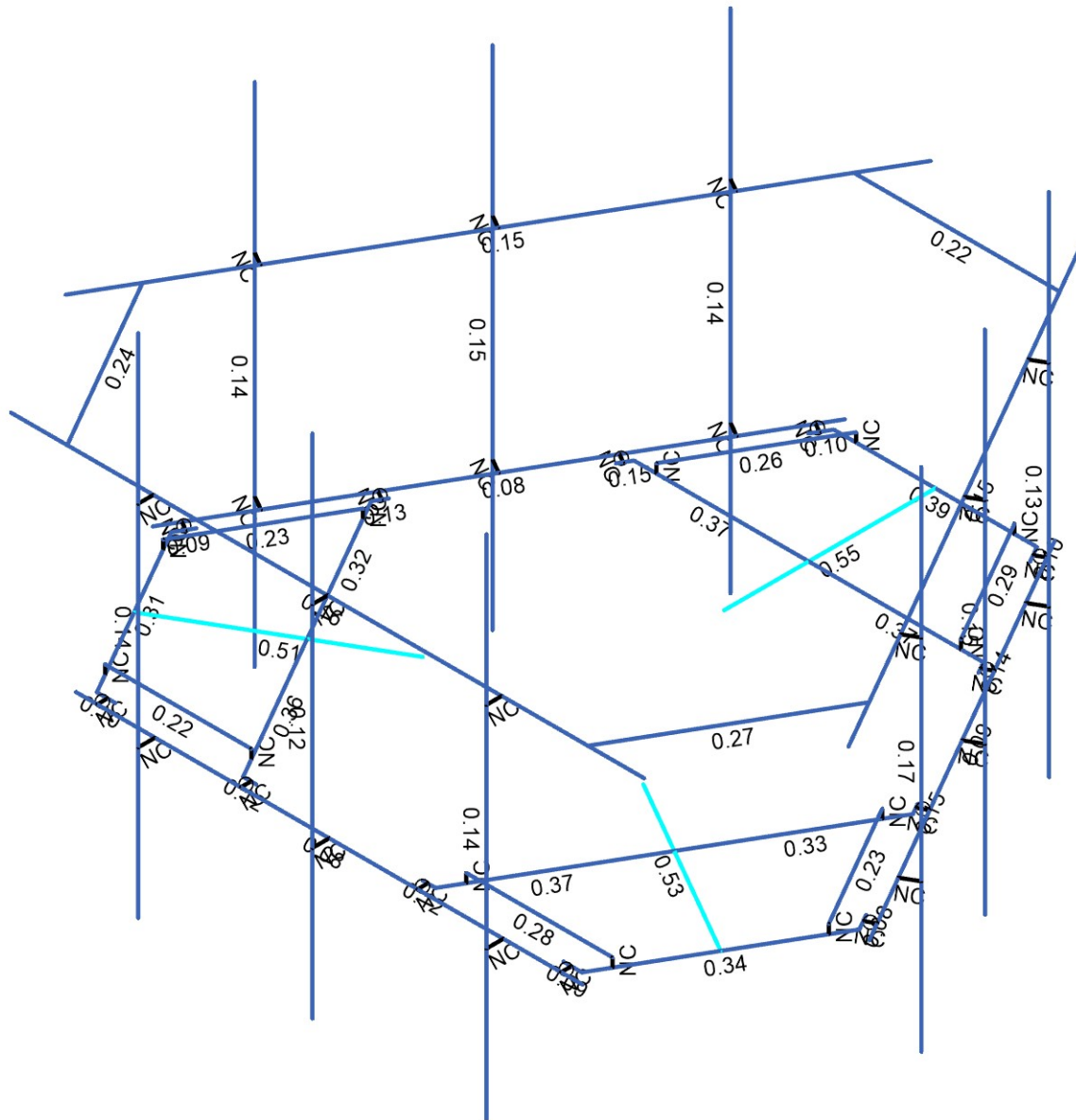
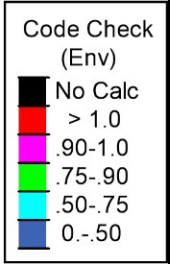


Envelope Only Solution

B+T Group
APK
149433.003.01

CT01698-S - Durham

SK-3
Nov 09, 2021
149433_003_01_Durham_CT.R3D

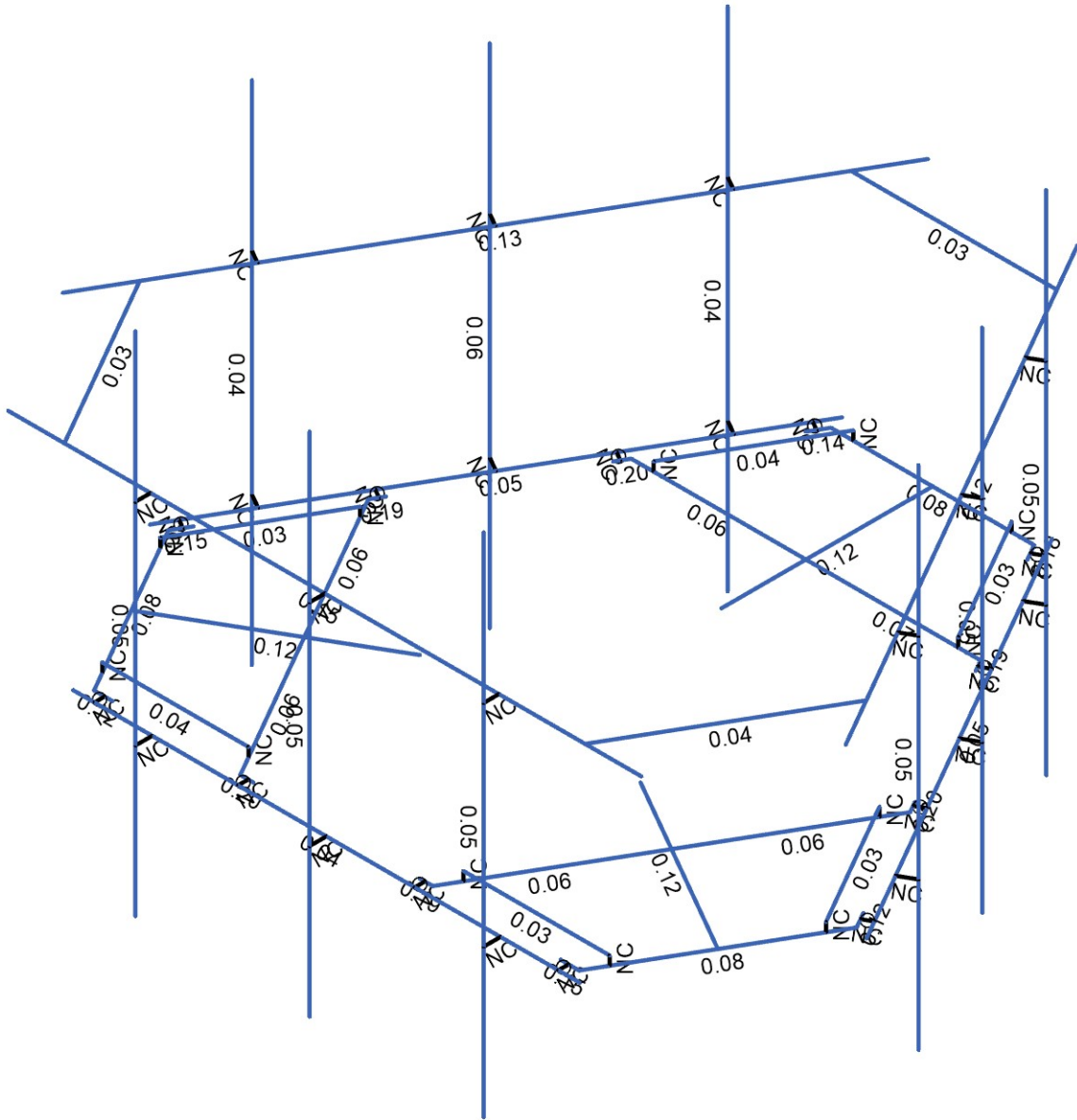
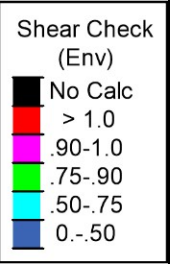


Member Code Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group
APK
149433.003.01

CT01698-S - Durham

SK-5
Nov 09, 2021
149433_003_01_Durham_CT.R3D



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group
APK
149433.003.01

CT01698-S - Durham

SK-6
Nov 09, 2021
149433_003_01_Durham_CT.R3D

Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	1	0	0	-2.014165	
2	2	0	0	-5.347498	
3	3	0	0	-3.347498	
4	4	2.758333	0	-3.347498	
5	5	-2.758333	0	-3.347498	
6	6	-1.603633	0	-5.347498	
7	7	1.603633	0	-5.347498	
8	8	1.749466	0	-5.094907	
9	9	-1.749466	0	-5.094907	
10	10	1.686966	0	-5.20316	
11	11	1.826789	0	-5.283887	
12	12	-1.686966	0	-5.20316	
13	13	-1.826789	0	-5.283887	
14	14	-3.999998	0	4.22399	
15	15	3.999998	0	4.22399	
16	16	2.8625	0	-3.167076	
17	17	2.820833	0	-3.239246	
18	18	2.960656	0	-3.319973	
19	19	-2.8625	0	-3.167076	
20	20	-2.820833	0	-3.239246	
21	21	-2.960656	0	-3.319973	
22	22	-1.25	0.140833	-5.347498	
23	23	-2.404701	0.140833	-3.347498	
24	24	2.404701	0.140833	-3.347498	
25	25	1.25	0.140833	-5.347498	
26	26	-1.25	0	-5.347498	
27	27	-2.404701	0	-3.347498	
28	28	2.404701	0	-3.347498	
29	29	1.25	0	-5.347498	
30	30	-2.749998	0	4.22399	
31	31	0.000002	0	4.22399	
32	32	-2.749998	0	4.489823	
33	33	0.000002	0	4.489823	
34	34	-2.749998	5.666663	4.489823	
35	35	0.000002	5.666663	4.489823	
36	36	-2.749998	-2.333337	4.489823	
37	37	0.000002	-2.333337	4.489823	
38	38	-5	3.33333	4.249823	
39	39	5	3.33333	4.249823	
40	40	2.749998	0	4.22399	
41	41	2.749998	0	4.489823	
42	42	2.749998	5.666663	4.489823	
43	43	2.749998	-2.333337	4.489823	
44	44	0	0	0	
45	45	-2.749998	3.3333	4.489823	
46	46	0.000002	3.3333	4.489823	
47	47	2.749998	3.3333	4.489823	
48	48	-2.749998	3.3333	4.249823	
49	49	0.000002	3.33333	4.249823	
50	50	2.749998	3.33333	4.249823	
51	51	-1.625	3.33333	-5.685064	
52	52	1.625	3.33333	-5.685064	
53	59	-1.744318	0	1.007082	
54	60	-4.631069	0	2.673749	
55	61	-2.899018	0	1.673749	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
56	62	-4.278185	0	-0.715038	
57	63	-1.519852	0	4.062536	
58	64	-3.829253	0	4.062536	
59	65	-5.432885	0	1.284962	
60	66	-5.287052	0	1.032371	
61	67	-3.537586	0	4.062536	
62	68	-5.349552	0	1.140625	
63	69	-5.489375	0	1.059898	
64	70	-3.662586	0	4.062536	
65	71	-3.662586	0	4.22399	
66	72	-4.174018	0	-0.89546	
67	73	-4.215685	0	-0.82329	
68	74	-4.355509	0	-0.904017	
69	75	-1.311518	0	4.062536	
70	76	-1.394853	0	4.062536	
71	77A	-1.394853	0	4.22399	
72	78	-4.006069	0.140833	3.756281	
73	79	-1.696668	0.140833	3.756281	
74	80	-4.101369	0.140833	-0.408783	
75	81	-5.256069	0.140833	1.591217	
76	82	-4.006069	0	3.756281	
77	83	-1.696668	0	3.756281	
78	84	-4.101369	0	-0.408783	
79	85	-5.256069	0	1.591217	
80	86A	-4.11091	3.333333	4.249823	
81	87	-5.73591	3.333333	1.435241	
82	88	1.744318	0	1.007082	
83	89	4.631069	0	2.673749	
84	90	2.899018	0	1.673749	
85	91	1.519852	0	4.062536	
86	92	4.278185	0	-0.715038	
87	93	5.432885	0	1.284962	
88	94	3.829253	0	4.062536	
89	95	3.537586	0	4.062536	
90	96	5.287052	0	1.032371	
91	97	3.662586	0	4.062536	
92	98A	3.662586	0	4.22399	
93	99	5.349552	0	1.140625	
94	100	5.489375	0	1.059898	
95	101	1.311518	0	4.062536	
96	102	1.394853	0	4.062536	
97	103A	1.394853	0	4.22399	
98	104	4.174018	0	-0.89546	
99	105	4.215685	0	-0.82329	
100	106	4.355509	0	-0.904017	
101	107	5.256069	0.140833	1.591217	
102	108	4.101369	0.140833	-0.408783	
103	109	1.696668	0.140833	3.756281	
104	110	4.006069	0.140833	3.756281	
105	111	5.256069	0	1.591217	
106	112	4.101369	0	-0.408783	
107	113	1.696668	0	3.756281	
108	114	4.006069	0	3.756281	
109	115	5.73591	3.333333	1.435241	
110	116A	4.11091	3.333333	4.249823	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
111	111A	5.658081	0	1.352105	
112	112A	1.658083	0	-5.576095	
113	113A	5.033081	0	0.269573	
114	114A	3.658081	0	-2.111997	
115	115A	5.2633	0	0.136657	
116	116	3.8883	0	-2.244913	
117	117	5.2633	5.666663	0.136657	
118	118	3.8883	5.666663	-2.244913	
119	119	5.2633	-2.333337	0.136657	
120	120	3.8883	-2.333337	-2.244913	
121	121	6.180455	3.333333	2.205216	
122	122	1.180455	3.333333	-6.455039	
123	123	2.283083	0	-4.493563	
124	124	2.513302	0	-4.62648	
125	125	2.513302	5.666663	-4.62648	
126	126	2.513302	-2.333337	-4.62648	
127	127	5.2633	3.3333	0.136657	
128	128	3.8883	3.3333	-2.244913	
129	129	2.513302	3.3333	-4.62648	
130	130	5.055454	3.333333	0.256657	
131	131	3.680454	3.333333	-2.124913	
132	132	2.305456	3.333333	-4.50648	
133	133	-1.658083	0	-5.576095	
134	134	-5.658081	0	1.352105	
135	135	-2.283083	0	-4.493563	
136	136	-3.658083	0	-2.111993	
137	137	-2.513302	0	-4.62648	
138	138	-3.888302	0	-2.24491	
139	139	-2.513302	5.666663	-4.62648	
140	140	-3.888302	5.666663	-2.24491	
141	141	-2.513302	-2.333337	-4.62648	
142	142	-3.888302	-2.333337	-2.24491	
143	143	-1.180455	3.333333	-6.455039	
144	144	-6.180455	3.333333	2.205216	
145	145	-5.033081	0	0.269573	
146	146	-5.2633	0	0.136657	
147	147	-5.2633	5.666663	0.136657	
148	148	-5.2633	-2.333337	0.136657	
149	149	-2.513302	3.3333	-4.62648	
150	150	-3.888302	3.3333	-2.24491	
151	151	-5.2633	3.3333	0.136657	
152	152	-2.305456	3.333333	-4.50648	
153	153	-3.680456	3.3333	-2.12491	
154	154	-5.055454	3.333333	0.256657	

Node Boundary Conditions

	Node Label	X [k/in] Reaction	Y [k/in] Reaction	Z [k/in] Reaction	X Rot [k-ft/rad] Reaction	Y Rot [k-ft/rad] Reaction	Z Rot [k-ft/rad] Reaction
1	1						
2	2						
3	3						
4	4						
5	5						
6	16						
7	17						
8	19						

Node Boundary Conditions (Continued)

Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
9	20					
10	22					
11	25					
12	26					
13	29					
14	59	Reaction	Reaction	Reaction	Reaction	Reaction
15	60					
16	61					
17	62					
18	63					
19	72					
20	73					
21	75					
22	76					
23	78					
24	81					
25	82					
26	85					
27	88	Reaction	Reaction	Reaction	Reaction	Reaction
28	89					
29	90					
30	91					
31	92					
32	101					
33	102					
34	104					
35	105					
36	107					
37	110					
38	111					
39	114					

Hot Rolled Steel Properties

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

Hot Rolled Steel Section Sets

Label	Shape	Type	Design List	Material	Design Rule	Area [in ²]	Iyy [in ⁴]	Izz [in ⁴]	J [in ⁴]	
1	MF-H1	PIPE 3.5x0.165	Beam	Pipe	A500 Gr.C	Typical	1.729	2.409	2.409	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	C3.38X2.06X0.188	Beam	Channel	A36 Gr.36	Typical	1.339	0.562	2.4	0.015
5	SF-H3	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical	0.944	0.346	0.346	0.021
6	SF-H4	L7.63x2.5x6	Beam	Single Angle	A36 Gr.36	Typical	3.658	1.307	22.092	0.163
7	MF-P1	PIPE 2.88x0.203	Column	Pipe	A500 Gr.C	Typical	1.707	1.538	1.538	3.076
8	MF-CP1	PL3/8X6	Beam	RECT	A36 Gr.36	Typical	2.25	0.026	6.75	0.101

Hot Rolled Steel Section Sets (Continued)

Label	Shape	Type	Design List	Material	Design Rule	Area [in ²]	Iyy [in ⁴]	Izz [in ⁴]	J [in ⁴]
9	MF-H3	Beam	Single Angle	A36 Gr.36	Typical	2.678	4.383	12.502	0.054

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	1	1	2		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
2	2	5	3	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
3	3	3	4	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
4	4	7	8		MF-CP1	Beam	RECT	A36 Gr.36	Typical
5	5	6	9		MF-CP1	Beam	RECT	A36 Gr.36	Typical
6	6	14	15		MF-H1	Beam	Pipe	A500 Gr.C	Typical
7	7	16	4		MF-CP1	Beam	RECT	A36 Gr.36	Typical
8	8	5	19		MF-CP1	Beam	RECT	A36 Gr.36	Typical
9	9	25	24		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
10	10	23	22		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
11	11	6	7		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
12	12	28	24		RIGID	None	None	RIGID	Typical
13	13	29	25		RIGID	None	None	RIGID	Typical
14	14	27	23		RIGID	None	None	RIGID	Typical
15	15	26	22		RIGID	None	None	RIGID	Typical
16	16	32	30		RIGID	None	None	RIGID	Typical
17	17	33	31		RIGID	None	None	RIGID	Typical
18	18	35	37		MF-P1	Column	Pipe	A500 Gr.C	Typical
19	19	34	36		MF-P1	Column	Pipe	A500 Gr.C	Typical
20	20	38	39		MF-H2	Beam	Pipe	A500 Gr.C	Typical
21	21	11	10		RIGID	None	None	RIGID	Typical
22	22	18	17		RIGID	None	None	RIGID	Typical
23	23	13	12		RIGID	None	None	RIGID	Typical
24	24	21	20		RIGID	None	None	RIGID	Typical
25	25	41	40		RIGID	None	None	RIGID	Typical
26	26	42	43		MF-P1	Column	Pipe	A500 Gr.C	Typical
27	27	45	48		RIGID	None	None	RIGID	Typical
28	28	46	49		RIGID	None	None	RIGID	Typical
29	29	47	50		RIGID	None	None	RIGID	Typical
30	30	52	51	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
31	31	59	60		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
32	32	63	61	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
33	33	61	62	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
34	34	65	66		MF-CP1	Beam	RECT	A36 Gr.36	Typical
35	35	64	67		MF-CP1	Beam	RECT	A36 Gr.36	Typical
36	36	72	62		MF-CP1	Beam	RECT	A36 Gr.36	Typical
37	37	63	75		MF-CP1	Beam	RECT	A36 Gr.36	Typical
38	38	81	80		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
39	39	79	78		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
40	40	64	65		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
41	41	84	80		RIGID	None	None	RIGID	Typical
42	42	85	81		RIGID	None	None	RIGID	Typical
43	43	83	79		RIGID	None	None	RIGID	Typical
44	44	82	78		RIGID	None	None	RIGID	Typical
45	45	69	68		RIGID	None	None	RIGID	Typical
46	46	74	73		RIGID	None	None	RIGID	Typical
47	47	71	70		RIGID	None	None	RIGID	Typical
48	48	77A	76		RIGID	None	None	RIGID	Typical
49	49	87	86A	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
50	50	88	89		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
51	51	92	90	180	SF-H2	Beam	Channel	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
52	52	90	91	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
53	53	94	95		MF-CP1	Beam	RECT	A36 Gr.36	Typical
54	54	93	96		MF-CP1	Beam	RECT	A36 Gr.36	Typical
55	55	101	91		MF-CP1	Beam	RECT	A36 Gr.36	Typical
56	56	92	104		MF-CP1	Beam	RECT	A36 Gr.36	Typical
57	57	110	109		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
58	58	108	107		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
59	59	93	94		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
60	60	113	109		RIGID	None	None	RIGID	Typical
61	61	114	110		RIGID	None	None	RIGID	Typical
62	62	112	108		RIGID	None	None	RIGID	Typical
63	63	111	107		RIGID	None	None	RIGID	Typical
64	64	98A	97		RIGID	None	None	RIGID	Typical
65	65	103A	102		RIGID	None	None	RIGID	Typical
66	66	100	99		RIGID	None	None	RIGID	Typical
67	67	106	105		RIGID	None	None	RIGID	Typical
68	68	116A	115	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
69	69	111A	112A		MF-H1	Beam	Pipe	A500 Gr.C	Typical
70	70	115A	113A		RIGID	None	None	RIGID	Typical
71	71	116	114A		RIGID	None	None	RIGID	Typical
72	72	118	120		MF-P1	Column	Pipe	A500 Gr.C	Typical
73	73	117	119		MF-P1	Column	Pipe	A500 Gr.C	Typical
74	74	121	122		MF-H2	Beam	Pipe	A500 Gr.C	Typical
75	75	124	123		RIGID	None	None	RIGID	Typical
76	76	125	126		MF-P1	Column	Pipe	A500 Gr.C	Typical
77	77	127	130		RIGID	None	None	RIGID	Typical
78	78	128	131		RIGID	None	None	RIGID	Typical
79	79	129	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	140	142		MF-P1	Column	Pipe	A500 Gr.C	Typical
84	84	139	141		MF-P1	Column	Pipe	A500 Gr.C	Typical
85	85	143	144		MF-H2	Beam	Pipe	A500 Gr.C	Typical
86	86	146	145		RIGID	None	None	RIGID	Typical
87	87	147	148		MF-P1	Column	Pipe	A500 Gr.C	Typical
88	88	149	152		RIGID	None	None	RIGID	Typical
89	89	150	153		RIGID	None	None	RIGID	Typical
90	90	151	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	N/A	None
2	2			2	Yes	N/A	None
3	3		2		Yes	N/A	None
4	4				Yes	Default	None
5	5				Yes	Default	None
6	6				Yes	N/A	None
7	7				Yes	Default	None
8	8				Yes	Default	None
9	9				Yes	N/A	None
10	10				Yes	N/A	None
11	11				Yes	N/A	None
12	12				Yes	** NA **	None
13	13				Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
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	N/A	None
21	21	OOOOOX			Yes	** NA **	None
22	22	OOOOOX			Yes	** NA **	None
23	23	OOOOOX			Yes	** NA **	None
24	24	OOOOOX			Yes	** NA **	None
25	25				Yes	** NA **	None
26	26				Yes	** NA **	None
27	27				Yes	** NA **	None
28	28				Yes	** NA **	None
29	29				Yes	** NA **	None
30	30				Yes	Default	None
31	31				Yes	N/A	None
32	32			2	Yes	N/A	None
33	33		2		Yes	N/A	None
34	34				Yes	Default	None
35	35				Yes	Default	None
36	36				Yes	Default	None
37	37				Yes	Default	None
38	38				Yes	N/A	None
39	39				Yes	N/A	None
40	40				Yes	N/A	None
41	41				Yes	** NA **	None
42	42				Yes	** NA **	None
43	43				Yes	** NA **	None
44	44				Yes	** NA **	None
45	45	OOOOOX			Yes	** NA **	None
46	46	OOOOOX			Yes	** NA **	None
47	47	OOOOOX			Yes	** NA **	None
48	48	OOOOOX			Yes	** NA **	None
49	49				Yes	Default	None
50	50				Yes	N/A	None
51	51			2	Yes	N/A	None
52	52		2		Yes	N/A	None
53	53				Yes	Default	None
54	54				Yes	Default	None
55	55				Yes	Default	None
56	56				Yes	Default	None
57	57				Yes	N/A	None
58	58				Yes	N/A	None
59	59				Yes	N/A	None
60	60				Yes	** NA **	None
61	61				Yes	** NA **	None
62	62				Yes	** NA **	None
63	63				Yes	** NA **	None
64	64	OOOOOX			Yes	** NA **	None
65	65	OOOOOX			Yes	** NA **	None
66	66	OOOOOX			Yes	** NA **	None
67	67	OOOOOX			Yes	** NA **	None
68	68				Yes	Default	None

Member Advanced Data (Continued)

	Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
69	69				Yes	N/A	None
70	70				Yes	** NA **	None
71	71				Yes	** NA **	None
72	72				Yes	** NA **	None
73	73				Yes	** NA **	None
74	74				Yes	N/A	None
75	75				Yes	** NA **	None
76	76				Yes	** NA **	None
77	77				Yes	** NA **	None
78	78				Yes	** NA **	None
79	79				Yes	** NA **	None
80	80				Yes	N/A	None
81	81				Yes	** NA **	None
82	82				Yes	** NA **	None
83	83				Yes	** NA **	None
84	84				Yes	** NA **	None
85	85				Yes	N/A	None
86	86				Yes	** NA **	None
87	87				Yes	** NA **	None
88	88				Yes	** NA **	None
89	89				Yes	** NA **	None
90	90				Yes	** NA **	None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
1	1	SF-H1	3.333	Lbyy	Lateral
2	2	SF-H2	2.758	Lbyy	Lateral
3	3	SF-H2	2.758	Lbyy	Lateral
4	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	20	MF-H2	10	Lbyy	Lateral
15	26	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

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
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	74	MF-H2	10	Lbyy	Lateral
43	76	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	85	MF-H2	10	Lbyy	Lateral
48	87	MF-P1	8	Lbyy	Lateral

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	26	Y	-0.032	%5
2	26	Y	-0.032	%80
3	26	Y	-0.075	%15
4	26	Y	-0.064	%50
5	26	Y	0	0
6	1	Y	-0.022	%20
7	1	Y	0	0
8	1	Y	0	0
9	1	Y	0	0
10	1	Y	0	0
11	87	Y	-0.032	%5
12	87	Y	-0.032	%80
13	87	Y	-0.075	%15
14	87	Y	-0.064	%50
15	87	Y	0	0
16	76	Y	-0.032	%5
17	76	Y	-0.032	%80
18	76	Y	-0.075	%15
19	76	Y	-0.064	%50
20	76	Y	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	26	Z	-0.179	%5
2	26	Z	-0.179	%80
3	26	Z	-0.079	%15
4	26	Z	-0.079	%50
5	26	Z	0	0
6	1	Z	-0.045	%20
7	1	Z	0	0
8	1	Z	0	0
9	1	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
10	1	Z	0	0
11	87	Z	-0.179	%5
12	87	Z	-0.179	%80
13	87	Z	-0.079	%15
14	87	Z	-0.079	%50
15	87	Z	0	0
16	76	Z	-0.179	%5
17	76	Z	-0.179	%80
18	76	Z	-0.079	%15
19	76	Z	-0.079	%50
20	76	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	26	X	-0.072	%5
2	26	X	-0.072	%80
3	26	X	-0.048	%15
4	26	X	-0.042	%50
5	26	X	0	0
6	1	X	-0.081	%20
7	1	X	0	0
8	1	X	0	0
9	1	X	0	0
10	1	X	0	0
11	87	X	-0.072	%5
12	87	X	-0.072	%80
13	87	X	-0.048	%15
14	87	X	-0.042	%50
15	87	X	0	0
16	76	X	-0.072	%5
17	76	X	-0.072	%80
18	76	X	-0.048	%15
19	76	X	-0.042	%50
20	76	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	26	Z	-0.035	%5
2	26	Z	-0.035	%80
3	26	Z	-0.014	%15
4	26	Z	-0.014	%50
5	26	Z	0	0
6	1	Z	-0.008	%20
7	1	Z	0	0
8	1	Z	0	0
9	1	Z	0	0
10	1	Z	0	0
11	87	Z	-0.035	%5
12	87	Z	-0.035	%80
13	87	Z	-0.014	%15
14	87	Z	-0.014	%50
15	87	Z	0	0
16	76	Z	-0.035	%5

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
17	76	Z	-0.035	%80
18	76	Z	-0.014	%15
19	76	Z	-0.014	%50
20	76	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	26	X	-0.016	%5
2	26	X	-0.016	%80
3	26	X	-0.008	%15
4	26	X	-0.007	%50
5	26	X	0	0
6	1	X	-0.014	%20
7	1	X	0	0
8	1	X	0	0
9	1	X	0	0
10	1	X	0	0
11	87	X	-0.016	%5
12	87	X	-0.016	%80
13	87	X	-0.008	%15
14	87	X	-0.007	%50
15	87	X	0	0
16	76	X	-0.016	%5
17	76	X	-0.016	%80
18	76	X	-0.008	%15
19	76	X	-0.007	%50
20	76	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	26	Z	-0.011	%5
2	26	Z	-0.011	%80
3	26	Z	-0.005	%15
4	26	Z	-0.005	%50
5	26	Z	0	0
6	1	Z	-0.003	%20
7	1	Z	0	0
8	1	Z	0	0
9	1	Z	0	0
10	1	Z	0	0
11	87	Z	-0.011	%5
12	87	Z	-0.011	%80
13	87	Z	-0.005	%15
14	87	Z	-0.005	%50
15	87	Z	0	0
16	76	Z	-0.011	%5
17	76	Z	-0.011	%80
18	76	Z	-0.005	%15
19	76	Z	-0.005	%50
20	76	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	26	X	-0.005	%5
2	26	X	-0.005	%80
3	26	X	-0.003	%15
4	26	X	-0.003	%50
5	26	X	0	0
6	1	X	-0.005	%20
7	1	X	0	0
8	1	X	0	0
9	1	X	0	0
10	1	X	0	0
11	87	X	-0.005	%5
12	87	X	-0.005	%80
13	87	X	-0.003	%15
14	87	X	-0.003	%50
15	87	X	0	0
16	76	X	-0.005	%5
17	76	X	-0.005	%80
18	76	X	-0.003	%15
19	76	X	-0.003	%50
20	76	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	26	Y	-0.118	%5
2	26	Y	-0.118	%80
3	26	Y	-0.034	%15
4	26	Y	-0.033	%50
5	26	Y	0	0
6	1	Y	-0.034	%20
7	1	Y	0	0
8	1	Y	0	0
9	1	Y	0	0
10	1	Y	0	0
11	87	Y	-0.118	%5
12	87	Y	-0.118	%80
13	87	Y	-0.034	%15
14	87	Y	-0.033	%50
15	87	Y	0	0
16	76	Y	-0.118	%5
17	76	Y	-0.118	%80
18	76	Y	-0.034	%15
19	76	Y	-0.033	%50
20	76	Y	0	0

Member Point Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	26	Z	-0.012	%5
2	26	Z	-0.012	%80
3	26	Z	-0.014	%15
4	26	Z	-0.012	%50
5	26	Z	0	0
6	1	Z	-0.004	%20

Member Point Loads (BLC 9 : 0 Seismic) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
7	1	Z	0	0
8	1	Z	0	0
9	1	Z	0	0
10	1	Z	0	0
11	87	Z	-0.012	%5
12	87	Z	-0.012	%80
13	87	Z	-0.014	%15
14	87	Z	-0.012	%50
15	87	Z	0	0
16	76	Z	-0.012	%5
17	76	Z	-0.012	%80
18	76	Z	-0.014	%15
19	76	Z	-0.012	%50
20	76	Z	0	0

Member Point Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	26	X	-0.012	%5
2	26	X	-0.012	%80
3	26	X	-0.014	%15
4	26	X	-0.012	%50
5	26	X	0	0
6	1	X	-0.004	%20
7	1	X	0	0
8	1	X	0	0
9	1	X	0	0
10	1	X	0	0
11	87	X	-0.012	%5
12	87	X	-0.012	%80
13	87	X	-0.014	%15
14	87	X	-0.012	%50
15	87	X	0	0
16	76	X	-0.012	%5
17	76	X	-0.012	%80
18	76	X	-0.014	%15
19	76	X	-0.012	%50
20	76	X	0	0

Member Point Loads (BLC 15 : Maint LL 1)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	Y	-0.25	%5

Member Point Loads (BLC 16 : Maint LL 2)

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

Member Point Loads (BLC 17 : Maint LL 3)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	85	Y	-0.25	%5



Member Point Loads (BLC 18 : Maint LL 4)

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

Member Point Loads (BLC 19 : Maint LL 5)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	74	Y	-0.25	%5

Member Point Loads (BLC 20 : Maint LL 6)

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

Member Point Loads (BLC 21 : Maint LL 7)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	Y	-0.25	%95

Member Point Loads (BLC 22 : Maint LL 8)

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

Member Point Loads (BLC 23 : Maint LL 9)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	85	Y	-0.25	%95

Member Point Loads (BLC 24 : Maint LL 10)

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

Member Point Loads (BLC 25 : Maint LL 11)

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

Member Point Loads (BLC 26 : Maint LL 12)

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

Member Point Loads (BLC 27 : Maint LL 13)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	1	Y	-0.25	%90



Member Point Loads (BLC 28 : Maint LL 14)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	50	Y	-0.25	%90

Member Point Loads (BLC 29 : Maint LL 15)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	31	Y	-0.25	%90

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	-0.02	-0.02	0	%100
2	2	Z	-0.017	-0.017	0	%100
3	3	Z	-0.017	-0.017	0	%100
4	4	Z	-0.024	-0.024	0	%100
5	5	Z	-0.024	-0.024	0	%100
6	6	Z	-0.014	-0.014	0	%100
7	7	Z	-0.024	-0.024	0	%100
8	8	Z	-0.024	-0.024	0	%100
9	9	Z	-0.011	-0.011	0	%100
10	10	Z	-0.011	-0.011	0	%100
11	11	Z	-0.033	-0.033	0	%100
12	18	Z	-0.012	-0.012	0	%100
13	19	Z	-0.012	-0.012	0	%100
14	20	Z	-0.012	-0.012	0	%100
15	26	Z	-0.012	-0.012	0	%100
16	30	Z	-0.029	-0.029	0	%100
17	31	Z	-0.02	-0.02	0	%100
18	32	Z	-0.017	-0.017	0	%100
19	33	Z	-0.017	-0.017	0	%100
20	34	Z	-0.024	-0.024	0	%100
21	35	Z	-0.024	-0.024	0	%100
22	36	Z	-0.024	-0.024	0	%100
23	37	Z	-0.024	-0.024	0	%100
24	38	Z	-0.011	-0.011	0	%100
25	39	Z	-0.011	-0.011	0	%100
26	40	Z	-0.033	-0.033	0	%100
27	49	Z	-0.029	-0.029	0	%100
28	50	Z	-0.02	-0.02	0	%100
29	51	Z	-0.017	-0.017	0	%100
30	52	Z	-0.017	-0.017	0	%100
31	53	Z	-0.024	-0.024	0	%100
32	54	Z	-0.024	-0.024	0	%100
33	55	Z	-0.024	-0.024	0	%100
34	56	Z	-0.024	-0.024	0	%100
35	57	Z	-0.011	-0.011	0	%100
36	58	Z	-0.011	-0.011	0	%100
37	59	Z	-0.033	-0.033	0	%100
38	68	Z	-0.029	-0.029	0	%100
39	69	Z	-0.014	-0.014	0	%100
40	72	Z	-0.012	-0.012	0	%100
41	73	Z	-0.012	-0.012	0	%100
42	74	Z	-0.012	-0.012	0	%100
43	76	Z	-0.012	-0.012	0	%100
44	80	Z	-0.014	-0.014	0	%100



Company : B+T Group
 Designer : APK
 Job Number : 149433.003.01
 Model Name : CT01698-S - Durham

11/9/2021
 2:01:46 PM
 Checked By : _____

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, %)]
45	83	Z	-0.012	-0.012	0	%100
46	84	Z	-0.012	-0.012	0	%100
47	85	Z	-0.012	-0.012	0	%100
48	87	Z	-0.012	-0.012	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	-0.02	-0.02	0	%100
2	2	X	-0.017	-0.017	0	%100
3	3	X	-0.017	-0.017	0	%100
4	4	X	-0.024	-0.024	0	%100
5	5	X	-0.024	-0.024	0	%100
6	6	X	-0.014	-0.014	0	%100
7	7	X	-0.024	-0.024	0	%100
8	8	X	-0.024	-0.024	0	%100
9	9	X	-0.011	-0.011	0	%100
10	10	X	-0.011	-0.011	0	%100
11	11	X	-0.033	-0.033	0	%100
12	18	X	-0.012	-0.012	0	%100
13	19	X	-0.012	-0.012	0	%100
14	20	X	-0.012	-0.012	0	%100
15	26	X	-0.012	-0.012	0	%100
16	30	X	-0.029	-0.029	0	%100
17	31	X	-0.02	-0.02	0	%100
18	32	X	-0.017	-0.017	0	%100
19	33	X	-0.017	-0.017	0	%100
20	34	X	-0.024	-0.024	0	%100
21	35	X	-0.024	-0.024	0	%100
22	36	X	-0.024	-0.024	0	%100
23	37	X	-0.024	-0.024	0	%100
24	38	X	-0.011	-0.011	0	%100
25	39	X	-0.011	-0.011	0	%100
26	40	X	-0.033	-0.033	0	%100
27	49	X	-0.029	-0.029	0	%100
28	50	X	-0.02	-0.02	0	%100
29	51	X	-0.017	-0.017	0	%100
30	52	X	-0.017	-0.017	0	%100
31	53	X	-0.024	-0.024	0	%100
32	54	X	-0.024	-0.024	0	%100
33	55	X	-0.024	-0.024	0	%100
34	56	X	-0.024	-0.024	0	%100
35	57	X	-0.011	-0.011	0	%100
36	58	X	-0.011	-0.011	0	%100
37	59	X	-0.033	-0.033	0	%100
38	68	X	-0.029	-0.029	0	%100
39	69	X	-0.014	-0.014	0	%100
40	72	X	-0.012	-0.012	0	%100
41	73	X	-0.012	-0.012	0	%100
42	74	X	-0.012	-0.012	0	%100
43	76	X	-0.012	-0.012	0	%100
44	80	X	-0.014	-0.014	0	%100
45	83	X	-0.012	-0.012	0	%100
46	84	X	-0.012	-0.012	0	%100
47	85	X	-0.012	-0.012	0	%100
48	87	X	-0.012	-0.012	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	-0.006	-0.006	0	%100
2	2	Z	-0.005	-0.005	0	%100
3	3	Z	-0.005	-0.005	0	%100
4	4	Z	-0.01	-0.01	0	%100
5	5	Z	-0.01	-0.01	0	%100
6	6	Z	-0.002	-0.002	0	%100
7	7	Z	-0.011	-0.011	0	%100
8	8	Z	-0.011	-0.011	0	%100
9	9	Z	-0.004	-0.004	0	%100
10	10	Z	-0.004	-0.004	0	%100
11	11	Z	-0.008	-0.008	0	%100
12	18	Z	-0.002	-0.002	0	%100
13	19	Z	-0.002	-0.002	0	%100
14	20	Z	-0.002	-0.002	0	%100
15	26	Z	-0.002	-0.002	0	%100
16	30	Z	-0.007	-0.007	0	%100
17	31	Z	-0.006	-0.006	0	%100
18	32	Z	-0.005	-0.005	0	%100
19	33	Z	-0.005	-0.005	0	%100
20	34	Z	-0.01	-0.01	0	%100
21	35	Z	-0.01	-0.01	0	%100
22	36	Z	-0.011	-0.011	0	%100
23	37	Z	-0.011	-0.011	0	%100
24	38	Z	-0.004	-0.004	0	%100
25	39	Z	-0.004	-0.004	0	%100
26	40	Z	-0.008	-0.008	0	%100
27	49	Z	-0.007	-0.007	0	%100
28	50	Z	-0.006	-0.006	0	%100
29	51	Z	-0.005	-0.005	0	%100
30	52	Z	-0.005	-0.005	0	%100
31	53	Z	-0.01	-0.01	0	%100
32	54	Z	-0.01	-0.01	0	%100
33	55	Z	-0.011	-0.011	0	%100
34	56	Z	-0.011	-0.011	0	%100
35	57	Z	-0.004	-0.004	0	%100
36	58	Z	-0.004	-0.004	0	%100
37	59	Z	-0.008	-0.008	0	%100
38	68	Z	-0.007	-0.007	0	%100
39	69	Z	-0.002	-0.002	0	%100
40	72	Z	-0.002	-0.002	0	%100
41	73	Z	-0.002	-0.002	0	%100
42	74	Z	-0.002	-0.002	0	%100
43	76	Z	-0.002	-0.002	0	%100
44	80	Z	-0.002	-0.002	0	%100
45	83	Z	-0.002	-0.002	0	%100
46	84	Z	-0.002	-0.002	0	%100
47	85	Z	-0.002	-0.002	0	%100
48	87	Z	-0.002	-0.002	0	%100

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

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.006	-0.006	0	%100
2	2	X	-0.005	-0.005	0	%100
3	3	X	-0.005	-0.005	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, %)]
4	4	X	-0.01	-0.01	0	%100
5	5	X	-0.01	-0.01	0	%100
6	6	X	-0.002	-0.002	0	%100
7	7	X	-0.011	-0.011	0	%100
8	8	X	-0.011	-0.011	0	%100
9	9	X	-0.004	-0.004	0	%100
10	10	X	-0.004	-0.004	0	%100
11	11	X	-0.008	-0.008	0	%100
12	18	X	-0.002	-0.002	0	%100
13	19	X	-0.002	-0.002	0	%100
14	20	X	-0.002	-0.002	0	%100
15	26	X	-0.002	-0.002	0	%100
16	30	X	-0.007	-0.007	0	%100
17	31	X	-0.006	-0.006	0	%100
18	32	X	-0.005	-0.005	0	%100
19	33	X	-0.005	-0.005	0	%100
20	34	X	-0.01	-0.01	0	%100
21	35	X	-0.01	-0.01	0	%100
22	36	X	-0.011	-0.011	0	%100
23	37	X	-0.011	-0.011	0	%100
24	38	X	-0.004	-0.004	0	%100
25	39	X	-0.004	-0.004	0	%100
26	40	X	-0.008	-0.008	0	%100
27	49	X	-0.007	-0.007	0	%100
28	50	X	-0.006	-0.006	0	%100
29	51	X	-0.005	-0.005	0	%100
30	52	X	-0.005	-0.005	0	%100
31	53	X	-0.01	-0.01	0	%100
32	54	X	-0.01	-0.01	0	%100
33	55	X	-0.011	-0.011	0	%100
34	56	X	-0.011	-0.011	0	%100
35	57	X	-0.004	-0.004	0	%100
36	58	X	-0.004	-0.004	0	%100
37	59	X	-0.008	-0.008	0	%100
38	68	X	-0.007	-0.007	0	%100
39	69	X	-0.002	-0.002	0	%100
40	72	X	-0.002	-0.002	0	%100
41	73	X	-0.002	-0.002	0	%100
42	74	X	-0.002	-0.002	0	%100
43	76	X	-0.002	-0.002	0	%100
44	80	X	-0.002	-0.002	0	%100
45	83	X	-0.002	-0.002	0	%100
46	84	X	-0.002	-0.002	0	%100
47	85	X	-0.002	-0.002	0	%100
48	87	X	-0.002	-0.002	0	%100

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

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.001	-0.001	0	%100
2	2	Z	-0.001	-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	-0.0004	-0.0004	0	%100
7	7	Z	-0.002	-0.002	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, %)]
8	8	Z	-0.002	-0.002	0	%100
9	9	Z	-0.0007	-0.0007	0	%100
10	10	Z	-0.0007	-0.0007	0	%100
11	11	Z	-0.002	-0.002	0	%100
12	18	Z	-0.0004	-0.0004	0	%100
13	19	Z	-0.0004	-0.0004	0	%100
14	20	Z	-0.0004	-0.0004	0	%100
15	26	Z	-0.0004	-0.0004	0	%100
16	30	Z	-0.002	-0.002	0	%100
17	31	Z	-0.001	-0.001	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	-0.0007	-0.0007	0	%100
25	39	Z	-0.0007	-0.0007	0	%100
26	40	Z	-0.002	-0.002	0	%100
27	49	Z	-0.002	-0.002	0	%100
28	50	Z	-0.001	-0.001	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	-0.0007	-0.0007	0	%100
36	58	Z	-0.0007	-0.0007	0	%100
37	59	Z	-0.002	-0.002	0	%100
38	68	Z	-0.002	-0.002	0	%100
39	69	Z	-0.0004	-0.0004	0	%100
40	72	Z	-0.0004	-0.0004	0	%100
41	73	Z	-0.0004	-0.0004	0	%100
42	74	Z	-0.0004	-0.0004	0	%100
43	76	Z	-0.0004	-0.0004	0	%100
44	80	Z	-0.0004	-0.0004	0	%100
45	83	Z	-0.0004	-0.0004	0	%100
46	84	Z	-0.0004	-0.0004	0	%100
47	85	Z	-0.0004	-0.0004	0	%100
48	87	Z	-0.0004	-0.0004	0	%100

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

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.001	-0.001	0	%100
2	2	X	-0.001	-0.001	0	%100
3	3	X	-0.001	-0.001	0	%100
4	4	X	-0.002	-0.002	0	%100
5	5	X	-0.002	-0.002	0	%100
6	6	X	-0.0004	-0.0004	0	%100
7	7	X	-0.002	-0.002	0	%100
8	8	X	-0.002	-0.002	0	%100
9	9	X	-0.0007	-0.0007	0	%100
10	10	X	-0.0007	-0.0007	0	%100
11	11	X	-0.002	-0.002	0	%100



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, %)]
12	18	X	-0.0004	-0.0004	0	%100
13	19	X	-0.0004	-0.0004	0	%100
14	20	X	-0.0004	-0.0004	0	%100
15	26	X	-0.0004	-0.0004	0	%100
16	30	X	-0.002	-0.002	0	%100
17	31	X	-0.001	-0.001	0	%100
18	32	X	-0.001	-0.001	0	%100
19	33	X	-0.001	-0.001	0	%100
20	34	X	-0.002	-0.002	0	%100
21	35	X	-0.002	-0.002	0	%100
22	36	X	-0.002	-0.002	0	%100
23	37	X	-0.002	-0.002	0	%100
24	38	X	-0.0007	-0.0007	0	%100
25	39	X	-0.0007	-0.0007	0	%100
26	40	X	-0.002	-0.002	0	%100
27	49	X	-0.002	-0.002	0	%100
28	50	X	-0.001	-0.001	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	-0.0007	-0.0007	0	%100
36	58	X	-0.0007	-0.0007	0	%100
37	59	X	-0.002	-0.002	0	%100
38	68	X	-0.002	-0.002	0	%100
39	69	X	-0.0004	-0.0004	0	%100
40	72	X	-0.0004	-0.0004	0	%100
41	73	X	-0.0004	-0.0004	0	%100
42	74	X	-0.0004	-0.0004	0	%100
43	76	X	-0.0004	-0.0004	0	%100
44	80	X	-0.0004	-0.0004	0	%100
45	83	X	-0.0004	-0.0004	0	%100
46	84	X	-0.0004	-0.0004	0	%100
47	85	X	-0.0004	-0.0004	0	%100
48	87	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	-0.009	-0.009	0	%100
2	2	Y	-0.007	-0.007	0	%100
3	3	Y	-0.007	-0.007	0	%100
4	4	Y	-0.01	-0.01	0	%100
5	5	Y	-0.01	-0.01	0	%100
6	6	Y	-0.006	-0.006	0	%100
7	7	Y	-0.01	-0.01	0	%100
8	8	Y	-0.01	-0.01	0	%100
9	9	Y	-0.005	-0.005	0	%100
10	10	Y	-0.005	-0.005	0	%100
11	11	Y	-0.013	-0.013	0	%100
12	18	Y	-0.006	-0.006	0	%100
13	19	Y	-0.006	-0.006	0	%100
14	20	Y	-0.006	-0.006	0	%100
15	26	Y	-0.006	-0.006	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, %)]
16	30	Y	-0.012	-0.012	0	%100
17	31	Y	-0.009	-0.009	0	%100
18	32	Y	-0.007	-0.007	0	%100
19	33	Y	-0.007	-0.007	0	%100
20	34	Y	-0.01	-0.01	0	%100
21	35	Y	-0.01	-0.01	0	%100
22	36	Y	-0.01	-0.01	0	%100
23	37	Y	-0.01	-0.01	0	%100
24	38	Y	-0.005	-0.005	0	%100
25	39	Y	-0.005	-0.005	0	%100
26	40	Y	-0.013	-0.013	0	%100
27	49	Y	-0.012	-0.012	0	%100
28	50	Y	-0.009	-0.009	0	%100
29	51	Y	-0.007	-0.007	0	%100
30	52	Y	-0.007	-0.007	0	%100
31	53	Y	-0.01	-0.01	0	%100
32	54	Y	-0.01	-0.01	0	%100
33	55	Y	-0.01	-0.01	0	%100
34	56	Y	-0.01	-0.01	0	%100
35	57	Y	-0.005	-0.005	0	%100
36	58	Y	-0.005	-0.005	0	%100
37	59	Y	-0.013	-0.013	0	%100
38	68	Y	-0.012	-0.012	0	%100
39	69	Y	-0.006	-0.006	0	%100
40	72	Y	-0.006	-0.006	0	%100
41	73	Y	-0.006	-0.006	0	%100
42	74	Y	-0.006	-0.006	0	%100
43	76	Y	-0.006	-0.006	0	%100
44	80	Y	-0.006	-0.006	0	%100
45	83	Y	-0.006	-0.006	0	%100
46	84	Y	-0.006	-0.006	0	%100
47	85	Y	-0.006	-0.006	0	%100
48	87	Y	-0.006	-0.006	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.001	-0.001	0	%100
2	2	Z	-0.0008	-0.0008	0	%100
3	3	Z	-0.0008	-0.0008	0	%100
4	4	Z	-0.001	-0.001	0	%100
5	5	Z	-0.001	-0.001	0	%100
6	6	Z	-0.001	-0.001	0	%100
7	7	Z	-0.001	-0.001	0	%100
8	8	Z	-0.001	-0.001	0	%100
9	9	Z	-0.0006	-0.0006	0	%100
10	10	Z	-0.0006	-0.0006	0	%100
11	11	Z	-0.002	-0.002	0	%100
12	18	Z	-0.001	-0.001	0	%100
13	19	Z	-0.001	-0.001	0	%100
14	20	Z	-0.001	-0.001	0	%100
15	26	Z	-0.001	-0.001	0	%100
16	30	Z	-0.002	-0.002	0	%100
17	31	Z	-0.001	-0.001	0	%100
18	32	Z	-0.0008	-0.0008	0	%100
19	33	Z	-0.0008	-0.0008	0	%100



Member Distributed Loads (BLC 9 : 0 Seismic) (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, %)]
20	34	Z	-0.001	-0.001	0	%100
21	35	Z	-0.001	-0.001	0	%100
22	36	Z	-0.001	-0.001	0	%100
23	37	Z	-0.001	-0.001	0	%100
24	38	Z	-0.0006	-0.0006	0	%100
25	39	Z	-0.0006	-0.0006	0	%100
26	40	Z	-0.002	-0.002	0	%100
27	49	Z	-0.002	-0.002	0	%100
28	50	Z	-0.001	-0.001	0	%100
29	51	Z	-0.0008	-0.0008	0	%100
30	52	Z	-0.0008	-0.0008	0	%100
31	53	Z	-0.001	-0.001	0	%100
32	54	Z	-0.001	-0.001	0	%100
33	55	Z	-0.001	-0.001	0	%100
34	56	Z	-0.001	-0.001	0	%100
35	57	Z	-0.0006	-0.0006	0	%100
36	58	Z	-0.0006	-0.0006	0	%100
37	59	Z	-0.002	-0.002	0	%100
38	68	Z	-0.002	-0.002	0	%100
39	69	Z	-0.001	-0.001	0	%100
40	72	Z	-0.001	-0.001	0	%100
41	73	Z	-0.001	-0.001	0	%100
42	74	Z	-0.001	-0.001	0	%100
43	76	Z	-0.001	-0.001	0	%100
44	80	Z	-0.001	-0.001	0	%100
45	83	Z	-0.001	-0.001	0	%100
46	84	Z	-0.001	-0.001	0	%100
47	85	Z	-0.001	-0.001	0	%100
48	87	Z	-0.001	-0.001	0	%100

Member Distributed Loads (BLC 10 : 90 Seismic)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.001	-0.001	0	%100
2	2	X	-0.0008	-0.0008	0	%100
3	3	X	-0.0008	-0.0008	0	%100
4	4	X	-0.001	-0.001	0	%100
5	5	X	-0.001	-0.001	0	%100
6	6	X	-0.001	-0.001	0	%100
7	7	X	-0.001	-0.001	0	%100
8	8	X	-0.001	-0.001	0	%100
9	9	X	-0.0006	-0.0006	0	%100
10	10	X	-0.0006	-0.0006	0	%100
11	11	X	-0.002	-0.002	0	%100
12	18	X	-0.001	-0.001	0	%100
13	19	X	-0.001	-0.001	0	%100
14	20	X	-0.001	-0.001	0	%100
15	26	X	-0.001	-0.001	0	%100
16	30	X	-0.002	-0.002	0	%100
17	31	X	-0.001	-0.001	0	%100
18	32	X	-0.0008	-0.0008	0	%100
19	33	X	-0.0008	-0.0008	0	%100
20	34	X	-0.001	-0.001	0	%100
21	35	X	-0.001	-0.001	0	%100
22	36	X	-0.001	-0.001	0	%100
23	37	X	-0.001	-0.001	0	%100



Member Distributed Loads (BLC 10 : 90 Seismic) (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, %)]
24	38	X	-0.0006	-0.0006	0	%100
25	39	X	-0.0006	-0.0006	0	%100
26	40	X	-0.002	-0.002	0	%100
27	49	X	-0.002	-0.002	0	%100
28	50	X	-0.001	-0.001	0	%100
29	51	X	-0.0008	-0.0008	0	%100
30	52	X	-0.0008	-0.0008	0	%100
31	53	X	-0.001	-0.001	0	%100
32	54	X	-0.001	-0.001	0	%100
33	55	X	-0.001	-0.001	0	%100
34	56	X	-0.001	-0.001	0	%100
35	57	X	-0.0006	-0.0006	0	%100
36	58	X	-0.0006	-0.0006	0	%100
37	59	X	-0.002	-0.002	0	%100
38	68	X	-0.002	-0.002	0	%100
39	69	X	-0.001	-0.001	0	%100
40	72	X	-0.001	-0.001	0	%100
41	73	X	-0.001	-0.001	0	%100
42	74	X	-0.001	-0.001	0	%100
43	76	X	-0.001	-0.001	0	%100
44	80	X	-0.001	-0.001	0	%100
45	83	X	-0.001	-0.001	0	%100
46	84	X	-0.001	-0.001	0	%100
47	85	X	-0.001	-0.001	0	%100
48	87	X	-0.001	-0.001	0	%100

Member Distributed Loads (BLC 30 : 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	10	Y	-0.02	-0.026	1.27	2.309
2	38	Y	-0.035	-0.016	0	1.155
3	38	Y	-0.016	0.0006163	1.155	2.309
4	39	Y	-0.018	-0.016	0.231	2.309
5	57	Y	-0.018	-0.016	0	2.078
6	58	Y	0.0006164	-0.016	0	1.155
7	58	Y	-0.016	-0.035	1.155	2.309
8	9	Y	-0.015	-0.015	0	2.078
9	10	Y	-0.014	-0.02	0.231	1.27

Member Distributed Loads (BLC 31 : 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	-0.008	-0.008	0	2.078
2	10	Y	-0.008	-0.011	0.231	1.27
3	10	Y	-0.011	-0.014	1.27	2.309
4	38	Y	-0.018	-0.008	0	1.155
5	38	Y	-0.008	0.0003261	1.155	2.309
6	39	Y	-0.01	-0.008	0.231	2.309
7	57	Y	-0.01	-0.008	0	2.078
8	58	Y	0.0003261	-0.008	0	1.155
9	58	Y	-0.008	-0.018	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	79	78	81	80	Y	Two Way	-0.01
3	108	107	110	109	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	-0.005
2	79	78	81	80	Y	Two Way	-0.005
3	108	107	110	109	Y	Two Way	-0.005

Node Loads and Enforced Displacements (BLC 11 : 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	113A	L	Y	-0.5
3	135	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 12 : 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	114A	L	Y	-0.5
3	136	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 13 : Live Load c)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s ² /ft, k*s ² *ft)]
1	40	L	Y	-0.5
2	123	L	Y	-0.5
3	145	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	0 Seismic	ELZ			20	48	
10	90 Seismic	ELX			20	48	
11	Live Load a	LL		3			
12	Live Load b	LL		3			
13	Live Load c	LL		3			
14	Live Load d	LL					
15	Maint LL 1	LL			1		
16	Maint LL 2	LL			1		
17	Maint LL 3	LL			1		
18	Maint LL 4	LL			1		

Basic Load Cases (Continued)

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
19	Maint LL 5	LL			1		
20	Maint LL 6	LL			1		
21	Maint LL 7	LL			1		
22	Maint LL 8	LL			1		
23	Maint LL 9	LL			1		
24	Maint LL 10	LL			1		
25	Maint LL 11	LL			1		
26	Maint LL 12	LL			1		
27	Maint LL 13	LL			1		
28	Maint LL 14	LL			1		
29	Maint LL 15	LL			1		
30	BLC 1 Transient Area Loads	None				9	
31	BLC 8 Transient Area Loads	None				9	

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 Dead	Yes	Y	1	1.4						
2	1.2 D + 1.0 - 0 W	Yes	Y	1	1.2	2	1				
3	1.2 D + 1.0 - 30 W	Yes	Y	1	1.2	2	0.866	3	0.5		
4	1.2 D + 1.0 - 60 W	Yes	Y	1	1.2	3	0.866	2	0.5		
5	1.2 D + 1.0 - 90 W	Yes	Y	1	1.2	3	1				
6	1.2 D + 1.0 - 120 W	Yes	Y	1	1.2	3	0.866	2	-0.5		
7	1.2 D + 1.0 - 150 W	Yes	Y	1	1.2	2	-0.866	3	0.5		
8	1.2 D + 1.0 - 180 W	Yes	Y	1	1.2	2	-1				
9	1.2 D + 1.0 - 210 W	Yes	Y	1	1.2	2	-0.866	3	-0.5		
10	1.2 D + 1.0 - 240 W	Yes	Y	1	1.2	3	-0.866	2	-0.5		
11	1.2 D + 1.0 - 270 W	Yes	Y	1	1.2	3	-1				
12	1.2 D + 1.0 - 300 W	Yes	Y	1	1.2	3	-0.866	2	0.5		
13	1.2 D + 1.0 - 330 W	Yes	Y	1	1.2	2	0.866	3	-0.5		
14	1.2 D + 1.0 - 0 W/Ice	Yes	Y	1	1.2	4	1			8	1
15	1.2 D + 1.0 - 30 W/Ice	Yes	Y	1	1.2	4	0.866	5	0.5	8	1
16	1.2 D + 1.0 - 60 W/Ice	Yes	Y	1	1.2	5	0.866	4	0.5	8	1
17	1.2 D + 1.0 - 90 W/Ice	Yes	Y	1	1.2	5	1			8	1
18	1.2 D + 1.0 - 120 W/Ice	Yes	Y	1	1.2	5	0.866	4	-0.5	8	1
19	1.2 D + 1.0 - 150 W/Ice	Yes	Y	1	1.2	4	-0.866	5	0.5	8	1
20	1.2 D + 1.0 - 180 W/Ice	Yes	Y	1	1.2	4	-1			8	1
21	1.2 D + 1.0 - 210 W/Ice	Yes	Y	1	1.2	4	-0.866	5	-0.5	8	1
22	1.2 D + 1.0 - 240 W/Ice	Yes	Y	1	1.2	5	-0.866	4	-0.5	8	1
23	1.2 D + 1.0 - 270 W/Ice	Yes	Y	1	1.2	5	-1			8	1
24	1.2 D + 1.0 - 300 W/Ice	Yes	Y	1	1.2	5	-0.866	4	0.5	8	1
25	1.2 D + 1.0 - 330 W/Ice	Yes	Y	1	1.2	4	0.866	5	-0.5	8	1
26	1.2 D + 1.0 E - 0	Yes	Y	1	1.2	9	1				
27	1.2 D + 1.0 E - 30	Yes	Y	1	1.2	9	0.866	10	0.5		
28	1.2 D + 1.0 E - 60	Yes	Y	1	1.2	10	0.866	9	0.5		
29	1.2 D + 1.0 E - 90	Yes	Y	1	1.2	10	1				
30	1.2 D + 1.0 E - 120	Yes	Y	1	1.2	10	0.866	9	-0.5		
31	1.2 D + 1.0 E - 150	Yes	Y	1	1.2	9	-0.866	10	0.5		
32	1.2 D + 1.0 E - 180	Yes	Y	1	1.2	9	-1				
33	1.2 D + 1.0 E - 210	Yes	Y	1	1.2	9	-0.866	10	-0.5		
34	1.2 D + 1.0 E - 240	Yes	Y	1	1.2	10	-0.866	9	-0.5		
35	1.2 D + 1.0 E - 270	Yes	Y	1	1.2	10	-1				
36	1.2 D + 1.0 E - 300	Yes	Y	1	1.2	10	-0.866	9	0.5		
37	1.2 D + 1.0 E - 330	Yes	Y	1	1.2	9	0.866	10	-0.5		
38	1.2 D + 1.5 LL a + Service - 0 W	Yes	Y	1	1.2	6	1			11	1.5
39	1.2 D + 1.5 LL a + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	11	1.5

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
40	1.2 D + 1.5 LL a + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	11	1.5
41	1.2 D + 1.5 LL a + Service - 90 W	Yes	Y	1	1.2	7	1			11	1.5
42	1.2 D + 1.5 LL a + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	11	1.5
43	1.2 D + 1.5 LL a + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	11	1.5
44	1.2 D + 1.5 LL a + Service - 180 W	Yes	Y	1	1.2	6	-1			11	1.5
45	1.2 D + 1.5 LL a + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	11	1.5
46	1.2 D + 1.5 LL a + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	11	1.5
47	1.2 D + 1.5 LL a + Service - 270 W	Yes	Y	1	1.2	7	-1			11	1.5
48	1.2 D + 1.5 LL a + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	11	1.5
49	1.2 D + 1.5 LL a + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	11	1.5
50	1.2 D + 1.5 LL b + Service - 0 W	Yes	Y	1	1.2	6	1			12	1.5
51	1.2 D + 1.5 LL b + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	12	1.5
52	1.2 D + 1.5 LL b + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	12	1.5
53	1.2 D + 1.5 LL b + Service - 90 W	Yes	Y	1	1.2	7	1			12	1.5
54	1.2 D + 1.5 LL b + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	12	1.5
55	1.2 D + 1.5 LL b + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	12	1.5
56	1.2 D + 1.5 LL b + Service - 180 W	Yes	Y	1	1.2	6	-1			12	1.5
57	1.2 D + 1.5 LL b + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	12	1.5
58	1.2 D + 1.5 LL b + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	12	1.5
59	1.2 D + 1.5 LL b + Service - 270 W	Yes	Y	1	1.2	7	-1			12	1.5
60	1.2 D + 1.5 LL b + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	12	1.5
61	1.2 D + 1.5 LL b + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	12	1.5
62	1.2 D + 1.5 LL c + Service - 0 W	Yes	Y	1	1.2	6	1			13	1.5
63	1.2 D + 1.5 LL c + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	13	1.5
64	1.2 D + 1.5 LL c + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	13	1.5
65	1.2 D + 1.5 LL c + Service - 90 W	Yes	Y	1	1.2	7	1			13	1.5
66	1.2 D + 1.5 LL c + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	13	1.5
67	1.2 D + 1.5 LL c + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	13	1.5
68	1.2 D + 1.5 LL c + Service - 180 W	Yes	Y	1	1.2	6	-1			13	1.5
69	1.2 D + 1.5 LL c + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	13	1.5
70	1.2 D + 1.5 LL c + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	13	1.5
71	1.2 D + 1.5 LL c + Service - 270 W	Yes	Y	1	1.2	7	-1			13	1.5
72	1.2 D + 1.5 LL c + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	13	1.5
73	1.2 D + 1.5 LL c + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	13	1.5
74	1.2 D + 1.5 LL d + Service - 0 W	Yes	Y	1	1.2	6	1			14	1.5
75	1.2 D + 1.5 LL d + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	14	1.5
76	1.2 D + 1.5 LL d + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	14	1.5
77	1.2 D + 1.5 LL d + Service - 90 W	Yes	Y	1	1.2	7	1			14	1.5
78	1.2 D + 1.5 LL d + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	14	1.5
79	1.2 D + 1.5 LL d + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	14	1.5
80	1.2 D + 1.5 LL d + Service - 180 W	Yes	Y	1	1.2	6	-1			14	1.5
81	1.2 D + 1.5 LL d + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	14	1.5
82	1.2 D + 1.5 LL d + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	14	1.5
83	1.2 D + 1.5 LL d + Service - 270 W	Yes	Y	1	1.2	7	-1			14	1.5
84	1.2 D + 1.5 LL d + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	14	1.5
85	1.2 D + 1.5 LL d + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	14	1.5
86	1.2 D + 1.5 LL Maint (1)	Yes	Y	1	1.2					15	1.5
87	1.2 D + 1.5 LL Maint (2)	Yes	Y	1	1.2					16	1.5
88	1.2 D + 1.5 LL Maint (3)	Yes	Y	1	1.2					17	1.5
89	1.2 D + 1.5 LL Maint (4)	Yes	Y	1	1.2					18	1.5
90	1.2 D + 1.5 LL Maint (5)	Yes	Y	1	1.2					19	1.5
91	1.2 D + 1.5 LL Maint (6)	Yes	Y	1	1.2					20	1.5
92	1.2 D + 1.5 LL Maint (7)	Yes	Y	1	1.2					21	1.5
93	1.2 D + 1.5 LL Maint (8)	Yes	Y	1	1.2					22	1.5
94	1.2 D + 1.5 LL Maint (9)	Yes	Y	1	1.2					23	1.5

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
95	1.2 D + 1.5 LL Maint (10)	Yes	Y	1	1.2					24	1.5
96	1.2 D + 1.5 LL Maint (11)	Yes	Y	1	1.2					25	1.5
97	1.2 D + 1.5 LL Maint (12)	Yes	Y	1	1.2					26	1.5
98	1.2 D + 1.5 LL Maint (13)	Yes	Y	1	1.2					27	1.5
99	1.2 D + 1.5 LL Maint (14)	Yes	Y	1	1.2					28	1.5
100	1.2 D + 1.5 LL Maint (15)	Yes	Y	1	1.2					29	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	1.21	5	1.835	2	1.468	2	4.127	2	1.193	11	0.361	97
2		min	-1.212	11	-0.205	8	-1.592	8	-1.036	8	-1.192	5	-0.212	89
3	59	max	1.169	5	1.717	18	1.365	2	0.372	13	1.344	3	0.388	12
4		min	-1.275	11	-0.013	12	-1.303	8	-1.766	7	-1.343	9	-3.142	6
5	88	max	1.193	5	1.714	22	1.553	2	0.334	3	1.384	7	3.035	10
6		min	-1.086	11	-0.02	4	-1.491	8	-2.013	9	-1.384	13	-0.454	4
7	Totals:	max	3.572	5	4.753	15	4.386	2						
8		min	-3.572	11	2.396	9	-4.386	8						

Envelope AISC 15TH (360-16): 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	0.55	0	13	0.124	0	y	73	70.173	73.278	8.24	8.24	2.009	H1-1b
2	2	C3.38X2.06X0.188	0.368	2.592	3	0.06	0.351	y	63	35.676	43.394	1.694	4.483	1.6	H1-1b
3	3	C3.38X2.06X0.188	0.374	0	13	0.069	2.241	z	8	35.676	43.394	1.694	4.483	1.596	H1-1b
4	4	PL3/8X6	0.101	0	2	0.177	0	y	2	68.997	72.9	0.57	9.113	2.344	H1-1b
5	5	PL3/8X6	0.102	0	3	0.135	0	y	2	68.997	72.9	0.57	9.113	1.899	H1-1b
6	6	PIPE 3.5x0.165	0.081	6.75	7	0.041	4		5	45.872	71.57	6.336	6.336	1.976	H1-1b
7	7	PL3/8X6	0.137	0.208	2	0.195	0.208	y	50	70.882	72.9	0.57	9.113	2.539	H1-1b
8	8	PL3/8X6	0.146	0	13	0.198	0	y	50	70.882	72.9	0.57	9.113	2.898	H1-1b
9	9	L2x2x4	0.292	0	8	0.031	2.309	y	48	23.349	30.586	0.691	1.577	1.5	H2-1
10	10	L2x2x4	0.263	2.309	8	0.035	0	y	63	23.349	30.586	0.691	1.577	1.5	H2-1
11	11	L7.63x2.5x6	0.391	1.604	8	0.08	1.57	z	3	75.414	118.523	1.798	13.71	1.234	H2-1
12	18	PIPE 2.88x0.203	0.123	5.667	5	0.046	5.667		6	35.519	70.68	5.029	5.029	3	H1-1b
13	19	PIPE 2.88x0.203	0.144	2.333	9	0.052	5.667		8	35.519	70.68	5.029	5.029	3	H1-1b
14	20	PIPE 2.88x0.203	0.161	7.812	13	0.146	9.062		2	24.131	70.68	5.029	5.029	2.501	H1-1b
15	26	PIPE 2.88x0.203	0.139	2.333	7	0.05	2.333		8	35.519	70.68	5.029	5.029	3	H1-1b
16	30	L6.63x4.33x.25	0.216	3.25	6	0.028	3.25	z	12	51.794	86.751	2.311	6.976	1.5	H2-1
17	31	HSS4X4X2	0.514	0	7	0.123	0	y	65	70.173	73.278	8.24	8.24	2.021	H1-1b
18	32	C3.38X2.06X0.188	0.361	2.592	7	0.06	0.351	y	68	35.676	43.394	1.694	4.483	1.601	H1-1b
19	33	C3.38X2.06X0.188	0.324	0	56	0.063	2.241	y	48	35.676	43.394	1.703	4.483	1.619	H1-1b
20	34	PL3/8X6	0.085	0	6	0.149	0	y	67	68.997	72.9	0.57	9.113	2.341	H1-1b
21	35	PL3/8X6	0.098	0	7	0.123	0	y	42	68.997	72.9	0.57	9.113	1.826	H1-1b
22	36	PL3/8X6	0.125	0.208	13	0.194	0.208	y	54	70.882	72.9	0.57	9.113	1.912	H1-1b
23	37	PL3/8X6	0.12	0	5	0.198	0	y	55	70.882	72.9	0.57	9.113	2.954	H1-1b
24	38	L2x2x4	0.234	0	12	0.03	2.309	y	40	23.349	30.586	0.691	1.577	1.5	H2-1
25	39	L2x2x4	0.223	2.309	12	0.035	0	y	68	23.349	30.586	0.691	1.577	1.5	H2-1
26	40	L7.63x2.5x6	0.311	1.604	12	0.079	0	z	67	75.414	118.523	1.798	13.806	1.255	H2-1
27	49	L6.63x4.33x.25	0.243	0	2	0.031	3.25	y	9	51.794	86.751	2.311	6.976	1.5	H2-1
28	50	HSS4X4X2	0.535	0	9	0.124	0	y	69	70.173	73.278	8.24	8.24	2.008	H1-1b
29	51	C3.38X2.06X0.188	0.332	2.592	23	0.06	0.351	y	73	35.676	43.394	1.694	4.483	1.628	H1-1b
30	52	C3.38X2.06X0.188	0.366	0	9	0.063	2.241	y	39	35.676	43.394	1.694	4.483	1.598	H1-1b
31	53	PL3/8X6	0.088	0	9	0.15	0	y	70	68.997	72.9	0.57	9.113	2.168	H1-1b
32	54	PL3/8X6	0.082	0	11	0.121	0	y	45	68.997	72.9	0.57	9.113	1.82	H1-1b
33	55	PL3/8X6	0.125	0.085	3	0.194	0.208	y	57	70.882	72.9	0.57	9.113	1.424	H1-1b



Company : B+T Group
 Designer : APK
 Job Number : 149433.003.01
 Model Name : CT01698-S - Durham

11/9/2021
 2:01:46 PM
 Checked By : _____

Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
34	56	PL3/8X6	0.147	0	9	0.198	0	y	59	70.882	72.9	0.57	9.113	2.903	H1-1b
35	57	L2x2x4	0.275	0	3	0.031	2.309	y	44	23.349	30.586	0.691	1.577	1.5	H2-1
36	58	L2x2x4	0.226	2.309	4	0.035	0	y	72	23.349	30.586	0.691	1.577	1.5	H2-1
37	59	L7.63x2.5x6	0.343	1.604	3	0.078	0	z	70	75.414	118.523	1.798	14.113	1.325	H2-1
38	68	L6.63x4.33x.25	0.268	3.25	2	0.036	3.25	z	8	51.794	86.751	2.311	6.976	1.5	H2-1
39	69	PIPE 3.5x0.165	0.085	1.25	2	0.053	4		9	45.872	71.57	6.336	6.336	1.717	H1-1b
40	72	PIPE 2.88x0.203	0.153	5.667	9	0.053	5.667		9	35.519	70.68	5.029	5.029	3	H1-1b
41	73	PIPE 2.88x0.203	0.174	2.333	2	0.05	5.667		13	35.519	70.68	5.029	5.029	3	H1-1b
42	74	PIPE 2.88x0.203	0.154	2.187	13	0.116	2.187		13	24.131	70.68	5.029	5.029	2.232	H1-1b
43	76	PIPE 2.88x0.203	0.126	5.667	9	0.053	2.333		13	35.519	70.68	5.029	5.029	3	H1-1b
44	80	PIPE 3.5x0.165	0.078	6.75	2	0.052	2.667		13	45.872	71.57	6.336	6.336	1.539	H1-1b
45	83	PIPE 2.88x0.203	0.153	5.667	13	0.059	5.667		2	35.519	70.68	5.029	5.029	3	H1-1b
46	84	PIPE 2.88x0.203	0.139	2.333	6	0.039	5.667		5	35.519	70.68	5.029	5.029	3	H1-1b
47	85	PIPE 2.88x0.203	0.15	7.812	9	0.13	9.062		9	24.131	70.68	5.029	5.029	2.51	H1-1b
48	87	PIPE 2.88x0.203	0.142	5.667	2	0.038	5.667		6	35.519	70.68	5.029	5.029	3	H1-1b

APPENDIX B

(Additional Calculations)

PROJECT	149433.003.01 - Durham, CT	KSC
SUBJECT	Platform Mount Analysis	
DATE	11/09/21	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	:	1.468	k
Vertical Shear	:	1.835	k
Horizontal Shear	:	1.211	k
Torsion	:	0.361	k.ft
Moment from Horizontal Forces	:	1.194	k.ft
Moment from Vertical Forces	:	4.127	k.ft

Bolt Parameters

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

Summary of Forces

Shear Resultant Force	:	2.20	k
Force from Horz. Moment	:	2.16	k
Force from Vert. Moment	:	7.48	k
Shear Load / Bolt	:	0.55	k
Tension Load / Bolt	:	0.37	k
Resultant from Moments / Bolt	:	3.89	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	:	20.55%		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	:	8.29%		OKAY
Unity Check, Combined	:	28.84%		OKAY
Available Bearing Strength, ΦR_n	:	34.66	k/bolt	
Unity Check, Bolt Bearing	:	1.59%		OKAY

Exhibit F

Power Density/RF Emissions Report



Radio Frequency Emissions Analysis Report



Site ID: BOHVN00038A

SBA - Durham Rd
1605 Durham Road, CT Route 68
Wallingford, CT 06492

May 20, 2022

Fox Hill Telecom Project Number: 221170

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	16.26 %

May 20, 2022

Dish Wireless
5701 South Santa Fe Drive
Littleton, CO 80120

Emissions Analysis for Site: **BOHVN00038A – SBA - Durham Rd**

Fox Hill Telecom, Inc (“Fox Hill”) was directed to analyze the proposed radio installation for Dish Wireless, LLC (Dish) facility located at **1605 Durham Road, CT Route 68, Wallingford, CT**, for the purpose of determining whether the emissions from the Proposed Dish radio and antenna installation located on this property are within specified federal limits.

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

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

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

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limits for the 600 MHz & 700 MHz bands are approximately $400 \mu\text{W}/\text{cm}^2$ and $467 \mu\text{W}/\text{cm}^2$ respectively. The general population exposure limit for the 1900 MHz (PCS) and 2100 MHz (AWS / AWS-4) bands is $1000 \mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.



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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed radio system installation for **Dish** on the subject site located at **1605 Durham Road, CT Route 68, Wallingford, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since **Dish** is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

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

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

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

Table 1: Channel Data Table

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

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	JMA MX08FRO665-21	110
B	1	JMA MX08FRO665-21	110
C	1	JMA MX08FRO665-21	110

Table 2: Antenna Data

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

RESULTS

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

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	JMA MX08FRO665-21	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	7.50
Sector A Composite MPE%							7.50
Antenna B1	JMA MX08FRO665-21	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	7.50
Sector B Composite MPE%							7.50
Antenna C1	JMA MX08FRO665-21	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	7.50
Sector C Composite MPE%							7.50

Table 3: Dish Emissions Levels



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

Site Composite MPE%	
Carrier	MPE%
Dish – Max Per Sector Value	7.50 %
T-Mobile	2.91 %
Nextel	0.30 %
Verizon Wireless	2.74 %
Sprint	0.42 %
AT&T	2.39 %
Site Total MPE %:	16.26 %

Table 4: All Carrier MPE Contributions

Dish Sector A Total:	7.50 %
Dish Sector B Total:	7.50 %
Dish Sector C Total:	7.50 %
Site Total:	16.26 %

Table 5: Site MPE Summary



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

Dish _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
Dish n71 (600 MHz) 5G	4	858.77	110	11.42	n71 (600 MHz)	400	2.85%
Dish n70 (AWS-4 / 1995-2020) 5G	4	1,648.39	110	21.92	n70 (AWS-4 / 1995-2020)	1000	2.19%
Dish n66 (AWS-4 / 2180-2200) 5G	4	1,849.52	110	24.59	n66 (AWS-4 / 2180-2200)	1000	2.46%
						Total:	7.50%

Table 6: Dish Maximum Sector MPE Power Values



Summary

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

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

Dish Sector	Power Density Value (%)
Sector A:	7.50 %
Sector B:	7.50 %
Sector C:	7.50 %
Dish Maximum Total (per sector):	7.50 %
Site Total:	16.26 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **16.26 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

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

Exhibit G

Letter of Authorization

SBA Letter of Authorization

CT - CONNECTICUT SITING COUNCIL

Melanie A. Bachman

Executive Director

Connecticut Siting Council

10 Franklin Square

New Britain, CT 06051

Re: Tower Share Application

SBA COMMUNICATIONS CORPORATION hereby authorizes DISH Wireless LLC, including their Agent, to act as our Agent in the processing of all zoning applications, building permits and approvals through the CONNECTICUT SITING COUNCIL for existing wireless communications towers.

Kri Pelletier

Site Development Manager

SBA COMMUNICATIONS CORPORATION

134 Flanders Road, Suite 125

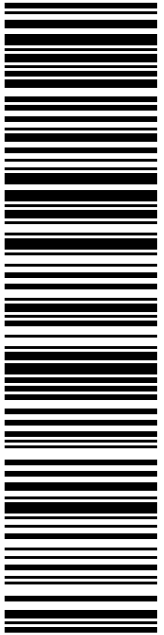
Westboro, MA 01581

SBA

By: _____ Date: _____


Exhibit H

Recipient Mailings



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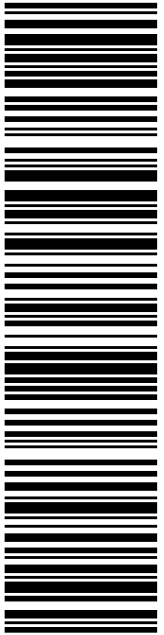
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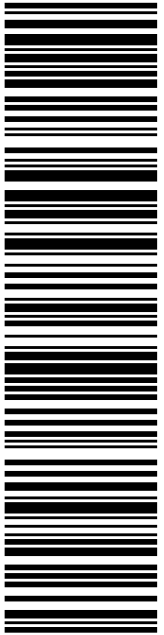


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AMY TORRE
ZONING ENFORCEMENT OFFICER
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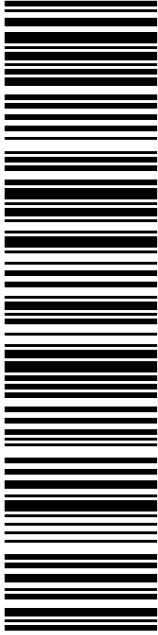


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