



Filed by:

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

December 2, 2021

Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Tower Share Application
60 Adams Street, Manchester, CT 06042
Latitude: 41.794100
Longitude: -72.555300
Dish Wireless Site# BOBDL00130A

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 60 Adams Street, Manchester, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900/2100 MHz antennas and six (6) RRUs, at the 100-foot level of the existing 141-foot monopole tower, one (1) Fiber cables will also be installed. Dish Wireless LLC equipment cabinets will be placed within 7' x 5' lease area. Included are plans by B+T Groupy, October 4, 2021 Exhibit 10. Also included is a structural analysis prepared by TES, dated September 2, 2021, confirming that the existing tower is structurally capable of supporting the proposed equipment, attached as Exhibit 8. This facility was approved by the Town of Manchester on December 17, 1998 and by the Connecticut Siting Council on December 17, 1998. Please see attached Exhibit 6.

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

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

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the tower is 150-feet; Dish Wireless LLC proposed antennas will be located at a center line height of 100-feet.
2. The proposed modifications will not result in the increase of the site boundary as depicted on the attached site plan.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed local and state criteria. The incremental effect of the proposed changes will be negligent.
4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. As indicated in the attached power density calculations, the combined site operations will result in a total power density of 31.09% as evidenced by Exhibit 7.



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

- A. Technical Feasibility. The existing monopole has been deemed structurally capable of supporting Dish Wireless LLC proposed loading. The structural analysis is included as Exhibit 8.
- B. Legal Feasibility. As referenced above, C.G.S. 16-50aa has been authorized to issue orders approving the shared use of an existing tower such as this support tower in Manchester. Under the authority granted to the Council, an order of the Council approving the requested shared use would permit Dish Wireless LLC to obtain a building permit for the proposed installation. Further, a Letter of Authorization is included as Exhibit 2, authorizing Dish Wireless LLC to file this application for shared use.
- C. Environmental Feasibility. The proposed shared use of this facility would have a minimal environmental impact. The installation of Dish Wireless LLC equipment at the 100-foot level of the existing 141-foot tower would have an insignificant visual impact on the area around the tower. Dish Wireless LLC ground equipment would be installed within the existing facility compound. Dish Wireless LLC shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit 7, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.
- D. Economic Feasibility. Dish Wireless LLC will be entering into an agreement with the owner of this facility to mutually agreeable terms. As previously mentioned, the Letter of Authorization has been provided by the owner to assist Dish Wireless LLC with this tower sharing application.
- E. Public Safety Concerns. As discussed above, the tower is structurally capable of supporting Dish Wireless LLC proposed loading.

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

Sincerely,

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

Attachments:



cc: Steve Stephanou, Deputy General Manager / with attachments
Town Hall, 41 Center St., Manchester, CT 06040
James Davis, Zoning Enforcement Officer / with attachments
Town Hall, 41 Center St., Manchester, CT 06040
Pom-Pom Gali, LLC / with attachments
79 Boston Post Road, Willimantic CT 06226 {SBA overnight address on file}
PO Box 133 Willimantic, CT 06226 (Town address on file)

EXHIBIT LIST

Exhibit 1	Copy of Check	X
Exhibit 2	Letter of Intent to Allow Shared Use of the Existing SBA Telecommunications Site	X
Exhibit 3	Notification Receipts	x
Exhibit 4	Property Card	x
Exhibit 5	Property Map	x
Exhibit 6	Original Zoning Approval	Town of Manchester 12/17/98
Exhibit 7	EME Report	EBI Consulting 11/30/21
Exhibit 8	Structural Analysis	TES 9/2/21
Exhibit 9	Mount Analysis	B & T Group 9/3/21
Exhibit 10	Construction Drawings	B+T Group 11/4/21

EXHIBIT 1

Copy of check

EXHIBIT 2

Letter of Intent

December 2, 2021

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

RE: **Notice of Intent to Allow Shared Use of the Existing SBA Telecommunications Site**
Location: 60 Adams Street, Manchester, CT
Dish Wireless Site No: BOBDL00130A
Site No: CT16504-A

Dear Ms. Bachman:

Please let the following serve as Evidence of Intent to allow Dish Wireless' shared use of the existing SBA telecommunications site at **60 Adams Street, Manchester, CT**.

SBA Towers VIII, LLC ("Owner") and Dish Wireless ("Tenant") are entering into a Site Lease Agreement. Tenant will be provided ground space within the existing site compound for its base station equipment and space at the height of 100' for antennas and associated equipment.

Thank you,

Rick Woods

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

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

EXHIBIT 3

Fedex Labels

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

SHIP DATE: 02DEC21
ACTWGT: 2.00 LB
CAD: 105843304/NET4400

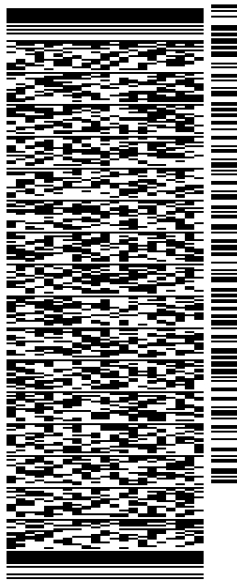
BILL SENDER

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

NEW BRITAIN CT 06051

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

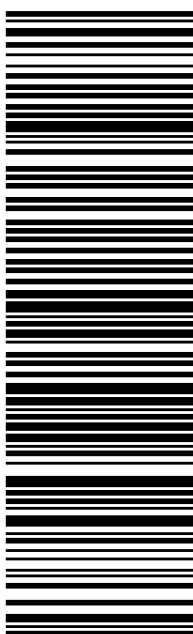
56D.J3/E934/FE4A



TRK# 7753 6991 8509 FRI - 03 DEC 11:30A
0201 PRIORITY OVERNIGHT

EB BDLA

06051
CT:US BDL



After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.



TRACK ANOTHER SHIPMENT

775369918509



[ADD NICKNAME](#)

ON TIME

Scheduled delivery:
Friday, 12/3/2021 before 11:30 am



PICKED UP
WESTBOROUGH, MA

[GET STATUS UPDATES](#)

FROM
WESTBOROUGH, MA US

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

Travel History

Shipment Facts

Travel History

TIME ZONE
Local Scan Time



Thursday, December 2, 2021

11:48 AM

WESTBOROUGH, MA

Picked up
Tendered at FedEx Office

9:22 AM

Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER

775369918509

SERVICE

FedEx Priority Overnight

WEIGHT

2 lbs / 0.91 kgs

TOTAL PIECES

1

TOTAL SHIPMENT WEIGHT

2 lbs / 0.91 kgs

TERMS

Shipper

SHIPPER REFERENCE

10-56-92009-6089

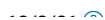
PACKAGING

FedEx Pak

SPECIAL HANDLING SECTION

Deliver Weekday

ACTUAL PICK UP



STANDARD TRANSIT



SCHEDULED DELIVERY

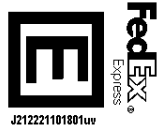
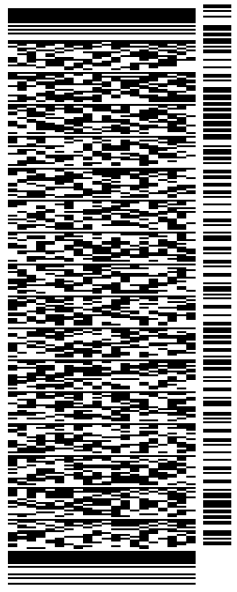


ORIGIN ID:BFBA (508) 614-0389
RICK WOODS
SBA COMMUNICATIONS CORPORATION
134 FLANDERS RD
SUITE 125
WESTBOROUGH, MA 01581
UNITED STATES US

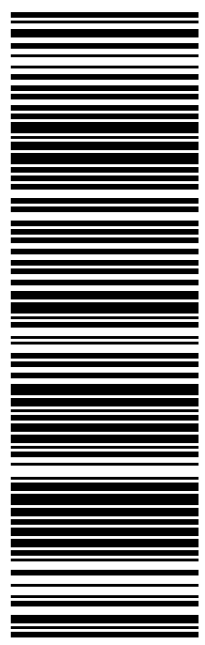
SHIP DATE: 02DEC21
ACTWGT: 1.00 LB
CAD: 105843304/NET4400
BILL SENDER

TO STEVE STEPHANOU
TOWN HALL
DEPUTY GENERAL MANAGER
41 CENTER ST
MANCHESTER CT 06040
(508) 251-0720 X3807
REF: 105692009-6089
PO: DEPT:

56DJ3IE934/FE4A



TRK# 7753 6999 2357
0201
FRI - 03 DEC 11:30A
PRIORITY OVERNIGHT

EB QCWA
06040
CT:US BDL


After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.



TRACK ANOTHER SHIPMENT

775369992357



[ADD NICKNAME](#)

ON TIME

Scheduled delivery:
Friday, 12/3/2021 before 11:30 am



PICKED UP
WESTBOROUGH, MA

[GET STATUS UPDATES](#)



Want to know when your package will arrive?

Take more control of your delivery with FedEx Delivery Manager®. [Sign up](#) or [Log in](#)

FROM

WESTBOROUGH, MA US

TO

MANCHESTER, CT US

[MANAGE DELIVERY](#)

Travel History

Shipment Facts

Travel History

TIME ZONE
Local Scan Time



Thursday, December 2, 2021

11:48 AM

WESTBOROUGH, MA

Picked up
Tendered at FedEx Office

9:27 AM

Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER
775369992357

SERVICE
FedEx Priority Overnight

WEIGHT
0.5 lbs / 0.23 kgs

TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
0.5 lbs / 0.23 kgs

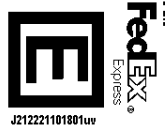
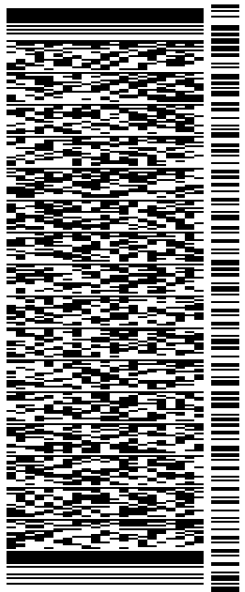
TERMS
Shipper

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

SHIP DATE: 02DEC21
ACTWGT: 1.00 LB
CAD: 105843304/NET4400
BILL SENDER

TO
JAMES DAVIS
TOWN OF MANCHESTER
ZONING ENFORCEMENT OFFICER
41 MAIN ST
MANCHESTER CT 06040
(508) 251-0720 X 3807
REF: 1056-92009-6089
PO: DEPT:

56DJ3IE934/FE4A



TRK# 7753 7004 1631
0201
FRI - 03 DEC 11:30A
PRIORITY OVERNIGHT

EB QCWA
06040
CT:US BDL

After printing this label:

- 1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
- 2. Fold the printed page along the horizontal line.
- 3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.



TRACK ANOTHER SHIPMENT

775370041631



[ADD NICKNAME](#)

ON TIME

Scheduled delivery:
Friday, 12/3/2021 before 11:30 am



PICKED UP
WESTBOROUGH, MA

[GET STATUS UPDATES](#)



Want to know when your package will arrive?

Take more control of your delivery with FedEx Delivery Manager®. [Sign up](#) or [Log in](#)

FROM

WESTBOROUGH, MA US

TO

MANCHESTER, CT US

[MANAGE DELIVERY](#)

Travel History

Shipment Facts

Travel History

TIME ZONE
Local Scan Time



Thursday, December 2, 2021

11:48 AM

WESTBOROUGH, MA

Picked up
Tendered at FedEx Office

9:30 AM

Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER

775370041631

SERVICE

FedEx Priority Overnight

WEIGHT

0.5 lbs / 0.23 kgs

TOTAL PIECES

1

TOTAL SHIPMENT WEIGHT

0.5 lbs / 0.23 kgs

TERMS

Shipper

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

SHIP DATE: 02DEC21
ACTWGT: 1.00 LB
CAD: 105843304/NET4400
BILL SENDER

TO

POM-POM GALLI
79 BOSTON POST RD

WILLIMANTIC CT 06226

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

56DJ3IE934/FE4A

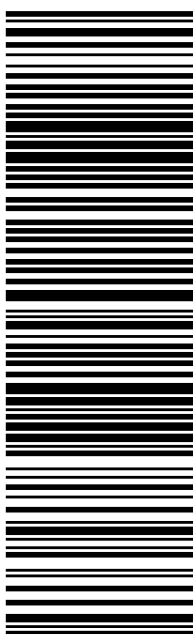


J212221101801uv

TRK# 7753 7006 5065
0201
FRI - 03 DEC 11:30A
PRIORITY OVERNIGHT

EB GONA

06226
CT-US BDL



After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.



TRACK ANOTHER SHIPMENT

775370065065



[ADD NICKNAME](#)

ON TIME

Scheduled delivery:
Friday, 12/3/2021 before 11:30 am



PICKED UP
WESTBOROUGH, MA

[GET STATUS UPDATES](#)

FROM
WESTBOROUGH, MA US

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

Travel History

Shipment Facts

Travel History

TIME ZONE
Local Scan Time



Thursday, December 2, 2021

11:48 AM

WESTBOROUGH, MA

Picked up
Tendered at FedEx Office

9:31 AM

Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER

775370065065

SERVICE

FedEx Priority Overnight

WEIGHT

0.5 lbs / 0.23 kgs

TOTAL PIECES

1

TOTAL SHIPMENT WEIGHT

0.5 lbs / 0.23 kgs

TERMS

Shipper

SHIPPER REFERENCE

10-56-92009-6089

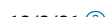
PACKAGING

FedEx Envelope

SPECIAL HANDLING SECTION

Deliver Weekday

ACTUAL PICK UP



STANDARD TRANSIT



SCHEDULED DELIVERY



EXHIBIT 4

Property Card

60 ADAMS STREET

Location 60 ADAMS STREET

Mblu 28/ 20/ 60/ /

Acct# 002000060

Owner POM-POM GALI LLC

Assessment \$1,145,400

Appraisal \$1,636,300

PID 26

Building Count 3

DISTRICT E

CONCRETE

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2021	\$522,100	\$1,114,200	\$1,636,300

Assessment			
Valuation Year	Improvements	Land	Total
2021	\$365,500	\$779,900	\$1,145,400

Owner of Record

Owner POM-POM GALI LLC
Address PO BOX 133
WILLIMANTIC, CT 06226

Sale Price \$1,551,222
Certificate C
Book & Page 3204/0184
Sale Date 12/23/2005
Instrument 36

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
POM-POM GALI LLC	\$1,551,222	C	3204/0184	36	12/23/2005
THORNTON WILLIAM B EST	\$0		3130/0054	35	08/25/2005
THORNTON WILLIAM B	\$0		0492/0089		

Building Information

Building 1 : Section 1

Year Built: 1965

Building Photo

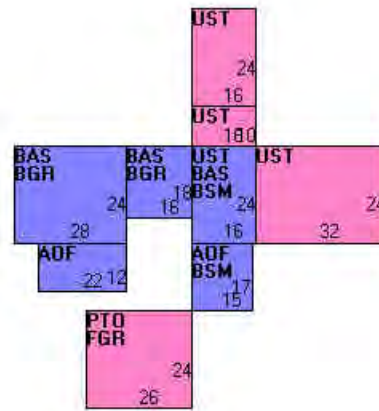
Living Area: 1,863
Replacement Cost: \$210,551
Replacement Cost
Less Depreciation: \$80,000



(<http://images.vgsi.com/photos2/ManchesterCTPhotos/100\02\62\27.jpg>)

Building Attributes	
Field	Description
Style:	Light Indust
Model	Ind/Comm
Grade	Average
Stories:	1
Occupancy	1.00
Exterior Wall 1	Pre-finish Metl
Exterior Wall 2	Concr/Cinder
Roof Structure	Flat
Roof Cover	Tar + Gravel
Interior Wall 1	Minim/Masonry
Interior Wall 2	Drywall/Sheetr
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Electric
Heating Type	Electr Basebrd
AC Type	None
Struct Class	
Bldg Use	Industrial 96
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	300
Heat/AC	None
Frame Type	Masonry
Baths/Plumbing	Average
Ceiling/Wall	Ceiling & Wall
Rooms/Prtns	Average
Wall Height	9.00
% Comn Wall	0.00

Building Layout



(http://images.vgsi.com/photos2/ManchesterCTPhotos//Sketches/26_26.jp)

Building Sub-Areas (sq ft)		Legend	
Code	Description	Gross Area	Living Area
BAS	First Floor	1,344	1,344
AOF	Office, (Average)	519	519
BGR	Basement Garage	960	0
BSM	Basement	639	0
FGR	Garage	624	0
PTO	Patio	624	0
UST	Utility, Storage, Unfinished	1,696	0
		6,406	1,863

Building 2 : Section 1

Year Built: 1965
Living Area: 8,658
Replacement Cost: \$387,411
Replacement Cost
Less Depreciation: \$147,200

Building Attributes : Bldg 2 of 3

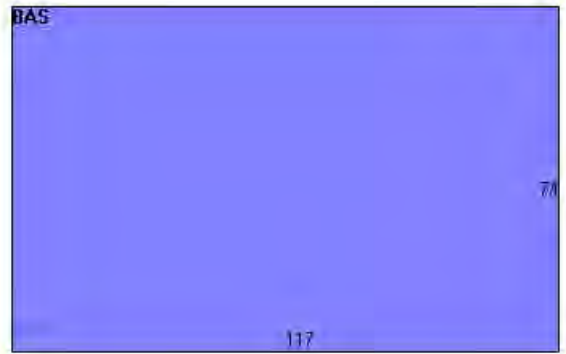
Field	Description
Style:	Service Shop
Model	Serv Station
Grade	Minimum
Stories:	1
Occupancy	1.00
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Metal/Tin
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	None
Struct Class	
Bldg Use	Industrial 96
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	300
Heat/AC	None
Frame Type	Masonry
Baths/Plumbing	Average
Ceiling/Wall	Ceiling & Wall
Rooms/Prtns	Average
Wall Height	18.00
% Comn Wall	0.00

Building Photo



(<http://images.vgsi.com/photos2/ManchesterCTPhotos/\00\02\62\30.jpg>)

Building Layout



(http://images.vgsi.com/photos2/ManchesterCTPhotos//Sketches/26_1797;

Building Sub-Areas (sq ft)			<u>Legend</u>
Code	Description	Gross Area	Living Area
BAS	First Floor	8,658	8,658
		8,658	8,658

Building 3 : Section 1

Year Built: 1965
Living Area: 6,398
Replacement Cost: \$428,970
Replacement Cost
Less Depreciation: \$163,000

Building Attributes : Bldg 3 of 3	
Field	Description
Style:	Office Bldg
Model	Comm/Ind
Grade	Below Average

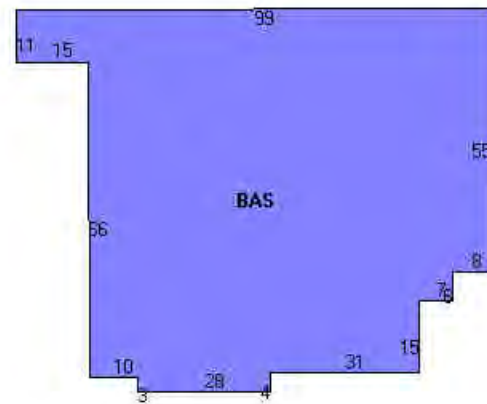
Stories:	1
Occupancy	1.00
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Metal/Tin
Interior Wall 1	Drywall/Sheetr
Interior Wall 2	
Interior Floor 1	Tile/Vinyl Cmp
Interior Floor 2	Carpet
Heating Fuel	Electric
Heating Type	Electr Basebrd
AC Type	Central
Struct Class	
Bldg Use	Industrial 94
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	300C
Heat/AC	Heat AC Split
Frame Type	Masonry
Baths/Plumbing	Average
Ceiling/Wall	Susp Ceil & WI
Rooms/Prtns	Average
Wall Height	10.00
% Comn Wall	0.00

Building Photo



(<http://images.vgsi.com/photos2/ManchesterCTPhotos/\00\02\62\32.jpg>)

Building Layout



(http://images.vgsi.com/photos2/ManchesterCTPhotos//Sketches/26_1797;

Building Sub-Areas (sq ft)			<u>Legend</u>
Code	Description	Gross Area	Living Area
BAS	First Floor	6,398	6,398
		6,398	6,398

Extra Features

Extra Features	<u>Legend</u>
No Data for Extra Features	

Land

Land Use

Use Code	300
Description	Industrial 96
Zone	IND

Land Line Valuation

Size (Acres)	26.45
Frontage	0
Depth	0

Neighborhood 4000
 Alt Land Appr No
 Category

Assessed Value \$779,900
 Appraised Value \$1,114,200

Outbuildings

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
FGR1	Garage Average			1440.00 S.F.	\$14,700	2
PAV2	Paving Concrete			40000.00 S.F.	\$54,000	1
PAV2	Paving Concrete			11498.00 S.F.	\$25,900	3
SHD1	Shed			1680.00 S.F.	\$15,100	1
PAV1	Paving Asphalt			8000.00 S.F.	\$10,000	3
TNK5	Tank Elevated			240.00 GALS	\$400	1
FN4	Fence 8' Chain			290.00 L.F.	\$4,400	1
FN3	Fence 6' Chain			640.00 L.F.	\$7,400	3
MSC16	SCL2			1.00 UNIT	\$0	3

Valuation History

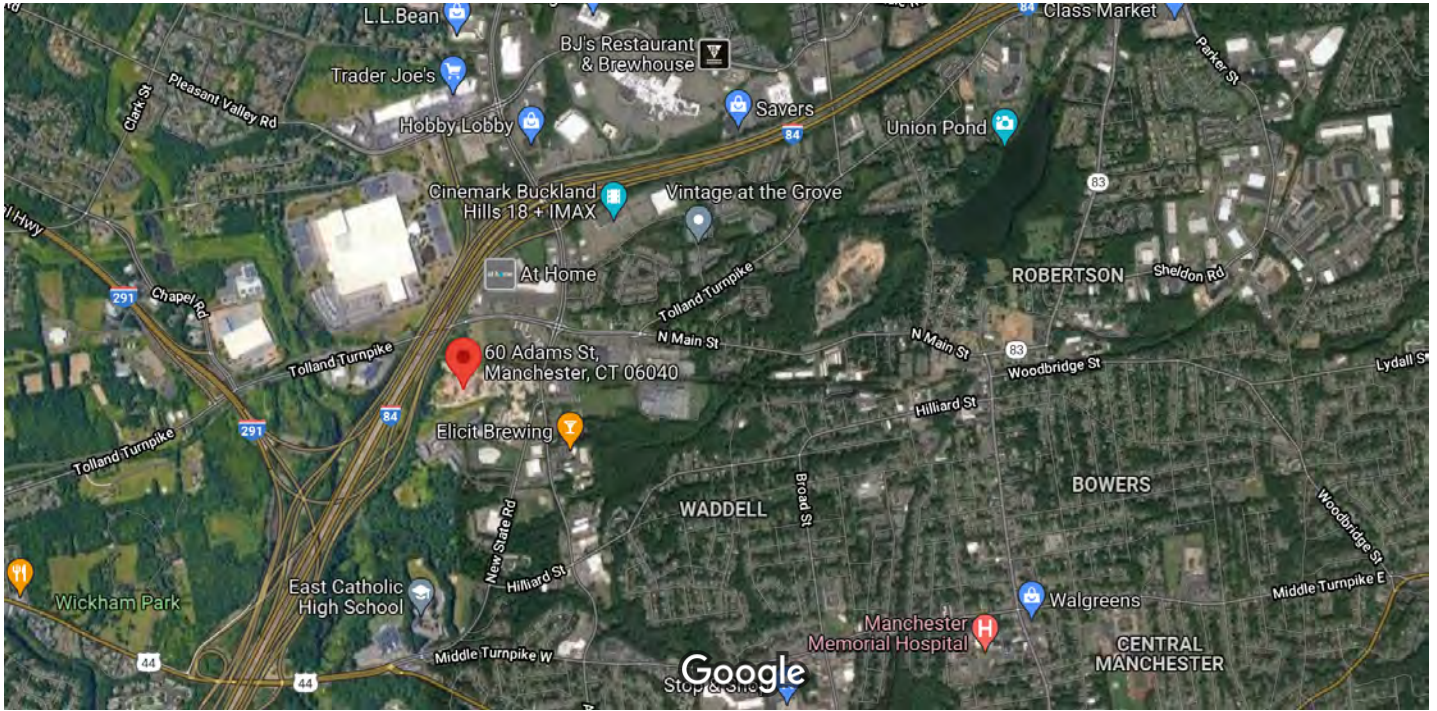
Appraisal			
Valuation Year	Improvements	Land	Total
2020	\$520,100	\$1,114,200	\$1,634,300
2015	\$440,800	\$1,114,200	\$1,555,000
2010	\$527,000	\$1,156,400	\$1,683,400

Assessment			
Valuation Year	Improvements	Land	Total
2020	\$364,200	\$779,900	\$1,144,100
2015	\$308,600	\$779,900	\$1,088,500
2010	\$369,000	\$809,400	\$1,178,400

EXHIBIT 5

Property Map

Google Maps 60 Adams St



Imagery ©2021 CNES / Airbus, Landsat / Copernicus, Maxar Technologies, U.S. Geological Survey, USDA Farm Service Agency, Map data ©2021 2000 ft

Google Maps 60 Adams St



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

EXHIBIT 6

Zoning Approval

SITE NAME: Manchester 12, CT SITE ID: CT16504-A
 Transaction: Mariner Towers, LLC Pam

ZONING/PERMITTING COMPLETION FORM

Address: 60 Adams Street, Manchester, CT 06042

Jurisdiction: Connecticut Siting Council /Town of Manchester Zoning District: Industrial

Zoning Approval Type: Certificate/Zoning Permit Case #: TS-BAM/SCLP-077-981208 (CSC)

Approval Date: 12/17/98 Approved Height: 140 99-1764 (Zoning Permit)

Conditions of Approval:

	<u>Yes</u>
Removal Bond _____	<input type="checkbox"/>
Site Plan Submittal _____	<input type="checkbox"/>
Fall Zone _____	<input type="checkbox"/>
Periodic Inspections _____	<input type="checkbox"/>
Periodic Reporting _____	<input type="checkbox"/>
Approval Renewal _____	<input type="checkbox"/>
Additional Conditions _____	<input type="checkbox"/>

Approval is for a tower replacement.

JURISDICTION POC/DEPT.

Planning/Zoning: _____

Phone: _____ Email: _____

Bldg./Code Enforcement: _____

Phone: _____ Email: _____

Submitted by: *Datches Estes* Date: 7/1/14
Zoning Compliance

TO BE COMPLETED BY CORPORATE

	<u>Yes</u>	<u>No</u>	<u>N/A</u>	
Zoning Approval Attached (required)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Building Permit Attached (required)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Date Recd</u>
<u>99-1764</u>				<u>5/11/99</u>
Certificate of Occupancy or Compliance (CO) attached (required)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>10/5/99</u>
Zoning Manager Approval: <u><i>Diane E. Borchardt</i></u>				Date <u>7/10/2014</u>
<u>Diane E. Borchardt, AICP</u>				



STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Ten Franklin Square
New Britain, Connecticut 06051
Phone: (860) 827-2935
Fax: (860) 827-2950

December 22, 1998

Jennifer Young Gaudet
Manager-Regulatory
Bell Atlantic Mobile
20 Alexander Drive
Wallingford, CT 06492

RE: TS-BAM/SCLP-077-981208 - Cellco Partnership d/b/a Bell Atlantic Mobile and Springwich Cellular Limited Partnership request for an order to approve tower sharing on a telecommunications tower to be replaced at 60 Adams Street, Manchester, Connecticut.

Dear Ms. Gaudet:

At a public meeting held on December 17, 1998, the Connecticut Siting Council (Council) ruled that the shared use of this replacement tower site is technically, legally, environmentally, and economically feasible and meets public safety concerns, and therefore, in compliance with General Statutes § 16-50aa, the Council has ordered the shared use of this facility to avoid the unnecessary proliferation of tower structures. The proposed shared use is to be implemented as specified in your letter dated December 8, 1998, with the condition that fencing surrounding the base of the tower will consist of black vinyl chainlink fencing as requested by the Town of Manchester.

This facility has been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequency now used on this tower. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

This decision applies only to this request for tower sharing and is not applicable to any other request or construction. Please notify the Council when all work is complete.

Very truly yours,

Mortimer A. Gelston
Chairman

MAG/RKE/jlh

c: Honorable Stephen T. Cassano, Mayor, Town of Manchester
Peter Van wilgen, Springwich
Mark Pellegrini, Director of Planning & Economic Development, Town of Manchester

99-1764

TOWN OF MANCHESTER ZONING PERMIT

41 Center Street

Please Print or Type

Telephone: 647-3052

TO: ZONING ENFORCEMENT OFFICER

Certification of Zoning Approval is hereby requested for:

application of a Building Permit

Other:

Decision is based on the following information:

- 1.) Location: (street and no. or lot no.) 60 ADAMS ST
- 2.) Owner's Name: BELL ATLANTIC MOBILE
- 3.) Builder: BELL ATLANTIC MOBILE
Address: 20 ALEXANDER DR WALLINGFORD CT 06492
- 4.) Check Type of Construction: New Building Addition Alteration
 Repair Miscellaneous
- 5.) Job Description* CONSTRUCT A 148-0 MONOPOLE TOWER WITH TWO MODULAR BUILDINGS
(*Plot Plan required for all additions to buildings and accessory structures)
- 6.) Other Buildings Not Shown: _____
- 7.) Merestones or Stakes Indicating Lot Boundaries? ON PLANS
- 8.) Distance from Street Line: 800'
- 9.) Distance from Side Line: Left 100' Right 100'
- 10.) Distance from Building to Rear Lot Line: 100'
- 11.) Proposed Use: CELLULAR COMMUNICATION FACILITY
(For example: manufacturing, office, storage, dwelling, school, bath, garage)
- 12.) Sewer Septic Water Well

THIS PERMIT SHALL NOT BE EFFECTIVE FOR 24 HOURS AFTER APPROVAL

I hereby certify that the above statements are true to the best of my knowledge and belief.

4-19-99
Date

Mark D. Ganger
Signature

203-494-0023
Telephone

FOR OFFICE USE ONLY

This is to certify that the above-stated information is a permitted and lawful use as controlled by the Zoning Regulations of the Town of Manchester, Connecticut, upon authorized signature of the Zoning Enforcement Officer.

Zoning Permit Issued: 4/29/99
Zone: IND

Conditions: _____
Approved By: Thomas A. Flynn
Zoning Enforcement Officer

ADDITIONAL APPROVAL FOR BUSINESS AND INDUSTRIAL USE

Date	Engineering	Date	Police	Date	Fire
------	-------------	------	--------	------	------

Comments: approved by selectmen council

Additional Permits May Be Required From: _____ Dept(s)
for _____

TOWN OF MANCHESTER
BUILDING DEPARTMENT

CH

INSPECTION

DATE OF LAST INSPECTION _____
 DATE: 5-11-99 AM 10 PM PERMIT# 99-1764
 ORIGINAL INSPECTION _____ PRE-INSPECTION _____ RE-INSPECTION _____
 LOCATION 60 Adams-
 OWNER (Old Sand & Gravel) Bell Atlantic Tower
 CONTRACTOR _____

TYPE OF INSPECTION:	EXPLAIN	APPROVE	DISAPPROVE
<input checked="" type="checkbox"/> STRUCTURE	Foundation <u>footings</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> ELECTRICAL		<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> PLUMBING	<u>for 2 modular</u>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> HEATING	<u>Bldgs, and</u>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> AIR COND.	<u>footings pier</u>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> VENTILATION	<u>for tower</u>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> SPRINKLER		<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> ALARM		<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> DEMOLITION		<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> ZONING		<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> CERT. OF OCCUP.	<u>26' deep</u>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> OTHER		<input type="checkbox"/>	<input type="checkbox"/>

COMMENTS: _____

Calvin Hutchinson
 INSPECTOR'S SIGNATURE

TOM

TOWN OF MANCHESTER - BUILDING INSPECTION

Date of inspection: 10/05/99

Inspector: AMY INSPECTOR

Permit #: 99-00001764

Address of inspection: 60 ADAMS STREET

Owner: THORNTON WILLIAM B

Contractor: BELL ATLANTIC MOBILE

Type of inspection:

CERTIFICATE OF USE

FINISH ELECTRIC

Request Comments:

Results	Reinsp	Rec'd by	Permit	Time
---	No	LW	BLDG	10:12
---	No	LW	ELEC	10:12

Request Comments: WIRE CELL SITE, WATER, GENERATOR

ELECTRIC SERVICE (NEW)

FINISH ELECTRIC

Request Comments:

Request Comments: ADD METER, PHONE WIRE AND CIRCUITS

TANK INSTALLATION

Request Comments:

Request Comments: 1000 GAL PROPANE TANK

FINAL INSPECTION FOR ZONING

Comments: TOWER

Inspector's signature: *proffans*



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

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

E-Mail: siting.council@ct.gov

www.ct.gov/csc

February 4, 2014

Matt Burke
TRM, Inc.
16 Chestnut Street
Foxborough, MA 02035

RE: **EM-AT&T-077-140117** – American Telephone and Telegraph (AT&T) notice of intent to modify an existing telecommunications facility located at 60 Adams Street, Manchester, Connecticut.

Dear Mr. Burke:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

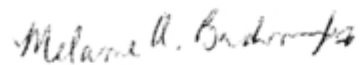
- Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated January 17, 2014. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.



Very truly yours,



Melanie A. Bachman
Acting Executive Director

MAB/CDM/cm

- c: The Honorable Leo V. Diana, Mayor, Town of Manchester
- Scott Shanley, General Manager, Town of Manchester
- James Davis, Zoning Enforcement Officer, Town of Manchester
- Mariner Towers



Matt Burke

16 Chestnut Street, Suite 220
Foxboro, MA 02035
Tel (508) 930-0974
Fax (774) 215-5423

Melanie Bachman
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

**Re: Notice of Exempt Modification - Emergency Backup Generator
60 Adams St., Manchester, CT 06040 (FA# 10035244)**

Dear Ms. Bachman:

American Telephone and Telegraph Company ("AT&T") currently maintains a wireless telecommunications facility at the above referenced address. AT&T's facility consists of antennas at the 125' level of an existing 140' tower and a 12' x 26' equipment shelter. The tower and AT&T's shelter are located within an existing, fenced-in compound area. The shelter houses AT&T's equipment and space for a back-up generator. AT&T does not currently maintain a generator at this cell site.

In an effort to further enhance multiple tenants' network reliability, AT&T intends to modify its facility by installing a new diesel-fueled generator outside in a designated 4' x 8' ground space. The generator incorporates a built-in fuel tank as part of the unit. The diesel fuel tanks are double walled for added safety and will be filled by a licensed fuel filling company. The proposed modification will remain within the existing, fenced-in compound. The new generator and tank will be surrounded by a security fence and gate and will be placed on a 4' x 8' concrete pad. (See Facility Compound Plan attached).

Please accept this letter as notification pursuant to R.C.S.A Section 16-50j-73, for construction that constitutes modification pursuant to R.C.S.A Section 16-50j-72(b)(2). In accordance with R.C.S.A Section 16-50j-73, a copy of this submission is being sent to the Town of Manchester. A copy of this submission is also being sent to Pom-Pom Gali, LLC, the property owner on which the tower is located.

AT&T's Proposed Wireless Modifications Constitute An "Exempt Modification"

The proposed modification to the above mentioned Facility constitutes an exempt modification of an existing facility provided for in R.C.S.A Section 16-50j-72(b)(2) and Council regulations promulgated pursuant thereto.

- 1) The proposed modification will not result in an increase in the height of the existing tower.
- 2) The generator and attached fuel tank will remain entirely within the limits of the leased area. The modifications therefore, will not require the extension of the boundary.
- 3) The proposed modification does not increase the noise levels at the boundary by six (6) decibels or more under normal conditions. Proposed modification is only used during emergency power failure.
- 4) The installation of a new generator and attached fuel tank will not change, in any way, radio frequency (RF) emissions at the facility.
- 5) The facility has received all municipal zoning approvals and building permits. (Regs., Conn. State Agencies Section 16-50j-72))

For all the foregoing reasons, American Telephone and Telegraph Company respectfully submits that the proposed modifications to the above-referenced telecommunications facility constitutes an exempt modification under R.C.S.A Section 16-50j-72(b)(2)

Respectfully submitted,

Matt Burke 508.930.0974

On behalf of AT&T

c/o Tower Resource Management, Inc.
16 Chestnut Street, Suite 220
Foxboro, MA 02035

cc: **Town of Manchester, CT**
Pom-Pom Gali, LLC

EXHIBIT 7

EME Report

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

Dish Wireless Existing Facility

Site ID: BOBDL00130A

BOBDL00130A
60 Adams Street
Manchester, Connecticut 06042

November 30, 2021

EBI Project Number: 6221007172

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	31.09%

November 30, 2021

Dish Wireless

Emissions Analysis for Site: BOBDL00130A - BOBDL00130A

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **60 Adams Street in Manchester, Connecticut** for the purpose of determining whether the emissions from the Proposed Dish Wireless Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed Dish Wireless antenna facility located at 60 Adams Street in Manchester, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since Dish Wireless is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

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

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

- 6) The antennas used in this modeling are the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector A, the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector B, the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 7) The antenna mounting height centerline of the proposed antennas is 100 feet above ground level (AGL).
- 8) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.
- 9) All calculations were done with respect to uncontrolled / general population threshold limits.

Dish Wireless Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	I	Antenna #:	I	Antenna #:	I
Make / Model:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21
Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz	Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz	Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz
Gain:	17.45 dBd / 22.65 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd / 22.65 dBd
Height (AGL):	100 feet	Height (AGL):	100 feet	Height (AGL):	100 feet
Channel Count:	12	Channel Count:	12	Channel Count:	12
Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts
ERP (W):	5,236.31	ERP (W):	5,236.31	ERP (W):	5,236.31
Antenna AI MPE %:	2.68%	Antenna BI MPE %:	2.68%	Antenna CI MPE %:	2.68%

Site Composite MPE %	
Carrier	MPE %
Dish Wireless (Max at Sector A):	2.68%
AT&T	6.44%
T-Mobile	10.78%
Nextel	0.65%
PageNet	0.4%
Verizon	9.91%
Clearwire	0.16%
Sprint	0.07%
Site Total MPE % :	31.09%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	2.68%
Dish Wireless Sector B Total:	2.68%
Dish Wireless Sector C Total:	2.68%
Site Total MPE % :	31.09%

Dish Wireless Maximum MPE Power Values (Sector A)							
Dish Wireless Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
Dish Wireless 600 MHz n71	4	223.68	100.0	3.64	600 MHz n71	400	0.91%
Dish Wireless 1900 MHz n70	4	542.70	100.0	8.83	1900 MHz n70	1000	0.88%
Dish Wireless 2190 MHz n66	4	542.70	100.0	8.83	2190 MHz n66	1000	0.88%
						Total:	2.68%

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

Summary

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

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

Dish Wireless Sector	Power Density Value (%)
Sector A:	2.68%
Sector B:	2.68%
Sector C:	2.68%
Dish Wireless Maximum MPE % (Sector A):	2.68%
Site Total:	31.09%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **31.09%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

EXHIBIT 8

Structural Analysis



Tower Engineering Solutions

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

Structural Analysis Report

Existing 141 ft EEI Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT16504-A

Customer Site Name: Manchester 12, CT

Carrier Name: Dish Wireless (App#: 167828-1)

Carrier Site ID / Name: BOBDL00130A / 0

Site Location: 60 Adams Street

Manchester, Connecticut

Hartford County

Latitude: 41.794100

Longitude: -72.555300

Analysis Result:

Max Structural Usage: 99.7% [Pass]

Max Foundation Usage: 95.0% [Pass]

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



Report Prepared By: Mohammed Al Rubaye

Introduction

The purpose of this report is to summarize the analysis results on the 141 ft EEI 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	FDH, Mapping Report #15BRLA1500, dated June 15, 2015
Foundation Drawing	FDH, Mapping Report # 15BRLC1500, dated June 16, 2015
Geotechnical Report	FDH, Project # 15BRNG1600, dated June 17, 2015
Modification Drawings	TES, Job # 36710, dated December 14, 2017

Analysis Criteria

The comprehensive analysis was performed in accordance with the requirements and stipulations of the TIA-222-H. 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:	118.0 mph (3-Sec. Gust) (Ultimate wind speed)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 1"1/2 radial ice concurrent
Service Load Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Risk Category:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	$S_5 = 0.188$, $S_1 = 0.055$

This structural analysis is based upon the tower being classified as a Risk Category 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	135.0	3	Ericsson - Air 32 KRD901146-1_B66A_B2A - Panel	(3) Sector frames w/ (1) low profile platform sitepro RMQP-396	(2) 1 1/4" Fiber (2) 1 5/8" Fiber	T-Mobile
2		3	Ericsson - AIR6449 B41 - Panel			
3		3	RFS - APXVAARR24_43-U-NA20 - Panel			
4		3	CommScope CBC192-3Q-43 Diplexers			
5		3	Ericsson RRUS11 B4			
6		3	Ericsson 4415 B25			
7		3	Ericsson Radio 4449 B71+B85			
7	125.0	3	Quintel QS66512-2 - Panel	Platform w/ Handrails	(12) 1 1/4" (4) 0.625" DC (2) 0.40" Fiber (2) 2" Conduit	AT&T
8		3	Kathrein 800-10121 - Panel			
9		3	CCI OPA-65R-LCUU-H6 - Panel			
10		3	CCI HPA-65R-BUU-H6 - Panel			
11		6	CCI DTMAPB7819VG12A			
12		6	Kathrein 782 10250			
13		6	Ericsson RRUS-32			
14		3	Ericsson RRUS-11			
15		3	Ericsson B14 4478			
16		3	Ericsson RRUS 32 B66			
17		6	Kaelus DBC0061F1V51-2			
18	3	Raycap DC6-48-60-18-8F				
19	118.5	1	Andrew VHLP1-23-DW1 - Dish	Low Profile Platform*	(3) 1-1/4" (2) 2 1/8" F.C. (1) 3/4" Fiber (2) 5/8"	Sprint-Clearwire
20		1	Andrew VHLP2-23-DW1 - Dish			
21	117.0	3	RFS APXVTM14 - Panel			
22		3	RFS APXVSP18 - Panel			
23		3	Alcatel Lucent RRH8x20-25-FEU			
24		3	Alcatel Lucent RRH1900-4X45			
25	114.5	3	Argus LLPX310R-V1 - Panel			
26	114.0	1	20" x 18" x 9" Junction Box			
27	113.0	3	Samsung SPI-22132825WB			
28	112.5	3	Alcatel Lucent RRH2X50-800			
33	90.0	6	Andrew - SBNHH-1D65B w/ Mount Pipe - Panel			
34		3	Swedcom - SLCP 2x6014 - Panel			
35		3	L-Sub6 Antenna - Panel			
36		3	Samsung - XXDWMM-12.5-65-8T - Panel			
37		3	Samsung B5/B13 RRH-BR04C			
38		3	Alcatel Lucent B2/B66A RRH-BR049			
39		2	RFS DB-T1-6Z-8AB-OZ			

*Mount is at 114'.

*According to Mapping and Mount Analysis.

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
30	100.0	3	JMA Wireless MX08FRO665-21 - Panel	Platform w/HRK Commscope MC-PK8- DSH	(1) 1.6" Hybrid	Dish Wireless
31		3	Fujitsu TA08025-B605 - RRU			
32		3	Fujitsu TA08025-B604 - RRU			
33		1	Raycap RDIDC-9181-PF-48 - OVP			

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

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	99.7%	74.8%	73.1%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	3622.3	34.4	76.9

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

Service Load 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 1.5565 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 98.50% at 70.0ft

Structure: CT16504-A-SBA
Site Name: Manchester 12, CT
Height: 140.50 (ft)
Base Elev: 0.000 (ft)

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

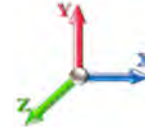
9/2/2021



Page: 1

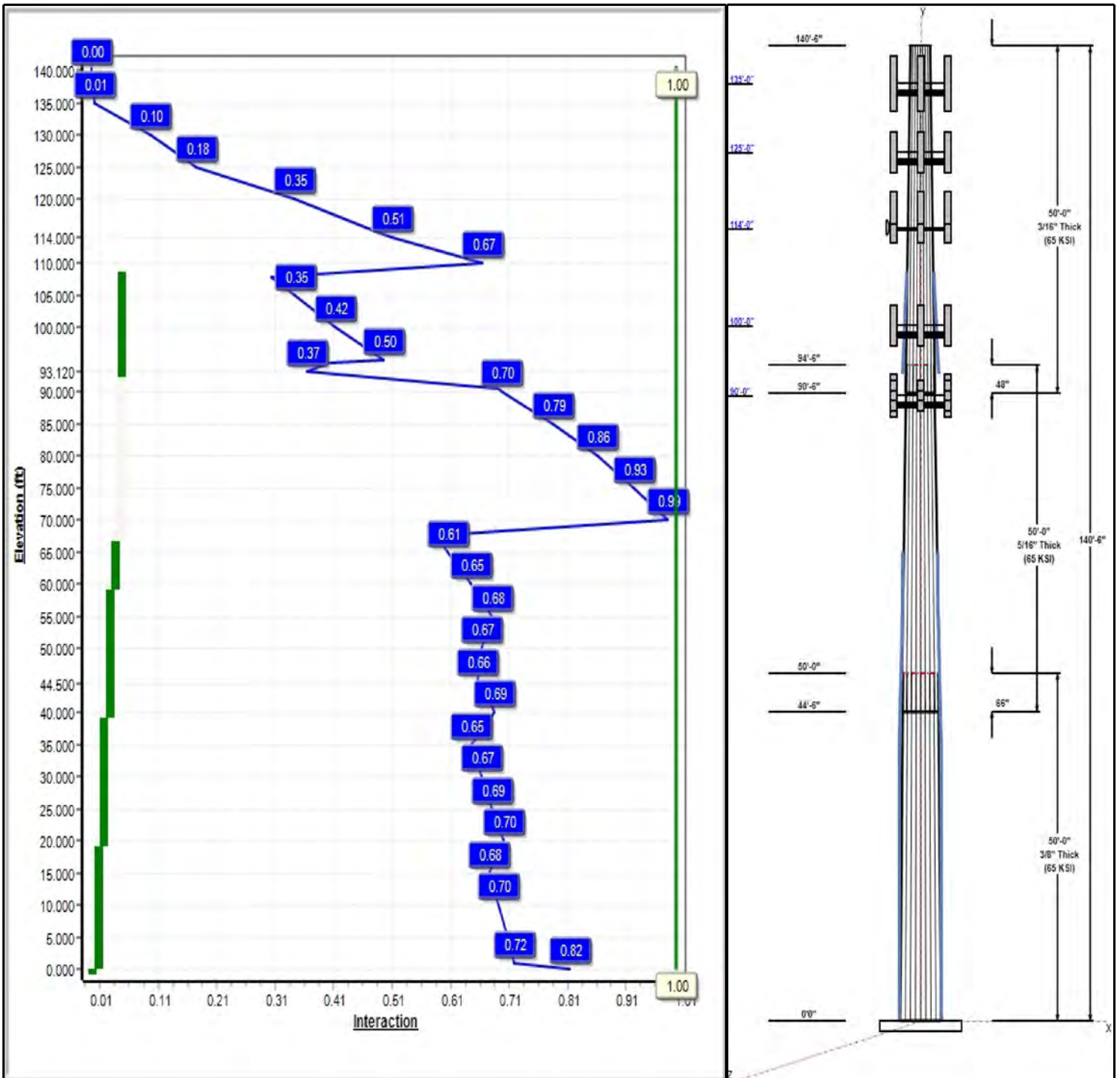
Dead Load Factor: 1.20
Wind Load Factor: 1.00

Load Case : 1.2D + 1.0W 118 mph Wind



Iterations: 25

Copyright © 2021 by Tower Engineering Solutions, LLC. All rights reserved.



Structure: CT16504-A-SBA

Type: Tapered
Site Name: Manchester 12, CT
Height: 140.50 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.18206

9/2/2021

Page: 2

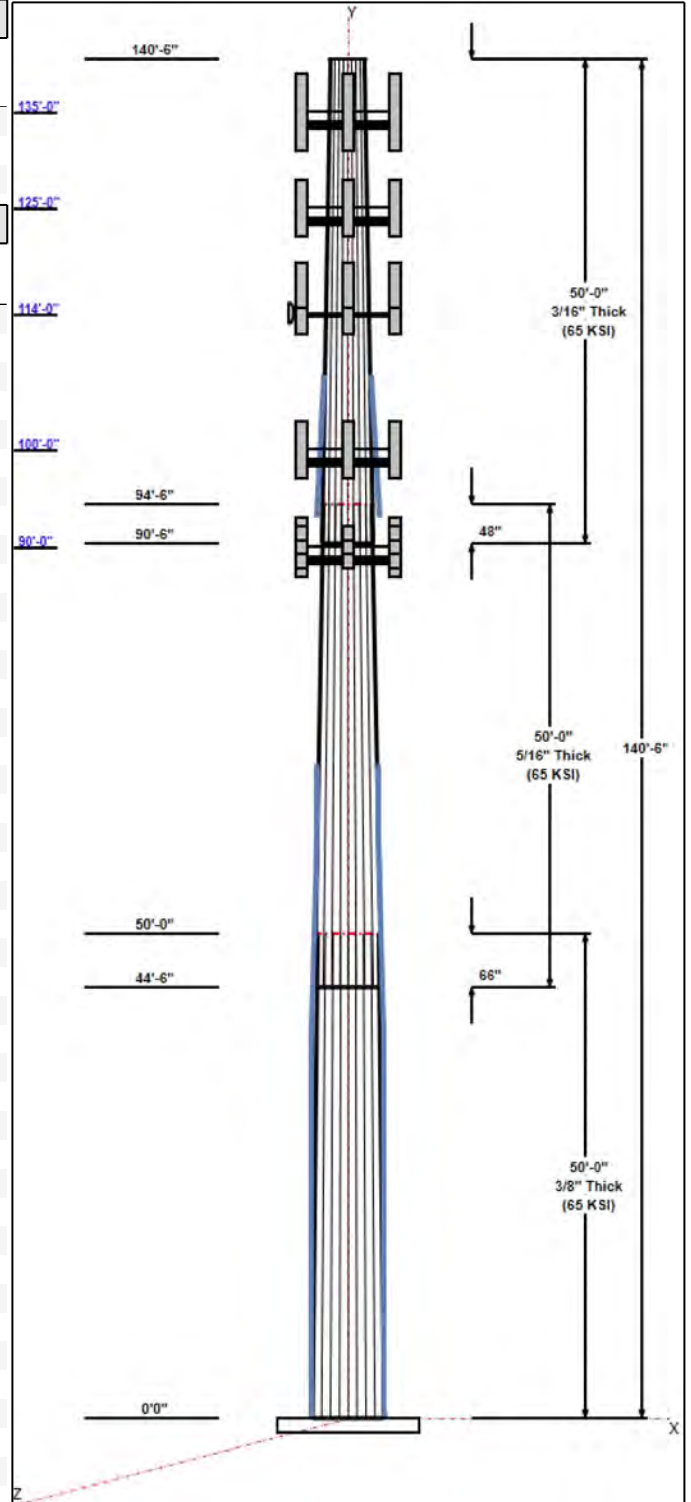


Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	50.00	33.44	42.54	0.375		0.18206	65
2	50.00	25.96	35.06	0.313	Slip	0.18206	65
3	50.00	17.96	27.06	0.188	Slip	0.18206	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
135.00	135.00	3	Air 32	T-Mobile
135.00	135.00	3	AIR6449 B41	T-Mobile
135.00	135.00	3	APXVAARR24_43-U-NA20	T-Mobile
135.00	135.00	3	Commscope	T-Mobile
135.00	135.00	3	Ericsson RRUS11 B4	T-Mobile
135.00	135.00	3	Ericsson 4415 B25	T-Mobile
135.00	135.00	3	Ericsson Radio 4449	T-Mobile
135.00	135.00	3	Sector Frame	T-Mobile
125.00	125.00	1	Platform w/ Hand Rails	AT&T
125.00	125.00	3	QS66512-2	AT&T
125.00	125.00	3	CCI OPA-65R-LCUU-H6	AT&T
125.00	125.00	6	Kathrein 782 10250	AT&T
125.00	125.00	3	Raycap DC6-48-60-18-8F	AT&T
125.00	125.00	6	CCI DTMAPB7819VG12A	AT&T
125.00	125.00	3	Ericsson RRUS-11	AT&T
125.00	125.00	6	Ericsson RRUS-32	AT&T
125.00	125.00	3	Kathrein 800-10121	AT&T
125.00	125.00	3	HPA-65R-BUU-H6	AT&T
125.00	125.00	3	B14 4478	AT&T
125.00	125.00	3	RRUS 32 B66	AT&T
125.00	125.00	6	DBC0061F1V51-2	AT&T
114.00	118.50	1	Andrew VHLP1-23-DW1	Sprint-Clearwire
114.00	118.50	1	Andrew VHLP2-23-DW1	Sprint-Clearwire
114.00	114.50	3	Argus LLPX310R-V1	Sprint-Clearwire
114.00	113.00	3	Samsung	Sprint-Clearwire
114.00	114.00	1	20" x 18" x 9" Junction Box	Sprint-Clearwire
114.00	117.00	3	RFS APXVTM14	Sprint-Clearwire
114.00	115.00	3	RFS APXVSP18	Sprint-Clearwire
114.00	117.00	3	Alcatel Lucent	Sprint-Clearwire
114.00	112.50	3	Alcatel Lucent	Sprint-Clearwire
114.00	117.00	3	Alcatel Lucent	Sprint-Clearwire
114.00	114.00	1	Low Profile Platform	Sprint-Clearwire
100.00	100.00	3	JMA Wireless	Dish Wireless
100.00	100.00	3	Fujitsu TA08025-B605 -	Dish Wireless
100.00	100.00	3	Fujitsu TA08025-B604 -	Dish Wireless
100.00	100.00	1	Raycap	Dish Wireless
100.00	100.00	1	Platform w/HRK	Dish Wireless
90.00	90.00	1	Platform w/ Hand Rails	Verizon
90.00	90.00	6	SBNHH-1D65B w/ Mount	Verizon
90.00	90.00	3	SLCP 2x6014	Verizon
90.00	90.00	3	L-Sub6 Antenna	Verizon
90.00	90.00	3	XXDWMM-12.5-65-8T	Verizon
90.00	90.00	3	Samsung B5/B13	Verizon
90.00	90.00	3	Alcatel Lucent B2/B66A	Verizon
90.00	90.00	2	RFS DB-T1-6Z-8AB-0Z	Verizon



Linear Appurtenances

Structure: CT16504-A-SBA

Type: Tapered	Base Shape: 18 Sided	9/2/2021
Site Name: Manchester 12, CT	Taper: 0.18206	
Height: 140.50 (ft)		
Base Elev: 0.00 (ft)		Page: 3



Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	135.00	Outside	1 1/4" Fiber	T-Mobile
0.00	135.00	Outside	1 5/8" Fiber	T-Mobile
0.00	125.00	Inside	0.40" Fiber	AT&T
0.00	125.00	Inside	0.625" DC	AT&T
0.00	125.00	Inside	1 1/4" Coax	AT&T
0.00	125.00	Inside	2" Conduit	AT&T
0.00	114.00	Inside	1-1/4"	Sprint-Clearwire
0.00	114.00	Inside	2 1/8" F.C.	Sprint-Clearwire
0.00	114.00	Inside	3/4"	Sprint-Clearwire
0.00	114.00	Inside	5/8"	Sprint-Clearwire
90.50	110.50	Outside	1" Reinforcing plate	
90.50	110.50	Outside	1" Reinforcing plate	
0.00	100.00	Inside	1.6" Hybrid	Dish Wireless
0.00	90.00	Inside	1 5/8" Coax	Verizon
0.00	90.00	Inside	1 5/8" Hybrid	Verizon
40.00	70.00	Outside	1" Reinforcing plate	
40.00	70.00	Outside	1" Reinforcing plate	
0.00	40.00	Outside	1.25" Reinforcing plate	
0.00	40.00	Outside	1.25" Reinforcing plate	

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
12	2.25" 18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
1.7500	57.0	60.0	Round

Reactions

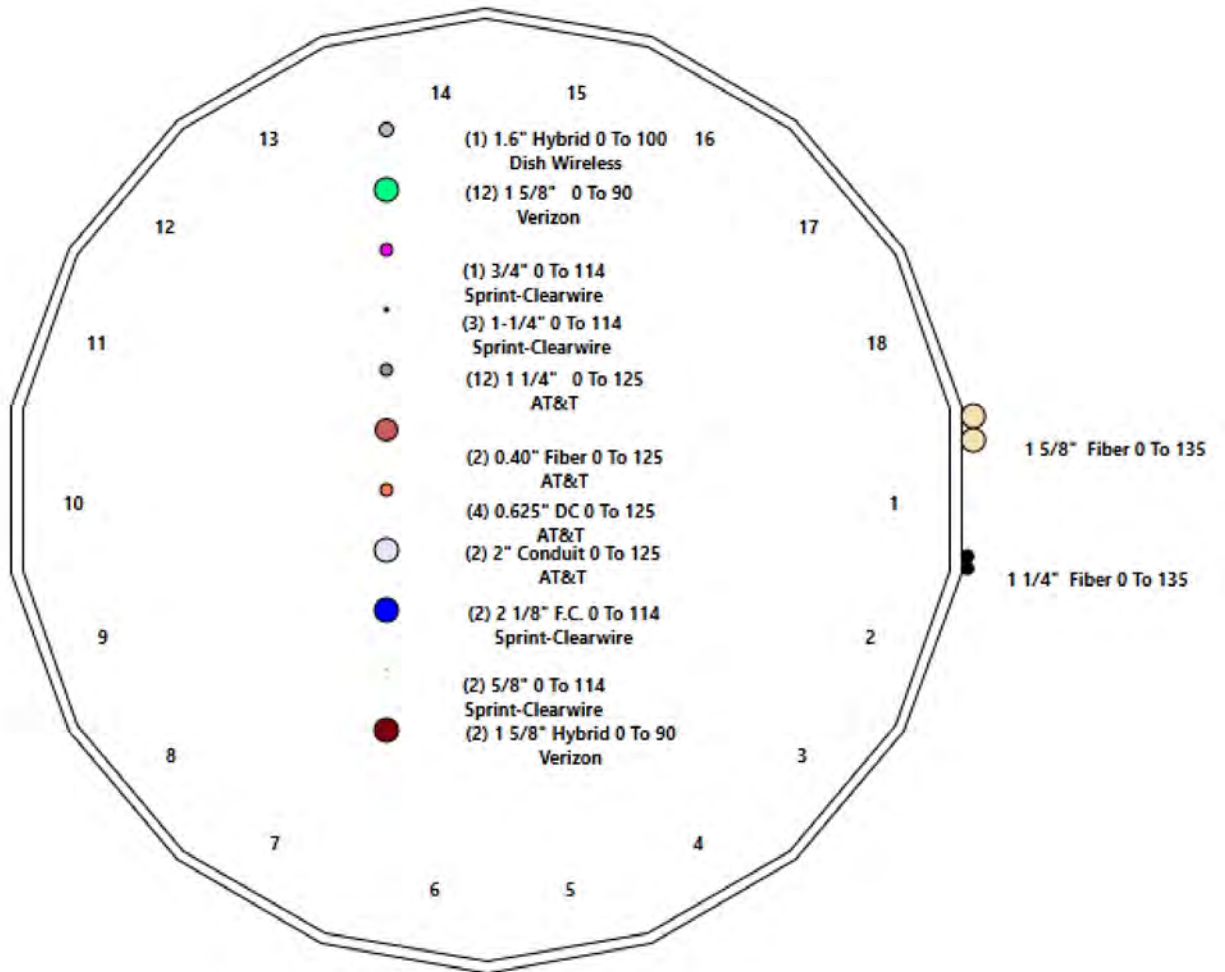
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.0W 118 mph Wind	3622.3	34.4	44.2
0.9D + 1.0W 118 mph Wind	3566.8	34.4	33.2
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1025.7	9.4	76.9
1.2D + 1.0Ev + 1.0Eh	57.2	0.5	45.7
0.9D + 1.0Ev + 1.0Eh	56.4	0.5	34.6
1.0D + 1.0W 60 mph Wind	831.4	8.0	36.9

Structure: CT16504-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Manchester 12, CT
Height: 140.50 (ft)

9/2/2021

Page: 4



Shaft Properties

Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 5

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	50.000	0.3750	65		0.00	7,617
2	18	50.000	0.3125	65	Slip	66.00	5,096
3	18	50.000	0.1875	65	Slip	48.00	2,260
Total Shaft Weight:							14,973

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	42.54	0.00	50.19	11272.80	18.59	113.44	33.44	50.00	39.35	5434.44	14.31	89.16	0.182064
2	35.06	44.50	34.47	5258.76	18.37	112.20	25.96	94.50	25.44	2114.11	13.24	83.07	0.182064
3	27.06	90.50	15.99	1459.57	24.04	144.34	17.96	140.50	10.58	422.08	15.48	95.79	0.182064

Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Fu (ksi)	Offset (in)	Intermediate Connectors		Termination Connectors			
							Description	Spacing (in)	Description	Spacing (in)	Lower Qty	Upper Qty
0.00	1.00	4	SOL 2 1/4" William R71	105	125	4.75	5/8" Hollo Bolt	18.00	5/8" Hollo Bolt	3.00		
1.00	20.00	4	LNP LP7X125-B-20A	65	80	0.00	5/8" Hollo Bolt	24.00	5/8" Hollo Bolt	3.00		
20.00	40.00	4	LNP LP6X125-G-20AB	65	80	0.00	5/8" Hollo Bolt	24.00	5/8" Hollo Bolt	3.00		
40.00	60.00	4	LNP LP6X100-G-20BC	65	80	0.00	5/8" Hollo Bolt	24.00	5/8" Hollo Bolt	3.00		
60.00	67.50	4	LNP LP6X100-G-10CT	65	80	0.00	5/8" Hollo Bolt	24.00	5/8" Hollo Bolt	3.00		
93.12	107.8	3	LNP LP6X100-G-20TT	65	80	0.00	5/8" Hollo Bolt	24.00	5/8" Hollo Bolt	3.00	8	8

Load Summary

Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 6

Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
1	135.00	Air 32 KRD901146-1_B66A_B2A	3	132.20	6.51	0.87	314.29	7.677	0.87	0.00	0.00
2	135.00	AIR6449 B41	3	103.00	5.65	0.80	254.01	6.612	0.81	0.00	0.00
3	135.00	APXVAARR24_43-U-NA20	3	128.00	20.24	0.70	541.00	22.119	0.70	0.00	0.00
4	135.00	Commscope CBC192-3Q-43	3	11.00	0.32	0.91	21.40	0.579	0.91	0.00	0.00
5	135.00	Ericsson RRUS11 B4	3	44.00	2.57	0.67	106.61	3.209	0.67	0.00	0.00
6	135.00	Ericsson 4415 B25	3	44.10	1.86	0.67	91.04	2.427	0.67	0.00	0.00
7	135.00	Ericsson Radio 4449 B71+B85	3	70.00	1.65	0.00	137.35	2.182	0.67	0.00	0.00
8	135.00	Sector Frame	3	817.00	15.00	0.75	1449.08	22.460	0.75	0.00	0.00
9	125.00	Platform w/ Hand Rails	1	2000.00	40.00	1.00	4056.42	60.564	1.00	0.00	0.00
10	125.00	QS66512-2	3	111.00	8.13	0.92	333.47	9.404	0.92	0.00	0.00
11	125.00	CCI OPA-65R-LCUU-H6	3	73.00	9.66	0.79	299.87	11.000	0.79	0.00	0.00
12	125.00	Kathrein 782 10250	6	6.40	0.52	0.67	18.96	1.079	0.67	0.00	0.00
13	125.00	Raycap DC6-48-60-18-8F	3	32.80	1.47	0.67	93.51	2.157	0.67	0.00	0.00
14	125.00	CCI DTMABP7819VG12A	6	19.00	1.14	0.67	43.80	1.896	0.67	0.00	0.00
15	125.00	Ericsson RRUS-11	3	54.00	2.52	0.67	141.23	3.159	0.67	0.00	0.00
16	125.00	Ericsson RRUS-32	6	77.00	2.52	0.67	190.98	4.250	0.67	0.00	0.00
17	125.00	Kathrein 800-10121	3	44.10	5.15	0.79	177.13	6.175	0.79	0.00	0.00
18	125.00	HPA-65R-BUU-H6	3	51.00	9.66	0.85	293.90	11.000	0.85	0.00	0.00
19	125.00	B14 4478	3	59.40	1.65	0.67	119.08	2.177	0.67	0.00	0.00
20	125.00	RRUS 32 B66	3	53.00	2.74	0.67	139.04	3.454	0.67	0.00	0.00
21	125.00	DBC0061F1V51-2	6	25.40	0.43	0.67	39.68	0.710	0.67	0.00	0.00
22	114.00	Andrew VHLP1-23-DW1	1	14.00	1.61	1.00	48.45	2.348	1.00	0.00	4.50
23	114.00	Andrew VHLP2-23-DW1	1	31.00	4.69	1.00	126.21	5.932	1.00	0.00	4.50
24	114.00	Argus LLPX310R-V1	3	50.70	4.31	0.69	156.26	5.244	0.69	0.00	0.50
25	114.00	Samsung SPI-22132825WB	3	33.10	1.82	0.50	75.84	2.769	0.50	0.00	-1.00
26	114.00	20" x 18" x 9" Junction Box	1	20.00	3.15	0.50	114.45	4.372	0.50	0.00	0.00
27	114.00	RFS APXVTM14	3	116.70	6.34	0.79	271.92	7.421	0.79	0.00	3.00
28	114.00	RFS APXVSP18	3	125.30	8.02	0.83	318.56	9.277	0.83	0.00	1.00
29	114.00	Alcatel Lucent RRH8x20-25-FEU	3	70.00	4.05	0.50	176.87	4.840	0.50	0.00	3.00
30	114.00	Alcatel Lucent RRH2X50-800	3	64.00	2.40	0.50	139.11	3.489	0.50	0.00	-1.50
31	114.00	Alcatel Lucent RRH1900-4X45	3	60.00	2.71	0.50	138.57	3.939	0.50	0.00	3.00
32	114.00	Low Profile Platform	1	1800.00	25.00	1.00	3328.17	45.376	1.00	0.00	0.00
33	100.00	JMA Wireless MX08FRO665-21	3	64.50	12.49	0.74	343.81	13.897	0.74	0.00	0.00
34	100.00	Fujitsu TA08025-B605 - RRU	3	75.00	1.96	0.50	125.23	2.499	0.50	0.00	0.00
35	100.00	Fujitsu TA08025-B604 - RRU	3	63.90	1.96	0.50	112.52	2.499	0.50	0.00	0.00
36	100.00	Raycap RDIDC-9181-PF-48 - OVP	1	21.90	2.01	0.50	73.03	2.556	0.50	0.00	0.00
37	100.00	Platform w/HRK Commscope	1	1727.00	37.59	1.00	3347.77	82.947	1.00	0.00	0.00
38	90.00	Platform w/ Hand Rails	1	2200.00	42.00	1.00	4388.96	62.895	1.00	0.00	0.00
39	90.00	SBNHH-1D65B w/ Mount Pipe	6	40.00	8.16	0.83	231.18	9.391	0.83	0.00	0.00
40	90.00	SLCP 2x6014	3	20.00	6.49	0.89	187.46	8.462	0.89	0.00	0.00
41	90.00	L-Sub6 Antenna	3	81.60	4.03	0.84	185.85	4.816	0.84	0.00	0.00
42	90.00	XXDWMM-12.5-65-8T	3	87.30	1.53	0.74	136.17	2.031	0.75	0.00	0.00
43	90.00	Samsung B5/B13 RRH-BR04C	3	70.30	1.88	0.67	116.51	2.404	0.67	0.00	0.00
44	90.00	Alcatel Lucent B2/B66A RRH-BR049	3	84.40	1.88	0.67	133.11	2.404	0.67	0.00	0.00
45	90.00	RFS DB-T1-6Z-8AB-0Z	2	18.90	4.80	0.71	133.95	5.755	0.71	0.00	0.00
Totals:			133	17,541.70			40,288.26				

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		

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	135.00	(2) 1 1/4" Fiber	0.00	Outside
0.00	135.00	(2) 1 5/8" Fiber	1.98	Outside
0.00	125.00	(2) 0.40" Fiber	0.00	Inside
0.00	125.00	(4) 0.625" DC	0.00	Inside
0.00	125.00	(12) 1 1/4" Coax	0.00	Inside
0.00	125.00	(2) 2" Conduit	0.00	Inside
0.00	114.00	(3) 1-1/4"	0.00	Inside
0.00	114.00	(2) 2 1/8" F.C.	0.00	Inside
0.00	114.00	(1) 3/4"	0.00	Inside
0.00	114.00	(2) 5/8"	0.00	Inside
90.50	110.50	(1) 1" Reinforcing plate	1.00	Outside
90.50	110.50	(2) 1" Reinforcing plate	1.00	Outside
0.00	100.00	(1) 1.6" Hybrid	0.00	Inside
0.00	90.00	(12) 1 5/8" Coax	0.00	Inside
0.00	90.00	(2) 1 5/8" Hybrid	0.00	Inside
40.00	70.00	(2) 1" Reinforcing plate	1.00	Outside
40.00	70.00	(2) 1" Reinforcing plate	1.00	Outside
0.00	40.00	(2) 1.25" Reinforcing plate	1.25	Outside
0.00	40.00	(2) 1.25" Reinforcing plate	1.25	Outside

Shaft Section Properties

Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 8

Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Additional Reinforcing			
											Area (in^2)	Ixp (in^4)	Iyp (in^4)	Weight (lb)
0.00	RB1	0.3750	42.540	50.185	11272.8	18.59	113.44	65	80	0.0	16.32	7061.8	4973.6	
1.00	RT1 RB2	0.3750	42.358	49.968	11127.4	18.51	112.95	65	80	170.4	35.00	9835.2	6951.8	119.1
5.00		0.3750	41.630	49.102	10558.3	18.16	111.01	65	80	674.2	35.00	9511.8	6724.0	476.4
10.00		0.3750	40.719	48.018	9874.7	17.74	108.58	65	81	826.2	35.00	9115.2	6444.8	595.5
15.00		0.3750	39.809	46.935	9221.2	17.31	106.16	65	81	807.8	35.00	8727.1	6171.5	595.5
20.00	RT2 RB3	0.3750	38.899	45.851	8597.3	16.88	103.73	65	82	789.3	30.00	7139.4	5043.9	510.4
25.00		0.3750	37.988	44.768	8002.1	16.45	101.30	65	82	770.9	30.00	6821.4	4819.9	510.4
30.00		0.3750	37.078	43.684	7435.0	16.02	98.87	65	83	752.5	30.00	6510.6	4601.1	510.4
35.00		0.3750	36.168	42.601	6895.4	15.60	96.45	65	83	734.0	30.00	6207.1	4387.4	510.4
40.00	RT3 RB4	0.3750	35.257	41.517	6382.6	15.17	94.02	65	83	715.6	24.00	4664.1	3297.5	408.3
44.50	Bot - Section 2	0.3750	34.438	40.542	5943.3	14.78	91.84	65	83	628.3	24.00	4457.3	3151.9	367.5
45.00		0.3750	34.347	40.434	5895.8	14.74	91.59	65	83	127.5	24.00	4591.6	3246.4	40.8
50.00	Top - Section 1	0.3125	34.062	33.474	4817.1	17.81	109.00	65	80	1255.9	24.00	4363.9	3086.1	408.3
55.00		0.3125	33.151	32.571	4437.8	17.29	106.08	65	81	561.8	24.00	4142.0	2929.9	408.3
60.00	RT4 RB5	0.3125	32.241	31.668	4078.8	16.78	103.17	65	82	546.5	24.00	3926.0	2777.8	408.3
65.00		0.3125	31.331	30.765	3739.8	16.27	100.26	65	82	531.1	24.00	3715.9	2629.8	408.3
67.50	RT5	0.3125	30.876	30.314	3577.6	16.01	98.80	65	83	259.8	24.00	3613.0	2557.4	204.2
70.00		0.3125	30.421	29.862	3420.1	15.75	97.35	65	83	256.0				
75.00		0.3125	29.510	28.959	3119.2	15.24	94.43	65	83	500.4				
80.00		0.3125	28.600	28.057	2836.4	14.73	91.52	65	83	485.0				
85.00		0.3125	27.690	27.154	2571.3	14.21	88.61	65	83	469.7				
90.00		0.3125	26.779	26.251	2323.2	13.70	85.69	65	83	454.3				
90.50	Bot - Section 3	0.3125	26.688	26.160	2299.4	13.65	85.40	65	83	44.6				
93.12	RB6	0.3125	26.211	25.687	2176.8	13.38	83.88	65	83	372.4	18.00	1740.0	1740.0	160.5
94.50	Top - Section 2	0.1875	26.335	15.560	1344.1	23.36	140.45	65	74	193.5	18.00	1708.9	1708.9	84.5
95.00		0.1875	26.244	15.506	1330.1	23.27	139.97	65	74	26.4	18.00	1697.8	1697.8	30.6
100.00		0.1875	25.334	14.965	1195.5	22.41	135.11	65	75	259.2	18.00	1588.0	1588.0	306.2
105.00		0.1875	24.423	14.423	1070.3	21.56	130.26	65	76	250.0	18.00	1482.0	1482.0	306.2
107.87	RT6	0.1875	23.901	14.112	1002.6	21.07	127.47	65	77	139.3	18.00	1422.9	1422.9	175.8
110.00		0.1875	23.513	13.881	954.2	20.70	125.40	65	77	101.4				
114.00		0.1875	22.785	13.448	867.6	20.02	121.52	65	78	186.0				
115.00		0.1875	22.603	13.339	846.8	19.85	120.55	65	78	45.6				
120.00		0.1875	21.692	12.798	747.7	18.99	115.69	65	79	222.3				
125.00		0.1875	20.782	12.256	656.7	18.13	110.84	65	80	213.1				
130.00		0.1875	19.872	11.714	573.5	17.28	105.98	65	81	203.9				
135.00		0.1875	18.961	11.172	497.5	16.42	101.13	65	82	194.7				
140.00		0.1875	18.051	10.631	428.6	15.56	96.27	65	83	185.5				
140.50		0.1875	17.960	10.576	422.1	15.48	95.79	65	83	18.0				
Total Weight										14973.2	7546.2			

Wind Loading - Shaft

Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 9

Load Case: 1.2D + 1.0W 118 mph Wind

Iterations 25

Dead Load Factor 1.20
Wind Load Factor 1.00



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00	RB1	1.00	0.85	28.680	31.55	390.90	0.730	0.000	0.00	0.000	0.00	0.0	0.0	0.0
1.00	RT1 RB2	1.00	0.85	28.680	31.55	389.23	0.739 *	0.000	1.00	3.592	2.65	83.7	0.0	204.5
5.00		1.00	0.85	28.680	31.55	382.54	0.741 *	0.000	4.00	14.214	10.53	332.3	0.0	809.1
10.00		1.00	0.85	28.680	31.55	374.17	0.746 *	0.000	5.00	17.421	12.99	409.8	0.0	991.4
15.00		1.00	0.85	28.680	31.55	365.81	0.751 *	0.000	5.00	17.036	12.79	403.6	0.0	969.3
20.00	RT2 RB3	1.00	0.90	30.430	33.47	368.19	0.757 *	0.000	5.00	16.650	12.60	421.6	0.0	947.2
25.00		1.00	0.95	31.894	35.08	368.12	0.762 *	0.000	5.00	16.265	12.40	435.0	0.0	925.1
30.00		1.00	0.98	33.142	36.46	366.26	0.768 *	0.000	5.00	15.880	12.20	444.9	0.0	902.9
35.00		1.00	1.01	34.235	37.66	363.12	0.775 *	0.000	5.00	15.495	12.01	452.1	0.0	880.8
40.00	RT3 RB4	1.00	1.04	35.211	38.73	358.99	0.782 *	0.000	5.00	15.110	11.81	457.4	0.0	858.7
44.50	Bot - Section 2	1.00	1.07	36.011	39.61	354.60	0.757 *	0.000	4.50	13.270	10.05	398.1	0.0	753.9
45.00		1.00	1.07	36.095	39.70	354.08	0.761 *	0.000	0.50	1.482	1.13	44.7	0.0	152.9
50.00	Top - Section 1	1.00	1.09	36.905	40.60	348.54	0.764 *	0.000	5.00	14.604	11.16	453.1	0.0	1507.1
55.00		1.00	1.12	37.653	41.42	349.05	0.766 *	0.000	5.00	14.219	10.90	451.4	0.0	674.2
60.00	RT4 RB5	1.00	1.14	38.349	42.18	342.59	0.774 *	0.000	5.00	13.834	10.70	451.4	0.0	655.8
65.00		1.00	1.16	39.001	42.90	335.73	0.781 *	0.000	5.00	13.448	10.50	450.6	0.0	637.3
67.50	RT5	1.00	1.17	39.312	43.24	332.17	0.787 *	0.000	2.50	6.580	5.18	223.9	0.0	311.8
70.00		1.00	1.17	39.614	43.58	328.53	0.791 *	0.000	2.50	6.484	5.13	223.5	0.0	307.1
75.00		1.00	1.19	40.194	44.21	321.02	0.730	0.000	5.00	12.678	9.26	409.2	0.0	600.5
80.00		1.00	1.21	40.743	44.82	313.24	0.730	0.000	5.00	12.293	8.97	402.2	0.0	582.0
85.00		1.00	1.22	41.267	45.39	305.21	0.730	0.000	5.00	11.908	8.69	394.6	0.0	563.6
90.00	Appurtenance(s)	1.00	1.24	41.766	45.94	296.96	0.730	0.000	5.00	11.523	8.41	386.5	0.0	545.2
90.50	Bot - Section 3	1.00	1.24	41.815	46.00	296.12	0.730	0.000	0.50	1.131	0.83	38.0	0.0	53.5
93.12	RB6	1.00	1.25	42.067	46.27	291.70	0.836 *	0.000	2.62	5.947	4.97	229.9	0.0	446.9
94.50	Top - Section 2	1.00	1.25	42.198	46.42	289.36	0.840 *	0.000	1.38	3.090	2.60	120.5	0.0	232.2
95.00		1.00	1.25	42.244	46.47	292.68	0.838 *	0.000	0.50	1.112	0.93	43.3	0.0	31.7
100.00	Appurtenance(s)	1.00	1.27	42.703	46.97	284.06	0.844 *	0.000	5.00	10.911	9.21	432.5	0.0	311.1
105.00		1.00	1.28	43.144	47.46	275.26	0.856 *	0.000	5.00	10.526	9.01	427.6	0.0	300.0
107.87	RT6	1.00	1.29	43.390	47.73	270.14	0.866 *	0.000	2.87	5.868	5.08	242.6	0.0	167.2
110.00		1.00	1.29	43.569	47.93	266.31	0.873 *	0.000	2.13	4.273	3.73	178.8	0.0	121.7
114.00	Appurtenance(s)	1.00	1.30	43.898	48.29	259.03	0.730	0.000	4.00	7.835	5.72	276.2	0.0	223.2
115.00		1.00	1.30	43.978	48.38	257.20	0.730	0.000	1.00	1.920	1.40	67.8	0.0	54.7
120.00		1.00	1.32	44.374	48.81	247.95	0.730	0.000	5.00	9.370	6.84	333.9	0.0	266.8
125.00	Appurtenance(s)	1.00	1.33	44.757	49.23	238.56	0.730	0.000	5.00	8.985	6.56	322.9	0.0	255.8
130.00		1.00	1.34	45.128	49.64	229.06	0.730	0.000	5.00	8.600	6.28	311.7	0.0	244.7
135.00	Appurtenance(s)	1.00	1.35	45.488	50.04	219.43	0.731 *	0.000	5.00	8.215	6.00	300.5	0.0	233.6
140.00		1.00	1.36	45.838	50.42	209.70	0.730	0.000	5.00	7.830	5.72	288.2	0.0	222.6
140.50		1.00	1.36	45.872	50.46	208.72	0.730	0.000	0.50	0.762	0.56	28.1	0.0	21.6
Totals:									140.50			11,372.0		17,967.8

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

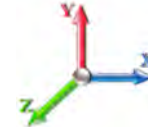
Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 10

Load Case: 1.2D + 1.0W 118 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	135.00	Commscope	3	45.488	50.037	0.73	0.80	0.70	39.60	0.000	0.000	34.97	0.00	0.00
2	135.00	Air 32	3	45.488	50.037	0.70	0.80	13.59	475.92	0.000	0.000	680.15	0.00	0.00
3	135.00	AIR6449 B41	3	45.488	50.037	0.64	0.80	10.85	370.80	0.000	0.000	542.80	0.00	0.00
4	135.00	APXVAARR24_43-U-NA2	3	45.488	50.037	0.56	0.80	34.00	460.80	0.000	0.000	1701.42	0.00	0.00
5	135.00	Sector Frame	3	45.488	50.037	0.56	0.75	25.31	2941.20	0.000	0.000	1266.56	0.00	0.00
6	135.00	Ericsson RRUS11 B4	3	45.488	50.037	0.54	0.80	4.13	158.40	0.000	0.000	206.78	0.00	0.00
7	135.00	Ericsson 4415 B25	3	45.488	50.037	0.54	0.80	2.99	158.76	0.000	0.000	149.65	0.00	0.00
8	135.00	Ericsson Radio 4449	3	45.488	50.037	0.00	0.80	4.95	252.00	0.000	0.000	247.68	0.00	0.00
9	125.00	Raycap DC6-48-60-18-8F	3	44.757	49.233	0.50	0.75	2.22	118.08	0.000	0.000	109.10	0.00	0.00
10	125.00	Kathrein 782 10250	6	44.757	49.233	0.50	0.75	1.57	46.08	0.000	0.000	77.19	0.00	0.00
11	125.00	CCI OPA-65R-LCUU-H6	3	44.757	49.233	0.59	0.75	17.17	262.80	0.000	0.000	845.36	0.00	0.00
12	125.00	CCI DTMAPB7819VG12A	6	44.757	49.233	0.50	0.75	3.44	136.80	0.000	0.000	169.22	0.00	0.00
13	125.00	QS66512-2	3	44.757	49.233	0.69	0.75	16.83	399.60	0.000	0.000	828.54	0.00	0.00
14	125.00	Platform w/ Hand Rails	1	44.757	49.233	1.00	1.00	40.00	2400.00	0.000	0.000	1969.31	0.00	0.00
15	125.00	B14 4478	3	44.757	49.233	0.50	0.75	2.49	213.84	0.000	0.000	122.46	0.00	0.00
16	125.00	Ericsson RRUS-11	3	44.757	49.233	0.50	0.75	3.80	194.40	0.000	0.000	187.03	0.00	0.00
17	125.00	Ericsson RRUS-32	6	44.757	49.233	0.50	0.75	7.60	554.40	0.000	0.000	374.06	0.00	0.00
18	125.00	Kathrein 800-10121	3	44.757	49.233	0.59	0.75	9.15	158.76	0.000	0.000	450.68	0.00	0.00
19	125.00	HPA-65R-BUU-H6	3	44.757	49.233	0.64	0.75	18.47	183.60	0.000	0.000	909.56	0.00	0.00
20	125.00	RRUS 32 B66	3	44.757	49.233	0.50	0.75	4.13	190.80	0.000	0.000	203.36	0.00	0.00
21	125.00	DBC0061F1V51-2	6	44.757	49.233	0.50	0.75	1.30	182.88	0.000	0.000	63.83	0.00	0.00
22	114.00	Low Profile Platform	1	43.898	48.287	1.00	1.00	25.00	2160.00	0.000	0.000	1207.18	0.00	0.00
23	114.00	Alcatel Lucent	3	44.138	48.552	0.40	0.80	3.25	216.00	0.000	3.000	157.89	0.00	473.67
24	114.00	Samsung	3	43.816	48.198	0.40	0.80	2.18	119.16	0.000	-1.000	105.26	0.00	-105.26
25	114.00	Andrew VHLP1-23-DW1	1	44.257	48.682	1.00	1.00	1.61	16.80	0.000	4.500	78.38	0.00	352.70
26	114.00	Andrew VHLP2-23-DW1	1	44.257	48.682	1.00	1.00	4.69	37.20	0.000	4.500	228.32	0.00	1027.44
27	114.00	Argus LLPX310R-V1	3	43.938	48.332	0.55	0.80	7.14	182.52	0.000	0.500	344.96	0.00	172.48
28	114.00	Alcatel Lucent	3	43.775	48.153	0.40	0.80	2.88	230.40	0.000	-1.500	138.68	0.00	-208.02
29	114.00	20" x 18" x 9" Junction Box	1	43.898	48.287	0.40	0.80	1.26	24.00	0.000	0.000	60.84	0.00	0.00
30	114.00	RFS APXVTM14	3	44.138	48.552	0.63	0.80	12.02	420.12	0.000	3.000	583.63	0.00	1750.88
31	114.00	RFS APXVSP18	3	43.978	48.376	0.66	0.80	15.98	451.08	0.000	1.000	772.85	0.00	772.85
32	114.00	Alcatel Lucent	3	44.138	48.552	0.40	0.80	4.86	252.00	0.000	3.000	235.96	0.00	707.89
33	100.00	JMA Wireless	3	42.703	46.973	0.55	0.75	20.80	232.20	0.000	0.000	976.85	0.00	0.00
34	100.00	Fujitsu TA08025-B605 -	3	42.703	46.973	0.38	0.75	2.21	270.00	0.000	0.000	103.58	0.00	0.00
35	100.00	Raycap	1	42.703	46.973	0.38	0.75	0.75	26.28	0.000	0.000	35.41	0.00	0.00
36	100.00	Fujitsu TA08025-B604 -	3	42.703	46.973	0.38	0.75	2.21	230.04	0.000	0.000	103.58	0.00	0.00
37	100.00	Platform w/HRK	1	42.703	46.973	1.00	1.00	37.59	2072.40	0.000	0.000	1765.73	0.00	0.00
38	90.00	RFS DB-T1-6Z-8AB-0Z	2	41.766	45.943	0.71	1.00	6.82	45.36	0.000	0.000	313.15	0.00	0.00
39	90.00	Alcatel Lucent B2/B66A	3	41.766	45.943	0.50	0.75	2.83	303.84	0.000	0.000	130.21	0.00	0.00
40	90.00	Samsung B5/B13	3	41.766	45.943	0.50	0.75	2.83	253.08	0.000	0.000	130.21	0.00	0.00
41	90.00	XXDMMM-12.5-65-8T	3	41.766	45.943	0.55	0.75	2.55	314.28	0.000	0.000	117.04	0.00	0.00
42	90.00	L-Sub6 Antenna	3	41.766	45.943	0.63	0.75	7.62	293.76	0.000	0.000	349.93	0.00	0.00
43	90.00	SLCP 2x6014	3	41.766	45.943	0.67	0.75	13.00	72.00	0.000	0.000	597.09	0.00	0.00
44	90.00	SBNHH-1D65B w/ Mount	6	41.766	45.943	0.62	0.75	30.48	288.00	0.000	0.000	1400.23	0.00	0.00
45	90.00	Platform w/ Hand Rails	1	41.766	45.943	1.00	1.00	42.00	2640.00	0.000	0.000	1929.61	0.00	0.00

Totals: 21,050.04

23,006.29

Total Applied Force Summary

Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 11

Load Case: 1.2D + 1.0W 118 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
1.00		83.70	251.83	0.00	0.00
5.00		332.31	998.49	0.00	0.00
10.00		409.80	1228.20	0.00	0.00
15.00		403.60	1206.08	0.00	0.00
20.00		421.64	1183.96	0.00	0.00
25.00		435.02	1161.84	0.00	0.00
30.00		444.87	1139.72	0.00	0.00
35.00		452.13	1117.60	0.00	0.00
40.00		457.40	1095.48	0.00	0.00
44.50		398.07	967.02	0.00	0.00
45.00		44.74	176.62	0.00	0.00
50.00		453.10	1743.88	0.00	0.00
55.00		451.36	910.98	0.00	0.00
60.00		451.40	892.55	0.00	0.00
65.00		450.63	874.11	0.00	0.00
67.50		223.92	430.14	0.00	0.00
70.00		223.50	425.53	0.00	0.00
75.00		409.19	837.24	0.00	0.00
80.00		402.19	818.81	0.00	0.00
85.00		394.59	800.38	0.00	0.00
90.00	(24) attachments	5353.91	4992.26	0.00	0.00
90.50		37.98	68.37	0.00	0.00
93.12		229.93	524.85	0.00	0.00
94.50		120.49	273.19	0.00	0.00
95.00		43.29	46.58	0.00	0.00
100.00	(11) attachments	3417.64	3290.67	0.00	0.00
105.00		427.62	442.69	0.00	0.00
107.87		242.61	249.11	0.00	0.00
110.00		178.79	182.52	0.00	0.00
114.00	(25) attachments	4190.15	4446.62	0.00	4944.64
115.00		67.82	74.20	0.00	0.00
120.00		333.89	364.37	0.00	0.00
125.00	(49) attachments	6632.64	5395.35	0.00	0.00
130.00		311.65	265.09	0.00	0.00
135.00	(24) attachments	5130.47	5111.51	0.00	0.00
140.00		288.20	222.57	0.00	0.00
140.50		28.06	21.65	0.00	0.00
Totals:		34,378.31	44,232.08	0.00	4,944.64

Linear Appurtenance Segment Forces (Factored)

Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



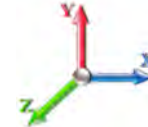
Page: 12

Load Case: 1.2D + 1.0W 118 mph Wind

Iterations 25

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)
1.00	1 1/4" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.104	1.012	28.680	0.00	1.58
1.00	1 5/8" Fiber	Yes	1.00	0.000	1.98	0.17	0.00	0.104	1.012	28.680	0.00	2.50
1.00	1.25" Reinforcing	Yes	1.00	0.000	1.25	0.10	0.00	0.104	1.012	28.680	0.00	0.00
1.00	1.25" Reinforcing	Yes	1.00	0.000	1.25	0.10	0.00	0.104	1.012	28.680	0.00	0.00
5.00	1 1/4" Fiber	Yes	4.00	0.000	0.00	0.00	0.00	0.105	1.015	28.680	0.00	6.34
5.00	1 5/8" Fiber	Yes	4.00	0.000	1.98	0.66	0.00	0.105	1.015	28.680	0.00	9.98
5.00	1.25" Reinforcing	Yes	4.00	0.000	1.25	0.42	0.00	0.105	1.015	28.680	0.00	0.00
5.00	1.25" Reinforcing	Yes	4.00	0.000	1.25	0.42	0.00	0.105	1.015	28.680	0.00	0.00
10.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	28.680	0.00	7.92
10.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.107	1.021	28.680	0.00	12.48
10.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.107	1.021	28.680	0.00	0.00
10.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.107	1.021	28.680	0.00	0.00
15.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	28.680	0.00	7.92
15.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.110	1.029	28.680	0.00	12.48
15.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.110	1.029	28.680	0.00	0.00
15.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.110	1.029	28.680	0.00	0.00
20.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.036	30.430	0.00	7.92
20.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.112	1.036	30.430	0.00	12.48
20.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.112	1.036	30.430	0.00	0.00
20.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.112	1.036	30.430	0.00	0.00
25.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.044	31.894	0.00	7.92
25.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.115	1.044	31.894	0.00	12.48
25.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.115	1.044	31.894	0.00	0.00
25.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.115	1.044	31.894	0.00	0.00
30.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.118	1.053	33.142	0.00	7.92
30.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.118	1.053	33.142	0.00	12.48
30.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.118	1.053	33.142	0.00	0.00
30.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.118	1.053	33.142	0.00	0.00
35.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.120	1.061	34.235	0.00	7.92
35.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.120	1.061	34.235	0.00	12.48
35.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.120	1.061	34.235	0.00	0.00
35.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.120	1.061	34.235	0.00	0.00
40.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.124	1.071	35.211	0.00	7.92
40.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.124	1.071	35.211	0.00	12.48
40.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.124	1.071	35.211	0.00	0.00
40.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.124	1.071	35.211	0.00	0.00
44.50	1 1/4" Fiber	Yes	4.50	0.000	0.00	0.00	0.00	0.112	1.037	36.011	0.00	7.13
44.50	1 5/8" Fiber	Yes	4.50	0.000	1.98	0.74	0.00	0.112	1.037	36.011	0.00	11.23
44.50	1" Reinforcing plate	Yes	4.50	0.000	1.00	0.38	0.00	0.112	1.037	36.011	0.00	0.00
44.50	1" Reinforcing plate	Yes	4.50	0.000	1.00	0.38	0.00	0.112	1.037	36.011	0.00	0.00
45.00	1 1/4" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.114	1.042	36.095	0.00	0.79
45.00	1 5/8" Fiber	Yes	0.50	0.000	1.98	0.08	0.00	0.114	1.042	36.095	0.00	1.25
45.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.114	1.042	36.095	0.00	0.00
45.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.114	1.042	36.095	0.00	0.00
50.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.116	1.047	36.905	0.00	7.92
50.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.116	1.047	36.905	0.00	12.48
50.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.116	1.047	36.905	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

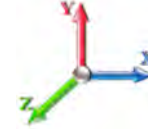


Page: 13

Load Case: 1.2D + 1.0W 118 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00

Iterations 25



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
50.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.116	1.047	36.905	0.00	0.00
55.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.117	1.050	37.653	0.00	7.92
55.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.117	1.050	37.653	0.00	12.48
55.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.117	1.050	37.653	0.00	0.00
55.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.117	1.050	37.653	0.00	0.00
60.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.120	1.060	38.349	0.00	7.92
60.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.120	1.060	38.349	0.00	12.48
60.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.120	1.060	38.349	0.00	0.00
60.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.120	1.060	38.349	0.00	0.00
65.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.070	39.001	0.00	7.92
65.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.123	1.070	39.001	0.00	12.48
65.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.123	1.070	39.001	0.00	0.00
65.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.123	1.070	39.001	0.00	0.00
67.50	1 1/4" Fiber	Yes	2.50	0.000	0.00	0.00	0.00	0.126	1.078	39.312	0.00	3.96
67.50	1 5/8" Fiber	Yes	2.50	0.000	1.98	0.41	0.00	0.126	1.078	39.312	0.00	6.24
67.50	1" Reinforcing plate	Yes	2.50	0.000	1.00	0.21	0.00	0.126	1.078	39.312	0.00	0.00
67.50	1" Reinforcing plate	Yes	2.50	0.000	1.00	0.21	0.00	0.126	1.078	39.312	0.00	0.00
70.00	1 1/4" Fiber	Yes	2.50	0.000	0.00	0.00	0.00	0.128	1.084	39.614	0.00	3.96
70.00	1 5/8" Fiber	Yes	2.50	0.000	1.98	0.41	0.00	0.128	1.084	39.614	0.00	6.24
70.00	1" Reinforcing plate	Yes	2.50	0.000	1.00	0.21	0.00	0.128	1.084	39.614	0.00	0.00
70.00	1" Reinforcing plate	Yes	2.50	0.000	1.00	0.21	0.00	0.128	1.084	39.614	0.00	0.00
75.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.065	0.000	40.194	0.00	7.92
75.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.065	0.000	40.194	0.00	12.48
80.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.067	0.000	40.743	0.00	7.92
80.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.067	0.000	40.743	0.00	12.48
85.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	41.267	0.00	7.92
85.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.069	0.000	41.267	0.00	12.48
90.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	41.766	0.00	7.92
90.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.072	0.000	41.766	0.00	12.48
90.50	1 1/4" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.073	0.000	41.815	0.00	0.79
90.50	1 5/8" Fiber	Yes	0.50	0.000	1.98	0.08	0.00	0.073	0.000	41.815	0.00	1.25
93.12	1 1/4" Fiber	Yes	2.62	0.000	0.00	0.00	0.00	0.148	1.145	42.067	0.00	4.15
93.12	1 5/8" Fiber	Yes	2.62	0.000	1.98	0.43	0.00	0.148	1.145	42.067	0.00	6.54
93.12	1" Reinforcing plate	Yes	2.62	0.000	1.00	0.22	0.00	0.148	1.145	42.067	0.00	0.00
93.12	1" Reinforcing plate	Yes	2.62	0.000	1.00	0.22	0.00	0.148	1.145	42.067	0.00	0.00
94.50	1 1/4" Fiber	Yes	1.38	0.000	0.00	0.00	0.00	0.150	1.151	42.198	0.00	2.19
94.50	1 5/8" Fiber	Yes	1.38	0.000	1.98	0.23	0.00	0.150	1.151	42.198	0.00	3.44
94.50	1" Reinforcing plate	Yes	1.38	0.000	1.00	0.11	0.00	0.150	1.151	42.198	0.00	0.00
94.50	1" Reinforcing plate	Yes	1.38	0.000	1.00	0.11	0.00	0.150	1.151	42.198	0.00	0.00
95.00	1 1/4" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.149	1.147	42.244	0.00	0.79
95.00	1 5/8" Fiber	Yes	0.50	0.000	1.98	0.08	0.00	0.149	1.147	42.244	0.00	1.25
95.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.149	1.147	42.244	0.00	0.00
95.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.149	1.147	42.244	0.00	0.00
100.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.152	1.156	42.703	0.00	7.92
100.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.152	1.156	42.703	0.00	12.48
100.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.152	1.156	42.703	0.00	0.00
100.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.152	1.156	42.703	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

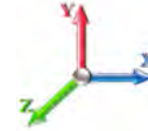
Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 14

Load Case: 1.2D + 1.0W 118 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
105.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.158	1.173	43.144	0.00	7.92
105.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.158	1.173	43.144	0.00	12.48
105.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.158	1.173	43.144	0.00	0.00
105.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.158	1.173	43.144	0.00	0.00
107.87	1 1/4" Fiber	Yes	2.87	0.000	0.00	0.00	0.00	0.162	1.187	43.390	0.00	4.55
107.87	1 5/8" Fiber	Yes	2.87	0.000	1.98	0.47	0.00	0.162	1.187	43.390	0.00	7.16
107.87	1" Reinforcing plate	Yes	2.87	0.000	1.00	0.24	0.00	0.162	1.187	43.390	0.00	0.00
107.87	1" Reinforcing plate	Yes	2.87	0.000	1.00	0.24	0.00	0.162	1.187	43.390	0.00	0.00
110.00	1 1/4" Fiber	Yes	2.13	0.000	0.00	0.00	0.00	0.165	1.196	43.569	0.00	3.37
110.00	1 5/8" Fiber	Yes	2.13	0.000	1.98	0.35	0.00	0.165	1.196	43.569	0.00	5.32
110.00	1" Reinforcing plate	Yes	2.13	0.000	1.00	0.18	0.00	0.165	1.196	43.569	0.00	0.00
110.00	1" Reinforcing plate	Yes	2.13	0.000	1.00	0.18	0.00	0.165	1.196	43.569	0.00	0.00
114.00	1 1/4" Fiber	Yes	4.00	0.000	0.00	0.00	0.00	0.095	0.000	43.898	0.00	6.34
114.00	1 5/8" Fiber	Yes	4.00	0.000	1.98	0.66	0.00	0.095	0.000	43.898	0.00	9.98
114.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.095	0.000	43.898	0.00	0.00
114.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.095	0.000	43.898	0.00	0.00
115.00	1 1/4" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.086	0.000	43.978	0.00	1.58
115.00	1 5/8" Fiber	Yes	1.00	0.000	1.98	0.17	0.00	0.086	0.000	43.978	0.00	2.50
120.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.088	0.000	44.374	0.00	7.92
120.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.088	0.000	44.374	0.00	12.48
125.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.092	0.000	44.757	0.00	7.92
125.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.092	0.000	44.757	0.00	12.48
130.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.096	0.000	45.128	0.00	7.92
130.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.096	0.000	45.128	0.00	12.48
135.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.100	1.001	45.488	0.00	7.92
135.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.100	1.001	45.488	0.00	12.48
Totals:											0.0	550.8

Calculated Forces

Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

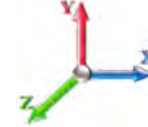


Page: 15

Load Case: 1.2D + 1.0W 118 mph Wind

Iterations 25

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	-44.21	-34.40	0.00	-3622.2	0.00	3622.25	3592.24	880.75	3081.19	3113.33	0.00	0.000	0.000	0.818
1.00	-43.87	-34.43	0.00	-3587.8	0.00	3587.85	3581.26	876.95	3054.64	3090.29	0.01	-0.063	0.000	0.723
5.00	-42.73	-34.28	0.00	-3450.1	0.00	3450.14	3536.93	861.73	2949.58	2998.63	0.15	-0.285	0.000	0.712
10.00	-41.34	-34.06	0.00	-3278.7	0.00	3278.74	3480.64	842.72	2820.85	2885.21	0.60	-0.562	0.000	0.696
15.00	-39.97	-33.84	0.00	-3108.4	0.00	3108.43	3423.37	823.70	2694.99	2773.12	1.34	-0.840	0.000	0.680
20.00	-38.63	-33.59	0.00	-2939.2	0.00	2939.24	3365.12	804.69	2572.00	2662.41	2.37	-1.119	0.000	0.704
25.00	-37.30	-33.33	0.00	-2771.2	0.00	2771.28	3305.89	785.67	2451.88	2553.15	3.70	-1.417	0.000	0.686
30.00	-36.00	-33.04	0.00	-2604.6	0.00	2604.65	3245.52	766.66	2334.64	2445.26	5.34	-1.715	0.000	0.666
35.00	-34.73	-32.73	0.00	-2439.4	0.00	2439.47	3165.03	747.64	2220.26	2324.87	7.30	-2.013	0.000	0.650
40.00	-33.49	-32.40	0.00	-2275.8	0.00	2275.82	3084.53	728.63	2108.76	2207.52	9.56	-2.311	0.000	0.689
44.50	-32.45	-32.06	0.00	-2130.0	0.00	2130.00	3012.08	711.52	2010.87	2104.51	11.88	-2.602	0.000	0.670
45.00	-32.18	-32.10	0.00	-2113.9	0.00	2113.97	3004.03	709.61	2000.14	2093.21	12.16	-2.635	0.000	0.660
50.00	-30.28	-31.73	0.00	-1953.4	0.00	1953.46	2423.81	587.47	1644.99	1680.79	15.08	-2.952	0.000	0.667
55.00	-29.22	-31.40	0.00	-1794.8	0.00	1794.80	2376.14	571.62	1557.44	1602.88	18.34	-3.265	0.000	0.685
60.00	-28.18	-31.05	0.00	-1637.8	0.00	1637.81	2327.49	555.78	1472.29	1526.13	21.94	-3.596	0.000	0.648
65.00	-27.21	-30.66	0.00	-1482.5	0.00	1482.54	2277.86	539.93	1389.54	1450.59	25.87	-3.920	0.000	0.610
67.50	-26.71	-30.48	0.00	-1405.8	0.00	1405.89	2252.16	532.01	1349.06	1412.97	27.97	-4.081	0.000	0.590
67.50	-26.71	-30.48	0.00	-1405.8	0.00	1405.89	2252.16	532.01	1349.06	1412.97	27.97	-4.081	0.000	0.590
70.00	-26.12	-30.39	0.00	-1329.6	0.00	1329.68	2218.62	524.08	1309.17	1370.99	30.15	-4.239	0.000	0.985
75.00	-25.05	-30.14	0.00	-1177.7	0.00	1177.74	2151.54	508.24	1231.20	1288.93	34.86	-4.761	0.000	0.929
80.00	-24.01	-29.87	0.00	-1027.0	0.00	1027.05	2084.46	492.39	1155.63	1209.39	40.12	-5.264	0.000	0.864
85.00	-23.02	-29.59	0.00	-877.68	0.00	877.68	2017.38	476.55	1082.45	1132.40	45.88	-5.741	0.000	0.790
90.00	-18.51	-23.82	0.00	-729.73	0.00	729.73	1950.30	460.70	1011.66	1057.93	52.12	-6.186	0.000	0.702
90.50	-18.39	-23.82	0.00	-717.81	0.00	717.81	1943.59	459.12	1004.71	1050.62	52.77	-6.230	0.000	0.695
93.12	-17.84	-23.58	0.00	-655.40	0.00	655.40	1908.44	450.81	968.70	1012.75	56.25	-6.453	0.000	0.368
94.50	-17.56	-23.44	0.00	-622.86	0.00	622.86	1035.36	273.09	592.44	557.40	58.12	-6.517	0.000	0.406
95.00	-17.46	-23.44	0.00	-611.14	0.00	611.14	1033.16	272.13	588.32	554.27	58.80	-6.540	0.000	0.500
100.00	-14.51	-19.72	0.00	-493.95	0.00	493.95	1010.63	262.63	547.93	523.10	65.78	-6.799	0.000	0.418
105.00	-14.06	-19.29	0.00	-395.34	0.00	395.34	987.11	253.12	508.98	492.30	73.01	-7.027	0.000	0.349
107.87	-13.81	-19.04	0.00	-339.99	0.00	339.99	973.17	247.66	487.27	474.80	77.26	-7.144	0.000	0.308
107.87	-13.81	-19.04	0.00	-339.99	0.00	339.99	973.17	247.66	487.27	474.80	77.26	-7.144	0.000	0.308
110.00	-13.58	-18.89	0.00	-299.44	0.00	299.44	962.61	243.61	471.46	461.91	80.46	-7.224	0.000	0.668
114.00	-9.67	-14.19	0.00	-218.94	0.00	218.94	942.31	236.01	442.48	437.94	86.63	-7.536	0.000	0.514
115.00	-9.56	-14.15	0.00	-204.75	0.00	204.75	937.13	234.11	435.38	431.99	88.21	-7.606	0.000	0.488
120.00	-9.18	-13.80	0.00	-134.03	0.00	134.03	910.67	224.60	400.73	402.61	96.32	-7.890	0.000	0.347
125.00	-4.75	-6.50	0.00	-65.01	0.00	65.01	883.23	215.09	367.52	373.80	104.67	-8.080	0.000	0.180
130.00	-4.52	-6.16	0.00	-32.53	0.00	32.53	854.80	205.58	335.75	345.64	113.16	-8.185	0.000	0.100
135.00	-0.20	-0.35	0.00	-1.75	0.00	1.75	825.39	196.08	305.42	318.16	121.74	-8.228	0.000	0.006
140.00	-0.02	-0.03	0.00	-0.02	0.00	0.02	789.80	186.57	276.52	289.54	130.32	-8.230	0.000	0.000
140.50	0.00	-0.03	0.00	0.00	0.00	0.00	785.78	185.62	273.70	286.58	131.18	-8.230	0.000	0.000

Wind Loading - Shaft

Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

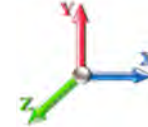


Page: 16

Load Case: 0.9D + 1.0W 118 mph Wind

Iterations 25

Dead Load Factor 0.90
Wind Load Factor 1.00



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00	RB1	1.00	0.85	28.680	31.55	390.90	0.730	0.000	0.00	0.000	0.00	0.0	0.0	0.0
1.00	RT1 RB2	1.00	0.85	28.680	31.55	389.23	0.739 *	0.000	1.00	3.592	2.65	83.7	0.0	153.4
5.00		1.00	0.85	28.680	31.55	382.54	0.741 *	0.000	4.00	14.214	10.53	332.3	0.0	606.8
10.00		1.00	0.85	28.680	31.55	374.17	0.746 *	0.000	5.00	17.421	12.99	409.8	0.0	743.6
15.00		1.00	0.85	28.680	31.55	365.81	0.751 *	0.000	5.00	17.036	12.79	403.6	0.0	727.0
20.00	RT2 RB3	1.00	0.90	30.430	33.47	368.19	0.757 *	0.000	5.00	16.650	12.60	421.6	0.0	710.4
25.00		1.00	0.95	31.894	35.08	368.12	0.762 *	0.000	5.00	16.265	12.40	435.0	0.0	693.8
30.00		1.00	0.98	33.142	36.46	366.26	0.768 *	0.000	5.00	15.880	12.20	444.9	0.0	677.2
35.00		1.00	1.01	34.235	37.66	363.12	0.775 *	0.000	5.00	15.495	12.01	452.1	0.0	660.6
40.00	RT3 RB4	1.00	1.04	35.211	38.73	358.99	0.782 *	0.000	5.00	15.110	11.81	457.4	0.0	644.0
44.50	Bot - Section 2	1.00	1.07	36.011	39.61	354.60	0.757 *	0.000	4.50	13.270	10.05	398.1	0.0	565.4
45.00		1.00	1.07	36.095	39.70	354.08	0.761 *	0.000	0.50	1.482	1.13	44.7	0.0	114.7
50.00	Top - Section 1	1.00	1.09	36.905	40.60	348.54	0.764 *	0.000	5.00	14.604	11.16	453.1	0.0	1130.3
55.00		1.00	1.12	37.653	41.42	349.05	0.766 *	0.000	5.00	14.219	10.90	451.4	0.0	505.7
60.00	RT4 RB5	1.00	1.14	38.349	42.18	342.59	0.774 *	0.000	5.00	13.834	10.70	451.4	0.0	491.8
65.00		1.00	1.16	39.001	42.90	335.73	0.781 *	0.000	5.00	13.448	10.50	450.6	0.0	478.0
67.50	RT5	1.00	1.17	39.312	43.24	332.17	0.787 *	0.000	2.50	6.580	5.18	223.9	0.0	233.8
70.00		1.00	1.17	39.614	43.58	328.53	0.791 *	0.000	2.50	6.484	5.13	223.5	0.0	230.4
75.00		1.00	1.19	40.194	44.21	321.02	0.730	0.000	5.00	12.678	9.26	409.2	0.0	450.4
80.00		1.00	1.21	40.743	44.82	313.24	0.730	0.000	5.00	12.293	8.97	402.2	0.0	436.5
85.00		1.00	1.22	41.267	45.39	305.21	0.730	0.000	5.00	11.908	8.69	394.6	0.0	422.7
90.00	Appurtenance(s)	1.00	1.24	41.766	45.94	296.96	0.730	0.000	5.00	11.523	8.41	386.5	0.0	408.9
90.50	Bot - Section 3	1.00	1.24	41.815	46.00	296.12	0.730	0.000	0.50	1.131	0.83	38.0	0.0	40.1
93.12	RB6	1.00	1.25	42.067	46.27	291.70	0.836 *	0.000	2.62	5.947	4.97	229.9	0.0	335.2
94.50	Top - Section 2	1.00	1.25	42.198	46.42	289.36	0.840 *	0.000	1.38	3.090	2.60	120.5	0.0	174.1
95.00		1.00	1.25	42.244	46.47	292.68	0.838 *	0.000	0.50	1.112	0.93	43.3	0.0	23.8
100.00	Appurtenance(s)	1.00	1.27	42.703	46.97	284.06	0.844 *	0.000	5.00	10.911	9.21	432.5	0.0	233.3
105.00		1.00	1.28	43.144	47.46	275.26	0.856 *	0.000	5.00	10.526	9.01	427.6	0.0	225.0
107.87	RT6	1.00	1.29	43.390	47.73	270.14	0.866 *	0.000	2.87	5.868	5.08	242.6	0.0	125.4
110.00		1.00	1.29	43.569	47.93	266.31	0.873 *	0.000	2.13	4.273	3.73	178.8	0.0	91.3
114.00	Appurtenance(s)	1.00	1.30	43.898	48.29	259.03	0.730	0.000	4.00	7.835	5.72	276.2	0.0	167.4
115.00		1.00	1.30	43.978	48.38	257.20	0.730	0.000	1.00	1.920	1.40	67.8	0.0	41.0
120.00		1.00	1.32	44.374	48.81	247.95	0.730	0.000	5.00	9.370	6.84	333.9	0.0	200.1
125.00	Appurtenance(s)	1.00	1.33	44.757	49.23	238.56	0.730	0.000	5.00	8.985	6.56	322.9	0.0	191.8
130.00		1.00	1.34	45.128	49.64	229.06	0.730	0.000	5.00	8.600	6.28	311.7	0.0	183.5
135.00	Appurtenance(s)	1.00	1.35	45.488	50.04	219.43	0.731 *	0.000	5.00	8.215	6.00	300.5	0.0	175.2
140.00		1.00	1.36	45.838	50.42	209.70	0.730	0.000	5.00	7.830	5.72	288.2	0.0	166.9
140.50		1.00	1.36	45.872	50.46	208.72	0.730	0.000	0.50	0.762	0.56	28.1	0.0	16.2
Totals:									140.50			11,372.0		13,475.8

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 17

Load Case: 0.9D + 1.0W 118 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.00



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	135.00	Commscope	3	45.488	50.037	0.73	0.80	0.70	29.70	0.000	0.000	34.97	0.00	0.00
2	135.00	Air 32	3	45.488	50.037	0.70	0.80	13.59	356.94	0.000	0.000	680.15	0.00	0.00
3	135.00	AIR6449 B41	3	45.488	50.037	0.64	0.80	10.85	278.10	0.000	0.000	542.80	0.00	0.00
4	135.00	APXVAARR24_43-U-NA2	3	45.488	50.037	0.56	0.80	34.00	345.60	0.000	0.000	1701.42	0.00	0.00
5	135.00	Sector Frame	3	45.488	50.037	0.56	0.75	25.31	2205.90	0.000	0.000	1266.56	0.00	0.00
6	135.00	Ericsson RRUS11 B4	3	45.488	50.037	0.54	0.80	4.13	118.80	0.000	0.000	206.78	0.00	0.00
7	135.00	Ericsson 4415 B25	3	45.488	50.037	0.54	0.80	2.99	119.07	0.000	0.000	149.65	0.00	0.00
8	135.00	Ericsson Radio 4449	3	45.488	50.037	0.00	0.80	4.95	189.00	0.000	0.000	247.68	0.00	0.00
9	125.00	Raycap DC6-48-60-18-8F	3	44.757	49.233	0.50	0.75	2.22	88.56	0.000	0.000	109.10	0.00	0.00
10	125.00	Kathrein 782 10250	6	44.757	49.233	0.50	0.75	1.57	34.56	0.000	0.000	77.19	0.00	0.00
11	125.00	CCI OPA-65R-LCUU-H6	3	44.757	49.233	0.59	0.75	17.17	197.10	0.000	0.000	845.36	0.00	0.00
12	125.00	CCI DTMAPB7819VG12A	6	44.757	49.233	0.50	0.75	3.44	102.60	0.000	0.000	169.22	0.00	0.00
13	125.00	QS66512-2	3	44.757	49.233	0.69	0.75	16.83	299.70	0.000	0.000	828.54	0.00	0.00
14	125.00	Platform w/ Hand Rails	1	44.757	49.233	1.00	1.00	40.00	1800.00	0.000	0.000	1969.31	0.00	0.00
15	125.00	B14 4478	3	44.757	49.233	0.50	0.75	2.49	160.38	0.000	0.000	122.46	0.00	0.00
16	125.00	Ericsson RRUS-11	3	44.757	49.233	0.50	0.75	3.80	145.80	0.000	0.000	187.03	0.00	0.00
17	125.00	Ericsson RRUS-32	6	44.757	49.233	0.50	0.75	7.60	415.80	0.000	0.000	374.06	0.00	0.00
18	125.00	Kathrein 800-10121	3	44.757	49.233	0.59	0.75	9.15	119.07	0.000	0.000	450.68	0.00	0.00
19	125.00	HPA-65R-BUU-H6	3	44.757	49.233	0.64	0.75	18.47	137.70	0.000	0.000	909.56	0.00	0.00
20	125.00	RRUS 32 B66	3	44.757	49.233	0.50	0.75	4.13	143.10	0.000	0.000	203.36	0.00	0.00
21	125.00	DBC0061F1V51-2	6	44.757	49.233	0.50	0.75	1.30	137.16	0.000	0.000	63.83	0.00	0.00
22	114.00	Low Profile Platform	1	43.898	48.287	1.00	1.00	25.00	1620.00	0.000	0.000	1207.18	0.00	0.00
23	114.00	Alcatel Lucent	3	44.138	48.552	0.40	0.80	3.25	162.00	0.000	3.000	157.89	0.00	473.67
24	114.00	Samsung	3	43.816	48.198	0.40	0.80	2.18	89.37	0.000	-1.000	105.26	0.00	-105.26
25	114.00	Andrew VHLP1-23-DW1	1	44.257	48.682	1.00	1.00	1.61	12.60	0.000	4.500	78.38	0.00	352.70
26	114.00	Andrew VHLP2-23-DW1	1	44.257	48.682	1.00	1.00	4.69	27.90	0.000	4.500	228.32	0.00	1027.44
27	114.00	Argus LLPX310R-V1	3	43.938	48.332	0.55	0.80	7.14	136.89	0.000	0.500	344.96	0.00	172.48
28	114.00	Alcatel Lucent	3	43.775	48.153	0.40	0.80	2.88	172.80	0.000	-1.500	138.68	0.00	-208.02
29	114.00	20" x 18" x 9" Junction Box	1	43.898	48.287	0.40	0.80	1.26	18.00	0.000	0.000	60.84	0.00	0.00
30	114.00	RFS APXVTM14	3	44.138	48.552	0.63	0.80	12.02	315.09	0.000	3.000	583.63	0.00	1750.88
31	114.00	RFS APXVSP18	3	43.978	48.376	0.66	0.80	15.98	338.31	0.000	1.000	772.85	0.00	772.85
32	114.00	Alcatel Lucent	3	44.138	48.552	0.40	0.80	4.86	189.00	0.000	3.000	235.96	0.00	707.89
33	100.00	JMA Wireless	3	42.703	46.973	0.55	0.75	20.80	174.15	0.000	0.000	976.85	0.00	0.00
34	100.00	Fujitsu TA08025-B605 -	3	42.703	46.973	0.38	0.75	2.21	202.50	0.000	0.000	103.58	0.00	0.00
35	100.00	Raycap	1	42.703	46.973	0.38	0.75	0.75	19.71	0.000	0.000	35.41	0.00	0.00
36	100.00	Fujitsu TA08025-B604 -	3	42.703	46.973	0.38	0.75	2.21	172.53	0.000	0.000	103.58	0.00	0.00
37	100.00	Platform w/HRK	1	42.703	46.973	1.00	1.00	37.59	1554.30	0.000	0.000	1765.73	0.00	0.00
38	90.00	RFS DB-T1-6Z-8AB-0Z	2	41.766	45.943	0.71	1.00	6.82	34.02	0.000	0.000	313.15	0.00	0.00
39	90.00	Alcatel Lucent B2/B66A	3	41.766	45.943	0.50	0.75	2.83	227.88	0.000	0.000	130.21	0.00	0.00
40	90.00	Samsung B5/B13	3	41.766	45.943	0.50	0.75	2.83	189.81	0.000	0.000	130.21	0.00	0.00
41	90.00	XXDWMM-12.5-65-8T	3	41.766	45.943	0.55	0.75	2.55	235.71	0.000	0.000	117.04	0.00	0.00
42	90.00	L-Sub6 Antenna	3	41.766	45.943	0.63	0.75	7.62	220.32	0.000	0.000	349.93	0.00	0.00
43	90.00	SLCP 2x6014	3	41.766	45.943	0.67	0.75	13.00	54.00	0.000	0.000	597.09	0.00	0.00
44	90.00	SBNHH-1D65B w/ Mount	6	41.766	45.943	0.62	0.75	30.48	216.00	0.000	0.000	1400.23	0.00	0.00
45	90.00	Platform w/ Hand Rails	1	41.766	45.943	1.00	1.00	42.00	1980.00	0.000	0.000	1929.61	0.00	0.00

Totals: 15,787.53

23,006.29

Total Applied Force Summary

Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 18

Load Case: 0.9D + 1.0W 118 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.00



Iterations 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
1.00		83.70	188.88	0.00	0.00
5.00		332.31	748.87	0.00	0.00
10.00		409.80	921.15	0.00	0.00
15.00		403.60	904.56	0.00	0.00
20.00		421.64	887.97	0.00	0.00
25.00		435.02	871.38	0.00	0.00
30.00		444.87	854.79	0.00	0.00
35.00		452.13	838.20	0.00	0.00
40.00		457.40	821.61	0.00	0.00
44.50		398.07	725.26	0.00	0.00
45.00		44.74	132.46	0.00	0.00
50.00		453.10	1307.91	0.00	0.00
55.00		451.36	683.23	0.00	0.00
60.00		451.40	669.41	0.00	0.00
65.00		450.63	655.58	0.00	0.00
67.50		223.92	322.61	0.00	0.00
70.00		223.50	319.15	0.00	0.00
75.00		409.19	627.93	0.00	0.00
80.00		402.19	614.11	0.00	0.00
85.00		394.59	600.28	0.00	0.00
90.00	(24) attachments	5353.91	3744.20	0.00	0.00
90.50		37.98	51.28	0.00	0.00
93.12		229.93	393.63	0.00	0.00
94.50		120.49	204.89	0.00	0.00
95.00		43.29	34.94	0.00	0.00
100.00	(11) attachments	3417.64	2468.00	0.00	0.00
105.00		427.62	332.02	0.00	0.00
107.87		242.61	186.83	0.00	0.00
110.00		178.79	136.89	0.00	0.00
114.00	(25) attachments	4190.15	3334.96	0.00	4944.64
115.00		67.82	55.65	0.00	0.00
120.00		333.89	273.28	0.00	0.00
125.00	(49) attachments	6632.64	4046.52	0.00	0.00
130.00		311.65	198.82	0.00	0.00
135.00	(24) attachments	5130.47	3833.63	0.00	0.00
140.00		288.20	166.93	0.00	0.00
140.50		28.06	16.24	0.00	0.00
	Totals:	34,378.31	33,174.06	0.00	4,944.64

Linear Appurtenance Segment Forces (Factored)

Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



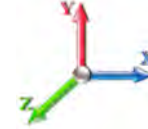
Page: 19

Load Case: 0.9D + 1.0W 118 mph Wind

Iterations 25

Dead Load Factor 0.90

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)
1.00	1 1/4" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.104	1.012	28.680	0.00	1.19
1.00	1 5/8" Fiber	Yes	1.00	0.000	1.98	0.17	0.00	0.104	1.012	28.680	0.00	1.87
1.00	1.25" Reinforcing	Yes	1.00	0.000	1.25	0.10	0.00	0.104	1.012	28.680	0.00	0.00
1.00	1.25" Reinforcing	Yes	1.00	0.000	1.25	0.10	0.00	0.104	1.012	28.680	0.00	0.00
5.00	1 1/4" Fiber	Yes	4.00	0.000	0.00	0.00	0.00	0.105	1.015	28.680	0.00	4.75
5.00	1 5/8" Fiber	Yes	4.00	0.000	1.98	0.66	0.00	0.105	1.015	28.680	0.00	7.49
5.00	1.25" Reinforcing	Yes	4.00	0.000	1.25	0.42	0.00	0.105	1.015	28.680	0.00	0.00
5.00	1.25" Reinforcing	Yes	4.00	0.000	1.25	0.42	0.00	0.105	1.015	28.680	0.00	0.00
10.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	28.680	0.00	5.94
10.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.107	1.021	28.680	0.00	9.36
10.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.107	1.021	28.680	0.00	0.00
10.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.107	1.021	28.680	0.00	0.00
15.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	28.680	0.00	5.94
15.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.110	1.029	28.680	0.00	9.36
15.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.110	1.029	28.680	0.00	0.00
15.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.110	1.029	28.680	0.00	0.00
20.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.036	30.430	0.00	5.94
20.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.112	1.036	30.430	0.00	9.36
20.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.112	1.036	30.430	0.00	0.00
20.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.112	1.036	30.430	0.00	0.00
25.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.044	31.894	0.00	5.94
25.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.115	1.044	31.894	0.00	9.36
25.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.115	1.044	31.894	0.00	0.00
25.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.115	1.044	31.894	0.00	0.00
30.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.118	1.053	33.142	0.00	5.94
30.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.118	1.053	33.142	0.00	9.36
30.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.118	1.053	33.142	0.00	0.00
30.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.118	1.053	33.142	0.00	0.00
35.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.120	1.061	34.235	0.00	5.94
35.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.120	1.061	34.235	0.00	9.36
35.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.120	1.061	34.235	0.00	0.00
35.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.120	1.061	34.235	0.00	0.00
40.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.124	1.071	35.211	0.00	5.94
40.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.124	1.071	35.211	0.00	9.36
40.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.124	1.071	35.211	0.00	0.00
40.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.124	1.071	35.211	0.00	0.00
44.50	1 1/4" Fiber	Yes	4.50	0.000	0.00	0.00	0.00	0.112	1.037	36.011	0.00	5.35
44.50	1 5/8" Fiber	Yes	4.50	0.000	1.98	0.74	0.00	0.112	1.037	36.011	0.00	8.42
44.50	1" Reinforcing plate	Yes	4.50	0.000	1.00	0.38	0.00	0.112	1.037	36.011	0.00	0.00
44.50	1" Reinforcing plate	Yes	4.50	0.000	1.00	0.38	0.00	0.112	1.037	36.011	0.00	0.00
45.00	1 1/4" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.114	1.042	36.095	0.00	0.59
45.00	1 5/8" Fiber	Yes	0.50	0.000	1.98	0.08	0.00	0.114	1.042	36.095	0.00	0.94
45.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.114	1.042	36.095	0.00	0.00
45.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.114	1.042	36.095	0.00	0.00
50.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.116	1.047	36.905	0.00	5.94
50.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.116	1.047	36.905	0.00	9.36
50.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.116	1.047	36.905	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



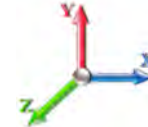
Page: 20

Load Case: 0.9D + 1.0W 118 mph Wind

Iterations 25

Dead Load Factor 0.90

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)
50.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.116	1.047	36.905	0.00	0.00
55.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.117	1.050	37.653	0.00	5.94
55.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.117	1.050	37.653	0.00	9.36
55.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.117	1.050	37.653	0.00	0.00
55.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.117	1.050	37.653	0.00	0.00
60.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.120	1.060	38.349	0.00	5.94
60.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.120	1.060	38.349	0.00	9.36
60.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.120	1.060	38.349	0.00	0.00
60.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.120	1.060	38.349	0.00	0.00
65.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.070	39.001	0.00	5.94
65.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.123	1.070	39.001	0.00	9.36
65.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.123	1.070	39.001	0.00	0.00
65.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.123	1.070	39.001	0.00	0.00
67.50	1 1/4" Fiber	Yes	2.50	0.000	0.00	0.00	0.00	0.126	1.078	39.312	0.00	2.97
67.50	1 5/8" Fiber	Yes	2.50	0.000	1.98	0.41	0.00	0.126	1.078	39.312	0.00	4.68
67.50	1" Reinforcing plate	Yes	2.50	0.000	1.00	0.21	0.00	0.126	1.078	39.312	0.00	0.00
67.50	1" Reinforcing plate	Yes	2.50	0.000	1.00	0.21	0.00	0.126	1.078	39.312	0.00	0.00
70.00	1 1/4" Fiber	Yes	2.50	0.000	0.00	0.00	0.00	0.128	1.084	39.614	0.00	2.97
70.00	1 5/8" Fiber	Yes	2.50	0.000	1.98	0.41	0.00	0.128	1.084	39.614	0.00	4.68
70.00	1" Reinforcing plate	Yes	2.50	0.000	1.00	0.21	0.00	0.128	1.084	39.614	0.00	0.00
70.00	1" Reinforcing plate	Yes	2.50	0.000	1.00	0.21	0.00	0.128	1.084	39.614	0.00	0.00
75.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.065	0.000	40.194	0.00	5.94
75.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.065	0.000	40.194	0.00	9.36
80.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.067	0.000	40.743	0.00	5.94
80.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.067	0.000	40.743	0.00	9.36
85.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	41.267	0.00	5.94
85.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.069	0.000	41.267	0.00	9.36
90.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	41.766	0.00	5.94
90.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.072	0.000	41.766	0.00	9.36
90.50	1 1/4" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.073	0.000	41.815	0.00	0.59
90.50	1 5/8" Fiber	Yes	0.50	0.000	1.98	0.08	0.00	0.073	0.000	41.815	0.00	0.94
93.12	1 1/4" Fiber	Yes	2.62	0.000	0.00	0.00	0.00	0.148	1.145	42.067	0.00	3.11
93.12	1 5/8" Fiber	Yes	2.62	0.000	1.98	0.43	0.00	0.148	1.145	42.067	0.00	4.90
93.12	1" Reinforcing plate	Yes	2.62	0.000	1.00	0.22	0.00	0.148	1.145	42.067	0.00	0.00
93.12	1" Reinforcing plate	Yes	2.62	0.000	1.00	0.22	0.00	0.148	1.145	42.067	0.00	0.00
94.50	1 1/4" Fiber	Yes	1.38	0.000	0.00	0.00	0.00	0.150	1.151	42.198	0.00	1.64
94.50	1 5/8" Fiber	Yes	1.38	0.000	1.98	0.23	0.00	0.150	1.151	42.198	0.00	2.58
94.50	1" Reinforcing plate	Yes	1.38	0.000	1.00	0.11	0.00	0.150	1.151	42.198	0.00	0.00
94.50	1" Reinforcing plate	Yes	1.38	0.000	1.00	0.11	0.00	0.150	1.151	42.198	0.00	0.00
95.00	1 1/4" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.149	1.147	42.244	0.00	0.59
95.00	1 5/8" Fiber	Yes	0.50	0.000	1.98	0.08	0.00	0.149	1.147	42.244	0.00	0.94
95.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.149	1.147	42.244	0.00	0.00
95.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.149	1.147	42.244	0.00	0.00
100.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.152	1.156	42.703	0.00	5.94
100.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.152	1.156	42.703	0.00	9.36
100.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.152	1.156	42.703	0.00	0.00
100.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.152	1.156	42.703	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 21

Load Case: 0.9D + 1.0W 118 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.00



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
105.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.158	1.173	43.144	0.00	5.94
105.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.158	1.173	43.144	0.00	9.36
105.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.158	1.173	43.144	0.00	0.00
105.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.158	1.173	43.144	0.00	0.00
107.87	1 1/4" Fiber	Yes	2.87	0.000	0.00	0.00	0.00	0.162	1.187	43.390	0.00	3.41
107.87	1 5/8" Fiber	Yes	2.87	0.000	1.98	0.47	0.00	0.162	1.187	43.390	0.00	5.37
107.87	1" Reinforcing plate	Yes	2.87	0.000	1.00	0.24	0.00	0.162	1.187	43.390	0.00	0.00
107.87	1" Reinforcing plate	Yes	2.87	0.000	1.00	0.24	0.00	0.162	1.187	43.390	0.00	0.00
110.00	1 1/4" Fiber	Yes	2.13	0.000	0.00	0.00	0.00	0.165	1.196	43.569	0.00	2.53
110.00	1 5/8" Fiber	Yes	2.13	0.000	1.98	0.35	0.00	0.165	1.196	43.569	0.00	3.99
110.00	1" Reinforcing plate	Yes	2.13	0.000	1.00	0.18	0.00	0.165	1.196	43.569	0.00	0.00
110.00	1" Reinforcing plate	Yes	2.13	0.000	1.00	0.18	0.00	0.165	1.196	43.569	0.00	0.00
114.00	1 1/4" Fiber	Yes	4.00	0.000	0.00	0.00	0.00	0.095	0.000	43.898	0.00	4.75
114.00	1 5/8" Fiber	Yes	4.00	0.000	1.98	0.66	0.00	0.095	0.000	43.898	0.00	7.49
114.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.095	0.000	43.898	0.00	0.00
114.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.095	0.000	43.898	0.00	0.00
115.00	1 1/4" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.086	0.000	43.978	0.00	1.19
115.00	1 5/8" Fiber	Yes	1.00	0.000	1.98	0.17	0.00	0.086	0.000	43.978	0.00	1.87
120.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.088	0.000	44.374	0.00	5.94
120.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.088	0.000	44.374	0.00	9.36
125.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.092	0.000	44.757	0.00	5.94
125.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.092	0.000	44.757	0.00	9.36
130.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.096	0.000	45.128	0.00	5.94
130.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.096	0.000	45.128	0.00	9.36
135.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.100	1.001	45.488	0.00	5.94
135.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.100	1.001	45.488	0.00	9.36
Totals:											0.0	413.1

Calculated Forces

Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

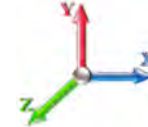


Page: 22

Load Case: 0.9D + 1.0W 118 mph Wind

Iterations 25

Dead Load Factor 0.90
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	-33.15	-34.40	0.00	-3566.7	0.00	3566.75	3592.24	880.75	3081.19	3113.33	0.00	0.000	0.000	0.803
1.00	-32.88	-34.39	0.00	-3532.3	0.00	3532.36	3581.26	876.95	3054.64	3090.29	0.01	-0.062	0.000	0.710
5.00	-31.99	-34.20	0.00	-3394.7	0.00	3394.78	3536.93	861.73	2949.58	2998.63	0.15	-0.280	0.000	0.698
10.00	-30.91	-33.93	0.00	-3223.8	0.00	3223.80	3480.64	842.72	2820.85	2885.21	0.59	-0.553	0.000	0.683
15.00	-29.85	-33.66	0.00	-3054.1	0.00	3054.16	3423.37	823.70	2694.99	2773.12	1.32	-0.826	0.000	0.666
20.00	-28.80	-33.36	0.00	-2885.8	0.00	2885.88	3365.12	804.69	2572.00	2662.41	2.33	-1.101	0.000	0.690
25.00	-27.77	-33.05	0.00	-2719.0	0.00	2719.07	3305.89	785.67	2451.88	2553.15	3.64	-1.393	0.000	0.671
30.00	-26.76	-32.72	0.00	-2553.8	0.00	2553.81	3245.52	766.66	2334.64	2445.26	5.25	-1.685	0.000	0.652
35.00	-25.77	-32.37	0.00	-2390.2	0.00	2390.21	3165.03	747.64	2220.26	2324.87	7.17	-1.978	0.000	0.635
40.00	-24.81	-32.01	0.00	-2228.3	0.00	2228.35	3084.53	728.63	2108.76	2207.52	9.40	-2.269	0.000	0.673
44.50	-24.02	-31.65	0.00	-2084.3	0.00	2084.30	3012.08	711.52	2010.87	2104.51	11.67	-2.554	0.000	0.654
45.00	-23.79	-31.67	0.00	-2068.4	0.00	2068.47	3004.03	709.61	2000.14	2093.21	11.94	-2.586	0.000	0.644
50.00	-22.34	-31.28	0.00	-1910.1	0.00	1910.12	2423.81	587.47	1644.99	1680.79	14.82	-2.896	0.000	0.650
55.00	-21.51	-30.91	0.00	-1753.7	0.00	1753.75	2376.14	571.62	1557.44	1602.88	18.01	-3.202	0.000	0.667
60.00	-20.70	-30.53	0.00	-1599.2	0.00	1599.21	2327.49	555.78	1472.29	1526.13	21.54	-3.525	0.000	0.631
65.00	-19.95	-30.12	0.00	-1446.5	0.00	1446.55	2277.86	539.93	1389.54	1450.59	25.40	-3.841	0.000	0.594
67.50	-19.56	-29.93	0.00	-1371.2	0.00	1371.24	2252.16	532.01	1349.06	1412.97	27.45	-3.999	0.000	0.574
67.50	-19.56	-29.93	0.00	-1371.2	0.00	1371.24	2252.16	532.01	1349.06	1412.97	27.45	-3.999	0.000	0.574
70.00	-19.08	-29.80	0.00	-1296.4	0.00	1296.41	2218.62	524.08	1309.17	1370.99	29.58	-4.153	0.000	0.957
75.00	-18.23	-29.50	0.00	-1147.4	0.00	1147.42	2151.54	508.24	1231.20	1288.93	34.20	-4.662	0.000	0.902
80.00	-17.41	-29.20	0.00	-999.91	0.00	999.91	2084.46	492.39	1155.63	1209.39	39.35	-5.151	0.000	0.839
85.00	-16.63	-28.88	0.00	-853.94	0.00	853.94	2017.38	476.55	1082.45	1132.40	44.99	-5.616	0.000	0.766
90.00	-13.35	-23.22	0.00	-709.56	0.00	709.56	1950.30	460.70	1011.66	1057.93	51.09	-6.049	0.000	0.680
90.50	-13.25	-23.21	0.00	-697.94	0.00	697.94	1943.59	459.12	1004.71	1050.62	51.73	-6.092	0.000	0.674
93.12	-12.83	-22.97	0.00	-637.13	0.00	637.13	1908.44	450.81	968.70	1012.75	55.13	-6.308	0.000	0.356
94.50	-12.62	-22.84	0.00	-605.43	0.00	605.43	1035.36	273.09	592.44	557.40	56.96	-6.370	0.000	0.393
95.00	-12.54	-22.82	0.00	-594.01	0.00	594.01	1033.16	272.13	588.32	554.27	57.62	-6.393	0.000	0.483
100.00	-10.39	-19.19	0.00	-479.90	0.00	479.90	1010.63	262.63	547.93	523.10	64.44	-6.645	0.000	0.404
105.00	-10.06	-18.75	0.00	-383.96	0.00	383.96	987.11	253.12	508.98	492.30	71.51	-6.866	0.000	0.337
107.87	-9.87	-18.51	0.00	-330.14	0.00	330.14	973.17	247.66	487.27	474.80	75.66	-6.980	0.000	0.297
107.87	-9.87	-18.51	0.00	-330.14	0.00	330.14	973.17	247.66	487.27	474.80	75.66	-6.980	0.000	0.297
110.00	-9.70	-18.35	0.00	-290.72	0.00	290.72	962.61	243.61	471.46	461.91	78.78	-7.057	0.000	0.645
114.00	-6.87	-13.79	0.00	-212.39	0.00	212.39	942.31	236.01	442.48	437.94	84.82	-7.360	0.000	0.496
115.00	-6.78	-13.74	0.00	-198.59	0.00	198.59	937.13	234.11	435.38	431.99	86.36	-7.428	0.000	0.470
120.00	-6.50	-13.40	0.00	-129.90	0.00	129.90	910.67	224.60	400.73	402.61	94.28	-7.704	0.000	0.333
125.00	-3.38	-6.29	0.00	-62.90	0.00	62.90	883.23	215.09	367.52	373.80	102.43	-7.887	0.000	0.173
130.00	-3.22	-5.95	0.00	-31.48	0.00	31.48	854.80	205.58	335.75	345.64	110.72	-7.989	0.000	0.096
135.00	-0.14	-0.34	0.00	-1.71	0.00	1.71	825.39	196.08	305.42	318.16	119.09	-8.030	0.000	0.006
140.00	-0.01	-0.03	0.00	-0.02	0.00	0.02	789.80	186.57	276.52	289.54	127.48	-8.033	0.000	0.000
140.50	0.00	-0.03	0.00	0.00	0.00	0.00	785.78	185.62	273.70	286.58	128.32	-8.033	0.000	0.000

Wind Loading - Shaft

Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

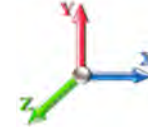


Page: 23

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

Iterations 24

Dead Load Factor 1.20
Wind Load Factor 1.00



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00	RB1	1.00	0.85	5.149	5.66	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
1.00	RT1 RB2	1.00	0.85	5.149	5.66	0.00	1.214 *	1.057	1.00	3.768	4.58	25.9	57.5	262.0
5.00		1.00	0.85	5.149	5.66	0.00	1.218 *	1.242	4.00	15.042	18.32	103.8	266.8	1075.9
10.00		1.00	0.85	5.149	5.66	0.00	1.226 *	1.331	5.00	18.530	22.71	128.7	350.6	1342.1
15.00		1.00	0.85	5.149	5.66	0.00	1.234 *	1.386	5.00	18.191	22.46	127.2	357.7	1327.0
20.00	RT2 RB3	1.00	0.90	5.464	6.01	0.00	1.244 *	1.427	5.00	17.839	22.18	133.3	360.3	1307.5
25.00		1.00	0.95	5.726	6.30	0.00	1.253 *	1.459	5.00	17.481	21.91	138.0	360.4	1285.5
30.00		1.00	0.98	5.951	6.55	0.00	1.263 *	1.486	5.00	17.118	21.62	141.5	358.9	1261.8
35.00		1.00	1.01	6.147	6.76	0.00	1.274 *	1.509	5.00	16.752	21.34	144.3	356.0	1236.9
40.00	RT3 RB4	1.00	1.04	6.322	6.95	0.00	1.285 *	1.529	5.00	16.384	21.05	146.4	352.3	1211.0
44.50	Bot - Section 2	1.00	1.07	6.466	7.11	0.00	1.245 *	1.546	4.50	14.429	17.96	127.8	313.5	1067.4
45.00		1.00	1.07	6.481	7.13	0.00	1.250 *	1.547	0.50	1.611	2.01	14.4	35.4	188.3
50.00	Top - Section 1	1.00	1.09	6.626	7.29	0.00	1.256 *	1.564	5.00	15.907	19.98	145.7	348.9	1856.0
55.00		1.00	1.12	6.760	7.44	0.00	1.260 *	1.579	5.00	15.534	19.57	145.5	343.3	1017.5
60.00	RT4 RB5	1.00	1.14	6.885	7.57	0.00	1.272 *	1.592	5.00	15.161	19.28	146.0	337.4	993.2
65.00		1.00	1.16	7.002	7.70	0.00	1.284 *	1.605	5.00	14.786	18.98	146.2	331.1	968.4
67.50	RT5	1.00	1.17	7.058	7.76	0.00	1.294 *	1.611	2.50	7.251	9.38	72.8	163.9	475.6
70.00		1.00	1.17	7.113	7.82	0.00	1.300 *	1.617	2.50	7.157	9.31	72.8	162.2	469.4
75.00		1.00	1.19	7.217	7.94	0.00	1.200	1.628	5.00	14.035	16.84	133.7	317.5	918.0
80.00		1.00	1.21	7.315	8.05	0.00	1.200	1.639	5.00	13.659	16.39	131.9	310.3	892.3
85.00		1.00	1.22	7.409	8.15	0.00	1.200	1.649	5.00	13.282	15.94	129.9	302.9	866.5
90.00	Appurtenance(s)	1.00	1.24	7.499	8.25	0.00	1.200	1.658	5.00	12.905	15.49	127.7	295.3	840.4
90.50	Bot - Section 3	1.00	1.24	7.508	8.26	0.00	1.200	1.659	0.50	1.269	1.52	12.6	29.4	83.0
93.12	RB6	1.00	1.25	7.553	8.31	0.00	1.373 *	1.664	2.62	6.674	9.17	76.2	154.2	601.2
94.50	Top - Section 2	1.00	1.25	7.576	8.33	0.00	1.381 *	1.666	1.38	3.473	4.80	40.0	80.6	312.8
95.00		1.00	1.25	7.585	8.34	0.00	1.377 *	1.667	0.50	1.251	1.72	14.4	29.1	60.9
100.00	Appurtenance(s)	1.00	1.27	7.667	8.43	0.00	1.387 *	1.676	5.00	12.308	17.07	144.0	283.4	594.4
105.00		1.00	1.28	7.746	8.52	0.00	1.407 *	1.684	5.00	11.929	16.79	143.0	275.3	575.2
107.87	RT6	1.00	1.29	7.790	8.57	0.00	1.424 *	1.689	2.87	6.676	9.51	81.5	155.3	322.5
110.00		1.00	1.29	7.823	8.60	0.00	1.435 *	1.692	2.13	4.874	6.99	60.2	113.7	235.5
114.00	Appurtenance(s)	1.00	1.30	7.882	8.67	0.00	1.200	1.698	4.00	8.967	10.76	93.3	208.2	431.4
115.00		1.00	1.30	7.896	8.69	0.00	1.200	1.699	1.00	2.204	2.64	23.0	51.7	106.4
120.00		1.00	1.32	7.967	8.76	0.00	1.200	1.707	5.00	10.793	12.95	113.5	250.0	516.8
125.00	Appurtenance(s)	1.00	1.33	8.036	8.84	0.00	1.200	1.714	5.00	10.413	12.50	110.5	241.3	497.1
130.00		1.00	1.34	8.103	8.91	0.00	1.200	1.720	5.00	10.034	12.04	107.3	232.5	477.2
135.00	Appurtenance(s)	1.00	1.35	8.167	8.98	0.00	1.202 *	1.727	5.00	9.654	11.60	104.2	223.6	457.2
140.00		1.00	1.36	8.230	9.05	0.00	1.200	1.733	5.00	9.274	11.13	100.8	214.6	437.2
140.50		1.00	1.36	8.236	9.06	0.00	1.200	1.734	0.50	0.906	1.09	9.9	21.4	43.0
Totals:									140.50			3,717.6	26,614.3	

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

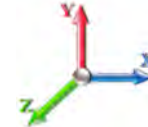
Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 24

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

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	135.00	Commscope	3	8.167	8.984	0.73	0.80	1.27	63.61	0.000	0.000	11.37	0.00	0.00
2	135.00	Air 32	3	8.167	8.984	0.70	0.80	16.03	1022.20	0.000	0.000	144.02	0.00	0.00
3	135.00	AIR6449 B41	3	8.167	8.984	0.65	0.80	12.85	823.83	0.000	0.000	115.49	0.00	0.00
4	135.00	APXVAARR24_43-U-NA2	3	8.167	8.984	0.56	0.80	37.16	1699.80	0.000	0.000	333.85	0.00	0.00
5	135.00	Sector Frame	3	8.167	8.984	0.56	0.75	37.90	5638.45	0.000	0.000	340.51	0.00	0.00
6	135.00	Ericsson RRUS11 B4	3	8.167	8.984	0.54	0.80	5.16	302.43	0.000	0.000	46.36	0.00	0.00
7	135.00	Ericsson 4415 B25	3	8.167	8.984	0.54	0.80	3.90	268.99	0.000	0.000	35.06	0.00	0.00
8	135.00	Ericsson Radio 4449	3	8.167	8.984	0.54	0.80	3.51	454.05	0.000	0.000	31.51	0.00	0.00
9	125.00	Raycap DC6-48-60-18-8F	3	8.036	8.840	0.50	0.75	3.25	247.10	0.000	0.000	28.75	0.00	0.00
10	125.00	Kathrein 782 10250	6	8.036	8.840	0.50	0.75	3.25	99.81	0.000	0.000	28.75	0.00	0.00
11	125.00	CCI OPA-65R-LCUU-H6	3	8.036	8.840	0.59	0.75	19.55	943.40	0.000	0.000	172.84	0.00	0.00
12	125.00	CCI DTMAPB7819VG12A	6	8.036	8.840	0.50	0.75	5.72	252.29	0.000	0.000	50.52	0.00	0.00
13	125.00	QS66512-2	3	8.036	8.840	0.69	0.75	19.47	1067.02	0.000	0.000	172.08	0.00	0.00
14	125.00	Platform w/ Hand Rails	1	8.036	8.840	1.00	1.00	60.56	3856.42	0.000	0.000	535.36	0.00	0.00
15	125.00	B14 4478	3	8.036	8.840	0.50	0.75	3.28	392.87	0.000	0.000	29.01	0.00	0.00
16	125.00	Ericsson RRUS-11	3	8.036	8.840	0.50	0.75	4.76	456.08	0.000	0.000	42.09	0.00	0.00
17	125.00	Ericsson RRUS-32	6	8.036	8.840	0.50	0.75	12.81	1238.25	0.000	0.000	113.27	0.00	0.00
18	125.00	Kathrein 800-10121	3	8.036	8.840	0.59	0.75	10.98	557.86	0.000	0.000	97.02	0.00	0.00
19	125.00	HPA-65R-BUU-H6	3	8.036	8.840	0.64	0.75	21.04	912.31	0.000	0.000	185.97	0.00	0.00
20	125.00	RRUS 32 B66	3	8.036	8.840	0.50	0.75	5.21	448.93	0.000	0.000	46.03	0.00	0.00
21	125.00	DBC0061F1V51-2	6	8.036	8.840	0.50	0.75	2.14	247.54	0.000	0.000	18.92	0.00	0.00
22	114.00	Low Profile Platform	1	7.882	8.670	1.00	1.00	45.38	3288.17	0.000	0.000	393.40	0.00	0.00
23	114.00	Alcatel Lucent	3	7.925	8.717	0.40	0.80	4.73	382.41	0.000	3.000	41.21	0.00	123.63
24	114.00	Samsung	3	7.867	8.654	0.40	0.80	3.32	209.87	0.000	-1.000	28.76	0.00	-28.76
25	114.00	Andrew VHLP1-23-DW1	1	7.946	8.741	1.00	1.00	2.35	41.15	0.000	4.500	20.52	0.00	92.36
26	114.00	Andrew VHLP2-23-DW1	1	7.946	8.741	1.00	1.00	5.93	104.41	0.000	4.500	51.85	0.00	233.34
27	114.00	Argus LLPX310R-V1	3	7.889	8.678	0.55	0.80	8.68	499.21	0.000	0.500	75.36	0.00	37.68
28	114.00	Alcatel Lucent	3	7.860	8.646	0.40	0.80	4.19	389.44	0.000	-1.500	36.20	0.00	-54.29
29	114.00	20" x 18" x 9" Junction Box	1	7.882	8.670	0.40	0.80	1.75	100.45	0.000	0.000	15.16	0.00	0.00
30	114.00	RFS APXVTM14	3	7.925	8.717	0.63	0.80	14.07	885.77	0.000	3.000	122.66	0.00	367.98
31	114.00	RFS APXVSP18	3	7.896	8.686	0.66	0.80	18.48	1030.87	0.000	1.000	160.52	0.00	160.52
32	114.00	Alcatel Lucent	3	7.925	8.717	0.40	0.80	5.81	572.60	0.000	3.000	50.62	0.00	151.87
33	100.00	JMA Wireless	3	7.667	8.434	0.55	0.75	23.14	868.54	0.000	0.000	195.14	0.00	0.00
34	100.00	Fujitsu TA08025-B605 -	3	7.667	8.434	0.38	0.75	2.81	382.88	0.000	0.000	23.71	0.00	0.00
35	100.00	Raycap	1	7.667	8.434	0.38	0.75	0.96	64.71	0.000	0.000	8.08	0.00	0.00
36	100.00	Fujitsu TA08025-B604 -	3	7.667	8.434	0.38	0.75	2.81	339.59	0.000	0.000	23.71	0.00	0.00
37	100.00	Platform w/HRK	1	7.667	8.434	1.00	1.00	82.95	3320.17	0.000	0.000	699.57	0.00	0.00
38	90.00	RFS DB-T1-6Z-8AB-0Z	2	7.499	8.249	0.71	1.00	8.17	221.26	0.000	0.000	67.41	0.00	0.00
39	90.00	Alcatel Lucent B2/B66A	3	7.499	8.249	0.50	0.75	3.62	344.36	0.000	0.000	29.89	0.00	0.00
40	90.00	Samsung B5/B13	3	7.499	8.249	0.50	0.75	3.62	356.92	0.000	0.000	29.89	0.00	0.00
41	90.00	XXDMMM-12.5-65-8T	3	7.499	8.249	0.56	0.75	3.43	460.88	0.000	0.000	28.28	0.00	0.00
42	90.00	L-Sub6 Antenna	3	7.499	8.249	0.63	0.75	9.10	525.81	0.000	0.000	75.08	0.00	0.00
43	90.00	SLCP 2x6014	3	7.499	8.249	0.67	0.75	16.94	423.19	0.000	0.000	139.77	0.00	0.00
44	90.00	SBNHH-1D65B w/ Mount	6	7.499	8.249	0.62	0.75	35.07	1435.07	0.000	0.000	289.33	0.00	0.00
45	90.00	Platform w/ Hand Rails	1	7.499	8.249	1.00	1.00	62.89	4628.96	0.000	0.000	518.81	0.00	0.00

Totals: 41,869.90

5,703.71

Total Applied Force Summary

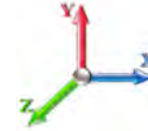
Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 25

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

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
1.00		25.92	326.31	0.00	0.00
5.00		103.79	1348.39	0.00	0.00
10.00		128.65	1692.44	0.00	0.00
15.00		127.20	1683.63	0.00	0.00
20.00		133.33	1668.85	0.00	0.00
25.00		137.99	1650.61	0.00	0.00
30.00		141.54	1630.08	0.00	0.00
35.00		144.27	1607.91	0.00	0.00
40.00		146.38	1584.50	0.00	0.00
44.50		127.75	1399.08	0.00	0.00
45.00		14.35	225.20	0.00	0.00
50.00		145.66	2226.67	0.00	0.00
55.00		145.54	1390.05	0.00	0.00
60.00		146.01	1367.33	0.00	0.00
65.00		146.23	1344.13	0.00	0.00
67.50		72.83	663.88	0.00	0.00
70.00		72.82	657.95	0.00	0.00
75.00		133.70	1237.12	0.00	0.00
80.00		131.89	1212.20	0.00	0.00
85.00		129.90	1187.03	0.00	0.00
90.00	(24) attachments	1306.21	9558.05	0.00	0.00
90.50		12.58	106.27	0.00	0.00
93.12		76.15	754.96	0.00	0.00
94.50		39.97	393.88	0.00	0.00
95.00		14.37	90.24	0.00	0.00
100.00	(11) attachments	1094.20	5865.34	0.00	0.00
105.00		143.04	865.27	0.00	0.00
107.87		81.46	489.27	0.00	0.00
110.00		60.19	359.43	0.00	0.00
114.00	(25) attachments	1089.55	8125.75	0.00	1084.33
115.00		22.97	143.35	0.00	0.00
120.00		113.50	702.08	0.00	0.00
125.00	(49) attachments	1631.07	11402.70	0.00	0.00
130.00		107.32	586.27	0.00	0.00
135.00	(24) attachments	1162.37	10840.12	0.00	0.00
140.00		100.75	437.17	0.00	0.00
140.50		9.85	43.02	0.00	0.00
	Totals:	9,421.31	76,866.53	0.00	1,084.33

Linear Appurtenance Segment Forces (Factored)

Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



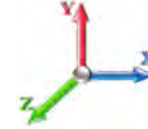
Page: 26

Load Case: 1.2D + 1.0Di + 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)
1.00	1 1/4" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.104	1.012	5.149	0.00	5.90
1.00	1 5/8" Fiber	Yes	1.00	0.000	1.98	0.34	0.00	0.104	1.012	5.149	0.00	7.77
1.00	1.25" Reinforcing	Yes	1.00	0.000	1.25	0.28	0.00	0.104	1.012	5.149	0.00	3.68
1.00	1.25" Reinforcing	Yes	1.00	0.000	1.25	0.28	0.00	0.104	1.012	5.149	0.00	3.68
5.00	1 1/4" Fiber	Yes	4.00	0.000	0.00	0.00	0.00	0.105	1.015	5.149	0.00	27.46
5.00	1 5/8" Fiber	Yes	4.00	0.000	1.98	1.49	0.00	0.105	1.015	5.149	0.00	35.44
5.00	1.25" Reinforcing	Yes	4.00	0.000	1.25	1.24	0.00	0.105	1.015	5.149	0.00	18.24
5.00	1.25" Reinforcing	Yes	4.00	0.000	1.25	1.24	0.00	0.105	1.015	5.149	0.00	18.24
10.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	5.149	0.00	36.80
10.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	1.93	0.00	0.107	1.021	5.149	0.00	47.08
10.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	1.63	0.00	0.107	1.021	5.149	0.00	25.07
10.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	1.63	0.00	0.107	1.021	5.149	0.00	25.07
15.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	5.149	0.00	38.38
15.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	1.98	0.00	0.110	1.029	5.149	0.00	48.84
15.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	1.68	0.00	0.110	1.029	5.149	0.00	26.52
15.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	1.68	0.00	0.110	1.029	5.149	0.00	26.52
20.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.036	5.464	0.00	39.56
20.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	2.01	0.00	0.112	1.036	5.464	0.00	50.16
20.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	1.71	0.00	0.112	1.036	5.464	0.00	27.61
20.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	1.71	0.00	0.112	1.036	5.464	0.00	27.61
25.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.044	5.726	0.00	40.52
25.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	2.04	0.00	0.115	1.044	5.726	0.00	51.22
25.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	1.74	0.00	0.115	1.044	5.726	0.00	28.49
25.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	1.74	0.00	0.115	1.044	5.726	0.00	28.49
30.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.118	1.053	5.951	0.00	41.32
30.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	2.06	0.00	0.118	1.053	5.951	0.00	52.12
30.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	1.76	0.00	0.118	1.053	5.951	0.00	29.23
30.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	1.76	0.00	0.118	1.053	5.951	0.00	29.23
35.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.120	1.061	6.147	0.00	42.02
35.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	2.08	0.00	0.120	1.061	6.147	0.00	52.90
35.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	1.78	0.00	0.120	1.061	6.147	0.00	29.88
35.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	1.78	0.00	0.120	1.061	6.147	0.00	29.88
40.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.124	1.071	6.322	0.00	42.64
40.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	2.10	0.00	0.124	1.071	6.322	0.00	53.58
40.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	1.80	0.00	0.124	1.071	6.322	0.00	30.45
40.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	1.80	0.00	0.124	1.071	6.322	0.00	30.45
44.50	1 1/4" Fiber	Yes	4.50	0.000	0.00	0.00	0.00	0.112	1.037	6.466	0.00	38.83
44.50	1 5/8" Fiber	Yes	4.50	0.000	1.98	1.90	0.00	0.112	1.037	6.466	0.00	48.73
44.50	1" Reinforcing plate	Yes	4.50	0.000	1.00	1.53	0.00	0.112	1.037	6.466	0.00	24.70
44.50	1" Reinforcing plate	Yes	4.50	0.000	1.00	1.53	0.00	0.112	1.037	6.466	0.00	24.70
45.00	1 1/4" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.114	1.042	6.481	0.00	4.32
45.00	1 5/8" Fiber	Yes	0.50	0.000	1.98	0.21	0.00	0.114	1.042	6.481	0.00	5.42
45.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.17	0.00	0.114	1.042	6.481	0.00	2.75
45.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.17	0.00	0.114	1.042	6.481	0.00	2.75
50.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.116	1.047	6.626	0.00	43.71
50.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	2.13	0.00	0.116	1.047	6.626	0.00	54.77
50.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	1.72	0.00	0.116	1.047	6.626	0.00	27.93

Linear Appurtenance Segment Forces (Factored)

Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 27

Load Case: 1.2D + 1.0Di + 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	1" Reinforcing plate	Yes	5.00	0.000	1.00	1.72	0.00	0.116	1.047	6.626	0.00	27.93
55.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.117	1.050	6.760	0.00	44.18
55.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	2.14	0.00	0.117	1.050	6.760	0.00	55.29
55.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	1.73	0.00	0.117	1.050	6.760	0.00	28.34
55.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	1.73	0.00	0.117	1.050	6.760	0.00	28.34
60.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.120	1.060	6.885	0.00	44.61
60.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	2.15	0.00	0.120	1.060	6.885	0.00	55.77
60.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	1.74	0.00	0.120	1.060	6.885	0.00	28.71
60.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	1.74	0.00	0.120	1.060	6.885	0.00	28.71
65.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.070	7.002	0.00	45.02
65.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	2.16	0.00	0.123	1.070	7.002	0.00	56.21
65.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	1.75	0.00	0.123	1.070	7.002	0.00	29.06
65.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	1.75	0.00	0.123	1.070	7.002	0.00	29.06
67.50	1 1/4" Fiber	Yes	2.50	0.000	0.00	0.00	0.00	0.126	1.078	7.058	0.00	22.60
67.50	1 5/8" Fiber	Yes	2.50	0.000	1.98	1.08	0.00	0.126	1.078	7.058	0.00	28.21
67.50	1" Reinforcing plate	Yes	2.50	0.000	1.00	0.88	0.00	0.126	1.078	7.058	0.00	14.61
67.50	1" Reinforcing plate	Yes	2.50	0.000	1.00	0.88	0.00	0.126	1.078	7.058	0.00	14.61
70.00	1 1/4" Fiber	Yes	2.50	0.000	0.00	0.00	0.00	0.128	1.084	7.113	0.00	22.70
70.00	1 5/8" Fiber	Yes	2.50	0.000	1.98	1.09	0.00	0.128	1.084	7.113	0.00	28.32
70.00	1" Reinforcing plate	Yes	2.50	0.000	1.00	0.88	0.00	0.128	1.084	7.113	0.00	14.69
70.00	1" Reinforcing plate	Yes	2.50	0.000	1.00	0.88	0.00	0.128	1.084	7.113	0.00	14.69
75.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.065	0.000	7.217	0.00	45.75
75.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	2.18	0.00	0.065	0.000	7.217	0.00	57.03
80.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.067	0.000	7.315	0.00	46.09
80.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	2.19	0.00	0.067	0.000	7.315	0.00	57.40
85.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	7.409	0.00	46.41
85.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	2.20	0.00	0.069	0.000	7.409	0.00	57.75
90.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	7.499	0.00	46.72
90.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	2.21	0.00	0.072	0.000	7.499	0.00	58.09
90.50	1 1/4" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.073	0.000	7.508	0.00	4.67
90.50	1 5/8" Fiber	Yes	0.50	0.000	1.98	0.22	0.00	0.073	0.000	7.508	0.00	5.81
93.12	1 1/4" Fiber	Yes	2.62	0.000	0.00	0.00	0.00	0.148	1.145	7.553	0.00	24.57
93.12	1 5/8" Fiber	Yes	2.62	0.000	1.98	1.16	0.00	0.148	1.145	7.553	0.00	30.54
93.12	1" Reinforcing plate	Yes	2.62	0.000	1.00	0.94	0.00	0.148	1.145	7.553	0.00	13.44
93.12	1" Reinforcing plate	Yes	2.62	0.000	1.00	0.94	0.00	0.148	1.145	7.553	0.00	18.02
94.50	1 1/4" Fiber	Yes	1.38	0.000	0.00	0.00	0.00	0.150	1.151	7.576	0.00	12.97
94.50	1 5/8" Fiber	Yes	1.38	0.000	1.98	0.61	0.00	0.150	1.151	7.576	0.00	16.11
94.50	1" Reinforcing plate	Yes	1.38	0.000	1.00	0.50	0.00	0.150	1.151	7.576	0.00	7.10
94.50	1" Reinforcing plate	Yes	1.38	0.000	1.00	0.50	0.00	0.150	1.151	7.576	0.00	9.51
95.00	1 1/4" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.149	1.147	7.585	0.00	4.70
95.00	1 5/8" Fiber	Yes	0.50	0.000	1.98	0.22	0.00	0.149	1.147	7.585	0.00	5.84
95.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.18	0.00	0.149	1.147	7.585	0.00	2.57
95.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.18	0.00	0.149	1.147	7.585	0.00	3.45
100.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.152	1.156	7.667	0.00	47.28
100.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	2.22	0.00	0.152	1.156	7.667	0.00	58.72
100.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	1.81	0.00	0.152	1.156	7.667	0.00	25.95
100.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	1.81	0.00	0.152	1.156	7.667	0.00	34.75

Linear Appurtenance Segment Forces (Factored)

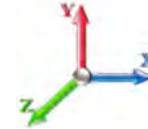
Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 28

Load Case: 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)
105.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.158	1.173	7.746	0.00	47.55
105.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	2.23	0.00	0.158	1.173	7.746	0.00	59.01
105.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	1.82	0.00	0.158	1.173	7.746	0.00	26.16
105.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	1.82	0.00	0.158	1.173	7.746	0.00	35.00
107.87	1 1/4" Fiber	Yes	2.87	0.000	0.00	0.00	0.00	0.162	1.187	7.790	0.00	27.38
107.87	1 5/8" Fiber	Yes	2.87	0.000	1.98	1.28	0.00	0.162	1.187	7.790	0.00	33.97
107.87	1" Reinforcing plate	Yes	2.87	0.000	1.00	1.05	0.00	0.162	1.187	7.790	0.00	15.08
107.87	1" Reinforcing plate	Yes	2.87	0.000	1.00	1.05	0.00	0.162	1.187	7.790	0.00	20.17
110.00	1 1/4" Fiber	Yes	2.13	0.000	0.00	0.00	0.00	0.165	1.196	7.823	0.00	20.37
110.00	1 5/8" Fiber	Yes	2.13	0.000	1.98	0.95	0.00	0.165	1.196	7.823	0.00	25.26
110.00	1" Reinforcing plate	Yes	2.13	0.000	1.00	0.78	0.00	0.165	1.196	7.823	0.00	11.23
110.00	1" Reinforcing plate	Yes	2.13	0.000	1.00	0.78	0.00	0.165	1.196	7.823	0.00	15.01
114.00	1 1/4" Fiber	Yes	4.00	0.000	0.00	0.00	0.00	0.095	0.000	7.882	0.00	38.41
114.00	1 5/8" Fiber	Yes	4.00	0.000	1.98	1.79	0.00	0.095	0.000	7.882	0.00	47.61
114.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.18	0.00	0.095	0.000	7.882	0.00	2.65
114.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.18	0.00	0.095	0.000	7.882	0.00	3.54
115.00	1 1/4" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.086	0.000	7.896	0.00	9.61
115.00	1 5/8" Fiber	Yes	1.00	0.000	1.98	0.45	0.00	0.086	0.000	7.896	0.00	11.91
120.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.088	0.000	7.967	0.00	48.29
120.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	2.25	0.00	0.088	0.000	7.967	0.00	59.83
125.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.092	0.000	8.036	0.00	48.52
125.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	2.25	0.00	0.092	0.000	8.036	0.00	60.08
130.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.096	0.000	8.103	0.00	48.75
130.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	2.26	0.00	0.096	0.000	8.103	0.00	60.33
135.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.100	1.001	8.167	0.00	48.96
135.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	2.26	0.00	0.100	1.001	8.167	0.00	60.56
Totals:											0.0	3,718.9

Calculated Forces

Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 29

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

Iterations 24

Dead Load Factor 1.20
Wind Load Factor 1.00



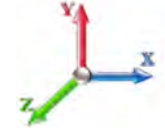
Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-76.86	-9.43	0.00	-1025.6	0.00	1025.69	3592.24	880.75	3081.19	3113.33	0.00	0.000	0.000	0.245
1.00	-76.53	-9.46	0.00	-1016.2	0.00	1016.26	3581.26	876.95	3054.64	3090.29	0.00	-0.018	0.000	0.215
5.00	-75.17	-9.45	0.00	-978.41	0.00	978.41	3536.93	861.73	2949.58	2998.63	0.04	-0.081	0.000	0.212
10.00	-73.47	-9.42	0.00	-931.17	0.00	931.17	3480.64	842.72	2820.85	2885.21	0.17	-0.159	0.000	0.208
15.00	-71.77	-9.38	0.00	-884.08	0.00	884.08	3423.37	823.70	2694.99	2773.12	0.38	-0.238	0.000	0.203
20.00	-70.09	-9.34	0.00	-837.16	0.00	837.16	3365.12	804.69	2572.00	2662.41	0.67	-0.318	0.000	0.211
25.00	-68.43	-9.30	0.00	-790.44	0.00	790.44	3305.89	785.67	2451.88	2553.15	1.05	-0.403	0.000	0.206
30.00	-66.78	-9.24	0.00	-743.96	0.00	743.96	3245.52	766.66	2334.64	2445.26	1.52	-0.488	0.000	0.200
35.00	-65.16	-9.18	0.00	-697.75	0.00	697.75	3165.03	747.64	2220.26	2324.87	2.07	-0.573	0.000	0.196
40.00	-63.57	-9.11	0.00	-651.85	0.00	651.85	3084.53	728.63	2108.76	2207.52	2.72	-0.658	0.000	0.208
44.50	-62.16	-9.02	0.00	-610.86	0.00	610.86	3012.08	711.52	2010.87	2104.51	3.38	-0.742	0.000	0.203
45.00	-61.93	-9.05	0.00	-606.35	0.00	606.35	3004.03	709.61	2000.14	2093.21	3.46	-0.751	0.000	0.200
50.00	-59.69	-8.97	0.00	-561.09	0.00	561.09	2423.81	587.47	1644.99	1680.79	4.29	-0.842	0.000	0.202
55.00	-58.29	-8.90	0.00	-516.24	0.00	516.24	2376.14	571.62	1557.44	1602.88	5.22	-0.932	0.000	0.208
60.00	-56.91	-8.82	0.00	-471.76	0.00	471.76	2327.49	555.78	1472.29	1526.13	6.25	-1.027	0.000	0.198
65.00	-55.56	-8.72	0.00	-427.65	0.00	427.65	2277.86	539.93	1389.54	1450.59	7.38	-1.121	0.000	0.187
67.50	-54.89	-8.68	0.00	-405.86	0.00	405.86	2252.16	532.01	1349.06	1412.97	7.98	-1.167	0.000	0.181
67.50	-54.89	-8.68	0.00	-405.86	0.00	405.86	2252.16	532.01	1349.06	1412.97	7.98	-1.167	0.000	0.181
70.00	-54.22	-8.68	0.00	-384.17	0.00	384.17	2218.62	524.08	1309.17	1370.99	8.60	-1.213	0.000	0.305
75.00	-52.96	-8.66	0.00	-340.75	0.00	340.75	2151.54	508.24	1231.20	1288.93	9.95	-1.364	0.000	0.289
80.00	-51.73	-8.63	0.00	-297.45	0.00	297.45	2084.46	492.39	1155.63	1209.39	11.46	-1.509	0.000	0.271
85.00	-50.53	-8.58	0.00	-254.33	0.00	254.33	2017.38	476.55	1082.45	1132.40	13.11	-1.648	0.000	0.250
90.00	-41.01	-7.04	0.00	-211.42	0.00	211.42	1950.30	460.70	1011.66	1057.93	14.91	-1.776	0.000	0.221
90.50	-40.90	-7.05	0.00	-207.90	0.00	207.90	1943.59	459.12	1004.71	1050.62	15.10	-1.789	0.000	0.219
93.12	-40.14	-6.98	0.00	-189.43	0.00	189.43	1908.44	450.81	968.70	1012.75	16.10	-1.854	0.000	0.117
94.50	-39.74	-6.94	0.00	-179.80	0.00	179.80	1035.36	273.09	592.44	557.40	16.63	-1.872	0.000	0.128
95.00	-39.65	-6.95	0.00	-176.33	0.00	176.33	1033.16	272.13	588.32	554.27	16.83	-1.879	0.000	0.158
100.00	-33.82	-5.70	0.00	-141.60	0.00	141.60	1010.63	262.63	547.93	523.10	18.84	-1.953	0.000	0.132
105.00	-32.95	-5.55	0.00	-113.11	0.00	113.11	987.11	253.12	508.98	492.30	20.92	-2.019	0.000	0.112
107.87	-32.46	-5.47	0.00	-97.17	0.00	97.17	973.17	247.66	487.27	474.80	22.14	-2.052	0.000	0.100
107.87	-32.46	-5.47	0.00	-97.17	0.00	97.17	973.17	247.66	487.27	474.80	22.14	-2.052	0.000	0.100
110.00	-32.10	-5.43	0.00	-85.52	0.00	85.52	962.61	243.61	471.46	461.91	23.07	-2.075	0.000	0.219
114.00	-24.02	-4.06	0.00	-62.72	0.00	62.72	942.31	236.01	442.48	437.94	24.84	-2.164	0.000	0.169
115.00	-23.87	-4.06	0.00	-58.66	0.00	58.66	937.13	234.11	435.38	431.99	25.30	-2.184	0.000	0.162
120.00	-23.17	-3.94	0.00	-38.38	0.00	38.38	910.67	224.60	400.73	402.61	27.63	-2.265	0.000	0.121
125.00	-11.84	-1.86	0.00	-18.67	0.00	18.67	883.23	215.09	367.52	373.80	30.04	-2.320	0.000	0.063
130.00	-11.26	-1.74	0.00	-9.34	0.00	9.34	854.80	205.58	335.75	345.64	32.48	-2.350	0.000	0.040
135.00	-0.48	-0.13	0.00	-0.66	0.00	0.66	825.39	196.08	305.42	318.16	34.95	-2.362	0.000	0.003
140.00	-0.04	-0.01	0.00	-0.01	0.00	0.01	789.80	186.57	276.52	289.54	37.43	-2.363	0.000	0.000
140.50	0.00	-0.01	0.00	0.00	0.00	0.00	785.78	185.62	273.70	286.58	37.67	-2.363	0.000	0.000

Seismic Segment Forces (Factored)

Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 30

Load Case: 1.2D + 1.0Ev + 1.0Eh							Iterations 21
Gust Response Factor	1.10			Sds	0.20	Ss	0.19
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1	0.09	S1	0.06
Wind Load Factor	0.00	Structure Frequency (f1)	0.24	SA	0.02	Seismic Importance Factor	1.00

Top Elev (ft)	Description	Wz (lb)	Hz (lb)	Vertical Ev (lb)	Lateral Fs (lb)	R: 1.50
0.00	RB1	0.00	0.00	0.00	0.00	
1.00	RT1 RB2	217.75	0.50	8.73	0.00	
5.00		863.64	3.00	34.64	0.00	
10.00		1062.9	7.50	42.63	0.03	
15.00		1044.5	12.50	41.89	0.07	
20.00	RT2 RB3	1026.1	17.50	41.15	0.14	
25.00		1007.6	22.50	40.41	0.22	
30.00		989.23	27.50	39.67	0.32	
35.00		970.79	32.50	38.94	0.43	
40.00	RT3 RB4	952.36	37.50	38.20	0.56	
44.50	Bot - Section 2	841.36	42.25	33.74	0.55	
45.00		151.13	44.75	6.06	0.02	
50.00	Top - Section 1	1492.6	47.50	59.87	2.19	
55.00		798.61	52.50	32.03	0.77	
60.00	RT4 RB5	783.25	57.50	31.41	0.88	
65.00		767.89	62.50	30.80	1.00	
67.50	RT5	378.18	66.25	15.17	0.27	
70.00		374.34	68.75	15.01	0.29	
75.00		737.17	72.50	29.57	1.24	
80.00		721.80	77.50	28.95	1.36	
85.00		706.44	82.50	28.33	1.48	
90.00	Appurtenance(s)	4199.6	87.50	168.44	58.77	
90.50	Bot - Section 3	59.46	90.25	2.38	0.01	
93.12	RB6	450.36	91.81	18.06	0.74	
94.50	Top - Section 2	234.50	93.81	9.40	0.21	
95.00		41.30	94.75	1.66	0.01	
100.00	Appurtenance(s)	2767.0	97.50	110.98	31.67	
105.00		392.69	102.50	15.75	0.71	
107.87	RT6	221.24	106.44	8.87	0.24	
110.00		162.23	108.94	6.51	0.14	
114.00	Appurtenance(s)	3724.5	112.00	149.38	75.73	
115.00		65.09	114.50	2.61	0.02	
120.00		319.91	117.50	12.83	0.61	
125.00	Appurtenance(s)	4512.3	122.50	180.98	132.97	
130.00		224.31	127.50	9.00	0.36	
135.00	Appurtenance(s)	4262.9	132.50	170.97	138.85	
140.00		185.48	137.50	7.44	0.28	
140.50		18.04	140.25	0.72	0.00	
Totals:		37,729.1		1,513.2	453.2	Total Wind: 34,378.3

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

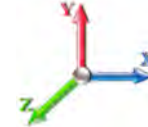
Calculated Forces

Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 31

Load Case: 1.2D + 1.0Ev + 1.0Eh							Iterations 21
Gust Response Factor	1.10				Sds 0.20		Ss 0.19
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1 0.09			S1 0.06
Wind Load Factor	0.00	Structure Frequency (f1)	0.24	SA 0.02	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	-45.75	-0.45	0.00	-57.20	0.00	57.20	3592.24	880.75	3081.19	3113.33	0.00	0.00	0.00	0.022
1.00	-45.48	-0.45	0.00	-56.75	0.00	56.75	3581.26	876.95	3054.64	3090.29	0.00	0.00	0.00	0.019
5.00	-44.45	-0.46	0.00	-54.93	0.00	54.93	3536.93	861.73	2949.58	2998.63	0.00	0.00	0.00	0.019
10.00	-43.18	-0.46	0.00	-52.64	0.00	52.64	3480.64	842.72	2820.85	2885.21	0.01	-0.01	0.018	0.018
15.00	-41.93	-0.46	0.00	-50.34	0.00	50.34	3423.37	823.70	2694.99	2773.12	0.02	-0.01	0.018	0.018
20.00	-40.71	-0.47	0.00	-48.02	0.00	48.02	3365.12	804.69	2572.00	2662.41	0.04	-0.02	0.019	0.019
25.00	-39.51	-0.47	0.00	-45.68	0.00	45.68	3305.89	785.67	2451.88	2553.15	0.06	-0.02	0.018	0.018
30.00	-38.33	-0.47	0.00	-43.34	0.00	43.34	3245.52	766.66	2334.64	2445.26	0.09	-0.03	0.018	0.018
35.00	-37.17	-0.47	0.00	-40.98	0.00	40.98	3165.03	747.64	2220.26	2324.87	0.12	-0.03	0.018	0.018
40.00	-36.04	-0.48	0.00	-38.61	0.00	38.61	3084.53	728.63	2108.76	2207.52	0.15	-0.04	0.019	0.019
44.50	-35.03	-0.48	0.00	-36.47	0.00	36.47	3012.08	711.52	2010.87	2104.51	0.19	-0.04	0.019	0.019
45.00	-34.85	-0.48	0.00	-36.23	0.00	36.23	3004.03	709.61	2000.14	2093.21	0.20	-0.04	0.018	0.018
50.00	-33.05	-0.48	0.00	-33.84	0.00	33.84	2423.81	587.47	1644.99	1680.79	0.25	-0.05	0.019	0.019
55.00	-32.11	-0.48	0.00	-31.45	0.00	31.45	2376.14	571.62	1557.44	1602.88	0.30	-0.05	0.020	0.020
60.00	-31.18	-0.48	0.00	-29.06	0.00	29.06	2327.49	555.78	1472.29	1526.13	0.36	-0.06	0.019	0.019
65.00	-30.28	-0.48	0.00	-26.65	0.00	26.65	2277.86	539.93	1389.54	1450.59	0.43	-0.07	0.018	0.018
67.50	-29.83	-0.48	0.00	-25.45	0.00	25.45	2252.16	532.01	1349.06	1412.97	0.46	-0.07	0.018	0.018
67.50	-29.83	-0.48	0.00	-25.45	0.00	25.45	2252.16	532.01	1349.06	1412.97	0.46	-0.07	0.018	0.018
70.00	-29.39	-0.48	0.00	-24.25	0.00	24.25	2218.62	524.08	1309.17	1370.99	0.50	-0.07	0.031	0.031
75.00	-28.52	-0.49	0.00	-21.83	0.00	21.83	2151.54	508.24	1231.20	1288.93	0.58	-0.08	0.030	0.030
80.00	-27.68	-0.49	0.00	-19.40	0.00	19.40	2084.46	492.39	1155.63	1209.39	0.67	-0.09	0.029	0.029
85.00	-26.85	-0.49	0.00	-16.96	0.00	16.96	2017.38	476.55	1082.45	1132.40	0.77	-0.10	0.028	0.028
90.00	-21.69	-0.42	0.00	-14.51	0.00	14.51	1950.30	460.70	1011.66	1057.93	0.88	-0.11	0.025	0.025
90.50	-21.62	-0.42	0.00	-14.30	0.00	14.30	1943.59	459.12	1004.71	1050.62	0.89	-0.11	0.025	0.025
93.12	-21.07	-0.42	0.00	-13.19	0.00	13.19	1908.44	450.81	968.70	1012.75	0.95	-0.11	0.014	0.014
94.50	-20.79	-0.42	0.00	-12.60	0.00	12.60	1035.36	273.09	592.44	557.40	0.98	-0.12	0.015	0.015
95.00	-20.74	-0.42	0.00	-12.39	0.00	12.39	1033.16	272.13	588.32	554.27	0.99	-0.12	0.019	0.019
100.00	-17.34	-0.39	0.00	-10.27	0.00	10.27	1010.63	262.63	547.93	523.10	1.12	-0.12	0.016	0.016
105.00	-16.88	-0.39	0.00	-8.34	0.00	8.34	987.11	253.12	508.98	492.30	1.25	-0.13	0.015	0.015
107.87	-16.62	-0.39	0.00	-7.23	0.00	7.23	973.17	247.66	487.27	474.80	1.32	-0.13	0.014	0.014
107.87	-16.62	-0.39	0.00	-7.23	0.00	7.23	973.17	247.66	487.27	474.80	1.32	-0.13	0.014	0.014
110.00	-16.43	-0.39	0.00	-6.41	0.00	6.41	962.61	243.61	471.46	461.91	1.38	-0.13	0.031	0.031
114.00	-11.84	-0.30	0.00	-4.86	0.00	4.86	942.31	236.01	442.48	437.94	1.49	-0.14	0.024	0.024
115.00	-11.76	-0.30	0.00	-4.56	0.00	4.56	937.13	234.11	435.38	431.99	1.52	-0.14	0.023	0.023
120.00	-11.38	-0.30	0.00	-3.05	0.00	3.05	910.67	224.60	400.73	402.61	1.67	-0.14	0.020	0.020
125.00	-5.81	-0.15	0.00	-1.54	0.00	1.54	883.23	215.09	367.52	373.80	1.82	-0.15	0.011	0.011
130.00	-5.53	-0.15	0.00	-0.77	0.00	0.77	854.80	205.58	335.75	345.64	1.98	-0.15	0.009	0.009
135.00	-0.25	0.00	0.00	0.00	0.00	0.00	825.39	196.08	305.42	318.16	2.14	-0.15	0.000	0.000
140.00	-0.02	0.00	0.00	0.00	0.00	0.00	789.80	186.57	276.52	289.54	2.30	-0.15	0.000	0.000
140.50	0.00	0.00	0.00	0.00	0.00	0.00	785.78	185.62	273.70	286.58	2.32	-0.15	0.000	0.000

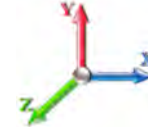
Seismic Segment Forces (Factored)

Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 32

Load Case: 0.9D + 1.0Ev + 1.0Eh				Iterations 21
Gust Response Factor	1.10	Sds	0.20	Ss 0.19
Dead Load Factor	0.90	Seismic Load Factor	1.00	S1 0.06
Wind Load Factor	0.00	Structure Frequency (f1)	0.24	SA 0.02
				Seismic Importance Factor 1.00



Top Elev (ft)	Description	Wz (lb)	Hz (lb)	Vertical Ev (lb)	Lateral Fs (lb)	R: 1.50
0.00	RB1	0.00	0.00	0.00	0.00	
1.00	RT1 RB2	205.92	0.50	8.26	0.00	
5.00		816.29	3.00	32.74	0.00	
10.00		1003.7	7.50	40.26	0.03	
15.00		985.34	12.50	39.52	0.07	
20.00	RT2 RB3	966.90	17.50	38.78	0.13	
25.00		948.47	22.50	38.04	0.20	
30.00		930.04	27.50	37.30	0.29	
35.00		911.60	32.50	36.56	0.39	
40.00	RT3 RB4	893.17	37.50	35.82	0.50	
44.50	Bot - Section 2	788.09	42.25	31.61	0.49	
45.00		145.21	44.75	5.82	0.02	
50.00	Top - Section 1	1433.5	47.50	57.49	2.05	
55.00		739.42	52.50	29.66	0.67	
60.00	RT4 RB5	724.06	57.50	29.04	0.77	
65.00		708.70	62.50	28.42	0.87	
67.50	RT5	348.59	66.25	13.98	0.24	
70.00		344.75	68.75	13.83	0.25	
75.00		677.97	72.50	27.19	1.07	
80.00		662.61	77.50	26.58	1.17	
85.00		647.25	82.50	25.96	1.26	
90.00	Appurtenance(s)	4140.4	87.50	166.06	58.06	
90.50	Bot - Section 3	55.74	90.25	2.24	0.01	
93.12	RB6	430.88	91.81	17.28	0.69	
94.50	Top - Section 2	224.24	93.81	8.99	0.20	
95.00		37.58	94.75	1.51	0.01	
100.00	Appurtenance(s)	2729.8	97.50	109.48	31.34	
105.00		357.02	102.50	14.32	0.59	
107.87	RT6	200.76	106.44	8.05	0.20	
110.00		147.04	108.94	5.90	0.11	
114.00	Appurtenance(s)	3696.0	112.00	148.23	75.80	
115.00		60.21	114.50	2.41	0.02	
120.00		295.52	117.50	11.85	0.53	
125.00	Appurtenance(s)	4488.0	122.50	180.00	133.71	
130.00		219.21	127.50	8.79	0.35	
135.00	Appurtenance(s)	4257.8	132.50	170.77	140.80	
140.00		185.48	137.50	7.44	0.29	
140.50		18.04	140.25	0.72	0.00	
Totals:		36,425.5		1,460.9	453.2	Total Wind: 34,378.3

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

Calculated Forces

Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 33

Load Case: 0.9D + 1.0Ev + 1.0Eh							Iterations 21
Gust Response Factor	1.10				Sds	0.20	Ss 0.19
Dead Load Factor	0.90	Seismic Load Factor	1.00	Sd1	0.09		S1 0.06
Wind Load Factor	0.00	Structure Frequency (f1)	0.24	SA	0.02	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	-34.63	-0.45	0.00	-56.39	0.00	56.39	3592.24	880.75	3081.19	3113.33	0.00	0.00	0.00	0.020
1.00	-34.44	-0.45	0.00	-55.94	0.00	55.94	3581.26	876.95	3054.64	3090.29	0.00	0.00	0.00	0.017
5.00	-33.66	-0.46	0.00	-54.13	0.00	54.13	3536.93	861.73	2949.58	2998.63	0.00	0.00	0.00	0.017
10.00	-32.69	-0.46	0.00	-51.84	0.00	51.84	3480.64	842.72	2820.85	2885.21	0.01	-0.01	0.016	0.016
15.00	-31.75	-0.46	0.00	-49.55	0.00	49.55	3423.37	823.70	2694.99	2773.12	0.02	-0.01	0.016	0.016
20.00	-30.82	-0.46	0.00	-47.25	0.00	47.25	3365.12	804.69	2572.00	2662.41	0.04	-0.02	0.017	0.017
25.00	-29.91	-0.47	0.00	-44.93	0.00	44.93	3305.89	785.67	2451.88	2553.15	0.06	-0.02	0.016	0.016
30.00	-29.02	-0.47	0.00	-42.61	0.00	42.61	3245.52	766.66	2334.64	2445.26	0.08	-0.03	0.016	0.016
35.00	-28.15	-0.47	0.00	-40.27	0.00	40.27	3165.03	747.64	2220.26	2324.87	0.12	-0.03	0.016	0.016
40.00	-27.29	-0.47	0.00	-37.93	0.00	37.93	3084.53	728.63	2108.76	2207.52	0.15	-0.04	0.017	0.017
44.50	-26.53	-0.47	0.00	-35.82	0.00	35.82	3012.08	711.52	2010.87	2104.51	0.19	-0.04	0.017	0.017
45.00	-26.39	-0.47	0.00	-35.58	0.00	35.58	3004.03	709.61	2000.14	2093.21	0.19	-0.04	0.016	0.016
50.00	-25.03	-0.47	0.00	-33.22	0.00	33.22	2423.81	587.47	1644.99	1680.79	0.24	-0.05	0.017	0.017
55.00	-24.32	-0.47	0.00	-30.87	0.00	30.87	2376.14	571.62	1557.44	1602.88	0.29	-0.05	0.017	0.017
60.00	-23.62	-0.47	0.00	-28.52	0.00	28.52	2327.49	555.78	1472.29	1526.13	0.35	-0.06	0.017	0.017
65.00	-22.93	-0.47	0.00	-26.15	0.00	26.15	2277.86	539.93	1389.54	1450.59	0.42	-0.06	0.016	0.016
67.50	-22.60	-0.47	0.00	-24.97	0.00	24.97	2252.16	532.01	1349.06	1412.97	0.45	-0.07	0.016	0.016
67.50	-22.60	-0.47	0.00	-24.97	0.00	24.97	2252.16	532.01	1349.06	1412.97	0.45	-0.07	0.016	0.016
70.00	-22.26	-0.47	0.00	-23.79	0.00	23.79	2218.62	524.08	1309.17	1370.99	0.49	-0.07	0.027	0.027
75.00	-21.61	-0.48	0.00	-21.42	0.00	21.42	2151.54	508.24	1231.20	1288.93	0.57	-0.08	0.027	0.027
80.00	-20.97	-0.48	0.00	-19.03	0.00	19.03	2084.46	492.39	1155.63	1209.39	0.66	-0.09	0.026	0.026
85.00	-20.34	-0.48	0.00	-16.65	0.00	16.65	2017.38	476.55	1082.45	1132.40	0.75	-0.10	0.025	0.025
90.00	-16.43	-0.41	0.00	-14.25	0.00	14.25	1950.30	460.70	1011.66	1057.93	0.86	-0.11	0.022	0.022
90.50	-16.38	-0.42	0.00	-14.05	0.00	14.05	1943.59	459.12	1004.71	1050.62	0.87	-0.11	0.022	0.022
93.12	-15.97	-0.41	0.00	-12.96	0.00	12.96	1908.44	450.81	968.70	1012.75	0.93	-0.11	0.012	0.012
94.50	-15.75	-0.41	0.00	-12.39	0.00	12.39	1035.36	273.09	592.44	557.40	0.97	-0.11	0.013	0.013
95.00	-15.72	-0.42	0.00	-12.18	0.00	12.18	1033.16	272.13	588.32	554.27	0.98	-0.11	0.017	0.017
100.00	-13.14	-0.38	0.00	-10.10	0.00	10.10	1010.63	262.63	547.93	523.10	1.10	-0.12	0.014	0.014
105.00	-12.79	-0.38	0.00	-8.20	0.00	8.20	987.11	253.12	508.98	492.30	1.23	-0.12	0.013	0.013
107.87	-12.60	-0.38	0.00	-7.12	0.00	7.12	973.17	247.66	487.27	474.80	1.30	-0.13	0.012	0.012
107.87	-12.60	-0.38	0.00	-7.12	0.00	7.12	973.17	247.66	487.27	474.80	1.30	-0.13	0.012	0.012
110.00	-12.46	-0.38	0.00	-6.31	0.00	6.31	962.61	243.61	471.46	461.91	1.36	-0.13	0.027	0.027
114.00	-8.97	-0.30	0.00	-4.79	0.00	4.79	942.31	236.01	442.48	437.94	1.47	-0.13	0.020	0.020
115.00	-8.91	-0.30	0.00	-4.49	0.00	4.49	937.13	234.11	435.38	431.99	1.50	-0.14	0.020	0.020
120.00	-8.63	-0.30	0.00	-3.01	0.00	3.01	910.67	224.60	400.73	402.61	1.64	-0.14	0.017	0.017
125.00	-4.40	-0.15	0.00	-1.53	0.00	1.53	883.23	215.09	367.52	373.80	1.79	-0.15	0.009	0.009
130.00	-4.20	-0.15	0.00	-0.76	0.00	0.76	854.80	205.58	335.75	345.64	1.95	-0.15	0.007	0.007
135.00	-0.19	0.00	0.00	0.00	0.00	0.00	825.39	196.08	305.42	318.16	2.10	-0.15	0.000	0.000
140.00	-0.02	0.00	0.00	0.00	0.00	0.00	789.80	186.57	276.52	289.54	2.26	-0.15	0.000	0.000
140.50	0.00	0.00	0.00	0.00	0.00	0.00	785.78	185.62	273.70	286.58	2.28	-0.15	0.000	0.000

Wind Loading - Shaft

Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 34

Load Case: 1.0D + 1.0W 60 mph Wind	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	RB1	1.00	0.85	6.635	7.30	198.77	0.730	0.000	0.00	0.000	0.00	0.0	0.0	0.0
1.00	RT1 RB2	1.00	0.85	6.635	7.30	197.91	0.739 *	0.000	1.00	3.592	2.65	19.4	0.0	170.4
5.00		1.00	0.85	6.635	7.30	194.51	0.741 *	0.000	4.00	14.214	10.53	76.9	0.0	674.2
10.00		1.00	0.85	6.635	7.30	190.26	0.746 *	0.000	5.00	17.421	12.99	94.8	0.0	826.2
15.00		1.00	0.85	6.635	7.30	186.00	0.751 *	0.000	5.00	17.036	12.79	93.4	0.0	807.8
20.00	RT2 RB3	1.00	0.90	7.040	7.74	187.22	0.757 *	0.000	5.00	16.650	12.60	97.5	0.0	789.3
25.00		1.00	0.95	7.378	8.12	187.18	0.762 *	0.000	5.00	16.265	12.40	100.6	0.0	770.9
30.00		1.00	0.98	7.667	8.43	186.24	0.768 *	0.000	5.00	15.880	12.20	102.9	0.0	752.5
35.00		1.00	1.01	7.920	8.71	184.63	0.775 *	0.000	5.00	15.495	12.01	104.6	0.0	734.0
40.00	RT3 RB4	1.00	1.04	8.145	8.96	182.54	0.782 *	0.000	5.00	15.110	11.81	105.8	0.0	715.6
44.50	Bot - Section 2	1.00	1.07	8.330	9.16	180.31	0.757 *	0.000	4.50	13.270	10.05	92.1	0.0	628.3
45.00		1.00	1.07	8.350	9.18	180.04	0.761 *	0.000	0.50	1.482	1.13	10.4	0.0	127.5
50.00	Top - Section 1	1.00	1.09	8.537	9.39	177.22	0.764 *	0.000	5.00	14.604	11.16	104.8	0.0	1255.9
55.00		1.00	1.12	8.710	9.58	177.48	0.766 *	0.000	5.00	14.219	10.90	104.4	0.0	561.8
60.00	RT4 RB5	1.00	1.14	8.871	9.76	174.20	0.774 *	0.000	5.00	13.834	10.70	104.4	0.0	546.5
65.00		1.00	1.16	9.022	9.92	170.71	0.781 *	0.000	5.00	13.448	10.50	104.2	0.0	531.1
67.50	RT5	1.00	1.17	9.094	10.00	168.90	0.787 *	0.000	2.50	6.580	5.18	51.8	0.0	259.8
70.00		1.00	1.17	9.164	10.08	167.05	0.791 *	0.000	2.50	6.484	5.13	51.7	0.0	256.0
75.00		1.00	1.19	9.298	10.23	163.23	0.730	0.000	5.00	12.678	9.26	94.7	0.0	500.4
80.00		1.00	1.21	9.425	10.37	159.28	0.730	0.000	5.00	12.293	8.97	93.0	0.0	485.0
85.00		1.00	1.22	9.546	10.50	155.19	0.730	0.000	5.00	11.908	8.69	91.3	0.0	469.7
90.00	Appurtenance(s)	1.00	1.24	9.662	10.63	151.00	0.730	0.000	5.00	11.523	8.41	89.4	0.0	454.3
90.50	Bot - Section 3	1.00	1.24	9.673	10.64	150.57	0.730	0.000	0.50	1.131	0.83	8.8	0.0	44.6
93.12	RB6	1.00	1.25	9.731	10.70	148.32	0.836 *	0.000	2.62	5.947	4.97	53.2	0.0	372.4
94.50	Top - Section 2	1.00	1.25	9.762	10.74	147.13	0.840 *	0.000	1.38	3.090	2.60	27.9	0.0	193.5
95.00		1.00	1.25	9.772	10.75	148.82	0.838 *	0.000	0.50	1.112	0.93	10.0	0.0	26.4
100.00	Appurtenance(s)	1.00	1.27	9.879	10.87	144.44	0.844 *	0.000	5.00	10.911	9.21	100.1	0.0	259.2
105.00		1.00	1.28	9.981	10.98	139.96	0.856 *	0.000	5.00	10.526	9.01	98.9	0.0	250.0
107.87	RT6	1.00	1.29	10.037	11.04	137.36	0.866 *	0.000	2.87	5.868	5.08	56.1	0.0	139.3
110.00		1.00	1.29	10.079	11.09	135.41	0.873 *	0.000	2.13	4.273	3.73	41.4	0.0	101.4
114.00	Appurtenance(s)	1.00	1.30	10.155	11.17	131.71	0.730	0.000	4.00	7.835	5.72	63.9	0.0	186.0
115.00		1.00	1.30	10.174	11.19	130.78	0.730	0.000	1.00	1.920	1.40	15.7	0.0	45.6
120.00		1.00	1.32	10.265	11.29	126.07	0.730	0.000	5.00	9.370	6.84	77.2	0.0	222.3
125.00	Appurtenance(s)	1.00	1.33	10.354	11.39	121.30	0.730	0.000	5.00	8.985	6.56	74.7	0.0	213.1
130.00		1.00	1.34	10.440	11.48	116.47	0.730	0.000	5.00	8.600	6.28	72.1	0.0	203.9
135.00	Appurtenance(s)	1.00	1.35	10.523	11.58	111.58	0.731 *	0.000	5.00	8.215	6.00	69.5	0.0	194.7
140.00		1.00	1.36	10.604	11.66	106.63	0.730	0.000	5.00	7.830	5.72	66.7	0.0	185.5
140.50		1.00	1.36	10.612	11.67	106.13	0.730	0.000	0.50	0.762	0.56	6.5	0.0	18.0
Totals:									140.50			2,630.7		14,973.2

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

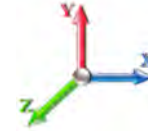
Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 35

Load Case: 1.0D + 1.0W 60 mph Wind

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	135.00	Commscope	3	10.523	11.575	0.73	0.80	0.70	33.00	0.000	0.000	8.09	0.00	0.00
2	135.00	Air 32	3	10.523	11.575	0.70	0.80	13.59	396.60	0.000	0.000	157.34	0.00	0.00
3	135.00	AIR6449 B41	3	10.523	11.575	0.64	0.80	10.85	309.00	0.000	0.000	125.57	0.00	0.00
4	135.00	APXVAARR24_43-U-NA2	3	10.523	11.575	0.56	0.80	34.00	384.00	0.000	0.000	393.59	0.00	0.00
5	135.00	Sector Frame	3	10.523	11.575	0.56	0.75	25.31	2451.00	0.000	0.000	292.99	0.00	0.00
6	135.00	Ericsson RRUS11 B4	3	10.523	11.575	0.54	0.80	4.13	132.00	0.000	0.000	47.83	0.00	0.00
7	135.00	Ericsson 4415 B25	3	10.523	11.575	0.54	0.80	2.99	132.30	0.000	0.000	34.62	0.00	0.00
8	135.00	Ericsson Radio 4449	3	10.523	11.575	0.00	0.80	4.95	210.00	0.000	0.000	57.30	0.00	0.00
9	125.00	Raycap DC6-48-60-18-8F	3	10.354	11.389	0.50	0.75	2.22	98.40	0.000	0.000	25.24	0.00	0.00
10	125.00	Kathrein 782 10250	6	10.354	11.389	0.50	0.75	1.57	38.40	0.000	0.000	17.86	0.00	0.00
11	125.00	CCI OPA-65R-LCUU-H6	3	10.354	11.389	0.59	0.75	17.17	219.00	0.000	0.000	195.56	0.00	0.00
12	125.00	CCI DTMAPB7819VG12A	6	10.354	11.389	0.50	0.75	3.44	114.00	0.000	0.000	39.15	0.00	0.00
13	125.00	QS66512-2	3	10.354	11.389	0.69	0.75	16.83	333.00	0.000	0.000	191.67	0.00	0.00
14	125.00	Platform w/ Hand Rails	1	10.354	11.389	1.00	1.00	40.00	2000.00	0.000	0.000	455.56	0.00	0.00
15	125.00	B14 4478	3	10.354	11.389	0.50	0.75	2.49	178.20	0.000	0.000	28.33	0.00	0.00
16	125.00	Ericsson RRUS-11	3	10.354	11.389	0.50	0.75	3.80	162.00	0.000	0.000	43.27	0.00	0.00
17	125.00	Ericsson RRUS-32	6	10.354	11.389	0.50	0.75	7.60	462.00	0.000	0.000	86.53	0.00	0.00
18	125.00	Kathrein 800-10121	3	10.354	11.389	0.59	0.75	9.15	132.30	0.000	0.000	104.26	0.00	0.00
19	125.00	HPA-65R-BUU-H6	3	10.354	11.389	0.64	0.75	18.47	153.00	0.000	0.000	210.41	0.00	0.00
20	125.00	RRUS 32 B66	3	10.354	11.389	0.50	0.75	4.13	159.00	0.000	0.000	47.04	0.00	0.00
21	125.00	DBC0061F1V51-2	6	10.354	11.389	0.50	0.75	1.30	152.40	0.000	0.000	14.77	0.00	0.00
22	114.00	Low Profile Platform	1	10.155	11.170	1.00	1.00	25.00	1800.00	0.000	0.000	279.26	0.00	0.00
23	114.00	Alcatel Lucent	3	10.211	11.232	0.40	0.80	3.25	180.00	0.000	3.000	36.53	0.00	109.58
24	114.00	Samsung	3	10.136	11.150	0.40	0.80	2.18	99.30	0.000	-1.000	24.35	0.00	-24.35
25	114.00	Andrew VHLP1-23-DW1	1	10.238	11.262	1.00	1.00	1.61	14.00	0.000	4.500	18.13	0.00	81.59
26	114.00	Andrew VHLP2-23-DW1	1	10.238	11.262	1.00	1.00	4.69	31.00	0.000	4.500	52.82	0.00	237.68
27	114.00	Argus LLPX310R-V1	3	10.164	11.181	0.55	0.80	7.14	152.10	0.000	0.500	79.80	0.00	39.90
28	114.00	Alcatel Lucent	3	10.127	11.139	0.40	0.80	2.88	192.00	0.000	-1.500	32.08	0.00	-48.12
29	114.00	20" x 18" x 9" Junction Box	1	10.155	11.170	0.40	0.80	1.26	20.00	0.000	0.000	14.07	0.00	0.00
30	114.00	RFS APXVTM14	3	10.211	11.232	0.63	0.80	12.02	350.10	0.000	3.000	135.01	0.00	405.03
31	114.00	RFS APXVSP18	3	10.174	11.191	0.66	0.80	15.98	375.90	0.000	1.000	178.78	0.00	178.78
32	114.00	Alcatel Lucent	3	10.211	11.232	0.40	0.80	4.86	210.00	0.000	3.000	54.59	0.00	163.76
33	100.00	JMA Wireless	3	9.879	10.866	0.55	0.75	20.80	193.50	0.000	0.000	225.98	0.00	0.00
34	100.00	Fujitsu TA08025-B605 -	3	9.879	10.866	0.38	0.75	2.21	225.00	0.000	0.000	23.96	0.00	0.00
35	100.00	Raycap	1	9.879	10.866	0.38	0.75	0.75	21.90	0.000	0.000	8.19	0.00	0.00
36	100.00	Fujitsu TA08025-B604 -	3	9.879	10.866	0.38	0.75	2.21	191.70	0.000	0.000	23.96	0.00	0.00
37	100.00	Platform w/HRK	1	9.879	10.866	1.00	1.00	37.59	1727.00	0.000	0.000	408.47	0.00	0.00
38	90.00	RFS DB-T1-6Z-8AB-0Z	2	9.662	10.628	0.71	1.00	6.82	37.80	0.000	0.000	72.44	0.00	0.00
39	90.00	Alcatel Lucent B2/B66A	3	9.662	10.628	0.50	0.75	2.83	253.20	0.000	0.000	30.12	0.00	0.00
40	90.00	Samsung B5/B13	3	9.662	10.628	0.50	0.75	2.83	210.90	0.000	0.000	30.12	0.00	0.00
41	90.00	XXDMMM-12.5-65-8T	3	9.662	10.628	0.55	0.75	2.55	261.90	0.000	0.000	27.07	0.00	0.00
42	90.00	L-Sub6 Antenna	3	9.662	10.628	0.63	0.75	7.62	244.80	0.000	0.000	80.95	0.00	0.00
43	90.00	SLCP 2x6014	3	9.662	10.628	0.67	0.75	13.00	60.00	0.000	0.000	138.12	0.00	0.00
44	90.00	SBNHH-1D65B w/ Mount	6	9.662	10.628	0.62	0.75	30.48	240.00	0.000	0.000	323.92	0.00	0.00
45	90.00	Platform w/ Hand Rails	1	9.662	10.628	1.00	1.00	42.00	2200.00	0.000	0.000	446.38	0.00	0.00

Totals: 17,541.70

5,322.07

Total Applied Force Summary

Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (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: 1.0D + 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
1.00		19.36	209.86	0.00	0.00
5.00		76.87	832.07	0.00	0.00
10.00		94.80	1023.50	0.00	0.00
15.00		93.36	1005.07	0.00	0.00
20.00		97.54	986.63	0.00	0.00
25.00		100.63	968.20	0.00	0.00
30.00		102.91	949.77	0.00	0.00
35.00		104.59	931.33	0.00	0.00
40.00		105.81	912.90	0.00	0.00
44.50		92.09	805.85	0.00	0.00
45.00		10.35	147.18	0.00	0.00
50.00		104.82	1453.23	0.00	0.00
55.00		104.41	759.15	0.00	0.00
60.00		104.42	743.79	0.00	0.00
65.00		104.24	728.43	0.00	0.00
67.50		51.80	358.45	0.00	0.00
70.00		51.70	354.61	0.00	0.00
75.00		94.66	697.70	0.00	0.00
80.00		93.04	682.34	0.00	0.00
85.00		91.28	666.98	0.00	0.00
90.00	(24) attachments	1238.53	4160.22	0.00	0.00
90.50		8.79	56.98	0.00	0.00
93.12		53.19	437.37	0.00	0.00
94.50		27.87	227.66	0.00	0.00
95.00		10.01	38.82	0.00	0.00
100.00	(11) attachments	790.61	2742.22	0.00	0.00
105.00		98.92	368.91	0.00	0.00
107.87		56.12	207.59	0.00	0.00
110.00		41.36	152.10	0.00	0.00
114.00	(25) attachments	969.31	3705.52	0.00	1143.85
115.00		15.69	61.84	0.00	0.00
120.00		77.24	303.65	0.00	0.00
125.00	(49) attachments	1534.34	4496.13	0.00	0.00
130.00		72.09	220.91	0.00	0.00
135.00	(24) attachments	1186.84	4259.59	0.00	0.00
140.00		66.67	185.48	0.00	0.00
140.50		6.49	18.04	0.00	0.00
	Totals:	7,952.77	36,860.06	0.00	1,143.85

Linear Appurtenance Segment Forces (Factored)

Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



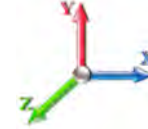
Page: 37

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)
1.00	1 1/4" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.104	1.012	6.635	0.00	1.32
1.00	1 5/8" Fiber	Yes	1.00	0.000	1.98	0.17	0.00	0.104	1.012	6.635	0.00	2.08
1.00	1.25" Reinforcing	Yes	1.00	0.000	1.25	0.10	0.00	0.104	1.012	6.635	0.00	0.00
1.00	1.25" Reinforcing	Yes	1.00	0.000	1.25	0.10	0.00	0.104	1.012	6.635	0.00	0.00
5.00	1 1/4" Fiber	Yes	4.00	0.000	0.00	0.00	0.00	0.105	1.015	6.635	0.00	5.28
5.00	1 5/8" Fiber	Yes	4.00	0.000	1.98	0.66	0.00	0.105	1.015	6.635	0.00	8.32
5.00	1.25" Reinforcing	Yes	4.00	0.000	1.25	0.42	0.00	0.105	1.015	6.635	0.00	0.00
5.00	1.25" Reinforcing	Yes	4.00	0.000	1.25	0.42	0.00	0.105	1.015	6.635	0.00	0.00
10.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	6.635	0.00	6.60
10.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.107	1.021	6.635	0.00	10.40
10.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.107	1.021	6.635	0.00	0.00
10.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.107	1.021	6.635	0.00	0.00
15.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	6.635	0.00	6.60
15.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.110	1.029	6.635	0.00	10.40
15.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.110	1.029	6.635	0.00	0.00
15.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.110	1.029	6.635	0.00	0.00
20.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.036	7.040	0.00	6.60
20.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.112	1.036	7.040	0.00	10.40
20.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.112	1.036	7.040	0.00	0.00
20.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.112	1.036	7.040	0.00	0.00
25.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.044	7.378	0.00	6.60
25.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.115	1.044	7.378	0.00	10.40
25.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.115	1.044	7.378	0.00	0.00
25.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.115	1.044	7.378	0.00	0.00
30.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.118	1.053	7.667	0.00	6.60
30.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.118	1.053	7.667	0.00	10.40
30.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.118	1.053	7.667	0.00	0.00
30.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.118	1.053	7.667	0.00	0.00
35.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.120	1.061	7.920	0.00	6.60
35.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.120	1.061	7.920	0.00	10.40
35.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.120	1.061	7.920	0.00	0.00
35.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.120	1.061	7.920	0.00	0.00
40.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.124	1.071	8.145	0.00	6.60
40.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.124	1.071	8.145	0.00	10.40
40.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.124	1.071	8.145	0.00	0.00
40.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.124	1.071	8.145	0.00	0.00
44.50	1 1/4" Fiber	Yes	4.50	0.000	0.00	0.00	0.00	0.112	1.037	8.330	0.00	5.94
44.50	1 5/8" Fiber	Yes	4.50	0.000	1.98	0.74	0.00	0.112	1.037	8.330	0.00	9.36
44.50	1" Reinforcing plate	Yes	4.50	0.000	1.00	0.38	0.00	0.112	1.037	8.330	0.00	0.00
44.50	1" Reinforcing plate	Yes	4.50	0.000	1.00	0.38	0.00	0.112	1.037	8.330	0.00	0.00
45.00	1 1/4" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.114	1.042	8.350	0.00	0.66
45.00	1 5/8" Fiber	Yes	0.50	0.000	1.98	0.08	0.00	0.114	1.042	8.350	0.00	1.04
45.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.114	1.042	8.350	0.00	0.00
45.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.114	1.042	8.350	0.00	0.00
50.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.116	1.047	8.537	0.00	6.60
50.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.116	1.047	8.537	0.00	10.40
50.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.116	1.047	8.537	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

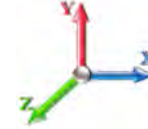
Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 38

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	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.116	1.047	8.537	0.00	0.00
55.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.117	1.050	8.710	0.00	6.60
55.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.117	1.050	8.710	0.00	10.40
55.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.117	1.050	8.710	0.00	0.00
55.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.117	1.050	8.710	0.00	0.00
60.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.120	1.060	8.871	0.00	6.60
60.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.120	1.060	8.871	0.00	10.40
60.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.120	1.060	8.871	0.00	0.00
60.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.120	1.060	8.871	0.00	0.00
65.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.070	9.022	0.00	6.60
65.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.123	1.070	9.022	0.00	10.40
65.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.123	1.070	9.022	0.00	0.00
65.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.123	1.070	9.022	0.00	0.00
67.50	1 1/4" Fiber	Yes	2.50	0.000	0.00	0.00	0.00	0.126	1.078	9.094	0.00	3.30
67.50	1 5/8" Fiber	Yes	2.50	0.000	1.98	0.41	0.00	0.126	1.078	9.094	0.00	5.20
67.50	1" Reinforcing plate	Yes	2.50	0.000	1.00	0.21	0.00	0.126	1.078	9.094	0.00	0.00
67.50	1" Reinforcing plate	Yes	2.50	0.000	1.00	0.21	0.00	0.126	1.078	9.094	0.00	0.00
70.00	1 1/4" Fiber	Yes	2.50	0.000	0.00	0.00	0.00	0.128	1.084	9.164	0.00	3.30
70.00	1 5/8" Fiber	Yes	2.50	0.000	1.98	0.41	0.00	0.128	1.084	9.164	0.00	5.20
70.00	1" Reinforcing plate	Yes	2.50	0.000	1.00	0.21	0.00	0.128	1.084	9.164	0.00	0.00
70.00	1" Reinforcing plate	Yes	2.50	0.000	1.00	0.21	0.00	0.128	1.084	9.164	0.00	0.00
75.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.065	0.000	9.298	0.00	6.60
75.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.065	0.000	9.298	0.00	10.40
80.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.067	0.000	9.425	0.00	6.60
80.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.067	0.000	9.425	0.00	10.40
85.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	9.546	0.00	6.60
85.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.069	0.000	9.546	0.00	10.40
90.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	9.662	0.00	6.60
90.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.072	0.000	9.662	0.00	10.40
90.50	1 1/4" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.073	0.000	9.673	0.00	0.66
90.50	1 5/8" Fiber	Yes	0.50	0.000	1.98	0.08	0.00	0.073	0.000	9.673	0.00	1.04
93.12	1 1/4" Fiber	Yes	2.62	0.000	0.00	0.00	0.00	0.148	1.145	9.731	0.00	3.46
93.12	1 5/8" Fiber	Yes	2.62	0.000	1.98	0.43	0.00	0.148	1.145	9.731	0.00	5.45
93.12	1" Reinforcing plate	Yes	2.62	0.000	1.00	0.22	0.00	0.148	1.145	9.731	0.00	0.00
93.12	1" Reinforcing plate	Yes	2.62	0.000	1.00	0.22	0.00	0.148	1.145	9.731	0.00	0.00
94.50	1 1/4" Fiber	Yes	1.38	0.000	0.00	0.00	0.00	0.150	1.151	9.762	0.00	1.82
94.50	1 5/8" Fiber	Yes	1.38	0.000	1.98	0.23	0.00	0.150	1.151	9.762	0.00	2.87
94.50	1" Reinforcing plate	Yes	1.38	0.000	1.00	0.11	0.00	0.150	1.151	9.762	0.00	0.00
94.50	1" Reinforcing plate	Yes	1.38	0.000	1.00	0.11	0.00	0.150	1.151	9.762	0.00	0.00
95.00	1 1/4" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.149	1.147	9.772	0.00	0.66
95.00	1 5/8" Fiber	Yes	0.50	0.000	1.98	0.08	0.00	0.149	1.147	9.772	0.00	1.04
95.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.149	1.147	9.772	0.00	0.00
95.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.149	1.147	9.772	0.00	0.00
100.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.152	1.156	9.879	0.00	6.60
100.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.152	1.156	9.879	0.00	10.40
100.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.152	1.156	9.879	0.00	0.00
100.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.152	1.156	9.879	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

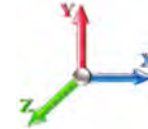
Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 39

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)
105.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.158	1.173	9.981	0.00	6.60
105.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.158	1.173	9.981	0.00	10.40
105.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.158	1.173	9.981	0.00	0.00
105.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.158	1.173	9.981	0.00	0.00
107.87	1 1/4" Fiber	Yes	2.87	0.000	0.00	0.00	0.00	0.162	1.187	10.037	0.00	3.79
107.87	1 5/8" Fiber	Yes	2.87	0.000	1.98	0.47	0.00	0.162	1.187	10.037	0.00	5.97
107.87	1" Reinforcing plate	Yes	2.87	0.000	1.00	0.24	0.00	0.162	1.187	10.037	0.00	0.00
107.87	1" Reinforcing plate	Yes	2.87	0.000	1.00	0.24	0.00	0.162	1.187	10.037	0.00	0.00
110.00	1 1/4" Fiber	Yes	2.13	0.000	0.00	0.00	0.00	0.165	1.196	10.079	0.00	2.81
110.00	1 5/8" Fiber	Yes	2.13	0.000	1.98	0.35	0.00	0.165	1.196	10.079	0.00	4.43
110.00	1" Reinforcing plate	Yes	2.13	0.000	1.00	0.18	0.00	0.165	1.196	10.079	0.00	0.00
110.00	1" Reinforcing plate	Yes	2.13	0.000	1.00	0.18	0.00	0.165	1.196	10.079	0.00	0.00
114.00	1 1/4" Fiber	Yes	4.00	0.000	0.00	0.00	0.00	0.095	0.000	10.155	0.00	5.28
114.00	1 5/8" Fiber	Yes	4.00	0.000	1.98	0.66	0.00	0.095	0.000	10.155	0.00	8.32
114.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.095	0.000	10.155	0.00	0.00
114.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.095	0.000	10.155	0.00	0.00
115.00	1 1/4" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.086	0.000	10.174	0.00	1.32
115.00	1 5/8" Fiber	Yes	1.00	0.000	1.98	0.17	0.00	0.086	0.000	10.174	0.00	2.08
120.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.088	0.000	10.265	0.00	6.60
120.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.088	0.000	10.265	0.00	10.40
125.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.092	0.000	10.354	0.00	6.60
125.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.092	0.000	10.354	0.00	10.40
130.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.096	0.000	10.440	0.00	6.60
130.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.096	0.000	10.440	0.00	10.40
135.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.100	1.001	10.523	0.00	6.60
135.00	1 5/8" Fiber	Yes	5.00	0.000	1.98	0.82	0.00	0.100	1.001	10.523	0.00	10.40
Totals:											0.0	459.0

Calculated Forces

Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



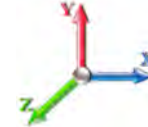
Page: 40

Load Case: 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	-36.86	-7.96	0.00	-831.41	0.00	831.41	3592.24	880.75	3081.19	3113.33	0.00	0.000	0.000	0.193
1.00	-36.64	-7.96	0.00	-823.46	0.00	823.46	3581.26	876.95	3054.64	3090.29	0.00	-0.014	0.000	0.170
5.00	-35.80	-7.92	0.00	-791.62	0.00	791.62	3536.93	861.73	2949.58	2998.63	0.04	-0.065	0.000	0.167
10.00	-34.77	-7.86	0.00	-752.04	0.00	752.04	3480.64	842.72	2820.85	2885.21	0.14	-0.129	0.000	0.164
15.00	-33.76	-7.80	0.00	-712.75	0.00	712.75	3423.37	823.70	2694.99	2773.12	0.31	-0.193	0.000	0.160
20.00	-32.76	-7.74	0.00	-673.75	0.00	673.75	3365.12	804.69	2572.00	2662.41	0.54	-0.257	0.000	0.165
25.00	-31.79	-7.67	0.00	-635.07	0.00	635.07	3305.89	785.67	2451.88	2553.15	0.85	-0.325	0.000	0.161
30.00	-30.83	-7.60	0.00	-596.72	0.00	596.72	3245.52	766.66	2334.64	2445.26	1.23	-0.393	0.000	0.156
35.00	-29.89	-7.52	0.00	-558.74	0.00	558.74	3165.03	747.64	2220.26	2324.87	1.67	-0.462	0.000	0.153
40.00	-28.97	-7.44	0.00	-521.14	0.00	521.14	3084.53	728.63	2108.76	2207.52	2.19	-0.530	0.000	0.162
44.50	-28.16	-7.36	0.00	-487.65	0.00	487.65	3012.08	711.52	2010.87	2104.51	2.72	-0.596	0.000	0.157
45.00	-28.01	-7.37	0.00	-483.97	0.00	483.97	3004.03	709.61	2000.14	2093.21	2.79	-0.604	0.000	0.155
50.00	-26.55	-7.28	0.00	-447.14	0.00	447.14	2423.81	587.47	1644.99	1680.79	3.46	-0.676	0.000	0.156
55.00	-25.78	-7.20	0.00	-410.74	0.00	410.74	2376.14	571.62	1557.44	1602.88	4.21	-0.748	0.000	0.161
60.00	-25.03	-7.12	0.00	-374.74	0.00	374.74	2327.49	555.78	1472.29	1526.13	5.03	-0.824	0.000	0.152
65.00	-24.29	-7.03	0.00	-339.16	0.00	339.16	2277.86	539.93	1389.54	1450.59	5.93	-0.898	0.000	0.143
67.50	-23.93	-6.98	0.00	-321.60	0.00	321.60	2252.16	532.01	1349.06	1412.97	6.41	-0.935	0.000	0.139
67.50	-23.93	-6.98	0.00	-321.60	0.00	321.60	2252.16	532.01	1349.06	1412.97	6.41	-0.935	0.000	0.139
70.00	-23.57	-6.96	0.00	-304.14	0.00	304.14	2218.62	524.08	1309.17	1370.99	6.91	-0.971	0.000	0.233
75.00	-22.86	-6.90	0.00	-269.35	0.00	269.35	2151.54	508.24	1231.20	1288.93	7.99	-1.090	0.000	0.220
80.00	-22.16	-6.83	0.00	-234.86	0.00	234.86	2084.46	492.39	1155.63	1209.39	9.20	-1.205	0.000	0.205
85.00	-21.49	-6.77	0.00	-200.69	0.00	200.69	2017.38	476.55	1082.45	1132.40	10.52	-1.315	0.000	0.188
90.00	-17.35	-5.45	0.00	-166.85	0.00	166.85	1950.30	460.70	1011.66	1057.93	11.95	-1.416	0.000	0.167
90.50	-17.29	-5.45	0.00	-164.13	0.00	164.13	1943.59	459.12	1004.71	1050.62	12.10	-1.426	0.000	0.165
93.12	-16.85	-5.39	0.00	-149.86	0.00	149.86	1908.44	450.81	968.70	1012.75	12.90	-1.477	0.000	0.088
94.50	-16.63	-5.36	0.00	-142.42	0.00	142.42	1035.36	273.09	592.44	557.40	13.33	-1.492	0.000	0.096
95.00	-16.58	-5.36	0.00	-139.74	0.00	139.74	1033.16	272.13	588.32	554.27	13.48	-1.497	0.000	0.119
100.00	-13.86	-4.51	0.00	-112.95	0.00	112.95	1010.63	262.63	547.93	523.10	15.08	-1.556	0.000	0.099
105.00	-13.49	-4.41	0.00	-90.40	0.00	90.40	987.11	253.12	508.98	492.30	16.74	-1.608	0.000	0.083
107.87	-13.28	-4.35	0.00	-77.74	0.00	77.74	973.17	247.66	487.27	474.80	17.72	-1.635	0.000	0.074
107.87	-13.28	-4.35	0.00	-77.74	0.00	77.74	973.17	247.66	487.27	474.80	17.72	-1.635	0.000	0.074
110.00	-13.13	-4.32	0.00	-68.47	0.00	68.47	962.61	243.61	471.46	461.91	18.45	-1.654	0.000	0.162
114.00	-9.45	-3.25	0.00	-50.06	0.00	50.06	942.31	236.01	442.48	437.94	19.87	-1.725	0.000	0.125
115.00	-9.39	-3.24	0.00	-46.81	0.00	46.81	937.13	234.11	435.38	431.99	20.23	-1.741	0.000	0.119
120.00	-9.08	-3.16	0.00	-30.63	0.00	30.63	910.67	224.60	400.73	402.61	22.09	-1.806	0.000	0.086
125.00	-4.64	-1.48	0.00	-14.85	0.00	14.85	883.23	215.09	367.52	373.80	24.01	-1.849	0.000	0.045
130.00	-4.42	-1.41	0.00	-7.43	0.00	7.43	854.80	205.58	335.75	345.64	25.96	-1.873	0.000	0.027
135.00	-0.20	-0.08	0.00	-0.40	0.00	0.40	825.39	196.08	305.42	318.16	27.93	-1.883	0.000	0.002
140.00	-0.02	-0.01	0.00	0.00	0.00	0.00	789.80	186.57	276.52	289.54	29.90	-1.884	0.000	0.000
140.50	0.00	-0.01	0.00	0.00	0.00	0.00	785.78	185.62	273.70	286.58	30.10	-1.884	0.000	0.000

Final Analysis Summary

Structure: CT16504-A-SBA	Code: EIA/TIA-222-H	9/2/2021
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 41

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 + 1.0W 118 mph Wind	34.4	0.00	44.21	0.00	0.00	3622.25
0.9D + 1.0W 118 mph Wind	34.4	0.00	33.15	0.00	0.00	3566.75
1.2D + 1.0Di + 1.0Wi 50 mph Wind	9.4	0.00	76.86	0.00	0.00	1025.69
1.2D + 1.0Ev + 1.0Eh	0.5	0.00	45.75	0.00	0.00	57.20
0.9D + 1.0Ev + 1.0Eh	0.5	0.00	34.63	0.00	0.00	56.39
1.0D + 1.0W 60 mph Wind	8.0	0.00	36.86	0.00	0.00	831.41

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 + 1.0W 118 mph Wind	-26.12	-30.39	0.00	-1329.6	0.00	-1329.6	2218.62	524.08	1309.17	1370.99	70.00	0.985
0.9D + 1.0W 118 mph Wind	-19.08	-29.80	0.00	-1296.4	0.00	-1296.4	2218.62	524.08	1309.17	1370.99	70.00	0.957
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-54.22	-8.68	0.00	-384.17	0.00	-384.17	2218.62	524.08	1309.17	1370.99	70.00	0.305
1.2D + 1.0Ev + 1.0Eh	-16.43	-0.39	0.00	-6.41	0.00	-6.41	962.61	243.61	471.46	461.91	110.00	0.031
0.9D + 1.0Ev + 1.0Eh	-22.26	-0.47	0.00	-23.79	0.00	-23.79	2218.62	524.08	1309.17	1370.99	70.00	0.027
1.0D + 1.0W 60 mph Wind	-23.57	-6.96	0.00	-304.14	0.00	-304.14	2218.62	524.08	1309.17	1370.99	70.00	0.233

Additional Steel Summary

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors			Lower Termination				Upper Termination				Max Member			
			VQ/I (lb/in)	Vu (kips)	phi Vn (kips)	MQ/I (kips)	phi Vn (kips)	Num Reqd	Num Actual	MQ/I (kips)	phi Vn (kips)	Num Reqd	Num Actual	Pu (kips)	phi Pn (kips)	phi Tn (kips)	Ratio
0.0	1.0	(4) SOL-2 1/4" William R71	-335.0	-6.03	25.3	277.0	25.3	11	0	418.9	25.3			277.00	370.7	385.56	0.747
1.0	20.0	(4) LNP-LP7X125-B-20A	-373.7	-8.97	25.3	418.9	25.3			392.4	25.3			418.91	460.8	435.94	0.961
20.0	40.0	(4) LNP-LP6X125-G-20AB	-386.5	-9.28	25.3	359.9	25.3			325.7	25.3			359.85	395.0	360.94	0.997
40.0	60.0	(4) LNP-LP6X100-G-20BC	-415.0	-9.96	25.3	285.3	25.3			262.6	25.3			285.28	297.8	288.75	0.988
60.0	67.5	(4) LNP-LP6X100-G-10CT	-435.7	-10.46	25.3	262.6	25.3			241.2	25.3	10	0	262.65	297.8	288.75	0.910
93.1	107.9	(3) LNP-LP6X100-G-20TT	632.7	15.18	25.3	166.2	22.7	8	8	125.7	22.7	6	8	197.96	297.8	288.75	0.686



Pier Foundation Design For Monopole			Date
Customer Name:	Dish Wireless	EIA/TIA Standard:	EIA-222-H
Site Name:		Structure Height (Ft.):	140.5
Site Number:	CT16504-A-SBA	Engineer Name:	J. Tibbetts
Engr. Number:	114612	Engineer Login ID:	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	44.2	Shear Force (Kips):	34.4
Uplift Force (Kips):	0.0	Moment (Kips-ft):	3622.3

Foundation Geometries:

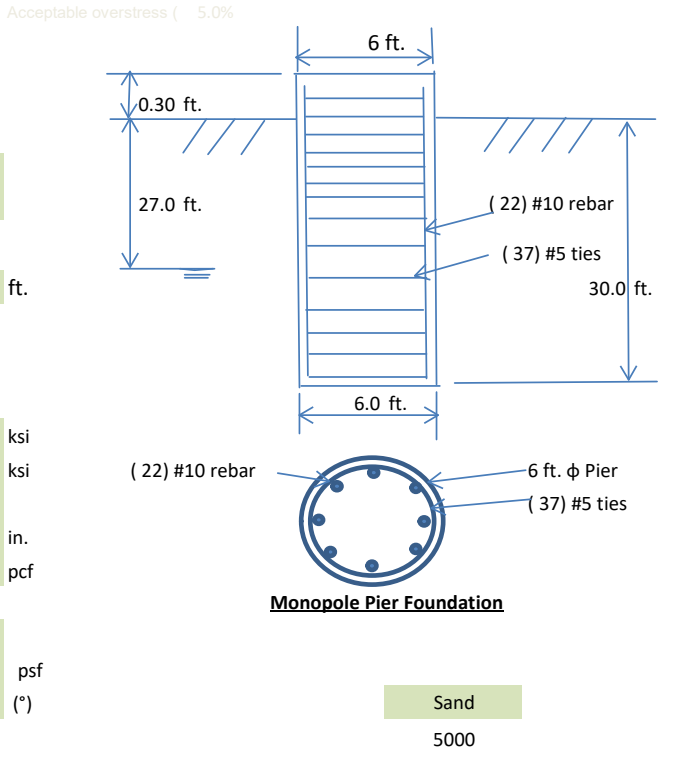
Diameter of Pier (ft.):	6.0	Depth of Base B. G. S. :	30.0 ft.
Pier Height A. G. (ft.):	0.30		

Material Properties and Rebar Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000 ksi
Vertical bar yield (ksi)	60	Tie steel yield strength:	60 ksi
Vertical Rebar Size #:	10	Tie / Stirrup Size #:	5
Qty. of Vertical Rebars:	22	Tie Spacing:	12.0 in.
Concrete Cover (in.):	4	Concrete unit weight:	150.0 pcf

Soil Design Parameters:

Water Table B.G.S. (ft):	27.0	Unit weight of water:	62.4 psf
Ratio of Uplift/Axial Skin Friction:	1.0	Pullout failure Angle:	30 (°)
Skin Frictions are to be obtained from:	Soil Report		



Depth of Layers (ft)		γ_{soil} (pcf)	ϕ (°)	Cohesion (psf)	Ultimate Skin Friction (psf)	Ultimate Bearing (psf)	Soil Types					
Top	Bottom											
0.0	1.0	100	0				Sand					
1.0	5.0	135	40				Sand					
5.0	7.0	120	33				Sand					
7.0	10.0	130	38				Sand					
10.0	15.0	128	37				Sand					
15.0	30.0	132	39			11600	Sand					
30.0	35.0	127	36			11600	Sand					

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

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Soil Bearing Strength Reduction Factor:	0.75
Total Dry Soil Volume from Conical Failure (cu. Ft.):	14255	Dry Soil Weight from Conical Failure:	1845 Kips
Total Buoyant Soil Volume from Conical Failure (cu. Ft.):	58	Buoyant Soil Weight from Conical Failure (Kips):	5 Kips
Total Dry Concrete Volume (cu. Ft.):	772	Total Dry Concrete Weight:	115.8 Kips
Total Buoyant Concrete Volume (cu. Ft.):	84.8	Total Buoyant Concrete Weight:	7.43 Kips
Total Effective Concrete Weight (Kips):	123.2	Total Effective Soil Weight:	1849.7 Kips
Total Effective Vertical Load on Base (Kips):	61.3		

Check Soil Capacities:

Allowable Foundation Overturning Resistance (kips-ft.):	16168.8	>	Design Factored Moment (kips-ft):	4336	Usage	0.27	OK!
Factor of Safety of Passive Soil Resistance against Moment:	3.73	OK!					

Check the capacities of Reinforcing Concrete:

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

Reinforcing Concrete Pier:

Vertical Steel Rebar Area (sq. in./each):	1.27	Tie / Stirrup Area (sq. in./each):	0.31	Usage	
Calculated Moment Capacity (Mn, Kips-Ft):	3931.4	>	Design Factored Moment (Mu, K-Ft):	3720.9	0.95 OK!
Calculated Shear Capacity (Kips):	707.8	>	Design Factored Shear (Kips):	311.1	0.44 OK!
Calculated Tension Capacity (Tn, Kips):	1508.8	>	Design Factored Tension (Tu Kips):	0.0	0.00 OK!
Calculated Compression Capacity (Pn, Kips):	5362	>	Design Factored Axial Load (Pu Kips):	44.2	0.01 OK!
Moment & Axial Strength Combination:	0.95	OK!	Max. Allowable Tie/Stirrup Spacing:	12.00	in.
Pier Reinforcement Ratio:	0.007	Reinforcement Ratio is satisfied per ACI			

EXHIBIT 9

Antenna Mount Analysis



September 3, 2021

Sydney Schuch
SBA Network Services, LLC.
470 Davidson Road
Pittsburgh, PA 15239
(561) 579-8812

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

Subject: **Appurtenance Mount Analysis Report**

Carrier Designation: **Dish Co-Locate**
Site Number: BOBDL00130A
Site Name: N/A

SBA Network Services Designation: **Site Number:** CT16504-A
Site Name: Manchester 12, CT
Application Number: 167828, v1

Engineering Firm Designation: **Project Number:** 149476.003.01

Site Data: **60 Adams Street, Manchester, CT, 06042, Hartford County**
Latitude 41.79405°, Longitude -72.55534°
Monopole
8 ft. Platform Mount

Dear Mr. Schuch,

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

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

Existing + Proposed Equipment	Sufficient Capacity
Note: See Table 1 for the final loading configuration	(Passing at 55.3%)

The jurisdiction has adopted the 2015 International Building Code. This analysis has been performed in accordance with the ANSI/TIA-222-H Standard.

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

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

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

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

Chad E. Tuttle, P.E.

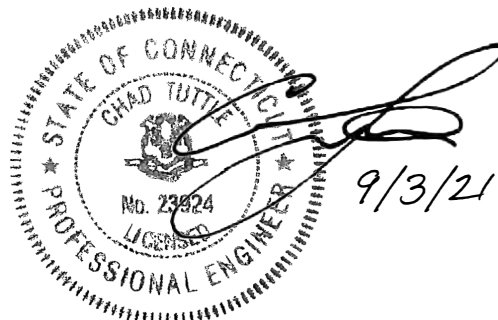


TABLE OF CONTENTS

1) INTRODUCTION

2) ANALYSIS CRITERIA

Table 1 – Proposed and Existing Equipment Information

Table 2 – Documents Provided

3) ANALYSIS PROCEDURE

3.1) Analysis Method

3.2) Assumptions

4) ANALYSIS RESULTS

Table 3 – Mount Component Stresses vs. Capacity

5) RECOMMENDATIONS

6) APPENDIX A

RISA-3D Output

7) APPENDIX B

Additional Calculations

1) INTRODUCTION

The appurtenance mount consists of platform mount designed by Commscope (Part# MC-PK8-DSH) at 100 ft., attached to monopole at 60 Adams Street, Manchester, CT, 06042, Hartford County. The proposed antenna loading information was obtained from SBA Network Services, LLC. All information provided to B+T Group was assumed accurate and complete.

2) ANALYSIS CRITERIA

The structural analysis was performed for this mount in accordance with the ANSI/TIA-222-H-2017 Structural Standard for Antenna Supporting Structures and Antennas and Small Wind Turbine Support Structures using a 3-second gust wind speed of 118 mph with no ice and 50 mph with 1.5 inch escalated ice thickness. Exposure Category C & Topographic Category 1 and Risk Category II were used in this analysis. In addition, the platform mount has been analyzed for various live loading conditions consisting of a 250-lb man live load applied individually at the midpoint and cantilevered ends of horizontal members as well as a 500-pound man live load applied individually at mount pipe locations using a 3-second gust of 30 mph. The mount was analyzed under 30° increments in the wind direction. The analyzed loading is detailed in Table 1.

Table 1 – Proposed and Existing Equipment Information

Loading	RAD Center Elev. (ft.)	Position	Qty.	Description	Note
Proposed	100	1	3	JMA Wireless MX08FRO665-21	1
		1	3	FUJITSU TA08025-B605	2
		1	3	FUJITSU TA08025-B604	
		-	1	Raycap RDIDC-9181-PF-48	3

Note:

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

Table 2 – Documents Provided

Documents	Remarks	Reference	Source
RFDS	Existing Loading & Proposed Loading	Date: 07/22/2021	SBA Network Services, LLC
Collo App		Date: 08/02/2021	SBA Network Services, LLC

3) ANALYSIS PROCEDURE

3.1) Analysis Method

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

Manufacturers drawing were used to create the model.

3.2) Assumptions

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

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

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

4) ANALYSIS RESULTS

Table 3 – Mount Component Stresses vs. Capacity

Notes	Component	Elevation (ft.)	% Capacity	Pass / Fail
-	Main Horizontals	100	8.8	Pass
-	Support Rails	100	15.4	Pass
-	Support Tubes	100	55.3	Pass
-	Support Channels	100	41.9	Pass
-	Support Angles	100	35.4	Pass
-	Mount Pipes	100	16.9	Pass
-	Connection Plates	100	23.4	Pass
-	Connection Angles	100	25.9	Pass
-	Connection	100	30.0	Pass

5) RECOMMENDATIONS

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

APPENDIX A

(RISA-3D Output)



Envelope Only Solution

B+T Group

AK

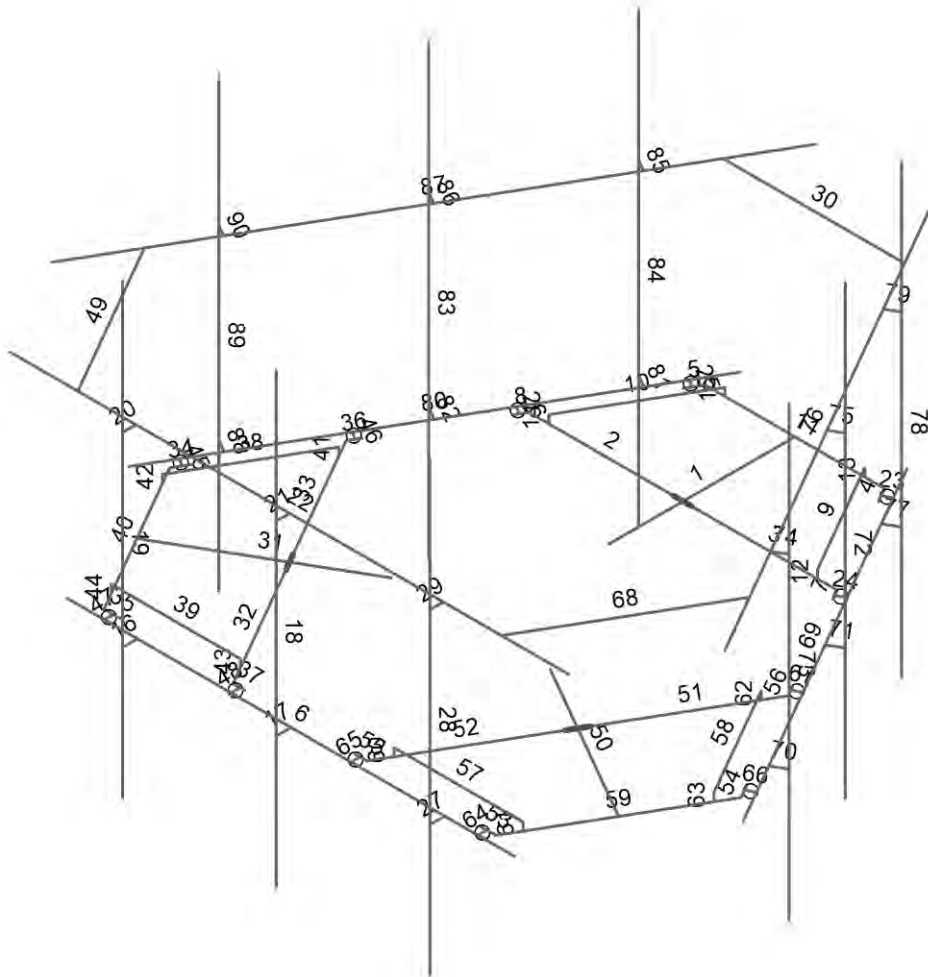
149476.003.01

CT16504-A - Manchester 12, CT

AK1

Sep 03, 2021

149476_003_01_Manchester 12 C...



Envelope Only Solution

B+T Group

AK

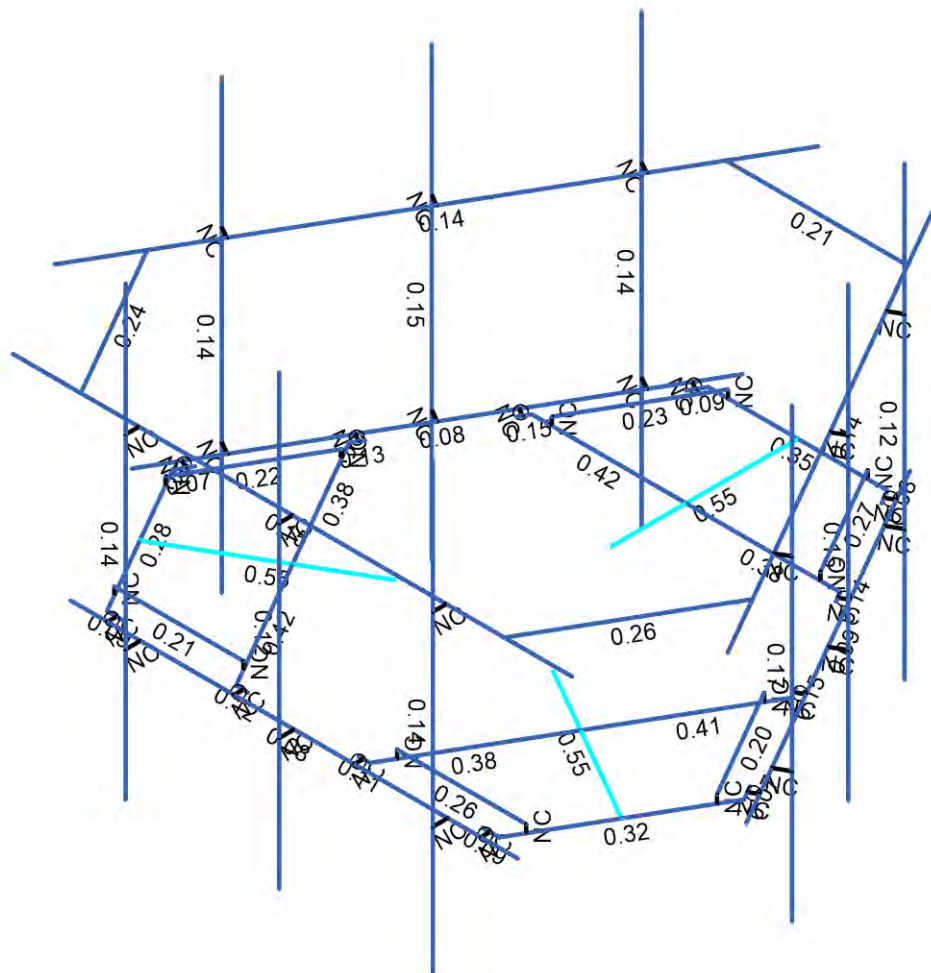
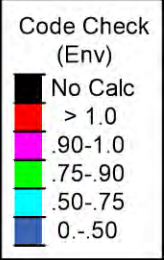
149476.003.01

CT16504-A - Manchester 12, CT

AK2

Sep 03, 2021

149476_003_01_Manchester 12 C...



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	CT16504-A - Manchester 12, CT	AK4
AK		Sep 03, 2021
149476.003.01		149476_003_01_Manchester 12 C...



Hot Rolled Steel Section Sets

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

Member Primary Data

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



Member Primary Data (Continued)

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

Basic Load Cases

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



Basic Load Cases (Continued)

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
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		
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	Maint LL 16	LL					
31	Maint LL 17	LL					
32	Maint LL 18	LL					
33	Maint LL 19	LL					
34	Maint LL 20	LL					
35	Maint LL 21	LL					
36	Maint LL 22	LL					
37	Maint LL 23	LL					
38	Maint LL 24	LL					
39	BLC 1 Transient Area Loads	None				9	
40	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



Load Combinations (Continued)

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



Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
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
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
101	1.2 D + 1.5 LL Maint (16)	Yes	Y	1	1.2					30	1.5
102	1.2 D + 1.5 LL Maint (17)	Yes	Y	1	1.2					31	1.5
103	1.2 D + 1.5 LL Maint (18)	Yes	Y	1	1.2					32	1.5
104	1.2 D + 1.5 LL Maint (19)	Yes	Y	1	1.2					33	1.5
105	1.2 D + 1.5 LL Maint (20)	Yes	Y	1	1.2					34	1.5
106	1.2 D + 1.5 LL Maint (21)	Yes	Y	1	1.2					35	1.5
107	1.2 D + 1.5 LL Maint (22)	Yes	Y	1	1.2					36	1.5
108	1.2 D + 1.5 LL Maint (23)	Yes	Y	1	1.2					37	1.5
109	1.2 D + 1.5 LL Maint (24)	Yes	Y	1	1.2					38	1.5

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Y	-0.032	%5
2	28	Y	-0.032	%80
3	28	Y	-0.075	%15
4	28	Y	-0.064	%50
5	28	Y	0	0
6	89	Y	-0.032	%5
7	89	Y	-0.032	%80
8	89	Y	-0.075	%15
9	89	Y	-0.064	%50
10	89	Y	0	0
11	78	Y	-0.032	%5
12	78	Y	-0.032	%80
13	78	Y	-0.075	%15
14	78	Y	-0.064	%50
15	78	Y	0	0
16	31	Y	-0.022	%10
17	31	Y	0	0
18	31	Y	0	0
19	31	Y	0	0
20	31	Y	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Z	-0.171	%5
2	28	Z	-0.171	%80
3	28	Z	-0.076	%15
4	28	Z	-0.076	%50

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
5	28	Z	0	0
6	89	Z	-0.171	%5
7	89	Z	-0.171	%80
8	89	Z	-0.076	%15
9	89	Z	-0.076	%50
10	89	Z	0	0
11	78	Z	-0.171	%5
12	78	Z	-0.171	%80
13	78	Z	-0.076	%15
14	78	Z	-0.076	%50
15	78	Z	0	0
16	31	Z	-0.077	%10
17	31	Z	0	0
18	31	Z	0	0
19	31	Z	0	0
20	31	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	X	-0.069	%5
2	28	X	-0.069	%80
3	28	X	-0.046	%15
4	28	X	-0.04	%50
5	28	X	0	0
6	89	X	-0.069	%5
7	89	X	-0.069	%80
8	89	X	-0.046	%15
9	89	X	-0.04	%50
10	89	X	0	0
11	78	X	-0.069	%5
12	78	X	-0.069	%80
13	78	X	-0.046	%15
14	78	X	-0.04	%50
15	78	X	0	0
16	31	X	-0.043	%10
17	31	X	0	0
18	31	X	0	0
19	31	X	0	0
20	31	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Z	-0.037	%5
2	28	Z	-0.037	%80
3	28	Z	-0.014	%15
4	28	Z	-0.014	%50
5	28	Z	0	0
6	89	Z	-0.037	%5
7	89	Z	-0.037	%80
8	89	Z	-0.014	%15
9	89	Z	-0.014	%50
10	89	Z	0	0
11	78	Z	-0.037	%5
12	78	Z	-0.037	%80
13	78	Z	-0.014	%15
14	78	Z	-0.014	%50



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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
15	78	Z	0	0
16	31	Z	-0.014	%10
17	31	Z	0	0
18	31	Z	0	0
19	31	Z	0	0
20	31	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	X	-0.018	%5
2	28	X	-0.018	%80
3	28	X	-0.008	%15
4	28	X	-0.007	%50
5	28	X	0	0
6	89	X	-0.018	%5
7	89	X	-0.018	%80
8	89	X	-0.008	%15
9	89	X	-0.007	%50
10	89	X	0	0
11	78	X	-0.018	%5
12	78	X	-0.018	%80
13	78	X	-0.008	%15
14	78	X	-0.007	%50
15	78	X	0	0
16	31	X	-0.008	%10
17	31	X	0	0
18	31	X	0	0
19	31	X	0	0
20	31	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Z	-0.011	%5
2	28	Z	-0.011	%80
3	28	Z	-0.005	%15
4	28	Z	-0.005	%50
5	28	Z	0	0
6	89	Z	-0.011	%5
7	89	Z	-0.011	%80
8	89	Z	-0.005	%15
9	89	Z	-0.005	%50
10	89	Z	0	0
11	78	Z	-0.011	%5
12	78	Z	-0.011	%80
13	78	Z	-0.005	%15
14	78	Z	-0.005	%50
15	78	Z	0	0
16	31	Z	-0.005	%10
17	31	Z	0	0
18	31	Z	0	0
19	31	Z	0	0
20	31	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	X	-0.004	%5
2	28	X	-0.004	%80
3	28	X	-0.003	%15
4	28	X	-0.003	%50
5	28	X	0	0
6	89	X	-0.004	%5
7	89	X	-0.004	%80
8	89	X	-0.003	%15
9	89	X	-0.003	%50
10	89	X	0	0
11	78	X	-0.004	%5
12	78	X	-0.004	%80
13	78	X	-0.003	%15
14	78	X	-0.003	%50
15	78	X	0	0
16	31	X	-0.003	%10
17	31	X	0	0
18	31	X	0	0
19	31	X	0	0
20	31	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Y	-0.164	%5
2	28	Y	-0.164	%80
3	28	Y	-0.052	%15
4	28	Y	-0.05	%50
5	28	Y	0	0
6	89	Y	-0.164	%5
7	89	Y	-0.164	%80
8	89	Y	-0.052	%15
9	89	Y	-0.05	%50
10	89	Y	0	0
11	78	Y	-0.164	%5
12	78	Y	-0.164	%80
13	78	Y	-0.052	%15
14	78	Y	-0.05	%50
15	78	Y	0	0
16	31	Y	-0.052	%10
17	31	Y	0	0
18	31	Y	0	0
19	31	Y	0	0
20	31	Y	0	0

Member Point Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Z	-0.012	%5
2	28	Z	-0.012	%80
3	28	Z	-0.014	%15
4	28	Z	-0.012	%50
5	28	Z	0	0
6	89	Z	-0.012	%5
7	89	Z	-0.012	%80
8	89	Z	-0.014	%15
9	89	Z	-0.012	%50



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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
10	89	Z	0	0
11	78	Z	-0.012	%5
12	78	Z	-0.012	%80
13	78	Z	-0.014	%15
14	78	Z	-0.012	%50
15	78	Z	0	0
16	31	Z	-0.004	%10
17	31	Z	0	0
18	31	Z	0	0
19	31	Z	0	0
20	31	Z	0	0

Member Point Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	X	-0.012	%5
2	28	X	-0.012	%80
3	28	X	-0.014	%15
4	28	X	-0.012	%50
5	28	X	0	0
6	89	X	-0.012	%5
7	89	X	-0.012	%80
8	89	X	-0.014	%15
9	89	X	-0.012	%50
10	89	X	0	0
11	78	X	-0.012	%5
12	78	X	-0.012	%80
13	78	X	-0.014	%15
14	78	X	-0.012	%50
15	78	X	0	0
16	31	X	-0.004	%10
17	31	X	0	0
18	31	X	0	0
19	31	X	0	0
20	31	X	0	0

Member Point Loads (BLC 15 : Maint LL 1)

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

Member Point Loads (BLC 16 : Maint LL 2)

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

Member Point Loads (BLC 17 : Maint LL 3)

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

Member Point Loads (BLC 18 : Maint LL 4)

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



Member Point Loads (BLC 19 : Maint LL 5)

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

Member Point Loads (BLC 20 : Maint LL 6)

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

Member Point Loads (BLC 21 : Maint LL 7)

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

Member Point Loads (BLC 22 : Maint LL 8)

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

Member Point Loads (BLC 23 : Maint LL 9)

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

Member Point Loads (BLC 24 : Maint LL 10)

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

Member Point Loads (BLC 25 : Maint LL 11)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	76	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	31	Y	-0.25	%95

Member Point Loads (BLC 28 : Maint LL 14)

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

Member Point Loads (BLC 29 : Maint LL 15)

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



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

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.019	-0.019	0	%100
2	2	Z	-0.016	-0.016	0	%100
3	3	Z	-0.016	-0.016	0	%100
4	4	Z	-0.023	-0.023	0	%100
5	5	Z	-0.023	-0.023	0	%100
6	6	Z	-0.014	-0.014	0	%100
7	7	Z	-0.023	-0.023	0	%100
8	8	Z	-0.023	-0.023	0	%100
9	9	Z	-0.01	-0.01	0	%100
10	10	Z	-0.01	-0.01	0	%100
11	11	Z	-0.033	-0.033	0	%100
12	18	Z	-0.011	-0.011	0	%100
13	19	Z	-0.011	-0.011	0	%100
14	22	Z	-0.011	-0.011	0	%100
15	28	Z	-0.011	-0.011	0	%100
16	30	Z	-0.028	-0.028	0	%100
17	31	Z	-0.019	-0.019	0	%100
18	32	Z	-0.016	-0.016	0	%100
19	33	Z	-0.016	-0.016	0	%100
20	34	Z	-0.023	-0.023	0	%100
21	35	Z	-0.023	-0.023	0	%100
22	36	Z	-0.023	-0.023	0	%100
23	37	Z	-0.023	-0.023	0	%100
24	38	Z	-0.01	-0.01	0	%100
25	39	Z	-0.01	-0.01	0	%100
26	40	Z	-0.033	-0.033	0	%100
27	49	Z	-0.028	-0.028	0	%100
28	50	Z	-0.019	-0.019	0	%100
29	51	Z	-0.016	-0.016	0	%100
30	52	Z	-0.016	-0.016	0	%100
31	53	Z	-0.023	-0.023	0	%100
32	54	Z	-0.023	-0.023	0	%100
33	55	Z	-0.023	-0.023	0	%100
34	56	Z	-0.023	-0.023	0	%100
35	57	Z	-0.01	-0.01	0	%100
36	58	Z	-0.01	-0.01	0	%100
37	59	Z	-0.033	-0.033	0	%100
38	68	Z	-0.028	-0.028	0	%100
39	69	Z	-0.014	-0.014	0	%100
40	72	Z	-0.011	-0.011	0	%100
41	73	Z	-0.011	-0.011	0	%100
42	76	Z	-0.011	-0.011	0	%100
43	78	Z	-0.011	-0.011	0	%100
44	80	Z	-0.014	-0.014	0	%100
45	83	Z	-0.011	-0.011	0	%100
46	84	Z	-0.011	-0.011	0	%100
47	87	Z	-0.011	-0.011	0	%100
48	89	Z	-0.011	-0.011	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	-0.019	-0.019	0	%100
2	2	X	-0.016	-0.016	0	%100
3	3	X	-0.016	-0.016	0	%100
4	4	X	-0.023	-0.023	0	%100
5	5	X	-0.023	-0.023	0	%100
6	6	X	-0.014	-0.014	0	%100



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

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
7	7	X	-0.023	-0.023	0	%100
8	8	X	-0.023	-0.023	0	%100
9	9	X	-0.01	-0.01	0	%100
10	10	X	-0.01	-0.01	0	%100
11	11	X	-0.033	-0.033	0	%100
12	18	X	-0.011	-0.011	0	%100
13	19	X	-0.011	-0.011	0	%100
14	22	X	-0.011	-0.011	0	%100
15	28	X	-0.011	-0.011	0	%100
16	30	X	-0.028	-0.028	0	%100
17	31	X	-0.019	-0.019	0	%100
18	32	X	-0.016	-0.016	0	%100
19	33	X	-0.016	-0.016	0	%100
20	34	X	-0.023	-0.023	0	%100
21	35	X	-0.023	-0.023	0	%100
22	36	X	-0.023	-0.023	0	%100
23	37	X	-0.023	-0.023	0	%100
24	38	X	-0.01	-0.01	0	%100
25	39	X	-0.01	-0.01	0	%100
26	40	X	-0.033	-0.033	0	%100
27	49	X	-0.028	-0.028	0	%100
28	50	X	-0.019	-0.019	0	%100
29	51	X	-0.016	-0.016	0	%100
30	52	X	-0.016	-0.016	0	%100
31	53	X	-0.023	-0.023	0	%100
32	54	X	-0.023	-0.023	0	%100
33	55	X	-0.023	-0.023	0	%100
34	56	X	-0.023	-0.023	0	%100
35	57	X	-0.01	-0.01	0	%100
36	58	X	-0.01	-0.01	0	%100
37	59	X	-0.033	-0.033	0	%100
38	68	X	-0.028	-0.028	0	%100
39	69	X	-0.014	-0.014	0	%100
40	72	X	-0.011	-0.011	0	%100
41	73	X	-0.011	-0.011	0	%100
42	76	X	-0.011	-0.011	0	%100
43	78	X	-0.011	-0.011	0	%100
44	80	X	-0.014	-0.014	0	%100
45	83	X	-0.011	-0.011	0	%100
46	84	X	-0.011	-0.011	0	%100
47	87	X	-0.011	-0.011	0	%100
48	89	X	-0.011	-0.011	0	%100

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

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.007	-0.007	0	%100
2	2	Z	-0.006	-0.006	0	%100
3	3	Z	-0.006	-0.006	0	%100
4	4	Z	-0.013	-0.013	0	%100
5	5	Z	-0.013	-0.013	0	%100
6	6	Z	-0.002	-0.002	0	%100
7	7	Z	-0.015	-0.015	0	%100
8	8	Z	-0.015	-0.015	0	%100
9	9	Z	-0.006	-0.006	0	%100
10	10	Z	-0.006	-0.006	0	%100
11	11	Z	-0.009	-0.009	0	%100
12	18	Z	-0.002	-0.002	0	%100
13	19	Z	-0.002	-0.002	0	%100



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

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
14	22	Z	-0.002	-0.002	0	%100
15	28	Z	-0.002	-0.002	0	%100
16	30	Z	-0.008	-0.008	0	%100
17	31	Z	-0.007	-0.007	0	%100
18	32	Z	-0.006	-0.006	0	%100
19	33	Z	-0.006	-0.006	0	%100
20	34	Z	-0.013	-0.013	0	%100
21	35	Z	-0.013	-0.013	0	%100
22	36	Z	-0.015	-0.015	0	%100
23	37	Z	-0.015	-0.015	0	%100
24	38	Z	-0.006	-0.006	0	%100
25	39	Z	-0.006	-0.006	0	%100
26	40	Z	-0.009	-0.009	0	%100
27	49	Z	-0.008	-0.008	0	%100
28	50	Z	-0.007	-0.007	0	%100
29	51	Z	-0.006	-0.006	0	%100
30	52	Z	-0.006	-0.006	0	%100
31	53	Z	-0.013	-0.013	0	%100
32	54	Z	-0.013	-0.013	0	%100
33	55	Z	-0.015	-0.015	0	%100
34	56	Z	-0.015	-0.015	0	%100
35	57	Z	-0.006	-0.006	0	%100
36	58	Z	-0.006	-0.006	0	%100
37	59	Z	-0.009	-0.009	0	%100
38	68	Z	-0.008	-0.008	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	76	Z	-0.002	-0.002	0	%100
43	78	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	87	Z	-0.002	-0.002	0	%100
48	89	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	-0.007	-0.007	0	%100
2	2	X	-0.006	-0.006	0	%100
3	3	X	-0.006	-0.006	0	%100
4	4	X	-0.013	-0.013	0	%100
5	5	X	-0.013	-0.013	0	%100
6	6	X	-0.002	-0.002	0	%100
7	7	X	-0.015	-0.015	0	%100
8	8	X	-0.015	-0.015	0	%100
9	9	X	-0.006	-0.006	0	%100
10	10	X	-0.006	-0.006	0	%100
11	11	X	-0.009	-0.009	0	%100
12	18	X	-0.002	-0.002	0	%100
13	19	X	-0.002	-0.002	0	%100
14	22	X	-0.002	-0.002	0	%100
15	28	X	-0.002	-0.002	0	%100
16	30	X	-0.008	-0.008	0	%100
17	31	X	-0.007	-0.007	0	%100
18	32	X	-0.006	-0.006	0	%100
19	33	X	-0.006	-0.006	0	%100
20	34	X	-0.013	-0.013	0	%100



Company : B+T Group
 Designer : AK
 Job Number : 149476.003.01
 Model Name : CT16504-A - Manchester 12, CT

9/3/2021
 3:28:57 PM
 Checked By : _____

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, %)]
21	35	X	-0.013	-0.013	0	%100
22	36	X	-0.015	-0.015	0	%100
23	37	X	-0.015	-0.015	0	%100
24	38	X	-0.006	-0.006	0	%100
25	39	X	-0.006	-0.006	0	%100
26	40	X	-0.009	-0.009	0	%100
27	49	X	-0.008	-0.008	0	%100
28	50	X	-0.007	-0.007	0	%100
29	51	X	-0.006	-0.006	0	%100
30	52	X	-0.006	-0.006	0	%100
31	53	X	-0.013	-0.013	0	%100
32	54	X	-0.013	-0.013	0	%100
33	55	X	-0.015	-0.015	0	%100
34	56	X	-0.015	-0.015	0	%100
35	57	X	-0.006	-0.006	0	%100
36	58	X	-0.006	-0.006	0	%100
37	59	X	-0.009	-0.009	0	%100
38	68	X	-0.008	-0.008	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	76	X	-0.002	-0.002	0	%100
43	78	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	87	X	-0.002	-0.002	0	%100
48	89	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
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	22	Z	-0.0004	-0.0004	0	%100
15	28	Z	-0.0004	-0.0004	0	%100
16	30	Z	-0.002	-0.002	0	%100
17	31	Z	-0.001	-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



Company : B+T Group
 Designer : AK
 Job Number : 149476.003.01
 Model Name : CT16504-A - Manchester 12, CT

9/3/2021
 3:28:57 PM
 Checked By : _____

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, %)]
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	76	Z	-0.0004	-0.0004	0	%100
43	78	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	87	Z	-0.0004	-0.0004	0	%100
48	89	Z	-0.0004	-0.0004	0	%100

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

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.001	-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
12	18	X	-0.0004	-0.0004	0	%100
13	19	X	-0.0004	-0.0004	0	%100
14	22	X	-0.0004	-0.0004	0	%100
15	28	X	-0.0004	-0.0004	0	%100
16	30	X	-0.002	-0.002	0	%100
17	31	X	-0.001	-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



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, %)]
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	76	X	-0.0004	-0.0004	0	%100
43	78	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	87	X	-0.0004	-0.0004	0	%100
48	89	X	-0.0004	-0.0004	0	%100

Member Distributed Loads (BLC 8 : Ice)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Y	-0.015	-0.015	0	%100
2	2	Y	-0.012	-0.012	0	%100
3	3	Y	-0.012	-0.012	0	%100
4	4	Y	-0.016	-0.016	0	%100
5	5	Y	-0.016	-0.016	0	%100
6	6	Y	-0.011	-0.011	0	%100
7	7	Y	-0.016	-0.016	0	%100
8	8	Y	-0.016	-0.016	0	%100
9	9	Y	-0.009	-0.009	0	%100
10	10	Y	-0.009	-0.009	0	%100
11	11	Y	-0.02	-0.02	0	%100
12	18	Y	-0.009	-0.009	0	%100
13	19	Y	-0.009	-0.009	0	%100
14	22	Y	-0.009	-0.009	0	%100
15	28	Y	-0.009	-0.009	0	%100
16	30	Y	-0.02	-0.02	0	%100
17	31	Y	-0.015	-0.015	0	%100
18	32	Y	-0.012	-0.012	0	%100
19	33	Y	-0.012	-0.012	0	%100
20	34	Y	-0.016	-0.016	0	%100
21	35	Y	-0.016	-0.016	0	%100
22	36	Y	-0.016	-0.016	0	%100
23	37	Y	-0.016	-0.016	0	%100
24	38	Y	-0.009	-0.009	0	%100
25	39	Y	-0.009	-0.009	0	%100
26	40	Y	-0.02	-0.02	0	%100
27	49	Y	-0.02	-0.02	0	%100
28	50	Y	-0.015	-0.015	0	%100
29	51	Y	-0.012	-0.012	0	%100
30	52	Y	-0.012	-0.012	0	%100
31	53	Y	-0.016	-0.016	0	%100
32	54	Y	-0.016	-0.016	0	%100
33	55	Y	-0.016	-0.016	0	%100
34	56	Y	-0.016	-0.016	0	%100
35	57	Y	-0.009	-0.009	0	%100
36	58	Y	-0.009	-0.009	0	%100
37	59	Y	-0.02	-0.02	0	%100
38	68	Y	-0.02	-0.02	0	%100
39	69	Y	-0.011	-0.011	0	%100
40	72	Y	-0.009	-0.009	0	%100
41	73	Y	-0.009	-0.009	0	%100



Company : B+T Group
 Designer : AK
 Job Number : 149476.003.01
 Model Name : CT16504-A - Manchester 12, CT

9/3/2021
 3:28:57 PM
 Checked By : _____

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, %)]
42	76	Y	-0.009	-0.009	0	%100
43	78	Y	-0.009	-0.009	0	%100
44	80	Y	-0.011	-0.011	0	%100
45	83	Y	-0.009	-0.009	0	%100
46	84	Y	-0.009	-0.009	0	%100
47	87	Y	-0.009	-0.009	0	%100
48	89	Y	-0.009	-0.009	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	22	Z	-0.001	-0.001	0	%100
15	28	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
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	76	Z	-0.001	-0.001	0	%100
43	78	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	87	Z	-0.001	-0.001	0	%100
48	89	Z	-0.001	-0.001	0	%100



Company : B+T Group
Designer : AK
Job Number : 149476.003.01
Model Name : CT16504-A - Manchester 12, CT

9/3/2021
3:28:57 PM
Checked By : _____

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, %)]



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	22	X	-0.001	-0.001	0 %100
15	28	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
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	76	X	-0.001	-0.001	0 %100
43	78	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	87	X	-0.001	-0.001	0 %100
48	89	X	-0.001	-0.001	0 %100

Member Distributed Loads (BLC 39 : BLC 1 Transient Area Loads)

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

Member Distributed Loads (BLC 39 : BLC 1 Transient Area Loads) (Continued)

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
7	57	Y	-0.035	-0.016	0 1.155
8	57	Y	-0.016	0.0006163	1.155 2.309
9	58	Y	-0.018	-0.016	0.231 2.309

Member Distributed Loads (BLC 40 : 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	-0.012	-0.012	0 2.078
2	10	Y	-0.011	-0.016	0.231 1.27
3	10	Y	-0.016	-0.021	1.27 2.309
4	38	Y	-0.011	-0.016	0 2.078
5	39	Y	0.0004931	-0.013	0 1.155
6	39	Y	-0.013	-0.028	1.155 2.309
7	57	Y	-0.028	-0.013	0 1.155
8	57	Y	-0.013	0.0004931	1.155 2.309
9	58	Y	-0.014	-0.013	0.231 2.309

Member Area Loads (BLC 1 : Dead)

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

Member Area Loads (BLC 8 : Ice)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	23	22	25	24	Y	Two Way	-0.008
2	73	72	75	74	Y	Two Way	-0.008
3	102	101	104	103	Y	Two Way	-0.008

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	113	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	114	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	44	L	Y -0.5
2	127	L	Y -0.5
3	149	L	Y -0.5

Envelope Node Reactions

Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC	
1	1	max	1.166	5	2.188	14	1.259	2	4.431	14	1.174	11	0.345	11
2		min	-1.171	11	-0.229	8	-1.385	8	-1.089	8	-1.179	5	-0.226	5
3	53	max	1.117	5	2.229	18	1.46	2	0.42	13	1.403	3	0.408	12
4		min	-1.222	11	0.013	12	-1.394	8	-2.039	19	-1.409	9	-3.868	18
5	82	max	1.117	5	2.146	22	1.526	2	0.407	3	1.415	7	3.648	22
6		min	-1.007	11	-0.02	4	-1.467	8	-2.363	21	-1.421	13	-0.47	4
7	Totals:	max	3.4	5	5.989	21	4.246	2						
8		min	-3.4	11	2.396	3	-4.246	8						

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

Member	Shape	Code Check	Loc[ft]	LC	Shear	Check	Loc[ft]	LC	Dir	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	1	HSS4X4X2	0.553	0	13	0.132	0	y	25	70.173	73.278	8.24	8.24	1.98	H1-1b
2	2	C3.38x2.06x.188	0.419	2.592	15	0.069	0.351	y	15	35.676	43.394	1.694	4.483	1.632	H1-1b
3	3	C3.38x2.06x.188	0.384	0	25	0.066	2.241	y	20	35.676	43.394	1.694	4.483	1.633	H1-1b
4	4	PL3/8"x6	0.081	0	13	0.184	0	y	2	68.997	72.9	0.57	9.113	2.393	H1-1b
5	5	PL3/8"x6	0.087	0	3	0.143	0	y	2	68.997	72.9	0.57	9.113	2.01	H1-1b
6	6	PIPE 3.5x0.165	0.079	6.75	7	0.04	3	5	45.872	71.57	6.336	6.336	1.917	H1-1b	
7	7	PL3/8"x6	0.142	0.208	8	0.217	0.208	y	25	70.882	72.9	0.57	9.113	1.401	H1-1b
8	8	PL3/8"x6	0.147	0	13	0.232	0	y	15	70.882	72.9	0.57	9.113	2.971	H1-1b
9	9	L2x2x4	0.266	0	7	0.03	2.309	y	48	23.349	30.586	0.691	1.577	1.5	H2-1
10	10	L2x2x4	0.233	2.309	8	0.04	0	y	16	23.349	30.586	0.691	1.577	1.5	H2-1
11	11	L7.63x2.5x6	0.354	1.604	8	0.083	0.334	y	14	75.414	118.523	1.798	13.724	1.237	H2-1
12	18	PIPE 2.88x0.203	0.12	5.667	5	0.042	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	0.047	5.667	9	35.519	70.68	5.029	5.029	3	H1-1b	
14	22	PIPE 2.88x0.203	0.147	7.812	13	0.154	8.75	2	24.131	70.68	5.029	5.029	2.477	H1-1b	
15	28	PIPE 2.88x0.203	0.136	2.333	7	0.043	2.333	8	35.519	70.68	5.029	5.029	3	H1-1b	
16	30	L6.63x4.33x.25	0.208	3.25	6	0.023	3.25	z	12	51.794	86.751	2.311	6.976	1.5	H2-1
17	31	HSS4X4X2	0.549	0	19	0.135	0	y	16	70.173	73.278	8.24	8.24	2.177	H1-1b
18	32	C3.38x2.06x.188	0.419	2.592	19	0.07	0.351	y	20	35.676	43.394	1.694	4.483	1.629	H1-1b
19	33	C3.38x2.06x.188	0.378	0	21	0.066	2.241	y	24	35.676	43.394	1.703	4.483	1.645	H1-1b
20	34	PL3/8"x6	0.069	0	6	0.153	0	y	6	68.997	72.9	0.57	9.113	2.509	H1-1b
21	35	PL3/8"x6	0.087	0	7	0.124	0	y	42	68.997	72.9	0.57	9.113	1.923	H1-1b
22	36	PL3/8"x6	0.127	0.208	13	0.213	0.208	y	17	70.882	72.9	0.57	9.113	1.954	H1-1b
23	37	PL3/8"x6	0.121	0	5	0.234	0	y	19	70.882	72.9	0.57	9.113	3	H1-1b
24	38	L2x2x4	0.216	0	11	0.03	2.309	y	39	23.349	30.586	0.691	1.577	1.5	H2-1
25	39	L2x2x4	0.212	2.309	13	0.041	2.309	y	20	23.349	30.586	0.691	1.577	1.5	H2-1
26	40	L7.63x2.5x6	0.279	1.604	12	0.083	0.334	y	19	75.414	118.523	1.798	13.808	1.255	H2-1
27	49	L6.63x4.33x.25	0.24	0	3	0.026	3.25	y	9	51.794	86.751	2.311	6.976	1.5	H2-1
28	50	HSS4X4X2	0.546	0	21	0.136	0	y	20	70.173	73.278	8.24	8.24	2.165	H1-1b
29	51	C3.38x2.06x.188	0.411	2.592	23	0.069	0.351	y	25	35.676	43.394	1.694	4.483	1.632	H1-1b
30	52	C3.38x2.06x.188	0.383	0	21	0.066	2.241	y	16	35.676	43.394	1.694	4.483	1.632	H1-1b
31	53	PL3/8"x6	0.088	0.164	3	0.153	0	y	10	68.997	72.9	0.57	9.113	2.176	H1-1b
32	54	PL3/8"x6	0.071	0	11	0.126	0	y	45	68.997	72.9	0.57	9.113	1.913	H1-1b
33	55	PL3/8"x6	0.114	0.208	4	0.218	0.208	y	21	70.882	72.9	0.57	9.113	1.606	H1-1b
34	56	PL3/8"x6	0.147	0	9	0.228	0	y	23	70.882	72.9	0.57	9.113	2.988	H1-1b
35	57	L2x2x4	0.262	0	3	0.03	2.309	y	44	23.349	30.586	0.691	1.577	1.5	H2-1
36	58	L2x2x4	0.197	2.309	4	0.04	0	y	24	23.349	30.586	0.691	1.577	1.5	H2-1
37	59	L7.63x2.5x6	0.318	1.604	3	0.083	0.334	y	22	75.414	118.523	1.798	14.016	1.302	H2-1
38	68	L6.63x4.33x.25	0.259	3.25	2	0.029	3.25	y	2	51.794	86.751	2.311	6.976	1.5	H2-1
39	69	PIPE 3.5x0.165	0.088	1.25	2	0.051	4	9	45.872	71.57	6.336	6.336	1.709	H1-1b	
40	72	PIPE 2.88x0.203	0.148	5.667	9	0.047	5.667	9	35.519	70.68	5.029	5.029	3	H1-1b	
41	73	PIPE 2.88x0.203	0.169	2.333	2	0.048	5.667	13	35.519	70.68	5.029	5.029	3	H1-1b	
42	76	PIPE 2.88x0.203	0.139	2.188	13	0.125	2.188	13	24.131	70.68	5.029	5.029	2.199	H1-1b	
43	78	PIPE 2.88x0.203	0.119	5.667	9	0.044	2.333	13	35.519	70.68	5.029	5.029	3	H1-1b	
44	80	PIPE 3.5x0.165	0.079	6.75	2	0.051	3	13	45.872	71.57	6.336	6.336	1.546	H1-1b	
45	83	PIPE 2.88x0.203	0.148	5.667	13	0.053	5.667	13	35.519	70.68	5.029	5.029	3	H1-1b	
46	84	PIPE 2.88x0.203	0.135	2.333	6	0.036	5.667	5	35.519	70.68	5.029	5.029	3	H1-1b	



Company : B+T Group
 Designer : AK
 Job Number : 149476.003.01
 Model Name : CT16504-A - Manchester 12, CT

9/3/2021
 3:28:57 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
47	87	PIPE_2.88x0.203	0.137	7.813	9	0.142	8.75	9	24.131	70.68	5.029	5.029	2.483	H1-1b		
48	89	PIPE_2.88x0.203	0.137	5.667	2	0.033	5.667	4	35.519	70.68	5.029	5.029	3	H1-1b		

APPENDIX B

Additional Calculations

PROJECT	149476.003.01 - Manchester 12 CT, C KSC			
SUBJECT	Platform Mount Analysis			
DATE	09/03/21	PAGE	1	OF 1



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

[REF: AISC 360-05]

Reactions at Bolted Connection

Tension	:	1.259	k
Vertical Shear	:	2.188	k
Horizontal Shear	:	1.166	k
Torsion	:	0.345	k.ft
Moment from Horizontal Forces	:	1.174	k.ft
Moment from Vertical Forces	:	4.431	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	:	2.48	k
Force from Horz. Moment	:	2.13	k
Force from Vert. Moment	:	8.03	k
Shear Load / Bolt	:	0.62	k
Tension Load / Bolt	:	0.31	k
Resultant from Moments / Bolt	:	4.15	k

Bolt Checks

Nominal Tensile Stress, F_{nt}	:	90.00	ksi	[AISC Table J3.2]
Available Tensile Stress, ΦR_{nt}	:	20.72	k/bolt	[Eq. J3-1]
Unity Check, Bolt Tension	:	21.55%		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	:	8.46%		OKAY
Unity Check, Combined	:	30.01%		OKAY
Available Bearing Strength, ΦR_n	:	34.66	k/bolt	
Unity Check, Bolt Bearing	:	1.79%		OKAY

EXHIBIT 10

Construction Drawings



DISH Wireless L.L.C. SITE ID:
BOBDL00130A

DISH Wireless L.L.C. SITE ADDRESS:
**60 ADAMS STREET
MANCHESTER, CT 06042**



By Stephen Roth at 5:31:53 AM, 11/8/2021

SCOPE OF WORK

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

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

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

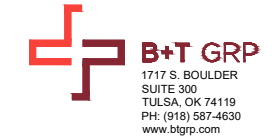
SITE INFORMATION		PROJECT DIRECTORY	
PROPERTY OWNER:	POM-POM GALI LLC	APPLICANT:	DISH Wireless L.L.C.
ADDRESS:	PO BOX 133 WILLIMANTIC, CT 06226		5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER TYPE:	MONOPOLE	TOWER OWNER:	SBA COMMUNICATAIONS CORP. 8051 CONGRESS AVENUE BOCA RATON, FL 33487 (800) 487-7483
TOWER CO SITE ID:	CT16504-A	SITE DESIGNER:	B+T GROUP 1717 S. BOULDER AVE, SUITE 300 TULSA, OK 74119 (918) 587-4630
TOWER APP NUMBER:	167828	SITE ACQUISITION:	JEAN COTTRELL JEAN.COTTRELL@DISH.COM
COUNTY:	HARTFORD	CONST. MANAGER:	JAVIER SOTO JAVIER.SOTO@DISH.COM
LATITUDE (NAD 83):	41° 47' 38.59" N 41.794052 N	RF ENGINEER:	BOSSENER CHARLES BOSSENER.CHARLES@DISH.COM
LONGITUDE (NAD 83):	72° 33' 19.24" W 72.55534444 W		
ZONING JURISDICTION:	CITY OF MANCHESTER		
ZONING DISTRICT:	IND		
PARCEL NUMBER:	09003077-28-20-60		
OCCUPANCY GROUP:	U		
CONSTRUCTION TYPE:	II-B		
POWER COMPANY:	EVERSOURCE		
TELEPHONE COMPANY:	FRONTIER		



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



8051 CONGRESS AVENUE
BOCA RATON, FL 33487



11/4/21

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

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
CDD	CDD	RCM

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	9/14/21	ISSUED FOR REVIEW
0	11/4/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149476.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

**BOBDL00130A
60 ADAMS STREET
MANCHESTER, CT 06042**

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

CONNECTICUT CODE OF COMPLIANCE

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

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

SHEET INDEX

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

SITE PHOTO



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

CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

GENERAL NOTES

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

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

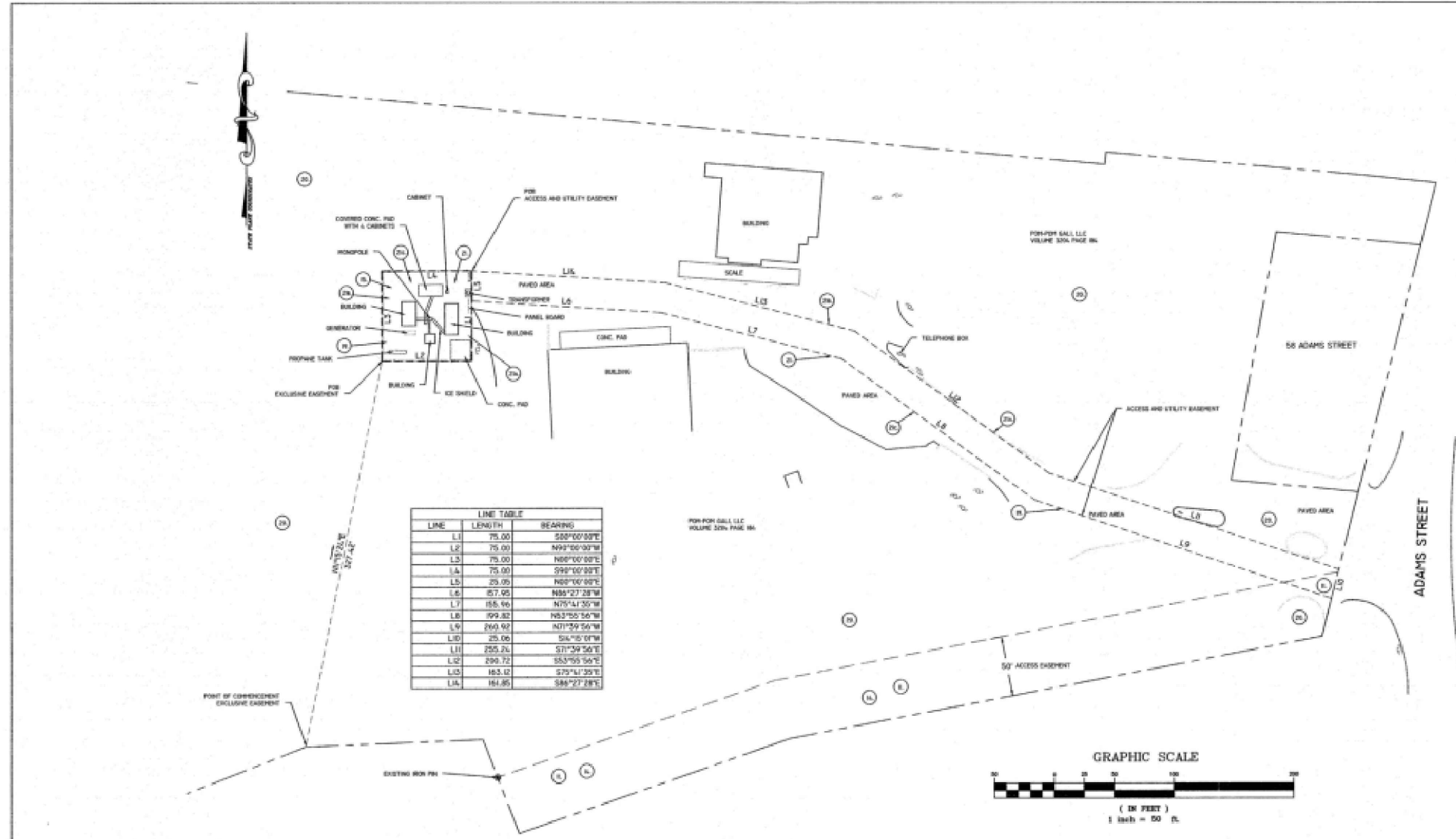
CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON THE JOB SITE, AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

DIRECTIONS

DIRECTIONS FROM BRADLEY INTERNATIONAL AIRPORT:
CONTINUE TO BRADLEY INTERNATIONAL AIRPORT CON,HEAD NORTH TOWARD BRADLEY INTERNATIONAL AIRPORT,SLIGHT LEFT ONTO BRADLEY INTERNATIONAL AIRPORT,SLIGHT LEFT,TAKE CT-20 E, I-91 S AND I-291 E TO TOLLAND TURNPIKE IN MANCHESTER. TAKE EXIT 5 FROM I-291 E,CONTINUE ONTO BRADLEY INTERNATIONAL AIRPORT CON,CONTINUE ONTO CT-20 E/BRADLEY INTERNATIONAL AIRPORT CON,USE THE RIGHT 2 LANES TO MERGE WITH I-91 S TOWARD HARTFORD,TAKE EXIT 35A FOR I-291 TOWARD MANCHESTER,CONTINUE ONTO I-291 E,TAKE EXIT 5 FOR TOLLAND TURNPIKE,CONTINUE ON TOLLAND TURNPIKE,TO YOUR DESTINATION,USE ANY LANE TO TURN LEFT ONTO TOLLAND TURNPIKE,TURN RIGHT ONTO ADAMS ST,TURN RIGHT AND ARRIVE AT BOBDL00130A.

VICINITY MAP





HSS
 DATE: June 20, 2024
 DRAWN BY: EAS
 CHECK BY: RJA
 DWG. NO.: 2024-124
 REVISION: SHEET 1 OF 2

Tower Site
 HSS Land Surveyors, LLC
 6015 Columbia Boulevard
 Bloomburg, PA 17815
 V: 570.387.9900 F: 570.387.0355
 Email: hssbob199@yahoo.com

**MANCHESTER 12, CT
 CT16504-A
 TOWN OF MANCHESTER
 HARTFORD COUNTY
 CONNECTICUT**

2 of 2

**TITLE EXCEPTIONS
 PERTINENT TO SURVEY**

- COMMONWEALTH LAND TITLE INSURANCE COMPANY COMMITMENT NO. CT16504-01
- RIGHTS OF ACCESS, DRILLING RIGHTS, IN CERTIFICATE OF TITLING BY THE STATE OF CONNECTICUT DATED FEBRUARY AND RECORDED IN VOLUME 89 OF THE MANCHESTER LAND RECORDS. AFFECTS PROPERTY BUT NOT PLUOTABLE.
 - CERTIFICATE OF TAKING BY THE STATE OF CONNECTICUT DATED MARCH AND RECORDED IN VOLUME 117 AT PAGE 88 OF THE MANCHESTER LAND RECORDS. RIGHTS OF ACCESS GRANTED IN NOTICE OF HYPOTHECATION DATED MARCH AND RECORDED IN VOLUME 87 AT PAGE 214 OF THE SAID LAND RECORDS. APPLICABLE CERTIFICATE OF CONDEMNATION DATED MARCH AND RECORDED IN VOLUME 90 AT PAGE 174 OF THE SAID LAND RECORDS. AFFECTS PROPERTY BUT NOT PLUOTABLE.
 - EASEMENT FROM ALICE F. THORNTON AND WILLIAM B. THORNTON TO THE CONNECTICUT POWER COMPANY DATED MARCH AND RECORDED IN VOLUME 290 AT PAGE 58 OF THE MANCHESTER LAND RECORDS. AFFECTS PROPERTY BUT NOT PLUOTABLE.
 - RIGHT OF WAY FROM WILLIAM B. THORNTON AND ALICE F. THORNTON TO THOMAS J. HACKETT, ET AL. DATED MARCH AND RECORDED IN VOLUME 384 AT PAGE 54 OF THE MANCHESTER LAND RECORDS. AFFECTS ACCESS AND SHOWN ON PLAN.
 - RIGHTS OF ACCESS, EASEMENT TO AND FROM LAND, EASEMENT TO SLOPE, IN CERTIFICATE OF TITLING BY THE STATE OF CONNECTICUT DATED FEBRUARY AND RECORDED IN VOLUME 89 AT PAGE 89 OF THE MANCHESTER LAND RECORDS. DOES NOT AFFECT PROPERTY.
 - EASEMENT FROM WILLIAM B. THORNTON TO THE TOWN OF MANCHESTER DATED MARCH AND RECORDED IN VOLUME 90 AT PAGE 172 OF THE MANCHESTER LAND RECORDS. AFFECTS ACCESS AND SHOWN ON PLAN.
 - NOTICE OF LEASE FROM WILLIAM B. THORNTON TO BETH CELLARIE, INC. DATED MARCH AND RECORDED IN VOLUME 290 AT PAGE 58 OF THE MANCHESTER LAND RECORDS. AFFECTS ACCESS AND SHOWN ON PLAN.
 - NOTICE OF LEASE FROM WILLIAM B. THORNTON TO BELLO PARTNERSHIP DATED MARCH AND RECORDED IN VOLUME 290 AT PAGE 58 OF THE MANCHESTER LAND RECORDS. AFFECTS ACCESS AND SHOWN ON PLAN.
 - EASEMENT BY WILLIAM B. THORNTON TO THE CONNECTICUT LIGHT AND POWER COMPANY DATED FEBRUARY AND RECORDED IN VOLUME 290 AT PAGE 58 OF THE MANCHESTER LAND RECORDS. AFFECTS ACCESS AND SHOWN ON PLAN.
 - CERTIFICATE OF APPROVAL, BY SPECIAL EXCEPTION BY THE MANCHESTER PLANNING AND ZONING COMMISSION DATED MARCH AND RECORDED IN VOLUME 108 AT PAGE 1 OF THE MANCHESTER LAND RECORDS. DOES NOT AFFECT PROPERTY.
 - CERTIFICATE OF APPROVAL OF VARIANCE BY THE MANCHESTER ZONING BOARD OF APPEALS DATED FEBRUARY AND RECORDED IN VOLUME 89 AT PAGE 89 OF THE MANCHESTER LAND RECORDS. AFFECTS PROPERTY BUT NOT PLUOTABLE.
 - MEMORANDUM OF PURCHASE AGREEMENT BETWEEN WILLIAM B. THORNTON AND SPENT SPECTRUM L.P. DATED FEBRUARY AND RECORDED IN VOLUME 208 AT PAGE 208 OF THE MANCHESTER LAND RECORDS. RE-RECORDED IN VOLUME 202 AT PAGE 58 OF SAID LAND RECORDS. AFFECTS PROPERTY AND SHOWN ON PLAN.
 - OPEN END MORTGAGE FROM POP-POP GALL, LLC TO FARMINGTON BANK, MARCH AND RECORDED IN VOLUME 384 AT PAGE 54 OF THE MANCHESTER LAND RECORDS. PARTIAL RELEASE OF MORTGAGE DATED FEBRUARY AND RECORDED IN VOLUME 384 AT PAGE 54 OF THE SAID LAND RECORDS. AFFECTS PROPERTY AND SHOWN ON PLAN.
 - EASEMENT AGREEMENT BY AND BETWEEN POP-POP GALL, LLC AND NAVIGATOR PROPERTIES, LLC DATED FEBRUARY AND RECORDED IN VOLUME 384 AT PAGE 54 OF THE MANCHESTER LAND RECORDS. AFFECTS PROPERTY AND SHOWN ON PLAN.
 - THE FOLLOWING MATTERS AFFECT THIS EASEMENT INTEREST:
 - MEMORANDUM OF PURCHASE AGREEMENT BETWEEN NAVIGATOR PROPERTIES, LLC TO SPENT SPECTRUM L.P. DATED FEBRUARY AND RECORDED IN VOLUME 202 AT PAGE 58 OF THE SAID LAND RECORDS. AFFECTS PROPERTY AND SHOWN ON PLAN.
 - MORTGAGE FROM NAVIGATOR PROPERTIES, LLC TO BANK, NATIONAL ASSOCIATION, DATED FEBRUARY AND RECORDED IN VOLUME 400 AT PAGE 84 OF THE SAID LAND RECORDS. AFFECTS PROPERTY AND SHOWN ON PLAN.
 - COLLATERAL ASSIGNMENT OF LEASES AND RENTALS FROM NAVIGATOR PROPERTIES, LLC TO BANK, NATIONAL ASSOCIATION, DATED FEBRUARY AND RECORDED IN VOLUME 400 AT PAGE 84 OF THE SAID LAND RECORDS. AFFECTS PROPERTY AND SHOWN ON PLAN.
 - EASEMENT GRANT BY COURT ORDER IN SETTLEMENT OF LANDMARKER ACTION (ACTIVE BALANCED LINE) UNITED STATES DISTRICT COURT FOR THE DISTRICT OF CONNECTICUT V. SPENT COMMUNICATIONS COMPANY L.P. AND INTEL COMMUNICATIONS, LLC DATED FEBRUARY AND RECORDED IN VOLUME 400 AT PAGE 84 OF THE MANCHESTER LAND RECORDS. AFFECTS PROPERTY BUT NOT PLUOTABLE.

NOTES

- DRAWING IS BASED ON STATE PLANE COORDINATES.
- COMPOUND AREA LIES ENTIRELY ON SUBJECT TRACT.

TOWER INFORMATION

BASE OF TOWER ELEVATION: 64.3 HSL
 LATITUDE: N43°07'58.50"
 LONGITUDE: W72°53'39.20"

TOWER HEIGHT: 84.8 FT.
 ANTENNA HEIGHT: 128.3 FT.
 HIGHEST ATTACHMENT HEIGHT: 143.7 FT.



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:	CHECKED BY:	APPROVED BY:
CDD	CDD	RCM

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	9/14/21	ISSUED FOR REVIEW
0	11/4/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
 149476.001.01

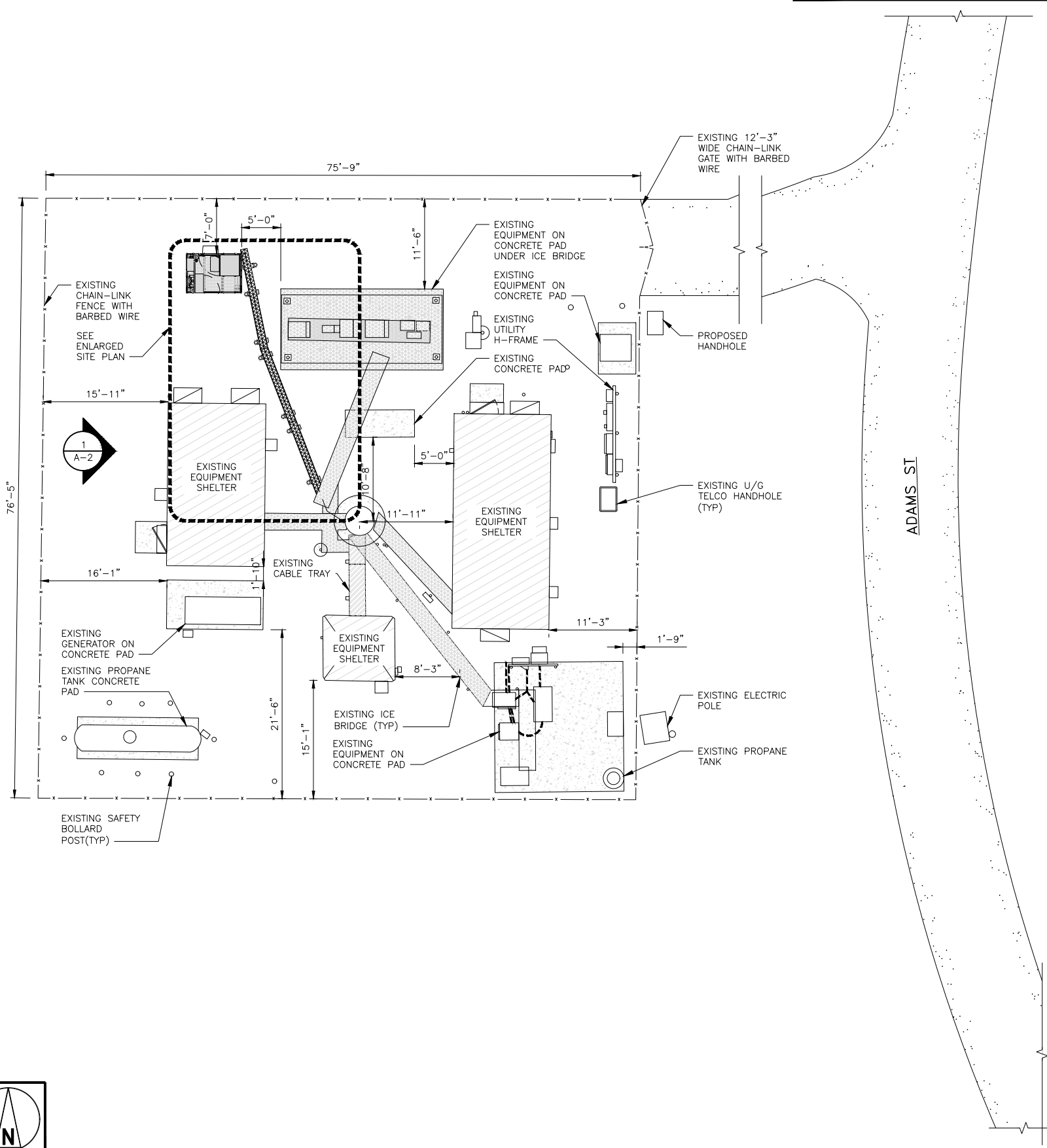
DISH Wireless L.L.C.
 PROJECT INFORMATION
 BOBDL00130A
 60 ADAMS STREET
 MANCHESTER, CT 06042

SHEET TITLE
 SITE SURVEY

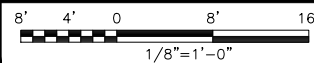
SHEET NUMBER
LS-1

NOTES

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



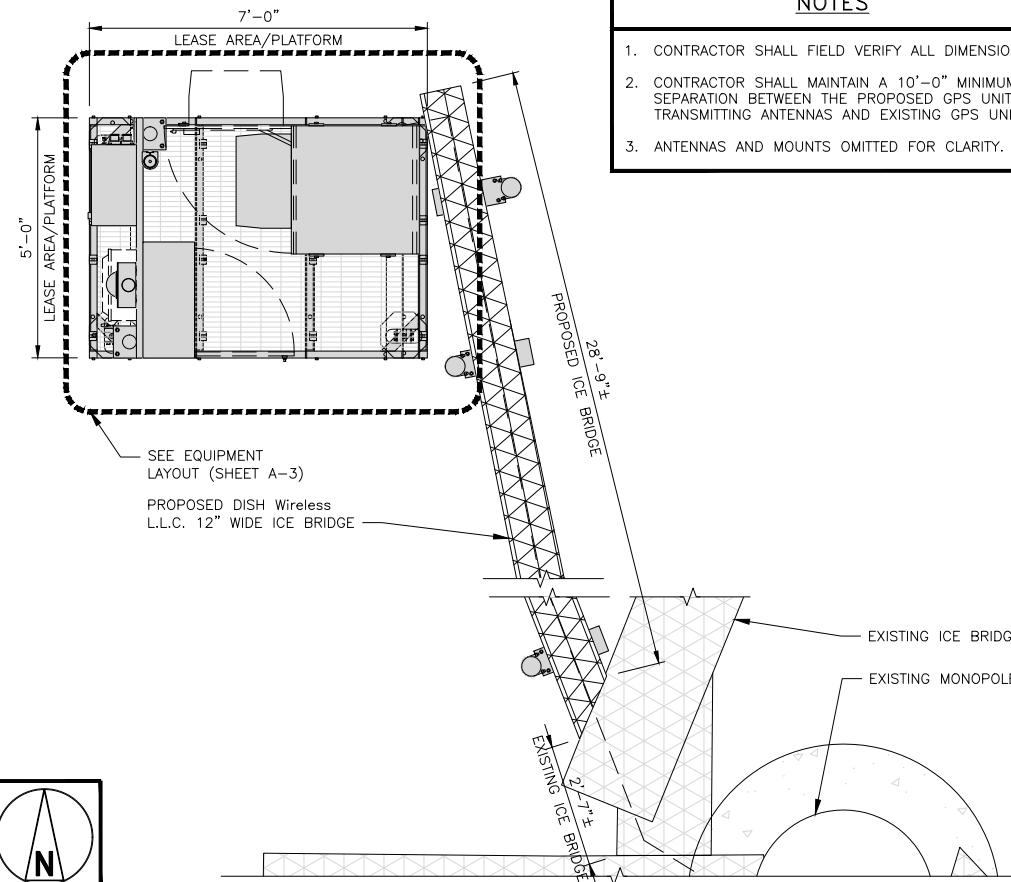
OVERALL SITE PLAN



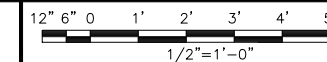
1

NOTES

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



ENLARGED SITE PLAN



2

NOT USED

3



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



8051 CONGRESS AVENUE
BOCA RATON, FL 33487



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



11/4/21

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

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
CDD	CDD	RCM

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	9/14/21	ISSUED FOR REVIEW
0	11/4/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149476.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00130A
60 ADAMS STREET
MANCHESTER, CT 06042

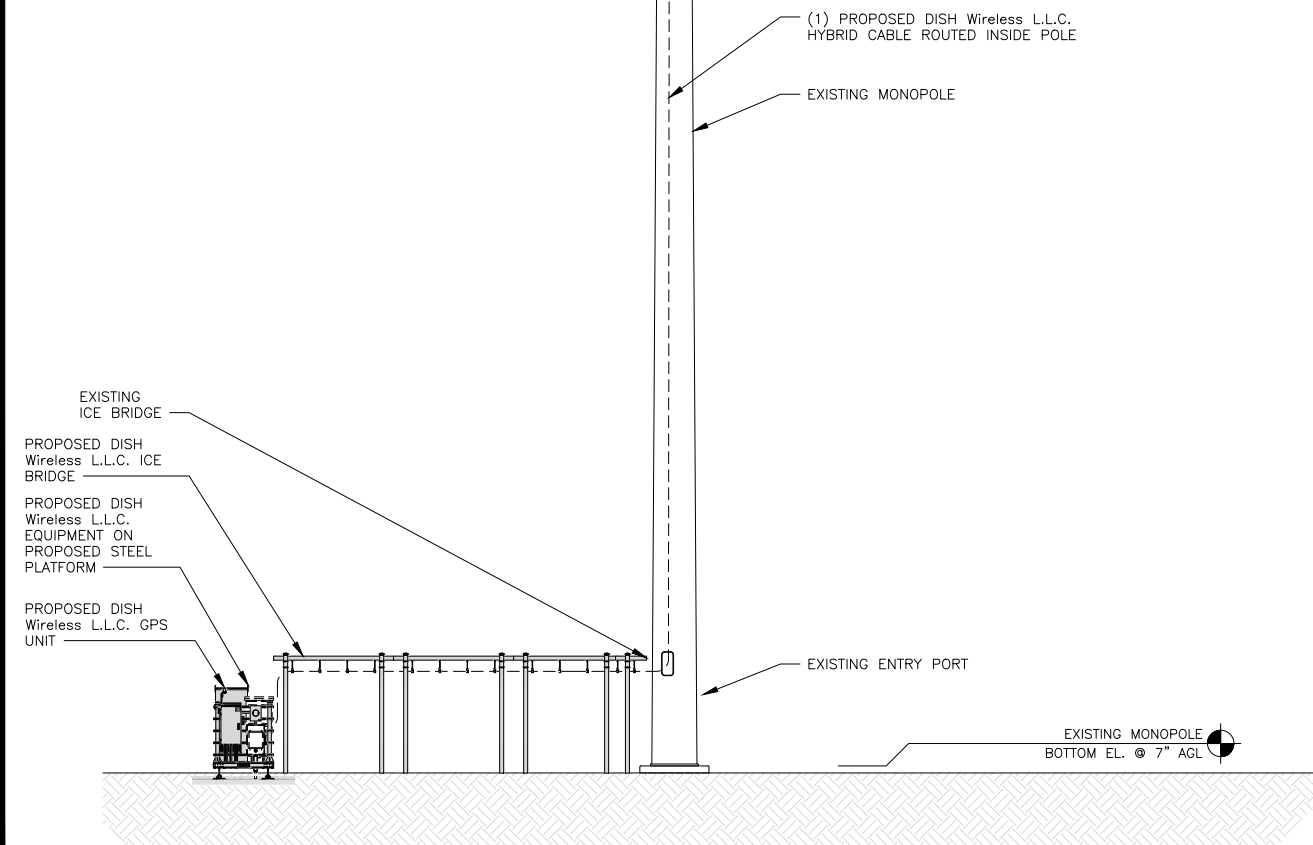
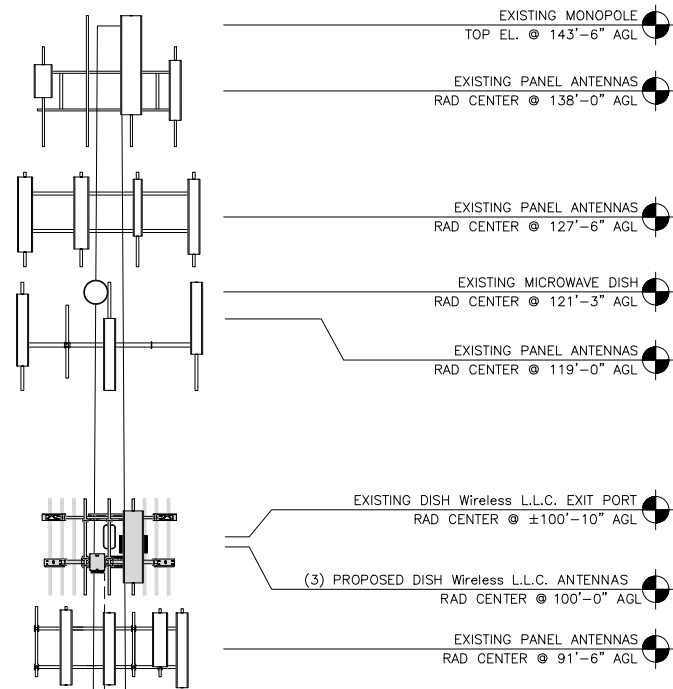
SHEET TITLE
OVERALL AND ENLARGED
SITE PLAN

SHEET NUMBER

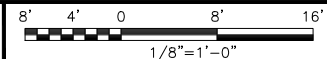
A-1

NOTES

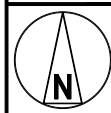
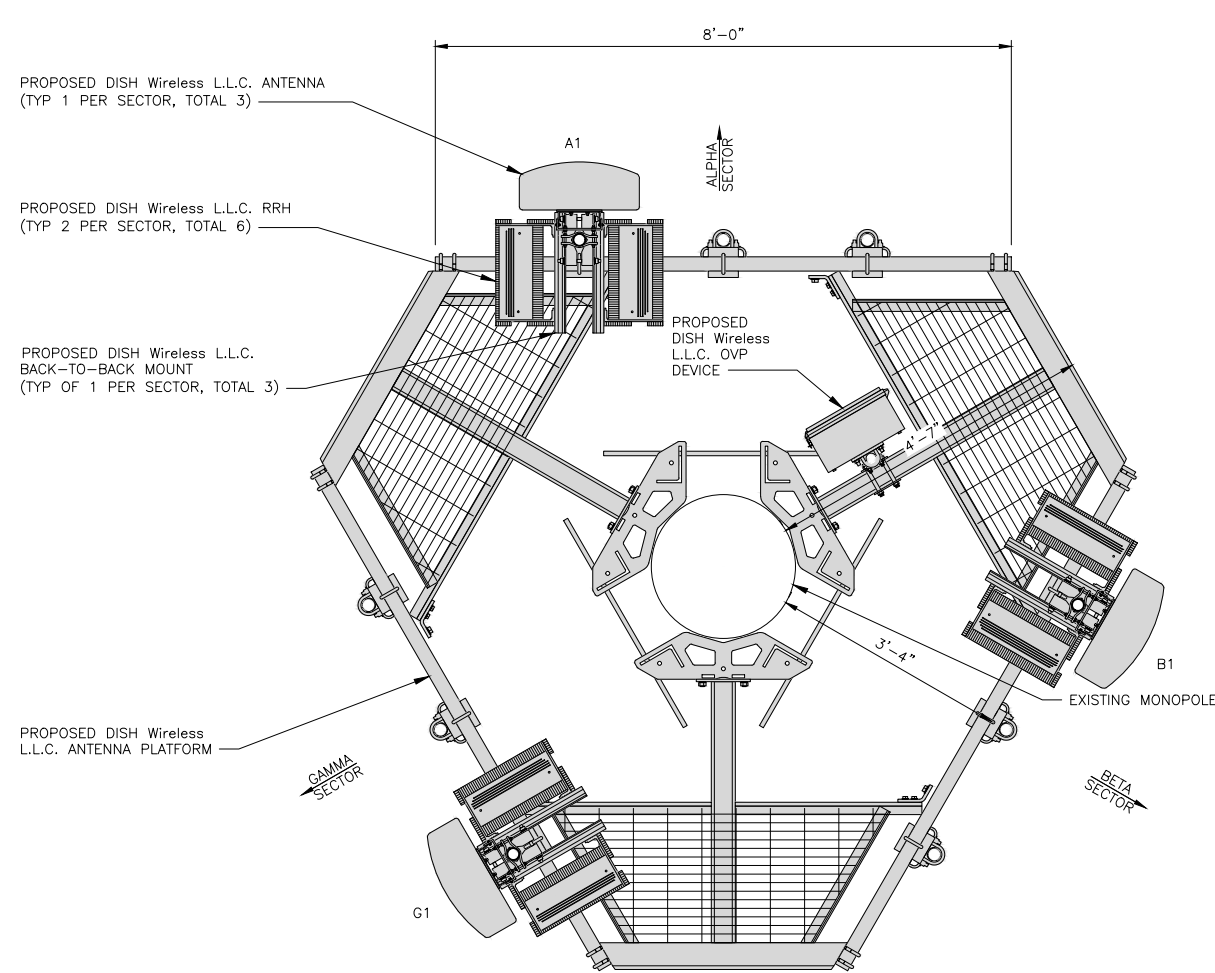
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



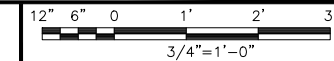
PROPOSED WEST ELEVATION



1



ANTENNA LAYOUT



2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE	
		EXISTING OR PROPOSED	MANUFACTURER - MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH	
ALPHA	A1	PROPOSED	JMA - MX08FR0665-21	5G	72.0" x 20.0"	0°	100'-0"	(1) HIGH-CAPACITY HYBRID CABLE (155' LONG)	
BETA	B1	PROPOSED	JMA - MX08FR0665-21	5G	72.0" x 20.0"	120°	100'-0"		
GAMMA	G1	PROPOSED	JMA - MX08FR0665-21	5G	72.0" x 20.0"	240°	100'-0"		

SECTOR	POSITION	RRH	
		MANUFACTURER - MODEL NUMBER	TECHNOLOGY
ALPHA	A1	FUJITSU - TA08025-B605	5G
	A1	FUJITSU - TA08025-B604	5G
BETA	B1	FUJITSU - TA08025-B605	5G
	B1	FUJITSU - TA08025-B604	5G
GAMMA	G1	FUJITSU - TA08025-B605	5G
	G1	FUJITSU - TA08025-B604	5G

- NOTES**
1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS.
 2. ANTENNA AND RRH MODELS MAY CHANGE DUE TO EQUIPMENT AVAILABILITY. ALL EQUIPMENT CHANGES MUST BE APPROVED AND REMAIN IN COMPLIANCE WITH THE PROPOSED DESIGN AND STRUCTURAL ANALYSES.

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

ANTENNA SCHEDULE

NO SCALE

3



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



8051 CONGRESS AVENUE
BOCA RATON, FL 33487



11/4/21

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

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
CDD	CDD	RCM

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	9/14/21	ISSUED FOR REVIEW
0	11/4/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149476.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00130A
60 ADAMS STREET
MANCHESTER, CT 06042

SHEET TITLE
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER

A-2



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



8051 CONGRESS AVENUE
BOCA RATON, FL 33487



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



11/4/21

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

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
CDD	CDD	RCM

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	9/14/21	ISSUED FOR REVIEW
0	11/4/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149476.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00130A
60 ADAMS STREET
MANCHESTER, CT 06042

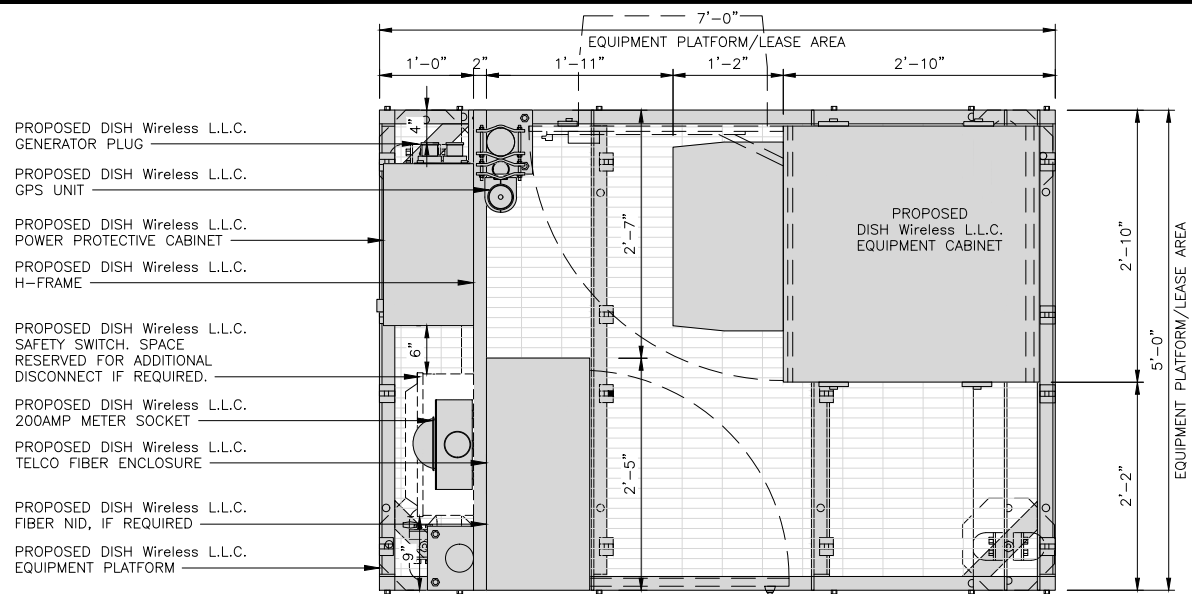
SHEET TITLE
**EQUIPMENT PLATFORM AND
H-FRAME DETAILS**

SHEET NUMBER

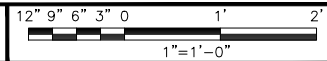
A-3

NOTES

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



PLATFORM EQUIPMENT PLAN

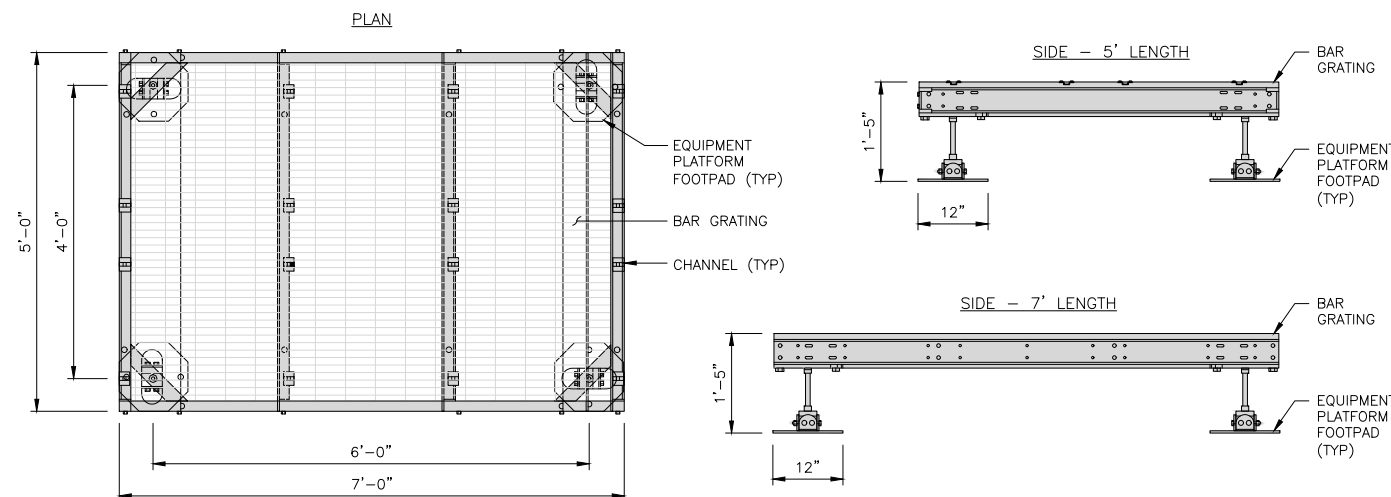


1

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

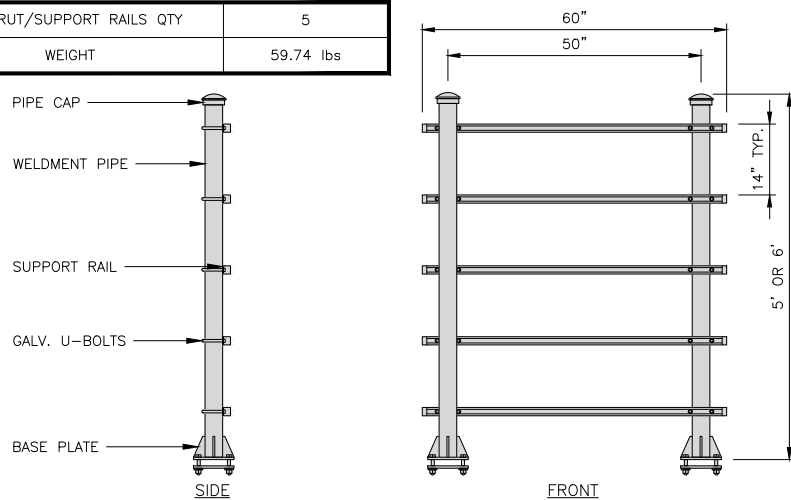
NO SCALE

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

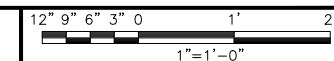
3

NOT USED

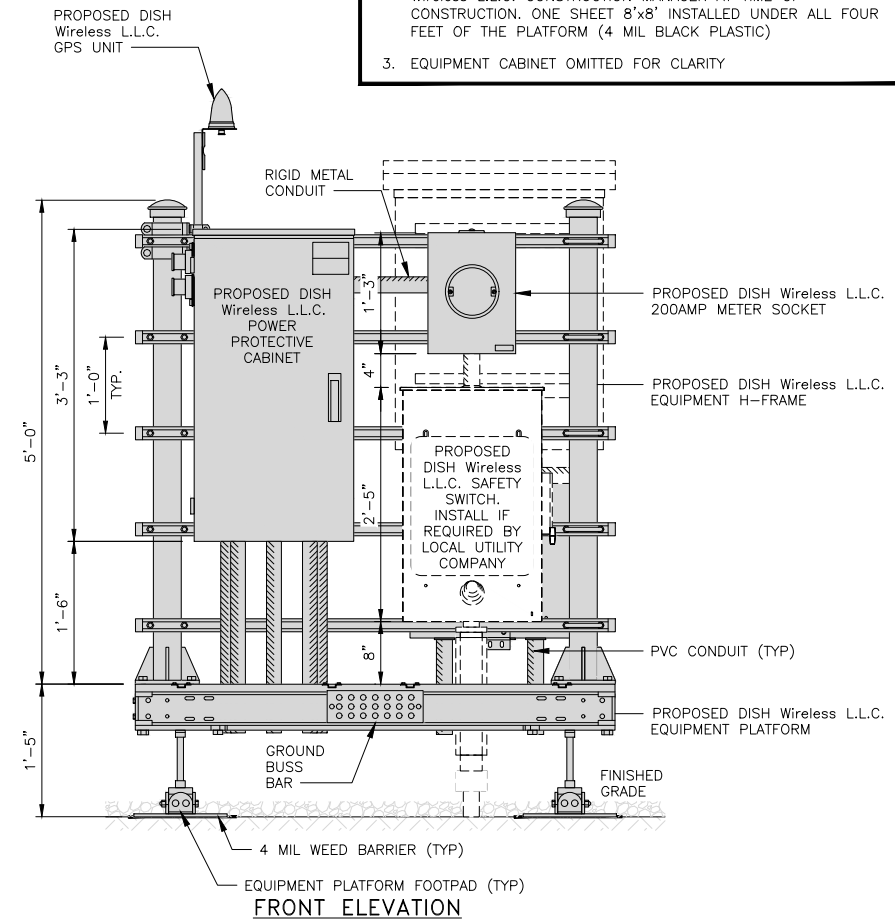
NO SCALE

4

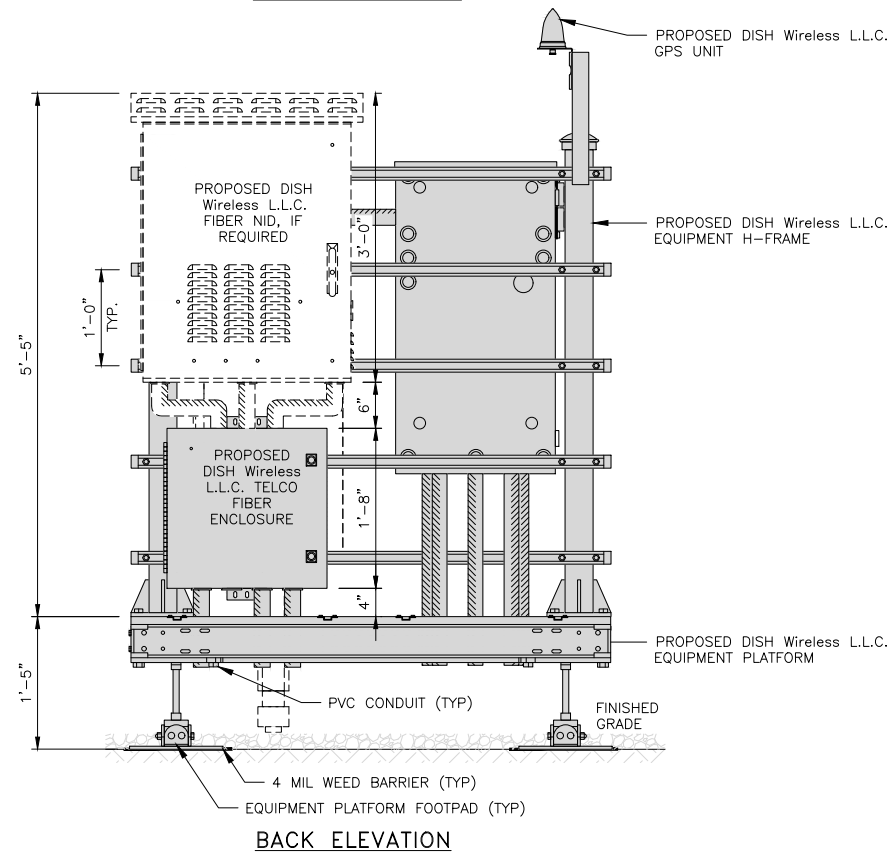
H-FRAME EQUIPMENT ELEVATION



5



FRONT ELEVATION



BACK ELEVATION

CHARLES INDUSTRY HEX CUBE-PM639155N4	
DIMENSIONS (HxWxD):	74"x32"x32"
POWER PLANT:	-48VDC ABB/600W
TOTAL WEIGHT (EMPTY)	408 LBS

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

POWER PROTECTION CABINET (PPC) DETAIL NO SCALE 2

SQUARE D SAFETY SWITCHES D224NRB	
ENCLOSURE DIM (HxWxD)	29.25"x19.00"x8.50"
ENCLOSURE TYPE	NEMA 3R RAINPROOF
UL LISTED	FILE E-2875

SAFETY SWITCH DETAIL NO SCALE 3

EATON METER SOCKET UNRRS213BEUSE	
METER SOCKET TYPE	RING
ENCLOSURE DIM (HxWxD)	16"x12"x6"
MAIN AMPERE RATING	200A
WEIGHT	18 LBS

METER SOCKET DETAIL NO SCALE 4

ZAYO 5RU (LEFT SWING DOOR) FIBER NID ENCLOSURE	
DIMENSIONS (HxWxD)	36.1"x29"x12.9"
WEIGHT	85 lbs

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

FIBER TELCO ENCLOSURE DETAIL NO SCALE 6

COMMSCOPE WB-K110-B WAVEGUIDE BRIDGE KIT		INCLUDED PRODUCTS:	WB-T12-3 TRAPEZE KIT, 3 RUNGS
DIMENSIONS (HxL)	160"x10"	WB-LB12-3 SUPPORT BRACKET	
WEIGHT/ VOLUME	325.0 LBS	MF-130 DIRECT BURIAL PIPE COLUMN, 13'-4"	
CABLE RUN (QTY)	12		

ICE BRIDGE DETAIL NO SCALE 7

TYPICAL ICE BRIDGE CONCRETE PIER DETAIL NO SCALE 8

HYBRID CABLE RUN NO SCALE 9

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

8051 CONGRESS AVENUE
BOCA RATON, FL 33487

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

11/4/21

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

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
CDD	CDD	RCM

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	9/14/21	ISSUED FOR REVIEW
0	11/4/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149476.001.01

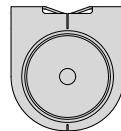
DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00130A
60 ADAMS STREET
MANCHESTER, CT 06042

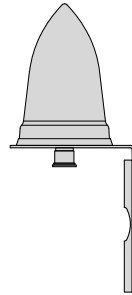
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-4

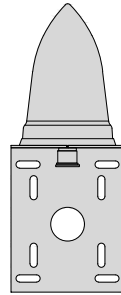
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



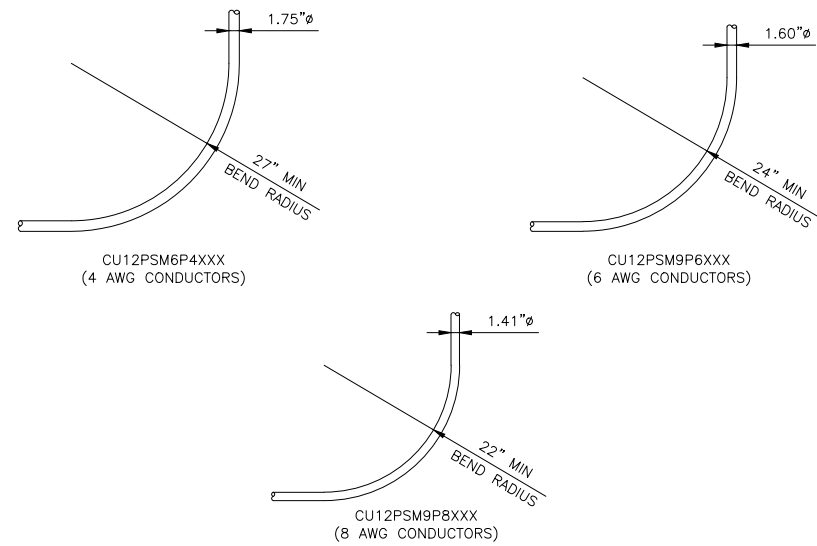
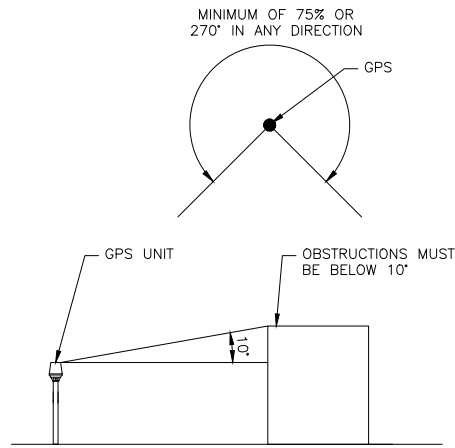
TOP



BACK



SIDE



GPS DETAIL

NO SCALE

1

GPS MINIMUM SKY VIEW REQUIREMENTS

NO SCALE

2

CABLES UNLIMITED HYBRID CABLE
MINIMUM BEND RADIUS

NO SCALE

3

NOT USED

NO SCALE

4

NOT USED

NO SCALE

5

NOT USED

NO SCALE

6

NOT USED

NO SCALE

7

NOT USED

NO SCALE

8

NOT USED

NO SCALE

9



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



8051 CONGRESS AVENUE
BOCA RATON, FL 33487



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



11/4/21

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

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
CDD	CDD	RCM

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	9/14/21	ISSUED FOR REVIEW
0	11/4/21	ISSUED FOR CONSTRUCTION

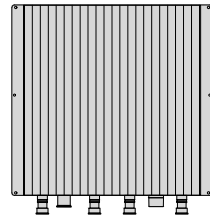
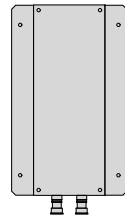
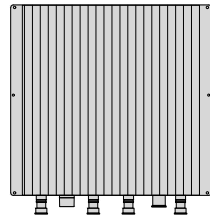
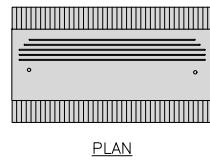
A&E PROJECT NUMBER
149476.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00130A
60 ADAMS STREET
MANCHESTER, CT 06042

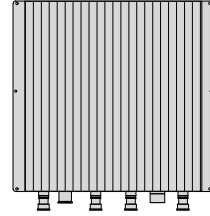
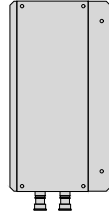
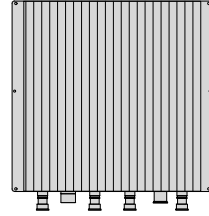
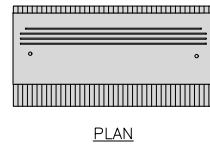
SHEET TITLE
EQUIPMENT DETAILS

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

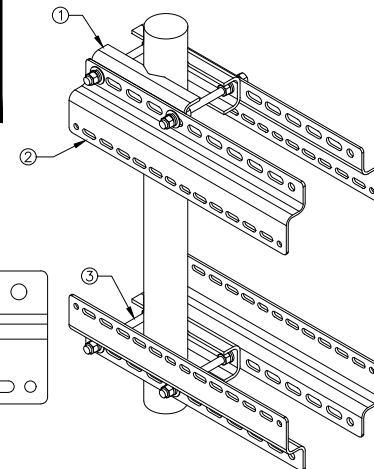
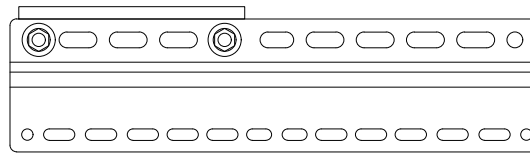


FUJITSU DUAL BAND TA08025-B604	
DIMENSIONS (HxWxD)	14.9"x15.7"x7.8"
WEIGHT	63.9 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



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

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



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

RRH DETAIL

NO SCALE

1

RRH DETAIL

NO SCALE

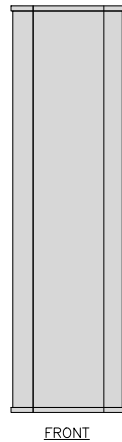
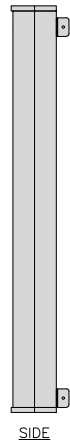
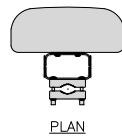
2

RRH MOUNT DETAIL

NO SCALE

3

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



ANTENNA DETAIL

NO SCALE

4

NOT USED

NO SCALE

5

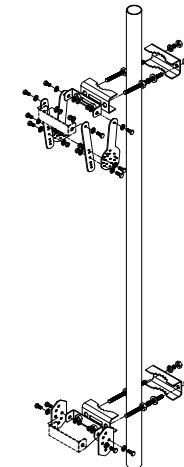
ANTENNA BRACKET DETAIL

NO SCALE

6

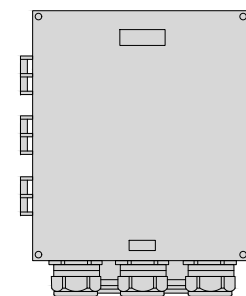
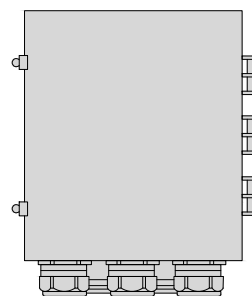
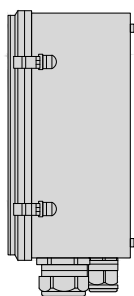
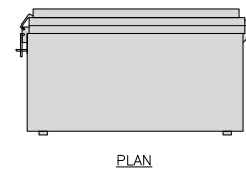
JMA ANTENNA MOUNT BRACKET #91900318	
TOTAL WEIGHT (WITH BRACKETS)	18 lbs (8.18 Kg)
POLE DIAMETER RANGE	2.5" TO 4.5"

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



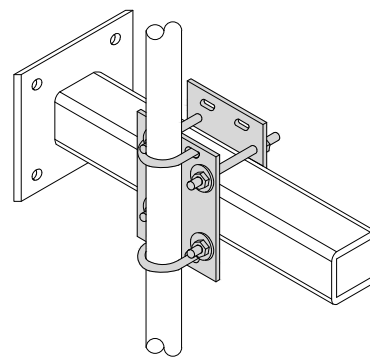
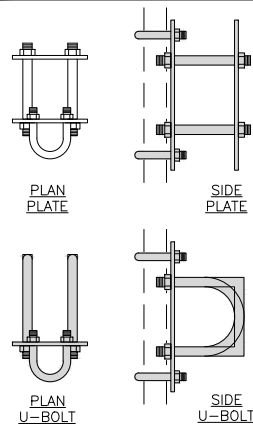
NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

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



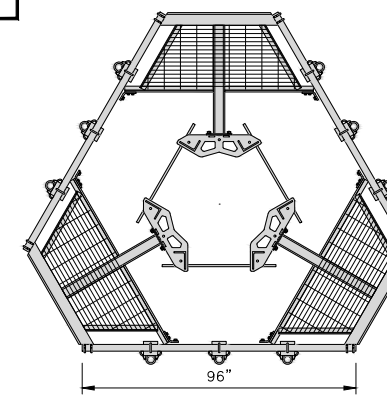
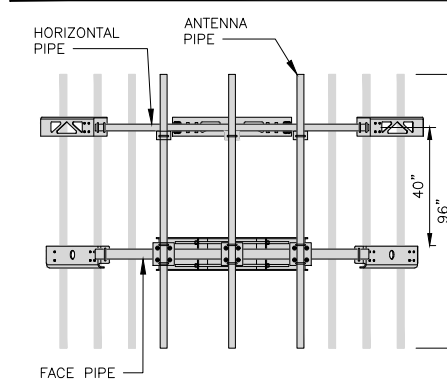
COMMSCOPE XP-2040 CROSSOVER PLATE	
DIMENSIONS (HxW)	10"x12"
WEIGHT	11 lbs

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



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

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



SURGE SUPPRESSION DETAIL (OVP)

NO SCALE

7

RRH/OVP MOUNT DETAIL

NO SCALE

8

ANTENNA PLATFORM DETAIL

NO SCALE

9

dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



8051 CONGRESS AVENUE
BOCA RATON, FL 33487



11/4/21

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

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
CDD	CDD	RCM

RFDS REV #: 1

CONSTRUCTION
DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	9/14/21	ISSUED FOR REVIEW
0	11/4/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149476.001.01

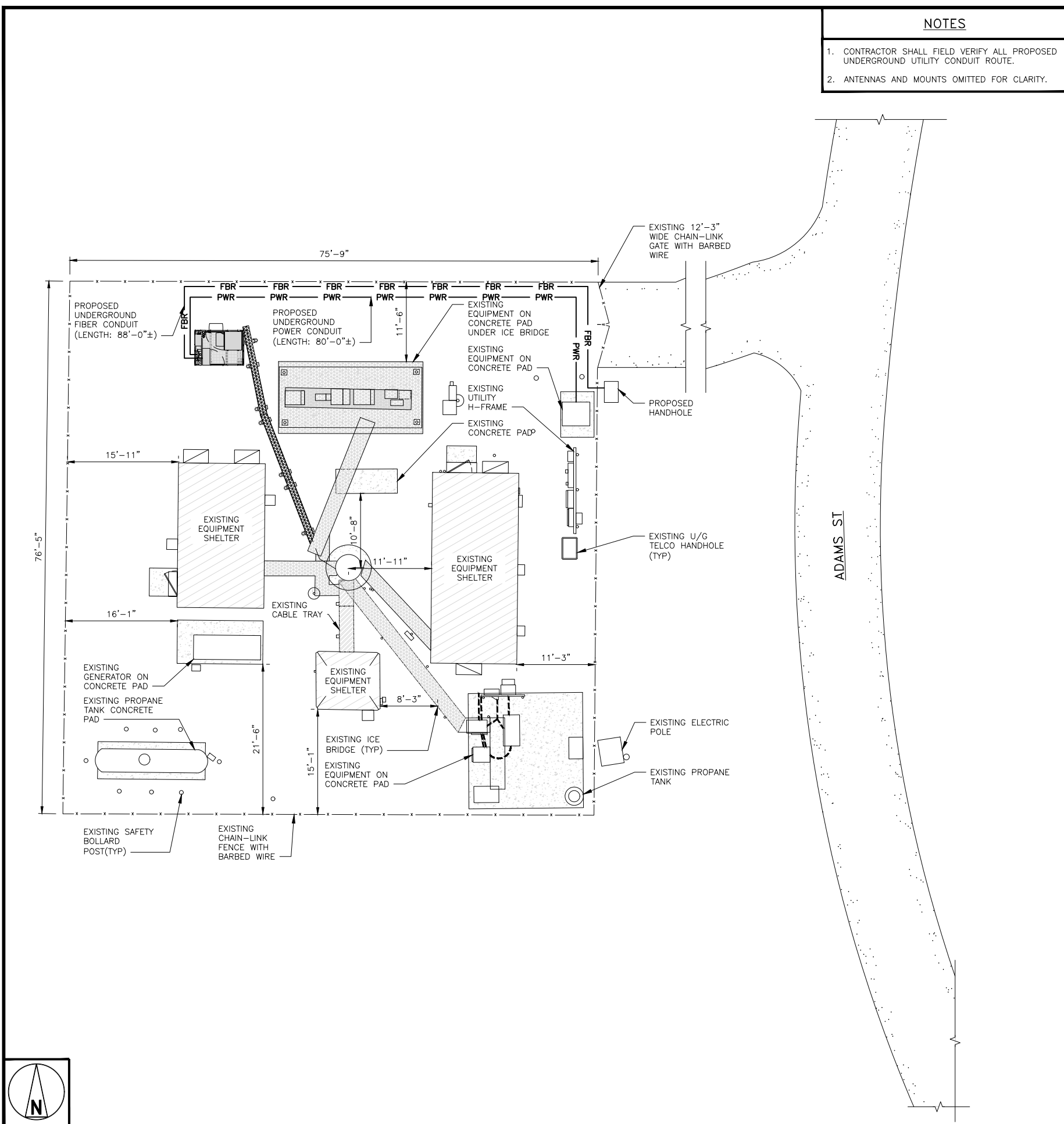
DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00130A
60 ADAMS STREET
MANCHESTER, CT 06042

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.

- 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.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

8051 CONGRESS AVENUE
BOCA RATON, FL 33487

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

11/4/21

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

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
CDD	CDD	RCM
RFDS REV #:		1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	9/14/21	ISSUED FOR REVIEW
0	11/4/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149476.001.01

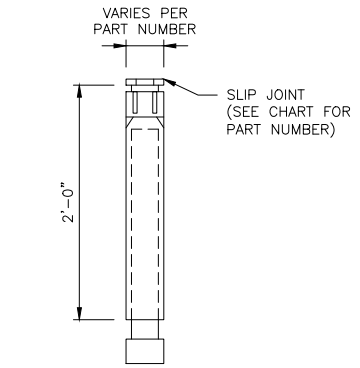
DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00130A
60 ADAMS STREET
MANCHESTER, CT 06042

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

SHEET NUMBER
E-1

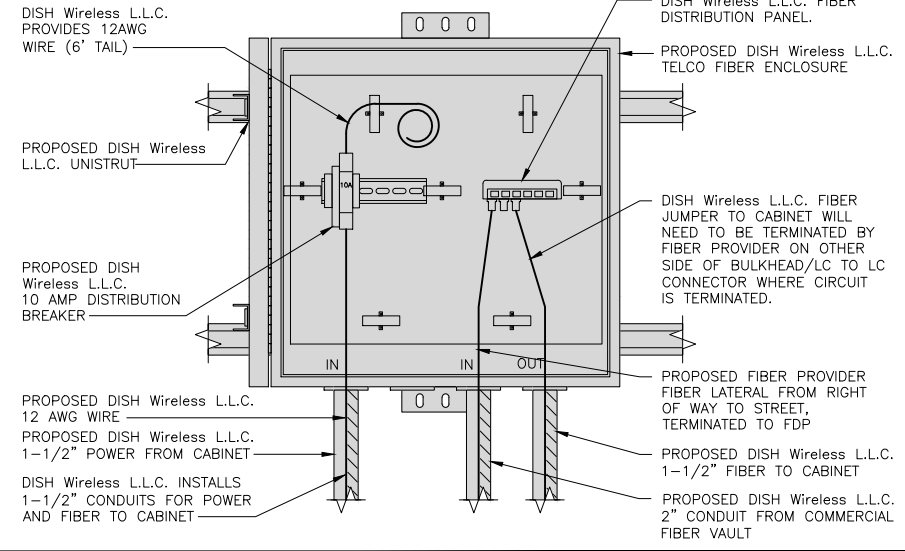
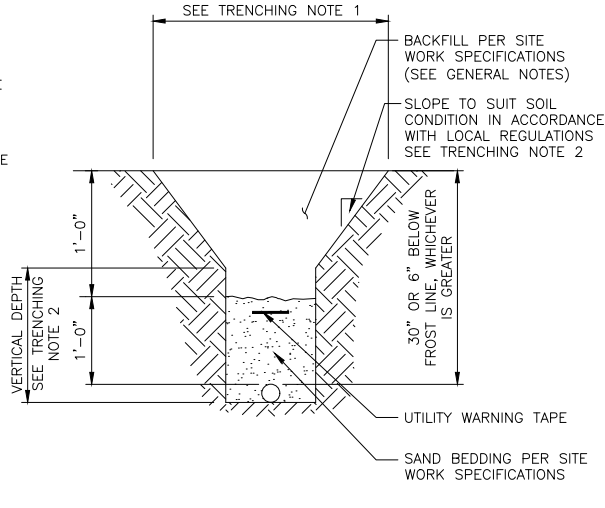
CARLON EXPANSION FITTINGS				
COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD CTN QTY.	TRAVEL LENGTH
E945D	E945DX	1/2"	20	4"
E945E	E945EX	3/4"	15	4"
E945F	E945FX	1"	10	4"
E945G	E945GX	1 1/4"	5	4"
E945H	E945HX	1 1/2"	5	4"
E945J	E945JX	2"	15	8"
E945K	E945KX	2 1/2"	10	8"
E945L	E945LX	3"	10	8"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

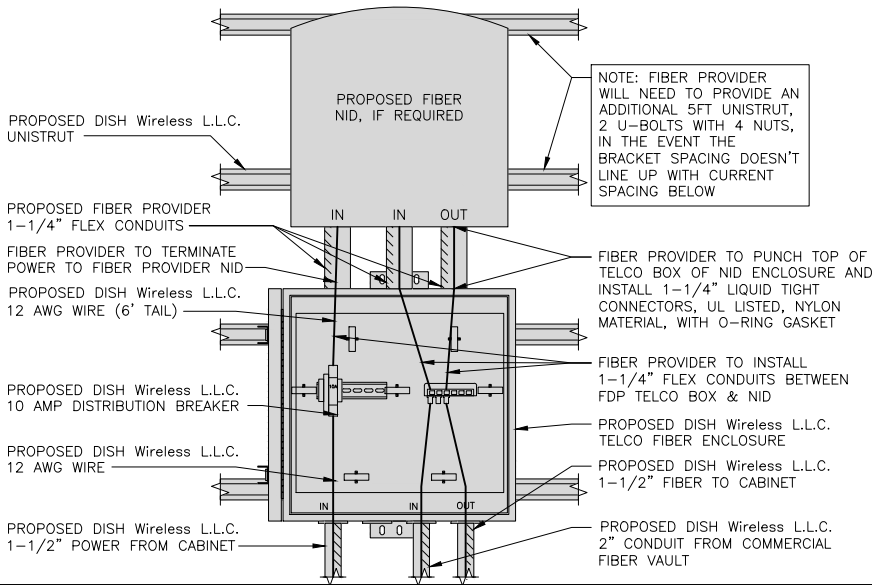
NO SCALE 1

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



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:	CHECKED BY:	APPROVED BY:
CDD	CDD	RCM

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

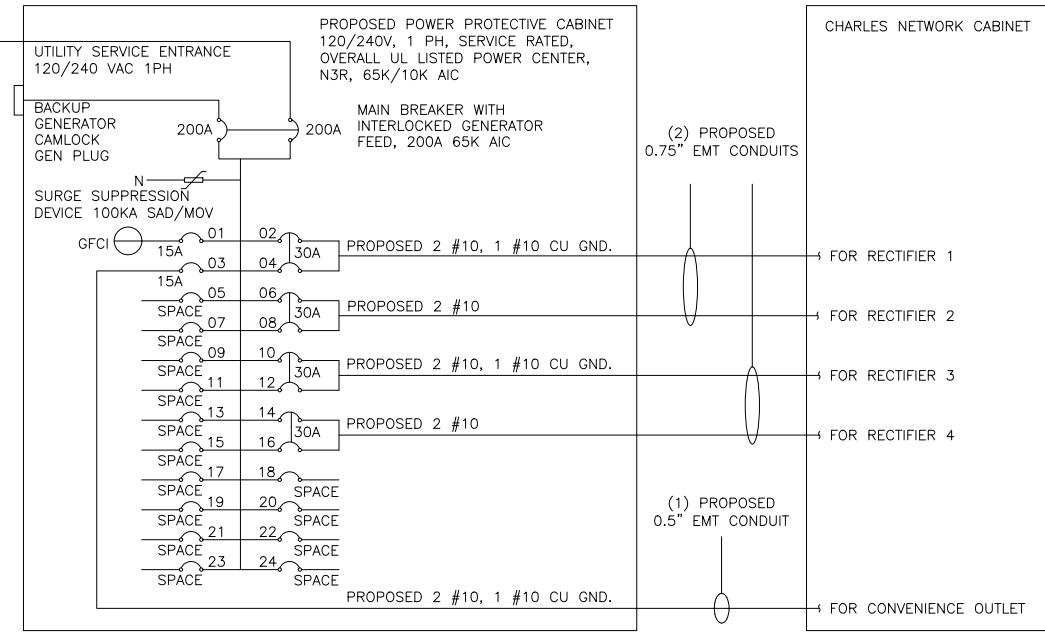
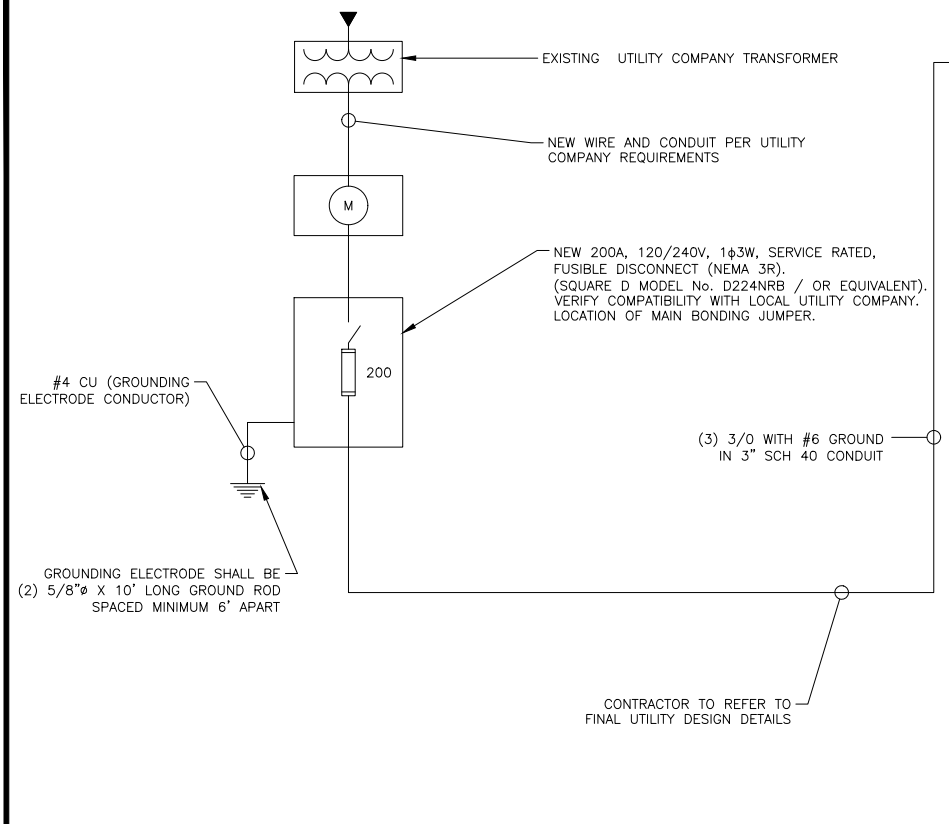
SUBMITTALS		
REV	DATE	DESCRIPTION
A	9/14/21	ISSUED FOR REVIEW
0	11/4/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149476.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00130A
60 ADAMS STREET
MANCHESTER, CT 06042

SHEET TITLE
ELECTRICAL
DETAILS

SHEET NUMBER
E-2



NOTE:
BRANCH CIRCUIT WIRING SUPPLYING RECTIFIERS ARE TO BE RATED UL1015, 105°C, 600V, AND PVC INSULATED, IN THE SIZES SHOWN IN THE ONE-LINE DIAGRAM. CONTRACTOR MAY SUBSTITUTE UL1015 WIRE FOR THWN-2 FOR CONVENIENCE OUTLET BRANCH CIRCUIT.

BREAKERS REQUIRED:
(4) 30A, 2P BREAKER - SQUARE D P/N:Q0230
(1) 15A, 1P BREAKER - SQUARE D P/N:Q0115

NOTES

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

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

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

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

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

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

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

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

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



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

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
CDD	CDD	RCM
RFDS REV #:	1	

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	9/14/21	ISSUED FOR REVIEW
0	11/4/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149476.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00130A
60 ADAMS STREET
MANCHESTER, CT 06042

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

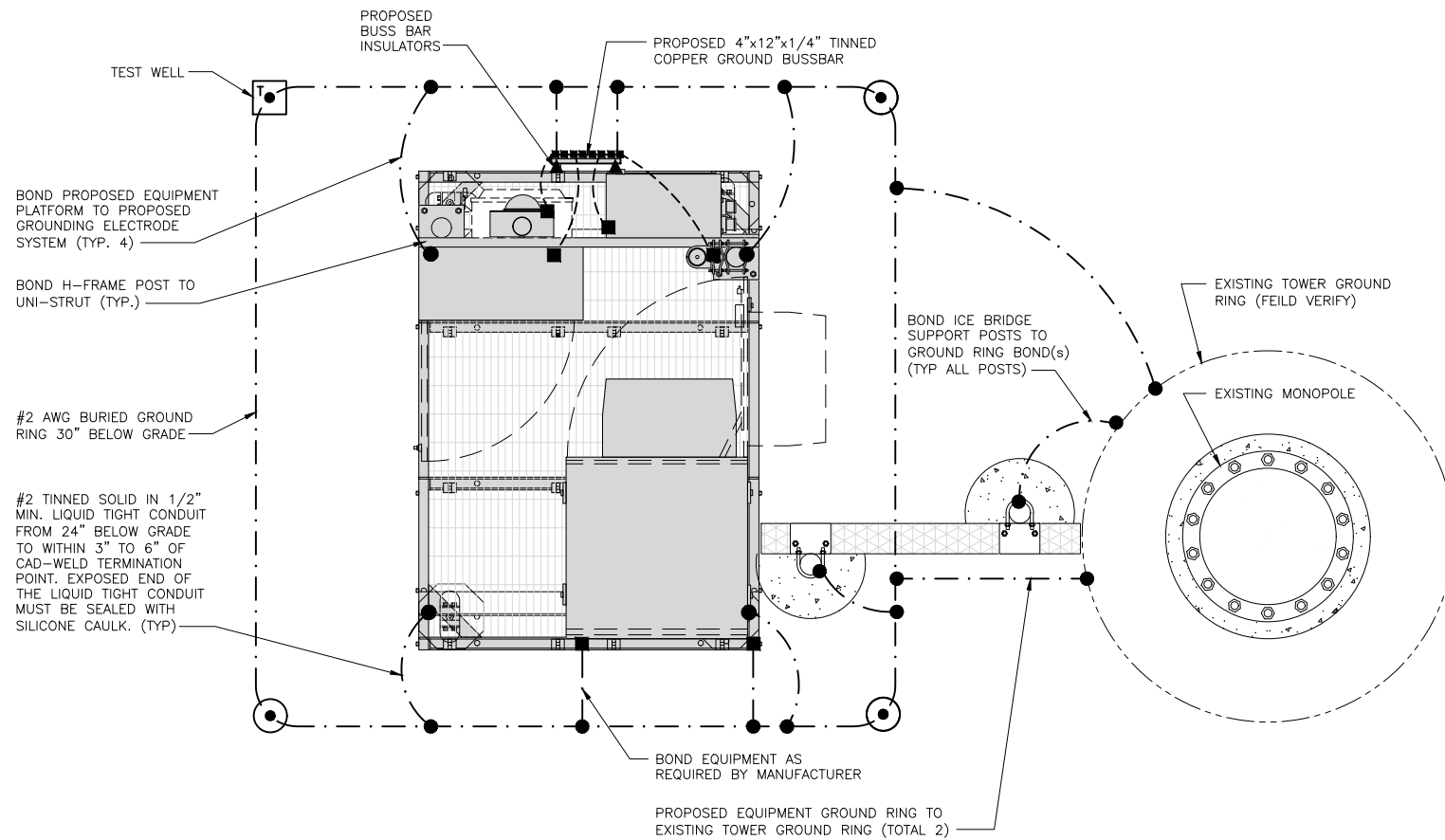
SHEET NUMBER
E-3

PPC ONE-LINE DIAGRAM NO SCALE 1

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

PANEL SCHEDULE NO SCALE 2

NOT USED NO SCALE 3

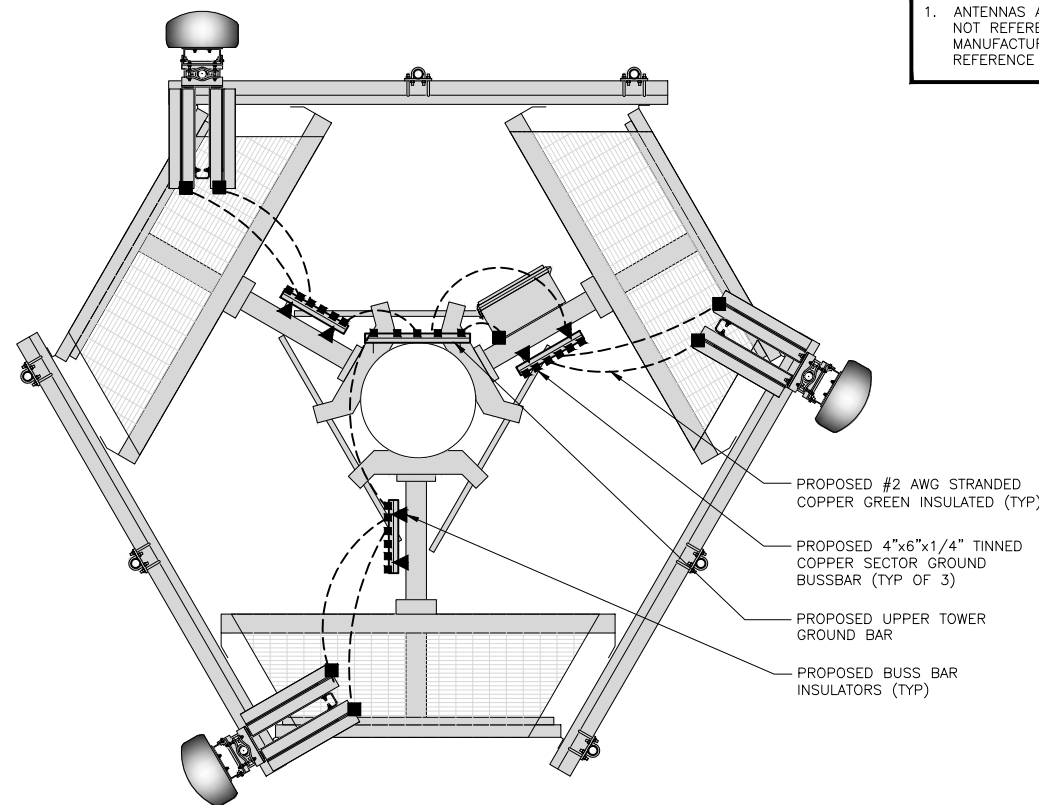


TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE 1

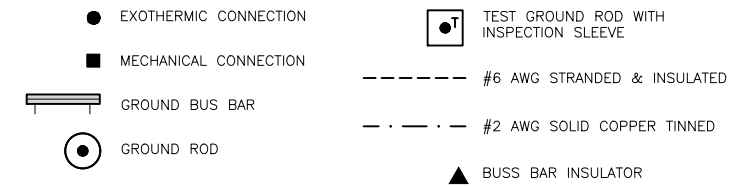
NOTES

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



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE 2



GROUNDING LEGEND

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

GROUNDING KEY NOTES

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

GROUNDING KEY NOTES

NO SCALE 3



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



8051 CONGRESS AVENUE
BOCA RATON, FL 33487



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



11/4/21

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

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

DRAWN BY: CHECKED BY: APPROVED BY:

CDD CDD RCM

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	9/14/21	ISSUED FOR REVIEW
0	11/4/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149476.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00130A
60 ADAMS STREET
MANCHESTER, CT 06042

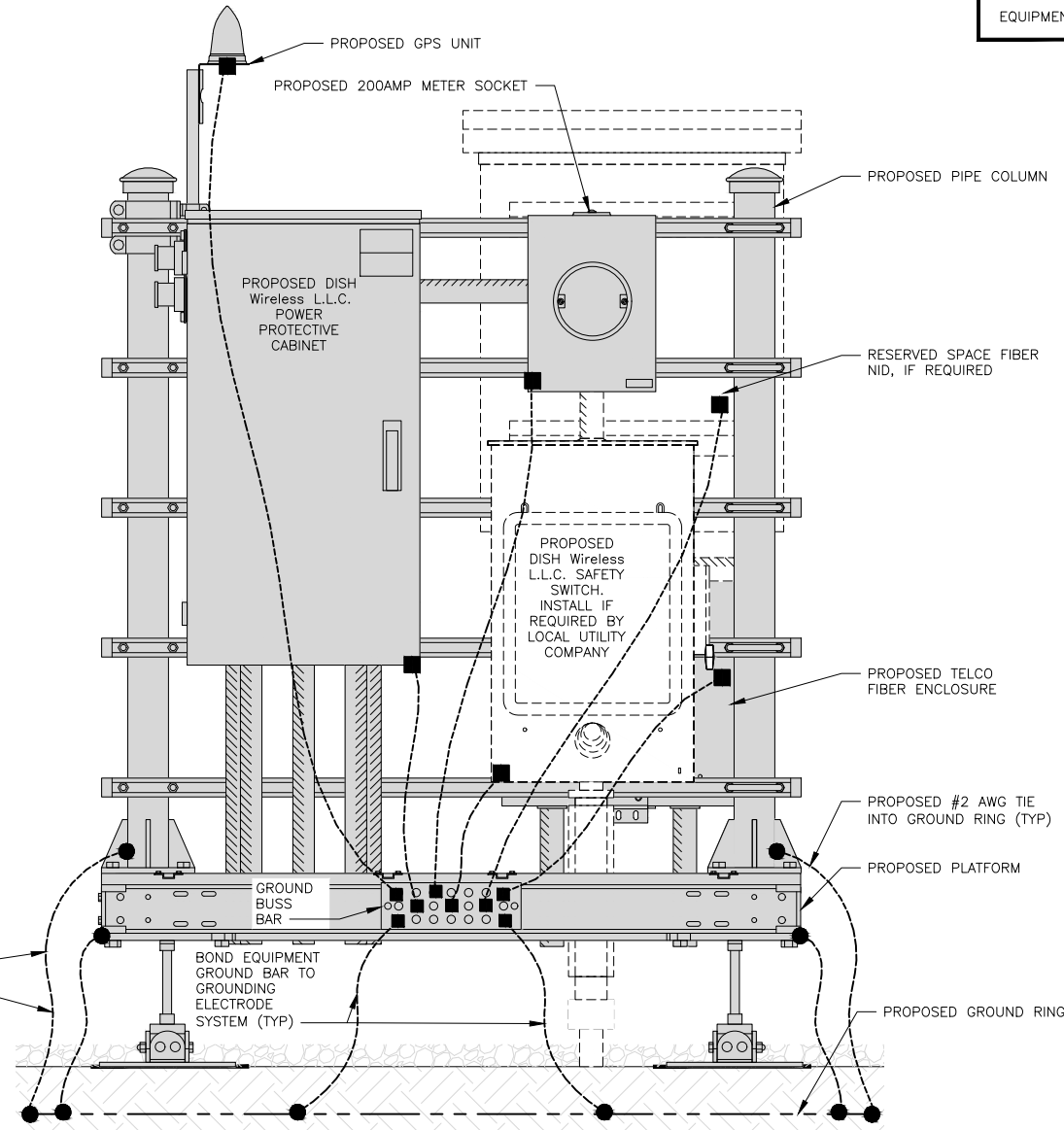
SHEET TITLE
GROUNDING PLANS
AND NOTES

SHEET NUMBER

G-1

NOTES

EQUIPMENT CABINET OMITTED FOR CLARITY



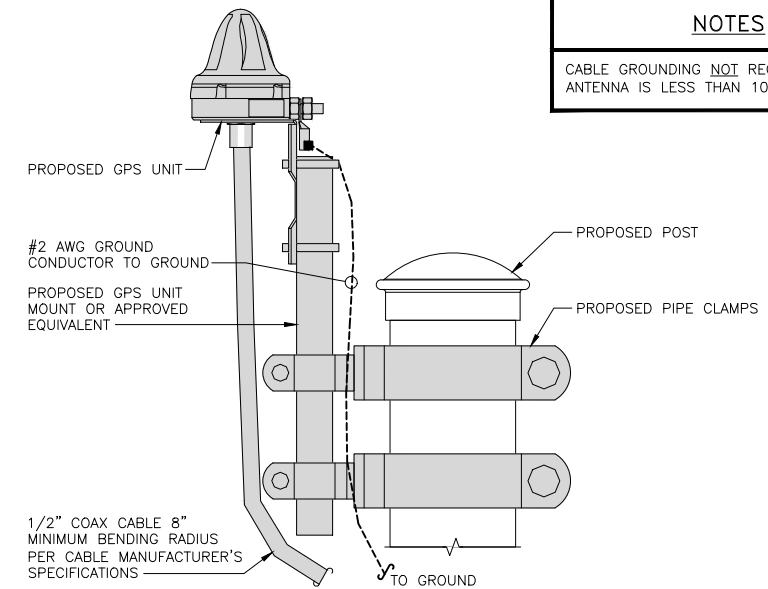
#2 TINNED SOLID IN 1/2" MIN. LIQUID TIGHT CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. EXPOSED END OF THE LIQUID TIGHT CONDUIT MUST BE SEALED WITH SILICONE CAULK. (TYP)

H-FRAME GROUNDING DETAIL

NO SCALE 1

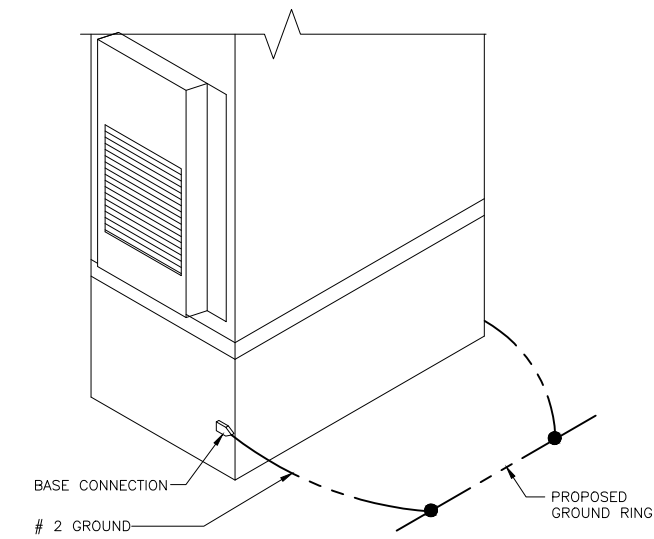
NOTES

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



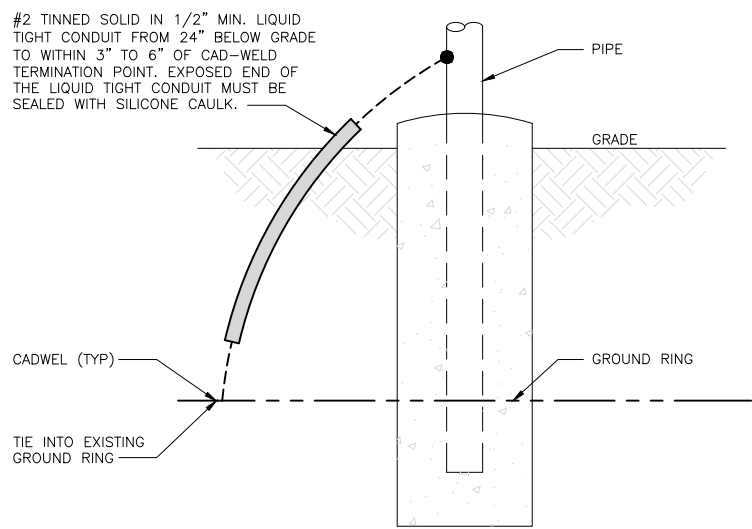
TYPICAL GPS UNIT GROUNDING

NO SCALE 2



OUTDOOR CABINET GROUNDING

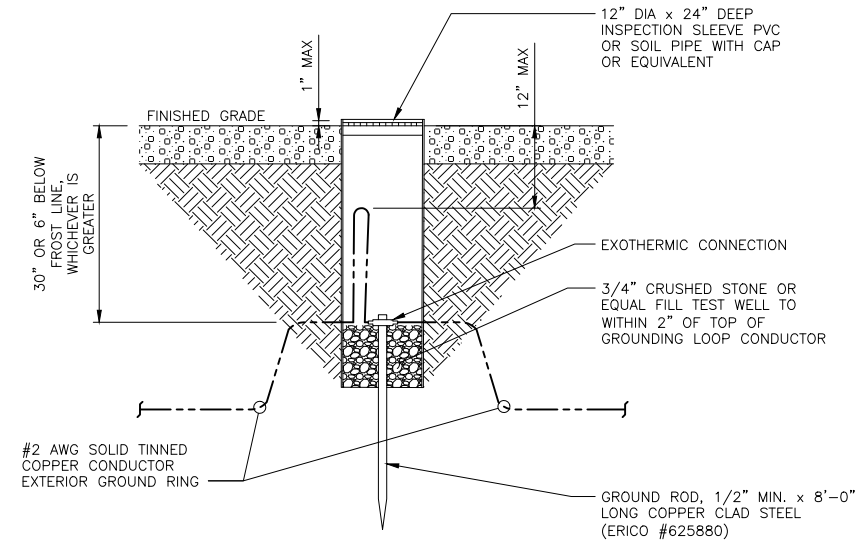
NO SCALE 3



#2 TINNED SOLID IN 1/2" MIN. LIQUID TIGHT CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. EXPOSED END OF THE LIQUID TIGHT CONDUIT MUST BE SEALED WITH SILICONE CAULK.

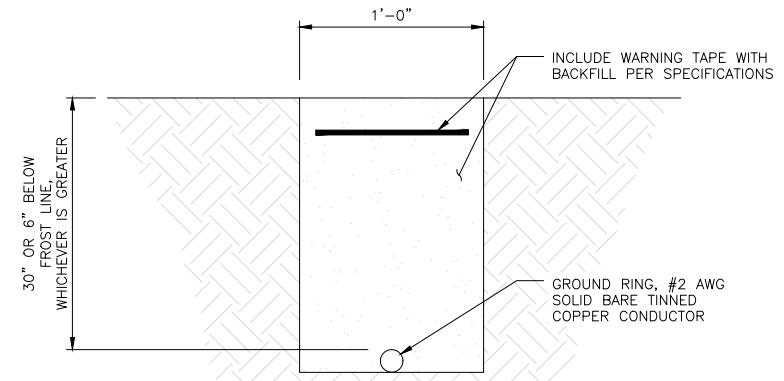
TRANSITIONING GROUND DETAIL

NO SCALE 4



TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE

NO SCALE 5



TYPICAL GROUND RING TRENCH

NO SCALE 6

dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



8051 CONGRESS AVENUE
BOCA RATON, FL 33487



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



11/4/21

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

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
CDD	CDD	RCM

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	9/14/21	ISSUED FOR REVIEW
0	11/4/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149476.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

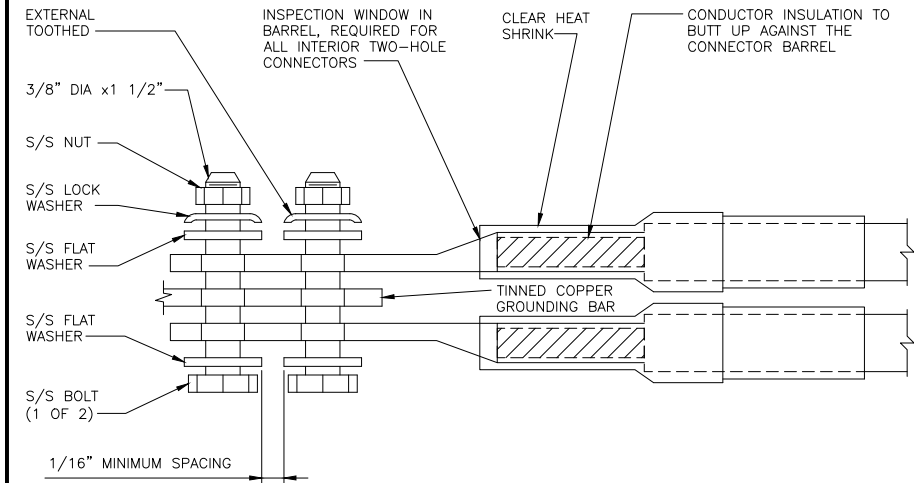
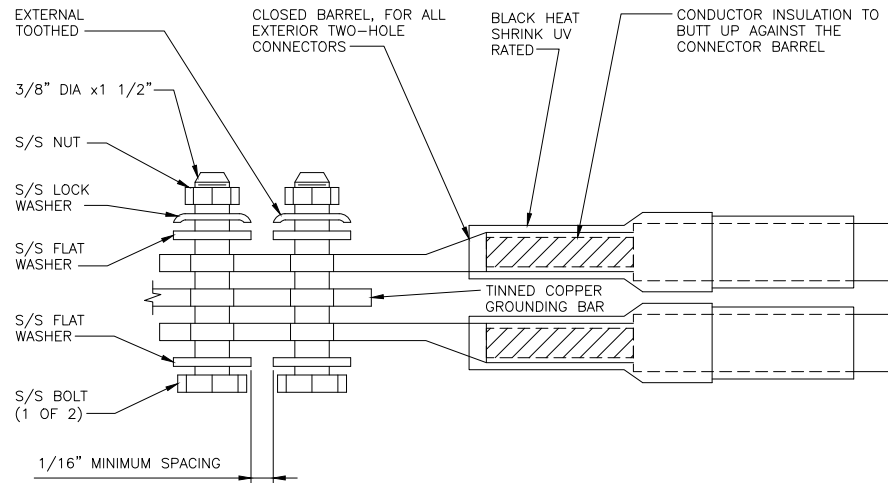
BOBDL00130A
60 ADAMS STREET
MANCHESTER, CT 06042

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

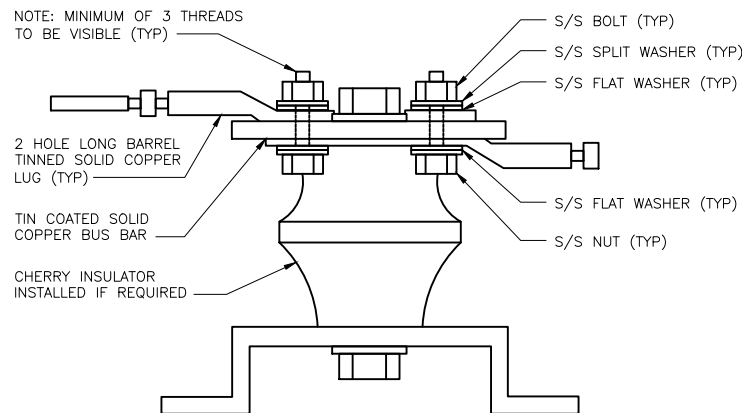
NO SCALE

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



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



8051 CONGRESS AVENUE
BOCA RATON, FL 33487



11/4/21

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

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
CDD	CDD	RCM

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	9/14/21	ISSUED FOR REVIEW
0	11/4/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149476.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00130A
60 ADAMS STREET
MANCHESTER, CT 06042

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-3

RF JUMPER COLOR CODING

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

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

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

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

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

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

PORT 1 + SLANT	PORT 2 - SLANT	PORT 3 + SLANT	PORT 4 - SLANT	PORT 1 + SLANT	PORT 2 - SLANT	PORT 3 + SLANT	PORT 4 - SLANT	PORT 1 + SLANT	PORT 2 - SLANT	PORT 3 + SLANT	PORT 4 - SLANT
RED	RED	RED	RED	BLUE	BLUE	BLUE	BLUE	GREEN	GREEN	GREEN	GREEN
PURPLE	PURPLE	RED	RED	PURPLE	PURPLE	BLUE	BLUE	PURPLE	PURPLE	GREEN	GREEN
	WHITE (-) PORT	PURPLE	PURPLE		WHITE (-) PORT	PURPLE	PURPLE		WHITE (-) PORT	PURPLE	PURPLE
			WHITE (-) PORT				WHITE (-) PORT				WHITE (-) PORT

HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED ALONG WITH FREQUENCY BANDS

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

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

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

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

FIBER JUMPERS TO RRHs

LOW-BAND RRH FIBER CABLES HAVE SECTOR STRIPE ONLY

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

POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY

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

RET MOTORS AT ANTENNAS

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

MICROWAVE RADIO LINKS

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

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

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

RF CABLE COLOR CODES

NO SCALE

1

NOT USED

NO SCALE

4

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

ORANGE

AWS (N66+N70+H-BLOCK)

PURPLE

CBRS TECH (3 GHz)

YELLOW

NEGATIVE SLANT PORT ON ANT/RRH

WHITE

ALPHA SECTOR

RED

BETA SECTOR

BLUE

GAMMA SECTOR

GREEN

COLOR IDENTIFIER

NO SCALE

2

NOT USED

NO SCALE

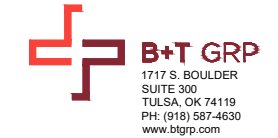
3



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



8051 CONGRESS AVENUE
BOCA RATON, FL 33487



11/4/21

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

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
CDD	CDD	RCM

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	9/14/21	ISSUED FOR REVIEW
0	11/4/21	ISSUED FOR CONSTRUCTION

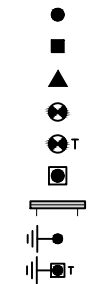
A&E PROJECT NUMBER
149476.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00130A
60 ADAMS STREET
MANCHESTER, CT 06042

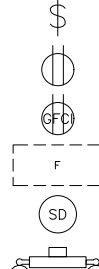
SHEET TITLE
RF
CABLE COLOR CODES

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



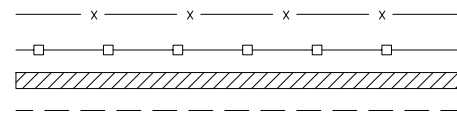
SINGLE POLE SWITCH
 DUPLEX RECEPTACLE
 DUPLEX GFCI RECEPTACLE
 FLUORESCENT LIGHTING FIXTURE (2) TWO LAMPS 48-T8
 SMOKE DETECTION (DC)
 EMERGENCY LIGHTING (DC)



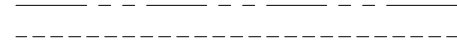
SECURITY LIGHT W/PHOTOCELL LITHONIA ALXW
 LED-1-25A400/51K-SR4-120-PE-DBBTXD



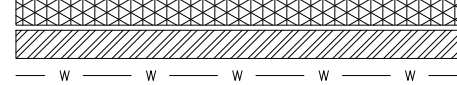
CHAIN LINK FENCE
 WOOD/WROUGHT IRON FENCE
 WALL STRUCTURE
 LEASE AREA



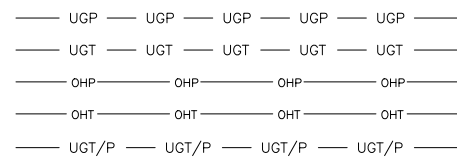
PROPERTY LINE (PL)
 SETBACKS



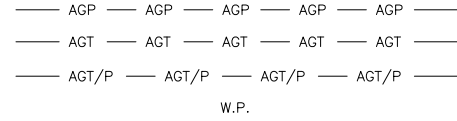
ICE BRIDGE
 CABLE TRAY



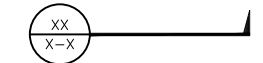
WATER LINE
 UNDERGROUND POWER
 UNDERGROUND TELCO
 OVERHEAD POWER
 OVERHEAD TELCO



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



SECTION REFERENCE



DETAIL REFERENCE



LEGEND

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

ABBREVIATIONS



5701 SOUTH SANTA FE DRIVE
 LITTLETON, CO 80120



8051 CONGRESS AVENUE
 BOCA RATON, FL 33487



11/4/21

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

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
CDD	CDD	RCM

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	9/14/21	ISSUED FOR REVIEW
0	11/4/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
 149476.001.01

DISH Wireless L.L.C.
 PROJECT INFORMATION
 BOBDL00130A
 60 ADAMS STREET
 MANCHESTER, CT 06042

SHEET TITLE
 LEGEND AND ABBREVIATIONS

SHEET NUMBER
 GN-1

SITE ACTIVITY REQUIREMENTS:

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

GENERAL NOTES:

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



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



8051 CONGRESS AVENUE
BOCA RATON, FL 33487



11/4/21

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

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
CDD	CDD	RCM

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	9/14/21	ISSUED FOR REVIEW
0	11/4/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149476.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00130A
60 ADAMS STREET
MANCHESTER, CT 06042

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.



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



8051 CONGRESS AVENUE
BOCA RATON, FL 33487



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



11/4/21

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

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

DRAWN BY: CHECKED BY: APPROVED BY:

CDD CDD RCM

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	9/14/21	ISSUED FOR REVIEW
0	11/4/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149476.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00130A
60 ADAMS STREET
MANCHESTER, CT 06042

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.



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



8051 CONGRESS AVENUE
BOCA RATON, FL 33487



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



11/4/21

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

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
CDD	CDD	RCM

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	9/14/21	ISSUED FOR REVIEW
0	11/4/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149476.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00130A
60 ADAMS STREET
MANCHESTER, CT 06042

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-4