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

November 16, 2021

Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Tower Share Application
51 Stony Ln., Stafford Springs, CT
Latitude: 42.016417
Longitude: -72.309944
Dish Site# BOBDL00140A

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 51 Stony Ln., Stafford Springs, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900/2100 MHz antennas and six (6) RRUs, at the 98-foot level of the existing 117-foot monopole tower, one (1) Hybrid cable will also be installed. Dish Wireless LLC equipment cabinets will be placed within 7' x 5' lease area. Included are plans by B & T Group, dated October 21, 2021 Exhibit 10. Also included is a structural analysis prepared by TES, dated September 1, 2021, confirming that the existing tower is structurally capable of supporting the proposed equipment, attached as Exhibit 8. This facility was approved by the Town of Stafford's Building Official on October 18, 2002 and later approved by the Connecticut Siting Council under Docket No. 213 on, March 21, 2002. 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 Mary Mitta, First Selectman for the Town of Stafford Springs, Glenn T. Setzler, Building Official, and the property owner Mark S. and Susan A. Cashman. Separate notice is not being sent to the tower owner as it belongs to SBA.

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

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the tower is 117-feet; Dish Wireless LLC proposed antennas will be located at a center line height of 98-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 28.98% 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 Stafford Springs. Under the authority granted to the Council, an order of the Council approving the requested shared use would permit Dish Wireless LLC to obtain a building permit for the proposed installation. Further, a Letter of Intent is included as Exhibit 2, authorizing Dish Wireless LLC to file this application for shared use.

C. Environmental Feasibility. The proposed shared use of this facility would have a minimal environmental impact. The installation of Dish Wireless LLC equipment at the 98-foot level of the existing 117-foot tower would have an insignificant visual impact on the area around the tower. Dish Wireless LLC ground equipment would be installed within the existing facility compound. Dish Wireless LLC shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit 7, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.

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

E. Public Safety Concerns. As discussed above, the tower is structurally capable of supporting Dish Wireless LLC proposed loading.

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

Sincerely,

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

Attachments:

cc: Mary Mitta, First Selectman / with attachments
Warren Memorial Town Hall, 1 Main St., Stafford Springs, CT 06076
Glenn T. Setzler, Building Official / with attachments
Warren Memorial Town Hall, 1 Main St., Stafford Springs, CT 06076
Mark S. and Susan A. Cashman / with attachments
51 Stony Lane, Stafford Springs, CT 06076 (SBA 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 Stafford (10/18/02), CSC Docket No. 219 (3/21/02)
Exhibit 7	EME Report	EBI Consulting 11/4/21
Exhibit 8	Structural Analysis	TES 9/1/21
Exhibit 9	Mount Analysis	B + T Group 9/7/21
Exhibit 10	Construction Drawings	B + T Group 10/21/21

EXHIBIT 1

Copy of check

EXHIBIT 2
Letter of Intent

November 16, 2021

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

RE: **Notice of Intent to Allow Shared Use of the Existing SBA Telecommunications Site**
Location: **51 Stony Ln., Stafford Springs, CT**
Dish Wireless Site No: BOBDL00140A
SBA Site No: CT46148-A

Dear Ms. Bachman:

Please let the following serve as Evidence of Intent to allow T-Mobile's shared use of the existing SBA telecommunications site at **51 Stony Ln., Stafford Springs, CT**.

SBA 2012 TC Assets, 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 98' 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@sbasite.com

EXHIBIT 3

Fedex Labels

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.

FedEx

TRACK ANOTHER SHIPMENT

775221838198

ADD NICKNAME

ON TIME

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

PICKED UP
WESTBOROUGH, MA

GET STATUS UPDATES

FROM	TO
WESTBOROUGH, MA US	NEW BRITAIN, CT US

MANAGE DELIVERY

Travel History | Shipment Facts

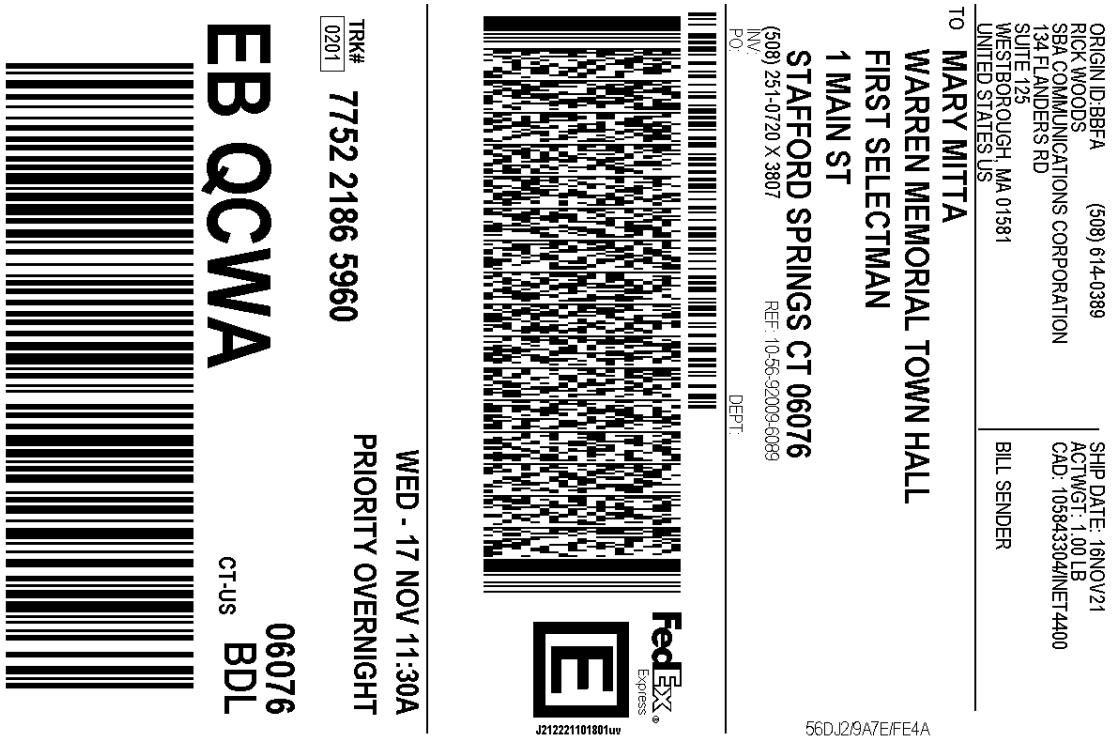
Travel History

TIME ZONE
Local Scan Time

Tuesday, November 16, 2021		
1:05 PM	WESTBOROUGH, MA	Picked up Tendered at FedEx Office
9:03 AM		Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER 775221838198	**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**



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FedEx

TRACK ANOTHER SHIPMENT

775221865960

ADD NICKNAME

ON TIME

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

PICKED UP
WESTBOROUGH, MA

GET STATUS UPDATES

FROM	TO
WESTBOROUGH, MA US	STAFFORD SPRINGS, CT US

MANAGE DELIVERY

Travel History | Shipment Facts

Travel History

TIME ZONE
Local Scan Time

Tuesday, November 16, 2021

1:05 PM	WESTBOROUGH, MA	Picked up Tendered at FedEx Office
9:05 AM		Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER
775221865960

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

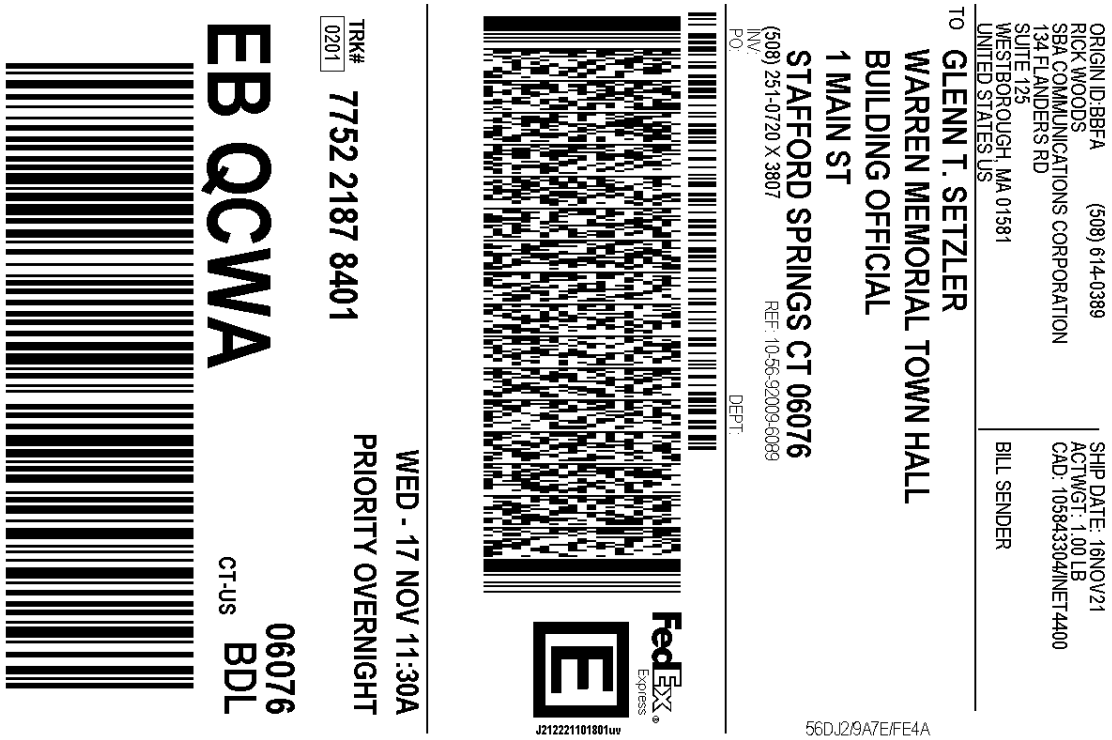
PACKAGING
FedEx Envelope

SPECIAL HANDLING SECTION
Deliver Weekday

ACTUAL PICK UP

STANDARD TRANSIT

SCHEDULED DELIVERY



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TRACK ANOTHER SHIPMENT

775221878401

ADD NICKNAME

ON TIME

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

PICKED UP
WESTBOROUGH, MA

GET STATUS UPDATES

FROM	TO
WESTBOROUGH, MA US	STAFFORD SPRINGS, CT US

MANAGE DELIVERY

Travel History | Shipment Facts

Travel History

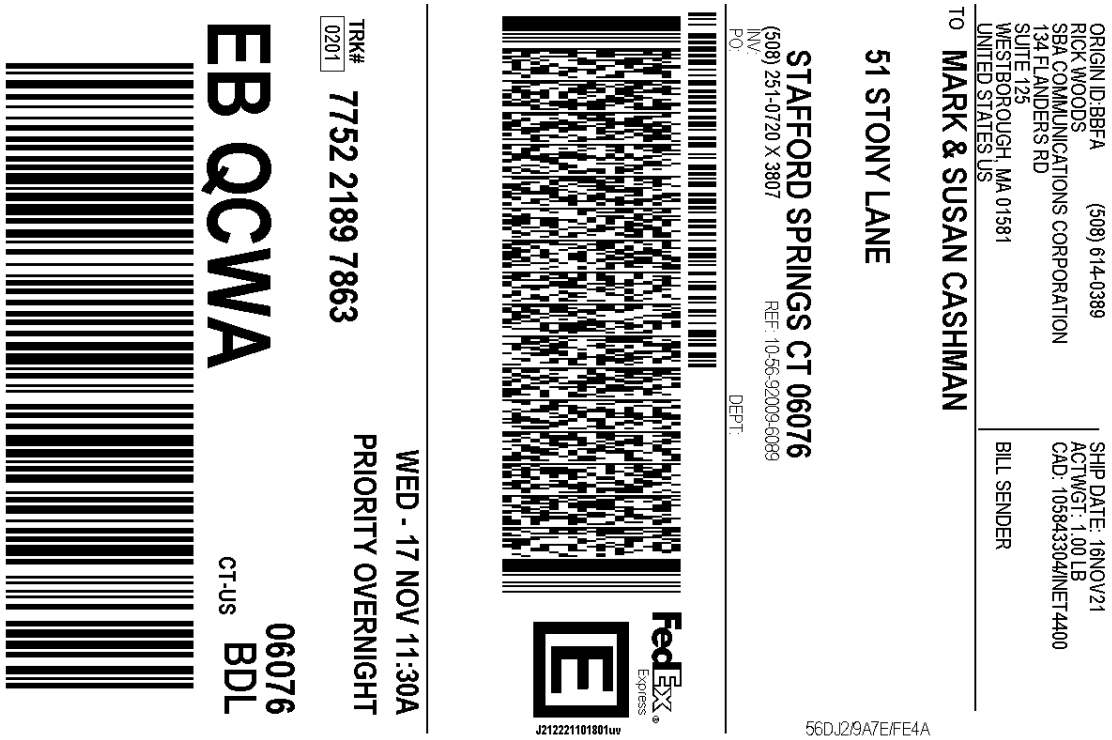
TIME ZONE
Local Scan Time

Tuesday, November 16, 2021

1:05 PM	WESTBOROUGH, MA	Picked up Tendered at FedEx Office
9:05 AM		Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER 775221878401	**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**



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TRACK ANOTHER SHIPMENT

775221897863

ADD NICKNAME

ON TIME

Scheduled delivery:
Wednesday, 11/17/2021 before 1:00 pm

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WESTBOROUGH, MA

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FROM	TO
WESTBOROUGH, MA US	STAFFORD SPRINGS, CT US

MANAGE DELIVERY

Travel History | Shipment Facts

Travel History

TIME ZONE
Local Scan Time

Tuesday, November 16, 2021

1:05 PM	WESTBOROUGH, MA	Picked up Tendered at FedEx Office
9:07 AM		Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER	SERVICE	WEIGHT
775221897863	FedEx Priority Overnight	0.5 lbs / 0.23 kgs
TOTAL PIECES	**TOTAL SHIPMENT WEIGHT**	**TERMS**
1	0.5 lbs / 0.23 kgs	Shipper

EXHIBIT 4

Property Card

51 STONY LA

Location	51 STONY LA	**Mblu**	14/ / 43/ /
Acct#	00047200	**Owner**	CASHMAN SUSAN A REV LIVING TRST
Assessment	$308,540	**Appraisal**	$600,400
PID	522	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$381,300	$219,100	$600,400

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$266,910	$41,630	$308,540

Owner of Record

Owner	CASHMAN SUSAN A REV LIVING TRST	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	51 STONY LA STAFFORD SPRINGS, CT 06076	**Book & Page**	645/ 687
		Sale Date	10/27/2016
		Instrument	01

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
CASHMAN SUSAN A REV LIVING TRST	$0		645/ 687	01	10/27/2016
CASHMAN MARK S+SUSAN A	$579,000		597/ 446	28	12/10/2012
RUSSO ROBERT P+PATRICIA LASINI	$66,275	1	376/ 531	0J	10/19/1999

Building Information

Building 1 : Section 1

Year Built:	2000
Living Area:	2,594
Replacement Cost:	$283,543

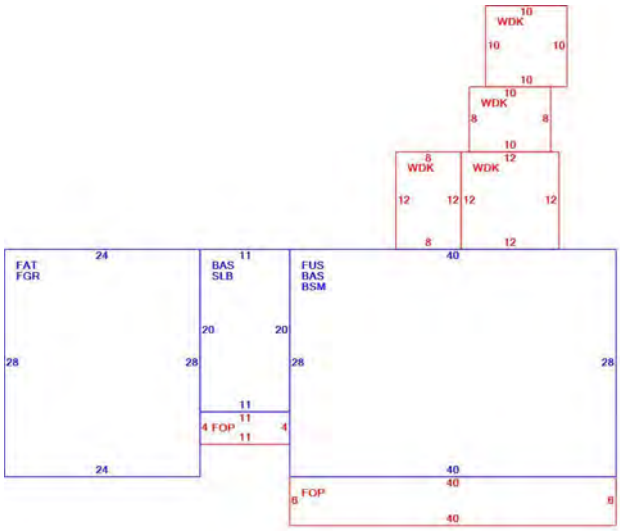
Building Percent Good: 89
Replacement Cost
Less Depreciation: $252,400

Building Attributes	
Field	**Description**
Style	Colonial
Model	Residential
Grade:	B-
Stories	2
Occupancy	1
Exterior Wall 1	Vinyl Siding
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt
Interior Wall 1	Drywall
Interior Wall 2	
Interior Flr 1	Hardwood
Interior Flr 2	Carpet
Heat Fuel	Oil
Heat Type:	Forced Hot Air
AC Type:	Central
Total Bedrooms:	4
Full Bthrms:	2
Half Baths:	1
Extra Fixtures	1
Total Rooms:	7
Bath Style:	Average
Kitchen Style:	Average
Num Kitchens	1
Fireplaces	1
Extra Openings	
Prefab Fpl(s)	
Attic Type	None
Bsmt Type	Full
Bsmt Garage(s)	0
Fin Bsmnt	168
Fn. Bmt. Qual.	BG Av Qual
Unfin Area	0.00

Building Photo

(http://images.vgsi.com/photos2/StaffordCTPhotos//\00\01\34\44.jpg)

Building Layout



(ParcelSketch.ashx?pid=522&bid=522)

Building Sub-Areas (sq ft)			
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	1,340	1,340
FUS	Finished Upper Story	1,120	1,120
FAT	1/4 Story Finished	672	134
BSM	Basement	1,120	0
FGR	Garage	672	0
FOP	Open Porch	284	0
SLB	Slab	220	0
WDK	Deck	420	0
		5,848	2,594

Extra Features

Extra Features

No Data for Extra Features

Land

Land Use

Use Code	101
Description	Res Dwelling
Zone	
Neighborhood	220
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	51.49
Frontage	
Depth	
Assessed Value	$41,630
Appraised Value	$219,100

Outbuildings

Outbuildings						
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
SHD1	Shed	FR	Frame	64.00 S.F.	$500	1
SHD1	Shed	FR	Frame	1000.00 S.F.	$8,400	1
BRN1	1 Story Barn			10000.00 S.F.	$120,000	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$358,100	$239,500	$597,600
2018	$355,600	$239,500	$595,100
2017	$355,600	$239,500	$595,100

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$250,670	$42,070	$292,740
2018	$248,920	$42,070	$290,990
2017	$248,920	$42,070	$290,990

All locations identified on Google, Yahoo, and Bing maps are approximate and may not be exact

Go To Google Maps (http://maps.google.com/?q=51 STONY LA STAFFORD, CT 06076)

Go To Yahoo Maps (http://maps.yahoo.com/#q=51%20STONY%20LA%20STAFFORD,%20CT%2006076)

Go To Microsoft Bing Maps (http://www.bing.com/maps/?q=51 STONY LA STAFFORD, CT 06076)

EXHIBIT 5

Property Map

Google Maps 51 Stony Ln

Map data ©2021 1000 ft

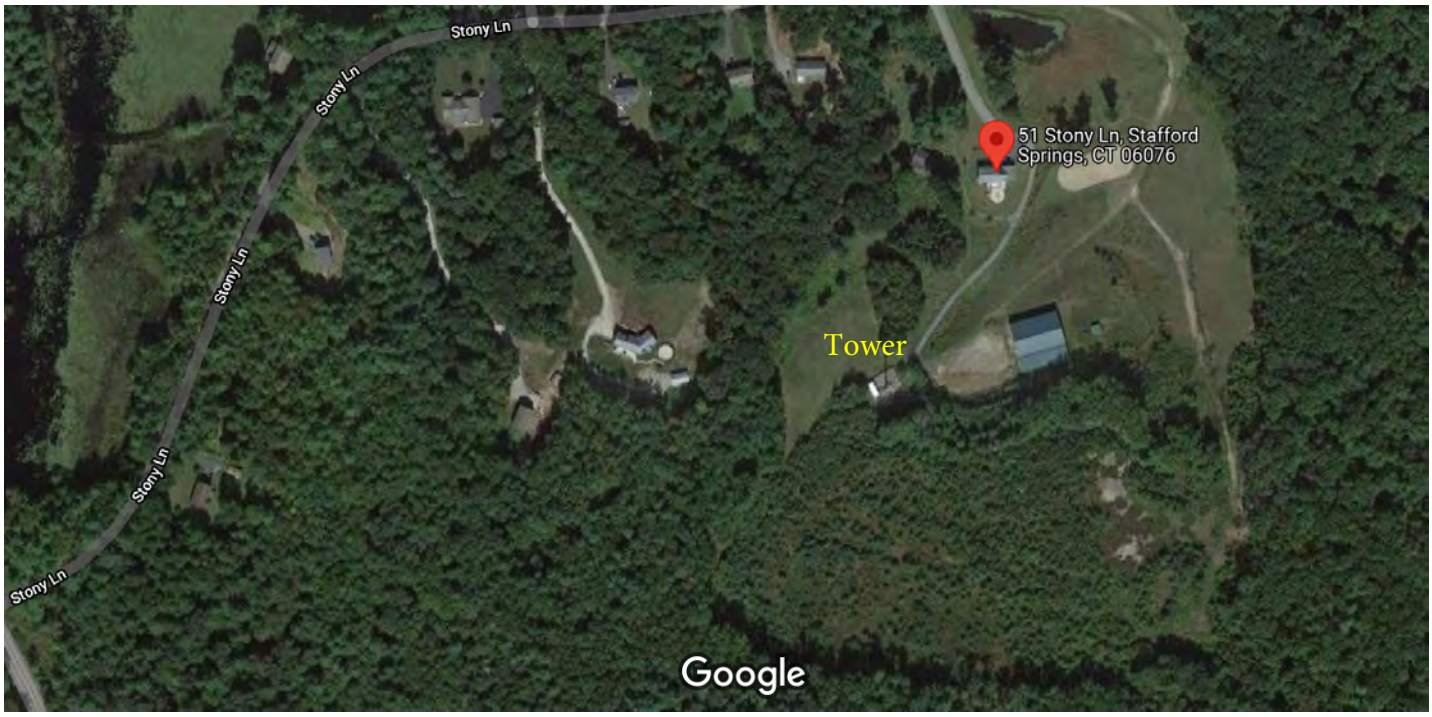
51 Stony Ln

Directions Save Nearby Send to your phone Share

51 Stony Ln, Stafford Springs, CT 06076

2M9R+38 Stafford Springs, Stafford, CT

Google Maps 51 Stony Ln



Imagery ©2021 CNES / Airbus, MassGIS, Commonwealth of Massachusetts EOEA, Maxar Technologies, U.S. Geological Survey, USDA Farm Service Agency, Map data ©2021 200 ft

51 Stony Ln

Directions Save Nearby Send to your phone Share

51 Stony Ln, Stafford Springs, CT 06076

2M9R+38 Stafford Springs, Stafford, CT

EXHIBIT 6

Zoning Approval

5

Town of Stafford
BUILDING PERMIT

"A Certificate of Use or Occupancy is required upon completion of new work, alteration or change of use."

Separate permits are required for plumbing, heating, and electrical.

Building Official
1 Main Street - Town Hall
Stafford Springs. CT 06076
Tel: 684-1775 • Fax: 684-9845

DATE 10-18-02

LICENSE MEO.0005716 EXPIRATION DATE 6-30-03

EST. COST $130,000 FEE $1560 MAP 14 LOT 43 PERMIT # 9352

Location of Construction 51 STONY LANE STAFFORD, CT

Owner's Name & Address ROBERT AND PATRICIA RUSSO 51 STONY LANE STAFFORD, CT 06076

Contractor's Name & Address

Signature of Applicant, Homeowner, Agent: Paul Bucci Jr. Telephone Number: 860-417-2514 Building Official Signature:

TYPE		FOUNDATIONS		ROOF TYPE		FOOTING		SPEC.	Size	Span
Single Family		Stone		Gable		Size		Joist		
Two Family		Concrete		Hip		Stone		2nd Flr.		
Apt. House		Conc. Blocks		Gambrel		Conc.		Rafter		
Stores		Piers		Truss		Drains		Girder		
Modular		Thickness		Flat		Key-way		Column		
Office				Roof Pitch				Sill		
Factory		CONSTRUCTION				CHIMNEYS		Post		
Gas Station		Frame		ROOFING		Size/Flues		Plate		
Comm. Gar.		Brick		Asph. Sh.		Stone		Stud		
Private Gar Att.		Conc. Blocks		Wood Sh.		Brick				
Base. Gar		Veneer		Built-up		Block		Species & Grade		
Farm Building				Comp. Roll		Fact. Built				
Demolition		EXTERIOR				Steel				
No. of Rooms		Clpbd.or Wd. Shin		CELLAR		Fireplace				
No. of Bathrooms		Plain Bds.or Nov. 8-DG		Whole		Built To Conform To:				
No. of Bedrooms		Vinyl		Part		BOCA				
Other - describe below.		Alum.		None		CABO				
		Conc. Blocks		Conc. Floor						
INSULATION		Br. Com.☐ Face☐		Dirt Floor						
Ceiling		Log								
Walls										

SWIMMING POOL - Above-Ground ☐ In Ground ☐ Fence ☐ State Approved ☐

Describe Nature of Work EREKT TELECOMMUNICATIONS SITE W/ STEEL MONOPOLE, CONCRETE MAT & PIER FOUNDATION AND BASE TRANSCEIVER STATION EQUIPMENT

Work shall not proceed until the inspector has inspected and approved the various stages of construction. Final inspection is required upon completion of work.

Permit will become null and void if construction work is not started within six months of date the permit is issued. Permit grants right of entry to any official from the Building, Health, or Zoning Departments during normal business hours for the purpose of inspection.

BROWN
RUDNICK
BERLACK
ISRAELS LLP

THOMAS J. REGAN
Direct Dial Telephone: (860) 509-6522
E-MAIL: tregan@brbilaw.com

Via FedEx

March 28, 2002

Ms. Tina Lopez
Sprint PCS
Crossroads Corporate Center
1 International Boulevard, Suite
Mahwah, NJ 07495

RE: Sprint/23 & 51 Stony Lane, Stafford, Connecticut (CT33XC732 & CT33XC732-A)

Dear Tina:

I enclose herewith a letter from the Connecticut Siting Council dated March 26, 2002, with the following attachments (all dated March 21, 2002):

1. Certificate of Environmental Compatibility and Public Need Docket No. 213 {Stony Lane, Stafford) approving the alternate site of 51 Stony Lane;

2. Findings of Fact;

3. Opinion; and

4. Decision and Order

There is a forty-five (45) day appeal period which commences on the date of the Decision (March 21, 2002). Therefore, the appeal period expires on May 5, 2002.

Please note in the Decision and Order the requirements for the approval, in particular, #1 tower height (not to exceed 120 feet above ground level), #2 (Development and Management Plan). The Development and Management Plan should be started during the appeal period as it must be submitted to and approved by the Siting Council prior to the commencement of construction.

CityPlace I
Hartford, Connecticut 06103
860.509.6500
fax 860.509.6501
www.brownrudnick.com

Boston | Dublin | London | New York | Providence

Please call me after you have had a chance to review the enclosed.

Very truly yours,

BROWN RUDNICK BERLACK ISRAELS LLP.

By: _____
Thomas J. Regan

TJR/bh
Enclosures

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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@po.state.ct.us
Web Site: www.state.ct.us/csc/index.htm

March 26, 2002

Thomas J. Regan, Esquire
Brown, Rudnick, Freed & Gesmer, P.C.
CityPlace 1, 38th Floor
185 Asylum Street
Hartford, CT 06103-3402

RE: **DOCKET NO. 213** - Sprint Spectrum, L.P. d/b/a Sprint PCS application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a wireless telecommunications facility at 23 Stony Lane, or 51 Stony Lane, Stafford, Connecticut.

Dear Attorney Regan:

By its Decision and Order dated March 21, 2002, the Connecticut Siting Council (Council) approved a Certificate of Environmental Compatibility and Public Need (Certificate) for the construction, maintenance, and operation of a wireless telecommunications facility located at 51 Stony Lane, Stafford, Connecticut.

Enclosed are the Council's Certificate, Findings of Fact, Opinion, and Decision and Order.

Very truly yours,

S. Derek Phelps
Executive Director

SDP/FOC/grg

Enclosures (4)

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CERTIFICATE

OF

ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED

DOCKET NO. 213

Pursuant to General Statutes § 16-50k, as amended, the Connecticut Siting Council hereby issues a Certificate of Environmental Compatibility and Public Need to Sprint Spectrum, L.P. d/b/a Sprint PCS application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a wireless telecommunications facility at 51 Stony Lane, Stafford, Connecticut. This Certificate is issued in accordance with and subject to the terms and conditions set forth in the Decision and Order of the Council on March 21, 2002.

By order of the Council,

Mortimer A. Gelston

Mortimer A. Gelston, Chairman

March 21, 2002

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
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Web Site: www.state.ct.us/csc/index.htm

March 26, 2002

TO: Parties and Intervenors

FROM: S. Derek Phelps, Executive Director

RE: **DOCKET NO. 213** - Sprint Spectrum, L.P. d/b/a Sprint PCS application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a cellular telecommunications facility at 23 Stony Lane, or 51 Stony Lane, Stafford, Connecticut.

By its Decision and Order dated March 21, 2002, the Connecticut Siting Council approved a Certificate of Environmental Compatibility and Public Need (Certificate) for the construction, maintenance, and operation of a wireless telecommunications facility located at 51 Stony Lane, Stafford, Connecticut.

Enclosed are the Council's Findings of Fact, Opinion, and Decision and Order.

SDP/FOC/grg

Enclosures (3)

c: Albert Palko, State Documents Librarian
Council Members

DOCKET NO. 213 - Sprint Spectrum, L.P. d/b/a Sprint PCS application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a wireless telecommunications facility at 23 Stony Lane, or 51 Stony Lane, Stafford, Connecticut.	}	Connecticut
	}	Siting
	}	Council
	}	March 21, 2002

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility at the proposed alternate site (51 Stony Lane) in Stafford, Connecticut, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Sprint Spectrum d/b/a Sprint PCS for the construction, maintenance, and operation of a wireless telecommunications facility at the proposed alternate site at 51 Stony Lane, Stafford, Connecticut. We deny certification of the proposed prime site at 23 Stony Lane, Stafford.

The facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas for Sprint PCS, and other telecommunications entities, both public and private, but such tower shall not exceed a height of 120 feet above ground level.

2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include: a final site plan(s) for development of the proposed alternate site including the location and specifications for the tower foundation, antennas, equipment and foundation for equipment, security fence, access road, and utility line that shall be underground; construction plans for site clearing, tree trimming, water drainage, and erosion and sedimentation controls consistent with the Connecticut Guidelines for Soil Erosion and Sediment Control, as amended; landscaping; a tower finish that may include painting; and provisions for the prevention and containment of spills and/or other discharge into surface water and groundwater bodies.

3. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

4. The Certificate Holder shall provide electromagnetic radio frequency power density measurements within sixty days following commencement of commercial operation.

5. The Certificate Holder shall provide the Council with a recalculated report of electromagnetic radio frequency power density if and when circumstances in operation cause a change in power density above the levels originally calculated and provided in the application.

6. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

7. Following completion of construction, if the facility does not initially provide or permanently ceases to provide wireless services this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment within sixty days, or reapply for any continued or new use to the Council before any such use is made.

8. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and cease to function.

9. Unless otherwise approved by the Council, this Decision and Order shall be void if the facility authorized herein is not operational within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved.

Pursuant to General Statutes § 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in The Hartford Courant, Stafford Reminder and the Journal Inquirer.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The parties and intervenors to this proceeding are:

Applicant

Sprint Spectrum, d/b/a Sprint PCS	Thomas J. Regan, Esq. Brown, Rudnick, Freed & Gesmer, P.C. CityPlace 1, 38th Floor 185 Asylum Street Hartford, CT 06103-3402

Intervenor

Citizens for Neighborhood Preservation	Glen E. Coe, Esq. Lewis B. Rome, Esq. Rome McGuigan Sabanosh, P.C. Attorneys At Law One State Street Hartford, CT 06103-3101

Party

Town of Stafford	Gordon J. Frassinelli, Jr. First Selectman Town of Stafford Warren Memorial Town 1 Main Street, P.O. Box 11 Stafford Springs, CT 06076

CERTIFICATION

The undersigned members of the Connecticut Siting Council (Council) hereby certify that they have heard this case, or read the record thereof, in Docket No. 213 – Sprint Spectrum, L.P. d/b/a Sprint PCS application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a wireless telecommunications facility in Stafford, Connecticut, and voted as follows to approve the alternate site (51 Stony Lane) and deny the prime site (23 Stony Lane).

Council Members	Vote Cast
Mortimer A. Gelston, Chairman	Yes
Commissioner Donald W. Downes Designee: Gerald J. Heffernan	Yes
Commissioner Arthur J. Rocque, Jr. Designee: Brian J. Emerick	Yes
Brian O'Neill	No
Pamela B. Katz	Yes
Daniel P. Lynch, Jr.	No
Philip T. Ashton	Yes
Colin C. Tait	Absent
Edward S. Wilensky	Yes

Dated at New Britain, Connecticut, March 21, 2002.

EXHIBIT 7

EME Report

EBI Consulting

environmental | engineering | due diligence

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

Dish Wireless Existing Facility

Site ID: BOBDL00140A

BOBDL00140A
51 Stony Lane
Stafford, Connecticut 06075

November 4, 2021

EBI Project Number: 6221006468

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**28.98%**

November 4, 2021

Dish Wireless

Emissions Analysis for Site: BOBDL00140A - BOBDL00140A

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **51 Stony Lane** in **Stafford, 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 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu W/cm^2$). The number of $\mu W/cm^2$ 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 ($\mu W/cm^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is 1000 $\mu W/cm^2$. 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 51 Stony Lane in Stafford, 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 98 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 #:	1	Antenna #:	1	Antenna #:	1
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):	98 feet	Height (AGL):	98 feet	Height (AGL):	98 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 A1 MPE %:	**2.79%**	Antenna B1 MPE %:	**2.79%**	Antenna C1 MPE %:	**2.79%**

Site Composite MPE %	
Carrier	**MPE %**
Dish Wireless (Max at Sector A):	2.79%
Sprint	3.66%
T-Mobile	18.75%
Verizon	3.78%
Site Total MPE % :	28.98%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	2.79%
Dish Wireless Sector B Total:	2.79%
Dish Wireless Sector C Total:	2.79%
Site Total MPE % :	28.98%

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 (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
Dish Wireless 600 MHz n71	4	223.68	98.0	3.80	600 MHz n71	400	0.95%
Dish Wireless 1900 MHz n70	4	542.70	98.0	9.22	1900 MHz n70	1000	0.92%
Dish Wireless 2190 MHz n66	4	542.70	98.0	9.22	2190 MHz n66	1000	0.92%
						Total:	**2.79%**

• 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:	2.79%
Sector B:	2.79%
Sector C:	2.79%
Dish Wireless Maximum MPE % (Sector A):	2.79%
Site Total:	28.98%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **28.98%** 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 SUMMIT Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT46148-A

Customer Site Name: Russo Property

Carrier Name: Dish Wireless (Application #: 168267, v1)

Carrier Site ID / Name: BOBDL00140A / 0

Site Location: 51 Stony Lane

Stafford Springs, Connecticut

Tolland County

Latitude: 42.016417

Longitude: -72.309944

Analysis Result:

Max Structural Usage: 97.0% [Pass]

Max Foundation Usage: 81.0% [Pass]

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

Report Prepared By: Saurav Devkota

Introduction

The purpose of this report is to summarize the analysis results on the 118 ft SUMMIT Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Paul J. ford and Company, Job # 29202-0158 Dated 03/28/2002
Foundation Drawing	Paul J. ford and Company, Job # 29202-0158 Dated 03/28/2002
Geotechnical Report	SEA Consultants, ref # 2001042.01-A Dated 04/04/2001
Modification Drawings	N/A

Analysis Criteria

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

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed V_{ult} = 125.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 97.0 mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	S_S = 0.173, S_1 = 0.065

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

Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	118.0	3	Ericsson - AIR32 KRD901146-1_B66A_B2A (Octo) - Panel	Platform w/ Handrails and Kicker Kit	(3) 2" Hybrid	T-Mobile Sprint
2		3	RFS - APXVAALL24_43-U-NA20 - Panel			
3		3	Ericsson - AIR6449 B41 - Panel			
4		3	Ericsson 4415 B25			
5		6	ALU 800 MHz RRH			
6		3	Ericsson 4449 B71 + B85			
7	108.0	2	Antel - BXA 70080/6CF - Panel	Low Profile Platform	(18) 1 5/8"	Verizon
8		6	Antel - LPA 80080/6CF - Panel			
9		6	Antel - LPA 185080/12CF - Panel			
10		1	Antel - BXA-70063/6CF - Panel			
-	78.0	1	GPS	(1) Standoff	[1](1) 1/2"	Sprint Nextel

1. Coax considered running outside the pole shaft.

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
11	98.0	3	JMA Wireless MX08FRO665-21 - Panel	Commscope MC-PK8-DSH	(1) 1.6" Hybrid	Dish Wireless
12		3	Fujitsu TA08025-B605			
13		3	Fujitsu TA08025-B604			
14		1	Raycap RDIDC-9181-PF-48			

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

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	**97.0%**	**71.8%**	**84.7%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Analysis Reactions	2022.5	21.5

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

Operational Condition (Rigidity)

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.7300 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.

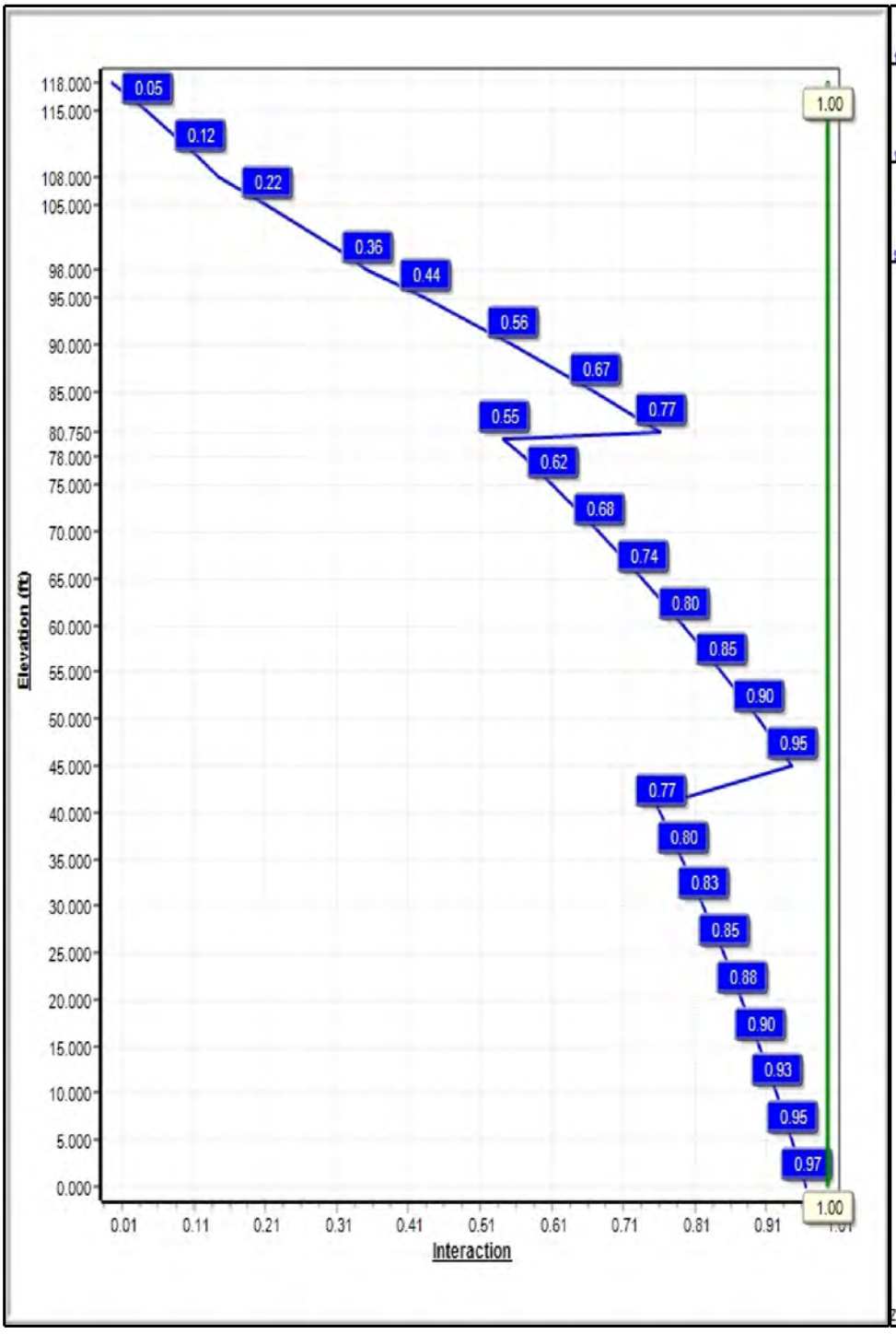
Usage Diagram - Max Ratio 97.00% at 0.0ft

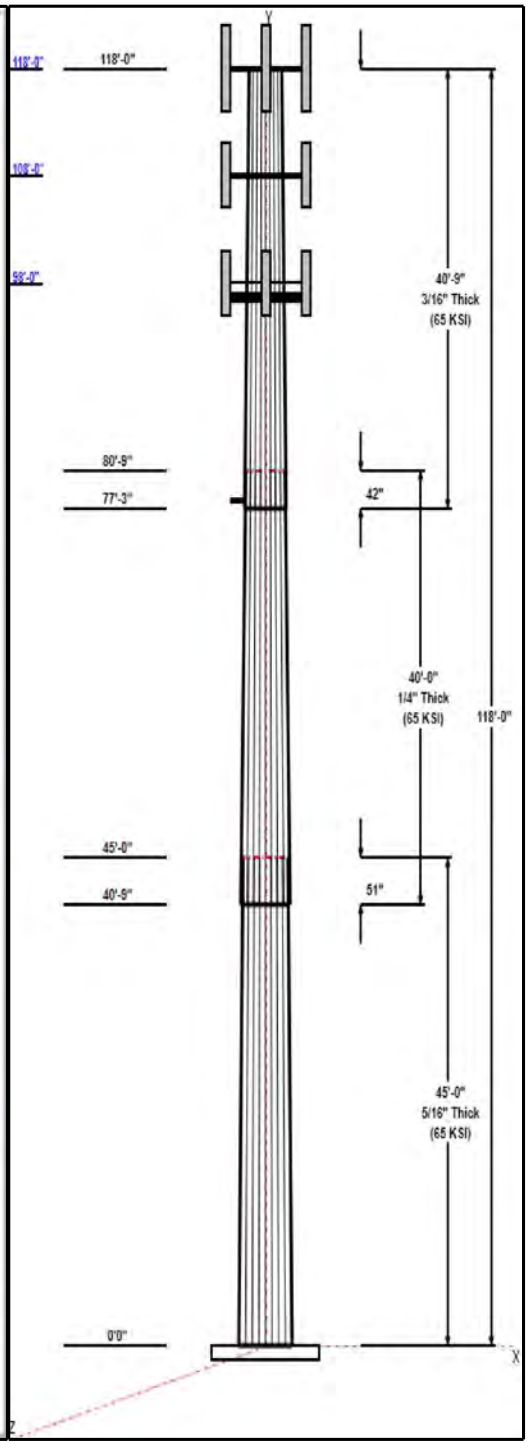
Structure:	CT46148-A-SBA	**Code:**	EIA/TIA-222-G	9/1/2021
Site Name:	Russo Property/ Ssusa	**Exposure:**	C	
Height:	118.00 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

Tower Engineering Solutions

Dead Load Factor:	1.20	**Iterations:**	25
Wind Load Factor:	1.60		

Load Case : 1.2D + 1.6W 97 mph Wind





Structure: CT46148-A-SBA

Type: Tapered
Site Name: Russo Property/ Ssusa
Height: 118.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.15004

9/1/2021

Tower Engineering Solutions

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	45.00	32.08	38.83	0.313		0.15004	65
2	40.00	27.21	33.22	0.250	Slip	0.15004	65
3	40.75	22.00	28.11	0.188	Slip	0.15004	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
118.00	118.00	3	AIR32	T-Mobile Sprint
118.00	118.00	3	APXVAALL24_43-U-NA20	T-Mobile Sprint
118.00	118.00	3	Ericsson 4415 B25	T-Mobile Sprint
118.00	118.00	6	ALU 800 MHz RRH	T-Mobile Sprint
118.00	118.00	3	Ericsson 4449 B71 + B85	T-Mobile Sprint
118.00	118.00	3	AIR6449 B41	T-Mobile Sprint
118.00	118.00	1	6' Lightning rod	-
118.00	118.00	1	Platform w/ Hand Rails and	T-Mobile Sprint
108.00	108.00	2	Antel - BXA 70080/6CF	Verizon
108.00	108.00	6	Antel - LPA 80080/6CF	Verizon
108.00	108.00	6	Antel - LPA 185080/12CF	Verizon
108.00	108.00	1	Antel - BXA-70063/6CF	Verizon
108.00	108.00	1	Low Profile Platform	Verizon
98.00	98.00	3	MX08FRO665-21	Dish Wireless
98.00	98.00	3	TA08025-B605	Dish Wireless
98.00	98.00	3	TA08025-B604	Dish Wireless
98.00	98.00	1	RDIDC-9181-OF-48	Dish Wireless
98.00	98.00	1	MC-PK8-DSH	Dish Wireless
78.00	78.00	1	GPS	T-Mobile Sprint
78.00	78.00	1	Pipe Mount	T-Mobile Sprint

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	118.00	Inside	2" Hybrid	T-Mobile Sprint
0.00	108.00	Inside	1 5/8" Coax	Verizon
0.00	98.00	Inside	1.6" Hybrid	Dish Wireless
0.00	78.00	Outside	1/2" Coax	T-Mobile Sprint

Anchor Bolts

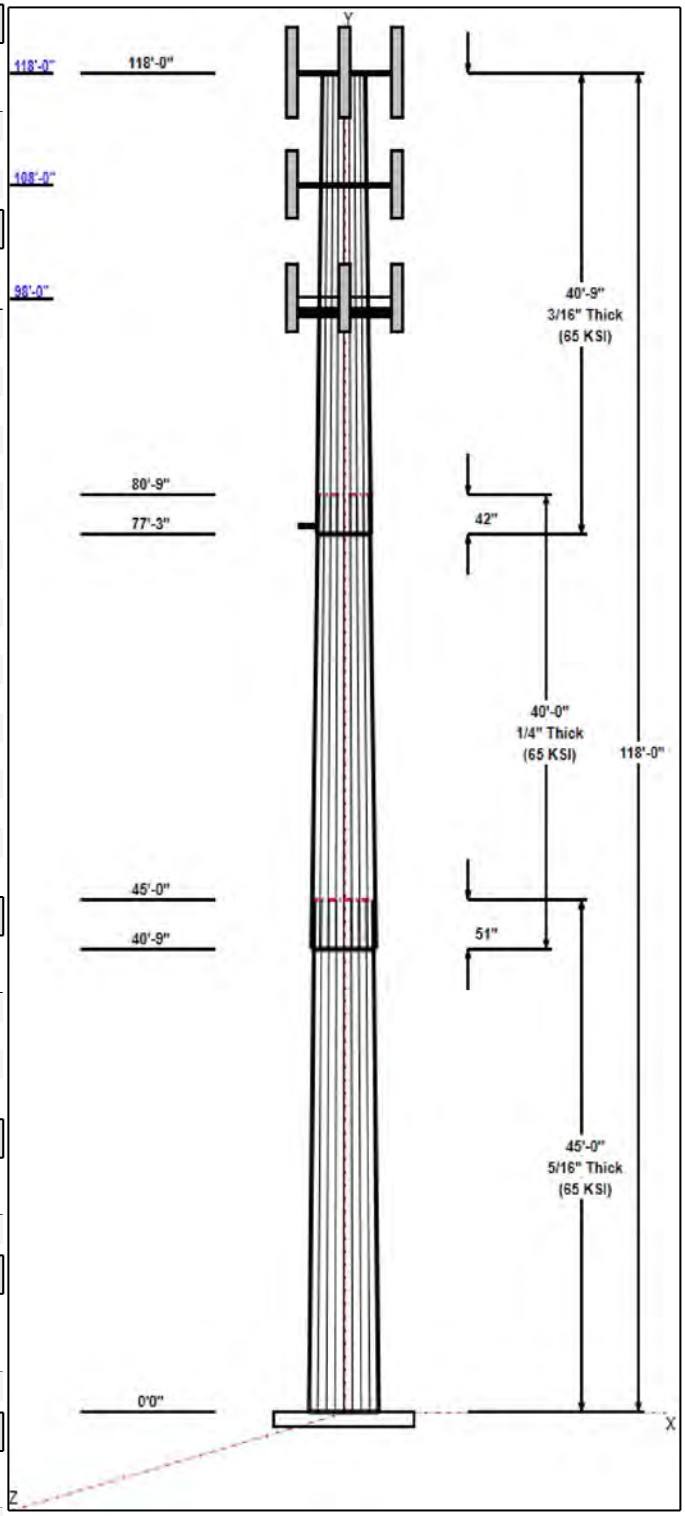
Qty	Specifications	Grade (ksi)	Arrangement
12	2.25" 18J	75.0	Cluster

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.5000	44.0	55.0	Clipped

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 97 mph Wind	2022.5	21.5	24.6
0.9D + 1.6W 97 mph Wind	1993.8	21.5	18.4
1.2D + 1.0Di + 1.0Wi 50 mph Wind	587.2	6.2	41.4
1.2D + 1.0E	150.7	1.4	24.6
0.9D + 1.0E	148.3	1.4	18.5

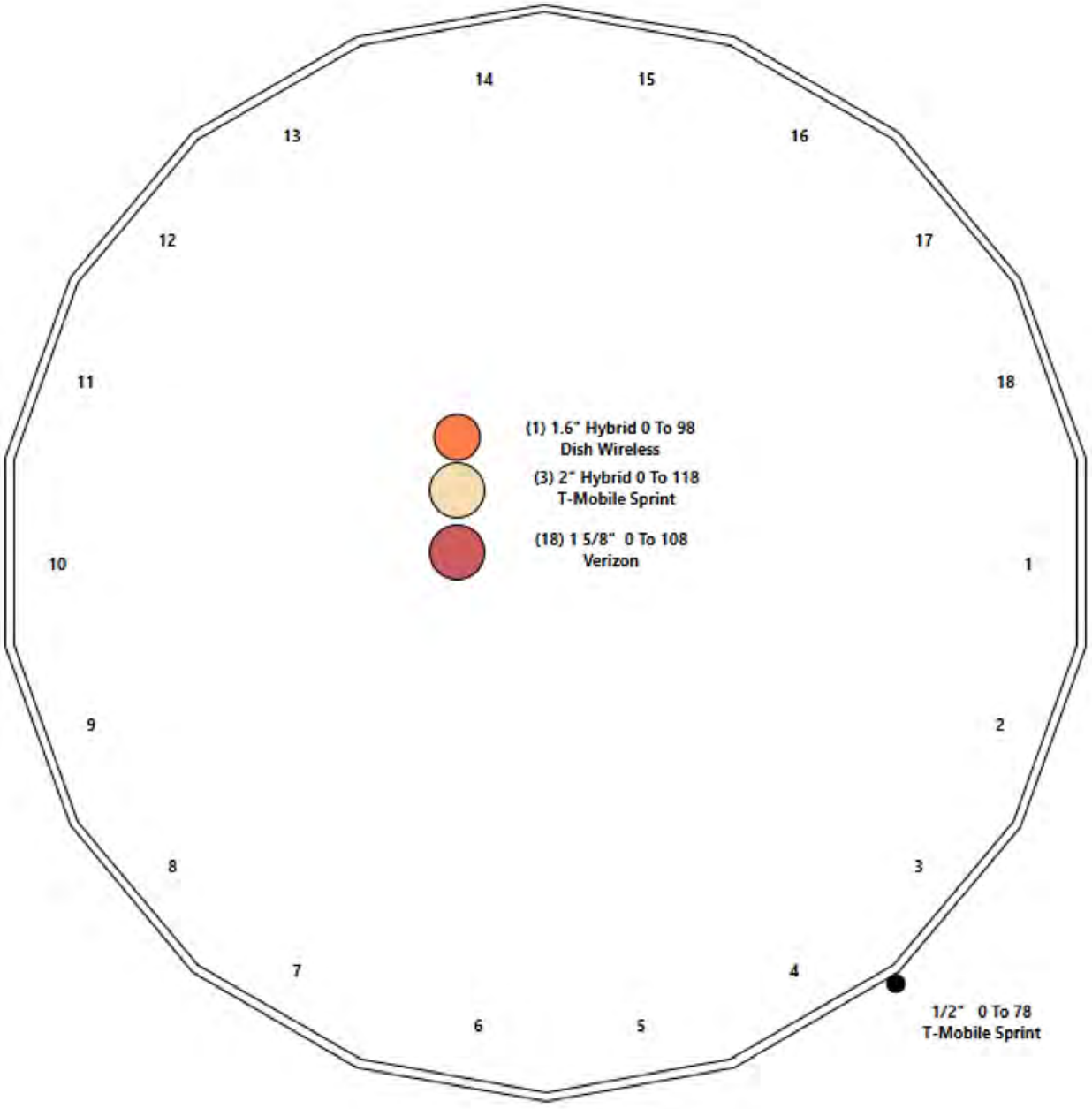


1.0D + 1.0W 60 mph Wind	480.4	5.1	20.5

Structure: CT46148-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Russo Property/ Ssusa
Height: 118.00 (ft)

9/1/2021



Shaft Properties

Structure:	CT46148-A-SBA		**Code:**	EIA/TIA-222-G	9/1/2021
Site Name:	Russo Property/ Ssusa		**Exposure:**	C	
Height:	118.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 5

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	45.000	0.3125	65		0.00	5,337
2	18	40.000	0.2500	65	Slip	51.00	3,236
3	18	40.750	0.1875	65	Slip	42.00	2,052
					Total Shaft Weight:		**10,626**

	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	38.83	0.00	38.20	7160.92	20.50	124.26	32.08	45.00	31.51	4016.66	16.69	102.6	0.150042
2	33.22	40.75	26.16	3591.49	22.02	132.86	27.21	80.75	21.40	1965.36	17.78	108.8	0.150042
3	28.11	77.25	16.62	1637.59	25.03	149.94	22.00	118.00	12.98	780.30	19.28	117.3	0.150042

Load Summary

Structure:	CT46148-A-SBA	**Code:**	EIA/TIA-222-G	9/1/2021	
Site Name:	Russo Property/ Ssusa	**Exposure:**	C		
Height:	118.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

Discrete Appurtenances

				No Ice			Ice				
No.	**Elev (ft)**	**Description**	**Qty**	**Weight (lb)**	**CaAa (sf)**	**CaAa Factor**	**Weight (lb)**	**CaAa (sf)**	**CaAa Factor**	**Hor. Ecc. (ft)**	**Vert Ecc (ft)**
1	118.00	AIR32 KRD901146-1_B66A_B2A	3	132.20	6.51	0.87	311.42	7.662	0.87	0.00	0.00
2	118.00	APXVAALL24_43-U-NA20	3	99.00	20.24	0.73	515.33	22.093	0.73	0.00	0.00
3	118.00	Ericsson 4415 B25	3	46.30	1.86	0.67	105.24	2.410	0.67	0.00	0.00
4	118.00	ALU 800 MHz RRH	6	53.00	2.49	0.67	125.21	3.607	0.67	0.00	0.00
5	118.00	Ericsson 4449 B71 + B85	3	73.20	1.97	0.67	129.57	2.526	0.67	0.00	0.00
6	118.00	AIR6449 B41	3	103.00	5.65	0.00	236.87	6.578	0.00	0.00	0.00
7	118.00	6' Lightning rod	1	6.50	0.38	1.00	41.94	1.442	1.00	0.00	0.00
8	118.00	Platform w/ Hand Rails and V-Brace	1	1600.00	32.00	1.00	3650.06	59.261	1.00	0.00	0.00
9	108.00	Antel - BXA 70080/6CF	2	18.00	5.84	0.88	139.86	8.148	0.89	0.00	0.00
10	108.00	Antel - LPA 80080/6CF	6	21.00	4.33	0.85	208.45	5.468	0.86	0.00	0.00
11	108.00	Antel - LPA 185080/12CF	6	10.50	3.52	0.84	122.21	4.630	0.85	0.00	0.00
12	108.00	Antel - BXA-70063/6CF	1	17.00	7.57	0.84	154.13	10.245	0.85	0.00	0.00
13	108.00	Low Profile Platform	1	1500.00	22.00	1.00	2766.61	39.091	1.00	0.00	0.00
14	98.00	MX08FRO665-21	3	64.50	12.49	0.74	343.25	13.894	0.74	0.00	0.00
15	98.00	TA08025-B605	3	75.00	1.96	0.80	125.12	2.498	0.80	0.00	0.00
16	98.00	TA08025-B604	3	63.90	1.96	0.76	112.42	2.498	0.76	0.00	0.00
17	98.00	RDIDC-9181-OF-48	1	21.90	2.01	1.00	72.93	2.555	1.00	0.00	0.00
18	98.00	MC-PK8-DSH	1	1727.00	37.59	1.00	3344.49	82.856	1.00	0.00	0.00
19	78.00	GPS	1	10.00	1.00	1.00	37.46	1.667	1.00	0.00	0.00
20	78.00	Pipe Mount	1	40.00	2.63	0.75	115.20	8.221	0.75	0.00	0.00
		Totals:	**52**	**7,436.70**			**18,835.38**				

Linear Appurtenances

Bottom Elev. (ft)	**Top Elev. (ft)**	**Description**	**Exposed Width**	**Exposed**
0.00	118.00	(3) 2" Hybrid	0.00	Inside
0.00	108.00	(18) 1 5/8" Coax	0.00	Inside
0.00	98.00	(1) 1.6" Hybrid	0.00	Inside
0.00	78.00	(1) 1/2" Coax	0.65	Outside

Shaft Section Properties

Structure:	CT46148-A-SBA	**Code:**	EIA/TIA-222-G	9/1/2021	
Site Name:	Russo Property/ Ssusa	**Exposure:**	C		
Height:	118.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 7	

Increment Length: **5 (ft)**

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.3125	38.830	38.203	7160.9	20.50	124.26	77.3	363.2	0.0
5.00		0.3125	38.080	37.459	6750.6	20.08	121.86	77.8	349.2	643.7
10.00		0.3125	37.330	36.715	6356.2	19.65	119.45	78.3	335.4	631.0
15.00		0.3125	36.579	35.971	5977.6	19.23	117.05	78.8	321.9	618.3
20.00		0.3125	35.829	35.227	5614.2	18.81	114.65	79.3	308.6	605.7
25.00		0.3125	35.079	34.483	5265.9	18.38	112.25	79.8	295.7	593.0
30.00		0.3125	34.329	33.739	4932.3	17.96	109.85	80.3	283.0	580.4
35.00		0.3125	33.579	32.995	4613.1	17.54	107.45	80.8	270.6	567.7
40.00		0.3125	32.828	32.250	4308.0	17.11	105.05	81.3	258.5	555.0
40.75	Bot - Section 2	0.3125	32.716	32.139	4263.4	17.05	104.69	81.3	256.7	82.2
45.00	Top - Section 1	0.2500	32.578	25.651	3387.1	21.57	130.31	0.0	0.0	834.8
50.00		0.2500	31.828	25.056	3156.7	21.04	127.31	76.7	195.3	431.4
55.00		0.2500	31.078	24.461	2937.0	20.51	124.31	77.3	186.1	421.2
60.00		0.2500	30.327	23.866	2727.8	19.98	121.31	77.9	177.2	411.1
65.00		0.2500	29.577	23.270	2528.7	19.45	118.31	78.5	168.4	401.0
70.00		0.2500	28.827	22.675	2339.6	18.92	115.31	79.1	159.9	390.9
75.00		0.2500	28.077	22.080	2160.1	18.39	112.31	79.8	151.5	380.7
77.25	Bot - Section 3	0.2500	27.739	21.812	2082.4	18.15	110.96	80.0	147.9	168.0
78.00		0.2500	27.627	21.723	2057.0	18.07	110.51	80.1	146.6	97.9
80.00		0.2500	27.327	21.485	1990.1	17.86	109.31	80.4	143.4	259.1
80.75	Top - Section 2	0.1875	27.589	16.307	1546.9	24.53	147.14	0.0	0.0	96.4
85.00		0.1875	26.951	15.927	1441.4	23.93	143.74	73.2	105.3	233.1
90.00		0.1875	26.201	15.481	1323.6	23.23	139.74	74.1	99.5	267.2
95.00		0.1875	25.451	15.034	1212.3	22.52	135.74	74.9	93.8	259.6
98.00		0.1875	25.001	14.767	1148.7	22.10	133.34	75.4	90.5	152.1
100.00		0.1875	24.701	14.588	1107.5	21.82	131.74	75.7	88.3	99.9
105.00		0.1875	23.951	14.141	1008.9	21.11	127.74	76.6	83.0	244.4
108.00		0.1875	23.500	13.874	952.7	20.69	125.34	77.1	79.8	143.0
110.00		0.1875	23.200	13.695	916.3	20.41	123.74	77.4	77.8	93.8
115.00		0.1875	22.450	13.249	829.6	19.70	119.73	78.2	72.8	229.2
118.00		0.1875	22.000	12.981	780.3	19.28	117.33	78.7	69.9	133.9
										10625.6

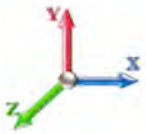
Wind Loading - Shaft

Structure:	CT46148-A-SBA	**Code:**	EIA/TIA-222-G	9/1/2021	
Site Name:	Russo Property/ Ssusa	**Exposure:**	C		
Height:	118.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 8	

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	19.450	21.40	293.84	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	19.450	21.40	288.17	0.650	0.000	5.00	16.270	10.58	362.0	0.0	772.4
10.00		1.00	0.85	19.450	21.40	282.49	0.650	0.000	5.00	15.953	10.37	355.0	0.0	757.2
15.00		1.00	0.85	19.450	21.40	276.81	0.650	0.000	5.00	15.635	10.16	347.9	0.0	742.0
20.00		1.00	0.90	20.638	22.70	279.29	0.650	0.000	5.00	15.318	9.96	361.6	0.0	726.8
25.00		1.00	0.95	21.630	23.79	279.94	0.650	0.000	5.00	15.000	9.75	371.2	0.0	711.6
30.00		1.00	0.98	22.477	24.72	279.26	0.650	0.000	5.00	14.683	9.54	377.5	0.0	696.4
35.00		1.00	1.01	23.218	25.54	277.63	0.650	0.000	5.00	14.366	9.34	381.6	0.0	681.2
40.00		1.00	1.04	23.880	26.27	275.26	0.650	0.000	5.00	14.048	9.13	383.8	0.0	666.0
40.75	Bot - Section 2	1.00	1.05	23.974	26.37	274.86	0.650	0.000	0.75	2.080	1.35	57.0	0.0	98.6
45.00	Top - Section 1	1.00	1.07	24.479	26.93	272.33	0.650	0.000	4.25	11.831	7.69	331.3	0.0	1001.8
50.00		1.00	1.09	25.029	27.53	273.22	0.650	0.000	5.00	13.625	8.86	390.1	0.0	517.6
55.00		1.00	1.12	25.536	28.09	269.47	0.650	0.000	5.00	13.307	8.65	388.8	0.0	505.5
60.00		1.00	1.14	26.008	28.61	265.38	0.650	0.000	5.00	12.990	8.44	386.5	0.0	493.3
65.00		1.00	1.16	26.450	29.09	261.01	0.650	0.000	5.00	12.673	8.24	383.5	0.0	481.2
70.00		1.00	1.17	26.866	29.55	256.38	0.650	0.000	5.00	12.355	8.03	379.7	0.0	469.0
75.00		1.00	1.19	27.259	29.98	251.53	0.650	0.000	5.00	12.038	7.82	375.4	0.0	456.9
77.25	Bot - Section 3	1.00	1.20	27.429	30.17	249.28	0.650	0.000	2.25	5.313	3.45	166.7	0.0	201.6
78.00	Appurtenance(s)	1.00	1.20	27.485	30.23	248.52	0.650	0.000	0.75	1.781	1.16	56.0	0.0	117.5
80.00		1.00	1.21	27.632	30.39	246.48	0.650	0.000	2.00	4.714	3.06	149.0	0.0	310.9
80.75	Top - Section 2	1.00	1.21	27.686	30.45	245.70	0.650	0.000	0.75	1.754	1.14	55.6	0.0	115.7
85.00		1.00	1.22	27.987	30.79	244.65	0.650	0.000	4.25	9.807	6.37	314.0	0.0	279.7
90.00		1.00	1.24	28.325	31.16	239.27	0.650	0.000	5.00	11.244	7.31	364.4	0.0	320.6
95.00		1.00	1.25	28.650	31.51	233.75	0.650	0.000	5.00	10.927	7.10	358.1	0.0	311.5
98.00	Appurtenance(s)	1.00	1.26	28.838	31.72	230.37	0.650	0.000	3.00	6.404	4.16	211.3	0.0	182.5
100.00		1.00	1.27	28.961	31.86	228.09	0.650	0.000	2.00	4.206	2.73	139.3	0.0	119.9
105.00		1.00	1.28	29.260	32.19	222.30	0.650	0.000	5.00	10.292	6.69	344.5	0.0	293.3
108.00	Appurtenance(s)	1.00	1.29	29.434	32.38	218.77	0.650	0.000	3.00	6.023	3.91	202.8	0.0	171.6
110.00		1.00	1.29	29.548	32.50	216.39	0.650	0.000	2.00	3.952	2.57	133.6	0.0	112.6
115.00		1.00	1.30	29.826	32.81	210.38	0.650	0.000	5.00	9.657	6.28	329.5	0.0	275.0
118.00	Appurtenance(s)	1.00	1.31	29.988	32.99	206.72	0.650	0.000	3.00	5.642	3.67	193.6	0.0	160.7
								Totals:	**118.00**			**8,651.2**		**12,750.7**

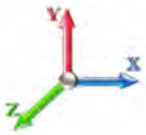
Discrete Appurtenance Forces

Structure:	CT46148-A-SBA	**Code:**	EIA/TIA-222-G	9/1/2021	
Site Name:	Russo Property/ Ssusa	**Exposure:**	C		
Height:	118.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 9	

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	118.00	6' Lightning rod	1	29.988	32.986	1.00	1.00	0.38	7.80	0.000	0.000	20.06	0.00	0.00
2	118.00	AIR6449 B41	3	29.988	32.986	0.00	1.00	16.95	370.80	0.000	0.000	894.59	0.00	0.00
3	118.00	Ericsson 4449 B71 + B85	3	29.988	32.986	0.50	0.75	2.97	263.52	0.000	0.000	156.74	0.00	0.00
4	118.00	ALU 800 MHz RRH	6	29.988	32.986	0.50	0.75	7.51	381.60	0.000	0.000	396.23	0.00	0.00
5	118.00	Ericsson 4415 B25	3	29.988	32.986	0.50	0.75	2.80	166.68	0.000	0.000	147.99	0.00	0.00
6	118.00	APXVAALL24_43-U-NA20	3	29.988	32.986	0.55	0.75	33.24	356.40	0.000	0.000	1754.57	0.00	0.00
7	118.00	AIR32	3	29.988	32.986	0.65	0.75	12.74	475.92	0.000	0.000	672.57	0.00	0.00
8	118.00	Platform w/ Hand Rails	1	29.988	32.986	1.00	1.00	32.00	1920.00	0.000	0.000	1688.91	0.00	0.00
9	108.00	Antel - BXA-70063/6CF	1	29.434	32.377	0.67	0.80	5.09	20.40	0.000	0.000	263.53	0.00	0.00
10	108.00	Low Profile Platform	1	29.434	32.377	1.00	1.00	22.00	1800.00	0.000	0.000	1139.68	0.00	0.00
11	108.00	Antel - LPA 185080/12CF	6	29.434	32.377	0.67	0.80	14.19	75.60	0.000	0.000	735.23	0.00	0.00
12	108.00	Antel - LPA 80080/6CF	6	29.434	32.377	0.68	0.80	17.67	151.20	0.000	0.000	915.18	0.00	0.00
13	108.00	Antel - BXA 70080/6CF	2	29.434	32.377	0.70	0.80	8.22	43.20	0.000	0.000	425.97	0.00	0.00
14	98.00	MC-PK8-DSH	1	28.838	31.722	1.00	1.00	37.59	2072.40	0.000	0.000	1907.87	0.00	0.00
15	98.00	RDIDC-9181-OF-48	1	28.838	31.722	1.00	1.00	2.01	26.28	0.000	0.000	102.02	0.00	0.00
16	98.00	TA08025-B604	3	28.838	31.722	0.57	0.75	3.35	230.04	0.000	0.000	170.11	0.00	0.00
17	98.00	TA08025-B605	3	28.838	31.722	0.60	0.75	3.53	270.00	0.000	0.000	179.06	0.00	0.00
18	98.00	MX08FRO665-21	3	28.838	31.722	0.55	0.75	20.80	232.20	0.000	0.000	1055.49	0.00	0.00
19	78.00	Pipe Mount	1	27.485	30.233	0.56	0.75	1.48	48.00	0.000	0.000	71.56	0.00	0.00
20	78.00	GPS	1	27.485	30.233	0.80	0.80	0.80	12.00	0.000	0.000	38.70	0.00	0.00
							Totals:		**8,924.04**			**12,736.03**		

Total Applied Force Summary

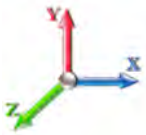
Structure:	CT46148-A-SBA		**Code:**	EIA/TIA-222-G	9/1/2021
Site Name:	Russo Property/ Ssusa		**Exposure:**	C	
Height:	118.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 10

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		362.03	908.84	0.00	0.00
10.00		354.96	893.65	0.00	0.00
15.00		347.90	878.45	0.00	0.00
20.00		361.64	863.26	0.00	0.00
25.00		371.18	848.07	0.00	0.00
30.00		377.55	832.88	0.00	0.00
35.00		381.57	817.69	0.00	0.00
40.00		383.78	802.49	0.00	0.00
40.75		57.04	119.06	0.00	0.00
45.00		331.31	1117.79	0.00	0.00
50.00		390.12	654.09	0.00	0.00
55.00		388.75	641.94	0.00	0.00
60.00		386.49	629.78	0.00	0.00
65.00		383.46	617.63	0.00	0.00
70.00		379.73	605.48	0.00	0.00
75.00		375.39	593.32	0.00	0.00
77.25		166.73	263.03	0.00	0.00
78.00	(2) attachments	166.25	197.92	0.00	0.00
80.00		149.00	365.07	0.00	0.00
80.75		55.57	136.03	0.00	0.00
85.00		313.99	394.87	0.00	0.00
90.00		364.36	456.12	0.00	0.00
95.00		358.13	447.00	0.00	0.00
98.00	(11) attachments	3625.80	3094.75	0.00	0.00
100.00		139.34	171.66	0.00	0.00
105.00		344.51	422.77	0.00	0.00
108.00	(16) attachments	3682.38	2339.69	0.00	0.00
110.00		133.58	119.44	0.00	0.00
115.00		329.51	292.22	0.00	0.00
118.00	(23) attachments	5925.21	4113.68	0.00	0.00
	Totals:	**21,387.28**	**24,638.67**	**0.00**	**0.00**

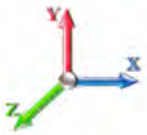
Linear Appurtenance Segment Forces (Factored)

Structure:	CT46148-A-SBA	**Code:**	EIA/TIA-222-G	9/1/2021	
Site Name:	Russo Property/ Ssusa	**Exposure:**	C		
Height:	118.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 11	

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.017	0.000	19.450	0.00	0.96
10.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.017	0.000	19.450	0.00	0.96
15.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.017	0.000	19.450	0.00	0.96
20.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.018	0.000	20.638	0.00	0.96
25.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.018	0.000	21.630	0.00	0.96
30.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.018	0.000	22.477	0.00	0.96
35.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.019	0.000	23.218	0.00	0.96
40.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.019	0.000	23.880	0.00	0.96
40.75	1/2" Coax	Yes	0.75	0.000	0.65	0.04	0.00	0.020	0.000	23.974	0.00	0.14
45.00	1/2" Coax	Yes	4.25	0.000	0.65	0.23	0.00	0.020	0.000	24.479	0.00	0.82
50.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.020	0.000	25.029	0.00	0.96
55.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.020	0.000	25.536	0.00	0.96
60.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	26.008	0.00	0.96
65.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	26.450	0.00	0.96
70.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.022	0.000	26.866	0.00	0.96
75.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.022	0.000	27.259	0.00	0.96
77.25	1/2" Coax	Yes	2.25	0.000	0.65	0.12	0.00	0.023	0.000	27.429	0.00	0.43
78.00	1/2" Coax	Yes	0.75	0.000	0.65	0.04	0.00	0.023	0.000	27.485	0.00	0.14
									Totals:		**0.0**	**15.0**

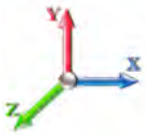
Calculated Forces

Structure:	CT46148-A-SBA	**Code:**	EIA/TIA-222-G	9/1/2021	
Site Name:	Russo Property/ Ssusa	**Exposure:**	C		
Height:	118.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 12	

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 25

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	-24.56	-21.47	0.00	-2022.4	0.00	2022.46	2657.45	1328.73	4204.87	2105.56	0.00	0.000	0.000	0.970
5.00	-23.51	-21.27	0.00	-1915.1	0.00	1915.10	2622.48	1311.24	4068.06	2037.05	0.21	-0.391	0.000	0.949
10.00	-22.48	-21.06	0.00	-1808.7	0.00	1808.76	2586.84	1293.42	3932.41	1969.13	0.83	-0.783	0.000	0.928
15.00	-21.46	-20.84	0.00	-1703.4	0.00	1703.47	2550.53	1275.26	3797.98	1901.81	1.86	-1.176	0.000	0.904
20.00	-20.47	-20.60	0.00	-1599.2	0.00	1599.25	2513.55	1256.78	3664.83	1835.14	3.30	-1.569	0.000	0.880
25.00	-19.49	-20.34	0.00	-1496.2	0.00	1496.24	2475.91	1237.96	3533.03	1769.14	5.15	-1.962	0.000	0.854
30.00	-18.54	-20.06	0.00	-1394.5	0.00	1394.55	2437.60	1218.80	3402.64	1703.85	7.42	-2.352	0.000	0.826
35.00	-17.61	-19.76	0.00	-1294.2	0.00	1294.27	2398.63	1199.31	3273.71	1639.29	10.09	-2.740	0.000	0.797
40.00	-16.75	-19.40	0.00	-1195.4	0.00	1195.48	2358.98	1179.49	3146.32	1575.50	13.16	-3.124	0.000	0.766
40.75	-16.57	-19.39	0.00	-1180.9	0.00	1180.94	2352.98	1176.49	3127.35	1566.00	13.66	-3.183	0.000	0.761
45.00	-15.36	-19.09	0.00	-1098.5	0.00	1098.53	1755.34	877.67	2332.03	1167.75	16.64	-3.506	0.000	0.950
50.00	-14.60	-18.76	0.00	-1003.0	0.00	1003.09	1728.64	864.32	2242.86	1123.10	20.50	-3.878	0.000	0.902
55.00	-13.85	-18.43	0.00	-909.30	0.00	909.30	1701.27	850.64	2154.50	1078.85	24.79	-4.309	0.000	0.851
60.00	-13.12	-18.09	0.00	-817.15	0.00	817.15	1673.24	836.62	2067.01	1035.04	29.53	-4.727	0.000	0.798
65.00	-12.42	-17.74	0.00	-726.71	0.00	726.71	1644.54	822.27	1980.47	991.70	34.69	-5.129	0.000	0.741
70.00	-11.74	-17.38	0.00	-638.02	0.00	638.02	1615.17	807.59	1894.92	948.87	40.26	-5.513	0.000	0.680
75.00	-11.11	-17.00	0.00	-551.11	0.00	551.11	1585.14	792.57	1810.44	906.57	46.22	-5.875	0.000	0.615
77.25	-10.84	-16.83	0.00	-512.87	0.00	512.87	1571.40	785.70	1772.79	887.71	49.02	-6.032	0.000	0.585
78.00	-10.63	-16.66	0.00	-500.25	0.00	500.25	1566.79	783.40	1760.29	881.45	49.97	-6.084	0.000	0.575
80.00	-10.26	-16.49	0.00	-466.93	0.00	466.93	1554.43	777.22	1727.08	864.83	52.55	-6.218	0.000	0.547
80.75	-10.08	-16.44	0.00	-454.57	0.00	454.57	1064.66	532.33	1199.95	600.87	53.53	-6.268	0.000	0.767
85.00	-9.64	-16.14	0.00	-384.69	0.00	384.69	1050.00	525.00	1155.69	578.71	59.21	-6.526	0.000	0.675
90.00	-9.14	-15.77	0.00	-304.00	0.00	304.00	1032.12	516.06	1103.96	552.80	66.22	-6.866	0.000	0.560
95.00	-8.69	-15.40	0.00	-225.13	0.00	225.13	1013.59	506.79	1052.64	527.10	73.55	-7.150	0.000	0.437
98.00	-6.05	-11.42	0.00	-178.94	0.00	178.94	1002.14	501.07	1022.08	511.80	78.08	-7.292	0.000	0.356
100.00	-5.87	-11.27	0.00	-156.10	0.00	156.10	994.38	497.19	1001.80	501.65	81.15	-7.375	0.000	0.318
105.00	-5.48	-10.89	0.00	-99.74	0.00	99.74	974.51	487.26	951.51	476.46	88.94	-7.539	0.000	0.215
108.00	-3.64	-6.93	0.00	-67.07	0.00	67.07	962.27	481.13	921.62	461.49	93.69	-7.610	0.000	0.149
110.00	-3.53	-6.79	0.00	-53.21	0.00	53.21	953.97	476.99	901.82	451.58	96.88	-7.646	0.000	0.122
115.00	-3.28	-6.42	0.00	-19.27	0.00	19.27	932.77	466.38	852.80	427.03	104.90	-7.702	0.000	0.049
118.00	0.00	-5.93	0.00	0.00	0.00	0.00	919.72	459.86	823.73	412.48	109.73	-7.712	0.000	0.000

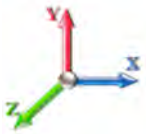
Wind Loading - Shaft

Structure:	CT46148-A-SBA	**Code:**	EIA/TIA-222-G	9/1/2021	
Site Name:	Russo Property/ Ssusa	**Exposure:**	C		
Height:	118.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 13	

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	19.450	21.40	293.84	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	19.450	21.40	288.17	0.650	0.000	5.00	16.270	10.58	362.0	0.0	579.3
10.00		1.00	0.85	19.450	21.40	282.49	0.650	0.000	5.00	15.953	10.37	355.0	0.0	567.9
15.00		1.00	0.85	19.450	21.40	276.81	0.650	0.000	5.00	15.635	10.16	347.9	0.0	556.5
20.00		1.00	0.90	20.638	22.70	279.29	0.650	0.000	5.00	15.318	9.96	361.6	0.0	545.1
25.00		1.00	0.95	21.630	23.79	279.94	0.650	0.000	5.00	15.000	9.75	371.2	0.0	533.7
30.00		1.00	0.98	22.477	24.72	279.26	0.650	0.000	5.00	14.683	9.54	377.5	0.0	522.3
35.00		1.00	1.01	23.218	25.54	277.63	0.650	0.000	5.00	14.366	9.34	381.6	0.0	510.9
40.00		1.00	1.04	23.880	26.27	275.26	0.650	0.000	5.00	14.048	9.13	383.8	0.0	499.5
40.75	Bot - Section 2	1.00	1.05	23.974	26.37	274.86	0.650	0.000	0.75	2.080	1.35	57.0	0.0	73.9
45.00	Top - Section 1	1.00	1.07	24.479	26.93	272.33	0.650	0.000	4.25	11.831	7.69	331.3	0.0	751.4
50.00		1.00	1.09	25.029	27.53	273.22	0.650	0.000	5.00	13.625	8.86	390.1	0.0	388.2
55.00		1.00	1.12	25.536	28.09	269.47	0.650	0.000	5.00	13.307	8.65	388.8	0.0	379.1
60.00		1.00	1.14	26.008	28.61	265.38	0.650	0.000	5.00	12.990	8.44	386.5	0.0	370.0
65.00		1.00	1.16	26.450	29.09	261.01	0.650	0.000	5.00	12.673	8.24	383.5	0.0	360.9
70.00		1.00	1.17	26.866	29.55	256.38	0.650	0.000	5.00	12.355	8.03	379.7	0.0	351.8
75.00		1.00	1.19	27.259	29.98	251.53	0.650	0.000	5.00	12.038	7.82	375.4	0.0	342.7
77.25	Bot - Section 3	1.00	1.20	27.429	30.17	249.28	0.650	0.000	2.25	5.313	3.45	166.7	0.0	151.2
78.00	Appurtenance(s)	1.00	1.20	27.485	30.23	248.52	0.650	0.000	0.75	1.781	1.16	56.0	0.0	88.1
80.00		1.00	1.21	27.632	30.39	246.48	0.650	0.000	2.00	4.714	3.06	149.0	0.0	233.2
80.75	Top - Section 2	1.00	1.21	27.686	30.45	245.70	0.650	0.000	0.75	1.754	1.14	55.6	0.0	86.8
85.00		1.00	1.22	27.987	30.79	244.65	0.650	0.000	4.25	9.807	6.37	314.0	0.0	209.8
90.00		1.00	1.24	28.325	31.16	239.27	0.650	0.000	5.00	11.244	7.31	364.4	0.0	240.5
95.00		1.00	1.25	28.650	31.51	233.75	0.650	0.000	5.00	10.927	7.10	358.1	0.0	233.6
98.00	Appurtenance(s)	1.00	1.26	28.838	31.72	230.37	0.650	0.000	3.00	6.404	4.16	211.3	0.0	136.9
100.00		1.00	1.27	28.961	31.86	228.09	0.650	0.000	2.00	4.206	2.73	139.3	0.0	89.9
105.00		1.00	1.28	29.260	32.19	222.30	0.650	0.000	5.00	10.292	6.69	344.5	0.0	220.0
108.00	Appurtenance(s)	1.00	1.29	29.434	32.38	218.77	0.650	0.000	3.00	6.023	3.91	202.8	0.0	128.7
110.00		1.00	1.29	29.548	32.50	216.39	0.650	0.000	2.00	3.952	2.57	133.6	0.0	84.4
115.00		1.00	1.30	29.826	32.81	210.38	0.650	0.000	5.00	9.657	6.28	329.5	0.0	206.3
118.00	Appurtenance(s)	1.00	1.31	29.988	32.99	206.72	0.650	0.000	3.00	5.642	3.67	193.6	0.0	120.5
								Totals:	**118.00**			**8,651.2**		**9,563.0**

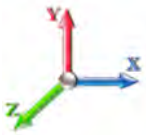
Discrete Appurtenance Forces

Structure:	CT46148-A-SBA	**Code:**	EIA/TIA-222-G	9/1/2021	
Site Name:	Russo Property/ Ssusa	**Exposure:**	C		
Height:	118.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 14	

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	118.00	6' Lightning rod	1	29.988	32.986	1.00	1.00	0.38	5.85	0.000	0.000	20.06	0.00	0.00
2	118.00	AIR6449 B41	3	29.988	32.986	0.00	1.00	16.95	278.10	0.000	0.000	894.59	0.00	0.00
3	118.00	Ericsson 4449 B71 + B85	3	29.988	32.986	0.50	0.75	2.97	197.64	0.000	0.000	156.74	0.00	0.00
4	118.00	ALU 800 MHz RRH	6	29.988	32.986	0.50	0.75	7.51	286.20	0.000	0.000	396.23	0.00	0.00
5	118.00	Ericsson 4415 B25	3	29.988	32.986	0.50	0.75	2.80	125.01	0.000	0.000	147.99	0.00	0.00
6	118.00	APXVAALL24_43-U-NA20	3	29.988	32.986	0.55	0.75	33.24	267.30	0.000	0.000	1754.57	0.00	0.00
7	118.00	AIR32	3	29.988	32.986	0.65	0.75	12.74	356.94	0.000	0.000	672.57	0.00	0.00
8	118.00	Platform w/ Hand Rails	1	29.988	32.986	1.00	1.00	32.00	1440.00	0.000	0.000	1688.91	0.00	0.00
9	108.00	Antel - BXA-70063/6CF	1	29.434	32.377	0.67	0.80	5.09	15.30	0.000	0.000	263.53	0.00	0.00
10	108.00	Low Profile Platform	1	29.434	32.377	1.00	1.00	22.00	1350.00	0.000	0.000	1139.68	0.00	0.00
11	108.00	Antel - LPA 185080/12CF	6	29.434	32.377	0.67	0.80	14.19	56.70	0.000	0.000	735.23	0.00	0.00
12	108.00	Antel - LPA 80080/6CF	6	29.434	32.377	0.68	0.80	17.67	113.40	0.000	0.000	915.18	0.00	0.00
13	108.00	Antel - BXA 70080/6CF	2	29.434	32.377	0.70	0.80	8.22	32.40	0.000	0.000	425.97	0.00	0.00
14	98.00	MC-PK8-DSH	1	28.838	31.722	1.00	1.00	37.59	1554.30	0.000	0.000	1907.87	0.00	0.00
15	98.00	RDIDC-9181-OF-48	1	28.838	31.722	1.00	1.00	2.01	19.71	0.000	0.000	102.02	0.00	0.00
16	98.00	TA08025-B604	3	28.838	31.722	0.57	0.75	3.35	172.53	0.000	0.000	170.11	0.00	0.00
17	98.00	TA08025-B605	3	28.838	31.722	0.60	0.75	3.53	202.50	0.000	0.000	179.06	0.00	0.00
18	98.00	MX08FRO665-21	3	28.838	31.722	0.55	0.75	20.80	174.15	0.000	0.000	1055.49	0.00	0.00
19	78.00	Pipe Mount	1	27.485	30.233	0.56	0.75	1.48	36.00	0.000	0.000	71.56	0.00	0.00
20	78.00	GPS	1	27.485	30.233	0.80	0.80	0.80	9.00	0.000	0.000	38.70	0.00	0.00
							Totals:		**6,693.03**			**12,736.03**		

Total Applied Force Summary

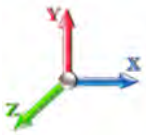
Structure:	CT46148-A-SBA		**Code:**	EIA/TIA-222-G	9/1/2021
Site Name:	Russo Property/ Ssusa		**Exposure:**	C	
Height:	118.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 15

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		362.03	681.63	0.00	0.00
10.00		354.96	670.23	0.00	0.00
15.00		347.90	658.84	0.00	0.00
20.00		361.64	647.45	0.00	0.00
25.00		371.18	636.05	0.00	0.00
30.00		377.55	624.66	0.00	0.00
35.00		381.57	613.26	0.00	0.00
40.00		383.78	601.87	0.00	0.00
40.75		57.04	89.30	0.00	0.00
45.00		331.31	838.34	0.00	0.00
50.00		390.12	490.57	0.00	0.00
55.00		388.75	481.45	0.00	0.00
60.00		386.49	472.34	0.00	0.00
65.00		383.46	463.22	0.00	0.00
70.00		379.73	454.11	0.00	0.00
75.00		375.39	444.99	0.00	0.00
77.25		166.73	197.27	0.00	0.00
78.00	(2) attachments	166.25	148.44	0.00	0.00
80.00		149.00	273.81	0.00	0.00
80.75		55.57	102.02	0.00	0.00
85.00		313.99	296.15	0.00	0.00
90.00		364.36	342.09	0.00	0.00
95.00		358.13	335.25	0.00	0.00
98.00	(11) attachments	3625.80	2321.06	0.00	0.00
100.00		139.34	128.75	0.00	0.00
105.00		344.51	317.08	0.00	0.00
108.00	(16) attachments	3682.38	1754.77	0.00	0.00
110.00		133.58	89.58	0.00	0.00
115.00		329.51	219.17	0.00	0.00
118.00	(23) attachments	5925.21	3085.26	0.00	0.00
	Totals:	**21,387.28**	**18,479.00**	**0.00**	**0.00**

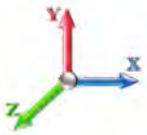
Linear Appurtenance Segment Forces (Factored)

Structure:	CT46148-A-SBA	**Code:**	EIA/TIA-222-G	9/1/2021	
Site Name:	Russo Property/ Ssusa	**Exposure:**	C		
Height:	118.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 16	

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.017	0.000	19.450	0.00	0.72
10.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.017	0.000	19.450	0.00	0.72
15.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.017	0.000	19.450	0.00	0.72
20.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.018	0.000	20.638	0.00	0.72
25.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.018	0.000	21.630	0.00	0.72
30.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.018	0.000	22.477	0.00	0.72
35.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.019	0.000	23.218	0.00	0.72
40.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.019	0.000	23.880	0.00	0.72
40.75	1/2" Coax	Yes	0.75	0.000	0.65	0.04	0.00	0.020	0.000	23.974	0.00	0.11
45.00	1/2" Coax	Yes	4.25	0.000	0.65	0.23	0.00	0.020	0.000	24.479	0.00	0.61
50.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.020	0.000	25.029	0.00	0.72
55.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.020	0.000	25.536	0.00	0.72
60.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	26.008	0.00	0.72
65.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	26.450	0.00	0.72
70.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.022	0.000	26.866	0.00	0.72
75.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.022	0.000	27.259	0.00	0.72
77.25	1/2" Coax	Yes	2.25	0.000	0.65	0.12	0.00	0.023	0.000	27.429	0.00	0.32
78.00	1/2" Coax	Yes	0.75	0.000	0.65	0.04	0.00	0.023	0.000	27.485	0.00	0.11
									Totals:		**0.0**	**11.2**

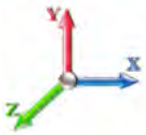
Calculated Forces

Structure:	CT46148-A-SBA	**Code:**	EIA/TIA-222-G	9/1/2021	
Site Name:	Russo Property/ Ssusa	**Exposure:**	C		
Height:	118.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 17	

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 25

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	-18.41	-21.45	0.00	-1993.7	0.00	1993.77	2657.45	1328.73	4204.87	2105.56	0.00	0.000	0.000	0.954
5.00	-17.58	-21.20	0.00	-1886.5	0.00	1886.52	2622.48	1311.24	4068.06	2037.05	0.21	-0.385	0.000	0.933
10.00	-16.77	-20.96	0.00	-1780.5	0.00	1780.50	2586.84	1293.42	3932.41	1969.13	0.82	-0.772	0.000	0.911
15.00	-15.98	-20.71	0.00	-1675.7	0.00	1675.72	2550.53	1275.26	3797.98	1901.81	1.83	-1.159	0.000	0.888
20.00	-15.21	-20.43	0.00	-1572.1	0.00	1572.19	2513.55	1256.78	3664.83	1835.14	3.25	-1.545	0.000	0.863
25.00	-14.45	-20.14	0.00	-1470.0	0.00	1470.03	2475.91	1237.96	3533.03	1769.14	5.08	-1.930	0.000	0.837
30.00	-13.71	-19.83	0.00	-1369.3	0.00	1369.34	2437.60	1218.80	3402.64	1703.85	7.30	-2.314	0.000	0.810
35.00	-12.98	-19.51	0.00	-1270.1	0.00	1270.19	2398.63	1199.31	3273.71	1639.29	9.93	-2.695	0.000	0.781
40.00	-12.33	-19.14	0.00	-1172.6	0.00	1172.64	2358.98	1179.49	3146.32	1575.50	12.95	-3.071	0.000	0.750
40.75	-12.18	-19.12	0.00	-1158.2	0.00	1158.29	2352.98	1176.49	3127.35	1566.00	13.44	-3.129	0.000	0.745
45.00	-11.25	-18.81	0.00	-1077.0	0.00	1077.03	1755.34	877.67	2332.03	1167.75	16.37	-3.446	0.000	0.929
50.00	-10.66	-18.46	0.00	-982.99	0.00	982.99	1728.64	864.32	2242.86	1123.10	20.17	-3.811	0.000	0.882
55.00	-10.07	-18.11	0.00	-890.68	0.00	890.68	1701.27	850.64	2154.50	1078.85	24.38	-4.233	0.000	0.832
60.00	-9.51	-17.76	0.00	-800.11	0.00	800.11	1673.24	836.62	2067.01	1035.04	29.03	-4.642	0.000	0.779
65.00	-8.96	-17.40	0.00	-711.32	0.00	711.32	1644.54	822.27	1980.47	991.70	34.10	-5.036	0.000	0.723
70.00	-8.43	-17.03	0.00	-624.32	0.00	624.32	1615.17	807.59	1894.92	948.87	39.57	-5.412	0.000	0.664
75.00	-7.96	-16.65	0.00	-539.16	0.00	539.16	1585.14	792.57	1810.44	906.57	45.42	-5.766	0.000	0.600
77.25	-7.75	-16.48	0.00	-501.69	0.00	501.69	1571.40	785.70	1772.79	887.71	48.17	-5.920	0.000	0.571
78.00	-7.59	-16.31	0.00	-489.34	0.00	489.34	1566.79	783.40	1760.29	881.45	49.11	-5.971	0.000	0.560
80.00	-7.31	-16.14	0.00	-456.72	0.00	456.72	1554.43	777.22	1727.08	864.83	51.63	-6.102	0.000	0.533
80.75	-7.17	-16.10	0.00	-444.61	0.00	444.61	1064.66	532.33	1199.95	600.87	52.59	-6.150	0.000	0.748
85.00	-6.83	-15.79	0.00	-376.19	0.00	376.19	1050.00	525.00	1155.69	578.71	58.17	-6.402	0.000	0.657
90.00	-6.45	-15.42	0.00	-297.25	0.00	297.25	1032.12	516.06	1103.96	552.80	65.05	-6.735	0.000	0.545
95.00	-6.11	-15.05	0.00	-220.14	0.00	220.14	1013.59	506.79	1052.64	527.10	72.24	-7.013	0.000	0.425
98.00	-4.23	-11.17	0.00	-174.99	0.00	174.99	1002.14	501.07	1022.08	511.80	76.68	-7.152	0.000	0.347
100.00	-4.09	-11.03	0.00	-152.65	0.00	152.65	994.38	497.19	1001.80	501.65	79.69	-7.233	0.000	0.309
105.00	-3.80	-10.65	0.00	-97.51	0.00	97.51	974.51	487.26	951.51	476.46	87.34	-7.394	0.000	0.209
108.00	-2.53	-6.78	0.00	-65.56	0.00	65.56	962.27	481.13	921.62	461.49	91.99	-7.463	0.000	0.145
110.00	-2.46	-6.63	0.00	-52.01	0.00	52.01	953.97	476.99	901.82	451.58	95.12	-7.498	0.000	0.118
115.00	-2.28	-6.28	0.00	-18.84	0.00	18.84	932.77	466.38	852.80	427.03	102.98	-7.553	0.000	0.047
118.00	0.00	-5.93	0.00	0.00	0.00	0.00	919.72	459.86	823.73	412.48	107.72	-7.562	0.000	0.000

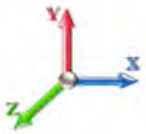
Wind Loading - Shaft

Structure:	CT46148-A-SBA	**Code:**	EIA/TIA-222-G	9/1/2021	
Site Name:	Russo Property/ Ssusa	**Exposure:**	C		
Height:	118.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 18	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.242	5.00	17.305	20.77	118.1	305.9	1078.3
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	5.00	17.062	20.47	116.4	322.3	1079.5
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	5.00	16.790	20.15	114.5	329.6	1071.6
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	5.00	16.507	19.81	119.5	332.9	1059.7
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	5.00	16.216	19.46	123.0	333.8	1045.5
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	5.00	15.921	19.11	125.5	333.3	1029.7
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	5.00	15.623	18.75	127.2	331.5	1012.8
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	5.00	15.322	18.39	128.3	329.0	995.1
40.75	Bot - Section 2	1.00	1.05	6.370	7.01	0.00	1.200	1.532	0.75	2.271	2.73	19.1	49.3	147.9
45.00	Top - Section 1	1.00	1.07	6.504	7.15	0.00	1.200	1.547	4.25	12.927	15.51	111.0	281.1	1282.9
50.00		1.00	1.09	6.650	7.32	0.00	1.200	1.564	5.00	14.928	17.91	131.0	327.0	844.6
55.00		1.00	1.12	6.785	7.46	0.00	1.200	1.579	5.00	14.623	17.55	131.0	322.8	828.3
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	5.00	14.317	17.18	130.6	318.3	811.6
65.00		1.00	1.16	7.028	7.73	0.00	1.200	1.605	5.00	14.010	16.81	130.0	313.4	794.6
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	5.00	13.703	16.44	129.1	308.3	777.3
75.00		1.00	1.19	7.243	7.97	0.00	1.200	1.628	5.00	13.395	16.07	128.1	302.9	759.7
77.25	Bot - Section 3	1.00	1.20	7.288	8.02	0.00	1.200	1.633	2.25	5.926	7.11	57.0	135.2	336.8
78.00	Appurtenance(s)	1.00	1.20	7.303	8.03	0.00	1.200	1.635	0.75	1.985	2.38	19.1	45.5	163.0
80.00		1.00	1.21	7.342	8.08	0.00	1.200	1.639	2.00	5.260	6.31	51.0	120.4	431.3
80.75	Top - Section 2	1.00	1.21	7.356	8.09	0.00	1.200	1.640	0.75	1.960	2.35	19.0	45.0	160.7
85.00		1.00	1.22	7.436	8.18	0.00	1.200	1.649	4.25	10.975	13.17	107.7	251.0	530.7
90.00		1.00	1.24	7.526	8.28	0.00	1.200	1.658	5.00	12.626	15.15	125.4	289.3	609.9
95.00		1.00	1.25	7.612	8.37	0.00	1.200	1.667	5.00	12.316	14.78	123.8	283.1	594.6
98.00	Appurtenance(s)	1.00	1.26	7.662	8.43	0.00	1.200	1.672	3.00	7.240	8.69	73.2	167.6	350.1
100.00		1.00	1.27	7.695	8.46	0.00	1.200	1.676	2.00	4.764	5.72	48.4	110.7	230.6
105.00		1.00	1.28	7.774	8.55	0.00	1.200	1.684	5.00	11.695	14.03	120.0	270.3	563.5
108.00	Appurtenance(s)	1.00	1.29	7.821	8.60	0.00	1.200	1.689	3.00	6.867	8.24	70.9	159.8	331.4
110.00		1.00	1.29	7.851	8.64	0.00	1.200	1.692	2.00	4.516	5.42	46.8	105.5	218.0
115.00		1.00	1.30	7.925	8.72	0.00	1.200	1.699	5.00	11.073	13.29	115.8	256.9	532.0
118.00	Appurtenance(s)	1.00	1.31	7.968	8.76	0.00	1.200	1.704	3.00	6.494	7.79	68.3	151.7	312.3
								Totals:	**118.00**			**2,928.9**		**19,983.9**

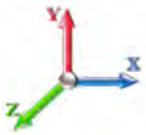
Discrete Appurtenance Forces

Structure:	CT46148-A-SBA	**Code:**	EIA/TIA-222-G	9/1/2021	
Site Name:	Russo Property/ Ssusa	**Exposure:**	C		
Height:	118.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 19	

Load Case: 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	118.00	6' Lightning rod	1	7.968	8.765	1.00	1.00	1.44	37.94	0.000	0.000	12.64	0.00	0.00
2	118.00	AIR6449 B41	3	7.968	8.765	0.00	1.00	19.73	677.30	0.000	0.000	172.96	0.00	0.00
3	118.00	Ericsson 4449 B71 + B85	3	7.968	8.765	0.50	0.75	3.81	257.44	0.000	0.000	33.37	0.00	0.00
4	118.00	ALU 800 MHz RRH	6	7.968	8.765	0.50	0.75	10.87	688.24	0.000	0.000	95.31	0.00	0.00
5	118.00	Ericsson 4415 B25	3	7.968	8.765	0.50	0.75	3.63	343.49	0.000	0.000	31.84	0.00	0.00
6	118.00	APXVAALL24_43-U-NA20	3	7.968	8.765	0.55	0.75	36.29	1605.38	0.000	0.000	318.05	0.00	0.00
7	118.00	AIR32	3	7.968	8.765	0.65	0.75	15.00	1013.58	0.000	0.000	131.45	0.00	0.00
8	118.00	Platform w/ Hand Rails	1	7.968	8.765	1.00	1.00	59.26	3370.06	0.000	0.000	519.40	0.00	0.00
9	108.00	Antel - BXA-70063/6CF	1	7.821	8.603	0.68	0.80	6.97	116.93	0.000	0.000	59.93	0.00	0.00
10	108.00	Low Profile Platform	1	7.821	8.603	1.00	1.00	39.09	2766.61	0.000	0.000	336.29	0.00	0.00
11	108.00	Antel - LPA 185080/12CF	6	7.821	8.603	0.68	0.80	18.89	745.84	0.000	0.000	162.49	0.00	0.00
12	108.00	Antel - LPA 80080/6CF	6	7.821	8.603	0.69	0.80	22.57	1275.89	0.000	0.000	194.19	0.00	0.00
13	108.00	Antel - BXA 70080/6CF	2	7.821	8.603	0.71	0.80	11.60	214.92	0.000	0.000	99.81	0.00	0.00
14	98.00	MC-PK8-DSH	1	7.662	8.429	1.00	1.00	82.86	3316.89	0.000	0.000	698.35	0.00	0.00
15	98.00	RDIDC-9181-OF-48	1	7.662	8.429	1.00	1.00	2.55	64.61	0.000	0.000	21.53	0.00	0.00
16	98.00	TA08025-B604	3	7.662	8.429	0.57	0.75	4.27	339.30	0.000	0.000	36.00	0.00	0.00
17	98.00	TA08025-B605	3	7.662	8.429	0.60	0.75	4.50	382.57	0.000	0.000	37.89	0.00	0.00
18	98.00	MX08FRO665-21	3	7.662	8.429	0.55	0.75	23.13	866.85	0.000	0.000	194.98	0.00	0.00
19	78.00	Pipe Mount	1	7.303	8.033	0.56	0.75	4.62	100.20	0.000	0.000	37.15	0.00	0.00
20	78.00	GPS	1	7.303	8.033	0.80	0.80	1.33	31.46	0.000	0.000	10.71	0.00	0.00
							Totals:		**18,215.52**			**3,204.35**		

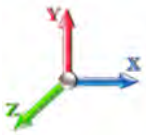
Total Applied Force Summary

Structure:	CT46148-A-SBA		**Code:**	EIA/TIA-222-G	9/1/2021
Site Name:	Russo Property/ Ssusa		**Exposure:**	C	
Height:	118.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 20

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		118.05	1227.49	0.00	0.00
10.00		116.39	1230.35	0.00	0.00
15.00		114.54	1223.51	0.00	0.00
20.00		119.48	1212.38	0.00	0.00
25.00		123.02	1198.78	0.00	0.00
30.00		125.51	1183.55	0.00	0.00
35.00		127.22	1167.13	0.00	0.00
40.00		128.33	1149.83	0.00	0.00
40.75		19.10	171.11	0.00	0.00
45.00		110.98	1414.75	0.00	0.00
50.00		131.04	1000.12	0.00	0.00
55.00		130.97	984.15	0.00	0.00
60.00		130.60	967.77	0.00	0.00
65.00		129.97	951.03	0.00	0.00
70.00		129.12	933.99	0.00	0.00
75.00		128.06	916.68	0.00	0.00
77.25		57.01	407.46	0.00	0.00
78.00	(2) attachments	66.99	318.18	0.00	0.00
80.00		50.97	485.51	0.00	0.00
80.75		19.03	181.06	0.00	0.00
85.00		107.73	645.84	0.00	0.00
90.00		125.44	745.37	0.00	0.00
95.00		123.76	730.08	0.00	0.00
98.00	(11) attachments	1061.98	5401.63	0.00	0.00
100.00		48.39	282.36	0.00	0.00
105.00		120.02	693.03	0.00	0.00
108.00	(16) attachments	923.61	5529.27	0.00	0.00
110.00		46.80	224.90	0.00	0.00
115.00		115.84	549.14	0.00	0.00
118.00	(23) attachments	1383.32	8316.09	0.00	0.00
	Totals:	**6,133.25**	**41,442.54**	**0.00**	**0.00**

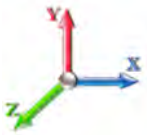
Linear Appurtenance Segment Forces (Factored)

Structure:	CT46148-A-SBA	**Code:**	EIA/TIA-222-G	9/1/2021	
Site Name:	Russo Property/ Ssusa	**Exposure:**	C		
Height:	118.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 21	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1/2" Coax	Yes	5.00	0.000	0.65	1.31	0.00	0.017	0.000	5.168	0.00	13.70
10.00	1/2" Coax	Yes	5.00	0.000	0.65	1.38	0.00	0.017	0.000	5.168	0.00	15.33
15.00	1/2" Coax	Yes	5.00	0.000	0.65	1.43	0.00	0.017	0.000	5.168	0.00	16.38
20.00	1/2" Coax	Yes	5.00	0.000	0.65	1.46	0.00	0.018	0.000	5.483	0.00	17.18
25.00	1/2" Coax	Yes	5.00	0.000	0.65	1.49	0.00	0.018	0.000	5.747	0.00	17.83
30.00	1/2" Coax	Yes	5.00	0.000	0.65	1.51	0.00	0.018	0.000	5.972	0.00	18.38
35.00	1/2" Coax	Yes	5.00	0.000	0.65	1.53	0.00	0.019	0.000	6.169	0.00	18.86
40.00	1/2" Coax	Yes	5.00	0.000	0.65	1.55	0.00	0.019	0.000	6.345	0.00	19.29
40.75	1/2" Coax	Yes	0.75	0.000	0.65	0.23	0.00	0.020	0.000	6.370	0.00	2.90
45.00	1/2" Coax	Yes	4.25	0.000	0.65	1.33	0.00	0.020	0.000	6.504	0.00	16.72
50.00	1/2" Coax	Yes	5.00	0.000	0.65	1.57	0.00	0.020	0.000	6.650	0.00	20.02
55.00	1/2" Coax	Yes	5.00	0.000	0.65	1.59	0.00	0.020	0.000	6.785	0.00	20.35
60.00	1/2" Coax	Yes	5.00	0.000	0.65	1.60	0.00	0.021	0.000	6.910	0.00	20.65
65.00	1/2" Coax	Yes	5.00	0.000	0.65	1.61	0.00	0.021	0.000	7.028	0.00	20.93
70.00	1/2" Coax	Yes	5.00	0.000	0.65	1.62	0.00	0.022	0.000	7.138	0.00	21.20
75.00	1/2" Coax	Yes	5.00	0.000	0.65	1.63	0.00	0.022	0.000	7.243	0.00	21.45
77.25	1/2" Coax	Yes	2.25	0.000	0.65	0.73	0.00	0.023	0.000	7.288	0.00	9.70
78.00	1/2" Coax	Yes	0.75	0.000	0.65	0.24	0.00	0.023	0.000	7.303	0.00	3.24
										Totals:	**0.0**	**294.1**

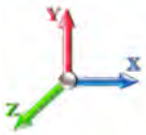
Calculated Forces

Structure:	CT46148-A-SBA	**Code:**	EIA/TIA-222-G	9/1/2021	
Site Name:	Russo Property/ Ssusa	**Exposure:**	C		
Height:	118.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 22	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

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	-41.44	-6.17	0.00	-587.15	0.00	587.15	2657.45	1328.73	4204.87	2105.56	0.00	0.000	0.000	0.294
5.00	-40.20	-6.14	0.00	-556.28	0.00	556.28	2622.48	1311.24	4068.06	2037.05	0.06	-0.114	0.000	0.288
10.00	-38.95	-6.09	0.00	-525.61	0.00	525.61	2586.84	1293.42	3932.41	1969.13	0.24	-0.228	0.000	0.282
15.00	-37.72	-6.05	0.00	-495.14	0.00	495.14	2550.53	1275.26	3797.98	1901.81	0.54	-0.342	0.000	0.275
20.00	-36.50	-5.99	0.00	-464.91	0.00	464.91	2513.55	1256.78	3664.83	1835.14	0.96	-0.456	0.000	0.268
25.00	-35.29	-5.93	0.00	-434.95	0.00	434.95	2475.91	1237.96	3533.03	1769.14	1.50	-0.570	0.000	0.260
30.00	-34.09	-5.86	0.00	-405.31	0.00	405.31	2437.60	1218.80	3402.64	1703.85	2.16	-0.684	0.000	0.252
35.00	-32.92	-5.78	0.00	-376.03	0.00	376.03	2398.63	1199.31	3273.71	1639.29	2.93	-0.796	0.000	0.243
40.00	-31.76	-5.67	0.00	-347.13	0.00	347.13	2358.98	1179.49	3146.32	1575.50	3.82	-0.908	0.000	0.234
40.75	-31.59	-5.68	0.00	-342.88	0.00	342.88	2352.98	1176.49	3127.35	1566.00	3.97	-0.925	0.000	0.232
45.00	-30.16	-5.60	0.00	-318.75	0.00	318.75	1755.34	877.67	2332.03	1167.75	4.83	-1.019	0.000	0.290
50.00	-29.16	-5.51	0.00	-290.77	0.00	290.77	1728.64	864.32	2242.86	1123.10	5.96	-1.127	0.000	0.276
55.00	-28.16	-5.42	0.00	-263.24	0.00	263.24	1701.27	850.64	2154.50	1078.85	7.21	-1.251	0.000	0.261
60.00	-27.19	-5.32	0.00	-236.16	0.00	236.16	1673.24	836.62	2067.01	1035.04	8.58	-1.372	0.000	0.244
65.00	-26.23	-5.22	0.00	-209.57	0.00	209.57	1644.54	822.27	1980.47	991.70	10.08	-1.489	0.000	0.227
70.00	-25.29	-5.11	0.00	-183.48	0.00	183.48	1615.17	807.59	1894.92	948.87	11.70	-1.599	0.000	0.209
75.00	-24.37	-4.99	0.00	-157.93	0.00	157.93	1585.14	792.57	1810.44	906.57	13.43	-1.703	0.000	0.190
77.25	-23.96	-4.93	0.00	-146.71	0.00	146.71	1571.40	785.70	1772.79	887.71	14.24	-1.748	0.000	0.181
78.00	-23.64	-4.86	0.00	-143.02	0.00	143.02	1566.79	783.40	1760.29	881.45	14.52	-1.763	0.000	0.177
80.00	-23.16	-4.81	0.00	-133.29	0.00	133.29	1554.43	777.22	1727.08	864.83	15.27	-1.801	0.000	0.169
80.75	-22.97	-4.80	0.00	-129.68	0.00	129.68	1064.66	532.33	1199.95	600.87	15.55	-1.815	0.000	0.237
85.00	-22.33	-4.71	0.00	-109.27	0.00	109.27	1050.00	525.00	1155.69	578.71	17.20	-1.889	0.000	0.210
90.00	-21.58	-4.59	0.00	-85.74	0.00	85.74	1032.12	516.06	1103.96	552.80	19.23	-1.985	0.000	0.176
95.00	-20.85	-4.46	0.00	-62.79	0.00	62.79	1013.59	506.79	1052.64	527.10	21.36	-2.065	0.000	0.140
98.00	-15.49	-3.21	0.00	-49.41	0.00	49.41	1002.14	501.07	1022.08	511.80	22.67	-2.104	0.000	0.112
100.00	-15.20	-3.16	0.00	-42.98	0.00	42.98	994.38	497.19	1001.80	501.65	23.55	-2.127	0.000	0.101
105.00	-14.51	-3.02	0.00	-27.17	0.00	27.17	974.51	487.26	951.51	476.46	25.81	-2.172	0.000	0.072
108.00	-9.02	-1.89	0.00	-18.10	0.00	18.10	962.27	481.13	921.62	461.49	27.18	-2.191	0.000	0.049
110.00	-8.80	-1.84	0.00	-14.31	0.00	14.31	953.97	476.99	901.82	451.58	28.10	-2.201	0.000	0.041
115.00	-8.26	-1.70	0.00	-5.11	0.00	5.11	932.77	466.38	852.80	427.03	30.41	-2.216	0.000	0.021
118.00	0.00	-1.38	0.00	0.00	0.00	0.00	919.72	459.86	823.73	412.48	31.80	-2.219	0.000	0.000

Seismic Segment Forces (Factored)

Structure:	CT46148-A-SBA	**Code:**	EIA/TIA-222-G	9/1/2021	
Site Name:	Russo Property/ Ssusa	**Exposure:**	C		
Height:	118.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 23	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	23
Gust Response Factor	1.10				**Sds**	0.18		**Ss**	0.17
Dead Load Factor	1.20	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.07
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.35		**SA**	0.04	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		643.65	0.00	0.04	0.02	12.68	
10.00		630.99	0.01	0.06	0.03	17.21	
15.00		618.33	0.03	0.07	0.04	18.84	
20.00		605.67	0.05	0.07	0.04	19.40	
25.00		593.02	0.08	0.07	0.04	19.64	
30.00		580.36	0.12	0.07	0.03	19.81	
35.00		567.70	0.17	0.07	0.03	19.82	
40.00		555.04	0.22	0.06	0.02	19.33	
40.75	Bot - Section 2	82.16	0.23	0.06	0.02	2.85	
45.00	Top - Section 1	834.84	0.27	0.05	0.01	27.38	
50.00		431.37	0.34	0.04	0.01	11.85	
55.00		421.24	0.41	0.01	0.01	7.47	
60.00		411.11	0.49	-0.01	0.01	1.56	
65.00		400.98	0.57	-0.04	0.01	-4.75	
70.00		390.85	0.67	-0.08	0.02	-9.79	
75.00		380.73	0.76	-0.10	0.04	-12.31	
77.25	Bot - Section 3	168.02	0.81	-0.11	0.06	-5.57	
78.00	Appurtenance(s)	147.88	0.83	-0.12	0.06	-4.89	
80.00		259.06	0.87	-0.12	0.08	-8.29	
80.75	Top - Section 2	96.42	0.89	-0.12	0.08	-3.01	
85.00		233.08	0.98	-0.11	0.12	-5.52	
90.00		267.19	1.10	-0.07	0.19	-1.98	
95.00		259.59	1.23	0.03	0.27	4.35	
98.00	Appurtenance(s)	2511.2	1.30	0.13	0.34	88.03	
100.00		99.89	1.36	0.21	0.39	4.88	
105.00		244.40	1.50	0.49	0.54	21.75	
108.00	Appurtenance(s)	1884.9	1.58	0.73	0.65	220.60	
110.00		93.81	1.64	0.92	0.73	12.89	
115.00		229.21	1.80	1.52	0.97	44.53	
118.00	Appurtenance(s)	3419.4	1.89	1.98	1.14	795.24	
	Totals:	**18,062.3**				**1,334.0**	**Total Wind:** **21,387.3**

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

Calculated Forces

Structure:	CT46148-A-SBA	**Code:**	EIA/TIA-222-G	9/1/2021	
Site Name:	Russo Property/ Ssusa	**Exposure:**	C		
Height:	118.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 24	

Load Case:	1.2D + 1.0E							**Iterations**	23
Gust Response Factor	1.10			**Sds**	0.18			**Ss**	0.17
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.07
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.35	**SA**	0.04	**Seismic Importance Factor**			1.00

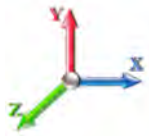
Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-24.64	-1.40	0.00	-150.69	0.00	150.69	2657.45	1328.73	4204.87	2105.56		0.00	0.00	0.081
5.00	-23.73	-1.40	0.00	-143.71	0.00	143.71	2622.48	1311.24	4068.06	2037.05		0.02	-0.03	0.080
10.00	-22.83	-1.39	0.00	-136.73	0.00	136.73	2586.84	1293.42	3932.41	1969.13		0.06	-0.06	0.078
15.00	-21.96	-1.38	0.00	-129.79	0.00	129.79	2550.53	1275.26	3797.98	1901.81		0.14	-0.09	0.077
20.00	-21.09	-1.37	0.00	-122.88	0.00	122.88	2513.55	1256.78	3664.83	1835.14		0.25	-0.12	0.075
25.00	-20.24	-1.36	0.00	-116.03	0.00	116.03	2475.91	1237.96	3533.03	1769.14		0.39	-0.15	0.074
30.00	-19.41	-1.35	0.00	-109.23	0.00	109.23	2437.60	1218.80	3402.64	1703.85		0.56	-0.18	0.072
35.00	-18.59	-1.34	0.00	-102.49	0.00	102.49	2398.63	1199.31	3273.71	1639.29		0.77	-0.21	0.070
40.00	-17.79	-1.32	0.00	-95.81	0.00	95.81	2358.98	1179.49	3146.32	1575.50		1.00	-0.24	0.068
40.75	-17.67	-1.32	0.00	-94.82	0.00	94.82	2352.98	1176.49	3127.35	1566.00		1.04	-0.25	0.068
45.00	-16.55	-1.30	0.00	-89.21	0.00	89.21	1755.34	877.67	2332.03	1167.75		1.27	-0.27	0.086
50.00	-15.90	-1.29	0.00	-82.73	0.00	82.73	1728.64	864.32	2242.86	1123.10		1.57	-0.30	0.083
55.00	-15.25	-1.29	0.00	-76.28	0.00	76.28	1701.27	850.64	2154.50	1078.85		1.91	-0.34	0.080
60.00	-14.62	-1.29	0.00	-69.84	0.00	69.84	1673.24	836.62	2067.01	1035.04		2.28	-0.37	0.076
65.00	-14.00	-1.30	0.00	-63.39	0.00	63.39	1644.54	822.27	1980.47	991.70		2.69	-0.41	0.072
70.00	-13.40	-1.30	0.00	-56.91	0.00	56.91	1615.17	807.59	1894.92	948.87		3.13	-0.44	0.068
75.00	-12.80	-1.30	0.00	-50.41	0.00	50.41	1585.14	792.57	1810.44	906.57		3.61	-0.47	0.064
77.25	-12.54	-1.30	0.00	-47.49	0.00	47.49	1571.40	785.70	1772.79	887.71		3.84	-0.49	0.061
78.00	-12.34	-1.30	0.00	-46.51	0.00	46.51	1566.79	783.40	1760.29	881.45		3.92	-0.49	0.061
80.00	-11.98	-1.30	0.00	-43.91	0.00	43.91	1554.43	777.22	1727.08	864.83		4.13	-0.51	0.058
80.75	-11.84	-1.30	0.00	-42.94	0.00	42.94	1064.66	532.33	1199.95	600.87		4.21	-0.51	0.083
85.00	-11.45	-1.30	0.00	-37.41	0.00	37.41	1050.00	525.00	1155.69	578.71		4.67	-0.54	0.076
90.00	-10.99	-1.30	0.00	-30.90	0.00	30.90	1032.12	516.06	1103.96	552.80		5.25	-0.57	0.067
95.00	-10.54	-1.30	0.00	-24.38	0.00	24.38	1013.59	506.79	1052.64	527.10		5.86	-0.60	0.057
98.00	-7.45	-1.18	0.00	-20.48	0.00	20.48	1002.14	501.07	1022.08	511.80		6.24	-0.61	0.047
100.00	-7.28	-1.18	0.00	-18.12	0.00	18.12	994.38	497.19	1001.80	501.65		6.50	-0.62	0.043
105.00	-6.85	-1.15	0.00	-12.24	0.00	12.24	974.51	487.26	951.51	476.46		7.17	-0.64	0.033
108.00	-4.52	-0.90	0.00	-8.79	0.00	8.79	962.27	481.13	921.62	461.49		7.58	-0.65	0.024
110.00	-4.40	-0.89	0.00	-6.98	0.00	6.98	953.97	476.99	901.82	451.58		7.85	-0.66	0.020
115.00	-4.10	-0.84	0.00	-2.53	0.00	2.53	932.77	466.38	852.80	427.03		8.54	-0.66	0.010
118.00	0.00	-0.80	0.00	0.00	0.00	0.00	919.72	459.86	823.73	412.48		8.96	-0.67	0.000

Seismic Segment Forces (Factored)

Structure:	CT46148-A-SBA	**Code:**	EIA/TIA-222-G	9/1/2021	
Site Name:	Russo Property/ Ssusa	**Exposure:**	C		
Height:	118.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 25	

Tower Engineering Solutions

Load Case: 0.9D + 1.0E



Gust Response Factor	1.10			**Sds**	0.18	**Iterations**	22
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10	**Ss**	0.17
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.35	**SA**	0.04	**S1**	0.07
						Seismic Importance Factor	1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		643.65	0.00	0.04	0.02	12.68	
10.00		630.99	0.01	0.06	0.03	17.21	
15.00		618.33	0.03	0.07	0.04	18.84	
20.00		605.67	0.05	0.07	0.04	19.40	
25.00		593.02	0.08	0.07	0.04	19.64	
30.00		580.36	0.12	0.07	0.03	19.81	
35.00		567.70	0.17	0.07	0.03	19.82	
40.00		555.04	0.22	0.06	0.02	19.33	
40.75	Bot - Section 2	82.16	0.23	0.06	0.02	2.85	
45.00	Top - Section 1	834.84	0.27	0.05	0.01	27.38	
50.00		431.37	0.34	0.04	0.01	11.85	
55.00		421.24	0.41	0.01	0.01	7.47	
60.00		411.11	0.49	-0.01	0.01	1.56	
65.00		400.98	0.57	-0.04	0.01	-4.75	
70.00		390.85	0.67	-0.08	0.02	-9.79	
75.00		380.73	0.76	-0.10	0.04	-12.31	
77.25	Bot - Section 3	168.02	0.81	-0.11	0.06	-5.57	
78.00	Appurtenance(s)	147.88	0.83	-0.12	0.06	-4.89	
80.00		259.06	0.87	-0.12	0.08	-8.29	
80.75	Top - Section 2	96.42	0.89	-0.12	0.08	-3.01	
85.00		233.08	0.98	-0.11	0.12	-5.52	
90.00		267.19	1.10	-0.07	0.19	-1.98	
95.00		259.59	1.23	0.03	0.27	4.35	
98.00	Appurtenance(s)	2511.2	1.30	0.13	0.34	88.03	
100.00		99.89	1.36	0.21	0.39	4.88	
105.00		244.40	1.50	0.49	0.54	21.75	
108.00	Appurtenance(s)	1884.9	1.58	0.73	0.65	220.60	
110.00		93.81	1.64	0.92	0.73	12.89	
115.00		229.21	1.80	1.52	0.97	44.53	
118.00	Appurtenance(s)	3419.4	1.89	1.98	1.14	795.24	
	Totals:	**18,062.3**				**1,334.0**	**Total Wind:** **21,387.3**

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

Calculated Forces

Structure:	CT46148-A-SBA	**Code:**	EIA/TIA-222-G	9/1/2021	
Site Name:	Russo Property/ Ssusa	**Exposure:**	C		
Height:	118.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 26	

Load Case:	0.9D + 1.0E							**Iterations**	22
Gust Response Factor	1.10			**Sds**	0.18			**Ss**	0.17
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.07
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.35	**SA**	0.04	**Seismic Importance Factor**			1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-18.48	-1.39	0.00	-148.30	0.00	148.30	2657.45	1328.73	4204.87	2105.56		0.00	0.00	0.077
5.00	-17.80	-1.39	0.00	-141.33	0.00	141.33	2622.48	1311.24	4068.06	2037.05		0.02	-0.03	0.076
10.00	-17.13	-1.38	0.00	-134.38	0.00	134.38	2586.84	1293.42	3932.41	1969.13		0.06	-0.06	0.075
15.00	-16.47	-1.37	0.00	-127.47	0.00	127.47	2550.53	1275.26	3797.98	1901.81		0.14	-0.09	0.073
20.00	-15.82	-1.36	0.00	-120.63	0.00	120.63	2513.55	1256.78	3664.83	1835.14		0.24	-0.12	0.072
25.00	-15.18	-1.34	0.00	-113.84	0.00	113.84	2475.91	1237.96	3533.03	1769.14		0.38	-0.15	0.070
30.00	-14.56	-1.33	0.00	-107.12	0.00	107.12	2437.60	1218.80	3402.64	1703.85		0.55	-0.18	0.069
35.00	-13.94	-1.32	0.00	-100.47	0.00	100.47	2398.63	1199.31	3273.71	1639.29		0.75	-0.21	0.067
40.00	-13.34	-1.30	0.00	-93.89	0.00	93.89	2358.98	1179.49	3146.32	1575.50		0.98	-0.24	0.065
40.75	-13.25	-1.30	0.00	-92.92	0.00	92.92	2352.98	1176.49	3127.35	1566.00		1.02	-0.24	0.065
45.00	-12.41	-1.27	0.00	-87.40	0.00	87.40	1755.34	877.67	2332.03	1167.75		1.25	-0.27	0.082
50.00	-11.92	-1.27	0.00	-81.04	0.00	81.04	1728.64	864.32	2242.86	1123.10		1.54	-0.30	0.079
55.00	-11.44	-1.26	0.00	-74.71	0.00	74.71	1701.27	850.64	2154.50	1078.85		1.87	-0.33	0.076
60.00	-10.96	-1.26	0.00	-68.40	0.00	68.40	1673.24	836.62	2067.01	1035.04		2.24	-0.37	0.073
65.00	-10.50	-1.27	0.00	-62.07	0.00	62.07	1644.54	822.27	1980.47	991.70		2.64	-0.40	0.069
70.00	-10.05	-1.27	0.00	-55.74	0.00	55.74	1615.17	807.59	1894.92	948.87		3.07	-0.43	0.065
75.00	-9.60	-1.27	0.00	-49.38	0.00	49.38	1585.14	792.57	1810.44	906.57		3.55	-0.46	0.061
77.25	-9.40	-1.27	0.00	-46.53	0.00	46.53	1571.40	785.70	1772.79	887.71		3.77	-0.48	0.058
78.00	-9.25	-1.27	0.00	-45.57	0.00	45.57	1566.79	783.40	1760.29	881.45		3.84	-0.48	0.058
80.00	-8.98	-1.27	0.00	-43.03	0.00	43.03	1554.43	777.22	1727.08	864.83		4.05	-0.50	0.056
80.75	-8.88	-1.27	0.00	-42.08	0.00	42.08	1064.66	532.33	1199.95	600.87		4.13	-0.50	0.078
85.00	-8.58	-1.27	0.00	-36.68	0.00	36.68	1050.00	525.00	1155.69	578.71		4.58	-0.52	0.072
90.00	-8.24	-1.27	0.00	-30.31	0.00	30.31	1032.12	516.06	1103.96	552.80		5.15	-0.56	0.063
95.00	-7.90	-1.27	0.00	-23.94	0.00	23.94	1013.59	506.79	1052.64	527.10		5.75	-0.59	0.053
98.00	-5.58	-1.16	0.00	-20.13	0.00	20.13	1002.14	501.07	1022.08	511.80		6.13	-0.60	0.045
100.00	-5.45	-1.15	0.00	-17.82	0.00	17.82	994.38	497.19	1001.80	501.65		6.38	-0.61	0.041
105.00	-5.14	-1.13	0.00	-12.05	0.00	12.05	974.51	487.26	951.51	476.46		7.03	-0.63	0.031
108.00	-3.38	-0.89	0.00	-8.66	0.00	8.66	962.27	481.13	921.62	461.49		7.43	-0.64	0.022
110.00	-3.29	-0.88	0.00	-6.88	0.00	6.88	953.97	476.99	901.82	451.58		7.70	-0.64	0.019
115.00	-3.08	-0.83	0.00	-2.49	0.00	2.49	932.77	466.38	852.80	427.03		8.38	-0.65	0.009
118.00	0.00	-0.80	0.00	0.00	0.00	0.00	919.72	459.86	823.73	412.48		8.79	-0.65	0.000

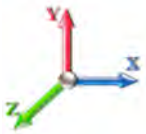
Wind Loading - Shaft

Structure:	CT46148-A-SBA	**Code:**	EIA/TIA-222-G	9/1/2021	
Site Name:	Russo Property/ Ssusa	**Exposure:**	C		
Height:	118.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 27	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	181.76	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	178.25	0.650	0.000	5.00	16.270	10.58	86.6	0.0	643.7
10.00		1.00	0.85	7.442	8.19	174.74	0.650	0.000	5.00	15.953	10.37	84.9	0.0	631.0
15.00		1.00	0.85	7.442	8.19	171.22	0.650	0.000	5.00	15.635	10.16	83.2	0.0	618.3
20.00		1.00	0.90	7.896	8.69	172.76	0.650	0.000	5.00	15.318	9.96	86.5	0.0	605.7
25.00		1.00	0.95	8.276	9.10	173.16	0.650	0.000	5.00	15.000	9.75	88.8	0.0	593.0
30.00		1.00	0.98	8.600	9.46	172.74	0.650	0.000	5.00	14.683	9.54	90.3	0.0	580.4
35.00		1.00	1.01	8.883	9.77	171.73	0.650	0.000	5.00	14.366	9.34	91.2	0.0	567.7
40.00		1.00	1.04	9.137	10.05	170.27	0.650	0.000	5.00	14.048	9.13	91.8	0.0	555.0
40.75	Bot - Section 2	1.00	1.05	9.173	10.09	170.02	0.650	0.000	0.75	2.080	1.35	13.6	0.0	82.2
45.00	Top - Section 1	1.00	1.07	9.366	10.30	168.45	0.650	0.000	4.25	11.831	7.69	79.2	0.0	834.8
50.00		1.00	1.09	9.576	10.53	169.00	0.650	0.000	5.00	13.625	8.86	93.3	0.0	431.4
55.00		1.00	1.12	9.770	10.75	166.68	0.650	0.000	5.00	13.307	8.65	93.0	0.0	421.2
60.00		1.00	1.14	9.951	10.95	164.15	0.650	0.000	5.00	12.990	8.44	92.4	0.0	411.1
65.00		1.00	1.16	10.120	11.13	161.45	0.650	0.000	5.00	12.673	8.24	91.7	0.0	401.0
70.00		1.00	1.17	10.279	11.31	158.59	0.650	0.000	5.00	12.355	8.03	90.8	0.0	390.9
75.00		1.00	1.19	10.430	11.47	155.58	0.650	0.000	5.00	12.038	7.82	89.8	0.0	380.7
77.25	Bot - Section 3	1.00	1.20	10.495	11.54	154.19	0.650	0.000	2.25	5.313	3.45	39.9	0.0	168.0
78.00	Appurtenance(s)	1.00	1.20	10.516	11.57	153.72	0.650	0.000	0.75	1.781	1.16	13.4	0.0	97.9
80.00		1.00	1.21	10.572	11.63	152.46	0.650	0.000	2.00	4.714	3.06	35.6	0.0	259.1
80.75	Top - Section 2	1.00	1.21	10.593	11.65	151.98	0.650	0.000	0.75	1.754	1.14	13.3	0.0	96.4
85.00		1.00	1.22	10.708	11.78	151.33	0.650	0.000	4.25	9.807	6.37	75.1	0.0	233.1
90.00		1.00	1.24	10.838	11.92	148.00	0.650	0.000	5.00	11.244	7.31	87.1	0.0	267.2
95.00		1.00	1.25	10.962	12.06	144.59	0.650	0.000	5.00	10.927	7.10	85.6	0.0	259.6
98.00	Appurtenance(s)	1.00	1.26	11.034	12.14	142.50	0.650	0.000	3.00	6.404	4.16	50.5	0.0	152.1
100.00		1.00	1.27	11.081	12.19	141.08	0.650	0.000	2.00	4.206	2.73	33.3	0.0	99.9
105.00		1.00	1.28	11.195	12.31	137.50	0.650	0.000	5.00	10.292	6.69	82.4	0.0	244.4
108.00	Appurtenance(s)	1.00	1.29	11.262	12.39	135.32	0.650	0.000	3.00	6.023	3.91	48.5	0.0	143.0
110.00		1.00	1.29	11.305	12.44	133.85	0.650	0.000	2.00	3.952	2.57	31.9	0.0	93.8
115.00		1.00	1.30	11.412	12.55	130.13	0.650	0.000	5.00	9.657	6.28	78.8	0.0	229.2
118.00	Appurtenance(s)	1.00	1.31	11.474	12.62	127.87	0.650	0.000	3.00	5.642	3.67	46.3	0.0	133.9
								Totals:	**118.00**			**2,068.8**		**10,625.6**

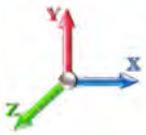
Discrete Appurtenance Forces

Structure:	CT46148-A-SBA	**Code:**	EIA/TIA-222-G	9/1/2021	
Site Name:	Russo Property/ Ssusa	**Exposure:**	C		
Height:	118.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 28	

Load Case: 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	118.00	6' Lightning rod	1	11.474	12.621	1.00	1.00	0.38	6.50	0.000	0.000	4.80	0.00	0.00
2	118.00	AIR6449 B41	3	11.474	12.621	0.00	1.00	16.95	309.00	0.000	0.000	213.93	0.00	0.00
3	118.00	Ericsson 4449 B71 + B85	3	11.474	12.621	0.50	0.75	2.97	219.60	0.000	0.000	37.48	0.00	0.00
4	118.00	ALU 800 MHz RRH	6	11.474	12.621	0.50	0.75	7.51	318.00	0.000	0.000	94.75	0.00	0.00
5	118.00	Ericsson 4415 B25	3	11.474	12.621	0.50	0.75	2.80	138.90	0.000	0.000	35.39	0.00	0.00
6	118.00	APXVAALL24_43-U-NA20	3	11.474	12.621	0.55	0.75	33.24	297.00	0.000	0.000	419.58	0.00	0.00
7	118.00	AIR32	3	11.474	12.621	0.65	0.75	12.74	396.60	0.000	0.000	160.83	0.00	0.00
8	118.00	Platform w/ Hand Rails	1	11.474	12.621	1.00	1.00	32.00	1600.00	0.000	0.000	403.87	0.00	0.00
9	108.00	Antel - BXA-70063/6CF	1	11.262	12.388	0.67	0.80	5.09	17.00	0.000	0.000	63.02	0.00	0.00
10	108.00	Low Profile Platform	1	11.262	12.388	1.00	1.00	22.00	1500.00	0.000	0.000	272.53	0.00	0.00
11	108.00	Antel - LPA 185080/12CF	6	11.262	12.388	0.67	0.80	14.19	63.00	0.000	0.000	175.82	0.00	0.00
12	108.00	Antel - LPA 80080/6CF	6	11.262	12.388	0.68	0.80	17.67	126.00	0.000	0.000	218.85	0.00	0.00
13	108.00	Antel - BXA 70080/6CF	2	11.262	12.388	0.70	0.80	8.22	36.00	0.000	0.000	101.86	0.00	0.00
14	98.00	MC-PK8-DSH	1	11.034	12.137	1.00	1.00	37.59	1727.00	0.000	0.000	456.23	0.00	0.00
15	98.00	RDIDC-9181-OF-48	1	11.034	12.137	1.00	1.00	2.01	21.90	0.000	0.000	24.40	0.00	0.00
16	98.00	TA08025-B604	3	11.034	12.137	0.57	0.75	3.35	191.70	0.000	0.000	40.68	0.00	0.00
17	98.00	TA08025-B605	3	11.034	12.137	0.60	0.75	3.53	225.00	0.000	0.000	42.82	0.00	0.00
18	98.00	MX08FRO665-21	3	11.034	12.137	0.55	0.75	20.80	193.50	0.000	0.000	252.40	0.00	0.00
19	78.00	Pipe Mount	1	10.516	11.568	0.56	0.75	1.48	40.00	0.000	0.000	17.11	0.00	0.00
20	78.00	GPS	1	10.516	11.568	0.80	0.80	0.80	10.00	0.000	0.000	9.25	0.00	0.00
							Totals:		**7,436.70**			**3,045.60**		

Total Applied Force Summary

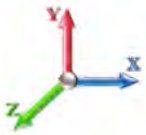
Structure:	CT46148-A-SBA		**Code:**	EIA/TIA-222-G	9/1/2021
Site Name:	Russo Property/ Ssusa		**Exposure:**	C	
Height:	118.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 29

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		86.57	757.36	0.00	0.00
10.00		84.88	744.70	0.00	0.00
15.00		83.19	732.04	0.00	0.00
20.00		86.48	719.38	0.00	0.00
25.00		88.76	706.73	0.00	0.00
30.00		90.28	694.07	0.00	0.00
35.00		91.25	681.41	0.00	0.00
40.00		91.77	668.75	0.00	0.00
40.75		13.64	99.22	0.00	0.00
45.00		79.23	931.49	0.00	0.00
50.00		93.29	545.08	0.00	0.00
55.00		92.96	534.95	0.00	0.00
60.00		92.42	524.82	0.00	0.00
65.00		91.70	514.69	0.00	0.00
70.00		90.81	504.56	0.00	0.00
75.00		89.77	494.44	0.00	0.00
77.25		39.87	219.19	0.00	0.00
78.00	(2) attachments	39.76	164.94	0.00	0.00
80.00		35.63	304.23	0.00	0.00
80.75		13.29	113.35	0.00	0.00
85.00		75.09	329.05	0.00	0.00
90.00		87.13	380.10	0.00	0.00
95.00		85.64	372.50	0.00	0.00
98.00	(11) attachments	867.05	2578.95	0.00	0.00
100.00		33.32	143.05	0.00	0.00
105.00		82.38	352.31	0.00	0.00
108.00	(16) attachments	880.58	1949.74	0.00	0.00
110.00		31.94	99.53	0.00	0.00
115.00		78.80	243.52	0.00	0.00
118.00	(23) attachments	1416.91	3428.06	0.00	0.00
	Totals:	**5,114.40**	**20,532.23**	**0.00**	**0.00**

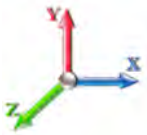
Linear Appurtenance Segment Forces (Factored)

Structure:	CT46148-A-SBA	**Code:**	EIA/TIA-222-G	9/1/2021	
Site Name:	Russo Property/ Ssusa	**Exposure:**	C		
Height:	118.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 30	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 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)
5.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.017	0.000	7.442	0.00	0.80
10.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.017	0.000	7.442	0.00	0.80
15.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.017	0.000	7.442	0.00	0.80
20.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.018	0.000	7.896	0.00	0.80
25.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.018	0.000	8.276	0.00	0.80
30.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.018	0.000	8.600	0.00	0.80
35.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.019	0.000	8.883	0.00	0.80
40.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.019	0.000	9.137	0.00	0.80
40.75	1/2" Coax	Yes	0.75	0.000	0.65	0.04	0.00	0.020	0.000	9.173	0.00	0.12
45.00	1/2" Coax	Yes	4.25	0.000	0.65	0.23	0.00	0.020	0.000	9.366	0.00	0.68
50.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.020	0.000	9.576	0.00	0.80
55.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.020	0.000	9.770	0.00	0.80
60.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	9.951	0.00	0.80
65.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	10.120	0.00	0.80
70.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.022	0.000	10.279	0.00	0.80
75.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.022	0.000	10.430	0.00	0.80
77.25	1/2" Coax	Yes	2.25	0.000	0.65	0.12	0.00	0.023	0.000	10.495	0.00	0.36
78.00	1/2" Coax	Yes	0.75	0.000	0.65	0.04	0.00	0.023	0.000	10.516	0.00	0.12
										Totals:	**0.0**	**12.5**

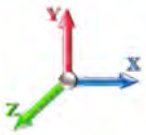
Calculated Forces

Structure:	CT46148-A-SBA	**Code:**	EIA/TIA-222-G	9/1/2021	
Site Name:	Russo Property/ Ssusa	**Exposure:**	C		
Height:	118.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 31	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

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	-20.53	-5.13	0.00	-480.39	0.00	480.39	2657.45	1328.73	4204.87	2105.56	0.00	0.000	0.000	0.236
5.00	-19.76	-5.08	0.00	-454.74	0.00	454.74	2622.48	1311.24	4068.06	2037.05	0.05	-0.093	0.000	0.231
10.00	-19.01	-5.02	0.00	-429.36	0.00	429.36	2586.84	1293.42	3932.41	1969.13	0.20	-0.186	0.000	0.225
15.00	-18.27	-4.96	0.00	-404.27	0.00	404.27	2550.53	1275.26	3797.98	1901.81	0.44	-0.279	0.000	0.220
20.00	-17.54	-4.90	0.00	-379.45	0.00	379.45	2513.55	1256.78	3664.83	1835.14	0.78	-0.373	0.000	0.214
25.00	-16.83	-4.83	0.00	-354.95	0.00	354.95	2475.91	1237.96	3533.03	1769.14	1.22	-0.466	0.000	0.207
30.00	-16.13	-4.76	0.00	-330.78	0.00	330.78	2437.60	1218.80	3402.64	1703.85	1.76	-0.558	0.000	0.201
35.00	-15.44	-4.69	0.00	-306.96	0.00	306.96	2398.63	1199.31	3273.71	1639.29	2.39	-0.650	0.000	0.194
40.00	-14.77	-4.60	0.00	-283.51	0.00	283.51	2358.98	1179.49	3146.32	1575.50	3.12	-0.741	0.000	0.186
40.75	-14.67	-4.60	0.00	-280.06	0.00	280.06	2352.98	1176.49	3127.35	1566.00	3.24	-0.755	0.000	0.185
45.00	-13.73	-4.53	0.00	-260.50	0.00	260.50	1755.34	877.67	2332.03	1167.75	3.95	-0.832	0.000	0.231
50.00	-13.18	-4.45	0.00	-237.86	0.00	237.86	1728.64	864.32	2242.86	1123.10	4.87	-0.920	0.000	0.219
55.00	-12.64	-4.37	0.00	-215.62	0.00	215.62	1701.27	850.64	2154.50	1078.85	5.89	-1.022	0.000	0.207
60.00	-12.11	-4.29	0.00	-193.78	0.00	193.78	1673.24	836.62	2067.01	1035.04	7.01	-1.121	0.000	0.194
65.00	-11.59	-4.20	0.00	-172.35	0.00	172.35	1644.54	822.27	1980.47	991.70	8.24	-1.217	0.000	0.181
70.00	-11.08	-4.12	0.00	-151.33	0.00	151.33	1615.17	807.59	1894.92	948.87	9.56	-1.308	0.000	0.166
75.00	-10.58	-4.03	0.00	-130.74	0.00	130.74	1585.14	792.57	1810.44	906.57	10.98	-1.394	0.000	0.151
77.25	-10.36	-3.99	0.00	-121.67	0.00	121.67	1571.40	785.70	1772.79	887.71	11.64	-1.431	0.000	0.144
78.00	-10.20	-3.95	0.00	-118.68	0.00	118.68	1566.79	783.40	1760.29	881.45	11.87	-1.443	0.000	0.141
80.00	-9.89	-3.91	0.00	-110.78	0.00	110.78	1554.43	777.22	1727.08	864.83	12.48	-1.475	0.000	0.134
80.75	-9.78	-3.90	0.00	-107.85	0.00	107.85	1064.66	532.33	1199.95	600.87	12.71	-1.487	0.000	0.189
85.00	-9.45	-3.83	0.00	-91.28	0.00	91.28	1050.00	525.00	1155.69	578.71	14.06	-1.548	0.000	0.167
90.00	-9.06	-3.74	0.00	-72.15	0.00	72.15	1032.12	516.06	1103.96	552.80	15.73	-1.629	0.000	0.139
95.00	-8.69	-3.65	0.00	-53.45	0.00	53.45	1013.59	506.79	1052.64	527.10	17.47	-1.696	0.000	0.110
98.00	-6.14	-2.71	0.00	-42.49	0.00	42.49	1002.14	501.07	1022.08	511.80	18.55	-1.730	0.000	0.089
100.00	-5.99	-2.68	0.00	-37.07	0.00	37.07	994.38	497.19	1001.80	501.65	19.28	-1.750	0.000	0.080
105.00	-5.64	-2.59	0.00	-23.68	0.00	23.68	974.51	487.26	951.51	476.46	21.13	-1.789	0.000	0.056
108.00	-3.72	-1.65	0.00	-15.93	0.00	15.93	962.27	481.13	921.62	461.49	22.26	-1.805	0.000	0.038
110.00	-3.62	-1.61	0.00	-12.63	0.00	12.63	953.97	476.99	901.82	451.58	23.02	-1.814	0.000	0.032
115.00	-3.38	-1.53	0.00	-4.58	0.00	4.58	932.77	466.38	852.80	427.03	24.93	-1.827	0.000	0.014
118.00	0.00	-1.42	0.00	0.00	0.00	0.00	919.72	459.86	823.73	412.48	26.08	-1.830	0.000	0.000

Final Analysis Summary

Structure:	CT46148-A-SBA	**Code:**	EIA/TIA-222-G	9/1/2021	
Site Name:	Russo Property/ Ssusa	**Exposure:**	C		
Height:	118.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 32	

Tower Engineering Solutions

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 97 mph Wind	21.5	0.00	24.56	0.00	0.00	2022.46
0.9D + 1.6W 97 mph Wind	21.5	0.00	18.41	0.00	0.00	1993.77
1.2D + 1.0Di + 1.0Wi 50 mph Wind	6.2	0.00	41.44	0.00	0.00	587.15
1.2D + 1.0E	1.4	0.00	24.64	0.00	0.00	150.69
0.9D + 1.0E	1.4	0.00	18.48	0.00	0.00	148.30
1.0D + 1.0W 60 mph Wind	5.1	0.00	20.53	0.00	0.00	480.39

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 97 mph Wind	-24.56	-21.47	0.00	-2022.4	0.00	-2022.4	2657.45	1328.7	4204.87	2105.56	0.00	0.970
0.9D + 1.6W 97 mph Wind	-18.41	-21.45	0.00	-1993.7	0.00	-1993.7	2657.45	1328.7	4204.87	2105.56	0.00	0.954
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-41.44	-6.17	0.00	-587.15	0.00	-587.15	2657.45	1328.7	4204.87	2105.56	0.00	0.294
1.2D + 1.0E	-16.55	-1.30	0.00	-89.21	0.00	-89.21	1755.34	877.67	2332.03	1167.75	45.00	0.086
0.9D + 1.0E	-12.41	-1.27	0.00	-87.40	0.00	-87.40	1755.34	877.67	2332.03	1167.75	45.00	0.082
1.0D + 1.0W 60 mph Wind	-20.53	-5.13	0.00	-480.39	0.00	-480.39	2657.45	1328.7	4204.87	2105.56	0.00	0.236

Base Plate Summary

Structure:	CT46148-A-SB		**Code:**	EIA/TIA-222-G	9/1/2021
Site Name:	Russo Property/ Ssusa		**Exposure:**	C	
Height:	118.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 33

Reactions	
Original Design	
Moment (kip-ft):	1600.00
Axial (kip):	15.00
Shear (kip):	18.00
Analysis (1.2D + 1.6W)	
Moment (kip-ft):	2022.46
Axial (kip):	24.56
Shear (kip):	21.47

Base Plate	
Yield (ksi):	55.00
Width (in):	44.00
Style:	Clipped
Polygon Sides:	0.00
Clip Length (in):	8.00
Effective Len (in):	8.63
Moment (kip-in):	565.26
Allow Stress (ksi):	74.25
Applied Stress (ksi):	63.11
Stress Ratio:	0.85

Anchor Bolts	
Bolt Circle:	45.00
Number Bolts:	12.00
Bolt Type:	2.25" 18J
Bolt Diameter (in):	2.25
Yield (ksi):	75.00
Ultimate (ksi):	100.00
Arrangement:	Clustered
Cluster Dist (in):	6.00
Start Angle (deg):	45.00
Compression	
Force (kip):	183.23
Allowable (kip):	260.00
Ratio:	0.72
Tension	
Force (kip):	176.32
Allowable (kip):	260.00
Ratio:	0.69

Pier Foundation Design For Monopole

				Date
				9/1/2021
Customer Name:	**Dish Wireless**	**EIA/TIA Standard:**	EIA-222-G
Site Name:		**Structure Height (Ft.):**	118
Site Number:	CT46148-A-SBA	**Engineer Name:**	H. You
Engr. Number:	114578	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

Analysis or Design? Analysis

Acceptable overstress (5.0%

Base Reactions (Factored):

Axial Load (Kips):	24.6	Shear Force (Kips):	21.5
Uplift Force (Kips):	0.0	Moment (Kips-ft):	2022.5

Foundation Geometries:

Diameter of Pier (ft.):	6.0	Depth of Base B. G. S. :	8.5	ft.
Pier Height A. G. (ft.):	0.50			

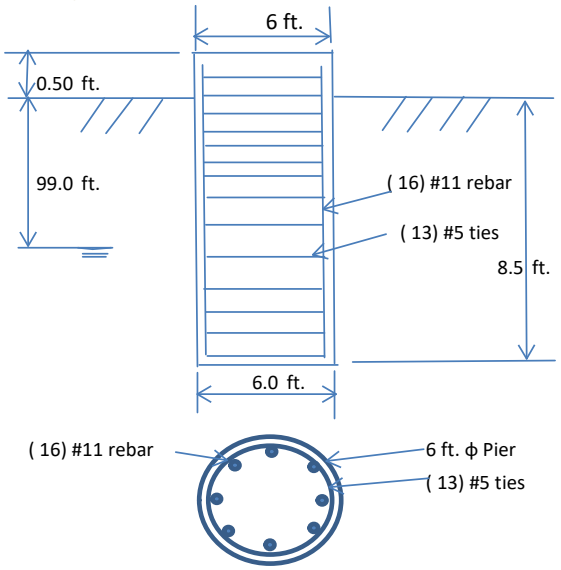
Material Properties and Reabr Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield strength:	60	ksi
Vertical Rebar Size #:	11	Tie / Stirrup Size #:	5	
Qty. of Vertical Rebars:	16	Tie Spacing:	18.0	in.
Concrete Cover (in.):	4	Concrete unit weight:	150.0	pcf

Soil Design Parameters:

Water Table B.G.S. (ft):	99.0	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



Monopole Pier Foundation

Depth of Layers (ft) Top	Depth of Layers (ft) Bottom	γ_{soil} (pcf)	ϕ (°)	Cohesion (psf)	Ultimate Skin Friction (psf)	Ultimate Bearing (psf)	Soil Types
0.0	3.0	100	0	0	0	0	Clay
3.0	6.0	125	0	10000	1500	0	Clay
6.0	11.0	130	0	10000	1500	0	Clay
11.0	17.0	125	0	10000	1500	0	Clay
17.0	25.0	130	0	15000	2000	0	Clay
25.0	30.0						

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.):	593	Dry Soil Weight from Conical Failure:	62	Kips
Total Buoyant Soil Volume from Conical Failure (cu. Ft.):	0	Buoyant Soil Weight from Conical Failure (Ki	0	Kips
Total Dry Concrete Volume (cu. Ft.):	254	Total Dry Concrete Weight:	38.2	Kips
Total Buoyant Concrete Volume (cu. Ft.):	0.0	Total Buoyant Concrete Weight:	0.00	Kips
Total Effective Concrete Weight (Kips):	38.2	Total Effective Soil Weight:	61.6	Kips
Total Effective Vertical Load on Base (Kips):	37.8			

Check Soil Capacities:

					Usage	
Allowable Foundation Overturning Resistance (kips-ft.):	2666.3	>	Design Factored Moment (kips-ft):	2152	0.81	OK!
Factor of Safety of Passive Soil Resistance against Moment:	1.24	OK!				

Check the capacities of Reinforceing Concrete:

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

Reinforcing Concrete Pier:

					Usage	
Vertical Steel Rebar Area (sq. in./each):	1.56		Tie / Stirrup Area (sq. in./each):	0.31		
Calculated Moment Capacity (Mn,Kips-Ft):	3511.7	>	Design Factored Moment (Mu, K-Ft):	2098.6	0.60	OK!
Calculated Shear Capacity (Kips):	707.2	<	Design Factored Shear (Kips):	709.3	1.00	OK!
Calculated Tension Capacity (Tn, Kips):	1347.8	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	5366	>	Design Factored Axial Load (Pu Kips):	24.6	0.00	OK!
Moment & Axial Strength Combination:	0.60	OK!	Max. Allowable Tie/Stirrup Spacing:	6.78	in.	
Pier Reinforcement Ratio:	0.006	Reinforcement Ratio is satisfied per ACI				

EXHIBIT 9

Antenna Mount Analysis

September 7, 2021

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

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

Subject:	**Appurtenance Mount Analysis Report**	
Carrier Designation:	***Dish Wireless* Co-Locate**	
	Site Number:	BOBDL00140A
	Site Name:	N/A
SBA Network Services Designation:	**Site Number:**	CT46148-A
	Site Name:	Russo Property/ Ssusa
	Application Number:	168267, v1
Engineering Firm Designation:	**B+T Group Project Number:**	149492.003.01
Site Data:	**51 Stony Lane, Stafford, CT, 06075, Tolland County** **Latitude *42.01641°*, Longitude *-72.309944°*** **Monopole** **8 ft. Platform Mount**	

Dear Ms. Knapik,

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

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

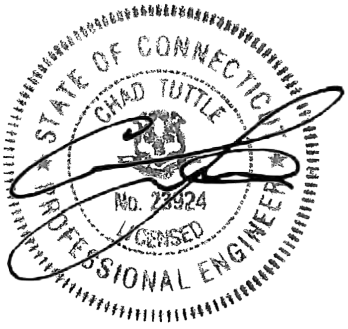
Proposed Equipment Note: See Table 1 for the final loading configuration	**Sufficient Capacity** **(Passing at 71.1%)**

This analysis has been performed in accordance with the 2018 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 125 mph converted to a nominal 3-second gust wind speed of 97 mph per Section 1609.3 and Appendix N as required for use in the ANSI/TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category C and Risk Category II were used in this analysis.

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

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

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



Chad E. Tuttle, P.E.

9-7-21

TABLE OF CONTENTS

1) INTRODUCTION

The appurtenance mount consists of Commscope platform mount (Part# MC-PK8-DSH) at 98 ft., attached to monopole at 51 Stony Lane, Stafford, CT, 06075, Tolland County. The proposed antenna loading information was obtained from SBA Communications Corporation. All information provided to B+T Group was assumed accurate and complete.

2) ANALYSIS CRITERIA

The structural analysis was performed for this mount in accordance with the ANSI/TIA-222-G-2-2005 Structural Standard for Antenna Supporting Structures and Antennas – Addendum 2 using a 3-second gust wind speed of 97 mph with no ice and 50 mph with 1 inch escalated ice thickness. Exposure category C, risk category II & Topo category 1 were used in the analysis. In addition, the platform mount has been analyzed for various live loading conditions consisting of a 250-lb man live load applied individually at the midpoint and cantilevered ends of horizontal members as well as a 500-pound man live load applied individually at mount pipe locations using a 3-second gust of 30mph. The mount was analyzed under 30º increments in the wind direction. The analyzed loading is detailed in Table 1.

Table 1 – Proposed Equipment Information

Loading	RAD Center Elev. (ft.)	Position	Qty.	Description	Note
Proposed	98	1	3	JMA Wireless - MX08FRO665-21	1
			3	Fujitsu - TA08025-B605	2
			3	Fujitsu - TA08025-B604	
		-	1	Raycap - RDIDC-9181-PF-48	3

Note:
1) Proposed Antenna to be installed on the Proposed Mount Pipe.
2) Proposed Equipment to be installed directly behind the Antenna
3) Proposed Equipment to be installed on Mount.

Table 2 - Documents Provided

Documents	Remarks	Reference	Source
SBA Application	Proposed Loading	Date: 08/04/2021	SBA Communications Corporation
RFDS		Date: 07/23/2021	

3) ANALYSIS PROCEDURE

3.1) Analysis Method

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

Manufacturer's drawings were used to create the model.

3.2) Assumptions

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

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

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

4) ANALYSIS RESULTS

Table 3 – Mount Component Stresses vs. Capacity

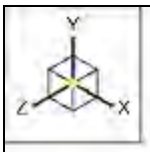
Notes	Component	Elevation (ft.)	% Capacity	Pass / Fail
-	Main Horizontals	98	10.8	Pass
-	Support Rails	98	18..5	Pass
-	Support Tubes	98	71.1	Pass
-	Support Channel	98	52.4	Pass
-	Support Angle	98	46.8	Pass
-	Mount Pipes	98	20.4	Pass
-	Connection Plates	98	28.7	Pass
-	Connection Angles	98	32.0	Pass
-	Connection Bolts	98	38.1	Pass

5) RECOMMENDATIONS

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

APPENDIX A

(RISA-3D Output)



Envelope Only Solution

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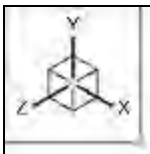

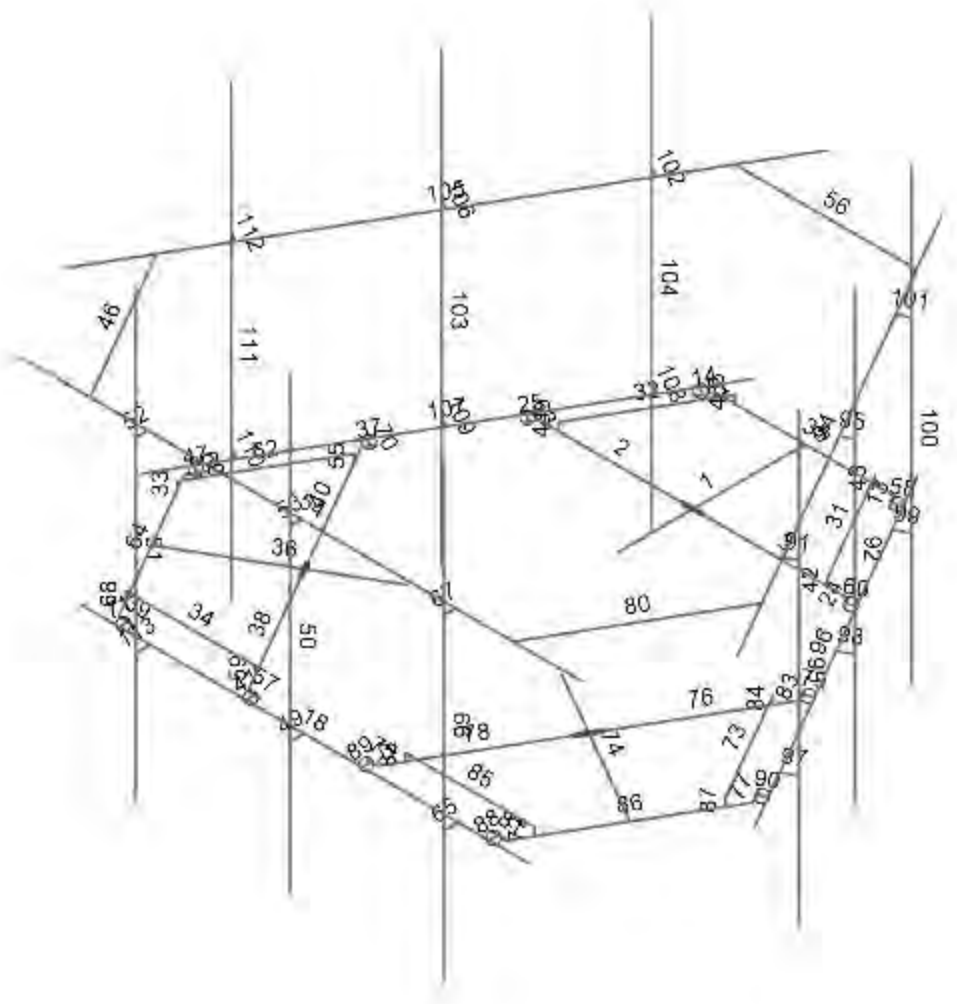

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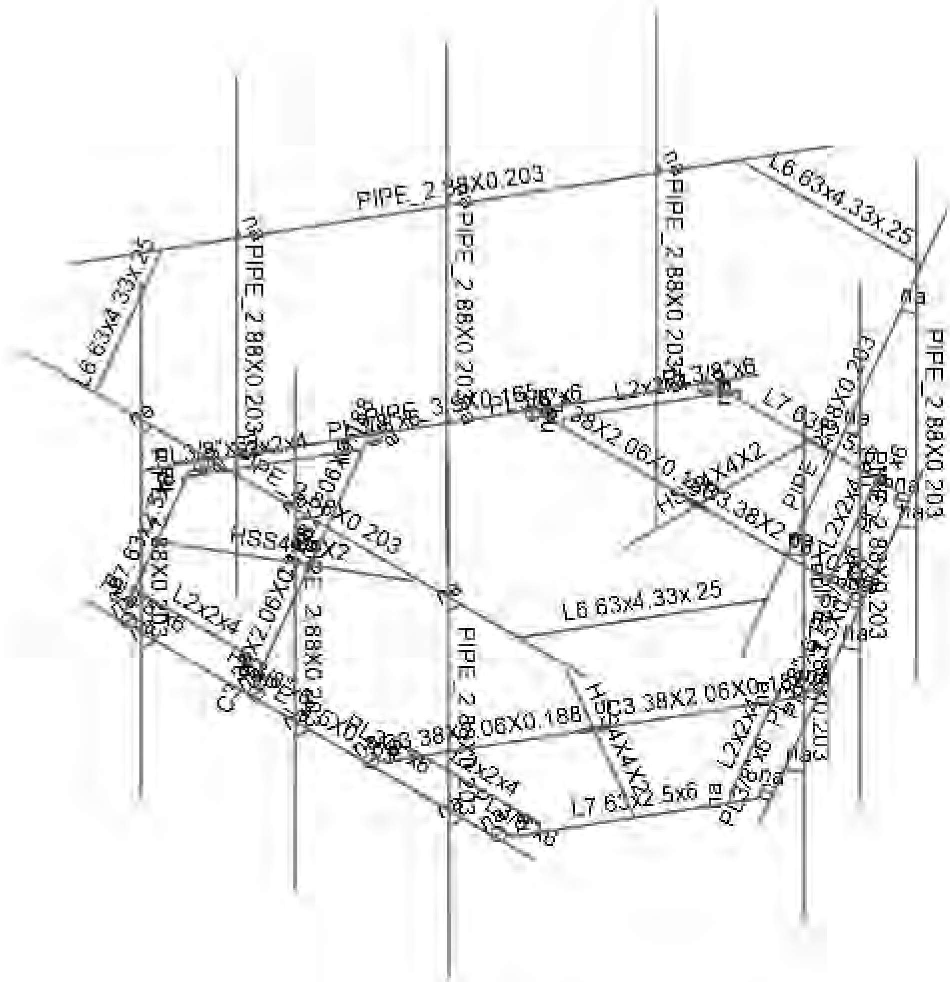

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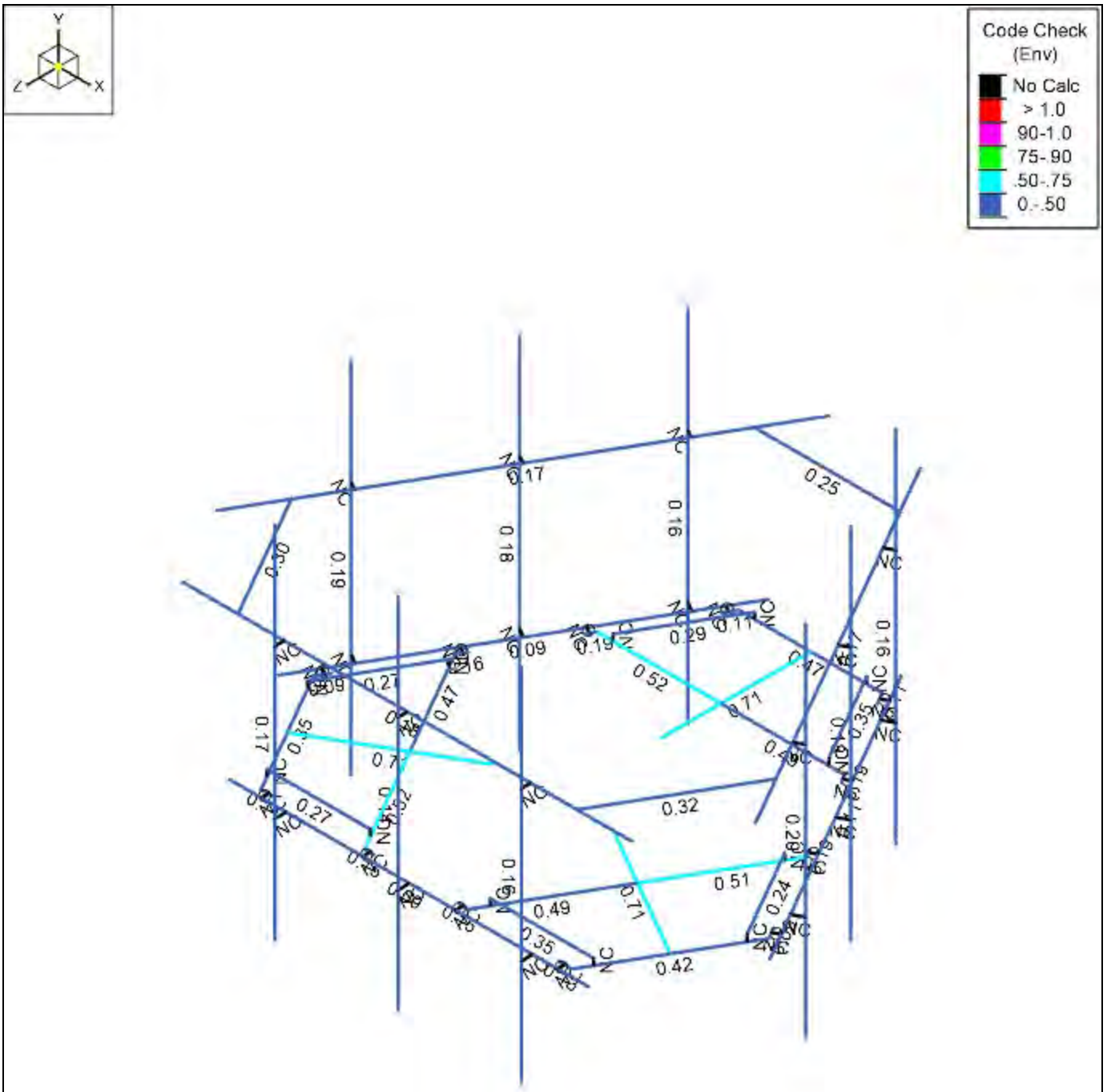

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Envelope Only Solution

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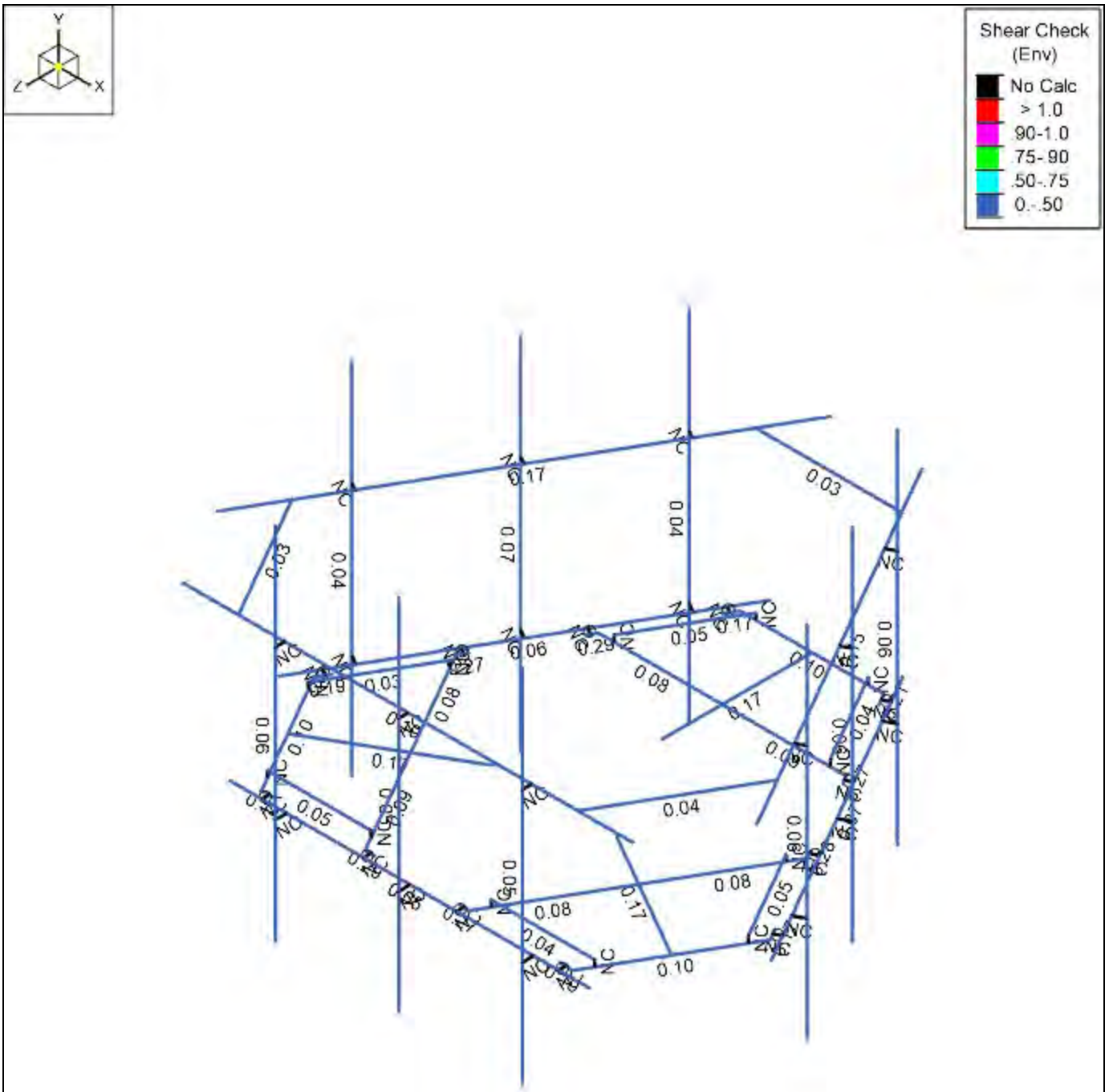

Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

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Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	2	0	0.333337	-1.599967	
2	4	0	0.333337	-4.9333	
3	5	0	0.333337	-2.9333	
4	6	2.758333	0.333337	-2.9333	
5	7	-2.758333	0.333337	-2.9333	
6	16	-1.603633	0.333337	-4.9333	
7	17	1.603633	0.333337	-4.9333	
8	25	1.749466	0.333337	-4.680709	
9	26	-1.749466	0.333337	-4.680709	
10	33	1.686966	0.333337	-4.788962	
11	35	1.826806	0.333337	-4.869699	
12	36	-1.686966	0.333337	-4.788962	
13	38	-1.826806	0.333337	-4.869699	
14	40	-3.999998	0.333337	4.017209	
15	41	3.999998	0.333337	4.017209	
16	49	2.8625	0.333337	-2.752878	
17	51	2.820833	0.333337	-2.825048	
18	53	2.960672	0.333337	-2.905784	
19	54	-2.8625	0.333337	-2.752878	
20	56	-2.820833	0.333337	-2.825048	
21	58	-2.960672	0.333337	-2.905784	
22	60	-1.25	0.47417	-4.9333	
23	64	-2.404701	0.47417	-2.9333	
24	65	2.404701	0.47417	-2.9333	
25	71	1.25	0.47417	-4.9333	
26	72	-1.25	0.333337	-4.9333	
27	76	-2.404701	0.333337	-2.9333	
28	77	2.404701	0.333337	-2.9333	
29	83	1.25	0.333337	-4.9333	
30	85	0.000002	0.333337	4.017209	
31	87	0.000002	0.333337	4.267209	
32	88	-2.749998	6	4.267209	
33	89	0.000002	6	4.267209	
34	90	-2.749998	-2	4.267209	
35	91	0.000002	-2	4.267209	
36	92	-2.749998	3.666667	4.267209	
37	93	0.000002	3.666667	4.267209	
38	94	-2.749998	3.666667	4.058876	
39	95	0.000002	3.666667	4.058876	
40	96	-5	3.666667	4.058876	
41	97	5.	3.666667	4.058876	
42	100	1.625018	3.666667	-5.302538	
43	101	-1.625018	3.666667	-5.302538	
44	102	2.749998	0.333337	4.017209	
45	103	2.749998	0.333337	4.267209	
46	104	2.749998	6	4.267209	
47	105	2.749998	-2	4.267209	
48	106	2.749998	3.666667	4.267209	
49	107	2.749998	3.666667	4.058876	
50	154	0	0.333337	0	
51	55	-3.742663	0.333337	-0.615882	
52	57	-4.897363	0.333337	1.384118	
53	59	-1.161146	0.333337	3.855437	
54	61	-3.815312	0.333337	-1.102559	
55	62	-1.385612	0.333337	0.799983	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
56	63	-2.540312	0.333337	1.46665	
57	66	-4.272363	0.333337	2.46665	
58	67	-3.919479	0.333337	-0.922137	
59	68	-4.928346	0.333337	0.825272	
60	69	-3.470547	0.333337	3.855437	
61	70	-5.074179	0.333337	1.077863	
62	73	-1.036147	0.333337	3.855437	
63	74	-3.17888	0.333337	3.855437	
64	75	-4.990846	0.333337	0.933526	
65	78	-5.130686	0.333337	0.852789	
66	79	-3.856979	0.333337	-1.030389	
67	80	-3.30388	0.333337	3.855437	
68	81	-3.30388	0.333337	4.017209	
69	82	-3.996819	0.333337	-1.111125	
70	98	-0.952812	0.333337	3.855437	
71	99	-1.036147	0.333337	4.017209	
72	108	-3.647363	0.47417	3.549182	
73	109	-1.337962	0.47417	3.549182	
74	110	-3.742663	0.47417	-0.615882	
75	111	-4.897363	0.47417	1.384118	
76	112	-3.647363	0.333337	3.549182	
77	113	-1.337962	0.333337	3.549182	
78	114	-5.404642	3.666667	1.243962	
79	115	-3.77945	3.666667	4.058876	
80	116	1.337988	0.333337	3.549197	
81	117	3.647389	0.333337	3.549197	
82	118	3.919505	0.333337	-0.922122	
83	119	0.952838	0.333337	3.855452	
84	120	1.385638	0.333337	0.799998	
85	121	2.540338	0.333337	1.466665	
86	122	4.272389	0.333337	2.466665	
87	123	1.161172	0.333337	3.855452	
88	124	3.178906	0.333337	3.855452	
89	125	5.074205	0.333337	1.077878	
90	126	3.470573	0.333337	3.855452	
91	127	3.857005	0.333337	-1.030374	
92	128	4.928372	0.333337	0.825288	
93	129	3.303906	0.333337	3.855452	
94	130	3.303906	0.333337	4.017209	
95	131	1.036173	0.333337	3.855452	
96	132	4.990872	0.333337	0.933541	
97	133	5.130699	0.333337	0.852812	
98	134	1.036173	0.333337	4.017209	
99	135	3.815338	0.333337	-1.102544	
100	136	3.996832	0.333337	-1.111103	
101	137	4.897389	0.47417	1.384133	
102	138	3.742689	0.47417	-0.615867	
103	139	1.337988	0.47417	3.549197	
104	140	3.647389	0.47417	3.549197	
105	141	4.897389	0.333337	1.384133	
106	142	3.742689	0.333337	-0.615867	
107	143	3.779485	3.666667	4.058876	
108	144	5.404659	3.666667	1.243992	
109	145	2.139831	3.666667	-4.410856	
110	146	2.103747	0.333337	-4.390023	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
111	147	4.853745	0.333337	0.373113	
112	148	3.478745	0.333337	-2.008456	
113	149	5.070251	0.333337	0.248113	
114	150	3.695251	0.333337	-2.133456	
115	151	5.070251	6	0.248113	
116	152	3.695251	6	-2.133456	
117	153	5.070251	-2	0.248113	
118	156	3.695251	-2	-2.133456	
119	157	5.070251	3.666667	0.248113	
120	158	3.695251	3.666667	-2.133456	
121	159	4.889829	3.666667	0.35228	
122	160	3.514829	3.666667	-2.02929	
123	161	2.320253	0.333337	-4.515023	
124	162	2.320253	6	-4.515023	
125	163	2.320253	-2	-4.515023	
126	164	2.320253	3.666667	-4.515023	
127	165	6.01483	3.666667	2.300839	
128	166	1.01483	3.666667	-6.359415	
129	167	5.478745	0.333337	1.455645	
130	168	1.478747	0.333337	-5.472555	
131	169	-4.889829	3.666667	0.35228	
132	170	-4.853745	0.333337	0.373113	
133	171	-2.103747	0.333337	-4.390023	
134	172	-3.478747	0.333337	-2.008453	
135	173	-2.320253	0.333337	-4.515023	
136	174	-3.695253	0.333337	-2.133453	
137	175	-2.320253	6	-4.515023	
138	176	-3.695253	6	-2.133453	
139	177	-2.320253	-2	-4.515023	
140	178	-3.695253	-2	-2.133453	
141	179	-2.320253	3.666667	-4.515023	
142	180	-3.695253	3.666667	-2.133453	
143	181	-2.139831	3.666667	-4.410856	
144	182	-3.514831	3.666667	-2.029286	
145	183	-5.070251	0.333337	0.248113	
146	184	-5.070251	6	0.248113	
147	185	-5.070251	-2	0.248113	
148	186	-5.070251	3.666667	0.248113	
149	187	-1.01483	3.666667	-6.359415	
150	188	-6.01483	3.666667	2.300839	
151	189	-1.478747	0.333337	-5.472555	
152	190	-5.478745	0.333337	1.455645	
153	155	-2.749998	0.333337	4.267209	
154	191	-2.749998	0.333337	4.017209	

Node Boundary Conditions

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

Node Boundary Conditions (Continued)

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

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [k/ft³]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3
8	A500 Gr.C	29000	11154	0.3	0.65	0.49	46	1.4	62	1.3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
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	1.704	1.53	1.53	3.059
3	SF-H1	HSS4X4X2	Beam	Tube	A500 Gr.B Rect	Typical	1.77	4.4	4.4	6.91
4	SF-H2	C3.38X2.06X0.188	Beam	Channel	A36 Gr.36	Typical	1.339	0.562	2.4	0.015
5	SF-H3	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical	0.944	0.346	0.346	0.021
6	SF-H4	L7.63x2.5x6	Beam	Single Angle	A36 Gr.36	Typical	3.658	1.307	22.092	0.163
7	MF-P1	PIPE_2.88X0.203	Column	Pipe	A500 Gr.C	Typical	1.704	1.53	1.53	3.059
8	MF-CP1	PL3/8"x6	Beam	RECT	A36 Gr.36	Typical	2.25	0.026	6.75	0.101

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
9	MF-H3	L6.63x4.33x.25	Beam	Single Angle	A36 Gr.36	Typical	2.678	4.383	12.502	0.054

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	1	2	4		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
2	2	7	5	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
3	3	5	6	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
4	13	17	25		MF-CP1	Beam	RECT	A36 Gr.36	Typical
5	14	16	26		MF-CP1	Beam	RECT	A36 Gr.36	Typical
6	18	40	41		MF-H1	Beam	Pipe	A500 Gr.C	Typical
7	24	49	6		MF-CP1	Beam	RECT	A36 Gr.36	Typical
8	25	7	54		MF-CP1	Beam	RECT	A36 Gr.36	Typical
9	31	71	65		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
10	32	64	60		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
11	35	16	17		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
12	42	77	65		RIGID	None	None	RIGID	Typical
13	43	83	71		RIGID	None	None	RIGID	Typical
14	44	76	64		RIGID	None	None	RIGID	Typical
15	45	72	60		RIGID	None	None	RIGID	Typical
16	49	87	85		RIGID	None	None	RIGID	Typical
17	50	89	91		MF-P1	Column	Pipe	A500 Gr.C	Typical
18	51	88	90		MF-P1	Column	Pipe	A500 Gr.C	Typical
19	52	92	94		RIGID	None	None	RIGID	Typical
20	53	93	95		RIGID	None	None	RIGID	Typical
21	54	96	97		MF-H2	Beam	Pipe	A500 Gr.C	Typical
22	56	100	101	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
23	58	35	33		RIGID	None	None	RIGID	Typical
24	60	53	51		RIGID	None	None	RIGID	Typical
25	61	38	36		RIGID	None	None	RIGID	Typical
26	63	58	56		RIGID	None	None	RIGID	Typical
27	65	103	102		RIGID	None	None	RIGID	Typical
28	66	104	105		MF-P1	Column	Pipe	A500 Gr.C	Typical
29	67	106	107		RIGID	None	None	RIGID	Typical
30	33	57	111		RIGID	None	None	RIGID	Typical
31	34	109	108		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
32	36	62	66		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
33	37	61	67		MF-CP1	Beam	RECT	A36 Gr.36	Typical
34	38	59	63	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
35	39	69	74		MF-CP1	Beam	RECT	A36 Gr.36	Typical
36	40	63	67	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
37	41	99	73		RIGID	None	None	RIGID	Typical
38	46	114	115	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
39	47	70	68		MF-CP1	Beam	RECT	A36 Gr.36	Typical
40	55	55	110		RIGID	None	None	RIGID	Typical
41	57	59	98		MF-CP1	Beam	RECT	A36 Gr.36	Typical
42	59	113	109		RIGID	None	None	RIGID	Typical
43	62	111	110		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
44	64	69	70		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
45	68	112	108		RIGID	None	None	RIGID	Typical
46	69	78	75		RIGID	None	None	RIGID	Typical
47	70	82	79		RIGID	None	None	RIGID	Typical
48	71	81	80		RIGID	None	None	RIGID	Typical
49	72	117	140		RIGID	None	None	RIGID	Typical
50	73	138	137		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
51	74	120	122		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical

Member Primary Data (Continued)

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

Member Advanced Data

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

Member Advanced Data (Continued)

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

Member Advanced Data (Continued)

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

Hot Rolled Steel Design Parameters

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

Hot Rolled Steel Design Parameters (Continued)

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

Member Point Loads (BLC 1 : Dead)

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

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	66	Z	-0.18	%15
2	66	Z	-0.18	%85
3	66	Z	-0.057	%15
4	66	Z	-0.057	%50
5	66	Z	0	0
6	36	Z	-0.058	%20
7	36	Z	0	0
8	36	Z	0	0
9	36	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
10	36	Z	0	0
11	111	Z	-0.18	%15
12	111	Z	-0.18	%85
13	111	Z	-0.057	%15
14	111	Z	-0.057	%50
15	111	Z	0	0
16	100	Z	-0.18	%15
17	100	Z	-0.18	%85
18	100	Z	-0.057	%15
19	100	Z	-0.057	%50
20	100	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	66	X	-0.072	%15
2	66	X	-0.072	%85
3	66	X	-0.03	%15
4	66	X	-0.034	%50
5	66	X	0	0
6	36	X	-0.034	%20
7	36	X	0	0
8	36	X	0	0
9	36	X	0	0
10	36	X	0	0
11	111	X	-0.072	%15
12	111	X	-0.072	%85
13	111	X	-0.03	%15
14	111	X	-0.034	%50
15	111	X	0	0
16	100	X	-0.072	%15
17	100	X	-0.072	%85
18	100	X	-0.03	%15
19	100	X	-0.034	%50
20	100	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	66	Z	-0.062	%15
2	66	Z	-0.062	%85
3	66	Z	-0.025	%15
4	66	Z	-0.025	%50
5	66	Z	0	0
6	36	Z	-0.026	%20
7	36	Z	0	0
8	36	Z	0	0
9	36	Z	0	0
10	36	Z	0	0
11	111	Z	-0.062	%15
12	111	Z	-0.062	%85
13	111	Z	-0.025	%15
14	111	Z	-0.025	%50
15	111	Z	0	0
16	100	Z	-0.062	%15

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
17	100	Z	-0.062	%85
18	100	Z	-0.025	%15
19	100	Z	-0.025	%50
20	100	Z	0	0

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

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

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	66	Z	-0.017	%15
2	66	Z	-0.017	%85
3	66	Z	-0.005	%15
4	66	Z	-0.005	%50
5	66	Z	0	0
6	36	Z	-0.006	%20
7	36	Z	0	0
8	36	Z	0	0
9	36	Z	0	0
10	36	Z	0	0
11	111	Z	-0.017	%15
12	111	Z	-0.017	%85
13	111	Z	-0.005	%15
14	111	Z	-0.005	%50
15	111	Z	0	0
16	100	Z	-0.017	%15
17	100	Z	-0.017	%85
18	100	Z	-0.005	%15
19	100	Z	-0.005	%50
20	100	Z	0	0

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

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

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	66	Y	-0.194	%15
2	66	Y	-0.194	%85
3	66	Y	-0.068	%15
4	66	Y	-0.071	%50
5	66	Y	0	0
6	36	Y	-0.072	%20
7	36	Y	0	0
8	36	Y	0	0
9	36	Y	0	0
10	36	Y	0	0
11	111	Y	-0.194	%15
12	111	Y	-0.194	%85
13	111	Y	-0.068	%15
14	111	Y	-0.071	%50
15	111	Y	0	0
16	100	Y	-0.194	%15
17	100	Y	-0.194	%85
18	100	Y	-0.068	%15
19	100	Y	-0.071	%50
20	100	Y	0	0

Member Point Loads (BLC 13 : Maint LL 1)

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

Member Point Loads (BLC 14 : Maint LL 2)

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

Member Point Loads (BLC 15 : Maint LL 3)

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

Member Point Loads (BLC 16 : Maint LL 4)

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

Member Point Loads (BLC 17 : Maint LL 5)

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

Member Point Loads (BLC 18 : Maint LL 6)

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

Member Point Loads (BLC 19 : Maint LL 7)

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

Member Point Loads (BLC 20 : Maint LL 8)

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

Member Point Loads (BLC 21 : Maint LL 9)

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

Member Point Loads (BLC 22 : Maint LL 10)

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

Member Point Loads (BLC 23 : Maint LL 11)

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

Member Point Loads (BLC 24 : Maint LL 12)

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

Member Point Loads (BLC 25 : Maint LL 13)

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

Member Point Loads (BLC 26 : Maint LL 14)

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

Member Point Loads (BLC 27 : Maint LL 15)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	36	Y	-0.25	%95

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.014	-0.014	0	%100
2	2	Z	-0.012	-0.012	0	%100
3	3	Z	-0.012	-0.012	0	%100
4	13	Z	-0.017	-0.017	0	%100
5	14	Z	-0.017	-0.017	0	%100
6	18	Z	-0.01	-0.01	0	%100
7	24	Z	-0.017	-0.017	0	%100
8	25	Z	-0.017	-0.017	0	%100
9	31	Z	-0.008	-0.008	0	%100
10	32	Z	-0.008	-0.008	0	%100
11	35	Z	-0.024	-0.024	0	%100
12	50	Z	-0.008	-0.008	0	%100
13	51	Z	-0.008	-0.008	0	%100
14	54	Z	-0.008	-0.008	0	%100
15	56	Z	-0.021	-0.021	0	%100
16	66	Z	-0.008	-0.008	0	%100
17	34	Z	-0.008	-0.008	0	%100
18	36	Z	-0.014	-0.014	0	%100
19	37	Z	-0.017	-0.017	0	%100
20	38	Z	-0.012	-0.012	0	%100
21	39	Z	-0.017	-0.017	0	%100
22	40	Z	-0.012	-0.012	0	%100
23	46	Z	-0.021	-0.021	0	%100
24	47	Z	-0.017	-0.017	0	%100
25	57	Z	-0.017	-0.017	0	%100
26	62	Z	-0.008	-0.008	0	%100
27	64	Z	-0.024	-0.024	0	%100
28	73	Z	-0.008	-0.008	0	%100
29	74	Z	-0.014	-0.014	0	%100
30	75	Z	-0.017	-0.017	0	%100
31	76	Z	-0.012	-0.012	0	%100
32	77	Z	-0.017	-0.017	0	%100
33	78	Z	-0.012	-0.012	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
34	80	Z	-0.021	-0.021	0	%100
35	81	Z	-0.017	-0.017	0	%100
36	83	Z	-0.017	-0.017	0	%100
37	85	Z	-0.008	-0.008	0	%100
38	86	Z	-0.024	-0.024	0	%100
39	92	Z	-0.008	-0.008	0	%100
40	93	Z	-0.008	-0.008	0	%100
41	94	Z	-0.008	-0.008	0	%100
42	96	Z	-0.01	-0.01	0	%100
43	100	Z	-0.008	-0.008	0	%100
44	103	Z	-0.008	-0.008	0	%100
45	104	Z	-0.008	-0.008	0	%100
46	105	Z	-0.008	-0.008	0	%100
47	107	Z	-0.01	-0.01	0	%100
48	111	Z	-0.008	-0.008	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.014	-0.014	0	%100
2	2	X	-0.012	-0.012	0	%100
3	3	X	-0.012	-0.012	0	%100
4	13	X	-0.017	-0.017	0	%100
5	14	X	-0.017	-0.017	0	%100
6	18	X	-0.01	-0.01	0	%100
7	24	X	-0.017	-0.017	0	%100
8	25	X	-0.017	-0.017	0	%100
9	31	X	-0.008	-0.008	0	%100
10	32	X	-0.008	-0.008	0	%100
11	35	X	-0.024	-0.024	0	%100
12	50	X	-0.008	-0.008	0	%100
13	51	X	-0.008	-0.008	0	%100
14	54	X	-0.008	-0.008	0	%100
15	56	X	-0.021	-0.021	0	%100
16	66	X	-0.008	-0.008	0	%100
17	34	X	-0.008	-0.008	0	%100
18	36	X	-0.014	-0.014	0	%100
19	37	X	-0.017	-0.017	0	%100
20	38	X	-0.012	-0.012	0	%100
21	39	X	-0.017	-0.017	0	%100
22	40	X	-0.012	-0.012	0	%100
23	46	X	-0.021	-0.021	0	%100
24	47	X	-0.017	-0.017	0	%100
25	57	X	-0.017	-0.017	0	%100
26	62	X	-0.008	-0.008	0	%100
27	64	X	-0.024	-0.024	0	%100
28	73	X	-0.008	-0.008	0	%100
29	74	X	-0.014	-0.014	0	%100
30	75	X	-0.017	-0.017	0	%100
31	76	X	-0.012	-0.012	0	%100
32	77	X	-0.017	-0.017	0	%100
33	78	X	-0.012	-0.012	0	%100
34	80	X	-0.021	-0.021	0	%100
35	81	X	-0.017	-0.017	0	%100
36	83	X	-0.017	-0.017	0	%100
37	85	X	-0.008	-0.008	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
38	86	X	-0.024	-0.024	0	%100
39	92	X	-0.008	-0.008	0	%100
40	93	X	-0.008	-0.008	0	%100
41	94	X	-0.008	-0.008	0	%100
42	96	X	-0.01	-0.01	0	%100
43	100	X	-0.008	-0.008	0	%100
44	103	X	-0.008	-0.008	0	%100
45	104	X	-0.008	-0.008	0	%100
46	105	X	-0.008	-0.008	0	%100
47	107	X	-0.01	-0.01	0	%100
48	111	X	-0.008	-0.008	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.009	-0.009	0	%100
2	2	Z	-0.008	-0.008	0	%100
3	3	Z	-0.008	-0.008	0	%100
4	13	Z	-0.018	-0.018	0	%100
5	14	Z	-0.018	-0.018	0	%100
6	18	Z	-0.003	-0.003	0	%100
7	24	Z	-0.022	-0.022	0	%100
8	25	Z	-0.022	-0.022	0	%100
9	31	Z	-0.008	-0.008	0	%100
10	32	Z	-0.008	-0.008	0	%100
11	35	Z	-0.011	-0.011	0	%100
12	50	Z	-0.003	-0.003	0	%100
13	51	Z	-0.003	-0.003	0	%100
14	54	Z	-0.003	-0.003	0	%100
15	56	Z	-0.01	-0.01	0	%100
16	66	Z	-0.003	-0.003	0	%100
17	34	Z	-0.008	-0.008	0	%100
18	36	Z	-0.009	-0.009	0	%100
19	37	Z	-0.022	-0.022	0	%100
20	38	Z	-0.008	-0.008	0	%100
21	39	Z	-0.018	-0.018	0	%100
22	40	Z	-0.008	-0.008	0	%100
23	46	Z	-0.01	-0.01	0	%100
24	47	Z	-0.018	-0.018	0	%100
25	57	Z	-0.022	-0.022	0	%100
26	62	Z	-0.008	-0.008	0	%100
27	64	Z	-0.011	-0.011	0	%100
28	73	Z	-0.008	-0.008	0	%100
29	74	Z	-0.009	-0.009	0	%100
30	75	Z	-0.022	-0.022	0	%100
31	76	Z	-0.008	-0.008	0	%100
32	77	Z	-0.018	-0.018	0	%100
33	78	Z	-0.008	-0.008	0	%100
34	80	Z	-0.01	-0.01	0	%100
35	81	Z	-0.018	-0.018	0	%100
36	83	Z	-0.022	-0.022	0	%100
37	85	Z	-0.008	-0.008	0	%100
38	86	Z	-0.011	-0.011	0	%100
39	92	Z	-0.003	-0.003	0	%100
40	93	Z	-0.003	-0.003	0	%100
41	94	Z	-0.003	-0.003	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
42	96	Z	-0.003	-0.003	0	%100
43	100	Z	-0.003	-0.003	0	%100
44	103	Z	-0.003	-0.003	0	%100
45	104	Z	-0.003	-0.003	0	%100
46	105	Z	-0.003	-0.003	0	%100
47	107	Z	-0.003	-0.003	0	%100
48	111	Z	-0.003	-0.003	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.009	-0.009	0	%100
2	2	X	-0.008	-0.008	0	%100
3	3	X	-0.008	-0.008	0	%100
4	13	X	-0.018	-0.018	0	%100
5	14	X	-0.018	-0.018	0	%100
6	18	X	-0.003	-0.003	0	%100
7	24	X	-0.022	-0.022	0	%100
8	25	X	-0.022	-0.022	0	%100
9	31	X	-0.008	-0.008	0	%100
10	32	X	-0.008	-0.008	0	%100
11	35	X	-0.011	-0.011	0	%100
12	50	X	-0.003	-0.003	0	%100
13	51	X	-0.003	-0.003	0	%100
14	54	X	-0.003	-0.003	0	%100
15	56	X	-0.01	-0.01	0	%100
16	66	X	-0.003	-0.003	0	%100
17	34	X	-0.008	-0.008	0	%100
18	36	X	-0.009	-0.009	0	%100
19	37	X	-0.022	-0.022	0	%100
20	38	X	-0.008	-0.008	0	%100
21	39	X	-0.018	-0.018	0	%100
22	40	X	-0.008	-0.008	0	%100
23	46	X	-0.01	-0.01	0	%100
24	47	X	-0.018	-0.018	0	%100
25	57	X	-0.022	-0.022	0	%100
26	62	X	-0.008	-0.008	0	%100
27	64	X	-0.011	-0.011	0	%100
28	73	X	-0.008	-0.008	0	%100
29	74	X	-0.009	-0.009	0	%100
30	75	X	-0.022	-0.022	0	%100
31	76	X	-0.008	-0.008	0	%100
32	77	X	-0.018	-0.018	0	%100
33	78	X	-0.008	-0.008	0	%100
34	80	X	-0.01	-0.01	0	%100
35	81	X	-0.018	-0.018	0	%100
36	83	X	-0.022	-0.022	0	%100
37	85	X	-0.008	-0.008	0	%100
38	86	X	-0.011	-0.011	0	%100
39	92	X	-0.003	-0.003	0	%100
40	93	X	-0.003	-0.003	0	%100
41	94	X	-0.003	-0.003	0	%100
42	96	X	-0.003	-0.003	0	%100
43	100	X	-0.003	-0.003	0	%100
44	103	X	-0.003	-0.003	0	%100
45	104	X	-0.003	-0.003	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
46	105	X	-0.003	-0.003	0	%100
47	107	X	-0.003	-0.003	0	%100
48	111	X	-0.003	-0.003	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.001	-0.001	0	%100
2	2	Z	-0.001	-0.001	0	%100
3	3	Z	-0.001	-0.001	0	%100
4	13	Z	-0.002	-0.002	0	%100
5	14	Z	-0.002	-0.002	0	%100
6	18	Z	-0.0005	-0.0005	0	%100
7	24	Z	-0.002	-0.002	0	%100
8	25	Z	-0.002	-0.002	0	%100
9	31	Z	-0.0007	-0.0007	0	%100
10	32	Z	-0.0007	-0.0007	0	%100
11	35	Z	-0.002	-0.002	0	%100
12	50	Z	-0.0004	-0.0004	0	%100
13	51	Z	-0.0004	-0.0004	0	%100
14	54	Z	-0.0004	-0.0004	0	%100
15	56	Z	-0.002	-0.002	0	%100
16	66	Z	-0.0004	-0.0004	0	%100
17	34	Z	-0.0007	-0.0007	0	%100
18	36	Z	-0.001	-0.001	0	%100
19	37	Z	-0.002	-0.002	0	%100
20	38	Z	-0.001	-0.001	0	%100
21	39	Z	-0.002	-0.002	0	%100
22	40	Z	-0.001	-0.001	0	%100
23	46	Z	-0.002	-0.002	0	%100
24	47	Z	-0.002	-0.002	0	%100
25	57	Z	-0.002	-0.002	0	%100
26	62	Z	-0.0007	-0.0007	0	%100
27	64	Z	-0.002	-0.002	0	%100
28	73	Z	-0.0007	-0.0007	0	%100
29	74	Z	-0.001	-0.001	0	%100
30	75	Z	-0.002	-0.002	0	%100
31	76	Z	-0.001	-0.001	0	%100
32	77	Z	-0.002	-0.002	0	%100
33	78	Z	-0.001	-0.001	0	%100
34	80	Z	-0.002	-0.002	0	%100
35	81	Z	-0.002	-0.002	0	%100
36	83	Z	-0.002	-0.002	0	%100
37	85	Z	-0.0007	-0.0007	0	%100
38	86	Z	-0.002	-0.002	0	%100
39	92	Z	-0.0004	-0.0004	0	%100
40	93	Z	-0.0004	-0.0004	0	%100
41	94	Z	-0.0004	-0.0004	0	%100
42	96	Z	-0.0005	-0.0005	0	%100
43	100	Z	-0.0004	-0.0004	0	%100
44	103	Z	-0.0004	-0.0004	0	%100
45	104	Z	-0.0004	-0.0004	0	%100
46	105	Z	-0.0004	-0.0004	0	%100
47	107	Z	-0.0005	-0.0005	0	%100
48	111	Z	-0.0004	-0.0004	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.001	-0.001	0	%100
2	2	X	-0.001	-0.001	0	%100
3	3	X	-0.001	-0.001	0	%100
4	13	X	-0.002	-0.002	0	%100
5	14	X	-0.002	-0.002	0	%100
6	18	X	-0.0005	-0.0005	0	%100
7	24	X	-0.002	-0.002	0	%100
8	25	X	-0.002	-0.002	0	%100
9	31	X	-0.0007	-0.0007	0	%100
10	32	X	-0.0007	-0.0007	0	%100
11	35	X	-0.002	-0.002	0	%100
12	50	X	-0.0004	-0.0004	0	%100
13	51	X	-0.0004	-0.0004	0	%100
14	54	X	-0.0004	-0.0004	0	%100
15	56	X	-0.002	-0.002	0	%100
16	66	X	-0.0004	-0.0004	0	%100
17	34	X	-0.0007	-0.0007	0	%100
18	36	X	-0.001	-0.001	0	%100
19	37	X	-0.002	-0.002	0	%100
20	38	X	-0.001	-0.001	0	%100
21	39	X	-0.002	-0.002	0	%100
22	40	X	-0.001	-0.001	0	%100
23	46	X	-0.002	-0.002	0	%100
24	47	X	-0.002	-0.002	0	%100
25	57	X	-0.002	-0.002	0	%100
26	62	X	-0.0007	-0.0007	0	%100
27	64	X	-0.002	-0.002	0	%100
28	73	X	-0.0007	-0.0007	0	%100
29	74	X	-0.001	-0.001	0	%100
30	75	X	-0.002	-0.002	0	%100
31	76	X	-0.001	-0.001	0	%100
32	77	X	-0.002	-0.002	0	%100
33	78	X	-0.001	-0.001	0	%100
34	80	X	-0.002	-0.002	0	%100
35	81	X	-0.002	-0.002	0	%100
36	83	X	-0.002	-0.002	0	%100
37	85	X	-0.0007	-0.0007	0	%100
38	86	X	-0.002	-0.002	0	%100
39	92	X	-0.0004	-0.0004	0	%100
40	93	X	-0.0004	-0.0004	0	%100
41	94	X	-0.0004	-0.0004	0	%100
42	96	X	-0.0005	-0.0005	0	%100
43	100	X	-0.0004	-0.0004	0	%100
44	103	X	-0.0004	-0.0004	0	%100
45	104	X	-0.0004	-0.0004	0	%100
46	105	X	-0.0004	-0.0004	0	%100
47	107	X	-0.0005	-0.0005	0	%100
48	111	X	-0.0004	-0.0004	0	%100

Member Distributed Loads (BLC 8 : Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Y	-0.021	-0.021	0	%100
2	2	Y	-0.017	-0.017	0	%100
3	3	Y	-0.017	-0.017	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
4	13	Y	-0.022	-0.022	0	%100
5	14	Y	-0.022	-0.022	0	%100
6	18	Y	-0.016	-0.016	0	%100
7	24	Y	-0.022	-0.022	0	%100
8	25	Y	-0.022	-0.022	0	%100
9	31	Y	-0.014	-0.014	0	%100
10	32	Y	-0.014	-0.014	0	%100
11	35	Y	-0.028	-0.028	0	%100
12	50	Y	-0.014	-0.014	0	%100
13	51	Y	-0.014	-0.014	0	%100
14	54	Y	-0.014	-0.014	0	%100
15	56	Y	-0.028	-0.028	0	%100
16	66	Y	-0.014	-0.014	0	%100
17	34	Y	-0.014	-0.014	0	%100
18	36	Y	-0.021	-0.021	0	%100
19	37	Y	-0.022	-0.022	0	%100
20	38	Y	-0.017	-0.017	0	%100
21	39	Y	-0.022	-0.022	0	%100
22	40	Y	-0.017	-0.017	0	%100
23	46	Y	-0.028	-0.028	0	%100
24	47	Y	-0.022	-0.022	0	%100
25	57	Y	-0.022	-0.022	0	%100
26	62	Y	-0.014	-0.014	0	%100
27	64	Y	-0.028	-0.028	0	%100
28	73	Y	-0.014	-0.014	0	%100
29	74	Y	-0.021	-0.021	0	%100
30	75	Y	-0.022	-0.022	0	%100
31	76	Y	-0.017	-0.017	0	%100
32	77	Y	-0.022	-0.022	0	%100
33	78	Y	-0.017	-0.017	0	%100
34	80	Y	-0.028	-0.028	0	%100
35	81	Y	-0.022	-0.022	0	%100
36	83	Y	-0.022	-0.022	0	%100
37	85	Y	-0.014	-0.014	0	%100
38	86	Y	-0.028	-0.028	0	%100
39	92	Y	-0.014	-0.014	0	%100
40	93	Y	-0.014	-0.014	0	%100
41	94	Y	-0.014	-0.014	0	%100
42	96	Y	-0.016	-0.016	0	%100
43	100	Y	-0.014	-0.014	0	%100
44	103	Y	-0.014	-0.014	0	%100
45	104	Y	-0.014	-0.014	0	%100
46	105	Y	-0.014	-0.014	0	%100
47	107	Y	-0.016	-0.016	0	%100
48	111	Y	-0.014	-0.014	0	%100

Member Distributed Loads (BLC 28 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	62	Y	-0.016	0.0006163	1.155	2.309
2	73	Y	0.0006164	-0.016	0	1.155
3	73	Y	-0.016	-0.035	1.155	2.309
4	85	Y	-0.018	-0.016	0	2.078
5	31	Y	-0.035	-0.016	0	1.155
6	31	Y	-0.016	0.0006163	1.155	2.309
7	32	Y	-0.018	-0.016	0.231	2.309

Member Distributed Loads (BLC 28 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
8	34	Y	-0.018	-0.016	0.231	2.309
9	62	Y	-0.035	-0.016	0	1.155

Member Distributed Loads (BLC 29 : BLC 8 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	31	Y	-0.037	-0.017	0	1.155
2	31	Y	-0.017	0.0006552	1.155	2.309
3	32	Y	-0.019	-0.017	0.231	2.309
4	34	Y	-0.02	-0.017	0.231	2.309
5	62	Y	-0.038	-0.017	0	1.155
6	62	Y	-0.017	0.000678	1.155	2.309
7	73	Y	0.0006781	-0.017	0	1.155
8	73	Y	-0.017	-0.038	1.155	2.309
9	85	Y	-0.02	-0.017	0	2.078

Member Area Loads (BLC 1 : Dead)

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

Member Area Loads (BLC 8 : Ice)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	64	60	71	65	Y	Two Way	-0.011
2	111	110	109	108	Y	Two Way	-0.011
3	139	138	137	140	Y	Two Way	-0.011

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

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	102	L	Y	-0.5
2	170	L	Y	-0.5
3	147	L	Y	-0.5

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

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	85	L	Y	-0.5
2	172	L	Y	-0.5
3	148	L	Y	-0.5

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

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	171	L	Y	-0.5
2	146	L	Y	-0.5
3	191	L	Y	-0.5

Basic Load Cases

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

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 Dead	Yes	Y	1	1.4						
2	0.9 D + 1.6 - 0 W	Yes	Y	1	0.9	2	1.6				
3	0.9 D + 1.6 - 30 W	Yes	Y	1	0.9	2	1.386	3	0.8		
4	0.9 D + 1.6 - 60 W	Yes	Y	1	0.9	3	1.386	2	0.8		
5	0.9 D + 1.6 - 90 W	Yes	Y	1	0.9	3	1.6				
6	0.9 D + 1.6 - 120 W	Yes	Y	1	0.9	3	1.386	2	-0.8		
7	0.9 D + 1.6 - 150 W	Yes	Y	1	0.9	2	-1.386	3	0.8		
8	0.9 D + 1.6 - 180 W	Yes	Y	1	0.9	2	-1.6				
9	0.9 D + 1.6 - 210 W	Yes	Y	1	0.9	2	-1.386	3	-0.8		
10	0.9 D + 1.6 - 240 W	Yes	Y	1	0.9	3	-1.386	2	-0.8		
11	0.9 D + 1.6 - 270 W	Yes	Y	1	0.9	3	-1.6				
12	0.9 D + 1.6 - 300 W	Yes	Y	1	0.9	3	-1.386	2	0.8		
13	0.9 D + 1.6 - 330 W	Yes	Y	1	0.9	2	1.386	3	-0.8		
14	1.2 D + 1.6 - 0 W	Yes	Y	1	1.2	2	1.6				
15	1.2 D + 1.6 - 30 W	Yes	Y	1	1.2	2	1.386	3	0.8		
16	1.2 D + 1.6 - 60 W	Yes	Y	1	1.2	3	1.386	2	0.8		
17	1.2 D + 1.6 - 90 W	Yes	Y	1	1.2	3	1.6				
18	1.2 D + 1.6 - 120 W	Yes	Y	1	1.2	3	1.386	2	-0.8		
19	1.2 D + 1.6 - 150 W	Yes	Y	1	1.2	2	-1.386	3	0.8		
20	1.2 D + 1.6 - 180 W	Yes	Y	1	1.2	2	-1.6				
21	1.2 D + 1.6 - 210 W	Yes	Y	1	1.2	2	-1.386	3	-0.8		
22	1.2 D + 1.6 - 240 W	Yes	Y	1	1.2	3	-1.386	2	-0.8		

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
23	1.2 D + 1.6 - 270 W	Yes	Y	1	1.2	3	-1.6				
24	1.2 D + 1.6 - 300 W	Yes	Y	1	1.2	3	-1.386	2	0.8		
25	1.2 D + 1.6 - 330 W	Yes	Y	1	1.2	2	1.386	3	-0.8		
26	0.9 D + 1.6 - 0 W/Ice	Yes	Y	1	0.9	4	1.6			8	1
27	0.9 D + 1.6 - 30 W/Ice	Yes	Y	1	0.9	4	1.386	5	0.8	8	1
28	0.9 D + 1.6 - 60 W/Ice	Yes	Y	1	0.9	5	1.386	4	0.8	8	1
29	0.9 D + 1.6 - 90 W/Ice	Yes	Y	1	0.9	5	1.6			8	1
30	0.9 D + 1.6 - 120 W/Ice	Yes	Y	1	0.9	5	1.386	4	-0.8	8	1
31	0.9 D + 1.6 - 150 W/Ice	Yes	Y	1	0.9	4	-1.386	5	0.8	8	1
32	0.9 D + 1.6 - 180 W/Ice	Yes	Y	1	0.9	4	-1.6			8	1
33	0.9 D + 1.6 - 210 W/Ice	Yes	Y	1	0.9	4	-1.386	5	-0.8	8	1
34	0.9 D + 1.6 - 240 W/Ice	Yes	Y	1	0.9	5	-1.386	4	-0.8	8	1
35	0.9 D + 1.6 - 270 W/Ice	Yes	Y	1	0.9	5	-1.6			8	1
36	0.9 D + 1.6 - 300 W/Ice	Yes	Y	1	0.9	5	-1.386	4	0.8	8	1
37	0.9 D + 1.6 - 330 W/Ice	Yes	Y	1	0.9	4	1.386	5	-0.8	8	1
38	1.2 D + 1.0 - 0 W/Ice	Yes	Y	1	1.2	4	1			8	1
39	1.2 D + 1.0 - 30 W/Ice	Yes	Y	1	1.2	4	0.866	5	0.5	8	1
40	1.2 D + 1.0 - 60 W/Ice	Yes	Y	1	1.2	5	0.866	4	0.5	8	1
41	1.2 D + 1.0 - 90 W/Ice	Yes	Y	1	1.2	5	1			8	1
42	1.2 D + 1.0 - 120 W/Ice	Yes	Y	1	1.2	5	0.866	4	-0.5	8	1
43	1.2 D + 1.0 - 150 W/Ice	Yes	Y	1	1.2	4	-0.866	5	0.5	8	1
44	1.2 D + 1.0 - 180 W/Ice	Yes	Y	1	1.2	4	-1			8	1
45	1.2 D + 1.0 - 210 W/Ice	Yes	Y	1	1.2	4	-0.866	5	-0.5	8	1
46	1.2 D + 1.0 - 240 W/Ice	Yes	Y	1	1.2	5	-0.866	4	-0.5	8	1
47	1.2 D + 1.0 - 270 W/Ice	Yes	Y	1	1.2	5	-1			8	1
48	1.2 D + 1.0 - 300 W/Ice	Yes	Y	1	1.2	5	-0.866	4	0.5	8	1
49	1.2 D + 1.0 - 330 W/Ice	Yes	Y	1	1.2	4	0.866	5	-0.5	8	1
50	1.2 D + 1.5 LL a + Service - 0 W	Yes	Y	1	1.2	6	1			9	1.5
51	1.2 D + 1.5 LL a + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	9	1.5
52	1.2 D + 1.5 LL a + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	9	1.5
53	1.2 D + 1.5 LL a + Service - 90 W	Yes	Y	1	1.2	7	1			9	1.5
54	1.2 D + 1.5 LL a + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	9	1.5
55	1.2 D + 1.5 LL a + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	9	1.5
56	1.2 D + 1.5 LL a + Service - 180 W	Yes	Y	1	1.2	6	-1			9	1.5
57	1.2 D + 1.5 LL a + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	9	1.5
58	1.2 D + 1.5 LL a + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	9	1.5
59	1.2 D + 1.5 LL a + Service - 270 W	Yes	Y	1	1.2	7	-1			9	1.5
60	1.2 D + 1.5 LL a + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	9	1.5
61	1.2 D + 1.5 LL a + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	9	1.5
62	1.2 D + 1.5 LL b + Service - 0 W	Yes	Y	1	1.2	6	1			10	1.5
63	1.2 D + 1.5 LL b + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	10	1.5
64	1.2 D + 1.5 LL b + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	10	1.5
65	1.2 D + 1.5 LL b + Service - 90 W	Yes	Y	1	1.2	7	1			10	1.5
66	1.2 D + 1.5 LL b + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	10	1.5
67	1.2 D + 1.5 LL b + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	10	1.5
68	1.2 D + 1.5 LL b + Service - 180 W	Yes	Y	1	1.2	6	-1			10	1.5
69	1.2 D + 1.5 LL b + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	10	1.5
70	1.2 D + 1.5 LL b + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	10	1.5
71	1.2 D + 1.5 LL b + Service - 270 W	Yes	Y	1	1.2	7	-1			10	1.5
72	1.2 D + 1.5 LL b + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	10	1.5
73	1.2 D + 1.5 LL b + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	10	1.5
74	1.2 D + 1.5 LL c + Service - 0 W	Yes	Y	1	1.2	6	1			11	1.5
75	1.2 D + 1.5 LL c + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	11	1.5
76	1.2 D + 1.5 LL c + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	11	1.5
77	1.2 D + 1.5 LL c + Service - 90 W	Yes	Y	1	1.2	7	1			11	1.5

Load Combinations (Continued)

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

Envelope Node Reactions

	Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	2	max	1.482	5	2.723	38	1.662	2	5.609	26	1.491	11	0.415	23
2		min	-1.486	23	-0.65	8	-1.775	20	-2.063	8	-1.495	17	-0.302	5
3	62	max	1.427	5	2.774	42	1.893	14	0.844	13	1.868	3	1.127	12
4		min	-1.521	23	-0.359	12	-1.831	8	-2.603	31	-1.871	21	-4.844	42
5	120	max	1.367	17	2.677	46	2.036	14	0.902	3	1.878	7	4.578	34
6		min	-1.269	11	-0.382	4	-1.984	8	-2.952	33	-1.883	25	-1.166	4
7	Totals:	max	4.263	17	7.376	43	5.576	14						
8		min	-4.263	11	1.796	2	-5.576	20						

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	1	HSS4X4X2	0.711	0	37	0.165	0	y	37	70.173	73.278	8.24	8.24	2.128	H1-1b
2	2	C3.38X2.06X0.188	0.524	2.592	27	0.084	0.351	y	40	38.433	43.394	1.694	4.483	1.627	H1-1b
3	3	C3.38X2.06X0.188	0.492	0	37	0.087	2.241	z	20	38.433	43.394	1.694	4.483	1.626	H1-1b
4	13	PL3/8"x6	0.11	0.164	19	0.211	0	y	14	68.856	72.9	0.57	9.113	2.587	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
5	14	PL3/8"x6	0.108	0	15	0.172	0	y	14	68.856	72.9	0.57	9.113	2.086	H1-1b
6	18	PIPE_3.5X0.165	0.093	6.75	19	0.049	4		16	45.872	71.57	6.336	6.336	1.868	H1-1b
7	24	PL3/8"x6	0.192	0.208	14	0.271	0.208	y	49	70.733	72.9	0.57	9.113	2.447	H1-1b
8	25	PL3/8"x6	0.187	0	25	0.287	0	y	39	70.733	72.9	0.57	9.113	2.871	H1-1b
9	31	L2x2x4	0.352	0	19	0.036	2.309	z	31	23.349	30.586	0.691	1.577	1.5	H2-1
10	32	L2x2x4	0.291	2.309	20	0.049	0	y	40	23.349	30.586	0.691	1.577	1.5	H2-1
11	35	L7.63x2.5x6	0.468	1.604	8	0.104	0.334	y	38	73.845	118.523	1.798	13.674	1.232	H2-1
12	50	PIPE_2.88X0.203	0.142	5.667	17	0.05	5.667		18	35.361	70.548	5.01	5.01	3	H1-1b
13	51	PIPE_2.88X0.203	0.173	2.333	21	0.056	5.667		21	35.361	70.548	5.01	5.01	3	H1-1b
14	54	PIPE_2.88X0.203	0.18	7.812	25	0.185	8.75		14	23.996	70.548	5.01	5.01	2.503	H1-1b
15	56	L6.63x4.33x.25	0.255	3.25	18	0.027	3.25	z	24	49.975	86.751	2.311	6.976	1.5	H2-1
16	66	PIPE_2.88X0.203	0.159	2.333	19	0.055	2.333		20	35.361	70.548	5.01	5.01	3	H1-1b
17	34	L2x2x4	0.265	2.309	25	0.049	0	y	44	23.349	30.586	0.691	1.577	1.5	H2-1
18	36	HSS4X4X2	0.71	0	31	0.166	0	y	40	70.173	73.278	8.24	8.24	2.153	H1-1b
19	37	PL3/8"x6	0.164	0.208	25	0.267	0.208	y	41	70.733	72.9	0.57	9.113	1.777	H1-1b
20	38	C3.38X2.06X0.188	0.523	2.592	31	0.085	0.351	y	44	38.433	43.394	1.694	4.483	1.627	H1-1b
21	39	PL3/8"x6	0.111	0	19	0.141	0	y	18	68.856	72.9	0.57	9.113	2	H1-1b
22	40	C3.38X2.06X0.188	0.474	0	29	0.082	2.241	y	48	38.433	43.394	1.694	4.483	1.628	H1-1b
23	46	L6.63x4.33x.25	0.301	0	3	0.031	3.25	y	21	49.974	86.751	2.311	6.976	1.5	H2-1
24	47	PL3/8"x6	0.092	0.164	22	0.187	0	y	30	68.856	72.9	0.57	9.113	1.341	H1-1b
25	57	PL3/8"x6	0.149	0	17	0.287	0	y	43	70.733	72.9	0.57	9.113	2.947	H1-1b
26	62	L2x2x4	0.271	0	23	0.035	0	y	40	23.349	30.586	0.691	1.577	1.5	H2-1
27	64	L7.63x2.5x6	0.353	1.604	12	0.104	0.334	y	43	73.845	118.523	1.798	13.721	1.242	H2-1
28	73	L2x2x4	0.239	2.309	16	0.049	2.309	y	48	23.349	30.586	0.691	1.577	1.5	H2-1
29	74	HSS4X4X2	0.71	0	33	0.169	0	y	32	70.173	73.278	8.24	8.24	2.132	H1-1b
30	75	PL3/8"x6	0.151	0.085	14	0.269	0.208	y	45	70.733	72.9	0.57	9.113	1.369	H1-1b
31	76	C3.38X2.06X0.188	0.511	2.592	47	0.085	0.351	y	49	38.433	43.394	1.694	4.483	1.63	H1-1b
32	77	PL3/8"x6	0.086	0	23	0.169	0	y	57	68.856	72.9	0.57	9.113	1.979	H1-1b
33	78	C3.38X2.06X0.188	0.493	0	33	0.083	2.241	y	39	38.433	43.394	1.694	4.483	1.628	H1-1b
34	80	L6.63x4.33x.25	0.32	3.25	14	0.035	3.25	y	14	49.974	86.751	2.311	6.976	1.5	H2-1
35	81	PL3/8"x6	0.126	0.164	14	0.19	0	y	34	68.856	72.9	0.57	9.113	2.08	H1-1b
36	83	PL3/8"x6	0.19	0	21	0.285	0	y	47	70.733	72.9	0.57	9.113	2.883	H1-1b
37	85	L2x2x4	0.348	0	15	0.036	2.309	z	39	23.349	30.586	0.691	1.577	1.5	H2-1
38	86	L7.63x2.5x6	0.424	1.604	3	0.101	0.334	y	46	73.845	118.523	1.798	13.85	1.27	H2-1
39	92	PIPE_2.88X0.203	0.181	5.667	21	0.058	5.667		21	35.361	70.548	5.01	5.01	3	H1-1b
40	93	PIPE_2.88X0.203	0.204	2.333	14	0.058	5.667		25	35.361	70.548	5.01	5.01	3	H1-1b
41	94	PIPE_2.88X0.203	0.167	2.187	25	0.152	2.187		25	23.996	70.548	5.01	5.01	2.186	H1-1b
42	96	PIPE_3.5X0.165	0.108	1.25	14	0.066	4		20	45.872	71.57	6.336	6.336	1.725	H1-1b
43	100	PIPE_2.88X0.203	0.158	5.667	21	0.055	2.333		25	35.361	70.548	5.01	5.01	3	H1-1b
44	103	PIPE_2.88X0.203	0.18	5.667	25	0.065	5.667		25	35.361	70.548	5.01	5.01	3	H1-1b
45	104	PIPE_2.88X0.203	0.161	2.333	18	0.043	5.667		17	35.361	70.548	5.01	5.01	3	H1-1b
46	105	PIPE_2.88X0.203	0.167	7.812	21	0.17	8.75		21	23.996	70.548	5.01	5.01	2.438	H1-1b
47	107	PIPE_3.5X0.165	0.091	4	14	0.062	3		25	45.872	71.57	6.336	6.336	1.43	H1-1b
48	111	PIPE_2.88X0.203	0.185	5.667	14	0.041	5.667		15	35.361	70.548	5.01	5.01	3	H1-1b

APPENDIX B

(Additional Calculations)

PROJECT	**154500.003.01 - Swansea 2, MA**				**KSC**
SUBJECT	**Platform Mount Analysis**				
DATE	**09/07/21**	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	:	1.662	k
Vertical Shear	:	2.723	k
Horizontal Shear	:	1.482	k
Torsion	:	0.415	k.ft
Moment from Horizontal Forces	:	1.49	k.ft
Moment from Vertical Forces	:	5.609	k.ft

Bolt Parameters

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

Summary of Forces

Shear Resultant Force	:	3.10	k
Force from Horz. Moment	:	2.70	k
Force from Vert. Moment	:	10.16	k
Shear Load / Bolt	:	0.78	k
Tension Load / Bolt	:	0.42	k
Resultant from Moments / Bolt	:	5.26	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	:	**27.37%**		**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	:	**10.77%**		**OKAY**
Unity Check, Combined	:	**38.14%**		**OKAY**
Available Bearing Strength, ΦR_n	:	34.66	k/bolt	
Unity Check, Bolt Bearing	:	**2.24%**		**OKAY**

EXHIBIT 10

Construction Drawings

DISH Wireless L.L.C. SITE ID:

BOBDL00140A

DISH Wireless L.L.C. SITE ADDRESS:

51 STONY LANE
STAFFORD, CT 06075

SBA APPROVED

By Stephen Roth at 4:12:37 PM, 11/4/2021

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 FIBER NID (IF REQUIRED)

SITE INFORMATION

PROPERTY OWNER:	CASHMAN SUSAN A REV LIVING TRST
ADDRESS:	51 STONY LA STAFFORD SPRINGS, CT 06076
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	CT46148-A
TOWER APP NUMBER:	168267
COUNTY:	TOLLAND
LATITUDE (NAD 83):	42° 00' 59.1" N 42.016417 N
LONGITUDE (NAD 83):	72° 18' 35.8" W 72.309944 W
ZONING JURISDICTION:	RESIDENTIAL
ZONING DISTRICT:	101
PARCEL NUMBER:	09013134-14/43
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	T.B.D.
TELEPHONE COMPANY:	VERIZON

PROJECT DIRECTORY

APPLICANT:	DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	SBA COMMUNICATAIONS CORP. 8051 CONGRESS AVENUE BOCA RATON, FL 33487 (800) 487-7483
SITE DESIGNER:	B+T GROUP 1717 S. BOULDER AVE, SUITE 300 TULSA, OK 74119 (918) 587-4630
SITE ACQUISITION:	RYAN LYNCH RYAN.LYNCH@DISH.COM
CONST. MANAGER:	JAVIER SOTO JAVIER.SOTO@DISH.COM
RF ENGINEER:	BOSSENER CHARLES BOSSENER.CHARLES@DISH.COM

CONNECTICUT CODE OF COMPLIANCE

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

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

SITE PHOTO

DIRECTIONS

DIRECTIONS FROM SOUTHBRIDGE MUNICIPAL AIRPORT:

TAKE PLEASANT ST TO MA-131 W/MAIN ST. HEAD SOUTH ON CLEMENCE HILL RD TOWARD AIRPORT ACCESS RD, TURN RIGHT ONTO AIRPORT ACCESS RD, TURN LEFT ONTO PLEASANT ST, CONTINUE ON MA-131 W/MAIN ST. TAKE I-84, CT-190 W AND CT-32 N/MONSON RD TO STONY LN IN STAFFORD. TURN RIGHT ONTO MA-131 W/MAIN ST, TURN RIGHT TOWARD US-20 E, SLIGHT RIGHT ONTO US-20 E, USE THE RIGHT LANE TO TAKE THE I-84 W RAMP TO HARTFORD CONNECTICUT. MERGE WITH I-84, TAKE EXIT 73 FOR CT-190 TOWARD STAFFORD SPRINGS. TURN RIGHT ONTO CT-190 W, AT THE ROUNDABOUT, TAKE THE 1ST EXIT ONTO MAIN ST. SLIGHT RIGHT ONTO CT-32 N/MONSON RD TURN RIGHT ONTO STONY LN, ARRIVE AT BOBDL00140A.

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

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.

VICINITY MAP

NO SCALE

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

SBA
8051 CONGRESS AVENUE
BOCA RATON, FL 33487

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

10/21/21

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
BLJ	BLJ	JW

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	9/10/21	ISSUED FOR REVIEW
0	10/21/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149492.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00140A
51 STONY LANE
STAFFORD, CT 06075

SHEET TITLE

TITLE SHEET

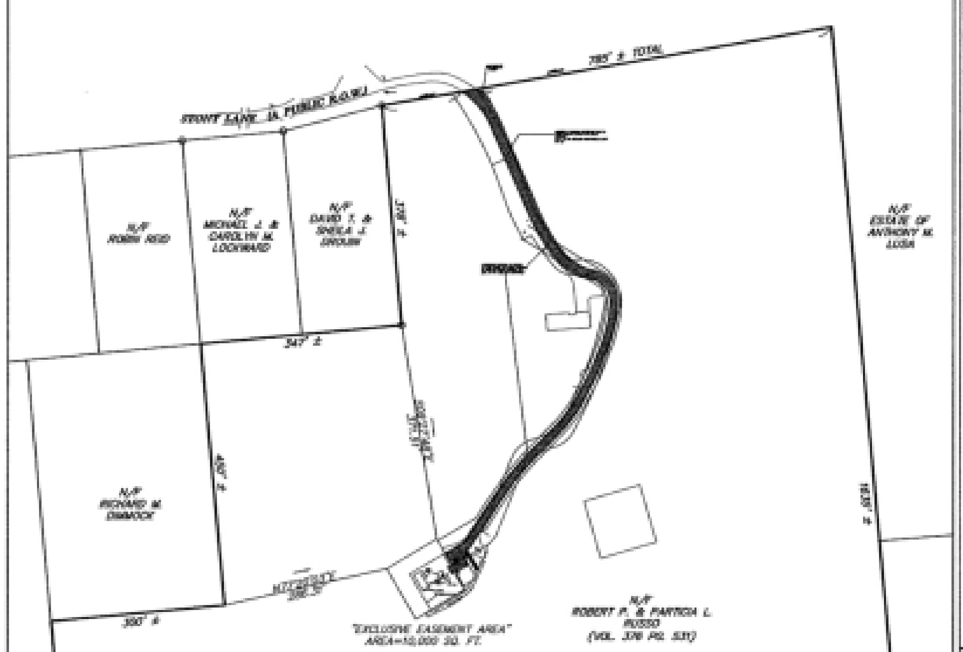
SHEET NUMBER

T-1

NOTES:

1. PROPERTY IS IN THE "AAA"-RURAL AND SINGLE FAMILY RESIDENCE ZONE.
2. PROPERTY IS IN FLOOD "ZONE C" AREA OF MINIMAL FLOODING AS DEPICTED ON THE NATIONAL FLOOD INSURANCE PROGRAM FIRM FLOOD INSURANCE RATE MAP TOWN OF STAFFORD CONNECTICUT TOLLAND COUNTY PANEL 15 OF 30 COMMUNITY-PANEL NUMBER 0901320015B EFFECTIVE DATE: JUNE 1, 1982 FEDERAL EMERGENCY MANAGEMENT AGENCY.
3. HORIZONTAL DATUM IS BASED ON NAD 83 AND THE VERTICAL DATUM IS BASED ON NAVD 88.

UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES OR GOVERNMENTAL AGENCIES, FROM PAROLE TESTIMONY AND FROM OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO DESIGN PROFESSIONALS, INC. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION.
CALL BEFORE YOU DIG 1-8



SPECIAL EXCEPTIONS TO STEWART TITLE GUARANTY COMPANY COMMITMENT SCHEDULE B-SECTION SECTION II, FILE NUMBER 1015593 EFFECTIVE DATE JULY 28, 2010.

1. ASSESSOR'S LAND CERTIFICATE DATED JANUARY 2, 2001 IN VOLUME 280 AT PAGE 582 OF SAID LAND RECORDS. (FOREST LAND 40.2 ACRES NOT PLOTTABLE)
2. MEMORANDUM OF PCS SITE AGREEMENT DATED MAY 1,2001 AND RECORDED MARCH 25, 2002 IN VOLUME 411 AT PAGE 62 OF SAID LAND RECORDS. (PLOTTED)
3. EASEMENT GRANTED TO THE CONNECTICUT LIGHT AND POWER COMPANY BY INSTRUMENT DATED JULY 22, 2003 AND RECORDED IN VOLUME 448 AT PAGE 318 OF SAID LAND RECORDS. (PLOTTED)
4. MEMORANDUM OF LEASE AGREEMENT BY AND BETWEEN SPRINT SPECTRUM REALTY COMPANY, L.P. (LANDLORD) AND CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS (TENANT) DATED DECEMBER 18, 2007 AND RECORDED JANUARY 10, 2008 IN VOLUME 540 AT PAGE 748 OF SAID LAND RECORDS. (NOT PLOTTABLE)
5. ASSIGNMENT AND ASSUMPTION OF LEASE DATED SEPTEMBER 23, 2009 AND RECORDED IN VOLUME 550 AT PAGE 424 OF SAID LAND RECORDS. (PORTIONS PLOTTED)

LEGAL DESCRIPTION OF EXCLUSIVE EASEMENT AREA:
EXHIBIT C

A CERTAIN PIECE OR PARCEL OF LAND, IN THE TOWN OF STAFFORD, COUNTY OF TOLLAND AND STATE OF CONNECTICUT SHOWN AS "PROPOSED 13 FOOT WIDE ACCESS AND UTILITY EASEMENT" ON THE MAP REFERRED TO ON EXHIBIT B ABOVE, AND BEING MORE PARTICULARLY BOUNDED AND DESCRIBED AS FOLLOWS:

COMMENCING AT AN IRON PIN AT THE SOUTHEASTERLY CORNER OF LAND NOW OR FORMERLY DAVID T. & SHEILA J. DROUIN;

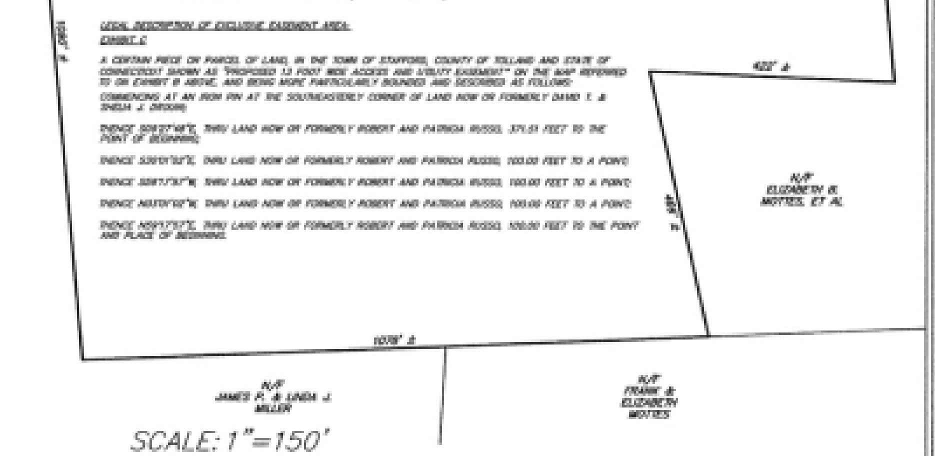
THENCE S09°27'48"E, THRU LAND NOW OR FORMERLY ROBERT AND PATRICIA RUSSO, 371.51 FEET TO THE POINT OF BEGINNING;

THENCE S30°01'02"E, THRU LAND NOW OR FORMERLY ROBERT AND PATRICIA RUSSO, 100.00 FEET TO A POINT;

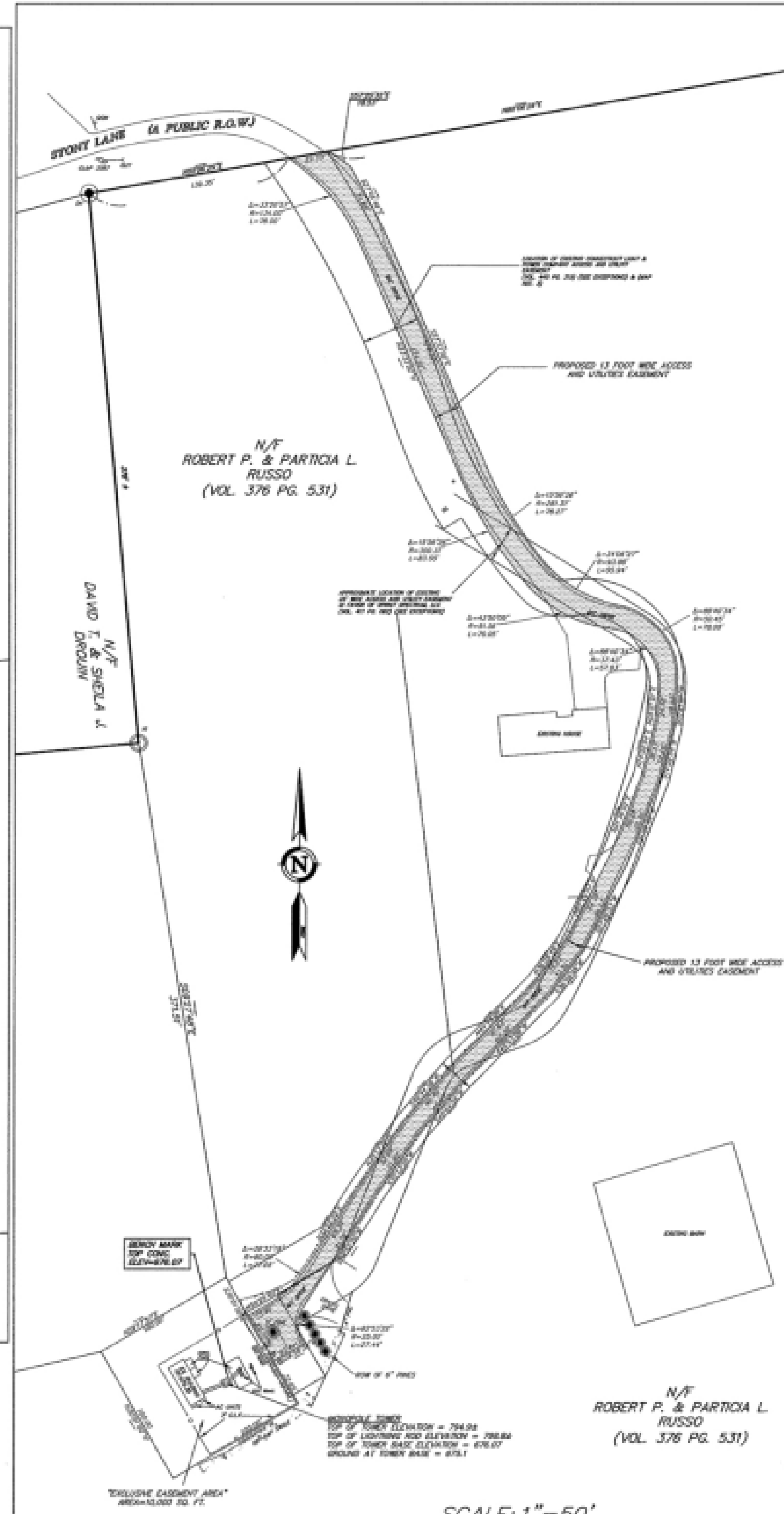
THENCE S59°17'57"W, THRU LAND NOW OR FORMERLY ROBERT AND PATRICIA RUSSO, 100.00 FEET TO A POINT;

THENCE N30°01'02"W, THRU LAND NOW OR FORMERLY ROBERT AND PATRICIA RUSSO, 100.00 FEET TO A POINT;

THENCE N59°17'57"E, THRU LAND NOW OR FORMERLY ROBERT AND PATRICIA RUSSO, 100.00 FEET TO THE POINT AND PLACE OF BEGINNING.



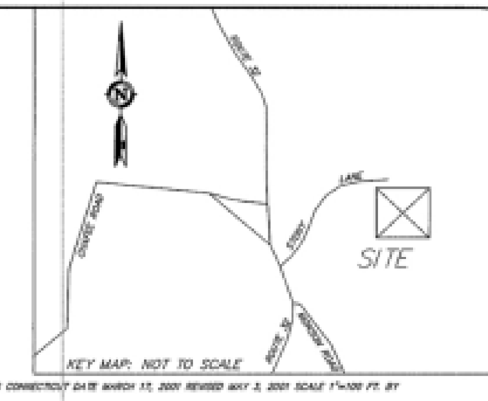
SCALE: 1"=150'



SCALE: 1"=50'

LEGEND

○	EXISTING IRON PIN
▫	EXISTING MONUMENT
	EXISTING UTILITY POLE
	EXISTING CATCH BASIN AND PIPE
	EXISTING SANITARY MANHOLE AND PIPE
	EXISTING WATER MAIN AND HYDRANT
	STONE WALL
x.x	EXISTING SPOT GRADE
	EXISTING TREELINE
	EXISTING PROPERTY LINE
	PROPOSED EASEMENT BOUNDARY



KEY MAP: NOT TO SCALE

MAP REFERENCES:

1. CELL SITE MAP PREPARED FOR SPRINT PCS RUSSO PROPERTY 51 STONY LANE STAFFORD SPRINGS CONNECTICUT DATE MARCH 17, 2001 REVISED MAY 3, 2001 SCALE 1"=100 FT. BY COMPASS ENGINEERING GROUP, LLC
2. SUBDIVISION PLAN LAND OF ROBERT P., SR. & PATRICIA L. RUSSO STAFFORD, CONNECTICUT SCALE 1"=100' DATE 10/21/88 REVISED 12/28/88 BY SCHINDLER SRUVEYS.
3. UTILITY EASEMENT PLAN MAP SHOWING EASEMENT AREA TO BE GRANTED TO THE CONNECTICUT LIGHT AND POWER COMPANY ACROSS THE PROPERTY OF ROBERT P. & PATRICIA L. RUSSO 51 STONY LANE STAFFORD SPRINGS, CONNECTICUT CL&P. FILE NUMBER E3163 SCALE: 1"=50' DATE: MAY 20, 2003 BY: McFARLAND-JOHNSON, INC.
4. RESUBDIVISION PLAN PREPARED FOR ROBERT & PATRICIA RUSSO 51 STONY LANE STAFFORD SPRINGS CONNECTICUT DATE 06/05/01 REVISED 10/22/01 SCALE 1"=40' BY COMPASS ENGINEERING GROUP, LLC.
5. PLAN OF SUBDIVISION STONY LANE, STAFFORD, CONNECTICUT PREPARED FOR: P.C. ASSOCIATES SCALE 1"=40' DATE 2-13-89 REVISED TO 3/8/89 BY SREENATH & SYMONDS.
6. REVISED SUBDIVISION PLAN PREPARED FOR ALLEN L. BACCHIOCHI, ETAL. STONY LANE STAFFORD, CONN. SCALE: 1"=100' JULY 27, 1993 BY WILLIAM W. SYMONDS, SR. LAND SURVEYING.
7. BOUNDARY MAP PREPARED FOR: P.C. ASSOCIATES STONY LANE STAFFORD, CONN. SCALE: 1"=40' DATE: FEB. 17, 1988 BY SREENATH & SYMONDS.

LEGAL DESCRIPTION OF PARENT PARCEL- (VOLUME 376 PAGE 531 OF THE STAFFORD LAND RECORDS)

PARCEL ONE:
BOUNDED NORTHERLY BY STONY LANE SO-CALLED, EASTERLY BY LAND NOW OR FORMERLY OF MYRON LEONARD, SOUTHERLY BY LAND NOW OR FORMERLY GEORGE SCHNEIDER AND FORMERLY OF WILLIAM CRAIG, WESTERLY BY CONN. ROUTE 32, CONTAINING FORTY ACRES MORE OR LESS.

EXCEPTING HOWEVER FROM SAID PARCEL ONE THE FOLLOWING PIECES OR PARCELS OF LAND:

1. THOSE PARCELS HAVING BEEN PREVIOUSLY CONVEYED, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:
   A. LOT #2, AS SHOWN ON A MAP ENTITLED "RESUBDIVISION PLAN PREPARED FOR P.C. ASSOCIATES TOPOGRAPHY PLAN STONY LANE, STAFFORD, CONNECTICUT SREENATH & SYMONDS CIVIL ENGINEERS & LAND SURVEYORS 139 HAZARD AVENUE, ENFIELD, CONNECTICUT 06082 SCALE 1"=100' PROJECT NO. 3443 DATE AUG 3, 1990 SHEET NO. 1 OF 3 REVISION DATE 11/05/90", WHICH MAP IS ON FIELD IN THE OFFICE OF THE TOWN CLERK OF STAFFORD. (SAID PARCEL HAVING BEEN CONVEYED TO DONALD M. STEVENS ON FEBRUARY 23, 1988 AND RECORDED IN VOLUME 250 AT PAGE 239).
   B. A PARCEL CONTAINING 30 ACRES MORE OR LESS CONVEYED TO JOHN E. JULIAN ON DECEMBER 28, 1990 AND RECORDED IN THE TOWN OF STAFFORD LAND RECORDS IN VOLUME 281 AT PAGE 194.
   C. LOT #8 AS SHOWN ON THE AFOREMENTIONED PLAN (SAID PARCEL HAVING BEEN CONVEYED TO CAREN L. ALEXANDER ON AUGUST 12, 1999 AND RECORDED IN THE TOWN OF STAFFORD LAND RECORDS IN VOLUME 374 AT PAGE 433).
   D. LOT #8 AS SHOWN ON THE AFOREMENTIONED PLAN. (SAID PARCEL HAVING BEEN CONVEYED TO ALLEN BACCHIOCHI ON AUGUST 18, 1999 AND RECORDED IN THE TOWN OF STAFFORD LAND RECORDS IN VOLUME 375 AT PAGE 56).

2. LOTS #4,5 AND 7 AS SHOWN ON THE AFOREMENTIONED PLAN, OWNERSHIP OF WHICH THE GRANTEE IS RETAINING.

PARCEL TWO:
BEGINNING AT THE HIGHWAY, AT THE CORNER OF LAND OWNED BY ARTHUR BLODGETT; THENCE RUNNING SOUTH 100 RODS TO A STAKE AND STONES; THENCE WEST 2° SOUTH 20 RODS TO A STAKE AND STONES; THENCE SOUTH 3° EAST 24 RODS TO A STAKE AND STONES; THENCE WESTERLY ON LAND FORMERLY OF ZENA D. WASHBURN TO A ROCK AND HEAP OF STONES; THENCE NORTH 12° EAST TO THE INTERSECTION WITH THE EAST LINE OF LAND OF THE ESTATE OF FRANCIS W. CHAFFEE; THENCE NORTHERLY ON SAID LINE TO THE HIGHWAY; THENCE EASTERLY ON THE HIGHWAY TO THE FIRST MENTIONED BOUNDS; CONTAINING 60 ACRES MORE OR LESS AS BOUNDED:

NORTHERLY: BY STONY LANE ROAD, SO CALLED;
EASTERLY: BY LAND NOW OR FORMERLY OF ARTHUR BLODGETT AND ESTATE OF CHARLES SCRANTON;
SOUTHERLY: BY LAND NOW OR FORMERLY OF ZENA D. WASHBURN; AND
WESTERLY: BY LAND NOW OR FORMERLY OF ESTATE OF FRANCIS W. CHAFFEE.

AND EXCEPTING, HOWEVER, FORM THE ABOVE REFERENCED PARCELS ONE AND TWO, A CERTAIN PIECE OR PARCEL OF LAND CONVEYED BY P.C. ASSOCIATES TO THE TOWN OF STAFFORD ON MARCH 14, 1989 AND RECORDED IN THE STAFFORD LAND RECORDS IN VOLUME 265 AT PAGE 19.

IT IS THE INTENT AND PURPOSE OF THIS DEED TO CONVEY TO THE GRANTEE HEREIN ALL OF THE GRANTOR'S INTEREST IN AND TO THE FOLLOWING: (1) LOT 3, AS SHOWN AND DESIGNATED ON THE AFOREMENTIONED PLAN; AND (2) PARCELS 3-5 AND 12, EACH AS SHOWN AND DESIGNATED ON A CERTAIN MAP OR PLAN ENTITLED "REVISED SUBDIVISION PLAN PREPARED FOR ALLEN L. BACCHIOCHI, ET AL. STONY LANE STAFFORD, CONN. SCALE 1"=100' JULY 27, 1993 WILLIAM W. SYMONDS, SR. LAND SURVEYING STAFFORD, CONN. LOUREIRO ENGINEERING ASSOCIATES P.C. PLAINVILLE, CONN.", WHICH MAP OR PLAN IS ON FILE IN THE OFFICE OF THE TOWN CLERK OF STAFFORD.

LEGAL DESCRIPTION OF ACCESS & UTILITIES EASEMENT:
EXHIBIT B
A CERTAIN PIECE OR PARCEL OF LAND, IN THE TOWN OF STAFFORD, COUNTY OF TOLLAND AND STATE OF CONNECTICUT SHOWN AS "EXCLUSIVE EASEMENT AREA AREA=10,000 SQ.FT." ON A MAP ENTITLED: "PLAN PREPARED FOR TOWERCO ASSETS LLC 51 STONY LANE STAFFORD CONNECTICUT EASEMENT-LEASE PLAN DESIGN: LRG DRAWN: LRG CHECKED: LRG JOB NO.: 2942 DATE: 07/29/10 DRAWING NO. JOBS\2942\SURVEY\2942 BASE.DWG DESIGN PROFESSIONALS CIVIL & TRAFFIC * ENGINEERS SURVEYORS LANDSCAPE ARCHITECTS *PLANNERS * GIS * GPS 425 SULLIVAN AVENUE, PO BOX 1167, SOUTH WINDSOR, CONNECTICUT 06074 TEL 860*291*8755 FAX 860*291*8757", REVISED THROUGH 9-02-10 AND BEING MORE PARTICULARLY BOUNDED AND DESCRIBED AS FOLLOWS:

COMMENCING AT A DRILL HOLE IN STONE WALL AT THE NORTHEAST CORNER OF LAND NOW OR FORMERLY DAVID T. & SHEILA J. DROUIN;

THENCE N80°08'29"E ALONG THE SOUTHERLY RIGHT-OF-WAY LINE OF STONY LANE, 139.35 FEET TO THE POINT OF BEGINNING;

THENCE N80°08'29"E ALONG THE SOUTHERLY RIGHT-OF-WAY LINE OF STONY LANE, 27.70 FEET TO A POINT;

THENCE S 37°33'32"E THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, 18.53 FEET TO A POINT;

THENCE S37°46'46"E THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, 51.86 FEET TO A POINT;

THENCE S23°33'32"E THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, 174.22 FEET TO A POINT;

THENCE IN A SOUTHEASTERLY DIRECTION, THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, ALONG A CURVE TO THE LEFT HAVING A DELTA OF 15°58'26", RADIUS OF 281.31 FEET AND AN ARC LENGTH OF 78.27 FEET TO A POINT;

THENCE IN A SOUTHEASTERLY AND EASTERLY DIRECTION, THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO ALONG A CURVE TO THE LEFT HAVING A DELTA OF 34°06'27", RADIUS OF 93.98 FEET AND AN ARC LENGTH OF 55.94 FEET TO A POINT;

THENCE IN A EASTERLY AND SOUTHERLY DIRECTION, THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, ALONG A CURVE TO THE RIGHT HAVING A DELTA OF 88°40'34", RADIUS OF 50.45 FEET AND AN ARC LENGTH OF 78.08 FEET TO A POINT;

THENCE S05°21'01"W, THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, 26.45 FEET TO A POINT;

THENCE S14°02'04"W, THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, 38.85 FEET TO A POINT;

THENCE S21°38'02"W, THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, 81.78 FEET TO A POINT;

THENCE S27°20'03"W, THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, 66.13 FEET TO A POINT;

THENCE S36°58'48"W, THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, 37.21 FEET TO A POINT;

THENCE S44°43'09"W, THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, 82.26 FEET TO A POINT;

THENCE S40°44'38"W, THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, 48.82 FEET TO A POINT;

THENCE S35°13'20"W, THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, 51.89 FEET TO A POINT;

THENCE S32°02'26"W, THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, 91.06 FEET TO A POINT;

THENCE IN A SOUTHERLY DIRECTION THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, ALONG A CURVE TO THE LEFT HAVING A DELTA OF 62°53'22", RADIUS OF 25.00 FEET AND AN ARC LENGTH OF 27.44 FEET TO A POINT;

THENCE S30°58'58"W, THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, 23.41 FEET TO A POINT;

THENCE N30°01'02"W, THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, 35.77 FEET TO A POINT;

THENCE N59°25'40"E, THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO ,15.96 FEET TO A POINT;

THENCE ON A NORTHEASTERLY DIRECTION ALONG A CURVE TO THE LEFT, HAVING DELTA OF 26°32'19", RADIUS OF 80.00 FEET AND AN ARC LENGTH OF 37.06 FEET, TO A POINT;

THENCE N32°02'26"E, THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, 88.24 FEET TO A POINT;

THENCE N35°13'20"E, THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, 52.89 FEET TO A POINT;

THENCE N40°44'38"E, THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, 49.70 FEET TO A POINT;

THENCE N44°43'09"E THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, ,81.83 FEET TO A POINT;

THENCE N36°58'48"E THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, 38.23 FEET TO A POINT;

THENCE N27°20'03"E THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, 64.38 FEET TO A POINT;

THENCE N21°38'02"E THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, 60.28 FEET TO A POINT;

THENCE N14°02'04"E THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, 36.13 FEET TO A POINT;

THENCE N05°21'01"E THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, 24.58 FEET TO A POINT;

THENCE IN A NORTHERLY DIRECTION THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, ALONG A CURVE TO THE LEFT HAVING A DELTA OF 88°40'34", RADIUS OF 37.43 FEET AND AN ARC LENGTH OF 57.93 FEET, TO A POINT;

THENCE IN A WESTERLY DIRECTION THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, ALONG A CURVE TO THE RIGHT HAVING A DELTA OF 43°50'08", RADIUS OF 81.56 FEET AND AN ARC LENGTH OF 76.05 FEET, TO A POINT;

THENCE IN A NORTHWESTERLY DIRECTION THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, ALONG A CURVE TO THE LEFT HAVING A DELTA OF 15°58'26", RADIUS OF 300.31 FEET AND AN ARC LENGTH OF 83.55 FEET, TO A POINT;

THENCE N23°33'32"W THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, 174.22 FEET TO A POINT;

THENCE IN A NORTHWESTERLY DIRECTION THRU PROPERTY NOW OR FORMERLY ROBERT P. & PATRICIA L. RUSSO, ALONG A CURVE TO THE LEFT HAVING A DELTA OF 33°20'57", RADIUS OF 134.00 FEET AND AN ARC LENGTH OF 78.00 FEET, TO THE POINT AND PLACE OF BEGINNING.

CERTIFICATION:

I HEREBY CERTIFY TO TCO ASSETS LAND LLC A DELAWARE LIMITED LIABILITY COMPANY AND STEWART TITLE GUARANTY COMPANY THAT THIS PLAN AND FIELD SURVEY HAS BEEN PREPARED BASED ON STEWART TITLE GUARANTY COMPANY COMMITMENT FOR TITLE INSURANCE FILE NUMBER: 1015593 EFFECTIVE DATE: JULY 28, 2010 AT 8:00 A.M. AND TO THE "STANDARDS AND ACCURACIES" DESCRIBED BELOW.

SURVEY NOTES:

1. THIS SURVEY AND MAP HAS BEEN PREPARED IN ACCORDANCE WITH SECTIONS 20-300b-1 THRU 20-300b-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES - "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT, PREPARED AND ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC., SEPTEMBER 26, 1996.

- TYPE OF SURVEY IS AN EASEMENT SURVEY AND IS INTENDED TO DEPICT THE LOCATION OF IMPROVEMENTS RELATIVE TO PROPERTY LINES.
- THIS IS A DEPENDENT RESURVEY BASED ON MAP REFERENCE #1.
- HORIZONTAL ACCURACY MEETS CLASS A-2 STANDARDS FOR THE EASEMENT AND LEASE AREA AND CLASS D FOR THE MAIN PARCEL. VERTICAL ACCURACY MEETS CLASS T-2 STANDARDS.

STATE OF CONNECTICUT LAWRENCE R. GEISSLER, JR. No. 12207 LICENSED LAND SURVEYOR

SITE CT2025

1. UNLESS OTHERWISE NOTED, EXISTING UTILITY LOCATIONS AS SHOWN, ARE BASED ON AVAILABLE INFORMATION. ALL EXISTING UTILITIES SHOULD BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
2. ALL UTILITIES ARE TO BE STAKED IN THE FIELD BY A LICENSED LAND SURVEYOR PRIOR TO CONSTRUCTION.
3. THIS PLAN IS INVALID UNLESS IT BEARS THE IMPRESSION SEAL AND ORIGINAL SIGNATURE OF THE PROFESSIONAL ENGINEER/SURVEYOR.

REVISIONS

NO.	DATE	DESCRIPTION	BY
2.	09-02-10	REVISE METES & BOUNDS DESCRIPTION	LRG
1	08-30-10	CLIENT COMMENTS	LRG

TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

Lawrence R Geissler

LAWRENCE R. GEISSLER, JR. 12207 LIC. NO.

GRAPHIC SCALE
(IN FEET)
1 inch = (AS NOTED)

design professionals
civil & traffic engineers · surveyors
landscape architects · planners · gis · gps
425 Sullivan Avenue, PO Box 1167, South Windsor, Connecticut 06074
Tel. 860-291-8755
Fax 860-291-8757

EASEMENT-LEASE PLAN

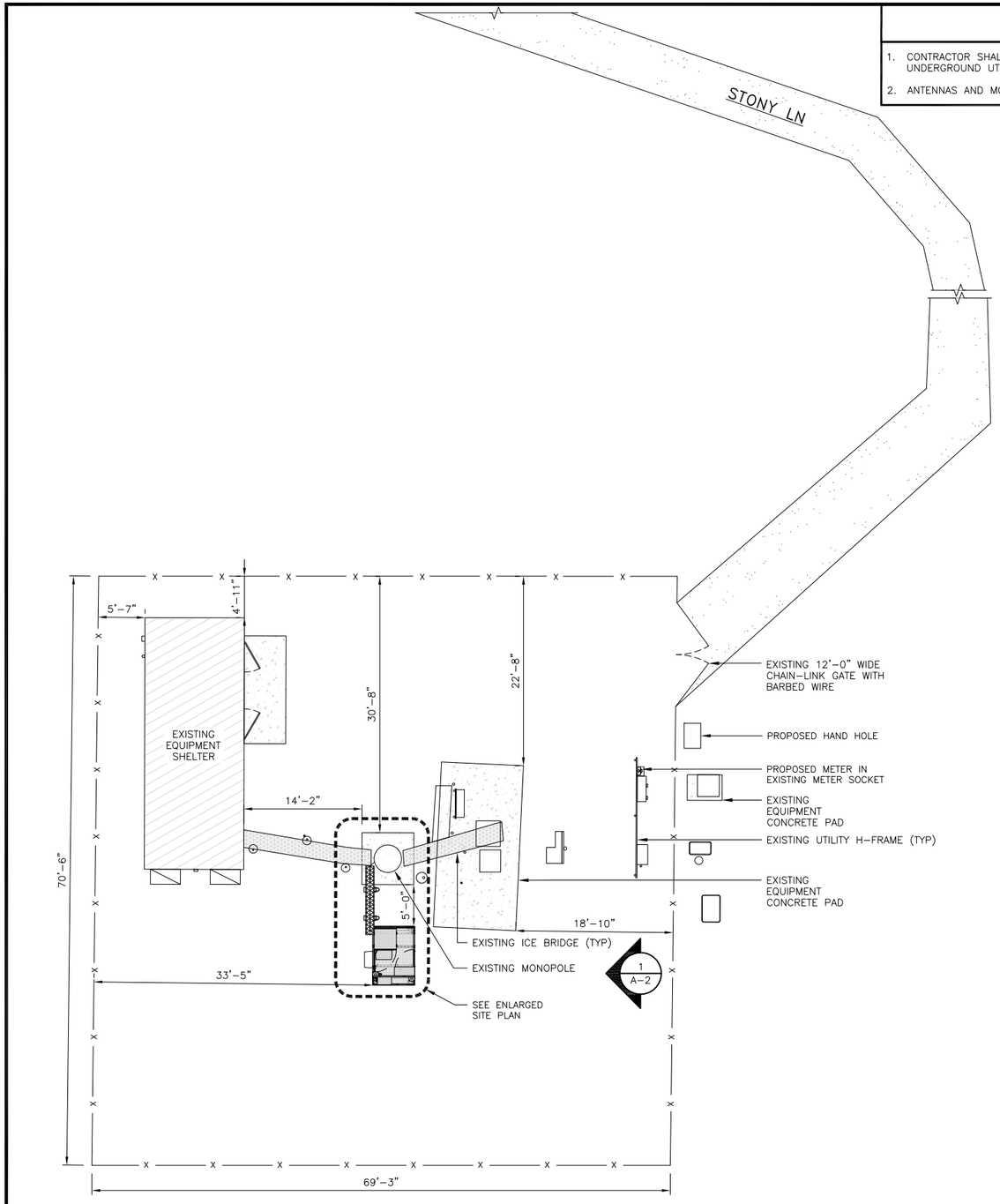
DESIGN: LRG | DRAWN: LRG | CHECKED: LRG
JOB NO.: 2942 | DATE: 07/29/10
DRAWING NO.: jobs\2942\survey\2942 base.dwg

PLAN PREPARED FOR:
TOWERCO ASSETS LLC
51 STONY LANE
STAFFORD CONNECTICUT

SHEET 1 / 1

NOTES

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



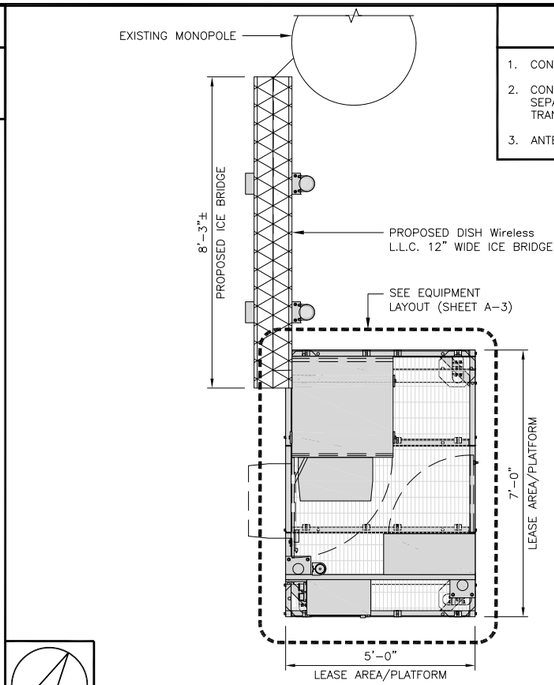
OVERALL SITE PLAN

8' 4' 0 8' 16'
1/8"=1'-0"

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

12" 6" 0 1' 2' 3' 4' 5'
1/2"=1'-0"

2

NOT USED

3

dish wireless.
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

SBA
8051 CONGRESS AVENUE
BOCA RATON, FL 33487

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

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
BLJ	BLJ	JW

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	9/10/21	ISSUED FOR REVIEW
0	10/21/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149492.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00140A
51 STONY LANE
STAFFORD, CT 06075

SHEET TITLE

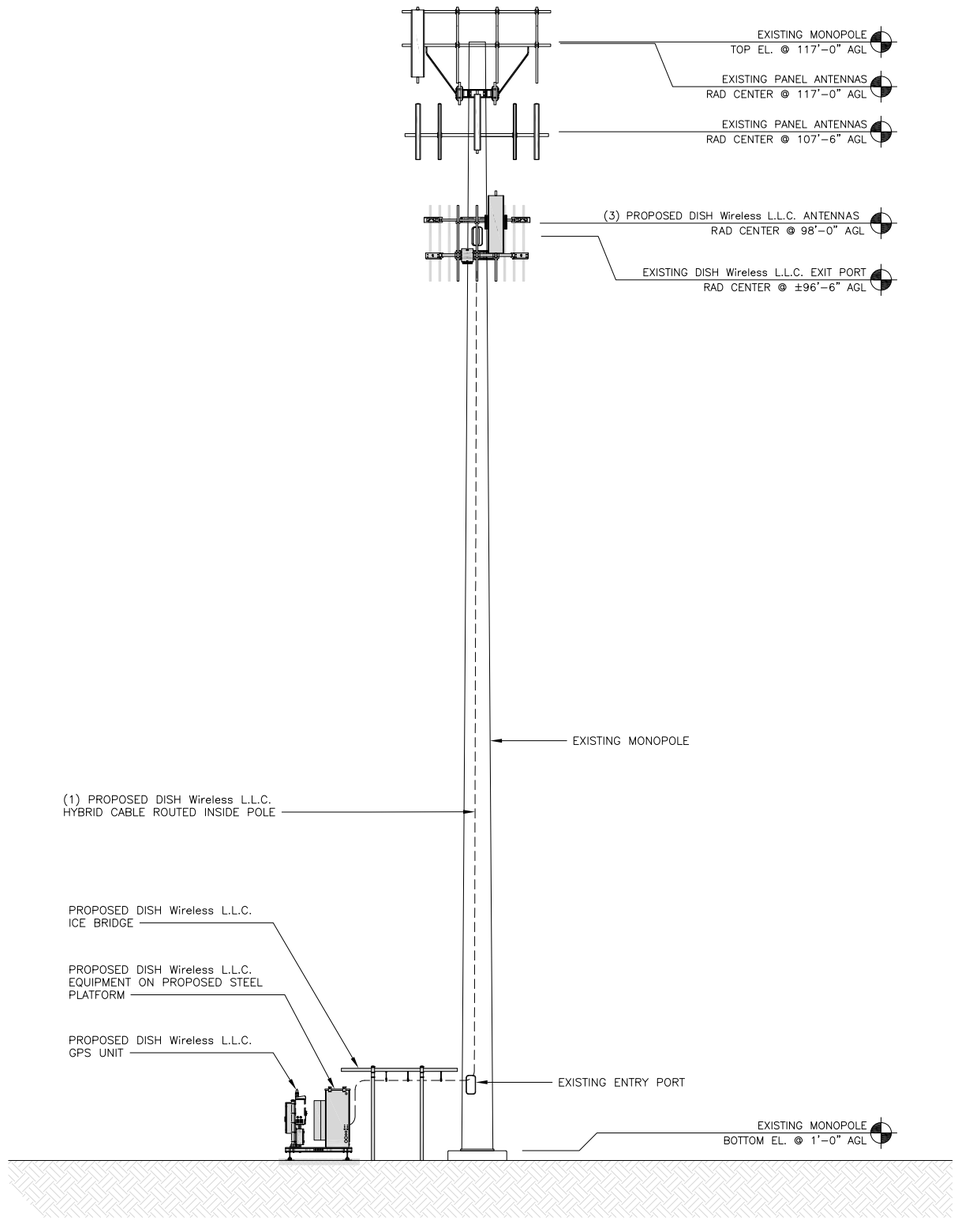
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER

A-1

NOTES

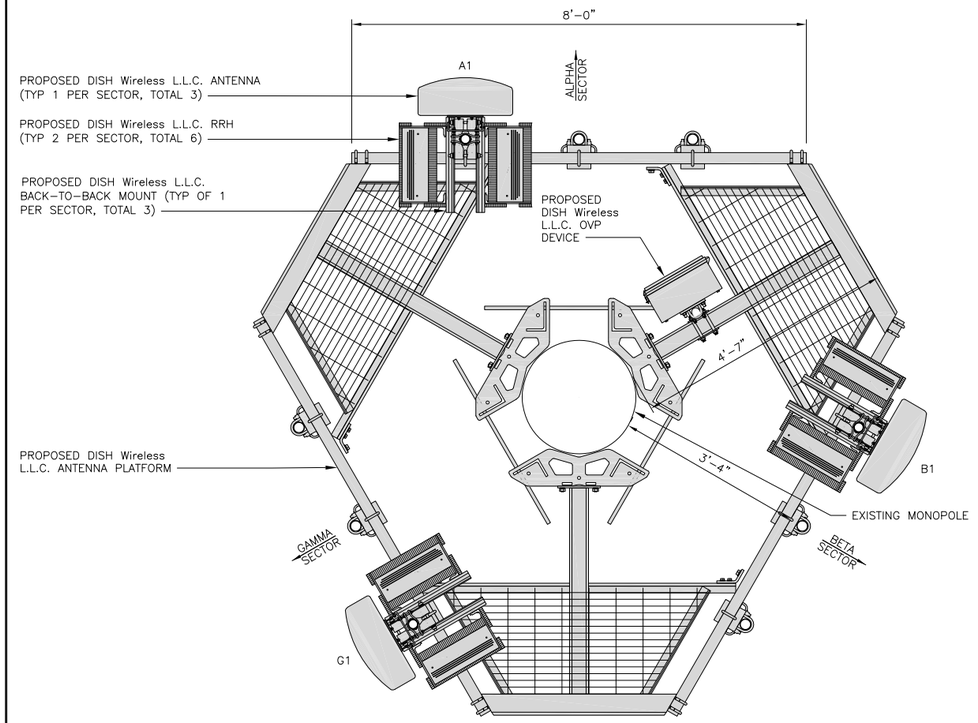
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



PROPOSED EAST ELEVATION

8' 4' 0 8' 16'
1/8"=1'-0"

1



N

ANTENNA LAYOUT

12" 6" 0 1' 2' 3'
3/4"=1'-0"

2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	JMA WIRELESS–MX08FRO665–21	5G	72.0" x 20.0"	0°	98'-0"	(1) HIGH-CAPACITY HYBRID CABLE (130' LONG)
BETA	B1	PROPOSED	JMA WIRELESS–MX08FRO665–21	5G	72.0" x 20.0"	120°	98'-0"	
GAMMA	G1	PROPOSED	JMA WIRELESS–MX08FRO665–21	5G	72.0" x 20.0"	240°	98'-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.

ANTENNA SCHEDULE

NO SCALE

3

dish wireless.
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

SBA
8051 CONGRESS AVENUE
BOCA RATON, FL 33487

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

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
BLJ	BLJ	JW

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	9/10/21	ISSUED FOR REVIEW
0	10/21/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149492.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

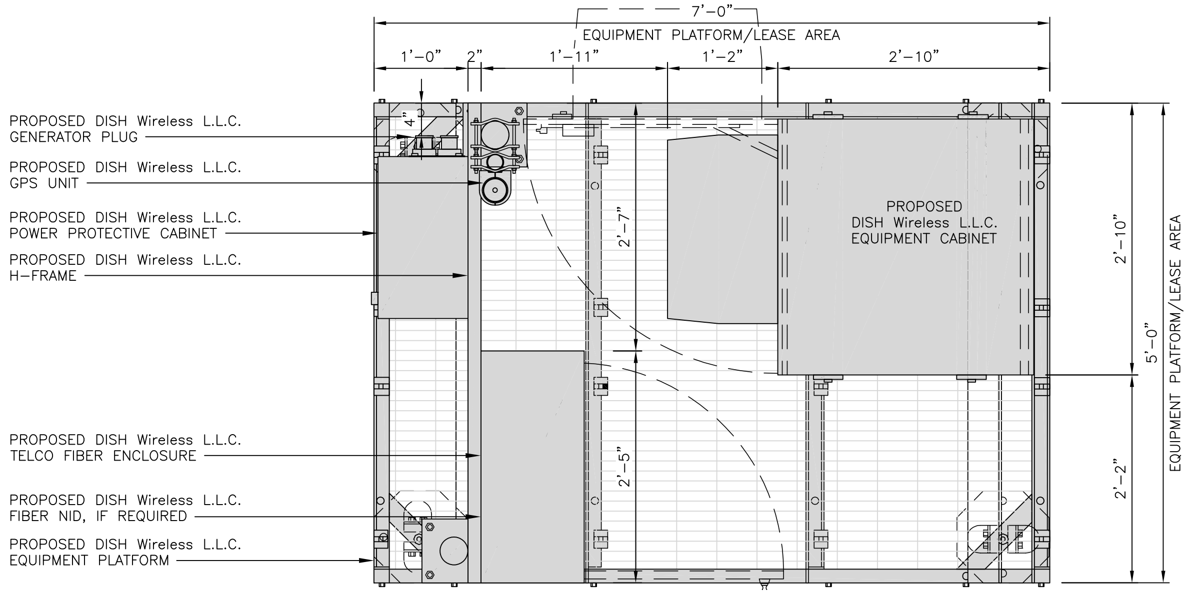
BOBDL00140A
51 STONY LANE
STAFFORD, CT 06075

SHEET TITLE

ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER

A-2



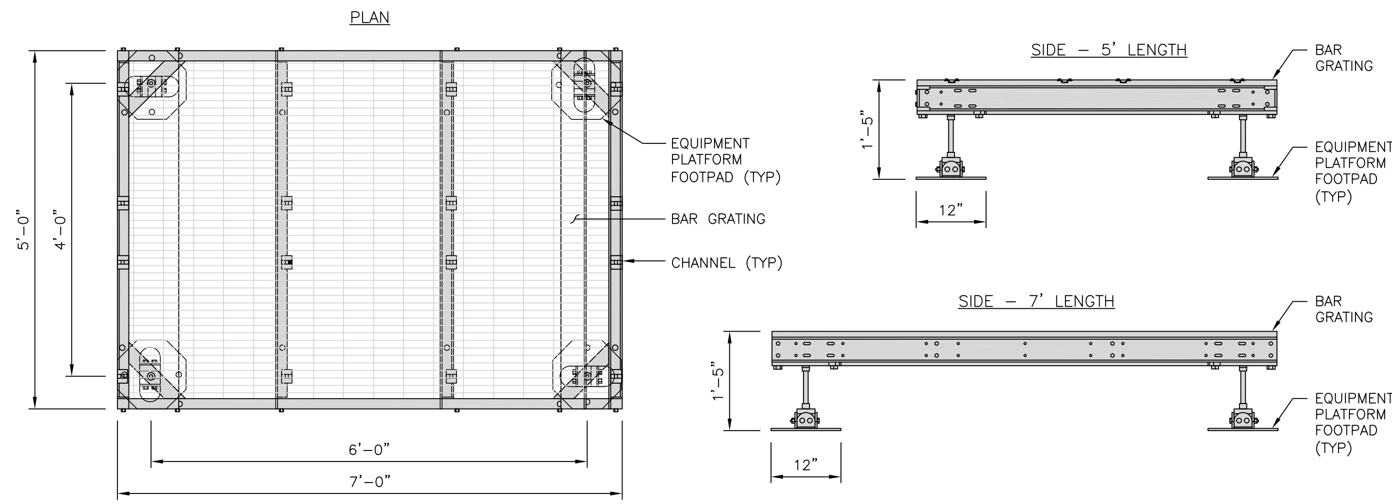
PLATFORM EQUIPMENT PLAN

12" 9" 6" 3" 0 1' 2'
1"=1'-0"

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"



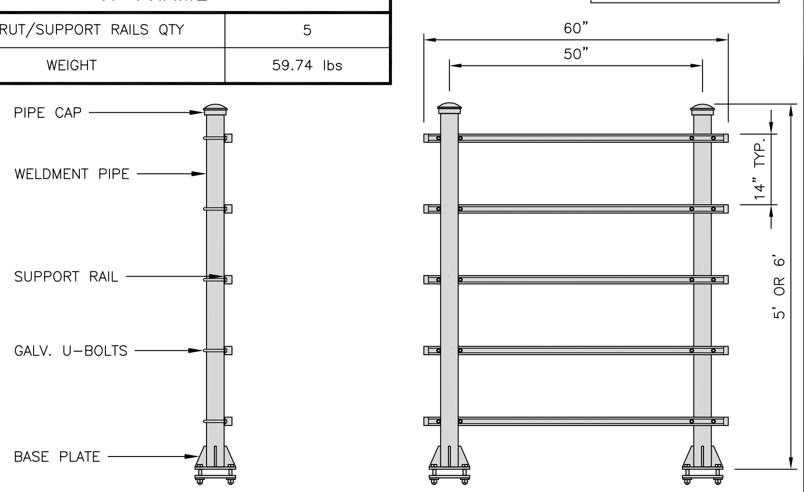
PLATFORM DETAIL

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

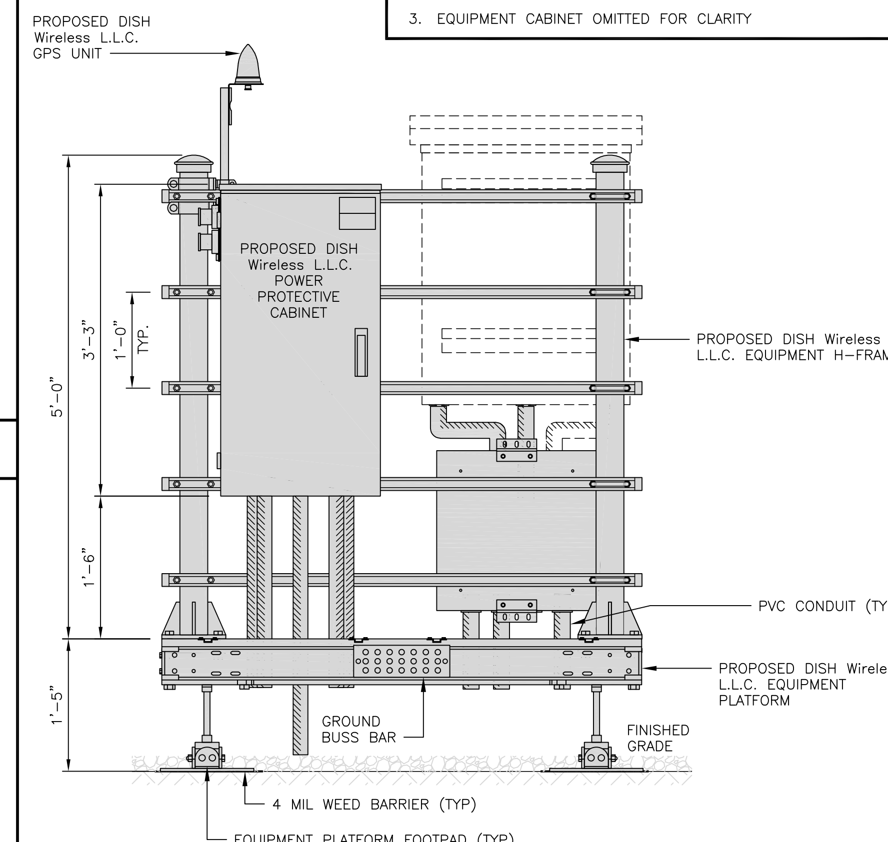
NOT USED

NO SCALE

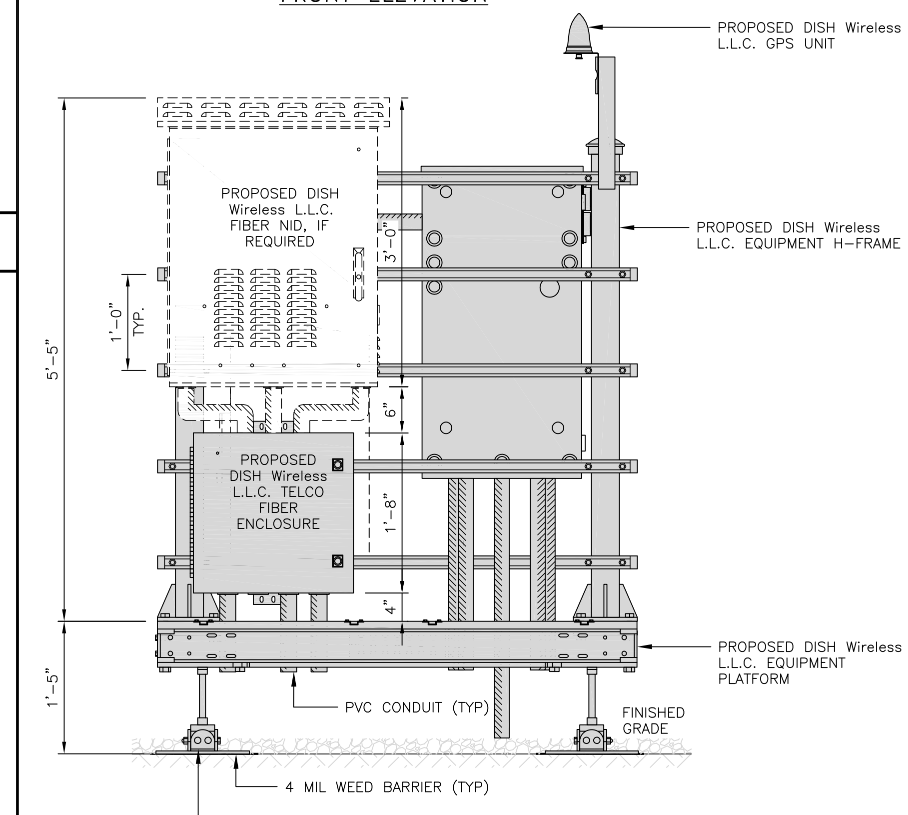
4

NOTES

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



FRONT ELEVATION



BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION

12" 9" 6" 3" 0 1' 2'
1"=1'-0"

5

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10/21/21

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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:
BLJ	BLJ	JW

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	9/10/21	ISSUED FOR REVIEW
0	10/21/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149492.001.01

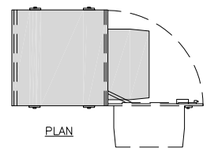
DISH Wireless L.L.C. PROJECT INFORMATION

BOBDL00140A
51 STONY LANE
STAFFORD, CT 06075

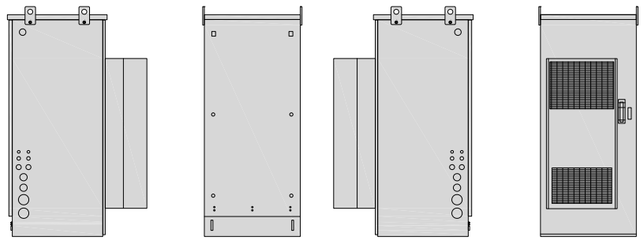
SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

SHEET NUMBER
A-3

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



PLAN

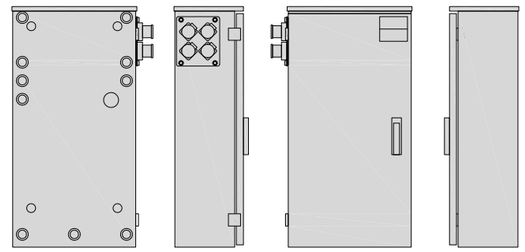


SIDE BACK SIDE FRONT

CABINET DETAIL | NO SCALE | 1

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

TOP



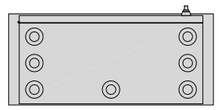
BACK SIDE FRONT SIDE

POWER PROTECTION CABINET (PPC) DETAIL | NO SCALE | 2

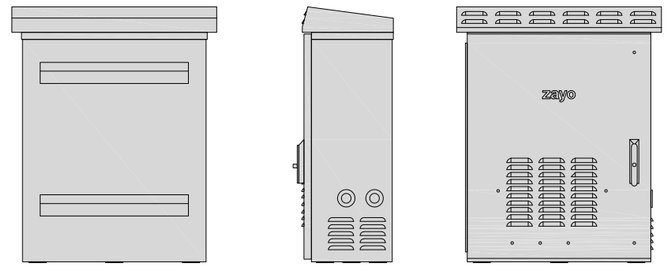
NOT USED | NO SCALE | 3

NOT USED | NO SCALE | 4

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



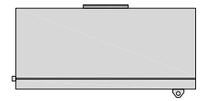
BOTTOM



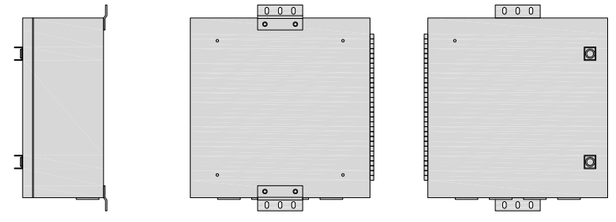
BACK SIDE FRONT

FIBER NID ENCLOSURE DETAIL | NO SCALE | 5

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



FRONT

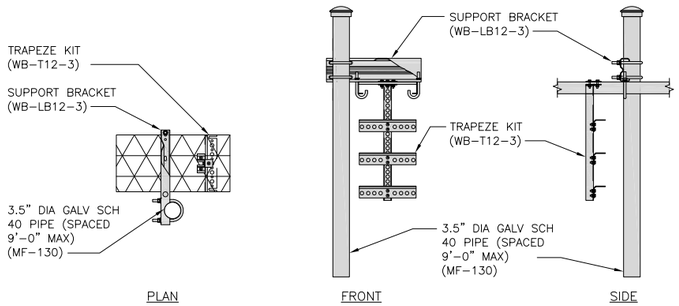


SIDE BACK FRONT

FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

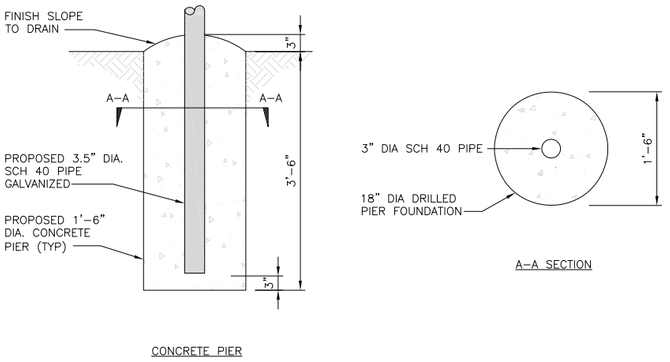
COMMSCOPE WB–K110–B WAVEGUIDE BRIDGE KIT	
DIMENSIONS (HxL)	160"x10'
WEIGHT/ VOLUME	325.0 LBS
CABLE RUN (QTY)	12

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



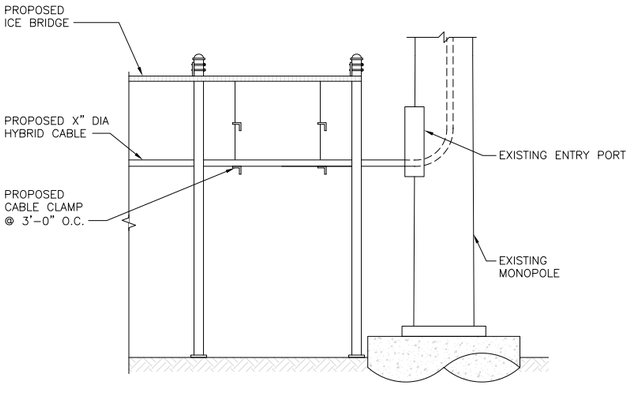
PLAN FRONT SIDE

ICE BRIDGE DETAIL | NO SCALE | 7



CONCRETE PIER A–A SECTION

TYPICAL ICE BRIDGE CONCRETE PIER DETAIL | NO SCALE | 8



HYBRID CABLE RUN | NO SCALE | 9

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00140A
51 STONY LANE
STAFFORD, CT 06075

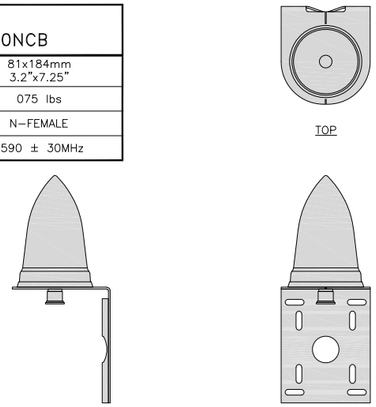
SHEET TITLE

EQUIPMENT DETAILS

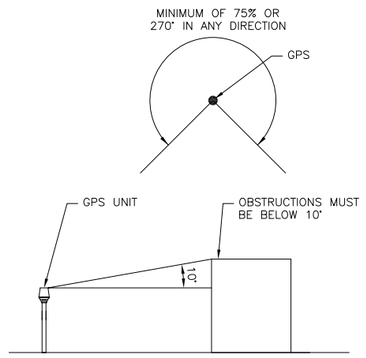
SHEET NUMBER

A-4

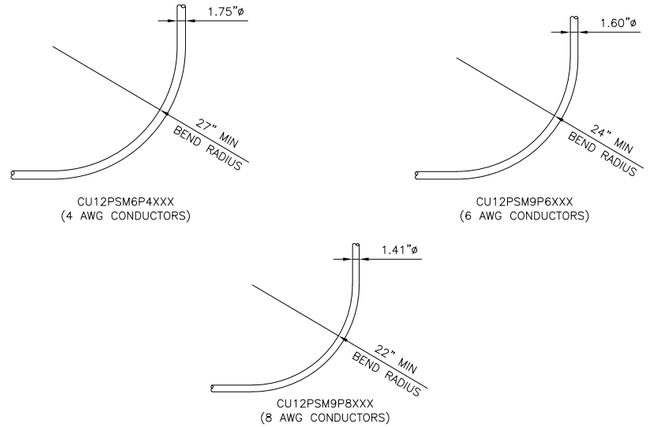
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



GPS DETAIL | NO SCALE | 1



GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 2



CABLES UNLIMITED HYBRID CABLE
MINIMUM BEND RADIUSES | NO SCALE | 3

NOT USED | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00140A
51 STONY LANE
STAFFORD, CT 06075

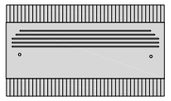
SHEET TITLE

EQUIPMENT DETAILS

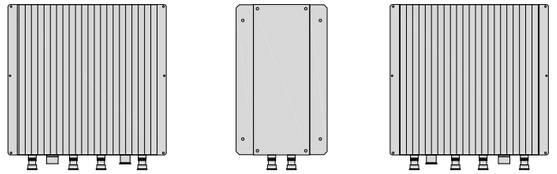
SHEET NUMBER

A-5

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



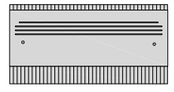
PLAN



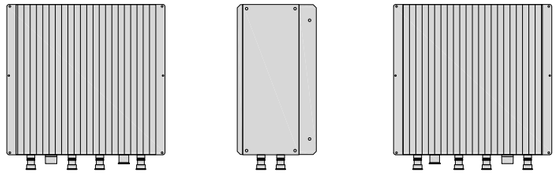
BACK SIDE FRONT

RRH DETAIL | NO SCALE | 1

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



PLAN



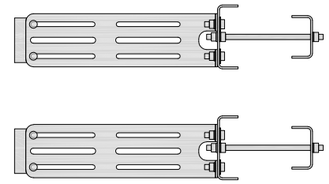
BACK SIDE FRONT

RRH DETAIL | NO SCALE | 2

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

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

PLAN

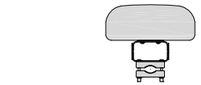


SIDE

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

RRH 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



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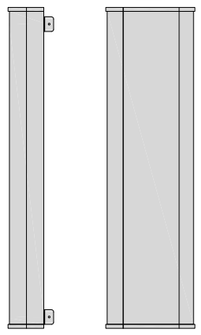


SIDE FRONT

ANTENNA DETAIL | NO SCALE | 4

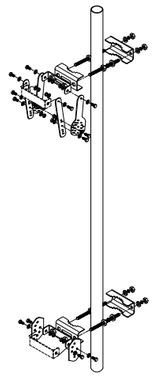
NOT USED | NO SCALE | 5

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

NOTE:
KIT #91900318: TOP AND BOTTOM BRACKETS FOR 4-,6-, AND 8-FOOT ANTENNAS

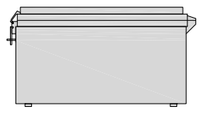
ANTENNA BRACKET NOT PART OF KIT

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

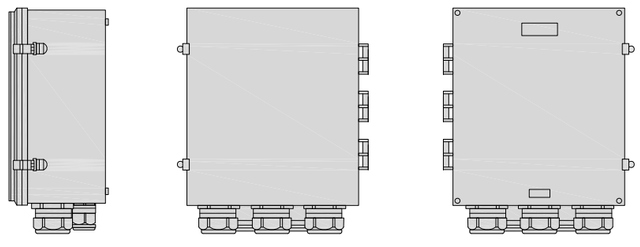


ANTENNA BRACKET DETAIL | NO SCALE | 6

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



PLAN

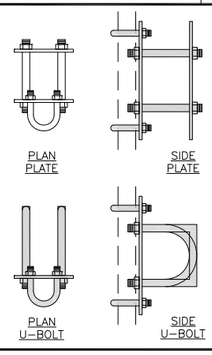


SIDE BACK FRONT

SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 7

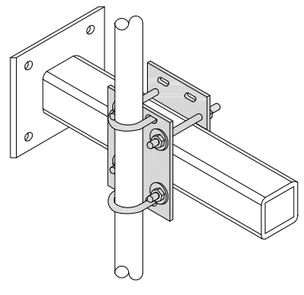
COMMSCOPE XP-2040 CROSSOVER PLATE	
DIMENSIONS (HxW)	10"x12"
WEIGHT	11 lbs

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



PLAN PLATE SIDE PLATE

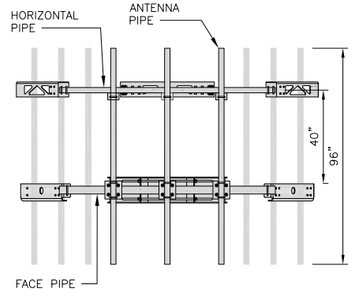
PLAN U-BOLT SIDE U-BOLT

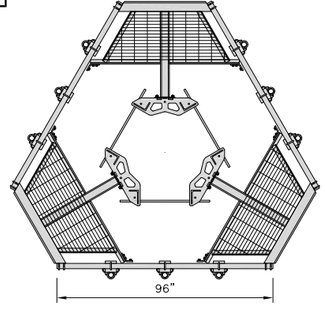


RRH/OVP MOUNT DETAIL | NO SCALE | 8

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

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





ANTENNA PLATFORM DETAIL | NO SCALE | 9

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00140A
51 STONY LANE
STAFFORD, CT 06075

SHEET TITLE

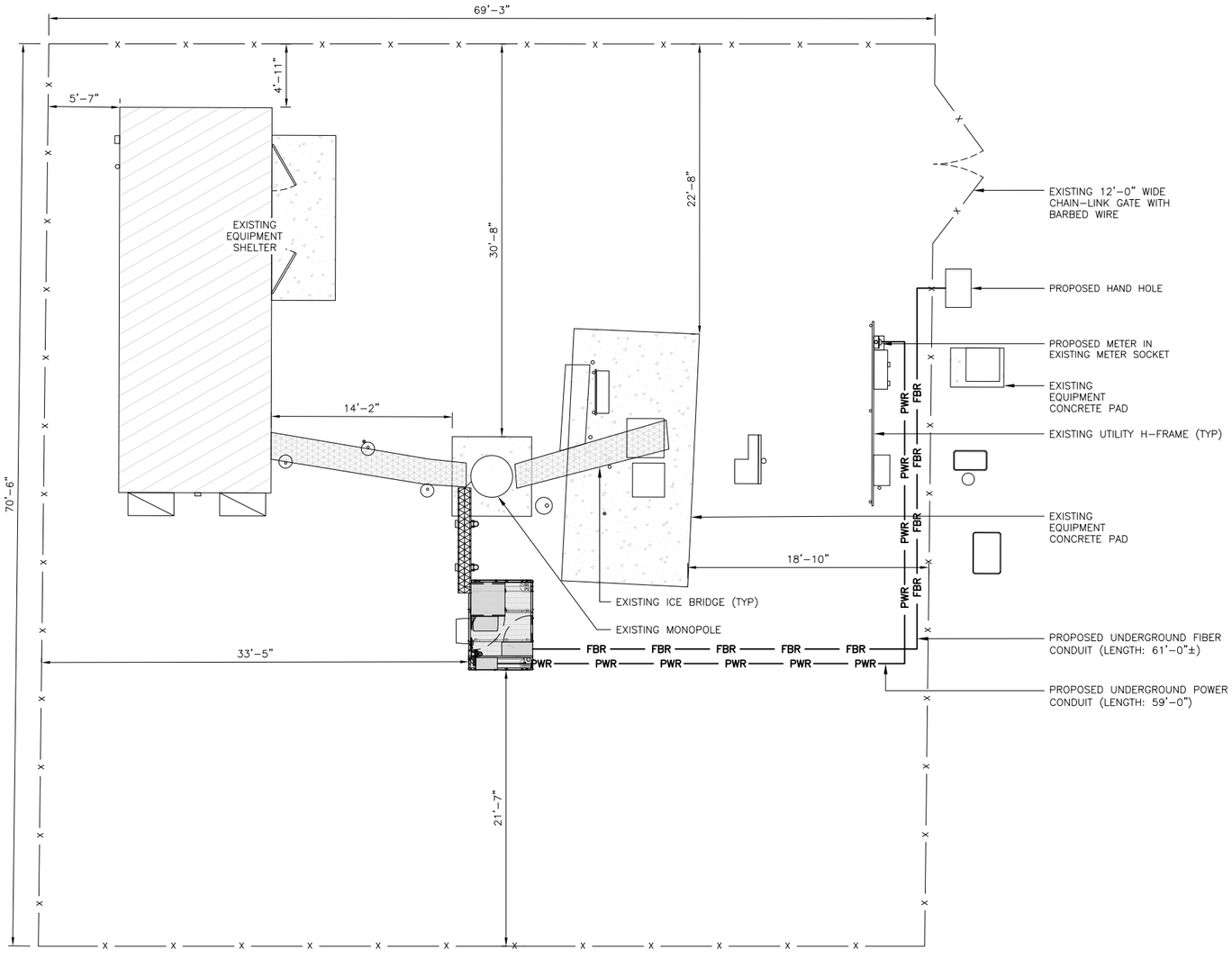
EQUIPMENT DETAILS

SHEET NUMBER

A-6

NOTES

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



UTILITY ROUTE PLAN

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

1

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

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

ELECTRICAL NOTES

NO SCALE

2

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DRAWN BY:	CHECKED BY:	APPROVED BY:
BLJ	BLJ	JW

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	9/10/21	ISSUED FOR REVIEW
0	10/21/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149492.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00140A
51 STONY LANE
STAFFORD, CT 06075

SHEET TITLE

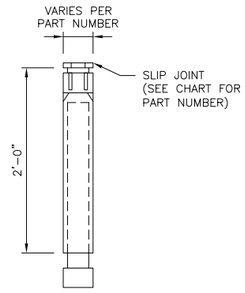
ELECTRICAL/FIBER ROUTE PLAN AND NOTES

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"

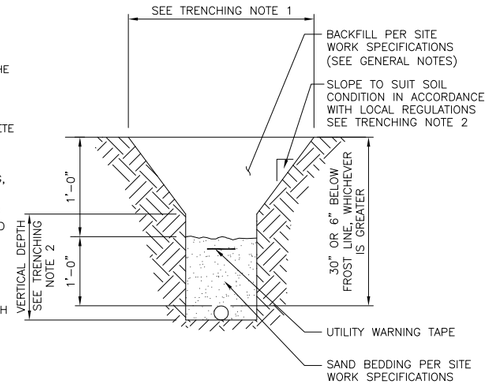


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

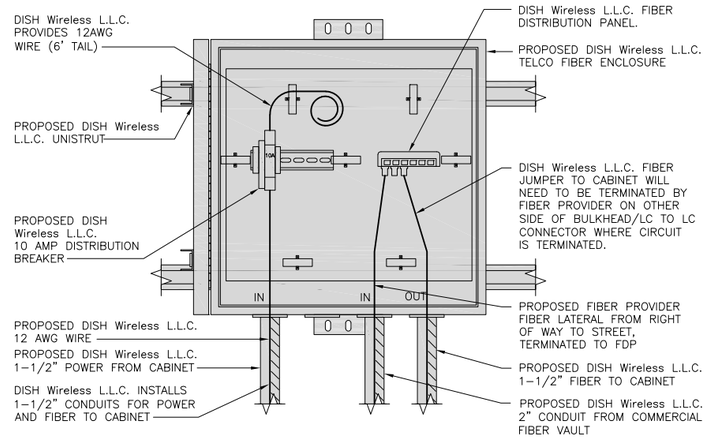
EXPANSION JOINT DETAIL | NO SCALE | 1

TRENCHING NOTES

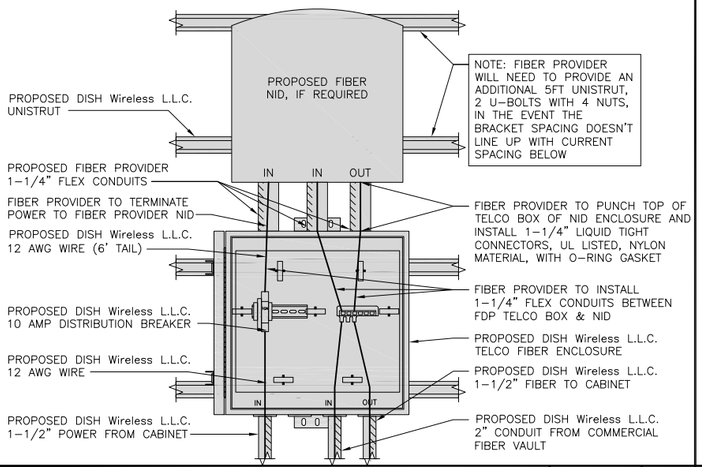
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT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



TYPICAL UNDERGROUND TRENCH DETAIL | NO SCALE | 2



DARK TELCO BOX – INTERIOR WIRING LAYOUT | NO SCALE | 3



LIT TELCO BOX – INTERIOR WIRING LAYOUT (OPTIONAL) | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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DISH Wireless L.L.C.
PROJECT INFORMATION

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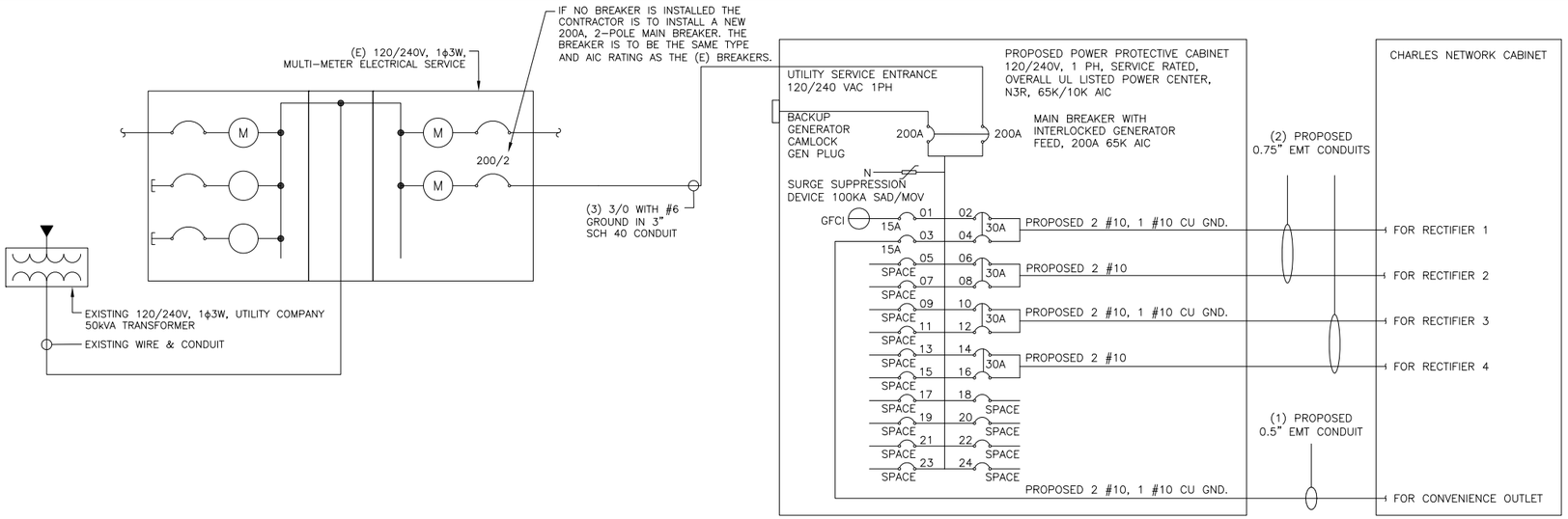
51 STONY LANE
STAFFORD, CT 06075

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:QO230
(1) 15A, 1P BREAKER - SQUARE D P/N:QO115

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)(a) OR 2020 NEC TABLE 310.15(C)(1) FOR UL1015 WIRE.

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

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

CABINET CONVENIENCE OUTLET CONDUCTORS (1 CONDUIT): USING THWN-2, CU.

#10 - 0.0211 SQ. IN X 2 = 0.0422 SQ. IN
#10 - 0.0211 SQ. IN X 1 = 0.0211 SQ. IN <GROUND
TOTAL = 0.0633 SQ. IN

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

RECTIFIER CONDUCTORS (2 CONDUITS): USING UL1015, CU.

#10 - 0.0266 SQ. IN X 4 = 0.1064 SQ. IN
#10 - 0.0082 SQ. IN X 1 = 0.0082 SQ. IN <BARE GROUND
TOTAL = 0.1146 SQ. IN

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

PPC FEED CONDUCTORS (1 CONDUIT): USING THWN, CU.

3/0 - 0.2679 SQ. IN X 3 = 0.8037 SQ. IN
#6 - 0.0507 SQ. IN X 1 = 0.0507 SQ. IN <GROUND
TOTAL = 0.8544 SQ. IN

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

PPC ONE-LINE DIAGRAM — NO SCALE — 1

PROPOSED CHARLES PANEL SCHEDULE

LOAD SERVED	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	LOAD SERVED
PPC GFCI OUTLET	180		15A	1	A	2	30A	2880		ABB/GE INFINITY RECTIFIER 1
CHARLES GFCI OUTLET		180	15A	3	B	4			2880	
-SPACE-				5	A	6	30A	2880		ABB/GE INFINITY RECTIFIER 2
-SPACE-				7	B	8			2880	
-SPACE-				9	A	10	30A	2880		ABB/GE INFINITY RECTIFIER 3
-SPACE-				11	B	12			2880	
-SPACE-				13	A	14	30A	2880		ABB/GE INFINITY RECTIFIER 4
-SPACE-				15	B	16			2880	
-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		VOLTAGE AMPS			
			98		98		AMPS			
			98				MAX AMPS			
			123				MAX 125%			

PANEL SCHEDULE — NO SCALE — 2

NOT USED — NO SCALE — 3

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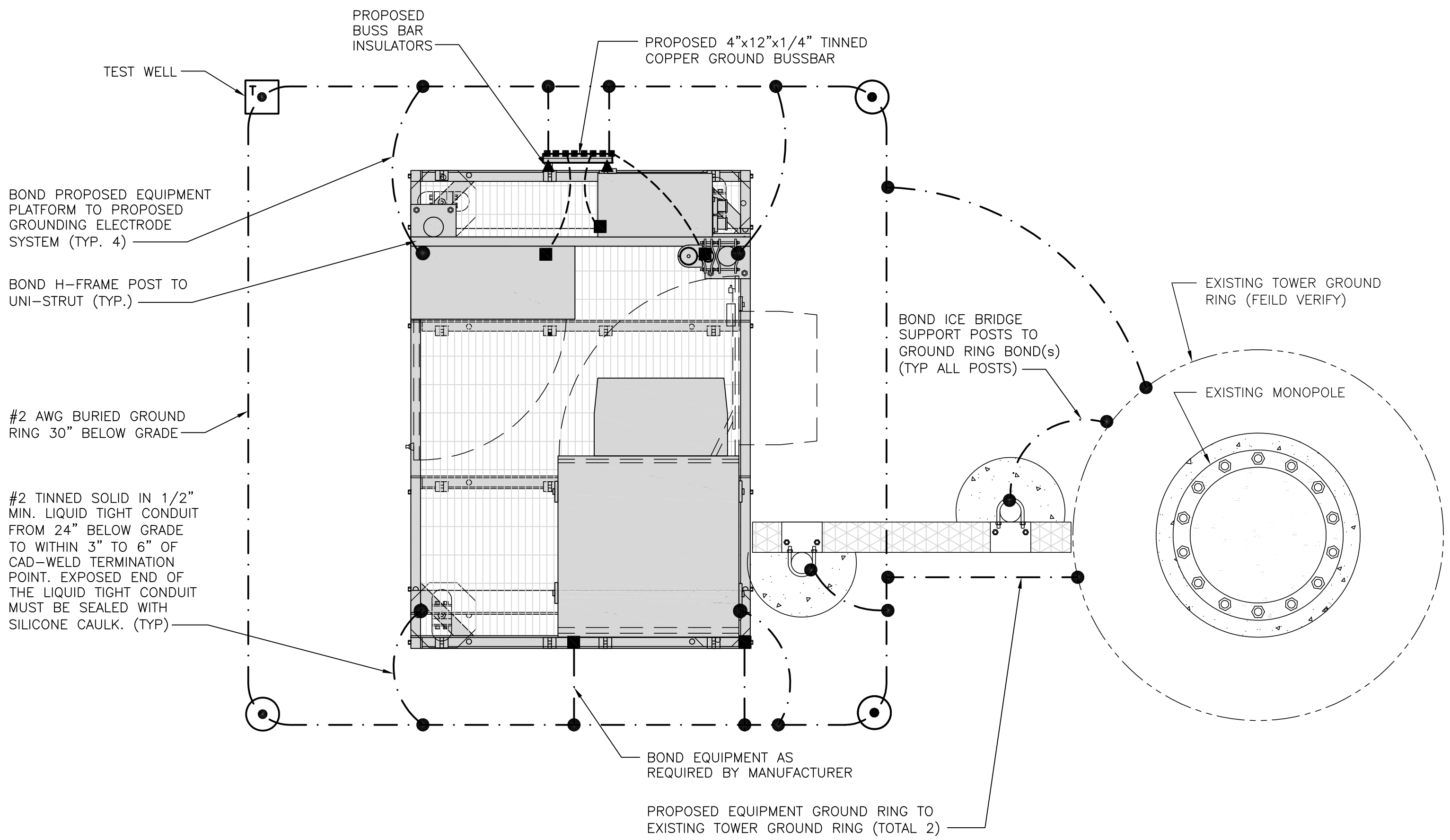
BOBDL00140A
51 STONY LANE
STAFFORD, CT 06075

SHEET TITLE

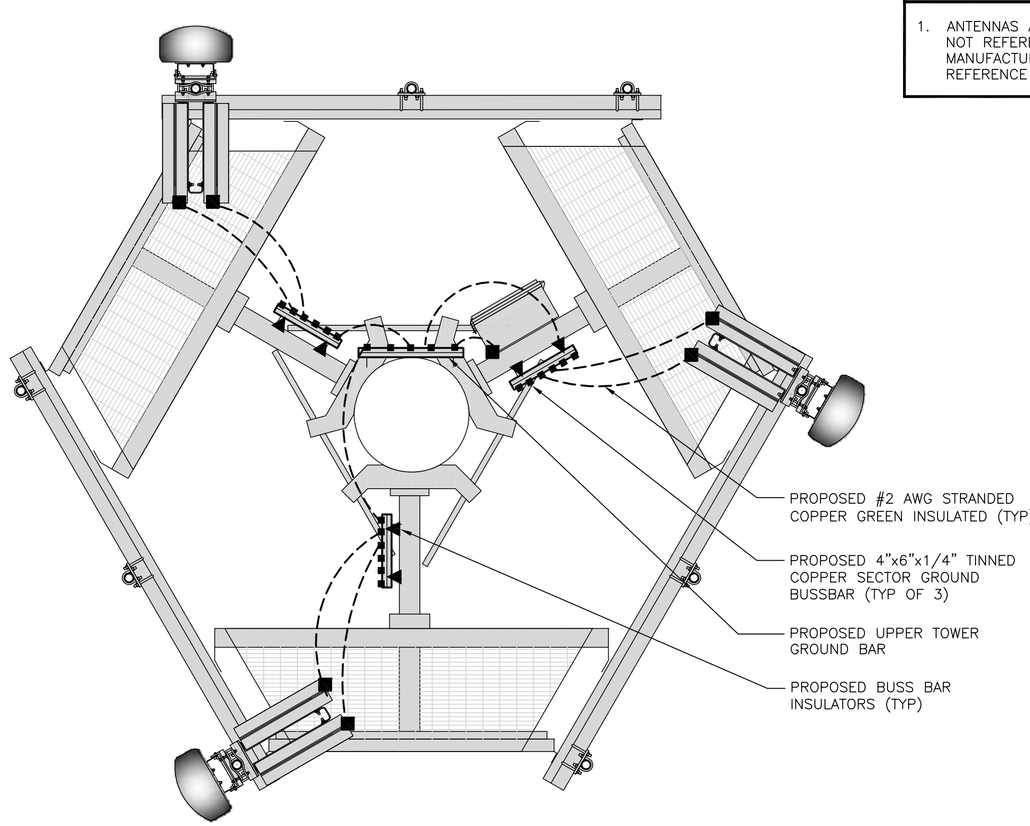
ELECTRICAL ONE-LINE, FAULT CALCS & PANEL SCHEDULE

SHEET NUMBER

E-3



TYPICAL EQUIPMENT GROUNDING PLAN — NO SCALE — 1



NOTES

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

TYPICAL ANTENNA GROUNDING PLAN — NO SCALE — 2

Symbol	Description
●	EXOTHERMIC CONNECTION
■	MECHANICAL CONNECTION
(bus bar)	GROUND BUS BAR
⊙	GROUND ROD
⊡T	TEST GROUND ROD WITH INSPECTION SLEEVE
- - - - -	#6 AWG STRANDED & INSULATED
– · – · –	#2 AWG SOLID COPPER TINNED
▲	BUSS BAR INSULATOR

GROUNDING LEGEND

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

GROUNDING KEY NOTES

(A) EXTERIOR GROUND RING: #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING.

(B) TOWER GROUND RING: THE GROUND RING SYSTEM SHALL BE INSTALLED AROUND AN ANTENNA TOWER'S LEGS, AND/OR GUY ANCHORS. WHERE SEPARATE SYSTEMS HAVE BEEN PROVIDED FOR THE TOWER AND THE BUILDING, AT LEAST TWO BONDS SHALL BE MADE BETWEEN THE TOWER RING GROUND SYSTEM AND THE BUILDING RING GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS.

(C) INTERIOR GROUND RING: #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTOR EXTENDED AROUND THE PERIMETER OF THE EQUIPMENT AREA. ALL NON-TELECOMMUNICATIONS RELATED METALLIC OBJECTS FOUND WITHIN A SITE SHALL BE GROUNDED TO THE INTERIOR GROUND RING WITH #6 AWG STRANDED GREEN INSULATED CONDUCTOR.

(D) BOND TO INTERIOR GROUND RING: #2 AWG SOLID TINNED COPPER WIRE PRIMARY BONDS SHALL BE PROVIDED AT LEAST AT FOUR POINTS ON THE INTERIOR GROUND RING, LOCATED AT THE CORNERS OF THE BUILDING.

(E) GROUND ROD: UL LISTED COPPER CLAD STEEL. MINIMUM 1/2" DIAMETER BY EIGHT FEET LONG. GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.

(F) CELL REFERENCE GROUND BAR: POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG UNLESS NOTED OTHERWISE STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUCTORS.

(G) HATCH PLATE GROUND BAR: BOND TO THE INTERIOR GROUND RING WITH TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CRGB MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS EACH.

(H) EXTERIOR CABLE ENTRY PORT GROUND BARS: LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE.

(I) TELCO GROUND BAR: BOND TO BOTH CELL REFERENCE GROUND BAR OR EXTERIOR GROUND RING.

(J) FRAME BONDING: THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK.

(K) INTERIOR UNIT BONDS: METAL FRAMES, CABINETS AND INDIVIDUAL METALLIC UNITS LOCATED WITH THE AREA OF THE INTERIOR GROUND RING REQUIRE A #6 AWG STRANDED GREEN INSULATED COPPER BOND TO THE INTERIOR GROUND RING.

(L) FENCE AND GATE GROUNDING: METAL FENCES WITHIN 7 FEET OF THE EXTERIOR GROUND RING OR OBJECTS BONDED TO THE EXTERIOR GROUND RING SHALL BE BONDED TO THE GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTOR AT AN INTERVAL NOT EXCEEDING 25 FEET. BONDS SHALL BE MADE AT EACH GATE POST AND ACROSS GATE OPENINGS.

(M) EXTERIOR UNIT BONDS: METALLIC OBJECTS, EXTERNAL TO OR MOUNTED TO THE BUILDING, SHALL BE BONDED TO THE EXTERIOR GROUND RING. USING #2 TINNED SOLID COPPER WIRE

(N) ICE BRIDGE SUPPORTS: EACH ICE BRIDGE LEG SHALL BE BONDED TO THE GROUND RING WITH #2 AWG BARE TINNED COPPER CONDUCTOR. PROVIDE EXOTHERMIC WELDS AT BOTH THE ICE BRIDGE LEG AND BURIED GROUND RING.

(O) DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICE CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH A MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR

(P) TOWER TOP COLLECTOR BUSS BAR IS TO BE MECHANICALLY BONDED TO PROPOSED ANTENNA MOUNT COLLAR.

REFER TO DISH Wireless L.L.C. GROUNDING NOTES.

GROUNDING KEY NOTES — NO SCALE — 3

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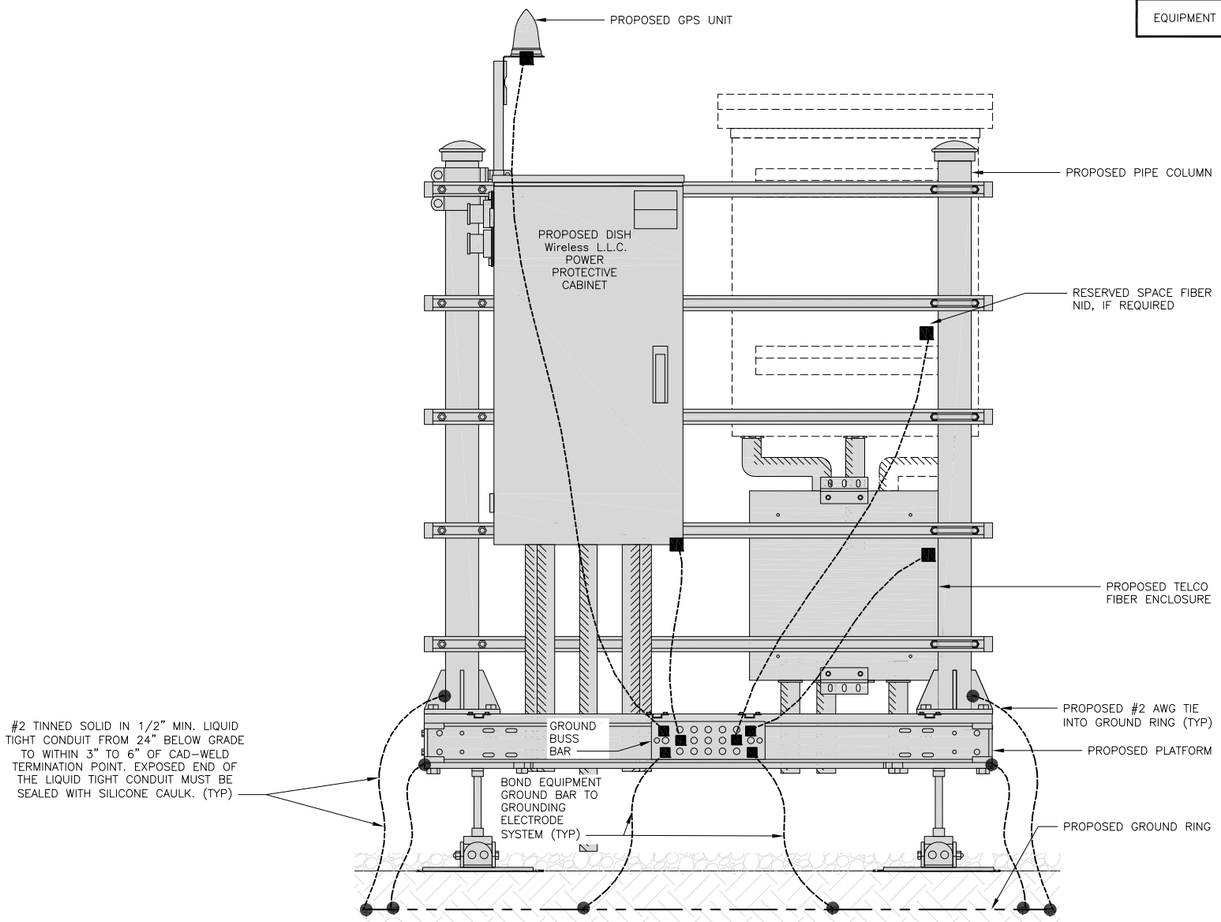
PROJECT INFORMATION
BOBDL00140A
51 STONY LANE
STAFFORD, CT 06075

SHEET TITLE
GROUNDING PLANS AND NOTES

SHEET NUMBER
G-1

NOTES

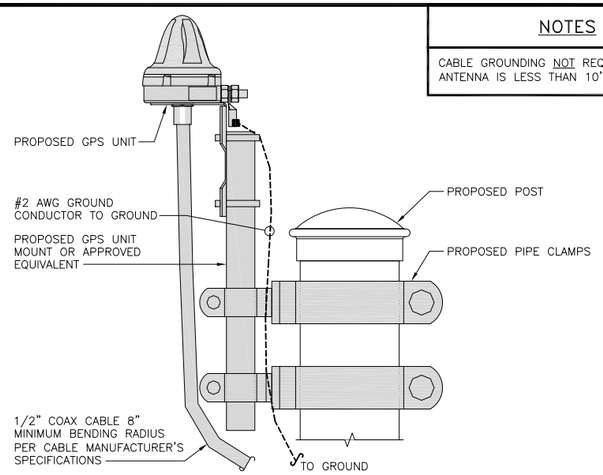
EQUIPMENT CABINET OMITTED FOR CLARITY



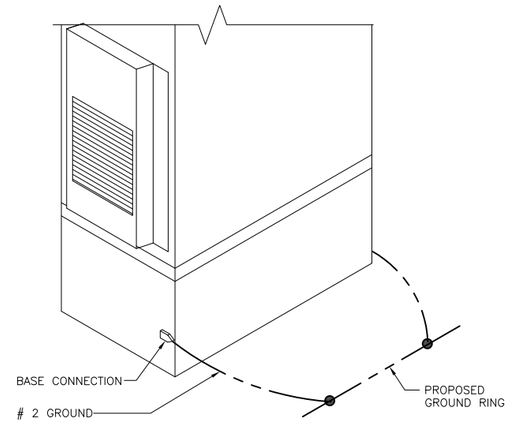
H-FRAME GROUNDING DETAIL | NO SCALE | 1

NOTES

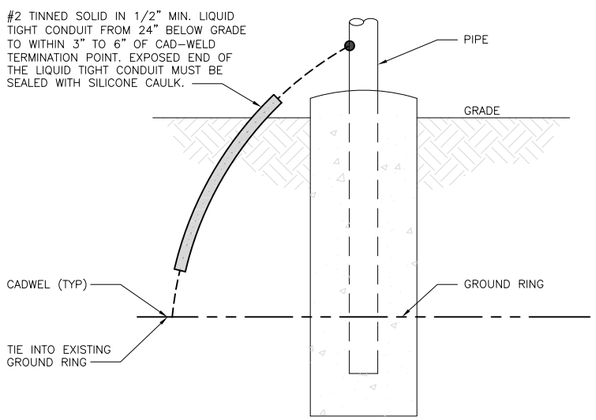
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET



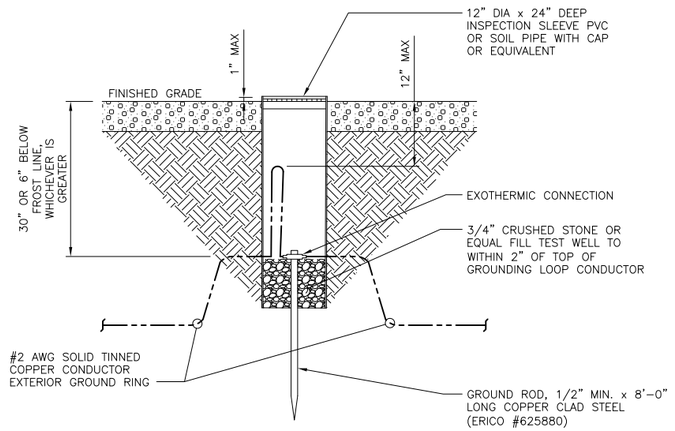
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



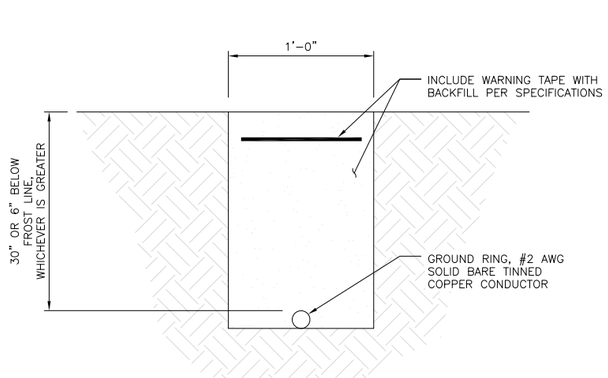
OUTDOOR CABINET GROUNDING | NO SCALE | 3



TRANSITIONING GROUND DETAIL | NO SCALE | 4



TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE | NO SCALE | 5



TYPICAL GROUND RING TRENCH | NO SCALE | 6

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51 STONY LANE
STAFFORD, CT 06075

SHEET TITLE

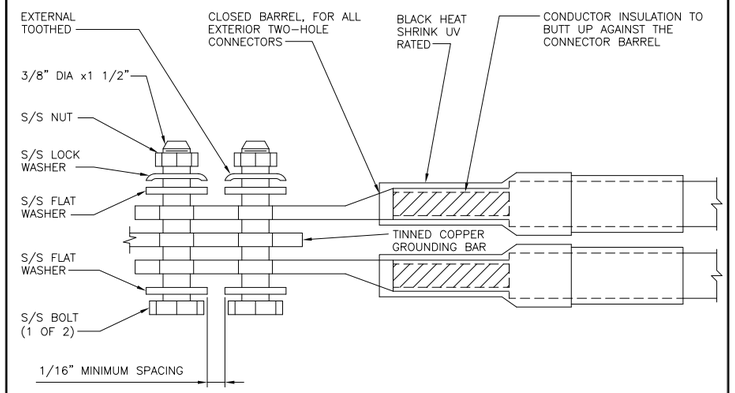
GROUNDING DETAILS

SHEET NUMBER

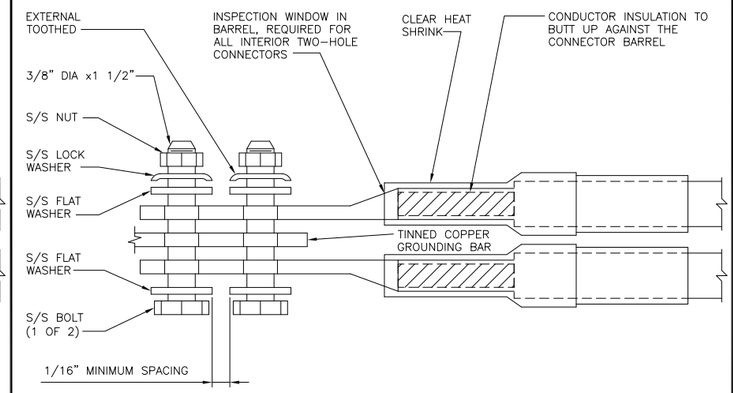
G-2

1. EXOTHERMIC WELD (2) TWO, #2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUND BAR, ROUTE CONDUCTORS TO BURIED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
2. ALL EXTERIOR GROUNDING HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
3. FOR GROUND BOND TO STEEL ONLY: COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
4. DO NOT INSTALL CABLE GROUNDING KIT AT A BEND AND ALWAYS DIRECT GROUND CONDUCTOR DOWN TO GROUNDING BUS.
5. NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUND BAR AND BOLTED ON THE BACK SIDE.
6. ALL GROUNDING PARTS AND EQUIPMENT TO BE SUPPLIED AND INSTALLED BY CONTRACTOR.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUND BAR AS REQUIRED.
8. ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).

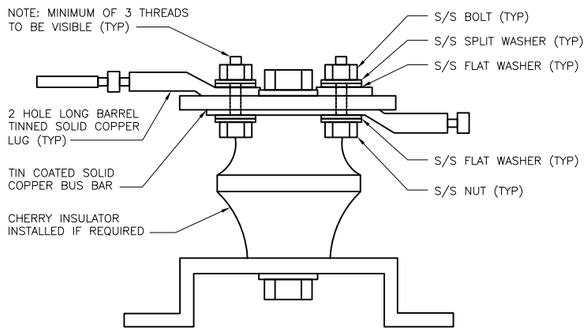
TYPICAL GROUNDING NOTES | NO SCALE | 1



TYPICAL EXTERIOR TWO HOLE LUG | NO SCALE | 2



TYPICAL INTERIOR TWO HOLE LUG | NO SCALE | 3



LUG DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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149492.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00140A
51 STONY LANE
STAFFORD, CT 06075

SHEET TITLE

GROUNDING DETAILS

SHEET NUMBER

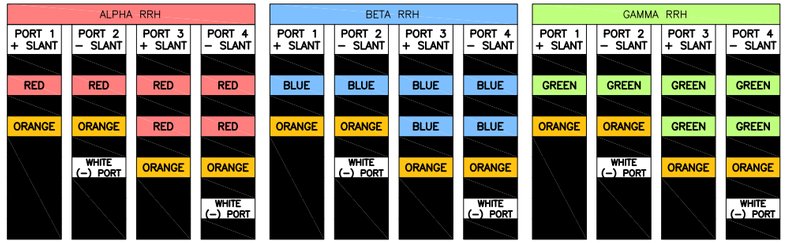
G-3

RF JUMPER COLOR CODING

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

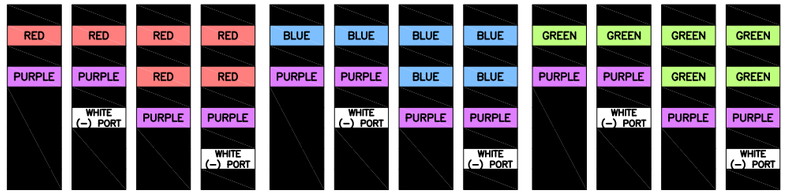
LOW-BAND RRH –
(600MHz N71 BASEBAND) +
(850MHz N26 BAND) +
(700MHz N29 BAND) – OPTIONAL PER MARKET

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



MID-BAND RRH –
(AWS BANDS N66+N70)

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

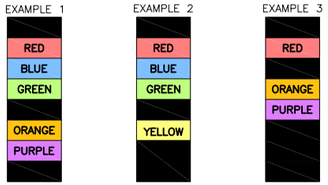


HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED
ALONG WITH FREQUENCY BANDS

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

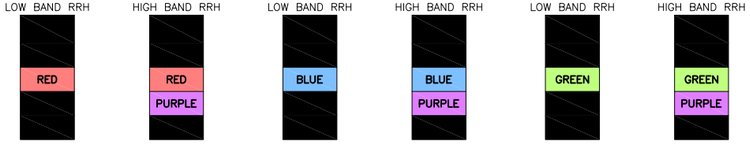
EXAMPLE 2 – HYBRID, OR DISCREET, SUPPORTS
CBRS ONLY, ALL SECTORS



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

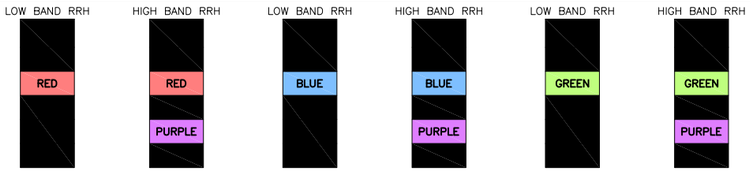
FIBER JUMPERS TO RRHs

LOW-BAND RRH FIBER CABLES HAVE SECTOR
STRIPE ONLY

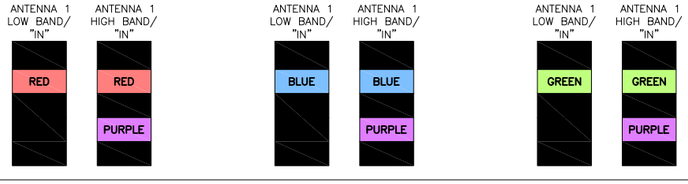


POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR
STRIPE ONLY



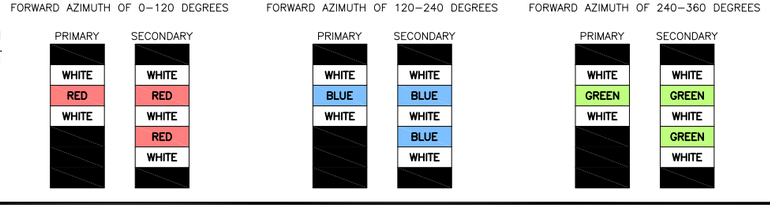
RET MOTORS AT ANTENNAS



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



RF CABLE COLOR CODES | NO SCALE | 1

LOW BANDS (N71+N26)
OPTIONAL – (N29)
ORANGE

AWS
(N66+N70+H-BLOCK)
PURPLE

CBRS TECH
(3 GHz)
YELLOW

NEGATIVE SLANT PORT
ON ANT/RRH
WHITE

ALPHA SECTOR
RED

BETA SECTOR
BLUE

GAMMA SECTOR
GREEN

COLOR IDENTIFIER | NO SCALE | 2

NOT USED | NO SCALE | 3

NOT USED | NO SCALE | 4

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PEC.0001564
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BLJ	BLJ	JW

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

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SHEET TITLE

RF
CABLE COLOR CODES

SHEET NUMBER

RF-1

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

BUSS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE

SINGLE POLE SWITCH

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE

FLUORESCENT LIGHTING FIXTURE (2) TWO LAMPS 48–T8

SMOKE DETECTION (DC)

EMERGENCY LIGHTING (DC)

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

CHAIN LINK FENCE

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE

UNDERGROUND POWER

UNDERGROUND TELCO

OVERHEAD POWER

OVERHEAD TELCO

UNDERGROUND TELCO/POWER

ABOVE GROUND POWER

ABOVE GROUND TELCO

ABOVE GROUND TELCO/POWER

WORKPOINT

W.P.

SECTION REFERENCE

XX
X–X

DETAIL REFERENCE

XX
X–X

LEGEND

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

ABBREVIATIONS

dish wireless.

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00140A
51 STONY LANE
STAFFORD, CT 06075

SHEET TITLE

LEGEND AND ABBREVIATIONS

SHEET NUMBER

GN-1

SITE ACTIVITY REQUIREMENTS:

1. NOTICE TO PROCEED – NO WORK SHALL COMMENCE PRIOR TO CONTRACTOR RECEIVING A WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE DISH Wireless L.L.C. AND TOWER OWNER NOC & THE DISH Wireless L.L.C. AND TOWER OWNER CONSTRUCTION MANAGER.

2. "LOOK UP" – DISH Wireless L.L.C. AND TOWER OWNER SAFETY CLIMB REQUIREMENT:

THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR DISH Wireless L.L.C. AND DISH Wireless L.L.C. AND TOWER OWNER POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.

3. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.

4. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND DISH Wireless L.L.C. AND TOWER OWNER STANDARDS, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA–322 (LATEST EDITION).

5. ALL SITE WORK TO COMPLY WITH DISH Wireless L.L.C. AND TOWER OWNER INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON DISH Wireless L.L.C. AND TOWER OWNER TOWER SITE AND LATEST VERSION OF ANSI/TIA–1019–A–2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."

6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY DISH Wireless L.L.C. AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.

7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES INCLUDING PRIVATE LOCATES SERVICES PRIOR TO THE START OF CONSTRUCTION.

10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.

11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND DISH PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.

12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.

13. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF DISH Wireless L.L.C. AND TOWER OWNER, AND/OR LOCAL UTILITIES.

14. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.

15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.

16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.

17. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.

18. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.

20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS AND RADIOS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

22. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES:

1.FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH Wireless L.L.C.

TOWER OWNER:TOWER OWNER

2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.

3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.

4. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.

5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.

6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CARRIER POC AND TOWER OWNER.

7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.

11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION, BEFORE SUBMITTING BIDS, TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.

12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF DISH Wireless L.L.C. AND TOWER OWNER

13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

dish wireless.

5701 SOUTH SANTA FE DRIVE
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10/21/21

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
BLJ	BLJ	JW

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0	10/21/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149492.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00140A
51 STONY LANE
STAFFORD, CT 06075

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-2

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.

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

3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF PLACEMENT.

4. CONCRETE EXPOSED TO FREEZE-THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.

5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:

#4 BARS AND SMALLER 40 ksi

#5 BARS AND LARGER 60 ksi

6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

- CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
- CONCRETE EXPOSED TO EARTH OR WEATHER:
- #6 BARS AND LARGER 2"
- #5 BARS AND SMALLER 1-1/2"
- CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
- SLAB AND WALLS 3/4"
- BEAMS AND COLUMNS 1-1/2"

7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.

2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.

3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.

4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.

4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.

4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.

5. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.

6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).

7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.

8. TIE WRAPS ARE NOT ALLOWED.

9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.

10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.

11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.

12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.

13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).

14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.

15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

16. ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.

17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.

18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.

19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.

20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.

21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).

22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).

23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.

24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3 (OR BETTER) FOR EXTERIOR LOCATIONS.

25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.

26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.

27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR DISH Wireless L.L.C. AND TOWER OWNER BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.

28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.

29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "DISH Wireless L.L.C.".

30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

dish wireless.

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SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-3

GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

2. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.

4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.

7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.

8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.

11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.

13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.

14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.

15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.

17. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.

19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.

20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON-METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).

21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). DO NOT ATTACH GROUNDING TO FIRE SPRINKLER SYSTEM PIPES.

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GN-4