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

July 28, 2021

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

Application for Tower Share
393 Jackson Hill Rd., Middlefield, CT
Latitude: 41.517360
Longitude: -72.714167
Dish Wireless #: BOBDL00136A

Dear Ms. Bachman:

Please accept this letter as notification pursuant to the Connecticut General Statutes § 16-50aa and R.C.S.A § 16-50j-88 of Dish Wireless' Application for Tower Sharing at the existing 146-foot Monopole Tower at 393 Jackson Hill Rd., Middlefield, CT.

- **The new antennas would support 5G services and would be installed at the 98-foot level of the tower.**

Per the requirements under R.C.S.A §16-50j-89 please find the following statements in support of Dish Wireless' Application:

1. Facility and Proposed Modifications

   A. Existing Facility and Appurtenances

Initial approval was given for this facility by the Town of Middlefield at its regular meeting on February 10, 1999 by the Town of Middefield's Planning & Zoning commission with the following conditions:

- Within 90 days of approval, the applicant meets with the various town agencies, including its 911 service, to determine their communications needs as related to the Tower and that the applicant uses its best efforts to reserve a location which will meet such needs.

- Latitude / Longitude: 41.517360 / -72.714167
- Height of Tower: 146'
- Owned/operated by: SBA 2012 TC Assets, LLC
- Property Owner: Town of Middlefield.
- Size/Components of existing equipment compound:

- 49’6” x 50’ fenced compound with 12’chain link swing gate containing:
  - Monopole [east area of compound]
  - Verizon 12’x30’ Equipment Shelter [south of monopole w/in compound]
  - AT&T 7’x16 Equipment Shelter [northeast of monopole w/in compound]
  - T-Mobile 6’x6’ Equipment Shelter [northwest of monopole w/in compound]
  - SBA 10’x25’ area [west of monopole w/in compound]
  - Town of Middlefield 5’x10’ area [west-center of monopole w/in compound]

- Components of existing tower:
  - Verizon:
    - 140’ & 138’
      - (6) Commscope SBNHH-1D65B – Panel @ 140’
      - (6) Antel LPA-80063/4CF – Panel @140’
      - (3) ALU B13 RRH4X30-4R RRU’s @138’
      - (3) ALU B25 RRH4x30-4R RRU’s @138’
      - (3) ALU B66 RRH4x45 RRU’s @138’
      - (2) Raycap RC2DC-3315-PF-48 Surge
      - Low Profile Platform
      - (1) 1-5/8” coax
      - (2) 1-5/8” Hybriflex
  - AT&T:
    - 150’ & 98’
      - (9) Cci Antennas HPA-65R-BUU-H8-panel
      - (6) Powerwave LGP21401 TMA’s
      - (6) Powerwave LGP219003 Diplexer
      - (6) Powerwave 7020.00 RET’s
      - (3) Ericsson RRUS-11 RRU’s
      - (3) Ericsson RRUS-32 RRU’s
      - (3) Ericsson RRUS 32 B2 RRU’s
      - (2) Raycap DC-6-48-60-18-8F Surge
      - Platform w/handrails
      - (6) 1-5/8” lines
      - (4) 3” DC
      - (2) 1/2” RET
      - (1) 3” Fiber
      - Empty Low Profile Platform @98’

  - Town of Middlefield
    - 124’, 119’ and 109’
      - (1) dbSpectra DS4C06F36D-N Omni @124’
      - (1) Telewave ANT450F6 Omni @119’
      - (1) Celwave PD1142-66 Omni @119’
      - (1) Airmux 400/ODU/F49F/100M – Dish @109’
      - (1) Pipe mount (Airmux 400/ODU/F49F/100M)
      - (3) Standard existing antenna pipe mount (au_andrew ATJB200-A01-004)
      - (1) ½” coax

- T-Mobile
  - 88’

    - (3) RFS APXVAARR24_43-U-NA20 –Panel
    - (3) Ericsson Air 32 KRD901146-1_B66A_B2A-Panel
    - (3) Ericsson KRY 112 144/1 TMA's
    - (3) Ericsson Radio 4449 B71+B12 RRU's
    - Platform w/Handrail (Sitepro RMQP-4096-HK)
    - (6) 1-5/8” coax
    - (3) 1-5/8” Fiber

B. Nature and Extent of Proposed Modifications

Dish Wireless proposes to install (3) panel antennas at the 98’ level of the existing 146’-foot Monopole Tower and occupy a ground lease area of 5’x7’ within the existing fenced compound. Dish Wireless’ full proposed scope of work is as follows:

Remove:

- N/A

Remove and Replace:

- N/A

Install:
Tower:
At 98’:

(3) JMA Wireless MX08FRO665-21 - Panel
(3) Fujitsu TA08025-B605 RRU's
(3) Fujitsu TA08025-B604 RRU's
(1) Raycap RDIDC-9181-PF-48 OVP
(1) Platform w/HRK (Sitepro1 SNP8HR-3XX)
(1) 1.6” Hyrbid

Ground (within existing compound):

(1) Generator plug (generator not being installed)
(1) GPS Unit
(1) Power Protective cabinet
(1) H-Frame
(1) Equipment platform
(1) Safety Switch (if required by local utility)
(1) 200AMP Meter socket
(1) Cena Box (reserved if needed)
(1) Telco Fiber Enclosure
(1) Ground Ring
(1) 2” AWG tie into ground ring

(1) 12'6"L x 12" W Ice Bridge
(1) 2'x6" Ice Bridge

Existing Equipment to Remain:

- N/A

C. This Proposal is technically, legally, environmentally, and economically feasible and meets public safety concerns per Connecticut General Statute Section 16-50aa.

- Initial approval was given for this facility by the Town of Middlefield at its regular meeting on February 10, 1999 by the Town of Middefield's Planning & Zoning commission with the following conditions:

  - Within 90 days of approval, the applicant meets with the various town agencies, including its 911 service, to determine their communications needs as related to the Tower and that the applicant uses its best efforts to reserve a location which will meet such needs.

Dish Wireless proposes to collocate at the above-referenced existing telecommunication facility rather than to require additional tower construction. Since the site was built, wireless technology has flourished, resulting in greatly increased consumer usage and data transfer. Four carriers currently share space on the tower including the Town of Middlefield. If approved, Dish Wireless will be the fifth carrier located on the tower.

The proposed collocation meets with all legal and technical requirements. This Application contains all required information and statements per R.C.S.A §16-50j-89 and the proposed installation has been drafted per current code, and studied with regard to structural feasibility and RF emissions output. Drawings and Reports are attached. Dish Wirelss' proposed collocation presents no known material changes to environmental conditions from those as documented in the Council's original Findings of Fact and presents no known public safety concerns.

2. Engineering Drawings per the requirements under R.C.S.A. §16-50j-89 are enclosed herewith.

3. Engineering and Structural Analysis per the requirements under R.C.S.A. §16-50j-89 is enclosed herewith.

4. Engineering and Mount Analysis per the requirements under R.C.S.A. §16-50j-89 is enclosed herewith.

5. A Letter from SBA, as Owner of the Facility, agreeing to the proposed shared use of the facility, is enclosed herewith.

6. With regard to any potential environmental impact:

A. Dish Wireless' collocation will not have any significant adverse visual impact on the surrounding areas. The antennas should result in only marginal additional equipment visibility from areas that already have views of the existing tower. The proposed work would not require any Federal Aviation Administration obstruction marking or lighting.

B. The proposed collocation does not affect or alter the existing site with regard to wetlands, water resources or air quality. National Wetlands Inventory Maps indicated that the site was not within the 100 year floor zone.

The proposed work is not thought to have any substantial adverse environmental impact. Public Need for the additional coverage outweighs any minor environmental effects that would result from the construction, operation, and maintenance of the proposed collocation.

7. The operation of Dish Wireless' new antennas will not increase the total radio frequency electromagnetic power density at the site to a level at or above the applicable standards. The anticipated Maximum Composite contributions from the Dish Wireless facility are only 2.79% of the allowable FCC established general public limit. The anticipated composite MPE value for this site assuming all carriers present is 20.64% of the allowable FCC established general public limit sampled at the ground level. FCC guidelines state that if a site is to be out of compliance (over allowable thresholds), the carriers over 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated are well within the allowable 100% threshold per the federal government. A Power Density / RF Report per the requirements under R.C.S.A. §16-50j-89 is enclosed herewith.

8. Per the Connecticut Siting Council's COVID 19 Guidelines, one original hard copy of this Tower Share Application is being submitted, along with check in the amount of $625 for the filing fee per Conn. Gen. Stat. §4-189j; Regs., Conn. State Agencies §16-50v-1a.

   A. A copy of this Application and all attachments is being sent to:
      i. The Town of Middlefield's First Selectman, Edward P. Bailey
      ii. Town of Middlefield's Planning & Zoning Commission, Jan Wojas
      iii. The Property Owner, The Town of Middlefield
      iv. (Separate notice is not being sent to tower owner, as it belongs to SBA)

Please note, additionally: the planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. §16.50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modification will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modification will not cause a significant change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

Dish Wireless respectfully submits for the Council's review and approval this Application for Tower Share.

Sincerely,

G. 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: Edward P. Bailey, First Selectman / with attachments
Town of Middlefield, 393 Jackson Hill Rd., CT 06455
Jan Wojas Planning & Zoning Commission / with attachments
Town of Middlefield, 393 Jackson Hill Rd., Middlefield, CT 06455

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	Fedex Labels	X
Exhibit 4	Property Card	x
Exhibit 5	Property Map	x
Exhibit 6	Original Zoning Approval	Town of Middlefield P&Z 2/10/99
Exhibit 7	EME Report	EBI Consulting 7/19/21
Exhibit 8	Structural Analysis	TES 6/3/21
Exhibit 9	Mount Analysis	B+T GRP 6/4/21
Exhibit 10	Construction Drawings	B+T GRP 6/2/21

EXHIBIT 1

Check copy

EXHIBIT 2
Letter of Intent

July 28, 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: **134 R Creamery Rd., Durham, CT**
DISH Site No: BOBDL00138A
SBA Site No: CT46140-A

Dear Ms. Bachman:

Please let the following serve as Evidence of Intent to allow Dish Wireless' shared use of the existing SBA telecommunications site at **134 R Creamery Rd., Durham, CT**.

SBA Steel, 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 86' 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

774391715749

ADD NICKNAME

Delivered
Monday, August 2, 2021 at 10:12 am

DELIVERED
Signature release on file

GET STATUS UPDATES

OBTAIN PROOF OF DELIVERY

FROM
SBA COMMUNICATIONS CORPORATION
Rick Woods

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

TO
Melanie A. Bachman Exec. Dir
Connecticut Siting Council

Ten Franklin Square
NEW BRITAIN, CT US 06051
508-251-0720

Travel History

TIME ZONE
Local Scan Time

Monday, August 2, 2021

10:12 AM	NEW BRITAIN, CT	Delivered Package delivered to recipient address - release authorized
7:15 AM	WINDSOR LOCKS, CT	On FedEx vehicle for delivery
7:03 AM	WINDSOR LOCKS, CT	At local FedEx facility

Saturday, July 31, 2021

10:14 PM	EAST GRANBY, CT	At destination sort facility
7:03 PM	NEWARK, NJ	Departed FedEx hub
12:43 PM	NEWARK, NJ	In transit
12:17 PM	NEWARK, NJ	Arrived at FedEx hub

Friday, July 30, 2021

8:51 PM	FRAMINGHAM, MA	Left FedEx origin facility

12:24 PM	FRAMINGHAM, MA	Picked up

Thursday, July 29, 2021

9:26 AM		Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER
774391715749

SERVICE
FedEx Priority Overnight

WEIGHT
5 lbs / 2.27 kgs

DIMENSIONS
18x13x3 in.

DELIVERY ATTEMPTS
1

TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
5 lbs / 2.27 kgs

TERMS
Shipper

SHIPPER REFERENCE
10-56-92009-6089

PACKAGING
FedEx Box

SPECIAL HANDLING SECTION
Deliver Weekday

SHIP DATE
7/30/21

STANDARD TRANSIT
8/2/21 before 10:30 am

ACTUAL DELIVERY
8/2/21 at 10:12 am

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1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
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FedEx

TRACK ANOTHER SHIPMENT

774391739437

ADD NICKNAME

Delivered
Monday, August 2, 2021 at 10:12 am

DELIVERED
Signature release on file

GET STATUS UPDATES

OBTAIN PROOF OF DELIVERY

FROM
SBA COMMUNICATIONS CORPORATION
Rick Woods

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

TO
Melanie A. Bachman Exec. Dir
Connecticut Siting Council

Ten Franklin Square
NEW BRITAIN, CT US 06051
508-251-0720

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Local Scan Time

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12:24 PM	FRAMINGHAM, MA	Picked up

Thursday, July 29, 2021

9:27 AM		Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER
774391739437

SERVICE
FedEx Priority Overnight

WEIGHT
5 lbs / 2.27 kgs

DIMENSIONS
18x13x3 in.

DELIVERY ATTEMPTS
1

TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
5 lbs / 2.27 kgs

TERMS
Shipper

SHIPPER REFERENCE
10-56-92009-6089

PACKAGING
FedEx Box

SPECIAL HANDLING SECTION
Deliver Weekday

SHIP DATE
7/30/21

STANDARD TRANSIT
8/2/21 before 10:30 am

ACTUAL DELIVERY
8/2/21 at 10:12 am

After printing this label:
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FedEx

TRACK ANOTHER SHIPMENT

774379401673

ADD NICKNAME

Delivered
Monday, August 2, 2021 at 8:47 am

DELIVERED

Signed for by: D.GOLUB

GET STATUS UPDATES

OBTAIN PROOF OF DELIVERY

FROM

SBA COMMUNICATIONS CORPORATION
Rick Woods

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

TO

Edward P. Bailey
Town of Middlefield

First Selectman
393 Jackson Hill Rd.
MIDDLEFIELD, CT US 06455
508-251-0720

Travel History

TIME ZONE
Local Scan Time

Monday, August 2, 2021

8:47 AM	MIDDLEFIELD, CT	Delivered
7:51 AM	NORTH HAVEN, CT	On FedEx vehicle for delivery
7:24 AM	NORTH HAVEN, CT	At local FedEx facility

Sunday, August 1, 2021

7:44 PM	EAST GRANBY, CT	At destination sort facility
4:36 PM	MEMPHIS, TN	Departed FedEx hub

Saturday, July 31, 2021

11:09 AM	MEMPHIS, TN	Arrived at FedEx hub

Friday, July 30, 2021

8:35 PM	FRAMINGHAM, MA	Left FedEx origin facility
12:24 PM	FRAMINGHAM, MA	Picked up

Wednesday, July 28, 2021

10:36 AM		Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER
774379401673

SERVICE
FedEx Priority Overnight

WEIGHT
1 lbs / 0.45 kgs

DELIVERY ATTEMPTS
1

DELIVERED TO
Receptionist/Front Desk

TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
1 lbs / 0.45 kgs

TERMS
Shipper

SHIPPER REFERENCE
10-56-92009-6089

PACKAGING
FedEx Envelope

SPECIAL HANDLING SECTION
Deliver Weekday

SHIP DATE
7/30/21

STANDARD TRANSIT
8/2/21 before 10:30 am

ACTUAL DELIVERY
8/2/21 at 8:47 am

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
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TRACK ANOTHER SHIPMENT

774379422903

ADD NICKNAME

Delivered
Monday, August 2, 2021 at 8:47 am

DELIVERED

Signed for by: D.GOLUB

GET STATUS UPDATES

OBTAIN PROOF OF DELIVERY

FROM

SBA COMMUNICATIONS CORPORATION
Rick Woods

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

TO

Jan Wojas
Town of Middlefield

Planning & Zoning Commission
393 Jackson Hill Rd.
MIDDLEFIELD, CT US 06455
508-251-0720

Travel History

TIME ZONE
Local Scan Time

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Friday, July 30, 2021

8:35 PM	FRAMINGHAM, MA	Left FedEx origin facility
12:24 PM	FRAMINGHAM, MA	Picked up

Wednesday, July 28, 2021

10:37 AM		Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER
774379422903

SERVICE
FedEx Priority Overnight

WEIGHT
1 lbs / 0.45 kgs

DELIVERY ATTEMPTS
1

DELIVERED TO
Receptionist/Front Desk

TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
1 lbs / 0.45 kgs

TERMS
Shipper

SHIPPER REFERENCE
10-56-92009-6089

PACKAGING
FedEx Envelope

SPECIAL HANDLING SECTION
Deliver Weekday

SHIP DATE
7/30/21

STANDARD TRANSIT
8/2/21 before 10:30 am

ACTUAL DELIVERY
8/2/21 at 8:47 am

EXHIBIT 4

Property Card

393 JACKSON HILL RD

Location	393 JACKSON HILL RD	**Mblu**	11/ / 242/ /
Acct#	00069300	**Owner**	MIDDLEFIELD TOWN OF
Assessment	$659,300	**PID**	676
Building Count	4		

Current Value

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2016	$472,000	$187,300	$659,300

Owner of Record

Owner	MIDDLEFIELD TOWN OF	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	393 JACKSON HILL RD MIDDLEFIELD, CT 06455	**Book & Page**	0000/0000
		Sale Date	01/01/1900
		Instrument	UNKQ

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
MIDDLEFIELD TOWN OF	$0		0000/0000	UNKQ	01/01/1900

Building Information

Building 1 : Section 1

Year Built:	1963
Living Area:	2,916
Replacement Cost:	$494,484
Building Percent Good:	72
Replacement Cost Less Depreciation:	$356,000

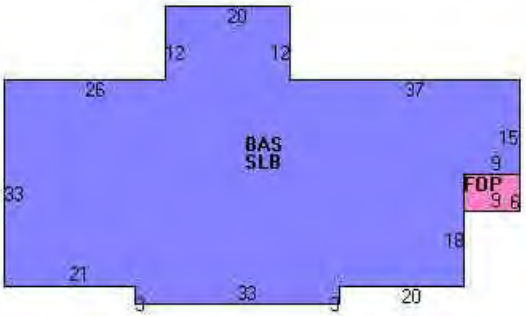
Building Attributes	
Field	**Description**
Style:	City/Town Hall

Model	Comm/Ind
Grade	Average
Stories:	1
Occupancy	1.00
Exterior Wall 1	Brick
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Asphalt Shingl
Interior Wall 1	Drywall
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	
Heating Fuel	Electric
Heating Type	Electr Basebrd
AC Type	Central
Struct Class	
Bldg Use	MUNICIPAL MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	903C
Heat/AC	HEAT/AC SPLIT
Frame Type	WOOD FRAME
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	9.00
% Comn Wall	

Building Photo

(http://images.vgsi.com/photos/MiddlefieldCTPhotos//\01\00\17\89.jpg)

Building Layout



(http://images.vgsi.com/photos/MiddlefieldCTPhotos//Sketches/676_676.jp

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	2,916	2,916
FOP	Porch, Open	54	0
SLB	Slab	2,916	0
		5,886	2,916

Building 2 : Section 1

Year Built: 1978
Living Area: 4,000
Replacement Cost: $168,916
Building Percent Good: 84
Replacement Cost Less Depreciation: $141,900

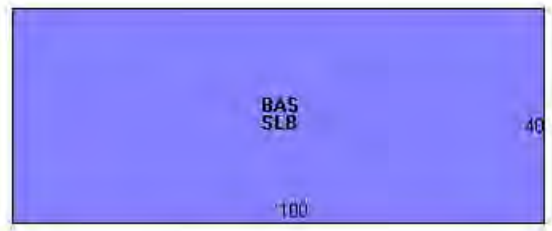
Building Attributes : Bldg 2 of 4	
Field	**Description**
Style:	Service Shop
Model	Ind/Comm

Grade	Average +
Stories:	1
Occupancy	1.00
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	Vinyl Siding
Roof Structure	Gable/Hip
Roof Cover	Asphalt Shingl
Interior Wall 1	Minimum
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Oil/Gas
Heating Type	Hot Air-no Duc
AC Type	None
Struct Class	
Bldg Use	MUNICIPAL MDL-96
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	9030
Heat/AC	NONE
Frame Type	MASONRY
Baths/Plumbing	NONE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	LIGHT
Wall Height	15.00
% Comn Wall	

Building Photo

(http://images.vgsi.com/photos/MiddlefieldCTPhotos//\01\00\17\90.jpg)

Building Layout



(http://images.vgsi.com/photos/MiddlefieldCTPhotos//Sketches/676_2216.j

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	4,000	4,000
SLB	Slab	4,000	0
		8,000	4,000

Building 3 : Section 1

Year Built: 1941
Living Area: 3,527
Replacement Cost: $181,842
Building Percent Good: 68
Replacement Cost Less Depreciation: $123,700

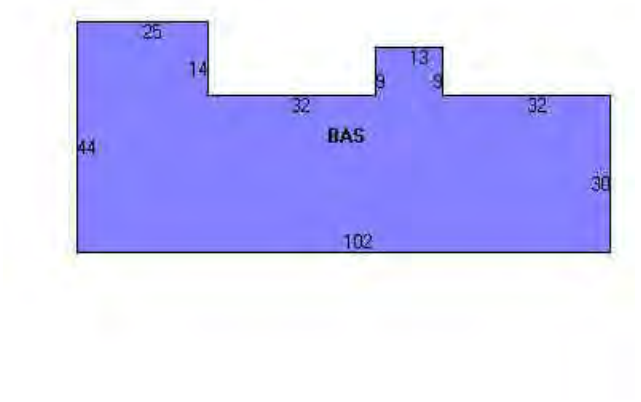
Building Attributes : Bldg 3 of 4	
Field	Description
Style:	Service Shop
Model	Ind/Comm
Grade	Average +

Stories:	1
Occupancy	1.00
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	Brick
Roof Structure	Gable/Hip
Roof Cover	Asphalt Shingl
Interior Wall 1	Minimum
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Oil/Gas
Heating Type	Forced Air-Duc
AC Type	None
Struct Class	
Bldg Use	MUNICIPAL MDL-96
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	9030
Heat/AC	NONE
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	18.00
% Comn Wall	

Building Photo

(http://images.vgsi.com/photos/MiddlefieldCTPhotos//\01\00\17\92.jpg)

Building Layout



(http://images.vgsi.com/photos/MiddlefieldCTPhotos//Sketches/676_2217.j

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	3,527	3,527
		3,527	3,527

Building 4 : Section 1

Year Built: 2000
Living Area: 374
Replacement Cost: $16,698
Building Percent Good: 88
Replacement Cost Less Depreciation: $14,700

Building Attributes : Bldg 4 of 4	
Field	Description
Style:	Warehouse
Model	Ind/Comm
Grade	Average
Stories:	1

Occupancy	1.00
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Asphalt Shingl
Interior Wall 1	Wall Brd/Wood
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Coal or Wood
Heating Type	None
AC Type	None
Struct Class	
Bldg Use	MUNICIPAL MDL-96
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	9030
Heat/AC	NONE
Frame Type	WOOD FRAME
Baths/Plumbing	NONE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	9.00
% Comn Wall	

Building Photo

(http://images.vgsi.com/photos/MiddlefieldCTPhotos//\01\00\17\91.jpg)

Building Layout

(http://images.vgsi.com/photos/MiddlefieldCTPhotos//Sketches/676_2218.j

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	374	374
FOP	Porch, Open	264	0
UAT	Attic, Unfinished	374	0
		1,012	374

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code 903C

Land Line Valuation

Size (Acres) 5.47

Description	MUNICIPAL MDL-94	**Frontage**	
Zone	HD2	**Depth**	
Neighborhood	0500	**Assessed Value**	$187,300
Alt Land Appr	No		
Category			

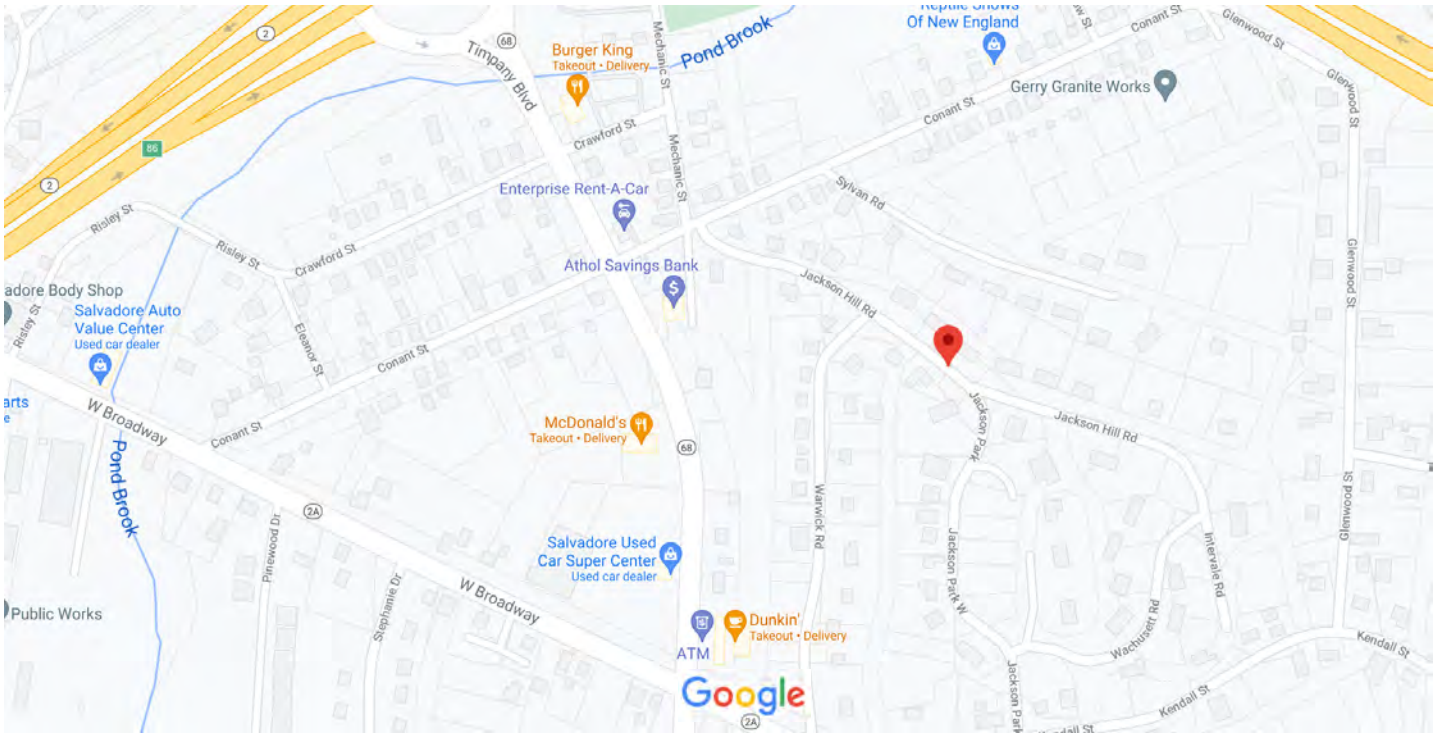
Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
KEN1	KENNEL-AVG			100.00 S.F.	$600	1
FN3	FENCE-6' CHAIN			71.00 L.F.	$500	1
BRN8	POLE BARN			2760.00 S.F.	$14,500	1
BRN8	POLE BARN			648.00 S.F.	$3,400	1
SHD7	COM MAS			140.00 S.F.	$3,000	1
PAV1	PAVING-ASPHALT			30000.00 S.F.	$15,800	1

EXHIBIT 5

Property Map

Google Maps Jackson Hill Rd



Map data ©2021 200 ft

Jackson Hill Rd

Directions Save Nearby Send to your phone Share

Gardner, MA 01440

EXHIBIT 6

Zoning Approval

TOWN OF MIDDLEFIELD

PLANNING AND ZONING COMMISSION
MIDDLEFIELD, CONNECTICUT

February 17, 1999

David Bass, Esq.
Cuddy & Feder & Worby
90 Maple Ave.
White Plains, NY 10601

Re: Nextel Communications

Dear Mr. Bass:

This is to inform you that at its regular meeting on February 10, 1999 the Middlefield Planning and Zoning Commission voted to approve, with conditions, your application for a special permit to install wireless communication towers, antennas and facilities at 393 Jackson Hill Road. A legal notice to that effect will be published in the Middletown Press on February 18, 1999.

This approval was conditional upon the following:

1. provided that within 90 days of approval the applicant meets with the various town agencies, including its 911 service, to determine their communications needs as related to the tower and that the applicant uses its best efforts to reserve a location which will meet such needs.

If you have any questions or comments please free feel to contact me at 347-7214.

Very truly yours,

G. L. Colegrove

Geoffrey L. Colegrove
Middlefield Town Planner

GLC/jes

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: BOBDL00136A

393 Jackson Hill Road
Middlefield, Connecticut 06455

July 19, 2021

EBI Project Number: 6221003255

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**20.64%**

21 B Street, Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

July 19, 2021

Dish Wireless

Emissions Analysis for Site: BOBDL00136A

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **393 Jackson Hill Road** in **Middlefield, 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 Wireless antenna facility located at 393 Jackson Hill Road in Middlefield, 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) 0 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%
AT&T	2.87%
T-Mobile	9.43%
Verizon	4.86%
Town of M'field	0.69%
Site Total MPE % :	20.64%

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 % :	20.64%

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	1667.71	98.0	28.33	600 MHz n71	400	7.08%
Dish Wireless 1900 MHz n70	4	7363.09	98.0	125.10	1900 MHz n70	1000	12.51%
Dish Wireless 2190 MHz n66	4	7363.09	98.0	125.10	2190 MHz n66	1000	12.51%
						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:	20.64%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **20.64%** 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 146 ft EEI Monopole
Customer Name: SBA Communications Corp
Customer Site Number: CT46135-A
Customer Site Name: Middlefield-jacskon Hill Rd
Carrier Name: Dish Wireless (App#: 153561, v2)
Carrier Site ID / Name: BOBDL00136A / 0
Site Location: 393 Jackson Hill Road
Middlefield, Connecticut
Middlesex County
Latitude: 41.517360
Longitude: -72.714167

Analysis Result:

Max Structural Usage: 94.5% [Pass]
Max Foundation Usage: 98.6% [Pass]
Additional Usage Caused by Mount Modification: N/A

Report Prepared By: Walter Velez

Introduction

The purpose of this report is to summarize the analysis results on the 146 ft EEI Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Original structural design report & design drawings prepared by Engineered Endeavors Incorporated, Inc. Dated 05-28-1999. Drawing No GS51482. Job No 5072. Previous structural report prepared by Tower Engineering Solutions. Dated 05-10-2021. TES Project No 107729.
Foundation Drawing	Original foundation design & drawings prepared by Engineered Endeavors Incorporated, Inc. Dated 05-28-1999. Drawing No 5072SPRD. Job No 5072.
Geotechnical Report	Geotechnical report prepared by Tectonic Engineering Consultants, P.C. Dated 05-20-1999. Project No W.O.1170.C942.
Modification Drawings	N/A
Mount Analysis	Dish Wireless (App#: 153561, v2)

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)
(Based on IBC 2015)	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 = 0.181, S_1 = 0.063

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	150.0	9	Cci Antennas HPA-65R-BUU-H8-Panel	Platform w/ Hand Rails	(6) 1 5/8" Coax; (2) 1/2" RET Line; (4) 3" DC Power; (1) 3" Fiber	AT&T
2		6	Powerwave LGP21401 TMA's			
3		6	Powerwave LGP219003 Diplexer			
4		6	Powerwave 7020.00 RET's			
5		3	Ericsson RRUS-11 RRU's			
6		3	Ericsson RRUS-32 RRU's			
7		3	Ericsson RRUS 32 B2 RRU's			
8		2	Raycap DC-6-48-60-18-8F Surge			
9	140.0	6	Commscope SBNHH-1D65B - Panel	Low Profile Platform	(10) 1 5/8"; (2) 1 5/8" Hybriflex	Verizon
10		6	Antel LPA-80063/4CF - Panel			
11	138.0	3	ALU B13 RRH4X30-4R RRU's			
12		3	ALU B25 RRH4x30-4R RRU's			
13		3	ALU B66 RRH4x45 RRU's			
14		2	Raycap RC2DC-3315-PF-48 Surge			
15	124.0	1	dbSpectra DS4C06F36D-N Omni	Pipe Mount	(4) 7/8"	Town of Middlefield
16	119.0	1	Telewave ANT450F6 Omni	Pipe Mount		
17		1	Celwave PD1142-66 Omni			
18	109.0	1	Airmux 400/ODU/F49F/100M - Dish	(1) Pipe Mount (Airmux 400/ODU/F49F/100M) (3) Standard Existing Antenna Pipe Mount (au_andrew ATJB200-A01-004)	(1) 1/2"	
19	98.0	-	-	Empty Low Profile Platform[1]	-	AT&T
20	88.0	3	RFS APXVAARR24_43-U-NA20 - Panel	Platform w/ Handrail (SitePro RMQP-4096-HK)	(6) 1 5/8" Coax; (3) 1 5/8" Fiber	T-Mobile
21		3	Ericsson Air 32 KRD901146-1_B66A_B2A - Panel			
22		3	Ericsson KRY 112 144/1 TMA's			
23		3	Ericsson Radio 4449 B71+B12 RRU's			

[1] Dish will need to remove empty low profile platform to install.

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
24	98.0	3	JMA Wireless MX08FRO665-21 - Panel	Platform w/HRK (Sitepro1 SNP8HR-3XX)	(1) 1.6" Hybrid	Dish Wireless
25		3	Fujitsu TA08025-B605 RRU's			
26		3	Fujitsu TA08025-B604 RRU's			
27		1	Raycap RDIDC-9181-PF-48 OVP			

The proposed transmission line can be installed inside or outside of the pole shafts. Please see the attached coax layout for the line placement considered in the analysis.
Note: Dish will need to remove empty low profile platform to install

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:	**94.5%**	**69.2%**	**92.8%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Original Design Reactions	2626.9	23.1	29.6
Analysis Reactions	3961.1	35.1	45.1
Factored Reactions*	3546.4	31.2	39.9

* Per section 15.5.1 of the TIA-222-G standard, factored reactions were obtained by multiplying a 1.35 factor to the original design reactions.

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 1.8014 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 ANSI/TIA-222-G standards, the 2015 IBC and the 2018 Connecticut State Building Code under the design basic wind speed 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.

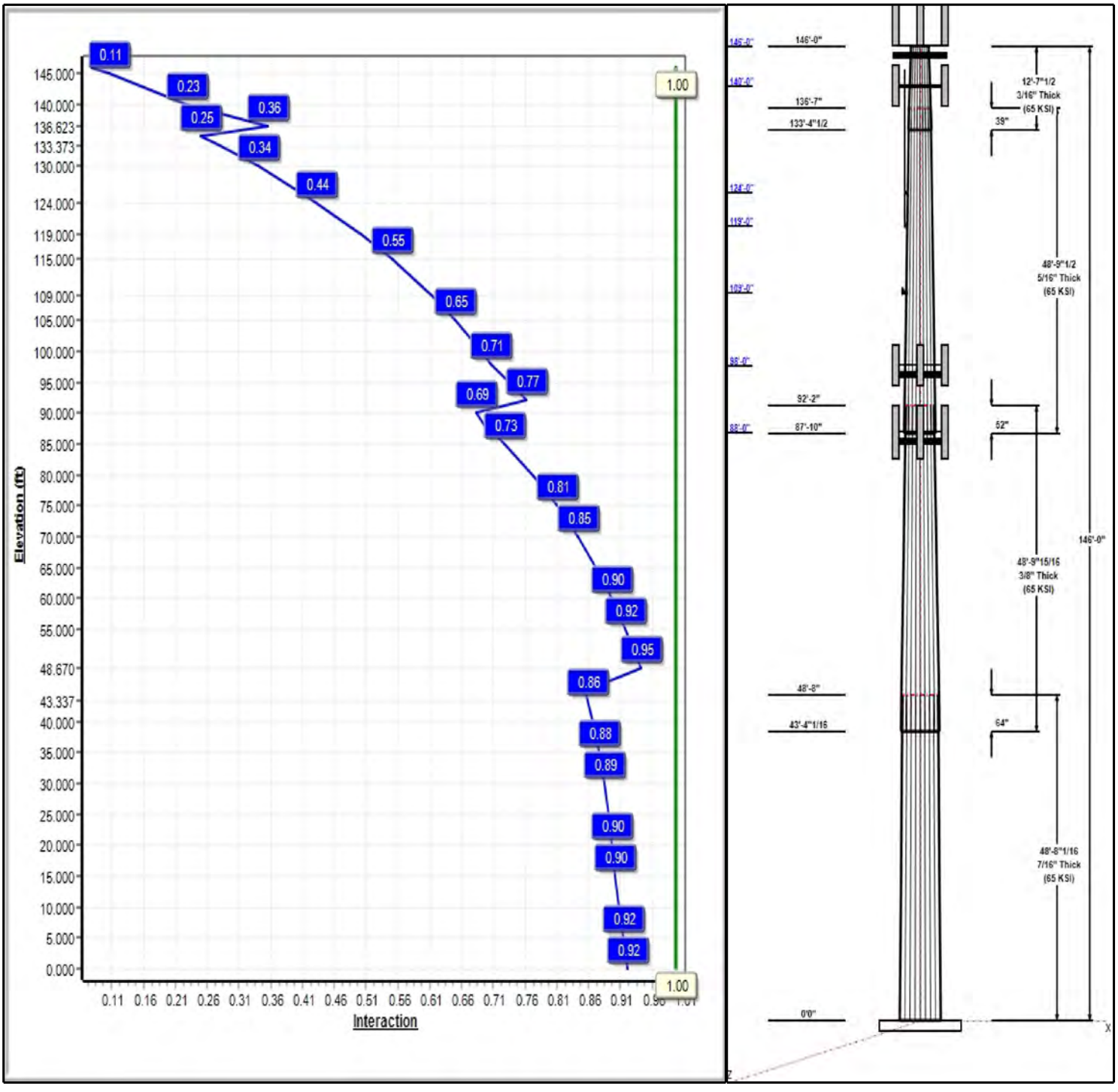
Usage Diagram - Max Ratio 94.51% at 48.7ft

Structure:	CT46135-A-SBA	**Code:**	EIA/TIA-222-G	6/3/2021
Site Name:	Middlefield-jacskon Hill Rd	**Exposure:**	C	
Height:	146.00 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

Tower Engineering Solutions

Dead Load Factor:	1.20	**Iterations:**	27
Wind Load Factor:	1.60		

Load Case : 1.2D + 1.6W 97 mph Wind



Structure: CT46135-A-SBA

Type: Tapered
Site Name: Middlefield-jacskon Hill Rd
Height: 146.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.19692

6/3/2021

Tower Engineering Solutions

Shaft Properties

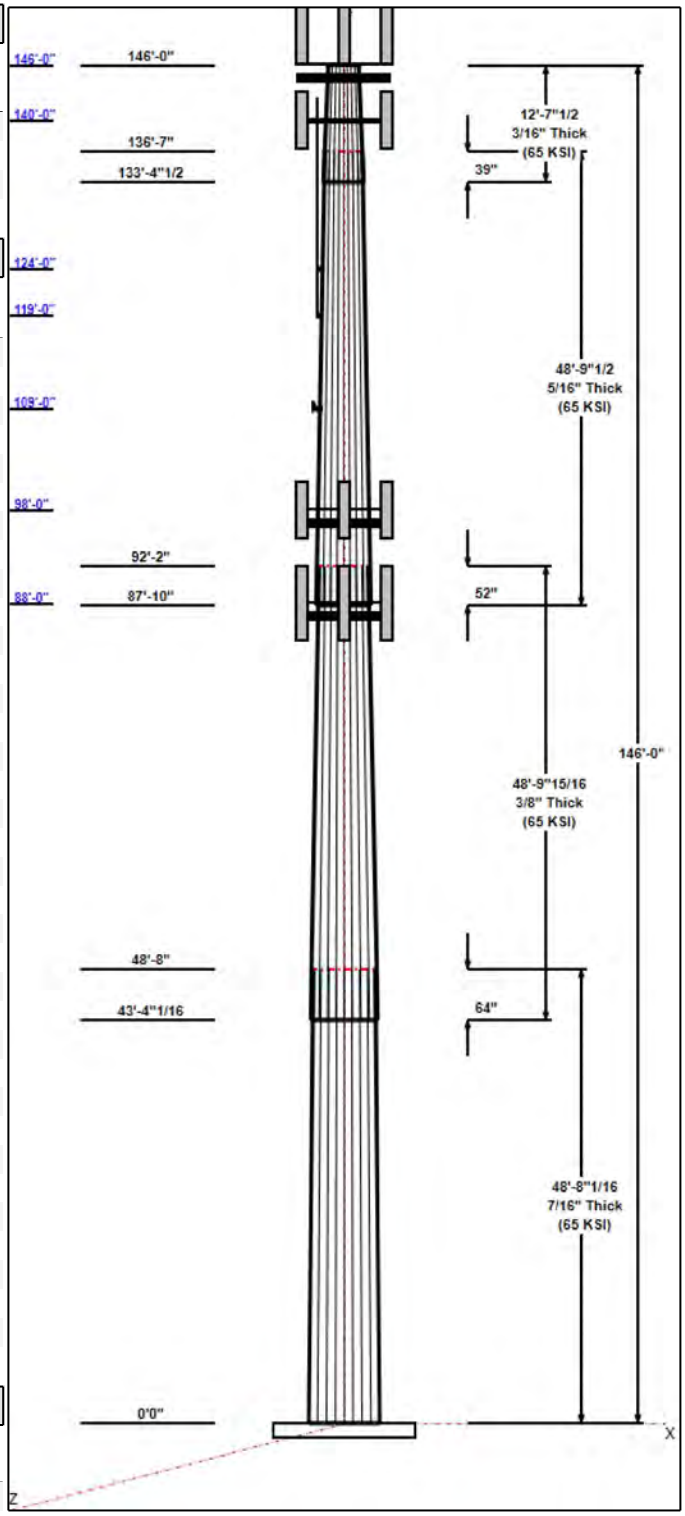
Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	48.67	36.42	46.00	0.438		0.19692	65
2	48.83	28.60	38.22	0.375	Slip	0.19692	65
3	48.79	20.47	30.08	0.313	Slip	0.19692	65
4	12.63	19.00	21.49	0.188	Slip	0.19692	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
146.00	150.00	9	Cci HPA-65R-BUU-H8	AT&T
146.00	150.00	6	Powerwave LGP21401	AT&T
146.00	150.00	6	Powerwave LGP219003	AT&T
146.00	150.00	6	Powerwave 7020.00 RET's	AT&T
146.00	150.00	3	Ericsson RRUS-11 RRU's	AT&T
146.00	150.00	3	Ericsson RRUS-32 RRU's	AT&T
146.00	150.00	3	Ericsson RRUS 32 B2	AT&T
146.00	150.00	2	Raycap DC-6-48-60-18-8F	AT&T
146.00	146.00	1	Beacon	---
146.00	149.50	1	Lightning Rod	---
146.00	146.00	1	Platform w/ Hand Rails	AT&T
140.00	140.00	6	Commscope	Verizon
140.00	140.00	6	Antel LPA-80063/4CF	Verizon
140.00	138.00	3	ALU B13 RRH4X30-4R	Verizon
140.00	138.00	3	ALU B25 RRH4x30-4R	Verizon
140.00	138.00	3	ALU B66 RRH4x45 RRU's	Verizon
140.00	138.00	2	Raycap	Verizon
140.00	140.00	1	Low Profile Platform	Verizon
124.00	124.00	1	Pipe Mount	Town of Middlefield CT
124.00	133.17	1	dbSpectra DS4C06F36D-N	Town of Middlefield CT
119.00	122.92	1	Telewave ANT450F6 Omni	Town of Middlefield CT
119.00	128.40	1	Celwave PD1142-66	Town of Middlefield CT
119.00	119.00	1	Pipe Mount	Town of Middlefield CT
109.00	109.00	1	Airmux	Town of Middlefield CT
109.00	109.00	1	Airmux	Town of Middlefield CT
109.00	109.00	3	Pipe Mount (au_andrew)	Town of Middlefield CT
98.00	98.00	3	JMA Wireless	Dish Wireless
98.00	98.00	3	Fujitsu TA08025-B605	Dish Wireless
98.00	98.00	3	Fujitsu TA08025-B604	Dish Wireless
98.00	98.00	1	Raycap	Dish Wireless
98.00	98.00	1	Platform w/HRK (Sitepro1	Dish Wireless
88.00	88.00	3	RFS	T-Mobile
88.00	88.00	3	Ericsson Air 32	T-Mobile
88.00	88.00	3	Ericsson KRY 112 144/1	T-Mobile
88.00	88.00	3	Ericsson Radio 4449	T-Mobile
88.00	88.00	1	Platform w/ Handrail	T-Mobile

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
3.00	146.00	Inside	1 5/8" Coax	AT&T
3.00	146.00	Inside	1/2" RET Line	AT&T
3.00	146.00	Inside	3" DC Power	AT&T
3.00	146.00	Inside	3" Fiber	AT&T
3.00	140.00	Inside	1 5/8" Coax	Verizon
3.00	140.00	Inside	1 5/8" Hybriflex	Verizon



3.00	119.00	Inside	7/8" Coax	Town of Middlefield
3.00	109.00	Inside	1/2"	Town of Middlefield
3.00	98.00	Inside	1.6" Hybrid	Dish Wireless
3.00	88.00	Inside	1 5/8" Coax	T-Mobile
3.00	88.00	Inside	1 5/8" Fiber	T-Mobile

Anchor Bolts

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

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.2500	61.0	60.0	Round

Reactions

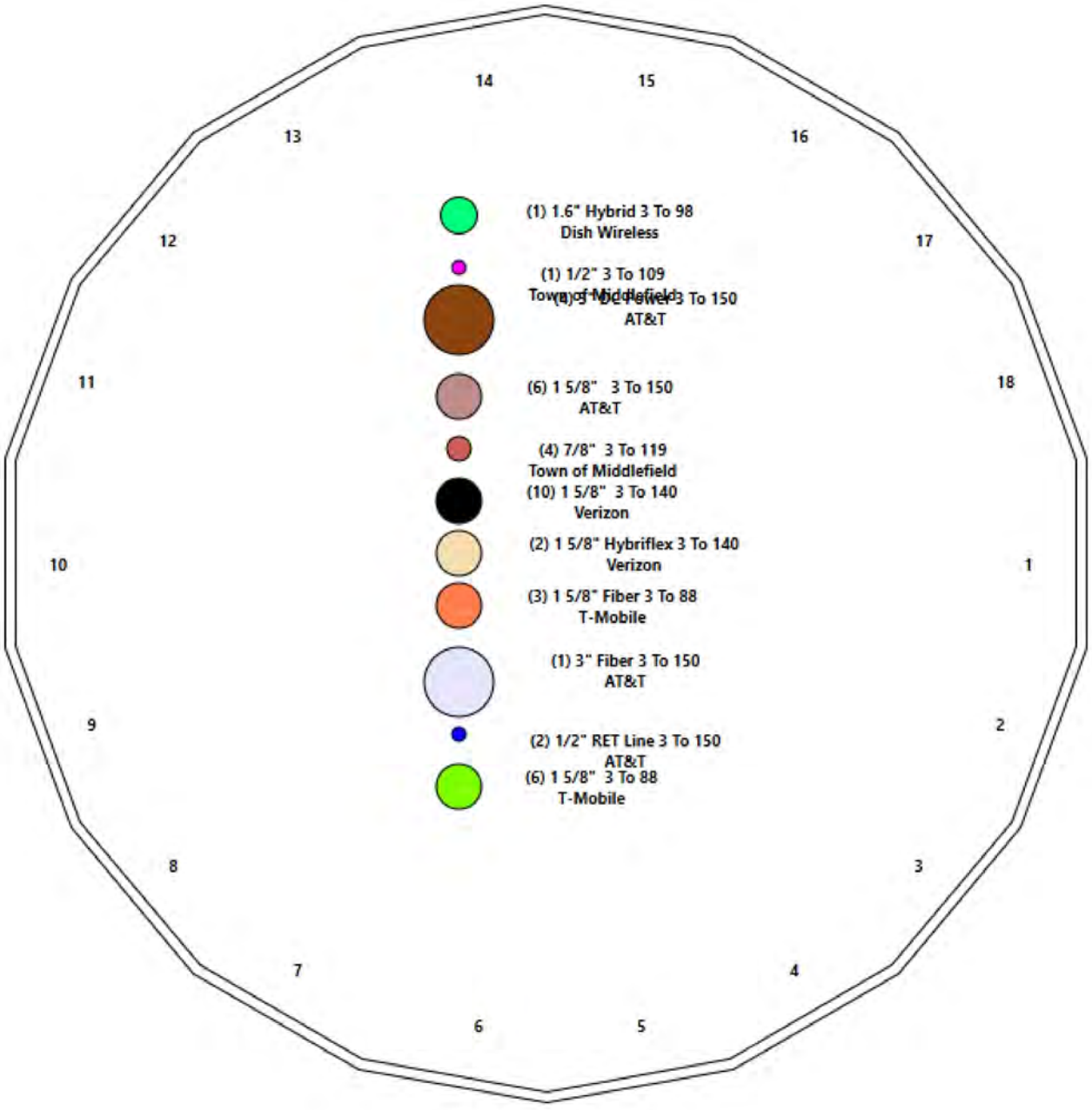
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 97 mph Wind	3961.1	35.1	45.1
0.9D + 1.6W 97 mph Wind	3898.5	35.1	33.8
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1108.9	9.7	71.9
1.2D + 1.0E	230.7	1.8	45.2
0.9D + 1.0E	226.6	1.8	33.9
1.0D + 1.0W 60 mph Wind	941.1	8.4	37.7

Structure: CT46135-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Middlefield-jacskon Hill Rd
Height: 146.00 (ft)

6/3/2021

Tower Engineering Solutions



Shaft Properties

Structure:	CT46135-A-SBA		**Code:**	EIA/TIA-222-G	6/3/2021
Site Name:	Middlefield-jacskon Hill Rd		**Exposure:**	C	
Height:	146.00 (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	48.670	0.4375	65		0.00	9,376
2	18	48.830	0.3750	65	Slip	64.00	6,533
3	18	48.790	0.3125	65	Slip	52.00	4,111
4	18	12.627	0.1875	65	Slip	39.00	513
					Total Shaft Weight:		**20,532**

	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	46.00	0.00	63.27	16593.77	17.13	105.14	36.42	48.67	49.96	8170.56	13.27	83.24	0.196918
2	38.22	43.34	45.04	8148.39	16.56	101.91	28.60	92.17	33.59	3381.52	12.04	76.27	0.196918
3	30.08	87.83	29.52	3305.07	15.56	96.25	20.47	136.62	19.99	1026.59	10.14	65.51	0.196918
4	21.49	133.3	12.68	726.47	18.80	114.59	19.00	146.00	11.20	500.59	16.46	101.3	0.196918

Load Summary

Structure:	CT46135-A-SBA	**Code:**	EIA/TIA-222-G	6/3/2021	
Site Name:	Middlefield-jacskon Hill Rd	**Exposure:**	C		
Height:	146.00 (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	146.00	Cci HPA-65R-BUU-H8	9	68.00	12.98	0.79	358.13	14.591	0.79	0.00	4.00
2	146.00	Powerwave LGP21401 TMA's	6	19.00	1.08	0.60	52.36	1.535	0.60	0.00	4.00
3	146.00	Powerwave LGP219003 Diplexer	6	6.50	0.37	0.60	18.12	0.863	0.60	0.00	4.00
4	146.00	Powerwave 7020.00 RET's	6	1.16	0.14	0.60	6.54	0.309	0.60	0.00	4.00
5	146.00	Ericsson RRUS-11 RRU's	3	50.00	2.57	0.67	131.23	3.219	0.67	0.00	4.00
6	146.00	Ericsson RRUS-32 RRU's	3	77.00	3.31	0.67	190.22	4.104	0.67	0.00	4.00
7	146.00	Ericsson RRUS 32 B2 RRU's	3	53.00	2.74	0.67	140.71	3.467	0.67	0.00	4.00
8	146.00	Raycap DC-6-48-60-18-8F Surge	2	20.00	1.90	0.67	58.78	2.802	0.67	0.00	4.00
9	146.00	Beacon	1	15.00	2.40	1.00	32.41	2.400	1.00	0.00	0.00
10	146.00	Lightning Rod	1	35.00	1.05	1.00	66.33	3.417	1.00	0.00	3.50
11	146.00	Platform w/ Hand Rails	1	1600.00	32.00	1.00	3694.18	59.848	1.00	0.00	0.00
12	140.00	Commscope SBNHH-1D65B	6	50.71	8.05	0.83	250.20	9.334	0.83	0.00	0.00
13	140.00	Antel LPA-80063/4CF RRU's	6	20.00	6.15	0.94	224.70	7.182	0.94	0.00	0.00
14	140.00	ALU B13 RRH4X30-4R RRU's	3	57.20	2.16	0.67	119.06	2.767	0.67	0.00	-2.00
15	140.00	ALU B25 RRH4x30-4R RRU's	3	51.00	2.14	0.67	108.35	2.744	0.67	0.00	-2.00
16	140.00	ALU B66 RRH4x45 RRU's	3	56.80	2.54	0.67	140.21	3.229	0.67	0.00	-2.00
17	140.00	Raycap RC2DC-3315-PF-48 Surge	2	42.00	2.52	0.67	191.52	3.151	0.67	0.00	-2.00
18	140.00	Low Profile Platform	1	1500.00	22.00	1.00	2799.91	39.540	1.00	0.00	0.00
19	124.00	Pipe Mount	1	87.00	4.31	1.00	218.09	9.594	1.00	0.00	0.00
20	124.00	dbSpectra DS4C06F36D-N	1	70.00	5.50	1.00	205.64	11.893	1.00	0.10	9.17
21	119.00	Telewave ANT450F6 Omni	1	21.00	1.86	1.00	68.91	4.627	1.00	0.00	3.92
22	119.00	Celwave PD1142-66	1	16.00	1.57	1.00	152.35	4.834	1.00	0.00	9.40
23	119.00	Pipe Mount	1	87.00	4.31	1.00	217.56	9.572	1.00	0.00	0.00
24	109.00	Airmux 400/ODU/F49F/100M	1	7.00	1.83	1.00	279.60	2.326	1.00	0.00	0.00
25	109.00	Airmux 400/ODU/F49F/100M	1	35.00	1.80	1.00	279.60	2.326	1.00	0.00	0.00
26	109.00	Pipe Mount (au_andrew)	3	20.00	1.60	0.75	108.40	5.416	0.75	0.00	0.00
27	98.00	JMA Wireless MX08FRO665-21	3	64.50	12.49	0.74	343.25	13.894	0.74	0.00	0.00
28	98.00	Fujitsu TA08025-B605 RRU's	3	74.95	1.96	0.67	125.04	2.498	0.67	0.00	0.00
29	98.00	Fujitsu TA08025-B604 RRU's	3	63.93	1.96	0.67	112.47	2.498	0.67	0.00	0.00
30	98.00	Raycap RDIDC-9181-PF-48 OVP	1	21.85	2.01	0.67	72.76	2.555	0.67	0.00	0.00
31	98.00	Platform w/HRK (Sitepro1	1	1876.00	39.73	1.00	3758.55	87.561	1.00	0.00	0.00
32	88.00	RFS APXVAARR24_43-U-NA20	3	128.00	20.24	0.72	533.51	22.038	0.72	0.00	0.00
33	88.00	Ericsson Air 32	3	132.20	6.51	0.86	304.27	7.570	0.86	0.00	0.00
34	88.00	Ericsson KRY 112 144/1 TMA's	3	11.02	0.35	0.60	21.26	0.735	0.60	0.00	0.00
35	88.00	Ericsson Radio 4449 B71+B12	3	74.00	1.63	0.67	136.93	2.130	0.67	0.00	0.00
36	88.00	Platform w/ Handrail (SitePro	1	2645.00	51.70	1.00	5270.82	87.970	1.00	0.00	0.00
		Totals:	**99**	**12,076.87**			**31,696.78**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
3.00	146.00	(6) 1 5/8" Coax	0.00	Inside
3.00	146.00	(2) 1/2" RET Line	0.00	Inside
3.00	146.00	(4) 3" DC Power	0.00	Inside
3.00	146.00	(1) 3" Fiber	0.00	Inside
3.00	140.00	(10) 1 5/8" Coax	0.00	Inside

Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice CaAa (sf)	No Ice CaAa Factor	Ice Weight (lb)	Ice CaAa (sf)	Ice CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
3.00	140.00	(2) 1 5/8" Hybriflex			0.00	Inside					
3.00	119.00	(4) 7/8" Coax			0.00	Inside					
3.00	109.00	(1) 1/2"			0.00	Inside					
3.00	98.00	(1) 1.6" Hybrid			0.00	Inside					
3.00	88.00	(6) 1 5/8" Coax			0.00	Inside					
3.00	88.00	(3) 1 5/8" Fiber			0.00	Inside					

Shaft Section Properties

Structure:	CT46135-A-SBA	**Code:**	EIA/TIA-222-G	6/3/2021	
Site Name:	Middlefield-jacskon Hill Rd	**Exposure:**	C		
Height:	146.00 (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	

Increment Length: **5 (ft)**

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.4375	46.000	63.267	16593.8	17.13	105.14	81.3	710.5	0.0
5.00		0.4375	45.015	61.900	15541.1	16.73	102.89	81.7	680.0	1064.8
10.00		0.4375	44.031	60.533	14533.9	16.34	100.64	82.2	650.1	1041.5
15.00		0.4375	43.046	59.165	13571.2	15.94	98.39	82.5	621.0	1018.3
20.00		0.4375	42.062	57.798	12652.0	15.54	96.14	82.5	592.5	995.0
25.00		0.4375	41.077	56.431	11775.2	15.14	93.89	82.5	564.6	971.7
30.00		0.4375	40.092	55.064	10939.9	14.75	91.64	82.5	537.4	948.5
35.00		0.4375	39.108	53.697	10145.1	14.35	89.39	82.5	510.9	925.2
40.00		0.4375	38.123	52.330	9389.8	13.95	87.14	82.5	485.1	902.0
43.34	Bot - Section 2	0.4375	37.466	51.417	8907.2	13.69	85.64	82.5	468.3	589.0
45.00		0.4375	37.139	50.962	8672.9	13.56	84.89	82.5	460.0	543.5
48.67	Top - Section 1	0.3750	37.166	43.789	7488.6	16.07	99.11	0.0	0.0	1182.4
50.00		0.3750	36.904	43.477	7329.8	15.94	98.41	82.5	391.2	197.5
55.00		0.3750	35.920	42.305	6753.0	15.48	95.79	82.5	370.3	729.7
60.00		0.3750	34.935	41.133	6207.2	15.02	93.16	82.5	350.0	709.8
65.00		0.3750	33.950	39.962	5691.6	14.55	90.53	82.5	330.2	689.9
70.00		0.3750	32.966	38.790	5205.5	14.09	87.91	82.5	311.0	669.9
75.00		0.3750	31.981	37.618	4747.8	13.63	85.28	82.5	292.4	650.0
80.00		0.3750	30.997	36.446	4317.8	13.16	82.66	82.5	274.4	630.1
85.00		0.3750	30.012	35.274	3914.5	12.70	80.03	82.5	256.9	610.1
87.83	Bot - Section 3	0.3750	29.454	34.610	3697.6	12.44	78.54	82.5	247.3	336.9
88.00		0.3750	29.421	34.571	3685.1	12.42	78.46	82.5	246.7	36.4
90.00		0.3750	29.027	34.102	3537.2	12.24	77.41	82.5	240.0	433.1
92.17	Top - Section 2	0.3125	29.226	28.677	3028.9	15.08	93.52	0.0	0.0	462.5
95.00		0.3125	28.668	28.124	2856.9	14.77	91.74	82.5	196.3	273.8
98.00		0.3125	28.077	27.538	2682.0	14.43	89.85	82.5	188.1	284.1
100.00		0.3125	27.683	27.147	2569.5	14.21	88.59	82.5	182.8	186.1
105.00		0.3125	26.699	26.171	2302.1	13.65	85.44	82.5	169.8	453.6
109.00		0.3125	25.911	25.390	2102.0	13.21	82.92	82.5	159.8	350.9
110.00		0.3125	25.714	25.194	2053.9	13.10	82.28	82.5	157.3	86.1
115.00		0.3125	24.729	24.218	1824.2	12.54	79.13	82.5	145.3	420.3
119.00		0.3125	23.942	23.436	1653.3	12.10	76.61	82.5	136.0	324.3
120.00		0.3125	23.745	23.241	1612.3	11.99	75.98	82.5	133.7	79.4
124.00		0.3125	22.957	22.460	1455.1	11.54	73.46	82.5	124.8	311.0
125.00		0.3125	22.760	22.265	1417.5	11.43	72.83	82.5	122.7	76.1
130.00		0.3125	21.776	21.288	1239.0	10.88	69.68	82.5	112.1	370.5
133.37	Bot - Section 4	0.3125	21.111	20.629	1127.5	10.50	67.56	82.5	105.2	240.6
135.00		0.3125	20.791	20.311	1076.2	10.32	66.53	82.5	102.0	182.9
136.62	Top - Section 3	0.1875	20.846	12.294	662.9	18.19	111.18	0.0	0.0	179.8
140.00		0.1875	20.182	11.899	601.0	17.57	107.63	80.7	58.7	139.0
145.00		0.1875	19.197	11.313	516.5	16.64	102.38	81.8	53.0	197.5
146.00		0.1875	19.000	11.195	500.6	16.46	101.33	82.0	51.9	38.3
										20532.0

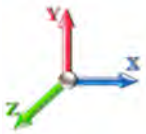
Wind Loading - Shaft

Structure:	CT46135-A-SBA	**Code:**	EIA/TIA-222-G	6/3/2021	
Site Name:	Middlefield-jacskon Hill Rd	**Exposure:**	C		
Height:	146.00 (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 27

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	348.10	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	340.65	0.650	0.000	5.00	19.254	12.52	428.4	0.0	1277.7
10.00		1.00	0.85	19.450	21.40	333.20	0.650	0.000	5.00	18.837	12.24	419.2	0.0	1249.8
15.00		1.00	0.85	19.450	21.40	325.75	0.650	0.000	5.00	18.421	11.97	409.9	0.0	1221.9
20.00		1.00	0.90	20.638	22.70	327.87	0.650	0.000	5.00	18.004	11.70	425.1	0.0	1194.0
25.00		1.00	0.95	21.630	23.79	327.80	0.650	0.000	5.00	17.588	11.43	435.2	0.0	1166.1
30.00		1.00	0.98	22.477	24.72	326.15	0.650	0.000	5.00	17.171	11.16	441.5	0.0	1138.2
35.00		1.00	1.01	23.218	25.54	323.34	0.650	0.000	5.00	16.755	10.89	445.0	0.0	1110.3
40.00		1.00	1.04	23.880	26.27	319.66	0.650	0.000	5.00	16.338	10.62	446.3	0.0	1082.4
43.34	Bot - Section 2	1.00	1.06	24.286	26.71	316.81	0.650	0.000	3.34	10.671	6.94	296.5	0.0	706.8
45.00		1.00	1.07	24.479	26.93	315.29	0.650	0.000	1.66	5.356	3.48	150.0	0.0	652.3
48.67	Top - Section 1	1.00	1.09	24.887	27.38	311.72	0.650	0.000	3.67	11.654	7.58	331.8	0.0	1418.9
50.00		1.00	1.09	25.029	27.53	316.79	0.650	0.000	1.33	4.168	2.71	119.3	0.0	237.0
55.00		1.00	1.12	25.536	28.09	311.45	0.650	0.000	5.00	15.406	10.01	450.0	0.0	875.7
60.00		1.00	1.14	26.008	28.61	305.70	0.650	0.000	5.00	14.989	9.74	446.0	0.0	851.8
65.00		1.00	1.16	26.450	29.09	299.60	0.650	0.000	5.00	14.572	9.47	440.9	0.0	827.8
70.00		1.00	1.17	26.866	29.55	293.19	0.650	0.000	5.00	14.156	9.20	435.1	0.0	803.9
75.00		1.00	1.19	27.259	29.98	286.51	0.650	0.000	5.00	13.739	8.93	428.4	0.0	780.0
80.00		1.00	1.21	27.632	30.39	279.58	0.650	0.000	5.00	13.323	8.66	421.1	0.0	756.1
85.00		1.00	1.22	27.987	30.79	272.43	0.650	0.000	5.00	12.906	8.39	413.2	0.0	732.1
87.83	Bot - Section 3	1.00	1.23	28.181	31.00	268.29	0.650	0.000	2.83	7.129	4.63	229.8	0.0	404.3
88.00	Appurtenance(s)	1.00	1.23	28.192	31.01	268.04	0.650	0.000	0.17	0.424	0.28	13.7	0.0	43.6
90.00		1.00	1.24	28.325	31.16	265.08	0.650	0.000	2.00	5.052	3.28	163.7	0.0	519.7
92.17	Top - Section 2	1.00	1.24	28.468	31.31	261.84	0.650	0.000	2.17	5.397	3.51	175.8	0.0	555.1
95.00		1.00	1.25	28.650	31.51	263.29	0.650	0.000	2.83	6.940	4.51	227.5	0.0	328.6
98.00	Appurtenance(s)	1.00	1.26	28.838	31.72	258.71	0.650	0.000	3.00	7.203	4.68	237.6	0.0	340.9
100.00		1.00	1.27	28.961	31.86	255.63	0.650	0.000	2.00	4.718	3.07	156.3	0.0	223.3
105.00		1.00	1.28	29.260	32.19	247.80	0.650	0.000	5.00	11.504	7.48	385.1	0.0	544.3
109.00	Appurtenance(s)	1.00	1.29	29.491	32.44	241.44	0.650	0.000	4.00	8.904	5.79	300.4	0.0	421.1
110.00		1.00	1.29	29.548	32.50	239.84	0.650	0.000	1.00	2.184	1.42	73.8	0.0	103.3
115.00		1.00	1.30	29.826	32.81	231.74	0.650	0.000	5.00	10.671	6.94	364.1	0.0	504.4
119.00	Appurtenance(s)	1.00	1.31	30.041	33.05	225.16	0.650	0.000	4.00	8.237	5.35	283.1	0.0	389.2
120.00		1.00	1.32	30.094	33.10	223.51	0.650	0.000	1.00	2.018	1.31	69.5	0.0	95.3
124.00	Appurtenance(s)	1.00	1.32	30.302	33.33	216.84	0.650	0.000	4.00	7.904	5.14	274.0	0.0	373.2
125.00		1.00	1.33	30.354	33.39	215.16	0.650	0.000	1.00	1.934	1.26	67.2	0.0	91.3
130.00		1.00	1.34	30.605	33.67	206.71	0.650	0.000	5.00	9.421	6.12	329.9	0.0	444.6
133.37	Bot - Section 4	1.00	1.34	30.771	33.85	200.94	0.650	0.000	3.37	6.121	3.98	215.5	0.0	288.7
135.00		1.00	1.35	30.850	33.93	198.15	0.650	0.000	1.63	2.935	1.91	103.6	0.0	219.5
136.62	Top - Section 3	1.00	1.35	30.927	34.02	195.35	0.650	0.000	1.62	2.886	1.88	102.1	0.0	215.7
140.00	Appurtenance(s)	1.00	1.36	31.087	34.20	193.07	0.650	0.000	3.38	5.861	3.81	208.5	0.0	166.8
145.00		1.00	1.37	31.317	34.45	184.34	0.650	0.000	5.00	8.330	5.41	298.5	0.0	236.9
146.00	Appurtenance(s)	1.00	1.37	31.362	34.50	182.58	0.650	0.000	1.00	1.616	1.05	58.0	0.0	46.0
								Totals:	**146.00**			**11,720.5**		**24,638.3**

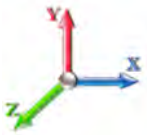
Discrete Appurtenance Forces

Structure:	CT46135-A-SBA	**Code:**	EIA/TIA-222-G	6/3/2021	
Site Name:	Middlefield-jacskon Hill Rd	**Exposure:**	C		
Height:	146.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 10	

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

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	146.00	Ericsson RRUS-11 RRU's	3	31.541	34.696	0.60	0.90	4.65	180.00	0.000	4.000	258.09	0.00	1032.35
2	146.00	Cci HPA-65R-BUU-H8	9	31.541	34.696	0.79	1.00	92.29	734.40	0.000	4.000	5123.17	0.00	20492.68
3	146.00	Powerwave LGP21401	6	31.541	34.696	0.54	0.90	3.50	136.80	0.000	4.000	194.25	0.00	777.00
4	146.00	Powerwave LGP219003	6	31.541	34.696	0.54	0.90	1.20	46.80	0.000	4.000	66.55	0.00	266.20
5	146.00	Powerwave 7020.00	6	31.541	34.696	0.54	0.90	0.45	8.35	0.000	4.000	25.18	0.00	100.72
6	146.00	Platform w/ Hand Rails	1	31.362	34.499	1.00	1.00	32.00	1920.00	0.000	0.000	1766.34	0.00	0.00
7	146.00	Ericsson RRUS 32 B2	3	31.541	34.696	0.60	0.90	4.96	190.80	0.000	4.000	275.16	0.00	1100.64
8	146.00	Raycap DC-6-48-60-18-8F	2	31.541	34.696	0.60	0.90	2.29	48.00	0.000	4.000	127.20	0.00	508.81
9	146.00	Beacon	1	31.362	34.499	1.00	1.00	2.40	18.00	0.000	0.000	132.48	0.00	0.00
10	146.00	Lightning Rod	1	31.519	34.671	1.00	1.00	1.05	42.00	0.000	3.500	58.25	0.00	203.87
11	146.00	Ericsson RRUS-32 RRU's	3	31.541	34.696	0.60	0.90	5.99	277.20	0.000	4.000	332.40	0.00	1329.60
12	140.00	ALU B13 RRH4X30-4R	3	30.993	34.092	0.54	0.80	3.47	205.92	0.000	-2.000	189.46	0.00	-378.91
13	140.00	Commscope	6	31.087	34.195	0.66	0.80	32.07	365.11	0.000	0.000	1754.69	0.00	0.00
14	140.00	Antel LPA-80063/4CF	6	31.087	34.195	0.75	0.80	27.75	144.00	0.000	0.000	1518.21	0.00	0.00
15	140.00	Low Profile Platform	1	31.087	34.195	1.00	1.00	22.00	1800.00	0.000	0.000	1203.67	0.00	0.00
16	140.00	ALU B25 RRH4x30-4R	3	30.993	34.092	0.54	0.80	3.44	183.60	0.000	-2.000	187.70	0.00	-375.41
17	140.00	ALU B66 RRH4x45 RRU's	3	30.993	34.092	0.54	0.80	4.08	204.48	0.000	-2.000	222.79	0.00	-445.57
18	140.00	Raycap	2	30.993	34.092	0.54	0.80	2.70	100.80	0.000	-2.000	147.36	0.00	-294.71
19	124.00	dbSpectra	1	30.761	33.837	1.00	1.00	5.50	84.00	1.071	9.170	297.77	199.37	2730.52
20	124.00	Pipe Mount	1	30.302	33.333	1.00	1.00	4.31	104.40	0.000	0.000	229.86	0.00	0.00
21	119.00	Pipe Mount	1	30.041	33.045	1.00	1.00	4.31	104.40	0.000	0.000	227.88	0.00	0.00
22	119.00	Celwave PD1142-66	1	30.526	33.578	1.00	1.00	1.57	19.20	0.000	9.400	84.35	0.00	792.88
23	119.00	Telewave ANT450F6	1	30.247	33.271	1.00	1.00	1.86	25.20	0.000	3.917	99.01	0.00	387.81
24	109.00	Pipe Mount (au_andrew)	3	29.491	32.440	0.56	0.75	2.70	72.00	0.000	0.000	140.14	0.00	0.00
25	109.00	Airmux	1	29.491	32.440	1.00	1.00	1.80	42.00	0.000	0.000	93.43	0.00	0.00
26	109.00	Airmux	1	29.491	32.440	1.00	1.00	1.83	8.40	0.000	0.000	94.98	0.00	0.00
27	98.00	Fujitsu TA08025-B605	3	28.838	31.722	0.54	0.80	3.15	269.82	0.000	0.000	159.96	0.00	0.00
28	98.00	JMA Wireless	3	28.838	31.722	0.55	0.75	20.80	232.20	0.000	0.000	1055.49	0.00	0.00
29	98.00	Raycap	1	28.838	31.722	0.54	0.80	1.08	26.22	0.000	0.000	54.68	0.00	0.00
30	98.00	Fujitsu TA08025-B604	3	28.838	31.722	0.54	0.80	3.15	230.15	0.000	0.000	159.96	0.00	0.00
31	98.00	Platform w/HRK (Sitepro1	1	28.838	31.722	1.00	1.00	39.73	2251.20	0.000	0.000	2016.23	0.00	0.00
32	88.00	Platform w/ Handrail	1	28.192	31.011	1.00	1.00	51.70	3174.00	0.000	0.000	2565.22	0.00	0.00
33	88.00	Ericsson Radio 4449	3	28.192	31.011	0.50	0.75	2.46	266.40	0.000	0.000	121.92	0.00	0.00
34	88.00	Ericsson KRY 112 144/1	3	28.192	31.011	0.45	0.75	0.47	39.67	0.000	0.000	23.44	0.00	0.00
35	88.00	Ericsson Air 32	3	28.192	31.011	0.65	0.75	12.60	475.92	0.000	0.000	625.02	0.00	0.00
36	88.00	RFS	3	28.192	31.011	0.54	0.75	32.79	460.80	0.000	0.000	1626.90	0.00	0.00
							Totals:		**14,492.24**			**23,259.19**		

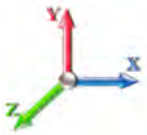
Total Applied Force Summary

Structure:	CT46135-A-SBA		**Code:**	EIA/TIA-222-G	6/3/2021
Site Name:	Middlefield-jacskon Hill Rd		**Exposure:**	C	
Height:	146.00 (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 27

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		428.42	1375.33	0.00	0.00
10.00		419.16	1493.79	0.00	0.00
15.00		409.89	1465.88	0.00	0.00
20.00		425.07	1437.96	0.00	0.00
25.00		435.21	1410.05	0.00	0.00
30.00		441.53	1382.14	0.00	0.00
35.00		445.03	1354.22	0.00	0.00
40.00		446.33	1326.31	0.00	0.00
43.34		296.48	869.56	0.00	0.00
45.00		149.99	733.41	0.00	0.00
48.67		331.80	1597.92	0.00	0.00
50.00		119.34	301.86	0.00	0.00
55.00		450.04	1119.66	0.00	0.00
60.00		445.97	1095.73	0.00	0.00
65.00		440.94	1071.81	0.00	0.00
70.00		435.07	1047.88	0.00	0.00
75.00		428.45	1023.95	0.00	0.00
80.00		421.14	1000.03	0.00	0.00
85.00		413.21	976.10	0.00	0.00
87.83		229.82	542.50	0.00	0.00
88.00	(13) attachments	4976.19	4468.55	0.00	0.00
90.00		163.69	594.78	0.00	0.00
92.17		175.78	636.43	0.00	0.00
95.00		227.46	435.00	0.00	0.00
98.00	(11) attachments	3683.93	3463.20	0.00	0.00
100.00		156.32	296.02	0.00	0.00
105.00		385.09	726.09	0.00	0.00
109.00	(5) attachments	628.94	688.92	0.00	0.00
110.00		73.83	139.44	0.00	0.00
115.00		364.11	685.25	0.00	0.00
119.00	(3) attachments	694.32	682.65	0.00	1180.69
120.00		69.46	128.97	0.00	0.00
124.00	(2) attachments	801.62	696.31	199.37	2730.52
125.00		67.17	124.98	0.00	0.00
130.00		329.87	612.96	0.00	0.00
133.37		215.47	402.28	0.00	0.00
135.00		103.60	274.30	0.00	0.00
136.62		102.09	270.37	0.00	0.00
140.00	(24) attachments	5432.33	3284.40	0.00	-1494.61
145.00		298.45	329.71	0.00	0.00
146.00	(41) attachments	8417.04	3666.86	0.00	25811.86
	Totals:	**34,979.65**	**45,233.57**	**199.37**	**28,228.46**

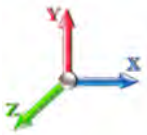
Calculated Forces

Structure:	CT46135-A-SBA	**Code:**	EIA/TIA-222-G	6/3/2021	
Site Name:	Middlefield-jacskon Hill Rd	**Exposure:**	C		
Height:	146.00 (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 27

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-45.13	-35.11	-0.19	-3961.0	-0.01	3961.07	4626.62	2313.31	8646.87	4329.86	0.00	0.000	0.000	0.925
5.00	-43.55	-34.94	-0.19	-3785.5	-0.01	3785.51	4552.64	2276.32	8322.99	4167.68	0.18	-0.332	0.000	0.918
10.00	-41.86	-34.75	-0.19	-3610.8	-0.01	3610.84	4477.51	2238.76	8003.10	4007.50	0.71	-0.671	0.000	0.911
15.00	-40.19	-34.57	-0.19	-3437.0	-0.01	3437.07	4395.69	2197.85	7677.64	3844.53	1.59	-1.015	0.000	0.903
20.00	-38.55	-34.35	-0.19	-3264.2	-0.01	3264.24	4294.12	2147.06	7325.16	3668.02	2.84	-1.367	0.000	0.899
25.00	-36.93	-34.11	-0.19	-3092.4	-0.01	3092.49	4192.55	2096.27	6980.95	3495.66	4.47	-1.724	0.000	0.894
30.00	-35.35	-33.85	-0.19	-2921.9	-0.01	2921.94	4090.97	2045.49	6645.03	3327.46	6.47	-2.087	0.000	0.887
35.00	-33.80	-33.57	-0.19	-2752.6	-0.01	2752.69	3989.40	1994.70	6317.40	3163.39	8.85	-2.456	0.000	0.879
40.00	-32.31	-33.24	-0.19	-2584.8	-0.01	2584.83	3887.82	1943.91	5998.04	3003.48	11.62	-2.830	0.000	0.869
43.34	-31.35	-33.01	-0.19	-2473.9	-0.01	2473.92	3820.04	1910.02	5789.54	2899.07	13.69	-3.086	0.000	0.862
45.00	-30.51	-32.93	-0.19	-2419.0	-0.01	2419.02	3786.25	1893.12	5686.97	2847.71	14.79	-3.216	0.000	0.858
48.67	-28.82	-32.60	-0.19	-2298.1	-0.01	2298.18	3251.53	1625.77	4904.15	2455.72	17.37	-3.500	0.000	0.945
50.00	-28.38	-32.59	-0.19	-2254.8	-0.01	2254.82	3230.14	1615.07	4836.85	2422.02	18.36	-3.606	0.000	0.940
55.00	-27.05	-32.27	-0.19	-2091.8	-0.01	2091.85	3143.08	1571.54	4578.34	2292.57	22.36	-4.027	0.000	0.921
60.00	-25.76	-31.94	-0.19	-1930.5	-0.01	1930.50	3056.01	1528.01	4326.92	2166.68	26.80	-4.451	0.000	0.900
65.00	-24.49	-31.59	-0.19	-1770.8	-0.01	1770.81	2968.95	1484.47	4082.61	2044.34	31.68	-4.875	0.000	0.875
70.00	-23.26	-31.24	-0.19	-1612.8	-0.01	1612.85	2881.88	1440.94	3845.39	1925.55	37.01	-5.298	0.000	0.846
75.00	-22.05	-30.87	-0.19	-1456.6	-0.01	1456.67	2794.82	1397.41	3615.28	1810.32	42.78	-5.717	0.000	0.813
80.00	-20.89	-30.50	-0.19	-1302.3	-0.01	1302.30	2707.76	1353.88	3392.26	1698.65	48.98	-6.131	-0.001	0.775
85.00	-19.80	-30.09	-0.19	-1149.7	-0.02	1149.79	2620.69	1310.35	3176.35	1590.53	55.60	-6.535	-0.001	0.731
87.83	-19.22	-29.84	-0.19	-1064.5	-0.02	1064.53	2571.36	1285.68	3057.15	1530.84	59.54	-6.763	-0.001	0.703
88.00	-15.33	-24.40	-0.19	-1059.5	-0.02	1059.55	2568.45	1284.23	3050.20	1527.37	59.78	-6.776	-0.001	0.700
90.00	-14.69	-24.21	-0.19	-1010.7	-0.02	1010.76	2533.63	1266.81	2967.53	1485.97	62.64	-6.936	-0.001	0.686
92.17	-14.00	-24.00	-0.19	-958.32	-0.02	958.32	2130.58	1065.29	2523.85	1263.80	65.82	-7.108	-0.001	0.765
95.00	-13.50	-23.78	-0.20	-890.32	-0.02	890.32	2089.47	1044.73	2426.88	1215.24	70.10	-7.328	-0.001	0.740
98.00	-10.47	-19.71	-0.20	-818.99	-0.02	818.99	2045.93	1022.97	2326.27	1164.86	74.77	-7.583	-0.001	0.709
100.00	-10.10	-19.57	-0.20	-779.56	-0.02	779.56	2016.91	1008.46	2260.38	1131.87	77.98	-7.753	-0.001	0.694
105.00	-9.31	-19.15	-0.20	-681.71	-0.02	681.71	1944.36	972.18	2099.80	1051.46	86.29	-8.157	-0.001	0.654
109.00	-8.66	-18.46	-0.20	-605.12	-0.02	605.12	1886.32	943.16	1975.59	989.26	93.23	-8.475	-0.001	0.617
110.00	-8.46	-18.40	-0.20	-586.66	-0.02	586.66	1871.81	935.90	1945.13	974.01	95.01	-8.556	-0.001	0.607
115.00	-7.73	-17.98	-0.20	-494.68	-0.02	494.68	1799.25	899.63	1796.38	899.53	104.14	-8.931	-0.001	0.555
119.00	-7.12	-17.21	-0.20	-421.59	-0.02	421.59	1741.21	870.61	1681.64	842.07	111.72	-9.217	-0.001	0.505
120.00	-6.95	-17.14	-0.20	-404.39	-0.02	404.39	1726.70	863.35	1653.55	828.00	113.65	-9.288	-0.001	0.493
124.00	-6.35	-16.25	0.00	-333.11	0.01	333.11	1668.66	834.33	1543.55	772.92	121.51	-9.549	-0.002	0.435
125.00	-6.19	-16.18	0.00	-316.86	0.01	316.86	1654.15	827.07	1516.64	759.45	123.50	-9.613	-0.002	0.421
130.00	-5.58	-15.77	0.00	-235.95	0.01	235.95	1581.59	790.80	1385.64	693.85	133.68	-9.890	-0.002	0.344
133.37	-5.19	-15.50	0.00	-182.74	0.00	182.74	1532.65	766.32	1300.60	651.27	140.69	-10.052	-0.001	0.284
135.00	-4.92	-15.36	0.00	-157.53	0.00	157.53	1509.04	754.52	1260.56	631.22	144.11	-10.122	-0.001	0.253
136.62	-4.65	-15.22	0.00	-132.60	0.00	132.60	885.20	442.60	750.52	375.82	147.54	-10.184	-0.001	0.359
140.00	-2.36	-9.29	0.00	-81.21	0.00	81.21	864.59	432.29	709.24	355.15	154.75	-10.284	-0.001	0.232
145.00	-2.08	-8.94	0.00	-34.75	0.00	34.75	833.10	416.55	649.44	325.20	165.54	-10.421	-0.001	0.110
146.00	0.00	-8.42	0.00	-25.81	0.00	25.81	826.66	413.33	637.68	319.32	167.72	-10.438	-0.001	0.081

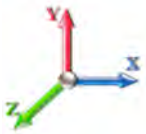
Wind Loading - Shaft

Structure:	CT46135-A-SBA	**Code:**	EIA/TIA-222-G	6/3/2021	
Site Name:	Middlefield-jacskon Hill Rd	**Exposure:**	C		
Height:	146.00 (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 27

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	348.10	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	340.65	0.650	0.000	5.00	19.254	12.52	428.4	0.0	958.3
10.00		1.00	0.85	19.450	21.40	333.20	0.650	0.000	5.00	18.837	12.24	419.2	0.0	937.4
15.00		1.00	0.85	19.450	21.40	325.75	0.650	0.000	5.00	18.421	11.97	409.9	0.0	916.4
20.00		1.00	0.90	20.638	22.70	327.87	0.650	0.000	5.00	18.004	11.70	425.1	0.0	895.5
25.00		1.00	0.95	21.630	23.79	327.80	0.650	0.000	5.00	17.588	11.43	435.2	0.0	874.6
30.00		1.00	0.98	22.477	24.72	326.15	0.650	0.000	5.00	17.171	11.16	441.5	0.0	853.6
35.00		1.00	1.01	23.218	25.54	323.34	0.650	0.000	5.00	16.755	10.89	445.0	0.0	832.7
40.00		1.00	1.04	23.880	26.27	319.66	0.650	0.000	5.00	16.338	10.62	446.3	0.0	811.8
43.34	Bot - Section 2	1.00	1.06	24.286	26.71	316.81	0.650	0.000	3.34	10.671	6.94	296.5	0.0	530.1
45.00		1.00	1.07	24.479	26.93	315.29	0.650	0.000	1.66	5.356	3.48	150.0	0.0	489.2
48.67	Top - Section 1	1.00	1.09	24.887	27.38	311.72	0.650	0.000	3.67	11.654	7.58	331.8	0.0	1064.1
50.00		1.00	1.09	25.029	27.53	316.79	0.650	0.000	1.33	4.168	2.71	119.3	0.0	177.7
55.00		1.00	1.12	25.536	28.09	311.45	0.650	0.000	5.00	15.406	10.01	450.0	0.0	656.8
60.00		1.00	1.14	26.008	28.61	305.70	0.650	0.000	5.00	14.989	9.74	446.0	0.0	638.8
65.00		1.00	1.16	26.450	29.09	299.60	0.650	0.000	5.00	14.572	9.47	440.9	0.0	620.9
70.00		1.00	1.17	26.866	29.55	293.19	0.650	0.000	5.00	14.156	9.20	435.1	0.0	602.9
75.00		1.00	1.19	27.259	29.98	286.51	0.650	0.000	5.00	13.739	8.93	428.4	0.0	585.0
80.00		1.00	1.21	27.632	30.39	279.58	0.650	0.000	5.00	13.323	8.66	421.1	0.0	567.1
85.00		1.00	1.22	27.987	30.79	272.43	0.650	0.000	5.00	12.906	8.39	413.2	0.0	549.1
87.83	Bot - Section 3	1.00	1.23	28.181	31.00	268.29	0.650	0.000	2.83	7.129	4.63	229.8	0.0	303.2
88.00	Appurtenance(s)	1.00	1.23	28.192	31.01	268.04	0.650	0.000	0.17	0.424	0.28	13.7	0.0	32.7
90.00		1.00	1.24	28.325	31.16	265.08	0.650	0.000	2.00	5.052	3.28	163.7	0.0	389.7
92.17	Top - Section 2	1.00	1.24	28.468	31.31	261.84	0.650	0.000	2.17	5.397	3.51	175.8	0.0	416.3
95.00		1.00	1.25	28.650	31.51	263.29	0.650	0.000	2.83	6.940	4.51	227.5	0.0	246.4
98.00	Appurtenance(s)	1.00	1.26	28.838	31.72	258.71	0.650	0.000	3.00	7.203	4.68	237.6	0.0	255.7
100.00		1.00	1.27	28.961	31.86	255.63	0.650	0.000	2.00	4.718	3.07	156.3	0.0	167.5
105.00		1.00	1.28	29.260	32.19	247.80	0.650	0.000	5.00	11.504	7.48	385.1	0.0	408.2
109.00	Appurtenance(s)	1.00	1.29	29.491	32.44	241.44	0.650	0.000	4.00	8.904	5.79	300.4	0.0	315.8
110.00		1.00	1.29	29.548	32.50	239.84	0.650	0.000	1.00	2.184	1.42	73.8	0.0	77.5
115.00		1.00	1.30	29.826	32.81	231.74	0.650	0.000	5.00	10.671	6.94	364.1	0.0	378.3
119.00	Appurtenance(s)	1.00	1.31	30.041	33.05	225.16	0.650	0.000	4.00	8.237	5.35	283.1	0.0	291.9
120.00		1.00	1.32	30.094	33.10	223.51	0.650	0.000	1.00	2.018	1.31	69.5	0.0	71.5
124.00	Appurtenance(s)	1.00	1.32	30.302	33.33	216.84	0.650	0.000	4.00	7.904	5.14	274.0	0.0	279.9
125.00		1.00	1.33	30.354	33.39	215.16	0.650	0.000	1.00	1.934	1.26	67.2	0.0	68.5
130.00		1.00	1.34	30.605	33.67	206.71	0.650	0.000	5.00	9.421	6.12	329.9	0.0	333.4
133.37	Bot - Section 4	1.00	1.34	30.771	33.85	200.94	0.650	0.000	3.37	6.121	3.98	215.5	0.0	216.5
135.00		1.00	1.35	30.850	33.93	198.15	0.650	0.000	1.63	2.935	1.91	103.6	0.0	164.6
136.62	Top - Section 3	1.00	1.35	30.927	34.02	195.35	0.650	0.000	1.62	2.886	1.88	102.1	0.0	161.8
140.00	Appurtenance(s)	1.00	1.36	31.087	34.20	193.07	0.650	0.000	3.38	5.861	3.81	208.5	0.0	125.1
145.00		1.00	1.37	31.317	34.45	184.34	0.650	0.000	5.00	8.330	5.41	298.5	0.0	177.7
146.00	Appurtenance(s)	1.00	1.37	31.362	34.50	182.58	0.650	0.000	1.00	1.616	1.05	58.0	0.0	34.5
								Totals:	**146.00**			**11,720.5**		**18,478.8**

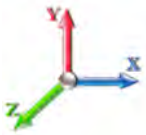
Discrete Appurtenance Forces

Structure:	CT46135-A-SBA	**Code:**	EIA/TIA-222-G	6/3/2021	
Site Name:	Middlefield-jacskon Hill Rd	**Exposure:**	C		
Height:	146.00 (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 27

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	146.00	Ericsson RRUS-11 RRU's	3	31.541	34.696	0.60	0.90	4.65	135.00	0.000	4.000	258.09	0.00	1032.35
2	146.00	Cci HPA-65R-BUU-H8	9	31.541	34.696	0.79	1.00	92.29	550.80	0.000	4.000	5123.17	0.00	20492.68
3	146.00	Powerwave LGP21401	6	31.541	34.696	0.54	0.90	3.50	102.60	0.000	4.000	194.25	0.00	777.00
4	146.00	Powerwave LGP219003	6	31.541	34.696	0.54	0.90	1.20	35.10	0.000	4.000	66.55	0.00	266.20
5	146.00	Powerwave 7020.00	6	31.541	34.696	0.54	0.90	0.45	6.26	0.000	4.000	25.18	0.00	100.72
6	146.00	Platform w/ Hand Rails	1	31.362	34.499	1.00	1.00	32.00	1440.00	0.000	0.000	1766.34	0.00	0.00
7	146.00	Ericsson RRUS 32 B2	3	31.541	34.696	0.60	0.90	4.96	143.10	0.000	4.000	275.16	0.00	1100.64
8	146.00	Raycap DC-6-48-60-18-8F	2	31.541	34.696	0.60	0.90	2.29	36.00	0.000	4.000	127.20	0.00	508.81
9	146.00	Beacon	1	31.362	34.499	1.00	1.00	2.40	13.50	0.000	0.000	132.48	0.00	0.00
10	146.00	Lightning Rod	1	31.519	34.671	1.00	1.00	1.05	31.50	0.000	3.500	58.25	0.00	203.87
11	146.00	Ericsson RRUS-32 RRU's	3	31.541	34.696	0.60	0.90	5.99	207.90	0.000	4.000	332.40	0.00	1329.60
12	140.00	ALU B13 RRH4X30-4R	3	30.993	34.092	0.54	0.80	3.47	154.44	0.000	-2.000	189.46	0.00	-378.91
13	140.00	Commscope	6	31.087	34.195	0.66	0.80	32.07	273.83	0.000	0.000	1754.69	0.00	0.00
14	140.00	Antel LPA-80063/4CF	6	31.087	34.195	0.75	0.80	27.75	108.00	0.000	0.000	1518.21	0.00	0.00
15	140.00	Low Profile Platform	1	31.087	34.195	1.00	1.00	22.00	1350.00	0.000	0.000	1203.67	0.00	0.00
16	140.00	ALU B25 RRH4x30-4R	3	30.993	34.092	0.54	0.80	3.44	137.70	0.000	-2.000	187.70	0.00	-375.41
17	140.00	ALU B66 RRH4x45 RRU's	3	30.993	34.092	0.54	0.80	4.08	153.36	0.000	-2.000	222.79	0.00	-445.57
18	140.00	Raycap	2	30.993	34.092	0.54	0.80	2.70	75.60	0.000	-2.000	147.36	0.00	-294.71
19	124.00	dbSpectra	1	30.761	33.837	1.00	1.00	5.50	63.00	1.071	9.170	297.77	199.37	2730.52
20	124.00	Pipe Mount	1	30.302	33.333	1.00	1.00	4.31	78.30	0.000	0.000	229.86	0.00	0.00
21	119.00	Pipe Mount	1	30.041	33.045	1.00	1.00	4.31	78.30	0.000	0.000	227.88	0.00	0.00
22	119.00	Celwave PD1142-66	1	30.526	33.578	1.00	1.00	1.57	14.40	0.000	9.400	84.35	0.00	792.88
23	119.00	Telewave ANT450F6	1	30.247	33.271	1.00	1.00	1.86	18.90	0.000	3.917	99.01	0.00	387.81
24	109.00	Pipe Mount (au_andrew)	3	29.491	32.440	0.56	0.75	2.70	54.00	0.000	0.000	140.14	0.00	0.00
25	109.00	Airmux	1	29.491	32.440	1.00	1.00	1.80	31.50	0.000	0.000	93.43	0.00	0.00
26	109.00	Airmux	1	29.491	32.440	1.00	1.00	1.83	6.30	0.000	0.000	94.98	0.00	0.00
27	98.00	Fujitsu TA08025-B605	3	28.838	31.722	0.54	0.80	3.15	202.37	0.000	0.000	159.96	0.00	0.00
28	98.00	JMA Wireless	3	28.838	31.722	0.55	0.75	20.80	174.15	0.000	0.000	1055.49	0.00	0.00
29	98.00	Raycap	1	28.838	31.722	0.54	0.80	1.08	19.67	0.000	0.000	54.68	0.00	0.00
30	98.00	Fujitsu TA08025-B604	3	28.838	31.722	0.54	0.80	3.15	172.61	0.000	0.000	159.96	0.00	0.00
31	98.00	Platform w/HRK (Sitepro1	1	28.838	31.722	1.00	1.00	39.73	1688.40	0.000	0.000	2016.23	0.00	0.00
32	88.00	Platform w/ Handrail	1	28.192	31.011	1.00	1.00	51.70	2380.50	0.000	0.000	2565.22	0.00	0.00
33	88.00	Ericsson Radio 4449	3	28.192	31.011	0.50	0.75	2.46	199.80	0.000	0.000	121.92	0.00	0.00
34	88.00	Ericsson KRY 112 144/1	3	28.192	31.011	0.45	0.75	0.47	29.75	0.000	0.000	23.44	0.00	0.00
35	88.00	Ericsson Air 32	3	28.192	31.011	0.65	0.75	12.60	356.94	0.000	0.000	625.02	0.00	0.00
36	88.00	RFS	3	28.192	31.011	0.54	0.75	32.79	345.60	0.000	0.000	1626.90	0.00	0.00
							Totals:		**10,869.18**			**23,259.19**		

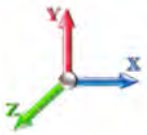
Total Applied Force Summary

Structure:	CT46135-A-SBA		**Code:**	EIA/TIA-222-G	6/3/2021
Site Name:	Middlefield-jacskon Hill Rd		**Exposure:**	C	
Height:	146.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 15

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

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		428.42	1031.50	0.00	0.00
10.00		419.16	1120.34	0.00	0.00
15.00		409.89	1099.41	0.00	0.00
20.00		425.07	1078.47	0.00	0.00
25.00		435.21	1057.54	0.00	0.00
30.00		441.53	1036.60	0.00	0.00
35.00		445.03	1015.67	0.00	0.00
40.00		446.33	994.73	0.00	0.00
43.34		296.48	652.17	0.00	0.00
45.00		149.99	550.06	0.00	0.00
48.67		331.80	1198.44	0.00	0.00
50.00		119.34	226.39	0.00	0.00
55.00		450.04	839.74	0.00	0.00
60.00		445.97	821.80	0.00	0.00
65.00		440.94	803.85	0.00	0.00
70.00		435.07	785.91	0.00	0.00
75.00		428.45	767.97	0.00	0.00
80.00		421.14	750.02	0.00	0.00
85.00		413.21	732.08	0.00	0.00
87.83		229.82	406.88	0.00	0.00
88.00	(13) attachments	4976.19	3351.41	0.00	0.00
90.00		163.69	446.09	0.00	0.00
92.17		175.78	477.32	0.00	0.00
95.00		227.46	326.25	0.00	0.00
98.00	(11) attachments	3683.93	2597.40	0.00	0.00
100.00		156.32	222.01	0.00	0.00
105.00		385.09	544.57	0.00	0.00
109.00	(5) attachments	628.94	516.69	0.00	0.00
110.00		73.83	104.58	0.00	0.00
115.00		364.11	513.94	0.00	0.00
119.00	(3) attachments	694.32	511.99	0.00	1180.69
120.00		69.46	96.73	0.00	0.00
124.00	(2) attachments	801.62	522.23	199.37	2730.52
125.00		67.17	93.74	0.00	0.00
130.00		329.87	459.72	0.00	0.00
133.37		215.47	301.71	0.00	0.00
135.00		103.60	205.72	0.00	0.00
136.62		102.09	202.78	0.00	0.00
140.00	(24) attachments	5432.33	2463.30	0.00	-1494.61
145.00		298.45	247.28	0.00	0.00
146.00	(41) attachments	8417.04	2750.14	0.00	25811.86
	Totals:	**34,979.65**	**33,925.18**	**199.37**	**28,228.46**

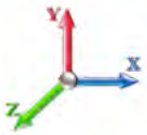
Calculated Forces

Structure:	CT46135-A-SBA	**Code:**	EIA/TIA-222-G	6/3/2021	
Site Name:	Middlefield-jacskon Hill Rd	**Exposure:**	C		
Height:	146.00 (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 27

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-33.82	-35.08	-0.19	-3898.4	-0.01	3898.46	4626.62	2313.31	8646.87	4329.86	0.00	0.000	0.000	0.908
5.00	-32.59	-34.83	-0.19	-3723.0	-0.01	3723.08	4552.64	2276.32	8322.99	4167.68	0.17	-0.327	0.000	0.901
10.00	-31.27	-34.59	-0.19	-3548.9	-0.01	3548.91	4477.51	2238.76	8003.10	4007.50	0.69	-0.659	0.000	0.893
15.00	-29.98	-34.34	-0.19	-3375.9	-0.01	3375.96	4395.69	2197.85	7677.64	3844.53	1.57	-0.998	0.000	0.885
20.00	-28.70	-34.07	-0.19	-3204.2	-0.01	3204.25	4294.12	2147.06	7325.16	3668.02	2.80	-1.343	0.000	0.880
25.00	-27.45	-33.78	-0.19	-3033.9	-0.01	3033.90	4192.55	2096.27	6980.95	3495.66	4.39	-1.694	0.000	0.875
30.00	-26.22	-33.47	-0.19	-2865.0	-0.01	2865.01	4090.97	2045.49	6645.03	3327.46	6.35	-2.050	0.000	0.868
35.00	-25.01	-33.14	-0.19	-2697.6	-0.01	2697.67	3989.40	1994.70	6317.40	3163.39	8.70	-2.412	0.000	0.859
40.00	-23.86	-32.78	-0.19	-2531.9	-0.01	2531.96	3887.82	1943.91	5998.04	3003.48	11.42	-2.779	0.000	0.849
43.34	-23.12	-32.53	-0.19	-2422.5	-0.01	2422.58	3820.04	1910.02	5789.54	2899.07	13.45	-3.029	0.000	0.842
45.00	-22.46	-32.43	-0.19	-2368.4	-0.01	2368.48	3786.25	1893.12	5686.97	2847.71	14.52	-3.156	0.000	0.838
48.67	-21.18	-32.10	-0.19	-2249.4	-0.01	2249.47	3251.53	1625.77	4904.15	2455.72	17.06	-3.434	0.000	0.923
50.00	-20.81	-32.06	-0.19	-2206.7	-0.01	2206.78	3230.14	1615.07	4836.85	2422.02	18.03	-3.537	0.000	0.918
55.00	-19.78	-31.70	-0.19	-2046.4	-0.01	2046.48	3143.08	1571.54	4578.34	2292.57	21.95	-3.950	0.000	0.899
60.00	-18.76	-31.33	-0.19	-1887.9	-0.01	1887.98	3056.01	1528.01	4326.92	2166.68	26.31	-4.365	0.000	0.878
65.00	-17.77	-30.96	-0.19	-1731.3	-0.01	1731.32	2968.95	1484.47	4082.61	2044.34	31.10	-4.779	0.000	0.853
70.00	-16.81	-30.58	-0.19	-1576.5	-0.01	1576.54	2881.88	1440.94	3845.39	1925.55	36.32	-5.193	0.000	0.825
75.00	-15.87	-30.19	-0.19	-1423.6	-0.01	1423.65	2794.82	1397.41	3615.28	1810.32	41.97	-5.603	0.000	0.793
80.00	-14.96	-29.80	-0.19	-1272.6	-0.01	1272.69	2707.76	1353.88	3392.26	1698.65	48.05	-6.007	-0.001	0.755
85.00	-14.12	-29.39	-0.19	-1123.6	-0.01	1123.68	2620.69	1310.35	3176.35	1590.53	54.54	-6.401	-0.001	0.712
87.83	-13.68	-29.14	-0.19	-1040.4	-0.01	1040.41	2571.36	1285.68	3057.15	1530.84	58.40	-6.624	-0.001	0.685
88.00	-10.89	-23.83	-0.19	-1035.5	-0.01	1035.56	2568.45	1284.23	3050.20	1527.37	58.63	-6.637	-0.001	0.683
90.00	-10.40	-23.64	-0.19	-987.90	-0.01	987.90	2533.63	1266.81	2967.53	1485.97	61.44	-6.794	-0.001	0.669
92.17	-9.87	-23.44	-0.19	-936.68	-0.02	936.68	2130.58	1065.29	2523.85	1263.80	64.55	-6.961	-0.001	0.746
95.00	-9.48	-23.22	-0.20	-870.25	-0.02	870.25	2089.47	1044.73	2426.88	1215.24	68.74	-7.177	-0.001	0.721
98.00	-7.30	-19.26	-0.20	-800.60	-0.02	800.60	2045.93	1022.97	2326.27	1164.86	73.31	-7.426	-0.001	0.691
100.00	-7.01	-19.11	-0.20	-762.08	-0.02	762.08	2016.91	1008.46	2260.38	1131.87	76.45	-7.592	-0.001	0.677
105.00	-6.41	-18.69	-0.20	-666.53	-0.02	666.53	1944.36	972.18	2099.80	1051.46	84.59	-7.987	-0.001	0.638
109.00	-5.92	-18.02	-0.20	-591.75	-0.02	591.75	1886.32	943.16	1975.59	989.26	91.40	-8.298	-0.001	0.602
110.00	-5.76	-17.95	-0.20	-573.73	-0.02	573.73	1871.81	935.90	1945.13	974.01	93.14	-8.377	-0.001	0.592
115.00	-5.21	-17.55	-0.20	-483.97	-0.02	483.97	1799.25	899.63	1796.38	899.53	102.08	-8.744	-0.001	0.541
119.00	-4.76	-16.80	-0.20	-412.60	-0.02	412.60	1741.21	870.61	1681.64	842.07	109.49	-9.024	-0.001	0.493
120.00	-4.62	-16.73	-0.20	-395.81	-0.02	395.81	1726.70	863.35	1653.55	828.00	111.38	-9.093	-0.001	0.481
124.00	-4.19	-15.86	0.00	-326.17	0.01	326.17	1668.66	834.33	1543.55	772.92	119.08	-9.349	-0.002	0.425
125.00	-4.07	-15.79	0.00	-310.31	0.01	310.31	1654.15	827.07	1516.64	759.45	121.04	-9.411	-0.002	0.411
130.00	-3.61	-15.40	0.00	-231.35	0.01	231.35	1581.59	790.80	1385.64	693.85	131.00	-9.683	-0.002	0.336
133.37	-3.32	-15.15	0.00	-179.38	0.00	179.38	1532.65	766.32	1300.60	651.27	137.87	-9.842	-0.002	0.278
135.00	-3.12	-15.01	0.00	-154.74	0.00	154.74	1509.04	754.52	1260.56	631.22	141.22	-9.911	-0.001	0.248
136.62	-2.91	-14.88	0.00	-130.37	0.00	130.37	885.20	442.60	750.52	375.82	144.58	-9.972	-0.001	0.351
140.00	-1.41	-9.11	0.00	-80.12	0.00	80.12	864.59	432.29	709.24	355.15	151.64	-10.070	-0.001	0.228
145.00	-1.21	-8.77	0.00	-34.58	0.00	34.58	833.10	416.55	649.44	325.20	162.21	-10.206	-0.001	0.108
146.00	0.00	-8.42	0.00	-25.81	0.00	25.81	826.66	413.33	637.68	319.32	164.34	-10.223	-0.001	0.081

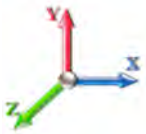
Wind Loading - Shaft

Structure:	CT46135-A-SBA	**Code:**	EIA/TIA-222-G	6/3/2021	
Site Name:	Middlefield-jacskon Hill Rd	**Exposure:**	C		
Height:	146.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 17	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 26

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	20.289	24.35	138.4	359.9	1637.6
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	5.00	19.947	23.94	136.1	378.2	1628.1
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	5.00	19.576	23.49	133.5	385.8	1607.7
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	5.00	19.193	23.03	138.9	388.6	1582.6
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	5.00	18.804	22.56	142.6	388.7	1554.8
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	5.00	18.409	22.09	145.1	386.9	1525.1
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	5.00	18.012	21.61	146.7	383.8	1494.1
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	5.00	17.612	21.13	147.5	379.7	1462.1
43.34	Bot - Section 2	1.00	1.06	6.453	7.10	0.00	1.200	1.541	3.34	11.528	13.83	98.2	251.3	958.1
45.00		1.00	1.07	6.504	7.15	0.00	1.200	1.547	1.66	5.785	6.94	49.7	127.1	779.4
48.67	Top - Section 1	1.00	1.09	6.613	7.27	0.00	1.200	1.559	3.67	12.608	15.13	110.0	277.6	1696.5
50.00		1.00	1.09	6.650	7.32	0.00	1.200	1.564	1.33	4.515	5.42	39.6	100.2	337.2
55.00		1.00	1.12	6.785	7.46	0.00	1.200	1.579	5.00	16.721	20.07	149.8	370.7	1246.4
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	5.00	16.316	19.58	148.8	364.3	1216.0
65.00		1.00	1.16	7.028	7.73	0.00	1.200	1.605	5.00	15.910	19.09	147.6	357.4	1185.3
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	5.00	15.504	18.60	146.1	350.2	1154.1
75.00		1.00	1.19	7.243	7.97	0.00	1.200	1.628	5.00	15.096	18.12	144.3	342.7	1122.7
80.00		1.00	1.21	7.342	8.08	0.00	1.200	1.639	5.00	14.689	17.63	142.3	334.9	1091.0
85.00		1.00	1.22	7.436	8.18	0.00	1.200	1.649	5.00	14.280	17.14	140.2	326.9	1059.0
87.83	Bot - Section 3	1.00	1.23	7.488	8.24	0.00	1.200	1.654	2.83	7.910	9.49	78.2	182.6	586.9
88.00	Appurtenance(s)	1.00	1.23	7.491	8.24	0.00	1.200	1.655	0.17	0.470	0.56	4.6	10.9	54.6
90.00		1.00	1.24	7.526	8.28	0.00	1.200	1.658	2.00	5.604	6.73	55.7	130.0	649.7
92.17	Top - Section 2	1.00	1.24	7.564	8.32	0.00	1.200	1.662	2.17	5.998	7.20	59.9	139.3	694.4
95.00		1.00	1.25	7.612	8.37	0.00	1.200	1.667	2.83	7.727	9.27	77.6	179.5	508.0
98.00	Appurtenance(s)	1.00	1.26	7.662	8.43	0.00	1.200	1.672	3.00	8.039	9.65	81.3	186.9	527.9
100.00		1.00	1.27	7.695	8.46	0.00	1.200	1.676	2.00	5.277	6.33	53.6	123.2	346.5
105.00		1.00	1.28	7.774	8.55	0.00	1.200	1.684	5.00	12.908	15.49	132.5	299.3	843.6
109.00	Appurtenance(s)	1.00	1.29	7.836	8.62	0.00	1.200	1.690	4.00	10.030	12.04	103.7	233.7	654.8
110.00		1.00	1.29	7.851	8.64	0.00	1.200	1.692	1.00	2.466	2.96	25.6	58.1	161.3
115.00		1.00	1.30	7.925	8.72	0.00	1.200	1.699	5.00	12.087	14.50	126.4	281.2	785.6
119.00	Appurtenance(s)	1.00	1.31	7.982	8.78	0.00	1.200	1.705	4.00	9.374	11.25	98.8	219.0	608.2
120.00		1.00	1.32	7.996	8.80	0.00	1.200	1.707	1.00	2.302	2.76	24.3	54.4	149.7
124.00	Appurtenance(s)	1.00	1.32	8.051	8.86	0.00	1.200	1.712	4.00	9.045	10.85	96.1	211.5	584.8
125.00		1.00	1.33	8.065	8.87	0.00	1.200	1.714	1.00	2.220	2.66	23.6	52.5	143.8
130.00		1.00	1.34	8.132	8.95	0.00	1.200	1.720	5.00	10.855	13.03	116.5	253.0	697.6
133.37	Bot - Section 4	1.00	1.34	8.176	8.99	0.00	1.200	1.725	3.37	7.091	8.51	76.5	166.3	455.0
135.00		1.00	1.35	8.197	9.02	0.00	1.200	1.727	1.63	3.404	4.08	36.8	80.5	300.0
136.62	Top - Section 3	1.00	1.35	8.217	9.04	0.00	1.200	1.729	1.62	3.353	4.02	36.4	79.3	295.0
140.00	Appurtenance(s)	1.00	1.36	8.260	9.09	0.00	1.200	1.733	3.38	6.837	8.20	74.5	160.6	327.3
145.00		1.00	1.37	8.321	9.15	0.00	1.200	1.739	5.00	9.780	11.74	107.4	227.9	464.9
146.00	Appurtenance(s)	1.00	1.37	8.333	9.17	0.00	1.200	1.741	1.00	1.906	2.29	21.0	45.2	91.1
								Totals:	**146.00**			**3,956.7**		**34,268.5**

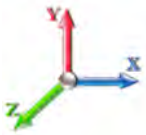
Discrete Appurtenance Forces

Structure:	CT46135-A-SBA	**Code:**	EIA/TIA-222-G	6/3/2021	
Site Name:	Middlefield-jacskon Hill Rd	**Exposure:**	C		
Height:	146.00 (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 26

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	146.00	Ericsson RRUS-11 RRU's	3	8.381	9.219	0.60	0.90	5.82	423.68	0.000	4.000	53.68	0.00	214.73
2	146.00	Cci HPA-65R-BUU-H8	9	8.381	9.219	0.79	1.00	103.74	3345.58	0.000	4.000	956.34	0.00	3825.38
3	146.00	Powerwave LGP21401	6	8.381	9.219	0.54	0.90	4.97	336.98	0.000	4.000	45.84	0.00	183.38
4	146.00	Powerwave LGP219003	6	8.381	9.219	0.54	0.90	2.80	107.50	0.000	4.000	25.77	0.00	103.08
5	146.00	Powerwave 7020.00	6	8.381	9.219	0.54	0.90	1.00	17.01	0.000	4.000	9.23	0.00	36.91
6	146.00	Platform w/ Hand Rails	1	8.333	9.166	1.00	1.00	59.85	3414.18	0.000	0.000	548.59	0.00	0.00
7	146.00	Ericsson RRUS 32 B2	3	8.381	9.219	0.60	0.90	6.27	453.93	0.000	4.000	57.81	0.00	231.24
8	146.00	Raycap DC-6-48-60-18-8F	2	8.381	9.219	0.60	0.90	3.38	66.56	0.000	4.000	31.15	0.00	124.61
9	146.00	Beacon	1	8.333	9.166	1.00	1.00	2.40	30.41	0.000	0.000	22.00	0.00	0.00
10	146.00	Lightning Rod	1	8.375	9.212	1.00	1.00	3.42	64.33	0.000	3.500	31.48	0.00	110.18
11	146.00	Ericsson RRUS-32 RRU's	3	8.381	9.219	0.60	0.90	7.42	616.86	0.000	4.000	68.44	0.00	273.75
12	140.00	ALU B13 RRH4X30-4R	3	8.235	9.058	0.54	0.80	4.45	345.61	0.000	-2.000	40.30	0.00	-80.59
13	140.00	Commscope	6	8.260	9.086	0.66	0.80	37.19	1562.07	0.000	0.000	337.87	0.00	0.00
14	140.00	Antel LPA-80063/4CF	6	8.260	9.086	0.75	0.80	32.40	1372.20	0.000	0.000	294.41	0.00	0.00
15	140.00	Low Profile Platform	1	8.260	9.086	1.00	1.00	39.54	2799.91	0.000	0.000	359.25	0.00	0.00
16	140.00	ALU B25 RRH4x30-4R	3	8.235	9.058	0.54	0.80	4.41	313.95	0.000	-2.000	39.97	0.00	-79.93
17	140.00	ALU B66 RRH4x45 RRU's	3	8.235	9.058	0.54	0.80	5.19	454.70	0.000	-2.000	47.03	0.00	-94.07
18	140.00	Raycap	2	8.235	9.058	0.54	0.80	3.38	369.84	0.000	-2.000	30.59	0.00	-61.19
19	124.00	dbSpectra	1	8.173	8.991	1.00	1.00	11.89	180.04	1.071	9.170	106.92	114.55	980.49
20	124.00	Pipe Mount	1	8.051	8.857	1.00	1.00	9.59	204.49	0.000	0.000	84.97	0.00	0.00
21	119.00	Pipe Mount	1	7.982	8.780	1.00	1.00	9.57	203.96	0.000	0.000	84.05	0.00	0.00
22	119.00	Celwave PD1142-66	1	8.111	8.922	1.00	1.00	4.83	136.65	0.000	9.400	43.13	0.00	405.42
23	119.00	Telewave ANT450F6	1	8.037	8.840	1.00	1.00	4.63	59.11	0.000	3.917	40.90	0.00	160.21
24	109.00	Pipe Mount (au_andrew)	3	7.836	8.619	0.56	0.75	9.14	382.20	0.000	0.000	78.77	0.00	0.00
25	109.00	Airmux	1	7.836	8.619	1.00	1.00	2.33	287.80	0.000	0.000	20.05	0.00	0.00
26	109.00	Airmux	1	7.836	8.619	1.00	1.00	2.36	30.52	0.000	0.000	20.38	0.00	0.00
27	98.00	Fujitsu TA08025-B605	3	7.662	8.429	0.54	0.80	4.02	382.14	0.000	0.000	33.85	0.00	0.00
28	98.00	JMA Wireless	3	7.662	8.429	0.55	0.75	23.13	866.85	0.000	0.000	194.98	0.00	0.00
29	98.00	Raycap	1	7.662	8.429	0.54	0.80	1.37	64.38	0.000	0.000	11.54	0.00	0.00
30	98.00	Fujitsu TA08025-B604	3	7.662	8.429	0.54	0.80	4.02	339.57	0.000	0.000	33.85	0.00	0.00
31	98.00	Platform w/HRK (Sitepro1	1	7.662	8.429	1.00	1.00	87.56	4061.75	0.000	0.000	738.01	0.00	0.00
32	88.00	Platform w/ Handrail	1	7.491	8.240	1.00	1.00	87.97	5044.82	0.000	0.000	724.84	0.00	0.00
33	88.00	Ericsson Radio 4449	3	7.491	8.240	0.50	0.75	3.21	455.20	0.000	0.000	26.46	0.00	0.00
34	88.00	Ericsson KRY 112 144/1	3	7.491	8.240	0.45	0.75	0.99	61.15	0.000	0.000	8.17	0.00	0.00
35	88.00	Ericsson Air 32	3	7.491	8.240	0.65	0.75	14.65	992.13	0.000	0.000	120.69	0.00	0.00
36	88.00	RFS	3	7.491	8.240	0.54	0.75	35.70	1677.32	0.000	0.000	294.17	0.00	0.00
							Totals:		**31,525.38**			**5,665.51**		

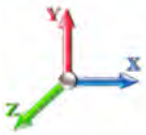
Total Applied Force Summary

Structure:	CT46135-A-SBA		**Code:**	EIA/TIA-222-G	6/3/2021
Site Name:	Middlefield-jacskon Hill Rd		**Exposure:**	C	
Height:	146.00 (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 26

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		138.41	1735.22	0.00	0.00
10.00		136.07	1872.04	0.00	0.00
15.00		133.54	1851.69	0.00	0.00
20.00		138.92	1826.59	0.00	0.00
25.00		142.65	1798.74	0.00	0.00
30.00		145.12	1769.05	0.00	0.00
35.00		146.68	1738.06	0.00	0.00
40.00		147.51	1706.06	0.00	0.00
43.34		98.20	1120.86	0.00	0.00
45.00		49.67	860.54	0.00	0.00
48.67		110.05	1875.52	0.00	0.00
50.00		39.63	402.06	0.00	0.00
55.00		149.76	1490.37	0.00	0.00
60.00		148.83	1460.00	0.00	0.00
65.00		147.59	1429.22	0.00	0.00
70.00		146.08	1398.10	0.00	0.00
75.00		144.33	1366.66	0.00	0.00
80.00		142.35	1334.95	0.00	0.00
85.00		140.17	1302.99	0.00	0.00
87.83		78.18	725.10	0.00	0.00
88.00	(13) attachments	1178.98	8293.32	0.00	0.00
90.00		55.68	724.83	0.00	0.00
92.17		59.88	775.74	0.00	0.00
95.00		77.65	614.46	0.00	0.00
98.00	(11) attachments	1093.54	6355.22	0.00	0.00
100.00		53.60	419.24	0.00	0.00
105.00		132.46	1025.35	0.00	0.00
109.00	(5) attachments	222.95	1500.73	0.00	0.00
110.00		25.56	197.50	0.00	0.00
115.00		126.44	966.44	0.00	0.00
119.00	(3) attachments	266.85	1152.60	0.00	565.63
120.00		24.30	183.36	0.00	0.00
124.00	(2) attachments	288.03	1103.99	114.55	980.49
125.00		23.63	177.49	0.00	0.00
130.00		116.52	866.00	0.00	0.00
133.37		76.52	568.62	0.00	0.00
135.00		36.83	354.81	0.00	0.00
136.62		36.37	349.69	0.00	0.00
140.00	(24) attachments	1223.96	7659.33	0.00	-315.78
145.00		107.42	557.62	0.00	0.00
146.00	(41) attachments	1871.31	8986.70	0.00	5103.26
	Totals:	**9,622.22**	**71,896.89**	**114.55**	**6,333.60**

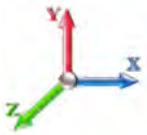
Calculated Forces

Structure:	CT46135-A-SBA	**Code:**	EIA/TIA-222-G	6/3/2021	
Site Name:	Middlefield-jacskon Hill Rd	**Exposure:**	C		
Height:	146.00 (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 26

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	-71.89	-9.68	-0.11	-1108.9	0.00	1108.95	4626.62	2313.31	8646.87	4329.86	0.00	0.000	0.000	0.272
5.00	-70.14	-9.66	-0.11	-1060.5	0.00	1060.54	4552.64	2276.32	8322.99	4167.68	0.05	-0.093	0.000	0.270
10.00	-68.25	-9.63	-0.11	-1012.2	0.00	1012.26	4477.51	2238.76	8003.10	4007.50	0.20	-0.188	0.000	0.268
15.00	-66.38	-9.60	-0.11	-964.12	0.00	964.12	4395.69	2197.85	7677.64	3844.53	0.45	-0.285	0.000	0.266
20.00	-64.54	-9.56	-0.11	-916.11	0.00	916.11	4294.12	2147.06	7325.16	3668.02	0.80	-0.383	0.000	0.265
25.00	-62.73	-9.52	-0.11	-868.29	0.00	868.29	4192.55	2096.27	6980.95	3495.66	1.25	-0.483	0.000	0.263
30.00	-60.94	-9.47	-0.11	-820.70	0.00	820.70	4090.97	2045.49	6645.03	3327.46	1.81	-0.585	0.000	0.262
35.00	-59.19	-9.41	-0.11	-773.37	0.00	773.37	3989.40	1994.70	6317.40	3163.39	2.48	-0.689	0.000	0.259
40.00	-57.47	-9.33	-0.11	-726.33	0.00	726.33	3887.82	1943.91	5998.04	3003.48	3.26	-0.794	0.000	0.257
43.34	-56.34	-9.27	-0.11	-695.21	0.00	695.21	3820.04	1910.02	5789.54	2899.07	3.84	-0.866	0.000	0.255
45.00	-55.47	-9.26	-0.11	-679.80	0.00	679.80	3786.25	1893.12	5686.97	2847.71	4.15	-0.903	0.000	0.253
48.67	-53.59	-9.17	-0.11	-645.82	0.00	645.82	3251.53	1625.77	4904.15	2455.72	4.87	-0.982	0.000	0.280
50.00	-53.18	-9.19	-0.11	-633.63	0.00	633.63	3230.14	1615.07	4836.85	2422.02	5.15	-1.012	0.000	0.278
55.00	-51.67	-9.12	-0.11	-587.67	0.00	587.67	3143.08	1571.54	4578.34	2292.57	6.27	-1.131	0.000	0.273
60.00	-50.20	-9.05	-0.11	-542.06	0.00	542.06	3056.01	1528.01	4326.92	2166.68	7.52	-1.250	0.000	0.267
65.00	-48.75	-8.97	-0.11	-496.83	0.00	496.83	2968.95	1484.47	4082.61	2044.34	8.90	-1.369	0.000	0.259
70.00	-47.34	-8.88	-0.11	-451.99	0.00	451.99	2881.88	1440.94	3845.39	1925.55	10.39	-1.487	0.000	0.251
75.00	-45.96	-8.80	-0.11	-407.57	0.00	407.57	2794.82	1397.41	3615.28	1810.32	12.01	-1.605	0.000	0.242
80.00	-44.61	-8.70	-0.11	-363.58	0.00	363.58	2707.76	1353.88	3392.26	1698.65	13.76	-1.720	0.000	0.231
85.00	-43.30	-8.59	-0.11	-320.06	0.00	320.06	2620.69	1310.35	3176.35	1590.53	15.62	-1.833	0.000	0.218
87.83	-42.57	-8.51	-0.11	-295.72	0.00	295.72	2571.36	1285.68	3057.15	1530.84	16.72	-1.896	0.000	0.210
88.00	-34.32	-7.07	-0.11	-294.30	0.00	294.30	2568.45	1284.23	3050.20	1527.37	16.79	-1.900	0.000	0.206
90.00	-33.59	-7.02	-0.11	-280.15	0.00	280.15	2533.63	1266.81	2967.53	1485.97	17.60	-1.944	0.000	0.202
92.17	-32.81	-6.97	-0.11	-264.94	0.00	264.94	2130.58	1065.29	2523.85	1263.80	18.49	-1.992	0.000	0.225
95.00	-32.19	-6.90	-0.11	-245.20	0.00	245.20	2089.47	1044.73	2426.88	1215.24	19.69	-2.053	0.000	0.217
98.00	-25.88	-5.61	-0.11	-224.49	0.00	224.49	2045.93	1022.97	2326.27	1164.86	21.00	-2.123	0.000	0.205
100.00	-25.45	-5.57	-0.11	-213.28	0.00	213.28	2016.91	1008.46	2260.38	1131.87	21.90	-2.169	0.000	0.201
105.00	-24.42	-5.44	-0.11	-185.43	0.00	185.43	1944.36	972.18	2099.80	1051.46	24.23	-2.280	-0.001	0.189
109.00	-22.93	-5.18	-0.11	-163.66	0.00	163.66	1886.32	943.16	1975.59	989.26	26.18	-2.366	-0.001	0.178
110.00	-22.73	-5.17	-0.11	-158.48	0.00	158.48	1871.81	935.90	1945.13	974.01	26.68	-2.388	-0.001	0.175
115.00	-21.76	-5.04	-0.11	-132.63	0.00	132.63	1799.25	899.63	1796.38	899.53	29.23	-2.488	-0.001	0.160
119.00	-20.62	-4.74	-0.11	-111.92	0.00	111.92	1741.21	870.61	1681.64	842.07	31.35	-2.565	-0.001	0.145
120.00	-20.43	-4.72	-0.11	-107.19	0.00	107.19	1726.70	863.35	1653.55	828.00	31.89	-2.584	-0.001	0.141
124.00	-19.34	-4.40	0.00	-87.33	0.00	87.33	1668.66	834.33	1543.55	772.92	34.08	-2.653	-0.001	0.125
125.00	-19.16	-4.38	0.00	-82.94	0.00	82.94	1654.15	827.07	1516.64	759.45	34.64	-2.669	-0.001	0.121
130.00	-18.29	-4.24	0.00	-61.05	0.00	61.05	1581.59	790.80	1385.64	693.85	37.47	-2.742	-0.001	0.100
133.37	-17.73	-4.14	0.00	-46.74	0.00	46.74	1532.65	766.32	1300.60	651.27	39.43	-2.783	-0.001	0.083
135.00	-17.37	-4.10	0.00	-40.00	0.00	40.00	1509.04	754.52	1260.56	631.22	40.38	-2.801	-0.001	0.075
136.62	-17.02	-4.05	0.00	-33.36	0.00	33.36	885.20	442.60	750.52	375.82	41.33	-2.817	-0.001	0.108
140.00	-9.43	-2.45	0.00	-19.69	0.00	19.69	864.59	432.29	709.24	355.15	43.33	-2.842	-0.001	0.066
145.00	-8.88	-2.32	0.00	-7.42	0.00	7.42	833.10	416.55	649.44	325.20	46.33	-2.874	-0.001	0.034
146.00	0.00	-1.87	0.00	-5.10	0.00	5.10	826.66	413.33	637.68	319.32	46.93	-2.877	-0.001	0.016

Seismic Segment Forces (Factored)

Structure:	CT46135-A-SBA	**Code:**	EIA/TIA-222-G	6/3/2021	
Site Name:	Middlefield-jacskon Hill Rd	**Exposure:**	C		
Height:	146.00 (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 + 1.0E							**Iterations**	24
Gust Response Factor	1.10				**Sds**	0.19		**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.31		**SA**	0.03	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1064.7	0.00	0.03	0.02	21.68	
10.00		1041.5	0.01	0.05	0.03	30.06	
15.00		1018.2	0.02	0.06	0.04	33.49	
20.00		995.00	0.04	0.07	0.04	34.73	
25.00		971.74	0.06	0.07	0.04	35.06	
30.00		948.48	0.08	0.07	0.04	35.11	
35.00		925.22	0.11	0.07	0.04	35.11	
40.00		901.96	0.14	0.07	0.03	35.03	
43.34	Bot - Section 2	588.97	0.17	0.07	0.03	23.14	
45.00		543.55	0.18	0.07	0.03	21.43	
48.67	Top - Section 1	1182.3	0.21	0.06	0.02	46.56	
50.00		197.47	0.22	0.06	0.02	7.74	
55.00		729.75	0.27	0.05	0.02	27.27	
60.00		709.81	0.32	0.04	0.01	23.41	
65.00		689.87	0.37	0.03	0.01	17.27	
70.00		669.93	0.43	0.01	0.01	8.77	
75.00		650.00	0.50	-0.02	0.01	-1.25	
80.00		630.06	0.57	-0.04	0.01	-11.03	
85.00		610.12	0.64	-0.07	0.02	-18.64	
87.83	Bot - Section 3	336.88	0.68	-0.08	0.03	-12.10	
88.00	Appurtenance(s)	3717.0	0.69	-0.08	0.03	-134.46	
90.00		433.05	0.72	-0.09	0.03	-16.82	
92.17	Top - Section 2	462.54	0.75	-0.10	0.04	-18.83	
95.00		273.82	0.80	-0.11	0.05	-11.37	
98.00	Appurtenance(s)	2792.1	0.85	-0.12	0.07	-112.80	
100.00		186.08	0.89	-0.12	0.08	-7.17	
105.00		453.57	0.98	-0.11	0.12	-13.63	
109.00	Appurtenance(s)	452.90	1.05	-0.09	0.16	-8.81	
110.00		86.06	1.07	-0.08	0.17	-1.40	
115.00		420.34	1.17	-0.02	0.23	1.16	
119.00	Appurtenance(s)	448.31	1.26	0.06	0.30	9.75	
120.00		79.42	1.28	0.09	0.32	2.15	
124.00	Appurtenance(s)	468.02	1.36	0.22	0.39	23.53	
125.00		76.09	1.39	0.26	0.42	4.31	
130.00		370.50	1.50	0.50	0.54	33.96	
133.37	Bot - Section 4	240.58	1.58	0.71	0.64	28.49	
135.00		182.94	1.62	0.83	0.69	24.20	
136.62	Top - Section 3	179.76	1.66	0.96	0.75	26.36	
140.00	Appurtenance(s)	2642.2	1.74	1.27	0.87	471.81	
145.00		197.46	1.86	1.85	1.09	45.56	
146.00	Appurtenance(s)	3040.2	1.89	1.98	1.14	735.33	
	Totals:	**32,608.8**				**1,474.2**	**Total Wind:** **34,979.7**

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

Calculated Forces

Structure:	CT46135-A-SBA	**Code:**	EIA/TIA-222-G	6/3/2021	
Site Name:	Middlefield-jacskon Hill Rd	**Exposure:**	C		
Height:	146.00 (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	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	24
Gust Response Factor	1.10			**Sds**	0.19			**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.31	**SA**	0.03	**Seismic Importance Factor**			1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-45.23	-1.85	0.00	-230.66	0.00	230.66	4626.62	2313.31	8646.87	4329.86		0.00	0.00	0.063
5.00	-43.86	-1.84	0.00	-221.41	0.00	221.41	4552.64	2276.32	8322.99	4167.68		0.01	-0.02	0.063
10.00	-42.36	-1.83	0.00	-212.20	0.00	212.20	4477.51	2238.76	8003.10	4007.50		0.04	-0.04	0.062
15.00	-40.90	-1.81	0.00	-203.07	0.00	203.07	4395.69	2197.85	7677.64	3844.53		0.09	-0.06	0.062
20.00	-39.46	-1.78	0.00	-194.04	0.00	194.04	4294.12	2147.06	7325.16	3668.02		0.17	-0.08	0.062
25.00	-38.05	-1.76	0.00	-185.12	0.00	185.12	4192.55	2096.27	6980.95	3495.66		0.26	-0.10	0.062
30.00	-36.66	-1.74	0.00	-176.31	0.00	176.31	4090.97	2045.49	6645.03	3327.46		0.38	-0.12	0.062
35.00	-35.31	-1.71	0.00	-167.63	0.00	167.63	3989.40	1994.70	6317.40	3163.39		0.52	-0.15	0.062
40.00	-33.98	-1.69	0.00	-159.06	0.00	159.06	3887.82	1943.91	5998.04	3003.48		0.69	-0.17	0.062
43.34	-33.11	-1.67	0.00	-153.43	0.00	153.43	3820.04	1910.02	5789.54	2899.07		0.81	-0.18	0.062
45.00	-32.38	-1.65	0.00	-150.66	0.00	150.66	3786.25	1893.12	5686.97	2847.71		0.88	-0.19	0.061
48.67	-30.78	-1.60	0.00	-144.60	0.00	144.60	3251.53	1625.77	4904.15	2455.72		1.03	-0.21	0.068
50.00	-30.48	-1.61	0.00	-142.47	0.00	142.47	3230.14	1615.07	4836.85	2422.02		1.09	-0.22	0.068
55.00	-29.36	-1.59	0.00	-134.44	0.00	134.44	3143.08	1571.54	4578.34	2292.57		1.33	-0.24	0.068
60.00	-28.26	-1.57	0.00	-126.51	0.00	126.51	3056.01	1528.01	4326.92	2166.68		1.60	-0.27	0.068
65.00	-27.19	-1.56	0.00	-118.64	0.00	118.64	2968.95	1484.47	4082.61	2044.34		1.90	-0.30	0.067
70.00	-26.14	-1.56	0.00	-110.83	0.00	110.83	2881.88	1440.94	3845.39	1925.55		2.23	-0.33	0.067
75.00	-25.12	-1.57	0.00	-103.02	0.00	103.02	2794.82	1397.41	3615.28	1810.32		2.59	-0.36	0.066
80.00	-24.12	-1.58	0.00	-95.17	0.00	95.17	2707.76	1353.88	3392.26	1698.65		2.98	-0.39	0.065
85.00	-23.14	-1.58	0.00	-87.30	0.00	87.30	2620.69	1310.35	3176.35	1590.53		3.40	-0.42	0.064
87.83	-22.60	-1.58	0.00	-82.83	0.00	82.83	2571.36	1285.68	3057.15	1530.84		3.65	-0.43	0.063
88.00	-18.13	-1.55	0.00	-82.56	0.00	82.56	2568.45	1284.23	3050.20	1527.37		3.67	-0.44	0.061
90.00	-17.53	-1.55	0.00	-79.47	0.00	79.47	2533.63	1266.81	2967.53	1485.97		3.85	-0.45	0.060
92.17	-16.90	-1.54	0.00	-76.12	0.00	76.12	2130.58	1065.29	2523.85	1263.80		4.06	-0.46	0.068
95.00	-16.46	-1.55	0.00	-71.75	0.00	71.75	2089.47	1044.73	2426.88	1215.24		4.34	-0.48	0.067
98.00	-13.00	-1.52	0.00	-67.11	0.00	67.11	2045.93	1022.97	2326.27	1164.86		4.65	-0.50	0.064
100.00	-12.70	-1.52	0.00	-64.07	0.00	64.07	2016.91	1008.46	2260.38	1131.87		4.86	-0.51	0.063
105.00	-11.97	-1.52	0.00	-56.45	0.00	56.45	1944.36	972.18	2099.80	1051.46		5.42	-0.55	0.060
109.00	-11.28	-1.52	0.00	-50.35	0.00	50.35	1886.32	943.16	1975.59	989.26		5.89	-0.57	0.057
110.00	-11.14	-1.52	0.00	-48.83	0.00	48.83	1871.81	935.90	1945.13	974.01		6.01	-0.58	0.056
115.00	-10.46	-1.52	0.00	-41.22	0.00	41.22	1799.25	899.63	1796.38	899.53		6.63	-0.61	0.052
119.00	-9.77	-1.50	0.00	-35.15	0.00	35.15	1741.21	870.61	1681.64	842.07		7.16	-0.64	0.047
120.00	-9.65	-1.50	0.00	-33.64	0.00	33.64	1726.70	863.35	1653.55	828.00		7.29	-0.64	0.046
124.00	-8.95	-1.47	0.00	-27.63	0.00	27.63	1668.66	834.33	1543.55	772.92		7.84	-0.66	0.041
125.00	-8.82	-1.47	0.00	-26.16	0.00	26.16	1654.15	827.07	1516.64	759.45		7.98	-0.67	0.040
130.00	-8.21	-1.43	0.00	-18.81	0.00	18.81	1581.59	790.80	1385.64	693.85		8.69	-0.69	0.032
133.37	-7.81	-1.40	0.00	-13.98	0.00	13.98	1532.65	766.32	1300.60	651.27		9.18	-0.70	0.027
135.00	-7.53	-1.37	0.00	-11.70	0.00	11.70	1509.04	754.52	1260.56	631.22		9.42	-0.71	0.024
136.62	-7.26	-1.34	0.00	-9.47	0.00	9.47	885.20	442.60	750.52	375.82		9.66	-0.71	0.033
140.00	-3.99	-0.83	0.00	-4.94	0.00	4.94	864.59	432.29	709.24	355.15		10.17	-0.72	0.019
145.00	-3.66	-0.78	0.00	-0.78	0.00	0.78	833.10	416.55	649.44	325.20		10.93	-0.73	0.007
146.00	0.00	-0.74	0.00	0.00	0.00	0.00	826.66	413.33	637.68	319.32		11.08	-0.73	0.000

Seismic Segment Forces (Factored)

Structure:	CT46135-A-SBA	**Code:**	EIA/TIA-222-G	6/3/2021	
Site Name:	Middlefield-jacskon Hill Rd	**Exposure:**	C		
Height:	146.00 (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:	0.9D + 1.0E							**Iterations**	24
Gust Response Factor	1.10				**Sds**	0.19		**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.31		**SA**	0.03	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1064.7	0.00	0.03	0.02	21.68	
10.00		1041.5	0.01	0.05	0.03	30.06	
15.00		1018.2	0.02	0.06	0.04	33.49	
20.00		995.00	0.04	0.07	0.04	34.73	
25.00		971.74	0.06	0.07	0.04	35.06	
30.00		948.48	0.08	0.07	0.04	35.11	
35.00		925.22	0.11	0.07	0.04	35.11	
40.00		901.96	0.14	0.07	0.03	35.03	
43.34	Bot - Section 2	588.97	0.17	0.07	0.03	23.14	
45.00		543.55	0.18	0.07	0.03	21.43	
48.67	Top - Section 1	1182.3	0.21	0.06	0.02	46.56	
50.00		197.47	0.22	0.06	0.02	7.74	
55.00		729.75	0.27	0.05	0.02	27.27	
60.00		709.81	0.32	0.04	0.01	23.41	
65.00		689.87	0.37	0.03	0.01	17.27	
70.00		669.93	0.43	0.01	0.01	8.77	
75.00		650.00	0.50	-0.02	0.01	-1.25	
80.00		630.06	0.57	-0.04	0.01	-11.03	
85.00		610.12	0.64	-0.07	0.02	-18.64	
87.83	Bot - Section 3	336.88	0.68	-0.08	0.03	-12.10	
88.00	Appurtenance(s)	3717.0	0.69	-0.08	0.03	-134.46	
90.00		433.05	0.72	-0.09	0.03	-16.82	
92.17	Top - Section 2	462.54	0.75	-0.10	0.04	-18.83	
95.00		273.82	0.80	-0.11	0.05	-11.37	
98.00	Appurtenance(s)	2792.1	0.85	-0.12	0.07	-112.80	
100.00		186.08	0.89	-0.12	0.08	-7.17	
105.00		453.57	0.98	-0.11	0.12	-13.63	
109.00	Appurtenance(s)	452.90	1.05	-0.09	0.16	-8.81	
110.00		86.06	1.07	-0.08	0.17	-1.40	
115.00		420.34	1.17	-0.02	0.23	1.16	
119.00	Appurtenance(s)	448.31	1.26	0.06	0.30	9.75	
120.00		79.42	1.28	0.09	0.32	2.15	
124.00	Appurtenance(s)	468.02	1.36	0.22	0.39	23.53	
125.00		76.09	1.39	0.26	0.42	4.31	
130.00		370.50	1.50	0.50	0.54	33.96	
133.37	Bot - Section 4	240.58	1.58	0.71	0.64	28.49	
135.00		182.94	1.62	0.83	0.69	24.20	
136.62	Top - Section 3	179.76	1.66	0.96	0.75	26.36	
140.00	Appurtenance(s)	2642.2	1.74	1.27	0.87	471.81	
145.00		197.46	1.86	1.85	1.09	45.56	
146.00	Appurtenance(s)	3040.2	1.89	1.98	1.14	735.33	
	Totals:	**32,608.8**				**1,474.2**	**Total Wind:** **34,979.7**

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

Calculated Forces

Structure:	CT46135-A-SBA	**Code:**	EIA/TIA-222-G	6/3/2021	
Site Name:	Middlefield-jacskon Hill Rd	**Exposure:**	C		
Height:	146.00 (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	

Tower Engineering Solutions

Load Case:	0.9D + 1.0E							**Iterations**	24
Gust Response Factor	1.10			**Sds**	0.19			**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.31	**SA**	0.03	**Seismic Importance Factor**			1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-33.92	-1.85	0.00	-226.63	0.00	226.63	4626.62	2313.31	8646.87	4329.86		0.00	0.00	0.060
5.00	-32.89	-1.84	0.00	-217.39	0.00	217.39	4552.64	2276.32	8322.99	4167.68		0.01	-0.02	0.059
10.00	-31.77	-1.82	0.00	-208.21	0.00	208.21	4477.51	2238.76	8003.10	4007.50		0.04	-0.04	0.059
15.00	-30.67	-1.79	0.00	-199.12	0.00	199.12	4395.69	2197.85	7677.64	3844.53		0.09	-0.06	0.059
20.00	-29.59	-1.77	0.00	-190.16	0.00	190.16	4294.12	2147.06	7325.16	3668.02		0.16	-0.08	0.059
25.00	-28.53	-1.74	0.00	-181.32	0.00	181.32	4192.55	2096.27	6980.95	3495.66		0.26	-0.10	0.059
30.00	-27.50	-1.71	0.00	-172.61	0.00	172.61	4090.97	2045.49	6645.03	3327.46		0.37	-0.12	0.059
35.00	-26.48	-1.69	0.00	-164.04	0.00	164.04	3989.40	1994.70	6317.40	3163.39		0.51	-0.14	0.058
40.00	-25.49	-1.66	0.00	-155.60	0.00	155.60	3887.82	1943.91	5998.04	3003.48		0.67	-0.17	0.058
43.34	-24.83	-1.64	0.00	-150.07	0.00	150.07	3820.04	1910.02	5789.54	2899.07		0.79	-0.18	0.058
45.00	-24.28	-1.62	0.00	-147.34	0.00	147.34	3786.25	1893.12	5686.97	2847.71		0.86	-0.19	0.058
48.67	-23.08	-1.57	0.00	-141.39	0.00	141.39	3251.53	1625.77	4904.15	2455.72		1.01	-0.21	0.065
50.00	-22.86	-1.57	0.00	-139.30	0.00	139.30	3230.14	1615.07	4836.85	2422.02		1.07	-0.21	0.065
55.00	-22.02	-1.55	0.00	-131.44	0.00	131.44	3143.08	1571.54	4578.34	2292.57		1.31	-0.24	0.064
60.00	-21.20	-1.54	0.00	-123.68	0.00	123.68	3056.01	1528.01	4326.92	2166.68		1.57	-0.27	0.064
65.00	-20.39	-1.52	0.00	-116.00	0.00	116.00	2968.95	1484.47	4082.61	2044.34		1.86	-0.29	0.064
70.00	-19.60	-1.52	0.00	-108.38	0.00	108.38	2881.88	1440.94	3845.39	1925.55		2.19	-0.32	0.063
75.00	-18.84	-1.53	0.00	-100.78	0.00	100.78	2794.82	1397.41	3615.28	1810.32		2.54	-0.35	0.062
80.00	-18.08	-1.53	0.00	-93.15	0.00	93.15	2707.76	1353.88	3392.26	1698.65		2.92	-0.38	0.062
85.00	-17.35	-1.53	0.00	-85.50	0.00	85.50	2620.69	1310.35	3176.35	1590.53		3.33	-0.41	0.060
87.83	-16.94	-1.53	0.00	-81.16	0.00	81.16	2571.36	1285.68	3057.15	1530.84		3.58	-0.43	0.060
88.00	-13.59	-1.51	0.00	-80.90	0.00	80.90	2568.45	1284.23	3050.20	1527.37		3.59	-0.43	0.058
90.00	-13.15	-1.51	0.00	-77.88	0.00	77.88	2533.63	1266.81	2967.53	1485.97		3.78	-0.44	0.058
92.17	-12.67	-1.51	0.00	-74.62	0.00	74.62	2130.58	1065.29	2523.85	1263.80		3.98	-0.45	0.065
95.00	-12.34	-1.51	0.00	-70.34	0.00	70.34	2089.47	1044.73	2426.88	1215.24		4.25	-0.47	0.064
98.00	-9.74	-1.49	0.00	-65.82	0.00	65.82	2045.93	1022.97	2326.27	1164.86		4.55	-0.49	0.061
100.00	-9.52	-1.49	0.00	-62.84	0.00	62.84	2016.91	1008.46	2260.38	1131.87		4.76	-0.50	0.060
105.00	-8.98	-1.49	0.00	-55.37	0.00	55.37	1944.36	972.18	2099.80	1051.46		5.31	-0.54	0.057
109.00	-8.46	-1.49	0.00	-49.41	0.00	49.41	1886.32	943.16	1975.59	989.26		5.77	-0.56	0.054
110.00	-8.35	-1.49	0.00	-47.92	0.00	47.92	1871.81	935.90	1945.13	974.01		5.88	-0.57	0.054
115.00	-7.84	-1.49	0.00	-40.46	0.00	40.46	1799.25	899.63	1796.38	899.53		6.50	-0.60	0.049
119.00	-7.33	-1.48	0.00	-34.50	0.00	34.50	1741.21	870.61	1681.64	842.07		7.01	-0.62	0.045
120.00	-7.23	-1.47	0.00	-33.03	0.00	33.03	1726.70	863.35	1653.55	828.00		7.14	-0.63	0.044
124.00	-6.71	-1.45	0.00	-27.13	0.00	27.13	1668.66	834.33	1543.55	772.92		7.68	-0.65	0.039
125.00	-6.61	-1.44	0.00	-25.69	0.00	25.69	1654.15	827.07	1516.64	759.45		7.81	-0.65	0.038
130.00	-6.15	-1.40	0.00	-18.48	0.00	18.48	1581.59	790.80	1385.64	693.85		8.51	-0.68	0.031
133.37	-5.85	-1.37	0.00	-13.74	0.00	13.74	1532.65	766.32	1300.60	651.27		8.99	-0.69	0.025
135.00	-5.65	-1.35	0.00	-11.50	0.00	11.50	1509.04	754.52	1260.56	631.22		9.23	-0.69	0.022
136.62	-5.44	-1.32	0.00	-9.31	0.00	9.31	885.20	442.60	750.52	375.82		9.47	-0.70	0.031
140.00	-2.99	-0.82	0.00	-4.86	0.00	4.86	864.59	432.29	709.24	355.15		9.96	-0.71	0.017
145.00	-2.74	-0.77	0.00	-0.77	0.00	0.77	833.10	416.55	649.44	325.20		10.71	-0.71	0.006
146.00	0.00	-0.74	0.00	0.00	0.00	0.00	826.66	413.33	637.68	319.32		10.86	-0.71	0.000

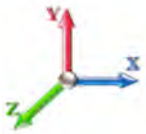
Wind Loading - Shaft

Structure:	CT46135-A-SBA	**Code:**	EIA/TIA-222-G	6/3/2021	
Site Name:	Middlefield-jacskon Hill Rd	**Exposure:**	C		
Height:	146.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 25	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



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	7.442	8.19	215.32	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	210.71	0.650	0.000	5.00	19.254	12.52	102.5	0.0	1064.8
10.00		1.00	0.85	7.442	8.19	206.10	0.650	0.000	5.00	18.837	12.24	100.2	0.0	1041.5
15.00		1.00	0.85	7.442	8.19	201.49	0.650	0.000	5.00	18.421	11.97	98.0	0.0	1018.3
20.00		1.00	0.90	7.896	8.69	202.81	0.650	0.000	5.00	18.004	11.70	101.6	0.0	995.0
25.00		1.00	0.95	8.276	9.10	202.77	0.650	0.000	5.00	17.588	11.43	104.1	0.0	971.7
30.00		1.00	0.98	8.600	9.46	201.74	0.650	0.000	5.00	17.171	11.16	105.6	0.0	948.5
35.00		1.00	1.01	8.883	9.77	200.01	0.650	0.000	5.00	16.755	10.89	106.4	0.0	925.2
40.00		1.00	1.04	9.137	10.05	197.73	0.650	0.000	5.00	16.338	10.62	106.7	0.0	902.0
43.34	Bot - Section 2	1.00	1.06	9.292	10.22	195.97	0.650	0.000	3.34	10.671	6.94	70.9	0.0	589.0
45.00		1.00	1.07	9.366	10.30	195.03	0.650	0.000	1.66	5.356	3.48	35.9	0.0	543.5
48.67	Top - Section 1	1.00	1.09	9.522	10.47	192.82	0.650	0.000	3.67	11.654	7.58	79.3	0.0	1182.4
50.00		1.00	1.09	9.576	10.53	195.96	0.650	0.000	1.33	4.168	2.71	28.5	0.0	197.5
55.00		1.00	1.12	9.770	10.75	192.65	0.650	0.000	5.00	15.406	10.01	107.6	0.0	729.7
60.00		1.00	1.14	9.951	10.95	189.09	0.650	0.000	5.00	14.989	9.74	106.6	0.0	709.8
65.00		1.00	1.16	10.120	11.13	185.32	0.650	0.000	5.00	14.572	9.47	105.4	0.0	689.9
70.00		1.00	1.17	10.279	11.31	181.35	0.650	0.000	5.00	14.156	9.20	104.0	0.0	669.9
75.00		1.00	1.19	10.430	11.47	177.22	0.650	0.000	5.00	13.739	8.93	102.5	0.0	650.0
80.00		1.00	1.21	10.572	11.63	172.93	0.650	0.000	5.00	13.323	8.66	100.7	0.0	630.1
85.00		1.00	1.22	10.708	11.78	168.51	0.650	0.000	5.00	12.906	8.39	98.8	0.0	610.1
87.83	Bot - Section 3	1.00	1.23	10.782	11.86	165.95	0.650	0.000	2.83	7.129	4.63	55.0	0.0	336.9
88.00	Appurtenance(s)	1.00	1.23	10.787	11.87	165.80	0.650	0.000	0.17	0.424	0.28	3.3	0.0	36.4
90.00		1.00	1.24	10.838	11.92	163.97	0.650	0.000	2.00	5.052	3.28	39.1	0.0	433.1
92.17	Top - Section 2	1.00	1.24	10.892	11.98	161.96	0.650	0.000	2.17	5.397	3.51	42.0	0.0	462.5
95.00		1.00	1.25	10.962	12.06	162.86	0.650	0.000	2.83	6.940	4.51	54.4	0.0	273.8
98.00	Appurtenance(s)	1.00	1.26	11.034	12.14	160.03	0.650	0.000	3.00	7.203	4.68	56.8	0.0	284.1
100.00		1.00	1.27	11.081	12.19	158.12	0.650	0.000	2.00	4.718	3.07	37.4	0.0	186.1
105.00		1.00	1.28	11.195	12.31	153.28	0.650	0.000	5.00	11.504	7.48	92.1	0.0	453.6
109.00	Appurtenance(s)	1.00	1.29	11.284	12.41	149.35	0.650	0.000	4.00	8.904	5.79	71.8	0.0	350.9
110.00		1.00	1.29	11.305	12.44	148.35	0.650	0.000	1.00	2.184	1.42	17.7	0.0	86.1
115.00		1.00	1.30	11.412	12.55	143.34	0.650	0.000	5.00	10.671	6.94	87.1	0.0	420.3
119.00	Appurtenance(s)	1.00	1.31	11.494	12.64	139.28	0.650	0.000	4.00	8.237	5.35	67.7	0.0	324.3
120.00		1.00	1.32	11.514	12.67	138.25	0.650	0.000	1.00	2.018	1.31	16.6	0.0	79.4
124.00	Appurtenance(s)	1.00	1.32	11.594	12.75	134.13	0.650	0.000	4.00	7.904	5.14	65.5	0.0	311.0
125.00		1.00	1.33	11.614	12.78	133.09	0.650	0.000	1.00	1.934	1.26	16.1	0.0	76.1
130.00		1.00	1.34	11.710	12.88	127.86	0.650	0.000	5.00	9.421	6.12	78.9	0.0	370.5
133.37	Bot - Section 4	1.00	1.34	11.773	12.95	124.29	0.650	0.000	3.37	6.121	3.98	51.5	0.0	240.6
135.00		1.00	1.35	11.803	12.98	122.57	0.650	0.000	1.63	2.935	1.91	24.8	0.0	182.9
136.62	Top - Section 3	1.00	1.35	11.833	13.02	120.83	0.650	0.000	1.62	2.886	1.88	24.4	0.0	179.8
140.00	Appurtenance(s)	1.00	1.36	11.894	13.08	119.43	0.650	0.000	3.38	5.861	3.81	49.8	0.0	139.0
145.00		1.00	1.37	11.982	13.18	114.02	0.650	0.000	5.00	8.330	5.41	71.4	0.0	197.5
146.00	Appurtenance(s)	1.00	1.37	12.000	13.20	112.93	0.650	0.000	1.00	1.616	1.05	13.9	0.0	38.3
								Totals:	**146.00**			**2,802.7**		**20,532.0**

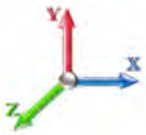
Discrete Appurtenance Forces

Structure:	CT46135-A-SBA	**Code:**	EIA/TIA-222-G	6/3/2021	
Site Name:	Middlefield-jacskon Hill Rd	**Exposure:**	C		
Height:	146.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 26	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	146.00	Ericsson RRUS-11 RRU's	3	12.068	13.275	0.60	0.90	4.65	150.00	0.000	4.000	61.72	0.00	246.87
2	146.00	Cci HPA-65R-BUU-H8	9	12.068	13.275	0.79	1.00	92.29	612.00	0.000	4.000	1225.12	0.00	4900.47
3	146.00	Powerwave LGP21401	6	12.068	13.275	0.54	0.90	3.50	114.00	0.000	4.000	46.45	0.00	185.81
4	146.00	Powerwave LGP219003	6	12.068	13.275	0.54	0.90	1.20	39.00	0.000	4.000	15.91	0.00	63.66
5	146.00	Powerwave 7020.00	6	12.068	13.275	0.54	0.90	0.45	6.96	0.000	4.000	6.02	0.00	24.09
6	146.00	Platform w/ Hand Rails	1	12.000	13.200	1.00	1.00	32.00	1600.00	0.000	0.000	422.39	0.00	0.00
7	146.00	Ericsson RRUS 32 B2	3	12.068	13.275	0.60	0.90	4.96	159.00	0.000	4.000	65.80	0.00	263.20
8	146.00	Raycap DC-6-48-60-18-8F	2	12.068	13.275	0.60	0.90	2.29	40.00	0.000	4.000	30.42	0.00	121.67
9	146.00	Beacon	1	12.000	13.200	1.00	1.00	2.40	15.00	0.000	0.000	31.68	0.00	0.00
10	146.00	Lightning Rod	1	12.060	13.266	1.00	1.00	1.05	35.00	0.000	3.500	13.93	0.00	48.75
11	146.00	Ericsson RRUS-32 RRU's	3	12.068	13.275	0.60	0.90	5.99	231.00	0.000	4.000	79.49	0.00	317.95
12	140.00	ALU B13 RRH4X30-4R	3	11.858	13.044	0.54	0.80	3.47	171.60	0.000	-2.000	45.31	0.00	-90.61
13	140.00	Commscope	6	11.894	13.084	0.66	0.80	32.07	304.26	0.000	0.000	419.61	0.00	0.00
14	140.00	Antel LPA-80063/4CF	6	11.894	13.084	0.75	0.80	27.75	120.00	0.000	0.000	363.05	0.00	0.00
15	140.00	Low Profile Platform	1	11.894	13.084	1.00	1.00	22.00	1500.00	0.000	0.000	287.84	0.00	0.00
16	140.00	ALU B25 RRH4x30-4R	3	11.858	13.044	0.54	0.80	3.44	153.00	0.000	-2.000	44.89	0.00	-89.77
17	140.00	ALU B66 RRH4x45 RRU's	3	11.858	13.044	0.54	0.80	4.08	170.40	0.000	-2.000	53.28	0.00	-106.55
18	140.00	Raycap	2	11.858	13.044	0.54	0.80	2.70	84.00	0.000	-2.000	35.24	0.00	-70.48
19	124.00	dbSpectra	1	11.770	12.947	1.00	1.00	5.50	70.00	1.071	9.170	71.21	76.28	652.96
20	124.00	Pipe Mount	1	11.594	12.753	1.00	1.00	4.31	87.00	0.000	0.000	54.97	0.00	0.00
21	119.00	Pipe Mount	1	11.494	12.643	1.00	1.00	4.31	87.00	0.000	0.000	54.49	0.00	0.00
22	119.00	Celwave PD1142-66	1	11.680	12.847	1.00	1.00	1.57	16.00	0.000	9.400	20.17	0.00	189.60
23	119.00	Telewave ANT450F6	1	11.573	12.730	1.00	1.00	1.86	21.00	0.000	3.917	23.68	0.00	92.74
24	109.00	Pipe Mount (au_andrew)	3	11.284	12.412	0.56	0.75	2.70	60.00	0.000	0.000	33.51	0.00	0.00
25	109.00	Airmux	1	11.284	12.412	1.00	1.00	1.80	35.00	0.000	0.000	22.34	0.00	0.00
26	109.00	Airmux	1	11.284	12.412	1.00	1.00	1.83	7.00	0.000	0.000	22.71	0.00	0.00
27	98.00	Fujitsu TA08025-B605	3	11.034	12.137	0.54	0.80	3.15	224.85	0.000	0.000	38.25	0.00	0.00
28	98.00	JMA Wireless	3	11.034	12.137	0.55	0.75	20.80	193.50	0.000	0.000	252.40	0.00	0.00
29	98.00	Raycap	1	11.034	12.137	0.54	0.80	1.08	21.85	0.000	0.000	13.08	0.00	0.00
30	98.00	Fujitsu TA08025-B604	3	11.034	12.137	0.54	0.80	3.15	191.79	0.000	0.000	38.25	0.00	0.00
31	98.00	Platform w/HRK (Sitepro1	1	11.034	12.137	1.00	1.00	39.73	1876.00	0.000	0.000	482.15	0.00	0.00
32	88.00	Platform w/ Handrail	1	10.787	11.865	1.00	1.00	51.70	2645.00	0.000	0.000	613.43	0.00	0.00
33	88.00	Ericsson Radio 4449	3	10.787	11.865	0.50	0.75	2.46	222.00	0.000	0.000	29.16	0.00	0.00
34	88.00	Ericsson KRY 112 144/1	3	10.787	11.865	0.45	0.75	0.47	33.06	0.000	0.000	5.61	0.00	0.00
35	88.00	Ericsson Air 32	3	10.787	11.865	0.65	0.75	12.60	396.60	0.000	0.000	149.46	0.00	0.00
36	88.00	RFS	3	10.787	11.865	0.54	0.75	32.79	384.00	0.000	0.000	389.04	0.00	0.00
							Totals:		**12,076.87**			**5,562.03**		

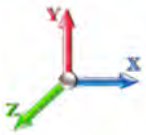
Total Applied Force Summary

Structure:	CT46135-A-SBA		**Code:**	EIA/TIA-222-G	6/3/2021
Site Name:	Middlefield-jacskon Hill Rd		**Exposure:**	C	
Height:	146.00 (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 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		102.45	1146.11	0.00	0.00
10.00		100.23	1244.83	0.00	0.00
15.00		98.02	1221.56	0.00	0.00
20.00		101.65	1198.30	0.00	0.00
25.00		104.07	1175.04	0.00	0.00
30.00		105.58	1151.78	0.00	0.00
35.00		106.42	1128.52	0.00	0.00
40.00		106.73	1105.26	0.00	0.00
43.34		70.90	724.64	0.00	0.00
45.00		35.87	611.18	0.00	0.00
48.67		79.34	1331.60	0.00	0.00
50.00		28.54	251.55	0.00	0.00
55.00		107.62	933.05	0.00	0.00
60.00		106.65	913.11	0.00	0.00
65.00		105.44	893.17	0.00	0.00
70.00		104.04	873.23	0.00	0.00
75.00		102.46	853.30	0.00	0.00
80.00		100.71	833.36	0.00	0.00
85.00		98.81	813.42	0.00	0.00
87.83		54.96	452.09	0.00	0.00
88.00	(13) attachments	1189.97	3723.79	0.00	0.00
90.00		39.14	495.65	0.00	0.00
92.17		42.03	530.36	0.00	0.00
95.00		54.39	362.50	0.00	0.00
98.00	(11) attachments	880.95	2886.00	0.00	0.00
100.00		37.38	246.68	0.00	0.00
105.00		92.09	605.07	0.00	0.00
109.00	(5) attachments	150.40	574.10	0.00	0.00
110.00		17.66	116.20	0.00	0.00
115.00		87.07	571.04	0.00	0.00
119.00	(3) attachments	166.04	568.87	0.00	282.34
120.00		16.61	107.48	0.00	0.00
124.00	(2) attachments	191.69	580.26	76.28	652.96
125.00		16.06	104.15	0.00	0.00
130.00		78.88	510.80	0.00	0.00
133.37		51.53	335.23	0.00	0.00
135.00		24.77	228.58	0.00	0.00
136.62		24.41	225.31	0.00	0.00
140.00	(24) attachments	1299.05	2737.00	0.00	-357.41
145.00		71.37	274.76	0.00	0.00
146.00	(41) attachments	2012.79	3055.71	0.00	6172.46
	Totals:	**8,364.78**	**37,694.64**	**76.28**	**6,750.35**

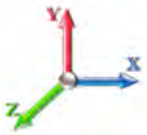
Calculated Forces

Structure:	CT46135-A-SBA	**Code:**	EIA/TIA-222-G	6/3/2021	
Site Name:	Middlefield-jacskon Hill Rd	**Exposure:**	C		
Height:	146.00 (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 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	-37.69	-8.39	-0.08	-941.12	0.00	941.12	4626.62	2313.31	8646.87	4329.86	0.00	0.000	0.000	0.226
5.00	-36.53	-8.34	-0.08	-899.17	0.00	899.17	4552.64	2276.32	8322.99	4167.68	0.04	-0.079	0.000	0.224
10.00	-35.27	-8.28	-0.08	-857.48	0.00	857.48	4477.51	2238.76	8003.10	4007.50	0.17	-0.159	0.000	0.222
15.00	-34.04	-8.23	-0.08	-816.06	0.00	816.06	4395.69	2197.85	7677.64	3844.53	0.38	-0.241	0.000	0.220
20.00	-32.83	-8.17	-0.08	-774.90	0.00	774.90	4294.12	2147.06	7325.16	3668.02	0.68	-0.325	0.000	0.219
25.00	-31.65	-8.11	-0.08	-734.04	0.00	734.04	4192.55	2096.27	6980.95	3495.66	1.06	-0.409	0.000	0.218
30.00	-30.48	-8.04	-0.08	-693.51	0.00	693.51	4090.97	2045.49	6645.03	3327.46	1.54	-0.496	0.000	0.216
35.00	-29.34	-7.97	-0.08	-653.31	0.00	653.31	3989.40	1994.70	6317.40	3163.39	2.10	-0.583	0.000	0.214
40.00	-28.23	-7.89	-0.08	-613.47	0.00	613.47	3887.82	1943.91	5998.04	3003.48	2.76	-0.672	0.000	0.212
43.34	-27.50	-7.83	-0.08	-587.16	0.00	587.16	3820.04	1910.02	5789.54	2899.07	3.25	-0.733	0.000	0.210
45.00	-26.88	-7.81	-0.08	-574.14	0.00	574.14	3786.25	1893.12	5686.97	2847.71	3.51	-0.764	0.000	0.209
48.67	-25.54	-7.73	-0.08	-545.49	0.00	545.49	3251.53	1625.77	4904.15	2455.72	4.13	-0.831	0.000	0.230
50.00	-25.29	-7.73	-0.08	-535.21	0.00	535.21	3230.14	1615.07	4836.85	2422.02	4.36	-0.856	0.000	0.229
55.00	-24.34	-7.65	-0.08	-496.59	0.00	496.59	3143.08	1571.54	4578.34	2292.57	5.31	-0.956	0.000	0.224
60.00	-23.42	-7.56	-0.08	-458.36	0.00	458.36	3056.01	1528.01	4326.92	2166.68	6.37	-1.057	0.000	0.219
65.00	-22.51	-7.48	-0.08	-420.54	0.00	420.54	2968.95	1484.47	4082.61	2044.34	7.53	-1.157	0.000	0.213
70.00	-21.63	-7.40	-0.08	-383.14	0.00	383.14	2881.88	1440.94	3845.39	1925.55	8.79	-1.258	0.000	0.207
75.00	-20.77	-7.31	-0.08	-346.16	0.00	346.16	2794.82	1397.41	3615.28	1810.32	10.16	-1.357	0.000	0.199
80.00	-19.92	-7.22	-0.08	-309.61	0.00	309.61	2707.76	1353.88	3392.26	1698.65	11.64	-1.456	0.000	0.190
85.00	-19.10	-7.13	-0.08	-273.50	0.00	273.50	2620.69	1310.35	3176.35	1590.53	13.21	-1.552	0.000	0.179
87.83	-18.65	-7.07	-0.08	-253.30	0.00	253.30	2571.36	1285.68	3057.15	1530.84	14.15	-1.606	0.000	0.173
88.00	-14.96	-5.78	-0.08	-252.12	0.00	252.12	2568.45	1284.23	3050.20	1527.37	14.21	-1.609	0.000	0.171
90.00	-14.46	-5.74	-0.08	-240.56	0.00	240.56	2533.63	1266.81	2967.53	1485.97	14.89	-1.647	0.000	0.168
92.17	-13.93	-5.69	-0.08	-228.13	0.00	228.13	2130.58	1065.29	2523.85	1263.80	15.65	-1.688	0.000	0.187
95.00	-13.56	-5.64	-0.08	-212.01	0.00	212.01	2089.47	1044.73	2426.88	1215.24	16.66	-1.741	0.000	0.181
98.00	-10.70	-4.68	-0.08	-195.09	0.00	195.09	2045.93	1022.97	2326.27	1164.86	17.78	-1.801	0.000	0.173
100.00	-10.45	-4.65	-0.08	-185.73	0.00	185.73	2016.91	1008.46	2260.38	1131.87	18.54	-1.842	0.000	0.169
105.00	-9.84	-4.55	-0.08	-162.49	0.00	162.49	1944.36	972.18	2099.80	1051.46	20.52	-1.938	0.000	0.160
109.00	-9.27	-4.39	-0.08	-144.29	0.00	144.29	1886.32	943.16	1975.59	989.26	22.18	-2.014	0.000	0.151
110.00	-9.15	-4.37	-0.08	-139.91	0.00	139.91	1871.81	935.90	1945.13	974.01	22.60	-2.033	0.000	0.149
115.00	-8.57	-4.28	-0.08	-118.04	0.00	118.04	1799.25	899.63	1796.38	899.53	24.78	-2.123	0.000	0.136
119.00	-8.01	-4.10	-0.08	-100.64	0.00	100.64	1741.21	870.61	1681.64	842.07	26.59	-2.191	-0.001	0.124
120.00	-7.90	-4.08	-0.08	-96.54	0.00	96.54	1726.70	863.35	1653.55	828.00	27.05	-2.208	-0.001	0.121
124.00	-7.32	-3.87	0.00	-79.56	0.00	79.56	1668.66	834.33	1543.55	772.92	28.92	-2.270	-0.001	0.107
125.00	-7.22	-3.86	0.00	-75.69	0.00	75.69	1654.15	827.07	1516.64	759.45	29.40	-2.285	-0.001	0.104
130.00	-6.71	-3.76	0.00	-56.40	0.00	56.40	1581.59	790.80	1385.64	693.85	31.83	-2.352	-0.001	0.086
133.37	-6.37	-3.70	0.00	-43.70	0.00	43.70	1532.65	766.32	1300.60	651.27	33.51	-2.390	-0.001	0.071
135.00	-6.14	-3.67	0.00	-37.68	0.00	37.68	1509.04	754.52	1260.56	631.22	34.32	-2.407	-0.001	0.064
136.62	-5.92	-3.64	0.00	-31.73	0.00	31.73	885.20	442.60	750.52	375.82	35.15	-2.422	-0.001	0.091
140.00	-3.24	-2.23	0.00	-19.44	0.00	19.44	864.59	432.29	709.24	355.15	36.87	-2.446	-0.001	0.059
145.00	-2.97	-2.14	0.00	-8.32	0.00	8.32	833.10	416.55	649.44	325.20	39.45	-2.479	-0.001	0.029
146.00	0.00	-2.01	0.00	-6.17	0.00	6.17	826.66	413.33	637.68	319.32	39.97	-2.483	-0.001	0.019

Final Analysis Summary

Structure:	CT46135-A-SBA	**Code:**	EIA/TIA-222-G	6/3/2021	
Site Name:	Middlefield-jacskon Hill Rd	**Exposure:**	C		
Height:	146.00 (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	

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	35.1	0.00	45.13	0.01	0.19	3961.07
0.9D + 1.6W 97 mph Wind	35.1	0.00	33.82	0.01	0.19	3898.46
1.2D + 1.0Di + 1.0Wi 50 mph Wind	9.7	0.00	71.89	0.00	0.11	1108.95
1.2D + 1.0E	1.8	0.00	45.23	0.00	0.00	230.66
0.9D + 1.0E	1.8	0.00	33.92	0.00	0.00	226.63
1.0D + 1.0W 60 mph Wind	8.4	0.00	37.69	0.00	0.08	941.12

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	-28.82	-32.60	-0.19	-2298.1	-0.01	-2298.1	3251.53	1625.7	4904.15	2455.72	48.67	0.945
0.9D + 1.6W 97 mph Wind	-21.18	-32.10	-0.19	-2249.4	-0.01	-2249.4	3251.53	1625.7	4904.15	2455.72	48.67	0.923
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-53.59	-9.17	-0.11	-645.82	0.00	-645.82	3251.53	1625.7	4904.15	2455.72	48.67	0.280
1.2D + 1.0E	-30.78	-1.60	0.00	-144.60	0.00	-144.60	3251.53	1625.7	4904.15	2455.72	48.67	0.068
0.9D + 1.0E	-12.67	-1.51	0.00	-74.62	0.00	-74.62	2130.58	1065.2	2523.85	1263.80	92.17	0.065
1.0D + 1.0W 60 mph Wind	-25.54	-7.73	-0.08	-545.49	0.00	-545.49	3251.53	1625.7	4904.15	2455.72	48.67	0.230

Base Plate Summary

Structure:	CT46135-A-SB		**Code:**	EIA/TIA-222-G	6/3/2021
Site Name:	Middlefield-jacskon Hill Rd		**Exposure:**	C	
Height:	146.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 30

Reactions	
Original Design	
Moment (kip-ft):	2626.95
Axial (kip):	29.58
Shear (kip):	23.10
Analysis (1.2D + 1.6W)	
Moment (kip-ft):	3961.07
Axial (kip):	45.13
Shear (kip):	35.11

Base Plate	
Yield (ksi):	60.00
Width (in):	61.00
Style:	Round
Polygon Sides:	0.00
Clip Length (in):	0.00
Effective Len (in):	12.52
Moment (kip-in):	793.99
Allow Stress (ksi):	81.00
Applied Stress (ksi):	75.33
Stress Ratio:	0.93

Anchor Bolts	
Bolt Circle:	55.00
Number Bolts:	20.00
Bolt Type:	2.25" 18J
Bolt Diameter (in):	2.25
Yield (ksi):	75.00
Ultimate (ksi):	100.00
Arrangement:	Radial
Cluster Dist (in):	0.00
Start Angle (deg):	0.00
Compression	
Force (kip):	176.44
Allowable (kip):	260.00
Ratio:	0.69
Tension	
Force (kip):	169.25
Allowable (kip):	260.00
Ratio:	0.66

Monopole Mat Foundation Design

			Date: 6/3/2021
Customer Name:	Dish Wireless	**EIA/TIA Standard:**	EIA-222-G
Site Name:	Middlefield-jacskon Hill Rd	**Structure Height (Ft.):**	146
Site Number:	CT46135-A-SBA	**Engineer Name:**	W. Velez
Engr. Number:	109419	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

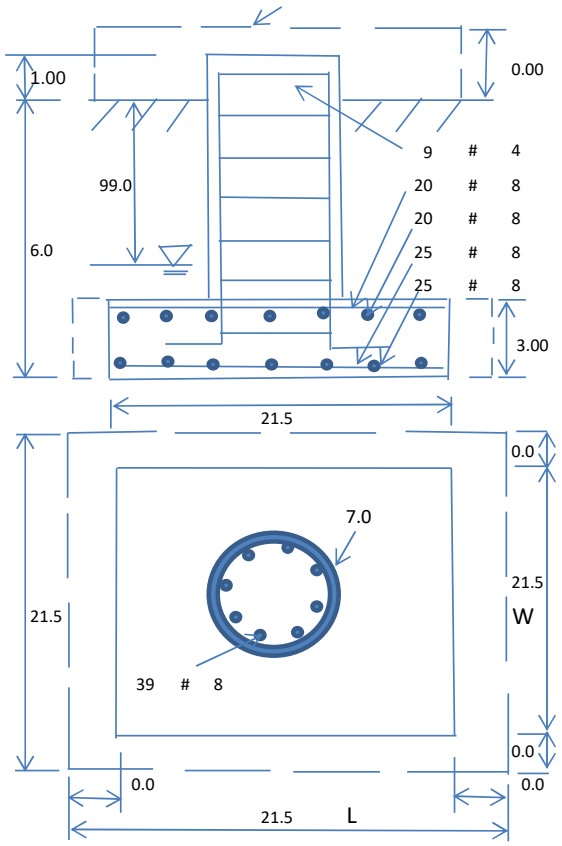
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	45.1	Shear Force (Kips):	35.1
Uplift Force (Kips):	0.0	Moment (Kips-ft):	3961.1
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	7.0	Depth of Base BG (ft.):	6.0
Pier Height A. G. (ft.):	1.00	Thickness of Pad (ft):	3.00
Length of Pad (ft.):	21.5	Width of Pad (ft.):	21.5
Final Length of pad (ft)	21.5	Final width of pad (ft):	21.5



Material Properties and Reabr Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	8	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	39	Tie Spacing (in):	10.5	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	8	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	25	Qty. of Rebar in Pad (W):	25	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	20	Qty. of Rebar in Pad (W):	20	
Apply 1.35 factor for e/w Per G:	1.35			

Soil Design Parameters:

Soil Unit Weight (pcf):	115.0	Soil Buoyant Weight:	52.6	Pcf		
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	40000	Ultimate Skin Friction:		Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	Yes	Reduction factor on the maximum soil bearing pressure:			1.00	

Foundation Analysis and Design: Uplift Strength Reduction Factor: 0.75 — Compression Strength Reduction Factor: 0.75

Total Dry Soil Volume (cu. Ft.):	1271.30	Total Dry Soil Weight (Kips):	146.20
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	146.20	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	1540.69	Total Dry Concrete Weight (Kips):	231.10
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	231.10	Total Vertical Load on Base (Kips):	422.43

Check Soil Capacities:

					Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	5898	<	Allowable Factored Soil Bearing (psf):	30000	0.20	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	4135.5	>	Design Factored Momont (kips-ft):	4079	0.99	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.00	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			
					Load/ Capacity Ratio	
(1) Concrete Pier:						
Vertical Steel Rebar Area (sq. in./each):	0.79		Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	5049.6	>	Design Factored Moment (Mu, Kips-F	4101.5	0.81	OK!
Calculated Shear Capacity (Kips):	679.3	>	Design Factored Shear (Kips):	35.1	0.05	OK!
Calculated Tension Capacity (Tn, Kips):	1663.7	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	9743.4	>	Design Factored Axial Load (Pu Kips):	45.1	0.00	OK!
Moment & Axial Strength Combination:	0.81	OK!	Check Tie Spacing (Design/Required):		0.875	OK!
Pier Reinforcement Ratio:	0.006		Reinforcement Ratio is satisfied per ACI			
(2).Concrete Pad:						
One-Way Design Shear Capacity (L-Direction, Kips):	795.5	>	One-Way Factored Shear (L-D. Kips):	273.3	0.34	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	795.5	>	One-Way Factored Shear (W-D., Kips)	273.3	0.34	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	665.6	>	One-Way Factored Shear (C-C, Kips):	279.0	0.42	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0024	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0024		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	2828.4	>	Moment at Bottom (L-Dir. K-Ft):	1174.3	0.42	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	2828.4	>	Moment at Bottom (W-Dir. K-Ft):	1174.3	0.42	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	3974.6	>	Moment at Bottom (C-C Dir. K-Ft):	1660.7	0.42	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0019	OK!	Upper Steel Reinf. Ratio (W-Dir.):	0.0019		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	2272.3	>	Moment at the top (L-Dir K-Ft):	531.6	0.23	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	2272.3	>	Moment at the top (W-Dir K-Ft):	531.6	0.23	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	3197.3	>	Moment at the top (C-C Dir. K-Ft):	502.6	0.16	OK!
(3).Check Punching Shear Capacity due to Moment in the Pier:						
Moment transferred by punching shear:	1584.4	k-ft.	Max. factored shear stress v_{u_CD}:		4.7	Psi
Max. factored shear stress v_{u_AB}:	10.6	Psi	Factored shear Strength ϕv_n:		189.7	Psi
Max. factored shear stress v_u:	10.6	Psi	Check Usage of Punching Shear Capacity:		0.06	OK!

EXHIBIT 9

Antenna Mount Analysis

June 4, 2021

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

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

Subject:	**Appurtenance Mount Analysis Report**	
Carrier Designation:	***Dish Wireless* Co-Locate**	
	Site Number:	BOBDL00136A
	Site Name:	N/A
***SBA Network Services Designation*:**	**Site Number:**	CT46135-A
	Site Name:	Middlefield-jacskon Hill Rd
	Application Number:	153561, v1
Engineering Firm Designation:	**B+T Group Project Number:**	149486.004.01
Site Data:	**393 Jackson Hill Road, Middlefield, CT, 06455, Middlesex County**	
	Latitude *41.51736*°, Longitude *-72.71417*°	
	Monopole	
	8' Platform Mount	

Dear Ms. Knapik,

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

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

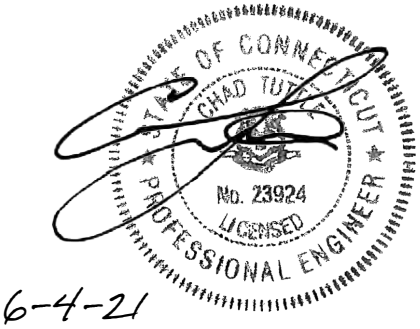
Proposed Equipment Note: See Table 1 for the final loading configuration	**Sufficient Capacity** **(Passing at 63.0%)**

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: Xavier Jones

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



6-4-21

Chad E. Tuttle, P.E.

TABLE OF CONTENTS

1) INTRODUCTION

The appurtenance mount consists of SitePro1 platform mount, Part# SNP8HR-396 at 98 ft., attached to monopole at 393 Jackson Hill Road, Middlefield, CT, 06455, Middlesex 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 0.75 inch escalated ice thickness. Exposure Category C, Topographic Category 1 and Risk Category II were used in this analysis. In addition, the platform mount has been analyzed for various live loading conditions consisting of a 250-lb man live load applied individually at the midpoint and cantilevered ends of horizontal members as well as a 500-pound man live load applied individually at mount pipe locations using a 3-second gust of 30 mph. The mount was analyzed under 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
		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 the proposed Mount.

Table 2 - Documents Provided

Documents	Remarks	Reference	Source
Collo_App_153561	Proposed Loading	Date: 05/06/2021	SBA Communications Corporation
RFDS		Date: 03/28/2021	
Construction Drawings	B+T Group	Date: 05/24/2021	On File

3) ANALYSIS PROCEDURE

3.1) Analysis Method

RISA-3D (Version 19.0.1), 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 drawing were used to create the model.

3.2) Assumptions

1. The mount was built in accordance with the manufacturer's specifications.
2. The mount has been maintained in accordance with the manufacturer's specifications and is free of damage.
3. The configuration of antennas and other appurtenances are as specified in Table 1.

4. All mount components have been assumed to be in sufficient condition to carry their full design capacity for the analysis.
5. Mount areas and weights are determined from field measurements, standard material properties, and/or manufacturer product data.
   The following assumptions have been included in the analysis of the mount

Component	Section	Length	Note
Proposed Mount Pipes	2” Std. Pipe	8’-0’’	All Positions, All Sectors

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

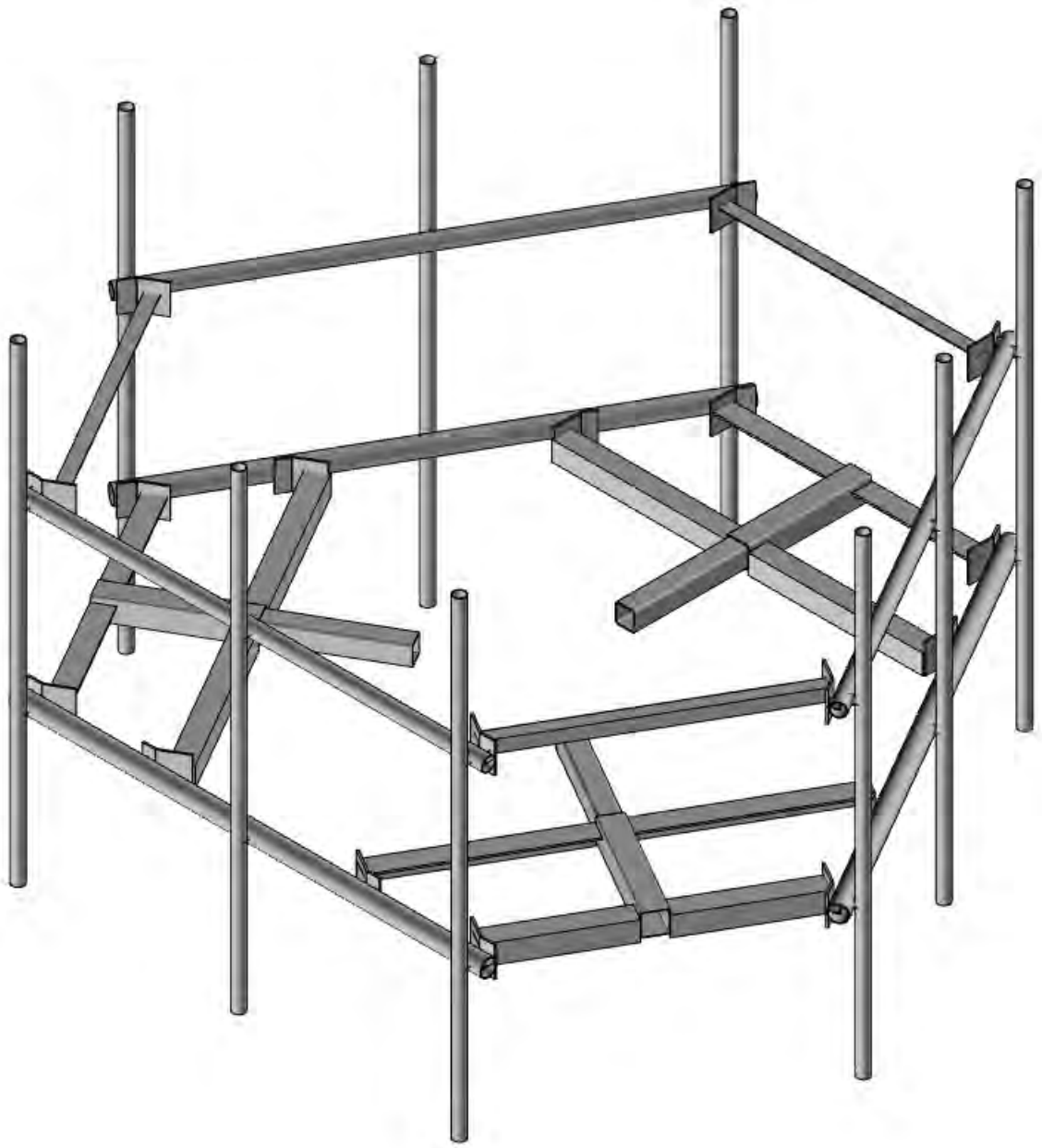
Notes	Component	Elevation (ft.)	% Capacity	Pass / Fail
-	Main Horizontals	98	15.2	Pass
-	Support Tubes	98	45.2	Pass
-	Support Angles	98	40.1	Pass
-	Connection Plates	98	60.8	Pass
-	Support Rails	98	30.4	Pass
-	Mount Pipes	98	63.0	Pass
-	Connection Angles	98	32.2	Pass

5) RECOMMENDATIONS

The SitePro1 Platform mounts, Part# SNP8HR-396 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)



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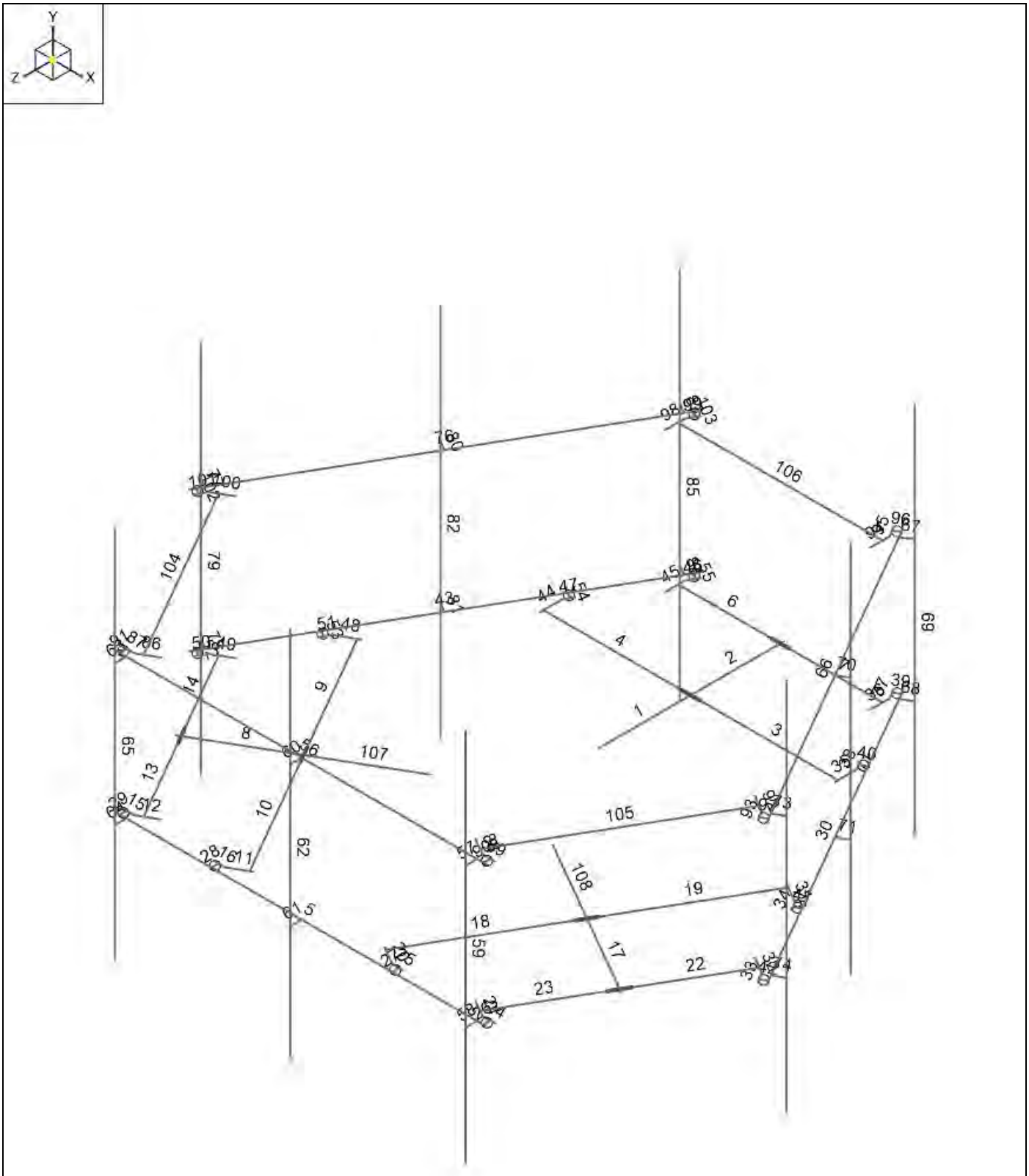

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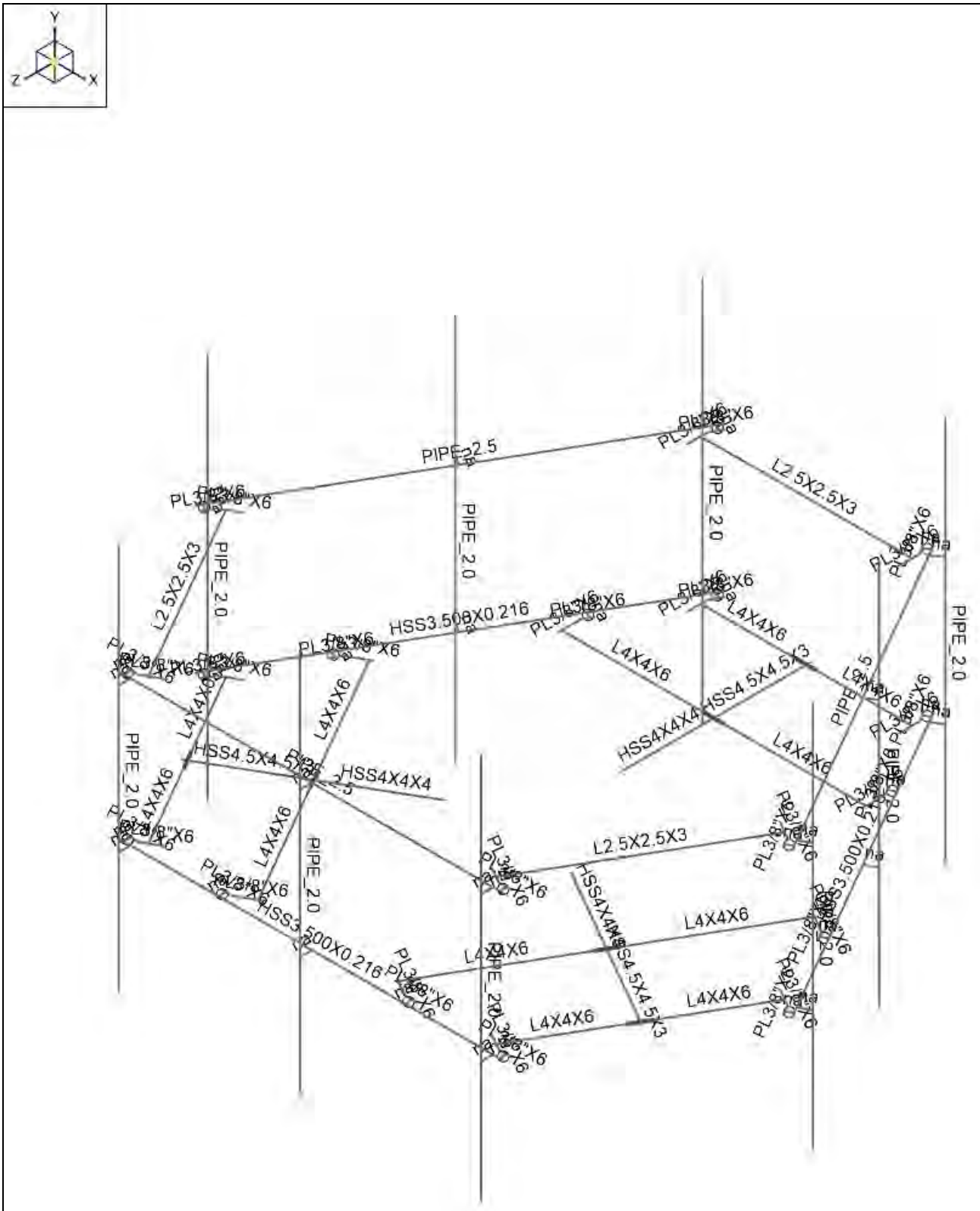
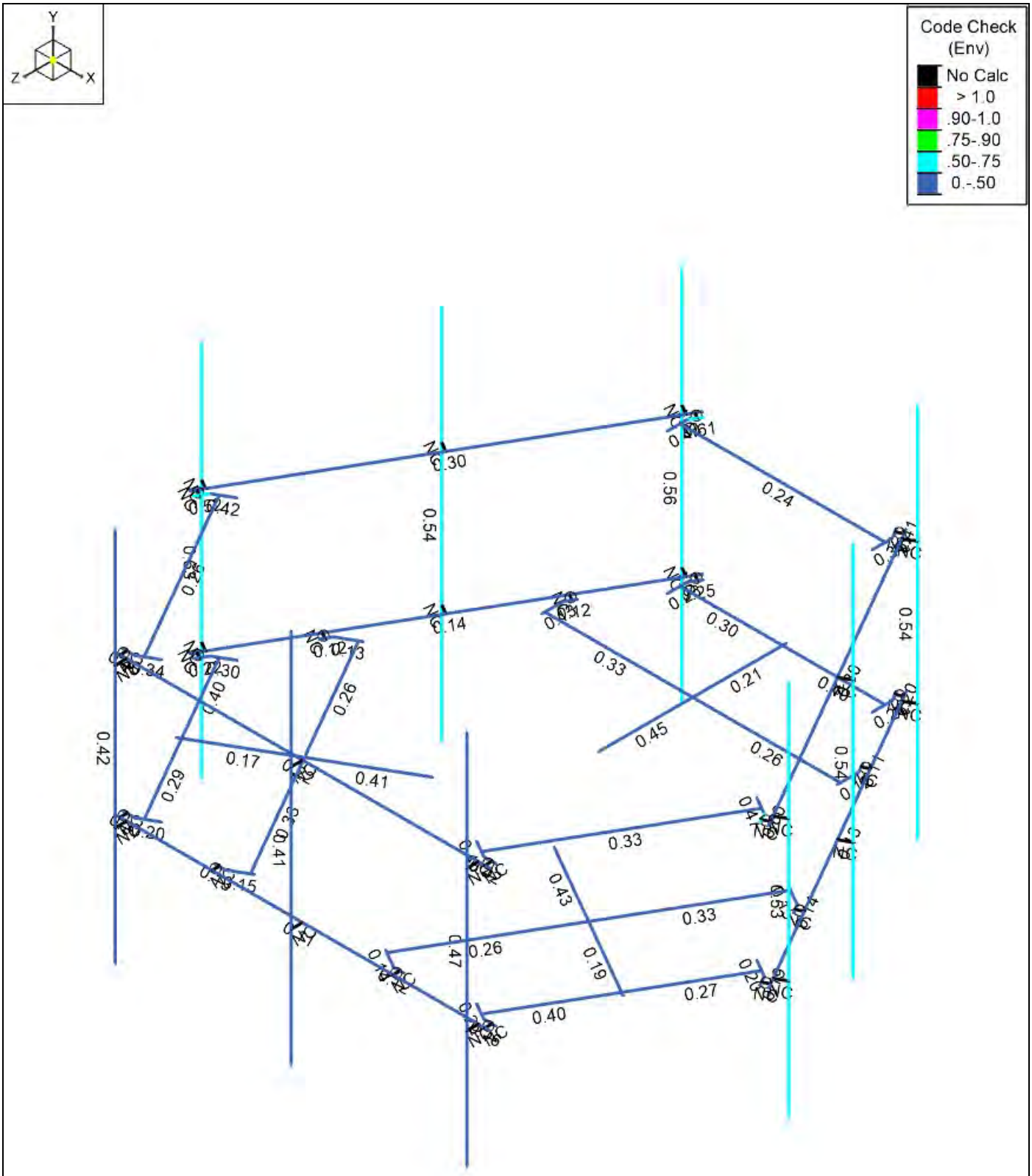
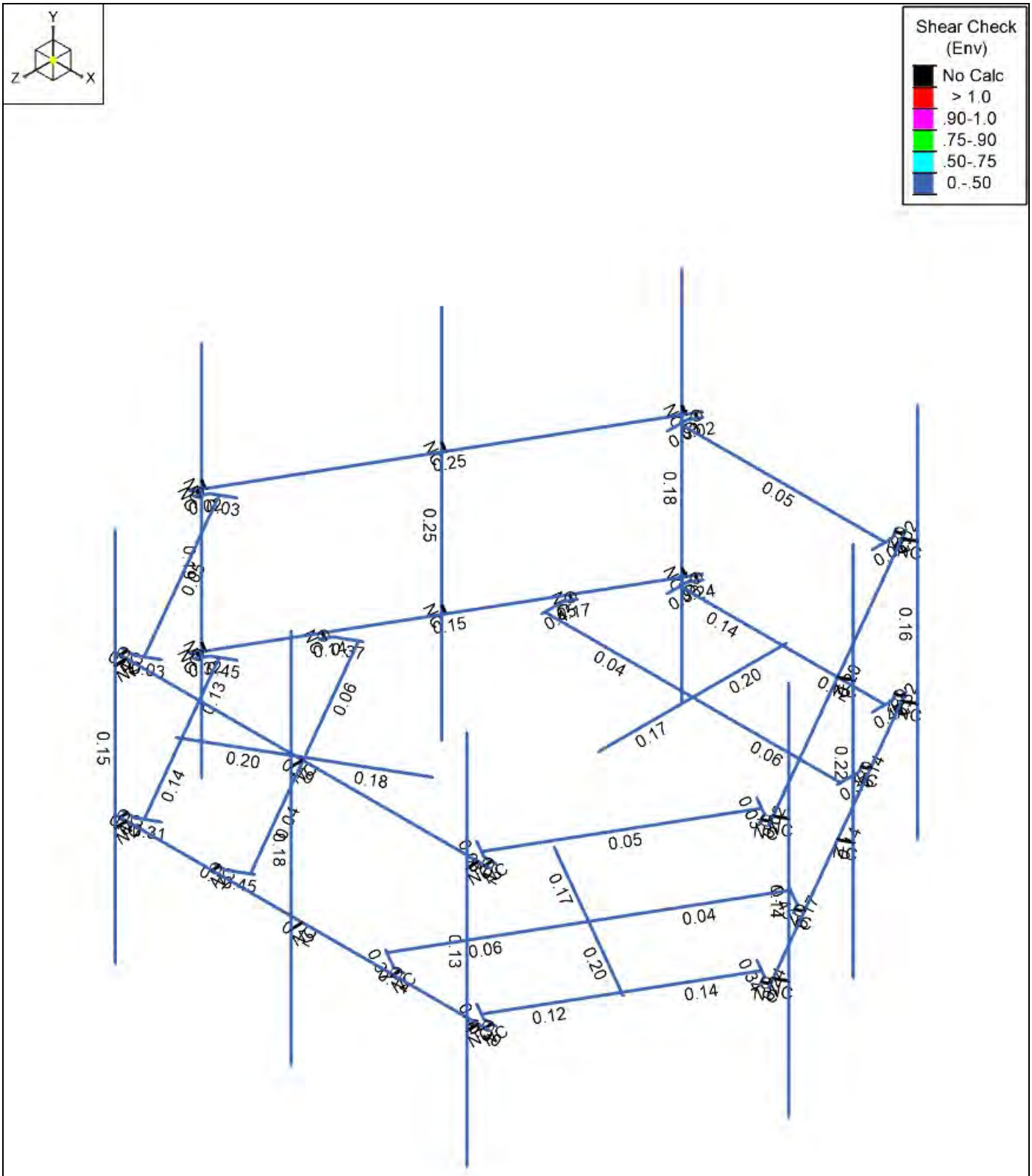


B+T Group	CT46135-A - Middlefield-jacskon Hill Rd	VP3
VP		Jun 04, 2021
149486.004.01		149486_004_01_Middlefield-jacs…



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	CT46135-A - Middlefield-jacskon Hill Rd	VP4
VP		Jun 04, 2021
149486.004.01		149486_004_01_Middlefield-jacs…



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	CT46135-A - Middlefield-jacskon Hill Rd	VP5
VP		Jun 04, 2021
149486.004.01		149486_004_01_Middlefield-jacs…

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	MF-H1	HSS3.500X0.216	Beam	HSS Pipe	A500 Gr.B RND	Typical	2.08	2.84	2.84	5.69
2	SF-H1	HSS4X4X4	Beam	Tube	A500 Gr.B Rect	Typical	3.37	7.8	7.8	12.8
3	SF-H2	HSS4.5X4.5X3	Beam	Tube	A500 Gr.B Rect	Typical	2.93	9.02	9.02	14.4
4	SF-H3	L4X4X6	Beam	Single Angle	A36 Gr.36	Typical	2.86	4.32	4.32	0.141
5	MF-CP1	PL3/8"x6	Beam	RECT	A36 Gr.36	Typical	2.25	0.026	6.75	0.101
6	MF-H2	PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
7	MF-P1	PIPE_2.0	Column	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
8	C-A1	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical	0.901	0.535	0.535	0.011

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	1	188	1		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
2	2	2	1		SF-H2	Beam	Tube	A500 Gr.B Rect	Typical
3	3	5	3	90	SF-H3	Beam	Single Angle	A36 Gr.36	Typical
4	4	3	4	90	SF-H3	Beam	Single Angle	A36 Gr.36	Typical
5	5	6	7		MF-H1	Beam	HSS Pipe	A500 Gr.B RND	Typical
6	6	9	8	90	SF-H3	Beam	Single Angle	A36 Gr.36	Typical
7	7	8	10	90	SF-H3	Beam	Single Angle	A36 Gr.36	Typical
8	8	12	11		SF-H2	Beam	Tube	A500 Gr.B Rect	Typical
9	9	15	13	90	SF-H3	Beam	Single Angle	A36 Gr.36	Typical
10	10	13	14	90	SF-H3	Beam	Single Angle	A36 Gr.36	Typical
11	11	17	19		MF-CP1	Beam	RECT	A36 Gr.36	Typical
12	12	16	18		MF-CP1	Beam	RECT	A36 Gr.36	Typical
13	13	21	20	90	SF-H3	Beam	Single Angle	A36 Gr.36	Typical
14	14	20	22	90	SF-H3	Beam	Single Angle	A36 Gr.36	Typical
15	15	18	23		MF-CP1	Beam	RECT	A36 Gr.36	Typical
16	16	19	24		MF-CP1	Beam	RECT	A36 Gr.36	Typical
17	17	28	27		SF-H2	Beam	Tube	A500 Gr.B Rect	Typical
18	18	31	29	90	SF-H3	Beam	Single Angle	A36 Gr.36	Typical
19	19	29	30	90	SF-H3	Beam	Single Angle	A36 Gr.36	Typical
20	20	33	35		MF-CP1	Beam	RECT	A36 Gr.36	Typical
21	21	32	34		MF-CP1	Beam	RECT	A36 Gr.36	Typical
22	22	37	36	90	SF-H3	Beam	Single Angle	A36 Gr.36	Typical
23	23	36	38	90	SF-H3	Beam	Single Angle	A36 Gr.36	Typical
24	24	34	39		MF-CP1	Beam	RECT	A36 Gr.36	Typical
25	25	35	40		MF-CP1	Beam	RECT	A36 Gr.36	Typical
26	26	41	45		RIGID	None	None	RIGID	Typical
27	27	42	46		RIGID	None	None	RIGID	Typical
28	28	26	44		RIGID	None	None	RIGID	Typical
29	29	25	43		RIGID	None	None	RIGID	Typical
30	30	47	48		MF-H1	Beam	HSS Pipe	A500 Gr.B RND	Typical
31	31	50	52		MF-CP1	Beam	RECT	A36 Gr.36	Typical
32	32	49	51		MF-CP1	Beam	RECT	A36 Gr.36	Typical
33	33	51	53		MF-CP1	Beam	RECT	A36 Gr.36	Typical
34	34	52	54		MF-CP1	Beam	RECT	A36 Gr.36	Typical
35	35	58	60		MF-CP1	Beam	RECT	A36 Gr.36	Typical
36	36	57	59		MF-CP1	Beam	RECT	A36 Gr.36	Typical
37	37	59	61		MF-CP1	Beam	RECT	A36 Gr.36	Typical
38	38	60	62		MF-CP1	Beam	RECT	A36 Gr.36	Typical
39	39	63	67		RIGID	None	None	RIGID	Typical
40	40	64	68		RIGID	None	None	RIGID	Typical
41	41	56	66		RIGID	None	None	RIGID	Typical
42	42	55	65		RIGID	None	None	RIGID	Typical
43	43	69	70		MF-H1	Beam	HSS Pipe	A500 Gr.B RND	Typical
44	44	72	74		MF-CP1	Beam	RECT	A36 Gr.36	Typical
45	45	71	73		MF-CP1	Beam	RECT	A36 Gr.36	Typical
46	46	73	75		MF-CP1	Beam	RECT	A36 Gr.36	Typical
47	47	74	76		MF-CP1	Beam	RECT	A36 Gr.36	Typical
48	48	80	82		MF-CP1	Beam	RECT	A36 Gr.36	Typical
49	49	79	81		MF-CP1	Beam	RECT	A36 Gr.36	Typical
50	50	81	83		MF-CP1	Beam	RECT	A36 Gr.36	Typical
51	51	82	84		MF-CP1	Beam	RECT	A36 Gr.36	Typical
52	52	85	89		RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
53	53	86	90		RIGID	None	None	RIGID	Typical
54	54	78	88		RIGID	None	None	RIGID	Typical
55	55	77	87		RIGID	None	None	RIGID	Typical
56	56	92	93		MF-H2	Beam	Pipe	A53 Gr.B	Typical
57	57	96	97		RIGID	None	None	RIGID	Typical
58	58	94	95		RIGID	None	None	RIGID	Typical
59	59	98	99		MF-P1	Column	Pipe	A53 Gr.B	Typical
60	60	102	103		RIGID	None	None	RIGID	Typical
61	61	100	101		RIGID	None	None	RIGID	Typical
62	62	104	105		MF-P1	Column	Pipe	A53 Gr.B	Typical
63	63	108	109		RIGID	None	None	RIGID	Typical
64	64	106	107		RIGID	None	None	RIGID	Typical
65	65	110	111		MF-P1	Column	Pipe	A53 Gr.B	Typical
66	66	112	113		MF-H2	Beam	Pipe	A53 Gr.B	Typical
67	67	116	117		RIGID	None	None	RIGID	Typical
68	68	114	115		RIGID	None	None	RIGID	Typical
69	69	118	119		MF-P1	Column	Pipe	A53 Gr.B	Typical
70	70	122	123		RIGID	None	None	RIGID	Typical
71	71	120	121		RIGID	None	None	RIGID	Typical
72	72	124	125		MF-P1	Column	Pipe	A53 Gr.B	Typical
73	73	128	129		RIGID	None	None	RIGID	Typical
74	74	126	127		RIGID	None	None	RIGID	Typical
75	75	130	131		MF-P1	Column	Pipe	A53 Gr.B	Typical
76	76	132	133		MF-H2	Beam	Pipe	A53 Gr.B	Typical
77	77	136	137		RIGID	None	None	RIGID	Typical
78	78	134	135		RIGID	None	None	RIGID	Typical
79	79	138	139		MF-P1	Column	Pipe	A53 Gr.B	Typical
80	80	142	143		RIGID	None	None	RIGID	Typical
81	81	140	141		RIGID	None	None	RIGID	Typical
82	82	144	145		MF-P1	Column	Pipe	A53 Gr.B	Typical
83	83	148	149		RIGID	None	None	RIGID	Typical
84	84	146	147		RIGID	None	None	RIGID	Typical
85	85	150	151		MF-P1	Column	Pipe	A53 Gr.B	Typical
86	86	152	153		MF-CP1	Beam	RECT	A36 Gr.36	Typical
87	87	153	155		MF-CP1	Beam	RECT	A36 Gr.36	Typical
88	88	157	158		MF-CP1	Beam	RECT	A36 Gr.36	Typical
89	89	158	160		MF-CP1	Beam	RECT	A36 Gr.36	Typical
90	90	161	163		RIGID	None	None	RIGID	Typical
91	91	156	162		RIGID	None	None	RIGID	Typical
92	92	164	165		MF-CP1	Beam	RECT	A36 Gr.36	Typical
93	93	165	167		MF-CP1	Beam	RECT	A36 Gr.36	Typical
94	94	169	170		MF-CP1	Beam	RECT	A36 Gr.36	Typical
95	95	170	172		MF-CP1	Beam	RECT	A36 Gr.36	Typical
96	96	173	175		RIGID	None	None	RIGID	Typical
97	97	168	174		RIGID	None	None	RIGID	Typical
98	98	176	177		MF-CP1	Beam	RECT	A36 Gr.36	Typical
99	99	177	179		MF-CP1	Beam	RECT	A36 Gr.36	Typical
100	100	181	182		MF-CP1	Beam	RECT	A36 Gr.36	Typical
101	101	182	184		MF-CP1	Beam	RECT	A36 Gr.36	Typical
102	102	185	187		RIGID	None	None	RIGID	Typical
103	103	180	186		RIGID	None	None	RIGID	Typical
104	104	183	154	180	C-A1	Beam	Single Angle	A36 Gr.36	Typical
105	105	159	166	180	C-A1	Beam	Single Angle	A36 Gr.36	Typical
106	106	171	178	180	C-A1	Beam	Single Angle	A36 Gr.36	Typical
107	107	189	11		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
108	108	190	27		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
1	Dead	DL	-1		20		3
2	0 Wind - No Ice	WLZ			20	72	
3	90 Wind - No Ice	WLX			20	72	
4	0 Wind - Ice	WLZ			20	72	

Basic Load Cases (Continued)

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
5	90 Wind - Ice	WLX			20	72	
6	0 Wind - Service	WLZ			20	72	
7	90 Wind - Service	WLX			20	72	
8	Ice	OL1			20	72	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				117	
29	BLC 8 Transient Area Loads	None				117	

Load Combinations

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 Dead	Yes	Y	1	1.4						
2	0.9 D + 1.6 - 0 W	Yes	Y	1	0.9	2	1.6				
3	0.9 D + 1.6 - 30 W	Yes	Y	1	0.9	2	1.386	3	0.8		
4	0.9 D + 1.6 - 60 W	Yes	Y	1	0.9	3	1.386	2	0.8		
5	0.9 D + 1.6 - 90 W	Yes	Y	1	0.9	3	1.6				
6	0.9 D + 1.6 - 120 W	Yes	Y	1	0.9	3	1.386	2	-0.8		
7	0.9 D + 1.6 - 150 W	Yes	Y	1	0.9	2	-1.386	3	0.8		
8	0.9 D + 1.6 - 180 W	Yes	Y	1	0.9	2	-1.6				
9	0.9 D + 1.6 - 210 W	Yes	Y	1	0.9	2	-1.386	3	-0.8		
10	0.9 D + 1.6 - 240 W	Yes	Y	1	0.9	3	-1.386	2	-0.8		
11	0.9 D + 1.6 - 270 W	Yes	Y	1	0.9	3	-1.6				
12	0.9 D + 1.6 - 300 W	Yes	Y	1	0.9	3	-1.386	2	0.8		
13	0.9 D + 1.6 - 330 W	Yes	Y	1	0.9	2	1.386	3	-0.8		
14	1.2 D + 1.6 - 0 W	Yes	Y	1	1.2	2	1.6				
15	1.2 D + 1.6 - 30 W	Yes	Y	1	1.2	2	1.386	3	0.8		
16	1.2 D + 1.6 - 60 W	Yes	Y	1	1.2	3	1.386	2	0.8		
17	1.2 D + 1.6 - 90 W	Yes	Y	1	1.2	3	1.6				
18	1.2 D + 1.6 - 120 W	Yes	Y	1	1.2	3	1.386	2	-0.8		
19	1.2 D + 1.6 - 150 W	Yes	Y	1	1.2	2	-1.386	3	0.8		
20	1.2 D + 1.6 - 180 W	Yes	Y	1	1.2	2	-1.6				
21	1.2 D + 1.6 - 210 W	Yes	Y	1	1.2	2	-1.386	3	-0.8		
22	1.2 D + 1.6 - 240 W	Yes	Y	1	1.2	3	-1.386	2	-0.8		
23	1.2 D + 1.6 - 270 W	Yes	Y	1	1.2	3	-1.6				
24	1.2 D + 1.6 - 300 W	Yes	Y	1	1.2	3	-1.386	2	0.8		
25	1.2 D + 1.6 - 330 W	Yes	Y	1	1.2	2	1.386	3	-0.8		
26	0.9 D + 1.6 - 0 W/Ice	Yes	Y	1	0.9	4	1.6			8	1
27	0.9 D + 1.6 - 30 W/Ice	Yes	Y	1	0.9	4	1.386	5	0.8	8	1
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

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
36	0.9 D + 1.6 - 300 W/Ice	Yes	Y	1	0.9	5	-1.386	4	0.8	8	1
37	0.9 D + 1.6 - 330 W/Ice	Yes	Y	1	0.9	4	1.386	5	-0.8	8	1
38	1.2 D + 1.0 - 0 W/Ice	Yes	Y	1	1.2	4	1			8	1
39	1.2 D + 1.0 - 30 W/Ice	Yes	Y	1	1.2	4	0.866	5	0.5	8	1
40	1.2 D + 1.0 - 60 W/Ice	Yes	Y	1	1.2	5	0.866	4	0.5	8	1
41	1.2 D + 1.0 - 90 W/Ice	Yes	Y	1	1.2	5	1			8	1
42	1.2 D + 1.0 - 120 W/Ice	Yes	Y	1	1.2	5	0.866	4	-0.5	8	1
43	1.2 D + 1.0 - 150 W/Ice	Yes	Y	1	1.2	4	-0.866	5	0.5	8	1
44	1.2 D + 1.0 - 180 W/Ice	Yes	Y	1	1.2	4	-1			8	1
45	1.2 D + 1.0 - 210 W/Ice	Yes	Y	1	1.2	4	-0.866	5	-0.5	8	1
46	1.2 D + 1.0 - 240 W/Ice	Yes	Y	1	1.2	5	-0.866	4	-0.5	8	1
47	1.2 D + 1.0 - 270 W/Ice	Yes	Y	1	1.2	5	-1			8	1
48	1.2 D + 1.0 - 300 W/Ice	Yes	Y	1	1.2	5	-0.866	4	0.5	8	1
49	1.2 D + 1.0 - 330 W/Ice	Yes	Y	1	1.2	4	0.866	5	-0.5	8	1
50	1.2 D + 1.5 LL a + Service - 0 W	Yes	Y	1	1.2	6	1			9	1.5
51	1.2 D + 1.5 LL a + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	9	1.5
52	1.2 D + 1.5 LL a + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	9	1.5
53	1.2 D + 1.5 LL a + Service - 90 W	Yes	Y	1	1.2	7	1			9	1.5
54	1.2 D + 1.5 LL a + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	9	1.5
55	1.2 D + 1.5 LL a + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	9	1.5
56	1.2 D + 1.5 LL a + Service - 180 W	Yes	Y	1	1.2	6	-1			9	1.5
57	1.2 D + 1.5 LL a + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	9	1.5
58	1.2 D + 1.5 LL a + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	9	1.5
59	1.2 D + 1.5 LL a + Service - 270 W	Yes	Y	1	1.2	7	-1			9	1.5
60	1.2 D + 1.5 LL a + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	9	1.5
61	1.2 D + 1.5 LL a + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	9	1.5
62	1.2 D + 1.5 LL b + Service - 0 W	Yes	Y	1	1.2	6	1			10	1.5
63	1.2 D + 1.5 LL b + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	10	1.5
64	1.2 D + 1.5 LL b + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	10	1.5
65	1.2 D + 1.5 LL b + Service - 90 W	Yes	Y	1	1.2	7	1			10	1.5
66	1.2 D + 1.5 LL b + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	10	1.5
67	1.2 D + 1.5 LL b + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	10	1.5
68	1.2 D + 1.5 LL b + Service - 180 W	Yes	Y	1	1.2	6	-1			10	1.5
69	1.2 D + 1.5 LL b + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	10	1.5
70	1.2 D + 1.5 LL b + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	10	1.5
71	1.2 D + 1.5 LL b + Service - 270 W	Yes	Y	1	1.2	7	-1			10	1.5
72	1.2 D + 1.5 LL b + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	10	1.5
73	1.2 D + 1.5 LL b + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	10	1.5
74	1.2 D + 1.5 LL c + Service - 0 W	Yes	Y	1	1.2	6	1			11	1.5
75	1.2 D + 1.5 LL c + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	11	1.5
76	1.2 D + 1.5 LL c + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	11	1.5
77	1.2 D + 1.5 LL c + Service - 90 W	Yes	Y	1	1.2	7	1			11	1.5
78	1.2 D + 1.5 LL c + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	11	1.5
79	1.2 D + 1.5 LL c + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	11	1.5
80	1.2 D + 1.5 LL c + Service - 180 W	Yes	Y	1	1.2	6	-1			11	1.5
81	1.2 D + 1.5 LL c + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	11	1.5
82	1.2 D + 1.5 LL c + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	11	1.5
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

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
99	1.2 D + 1.5 LL Maint (2)	Yes	Y	1	1.2					14	1.5
100	1.2 D + 1.5 LL Maint (3)	Yes	Y	1	1.2					15	1.5
101	1.2 D + 1.5 LL Maint (4)	Yes	Y	1	1.2					16	1.5
102	1.2 D + 1.5 LL Maint (5)	Yes	Y	1	1.2					17	1.5
103	1.2 D + 1.5 LL Maint (6)	Yes	Y	1	1.2					18	1.5
104	1.2 D + 1.5 LL Maint (7)	Yes	Y	1	1.2					19	1.5
105	1.2 D + 1.5 LL Maint (8)	Yes	Y	1	1.2					20	1.5
106	1.2 D + 1.5 LL Maint (9)	Yes	Y	1	1.2					21	1.5
107	1.2 D + 1.5 LL Maint (10)	Yes	Y	1	1.2					22	1.5
108	1.2 D + 1.5 LL Maint (11)	Yes	Y	1	1.2					23	1.5
109	1.2 D + 1.5 LL Maint (12)	Yes	Y	1	1.2					24	1.5
110	1.2 D + 1.5 LL Maint (13)	Yes	Y	1	1.2					25	1.5
111	1.2 D + 1.5 LL Maint (14)	Yes	Y	1	1.2					26	1.5
112	1.2 D + 1.5 LL Maint (15)	Yes	Y	1	1.2					27	1.5

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	59	Y	-0.032	%15
2	59	Y	-0.032	%85
3	59	Y	-0.075	%20
4	59	Y	-0.064	%50
5	59	Y	0	0
6	79	Y	-0.032	%15
7	79	Y	-0.032	%85
8	79	Y	-0.075	%20
9	79	Y	-0.064	%50
10	79	Y	0	0
11	69	Y	-0.032	%15
12	69	Y	-0.032	%85
13	69	Y	-0.075	%20
14	69	Y	-0.064	%50
15	69	Y	0	0
16	107	Y	-0.022	%50
17	107	Y	0	0
18	107	Y	0	0
19	107	Y	0	0
20	107	Y	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	59	Z	-0.18	%15
2	59	Z	-0.18	%85
3	59	Z	-0.057	%20
4	59	Z	-0.057	%50
5	59	Z	0	0
6	79	Z	-0.18	%15
7	79	Z	-0.18	%85
8	79	Z	-0.057	%20
9	79	Z	-0.057	%50
10	79	Z	0	0
11	69	Z	-0.18	%15
12	69	Z	-0.18	%85
13	69	Z	-0.057	%20
14	69	Z	-0.057	%50
15	69	Z	0	0
16	107	Z	-0.058	%50
17	107	Z	0	0
18	107	Z	0	0
19	107	Z	0	0
20	107	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	59	X	-0.072	%15
2	59	X	-0.072	%85
3	59	X	-0.034	%20
4	59	X	-0.03	%50
5	59	X	0	0
6	79	X	-0.072	%15
7	79	X	-0.072	%85
8	79	X	-0.034	%20
9	79	X	-0.03	%50
10	79	X	0	0
11	69	X	-0.072	%15
12	69	X	-0.072	%85
13	69	X	-0.034	%20
14	69	X	-0.03	%50
15	69	X	0	0
16	107	X	-0.033	%50
17	107	X	0	0
18	107	X	0	0
19	107	X	0	0
20	107	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	59	Z	-0.058	%15
2	59	Z	-0.058	%85
3	59	Z	-0.022	%20
4	59	Z	-0.022	%50
5	59	Z	0	0
6	79	Z	-0.058	%15
7	79	Z	-0.058	%85
8	79	Z	-0.022	%20
9	79	Z	-0.022	%50
10	79	Z	0	0
11	69	Z	-0.058	%15
12	69	Z	-0.058	%85
13	69	Z	-0.022	%20
14	69	Z	-0.022	%50
15	69	Z	0	0
16	107	Z	-0.023	%50
17	107	Z	0	0
18	107	Z	0	0
19	107	Z	0	0
20	107	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	59	X	-0.028	%15
2	59	X	-0.028	%85
3	59	X	-0.015	%20
4	59	X	-0.014	%50
5	59	X	0	0
6	79	X	-0.028	%15
7	79	X	-0.028	%85
8	79	X	-0.015	%20
9	79	X	-0.014	%50
10	79	X	0	0
11	69	X	-0.028	%15
12	69	X	-0.028	%85
13	69	X	-0.015	%20
14	69	X	-0.014	%50
15	69	X	0	0
16	107	X	-0.015	%50

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
17	107	X	0	0
18	107	X	0	0
19	107	X	0	0
20	107	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	59	Z	-0.017	%15
2	59	Z	-0.017	%85
3	59	Z	-0.005	%20
4	59	Z	-0.005	%50
5	59	Z	0	0
6	79	Z	-0.017	%15
7	79	Z	-0.017	%85
8	79	Z	-0.005	%20
9	79	Z	-0.005	%50
10	79	Z	0	0
11	69	Z	-0.017	%15
12	69	Z	-0.017	%85
13	69	Z	-0.005	%20
14	69	Z	-0.005	%50
15	69	Z	0	0
16	107	Z	-0.006	%50
17	107	Z	0	0
18	107	Z	0	0
19	107	Z	0	0
20	107	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	59	X	-0.007	%15
2	59	X	-0.007	%85
3	59	X	-0.003	%20
4	59	X	-0.003	%50
5	59	X	0	0
6	79	X	-0.007	%15
7	79	X	-0.007	%85
8	79	X	-0.003	%20
9	79	X	-0.003	%50
10	79	X	0	0
11	69	X	-0.007	%15
12	69	X	-0.007	%85
13	69	X	-0.003	%20
14	69	X	-0.003	%50
15	69	X	0	0
16	107	X	-0.003	%50
17	107	X	0	0
18	107	X	0	0
19	107	X	0	0
20	107	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	59	Y	-0.142	%15
2	59	Y	-0.142	%85
3	59	Y	-0.051	%20
4	59	Y	-0.05	%50
5	59	Y	0	0
6	79	Y	-0.142	%15
7	79	Y	-0.142	%85
8	79	Y	-0.051	%20
9	79	Y	-0.05	%50

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
10	79	Y	0	0
11	69	Y	-0.142	%15
12	69	Y	-0.142	%85
13	69	Y	-0.051	%20
14	69	Y	-0.05	%50
15	69	Y	0	0
16	107	Y	-0.052	%50
17	107	Y	0	0
18	107	Y	0	0
19	107	Y	0	0
20	107	Y	0	0

Member Point Loads (BLC 13 : Maint LL 1)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	56	Y	-0.25	%5

Member Point Loads (BLC 14 : Maint LL 2)

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

Member Point Loads (BLC 15 : Maint LL 3)

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

Member Point Loads (BLC 16 : Maint LL 4)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	43	Y	-0.25	%5

Member Point Loads (BLC 17 : Maint LL 5)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	66	Y	-0.25	%5

Member Point Loads (BLC 18 : Maint LL 6)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	30	Y	-0.25	%5

Member Point Loads (BLC 19 : Maint LL 7)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	56	Y	-0.25	%95

Member Point Loads (BLC 20 : Maint LL 8)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	5	Y	-0.25	%95

Member Point Loads (BLC 21 : Maint LL 9)

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

Member Point Loads (BLC 22 : Maint LL 10)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	43	Y	-0.25	%95

Member Point Loads (BLC 23 : Maint LL 11)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	66	Y	-0.25	%95

Member Point Loads (BLC 24 : Maint LL 12)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	30	Y	-0.25	%95

Member Point Loads (BLC 25 : Maint LL 13)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	8	Y	-0.25	%5

Member Point Loads (BLC 26 : Maint LL 14)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	2	Y	-0.25	%5

Member Point Loads (BLC 27 : Maint LL 15)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	17	Y	-0.25	%5

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.013	-0.013	0	%100
2	2	Z	-0.014	-0.014	0	%100
3	3	Z	-0.014	-0.014	0	%100
4	4	Z	-0.014	-0.014	0	%100
5	5	Z	-0.01	-0.01	0	%100
6	6	Z	-0.013	-0.013	0	%100
7	7	Z	-0.013	-0.013	0	%100
8	8	Z	-0.014	-0.014	0	%100
9	9	Z	-0.014	-0.014	0	%100
10	10	Z	-0.014	-0.014	0	%100
11	11	Z	-0.017	-0.017	0	%100
12	12	Z	-0.017	-0.017	0	%100
13	13	Z	-0.013	-0.013	0	%100
14	14	Z	-0.013	-0.013	0	%100
15	15	Z	-0.017	-0.017	0	%100
16	16	Z	-0.017	-0.017	0	%100
17	17	Z	-0.014	-0.014	0	%100
18	18	Z	-0.014	-0.014	0	%100
19	19	Z	-0.014	-0.014	0	%100
20	20	Z	-0.017	-0.017	0	%100
21	21	Z	-0.017	-0.017	0	%100
22	22	Z	-0.013	-0.013	0	%100
23	23	Z	-0.013	-0.013	0	%100
24	24	Z	-0.017	-0.017	0	%100
25	25	Z	-0.017	-0.017	0	%100
26	30	Z	-0.01	-0.01	0	%100
27	31	Z	-0.017	-0.017	0	%100
28	32	Z	-0.017	-0.017	0	%100
29	33	Z	-0.017	-0.017	0	%100
30	34	Z	-0.017	-0.017	0	%100
31	35	Z	-0.017	-0.017	0	%100
32	36	Z	-0.017	-0.017	0	%100
33	37	Z	-0.017	-0.017	0	%100
34	38	Z	-0.017	-0.017	0	%100
35	43	Z	-0.01	-0.01	0	%100
36	44	Z	-0.017	-0.017	0	%100
37	45	Z	-0.017	-0.017	0	%100
38	46	Z	-0.017	-0.017	0	%100
39	47	Z	-0.017	-0.017	0	%100
40	48	Z	-0.017	-0.017	0	%100
41	49	Z	-0.017	-0.017	0	%100
42	50	Z	-0.017	-0.017	0	%100
43	51	Z	-0.017	-0.017	0	%100
44	56	Z	-0.008	-0.008	0	%100
45	59	Z	-0.007	-0.007	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
46	62	Z	-0.007	-0.007	0	%100
47	65	Z	-0.007	-0.007	0	%100
48	66	Z	-0.008	-0.008	0	%100
49	69	Z	-0.007	-0.007	0	%100
50	72	Z	-0.007	-0.007	0	%100
51	75	Z	-0.007	-0.007	0	%100
52	76	Z	-0.008	-0.008	0	%100
53	79	Z	-0.007	-0.007	0	%100
54	82	Z	-0.007	-0.007	0	%100
55	85	Z	-0.007	-0.007	0	%100
56	86	Z	-0.017	-0.017	0	%100
57	87	Z	-0.017	-0.017	0	%100
58	88	Z	-0.017	-0.017	0	%100
59	89	Z	-0.017	-0.017	0	%100
60	92	Z	-0.017	-0.017	0	%100
61	93	Z	-0.017	-0.017	0	%100
62	94	Z	-0.017	-0.017	0	%100
63	95	Z	-0.017	-0.017	0	%100
64	98	Z	-0.017	-0.017	0	%100
65	99	Z	-0.017	-0.017	0	%100
66	100	Z	-0.017	-0.017	0	%100
67	101	Z	-0.017	-0.017	0	%100
68	104	Z	-0.011	-0.011	0	%100
69	105	Z	-0.011	-0.011	0	%100
70	106	Z	-0.011	-0.011	0	%100
71	107	Z	-0.013	-0.013	0	%100
72	108	Z	-0.013	-0.013	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.013	-0.013	0	%100
2	2	X	-0.014	-0.014	0	%100
3	3	X	-0.014	-0.014	0	%100
4	4	X	-0.014	-0.014	0	%100
5	5	X	-0.01	-0.01	0	%100
6	6	X	-0.013	-0.013	0	%100
7	7	X	-0.013	-0.013	0	%100
8	8	X	-0.014	-0.014	0	%100
9	9	X	-0.014	-0.014	0	%100
10	10	X	-0.014	-0.014	0	%100
11	11	X	-0.017	-0.017	0	%100
12	12	X	-0.017	-0.017	0	%100
13	13	X	-0.013	-0.013	0	%100
14	14	X	-0.013	-0.013	0	%100
15	15	X	-0.017	-0.017	0	%100
16	16	X	-0.017	-0.017	0	%100
17	17	X	-0.014	-0.014	0	%100
18	18	X	-0.014	-0.014	0	%100
19	19	X	-0.014	-0.014	0	%100
20	20	X	-0.017	-0.017	0	%100
21	21	X	-0.017	-0.017	0	%100
22	22	X	-0.013	-0.013	0	%100
23	23	X	-0.013	-0.013	0	%100
24	24	X	-0.017	-0.017	0	%100
25	25	X	-0.017	-0.017	0	%100
26	30	X	-0.01	-0.01	0	%100
27	31	X	-0.017	-0.017	0	%100
28	32	X	-0.017	-0.017	0	%100
29	33	X	-0.017	-0.017	0	%100
30	34	X	-0.017	-0.017	0	%100
31	35	X	-0.017	-0.017	0	%100
32	36	X	-0.017	-0.017	0	%100
33	37	X	-0.017	-0.017	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, %)]
34	38	X	-0.017	-0.017	0	%100
35	43	X	-0.01	-0.01	0	%100
36	44	X	-0.017	-0.017	0	%100
37	45	X	-0.017	-0.017	0	%100
38	46	X	-0.017	-0.017	0	%100
39	47	X	-0.017	-0.017	0	%100
40	48	X	-0.017	-0.017	0	%100
41	49	X	-0.017	-0.017	0	%100
42	50	X	-0.017	-0.017	0	%100
43	51	X	-0.017	-0.017	0	%100
44	56	X	-0.008	-0.008	0	%100
45	59	X	-0.007	-0.007	0	%100
46	62	X	-0.007	-0.007	0	%100
47	65	X	-0.007	-0.007	0	%100
48	66	X	-0.008	-0.008	0	%100
49	69	X	-0.007	-0.007	0	%100
50	72	X	-0.007	-0.007	0	%100
51	75	X	-0.007	-0.007	0	%100
52	76	X	-0.008	-0.008	0	%100
53	79	X	-0.007	-0.007	0	%100
54	82	X	-0.007	-0.007	0	%100
55	85	X	-0.007	-0.007	0	%100
56	86	X	-0.017	-0.017	0	%100
57	87	X	-0.017	-0.017	0	%100
58	88	X	-0.017	-0.017	0	%100
59	89	X	-0.017	-0.017	0	%100
60	92	X	-0.017	-0.017	0	%100
61	93	X	-0.017	-0.017	0	%100
62	94	X	-0.017	-0.017	0	%100
63	95	X	-0.017	-0.017	0	%100
64	98	X	-0.017	-0.017	0	%100
65	99	X	-0.017	-0.017	0	%100
66	100	X	-0.017	-0.017	0	%100
67	101	X	-0.017	-0.017	0	%100
68	104	X	-0.011	-0.011	0	%100
69	105	X	-0.011	-0.011	0	%100
70	106	X	-0.011	-0.011	0	%100
71	107	X	-0.013	-0.013	0	%100
72	108	X	-0.013	-0.013	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.007	-0.007	0	%100
2	2	Z	-0.007	-0.007	0	%100
3	3	Z	-0.007	-0.007	0	%100
4	4	Z	-0.007	-0.007	0	%100
5	5	Z	-0.003	-0.003	0	%100
6	6	Z	-0.007	-0.007	0	%100
7	7	Z	-0.007	-0.007	0	%100
8	8	Z	-0.007	-0.007	0	%100
9	9	Z	-0.007	-0.007	0	%100
10	10	Z	-0.007	-0.007	0	%100
11	11	Z	-0.012	-0.012	0	%100
12	12	Z	-0.012	-0.012	0	%100
13	13	Z	-0.007	-0.007	0	%100
14	14	Z	-0.007	-0.007	0	%100
15	15	Z	-0.015	-0.015	0	%100
16	16	Z	-0.016	-0.016	0	%100
17	17	Z	-0.007	-0.007	0	%100
18	18	Z	-0.007	-0.007	0	%100
19	19	Z	-0.007	-0.007	0	%100
20	20	Z	-0.012	-0.012	0	%100
21	21	Z	-0.012	-0.012	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, %)]
22	22	Z	-0.007	-0.007	0	%100
23	23	Z	-0.007	-0.007	0	%100
24	24	Z	-0.015	-0.015	0	%100
25	25	Z	-0.016	-0.016	0	%100
26	30	Z	-0.003	-0.003	0	%100
27	31	Z	-0.012	-0.012	0	%100
28	32	Z	-0.012	-0.012	0	%100
29	33	Z	-0.015	-0.015	0	%100
30	34	Z	-0.016	-0.016	0	%100
31	35	Z	-0.012	-0.012	0	%100
32	36	Z	-0.012	-0.012	0	%100
33	37	Z	-0.015	-0.015	0	%100
34	38	Z	-0.016	-0.016	0	%100
35	43	Z	-0.003	-0.003	0	%100
36	44	Z	-0.012	-0.012	0	%100
37	45	Z	-0.012	-0.012	0	%100
38	46	Z	-0.015	-0.015	0	%100
39	47	Z	-0.016	-0.016	0	%100
40	48	Z	-0.012	-0.012	0	%100
41	49	Z	-0.012	-0.012	0	%100
42	50	Z	-0.015	-0.015	0	%100
43	51	Z	-0.016	-0.016	0	%100
44	56	Z	-0.003	-0.003	0	%100
45	59	Z	-0.002	-0.002	0	%100
46	62	Z	-0.002	-0.002	0	%100
47	65	Z	-0.002	-0.002	0	%100
48	66	Z	-0.003	-0.003	0	%100
49	69	Z	-0.002	-0.002	0	%100
50	72	Z	-0.002	-0.002	0	%100
51	75	Z	-0.002	-0.002	0	%100
52	76	Z	-0.003	-0.003	0	%100
53	79	Z	-0.002	-0.002	0	%100
54	82	Z	-0.002	-0.002	0	%100
55	85	Z	-0.002	-0.002	0	%100
56	86	Z	-0.012	-0.012	0	%100
57	87	Z	-0.015	-0.015	0	%100
58	88	Z	-0.012	-0.012	0	%100
59	89	Z	-0.015	-0.015	0	%100
60	92	Z	-0.012	-0.012	0	%100
61	93	Z	-0.015	-0.015	0	%100
62	94	Z	-0.012	-0.012	0	%100
63	95	Z	-0.015	-0.015	0	%100
64	98	Z	-0.012	-0.012	0	%100
65	99	Z	-0.015	-0.015	0	%100
66	100	Z	-0.012	-0.012	0	%100
67	101	Z	-0.015	-0.015	0	%100
68	104	Z	-0.007	-0.007	0	%100
69	105	Z	-0.007	-0.007	0	%100
70	106	Z	-0.007	-0.007	0	%100
71	107	Z	-0.007	-0.007	0	%100
72	108	Z	-0.007	-0.007	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.007	-0.007	0	%100
2	2	X	-0.007	-0.007	0	%100
3	3	X	-0.007	-0.007	0	%100
4	4	X	-0.007	-0.007	0	%100
5	5	X	-0.003	-0.003	0	%100
6	6	X	-0.007	-0.007	0	%100
7	7	X	-0.007	-0.007	0	%100
8	8	X	-0.007	-0.007	0	%100
9	9	X	-0.007	-0.007	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, %)]
10	10	X	-0.007	-0.007	0	%100
11	11	X	-0.012	-0.012	0	%100
12	12	X	-0.012	-0.012	0	%100
13	13	X	-0.007	-0.007	0	%100
14	14	X	-0.007	-0.007	0	%100
15	15	X	-0.015	-0.015	0	%100
16	16	X	-0.016	-0.016	0	%100
17	17	X	-0.007	-0.007	0	%100
18	18	X	-0.007	-0.007	0	%100
19	19	X	-0.007	-0.007	0	%100
20	20	X	-0.012	-0.012	0	%100
21	21	X	-0.012	-0.012	0	%100
22	22	X	-0.007	-0.007	0	%100
23	23	X	-0.007	-0.007	0	%100
24	24	X	-0.015	-0.015	0	%100
25	25	X	-0.016	-0.016	0	%100
26	30	X	-0.003	-0.003	0	%100
27	31	X	-0.012	-0.012	0	%100
28	32	X	-0.012	-0.012	0	%100
29	33	X	-0.015	-0.015	0	%100
30	34	X	-0.016	-0.016	0	%100
31	35	X	-0.012	-0.012	0	%100
32	36	X	-0.012	-0.012	0	%100
33	37	X	-0.015	-0.015	0	%100
34	38	X	-0.016	-0.016	0	%100
35	43	X	-0.003	-0.003	0	%100
36	44	X	-0.012	-0.012	0	%100
37	45	X	-0.012	-0.012	0	%100
38	46	X	-0.015	-0.015	0	%100
39	47	X	-0.016	-0.016	0	%100
40	48	X	-0.012	-0.012	0	%100
41	49	X	-0.012	-0.012	0	%100
42	50	X	-0.015	-0.015	0	%100
43	51	X	-0.016	-0.016	0	%100
44	56	X	-0.003	-0.003	0	%100
45	59	X	-0.002	-0.002	0	%100
46	62	X	-0.002	-0.002	0	%100
47	65	X	-0.002	-0.002	0	%100
48	66	X	-0.003	-0.003	0	%100
49	69	X	-0.002	-0.002	0	%100
50	72	X	-0.002	-0.002	0	%100
51	75	X	-0.002	-0.002	0	%100
52	76	X	-0.003	-0.003	0	%100
53	79	X	-0.002	-0.002	0	%100
54	82	X	-0.002	-0.002	0	%100
55	85	X	-0.002	-0.002	0	%100
56	86	X	-0.012	-0.012	0	%100
57	87	X	-0.015	-0.015	0	%100
58	88	X	-0.012	-0.012	0	%100
59	89	X	-0.015	-0.015	0	%100
60	92	X	-0.012	-0.012	0	%100
61	93	X	-0.015	-0.015	0	%100
62	94	X	-0.012	-0.012	0	%100
63	95	X	-0.015	-0.015	0	%100
64	98	X	-0.012	-0.012	0	%100
65	99	X	-0.015	-0.015	0	%100
66	100	X	-0.012	-0.012	0	%100
67	101	X	-0.015	-0.015	0	%100
68	104	X	-0.007	-0.007	0	%100
69	105	X	-0.007	-0.007	0	%100
70	106	X	-0.007	-0.007	0	%100
71	107	X	-0.007	-0.007	0	%100
72	108	X	-0.007	-0.007	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, %)]

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.001	-0.001	0	%100
2	2	Z	-0.001	-0.001	0	%100
3	3	Z	-0.001	-0.001	0	%100
4	4	Z	-0.001	-0.001	0	%100
5	5	Z	-0.0005	-0.0005	0	%100
6	6	Z	-0.001	-0.001	0	%100
7	7	Z	-0.001	-0.001	0	%100
8	8	Z	-0.001	-0.001	0	%100
9	9	Z	-0.001	-0.001	0	%100
10	10	Z	-0.001	-0.001	0	%100
11	11	Z	-0.002	-0.002	0	%100
12	12	Z	-0.002	-0.002	0	%100
13	13	Z	-0.001	-0.001	0	%100
14	14	Z	-0.001	-0.001	0	%100
15	15	Z	-0.002	-0.002	0	%100
16	16	Z	-0.002	-0.002	0	%100
17	17	Z	-0.001	-0.001	0	%100
18	18	Z	-0.001	-0.001	0	%100
19	19	Z	-0.001	-0.001	0	%100
20	20	Z	-0.002	-0.002	0	%100
21	21	Z	-0.002	-0.002	0	%100
22	22	Z	-0.001	-0.001	0	%100
23	23	Z	-0.001	-0.001	0	%100
24	24	Z	-0.002	-0.002	0	%100
25	25	Z	-0.002	-0.002	0	%100
26	30	Z	-0.0005	-0.0005	0	%100
27	31	Z	-0.002	-0.002	0	%100
28	32	Z	-0.002	-0.002	0	%100
29	33	Z	-0.002	-0.002	0	%100
30	34	Z	-0.002	-0.002	0	%100
31	35	Z	-0.002	-0.002	0	%100
32	36	Z	-0.002	-0.002	0	%100
33	37	Z	-0.002	-0.002	0	%100
34	38	Z	-0.002	-0.002	0	%100
35	43	Z	-0.0005	-0.0005	0	%100
36	44	Z	-0.002	-0.002	0	%100
37	45	Z	-0.002	-0.002	0	%100
38	46	Z	-0.002	-0.002	0	%100
39	47	Z	-0.002	-0.002	0	%100
40	48	Z	-0.002	-0.002	0	%100
41	49	Z	-0.002	-0.002	0	%100
42	50	Z	-0.002	-0.002	0	%100
43	51	Z	-0.002	-0.002	0	%100
44	56	Z	-0.0004	-0.0004	0	%100
45	59	Z	-0.0003	-0.0003	0	%100
46	62	Z	-0.0003	-0.0003	0	%100
47	65	Z	-0.0003	-0.0003	0	%100
48	66	Z	-0.0004	-0.0004	0	%100
49	69	Z	-0.0003	-0.0003	0	%100
50	72	Z	-0.0003	-0.0003	0	%100
51	75	Z	-0.0003	-0.0003	0	%100
52	76	Z	-0.0004	-0.0004	0	%100
53	79	Z	-0.0003	-0.0003	0	%100
54	82	Z	-0.0003	-0.0003	0	%100
55	85	Z	-0.0003	-0.0003	0	%100
56	86	Z	-0.002	-0.002	0	%100
57	87	Z	-0.002	-0.002	0	%100
58	88	Z	-0.002	-0.002	0	%100
59	89	Z	-0.002	-0.002	0	%100
60	92	Z	-0.002	-0.002	0	%100
61	93	Z	-0.002	-0.002	0	%100
62	94	Z	-0.002	-0.002	0	%100
63	95	Z	-0.002	-0.002	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
64	98	Z	-0.002	-0.002	0	%100
65	99	Z	-0.002	-0.002	0	%100
66	100	Z	-0.002	-0.002	0	%100
67	101	Z	-0.002	-0.002	0	%100
68	104	Z	-0.001	-0.001	0	%100
69	105	Z	-0.001	-0.001	0	%100
70	106	Z	-0.001	-0.001	0	%100
71	107	Z	-0.001	-0.001	0	%100
72	108	Z	-0.001	-0.001	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.001	-0.001	0	%100
2	2	X	-0.001	-0.001	0	%100
3	3	X	-0.001	-0.001	0	%100
4	4	X	-0.001	-0.001	0	%100
5	5	X	-0.0005	-0.0005	0	%100
6	6	X	-0.001	-0.001	0	%100
7	7	X	-0.001	-0.001	0	%100
8	8	X	-0.001	-0.001	0	%100
9	9	X	-0.001	-0.001	0	%100
10	10	X	-0.001	-0.001	0	%100
11	11	X	-0.002	-0.002	0	%100
12	12	X	-0.002	-0.002	0	%100
13	13	X	-0.001	-0.001	0	%100
14	14	X	-0.001	-0.001	0	%100
15	15	X	-0.002	-0.002	0	%100
16	16	X	-0.002	-0.002	0	%100
17	17	X	-0.001	-0.001	0	%100
18	18	X	-0.001	-0.001	0	%100
19	19	X	-0.001	-0.001	0	%100
20	20	X	-0.002	-0.002	0	%100
21	21	X	-0.002	-0.002	0	%100
22	22	X	-0.001	-0.001	0	%100
23	23	X	-0.001	-0.001	0	%100
24	24	X	-0.002	-0.002	0	%100
25	25	X	-0.002	-0.002	0	%100
26	30	X	-0.0005	-0.0005	0	%100
27	31	X	-0.002	-0.002	0	%100
28	32	X	-0.002	-0.002	0	%100
29	33	X	-0.002	-0.002	0	%100
30	34	X	-0.002	-0.002	0	%100
31	35	X	-0.002	-0.002	0	%100
32	36	X	-0.002	-0.002	0	%100
33	37	X	-0.002	-0.002	0	%100
34	38	X	-0.002	-0.002	0	%100
35	43	X	-0.0005	-0.0005	0	%100
36	44	X	-0.002	-0.002	0	%100
37	45	X	-0.002	-0.002	0	%100
38	46	X	-0.002	-0.002	0	%100
39	47	X	-0.002	-0.002	0	%100
40	48	X	-0.002	-0.002	0	%100
41	49	X	-0.002	-0.002	0	%100
42	50	X	-0.002	-0.002	0	%100
43	51	X	-0.002	-0.002	0	%100
44	56	X	-0.0004	-0.0004	0	%100
45	59	X	-0.0003	-0.0003	0	%100
46	62	X	-0.0003	-0.0003	0	%100
47	65	X	-0.0003	-0.0003	0	%100
48	66	X	-0.0004	-0.0004	0	%100
49	69	X	-0.0003	-0.0003	0	%100
50	72	X	-0.0003	-0.0003	0	%100
51	75	X	-0.0003	-0.0003	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
52	76	X	-0.0004	-0.0004	0	%100
53	79	X	-0.0003	-0.0003	0	%100
54	82	X	-0.0003	-0.0003	0	%100
55	85	X	-0.0003	-0.0003	0	%100
56	86	X	-0.002	-0.002	0	%100
57	87	X	-0.002	-0.002	0	%100
58	88	X	-0.002	-0.002	0	%100
59	89	X	-0.002	-0.002	0	%100
60	92	X	-0.002	-0.002	0	%100
61	93	X	-0.002	-0.002	0	%100
62	94	X	-0.002	-0.002	0	%100
63	95	X	-0.002	-0.002	0	%100
64	98	X	-0.002	-0.002	0	%100
65	99	X	-0.002	-0.002	0	%100
66	100	X	-0.002	-0.002	0	%100
67	101	X	-0.002	-0.002	0	%100
68	104	X	-0.001	-0.001	0	%100
69	105	X	-0.001	-0.001	0	%100
70	106	X	-0.001	-0.001	0	%100
71	107	X	-0.001	-0.001	0	%100
72	108	X	-0.001	-0.001	0	%100

Member Distributed Loads (BLC 8 : Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Y	-0.015	-0.015	0	%100
2	2	Y	-0.016	-0.016	0	%100
3	3	Y	-0.015	-0.015	0	%100
4	4	Y	-0.015	-0.015	0	%100
5	5	Y	-0.011	-0.011	0	%100
6	6	Y	-0.015	-0.015	0	%100
7	7	Y	-0.015	-0.015	0	%100
8	8	Y	-0.016	-0.016	0	%100
9	9	Y	-0.015	-0.015	0	%100
10	10	Y	-0.015	-0.015	0	%100
11	11	Y	-0.016	-0.016	0	%100
12	12	Y	-0.016	-0.016	0	%100
13	13	Y	-0.015	-0.015	0	%100
14	14	Y	-0.015	-0.015	0	%100
15	15	Y	-0.016	-0.016	0	%100
16	16	Y	-0.016	-0.016	0	%100
17	17	Y	-0.016	-0.016	0	%100
18	18	Y	-0.015	-0.015	0	%100
19	19	Y	-0.015	-0.015	0	%100
20	20	Y	-0.016	-0.016	0	%100
21	21	Y	-0.016	-0.016	0	%100
22	22	Y	-0.015	-0.015	0	%100
23	23	Y	-0.015	-0.015	0	%100
24	24	Y	-0.016	-0.016	0	%100
25	25	Y	-0.016	-0.016	0	%100
26	30	Y	-0.011	-0.011	0	%100
27	31	Y	-0.016	-0.016	0	%100
28	32	Y	-0.016	-0.016	0	%100
29	33	Y	-0.016	-0.016	0	%100
30	34	Y	-0.016	-0.016	0	%100
31	35	Y	-0.016	-0.016	0	%100
32	36	Y	-0.016	-0.016	0	%100
33	37	Y	-0.016	-0.016	0	%100
34	38	Y	-0.016	-0.016	0	%100
35	43	Y	-0.011	-0.011	0	%100
36	44	Y	-0.016	-0.016	0	%100
37	45	Y	-0.016	-0.016	0	%100
38	46	Y	-0.016	-0.016	0	%100
39	47	Y	-0.016	-0.016	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, %)]
40	48	Y	-0.016	-0.016	0	%100
41	49	Y	-0.016	-0.016	0	%100
42	50	Y	-0.016	-0.016	0	%100
43	51	Y	-0.016	-0.016	0	%100
44	56	Y	-0.009	-0.009	0	%100
45	59	Y	-0.008	-0.008	0	%100
46	62	Y	-0.008	-0.008	0	%100
47	65	Y	-0.008	-0.008	0	%100
48	66	Y	-0.009	-0.009	0	%100
49	69	Y	-0.008	-0.008	0	%100
50	72	Y	-0.008	-0.008	0	%100
51	75	Y	-0.008	-0.008	0	%100
52	76	Y	-0.009	-0.009	0	%100
53	79	Y	-0.008	-0.008	0	%100
54	82	Y	-0.008	-0.008	0	%100
55	85	Y	-0.008	-0.008	0	%100
56	86	Y	-0.016	-0.016	0	%100
57	87	Y	-0.016	-0.016	0	%100
58	88	Y	-0.016	-0.016	0	%100
59	89	Y	-0.016	-0.016	0	%100
60	92	Y	-0.016	-0.016	0	%100
61	93	Y	-0.016	-0.016	0	%100
62	94	Y	-0.016	-0.016	0	%100
63	95	Y	-0.016	-0.016	0	%100
64	98	Y	-0.016	-0.016	0	%100
65	99	Y	-0.016	-0.016	0	%100
66	100	Y	-0.016	-0.016	0	%100
67	101	Y	-0.016	-0.016	0	%100
68	104	Y	-0.011	-0.011	0	%100
69	105	Y	-0.011	-0.011	0	%100
70	106	Y	-0.011	-0.011	0	%100
71	107	Y	-0.015	-0.015	0	%100
72	108	Y	-0.015	-0.015	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	5	Y	0	-0.001	0	0.8
2	5	Y	-0.001	-0.001	0.8	1.6
3	5	Y	-0.001	0	1.6	2.4
4	8	Y	-0.002	-0.014	0	0.694
5	8	Y	-0.014	-0.015	0.694	1.389
6	8	Y	-0.015	-0.003	1.389	2.083
7	9	Y	-0.001	-0.006	0	0.593
8	9	Y	-0.006	-0.009	0.593	1.185
9	9	Y	-0.009	-0.009	1.185	1.778
10	9	Y	-0.009	-0.006	1.778	2.371
11	9	Y	-0.006	-0.000536	2.371	2.964
12	10	Y	-0.0005405	-0.007	0.188	0.78
13	10	Y	-0.007	-0.009	0.78	1.373
14	10	Y	-0.009	-0.008	1.373	1.966
15	10	Y	-0.008	-0.007	1.966	2.558
16	10	Y	-0.007	-0.0009811	2.558	3.151
17	12	Y	-0.073	-0.023	0	0.104
18	12	Y	-0.023	0.002	0.104	0.208
19	12	Y	0.002	0.003	0.208	0.313
20	12	Y	0.003	0.003	0.313	0.417
21	13	Y	-0.0007206	-0.004	0	0.4
22	13	Y	-0.004	-0.009	0.4	0.8
23	13	Y	-0.009	-0.01	0.8	1.2
24	13	Y	-0.01	-0.006	1.2	1.6
25	13	Y	-0.006	-0.003	1.6	2
26	14	Y	-0.003	-0.006	0.188	0.588
27	14	Y	-0.006	-0.01	0.588	0.988

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, %)]
28	14	Y	-0.01	-0.009	0.988	1.388
29	14	Y	-0.009	-0.004	1.388	1.788
30	14	Y	-0.004	-0.000745	1.788	2.188
31	16	Y	-0.009	-0.009	0	0.216
32	43	Y	0	-0.001	5.6	6.4
33	43	Y	-0.001	-0.001	6.4	7.2
34	43	Y	-0.001	0	7.2	8
35	49	Y	-0.072	-0.023	0	0.104
36	49	Y	-0.023	0.002	0.104	0.208
37	49	Y	0.002	0.003	0.208	0.313
38	49	Y	0.003	0.003	0.313	0.417
39	51	Y	-0.009	-0.009	0	0.216
40	5	Y	0	-0.001	5.6	6.4
41	5	Y	-0.001	-0.001	6.4	7.2
42	5	Y	-0.001	0	7.2	8
43	17	Y	-0.002	-0.014	0	0.694
44	17	Y	-0.014	-0.015	0.694	1.389
45	17	Y	-0.015	-0.003	1.389	2.083
46	18	Y	-0.001	-0.006	0	0.593
47	18	Y	-0.006	-0.009	0.593	1.185
48	18	Y	-0.009	-0.009	1.185	1.778
49	18	Y	-0.009	-0.006	1.778	2.371
50	18	Y	-0.006	-0.0005361	2.371	2.964
51	19	Y	-0.0005405	-0.007	0.188	0.78
52	19	Y	-0.007	-0.009	0.78	1.373
53	19	Y	-0.009	-0.008	1.373	1.966
54	19	Y	-0.008	-0.007	1.966	2.558
55	19	Y	-0.007	-0.0009812	2.558	3.151
56	21	Y	-0.072	-0.023	0	0.104
57	21	Y	-0.023	0.002	0.104	0.208
58	21	Y	0.002	0.003	0.208	0.313
59	21	Y	0.003	0.003	0.313	0.417
60	22	Y	-0.0007239	-0.004	0	0.4
61	22	Y	-0.004	-0.009	0.4	0.8
62	22	Y	-0.009	-0.01	0.8	1.2
63	22	Y	-0.01	-0.006	1.2	1.6
64	22	Y	-0.006	-0.003	1.6	2
65	23	Y	-0.003	-0.006	0.188	0.587
66	23	Y	-0.006	-0.01	0.587	0.987
67	23	Y	-0.01	-0.009	0.987	1.387
68	23	Y	-0.009	-0.004	1.387	1.787
69	23	Y	-0.004	-0.0007447	1.787	2.187
70	25	Y	-0.009	-0.009	0	0.216
71	30	Y	0	-0.001	0	0.8
72	30	Y	-0.001	-0.001	0.8	1.6
73	30	Y	-0.001	0	1.6	2.4
74	32	Y	-0.073	-0.023	0	0.104
75	32	Y	-0.023	0.002	0.104	0.208
76	32	Y	0.002	0.003	0.208	0.313
77	32	Y	0.003	0.003	0.313	0.417
78	34	Y	-0.009	-0.009	0	0.216
79	2	Y	-0.002	-0.014	0	0.694
80	2	Y	-0.014	-0.015	0.694	1.389
81	2	Y	-0.015	-0.003	1.389	2.083
82	3	Y	-0.001	-0.006	0	0.593
83	3	Y	-0.006	-0.009	0.593	1.185
84	3	Y	-0.009	-0.009	1.185	1.778
85	3	Y	-0.009	-0.006	1.778	2.371
86	3	Y	-0.006	-0.0005361	2.371	2.964
87	4	Y	-0.0005405	-0.007	0.188	0.78
88	4	Y	-0.007	-0.009	0.78	1.373
89	4	Y	-0.009	-0.008	1.373	1.966
90	4	Y	-0.008	-0.007	1.966	2.558

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, %)]
91	4	Y	-0.007	-0.0009812	2.558	3.151
92	6	Y	-0.0007255	-0.004	0	0.4
93	6	Y	-0.004	-0.009	0.4	0.8
94	6	Y	-0.009	-0.01	0.8	1.2
95	6	Y	-0.01	-0.006	1.2	1.6
96	6	Y	-0.006	-0.003	1.6	2
97	7	Y	-0.003	-0.006	0.188	0.588
98	7	Y	-0.006	-0.01	0.588	0.988
99	7	Y	-0.01	-0.009	0.988	1.388
100	7	Y	-0.009	-0.004	1.388	1.788
101	7	Y	-0.004	-0.0007447	1.788	2.188
102	30	Y	0	-0.001	5.6	6.4
103	30	Y	-0.001	-0.001	6.4	7.2
104	30	Y	-0.001	0	7.2	8
105	36	Y	-0.072	-0.023	0	0.104
106	36	Y	-0.023	0.002	0.104	0.208
107	36	Y	0.002	0.003	0.208	0.313
108	36	Y	0.003	0.003	0.313	0.417
109	38	Y	-0.009	-0.009	0	0.216
110	43	Y	0	-0.001	0	0.8
111	43	Y	-0.001	-0.001	0.8	1.6
112	43	Y	-0.001	0	1.6	2.4
113	45	Y	-0.073	-0.023	0	0.104
114	45	Y	-0.023	0.002	0.104	0.208
115	45	Y	0.002	0.003	0.208	0.313
116	45	Y	0.003	0.003	0.313	0.417
117	47	Y	-0.009	-0.009	0	0.216

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	5	Y	-4.518e-20	-0.00051	0	0.8
2	5	Y	-0.00051	-0.00051	0.8	1.6
3	5	Y	-0.00051	-4.518e-20	1.6	2.4
4	8	Y	-0.0007155	-0.006	0	0.694
5	8	Y	-0.006	-0.006	0.694	1.389
6	8	Y	-0.006	-0.001	1.389	2.083
7	9	Y	-0.000403	-0.003	0	0.593
8	9	Y	-0.003	-0.004	0.593	1.185
9	9	Y	-0.004	-0.004	1.185	1.778
10	9	Y	-0.004	-0.003	1.778	2.371
11	9	Y	-0.003	-0.0002146	2.371	2.964
12	10	Y	-0.0002164	-0.003	0.188	0.78
13	10	Y	-0.003	-0.004	0.78	1.373
14	10	Y	-0.004	-0.003	1.373	1.966
15	10	Y	-0.003	-0.003	1.966	2.558
16	10	Y	-0.003	-0.0003928	2.558	3.151
17	12	Y	-0.029	-0.009	0	0.104
18	12	Y	-0.009	0.0008786	0.104	0.208
19	12	Y	0.0008786	0.001	0.208	0.313
20	12	Y	0.001	0.001	0.313	0.417
21	13	Y	-0.0002885	-0.002	0	0.4
22	13	Y	-0.002	-0.003	0.4	0.8
23	13	Y	-0.003	-0.004	0.8	1.2
24	13	Y	-0.004	-0.003	1.2	1.6
25	13	Y	-0.003	-0.001	1.6	2
26	14	Y	-0.001	-0.003	0.188	0.588
27	14	Y	-0.003	-0.004	0.588	0.988
28	14	Y	-0.004	-0.003	0.988	1.388
29	14	Y	-0.003	-0.002	1.388	1.788
30	14	Y	-0.002	-0.0002983	1.788	2.188
31	16	Y	-0.003	-0.003	0	0.216
32	43	Y	0	-0.0005049	5.6	6.4
33	43	Y	-0.0005049	-0.0005049	6.4	7.2

Member Distributed Loads (BLC 29 : BLC 8 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, %)]
34	43	Y	-0.0005049	0	7.2	8
35	49	Y	-0.029	-0.009	0	0.104
36	49	Y	-0.009	0.0008677	0.104	0.208
37	49	Y	0.0008677	0.001	0.208	0.313
38	49	Y	0.001	0.001	0.313	0.417
39	51	Y	-0.003	-0.003	0	0.216
40	5	Y	-4.518e-20	-0.0005049	5.6	6.4
41	5	Y	-0.0005049	-0.0005049	6.4	7.2
42	5	Y	-0.0005049	-4.518e-20	7.2	8
43	17	Y	-0.0007163	-0.006	0	0.694
44	17	Y	-0.006	-0.006	0.694	1.389
45	17	Y	-0.006	-0.001	1.389	2.083
46	18	Y	-0.000403	-0.003	0	0.593
47	18	Y	-0.003	-0.004	0.593	1.185
48	18	Y	-0.004	-0.004	1.185	1.778
49	18	Y	-0.004	-0.003	1.778	2.371
50	18	Y	-0.003	-0.0002146	2.371	2.964
51	19	Y	-0.0002164	-0.003	0.188	0.78
52	19	Y	-0.003	-0.004	0.78	1.373
53	19	Y	-0.004	-0.003	1.373	1.966
54	19	Y	-0.003	-0.003	1.966	2.558
55	19	Y	-0.003	-0.0003929	2.558	3.151
56	21	Y	-0.029	-0.009	0	0.104
57	21	Y	-0.009	0.0008672	0.104	0.208
58	21	Y	0.0008672	0.001	0.208	0.313
59	21	Y	0.001	0.001	0.313	0.417
60	22	Y	-0.0002898	-0.002	0	0.4
61	22	Y	-0.002	-0.003	0.4	0.8
62	22	Y	-0.003	-0.004	0.8	1.2
63	22	Y	-0.004	-0.003	1.2	1.6
64	22	Y	-0.003	-0.001	1.6	2
65	23	Y	-0.001	-0.003	0.188	0.587
66	23	Y	-0.003	-0.004	0.587	0.987
67	23	Y	-0.004	-0.003	0.987	1.387
68	23	Y	-0.003	-0.002	1.387	1.787
69	23	Y	-0.002	-0.0002982	1.787	2.187
70	25	Y	-0.003	-0.003	0	0.216
71	30	Y	0	-0.0005099	0	0.8
72	30	Y	-0.0005099	-0.0005099	0.8	1.6
73	30	Y	-0.0005099	0	1.6	2.4
74	32	Y	-0.029	-0.009	0	0.104
75	32	Y	-0.009	0.0008763	0.104	0.208
76	32	Y	0.0008763	0.001	0.208	0.313
77	32	Y	0.001	0.001	0.313	0.417
78	34	Y	-0.003	-0.003	0	0.216
79	2	Y	-0.0007163	-0.006	0	0.694
80	2	Y	-0.006	-0.006	0.694	1.389
81	2	Y	-0.006	-0.001	1.389	2.083
82	3	Y	-0.000403	-0.003	0	0.593
83	3	Y	-0.003	-0.004	0.593	1.185
84	3	Y	-0.004	-0.004	1.185	1.778
85	3	Y	-0.004	-0.003	1.778	2.371
86	3	Y	-0.003	-0.0002146	2.371	2.964
87	4	Y	-0.0002164	-0.003	0.188	0.78
88	4	Y	-0.003	-0.004	0.78	1.373
89	4	Y	-0.004	-0.003	1.373	1.966
90	4	Y	-0.003	-0.003	1.966	2.558
91	4	Y	-0.003	-0.0003929	2.558	3.151
92	6	Y	-0.0002905	-0.002	0	0.4
93	6	Y	-0.002	-0.003	0.4	0.8
94	6	Y	-0.003	-0.004	0.8	1.2
95	6	Y	-0.004	-0.003	1.2	1.6
96	6	Y	-0.003	-0.001	1.6	2

Member Distributed Loads (BLC 29 : BLC 8 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, %)]
97	7	Y	-0.001	-0.003	0.188	0.588
98	7	Y	-0.003	-0.004	0.588	0.988
99	7	Y	-0.004	-0.003	0.988	1.388
100	7	Y	-0.003	-0.002	1.388	1.788
101	7	Y	-0.002	-0.0002982	1.788	2.188
102	30	Y	0	-0.0005049	5.6	6.4
103	30	Y	-0.0005049	-0.0005049	6.4	7.2
104	30	Y	-0.0005049	0	7.2	8
105	36	Y	-0.029	-0.009	0	0.104
106	36	Y	-0.009	0.0008672	0.104	0.208
107	36	Y	0.0008672	0.001	0.208	0.313
108	36	Y	0.001	0.001	0.313	0.417
109	38	Y	-0.003	-0.003	0	0.216
110	43	Y	4.518e-20	-0.0005099	0	0.8
111	43	Y	-0.0005099	-0.0005099	0.8	1.6
112	43	Y	-0.0005099	4.518e-20	1.6	2.4
113	45	Y	-0.029	-0.009	0	0.104
114	45	Y	-0.009	0.0008771	0.104	0.208
115	45	Y	0.0008771	0.001	0.208	0.313
116	45	Y	0.001	0.001	0.313	0.417
117	47	Y	-0.003	-0.003	0	0.216

Member Area Loads (BLC 1 : Dead)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	21	22	15	14	Y	Two Way	-0.01
2	31	30	37	38	Y	Two Way	-0.01
3	4	9	10	5	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	21	22	15	14	Y	Two Way	-0.004
2	31	30	37	38	Y	Two Way	-0.004
3	4	9	10	5	Y	Two Way	-0.004

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	106	L	Y	-0.5
2	146	L	Y	-0.5
3	126	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	100	L	Y	-0.5
2	140	L	Y	-0.5
3	120	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	94	L	Y	-0.5
2	134	L	Y	-0.5
3	114	L	Y	-0.5

Envelope Node Reactions

	Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	188	max	0.98	5	2.195	38	2.151	2	6.845	14	1.432	11	1.806	77
2		min	-0.986	23	-0.502	8	-2.309	20	-3.033	8	-1.431	17	-0.945	59
3	189	max	1.574	5	2.227	42	1.439	14	1.32	11	1.783	3	1.817	13
4		min	-1.707	23	-0.234	12	-1.348	8	-3.096	53	-1.766	21	-6.031	43
5	190	max	1.556	16	2.148	46	1.756	14	0.759	5	1.86	7	5.099	21
6		min	-1.417	10	-0.245	4	-1.69	8	-4.096	47	-1.849	25	-2.14	3

Envelope Node Reactions (Continued)

	Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
7	Totals:	max	4.01	5	5.834	38	5.324	2						
8		min	-4.01	23	1.857	8	-5.324	8						

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	1	HSS4X4X4	0.452	0	25	0.173	0	y	76	137.398	139.518	16.181	16.181	1.278	H1-1b
2	2	HSS4.5X4.5X3	0.215	2.083	14	0.203	1.996	y	76	119.657	121.302	16.25	16.25	1.726	H1-1b
3	3	L4X4X6	0.263	2.964	60	0.061	2.964	z	77	83.036	92.664	4.398	9.886	1.5	H2-1
4	4	L4X4X6	0.331	0	41	0.044	0	z	78	83.036	92.664	4.398	9.886	1.5	H2-1
5	5	HSS3.500X0.216	0.108	0.25	24	0.115	0.25		18	51.941	78.624	6.899	6.899	2.163	H1-1b
6	6	L4X4X6	0.298	2	15	0.137	0	z	79	88.147	92.664	4.398	9.886	1.5	H2-1
7	7	L4X4X6	0.398	0	75	0.125	0	z	76	88.147	92.664	4.398	9.886	1.5	H2-1
8	8	HSS4.5X4.5X3	0.172	2.083	18	0.204	1.996	y	80	119.657	121.302	16.25	16.25	1.734	H1-1b
9	9	L4X4X6	0.263	2.964	51	0.062	2.964	z	80	83.036	92.664	4.398	9.886	1.5	H2-1
10	10	L4X4X6	0.332	0	45	0.044	0	z	81	83.036	92.664	4.398	9.886	1.5	H2-1
11	11	PL3/8"x6	0.146	0.067	21	0.446	0.067	y	47	63.595	72.9	0.57	9.113	1.561	H1-1b
12	12	PL3/8"x6	0.204	0.273	24	0.308	0.273	y	54	65.031	72.9	0.57	9.113	2.995	H1-1b
13	13	L4X4X6	0.287	2	19	0.137	0	z	82	88.147	92.664	4.398	9.886	1.5	H2-1
14	14	L4X4X6	0.401	0	80	0.126	0	z	80	88.147	92.664	4.398	9.886	1.5	H2-1
15	15	PL3/8"x6	0.211	0.167	19	0.21	0	y	53	69.866	72.9	0.57	9.113	1.436	H1-1b
16	16	PL3/8"x6	0.13	0.13	21	0.167	0	y	48	70.59	72.9	0.57	9.113	1.372	H1-1b
17	17	HSS4.5X4.5X3	0.186	2.083	21	0.203	1.996	y	85	119.657	121.302	16.25	16.25	1.734	H1-1b
18	18	L4X4X6	0.263	2.964	56	0.062	2.964	z	85	83.036	92.664	4.398	9.886	1.5	H2-1
19	19	L4X4X6	0.332	0	49	0.045	0	z	74	83.036	92.664	4.398	9.886	1.5	H2-1
20	20	PL3/8"x6	0.14	0.067	20	0.372	0.067	y	52	63.595	72.9	0.57	9.113	1.668	H1-1b
21	21	PL3/8"x6	0.224	0.273	24	0.409	0.273	y	82	65.031	72.9	0.57	9.113	2.862	H1-1b
22	22	L4X4X6	0.275	2	56	0.14	0	z	14	88.147	92.664	4.398	9.886	1.5	H2-1
23	23	L4X4X6	0.397	0	84	0.125	0	z	84	88.147	92.664	4.398	9.886	1.5	H2-1
24	24	PL3/8"x6	0.157	0.167	23	0.302	0	y	83	69.866	72.9	0.57	9.113	1.541	H1-1b
25	25	PL3/8"x6	0.118	0.13	19	0.141	0	y	51	70.59	72.9	0.57	9.113	1.376	H1-1b
26	30	HSS3.500X0.216	0.134	0.25	15	0.141	7.75		15	51.941	78.624	6.899	6.899	2.098	H1-1b
27	31	PL3/8"x6	0.154	0.067	25	0.449	0.067	y	39	63.595	72.9	0.57	9.113	1.555	H1-1b
28	32	PL3/8"x6	0.203	0.273	15	0.345	0.273	y	21	65.031	72.9	0.57	9.113	2.768	H1-1b
29	33	PL3/8"x6	0.187	0.167	22	0.243	0.167	y	15	69.866	72.9	0.57	9.113	1.496	H1-1b
30	34	PL3/8"x6	0.144	0.13	25	0.167	0	y	40	70.59	72.9	0.57	9.113	1.372	H1-1b
31	35	PL3/8"x6	0.123	0.067	24	0.372	0.067	y	56	63.595	72.9	0.57	9.113	1.862	H1-1b
32	36	PL3/8"x6	0.244	0.273	15	0.473	0.273	y	14	65.031	72.9	0.57	9.113	3	H1-1b
33	37	PL3/8"x6	0.203	0.167	14	0.322	0	y	15	69.866	72.9	0.57	9.113	1.521	H1-1b
34	38	PL3/8"x6	0.11	0.13	23	0.141	0	y	56	70.59	72.9	0.57	9.113	1.38	H1-1b
35	43	HSS3.500X0.216	0.145	0.25	20	0.152	0.25		14	51.941	78.624	6.899	6.899	2.16	H1-1b
36	44	PL3/8"x6	0.126	0.067	17	0.449	0.067	y	43	63.595	72.9	0.57	9.113	1.597	H1-1b
37	45	PL3/8"x6	0.264	0.273	20	0.365	0.273	y	14	65.031	72.9	0.57	9.113	3	H1-1b
38	46	PL3/8"x6	0.254	0.167	14	0.245	0.167	y	19	69.866	72.9	0.57	9.113	1.495	H1-1b
39	47	PL3/8"x6	0.115	0.13	18	0.168	0	y	44	70.59	72.9	0.57	9.113	1.375	H1-1b
40	48	PL3/8"x6	0.126	0.067	15	0.372	0.067	y	61	63.595	72.9	0.57	9.113	1.643	H1-1b
41	49	PL3/8"x6	0.298	0.273	20	0.449	0.273	y	19	65.031	72.9	0.57	9.113	2.951	H1-1b
42	50	PL3/8"x6	0.222	0.167	13	0.32	0	y	19	69.866	72.9	0.57	9.113	1.555	H1-1b
43	51	PL3/8"x6	0.12	0.13	15	0.141	0	y	60	70.59	72.9	0.57	9.113	1.376	H1-1b
44	56	PIPE_2.5	0.219	7.75	17	0.191	0.25		24	30.038	50.715	3.596	3.596	1.921	H1-1b
45	59	PIPE_2.0	0.469	5.5	24	0.129	5.5		23	14.916	32.13	1.872	1.872	2.843	H1-1b
46	62	PIPE_2.0	0.41	5.5	17	0.184	5.5		18	14.916	32.13	1.872	1.872	3	H1-1b
47	65	PIPE_2.0	0.418	5.5	23	0.147	5.5		24	14.916	32.13	1.872	1.872	3	H1-1b
48	66	PIPE_2.5	0.297	7.75	21	0.195	7.75		15	30.038	50.715	3.596	3.596	1.975	H1-1b
49	69	PIPE_2.0	0.542	5.5	15	0.165	5.5		15	14.916	32.13	1.872	1.872	3	H1-1b
50	72	PIPE_2.0	0.539	5.5	21	0.217	5.5		21	14.916	32.13	1.872	1.872	3	H1-1b
51	75	PIPE_2.0	0.526	5.5	15	0.137	5.5		16	14.916	32.13	1.872	1.872	2.559	H1-1b
52	76	PIPE_2.5	0.304	7.75	25	0.245	0.25		20	30.038	50.715	3.596	3.596	1.976	H1-1b
53	79	PIPE_2.0	0.63	5.5	20	0.186	5.5		19	14.916	32.13	1.872	1.872	3	H1-1b
54	82	PIPE_2.0	0.54	5.5	25	0.248	5.5		14	14.916	32.13	1.872	1.872	3	H1-1b
55	85	PIPE_2.0	0.562	5.5	19	0.184	5.5		20	14.916	32.13	1.872	1.872	3	H1-1b
56	86	PL3/8"x6	0.344	0.417	16	0.026	0.417	y	39	65.031	72.9	0.57	9.113	2.56	H1-1b
57	87	PL3/8"x6	0.452	0.167	17	0.018	0.167	y	47	69.866	72.9	0.57	9.113	1.469	H1-1b
58	88	PL3/8"x6	0.46	0.273	20	0.035	0.417	y	38	65.031	72.9	0.57	9.113	2.434	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
59	89	PL3/8"x6	0.422	0.167	18	0.018	0.167	y	45	69.866	72.9	0.57	9.113	1.592	H1-1b
60	92	PL3/8"x6	0.474	0.417	20	0.026	0.417	y	43	65.031	72.9	0.57	9.113	2.455	H1-1b
61	93	PL3/8"x6	0.599	0.167	21	0.018	0.167	y	39	69.866	72.9	0.57	9.113	1.415	H1-1b
62	94	PL3/8"x6	0.338	0.273	24	0.034	0.417	y	42	65.031	72.9	0.57	9.113	3	H1-1b
63	95	PL3/8"x6	0.407	0.167	21	0.022	0	z	14	69.866	72.9	0.57	9.113	1.453	H1-1b
64	98	PL3/8"x6	0.424	0.417	25	0.026	0.417	y	47	65.031	72.9	0.57	9.113	3	H1-1b
65	99	PL3/8"x6	0.608	0.167	25	0.02	0	z	20	69.866	72.9	0.57	9.113	1.447	H1-1b
66	100	PL3/8"x6	0.419	0.417	14	0.035	0.417	y	45	65.031	72.9	0.57	9.113	2.293	H1-1b
67	101	PL3/8"x6	0.516	0.167	14	0.018	0.167	y	49	69.866	72.9	0.57	9.113	1.689	H1-1b
68	104	L2.5x2.5x3	0.256	0	15	0.051	0	z	21	15.536	29.192	0.873	1.822	1.5	H2-1
69	105	L2.5x2.5x3	0.327	0	20	0.052	4.375	z	14	15.536	29.192	0.873	1.822	1.5	H2-1
70	106	L2.5x2.5x3	0.243	0	24	0.05	4.375	z	76	15.536	29.192	0.873	1.822	1.5	H2-1
71	107	HSS4X4X4	0.411	0	19	0.176	0	y	80	137.398	139.518	16.181	16.181	1.289	H1-1b
72	108	HSS4X4X4	0.431	0	21	0.174	0	y	85	137.398	139.518	16.181	16.181	1.283	H1-1b

EXHIBIT 10

Construction Drawings

DISH WIRELESS, LLC. SITE ID:

BOBDL00136A

DISH WIRELESS, LLC. SITE ADDRESS:

393 JACKSON HILL ROAD
MIDDLEFIELD, CT 06455

CONNECTICUT CODE COMPLIANCE

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

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

SHEET INDEX

SCOPE OF WORK

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

TOWER SCOPE OF WORK:
- REMOVE (1) EMPTY LOW PROFILE PLATFORM (98'-0" AGL)
- INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR)
- INSTALL (1) PROPOSED TOWER PLATFORM MOUNT
- INSTALL PROPOSED JUMPERS
- INSTALL (6) PROPOSED RRUs (2 PER SECTOR)
- INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP)
- INSTALL (1) PROPOSED HYBRID CABLE

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

SITE PHOTO

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

CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

811

GENERAL NOTES

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

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

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

SITE INFORMATION

PROPERTY OWNER:	TOWN OF MIDDLEFIELD
ADDRESS:	393 JACKSON ROAD MIDDLEFIELD, CT 06455
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	CT46135-A
TOWER APP NUMBER:	153561
COUNTY:	MIDDLESEX
LATITUDE (NAD 83):	41° 31' 2.54" N 41.51737156 N
LONGITUDE (NAD 83):	72° 42' 51.04" W 72.71417778 W
ZONING JURISDICTION:	TOWN OF MIDDLEFIELD
ZONING DISTRICT:	HD2
PARCEL NUMBER:	11/242
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	V-B
POWER COMPANY:	UNITED ILLUMINATING CO
FIBER COMPANY:	T.B.D.

PROJECT DIRECTORY

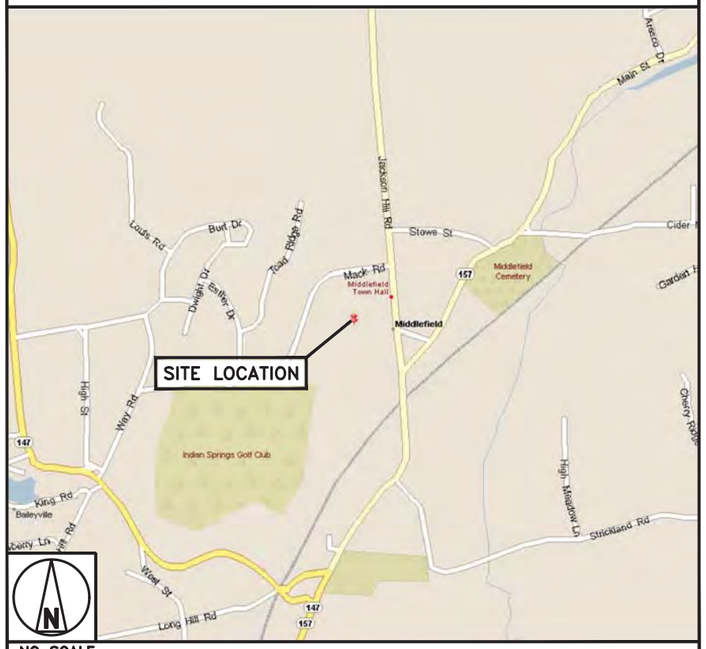
APPLICANT:	DISH WIRELESS, LLC. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	SBA COMMUNICATAIONS CORP. 8051 CONGRESS AVENUE BOCA RATON, FL 33487 (800) 487-7483
SITE DESIGNER:	B+T GROUP 1717 S. BOULDER AVE, SUITE 300 TULSA, OK 74119 (918) 587-4630
SITE ACQUISITION:	RYAN LYNCH RYAN.LYNCH@DISH.COM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

DIRECTIONS

DIRECTIONS FROM BRADLEY INTERNATIONAL AIRPORT:

DEPART BRADLEY INTERNATIONAL AIRPORT ON TERMINAL RD. ROAD NAME CHANGES TO BRADLEY FIELD CONNECTOR. ROAD NAME CHANGES TO CT-20 [BRADLEY FIELD CONNECTOR]. TAKE RAMP (RIGHT) ONTO I-91 [RICHARD P HORAN MEMORIAL HWY]. AT EXIT 20, TURN RIGHT ONTO RAMP. BEAR LEFT ONTO MIDDLE ST. TURN LEFT ONTO COUNTRY CLUB RD. TURN RIGHT ONTO HIGBY RD. ROAD NAME CHANGES TO JACKSON HILL RD. ARRIVE AT 393 JACKSON HILL RD, MIDDLEFIELD, CT 06455.

VICINITY MAP



NO SCALE

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

SBA

134 FLANDERS ROAD, SUITE 125
WESTBOROUGH, MA 01581

B+T GRP

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

36778
CHAD E. TUTTLE
REGISTERED
ARIZONA U.S.A.

06/02/21

EXPIRES: 9/30/2022

B&T ENGINEERING, INC.

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

RFDS REV #: 0

PRELIMINARY DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	5/18/21	ISSUED FOR REVIEW
B	5/24/21	ISSUED FOR REVIEW
0	6/2/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149486.001.01

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00136A
393 JACKSON HILL ROAD
MIDDLEFIELD, CT 06455

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1

CT46135-A

Compilation Plan

Map Showing Easement Area To Be Granted To The Connecticut Light and Power Company

Across The Property of

Town of Middlefield

Jackson Hill Road

Middlefield, Connecticut

scale 1" = 40' January 2000
Revised February 2000
CL&P File # E0098

stewart Lawrence Sargent
29592
CT2011 CT0942
Middle-Jackson Hill Rd

Map File 5
#462B

LEGEND

Existing Iron Pin
Existing Concrete Monument
Existing Iron Pipe
Utility Pole
Chain Link Fence

40 0 40 80 120
Scale 1" = 40'

Notes

1) This survey has been prepared in accordance with sections 20-300b-1 through 20-300b-20 of the Regulations of Connecticut State Agencies "Minimum Standards for Surveys and Maps in the State of Connecticut" as endorsed by the Connecticut Association of Land Surveyors, Inc. The type of survey performed is a Compilation Plan. This survey conforms to a Class D horizontal Accuracy and is intended to acquire an easement.
"This plan was compiled from other maps, record research or other sources of information. It is not to be construed as having been obtained as a result of a field survey, and is subject to such change as an accurate survey may dictate."
2) Ref. Dwg.:
"This map was compiled from a map entitled " Resurvey of Town Hall Property, Jackson Hill Road, Middlefield, Connecticut, scale 1" = 20', date 6, September, 1967 by E.A. Rossino, L.S.
3) Easement area conforms to Class A-2 Standards.

Original Inked Drawing From The Office Of S. P. Bertaccini Land Surveyors

To my knowledge and belief, this map is substantially correct as noted hereon.

Samuel P. Bertaccini, Jr.
Samuel P. Bertaccini Jr. RLS # 10383
Litchfield, Connecticut

Received for record in Middlefield CT on May 4 2000 @ 3:23 PM
Recorded by Diana M. Schultz Town Clerk

Jackson Hill Road

SITE SURVEY | NO SCALE | 1

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

SBA

134 FLANDERS ROAD, SUITE 125
WESTBOROUGH, MA 01581

B+T GRP

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

CHAD E. TUTTLE 38778 REGISTERED PROFESSIONAL ENGINEER (Civil) ARIZONA U.S.A.

06/02/21

EXPIRES: 9/30/2022

B&T ENGINEERING, INC.

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

RFDS REV #: 0

PRELIMINARY DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	5/18/21	ISSUED FOR REVIEW
B	5/24/21	ISSUED FOR REVIEW
0	6/2/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149486.001.01

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00136A
393 JACKSON HILL ROAD
MIDDLEFIELD, CT 06455

SHEET TITLE

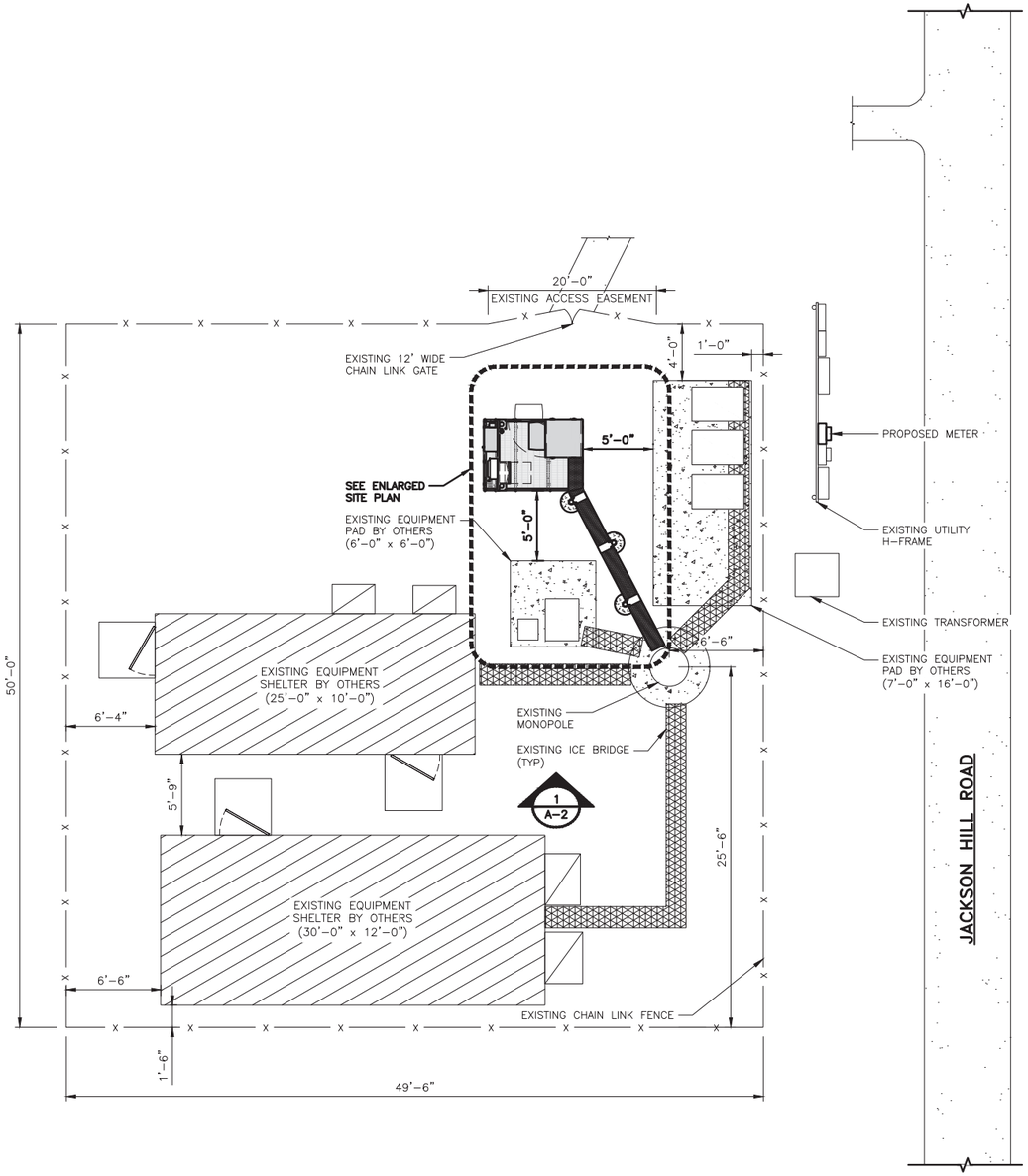
SITE SURVEY

SHEET NUMBER

LS-1

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.

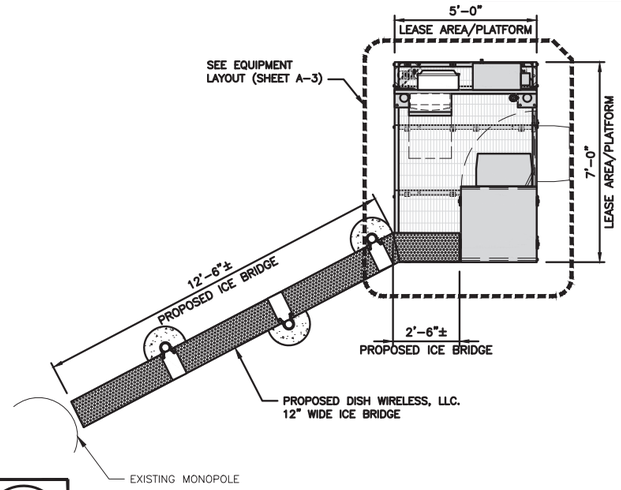


N

OVERALL SITE PLAN — 6' 4' 2' 0 5' 10' — 3/16"=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.



N

ENLARGED SITE PLAN — 12" 6" 0 1' 2' 3' 4' 5' 6' 7' — 3/8"=1'-0" — 2

NOT USED — 3

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

SBA
134 FLANDERS ROAD, SUITE 125
WESTBOROUGH, MA 01581

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

06/02/21
EXPIRES: 9/30/2022

B&T ENGINEERING, INC.

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

RFDS REV #: 0

PRELIMINARY DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	5/18/21	ISSUED FOR REVIEW
B	5/24/21	ISSUED FOR REVIEW
0	6/2/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149486.001.01

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00136A
393 JACKSON HILL ROAD
MIDDLEFIELD, CT 06455

SHEET TITLE

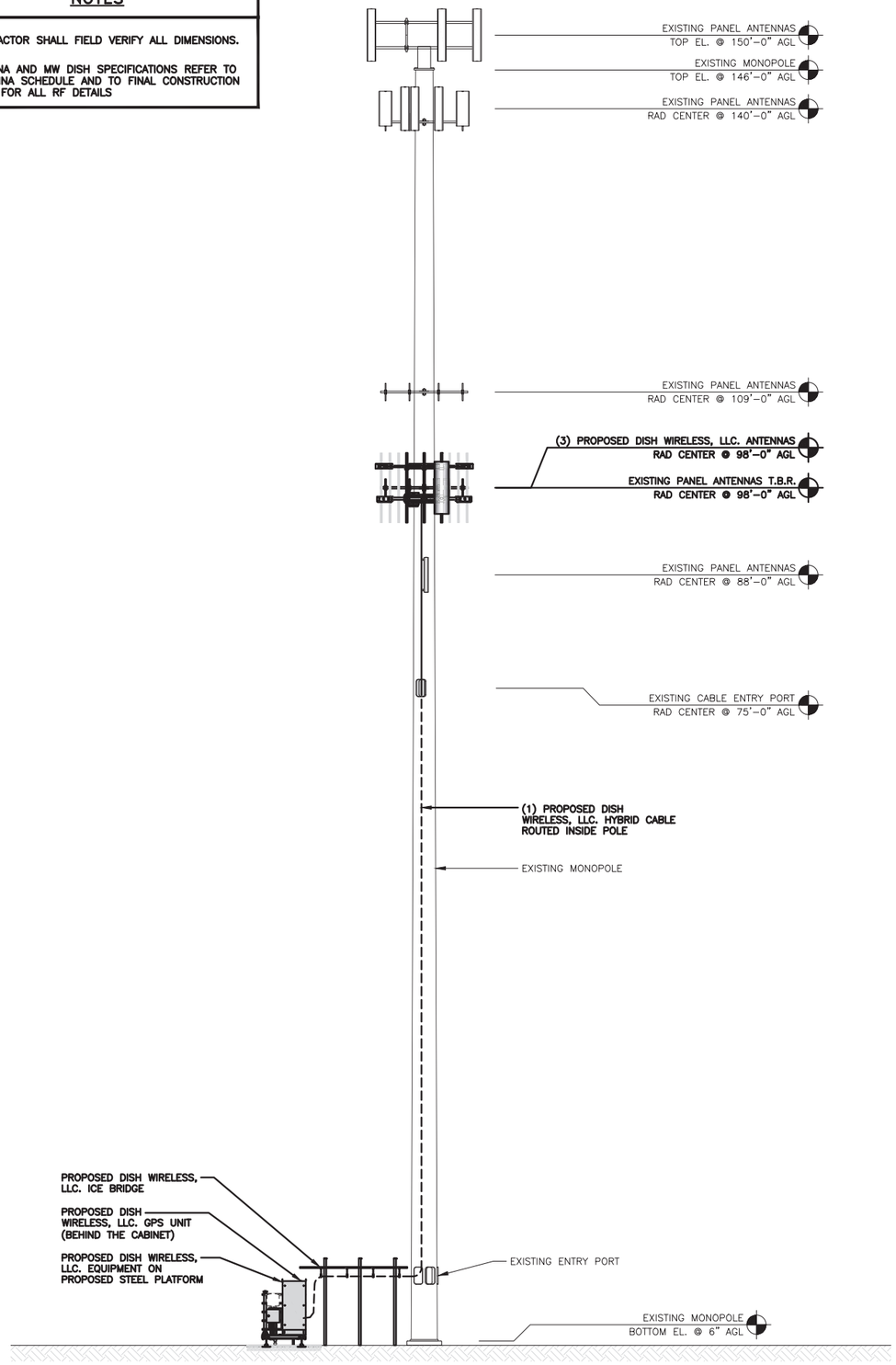
OVERALL AND ENLARGED SITE PLAN

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



PROPOSED SOUTH ELEVATION

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

1

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 (140' LONG)
BETA	B1	PROPOSED	JMA WIRELESS MX08FRO665-21	5G	72.0" x 20.0"	120°	98'-0"	
GAMMA	C1	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-B604	5G
	A1	FUJITSU TA08025-B605	5G
BETA	B1	FUJITSU TA08025-B604	5G
	B1	FUJITSU TA08025-B605	5G
GAMMA	C1	FUJITSU TA08025-B604	5G
	C1	FUJITSU TA08025-B605	5G

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

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5701 SOUTH SANTA FE DRIVE
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06/02/21
EXPIRES: 9/30/2022

B&T ENGINEERING, INC.

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

RFDS REV #: 0

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A&E PROJECT NUMBER

149486.001.01

DISH WIRELESS, LLC.
PROJECT INFORMATION

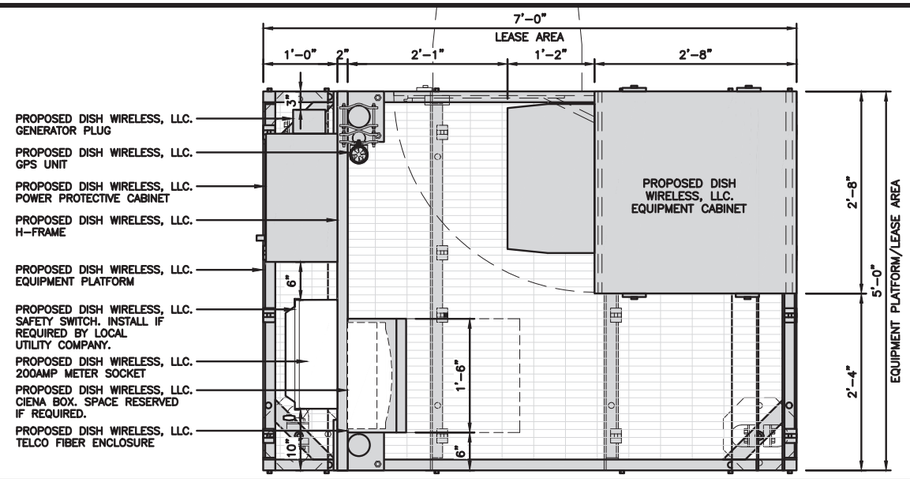
BOBDL00136A
393 JACKSON HILL ROAD
MIDDLEFIELD, CT 06455

SHEET TITLE

ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER

A-2

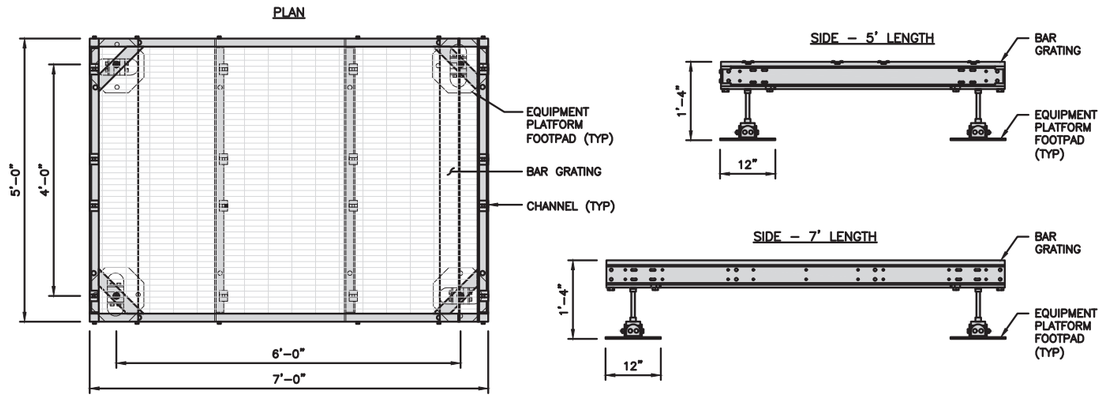


PLATFORM EQUIPMENT PLAN

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

1

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

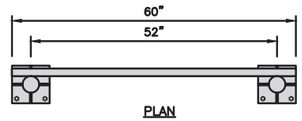


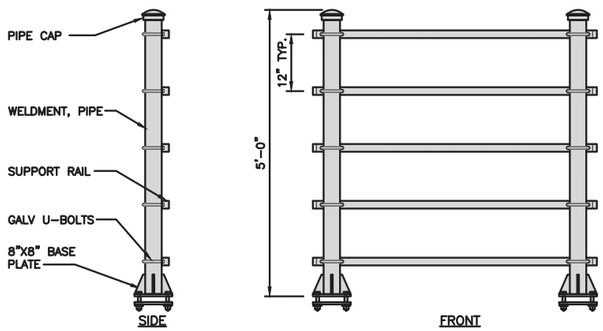
PLATFORM DETAIL

NO SCALE

2

KENWOOD T1701KT5-5S H-FRAME	
UNISTRUT/SUPPORT RAIL	5
WEIGHT/ VOLUME	173.6 LBS





H-FRAME DETAIL

NO SCALE

3

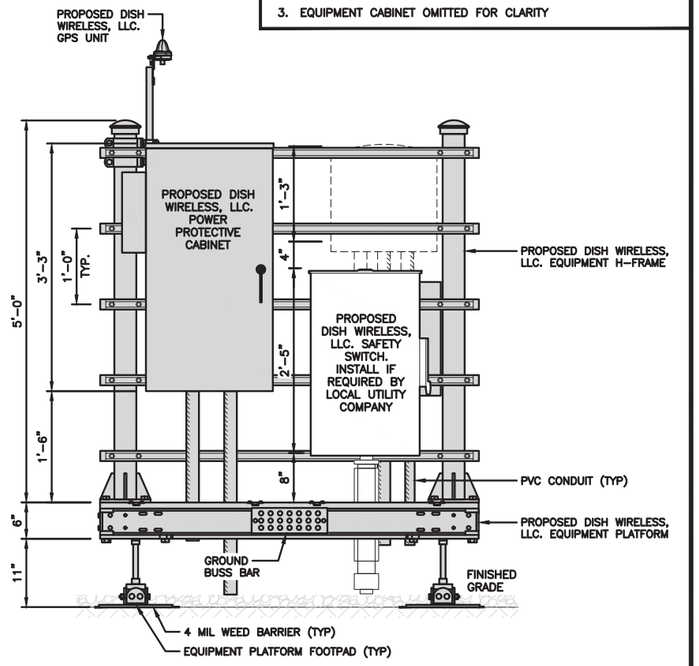
NOT USED

NO SCALE

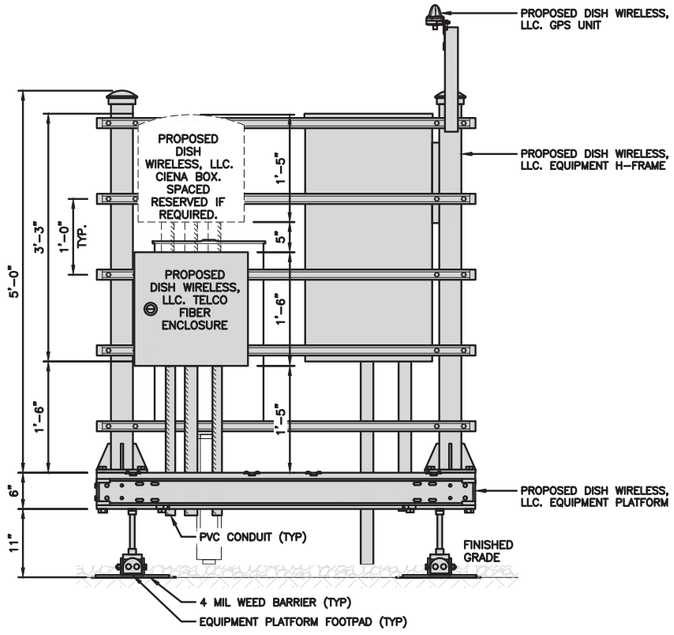
4

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, LLC. 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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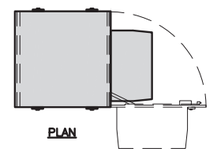
DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBDL00136A
393 JACKSON HILL ROAD
MIDDLEFIELD, CT 06455

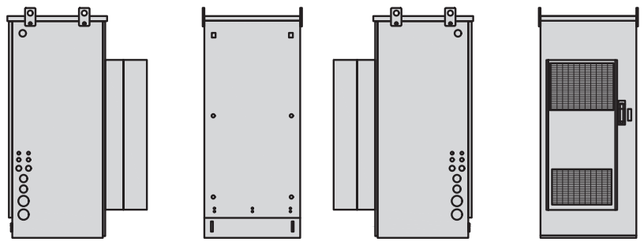
SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

SHEET NUMBER
A-3

CHARLES INDUSTRY HEX CUBE–PM639155N4

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

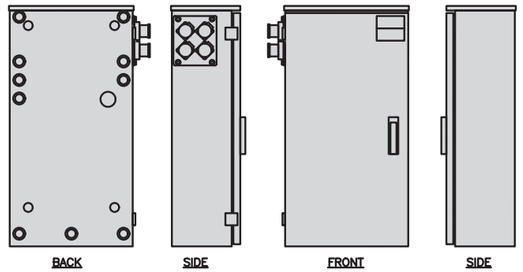




CABINET DETAIL | NO SCALE | 1

RAYCAP PPC RDIAC–2465–P–240–MTS

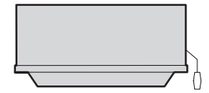
ENCLOSURE DIMENSIONS (HxWxD):	39"x22.855"x12.593
WEIGHT:	80 lbs
OPERATING AC VOLTAGE	240/120 1 PHASE 3W+G

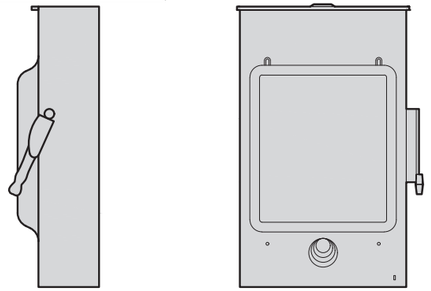


POWER PROTECTION CABINET (PPC) DETAIL | NO SCALE | 2

SQUARE D SAFETY SWITCHES D224NRB

ENCLOSURE DIM (HxWxD)	29.25"x19.00"x8.50"
ENCLOSURE TYPE	NEMA 3R RAINPROOF
UL LISTED	FILE E–2875



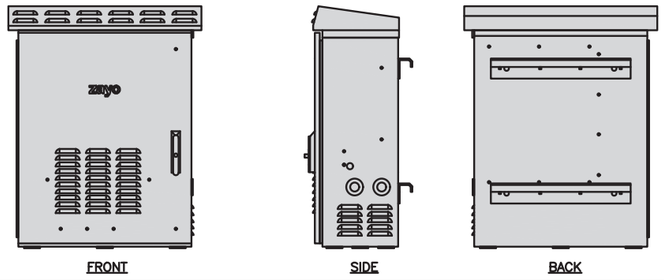


SAFETY SWITCH DETAIL | NO SCALE | 3

NOT USED | NO SCALE | 4

ZAYO 5RU CABINET LEFT SWING DOOR ("LIT" SITES)

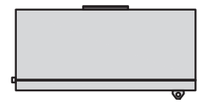
DIMENSIONS (HxWxD)	36.115"x29"x12.9"
WEIGHT	85 LBS
POWER INPUT	20A, –48VDC

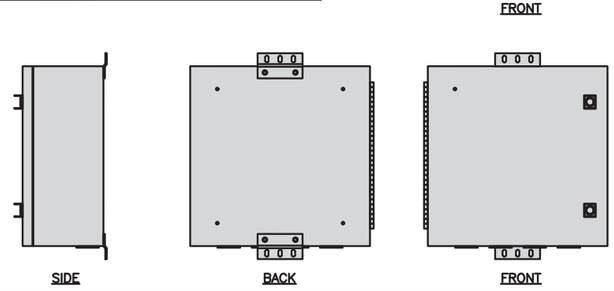


NETWORK INTERFACE UNIT DETAIL | NO SCALE | 5

CHARLES CFIT–PF2020DSH1 FIBER TELCO ENCLOSURE

ENCLOSURE DIMS (HxWxD)	20"x20"x9"
ENCLOSURE WEIGHT	20 lbs
MOUNTING	WALL
COMPLIANCE	TYPE 4



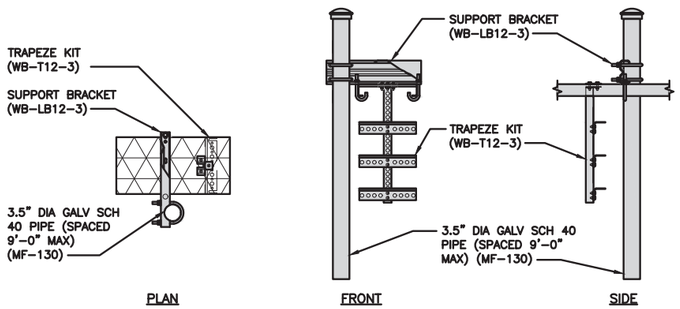


FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

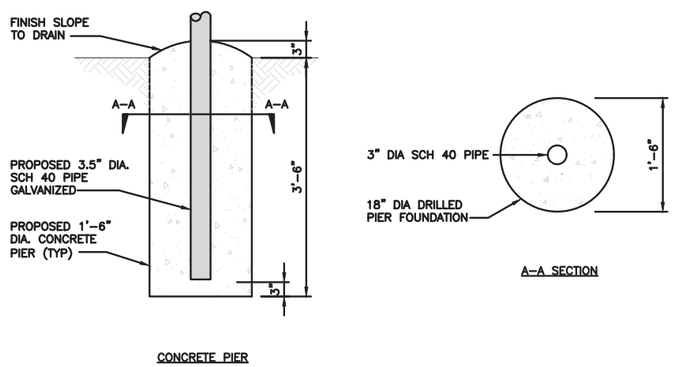
COMMSCOPE WB–K110–B WAVEGUIDE BRIDGE KIT

DIMENSIONS (HxL)	160"x10'
WEIGHT/ VOLUME	325.0 LBS
CABLE RUN (QTY)	12

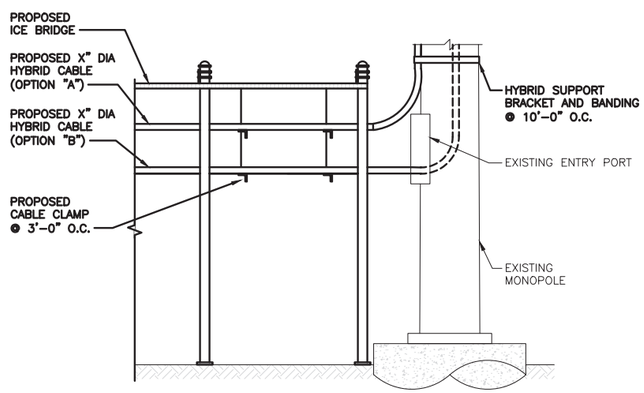
INCLUDED PRODUCTS:
- WB–T12–3 TRAPEZE KIT, 3 RUNGS
- WB–LB12–3 SUPPORT BRACKET
- MF–130 DIRECT BURIAL PIPE COLUMN, 13'–4"



ICE BRIDGE DETAIL | NO SCALE | 7



TYPICAL ICE BRIDGE CONCRETE PIER DETAIL | NO SCALE | 8



HYBRID CABLE RUN | NO SCALE | 9

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MIDDLEFIELD, CT 06455

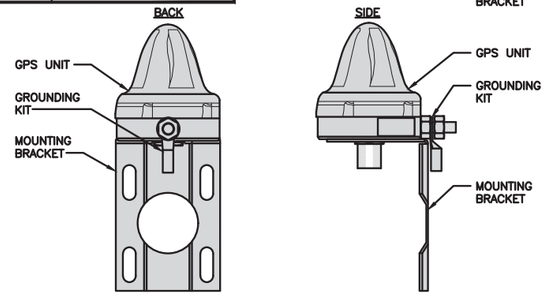
SHEET TITLE

EQUIPMENT DETAILS

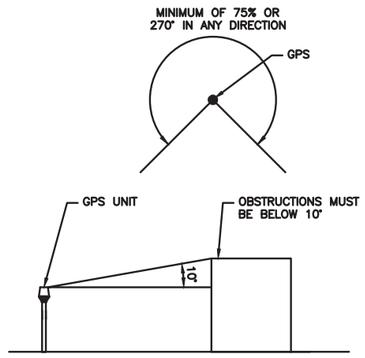
SHEET NUMBER

A-4

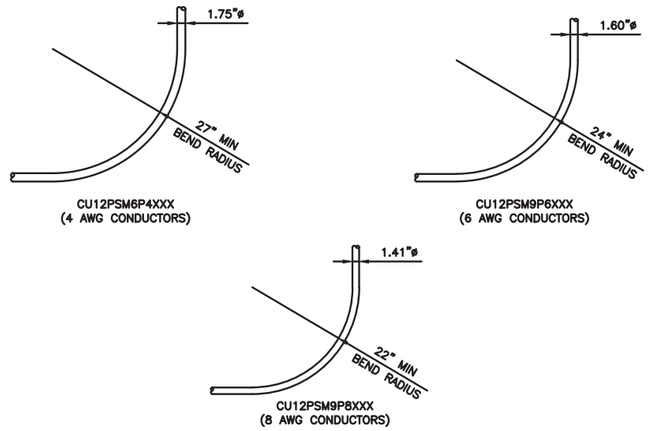
ROSENBERGER GPSGLONASS-36-N-S	
DIMENSION (DIA x H)	69mm x 98.5mm
WEIGHT (WITH ACCESSORIES)	515.74g
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1559 MHz ~ 1610.5MHz



GPS ANTENNA 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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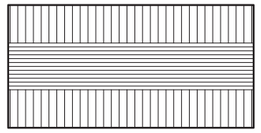
SHEET TITLE

EQUIPMENT DETAILS

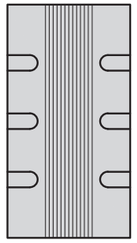
SHEET NUMBER

A-5

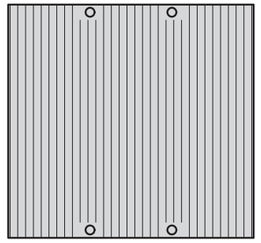
FUJITSU TA08025-B604 RRH	
DIMENSIONS (HxWxD) (KG/IN)	380x400x200/14.9"x15.7"x7.8"
WEIGHT(KG,LB)/ VOLUME	29kg,63.9lb/ 30L
POWER SUPPLY	DC-58~-36V



PLAN



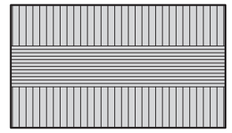
SIDE



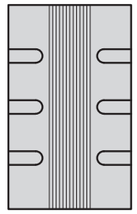
FRONT

REMOTE RADIO HEAD DETAIL | NO SCALE | 1

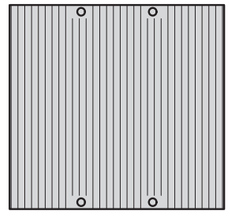
FUJITSU TA08025-B605 RRH	
DIMENSIONS (HxWxD) (KG/IN)	380x400x230/14.9"x15.7"x9.0"
WEIGHT(KG,LB)/ VOLUME	34kg,74.9lb/ 35L
POWER SUPPLY	DC-58~-36V



PLAN



SIDE

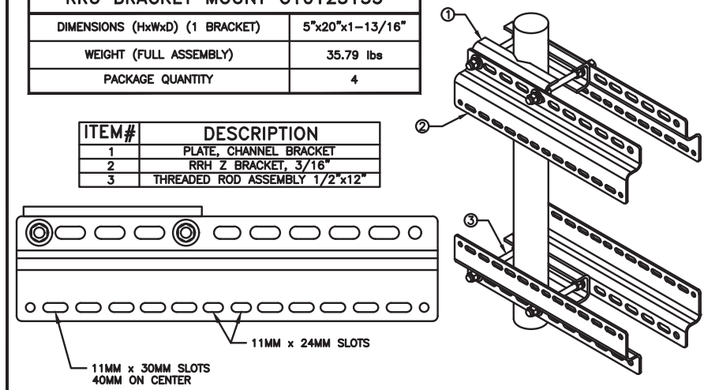


FRONT

REMOTE RADIO HEAD DETAIL | NO SCALE | 2

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

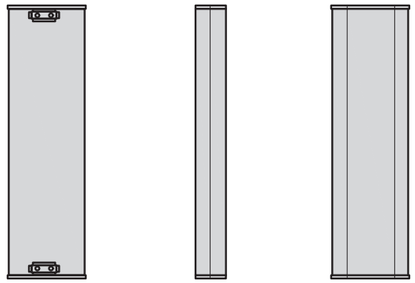
ITEM#	DESCRIPTION
1	PLATE, CHANNEL BRACKET
2	RRH Z BRACKET, 3/16"
3	THREADED ROD ASSEMBLY 1/2"x12"



REMOTE RADIO MOUNT DETAIL | NO SCALE | 3

JMA WIRELESS MX08FRO665-21 ANTENNA	
DIMENSIONS (HxWxD)	72.0"x20.0"x8.0"
TOTAL WEIGHT	64.5 LB
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE

PLAN

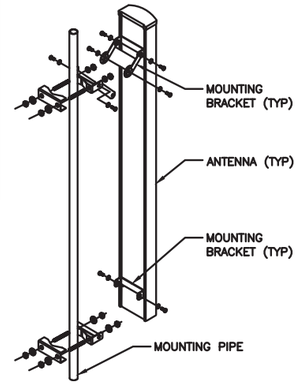


BACK SIDE FRONT

ANTENNA DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

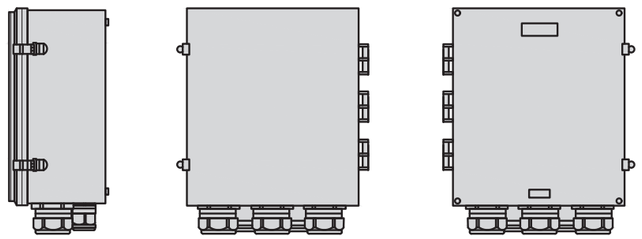
M04 MOUNTING BRACKET HPA-33R-BUU-H4-K	
WIDTH	5" (135mm)
DEPTH	2" (51mm)
HEIGHT	8" (213mm)
TOTAL WEIGHT (WITH BRACKETS)	1.5 LBS (15.50 Kg)
HOUSING MATERIAL	ASA/ABS/ALUMINUM
RADOME COLOR	LIGHT GRAY
CONNECTOR	1X8-PIN DAISY CHAIN



ANTENNA MOUNTING 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

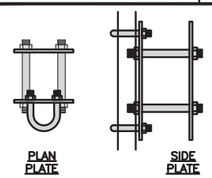
PLAN



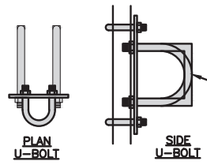
SIDE BACK FRONT

SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 7

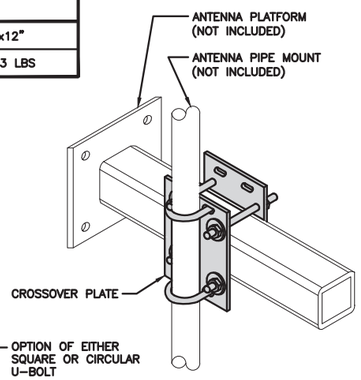
COMMSCOPE XP-2040 CROSSOVER PLATE	
DIMENSIONS (HxW)	10"x12"
WEIGHT	11.023 LBS



PLAN PLATE SIDE PLATE

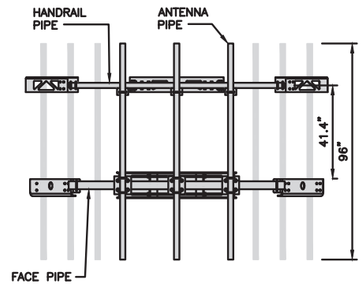


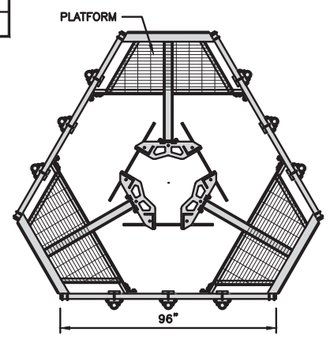
PLAN U-BOLT SIDE U-BOLT



RRH/OVP MOUNT DETAIL | NO SCALE | 8

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





ANTENNA PLATFORM DETAIL | NO SCALE | 9

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A&E PROJECT NUMBER

149486.001.01

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00136A
393 JACKSON HILL ROAD
MIDDLEFIELD, CT 06455

SHEET TITLE

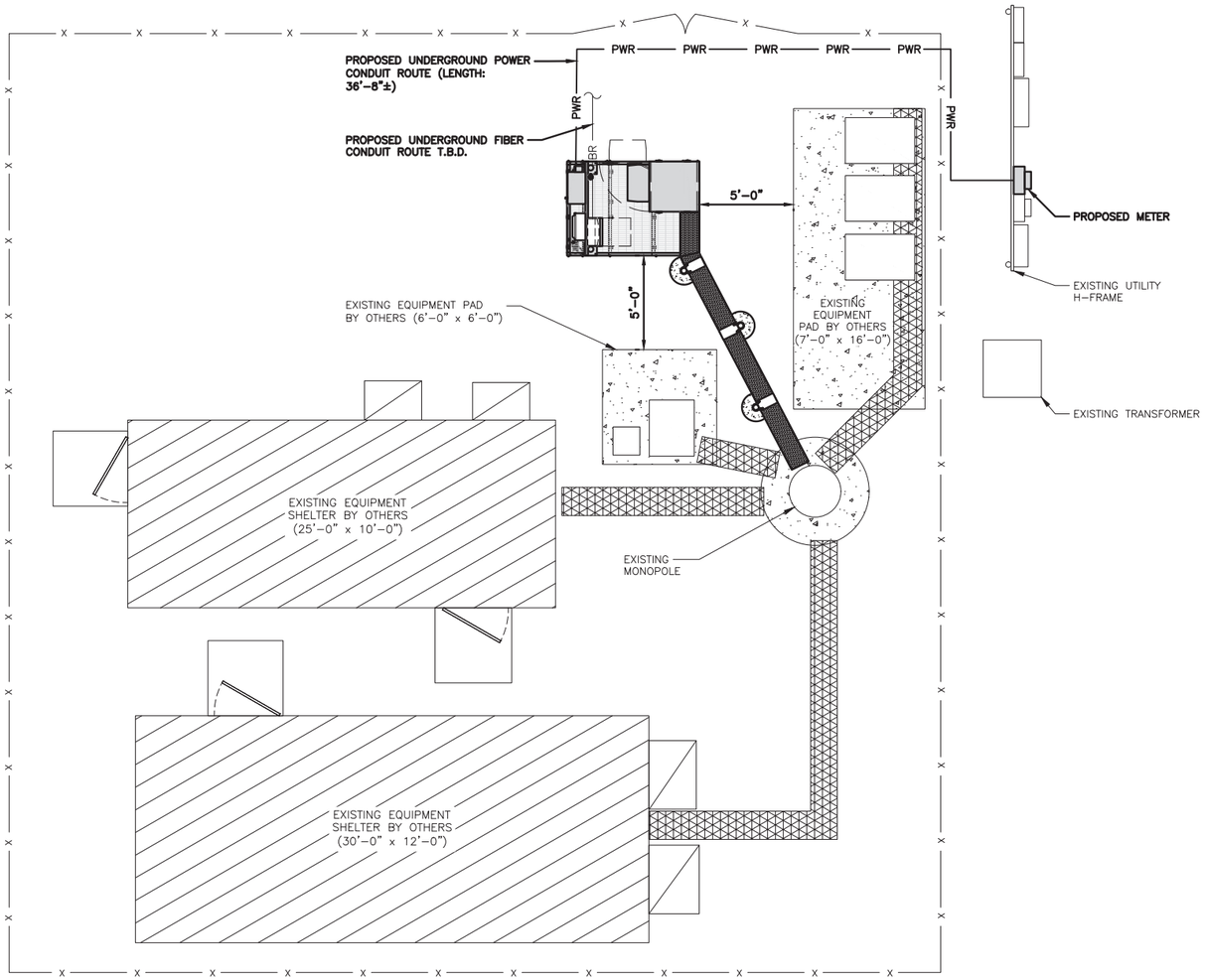
EQUIPMENT DETAILS

SHEET NUMBER

A-6

NOTES

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



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

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

UTILITY ROUTE PLAN

4' 2' 0 4' 8'
1/4"=1'-0"

1

ELECTRICAL NOTES

NO SCALE

2

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SHEET TITLE

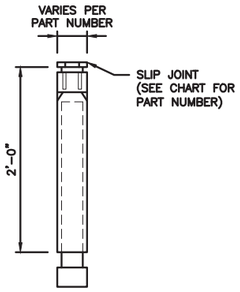
ELECTRICAL/FIBER ROUTE PLAN AND NOTES

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"

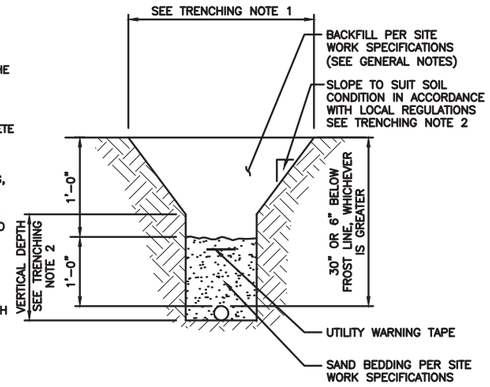


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

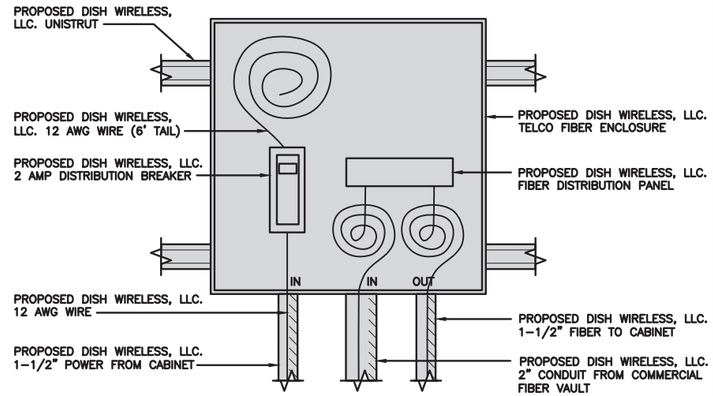
EXPANSION JOINT DETAIL | NO SCALE | 1

TRENCHING NOTES

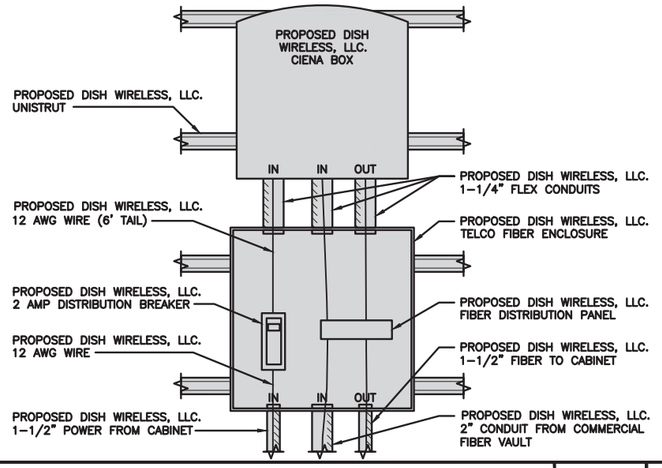
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT 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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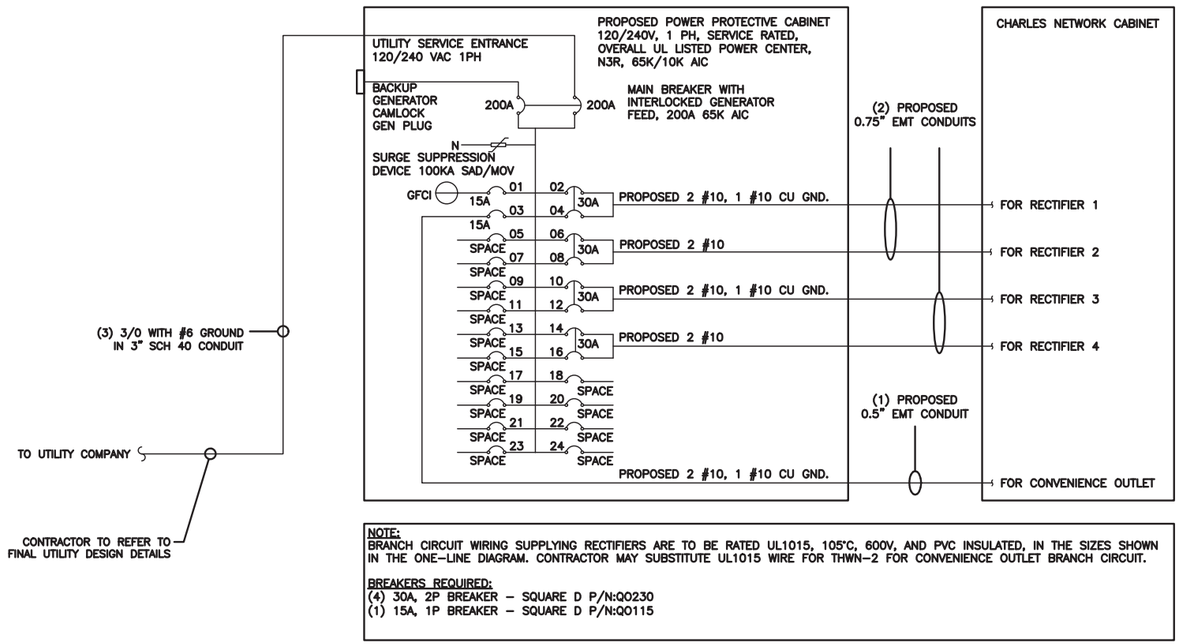
MIDDLEFIELD, CT 06455

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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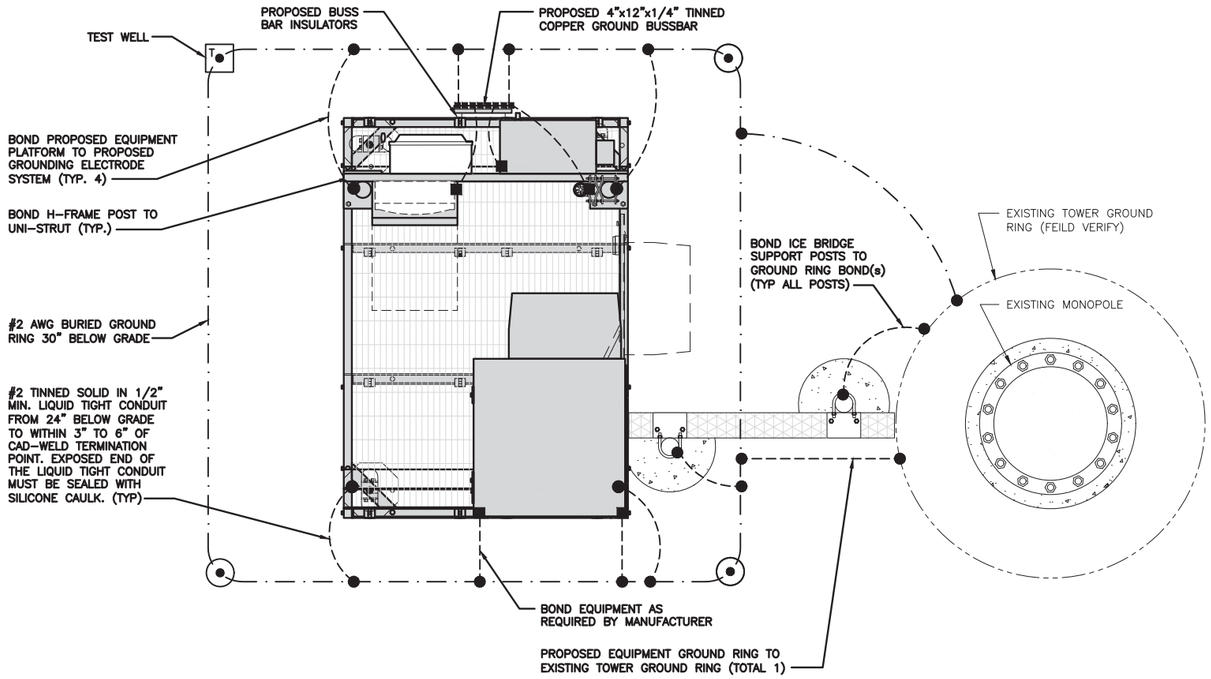
MIDDLEFIELD, CT 06455

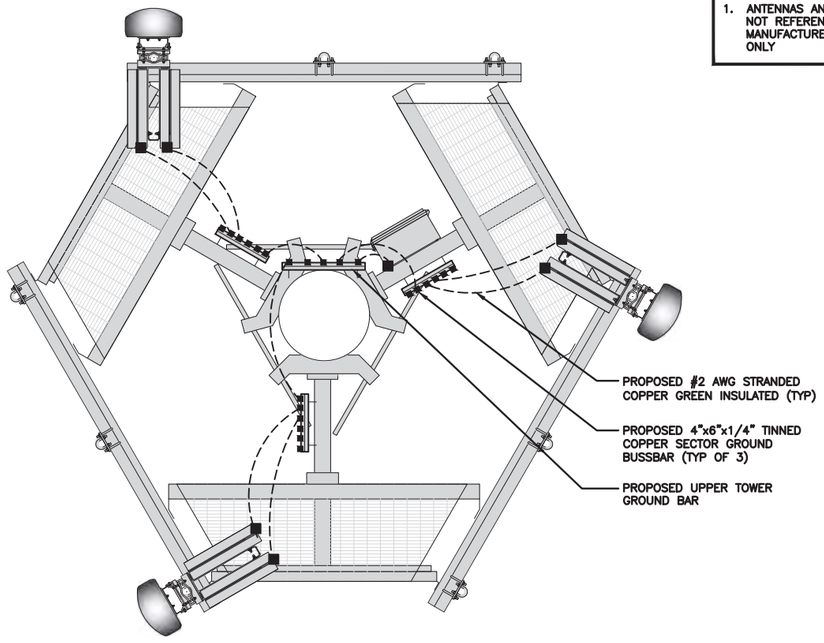
SHEET TITLE
ELECTRICAL ONE–LINE, FAULT CALCS & PANEL SCHEDULE

SHEET NUMBER
E-3



TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE | 1



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE | 2

NOTES

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

- EXOTHERMIC CONNECTION
- MECHANICAL CONNECTION
- GROUND BUS BAR
- GROUND ROD
- 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, LLC. 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.

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

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

(L) **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.

(M) **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.

(N) **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

(P) **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.

(Q) 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

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

REFER TO DISH WIRELESS, LLC. GROUNDING NOTES.

GROUNDING KEY NOTES

NO SCALE | 3

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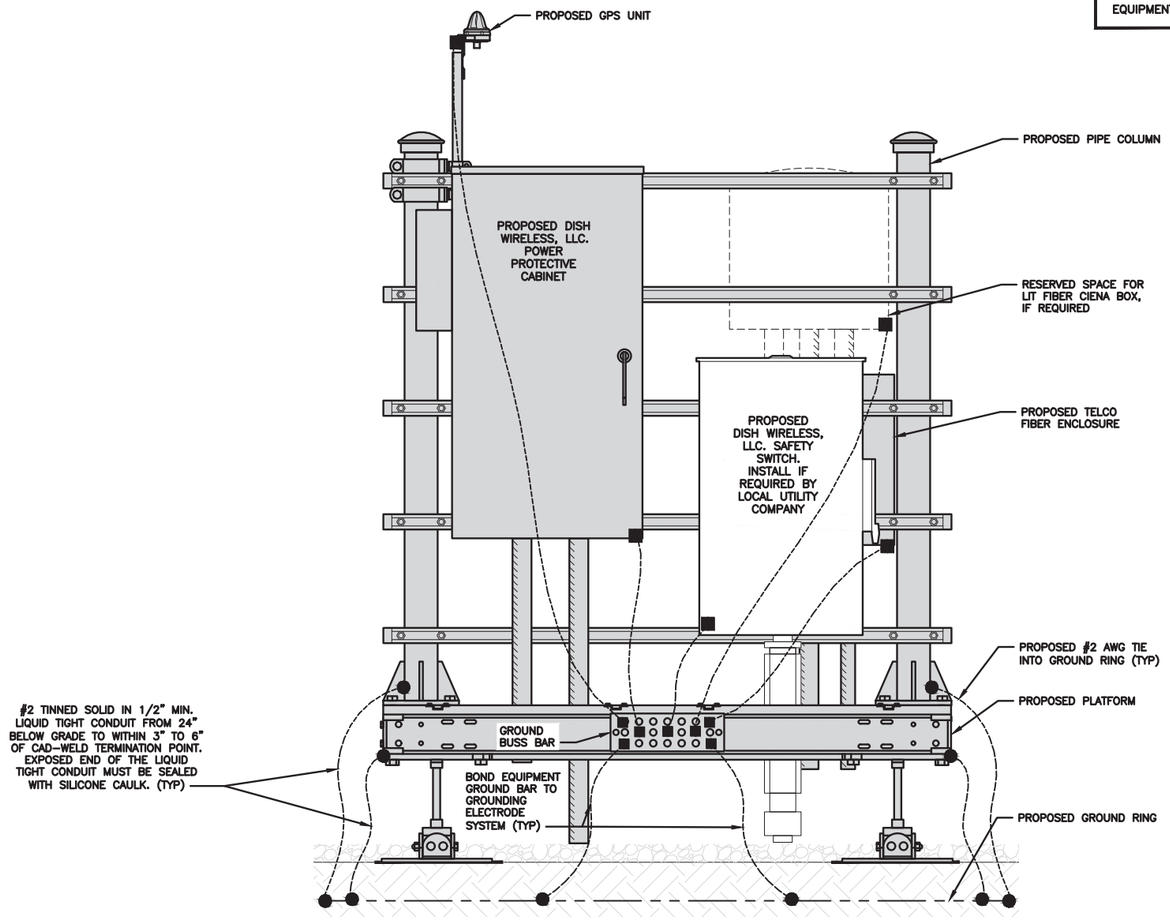
SHEET TITLE
GROUNDING PLANS AND NOTES

SHEET NUMBER
G-1

NOTES

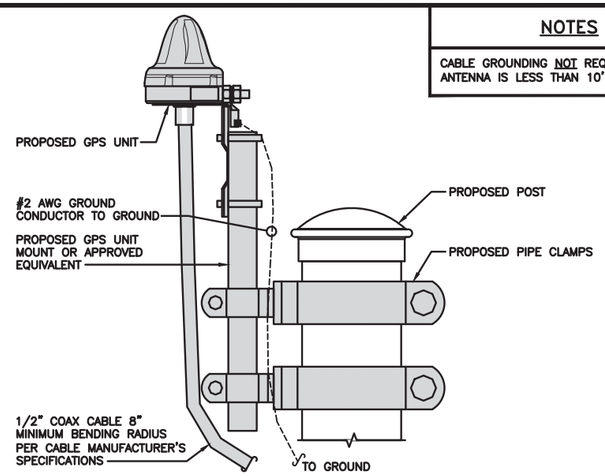
EQUIPMENT CABINET OMITTED FOR CLARITY



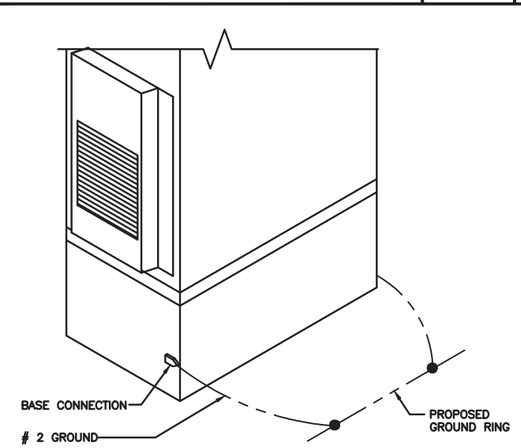
H-FRAME GROUNDING DETAIL | NO SCALE | 1

NOTES

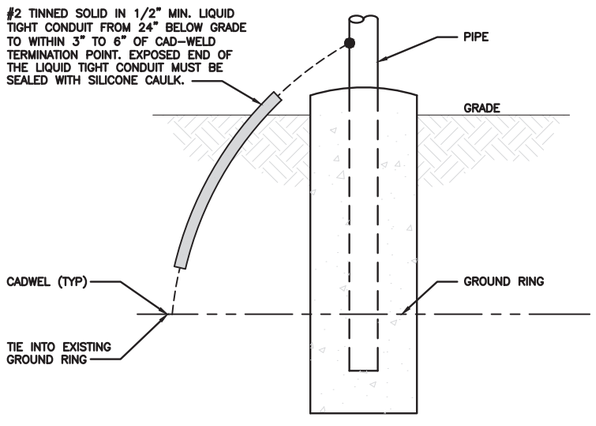
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET



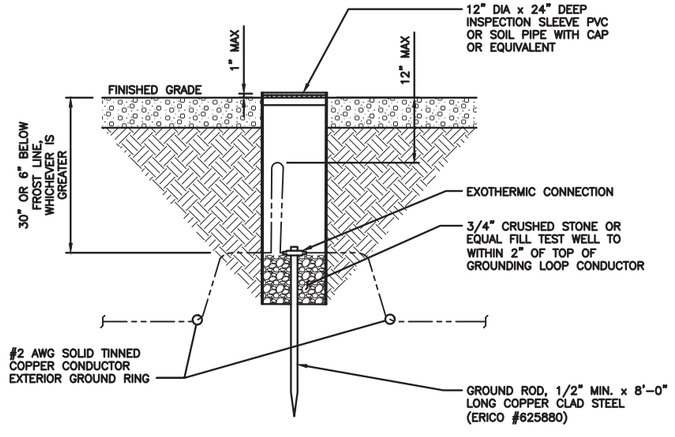
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



OUTDOOR CABINET GROUNDING | NO SCALE | 3



TRANSITIONING GROUND DETAIL | NO SCALE | 4



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

NOT USED | NO SCALE | 6

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06/02/21
EXPIRES: 9/30/2022

B&T ENGINEERING, INC.

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

RFDS REV #: 0

PRELIMINARY DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	5/18/21	ISSUED FOR REVIEW
B	5/24/21	ISSUED FOR REVIEW
0	6/2/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149486.001.01

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00136A
393 JACKSON HILL ROAD
MIDDLEFIELD, CT 06455

SHEET TITLE

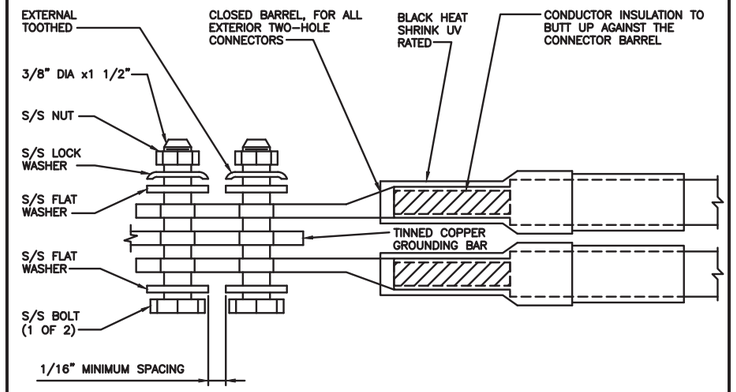
GROUNDING DETAILS

SHEET NUMBER

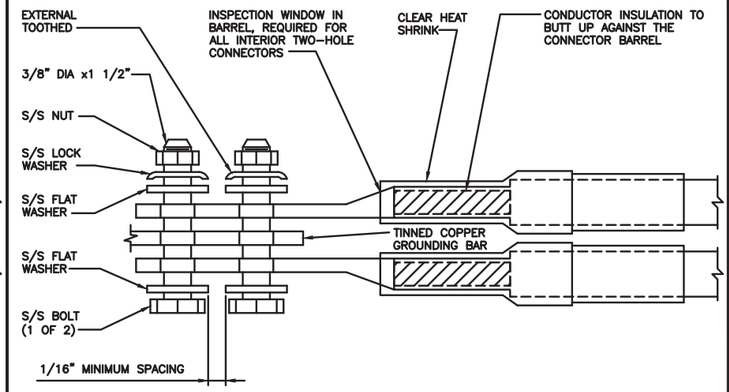
G-2

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.
9. ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).

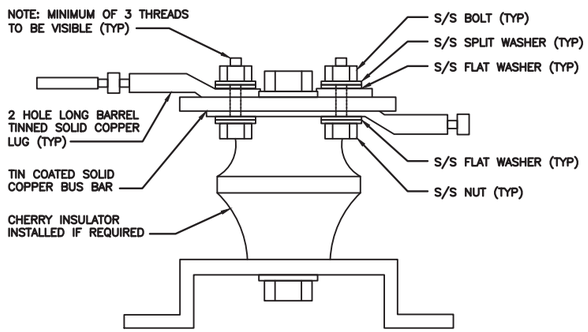
TYPICAL GROUNDING NOTES | NO SCALE | 1



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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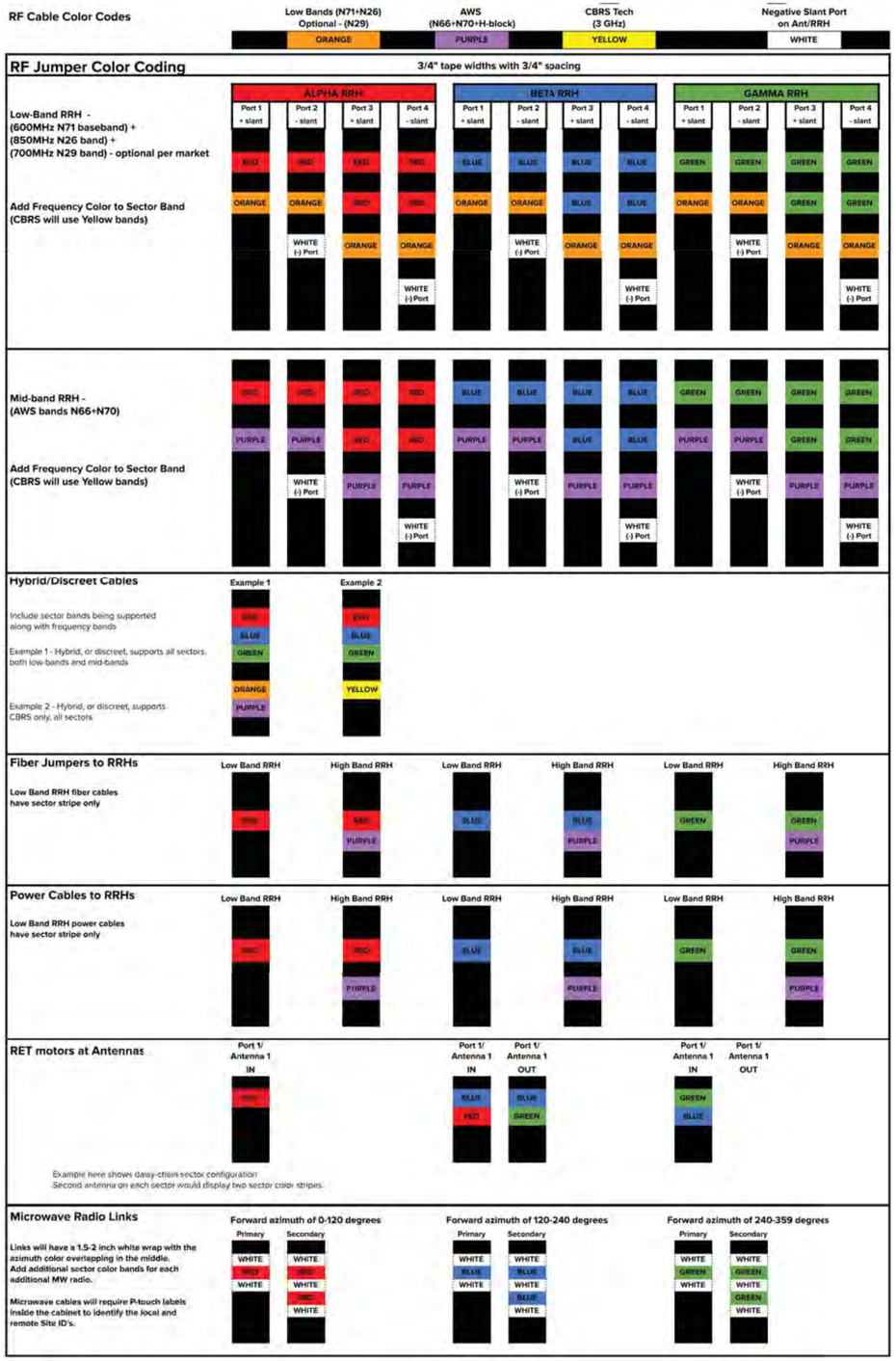
MIDDLEFIELD, CT 06455

SHEET TITLE

GROUNDING DETAILS

SHEET NUMBER

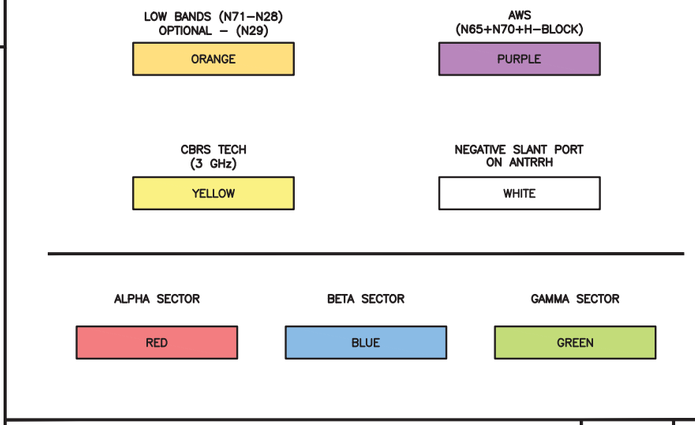
G-3



RF CABLE COLOR CODES | NO SCALE | 1

NOTES

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



COLOR IDENTIFIER | NO SCALE | 2

NOT USED | NO SCALE | 3

NOT USED | NO SCALE | 4

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CHAD E. TUTTLE 38778 REGISTERED PROFESSIONAL ENGINEER (Civil) ARIZONA U.S.A.

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BOBDL00136A
393 JACKSON HILL ROAD
MIDDLEFIELD, CT 06455

SHEET TITLE

RF
CABLE COLOR CODES

SHEET NUMBER

RF-1

NOTES

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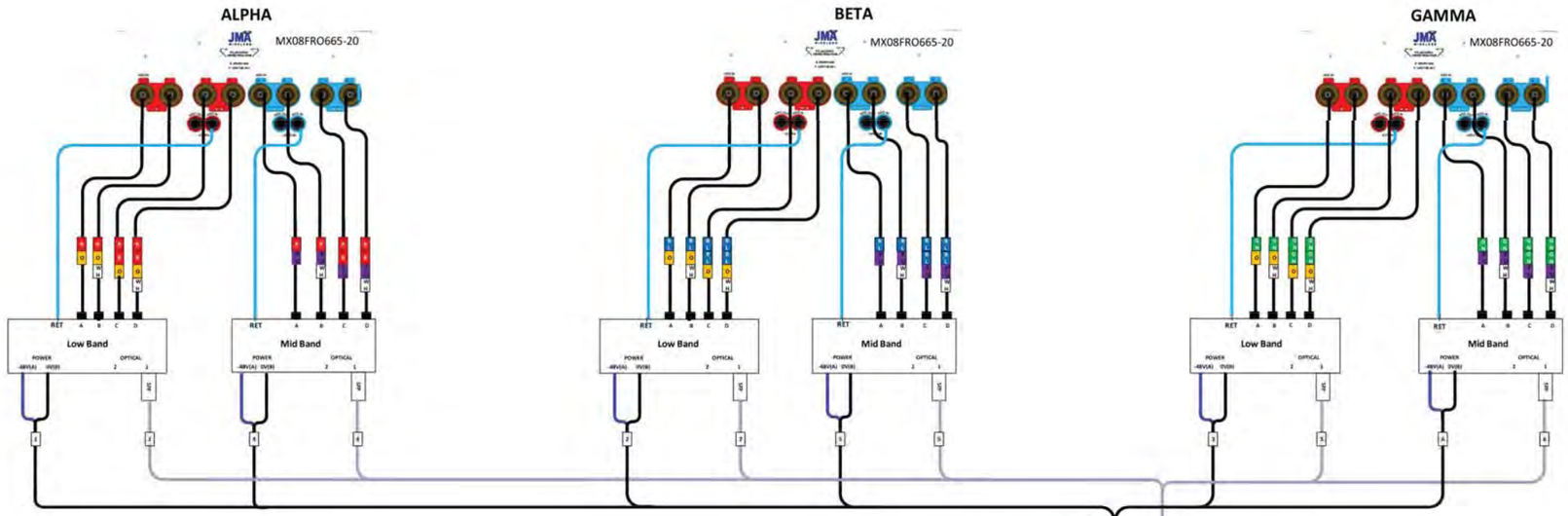
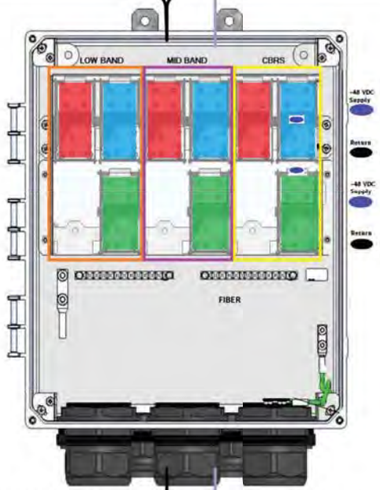


Fiber Patch Panel

Bottom Row	Pair 1	Pair 2	Pair 3	Pair 10	Open	Open
Middle Row	Pair 4	Pair 5	Pair 6	Pair 11	Open	Open
Top Row	Pair 7	Pair 8	Pair 9	Pair 12	Open	Open



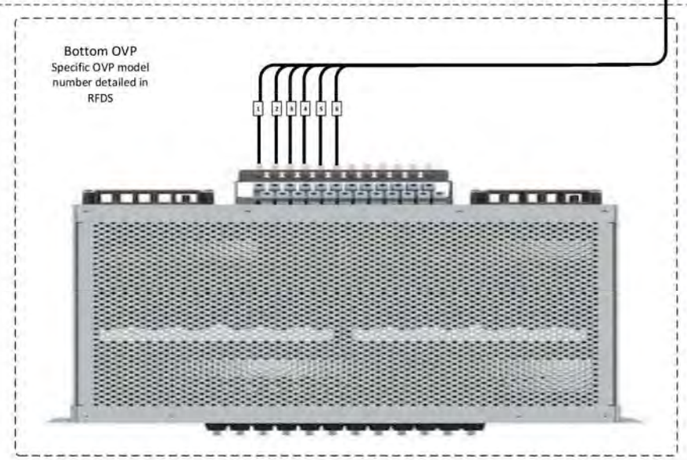
CSR NCS540		
Port	Interface	Description
0	Gi0/0/0/0	SiteBoss
1	Gi0/0/0/1	CBRS - Alpha
2	Gi0/0/0/2	CBRS - Beta
3	Gi0/0/0/3	CBRS - Gamma
4	Te0/0/0/4	Fujitsu Low-Band RU - Alpha
5	Te0/0/0/5	Fujitsu Mid-Band RU - Alpha
6	Te0/0/0/6	Fujitsu Low-Band RU - Beta
7	Te0/0/0/7	Fujitsu Mid-Band RU - Beta
8	Te0/0/0/8	Fujitsu Low-Band RU - Gamma
9	Te0/0/0/9	Fujitsu Mid-Band RU - Gamma
10	Te0/0/0/10	Fixed Wifi
11	Te0/0/0/11	Fixed Wifi
12	Te0/0/0/12	Fixed Wifi
13	Te0/0/0/13	Fixed Wifi
14	Te0/0/0/14	CBRS1
15	Te0/0/0/15	CBRS2
16	Te0/0/0/16	CBRS3
17	Gi0/0/0/17	SM1 - BMC
18	Gi0/0/0/18	SM2 - BMC
19	Te0/0/019	SM1 - Data 1
20	Te0/0/020	SM1 - Data 2
21	Te0/0/021	SM2 - Data 1
22	Te0/0/022	SM2 - Data 2
23	Te0/0/023	Reserved Uplink (EDC, LDC)
24	Te0/0/024	Blank/Future
25	Te0/0/025	Blank/Future
26	Te0/0/026	Fiber NIU
27	Te0/0/027	Fiber NIU
28	Te0/0/028	Blank/Future
29	Te0/0/029	Blank/Future

top

bottom

Bottom OVP Layout

Circuit 1	Alpha Low Band
Circuit 2	Beta Low Band
Circuit 3	Gamma Low Band
Circuit 4	Alpha Mid Band
Circuit 5	Beta Mid Band
Circuit 6	Gamma Mid Band
Circuit 7	Alpha CBRS
Circuit 8	Beta CBRS
Circuit 9	Gamma CBRS
Circuit 10	Open
Circuit 11	Open
Circuit 12	Open



Quan Liu	SIZE	ITEM NO	DWG NO
5- Jan- 2021	SCALE None		SHEET

5G plumbing diagram JMA MX08FRO665-20 2-2-2(LB+MB)

PLUMBING DIAGRAM

NO SCALE

1

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MIDDLEFIELD, CT 06455

SHEET TITLE

RF
PLUMBING DIAGRAM

SHEET NUMBER

RF-2

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

BUSS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE

SINGLE POLE SWITCH

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE

FLUORESCENT LIGHTING FIXTURE
(2) TWO LAMPS 48–T8

SMOKE DETECTION (DC)

EMERGENCY LIGHTING (DC)

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

CHAIN LINK FENCE

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE

UNDERGROUND POWER

UNDERGROUND TELCO

OVERHEAD POWER

OVERHEAD TELCO

UNDERGROUND TELCO/POWER

ABOVE GROUND POWER

ABOVE GROUND TELCO

ABOVE GROUND TELCO/POWER

WORKPOINT

SECTION REFERENCE

DETAIL REFERENCE

LEGEND

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

BOBDL00136A
393 JACKSON HILL ROAD
MIDDLEFIELD, CT 06455

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, LLC. AND TOWER OWNER NOC & THE DISH WIRELESS, LLC. AND TOWER OWNER CONSTRUCTION MANAGER.

2. "LOOK UP" – DISH WIRELESS, LLC. 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, LLC. AND DISH WIRELESS, LLC. 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, LLC. 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, LLC. AND TOWER OWNER INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON DISH WIRELESS, LLC. 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, LLC. 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, LLC. 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, LLC.

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, LLC. 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.

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B&T ENGINEERING, INC.

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RFDS REV #: 0

PRELIMINARY DOCUMENTS

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DISH WIRELESS, LLC.
PROJECT INFORMATION

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393 JACKSON HILL ROAD
MIDDLEFIELD, CT 06455

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, LLC. 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, LLC.".

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

dish wireless.

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149486.001.01

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00136A
393 JACKSON HILL ROAD
MIDDLEFIELD, CT 06455

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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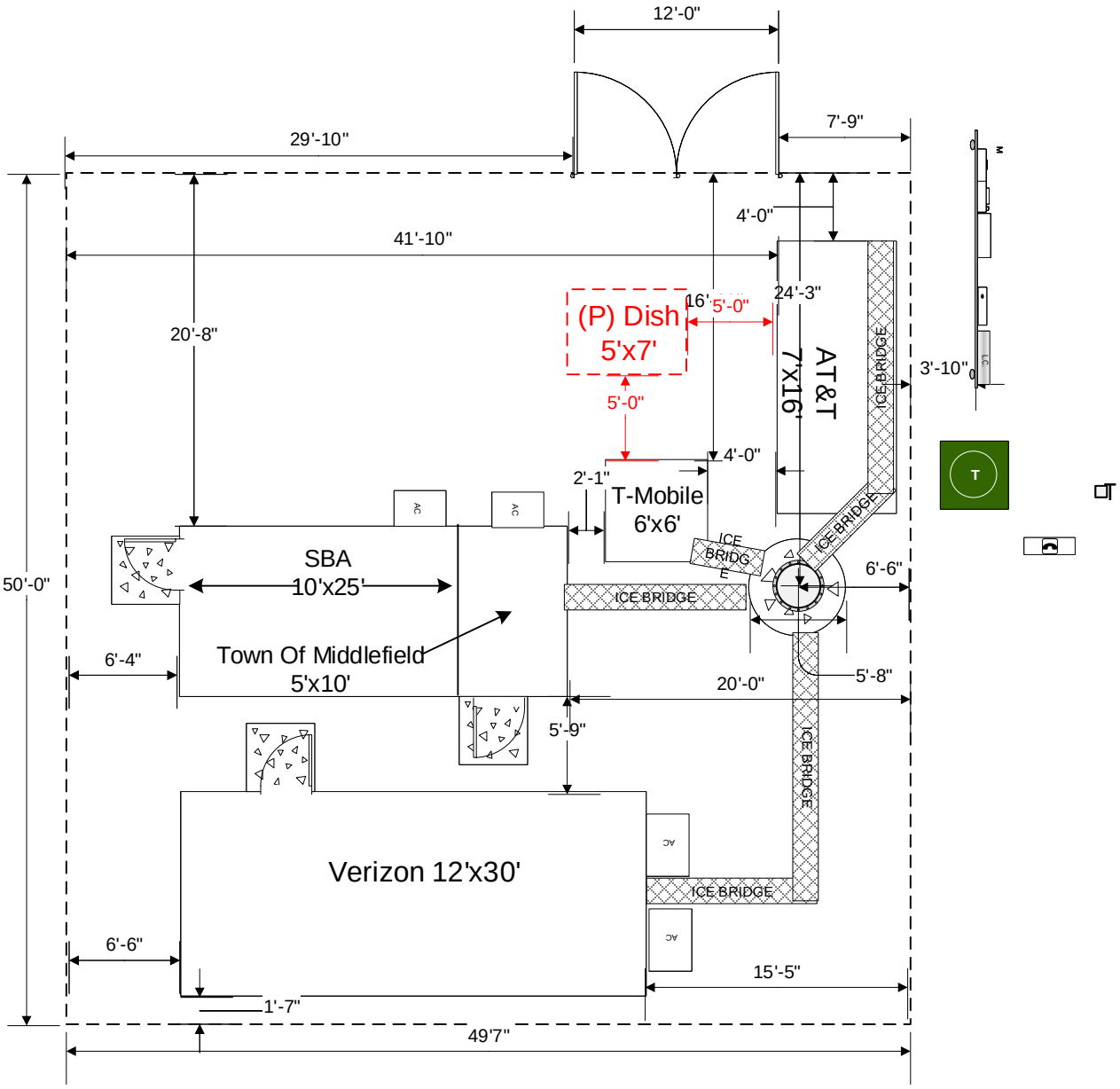
SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-4

EXHIBIT 11



0ft. 6ft. 10ft. 20ft.

SBA Communications	Middlefield-Jackson Hill Road		
	COMPOUND DRAWING		
By: Stephen Roth sroth@sbasite.com	DATE: 2/17/2021	SITE NUMBER: CT46135-A	STATE: CT