



Filed by:
G. Scott Shepherd, Site Development Specialist II - SBA
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Westborough, MA 01581 508.251.0720 x
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September 2, 2021

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

**Application for Tower
Share
229-231 Ashford Center
Ashford, CT 06278
Latitude: 41.880444
Longitude: -72.128499
T-Mobile #: CTNL162B**

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 T-Mobile's Application for Tower Sharing at the existing 176-foot Monopole Tower at 229-231 Ashford Center Rd., Ashford, CT.

- **The new antennas would support 5G services and would be installed at the 157-foot level of the tower.**

Per the requirements under R.C.S.A §16-50j-89 please find the following statements in support of T-Mobile's Application:

1. Facility and Proposed Modifications

A. Existing Facility and Appurtenances

By its Decision and Order dated May 20, 2003, the Connecticut Siting Council granted a Certificate of Environmental Compatibility and Public Need (Certificate) for the construction, maintenance and operation of a wireless telecommunications facility at 229-231 Ashford Center Road, Ashford, Connecticut.

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

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of AT&T Wireless PCS, LLC and

Omnipoint Holdings, Inc. d/b/a T-Mobile and other entities, both public and private, but such tower shall not exceed a height of 180 feet above ground level.

2. Underground utilities shall be installed in the base of the access road.
3. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include:
 - a. a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment building, security fence, access road, utility line, and landscaping; and
 - b. construction plans for site clearing, water drainage, and erosion and sedimentation control consistent with the 2002 Connecticut guideline for soil and Sediment Control, as amended.
4. The Certificate Holder shall, prior to the commencement Of operation, provide the Council worst-case modeling of electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of electromagnetic radio frequency power density is submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.
5. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.
6. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
7. If the facility does not initially provide wireless services within one year of completion of construction or ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made..
8. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and ceases to function.
9. Unless otherwise approved by the Council, this Decision and Order shall be void if the facility authorized herein is not operational within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved.
 - Latitude / Longitude: 41.880444/**-72.128499**
 - Height of Tower: 176'
 - Owned/operated by: SBA Towers V, LLC
 - Property Owner: BSA CT Rivers Council.
 - Size/Components of existing equipment compound:
 - 72' x 74' square foot fenced compound with 12' wide double chain link gate containing:
 - Monopole
 - AT&T equipment pad [south of monopole w/in compound]

➤ Components of existing tower:

▪ **AT&T: 167'**

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	167.0	6	Powerwave Allgon - 7770.00 - Panel	Low Profile Platform	(12) 1 5/8" (1) 3" (2) 3/4" DC (1) 7/16" Fiber	AT&T*
2		3	KMW - AM-X-CD-17-65-00T-RET - Panel			
3		6	Powerwave LGP21401 TMA			
4		3	Ericsson RRUS-11			
5		3	Ericsson RRUS-12			
6		6	Ericsson LGP 21901 Diplexer			
7		1	Raycap DC6-48-60-18-8F ("Squid") DC Surge Suppress			

B. Nature and Extent of Proposed Modifications

T-Mobile proposes to install (9) panel antennas at the 157' level of the existing 176'-foot Monopole Tower and occupy a ground lease area of 10'x 15' within the existing 72' x 74' fenced compound. T-Mobile's full proposed scope of work is as follows:

Remove:

- N/A

Remove and Replace:

- N/A

Install: Tower: T-Mobile

At 157':

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
8	157.0	3	RFS APX16DWV-16DWVS-E-A20 - Panel	SitePro1 RMQP-4096-HK	(3) 1.99" Hybrid - 6x24	T-Mobile
9		3	RFS APXVAALL24-43-U-NA20 - Panel			
10		3	Ericsson AIR6449 B41 - Panel			
11		3	Ericsson 4460 B25 + B66 RRU			
12		3	Ericsson 4480 B71 + B85 RRU			

Ground (within existing compound):

- 10' x 15' concrete pad
- Future T-Mobile equipment cabinet
- 2" RGS conduits for alarm & Spare
- 2" RGS conduit with LBs for DC power
- Cable Ice Bridge

- GPS antenna mounted to prop. cable ice bridge
- Ericsson 6160 equipment cabinet
- 1" RGS conduit for DC power to RAC24 cabinet
- 2" RGS conduit for Ethernet cable for generator controls
- 10' x 8' ice canopy
- 2" RGS conduit for power from PPC
- 2" TGS conduit for AAV to RAC24
- Breakers within prop. PPC
- 2" RGS conduit for emergency power from ATZ to Prop. PPC
- Generac 200a, 120/240v automatic transfer switch
- Purcell RAC24 cabinet mounted to prop. Unistrut on H-Frame
- 2" RGS conduit for emergency power from generator to ATS
- 1-1/2" conduit for generator heater & battery charger
- T-Mobile U/G power & Telco conduit from exist. Meter bank
- T-Mobile 200A meter & disconnect on exist. Utility H-Frame

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.

T-Mobile proposes to collocate at the above-referenced existing telecommunication facility rather than to require additional tower construction. The need for the site was dictated by the existing lack of, or extremely poor service, and projected future capacity and coverage requirements for this particular geographic area. Because new wireless telecommunications sites must function as an integral part of an existing network, their locations affect the services areas of all surrounding site. In order to use mobile communications services, users must be "handed-off" efficiently from one site to the next as they travel. To accomplish this goal, new sites must be placed on very exact, calculated locations.

When the need for a new site in the Ashford area was established, SBA system engineers identified a target area in which to locate the facility. Within the general target area, there are no other tall structures that are suitable for this purpose. The Selection of this specific site location was determined by local topographic and geographic factors, mitigation of the antenna mounting structure's visual impact, compatibility with existing land use, and the ability to negotiate a mutually beneficial lease with a landlord. SBA engineers believe that the Ashford Center Rd site is ideally suited for the proposed monopole tower facility. One carrier is currently on the tower.

This site will be located within a 72' x 74' square foot fenced compound owned by BSA CT Rivers Council with 12' wide double swing gate.

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. T-Mobile's 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. T-Mobile's 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.
 - C. 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 T-Mobile's 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 T-Mobile's facility are only 0.44573500% of the allowable FCC established general public limit. The anticipated composite MPE value for this site assuming all carriers present is 0.51610200% 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 were 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 Guidelines, one original hard copy of this Tower Share Application and fifteen (15) copies are 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 Ashford's First Selectman, Cathryn E. Silver-Smith
 - ii. The Town of Ashford's Zoning Enforcement Officer, Michael D'Amato
 - iii. The Property Owner, BSA CT Rivers Council
 - 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.

T-Mobile 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@sbsite.com

Attachments

cc: Cathryn E. Silver-Smith, First Selectman / with attachments
Town Hall, 5 Town Hall Rd., Ashford, CT 06278
Michael D'Amato, Zoning Enforcement Officer / with attachments 5
Town Hall, 5 Town Hall Rd., Ashford, CT 06278
BSA CT Rivers Council / with attachments
60 Darlin St. East Hartford CT 06108-3256 (SBA address on file)

EXHIBIT LIST

Exhibit 1	Copy of Check	X
Exhibit 2	Letter of Intent to Allow Shared Use of the Existing SBA Telecommunications Site	X
Exhibit 3	Notification Receipts	x
Exhibit 4	Property Card	x
Exhibit 5	Property Map	x
Exhibit 6	Original Zoning Approval	CSC Docket No. 239 5/20/03
Exhibit 7	EME Report	Centerline 8/26/21
Exhibit 8	Structural Analysis	TES 8/3/21
Exhibit 9	Mount Analysis	TES 7/8/21
Exhibit 10	Construction Drawings	Chappell 8/31/21
Exhibit 11	Generator Specifications	x
Exhibit 12	Wetlands Map	x

EXHIBIT 1

Copy of check

EXHIBIT 2

Letter of Intent

September 2, 2021

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

RE: **Notice of Intent to Allow Shared Use of the Existing SBA Telecommunications Site**
Location: 229-231 Ashford Ctr Rd., Ashford, CT
T-Mobile No: CTNL162B
SBA Site No: CT13611-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 **229-231 Ashford Ctr Rd, CT.**

SBA Towers V, 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 157' for antennas and associated equipment.

Thank you,

Rick Woods

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

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

EXHIBIT 3

Fedex Labels

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

SHIP DATE: 02SEP21
ACTWGT: 5.00 LB
CAD: 105843304/NET4400

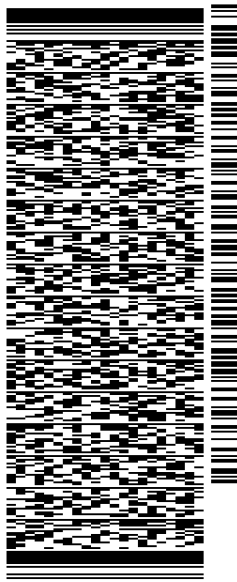
BILL SENDER

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

NEW BRITAIN CT 06051

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

56DJ3/169A/FE4A

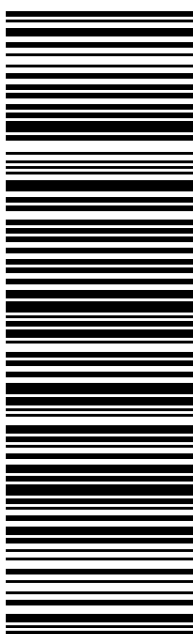


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774714901409


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Scheduled delivery:
Friday, September 3, 2021 before 10:30 am

**IN TRANSIT**

On FedEx vehicle for delivery
WINDSOR LOCKS, CT

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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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Travel History

TIME ZONE
Local Scan Time



Friday, September 3, 2021

8:38 AM	WINDSOR LOCKS, CT	On FedEx vehicle for delivery
7:10 AM	WINDSOR LOCKS, CT	At local FedEx facility
2:43 AM	NEWARK, NJ	Departed FedEx hub

Thursday, September 2, 2021

11:49 PM	NEWARK, NJ	Arrived at FedEx hub
8:21 PM	FRAMINGHAM, MA	Left FedEx origin facility
5:41 PM	FRAMINGHAM, MA	Picked up
1:44 PM		Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER

774714901409

SERVICE

FedEx Priority Overnight

WEIGHT

10 lbs / 4.54 kgs

DIMENSIONS

18x13x3 in.

TOTAL PIECES

1

TOTAL SHIPMENT WEIGHT

10 lbs / 4.54 kgs

TERMS

Shipper

SHIPPER REFERENCE

10-56-92009-6089

PACKAGING

FedEx Box

SPECIAL HANDLING SECTION

Deliver Weekday

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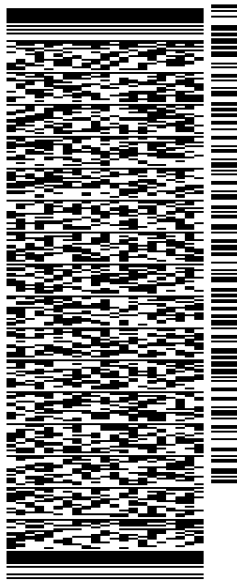
9/3/21 before 10:30 am

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

SHIP DATE: 02SEP21
ACTWGT: 5.00 LB
CAD: 105843304/NET4400
BILL SENDER

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

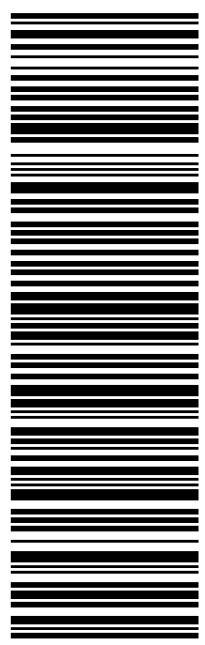
NEW BRITAIN CT 06051
(508) 251-0720 X.3807 REF: 105692009-6089
INV# PO: DEPT:



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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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Travel History

TIME ZONE

Local Scan Time



Friday, September 3, 2021

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7:08 AM	WINDSOR LOCKS, CT	At local FedEx facility
2:43 AM	NEWARK, NJ	Departed FedEx hub

Thursday, September 2, 2021

11:49 PM	NEWARK, NJ	Arrived at FedEx hub
8:21 PM	FRAMINGHAM, MA	Left FedEx origin facility
5:41 PM	FRAMINGHAM, MA	Picked up
1:45 PM		Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER

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SERVICE

FedEx Priority Overnight

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10 lbs / 4.54 kgs

DIMENSIONS

18x13x3 in.

TOTAL PIECES

1

TOTAL SHIPMENT WEIGHT

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TERMS

Shipper

SHIPPER REFERENCE

10-56-92009-6089

PACKAGING

FedEx Box

SPECIAL HANDLING SECTION

Deliver Weekday

SHIP DATE9/2/21 [?](#)**STANDARD TRANSIT**9/3/21 before 10:30 am [?](#)**SCHEDULED DELIVERY**

9/3/21 before 10:30 am

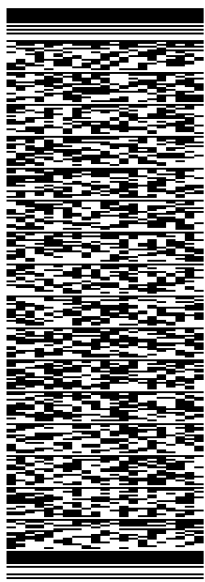
ORIGIN ID:BFBA (508) 614-0389
RICK WOODS
SBA COMMUNICATIONS CORPORATION
134 FLANDERS RD
SUITE 125
WESTBOROUGH, MA 01581
UNITED STATES US

SHIP DATE: 02SEP21
ACTWGT: 1.00 LB
CAD: 105843304/NET4400
BILL SENDER

TO CATHRYNE E. SILVER-SMITH
ASHFORD TOWN HALL
FIRST SELECTMAN
5 TOWN HALL RD
ASHFORD CT 06278
REF: 105692009-6089
DEPT:

PO: INV: (508) 251-0720 X 3807

56DJ3/169AFE4A

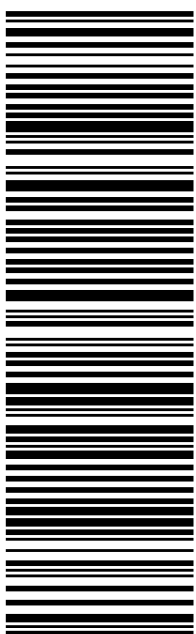


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NORWICH, CT

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Rick Woods
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WESTBOROUGH, MA US 01581
508-614-0389

TO

Cathryn E. Silver-Smith
Ashford Town Hall
First Selectman
5 Town Hall Rd
ASHFORD, CT US 06278
508-251-0720

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Travel History

TIME ZONE
Local Scan Time



Friday, September 3, 2021

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4:37 AM	NEWARK, NJ	Departed FedEx hub

Thursday, September 2, 2021

11:49 PM	NEWARK, NJ	Arrived at FedEx hub
8:10 PM	FRAMINGHAM, MA	Left FedEx origin facility
5:41 PM	FRAMINGHAM, MA	Picked up
1:49 PM		Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER

SERVICE

WEIGHT

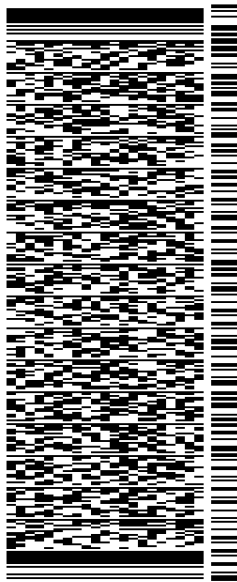
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1	1 lbs / 0.45 kgs	Shipper
10-56-92009-6089	FedEx Pak	Deliver Weekday
9/2/21 ?	9/3/21 before 4:30 pm ?	9/3/21 before 4:30 pm

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

SHIP DATE: 02SEP21
ACTWT: 1.00 LB
CAD: 105843304/NET4400
BILL SENDER

TO MICHAEL D'AMATO
ASHFORD TOWN HALL
ZONING ENFORCEMENT OFFICER
5 TOWN HALL RD
ASHFORD CT 06278
(508) 251-0720 X 3807
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PO: DEPT:

56DJ3/169A/FE4A

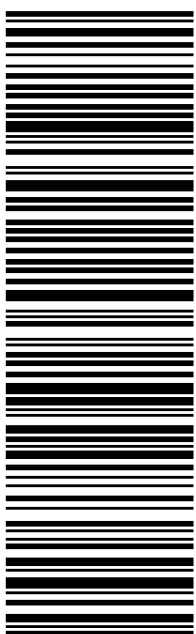


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2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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

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



TRACK ANOTHER SHIPMENT

774715047343


[ADD NICKNAME](#)

Scheduled delivery:
Friday, September 3, 2021 before 4:30 pm

**IN TRANSIT**

At FedEx destination facility
NORWICH, CT

[GET STATUS UPDATES](#)
FROM

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

TO

Michael D'Amato
Ashford Town Hall
Zoning Enforcement Officer
5 Town Hall Rd
ASHFORD, CT US 06278
508-251-0720

[MANAGE DELIVERY](#)

Travel History

TIME ZONE

Local Scan Time



Friday, September 3, 2021

8:15 AM	NORWICH, CT	At local FedEx facility
---------	-------------	-------------------------

Thursday, September 2, 2021

11:49 PM	NEWARK, NJ	Arrived at FedEx hub
8:10 PM	FRAMINGHAM, MA	Left FedEx origin facility
5:41 PM	FRAMINGHAM, MA	Picked up
1:50 PM		Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER

774715047343

SERVICE

FedEx Priority Overnight

WEIGHT

2 lbs / 0.91 kgs

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

SHIP DATE: 02SEP21
ACTWGT: 1.00 LB
CAD: 105843304/NET4400
BILL SENDER

TO

**BSA CT COUNCIL
60 DARLIN ST**

EAST HARTFORD CT 06108

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

56DJ3169AFE4A

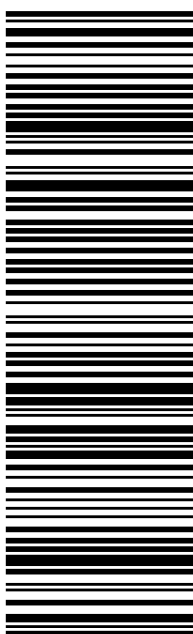


J212021070901uv

TRK# 7747 1508 0489
0201
FRI - 03 SEP 10:30A
PRIORITY OVERNIGHT

EB QCWA

06108
CT-US BDL



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TRACK ANOTHER SHIPMENT

774715080489


[ADD NICKNAME](#)

Scheduled delivery:
Friday, September 3, 2021 before 10:30 am

**IN TRANSIT**

On FedEx vehicle for delivery
WINDSOR LOCKS, CT

[GET STATUS UPDATES](#)
FROM

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

TO

BSA CT Council
60 Darlin St
EAST HARTFORD, CT US 06108
508-251-0720

[MANAGE DELIVERY](#)

Travel History

TIME ZONE

Local Scan Time



Friday, September 3, 2021

9:08 AM	WINDSOR LOCKS, CT	On FedEx vehicle for delivery
8:32 AM	WINDSOR LOCKS, CT	At local FedEx facility
7:26 AM	EAST GRANBY, CT	At destination sort facility
6:29 AM	NEWARK, NJ	Departed FedEx hub

Thursday, September 2, 2021

11:49 PM	NEWARK, NJ	Arrived at FedEx hub
8:10 PM	FRAMINGHAM, MA	Left FedEx origin facility
5:41 PM	FRAMINGHAM, MA	Picked up
1:52 PM		Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER 774715080489	SERVICE FedEx Priority Overnight	WEIGHT 1 lbs / 0.45 kgs
TOTAL PIECES 1	TOTAL SHIPMENT WEIGHT 1 lbs / 0.45 kgs	TERMS Shipper
SHIPPER REFERENCE 10-56-92009-6089	PACKAGING FedEx Pak	SPECIAL HANDLING SECTION Deliver Weekday
SHIP DATE 9/2/21 ?	STANDARD TRANSIT 9/3/21 before 10:30 am ?	SCHEDULED DELIVERY 9/3/21 before 10:30 am

EXHIBIT 4

Property Card

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2016.



Ashford, Connecticut

Information on the Property Records for the Municipality of Ashford was last updated on 8/26/2021.



Parcel Information

Location:	229-231 ASHFORD CENTER RD	Property Use:	NonProfit/Church	Primary Use:	NonProfit
Unique ID:	00059000	Map Block Lot:	36 A 1	Acres:	958.54
490 Acres:	0.00	Zone:	RA	Volume / Page:	0141/0868
Developers Map / Lot:		Census:	8301000		

Value Information

	Appraised Value	Assessed Value
Land	1,395,100	976,600
Buildings	2,099,500	1,469,600
Detached Outbuildings	82,000	57,500

	Appraised Value	Assessed Value
Total	3,576,600	2,503,700

Owner's Information

Owner's Data

CONNECTICUT RIVERS COUNCIL INC BSA
 60 DARLIN ST
 EAST HARTFORD CT 06108

Building 1



Building Use:	Res 30	Style:	Ranch	Living Area:	1,310
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Stories:	1.00	Construction:	Wood Frame	Year Built:	1964
Total Rooms:	5	Bedrooms:	3	Full Baths:	2
Half Baths:	0	Fireplaces:	1	Heating:	Radiant
Fuel:	Oil	Cooling Percent:	0	Basement Area:	0
Basement Finished Area:	0	Basement Garages:	0	Roof Material:	Clay Tile
Siding:	Wood Shingles	Units:			

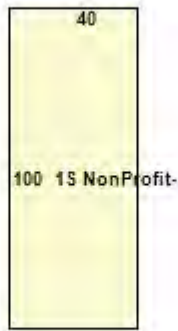
Special Features

Fireplace	1
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Attached Components

Type:	Year Built:	Area:
Under Enclosed Porch	1964	190

Building 2



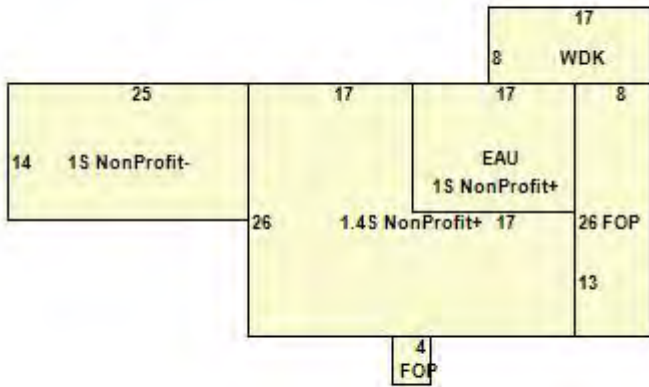
Category:	NonProfit/Church	Use:	NonProfit	GLA:	4,000
Stories:	1.00	Construction:	Steel	Year Built:	1964
Heating:	Hot Air No Duct	Fuel:	Oil	Cooling Percent:	0
Siding:	Pre-Finish Metal	Roof Material:	Metal	Beds/Units:	0

Special Features

Mezzanine Storage	400
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Attached Components

Building 3



Category:	NonProfit/Church	Use:	NonProfit	GLA:	1,499
Stories:	1.00	Construction:	Wood Frame	Year Built:	1850
Heating:	None	Fuel:	Wood	Cooling Percent:	0
Siding:	Clapboards	Roof Material:	Asphalt	Beds/Units:	0

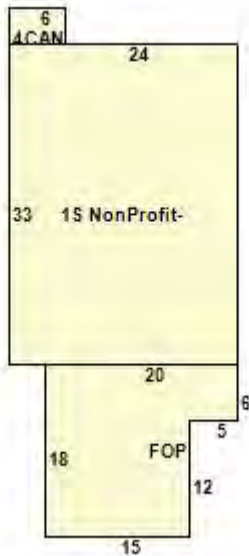
Special Features

Fireplace	1
Unfinished Basement	884

Attached Components

Type:	Year Built:	Area:
Wood Deck	1850	136
Open Porch	1850	208
Open Porch	1850	20
Expansion Attic	1850	221

Building 4



Category:	NonProfit/Church	Use:	NonProfit	GLA:	792
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Stories:	1.00	Construction:	Wood Frame	Year Built:	1960
Heating:	None	Fuel:	Wood	Cooling Percent:	0
Siding:	Wood Frame	Roof Material:	Asphalt	Beds/Units:	0

Special Features

Attached Components

Type:	Year Built:	Area:
Canopy	1960	24
Open Porch	1960	300

Building 5



9	22
40 FOP	40 1.45 NonProfit

Category:	NonProfit/Church	Use:	NonProfit	GLA:	1,232
Stories:	1.00	Construction:	Wood Frame	Year Built:	1900
Heating:	Forced Hot Air	Fuel:	Natural Gas	Cooling Percent:	0
Siding:	Clapboards	Roof Material:	Asphalt	Beds/Units:	0

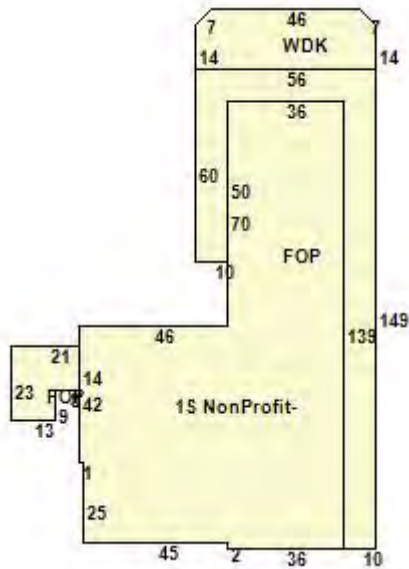
Special Features

Attached Components

Type:	Year Built:	Area:
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Type:	Year Built:	Area:
Open Porch	1900	360

Building 6



Category:	NonProfit/Church	Use:	NonProfit	GLA:	8,061
Stories:	1.00	Construction:	Wood Frame	Year Built:	1963
Heating:	Hot Air No Duct	Fuel:	Natural Gas	Cooling Percent:	0
Siding:	Clapboards	Roof Material:	Asphalt	Beds/Units:	0

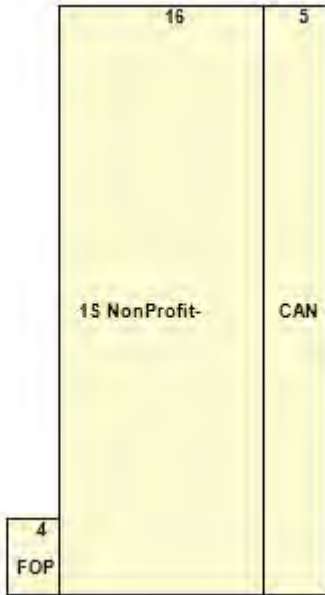
Special Features

Cooler	100
Fireplace	1

Attached Components

Type:	Year Built:	Area:
Wood Deck	1963	1,039
Open Porch	1963	2,450
Open Porch	1963	411

Building 7



Category:	NonProfit/Church	Use:	NonProfit	GLA:	736
Stories:	1.00	Construction:	Wood Frame	Year Built:	1960
Heating:	None	Fuel:	Wood	Cooling Percent:	0
Siding:	Pre-Fab Wood	Roof Material:	Asphalt	Beds/Units:	0

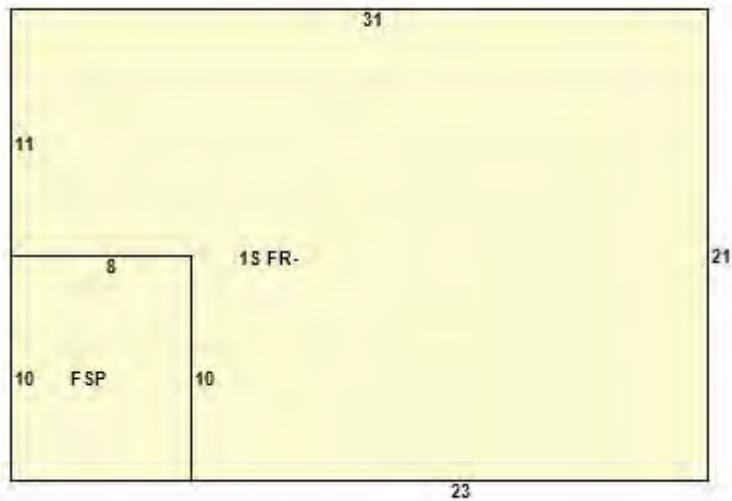
Special Features

Attached Components

Type:	Year Built:	Area:
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Type:	Year Built:	Area:
Canopy	1960	230
Open Porch	1960	24

Building 8



Building Use:	Res 30	Style:	Cottage	Living Area:	571
Stories:	1.00	Construction:	Wood Frame	Year Built:	1960
Total Rooms:	4	Bedrooms:	2	Full Baths:	1
Half Baths:	0	Fireplaces:	0	Heating:	Forced Hot Air

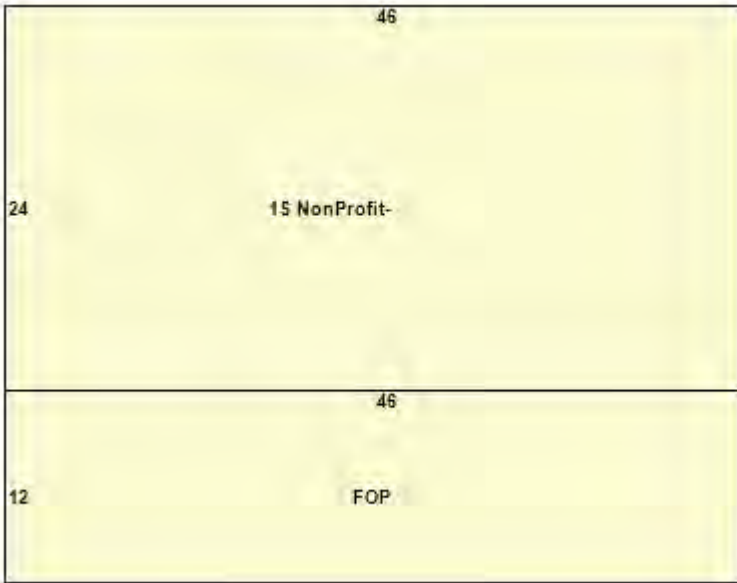
Fuel:	Natural Gas	Cooling Percent:	0	Basement Area:	0
Basement Finished Area:	0	Basement Garages:	0	Roof Material:	Asphalt
Siding:	Wood Frame	Units:			

Special Features

Attached Components

Type:	Year Built:	Area:
Screen Porch	1960	80

Building 9



Category:	NonProfit/Church	Use:	NonProfit	GLA:	1,104
Stories:	1.00	Construction:	Wood Frame	Year Built:	1983
Heating:	Hot Air No Duct	Fuel:	Natural Gas	Cooling Percent:	0
Siding:	Log Cabin	Roof Material:	Asphalt	Beds/Units:	0

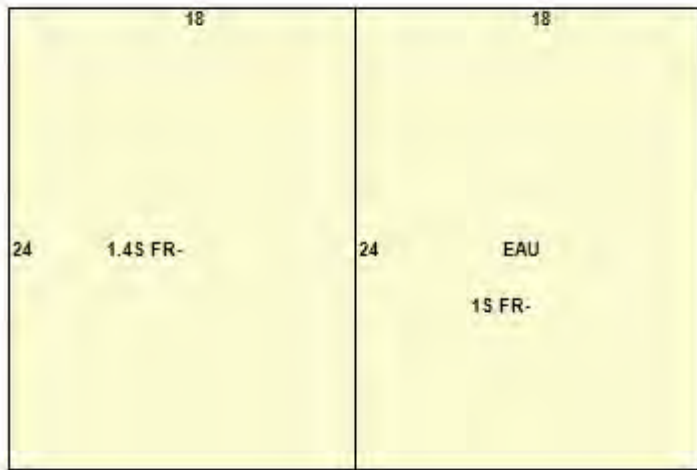
Special Features

Attached Components

Type:	Year Built:	Area:
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Type:	Year Built:	Area:
Open Porch	1983	552

Building 10



Building Use:	Res 30	Style:	Cottage	Living Area:	1,037
Stories:	1.00	Construction:	Wood Frame	Year Built:	1940
Total Rooms:	5	Bedrooms:	3	Full Baths:	1
Half Baths:	0	Fireplaces:	0	Heating:	Hot Air No Duct
Fuel:	Natural Gas	Cooling Percent:	0	Basement Area:	0

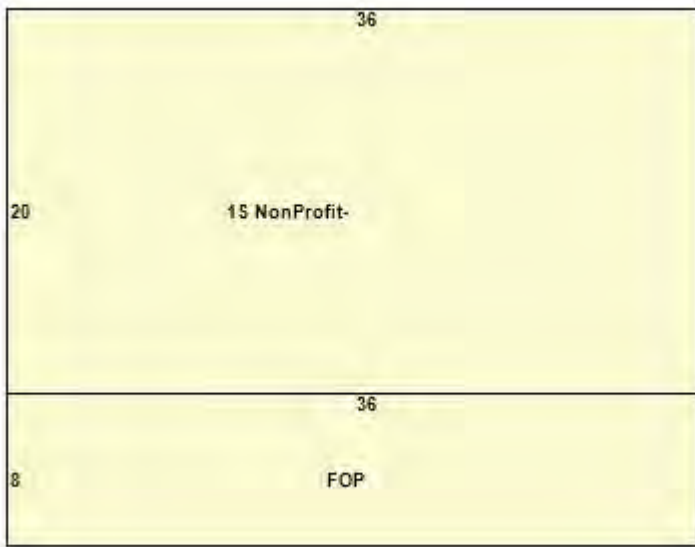
Basement Finished Area:	0	Basement Garages:	0	Roof Material:	Asphalt
Siding:	Vinyl Siding	Units:			

Special Features

Attached Components

Type:	Year Built:	Area:
Expansion Attic	1940	432

Building 11



Category:	NonProfit/Church	Use:	NonProfit	GLA:	720
Stories:	1.00	Construction:	Wood Frame	Year Built:	2003
Heating:	Forced Hot Air	Fuel:	Natural Gas	Cooling Percent:	0
Siding:	Wood Frame	Roof Material:	Asphalt	Beds/Units:	0

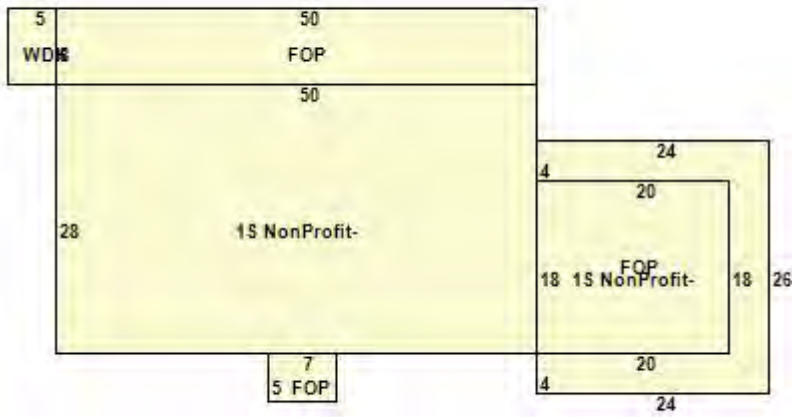
Special Features

Attached Components

Type:	Year Built:	Area:
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Type:	Year Built:	Area:
Open Porch	2003	288

Building 12



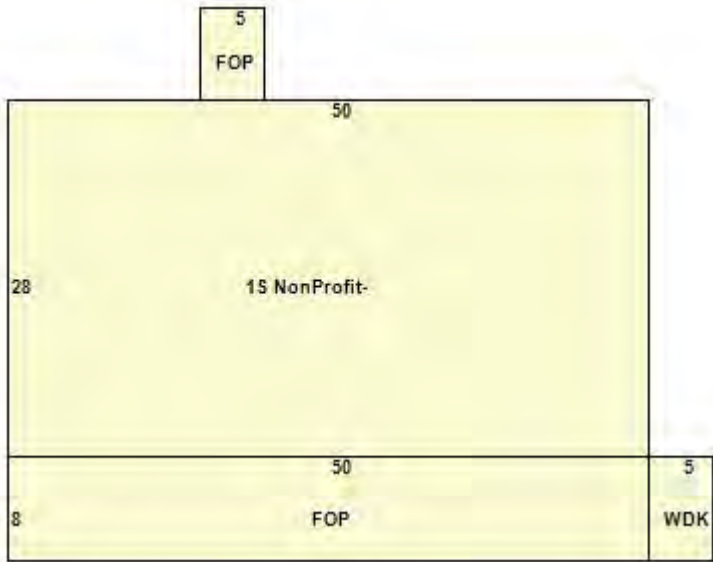
Category:	NonProfit/Church	Use:	NonProfit	GLA:	1,760
Stories:	1.00	Construction:	Wood Frame	Year Built:	2007
Heating:	Forced Hot Air	Fuel:	Natural Gas	Cooling Percent:	0
Siding:	Wood Frame	Roof Material:	Asphalt	Beds/Units:	0

Special Features

Attached Components

Type:	Year Built:	Area:
Wood Deck	2007	40
Open Porch	2007	264
Open Porch	2007	400
Open Porch	2007	35

Building 13



Category:	NonProfit/Church	Use:	NonProfit	GLA:	1,400
Stories:	1.00	Construction:	Wood Frame	Year Built:	2007
Heating:	Forced Hot Air	Fuel:	Natural Gas	Cooling Percent:	0
Siding:	Wood Frame	Roof Material:	Asphalt	Beds/Units:	0

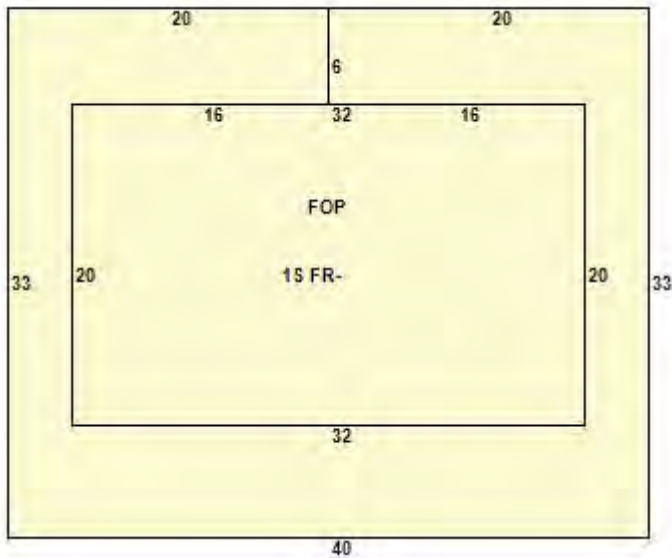
Special Features

Attached Components

Type:	Year Built:	Area:
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Type:	Year Built:	Area:
Wood Deck	2007	40
Open Porch	2007	35
Open Porch	2007	400

Building 14



Building Use:	Res 30	Style:	Cottage	Living Area:	640
Stories:	1.00	Construction:	Precast Panel	Year Built:	2011
Total Rooms:	4	Bedrooms:	0	Full Baths:	4
Half Baths:	0	Fireplaces:	0	Heating:	None

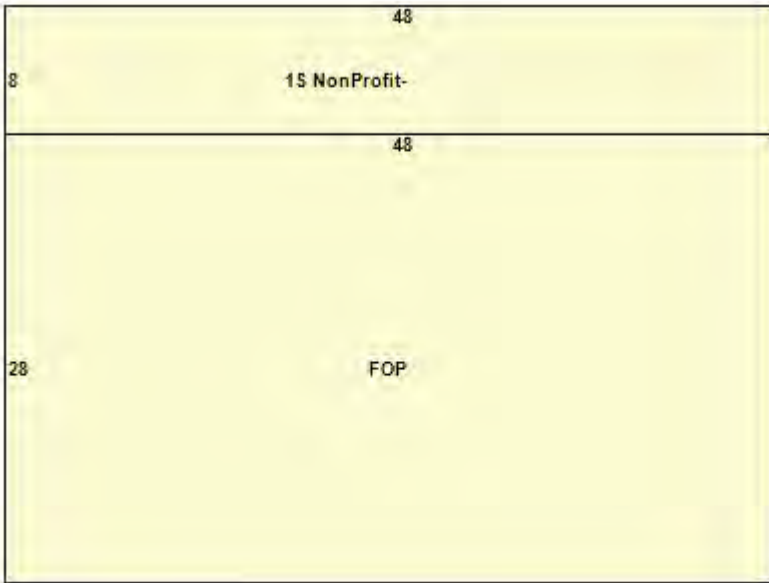
Fuel:	None	Cooling Percent:	0	Basement Area:	0
Basement Finished Area:	0	Basement Garages:	0	Roof Material:	Metal
Siding:	Concrete	Units:			

Special Features

Attached Components

Type:	Year Built:	Area:
Open Porch	2011	680

Building 15



Category:	NonProfit/Church	Use:	NonProfit	GLA:	384
Stories:	1.00	Construction:	Wood Frame	Year Built:	1990
Heating:	None	Fuel:	Wood	Cooling Percent:	0
Siding:	Clapboards	Roof Material:	Metal	Beds/Units:	0

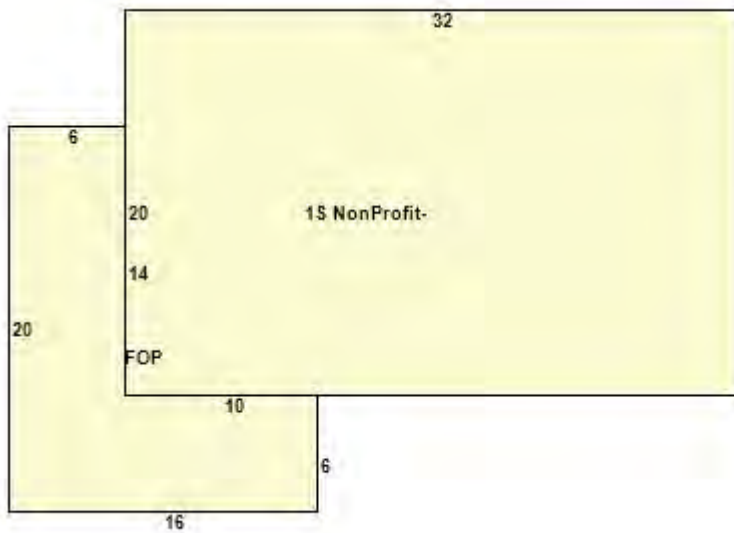
Special Features

Attached Components

Type:	Year Built:	Area:
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Type:	Year Built:	Area:
Open Porch	1990	1,344

Building 16



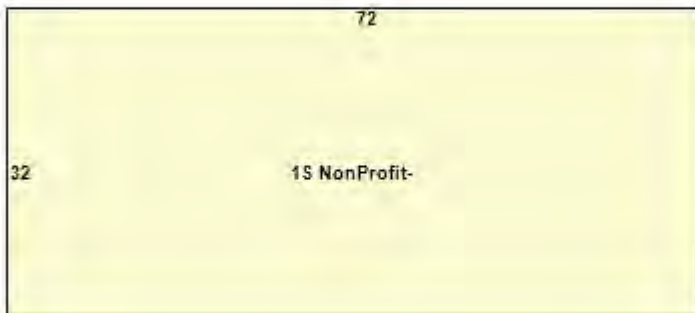
Category:	NonProfit/Church	Use:	NonProfit	GLA:	640
Stories:	1.00	Construction:	Wood Frame	Year Built:	1990
Heating:	None	Fuel:	Wood	Cooling Percent:	0
Siding:	Wood Frame	Roof Material:	Rolled	Beds/Units:	0

Special Features

Attached Components

Type:	Year Built:	Area:
Open Porch	1990	180

Building 17



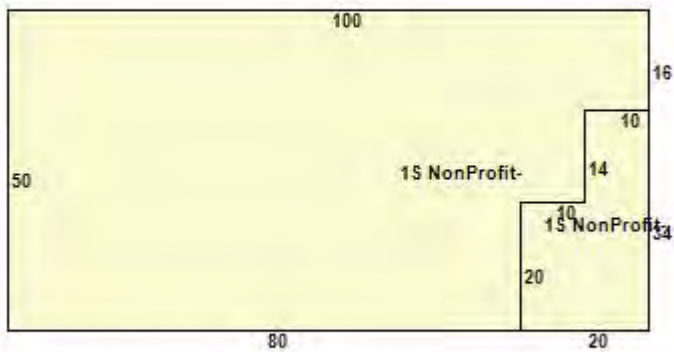
Category:	NonProfit/Church	Use:	NonProfit	GLA:	2,304
Stories:	1.00	Construction:	Wood Frame	Year Built:	2016

Heating:	None	Fuel:	Wood	Cooling Percent:	0
Siding:	Wood Frame	Roof Material:	Asphalt	Beds/Units:	0

Special Features

Attached Components

Building 18



Category:	NonProfit/Church	Use:	NonProfit	GLA:	5,000
Stories:	1.00	Construction:	Wood Frame	Year Built:	2010
Heating:	None	Fuel:	Wood	Cooling Percent:	0
Siding:	Pre-Finish Metal	Roof Material:	Metal	Beds/Units:	0

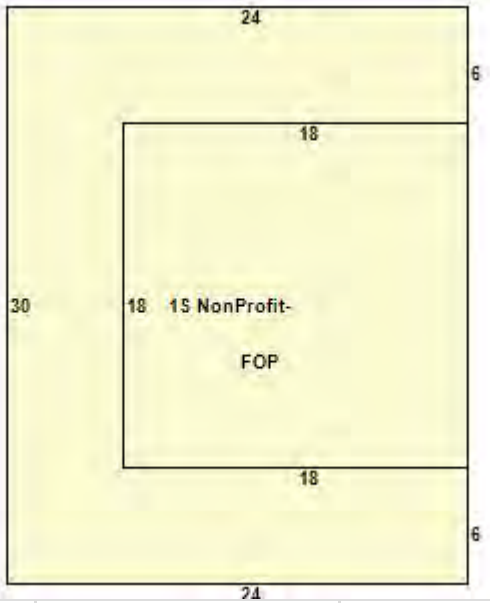
Special Features

Mezzanine Storage	570
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Attached Components

Building 19

Photo Not Available



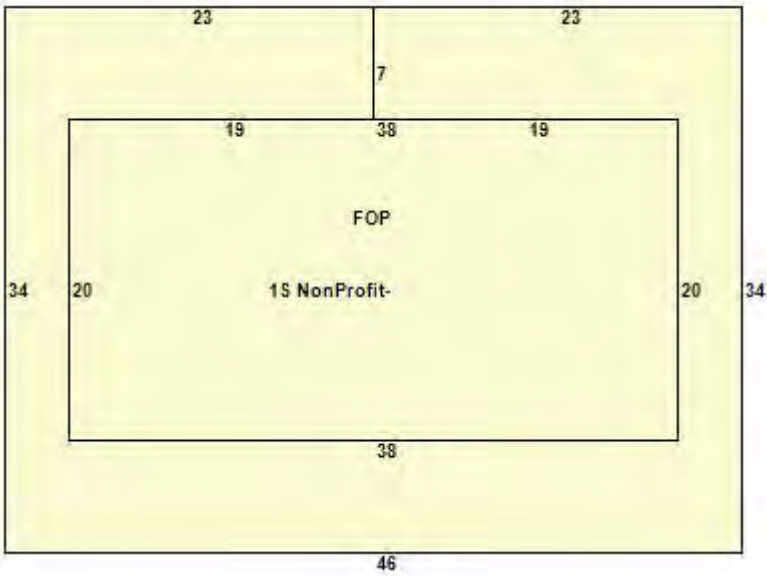
Category:	NonProfit/Church	Use:	NonProfit	GLA:	324
Stories:	1.00	Construction:	Masonry	Year Built:	2010
Heating:	None	Fuel:	Wood	Cooling Percent:	0
Siding:	Single Siding	Roof Material:	Metal	Beds/Units:	0

Special Features

Attached Components

Type:	Year Built:	Area:
Open Porch	2010	396

Building 20



Category:	NonProfit/Church	Use:	NonProfit	GLA:	760
Stories:	1.00	Construction:	Masonry	Year Built:	2010
Heating:	None	Fuel:	Wood	Cooling Percent:	0
Siding:	Concrete	Roof Material:	Metal	Beds/Units:	0

Special Features

Attached Components

Type:	Year Built:	Area:
Open Porch	2010	804

Detached Outbuildings

Type:	Year Built:	Length:	Width:	Area:
Cabin	2011	0.00	0.00	256
Cabin	2007	0.00	0.00	192
Cabin	2014	0.00	0.00	288
Cabin	2011	0.00	0.00	256
Average Work Shop	2007	0.00	0.00	1,008
Pole Barn All Walls	2010	0.00	0.00	1,000
Pole Barn All Walls	2010	0.00	0.00	400
Detached Garage	2015	26.00	40.00	1,040
Steel Garage Av	2010	32.00	16.00	512
Steel Garage Av	2007	0.00	0.00	320
Paving	2010	50.00	22.00	1,100
Frame Shed	2010	0.00	0.00	336
Frame Shed	2007	0.00	0.00	304
Metal Shed	1975	0.00	0.00	120
Metal Shed	2007	0.00	0.00	240

Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Sale Price
CONNECTICUT RIVERS COUNCIL INC BSA	0141	0868	03/01/2004		\$0

Building Permits

Permit Number	Permit Type	Date Opened	Reason
21-48B	Commercial	05/27/2021	2 SEASON CAMP CABINS 16X40 ON SONO TUBES, METAL ROOF
18-4G	HVAC	02/27/2018	INSTALL GAS HEATER AT CAMP MUSEUM.
16-38E	Electrical	06/13/2016	ELECTRICAL FOR NEW WATERFRONT BUILDING
16-73B	Commercial	06/13/2016	2 LARGE EVENT TENTS ONE 100X40, ONE 60X40
16-1F	Commercial	05/17/2016	INSTALL ANSUL FIRE SUPPRESSION TO EXHAUST HOODS.
16-6G	HVAC	05/09/2016	NEW PROPANE PIPING TEED OFF OF OF EXISTING GAS CKG APPLICANCES.
16-14B	HVAC	03/11/2016	INSTALL COMMERCIAL ISLAND HOODS IN DINING HALL
16-16B	Commercial	12/07/2015	32 X 72 ACCESSORY BUILDING, WATERFRONT, FOR STORAGE + SLEEPING 860-546-9683
16225	Commercial	09/08/2015	24 X 40 THREE BAY WOOD FRAMED UTILITY BUILDING 860-913-2750
16180	Miscellaneous	06/29/2015	SEASONAL DINING RENT 40 X 100
16128	Commercial	05/04/2015	46 X 33.4 BUILDING FOR 6 SHOWERS & 5 BATHROOMS 860-913-2750
16112	Commercial	04/20/2015	REMOVAL FIRE DAMAGED BUILDING HOUSING OWF AND FUEL
15926	Miscellaneous	08/15/2014	
15889	Miscellaneous	06/23/2014	40X100 TENT ON SLAB
15875	Electrical	06/10/2014	200 AMP SVC FOR OUTBUILDING 860-537-0288
15704	Commercial	10/04/2013	ARCHERY RANGE
15603	Addition	06/17/2013	8X34PORCH ON OFFICE BLDG W/8X8 WRAP AROUND DECK
15550	Outbuilding/Yard Item	04/16/2013	SHOWER/RESTROOM BLDG IN PARKING LOT
15535	Commercial	03/19/2013	57X20 DECK ADDTN ON DINING HALL
15400	Electrical	09/28/2012	WIRE STEEL BUILDING
15336	Outbuilding/Yard Item	06/29/2012	STORAGE BLDG 860 546-9683
15261	Outbuilding/Yard Item	03/20/2012	16X28 CABIN FOR STAFF NO PLUMBING

Permit Number	Permit Type	Date Opened	Reason
15262	Outbuilding/Yard Item	03/20/2012	PAVILLION W/CONCRETE SLAB SHOOTING SPORTS
15173	Electrical	12/02/2011	INSTALL 400 AMP SERVICE 860-429-8133
15063	Addition	09/06/2011	24X12 SHOWER HOUSE
15030	New	07/15/2011	16X16NEW CABIN 860-429-1086 "QUINEBAUG"
14985	Addition	05/24/2011	ADDN WITH ADA BATHROOM FACILITIES
14986	New	05/24/2011	16X16 CABIN
14783	Addition	09/03/2010	ADDITION ON RESIDENCE-22X17-BEDRM,BATH,FROST WALL & SLAB 429-1086
14713	Addition	06/02/2010	SHED-OPEN STRUCTURE OVER OUTDOOR FREEZER 860-428-1082
14466	Electrical	06/05/2009	100 AMP SERVICE ON TRADING POST
14467	Electrical	06/05/2009	NEW CIRCUITS TO NEW DISHWASHER IN DINING HALL
14317	Roof	10/28/2008	ROOF HOUSE 429-1036
14157	Electrical	07/08/2008	ELEC TO HANDICRAFT PAVILION 234-2171
14153	New	06/03/2008	50X100 STEEL MAINT. BLDG
14035	HVAC	01/23/2008	GAS LINES TO HANGING HEATERS
13991	HVAC	10/31/2007	2 CABINS- INSTALL GAS LINES TO FURNACE
13775	Miscellaneous	05/02/2007	DINING HALL & NEW SE
13761	Addition	01/26/2007	2 CAMP CABINS

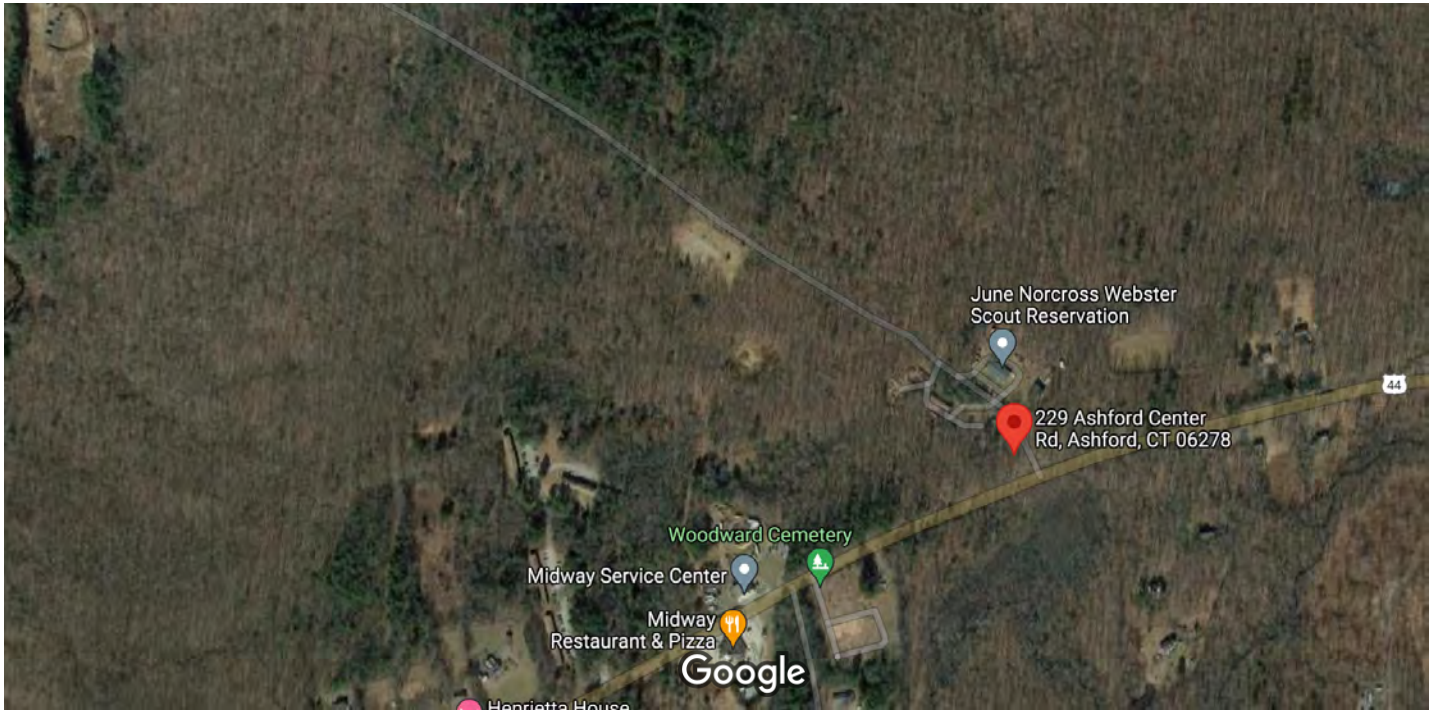
Information Published With Permission From The Assessor

EXHIBIT 5

Property Map



229 Ashford Center Rd



Imagery ©2021 CNES / Airbus, Maxar Technologies, USDA Farm Service Agency, Map data ©2021 500 ft



229 Ashford Center Rd

Ashford, CT 06278



Directions



Save



Nearby



Send to your phone



Share



VVC5+C8 Ashford, Connecticut

Photos



EXHIBIT 6

Zoning Approval



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

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

E-Mail: siting.council@po.state.ct.us

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

May 27, 2003

TO: Parties and Intervenors

FROM: S. Derek Phelps, Executive Director

RE: **DOCKET NO. 239** - Tower Ventures, Inc. application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a wireless telecommunications facility at 229-231 Ashford Center Road, Ashford, Connecticut.

By its Decision and Order dated May 20, 2003, the Connecticut Siting Council granted a Certificate of Environmental Compatibility and Public Need (Certificate) for the construction, maintenance and operation of a wireless telecommunications facility at 229-231 Ashford Center Road, Ashford, Connecticut.

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

SDP/laf

Enclosures

c: Julie Donaldson Kohler, Esq., Hurwitz & Sagarin, LLC
Albert Palko, State Documents Librarian
Council Members

Connecticut Siting Council

Decisions

DOCKET NO. 239 - National Grid Communications, Inc. }	Connecticut
application for a Certificate of Environmental }	
Compatibility and Public Need for the construction, }	Siting
maintenance and operation of a wireless }	
telecommunications facility at 229-231 Ashford Center }	Council
Road, Ashford, Connecticut.	

May 20, 2003

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Tower Ventures, Inc. for the construction, maintenance and operation of a wireless telecommunications facility at 229-231 Ashford Center Road, Ashford, Connecticut.

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

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of AT&T Wireless PCS, LLC and Omnipoint Holdings, Inc. d/b/a T-Mobile and other entities, both public and private, but such tower shall not exceed a height of 180 feet above ground level.
2. Underground utilities shall be installed in the base of the access road.
3. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include:
 - a. a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment building, security fence, access road, utility line, and landscaping; and
 - b. construction plans for site clearing, water drainage, and erosion and sedimentation control consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.
4. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of electromagnetic radio frequency power density is submitted to the Council if and when circumstances in operation

cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

5. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.
6. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
7. If the facility does not initially provide wireless services within one year of completion of construction or ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made..
8. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and ceases to function.
9. Unless otherwise approved by the Council, this Decision and Order shall be void if the facility authorized herein is not operational within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved.

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

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

The parties and intervenors to this proceeding are:

Applicant

Tower Ventures II, LLC

Its Representative

Julie Donaldson Kohler, Esq.
Hurwitz & Sagarin, LLC
147 N. Broad Street
Milford, CT 06460
(203) 877-8000

Intervenor

AT&T Wireless PCS, LLC
d/b/a AT&T Wireless

Its Representative

Christopher B. Fisher, Esq.
Cuddy & Feder LLP
90 Maple Avenue
White Plains, New York 10601
(914) 761-1300



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

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

E-Mail: siting.council@po.state.ct.us

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

0121
zap

**CERTIFICATE
OF
ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED
DOCKET NO. 239**

Pursuant to General Statutes § 16-50k, as amended, the Connecticut Siting Council hereby issues a Certificate of Environmental Compatibility and Public Need to Tower Ventures II, LLC. for the construction, maintenance and operation of a wireless telecommunications facility 229-231 Ashford Center Road, Ashford, Connecticut. This Certificate is issued in accordance with and subject to the terms and conditions set forth in the Decision and Order of the Council on May 20, 2003.

By order of the Council,



Pamela B. Kitz, P.E., Chairman

May 20, 2003

CERTIFICATE OF USE AND OCCUPANCY

ASHFORD, CONNECTICUT

This is to certify that GT RIVERS COUNCIL BSA/TOWER VENTURES II LLC at

LOCATION	R
142 FITTS ROAD	ZONE
STREET	CARD NO.
36	A
MAP	BLOCK
	LOT

under Permit No. 12829 conforms substantially to the requirements of the Building Code, Sanitation Code and the Zone Ordinance of the Town and is hereby approved for occupancy as indicated below.

Approved for ~~occupancy~~ use: Cellular Tower

Date June 4, 2004

[Signature]
 ZONING ENFORCEMENT OFFICER

Notice: If this certificate is lost or destroyed, a duplicate should be immediately obtained from the Department of Buildings.
Any change or extension of the use herein approved requires a new certificate of occupancy.

EXHIBIT 7

EME Report



Radio Frequency Emissions Analysis Report

August 26, 2021

Centerline Communications on behalf of T-Mobile

Site Name: CTNL162B

Site Address: 229-231 Ashford Center Road, Ashford, CT 06278

Site Compliance Summary

Compliance Status:	Compliant
Carrier MPE%	0.44573500%
of FCC General Population Allowable Limit:	
Composite MPE%	0.51610200%
of FCC General Population Allowable Limit:	



August 26, 2021

T-Mobile Connecticut
Attn: Ryan Clark, Site Acquisition Consultant

Emissions Analysis for Site: **CTNL162B**

Centerline Communications, LLC ("Centerline") was directed to analyze the proposed T-Mobile facility to be located a tower near **229-231 Ashford Center Road, Ashford CT 06278** for the purpose of determining whether the emissions from the proposed facility are within specified federal limits.

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

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

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

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limits for the 600 MHz (LTE and NR) bands are $400 \mu\text{W}/\text{cm}^2$, for the 700 MHz (LTE) band is $467 \mu\text{W}/\text{cm}^2$, and for the 1900 MHz (LTE and GSM), 2100 MHz (LTE), and 2500 MHz (LTE and NR) bands are $1000 \mu\text{W}/\text{cm}^2$.

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, as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means. Additional details can be found in FCC OET 65.



Calculations

Calculations were performed for the proposed facility using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Real world emissions values from this facility are expected to be lower than values listed in this report at ground level. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

RRH #	Frequency Band	Technology	Channel Count	Transmit Power per Channel (W)
1	2100	L	2	140
1	1900	L	2	140
1	1900	G	1	15
2	700	L	4	40
2	600	L	2	60
2	600	N	2	60
3	2500	L	1	30
3	2500	N	1	30
3	2500	L	1	90
3	2500	N	1	90
4	2100	L	2	140
4	1900	L	2	140
4	1900	G	1	15
5	700	L	4	40
5	600	L	2	60
5	600	N	2	60
6	2500	L	1	30
6	2500	N	1	30
6	2500	L	1	90
6	2500	N	1	90
7	2100	L	2	140
7	1900	L	2	140



RRH #	Frequency Band	Technology	Channel Count	Transmit Power per Channel (W)
7	1900	G	1	15
8	700	L	4	40
8	600	L	2	60
8	600	N	2	60
9	2500	L	1	30
9	2500	N	1	30
9	2500	L	1	90
9	2500	N	1	90

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

Table 1: Channel Data Table



The following antennas listed in Table 2 were used in the modeling for transmission in the 600 MHz (LTE and NR), 700 MHz (LTE), 1900 MHz (LTE), 2100 MHz (LTE) and 2500 MHz (LTE and NR) frequency bands. This is based on information from the carrier with regard to anticipated antenna selection.

Sector	Antenna Number	Make / Model	Centerline (ft)
A	1	RFS APX16DWV-16DWVS-E-A20	157
A	1	RFS APX16DWV-16DWVS-E-A20	157
A	1	RFS APX16DWV-16DWVS-E-A20	157
A	2	RFS APXVAALL24 43-U-NA20	157
A	2	RFS APXVAALL24 43-U-NA20	157
A	2	RFS APXVAALL24 43-U-NA20	157
A	3	ERICSSON AIR 6449 LTE BrM	157
A	3	ERICSSON AIR 6449 NR BrM	157
A	3	ERICSSON AIR 6449 LTE TB	157
A	3	ERICSSON AIR 6449 NR TB	157
B	4	RFS APX16DWV-16DWVS-E-A20	157
B	4	RFS APX16DWV-16DWVS-E-A20	157
B	4	RFS APX16DWV-16DWVS-E-A20	157
B	5	RFS APXVAALL24 43-U-NA20	157
B	5	RFS APXVAALL24 43-U-NA20	157
B	5	RFS APXVAALL24 43-U-NA20	157
B	6	ERICSSON AIR 6449 LTE BrM	157
B	6	ERICSSON AIR 6449 NR BrM	157
B	6	ERICSSON AIR 6449 LTE TB	157
B	6	ERICSSON AIR 6449 NR TB	157
C	7	RFS APX16DWV-16DWVS-E-A20	157
C	7	RFS APX16DWV-16DWVS-E-A20	157
C	7	RFS APX16DWV-16DWVS-E-A20	157
C	8	RFS APXVAALL24 43-U-NA20	157
C	8	RFS APXVAALL24 43-U-NA20	157
C	8	RFS APXVAALL24 43-U-NA20	157
C	9	ERICSSON AIR 6449 LTE BrM	157
C	9	ERICSSON AIR 6449 NR BrM	157
C	9	ERICSSON AIR 6449 LTE TB	157
C	9	ERICSSON AIR 6449 NR TB	157

Table 2: Antenna Data

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



T-Mobile Results

Per the calculations completed for the proposed T-Mobile configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

ID	Make / Model	Freq. Band	Gain (dBd)	Centerline (ft)	Channel TX Count	Power (W)	ERP (W)	MPE %
A1	RFS APX16DWV-16DWVS-E-A20	2100	16.25	157.0	2	140	11807.50	0.014884000
A1	RFS APX16DWV-16DWVS-E-A20	1900	16.25	157.0	2	140	11807.50	0.014816000
A1	RFS APX16DWV-16DWVS-E-A20	1900	16.25	157.0	1	15	632.54	0.000795000
A2	RFS APXVAALL24 43-U-NA20	700	13.65	157.0	4	40	3707.83	0.011441000
A2	RFS APXVAALL24 43-U-NA20	600	12.95	157.0	2	60	2366.91	0.009200000
A2	RFS APXVAALL24 43-U-NA20	600	12.95	157.0	2	60	2366.91	0.009200000
A3	ERICSSON AIR 6449 LTE BrM	2500	15.15	157.0	1	30	982.02	0.002672000
A3	ERICSSON AIR 6449 NR BrM	2500	15.15	157.0	1	30	982.02	0.002672000
A3	ERICSSON AIR 6449 LTE TB	2500	22.35	157.0	1	90	15461.18	0.041381000
A3	ERICSSON AIR 6449 NR TB	2500	22.35	157.0	1	90	15461.18	0.041381000
B4	RFS APX16DWV-16DWVS-E-A20	2100	16.25	157.0	2	140	11807.50	0.014953000
B4	RFS APX16DWV-16DWVS-E-A20	1900	16.25	157.0	2	140	11807.50	0.014953000
B4	RFS APX16DWV-16DWVS-E-A20	1900	16.25	157.0	1	15	632.54	0.000802000
B5	RFS APXVAALL24 43-U-NA20	700	13.65	157.0	4	40	3707.83	0.011547000
B5	RFS APXVAALL24 43-U-NA20	600	12.95	157.0	2	60	2366.91	0.009053000
B5	RFS APXVAALL24 43-U-NA20	600	12.95	157.0	2	60	2366.91	0.009053000
B6	ERICSSON AIR 6449 LTE BrM	2500	15.15	157.0	1	30	982.02	0.002697000
B6	ERICSSON AIR 6449 NR BrM	2500	15.15	157.0	1	30	982.02	0.002697000
B6	ERICSSON AIR 6449 LTE TB	2500	22.35	157.0	1	90	15461.18	0.041476000
B6	ERICSSON AIR 6449 NR TB	2500	22.35	157.0	1	90	15461.18	0.041476000
C7	RFS APX16DWV-16DWVS-E-A20	2100	16.25	157.0	2	140	11807.50	0.015022000
C7	RFS APX16DWV-16DWVS-E-A20	1900	16.25	157.0	2	140	11807.50	0.015126000
C7	RFS APX16DWV-16DWVS-E-A20	1900	16.25	157.0	1	15	632.54	0.000811000
C8	RFS APXVAALL24 43-U-NA20	700	13.65	157.0	4	40	3707.83	0.011547000



ID	Make / Model	Freq. Band	Gain (dBd)	Centerline (ft)	Channel Count	TX Power (W)	ERP (W)	MPE %
C8	RFS APXVAALL24 43-U-NA20	600	12.95	157.0	2	60	2366.91	0.008867000
C8	RFS APXVAALL24 43-U-NA20	600	12.95	157.0	2	60	2366.91	0.008867000
C9	ERICSSON AIR 6449 LTE BrM	2500	15.15	157.0	1	30	982.02	0.002697000
C9	ERICSSON AIR 6449 NR BrM	2500	15.15	157.0	1	30	982.02	0.002697000
C9	ERICSSON AIR 6449 LTE TB	2500	22.35	157.0	1	90	15461.18	0.041476000
C9	ERICSSON AIR 6449 NR TB	2500	22.35	157.0	1	90	15461.18	0.041476000
T-Mobile MPE%								0.44573500 %

Table 3: T-Mobile Antenna Inventory & Power Level



FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 4* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated T-Mobile sector(s).

Frequency Band	Technology	Centerline (ft.)	# of Channels	ERP W (Per Channel)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	MPE %
2100	L	157.0	2	5903.751048	0.1488450	1000	0.01488400
1900	L	157.0	2	5903.751048	0.1481610	1000	0.01481600
1900	G	157.0	1	632.5447551	0.0079450	1000	0.00079500
700	L	157.0	4	926.95786	0.0533930	467	0.01144100
600	L	157.0	2	1183.453642	0.0368010	400	0.00920000
600	N	157.0	2	1183.453642	0.0368010	400	0.00920000
2500	L	157.0	1	982.0220846	0.0267240	1000	0.00267200
2500	N	157.0	1	982.0220846	0.0267240	1000	0.00267200
2500	L	157.0	1	15461.17548	0.4138110	1000	0.04138100
2500	N	157.0	1	15461.17548	0.4138110	1000	0.04138100
2100	L	157.0	2	5903.751048	0.1495320	1000	0.01495300
1900	L	157.0	2	5903.751048	0.1495320	1000	0.01495300
1900	G	157.0	1	632.5447551	0.0080190	1000	0.00080200
700	L	157.0	4	926.95786	0.0538870	467	0.01154700
600	L	157.0	2	1183.453642	0.0362120	400	0.00905300
600	N	157.0	2	1183.453642	0.0362120	400	0.00905300
2500	L	157.0	1	982.0220846	0.0269720	1000	0.00269700
2500	N	157.0	1	982.0220846	0.0269720	1000	0.00269700
2500	L	157.0	1	15461.17548	0.4147650	1000	0.04147600
2500	N	157.0	1	15461.17548	0.4147650	1000	0.04147600
2100	L	157.0	2	5903.751048	0.1502220	1000	0.01502200
1900	L	157.0	2	5903.751048	0.1512630	1000	0.01512600
1900	G	157.0	1	632.5447551	0.0081120	1000	0.00081100
700	L	157.0	4	926.95786	0.0538870	467	0.01154700
600	L	157.0	2	1183.453642	0.0354700	400	0.00886700
600	N	157.0	2	1183.453642	0.0354700	400	0.00886700
2500	L	157.0	1	982.0220846	0.0269720	1000	0.00269700
2500	N	157.0	1	982.0220846	0.0269720	1000	0.00269700
2500	L	157.0	1	15461.17548	0.4147650	1000	0.04147600
2500	N	157.0	1	15461.17548	0.4147650	1000	0.04147600
T-Mobile MPE%							0.44573500 %

Table 4: T-Mobile Maximum Sector MPE Power Values



AT&T Results

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 4* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated AT&T sector(s).

Frequency Band	Technology	Centerline (ft.)	# of Channels	ERP W (Per Channel)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	MPE %
700	-	167.0	2	885.362768	0.0157180	467	0.00336800
850	-	167.0	2	1371.071146	0.0215980	567	0.00381100
1900	-	167.0	2	1207.980688	0.0205900	1000	0.00205900
2100	-	167.0	2	1355.376625	0.0220710	1000	0.00220700
850	-	167.0	1	818.749882	0.0209650	567	0.00370000
1900	-	167.0	1	1297.631114	0.0210090	1000	0.00210100
850	-	167.0	1	818.749882	0.0209650	567	0.00370000
1900	-	167.0	1	1297.631114	0.0210090	1000	0.00210100
700	-	167.0	2	885.362768	0.0164590	467	0.00352700
850	-	167.0	2	1371.071146	0.0226160	567	0.00399100
1900	-	167.0	2	1207.980688	0.0215600	1000	0.00215600
2100	-	167.0	2	1355.376625	0.0236500	1000	0.00236500
850	-	167.0	1	818.749882	0.0219530	567	0.00387400
1900	-	167.0	1	1297.631114	0.0191170	1000	0.00191200
850	-	167.0	1	818.749882	0.0219530	567	0.00387400
1900	-	167.0	1	1297.631114	0.0191170	1000	0.00191200
700	-	167.0	2	885.362768	0.0164590	467	0.00352700
850	-	167.0	2	1371.071146	0.0226160	567	0.00399100
1900	-	167.0	2	1207.980688	0.0215600	1000	0.00215600
2100	-	167.0	2	1355.376625	0.0236500	1000	0.00236500
850	-	167.0	1	818.749882	0.0219530	567	0.00387400
1900	-	167.0	1	1297.631114	0.0196070	1000	0.00196100
850	-	167.0	1	818.749882	0.0219530	567	0.00387400
1900	-	167.0	1	1297.631114	0.0196070	1000	0.00196100
						AT&T MPE%	0.07036700%



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 T-Mobile 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:

Carrier	Predicted MPE %
T-Mobile	0.44573500%
AT&T	0.07036700%
Composite	0.51610200%

Table 5: Total Predicted MPE(%) by Carrier

Compliance Status:

The anticipated composite MPE value for this site assuming all carriers present is **0.51610200%** of the allowable FCC established general population limit sampled at the ground level.

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.

Erin Kavanaugh
RF Compliance Consultant
Centerline Communications, LLC

750 West Center St. Suite 301
West Bridgewater, MA 02379

EXHIBIT 8

Structural Analysis



Tower Engineering Solutions

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1320 Greenway Drive, Suite 600, Irving, Texas 75038

Structural Analysis Report

Existing 176 ft EEI Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT13611-A

Customer Site Name: BSA

Carrier Name: T-Mobile (App#: 160674, V1)

Carrier Site ID / Name: CTNL162B / _

Site Location: 229-231 Ashford Center Rd

Ashford, Connecticut

Windham County

Latitude: 41.880444

Longitude: -72.128499

Exp.10/31/2021



08/03/2021

Analysis Result:

Max Structural Usage: 83.3% [Pass]

Max Foundation Usage: 51.0% [Pass]

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

Report Prepared By : Linfeng Chen

Introduction

The purpose of this report is to summarize the analysis results on the 176 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	EEI (Job No. 11863-E01) original design drawings dated August 21, 2003.
Foundation Drawing	EEI (Job No. 11863-E01) original design drawings dated August 21, 2003.
Geotechnical Report	Jaworski Geotech, Inc. (Project No. 02130G) Geotechnical Evaluation dated February 7, 2002.
Modification Drawings	N/A
Mount Analysis	TES, Job# 110405, Dated 07/08/21

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 $V_{ult} = 130.0$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 101.0$ mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 1" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	$S_S = 0.172$, $S_1 = 0.063$

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	167.0	6	Powerwave Allgon - 7770.00 - Panel	Low Profile Platform	(12) 1 5/8" (1) 3" (2) 3/4" DC (1) 7/16" Fiber	AT&T*
2		3	KMW - AM-X-CD-17-65-00T-RET - Panel			
3		6	Powerwave LGP21401 TMA			
4		3	Ericsson RRUS-11			
5		3	Ericsson RRUS-12			
6		6	Ericsson LGP 21901 Diplexer			
7		1	Raycap DC6-48-60-18-8F ("Squid") DC Surge Suppress			

*3 lines (2) 3/4" DC and (1) 7/16" Fiber housed in 3" conduit.

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
8	157.0	3	RFS APX16DWV-16DWVS-E-A20 - Panel	SitePro1 RMQP-4096-HK	(3) 1.99" Hybrid - 6x24	T-Mobile
9		3	RFS APXVAALL24-43-U-NA20 - Panel			
10		3	Ericsson AIR6449 B41 - Panel			
11		3	Ericsson 4460 B25 + B66 RRU			
12		3	Ericsson 4480 B71 + B85 RRU			

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

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	69.7%	56.0%	83.3%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	3430.3	29.2	69.4

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 1.4985 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the existing structure and its foundation were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the TIA-222 Standard under the design basic wind speed as specified in the Analysis Criteria.

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC**. Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.
2. The structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.
3. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the ANSI/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.
4. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.
5. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.
6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

Usage Diagram - Max Ratio 69.70% at 0.0ft

Structure: CT13611-A-SBA
Site Name: BSA
Height: 176.00 (ft)
Base Elev: 0.000 (ft)

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

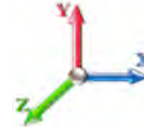
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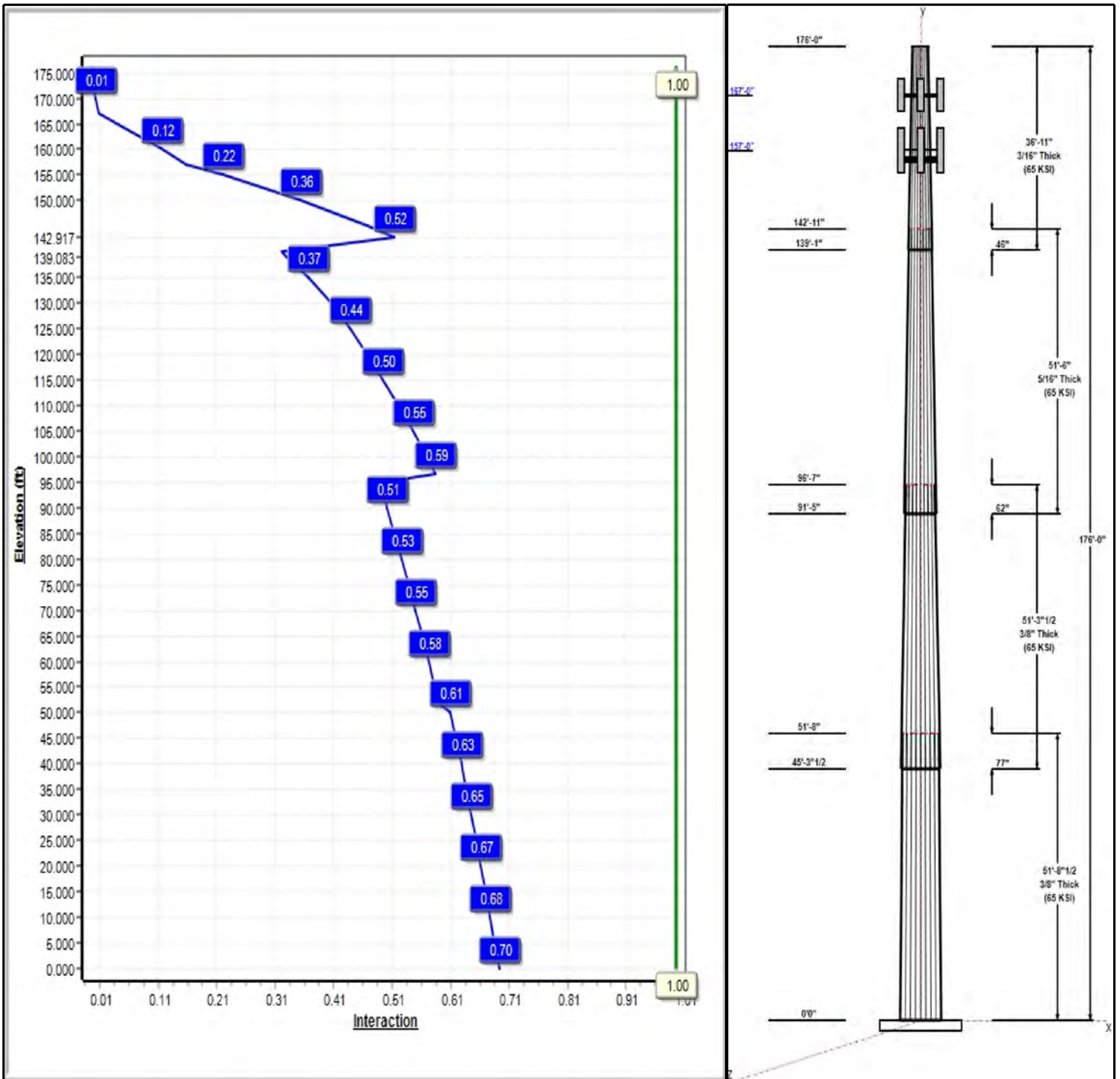
Dead Load Factor: 1.20
Wind Load Factor: 1.60

Load Case : 1.2D + 1.6W 101 mph Wind



Iterations: 28

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Structure: CT13611-A-SBA

Type: Tapered
Site Name: BSA
Height: 176.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.23153

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Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	51.71	44.53	56.50	0.375		0.23153	65
2	51.29	34.89	46.76	0.375	Slip	0.23153	65
3	51.50	24.78	36.71	0.313	Slip	0.23153	65
4	36.92	17.50	26.05	0.188	Slip	0.23153	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
167.00	167.00	6	7770.00	AT&T
167.00	167.00	3	AM-X-CD-17-65-00T-RET	AT&T
167.00	167.00	6	Powerwave LGP21401	AT&T
167.00	167.00	3	Ericsson RRUS-11	AT&T
167.00	167.00	6	Ericsson LGP 21901	AT&T
167.00	167.00	1	Raycap DC6-48-60-18-8F	AT&T
167.00	167.00	1	Low Profile Platform	AT&T
167.00	167.00	3	Ericsson RRUS-12	AT&T
157.00	157.00	3	RFS	T-Mobile
157.00	157.00	3	RFS	T-Mobile
157.00	157.00	3	Ericsson AIR6449 B41	T-Mobile
157.00	157.00	1	SitePro1 RMQP-4096-HK	T-Mobile
157.00	157.00	3	Ericsson 4460 B25 + B66	T-Mobile
157.00	157.00	3	Ericsson 4480 B71 + B85	T-Mobile

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	167.00	Inside	1 5/8" Coax	AT&T
0.00	167.00	Inside	3" Coax	AT&T
0.00	167.00	Inside	3/4" DC	AT&T
0.00	167.00	Inside	7/16" Fiber	AT&T
0.00	157.00	Inside	1.99" Hybrid - 6x24	T-Mobile

Anchor Bolts

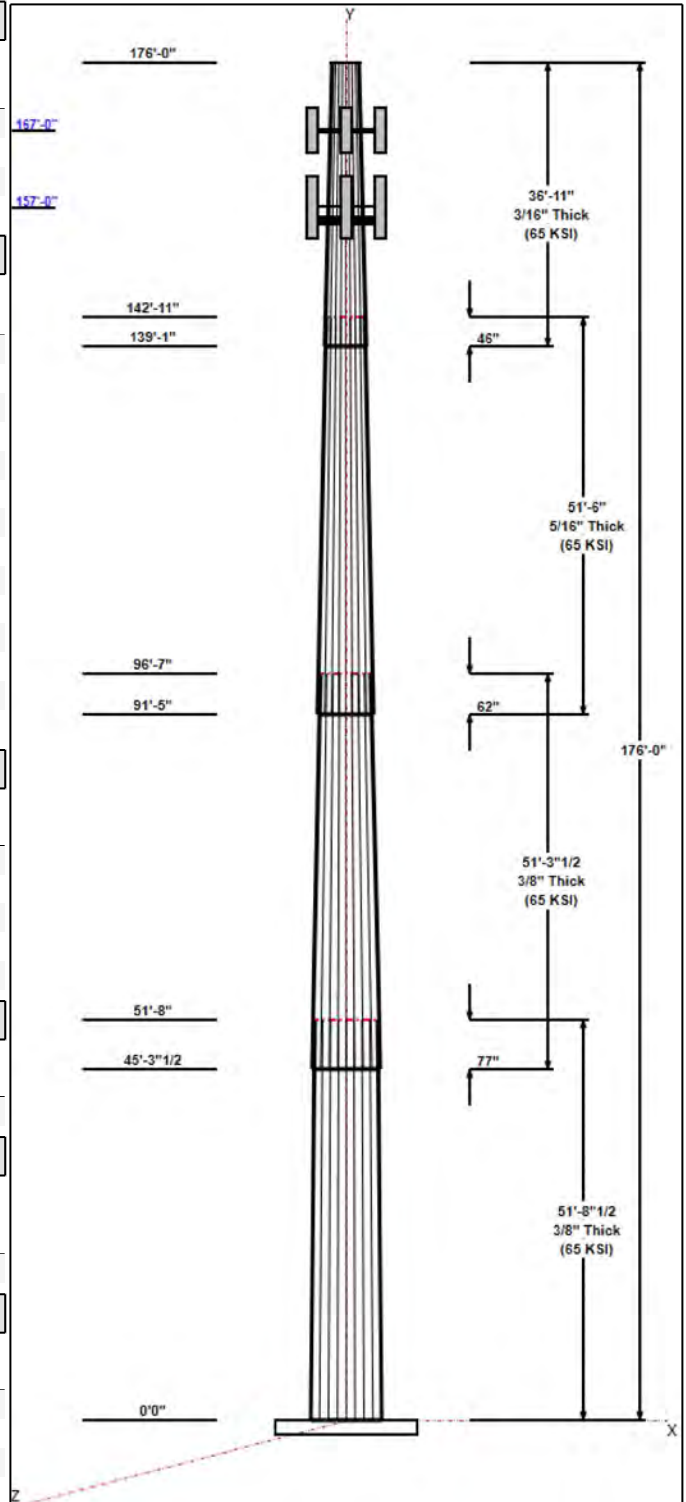
Qty	Specifications	Grade (ksi)	Arrangement
18	2.25" 18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.0000	72.0	60.0	Round

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 101 mph Wind	3430.3	29.2	41.6
0.9D + 1.6W 101 mph Wind	3390.9	29.2	31.2
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1015.3	8.5	69.4
1.2D + 1.0E	166.2	1.4	41.7
0.9D + 1.0E	164.2	1.4	31.3
1.0D + 1.0W 60 mph Wind	752.1	6.4	34.7

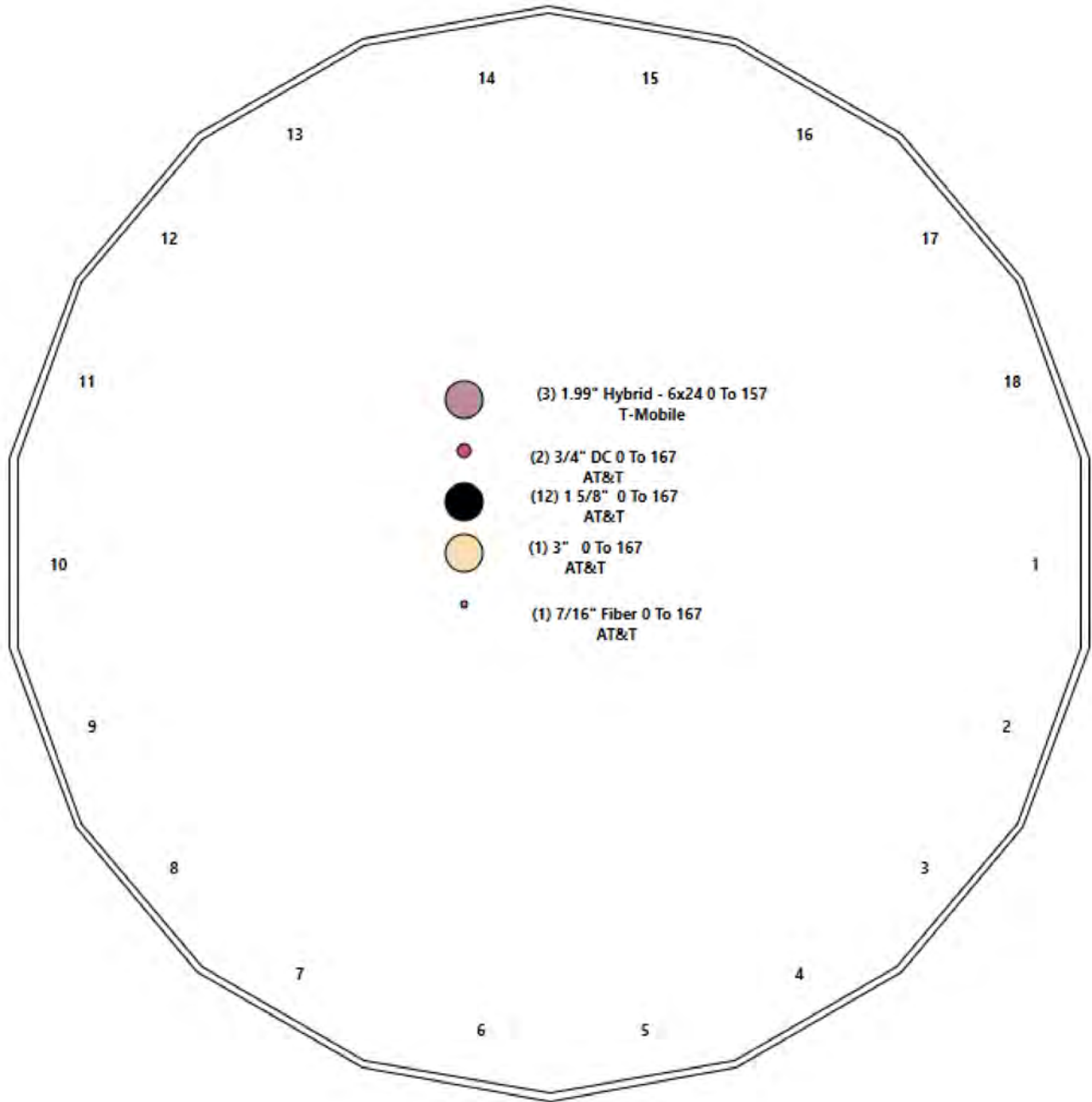


Structure: CT13611-A-SBA - Coax Line Placement

Type: Monopole
Site Name: BSA
Height: 176.00 (ft)

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Shaft Properties

Structure: CT13611-A-SBA	Code: EIA/TIA-222-G	8/3/2021
Site Name: BSA	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	51.710	0.3750	65		0.00	10,500
2	18	51.290	0.3750	65	Slip	77.00	8,403
3	18	51.500	0.3125	65	Slip	62.00	5,290
4	18	36.917	0.1875	65	Slip	46.00	1,614
Total Shaft Weight:							25,807

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	56.50	0.00	66.80	26585.49	25.16	150.67	44.53	51.71	52.55	12943.0	19.53	118.7	0.231534
2	46.76	45.29	55.21	15010.46	20.58	124.70	34.89	96.58	41.08	6181.75	14.99	93.03	0.231534
3	36.71	91.42	36.10	6041.86	19.30	117.47	24.78	142.92	24.27	1836.64	12.57	79.31	0.231534
4	26.05	139.0	15.39	1300.26	23.08	138.92	17.50	176.00	10.30	390.14	15.05	93.33	0.231534

Load Summary

Structure: CT13611-A-SBA	Code: EIA/TIA-222-G	8/3/2021
Site Name: BSA	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
1	167.00	7770.00	6	35.00	5.50	0.73	231.83	6.968	0.73	0.00	0.00
2	167.00	AM-X-CD-17-65-00T-RET	3	41.80	8.02	0.75	260.53	11.785	0.75	0.00	0.00
3	167.00	Powerwave LGP21401 TMA	6	14.10	1.29	1.00	47.79	2.416	1.00	0.00	0.00
4	167.00	Ericsson RRUS-11	3	44.00	2.57	0.73	129.28	3.441	0.73	0.00	0.00
5	167.00	Ericsson LGP 21901 Diplexer	6	5.50	0.23	0.75	15.86	0.726	0.75	0.00	0.00
6	167.00	Raycap DC6-48-60-18-8F ("Squid")	1	31.80	0.92	1.00	115.12	1.510	1.00	0.00	0.00
7	167.00	Low Profile Platform	1	1200.00	25.00	1.00	2611.24	53.225	1.00	0.00	0.00
8	167.00	Ericsson RRUS-12	3	60.00	2.70	0.75	160.14	4.151	0.75	0.00	0.00
9	157.00	RFS APX16DWV-16DWVS-E-A20	3	40.70	6.61	0.62	197.49	9.527	0.62	0.00	0.00
10	157.00	RFS APXVAALL24-43-U-NA20	3	143.30	20.24	0.72	751.75	22.757	0.75	0.00	0.00
11	157.00	Ericsson AIR6449 B41	3	103.00	5.65	0.71	286.66	6.923	0.75	0.00	0.00
12	157.00	SitePro1 RMQP-4096-HK	1	2449.00	48.00	1.00	5883.86	92.882	1.00	0.00	0.00
13	157.00	Ericsson 4460 B25 + B66	3	104.00	2.85	0.67	195.90	3.753	0.67	0.00	0.00
14	157.00	Ericsson 4480 B71 + B85	3	93.00	2.85	0.67	189.35	3.753	0.67	0.00	0.00
Totals:			45	5,897.80			16,896.47				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	167.00	(12) 1 5/8" Coax	0.00	Inside
0.00	167.00	(1) 3" Coax	0.00	Inside
0.00	167.00	(2) 3/4" DC	0.00	Inside
0.00	167.00	(1) 7/16" Fiber	0.00	Inside
0.00	157.00	(3) 1.99" Hybrid - 6x24	0.00	Inside

Shaft Section Properties

Structure: CT13611-A-SBA	Code: EIA/TIA-222-G	8/3/2021
Site Name: BSA	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in ³)	Weight (lb)
0.00		0.3750	56.500	66.800	26585.5	25.16	150.67	71.8	926.8	0.0
5.00		0.3750	55.342	65.423	24974.1	24.61	147.58	72.5	888.8	1124.8
10.00		0.3750	54.185	64.045	23429.1	24.07	144.49	73.1	851.7	1101.4
15.00		0.3750	53.027	62.667	21949.3	23.52	141.41	73.7	815.3	1077.9
20.00		0.3750	51.869	61.289	20533.1	22.98	138.32	74.4	779.7	1054.5
25.00		0.3750	50.712	59.911	19179.1	22.43	135.23	75.0	744.9	1031.0
30.00		0.3750	49.554	58.533	17886.0	21.89	132.14	75.7	710.9	1007.6
35.00		0.3750	48.396	57.155	16652.4	21.35	129.06	76.3	677.7	984.2
40.00		0.3750	47.239	55.777	15476.9	20.80	125.97	76.9	645.3	960.7
45.00		0.3750	46.081	54.400	14358.0	20.26	122.88	77.6	613.7	937.3
45.29	Bot - Section 2	0.3750	46.013	54.319	14294.1	20.22	122.70	77.6	611.9	54.3
50.00		0.3750	44.923	53.022	13294.4	19.71	119.80	78.2	582.9	1733.4
51.71	Top - Section 1	0.3750	45.277	53.443	13613.9	19.88	120.74	0.0	0.0	619.5
55.00		0.3750	44.516	52.536	12932.8	19.52	118.71	78.4	572.2	593.2
60.00		0.3750	43.358	51.159	11941.7	18.98	115.62	79.1	542.5	882.1
65.00		0.3750	42.200	49.781	11002.5	18.43	112.53	79.7	513.5	858.7
70.00		0.3750	41.043	48.403	10114.0	17.89	109.45	80.4	485.4	835.2
75.00		0.3750	39.885	47.025	9274.6	17.34	106.36	81.0	458.0	811.8
80.00		0.3750	38.727	45.647	8483.0	16.80	103.27	81.6	431.4	788.4
85.00		0.3750	37.570	44.269	7737.8	16.25	100.19	82.3	405.7	764.9
90.00		0.3750	36.412	42.891	7037.5	15.71	97.10	82.5	380.7	741.5
91.42	Bot - Section 3	0.3750	36.084	42.501	6847.1	15.56	96.22	82.5	373.7	205.8
95.00		0.3750	35.254	41.514	6380.8	15.17	94.01	82.5	356.5	947.4
96.58	Top - Section 2	0.3125	35.513	34.913	5465.5	18.63	113.64	0.0	0.0	411.6
100.00		0.3125	34.722	34.128	5105.2	18.18	111.11	80.0	289.6	401.3
105.00		0.3125	33.564	32.980	4607.1	17.53	107.40	80.8	270.4	570.9
110.00		0.3125	32.406	31.832	4142.4	16.87	103.70	81.6	251.8	551.4
115.00		0.3125	31.249	30.684	3710.1	16.22	100.00	82.3	233.9	531.8
120.00		0.3125	30.091	29.535	3309.0	15.57	96.29	82.5	216.6	512.3
125.00		0.3125	28.933	28.387	2937.9	14.91	92.59	82.5	200.0	492.7
130.00		0.3125	27.776	27.239	2595.6	14.26	88.88	82.5	184.1	473.2
135.00		0.3125	26.618	26.091	2281.0	13.61	85.18	82.5	168.8	453.7
139.08	Bot - Section 4	0.3125	25.672	25.153	2043.8	13.07	82.15	82.5	156.8	356.0
140.00		0.3125	25.460	24.943	1992.9	12.96	81.47	82.5	154.2	125.9
142.92	Top - Section 3	0.1875	25.160	14.861	1170.9	22.25	134.19	0.0	0.0	393.7
145.00		0.1875	24.678	14.574	1104.4	21.80	131.61	75.8	88.1	104.3
150.00		0.1875	23.520	13.885	955.0	20.71	125.44	77.0	80.0	242.1
155.00		0.1875	22.362	13.196	819.8	19.62	119.27	78.3	72.2	230.4
157.00		0.1875	21.899	12.921	769.5	19.18	116.80	78.8	69.2	88.9
160.00		0.1875	21.205	12.507	698.0	18.53	113.09	79.6	64.8	129.8
165.00		0.1875	20.047	11.818	588.9	17.44	106.92	80.9	57.9	206.9
167.00		0.1875	19.584	11.543	548.7	17.01	104.45	81.4	55.2	79.5
170.00		0.1875	18.889	11.129	491.8	16.35	100.74	82.2	51.3	115.7
175.00		0.1875	17.732	10.441	406.0	15.26	94.57	82.5	45.1	183.5
176.00		0.1875	17.500	10.303	390.1	15.05	93.33	82.5	43.9	35.3

25806.5

Wind Loading - Shaft

Structure: CT13611-A-SBA	Code: EIA/TIA-222-G	8/3/2021
Site Name: BSA	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

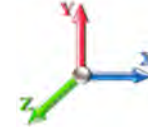


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Load Case: 1.2D + 1.6W 101 mph Wind

Iterations 28

Dead Load Factor 1.20
Wind Load Factor 1.60



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	21.088	23.20	445.19	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	21.088	23.20	436.07	0.650	0.000	5.00	23.660	15.38	570.8	0.0	1349.8
10.00		1.00	0.85	21.088	23.20	426.95	0.650	0.000	5.00	23.170	15.06	559.0	0.0	1321.6
15.00		1.00	0.85	21.088	23.20	417.83	0.650	0.000	5.00	22.680	14.74	547.1	0.0	1293.5
20.00		1.00	0.90	22.375	24.61	420.99	0.650	0.000	5.00	22.191	14.42	568.0	0.0	1265.4
25.00		1.00	0.95	23.451	25.80	421.38	0.650	0.000	5.00	21.701	14.11	582.2	0.0	1237.2
30.00		1.00	0.98	24.369	26.81	419.74	0.650	0.000	5.00	21.211	13.79	591.3	0.0	1209.1
35.00		1.00	1.01	25.172	27.69	416.64	0.650	0.000	5.00	20.721	13.47	596.7	0.0	1181.0
40.00		1.00	1.04	25.890	28.48	412.43	0.650	0.000	5.00	20.231	13.15	599.2	0.0	1152.9
45.00		1.00	1.07	26.540	29.19	407.34	0.650	0.000	5.00	19.742	12.83	599.4	0.0	1124.7
45.29	Bot - Section 2	1.00	1.07	26.576	29.23	407.02	0.650	0.000	0.29	1.143	0.74	34.7	0.0	65.1
50.00		1.00	1.09	27.135	29.85	401.54	0.650	0.000	4.71	18.407	11.96	571.4	0.0	2080.1
51.71	Top - Section 1	1.00	1.10	27.328	30.06	399.41	0.650	0.000	1.71	6.580	4.28	205.7	0.0	743.4
55.00		1.00	1.12	27.685	30.45	401.90	0.650	0.000	3.29	12.499	8.12	395.9	0.0	711.9
60.00		1.00	1.14	28.197	31.02	395.05	0.650	0.000	5.00	18.589	12.08	599.6	0.0	1058.6
65.00		1.00	1.16	28.676	31.54	387.76	0.650	0.000	5.00	18.100	11.76	593.8	0.0	1030.4
70.00		1.00	1.17	29.127	32.04	380.08	0.650	0.000	5.00	17.610	11.45	586.8	0.0	1002.3
75.00		1.00	1.19	29.553	32.51	372.05	0.650	0.000	5.00	17.120	11.13	578.8	0.0	974.2
80.00		1.00	1.21	29.958	32.95	363.71	0.650	0.000	5.00	16.630	10.81	569.9	0.0	946.0
85.00		1.00	1.22	30.342	33.38	355.10	0.650	0.000	5.00	16.140	10.49	560.3	0.0	917.9
90.00		1.00	1.24	30.710	33.78	346.23	0.650	0.000	5.00	15.651	10.17	549.8	0.0	889.8
91.42	Bot - Section 3	1.00	1.24	30.811	33.89	343.68	0.650	0.000	1.42	4.345	2.82	153.2	0.0	247.0
95.00		1.00	1.25	31.061	34.17	337.14	0.650	0.000	3.58	11.005	7.15	391.1	0.0	1136.8
96.58	Top - Section 2	1.00	1.26	31.170	34.29	334.21	0.650	0.000	1.58	4.783	3.11	170.5	0.0	493.9
100.00		1.00	1.27	31.399	34.54	333.84	0.650	0.000	3.42	10.153	6.60	364.7	0.0	481.6
105.00		1.00	1.28	31.723	34.89	324.37	0.650	0.000	5.00	14.446	9.39	524.2	0.0	685.1
110.00		1.00	1.29	32.035	35.24	314.72	0.650	0.000	5.00	13.956	9.07	511.5	0.0	661.6
115.00		1.00	1.30	32.336	35.57	304.90	0.650	0.000	5.00	13.466	8.75	498.1	0.0	638.2
120.00		1.00	1.32	32.627	35.89	294.92	0.650	0.000	5.00	12.976	8.43	484.3	0.0	614.7
125.00		1.00	1.33	32.909	36.20	284.80	0.650	0.000	5.00	12.486	8.12	470.1	0.0	591.3
130.00		1.00	1.34	33.182	36.50	274.53	0.650	0.000	5.00	11.997	7.80	455.4	0.0	567.8
135.00		1.00	1.35	33.446	36.79	264.14	0.650	0.000	5.00	11.507	7.48	440.3	0.0	544.4
139.08	Bot - Section 4	1.00	1.36	33.657	37.02	255.56	0.650	0.000	4.08	9.034	5.87	347.8	0.0	427.2
140.00		1.00	1.36	33.703	37.07	253.62	0.650	0.000	0.92	2.012	1.31	77.6	0.0	151.1
142.92	Top - Section 3	1.00	1.36	33.850	37.23	247.43	0.650	0.000	2.92	6.293	4.09	243.7	0.0	472.5
145.00		1.00	1.37	33.953	37.35	246.73	0.650	0.000	2.08	4.393	2.86	170.6	0.0	125.2
150.00		1.00	1.38	34.196	37.62	236.00	0.650	0.000	5.00	10.196	6.63	398.9	0.0	290.5
155.00		1.00	1.39	34.433	37.88	225.16	0.650	0.000	5.00	9.706	6.31	382.3	0.0	276.5
157.00	Appurtenance(s)	1.00	1.39	34.526	37.98	220.79	0.650	0.000	2.00	3.745	2.43	147.9	0.0	106.6
160.00		1.00	1.40	34.664	38.13	214.22	0.650	0.000	3.00	5.471	3.56	217.0	0.0	155.7
165.00		1.00	1.41	34.890	38.38	203.18	0.650	0.000	5.00	8.727	5.67	348.3	0.0	248.3
167.00	Appurtenance(s)	1.00	1.41	34.978	38.48	198.74	0.650	0.000	2.00	3.354	2.18	134.2	0.0	95.4
170.00		1.00	1.42	35.110	38.62	192.05	0.650	0.000	3.00	4.883	3.17	196.1	0.0	138.9
175.00		1.00	1.42	35.324	38.86	180.83	0.650	0.000	5.00	7.747	5.04	313.1	0.0	220.2
176.00		1.00	1.43	35.367	38.90	178.58	0.650	0.000	1.00	1.491	0.97	60.3	0.0	42.4
Totals:									176.00			17,961.7		30,967.8

Discrete Appurtenance Forces

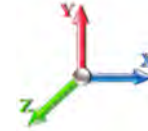
Structure: CT13611-A-SBA	Code: EIA/TIA-222-G	8/3/2021
Site Name: BSA	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 28

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	167.00	AM-X-CD-17-65-00T-RET	3	34.978	38.476	0.60	0.80	14.44	150.48	0.000	0.000	888.70	0.00	0.00
2	167.00	Low Profile Platform	1	34.978	38.476	1.00	1.00	25.00	1440.00	0.000	0.000	1539.04	0.00	0.00
3	167.00	Raycap DC6-48-60-18-8F	1	34.978	38.476	0.80	0.80	0.74	38.16	0.000	0.000	45.31	0.00	0.00
4	167.00	Ericsson LGP 21901	6	34.978	38.476	0.60	0.80	0.83	39.60	0.000	0.000	50.97	0.00	0.00
5	167.00	Ericsson RRUS-11	3	34.978	38.476	0.58	0.80	4.50	158.40	0.000	0.000	277.19	0.00	0.00
6	167.00	Powerwave LGP21401	6	34.978	38.476	0.80	0.80	6.19	101.52	0.000	0.000	381.19	0.00	0.00
7	167.00	Ericsson RRUS-12	3	34.978	38.476	0.60	0.80	4.86	216.00	0.000	0.000	299.19	0.00	0.00
8	167.00	7770.00	6	34.978	38.476	0.58	0.80	19.27	252.00	0.000	0.000	1186.41	0.00	0.00
9	157.00	Ericsson 4480 B71 + B85	3	34.526	37.979	0.50	0.75	4.30	334.80	0.000	0.000	261.08	0.00	0.00
10	157.00	Ericsson 4460 B25 + B66	3	34.526	37.979	0.50	0.75	4.30	374.40	0.000	0.000	261.08	0.00	0.00
11	157.00	SitePro1 RMQP-4096-HK	1	34.526	37.979	1.00	1.00	48.00	2938.80	0.000	0.000	2916.79	0.00	0.00
12	157.00	Ericsson AIR6449 B41	3	34.526	37.979	0.53	0.75	9.03	370.80	0.000	0.000	548.47	0.00	0.00
13	157.00	RFS	3	34.526	37.979	0.54	0.75	32.79	515.88	0.000	0.000	1992.46	0.00	0.00
14	157.00	RFS	3	34.526	37.979	0.46	0.75	9.22	146.52	0.000	0.000	560.32	0.00	0.00
Totals:									7,077.36			11,208.20		

Total Applied Force Summary

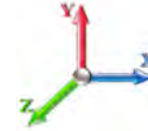
Structure: CT13611-A-SBA	Code: EIA/TIA-222-G	8/3/2021
Site Name: BSA	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 28

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		570.77	1459.40	0.00	0.00
10.00		558.96	1431.26	0.00	0.00
15.00		547.14	1403.13	0.00	0.00
20.00		568.00	1375.00	0.00	0.00
25.00		582.18	1346.87	0.00	0.00
30.00		591.31	1318.74	0.00	0.00
35.00		596.71	1290.61	0.00	0.00
40.00		599.21	1262.48	0.00	0.00
45.00		599.39	1234.34	0.00	0.00
45.29		34.75	71.54	0.00	0.00
50.00		571.42	2183.31	0.00	0.00
51.71		205.72	780.88	0.00	0.00
55.00		395.87	784.00	0.00	0.00
60.00		599.65	1168.17	0.00	0.00
65.00		593.77	1140.04	0.00	0.00
70.00		586.78	1111.91	0.00	0.00
75.00		578.81	1083.78	0.00	0.00
80.00		569.94	1055.65	0.00	0.00
85.00		560.26	1027.52	0.00	0.00
90.00		549.84	999.39	0.00	0.00
91.42		153.16	278.04	0.00	0.00
95.00		391.05	1215.39	0.00	0.00
96.58		170.54	528.60	0.00	0.00
100.00		364.69	556.52	0.00	0.00
105.00		524.24	794.68	0.00	0.00
110.00		511.45	771.24	0.00	0.00
115.00		498.14	747.80	0.00	0.00
120.00		484.34	724.36	0.00	0.00
125.00		470.08	700.91	0.00	0.00
130.00		455.39	677.47	0.00	0.00
135.00		440.28	654.03	0.00	0.00
139.08		347.83	516.73	0.00	0.00
140.00		77.58	171.22	0.00	0.00
142.92		243.69	536.40	0.00	0.00
145.00		170.63	170.88	0.00	0.00
150.00		398.88	400.14	0.00	0.00
155.00		382.35	386.08	0.00	0.00
157.00	(16) attachments	6688.13	4831.69	0.00	0.00
160.00		216.96	209.64	0.00	0.00
165.00		348.31	338.14	0.00	0.00
167.00	(29) attachments	4802.20	2527.48	0.00	0.00
170.00		196.14	138.87	0.00	0.00
175.00		313.07	220.19	0.00	0.00
176.00		60.31	42.35	0.00	0.00
Totals:		29,169.93	41,666.87	0.00	0.00

Calculated Forces

Structure: CT13611-A-SBA	Code: EIA/TIA-222-G	8/3/2021
Site Name: BSA	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



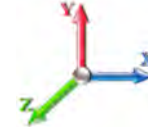
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Load Case: 1.2D + 1.6W 101 mph Wind

Iterations 28

Dead Load Factor 1.20

Wind Load Factor 1.60



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-41.62	-29.24	0.00	-3430.3	0.00	3430.33	4317.41	2158.71	9968.41	4991.62	0.00	0.000	0.000	0.697
5.00	-40.07	-28.79	0.00	-3284.1	0.00	3284.15	4266.06	2133.03	9645.32	4829.83	0.10	-0.180	0.000	0.690
10.00	-38.55	-28.35	0.00	-3140.2	0.00	3140.20	4213.11	2106.56	9323.64	4668.75	0.38	-0.363	0.000	0.682
15.00	-37.06	-27.91	0.00	-2998.4	0.00	2998.46	4158.58	2079.29	9003.59	4508.49	0.86	-0.549	0.000	0.674
20.00	-35.60	-27.45	0.00	-2858.9	0.00	2858.90	4102.46	2051.23	8685.41	4349.16	1.54	-0.739	0.000	0.666
25.00	-34.17	-26.96	0.00	-2721.6	0.00	2721.66	4044.75	2022.37	8369.33	4190.89	2.42	-0.932	0.000	0.658
30.00	-32.77	-26.46	0.00	-2586.8	0.00	2586.85	3985.45	1992.73	8055.57	4033.77	3.50	-1.129	0.000	0.650
35.00	-31.40	-25.95	0.00	-2454.5	0.00	2454.54	3924.57	1962.28	7744.37	3877.94	4.79	-1.329	0.000	0.641
40.00	-30.06	-25.43	0.00	-2324.8	0.00	2324.80	3862.10	1931.05	7435.94	3723.50	6.29	-1.534	0.000	0.632
45.00	-28.80	-24.85	0.00	-2197.6	0.00	2197.67	3798.04	1899.02	7130.53	3570.56	8.01	-1.741	0.000	0.623
45.29	-28.68	-24.86	0.00	-2190.3	0.00	2190.38	3794.23	1897.11	7112.71	3561.64	8.12	-1.754	0.000	0.623
50.00	-26.46	-24.28	0.00	-2073.3	0.00	2073.36	3732.39	1866.19	6828.35	3419.25	9.95	-1.954	0.000	0.614
51.71	-25.64	-24.10	0.00	-2031.8	0.00	2031.83	3752.64	1876.32	6920.41	3465.35	10.66	-2.029	0.000	0.593
55.00	-24.80	-23.75	0.00	-1952.5	0.00	1952.54	3708.89	1854.45	6722.75	3366.37	12.11	-2.173	0.000	0.587
60.00	-23.57	-23.19	0.00	-1833.7	0.00	1833.78	3641.10	1820.55	6425.31	3217.43	14.49	-2.381	0.000	0.577
65.00	-22.37	-22.64	0.00	-1717.8	0.00	1717.81	3571.72	1785.86	6131.65	3070.38	17.10	-2.593	0.000	0.566
70.00	-21.21	-22.08	0.00	-1604.6	0.00	1604.63	3500.75	1750.37	5841.99	2925.34	19.93	-2.808	0.000	0.555
75.00	-20.07	-21.52	0.00	-1494.2	0.00	1494.25	3428.19	1714.09	5556.57	2782.41	22.99	-3.026	0.000	0.543
80.00	-18.97	-20.97	0.00	-1386.6	0.00	1386.65	3354.04	1677.02	5275.60	2641.72	26.27	-3.246	0.000	0.531
85.00	-17.90	-20.42	0.00	-1281.8	0.00	1281.81	3278.31	1639.15	4999.32	2503.38	29.79	-3.470	0.000	0.518
90.00	-16.88	-19.85	0.00	-1179.7	0.00	1179.72	3186.62	1593.31	4706.74	2356.87	33.54	-3.696	0.000	0.506
91.42	-16.57	-19.71	0.00	-1151.6	0.00	1151.60	3157.61	1578.81	4621.01	2313.94	34.65	-3.763	0.000	0.503
95.00	-15.35	-19.27	0.00	-1080.9	0.00	1080.96	3084.25	1542.12	4407.69	2207.12	37.54	-3.929	0.000	0.495
96.58	-14.79	-19.10	0.00	-1050.4	0.00	1050.45	2497.75	1248.88	3609.06	1807.21	38.85	-4.005	0.000	0.587
100.00	-14.19	-18.75	0.00	-985.20	0.00	985.20	2457.75	1228.87	3470.74	1737.95	41.77	-4.165	0.000	0.573
105.00	-13.36	-18.23	0.00	-891.47	0.00	891.47	2397.86	1198.93	3271.22	1638.04	46.27	-4.426	0.000	0.550
110.00	-12.55	-17.71	0.00	-800.34	0.00	800.34	2336.39	1168.19	3075.35	1539.96	51.04	-4.687	0.000	0.525
115.00	-11.77	-17.21	0.00	-711.78	0.00	711.78	2273.33	1136.66	2883.37	1443.83	56.09	-4.947	0.000	0.498
120.00	-11.02	-16.71	0.00	-625.76	0.00	625.76	2194.33	1097.17	2677.99	1340.98	61.40	-5.203	0.000	0.472
125.00	-10.29	-16.22	0.00	-542.22	0.00	542.22	2109.02	1054.51	2472.77	1238.23	66.98	-5.454	0.000	0.443
130.00	-9.60	-15.74	0.00	-461.12	0.00	461.12	2023.72	1011.86	2275.74	1139.56	72.81	-5.697	0.000	0.410
135.00	-8.94	-15.27	0.00	-382.42	0.00	382.42	1938.41	969.21	2086.89	1045.00	78.90	-5.928	0.000	0.371
139.08	-8.43	-14.88	0.00	-320.08	0.00	320.08	1868.74	934.37	1938.73	970.81	84.04	-6.107	0.000	0.334
140.00	-8.25	-14.80	0.00	-306.44	0.00	306.44	1853.10	926.55	1906.22	954.53	85.21	-6.147	0.000	0.326
142.92	-7.72	-14.51	0.00	-263.27	0.00	263.27	1006.21	503.11	1032.86	517.20	89.00	-6.266	0.000	0.518
145.00	-7.52	-14.35	0.00	-233.04	0.00	233.04	993.78	496.89	1000.24	500.86	91.75	-6.346	0.000	0.474
150.00	-7.12	-13.93	0.00	-161.30	0.00	161.30	962.80	481.40	922.91	462.14	98.52	-6.600	0.000	0.357
155.00	-6.75	-13.52	0.00	-91.63	0.00	91.63	930.24	465.12	847.10	424.18	105.53	-6.788	0.000	0.224
157.00	-2.74	-6.31	0.00	-64.59	0.00	64.59	916.77	458.38	817.25	409.23	108.38	-6.843	0.000	0.161
160.00	-2.55	-6.07	0.00	-45.66	0.00	45.66	896.09	448.04	773.04	387.10	112.69	-6.904	0.000	0.121
165.00	-2.26	-5.69	0.00	-15.29	0.00	15.29	860.35	430.17	700.97	351.00	119.94	-6.966	0.000	0.046
167.00	-0.33	-0.61	0.00	-3.92	0.00	3.92	845.61	422.80	672.74	336.87	122.86	-6.975	0.000	0.012
170.00	-0.22	-0.40	0.00	-2.08	0.00	2.08	823.02	411.51	631.10	316.02	127.23	-6.980	0.000	0.007
175.00	-0.03	-0.06	0.00	-0.06	0.00	0.06	775.68	387.84	557.61	279.22	134.52	-6.983	0.000	0.000
176.00	0.00	-0.06	0.00	0.00	0.00	0.00	765.44	382.72	542.91	271.86	135.98	-6.983	0.000	0.000

Wind Loading - Shaft

Structure: CT13611-A-SBA	Code: EIA/TIA-222-G	8/3/2021
Site Name: BSA	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

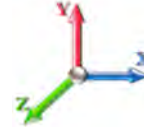


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Load Case: 0.9D + 1.6W 101 mph Wind

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	21.088	23.20	445.19	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	21.088	23.20	436.07	0.650	0.000	5.00	23.660	15.38	570.8	0.0	1012.3
10.00		1.00	0.85	21.088	23.20	426.95	0.650	0.000	5.00	23.170	15.06	559.0	0.0	991.2
15.00		1.00	0.85	21.088	23.20	417.83	0.650	0.000	5.00	22.680	14.74	547.1	0.0	970.1
20.00		1.00	0.90	22.375	24.61	420.99	0.650	0.000	5.00	22.191	14.42	568.0	0.0	949.0
25.00		1.00	0.95	23.451	25.80	421.38	0.650	0.000	5.00	21.701	14.11	582.2	0.0	927.9
30.00		1.00	0.98	24.369	26.81	419.74	0.650	0.000	5.00	21.211	13.79	591.3	0.0	906.8
35.00		1.00	1.01	25.172	27.69	416.64	0.650	0.000	5.00	20.721	13.47	596.7	0.0	885.7
40.00		1.00	1.04	25.890	28.48	412.43	0.650	0.000	5.00	20.231	13.15	599.2	0.0	864.6
45.00		1.00	1.07	26.540	29.19	407.34	0.650	0.000	5.00	19.742	12.83	599.4	0.0	843.5
45.29	Bot - Section 2	1.00	1.07	26.576	29.23	407.02	0.650	0.000	0.29	1.143	0.74	34.7	0.0	48.8
50.00		1.00	1.09	27.135	29.85	401.54	0.650	0.000	4.71	18.407	11.96	571.4	0.0	1560.1
51.71	Top - Section 1	1.00	1.10	27.328	30.06	399.41	0.650	0.000	1.71	6.580	4.28	205.7	0.0	557.5
55.00		1.00	1.12	27.685	30.45	401.90	0.650	0.000	3.29	12.499	8.12	395.9	0.0	533.9
60.00		1.00	1.14	28.197	31.02	395.05	0.650	0.000	5.00	18.589	12.08	599.6	0.0	793.9
65.00		1.00	1.16	28.676	31.54	387.76	0.650	0.000	5.00	18.100	11.76	593.8	0.0	772.8
70.00		1.00	1.17	29.127	32.04	380.08	0.650	0.000	5.00	17.610	11.45	586.8	0.0	751.7
75.00		1.00	1.19	29.553	32.51	372.05	0.650	0.000	5.00	17.120	11.13	578.8	0.0	730.6
80.00		1.00	1.21	29.958	32.95	363.71	0.650	0.000	5.00	16.630	10.81	569.9	0.0	709.5
85.00		1.00	1.22	30.342	33.38	355.10	0.650	0.000	5.00	16.140	10.49	560.3	0.0	688.4
90.00		1.00	1.24	30.710	33.78	346.23	0.650	0.000	5.00	15.651	10.17	549.8	0.0	667.3
91.42	Bot - Section 3	1.00	1.24	30.811	33.89	343.68	0.650	0.000	1.42	4.345	2.82	153.2	0.0	185.2
95.00		1.00	1.25	31.061	34.17	337.14	0.650	0.000	3.58	11.005	7.15	391.1	0.0	852.6
96.58	Top - Section 2	1.00	1.26	31.170	34.29	334.21	0.650	0.000	1.58	4.783	3.11	170.5	0.0	370.4
100.00		1.00	1.27	31.399	34.54	333.84	0.650	0.000	3.42	10.153	6.60	364.7	0.0	361.2
105.00		1.00	1.28	31.723	34.89	324.37	0.650	0.000	5.00	14.446	9.39	524.2	0.0	513.8
110.00		1.00	1.29	32.035	35.24	314.72	0.650	0.000	5.00	13.956	9.07	511.5	0.0	496.2
115.00		1.00	1.30	32.336	35.57	304.90	0.650	0.000	5.00	13.466	8.75	498.1	0.0	478.6
120.00		1.00	1.32	32.627	35.89	294.92	0.650	0.000	5.00	12.976	8.43	484.3	0.0	461.1
125.00		1.00	1.33	32.909	36.20	284.80	0.650	0.000	5.00	12.486	8.12	470.1	0.0	443.5
130.00		1.00	1.34	33.182	36.50	274.53	0.650	0.000	5.00	11.997	7.80	455.4	0.0	425.9
135.00		1.00	1.35	33.446	36.79	264.14	0.650	0.000	5.00	11.507	7.48	440.3	0.0	408.3
139.08	Bot - Section 4	1.00	1.36	33.657	37.02	255.56	0.650	0.000	4.08	9.034	5.87	347.8	0.0	320.4
140.00		1.00	1.36	33.703	37.07	253.62	0.650	0.000	0.92	2.012	1.31	77.6	0.0	113.3
142.92	Top - Section 3	1.00	1.36	33.850	37.23	247.43	0.650	0.000	2.92	6.293	4.09	243.7	0.0	354.3
145.00		1.00	1.37	33.953	37.35	246.73	0.650	0.000	2.08	4.393	2.86	170.6	0.0	93.9
150.00		1.00	1.38	34.196	37.62	236.00	0.650	0.000	5.00	10.196	6.63	398.9	0.0	217.9
155.00		1.00	1.39	34.433	37.88	225.16	0.650	0.000	5.00	9.706	6.31	382.3	0.0	207.3
157.00	Appurtenance(s)	1.00	1.39	34.526	37.98	220.79	0.650	0.000	2.00	3.745	2.43	147.9	0.0	80.0
160.00		1.00	1.40	34.664	38.13	214.22	0.650	0.000	3.00	5.471	3.56	217.0	0.0	116.8
165.00		1.00	1.41	34.890	38.38	203.18	0.650	0.000	5.00	8.727	5.67	348.3	0.0	186.2
167.00	Appurtenance(s)	1.00	1.41	34.978	38.48	198.74	0.650	0.000	2.00	3.354	2.18	134.2	0.0	71.5
170.00		1.00	1.42	35.110	38.62	192.05	0.650	0.000	3.00	4.883	3.17	196.1	0.0	104.2
175.00		1.00	1.42	35.324	38.86	180.83	0.650	0.000	5.00	7.747	5.04	313.1	0.0	165.1
176.00		1.00	1.43	35.367	38.90	178.58	0.650	0.000	1.00	1.491	0.97	60.3	0.0	31.8
Totals:									176.00			17,961.7		23,225.9

Discrete Appurtenance Forces

Structure: CT13611-A-SBA	Code: EIA/TIA-222-G	8/3/2021
Site Name: BSA	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 101 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	167.00	AM-X-CD-17-65-00T-RET	3	34.978	38.476	0.60	0.80	0.80	14.44	112.86	0.000	0.000	888.70	0.00	0.00	
2	167.00	Low Profile Platform	1	34.978	38.476	1.00	1.00	1.00	25.00	1080.00	0.000	0.000	1539.04	0.00	0.00	
3	167.00	Raycap DC6-48-60-18-8F	1	34.978	38.476	0.80	0.80	0.74	28.62	28.62	0.000	0.000	45.31	0.00	0.00	
4	167.00	Ericsson LGP 21901	6	34.978	38.476	0.60	0.80	0.83	29.70	29.70	0.000	0.000	50.97	0.00	0.00	
5	167.00	Ericsson RRUS-11	3	34.978	38.476	0.58	0.80	4.50	118.80	118.80	0.000	0.000	277.19	0.00	0.00	
6	167.00	Powerwave LGP21401	6	34.978	38.476	0.80	0.80	6.19	76.14	76.14	0.000	0.000	381.19	0.00	0.00	
7	167.00	Ericsson RRUS-12	3	34.978	38.476	0.60	0.80	4.86	162.00	162.00	0.000	0.000	299.19	0.00	0.00	
8	167.00	7770.00	6	34.978	38.476	0.58	0.80	19.27	189.00	189.00	0.000	0.000	1186.41	0.00	0.00	
9	157.00	Ericsson 4480 B71 + B85	3	34.526	37.979	0.50	0.75	4.30	251.10	251.10	0.000	0.000	261.08	0.00	0.00	
10	157.00	Ericsson 4460 B25 + B66	3	34.526	37.979	0.50	0.75	4.30	280.80	280.80	0.000	0.000	261.08	0.00	0.00	
11	157.00	SitePro1 RMQP-4096-HK	1	34.526	37.979	1.00	1.00	48.00	2204.10	2204.10	0.000	0.000	2916.79	0.00	0.00	
12	157.00	Ericsson AIR6449 B41	3	34.526	37.979	0.53	0.75	9.03	278.10	278.10	0.000	0.000	548.47	0.00	0.00	
13	157.00	RFS	3	34.526	37.979	0.54	0.75	32.79	386.91	386.91	0.000	0.000	1992.46	0.00	0.00	
14	157.00	RFS	3	34.526	37.979	0.46	0.75	9.22	109.89	109.89	0.000	0.000	560.32	0.00	0.00	
Totals:										5,308.02						11,208.20

Total Applied Force Summary

Structure: CT13611-A-SBA	Code: EIA/TIA-222-G	8/3/2021
Site Name: BSA	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

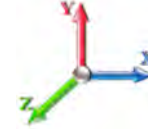


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Load Case: 0.9D + 1.6W 101 mph Wind

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		570.77	1094.55	0.00	0.00
10.00		558.96	1073.45	0.00	0.00
15.00		547.14	1052.35	0.00	0.00
20.00		568.00	1031.25	0.00	0.00
25.00		582.18	1010.15	0.00	0.00
30.00		591.31	989.05	0.00	0.00
35.00		596.71	967.95	0.00	0.00
40.00		599.21	946.86	0.00	0.00
45.00		599.39	925.76	0.00	0.00
45.29		34.75	53.66	0.00	0.00
50.00		571.42	1637.48	0.00	0.00
51.71		205.72	585.66	0.00	0.00
55.00		395.87	588.00	0.00	0.00
60.00		599.65	876.13	0.00	0.00
65.00		593.77	855.03	0.00	0.00
70.00		586.78	833.93	0.00	0.00
75.00		578.81	812.83	0.00	0.00
80.00		569.94	791.74	0.00	0.00
85.00		560.26	770.64	0.00	0.00
90.00		549.84	749.54	0.00	0.00
91.42		153.16	208.53	0.00	0.00
95.00		391.05	911.55	0.00	0.00
96.58		170.54	396.45	0.00	0.00
100.00		364.69	417.39	0.00	0.00
105.00		524.24	596.01	0.00	0.00
110.00		511.45	578.43	0.00	0.00
115.00		498.14	560.85	0.00	0.00
120.00		484.34	543.27	0.00	0.00
125.00		470.08	525.68	0.00	0.00
130.00		455.39	508.10	0.00	0.00
135.00		440.28	490.52	0.00	0.00
139.08		347.83	387.55	0.00	0.00
140.00		77.58	128.41	0.00	0.00
142.92		243.69	402.30	0.00	0.00
145.00		170.63	128.16	0.00	0.00
150.00		398.88	300.11	0.00	0.00
155.00		382.35	289.56	0.00	0.00
157.00	(16) attachments	6688.13	3623.77	0.00	0.00
160.00		216.96	157.23	0.00	0.00
165.00		348.31	253.61	0.00	0.00
167.00	(29) attachments	4802.20	1895.61	0.00	0.00
170.00		196.14	104.15	0.00	0.00
175.00		313.07	165.15	0.00	0.00
176.00		60.31	31.76	0.00	0.00
Totals:		29,169.93	31,250.16	0.00	0.00

Calculated Forces

Structure: CT13611-A-SBA	Code: EIA/TIA-222-G	8/3/2021
Site Name: BSA	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



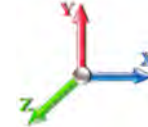
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Load Case: 0.9D + 1.6W 101 mph Wind

Iterations 27

Dead Load Factor 0.90

Wind Load Factor 1.60



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-31.20	-29.22	0.00	-3390.9	0.00	3390.94	4317.41	2158.71	9968.41	4991.62	0.00	0.000	0.000	0.687
5.00	-30.02	-28.74	0.00	-3244.8	0.00	3244.85	4266.06	2133.03	9645.32	4829.83	0.10	-0.178	0.000	0.679
10.00	-28.86	-28.27	0.00	-3101.1	0.00	3101.15	4213.11	2106.56	9323.64	4668.75	0.38	-0.358	0.000	0.671
15.00	-27.72	-27.80	0.00	-2959.8	0.00	2959.81	4158.58	2079.29	9003.59	4508.49	0.85	-0.542	0.000	0.663
20.00	-26.61	-27.31	0.00	-2820.8	0.00	2820.80	4102.46	2051.23	8685.41	4349.16	1.52	-0.730	0.000	0.655
25.00	-25.52	-26.80	0.00	-2684.2	0.00	2684.25	4044.75	2022.37	8369.33	4190.89	2.39	-0.920	0.000	0.647
30.00	-24.45	-26.28	0.00	-2550.2	0.00	2550.25	3985.45	1992.73	8055.57	4033.77	3.46	-1.114	0.000	0.639
35.00	-23.40	-25.74	0.00	-2418.8	0.00	2418.88	3924.57	1962.28	7744.37	3877.94	4.73	-1.312	0.000	0.630
40.00	-22.38	-25.20	0.00	-2290.1	0.00	2290.18	3862.10	1931.05	7435.94	3723.50	6.21	-1.513	0.000	0.621
45.00	-21.43	-24.61	0.00	-2164.2	0.00	2164.20	3798.04	1899.02	7130.53	3570.56	7.90	-1.718	0.000	0.612
45.29	-21.33	-24.61	0.00	-2156.9	0.00	2156.98	3794.23	1897.11	7112.71	3561.64	8.01	-1.730	0.000	0.611
50.00	-19.65	-24.04	0.00	-2041.1	0.00	2041.13	3732.39	1866.19	6828.35	3419.25	9.82	-1.927	0.000	0.602
51.71	-19.03	-23.85	0.00	-2000.0	0.00	2000.03	3752.64	1876.32	6920.41	3465.35	10.52	-2.001	0.000	0.582
55.00	-18.39	-23.49	0.00	-1921.5	0.00	1921.57	3708.89	1854.45	6722.75	3366.37	11.95	-2.143	0.000	0.576
60.00	-17.45	-22.92	0.00	-1804.1	0.00	1804.14	3641.10	1820.55	6425.31	3217.43	14.30	-2.348	0.000	0.566
65.00	-16.54	-22.35	0.00	-1689.5	0.00	1689.56	3571.72	1785.86	6131.65	3070.38	16.87	-2.556	0.000	0.555
70.00	-15.66	-21.78	0.00	-1577.8	0.00	1577.83	3500.75	1750.37	5841.99	2925.34	19.66	-2.767	0.000	0.544
75.00	-14.79	-21.22	0.00	-1468.9	0.00	1468.93	3428.19	1714.09	5556.57	2782.41	22.67	-2.981	0.000	0.532
80.00	-13.95	-20.66	0.00	-1362.8	0.00	1362.84	3354.04	1677.02	5275.60	2641.72	25.91	-3.198	0.000	0.520
85.00	-13.14	-20.11	0.00	-1259.5	0.00	1259.55	3278.31	1639.15	4999.32	2503.38	29.38	-3.418	0.000	0.507
90.00	-12.38	-19.54	0.00	-1159.0	0.00	1159.02	3186.62	1593.31	4706.74	2356.87	33.07	-3.641	0.000	0.496
91.42	-12.14	-19.40	0.00	-1131.3	0.00	1131.33	3157.61	1578.81	4621.01	2313.94	34.16	-3.706	0.000	0.493
95.00	-11.22	-18.97	0.00	-1061.8	0.00	1061.82	3084.25	1542.12	4407.69	2207.12	37.01	-3.869	0.000	0.485
96.58	-10.79	-18.80	0.00	-1031.7	0.00	1031.78	2497.75	1248.88	3609.06	1807.21	38.30	-3.943	0.000	0.575
100.00	-10.34	-18.44	0.00	-967.55	0.00	967.55	2457.75	1228.87	3470.74	1737.95	41.18	-4.101	0.000	0.561
105.00	-9.70	-17.92	0.00	-875.34	0.00	875.34	2397.86	1198.93	3271.22	1638.04	45.61	-4.357	0.000	0.539
110.00	-9.09	-17.40	0.00	-785.75	0.00	785.75	2336.39	1168.19	3075.35	1539.96	50.30	-4.614	0.000	0.514
115.00	-8.49	-16.90	0.00	-698.72	0.00	698.72	2273.33	1136.66	2883.37	1443.83	55.27	-4.869	0.000	0.488
120.00	-7.92	-16.40	0.00	-614.22	0.00	614.22	2194.33	1097.17	2677.99	1340.98	60.50	-5.120	0.000	0.462
125.00	-7.38	-15.92	0.00	-532.20	0.00	532.20	2109.02	1054.51	2472.77	1238.23	65.99	-5.367	0.000	0.434
130.00	-6.85	-15.45	0.00	-452.60	0.00	452.60	2023.72	1011.86	2275.74	1139.56	71.73	-5.605	0.000	0.401
135.00	-6.35	-14.98	0.00	-375.38	0.00	375.38	1938.41	969.21	2086.89	1045.00	77.71	-5.832	0.000	0.363
139.08	-5.98	-14.61	0.00	-314.20	0.00	314.20	1868.74	934.37	1938.73	970.81	82.77	-6.008	0.000	0.327
140.00	-5.84	-14.52	0.00	-300.81	0.00	300.81	1853.10	926.55	1906.22	954.53	83.93	-6.047	0.000	0.319
142.92	-5.44	-14.25	0.00	-258.45	0.00	258.45	1006.21	503.11	1032.86	517.20	87.65	-6.163	0.000	0.506
145.00	-5.29	-14.08	0.00	-228.77	0.00	228.77	993.78	496.89	1000.24	500.86	90.35	-6.242	0.000	0.463
150.00	-4.98	-13.67	0.00	-158.37	0.00	158.37	962.80	481.40	922.91	462.14	97.02	-6.491	0.000	0.349
155.00	-4.71	-13.27	0.00	-90.02	0.00	90.02	930.24	465.12	847.10	424.18	103.91	-6.676	0.000	0.218
157.00	-1.89	-6.20	0.00	-63.49	0.00	63.49	916.77	458.38	817.25	409.23	106.71	-6.730	0.000	0.157
160.00	-1.75	-5.97	0.00	-44.88	0.00	44.88	896.09	448.04	773.04	387.10	110.95	-6.790	0.000	0.118
165.00	-1.54	-5.60	0.00	-15.03	0.00	15.03	860.35	430.17	700.97	351.00	118.08	-6.851	0.000	0.045
167.00	-0.23	-0.60	0.00	-3.84	0.00	3.84	845.61	422.80	672.74	336.87	120.95	-6.860	0.000	0.012
170.00	-0.15	-0.39	0.00	-2.03	0.00	2.03	823.02	411.51	631.10	316.02	125.25	-6.864	0.000	0.007
175.00	-0.02	-0.06	0.00	-0.06	0.00	0.06	775.68	387.84	557.61	279.22	132.43	-6.867	0.000	0.000
176.00	0.00	-0.06	0.00	0.00	0.00	0.00	765.44	382.72	542.91	271.86	133.86	-6.867	0.000	0.000

Wind Loading - Shaft

Structure: CT13611-A-SBA	Code: EIA/TIA-222-G	8/3/2021
Site Name: BSA	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



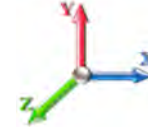
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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 27

Dead Load Factor 1.20

Wind Load Factor 1.00



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.656	5.00	25.040	30.05	170.8	591.3	1941.0
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.775	5.00	24.649	29.58	168.2	622.1	1943.8
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.848	5.00	24.221	29.06	165.2	635.3	1928.8
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.902	5.00	23.776	28.53	172.1	640.7	1906.1
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.945	5.00	23.322	27.99	176.9	641.5	1878.8
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.981	5.00	22.862	27.43	180.2	639.4	1848.5
35.00		1.00	1.01	6.169	6.79	0.00	1.200	2.012	5.00	22.398	26.88	182.4	635.1	1816.1
40.00		1.00	1.04	6.345	6.98	0.00	1.200	2.039	5.00	21.930	26.32	183.7	629.2	1782.1
45.00		1.00	1.07	6.504	7.15	0.00	1.200	2.063	5.00	21.461	25.75	184.3	622.0	1746.7
45.29	Bot - Section 2	1.00	1.07	6.513	7.16	0.00	1.200	2.064	0.29	1.244	1.49	10.7	36.5	101.6
50.00		1.00	1.09	6.650	7.32	0.00	1.200	2.085	4.71	20.043	24.05	175.9	587.0	2667.1
51.71	Top - Section 1	1.00	1.10	6.697	7.37	0.00	1.200	2.092	1.71	7.176	8.61	63.4	212.2	955.6
55.00		1.00	1.12	6.785	7.46	0.00	1.200	2.105	3.29	13.653	16.38	122.3	404.3	1116.2
60.00		1.00	1.14	6.910	7.60	0.00	1.200	2.123	5.00	20.359	24.43	185.7	604.7	1663.3
65.00		1.00	1.16	7.028	7.73	0.00	1.200	2.140	5.00	19.883	23.86	184.5	594.3	1624.7
70.00		1.00	1.17	7.138	7.85	0.00	1.200	2.156	5.00	19.407	23.29	182.9	583.3	1585.6
75.00		1.00	1.19	7.243	7.97	0.00	1.200	2.171	5.00	18.929	22.72	181.0	571.8	1545.9
80.00		1.00	1.21	7.342	8.08	0.00	1.200	2.185	5.00	18.451	22.14	178.8	559.8	1505.8
85.00		1.00	1.22	7.436	8.18	0.00	1.200	2.198	5.00	17.972	21.57	176.4	547.4	1465.3
90.00		1.00	1.24	7.526	8.28	0.00	1.200	2.211	5.00	17.493	20.99	173.8	534.7	1424.5
91.42	Bot - Section 3	1.00	1.24	7.551	8.31	0.00	1.200	2.215	1.42	4.868	5.84	48.5	150.5	397.4
95.00		1.00	1.25	7.612	8.37	0.00	1.200	2.223	3.58	12.333	14.80	123.9	380.1	1516.9
96.58	Top - Section 2	1.00	1.26	7.639	8.40	0.00	1.200	2.227	1.58	5.370	6.44	54.1	166.6	660.5
100.00		1.00	1.27	7.695	8.46	0.00	1.200	2.234	3.42	11.425	13.71	116.1	353.3	834.9
105.00		1.00	1.28	7.774	8.55	0.00	1.200	2.245	5.00	16.317	19.58	167.4	503.4	1188.5
110.00		1.00	1.29	7.851	8.64	0.00	1.200	2.256	5.00	15.836	19.00	164.1	489.5	1151.2
115.00		1.00	1.30	7.925	8.72	0.00	1.200	2.266	5.00	15.354	18.43	160.6	475.4	1113.6
120.00		1.00	1.32	7.996	8.80	0.00	1.200	2.276	5.00	14.873	17.85	157.0	461.1	1075.8
125.00		1.00	1.33	8.065	8.87	0.00	1.200	2.285	5.00	14.390	17.27	153.2	446.5	1037.8
130.00		1.00	1.34	8.132	8.95	0.00	1.200	2.294	5.00	13.908	16.69	149.3	431.7	999.6
135.00		1.00	1.35	8.197	9.02	0.00	1.200	2.303	5.00	13.426	16.11	145.3	416.8	961.2
139.08	Bot - Section 4	1.00	1.36	8.248	9.07	0.00	1.200	2.309	4.08	10.606	12.73	115.5	330.3	757.5
140.00		1.00	1.36	8.260	9.09	0.00	1.200	2.311	0.92	2.365	2.84	25.8	74.6	225.8
142.92	Top - Section 3	1.00	1.36	8.296	9.13	0.00	1.200	2.316	2.92	7.419	8.90	81.2	232.3	704.7
145.00		1.00	1.37	8.321	9.15	0.00	1.200	2.319	2.08	5.198	6.24	57.1	163.3	288.5
150.00		1.00	1.38	8.381	9.22	0.00	1.200	2.327	5.00	12.135	14.56	134.2	376.4	666.9
155.00		1.00	1.39	8.439	9.28	0.00	1.200	2.335	5.00	11.652	13.98	129.8	360.8	637.3
157.00	Appurtenance(s)	1.00	1.39	8.462	9.31	0.00	1.200	2.338	2.00	4.525	5.43	50.5	141.8	248.5
160.00		1.00	1.40	8.495	9.34	0.00	1.200	2.342	3.00	6.642	7.97	74.5	207.0	362.8
165.00		1.00	1.41	8.551	9.41	0.00	1.200	2.349	5.00	10.684	12.82	120.6	329.2	577.5
167.00	Appurtenance(s)	1.00	1.41	8.572	9.43	0.00	1.200	2.352	2.00	4.138	4.97	46.8	129.1	224.5
170.00		1.00	1.42	8.604	9.46	0.00	1.200	2.356	3.00	6.061	7.27	68.8	187.9	326.8
175.00		1.00	1.42	8.657	9.52	0.00	1.200	2.363	5.00	9.716	11.66	111.0	297.0	517.2
176.00		1.00	1.43	8.667	9.53	0.00	1.200	2.364	1.00	1.885	2.26	21.6	58.8	101.1
Totals:									176.00			5,696.2		49,023.8

Discrete Appurtenance Forces

Structure: CT13611-A-SBA	Code: EIA/TIA-222-G	8/3/2021
Site Name: BSA	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 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	167.00	AM-X-CD-17-65-00T-RET	3	8.572	9.429	0.60	0.80	21.21	667.18	0.000	0.000	200.03	0.00	0.00	
2	167.00	Low Profile Platform	1	8.572	9.429	1.00	1.00	53.22	2551.24	0.000	0.000	501.88	0.00	0.00	
3	167.00	Raycap DC6-48-60-18-8F	1	8.572	9.429	0.80	0.80	1.21	103.78	0.000	0.000	11.39	0.00	0.00	
4	167.00	Ericsson LGP 21901	6	8.572	9.429	0.60	0.80	2.61	88.59	0.000	0.000	24.64	0.00	0.00	
5	167.00	Ericsson RRUS-11	3	8.572	9.429	0.58	0.80	6.03	370.43	0.000	0.000	56.84	0.00	0.00	
6	167.00	Powerwave LGP21401	6	8.572	9.429	0.80	0.80	11.60	261.09	0.000	0.000	109.36	0.00	0.00	
7	167.00	Ericsson RRUS-12	3	8.572	9.429	0.60	0.80	7.47	452.83	0.000	0.000	70.45	0.00	0.00	
8	167.00	7770.00	6	8.572	9.429	0.58	0.80	24.42	1432.98	0.000	0.000	230.24	0.00	0.00	
9	157.00	Ericsson 4480 B71 + B85	3	8.462	9.308	0.50	0.75	5.66	572.85	0.000	0.000	52.66	0.00	0.00	
10	157.00	Ericsson 4460 B25 + B66	3	8.462	9.308	0.50	0.75	5.66	584.09	0.000	0.000	52.66	0.00	0.00	
11	157.00	SitePro1 RMQP-4096-HK	1	8.462	9.308	1.00	1.00	92.88	5583.66	0.000	0.000	864.51	0.00	0.00	
12	157.00	Ericsson AIR6449 B41	3	8.462	9.308	0.56	0.75	11.68	826.68	0.000	0.000	108.74	0.00	0.00	
13	157.00	RFS	3	8.462	9.308	0.56	0.75	38.40	2771.14	0.000	0.000	357.44	0.00	0.00	
14	157.00	RFS	3	8.462	9.308	0.46	0.75	13.29	516.39	0.000	0.000	123.70	0.00	0.00	
Totals:									16,782.92						2,764.56

Total Applied Force Summary

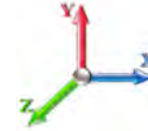
Structure: CT13611-A-SBA	Code: EIA/TIA-222-G	8/3/2021
Site Name: BSA	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 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		170.82	2050.66	0.00	0.00
10.00		168.15	2053.39	0.00	0.00
15.00		165.23	2038.43	0.00	0.00
20.00		172.09	2015.67	0.00	0.00
25.00		176.93	1988.40	0.00	0.00
30.00		180.22	1958.14	0.00	0.00
35.00		182.39	1925.73	0.00	0.00
40.00		183.67	1891.68	0.00	0.00
45.00		184.25	1856.35	0.00	0.00
45.29		10.69	108.01	0.00	0.00
50.00		175.94	2770.28	0.00	0.00
51.71		63.44	993.11	0.00	0.00
55.00		122.28	1188.35	0.00	0.00
60.00		185.71	1772.89	0.00	0.00
65.00		184.45	1734.32	0.00	0.00
70.00		182.86	1695.18	0.00	0.00
75.00		180.97	1655.53	0.00	0.00
80.00		178.81	1615.44	0.00	0.00
85.00		176.41	1574.94	0.00	0.00
90.00		173.79	1534.08	0.00	0.00
91.42		48.52	428.50	0.00	0.00
95.00		123.92	1595.47	0.00	0.00
96.58		54.15	695.21	0.00	0.00
100.00		116.05	909.81	0.00	0.00
105.00		167.45	1298.09	0.00	0.00
110.00		164.11	1260.77	0.00	0.00
115.00		160.62	1223.21	0.00	0.00
120.00		156.98	1185.42	0.00	0.00
125.00		153.20	1147.42	0.00	0.00
130.00		149.29	1109.22	0.00	0.00
135.00		145.26	1070.83	0.00	0.00
139.08		115.47	847.04	0.00	0.00
140.00		25.79	245.85	0.00	0.00
142.92		81.24	768.69	0.00	0.00
145.00		57.10	334.14	0.00	0.00
150.00		134.24	776.53	0.00	0.00
155.00		129.79	746.87	0.00	0.00
157.00	(16) attachments	1610.26	11147.10	0.00	0.00
160.00		74.48	416.68	0.00	0.00
165.00		120.59	667.33	0.00	0.00
167.00	(29) attachments	1251.66	6188.56	0.00	0.00
170.00		68.84	326.78	0.00	0.00
175.00		111.03	517.24	0.00	0.00
176.00		21.56	101.11	0.00	0.00
Totals:		8,460.72	69,428.46	0.00	0.00

Calculated Forces

Structure: CT13611-A-SBA	Code: EIA/TIA-222-G	8/3/2021
Site Name: BSA	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

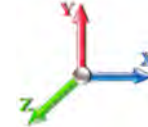


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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 27

Dead Load Factor 1.20
Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-69.42	-8.49	0.00	-1015.3	0.00	1015.33	4317.41	2158.71	9968.41	4991.62	0.00	0.000	0.000	0.220
5.00	-67.37	-8.38	0.00	-972.87	0.00	972.87	4266.06	2133.03	9645.32	4829.83	0.03	-0.053	0.000	0.217
10.00	-65.30	-8.28	0.00	-930.95	0.00	930.95	4213.11	2106.56	9323.64	4668.75	0.11	-0.107	0.000	0.215
15.00	-63.26	-8.17	0.00	-889.57	0.00	889.57	4158.58	2079.29	9003.59	4508.49	0.26	-0.163	0.000	0.213
20.00	-61.24	-8.05	0.00	-848.73	0.00	848.73	4102.46	2051.23	8685.41	4349.16	0.46	-0.219	0.000	0.210
25.00	-59.24	-7.92	0.00	-808.49	0.00	808.49	4044.75	2022.37	8369.33	4190.89	0.72	-0.276	0.000	0.208
30.00	-57.28	-7.79	0.00	-768.87	0.00	768.87	3985.45	1992.73	8055.57	4033.77	1.04	-0.335	0.000	0.205
35.00	-55.34	-7.66	0.00	-729.91	0.00	729.91	3924.57	1962.28	7744.37	3877.94	1.42	-0.395	0.000	0.202
40.00	-53.44	-7.52	0.00	-691.63	0.00	691.63	3862.10	1931.05	7435.94	3723.50	1.87	-0.455	0.000	0.200
45.00	-51.59	-7.34	0.00	-654.06	0.00	654.06	3798.04	1899.02	7130.53	3570.56	2.38	-0.517	0.000	0.197
45.29	-51.47	-7.36	0.00	-651.90	0.00	651.90	3794.23	1897.11	7112.71	3561.64	2.41	-0.521	0.000	0.197
50.00	-48.70	-7.19	0.00	-617.26	0.00	617.26	3732.39	1866.19	6828.35	3419.25	2.95	-0.580	0.000	0.194
51.71	-47.70	-7.15	0.00	-604.96	0.00	604.96	3752.64	1876.32	6920.41	3465.35	3.16	-0.603	0.000	0.187
55.00	-46.51	-7.05	0.00	-581.44	0.00	581.44	3708.89	1854.45	6722.75	3366.37	3.59	-0.646	0.000	0.185
60.00	-44.73	-6.90	0.00	-546.17	0.00	546.17	3641.10	1820.55	6425.31	3217.43	4.30	-0.708	0.000	0.182
65.00	-42.99	-6.74	0.00	-511.69	0.00	511.69	3571.72	1785.86	6131.65	3070.38	5.08	-0.771	0.000	0.179
70.00	-41.29	-6.58	0.00	-478.00	0.00	478.00	3500.75	1750.37	5841.99	2925.34	5.92	-0.835	0.000	0.175
75.00	-39.63	-6.42	0.00	-445.12	0.00	445.12	3428.19	1714.09	5556.57	2782.41	6.83	-0.899	0.000	0.172
80.00	-38.01	-6.26	0.00	-413.04	0.00	413.04	3354.04	1677.02	5275.60	2641.72	7.81	-0.965	0.000	0.168
85.00	-36.43	-6.09	0.00	-381.76	0.00	381.76	3278.31	1639.15	4999.32	2503.38	8.85	-1.032	0.000	0.164
90.00	-34.90	-5.92	0.00	-351.29	0.00	351.29	3186.62	1593.31	4706.74	2356.87	9.97	-1.099	0.000	0.160
91.42	-34.47	-5.88	0.00	-342.91	0.00	342.91	3157.61	1578.81	4621.01	2313.94	10.30	-1.119	0.000	0.159
95.00	-32.87	-5.75	0.00	-321.83	0.00	321.83	3084.25	1542.12	4407.69	2207.12	11.16	-1.169	0.000	0.156
96.58	-32.18	-5.70	0.00	-312.73	0.00	312.73	2497.75	1248.88	3609.06	1807.21	11.55	-1.191	0.000	0.186
100.00	-31.26	-5.60	0.00	-293.26	0.00	293.26	2457.75	1228.87	3470.74	1737.95	12.42	-1.239	0.000	0.181
105.00	-29.96	-5.44	0.00	-265.27	0.00	265.27	2397.86	1198.93	3271.22	1638.04	13.76	-1.317	0.000	0.174
110.00	-28.70	-5.29	0.00	-238.06	0.00	238.06	2336.39	1168.19	3075.35	1539.96	15.18	-1.394	0.000	0.167
115.00	-27.47	-5.13	0.00	-211.63	0.00	211.63	2273.33	1136.66	2883.37	1443.83	16.68	-1.471	0.000	0.159
120.00	-26.28	-4.98	0.00	-185.97	0.00	185.97	2194.33	1097.17	2677.99	1340.98	18.26	-1.548	0.000	0.151
125.00	-25.13	-4.83	0.00	-161.07	0.00	161.07	2109.02	1054.51	2472.77	1238.23	19.92	-1.622	0.000	0.142
130.00	-24.02	-4.67	0.00	-136.94	0.00	136.94	2023.72	1011.86	2275.74	1139.56	21.66	-1.694	0.000	0.132
135.00	-22.95	-4.52	0.00	-113.57	0.00	113.57	1938.41	969.21	2086.89	1045.00	23.47	-1.763	0.000	0.121
139.08	-22.11	-4.39	0.00	-95.11	0.00	95.11	1868.74	934.37	1938.73	970.81	25.00	-1.816	0.000	0.110
140.00	-21.86	-4.37	0.00	-91.08	0.00	91.08	1853.10	926.55	1906.22	954.53	25.35	-1.828	0.000	0.107
142.92	-21.09	-4.27	0.00	-78.35	0.00	78.35	1006.21	503.11	1032.86	517.20	26.48	-1.863	0.000	0.173
145.00	-20.76	-4.22	0.00	-69.45	0.00	69.45	993.78	496.89	1000.24	500.86	27.30	-1.887	0.000	0.160
150.00	-19.98	-4.09	0.00	-48.33	0.00	48.33	962.80	481.40	922.91	462.14	29.32	-1.963	0.000	0.125
155.00	-19.24	-3.94	0.00	-27.90	0.00	27.90	930.24	465.12	847.10	424.18	31.41	-2.020	0.000	0.087
157.00	-8.15	-1.94	0.00	-20.02	0.00	20.02	916.77	458.38	817.25	409.23	32.26	-2.036	0.000	0.058
160.00	-7.74	-1.85	0.00	-14.20	0.00	14.20	896.09	448.04	773.04	387.10	33.54	-2.055	0.000	0.045
165.00	-7.08	-1.71	0.00	-4.93	0.00	4.93	860.35	430.17	700.97	351.00	35.71	-2.075	0.000	0.022
167.00	-0.94	-0.24	0.00	-1.51	0.00	1.51	845.61	422.80	672.74	336.87	36.58	-2.078	0.000	0.006
170.00	-0.61	-0.15	0.00	-0.80	0.00	0.80	823.02	411.51	631.10	316.02	37.89	-2.080	0.000	0.003
175.00	-0.10	-0.03	0.00	-0.03	0.00	0.03	775.68	387.84	557.61	279.22	40.06	-2.081	0.000	0.000
176.00	0.00	-0.02	0.00	0.00	0.00	0.00	765.44	382.72	542.91	271.86	40.50	-2.081	0.000	0.000

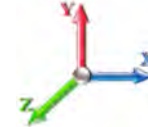
Seismic Segment Forces (Factored)

Structure: CT13611-A-SBA	Code: EIA/TIA-222-G	8/3/2021
Site Name: BSA	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0E						Iterations 24
Gust Response Factor	1.10			Sds	0.18	Ss 0.17
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1	0.10	S1 0.06
Wind Load Factor	0.00	Structure Frequency (f1)	0.32	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		1124.8	0.00	0.03	0.02	18.38	
10.00		1101.3	0.01	0.05	0.03	26.80	
15.00		1077.9	0.01	0.06	0.03	30.85	
20.00		1054.4	0.02	0.07	0.04	32.69	
25.00		1031.0	0.04	0.07	0.04	33.38	
30.00		1007.6	0.05	0.07	0.04	33.54	
35.00		984.16	0.07	0.07	0.04	33.48	
40.00		960.71	0.10	0.07	0.04	33.37	
45.00		937.27	0.12	0.07	0.03	33.21	
45.29	Bot - Section 2	54.26	0.13	0.07	0.03	1.92	
50.00		1733.4	0.15	0.07	0.03	62.48	
51.71	Top - Section 1	619.49	0.16	0.07	0.03	22.43	
55.00		593.23	0.18	0.06	0.03	21.58	
60.00		882.13	0.22	0.06	0.02	31.87	
65.00		858.69	0.26	0.05	0.02	29.99	
70.00		835.24	0.30	0.05	0.01	26.97	
75.00		811.80	0.34	0.03	0.01	22.51	
80.00		788.36	0.39	0.02	0.01	16.45	
85.00		764.91	0.44	0.00	0.01	8.92	
90.00		741.47	0.49	-0.01	0.01	0.49	
91.42	Bot - Section 3	205.82	0.51	-0.02	0.01	-0.54	
95.00		947.36	0.55	-0.03	0.01	-10.37	
96.58	Top - Section 2	411.57	0.57	-0.04	0.01	-5.97	
100.00		401.34	0.61	-0.06	0.02	-8.68	
105.00		570.89	0.67	-0.08	0.02	-17.13	
110.00		551.35	0.74	-0.10	0.04	-19.42	
115.00		531.82	0.81	-0.11	0.06	-19.60	
120.00		512.28	0.88	-0.12	0.08	-17.86	
125.00		492.74	0.95	-0.12	0.11	-14.41	
130.00		473.21	1.03	-0.10	0.15	-9.51	
135.00		453.67	1.11	-0.06	0.19	-3.39	
139.08	Bot - Section 4	356.01	1.18	-0.01	0.24	1.92	
140.00		125.93	1.20	0.00	0.25	1.08	
142.92	Top - Section 3	393.71	1.25	0.05	0.29	7.71	
145.00		104.34	1.28	0.10	0.32	2.94	
150.00		242.10	1.37	0.23	0.40	12.41	
155.00		230.38	1.47	0.42	0.50	17.95	
157.00	Appurtenance(s)	3989.8	1.50	0.51	0.55	357.38	
160.00		129.79	1.56	0.67	0.62	14.04	
165.00		206.94	1.66	0.98	0.76	29.42	
167.00	Appurtenance(s)	2076.2	1.70	1.13	0.82	325.61	
170.00		115.72	1.76	1.38	0.92	20.82	
175.00		183.49	1.87	1.87	1.10	40.66	
176.00		35.29	1.89	1.98	1.14	8.13	

Totals:	31,704.3	1,234.5	Total Wind: 29,169.9
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Seismic Segment Forces (Factored)

Structure: CT13611-A-SBA	Code: EIA/TIA-222-G	8/3/2021
Site Name: BSA	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Calculated Forces

Structure: CT13611-A-SBA	Code: EIA/TIA-222-G	8/3/2021
Site Name: BSA	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0E						Iterations 24
Gust Response Factor	1.10		Sds	0.18		Ss 0.17
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1	0.10	S1 0.06
Wind Load Factor	0.00	Structure Frequency (f1)	0.32	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	-41.67	-1.36	0.00	-166.23	0.00	166.23	4317.41	2158.71	9968.41	4991.62	0.00	0.00	0.00	0.043
5.00	-40.21	-1.35	0.00	-159.41	0.00	159.41	4266.06	2133.03	9645.32	4829.83	0.00	-0.01	0.042	
10.00	-38.78	-1.33	0.00	-152.66	0.00	152.66	4213.11	2106.56	9323.64	4668.75	0.02	-0.02	0.042	
15.00	-37.37	-1.30	0.00	-146.01	0.00	146.01	4158.58	2079.29	9003.59	4508.49	0.04	-0.03	0.041	
20.00	-36.00	-1.28	0.00	-139.49	0.00	139.49	4102.46	2051.23	8685.41	4349.16	0.07	-0.04	0.041	
25.00	-34.65	-1.25	0.00	-133.11	0.00	133.11	4044.75	2022.37	8369.33	4190.89	0.12	-0.05	0.040	
30.00	-33.33	-1.22	0.00	-126.87	0.00	126.87	3985.45	1992.73	8055.57	4033.77	0.17	-0.06	0.040	
35.00	-32.04	-1.19	0.00	-120.77	0.00	120.77	3924.57	1962.28	7744.37	3877.94	0.23	-0.06	0.039	
40.00	-30.78	-1.16	0.00	-114.82	0.00	114.82	3862.10	1931.05	7435.94	3723.50	0.31	-0.07	0.039	
45.00	-29.54	-1.13	0.00	-109.02	0.00	109.02	3798.04	1899.02	7130.53	3570.56	0.39	-0.09	0.038	
45.29	-29.47	-1.13	0.00	-108.69	0.00	108.69	3794.23	1897.11	7112.71	3561.64	0.40	-0.09	0.038	
50.00	-27.29	-1.07	0.00	-103.37	0.00	103.37	3732.39	1866.19	6828.35	3419.25	0.49	-0.10	0.038	
51.71	-26.51	-1.05	0.00	-101.55	0.00	101.55	3752.64	1876.32	6920.41	3465.35	0.52	-0.10	0.036	
55.00	-25.72	-1.03	0.00	-98.11	0.00	98.11	3708.89	1854.45	6722.75	3366.37	0.59	-0.11	0.036	
60.00	-24.56	-1.00	0.00	-92.98	0.00	92.98	3641.10	1820.55	6425.31	3217.43	0.71	-0.12	0.036	
65.00	-23.41	-0.97	0.00	-88.00	0.00	88.00	3571.72	1785.86	6131.65	3070.38	0.84	-0.13	0.035	
70.00	-22.30	-0.94	0.00	-83.15	0.00	83.15	3500.75	1750.37	5841.99	2925.34	0.98	-0.14	0.035	
75.00	-21.22	-0.92	0.00	-78.44	0.00	78.44	3428.19	1714.09	5556.57	2782.41	1.13	-0.15	0.034	
80.00	-20.16	-0.91	0.00	-73.83	0.00	73.83	3354.04	1677.02	5275.60	2641.72	1.29	-0.16	0.034	
85.00	-19.14	-0.90	0.00	-69.29	0.00	69.29	3278.31	1639.15	4999.32	2503.38	1.47	-0.17	0.034	
90.00	-18.14	-0.90	0.00	-64.79	0.00	64.79	3186.62	1593.31	4706.74	2356.87	1.66	-0.19	0.033	
91.42	-17.86	-0.90	0.00	-63.52	0.00	63.52	3157.61	1578.81	4621.01	2313.94	1.71	-0.19	0.033	
95.00	-16.64	-0.90	0.00	-60.30	0.00	60.30	3084.25	1542.12	4407.69	2207.12	1.86	-0.20	0.033	
96.58	-16.11	-0.90	0.00	-58.88	0.00	58.88	2497.75	1248.88	3609.06	1807.21	1.93	-0.20	0.039	
100.00	-15.56	-0.90	0.00	-55.81	0.00	55.81	2457.75	1228.87	3470.74	1737.95	2.08	-0.21	0.038	
105.00	-14.76	-0.90	0.00	-51.32	0.00	51.32	2397.86	1198.93	3271.22	1638.04	2.31	-0.23	0.037	
110.00	-13.99	-0.90	0.00	-46.82	0.00	46.82	2336.39	1168.19	3075.35	1539.96	2.55	-0.24	0.036	
115.00	-13.24	-0.90	0.00	-42.32	0.00	42.32	2273.33	1136.66	2883.37	1443.83	2.82	-0.26	0.035	
120.00	-12.52	-0.90	0.00	-37.82	0.00	37.82	2194.33	1097.17	2677.99	1340.98	3.09	-0.27	0.034	
125.00	-11.82	-0.90	0.00	-33.31	0.00	33.31	2109.02	1054.51	2472.77	1238.23	3.39	-0.29	0.033	
130.00	-11.14	-0.90	0.00	-28.81	0.00	28.81	2023.72	1011.86	2275.74	1139.56	3.70	-0.30	0.031	
135.00	-10.48	-0.90	0.00	-24.32	0.00	24.32	1938.41	969.21	2086.89	1045.00	4.02	-0.32	0.029	
139.08	-9.97	-0.89	0.00	-20.65	0.00	20.65	1868.74	934.37	1938.73	970.81	4.30	-0.33	0.027	
140.00	-9.80	-0.89	0.00	-19.83	0.00	19.83	1853.10	926.55	1906.22	954.53	4.37	-0.33	0.026	
142.92	-9.26	-0.88	0.00	-17.22	0.00	17.22	1006.21	503.11	1032.86	517.20	4.57	-0.34	0.043	
145.00	-9.09	-0.88	0.00	-15.38	0.00	15.38	993.78	496.89	1000.24	500.86	4.72	-0.35	0.040	
150.00	-8.69	-0.87	0.00	-10.97	0.00	10.97	962.80	481.40	922.91	462.14	5.09	-0.36	0.033	
155.00	-8.30	-0.85	0.00	-6.62	0.00	6.62	930.24	465.12	847.10	424.18	5.48	-0.38	0.025	
157.00	-3.47	-0.46	0.00	-4.92	0.00	4.92	916.77	458.38	817.25	409.23	5.64	-0.38	0.016	
160.00	-3.26	-0.45	0.00	-3.54	0.00	3.54	896.09	448.04	773.04	387.10	5.88	-0.38	0.013	
165.00	-2.93	-0.41	0.00	-1.31	0.00	1.31	860.35	430.17	700.97	351.00	6.28	-0.39	0.007	
167.00	-0.40	-0.07	0.00	-0.48	0.00	0.48	845.61	422.80	672.74	336.87	6.44	-0.39	0.002	
170.00	-0.26	-0.05	0.00	-0.26	0.00	0.26	823.02	411.51	631.10	316.02	6.69	-0.39	0.001	
175.00	-0.04	-0.01	0.00	-0.01	0.00	0.01	775.68	387.84	557.61	279.22	7.10	-0.39	0.000	
176.00	0.00	-0.01	0.00	0.00	0.00	0.00	765.44	382.72	542.91	271.86	7.18	-0.39	0.000	

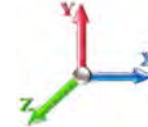
Seismic Segment Forces (Factored)

Structure: CT13611-A-SBA	Code: EIA/TIA-222-G	8/3/2021
Site Name: BSA	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0E		Iterations 24
Gust Response Factor 1.10	Sds 0.18	Ss 0.17
Dead Load Factor 0.90	Seismic Load Factor 1.00	S1 0.06
Wind Load Factor 0.00	Structure Frequency (f1) 0.32	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		1124.8	0.00	0.03	0.02	18.38	
10.00		1101.3	0.01	0.05	0.03	26.80	
15.00		1077.9	0.01	0.06	0.03	30.85	
20.00		1054.4	0.02	0.07	0.04	32.69	
25.00		1031.0	0.04	0.07	0.04	33.38	
30.00		1007.6	0.05	0.07	0.04	33.54	
35.00		984.16	0.07	0.07	0.04	33.48	
40.00		960.71	0.10	0.07	0.04	33.37	
45.00		937.27	0.12	0.07	0.03	33.21	
45.29	Bot - Section 2	54.26	0.13	0.07	0.03	1.92	
50.00		1733.4	0.15	0.07	0.03	62.48	
51.71	Top - Section 1	619.49	0.16	0.07	0.03	22.43	
55.00		593.23	0.18	0.06	0.03	21.58	
60.00		882.13	0.22	0.06	0.02	31.87	
65.00		858.69	0.26	0.05	0.02	29.99	
70.00		835.24	0.30	0.05	0.01	26.97	
75.00		811.80	0.34	0.03	0.01	22.51	
80.00		788.36	0.39	0.02	0.01	16.45	
85.00		764.91	0.44	0.00	0.01	8.92	
90.00		741.47	0.49	-0.01	0.01	0.49	
91.42	Bot - Section 3	205.82	0.51	-0.02	0.01	-0.54	
95.00		947.36	0.55	-0.03	0.01	-10.37	
96.58	Top - Section 2	411.57	0.57	-0.04	0.01	-5.97	
100.00		401.34	0.61	-0.06	0.02	-8.68	
105.00		570.89	0.67	-0.08	0.02	-17.13	
110.00		551.35	0.74	-0.10	0.04	-19.42	
115.00		531.82	0.81	-0.11	0.06	-19.60	
120.00		512.28	0.88	-0.12	0.08	-17.86	
125.00		492.74	0.95	-0.12	0.11	-14.41	
130.00		473.21	1.03	-0.10	0.15	-9.51	
135.00		453.67	1.11	-0.06	0.19	-3.39	
139.08	Bot - Section 4	356.01	1.18	-0.01	0.24	1.92	
140.00		125.93	1.20	0.00	0.25	1.08	
142.92	Top - Section 3	393.71	1.25	0.05	0.29	7.71	
145.00		104.34	1.28	0.10	0.32	2.94	
150.00		242.10	1.37	0.23	0.40	12.41	
155.00		230.38	1.47	0.42	0.50	17.95	
157.00	Appurtenance(s)	3989.8	1.50	0.51	0.55	357.38	
160.00		129.79	1.56	0.67	0.62	14.04	
165.00		206.94	1.66	0.98	0.76	29.42	
167.00	Appurtenance(s)	2076.2	1.70	1.13	0.82	325.61	
170.00		115.72	1.76	1.38	0.92	20.82	
175.00		183.49	1.87	1.87	1.10	40.66	
176.00		35.29	1.89	1.98	1.14	8.13	

Totals:	31,704.3	1,234.5	Total Wind: 29,169.9
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Seismic Segment Forces (Factored)

Structure: CT13611-A-SBA	Code: EIA/TIA-222-G	8/3/2021
Site Name: BSA	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

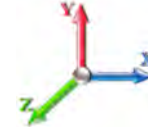
Calculated Forces

Structure: CT13611-A-SBA	Code: EIA/TIA-222-G	8/3/2021
Site Name: BSA	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0E		Iterations 24
Gust Response Factor 1.10	Sds 0.18	Ss 0.17
Dead Load Factor 0.90	Seismic Load Factor 1.00	S1 0.06
Wind Load Factor 0.00	Structure Frequency (f1) 0.32	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	-31.25	-1.36	0.00	-164.22	0.00	164.22	4317.41	2158.71	9968.41	4991.62	0.00	0.00	0.00	0.040
5.00	-30.16	-1.35	0.00	-157.41	0.00	157.41	4266.06	2133.03	9645.32	4829.83	0.00	-0.01	0.040	
10.00	-29.08	-1.33	0.00	-150.67	0.00	150.67	4213.11	2106.56	9323.64	4668.75	0.02	-0.02	0.039	
15.00	-28.03	-1.30	0.00	-144.04	0.00	144.04	4158.58	2079.29	9003.59	4508.49	0.04	-0.03	0.039	
20.00	-27.00	-1.27	0.00	-137.54	0.00	137.54	4102.46	2051.23	8685.41	4349.16	0.07	-0.04	0.038	
25.00	-25.99	-1.24	0.00	-131.19	0.00	131.19	4044.75	2022.37	8369.33	4190.89	0.12	-0.04	0.038	
30.00	-25.00	-1.21	0.00	-124.99	0.00	124.99	3985.45	1992.73	8055.57	4033.77	0.17	-0.05	0.037	
35.00	-24.03	-1.18	0.00	-118.94	0.00	118.94	3924.57	1962.28	7744.37	3877.94	0.23	-0.06	0.037	
40.00	-23.08	-1.15	0.00	-113.04	0.00	113.04	3862.10	1931.05	7435.94	3723.50	0.30	-0.07	0.036	
45.00	-22.16	-1.12	0.00	-107.29	0.00	107.29	3798.04	1899.02	7130.53	3570.56	0.39	-0.08	0.036	
45.29	-22.10	-1.12	0.00	-106.96	0.00	106.96	3794.23	1897.11	7112.71	3561.64	0.39	-0.08	0.036	
50.00	-20.47	-1.05	0.00	-101.71	0.00	101.71	3732.39	1866.19	6828.35	3419.25	0.48	-0.09	0.035	
51.71	-19.88	-1.03	0.00	-99.90	0.00	99.90	3752.64	1876.32	6920.41	3465.35	0.51	-0.10	0.034	
55.00	-19.29	-1.01	0.00	-96.51	0.00	96.51	3708.89	1854.45	6722.75	3366.37	0.58	-0.11	0.034	
60.00	-18.42	-0.98	0.00	-91.44	0.00	91.44	3641.10	1820.55	6425.31	3217.43	0.70	-0.12	0.033	
65.00	-17.56	-0.95	0.00	-86.53	0.00	86.53	3571.72	1785.86	6131.65	3070.38	0.83	-0.13	0.033	
70.00	-16.73	-0.93	0.00	-81.75	0.00	81.75	3500.75	1750.37	5841.99	2925.34	0.96	-0.14	0.033	
75.00	-15.91	-0.91	0.00	-77.11	0.00	77.11	3428.19	1714.09	5556.57	2782.41	1.11	-0.15	0.032	
80.00	-15.12	-0.89	0.00	-72.57	0.00	72.57	3354.04	1677.02	5275.60	2641.72	1.27	-0.16	0.032	
85.00	-14.35	-0.88	0.00	-68.11	0.00	68.11	3278.31	1639.15	4999.32	2503.38	1.45	-0.17	0.032	
90.00	-13.60	-0.88	0.00	-63.69	0.00	63.69	3186.62	1593.31	4706.74	2356.87	1.63	-0.18	0.031	
91.42	-13.39	-0.88	0.00	-62.44	0.00	62.44	3157.61	1578.81	4621.01	2313.94	1.69	-0.19	0.031	
95.00	-12.48	-0.88	0.00	-59.28	0.00	59.28	3084.25	1542.12	4407.69	2207.12	1.83	-0.20	0.031	
96.58	-12.08	-0.88	0.00	-57.88	0.00	57.88	2497.75	1248.88	3609.06	1807.21	1.90	-0.20	0.037	
100.00	-11.67	-0.88	0.00	-54.87	0.00	54.87	2457.75	1228.87	3470.74	1737.95	2.05	-0.21	0.036	
105.00	-11.07	-0.88	0.00	-50.45	0.00	50.45	2397.86	1198.93	3271.22	1638.04	2.27	-0.22	0.035	
110.00	-10.49	-0.88	0.00	-46.03	0.00	46.03	2336.39	1168.19	3075.35	1539.96	2.51	-0.24	0.034	
115.00	-9.93	-0.88	0.00	-41.61	0.00	41.61	2273.33	1136.66	2883.37	1443.83	2.77	-0.25	0.033	
120.00	-9.39	-0.88	0.00	-37.19	0.00	37.19	2194.33	1097.17	2677.99	1340.98	3.05	-0.27	0.032	
125.00	-8.86	-0.88	0.00	-32.77	0.00	32.77	2109.02	1054.51	2472.77	1238.23	3.34	-0.28	0.031	
130.00	-8.35	-0.88	0.00	-28.35	0.00	28.35	2023.72	1011.86	2275.74	1139.56	3.64	-0.30	0.029	
135.00	-7.86	-0.88	0.00	-23.93	0.00	23.93	1938.41	969.21	2086.89	1045.00	3.96	-0.31	0.027	
139.08	-7.47	-0.88	0.00	-20.32	0.00	20.32	1868.74	934.37	1938.73	970.81	4.24	-0.32	0.025	
140.00	-7.35	-0.88	0.00	-19.52	0.00	19.52	1853.10	926.55	1906.22	954.53	4.30	-0.33	0.024	
142.92	-6.94	-0.87	0.00	-16.95	0.00	16.95	1006.21	503.11	1032.86	517.20	4.50	-0.33	0.040	
145.00	-6.82	-0.87	0.00	-15.14	0.00	15.14	993.78	496.89	1000.24	500.86	4.65	-0.34	0.037	
150.00	-6.52	-0.85	0.00	-10.81	0.00	10.81	962.80	481.40	922.91	462.14	5.01	-0.36	0.030	
155.00	-6.23	-0.84	0.00	-6.53	0.00	6.53	930.24	465.12	847.10	424.18	5.39	-0.37	0.022	
157.00	-2.60	-0.46	0.00	-4.86	0.00	4.86	916.77	458.38	817.25	409.23	5.55	-0.37	0.015	
160.00	-2.45	-0.44	0.00	-3.49	0.00	3.49	896.09	448.04	773.04	387.10	5.79	-0.38	0.012	
165.00	-2.19	-0.41	0.00	-1.29	0.00	1.29	860.35	430.17	700.97	351.00	6.18	-0.38	0.006	
167.00	-0.30	-0.07	0.00	-0.47	0.00	0.47	845.61	422.80	672.74	336.87	6.34	-0.38	0.002	
170.00	-0.20	-0.05	0.00	-0.26	0.00	0.26	823.02	411.51	631.10	316.02	6.59	-0.38	0.001	
175.00	-0.03	-0.01	0.00	-0.01	0.00	0.01	775.68	387.84	557.61	279.22	6.99	-0.38	0.000	
176.00	0.00	-0.01	0.00	0.00	0.00	0.00	765.44	382.72	542.91	271.86	7.07	-0.38	0.000	

Wind Loading - Shaft

Structure: CT13611-A-SBA	Code: EIA/TIA-222-G	8/3/2021
Site Name: BSA	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



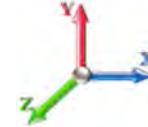
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Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 26

Dead Load Factor 1.00

Wind Load Factor 1.00



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	264.47	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	259.05	0.650	0.000	5.00	23.660	15.38	125.9	0.0	1124.8
10.00		1.00	0.85	7.442	8.19	253.63	0.650	0.000	5.00	23.170	15.06	123.3	0.0	1101.4
15.00		1.00	0.85	7.442	8.19	248.21	0.650	0.000	5.00	22.680	14.74	120.7	0.0	1077.9
20.00		1.00	0.90	7.896	8.69	250.09	0.650	0.000	5.00	22.191	14.42	125.3	0.0	1054.5
25.00		1.00	0.95	8.276	9.10	250.32	0.650	0.000	5.00	21.701	14.11	128.4	0.0	1031.0
30.00		1.00	0.98	8.600	9.46	249.35	0.650	0.000	5.00	21.211	13.79	130.4	0.0	1007.6
35.00		1.00	1.01	8.883	9.77	247.51	0.650	0.000	5.00	20.721	13.47	131.6	0.0	984.2
40.00		1.00	1.04	9.137	10.05	245.01	0.650	0.000	5.00	20.231	13.15	132.2	0.0	960.7
45.00		1.00	1.07	9.366	10.30	241.98	0.650	0.000	5.00	19.742	12.83	132.2	0.0	937.3
45.29	Bot - Section 2	1.00	1.07	9.379	10.32	241.79	0.650	0.000	0.29	1.143	0.74	7.7	0.0	54.3
50.00		1.00	1.09	9.576	10.53	238.54	0.650	0.000	4.71	18.407	11.96	126.0	0.0	1733.4
51.71	Top - Section 1	1.00	1.10	9.644	10.61	237.27	0.650	0.000	1.71	6.580	4.28	45.4	0.0	619.5
55.00		1.00	1.12	9.770	10.75	238.75	0.650	0.000	3.29	12.499	8.12	87.3	0.0	593.2
60.00		1.00	1.14	9.951	10.95	234.69	0.650	0.000	5.00	18.589	12.08	132.3	0.0	882.1
65.00		1.00	1.16	10.120	11.13	230.35	0.650	0.000	5.00	18.100	11.76	131.0	0.0	858.7
70.00		1.00	1.17	10.279	11.31	225.79	0.650	0.000	5.00	17.610	11.45	129.4	0.0	835.2
75.00		1.00	1.19	10.430	11.47	221.02	0.650	0.000	5.00	17.120	11.13	127.7	0.0	811.8
80.00		1.00	1.21	10.572	11.63	216.07	0.650	0.000	5.00	16.630	10.81	125.7	0.0	788.4
85.00		1.00	1.22	10.708	11.78	210.95	0.650	0.000	5.00	16.140	10.49	123.6	0.0	764.9
90.00		1.00	1.24	10.838	11.92	205.68	0.650	0.000	5.00	15.651	10.17	121.3	0.0	741.5
91.42	Bot - Section 3	1.00	1.24	10.873	11.96	204.16	0.650	0.000	1.42	4.345	2.82	33.8	0.0	205.8
95.00		1.00	1.25	10.962	12.06	200.28	0.650	0.000	3.58	11.005	7.15	86.3	0.0	947.4
96.58	Top - Section 2	1.00	1.26	11.000	12.10	198.54	0.650	0.000	1.58	4.783	3.11	37.6	0.0	411.6
100.00		1.00	1.27	11.081	12.19	198.32	0.650	0.000	3.42	10.153	6.60	80.4	0.0	401.3
105.00		1.00	1.28	11.195	12.31	192.70	0.650	0.000	5.00	14.446	9.39	115.6	0.0	570.9
110.00		1.00	1.29	11.305	12.44	186.96	0.650	0.000	5.00	13.956	9.07	112.8	0.0	551.4
115.00		1.00	1.30	11.412	12.55	181.13	0.650	0.000	5.00	13.466	8.75	109.9	0.0	531.8
120.00		1.00	1.32	11.514	12.67	175.20	0.650	0.000	5.00	12.976	8.43	106.8	0.0	512.3
125.00		1.00	1.33	11.614	12.78	169.19	0.650	0.000	5.00	12.486	8.12	103.7	0.0	492.7
130.00		1.00	1.34	11.710	12.88	163.09	0.650	0.000	5.00	11.997	7.80	100.4	0.0	473.2
135.00		1.00	1.35	11.803	12.98	156.91	0.650	0.000	5.00	11.507	7.48	97.1	0.0	453.7
139.08	Bot - Section 4	1.00	1.36	11.878	13.07	151.82	0.650	0.000	4.08	9.034	5.87	76.7	0.0	356.0
140.00		1.00	1.36	11.894	13.08	150.67	0.650	0.000	0.92	2.012	1.31	17.1	0.0	125.9
142.92	Top - Section 3	1.00	1.36	11.946	13.14	146.99	0.650	0.000	2.92	6.293	4.09	53.7	0.0	393.7
145.00		1.00	1.37	11.982	13.18	146.57	0.650	0.000	2.08	4.393	2.86	37.6	0.0	104.3
150.00		1.00	1.38	12.068	13.27	140.20	0.650	0.000	5.00	10.196	6.63	88.0	0.0	242.1
155.00		1.00	1.39	12.152	13.37	133.76	0.650	0.000	5.00	9.706	6.31	84.3	0.0	230.4
157.00	Appurtenance(s)	1.00	1.39	12.185	13.40	131.17	0.650	0.000	2.00	3.745	2.43	32.6	0.0	88.9
160.00		1.00	1.40	12.233	13.46	127.26	0.650	0.000	3.00	5.471	3.56	47.9	0.0	129.8
165.00		1.00	1.41	12.313	13.54	120.70	0.650	0.000	5.00	8.727	5.67	76.8	0.0	206.9
167.00	Appurtenance(s)	1.00	1.41	12.344	13.58	118.06	0.650	0.000	2.00	3.354	2.18	29.6	0.0	79.5
170.00		1.00	1.42	12.390	13.63	114.09	0.650	0.000	3.00	4.883	3.17	43.3	0.0	115.7
175.00		1.00	1.42	12.466	13.71	107.42	0.650	0.000	5.00	7.747	5.04	69.1	0.0	183.5
176.00		1.00	1.43	12.481	13.73	106.08	0.650	0.000	1.00	1.491	0.97	13.3	0.0	35.3
Totals:									176.00			3,961.8		25,806.5

Discrete Appurtenance Forces

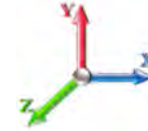
Structure: CT13611-A-SBA	Code: EIA/TIA-222-G	8/3/2021
Site Name: BSA	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 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	167.00	AM-X-CD-17-65-00T-RET	3	12.344	13.578	0.60	0.80	0.80	14.44	125.40	0.000	0.000	196.02	0.00	0.00
2	167.00	Low Profile Platform	1	12.344	13.578	1.00	1.00	1.00	25.00	1200.00	0.000	0.000	339.46	0.00	0.00
3	167.00	Raycap DC6-48-60-18-8F	1	12.344	13.578	0.80	0.80	0.74	31.80	31.80	0.000	0.000	9.99	0.00	0.00
4	167.00	Ericsson LGP 21901	6	12.344	13.578	0.60	0.80	0.83	33.00	33.00	0.000	0.000	11.24	0.00	0.00
5	167.00	Ericsson RRUS-11	3	12.344	13.578	0.58	0.80	0.80	4.50	132.00	0.000	0.000	61.14	0.00	0.00
6	167.00	Powerwave LGP21401	6	12.344	13.578	0.80	0.80	0.80	6.19	84.60	0.000	0.000	84.08	0.00	0.00
7	167.00	Ericsson RRUS-12	3	12.344	13.578	0.60	0.80	0.80	4.86	180.00	0.000	0.000	65.99	0.00	0.00
8	167.00	7770.00	6	12.344	13.578	0.58	0.80	0.80	19.27	210.00	0.000	0.000	261.68	0.00	0.00
9	157.00	Ericsson 4480 B71 + B85	3	12.185	13.403	0.50	0.75	0.75	4.30	279.00	0.000	0.000	57.58	0.00	0.00
10	157.00	Ericsson 4460 B25 + B66	3	12.185	13.403	0.50	0.75	0.75	4.30	312.00	0.000	0.000	57.58	0.00	0.00
11	157.00	SitePro1 RMQP-4096-HK	1	12.185	13.403	1.00	1.00	1.00	48.00	2449.00	0.000	0.000	643.35	0.00	0.00
12	157.00	Ericsson AIR6449 B41	3	12.185	13.403	0.53	0.75	0.75	9.03	309.00	0.000	0.000	120.97	0.00	0.00
13	157.00	RFS	3	12.185	13.403	0.54	0.75	0.75	32.79	429.90	0.000	0.000	439.47	0.00	0.00
14	157.00	RFS	3	12.185	13.403	0.46	0.75	0.75	9.22	122.10	0.000	0.000	123.59	0.00	0.00
Totals:										5,897.80			2,472.15		

Total Applied Force Summary

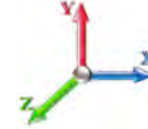
Structure: CT13611-A-SBA	Code: EIA/TIA-222-G	8/3/2021
Site Name: BSA	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 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		125.89	1216.16	0.00	0.00
10.00		123.29	1192.72	0.00	0.00
15.00		120.68	1169.28	0.00	0.00
20.00		125.28	1145.83	0.00	0.00
25.00		128.41	1122.39	0.00	0.00
30.00		130.42	1098.95	0.00	0.00
35.00		131.61	1075.51	0.00	0.00
40.00		132.17	1052.06	0.00	0.00
45.00		132.20	1028.62	0.00	0.00
45.29		7.66	59.62	0.00	0.00
50.00		126.04	1819.42	0.00	0.00
51.71		45.37	650.73	0.00	0.00
55.00		87.32	653.34	0.00	0.00
60.00		132.26	973.48	0.00	0.00
65.00		130.97	950.04	0.00	0.00
70.00		129.43	926.59	0.00	0.00
75.00		127.67	903.15	0.00	0.00
80.00		125.71	879.71	0.00	0.00
85.00		123.57	856.26	0.00	0.00
90.00		121.28	832.82	0.00	0.00
91.42		33.78	231.70	0.00	0.00
95.00		86.25	1012.83	0.00	0.00
96.58		37.61	440.50	0.00	0.00
100.00		80.44	463.76	0.00	0.00
105.00		115.63	662.24	0.00	0.00
110.00		112.81	642.70	0.00	0.00
115.00		109.87	623.17	0.00	0.00
120.00		106.83	603.63	0.00	0.00
125.00		103.68	584.09	0.00	0.00
130.00		100.44	564.56	0.00	0.00
135.00		97.11	545.02	0.00	0.00
139.08		76.72	430.61	0.00	0.00
140.00		17.11	142.68	0.00	0.00
142.92		53.75	447.00	0.00	0.00
145.00		37.64	142.40	0.00	0.00
150.00		87.98	333.45	0.00	0.00
155.00		84.33	321.73	0.00	0.00
157.00	(16) attachments	1475.18	4026.41	0.00	0.00
160.00		47.85	174.70	0.00	0.00
165.00		76.83	281.79	0.00	0.00
167.00	(29) attachments	1059.20	2106.23	0.00	0.00
170.00		43.26	115.72	0.00	0.00
175.00		69.05	183.49	0.00	0.00
176.00		13.30	35.29	0.00	0.00
Totals:		6,433.91	34,722.39	0.00	0.00

Calculated Forces

Structure: CT13611-A-SBA	Code: EIA/TIA-222-G	8/3/2021
Site Name: BSA	Exposure: C	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind	Iterations 26
Dead Load Factor 1.00	
Wind Load Factor 1.00	

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-34.72	-6.45	0.00	-752.09	0.00	752.09	4317.41	2158.71	9968.41	4991.62	0.00	0.000	0.000	0.159
5.00	-33.50	-6.34	0.00	-719.86	0.00	719.86	4266.06	2133.03	9645.32	4829.83	0.02	-0.039	0.000	0.157
10.00	-32.30	-6.24	0.00	-688.15	0.00	688.15	4213.11	2106.56	9323.64	4668.75	0.08	-0.079	0.000	0.155
15.00	-31.13	-6.14	0.00	-656.95	0.00	656.95	4158.58	2079.29	9003.59	4508.49	0.19	-0.120	0.000	0.153
20.00	-29.98	-6.03	0.00	-626.25	0.00	626.25	4102.46	2051.23	8685.41	4349.16	0.34	-0.162	0.000	0.151
25.00	-28.85	-5.92	0.00	-596.08	0.00	596.08	4044.75	2022.37	8369.33	4190.89	0.53	-0.204	0.000	0.149
30.00	-27.75	-5.81	0.00	-566.46	0.00	566.46	3985.45	1992.73	8055.57	4033.77	0.77	-0.247	0.000	0.147
35.00	-26.67	-5.69	0.00	-537.41	0.00	537.41	3924.57	1962.28	7744.37	3877.94	1.05	-0.291	0.000	0.145
40.00	-25.62	-5.58	0.00	-508.94	0.00	508.94	3862.10	1931.05	7435.94	3723.50	1.38	-0.336	0.000	0.143
45.00	-24.58	-5.45	0.00	-481.06	0.00	481.06	3798.04	1899.02	7130.53	3570.56	1.75	-0.381	0.000	0.141
45.29	-24.52	-5.45	0.00	-479.46	0.00	479.46	3794.23	1897.11	7112.71	3561.64	1.78	-0.384	0.000	0.141
50.00	-22.70	-5.32	0.00	-453.82	0.00	453.82	3732.39	1866.19	6828.35	3419.25	2.18	-0.428	0.000	0.139
51.71	-22.05	-5.28	0.00	-444.71	0.00	444.71	3752.64	1876.32	6920.41	3465.35	2.34	-0.444	0.000	0.134
55.00	-21.39	-5.20	0.00	-427.34	0.00	427.34	3708.89	1854.45	6722.75	3366.37	2.65	-0.476	0.000	0.133
60.00	-20.42	-5.08	0.00	-401.32	0.00	401.32	3641.10	1820.55	6425.31	3217.43	3.18	-0.521	0.000	0.130
65.00	-19.46	-4.95	0.00	-375.93	0.00	375.93	3571.72	1785.86	6131.65	3070.38	3.75	-0.568	0.000	0.128
70.00	-18.53	-4.83	0.00	-351.15	0.00	351.15	3500.75	1750.37	5841.99	2925.34	4.37	-0.615	0.000	0.125
75.00	-17.63	-4.71	0.00	-327.00	0.00	327.00	3428.19	1714.09	5556.57	2782.41	5.04	-0.662	0.000	0.123
80.00	-16.75	-4.59	0.00	-303.46	0.00	303.46	3354.04	1677.02	5275.60	2641.72	5.76	-0.711	0.000	0.120
85.00	-15.89	-4.47	0.00	-280.52	0.00	280.52	3278.31	1639.15	4999.32	2503.38	6.53	-0.760	0.000	0.117
90.00	-15.06	-4.34	0.00	-258.20	0.00	258.20	3186.62	1593.31	4706.74	2356.87	7.35	-0.809	0.000	0.114
91.42	-14.82	-4.31	0.00	-252.05	0.00	252.05	3157.61	1578.81	4621.01	2313.94	7.59	-0.824	0.000	0.114
95.00	-13.81	-4.22	0.00	-236.60	0.00	236.60	3084.25	1542.12	4407.69	2207.12	8.22	-0.860	0.000	0.112
96.58	-13.37	-4.18	0.00	-229.93	0.00	229.93	2497.75	1248.88	3609.06	1807.21	8.51	-0.877	0.000	0.133
100.00	-12.90	-4.10	0.00	-215.65	0.00	215.65	2457.75	1228.87	3470.74	1737.95	9.15	-0.912	0.000	0.129
105.00	-12.24	-3.99	0.00	-195.15	0.00	195.15	2397.86	1198.93	3271.22	1638.04	10.14	-0.969	0.000	0.124
110.00	-11.59	-3.87	0.00	-175.22	0.00	175.22	2336.39	1168.19	3075.35	1539.96	11.18	-1.026	0.000	0.119
115.00	-10.97	-3.76	0.00	-155.85	0.00	155.85	2273.33	1136.66	2883.37	1443.83	12.29	-1.083	0.000	0.113
120.00	-10.36	-3.65	0.00	-137.04	0.00	137.04	2194.33	1097.17	2677.99	1340.98	13.45	-1.139	0.000	0.107
125.00	-9.78	-3.55	0.00	-118.76	0.00	118.76	2109.02	1054.51	2472.77	1238.23	14.68	-1.194	0.000	0.101
130.00	-9.21	-3.44	0.00	-101.02	0.00	101.02	2023.72	1011.86	2275.74	1139.56	15.96	-1.247	0.000	0.093
135.00	-8.67	-3.34	0.00	-83.80	0.00	83.80	1938.41	969.21	2086.89	1045.00	17.29	-1.298	0.000	0.085
139.08	-8.24	-3.26	0.00	-70.15	0.00	70.15	1868.74	934.37	1938.73	970.81	18.42	-1.337	0.000	0.077
140.00	-8.09	-3.24	0.00	-67.16	0.00	67.16	1853.10	926.55	1906.22	954.53	18.68	-1.346	0.000	0.075
142.92	-7.65	-3.18	0.00	-57.71	0.00	57.71	1006.21	503.11	1032.86	517.20	19.51	-1.372	0.000	0.119
145.00	-7.50	-3.14	0.00	-51.09	0.00	51.09	993.78	496.89	1000.24	500.86	20.11	-1.390	0.000	0.110
150.00	-7.17	-3.05	0.00	-35.37	0.00	35.37	962.80	481.40	922.91	462.14	21.60	-1.445	0.000	0.084
155.00	-6.85	-2.96	0.00	-20.10	0.00	20.10	930.24	465.12	847.10	424.18	23.13	-1.487	0.000	0.055
157.00	-2.86	-1.38	0.00	-14.18	0.00	14.18	916.77	458.38	817.25	409.23	23.76	-1.498	0.000	0.038
160.00	-2.69	-1.33	0.00	-10.02	0.00	10.02	896.09	448.04	773.04	387.10	24.70	-1.512	0.000	0.029
165.00	-2.41	-1.25	0.00	-3.36	0.00	3.36	860.35	430.17	700.97	351.00	26.30	-1.526	0.000	0.012
167.00	-0.33	-0.13	0.00	-0.86	0.00	0.86	845.61	422.80	672.74	336.87	26.94	-1.528	0.000	0.003
170.00	-0.22	-0.09	0.00	-0.45	0.00	0.45	823.02	411.51	631.10	316.02	27.90	-1.529	0.000	0.002
175.00	-0.03	-0.01	0.00	-0.01	0.00	0.01	775.68	387.84	557.61	279.22	29.50	-1.529	0.000	0.000
176.00	0.00	-0.01	0.00	0.00	0.00	0.00	765.44	382.72	542.91	271.86	29.82	-1.529	0.000	0.000

Final Analysis Summary

Structure: CT13611-A-SBA	Code: EIA/TIA-222-G	8/3/2021
Site Name: BSA	Exposure: C	
Height: 176.00 (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 101 mph Wind	29.2	0.00	41.62	0.00	0.00	3430.33
0.9D + 1.6W 101 mph Wind	29.2	0.00	31.20	0.00	0.00	3390.94
1.2D + 1.0Di + 1.0Wi 50 mph Wind	8.5	0.00	69.42	0.00	0.00	1015.33
1.2D + 1.0E	1.4	0.00	41.67	0.00	0.00	166.23
0.9D + 1.0E	1.4	0.00	31.25	0.00	0.00	164.22
1.0D + 1.0W 60 mph Wind	6.4	0.00	34.72	0.00	0.00	752.09

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 101 mph Wind	-41.62	-29.24	0.00	-3430.3	0.00	-3430.3	4317.41	2158.7	9968.41	4991.62	0.00	0.697
0.9D + 1.6W 101 mph Wind	-31.20	-29.22	0.00	-3390.9	0.00	-3390.9	4317.41	2158.7	9968.41	4991.62	0.00	0.687
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-69.42	-8.49	0.00	-1015.3	0.00	-1015.3	4317.41	2158.7	9968.41	4991.62	0.00	0.220
1.2D + 1.0E	-41.67	-1.36	0.00	-166.23	0.00	-166.23	4317.41	2158.7	9968.41	4991.62	0.00	0.043
0.9D + 1.0E	-31.25	-1.36	0.00	-164.22	0.00	-164.22	4317.41	2158.7	9968.41	4991.62	0.00	0.040
1.0D + 1.0W 60 mph Wind	-34.72	-6.45	0.00	-752.09	0.00	-752.09	4317.41	2158.7	9968.41	4991.62	0.00	0.159

Base Plate Summary

Structure: CT13611-A-SB	Code: EIA/TIA-222-G	8/3/2021
Site Name: BSA	Exposure: C	
Height: 176.00 (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	Base Plate	Anchor Bolts
Original Design	Yield (ksi): 60.00	Bolt Circle: 66.00
Moment (kip-ft): 3414.00	Width (in): 72.00	Number Bolts: 18.00
Axial (kip): 36.00	Style: Round	Bolt Type: 2.25" 18J
Shear (kip): 27.00	Polygon Sides: 0.00	Bolt Diameter (in): 2.25
Analysis (1.2D + 1.6W)	Clip Length (in): 0.00	Yield (ksi): 75.00
Moment (kip-ft): 3430.33	Effective Len (in): 15.05	Ultimate (ksi): 100.00
Axial (kip): 41.62	Moment (kip-in): 676.67	Arrangement: Radial
Shear (kip): 29.24	Allow Stress (ksi): 81.00	Cluster Dist (in): 0.00
	Applied Stress (ksi): 67.23	Start Angle (deg): 0.00
	Stress Ratio: 0.83	Compression
		Force (kip): 142.46
		Allowable (kip): 260.00
		Ratio: 0.56
		Tension
		Force (kip): 134.74
		Allowable (kip): 260.00
		Ratio: 0.53



Monopole Mat Foundation Design

Date

8/3/2021

Customer Name:	T-Mobile	EIA/TIA Standard:	EIA-222-G
Site Name:		Structure Height (Ft.):	176
Site Number:	CT13611-A-SBA	Engineer Name:	H. You
Engr. Number:	112067	Engineer Login ID:	

Foundation Info Obtained from:

Mapping Operation

Structure Type:

Monopole

Analysis or Design?

Analysis

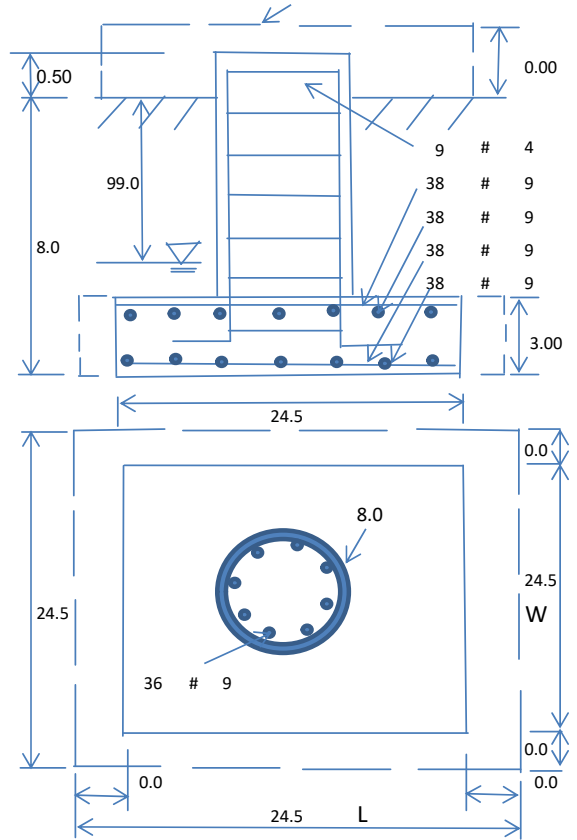
Base Reactions (Factored):

Axial Load (Kips):	41.6	Shear Force (Kips):	29.2
Uplift Force (Kips):	0.0	Moment (Kips-ft):	3430.3

Allowable overstress %: 5.0%

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	8.0	Depth of Base BG (ft.):	8.0
Pier Height A. G. (ft.):	0.50	Thickness of Pad (ft):	3.00
Length of Pad (ft.):	24.5	Width of Pad (ft.):	24.5
Final Length of pad (ft)	24.5	Final width of pad (ft):	24.5



Material Properties and Rebar Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	9	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	36	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	9	
Concrete Cover (in.):	4	Unit Weight of Concrete:	150.0	pcf

Rebar at the bottom of the concrete pad:

Qty. of Rebar in Pad (L):	38	Qty. of Rebar in Pad (W):	38
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Rebar at the top of the concrete pad:

Qty. of Rebar in Pad (L):	38	Qty. of Rebar in Pad (W):	38
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Apply 1.35 factor for e/w Per G: 1.35

Soil Design Parameters:

Soil Unit Weight (pcf):	110.0	Soil Buoyant Weight:	50.0	Pcf	Angle from Top of Pad:	30
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf	Angle from Bottm of Pad:	25
Ultimate Bearing Pressure (psf):	10000	Ultimate Skin Friction:	175	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Reduction factor on the maximum soil bearing pressure:	1.00
Consider soil hor. resist. for OTM.:	No					

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):	2749.92	Total Dry Soil Weight (Kips):	302.49
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	302.49	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	2077.21	Total Dry Concrete Weight (Kips):	311.58
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	311.58	Total Vertical Load on Base (Kips):	655.67

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	2674	< Allowable Factored Soil Bearing (psf):	7500	0.36	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	7279.8	> Design Factored Momont (kips-ft):	3679	0.51	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.98				OK!

Load/
Capacity
Ratio

Check the capacities of Reinforcing Concrete:

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

Load/
Capacity
Ratio

(1) Concrete Pier:

Vertical Steel Rebar Area (sq. in./each):	1.00	Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	6972.8	> Design Factored Moment (Mu, Kips-F	3590.9	0.51	OK!
Calculated Shear Capacity (Kips):	748.3	> Design Factored Shear (Kips):	29.2	0.04	OK!
Calculated Tension Capacity (Tn, Kips):	1944.0	> Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	9550.2	> Design Factored Axial Load (Pu Kips):	41.6	0.00	OK!
Moment & Axial Strength Combination:	0.51	OK! Check Tie Spacing (Design/Required):		1	OK!
Pier Reinforcement Ratio:	0.005	Reinforcement Ratio is satisfied per ACI			

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	759.4	> One-Way Factored Shear (L-D. Kips):	220.9	0.29	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	759.4	> One-Way Factored Shear (W-D., Kips)	220.9	0.29	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	663.5	> One-Way Factored Shear (C-C, Kips):	207.8	0.31	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0041	OK! Lower Steel Pad Reinf. Ratio (W-Direc	0.0041		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	5115.8	> Moment at Bottom (L-Dir. K-Ft):	1159.7	0.23	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	5115.8	> Moment at Bottom (W-Dir. K-Ft):	1159.7	0.23	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	7124.4	> Moment at Bottom (C-C Dir. K-Ft):	1640.0	0.23	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0041	OK! Upper Steel Reinf. Ratio (W-Dir.):	0.0041		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	5115.8	> Moment at the top (L-Dir K-Ft):	505.6	0.10	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	5115.8	> Moment at the top (W-Dir K-Ft):	505.6	0.10	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	7124.4	> Moment at the top (C-C Dir. K-Ft):	478.1	0.07	OK!

(3).Check Punching Shear Capacity due to Moment in the Pier:

Moment transferred by punching shear:	1372.1	k-ft.	Max. factored shear stress $v_{u,CD}$:	2.4	Psi
Max. factored shear stress $v_{u,AB}$:	7.7	Psi	Factored shear Strength ϕv_n :	164.3	Psi
Max. factored shear stress v_u :	7.7	Psi	Check Usage of Punching Shear Capacity:	0.05	OK!

EXHIBIT 9

Antenna Mount Analysis



Tower Engineering Solutions

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

Antenna Mount Analysis Report

Existing 176-Ft Monopole Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT13611-A-SBA / BSA

Customer Site Name: BSA

Carrier Name: T-Mobile (App#: 160674, V#1)

Carrier Site ID / Name: CTNL162B / _

Site Location: 229-231 Ashford Center Rd

Ashford, Connecticut

Windham County

Latitude: 41.880444

Longitude: -72.128499

Exp.10/31/2021



Analysis Result:

07/08/2021

Max Structural Usage: 89.3% [Pass]

Report Prepared By: Osuba Gurung

NOTE: The proposed platform w/ handrail and kicker [(1) Site Pro1 RMQP-4096-HK] mounts are not currently installed on the tower. The proposed mounts were assumed to be installed per the manufacturer's instructions, and it is assumed that they can be installed properly on the tower. TES cannot verify that the proposed mounts will fit properly and is not liable for any fit-up issues during installation.

Introduction

The purpose of this report is to summarize the analysis results on the (1) Proposed Platform w/ handrail and kicker at 157.00' elevation to support the proposed antenna configuration. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Mount Drawings	Mount info by SBA, Site name: BSA, Dated 03/24/2014
Antenna Loading	SBA, Application #: 160674, v1, Dated 06/15/2021
Modification Drawings	N/A

Analysis Criteria

Basic Wind Speed Used in the Analysis: $V_{ULT} = 130$ mph (3-Sec. Gust) / Equivalent to
 $V_{ASD} = 101$ mph (3-Sec. Gust)

Basic Wind Speed with Ice: 50 mph (3-Sec. Gust) with 1" radial ice concurrent

Operational Wind Speed: 60 mph +0" Radial ice

Standard/Codes: ANSI/TIA/EIA 222-G

Exposure Category: C

Structure Class: II

Topographic Category: 1

Crest Height (Ft): 0

The site is a Risk Category II structure per IBC Table 1604.5. This site does not support emergency communication equipment for first responders such as fire departments, police, hospitals, ambulance services or any of the facilities listed for Risk Categories III and IV. The scope of work detailed in this structural analysis does not include items that are a part of emergency service as the 911 or essential facility service of an emergency response system.

Mount Information

(1) Proposed Platform w/ handrails and kicker **[(1) Site Pro1 RMQP-4096-HK]** at 157.00' elevation

Final Antenna Configuration

- 3 RFS APX16DWV-16DWVS-E-A20
- 3 RFS APXVAALL24-43-U-NA20
- 3 Ericsson AIR6449 B41
- 3 Ericsson 4460 B25 + B66
- 3 Ericsson 4480 B71 + B85

In addition to the proposed equipment loading, a 500 lb serviceability load was also considered in this analysis in accordance with TIA requirements.

Analysis Results

Our calculations have determined that under design wind load the proposed mounts will be structurally adequate to support the proposed antenna configuration. The maximum structural usage is 89.3%, which occurs in the Connection plate. The proposed equipment must be installed as stipulated in the Final Antenna Configuration section of this report. The analysis results are void if the proposed equipment is not installed in accordance with this report.

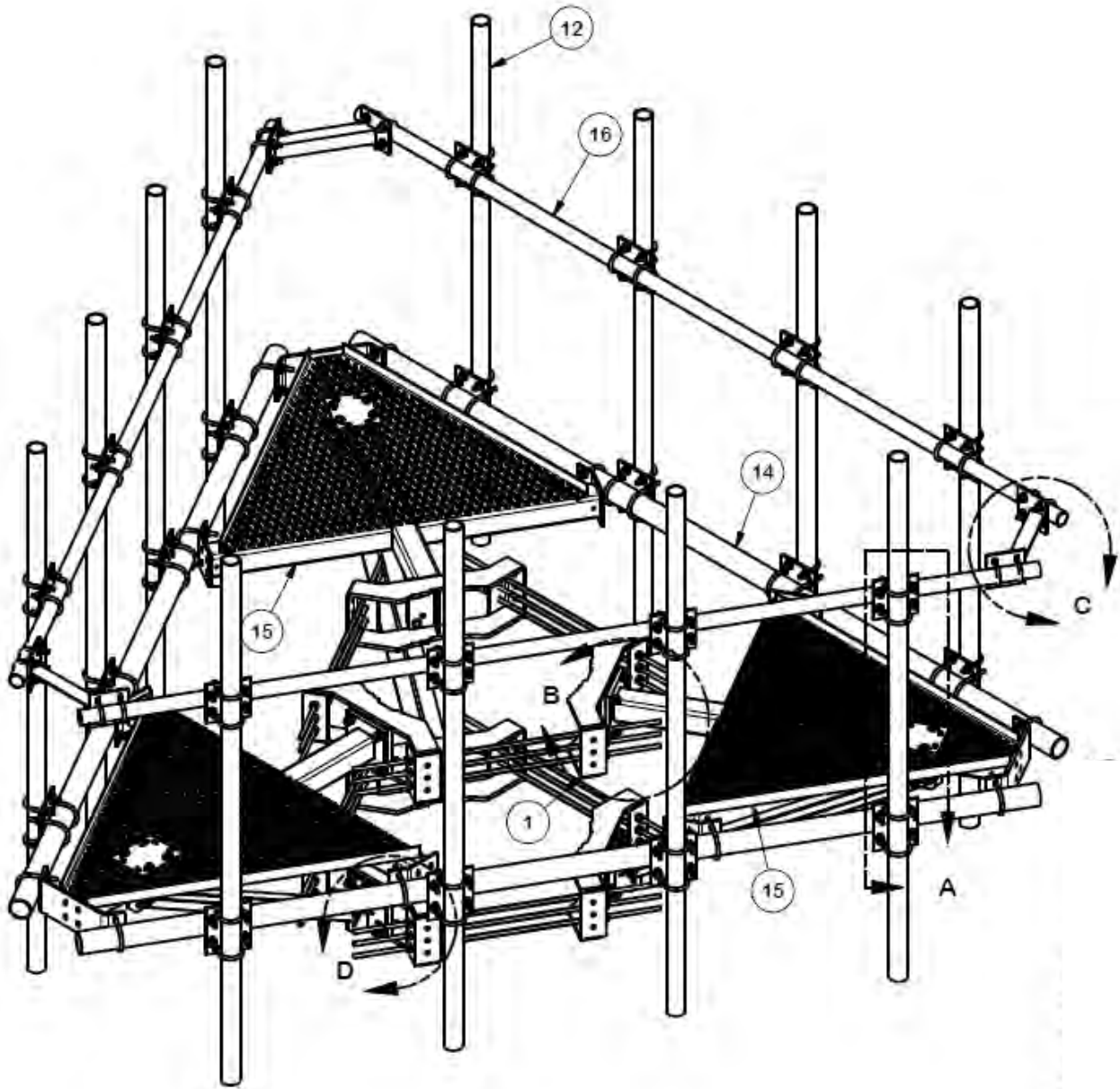
NOTE: The proposed platform w/ handrails and kicker [(1) Site Pro1 RMQP-4096-HK] mounts are not currently installed on the tower. The proposed mounts were assumed to be installed per the manufacturer's instructions, and it is assumed that they can be installed properly on the tower. TES cannot verify that the proposed mounts will fit properly and is not liable for any fit-up issues during installation.

Attachments

1. Mount Drawing
2. Antenna Placement Diagram
3. Analysis Calculations

Standard Conditions

1. The loading configuration as analyzed in this report is as provided from the customer. Any deviation from this design shall be communicated to TES to verify deviation will not adversely impact the analysis.
2. The analysis is based on the presumption that the antenna mount members and components along with any existing reinforcement items have been correctly and properly designed, manufactured, installed and maintained.
3. All the existing structural members were assumed to be in good condition with no physical damage or deterioration associated with corrosion. The mount analysis is not a condition assessment of the mount.
4. The mount analysis was performed in accordance with the loading provided, and if applicable the modification required to support the additional loading.
5. If the mount is modified, installation must adhere to the configuration communicated in the modification drawings.
6. The modification drawings are not intended to convey means or methods. These are the responsibility of the installing contractor.
7. Rigging plan review is available if the contractor requires for a construction class IV or other if required. Review fee would apply.
8. The mount modification package was created based upon information provided for the mount loading. The underlying tower is assumed to provide support and sufficient rigidity to support the mount loads as a tower analysis was not part of the mount analysis.
9. TES is not responsible for modifications to climbing facilities unless communicated to TES in writing.



RMQP-4096-HK

Sector: **A**

7/7/2021

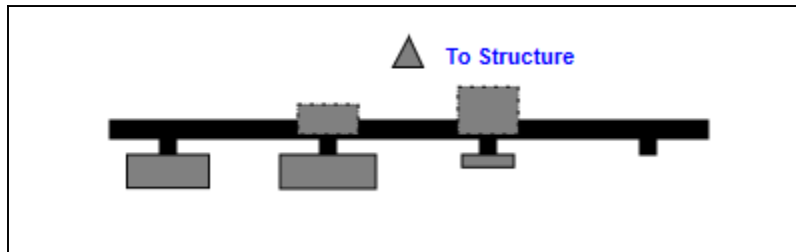
Structure Type: Monopole

Mount Elev: 157.00

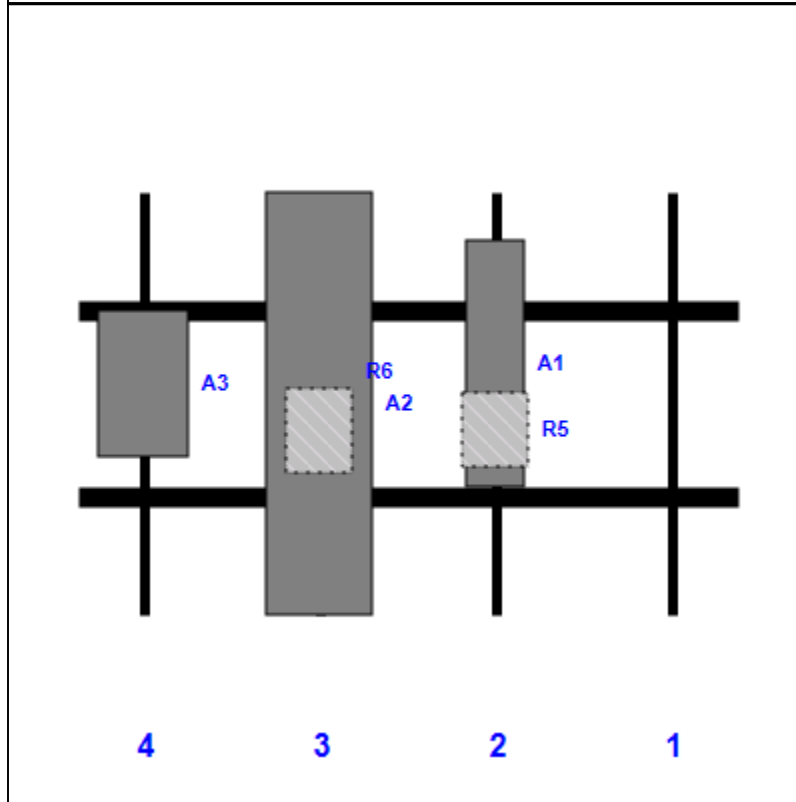
Page: 1



Plan View



Front View
Looking Toward Structure



Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	APX16DWV-16DWVS-E-A20	55.90	13.00	95.00	2	a	Front	39.00			
R5	4460 B25 + B66	17.00	15.10	95.00	2	b	Behind	54.00			
A2	APXVAALL24-43-U-NA20	95.90	24.00	55.00	3	a	Front	48.00			
R6	4480 B71 + B85	19.20	15.10	55.00	3	b	Behind	54.00			
A3	AIR6449 B41	33.10	20.50	15.00	4	a	Front	43.50			

Sector: **B**

7/7/2021

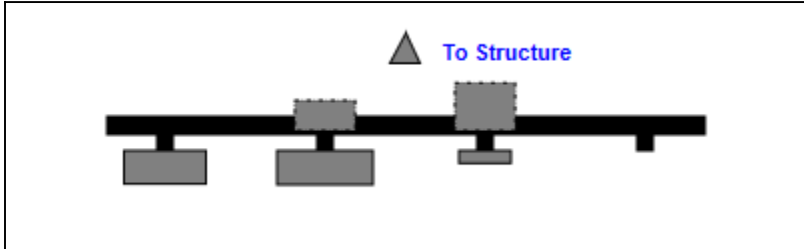
Structure Type: Monopole

Mount Elev: 157.00

Page: 2

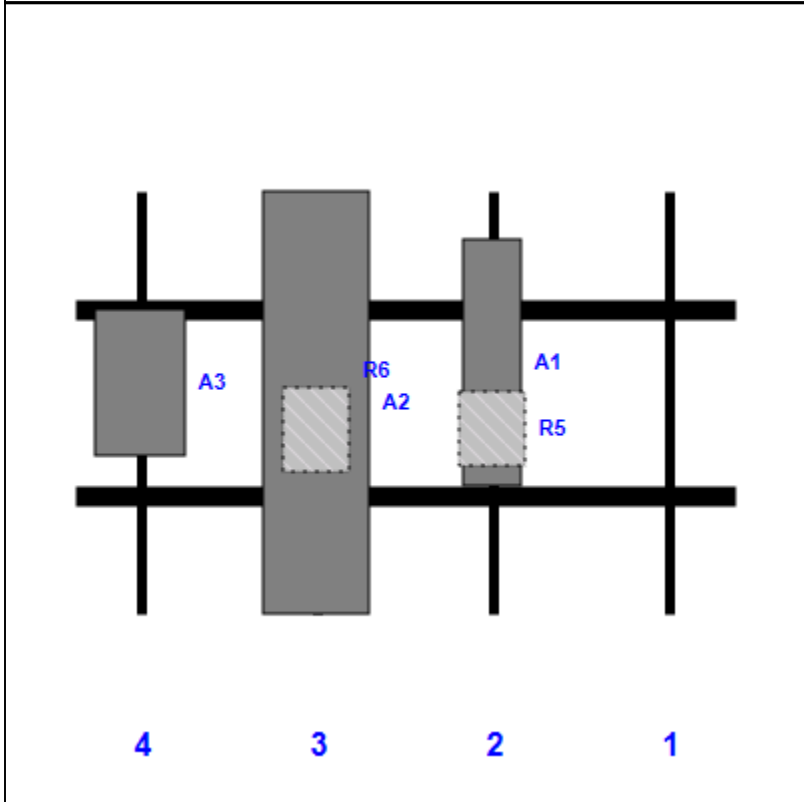


Plan View



Front View

Looking Toward Structure



Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	APX16DWV-16DWVS-E-A20	55.90	13.00	95.00	2	a	Front	39.00			
R5	4460 B25 + B66	17.00	15.10	95.00	2	b	Behind	54.00			
A2	APXVAALL24-43-U-NA20	95.90	24.00	55.00	3	a	Front	48.00			
R6	4480 B71 + B85	19.20	15.10	55.00	3	b	Behind	54.00			
A3	AIR6449 B41	33.10	20.50	15.00	4	a	Front	43.50			

Sector: C

7/7/2021

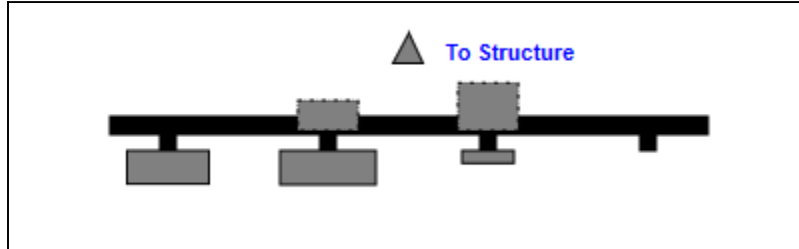
Structure Type: Monopole

Mount Elev: 157.00

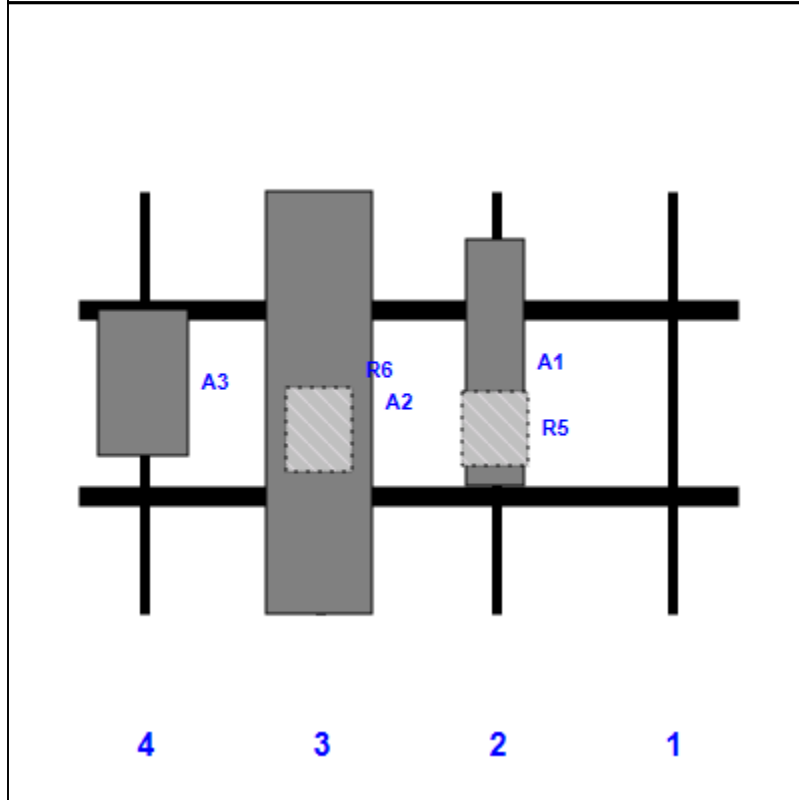
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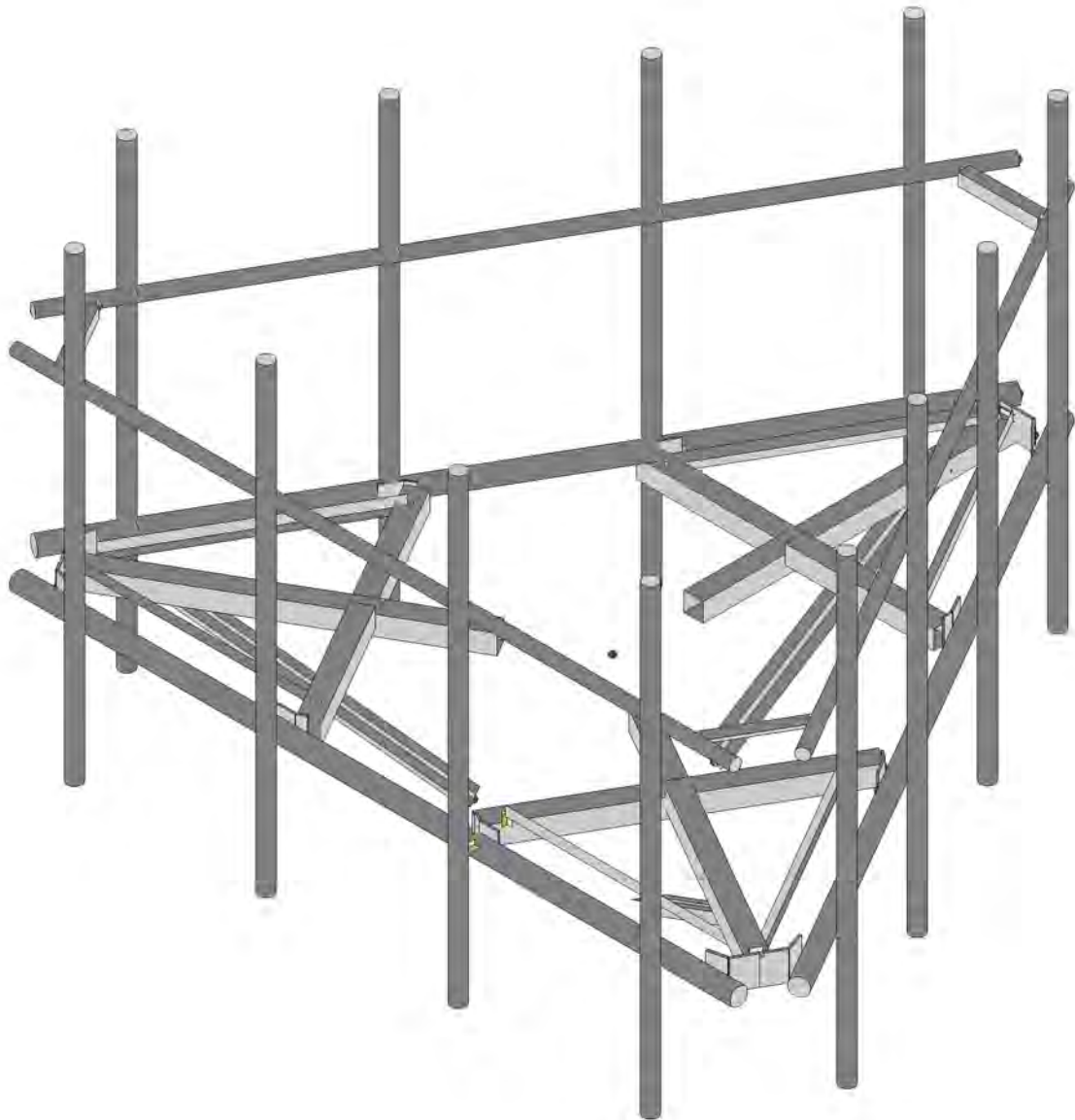
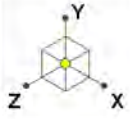
Plan View



Front View
Looking Toward Structure



Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	APX16DWV-16DWVS-E-A20	55.90	13.00	95.00	2	a	Front	39.00			
R5	4460 B25 + B66	17.00	15.10	95.00	2	b	Behind	54.00			
A2	APXVAALL24-43-U-NA20	95.90	24.00	55.00	3	a	Front	48.00			
R6	4480 B71 + B85	19.20	15.10	55.00	3	b	Behind	54.00			
A3	AIR6449 B41	33.10	20.50	15.00	4	a	Front	43.50			



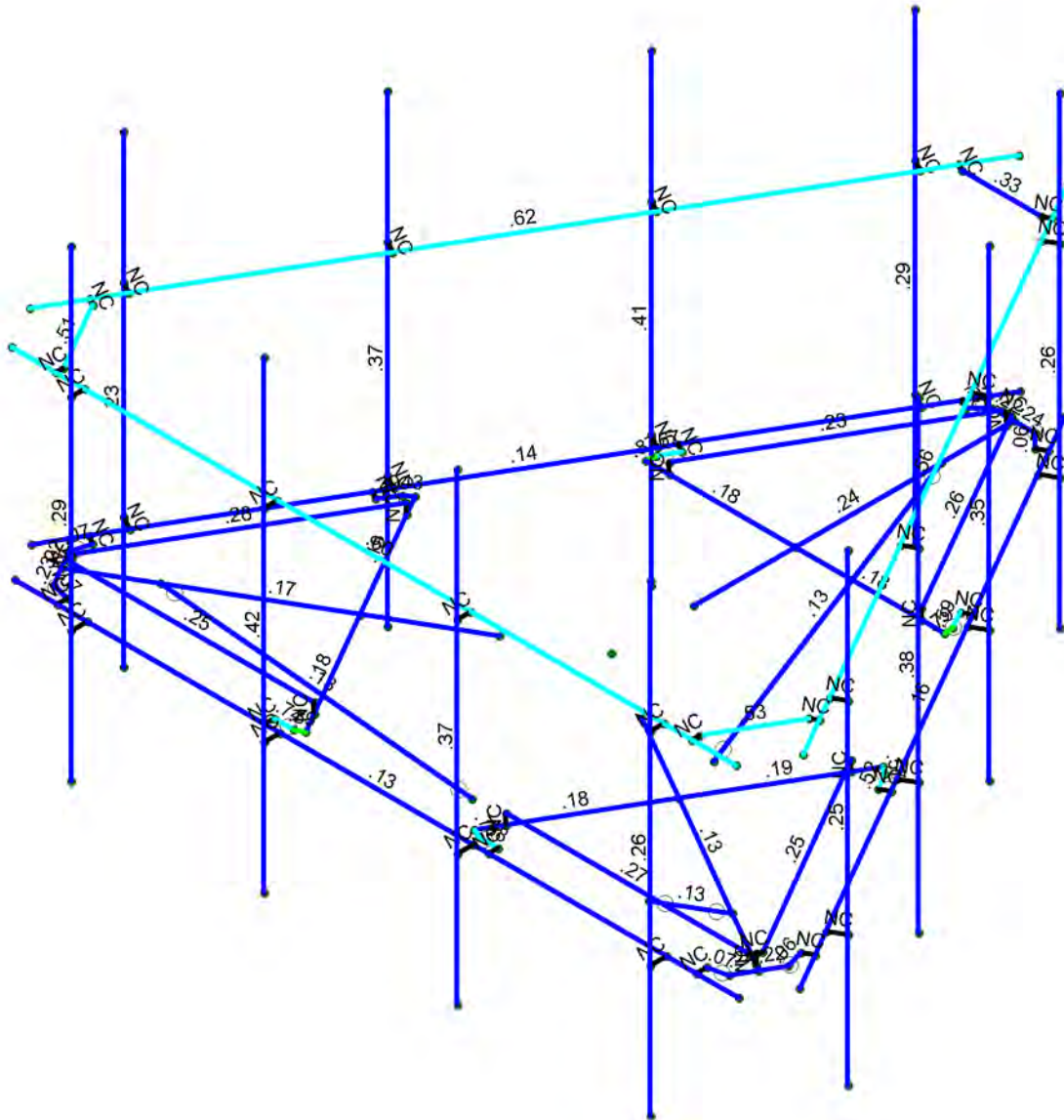
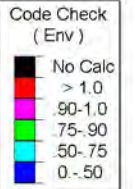
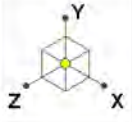
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TES Project No. 110405

SK - 1

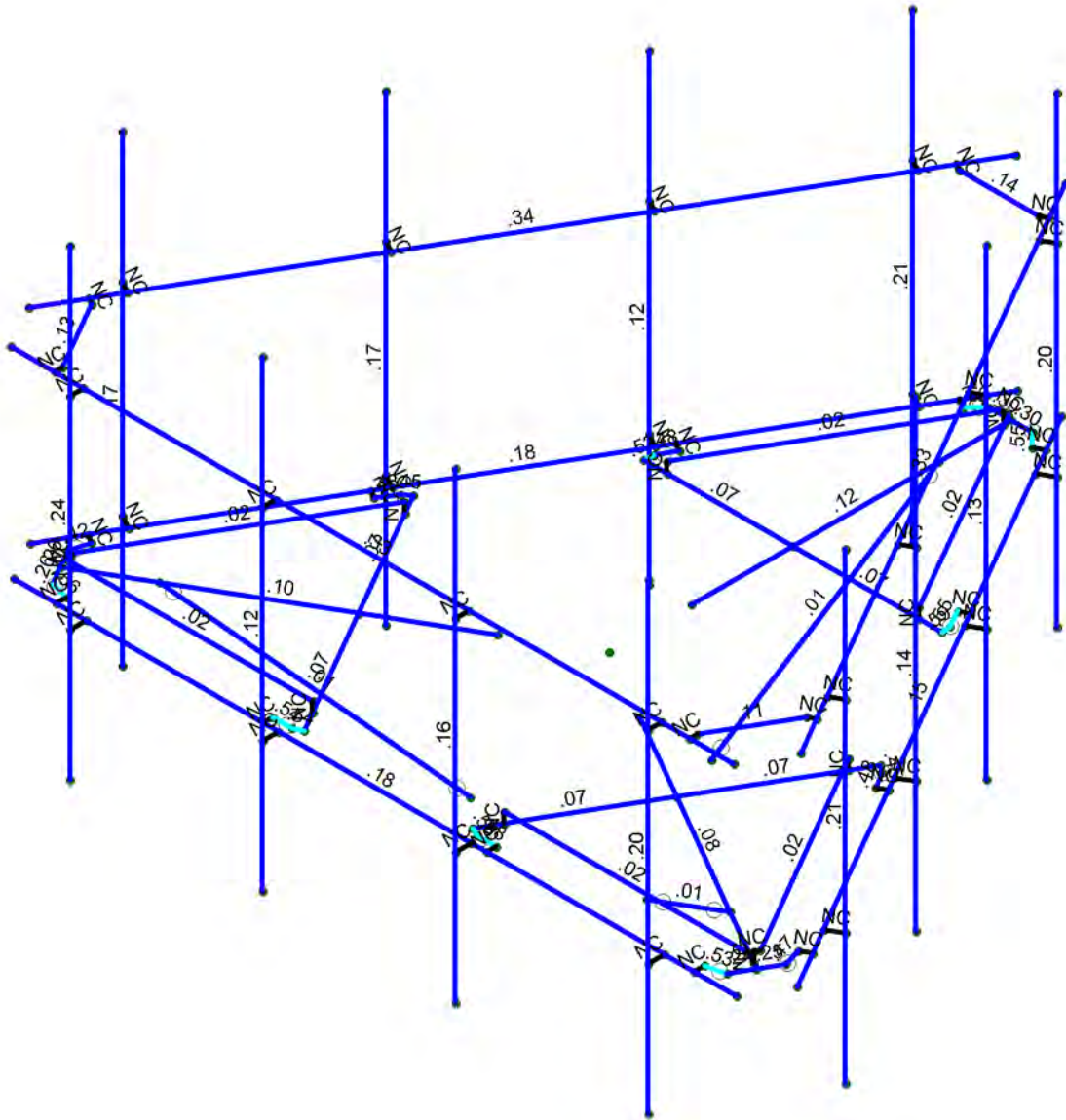
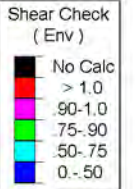
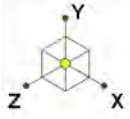
July 8, 2021 at 9:08 AM

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Member Code Checks Displayed (Enveloped)
 Results for LC 1, 1.2D+1.6W (Front)

Tower Engineering Solutio...		SK - 2
		July 8, 2021 at 9:08 AM
TES Project No. 110405		CT13611-A-SBA_110405_G_RISA_...



Member Shear Checks Displayed (Enveloped)
Results for LC 1, 1.2D+1.6W (Front)

Tower Engineering Solutio...

SK - 3

July 8, 2021 at 9:08 AM

TES Project No. 110405

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Company : Tower Engineering Solutions, LLC
 Designer :
 Job Number : TES Project No. 110405
 Model Name :

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6 UjW@ UX'7 UjYg

BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...	Surface(P...
1	Antenna D	None				24		
2	Antenna Di	None				24		
3	Antenna W Front	None				24		
4	Antenna Wi Front	None				24		
5	Antenna W Side	None				24		
6	Antenna Wi Side	None				24		
7	Service Lm1	None				1		
8	Service Lm2	None				1		
9	Structure D	None	-1				5	
10	Structure Di	None					63	3
11	Structure W Front	None					63	
12	Structure Wi Front	None					63	
13	Structure W Side	None					63	
14	Structure Wi Side	None					63	
15	BLC 9 Transient Area..	None					33	
16	BLC 10 Transient Are..	None					33	

@ UX'7 ca VjbUjc bg

Description	S... P...	S... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...
1	1.2D+1.6W (Front)	Yes Y	1	1.2	9	1.2	3	1.6	11	1.6							
2	1.2D+1.6W (Back)	Yes Y	1	1.2	9	1.2	3	-1.6	11	-1.6							
3	1.2D+1.6W (Left)	Yes Y	1	1.2	9	1.2	5	1.6	13	1.6							
4	1.2D+1.6W (Right)	Yes Y	1	1.2	9	1.2	5	-1.6	13	-1.6							
5	1.2D+1.0Di+1.0Wi (Front)	Yes Y	1	1.2	9	1.2	2	1	10	1	4	1	12	1			
6	1.2D+1.0Di+1.0Wi (Back)	Yes Y	1	1.2	9	1.2	2	1	10	1	4	-1	12	-1			
7	1.2D+1.0Di+1.0Wi (Left)	Yes Y	1	1.2	9	1.2	2	1	10	1	6	1	14	1			
8	1.2D+1.0Di+1.0Wi (Right)	Yes Y	1	1.2	9	1.2	2	1	10	1	6	-1	14	-1			
9	1.2D+1.5L1+.16W (Maintainance)	Yes Y	1	1.2	9	1.2	7	1.5	3	.16	11	.16					
10	1.2D+1.5L2+.16W (Maintainance)	Yes Y	1	1.2	9	1.2	8	1.5	3	.16	11	.16					
11	1.4D	Yes Y	1	1.4	9	1.4											

< chFc`YX'GhYY'GYWjcb'GYlg

Label	Shape	Type	Design List	Material	Design...A [in2]	Iyy [in...lzz [in...J [in4]
1	Footrails	PIPE 3.0	Beam	Pipe	A53 Gr.B	Typical 2.07 2.85 2.85 5.69
2	Grating Angles	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical .722 .271 .271 .009
3	Handrails	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical 1.02 .627 .627 1.25
4	Standoff Arm	HSS4X4X4	Beam	SquareTube	A500 Gr.46	Typical 3.37 7.8 7.8 12.8
5	Plan Bracing	HSS4X4X4	Beam	SquareTube	A500 Gr.46	Typical 3.37 7.8 7.8 12.8
6	Kickers	LL2.5x2.5x3x3	Beam	Double Angle	A36 Gr.36	Typical 1.8 2.46 1.07 .023
7	Mount Pipes	PIPE 2.5	Beam	Pipe	A53 Gr.B	Typical 1.61 1.45 1.45 2.89
8	Footrail Connection Plates	PL1/2x6	Beam	RECT	A36 Gr.36	Typical 3 .063 9 .237
9	Plan Bracing Connection Plates	PL3/8x6	Beam	RECT	A36 Gr.36	Typical 2.25 .026 6.75 .101
10	Handrail Corner Braces	L2.5x2.5x4	Beam	Single Angle	A36 Gr.36	Typical 1.19 .692 .692 .026



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	Label	E [ksi]	G [ksi]	Nu	Them (/1E...Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt	
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	58	1.2
3	A992	29000	11154	.3	.65	.49	50	1.1	58	1.2
4	A500 Gr.42	29000	11154	.3	.65	.49	42	1.3	58	1.1
5	A500 Gr.46	29000	11154	.3	.65	.49	46	1.2	58	1.1
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.5	58	1.2
7	Q235	29000	11154	.3	.65	.49	34	1.5	58	1.2
8	J429-Gr5	29000	11154	.3	.65	.49	92	1.5	120	1.2

A Ya Vy`Df`ja Ufm8 UU

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N30	N179			Standoff Arm	Beam	SquareTube	A500 Gr.46	Typical
2	M2	N28	N180			Standoff Arm	Beam	SquareTube	A500 Gr.46	Typical
3	M3	N22	N24			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
4	M4	N22	N23			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
5	M5	N26	N144			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
6	M6	N144	N142			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
7	M7	N25	N143			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
8	M8	N143	N139			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
9	M9	N149	N145			Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
10	M10	N150	N146		270	Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
11	M11	N24	N136			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
12	M12	N23	N133			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
13	M13	N22	N5			Standoff Arm	Beam	SquareTube	A500 Gr.46	Typical
14	M14	N26	N19			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
15	M15	N19	N25			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
16	M16	N77	N78			Footrails	Beam	Pipe	A53 Gr.B	Typical
17	M17	N79	N80			Footrails	Beam	Pipe	A53 Gr.B	Typical
18	M18	N1	N2			Footrails	Beam	Pipe	A53 Gr.B	Typical
19	M19	N31	N34			Kickers	Beam	Double Angle (...)	A36 Gr.36	Typical
20	M20	N32	N35			Kickers	Beam	Double Angle (...)	A36 Gr.36	Typical
21	M21	N33	N36			Kickers	Beam	Double Angle (...)	A36 Gr.36	Typical
22	M22	N37	N38			Handrails	Beam	Pipe	A53 Gr.B	Typical
23	M23	N81	N82			Handrails	Beam	Pipe	A53 Gr.B	Typical
24	M24	N83	N84			Handrails	Beam	Pipe	A53 Gr.B	Typical
25	M25	N130	N125		180	Handrail Corne...	Beam	Single Angle	A36 Gr.36	Typical
26	MP4A	N41	N42			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
27	MP1A	N43	N44			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
28	MP3A	N45	N46			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
29	MP2A	N47	N48			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
30	MP4C	N49	N50			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
31	MP1C	N51	N52			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
32	MP3C	N53	N54			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
33	MP2C	N55	N56			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
34	MP4B	N57	N58			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
35	MP1B	N59	N60			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
36	MP3B	N61	N62			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
37	MP2B	N63	N64			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
38	M38	N74	N87			RIGID	None	None	RIGID	Typical



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 Model Name :

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A Ya Vyf Df ja Ufm8 UUf7 cbHbi YXL

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
39	M39	N76	N89			RIGID	None	None	RIGID	Typical
40	M40	N75	N88			RIGID	None	None	RIGID	Typical
41	M41	N73	N86			RIGID	None	None	RIGID	Typical
42	M42	N66	N95			RIGID	None	None	RIGID	Typical
43	M43	N68	N97			RIGID	None	None	RIGID	Typical
44	M44	N67	N96			RIGID	None	None	RIGID	Typical
45	M45	N65	N94			RIGID	None	None	RIGID	Typical
46	M46	N70	N103			RIGID	None	None	RIGID	Typical
47	M47	N72	N105			RIGID	None	None	RIGID	Typical
48	M48	N71	N104			RIGID	None	None	RIGID	Typical
49	M49	N69	N102			RIGID	None	None	RIGID	Typical
50	M50	N110	N90			RIGID	None	None	RIGID	Typical
51	M51	N112	N92			RIGID	None	None	RIGID	Typical
52	M52	N111	N91			RIGID	None	None	RIGID	Typical
53	M53	N109	N85			RIGID	None	None	RIGID	Typical
54	M54	N114	N98			RIGID	None	None	RIGID	Typical
55	M55	N116	N100			RIGID	None	None	RIGID	Typical
56	M56	N115	N99			RIGID	None	None	RIGID	Typical
57	M57	N113	N93			RIGID	None	None	RIGID	Typical
58	M58	N118	N106			RIGID	None	None	RIGID	Typical
59	M59	N120	N108			RIGID	None	None	RIGID	Typical
60	M60	N119	N107			RIGID	None	None	RIGID	Typical
61	M61	N117	N101			RIGID	None	None	RIGID	Typical
62	M62	N39	N121			RIGID	None	None	RIGID	Typical
63	M63	N40	N122			RIGID	None	None	RIGID	Typical
64	M64	N123	N125			RIGID	None	None	RIGID	Typical
65	M65	N124	N126			RIGID	None	None	RIGID	Typical
66	M66	N127	N129			RIGID	None	None	RIGID	Typical
67	M67	N128	N130			RIGID	None	None	RIGID	Typical
68	M68	N122	N129		180	Handrail Corne...	Beam	Single Angle	A36 Gr.36	Typical
69	M69	N126	N121		180	Handrail Corne...	Beam	Single Angle	A36 Gr.36	Typical
70	M70	N10	N132			RIGID	None	None	RIGID	Typical
71	M71	N7	N131			RIGID	None	None	RIGID	Typical
72	M72	N18	N134			RIGID	None	None	RIGID	Typical
73	M73	N15	N133			RIGID	None	None	RIGID	Typical
74	M74	N14	N136			RIGID	None	None	RIGID	Typical
75	M75	N11	N135			RIGID	None	None	RIGID	Typical
76	M76	N8	N137			RIGID	None	None	RIGID	Typical
77	M77	N9	N138			RIGID	None	None	RIGID	Typical
78	M78	N16	N139			RIGID	None	None	RIGID	Typical
79	M79	N17	N140			RIGID	None	None	RIGID	Typical
80	M80	N12	N141			RIGID	None	None	RIGID	Typical
81	M81	N13	N142			RIGID	None	None	RIGID	Typical
82	M82	N21	N146			RIGID	None	None	RIGID	Typical
83	M83	N20	N145			RIGID	None	None	RIGID	Typical
84	M84	N147	N148			RIGID	None	None	RIGID	Typical
85	M85	N149	N150			RIGID	None	None	RIGID	Typical
86	M86	N30	N154			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
87	M87	N30	N153			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
88	M88	N156	N158			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
89	M89	N158	N138			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
90	M90	N155	N157			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical



A Ya Vyf Dfja Ufm8 UUf7 cbHbi YXL

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
91	M91	N157	N141			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
92	M92	N163	N159			Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
93	M93	N164	N160		270	Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
94	M94	N154	N132			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
95	M95	N153	N135			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
96	M96	N156	N29			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
97	M97	N29	N155			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
98	M98	N152	N160			RIGID	None	None	RIGID	Typical
99	M99	N151	N159			RIGID	None	None	RIGID	Typical
100	M100	N161	N162			RIGID	None	None	RIGID	Typical
101	M101	N163	N164			RIGID	None	None	RIGID	Typical
102	M102	N28	N168			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
103	M103	N28	N167			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
104	M104	N170	N172			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
105	M105	N172	N140			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
106	M106	N169	N171			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
107	M107	N171	N137			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
108	M108	N177	N173			Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
109	M109	N178	N174		270	Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
110	M110	N168	N134			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
111	M111	N167	N131			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
112	M112	N170	N27			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
113	M113	N27	N169			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
114	M114	N166	N174			RIGID	None	None	RIGID	Typical
115	M115	N165	N173			RIGID	None	None	RIGID	Typical
116	M116	N175	N176			RIGID	None	None	RIGID	Typical
117	M117	N177	N178			RIGID	None	None	RIGID	Typical

A Ya Vyf 5 Xj Ub WX 8 UHU

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1						Yes				None
2	M2						Yes				None
3	M3						Yes				None
4	M4						Yes				None
5	M5						Yes				None
6	M6		BenPIN				Yes				None
7	M7						Yes				None
8	M8		BenPIN				Yes				None
9	M9						Yes				None
10	M10						Yes				None
11	M11		BenPIN				Yes				None
12	M12		BenPIN				Yes				None
13	M13						Yes				None
14	M14						Yes				None
15	M15						Yes				None
16	M16						Yes				None
17	M17						Yes				None
18	M18						Yes				None
19	M19	BenPIN	BenPIN				Yes				None
20	M20	BenPIN	BenPIN				Yes				None



Company : Tower Engineering Solutions, LLC
 Designer :
 Job Number : TES Project No. 110405
 Model Name :

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A Ya Vyf'5 Xj Ub WX'8 UHf7 cbh7bi YXL

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
21	M21	BenPIN	BenPIN				Yes				None
22	M22						Yes				None
23	M23						Yes				None
24	M24						Yes				None
25	M25						Yes				None
26	MP4A						Yes				None
27	MP1A						Yes				None
28	MP3A						Yes				None
29	MP2A						Yes				None
30	MP4C						Yes				None
31	MP1C						Yes				None
32	MP3C						Yes				None
33	MP2C						Yes				None
34	MP4B						Yes				None
35	MP1B						Yes				None
36	MP3B						Yes				None
37	MP2B						Yes				None
38	M38						Yes	** NA **			None
39	M39						Yes	** NA **			None
40	M40						Yes	** NA **			None
41	M41						Yes	** NA **			None
42	M42						Yes	** NA **			None
43	M43						Yes	** NA **			None
44	M44						Yes	** NA **			None
45	M45						Yes	** NA **			None
46	M46						Yes	** NA **			None
47	M47						Yes	** NA **			None
48	M48						Yes	** NA **			None
49	M49						Yes	** NA **			None
50	M50						Yes	** NA **			None
51	M51						Yes	** NA **			None
52	M52						Yes	** NA **			None
53	M53						Yes	** NA **			None
54	M54						Yes	** NA **			None
55	M55						Yes	** NA **			None
56	M56						Yes	** NA **			None
57	M57						Yes	** NA **			None
58	M58						Yes	** NA **			None
59	M59						Yes	** NA **			None
60	M60						Yes	** NA **			None
61	M61						Yes	** NA **			None
62	M62						Yes	** NA **			None
63	M63						Yes	** NA **			None
64	M64						Yes	** NA **			None
65	M65						Yes	** NA **			None
66	M66						Yes	** NA **			None
67	M67						Yes	** NA **			None
68	M68						Yes				None
69	M69						Yes				None
70	M70						Yes	** NA **			None
71	M71						Yes	** NA **			None
72	M72						Yes	** NA **			None



A Ya Vyf'5 Xj Ub WX'8 UJfT' cbHbi YXL

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
73	M73						Yes	** NA **			None
74	M74						Yes	** NA **			None
75	M75						Yes	** NA **			None
76	M76						Yes	** NA **			None
77	M77						Yes	** NA **			None
78	M78						Yes	** NA **			None
79	M79						Yes	** NA **			None
80	M80						Yes	** NA **			None
81	M81						Yes	** NA **			None
82	M82						Yes	** NA **			None
83	M83						Yes	** NA **			None
84	M84						Yes	** NA **			None
85	M85						Yes	** NA **			None
86	M86						Yes				None
87	M87						Yes				None
88	M88						Yes				None
89	M89		BenPIN				Yes				None
90	M90						Yes				None
91	M91		BenPIN				Yes				None
92	M92						Yes				None
93	M93						Yes				None
94	M94		BenPIN				Yes				None
95	M95		BenPIN				Yes				None
96	M96						Yes				None
97	M97						Yes				None
98	M98						Yes	** NA **			None
99	M99						Yes	** NA **			None
100	M100						Yes	** NA **			None
101	M101						Yes	** NA **			None
102	M102						Yes				None
103	M103						Yes				None
104	M104						Yes				None
105	M105		BenPIN				Yes				None
106	M106						Yes				None
107	M107		BenPIN				Yes				None
108	M108						Yes				None
109	M109						Yes				None
110	M110		BenPIN				Yes				None
111	M111		BenPIN				Yes				None
112	M112						Yes				None
113	M113						Yes				None
114	M114						Yes	** NA **			None
115	M115						Yes	** NA **			None
116	M116						Yes	** NA **			None
117	M117						Yes	** NA **			None

< chFc`YX'GhYY'8 Yg][b'DU'Ua Yhfg

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
1	M1	Standoff Arm	5.53			Lbyy			2.1	2.1		Lateral
2	M2	Standoff Arm	5.532			Lbyy			2.1	2.1		Lateral



Company : Tower Engineering Solutions, LLC
 Designer :
 Job Number : TES Project No. 110405
 Model Name :

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<chFc`YX'GhY'8 YgJ[b'DU'Ua YhYfg f7 cbh]bi YXL

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
3	M3	Footrail Con...	.375			Lbyy			.65	.65		Lateral
4	M4	Footrail Con...	.375			Lbyy			.65	.65		Lateral
5	M5	Plan Bracin...	.156			Lbyy			.65	.65		Lateral
6	M6	Plan Bracin...	.332			Lbyy			.8	.8		Lateral
7	M7	Plan Bracin...	.156			Lbyy			.65	.65		Lateral
8	M8	Plan Bracin...	.333			Lbyy			.8	.8		Lateral
9	M9	Grating Ang...	4.21			Lbyy			.65	.65		Lateral
10	M10	Grating Ang...	4.209			Lbyy			.65	.65		Lateral
11	M11	Footrail Con...	.322			Lbyy			.8	.8		Lateral
12	M12	Footrail Con...	.321			Lbyy			.8	.8		Lateral
13	M13	Standoff Arm	5.532			Lbyy			2.1	2.1		Lateral
14	M14	Plan Bracing	2.58			Lbyy			1	1		Lateral
15	M15	Plan Bracing	2.58			Lbyy			1	1		Lateral
16	M16	Footrails	12.5			Lbyy			1	1		Lateral
17	M17	Footrails	12.5			Lbyy			1	1		Lateral
18	M18	Footrails	12.5			Lbyy			1	1		Lateral
19	M19	Kickers	4.662			Lbyy			1	1		Lateral
20	M20	Kickers	4.664			Lbyy			1	1		Lateral
21	M21	Kickers	4.664			Lbyy			1	1		Lateral
22	M22	Handrails	12.5			Lbyy			1	1		Lateral
23	M23	Handrails	12.5			Lbyy			1	1		Lateral
24	M24	Handrails	12.5			Lbyy			1	1		Lateral
25	M25	Handrail Co...	1.383			Lbyy			.65	.65		Lateral
26	MP4A	Mount Pipes	8			Lbyy			1	1		Lateral
27	MP1A	Mount Pipes	8			Lbyy			1	1		Lateral
28	MP3A	Mount Pipes	8			Lbyy			1	1		Lateral
29	MP2A	Mount Pipes	8			Lbyy			1	1		Lateral
30	MP4C	Mount Pipes	8			Lbyy			1	1		Lateral
31	MP1C	Mount Pipes	8			Lbyy			1	1		Lateral
32	MP3C	Mount Pipes	8			Lbyy			1	1		Lateral
33	MP2C	Mount Pipes	8			Lbyy			1	1		Lateral
34	MP4B	Mount Pipes	8			Lbyy			1	1		Lateral
35	MP1B	Mount Pipes	8			Lbyy			1	1		Lateral
36	MP3B	Mount Pipes	8			Lbyy			1	1		Lateral
37	MP2B	Mount Pipes	8			Lbyy			1	1		Lateral
38	M68	Handrail Co...	1.383			Lbyy			.65	.65		Lateral
39	M69	Handrail Co...	1.383			Lbyy			.65	.65		Lateral
40	M86	Footrail Con...	.375			Lbyy			.65	.65		Lateral
41	M87	Footrail Con...	.375			Lbyy			.65	.65		Lateral
42	M88	Plan Bracin...	.156			Lbyy			.65	.65		Lateral
43	M89	Plan Bracin...	.332			Lbyy			.8	.8		Lateral
44	M90	Plan Bracin...	.156			Lbyy			.65	.65		Lateral
45	M91	Plan Bracin...	.333			Lbyy			.8	.8		Lateral
46	M92	Grating Ang...	4.21			Lbyy			.65	.65		Lateral
47	M93	Grating Ang...	4.209			Lbyy			.65	.65		Lateral
48	M94	Footrail Con...	.322			Lbyy			.8	.8		Lateral
49	M95	Footrail Con...	.321			Lbyy			.8	.8		Lateral
50	M96	Plan Bracing	2.58			Lbyy			1	1		Lateral
51	M97	Plan Bracing	2.58			Lbyy			1	1		Lateral
52	M102	Footrail Con...	.374			Lbyy			.65	.65		Lateral
53	M103	Footrail Con...	.376			Lbyy			.65	.65		Lateral
54	M104	Plan Bracin...	.156			Lbyy			.65	.65		Lateral



<chFc`YX'GhY'8 YgJ[b'DU'Ua YhYfg'f7 cbh]bi YXL

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
55	M105	Plan Bracin...	.332			Lbyy			.8	.8		Lateral
56	M106	Plan Bracin...	.156			Lbyy			.65	.65		Lateral
57	M107	Plan Bracin...	.333			Lbyy			.8	.8		Lateral
58	M108	Grating Ang...	4.21			Lbyy			.65	.65		Lateral
59	M109	Grating Ang...	4.209			Lbyy			.65	.65		Lateral
60	M110	Footrail Con...	.322			Lbyy			.8	.8		Lateral
61	M111	Footrail Con...	.321			Lbyy			.8	.8		Lateral
62	M112	Plan Bracing	2.579			Lbyy			1	1		Lateral
63	M113	Plan Bracing	2.581			Lbyy			1	1		Lateral

>c]bh6 ci bXUf mi7 cbX]h]cbg

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N3						
2	N5	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N29						
4	N31	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N32	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6	N33	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
7	N179	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
8	N180	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

9bj YcdY>c]bhFYUM]cbg

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N5	max	2371.075	4	1217.55	6	7122.756	1	1.587	6	3.377	3	.714	3
2		min	-2367.146	3	267.444	1	-4900.653	2	.346	1	-3.388	4	-.822	4
3	N31	max	521.994	3	3151.009	8	2428.206	8	0	1	0	2	0	2
4		min	-4189.806	8	-395.143	3	-323.687	3	0	2	0	1	0	1
5	N32	max	56.618	4	3165.847	5	948.883	2	0	11	0	4	0	3
6		min	-56.74	3	-605.566	2	-4870.337	5	0	1	0	3	0	4
7	N33	max	4195.085	7	3152.798	7	2431.166	7	0	3	0	3	0	3
8		min	-537.881	4	-406.51	4	-332.834	4	0	4	0	4	0	4
9	N179	max	5861.791	4	1224.638	7	2739.309	1	.284	1	2.001	1	.033	2
10		min	-3847.475	3	232.06	9	-3915.597	2	-1.117	6	-2.014	2	-1.346	5
11	N180	max	4153.883	4	1222.273	8	2252.559	1	.262	3	1.316	2	1.558	5
12		min	-6173.435	3	234.54	10	-3418.811	2	-.707	6	-1.319	1	.101	2
13	Totals:	max	9020.209	4	11989.665	7	8862.564	1						
14		min	-9020.178	3	3737.081	4	-8862.594	2						

9bj YcdYA Ya VYf'GYW]cb': cfW]g

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
1	M1	1	max	1089.885	3	412.094	3	639.366	2	.806	2	.248	2	-.025	1
2			min	-1138.776	4	-1458.778	8	-685.721	1	-.708	1	-.239	1	-.165	9
3		2	max	3751.832	3	1277.368	8	95.629	1	.614	2	.114	4	1.534	4
4			min	-5937.622	4	-93.879	3	-100.973	2	-.514	1	-.114	3	-.819	3
5		3	max	3776.091	3	1226.483	8	75.695	4	.614	2	.228	4	.413	4
6			min	-5961.881	4	-112.904	3	-81.46	3	-.514	1	-.236	3	-.676	3
7		4	max	4162.372	3	-212.651	9	1811.155	2	.767	2	1.172	4	.06	9



Company : Tower Engineering Solutions, LLC
 Designer :
 Job Number : TES Project No. 110405
 Model Name :

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9bj YcdYA Ya VYf GYVJcb: cfWVg fT cbhpi YXL

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC	
8		min	-6489.708	4	-1172.195	7	-1805.162	1	-.659	1	-1.164	3	-.059	7	
9	5	max	4186.631	3	-231.676	9	1853.15	2	.767	2	2.014	2	1.597	7	
10		min	-6513.967	4	-1223.081	7	-1847.156	1	-.659	1	-2.001	1	.367	9	
11	M2	1	max	933.019	4	416.417	4	432.869	3	.684	1	.205	1	-.019	4
12		min	-989.211	3	-1460.581	7	-469.714	4	-.572	2	-.188	2	-.17	10	
13		2	max	3929.789	4	1277.309	7	118.329	4	.538	1	.108	4	1.573	3
14		min	-6121.628	3	-100.426	4	-123.375	3	-.435	2	-.112	3	-.861	4	
15		3	max	3954.036	4	1226.408	7	104.346	4	.538	1	.262	4	.444	3
16		min	-6145.875	3	-119.457	4	-109.391	3	-.435	2	-.272	3	-.709	4	
17		4	max	4356.538	4	-215.122	10	1427.765	1	.624	1	1.317	4	.056	10
18		min	-6690.322	3	-1169.834	8	-1430.64	2	-.511	2	-1.31	3	-.06	5	
19		5	max	4380.784	4	-234.152	10	1469.806	1	.624	1	1.319	1	1.597	8
20		min	-6714.569	3	-1220.735	8	-1472.681	2	-.511	2	-1.316	2	.366	10	
21	M3	1	max	711.158	1	888.355	5	570.838	2	.226	3	.174	1	.62	5
22		min	-608.103	2	-259.155	2	-590.46	1	-.158	4	-.186	2	-.247	2	
23		2	max	711.158	1	885.302	5	565.141	2	.226	3	.119	1	.54	8
24		min	-608.103	2	-260.303	2	-584.763	1	-.158	4	-.132	2	-.244	3	
25		3	max	711.158	1	882.249	5	559.444	2	.226	3	.068	3	.477	4
26		min	-608.103	2	-261.452	2	-579.066	1	-.158	4	-.083	4	-.244	3	
27		4	max	711.158	1	879.196	5	553.747	2	.226	3	.025	3	.433	4
28		min	-608.103	2	-.262.6	2	-573.37	1	-.158	4	-.042	4	-.243	3	
29		5	max	711.158	1	876.142	5	548.05	2	.226	3	.024	2	.389	4
30		min	-608.103	2	-263.749	2	-567.673	1	-.158	4	-.043	1	-.243	3	
31	M4	1	max	769.977	1	601.208	5	659.625	1	.198	3	.2	2	.522	3
32		min	-685.876	2	-265.965	2	-625.35	2	-.229	4	-.202	1	-.305	4	
33		2	max	769.977	1	598.155	5	653.928	1	.198	3	.142	2	.487	3
34		min	-685.876	2	-267.113	2	-619.653	2	-.229	4	-.14	1	-.299	4	
35		3	max	769.977	1	595.101	5	648.231	1	.198	3	.084	2	.452	3
36		min	-685.876	2	-268.262	2	-613.956	2	-.229	4	-.079	1	-.292	4	
37		4	max	769.977	1	592.048	5	642.534	1	.198	3	.059	3	.417	3
38		min	-685.876	2	-269.41	2	-608.259	2	-.229	4	-.05	4	-.285	4	
39		5	max	769.977	1	588.995	5	636.837	1	.198	3	.041	1	.383	3
40		min	-685.876	2	-270.558	2	-602.562	2	-.229	4	-.03	2	-.279	4	
41	M5	1	max	1326.813	2	1017.623	5	808.687	4	.168	4	.482	3	.488	5
42		min	-1081.986	1	65.149	2	-739.647	3	-.223	3	-.477	4	-.006	2	
43		2	max	1326.533	2	1016.483	5	806.355	4	.168	4	.454	3	.448	5
44		min	-1081.706	1	64.791	2	-737.315	3	-.223	3	-.446	4	-.008	2	
45		3	max	1326.254	2	1015.343	5	804.023	4	.168	4	.425	3	.409	5
46		min	-1081.426	1	64.433	2	-734.983	3	-.223	3	-.415	4	-.011	2	
47		4	max	1325.974	2	1014.204	5	801.692	4	.168	4	.396	3	.369	5
48		min	-1081.146	1	64.076	2	-732.652	3	-.223	3	-.383	4	-.013	2	
49		5	max	1325.694	2	1013.064	5	799.36	4	.168	4	.368	3	.33	5
50		min	-1080.867	1	63.718	2	-730.32	3	-.223	3	-.352	4	-.016	2	
51	M6	1	max	1267.126	2	1013.056	5	1069.864	4	.206	4	.368	3	.334	5
52		min	-1010.796	1	64.582	2	-1117.547	3	-.191	3	-.352	4	.021	2	
53		2	max	1265.024	2	1010.629	5	1065.957	4	.206	4	.275	3	.25	5
54		min	-1008.694	1	63.821	2	-1113.64	3	-.191	3	-.264	4	.016	2	
55		3	max	1262.923	2	1008.202	5	1062.049	4	.206	4	.183	3	.167	5
56		min	-1006.593	1	63.059	2	-1109.733	3	-.191	3	-.175	4	.01	2	
57		4	max	1260.822	2	1005.775	5	1058.142	4	.206	4	.092	3	.083	5
58		min	-1004.492	1	62.298	2	-1105.826	3	-.191	3	-.088	4	.005	2	
59		5	max	1258.721	2	1003.348	5	1054.235	4	.206	4	0	11	0	11



Company : Tower Engineering Solutions, LLC
 Designer :
 Job Number : TES Project No. 110405
 Model Name :

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 Checked By: _____

9bj YcdYA Ya Vyf GYVjcb : cfWkg f7 cbh7bi YXL

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC	
60		min	-1002.391	1	61.536	2	-1101.919	3	-.191	3	0	1	0	1	
61	M7	1	max	1106.952	2	995.909	5	737.687	4	.252	4	.437	3	.48	5
62		min	-888.633	1	70.308	2	-794.547	3	-.198	3	-.441	4	.003	2	
63		2	max	1106.672	2	994.769	5	735.355	4	.252	4	.406	3	.441	5
64		min	-888.353	1	69.951	2	-792.215	3	-.198	3	-.413	4	0	2	
65		3	max	1106.392	2	993.63	5	733.024	4	.252	4	.375	3	.403	5
66		min	-888.073	1	69.593	2	-789.883	3	-.198	3	-.384	4	-.002	2	
67		4	max	1106.113	2	992.49	5	730.692	4	.252	4	.345	3	.364	5
68		min	-887.793	1	69.236	2	-787.552	3	-.198	3	-.355	4	-.005	2	
69		5	max	1105.833	2	991.35	5	728.36	4	.252	4	.314	3	.325	5
70		min	-887.513	1	68.878	2	-785.22	3	-.198	3	-.327	4	-.008	2	
71	M8	1	max	1060.741	2	991.366	5	988.584	4	.221	4	.314	3	.329	5
72		min	-833.196	1	69.398	2	-949.797	3	-.237	3	-.327	4	.023	2	
73		2	max	1058.628	2	988.925	5	984.655	4	.221	4	.235	3	.246	5
74		min	-831.083	1	68.632	2	-945.868	3	-.237	3	-.245	4	.017	2	
75		3	max	1056.514	2	986.484	5	980.727	4	.221	4	.156	3	.164	5
76		min	-828.969	1	67.866	2	-941.939	3	-.237	3	-.163	4	.011	2	
77		4	max	1054.4	2	984.043	5	976.798	4	.221	4	.078	3	.082	5
78		min	-826.855	1	67.1	2	-938.01	3	-.237	3	-.081	4	.006	2	
79		5	max	1052.286	2	981.602	5	972.869	4	.221	4	0	11	0	11
80		min	-824.741	1	66.334	2	-934.081	3	-.237	3	0	1	0	1	
81	M9	1	max	914.414	1	106.117	8	36.135	3	0	8	-.004	2	.142	8
82		min	-1235.2	2	9.125	3	-47.054	4	0	3	-.068	5	-.034	3	
83		2	max	905.206	1	80.752	8	20.108	3	0	8	.008	3	.054	5
84		min	-1225.992	2	3.127	3	-31.027	4	0	3	-.015	4	-.026	2	
85		3	max	895.999	1	42.039	8	7.44	2	0	8	.023	7	.02	1
86		min	-1216.784	2	-6.686	3	-21.538	5	0	3	-.006	4	-.026	2	
87		4	max	886.791	1	17.432	4	12.73	2	0	8	.019	6	0	3
88		min	-1207.577	2	-18.762	3	-23.688	1	0	3	-.005	1	-.04	8	
89		5	max	877.584	1	9.318	4	18.02	2	0	8	.022	4	.011	2
90		min	-1198.369	2	-46.252	7	-28.977	1	0	3	-.029	3	-.037	5	
91	M10	1	max	1083.309	1	36.415	4	100.445	7	0	4	-.006	2	.038	4
92		min	-1425.329	2	-44.529	3	6.885	4	0	7	-.062	5	-.118	7	
93		2	max	1074.107	1	20.384	4	74.934	7	0	4	.009	4	.026	2
94		min	-1416.128	2	-28.498	3	.844	4	0	7	-.013	3	-.043	1	
95		3	max	1064.906	1	8.683	2	35.67	7	0	4	.026	8	.027	6
96		min	-1406.926	2	-17.032	5	-9.126	4	0	7	-.004	3	-.015	1	
97		4	max	1055.705	1	13.964	2	14.036	3	0	4	.02	6	.038	7
98		min	-1397.725	2	-22.004	1	-25.177	8	0	7	-.007	1	-.001	4	
99		5	max	1046.503	1	19.594	3	5.339	3	0	4	.024	3	.027	1
100		min	-1388.524	2	-27.707	4	-59.985	8	0	7	-.034	4	-.014	2	
101	M11	1	max	899.34	1	876.285	5	129.878	1	.332	3	.024	2	.281	5
102		min	-816.811	2	-265.175	2	-70.463	2	-.392	4	-.043	1	-.086	2	
103		2	max	896.896	1	873.66	5	132.167	1	.332	3	.018	2	.21	5
104		min	-814.368	2	-266.162	2	-72.752	2	-.392	4	-.033	1	-.065	2	
105		3	max	894.453	1	871.035	5	134.457	1	.332	3	.012	2	.14	5
106		min	-811.924	2	-267.149	2	-75.042	2	-.392	4	-.022	1	-.043	2	
107		4	max	892.01	1	868.411	5	136.746	1	.332	3	.006	2	.07	5
108		min	-809.481	2	-268.136	2	-77.331	2	-.392	4	-.011	1	-.022	2	
109		5	max	889.566	1	865.786	5	139.036	1	.332	3	0	11	0	11
110		min	-807.037	2	-269.124	2	-79.62	2	-.392	4	0	1	0	1	
111	M12	1	max	990.264	1	588.966	5	88.613	2	.414	3	.041	1	.187	5



Company : Tower Engineering Solutions, LLC
 Designer :
 Job Number : TES Project No. 110405
 Model Name :

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9bj YcdYA Ya VYf GYVjcb : cfWkg f7 cbh7bi YXL

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC	
112		min	-909.779	2	-271.755	2	-123.963	1	-.36	4	-.03	2	-.088	2	
113	2	max	987.834	1	586.357	5	90.895	2	.414	3	.031	1	.14	5	
114		min	-907.349	2	-272.736	2	-126.246	1	-.36	4	-.023	2	-.066	2	
115	3	max	985.404	1	583.747	5	93.178	2	.414	3	.021	1	.093	5	
116		min	-904.919	2	-273.718	2	-128.528	1	-.36	4	-.015	2	-.044	2	
117	4	max	982.975	1	581.138	5	95.461	2	.414	3	.011	1	.046	5	
118		min	-902.489	2	-274.699	2	-130.811	1	-.36	4	-.008	2	-.022	2	
119	5	max	980.545	1	578.528	5	97.744	2	.414	3	0	11	0	11	
120		min	-900.06	2	-275.681	2	-133.094	1	-.36	4	0	1	0	1	
121	M13	1	max	1199.061	2	527.581	2	608.737	4	.871	4	.3	4	-.014	2
122		min	-1247.016	1	-1488.85	5	-626.478	3	-.765	3	-.288	3	-.166	5	
123	2	max	4521.039	2	1283.354	5	68.597	3	.676	4	.041	3	1.688	1	
124		min	-6601.318	1	-164.605	2	-73.515	4	-.575	3	-.044	4	-.996	2	
125	3	max	4521.039	2	1232.453	5	17.963	2	.676	4	.097	3	.499	1	
126		min	-6601.318	1	-183.636	2	-22.925	1	-.575	3	-.107	4	-.755	2	
127	4	max	4900.653	2	-247.347	1	2313.067	4	.822	4	.213	2	.001	3	
128		min	-7122.756	1	-1165.285	6	-2309.703	3	-.714	3	-.204	1	-.062	8	
129	5	max	4900.653	2	-266.377	1	2369.092	4	.822	4	3.388	4	1.587	6	
130		min	-7122.756	1	-1216.186	6	-2365.727	3	-.714	3	-3.377	3	.346	1	
131	M14	1	max	584.232	3	-64.252	2	1306.261	2	.017	2	.477	4	.147	4
132		min	-703.56	4	-1017.229	5	-1072.955	1	-.475	5	-.482	3	-.233	3	
133	2	max	1234.948	3	-94.647	2	151.851	3	-.075	4	.419	2	.526	5	
134		min	-1182.952	4	-1094.043	5	-217.721	4	-.549	7	-.324	1	-.17	2	
135	3	max	1234.948	3	-103.523	2	164.329	2	-.075	4	.516	2	1.239	5	
136		min	-1182.952	4	-1117.783	5	-230.926	1	-.549	7	-.465	1	-.106	2	
137	4	max	1234.948	3	-112.399	2	190.458	2	-.075	4	.631	2	1.968	5	
138		min	-1182.952	4	-1141.523	5	-257.055	1	-.549	7	-.622	1	-.037	2	
139	5	max	1234.948	3	-121.275	2	216.588	2	-.075	4	.762	2	2.712	5	
140		min	-1182.952	4	-1165.263	5	-283.185	1	-.549	7	-.796	1	.039	2	
141	M15	1	max	1091.434	4	1129.395	5	237.872	1	.514	8	.585	2	2.638	5
142		min	-1031.196	3	125.025	2	-163.463	2	.128	3	-.643	1	.081	2	
143	2	max	1091.434	4	1105.655	5	211.785	3	.514	8	.488	2	1.918	5	
144		min	-1031.196	3	116.15	2	-139.224	4	.128	3	-.498	1	.003	2	
145	3	max	1091.434	4	1081.915	5	211.785	3	.514	8	.408	2	1.212	5	
146		min	-1031.196	3	107.274	2	-139.224	4	.128	3	-.37	1	-.069	2	
147	4	max	1091.434	4	1058.176	5	211.785	3	.514	8	.344	2	.522	5	
148		min	-1031.196	3	98.398	2	-139.224	4	.128	3	-.259	1	-.135	2	
149	5	max	625.481	4	995.656	5	880.075	1	.468	5	.437	3	.177	3	
150		min	-722.664	3	69.584	2	-1088.713	2	-.007	2	-.441	4	-.262	4	
151	M16	1	max	0	11	.008	1	.016	3	0	11	0	11	0	11
152		min	0	1	-.002	7	-.007	1	0	1	0	1	0	1	1
153	2	max	281.318	2	232.463	2	247.722	3	.347	4	.242	2	.209	2	
154		min	-325.02	1	-215.914	1	-240.424	4	-.411	3	-.264	1	-.296	1	
155	3	max	758.101	3	287.559	2	203.903	3	.338	4	.5	4	.088	1	
156		min	-1077.568	4	-349.945	1	-214.813	4	-.309	3	-.49	3	-.205	6	
157	4	max	471.726	1	258.503	3	206.165	2	.405	1	.163	1	.087	4	
158		min	-472.576	2	-261.88	4	-218.142	1	-.307	2	-.167	2	-.102	3	
159	5	max	0	11	0	5	.005	3	0	11	0	11	0	11	11
160		min	0	1	-.007	3	0	1	0	1	0	1	0	1	1
161	M17	1	max	0	11	.007	4	.005	1	0	11	0	11	0	11
162		min	0	1	-.001	5	-.007	4	0	1	0	1	0	1	1
163	2	max	259.985	1	185.029	3	232.541	1	.291	2	.219	3	.201	3	



9bj YcdYA Ya VYf GYVJcb: cfWkg fT cbhpi YXL

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC	
164		min	-287.236	2	-171.617	4	-227.573	2	-.358	1	-.234	4	-.283	4	
165	3	max	955.49	4	294.591	1	107.385	1	.35	2	.456	3	.09	4	
166		min	-1275.449	3	-351.979	2	-115.166	2	-.322	1	-.446	4	-.206	7	
167	4	max	385.367	4	312.836	1	239.531	3	.592	4	.173	2	.095	2	
168		min	-377.127	3	-318.85	2	-251.387	4	-.496	3	-.184	1	-.115	1	
169	5	max	0	11	.001	8	.005	1	0	11	0	11	0	11	
170		min	0	1	-.008	1	-.012	3	0	1	0	1	0	1	
171	M18	1	max	0	11	0	11	0	11	0	11	0	11	11	
172		min	0	1	0	1	0	1	0	1	0	1	0	1	
173	2	max	404.597	4	228.44	4	235.856	2	.217	3	.262	4	.158	4	
174		min	-444.359	3	-211.965	3	-227.667	1	-.283	4	-.281	3	-.243	3	
175	3	max	1045.54	2	351.951	4	69.734	2	.312	3	.589	1	.051	3	
176		min	-1375.896	1	-412.057	3	-79.991	1	-.282	4	-.572	2	-.198	8	
177	4	max	493.943	3	279.501	4	254.247	1	.542	2	.293	3	.09	10	
178		min	-504.765	4	-285.911	3	-264.188	2	-.45	1	-.301	4	-.087	4	
179	5	max	0	11	0	11	0	11	0	11	0	11	0	11	
180		min	0	1	0	1	0	1	0	1	0	1	0	1	
181	M19	1	max	5777.153	8	64.766	8	46.339	2	0	2	0	11	0	11
182		min	-730.066	3	-4.242	3	-46.339	1	0	1	0	1	0	1	
183	2	max	5763.296	8	32.383	8	23.169	2	0	2	.041	2	.004	3	
184		min	-749.38	3	-2.121	3	-23.169	1	0	1	-.041	1	-.057	8	
185	3	max	5749.439	8	0	11	0	11	0	2	.054	2	.005	3	
186		min	-768.694	3	0	1	0	1	0	1	-.054	1	-.075	8	
187	4	max	5735.581	8	2.121	3	23.169	1	0	2	.041	2	.004	3	
188		min	-788.008	3	-32.383	8	-23.169	2	0	1	-.041	1	-.057	8	
189	5	max	5721.724	8	4.242	3	46.339	1	0	2	0	11	0	11	
190		min	-807.323	3	-64.766	8	-46.339	2	0	1	0	1	0	1	
191	M20	1	max	5808.518	5	64.24	5	59.05	4	0	4	0	11	0	11
192		min	-1125.647	2	-2.492	2	-59.05	3	0	3	0	1	0	1	
193	2	max	5794.218	5	32.12	5	29.525	4	0	4	.052	4	.002	2	
194		min	-1143.601	2	-1.246	2	-29.525	3	0	3	-.052	3	-.056	5	
195	3	max	5779.919	5	0	11	0	11	0	4	.069	4	.003	2	
196		min	-1161.554	2	0	1	0	1	0	3	-.069	3	-.075	5	
197	4	max	5765.619	5	1.246	2	29.525	3	0	4	.052	4	.002	2	
198		min	-1179.508	2	-32.12	5	-29.525	4	0	3	-.052	3	-.056	5	
199	5	max	5751.32	5	2.492	2	59.05	3	0	4	0	11	0	11	
200		min	-1197.461	2	-64.24	5	-59.05	4	0	3	0	1	0	1	
201	M21	1	max	5783.202	7	64.804	7	46.359	1	.001	3	0	11	0	11
202		min	-751.633	4	-4.228	4	-46.359	2	0	4	0	1	0	1	
203	2	max	5769.347	7	32.402	7	23.179	1	.001	3	.041	1	.004	4	
204		min	-770.954	4	-2.114	4	-23.179	2	0	4	-.041	2	-.057	7	
205	3	max	5755.492	7	0	11	0	11	.001	3	.054	1	.005	4	
206		min	-790.275	4	0	1	0	1	0	4	-.054	2	-.076	7	
207	4	max	5741.637	7	2.114	4	23.179	2	.001	3	.041	1	.004	4	
208		min	-809.596	4	-32.402	7	-23.179	1	0	4	-.041	2	-.057	7	
209	5	max	5727.782	7	4.228	4	46.359	2	.001	3	0	11	0	11	
210		min	-828.917	4	-64.804	7	-46.359	1	0	4	0	1	0	1	
211	M22	1	max	0	11	0	11	0	11	0	11	0	11	11	
212		min	0	1	0	1	0	1	0	1	0	1	0	1	
213	2	max	246.638	3	314.353	4	338.547	1	.466	1	.372	1	.084	3	
214		min	-190.465	4	-265.427	3	-367.818	2	-.478	2	-.385	2	-.099	4	
215	3	max	204.036	2	354.275	4	149.131	2	.161	2	.41	1	.027	4	



Company : Tower Engineering Solutions, LLC
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9bj YcdYA Ya Vyf GYVjcb : cfWkg f7 cbh7bi YXL

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC	
216		min	-113.534	1	-379.647	3	-141.421	1	-.154	1	-.43	2	-.038	3	
217	4	max	348.406	4	189.413	4	270.945	2	.387	2	.183	1	.038	4	
218		min	-351.569	3	-246.605	3	-232.389	1	-.364	1	-.187	2	-.048	3	
219	5	max	0	11	0	11	0	11	0	11	0	11	0	11	
220		min	0	1	0	1	0	1	0	1	0	1	0	1	
221	M23	1	max	0	11	.01	4	.034	3	0	11	0	11	0	11
222		min	0	1	0	2	-.023	1	0	1	0	1	0	1	
223	2	max	321.228	1	280.292	2	321.464	4	.401	4	.264	4	.114	1	
224		min	-264.278	2	-231.198	1	-352.046	3	-.414	3	-.277	3	-.13	2	
225	3	max	274.396	1	326.6	2	125.773	1	.145	1	.334	4	.035	3	
226		min	-192.308	2	-352.755	1	-116.738	2	-.137	2	-.355	3	-.045	4	
227	4	max	272.629	3	199.147	2	210.004	1	.298	3	.22	4	.055	3	
228		min	-272.552	4	-253.999	1	-170.038	2	-.275	4	-.226	3	-.064	4	
229	5	max	0	11	.004	3	.03	3	0	11	0	11	0	11	
230		min	0	1	-.007	1	-.002	1	0	1	0	1	0	1	
231	M24	1	max	0	11	.008	2	.011	1	0	11	0	11	0	11
232		min	0	1	-.006	3	-.032	4	0	1	0	1	0	1	
233	2	max	249.934	4	327.15	1	195.614	2	.333	3	.345	3	.118	4	
234		min	-190.652	3	-280.422	2	-225.584	1	-.345	4	-.36	4	-.133	3	
235	3	max	321.315	4	357.219	1	154.755	4	.19	4	.307	3	.033	1	
236		min	-235.85	3	-381.563	2	-146.209	3	-.183	3	-.329	4	-.043	2	
237	4	max	411	1	154.084	1	286.682	4	.326	4	.211	2	.058	1	
238		min	-414.551	2	-211.266	2	-246.051	3	-.301	3	-.218	1	-.067	2	
239	5	max	0	11	0	1	.026	1	0	11	0	11	0	11	
240		min	0	1	-.008	4	-.025	4	0	1	0	1	0	1	
241	M25	1	max	461.569	2	592.6	3	504.403	4	.019	3	.127	1	.519	3
242		min	-572.274	1	-562.567	4	-487.362	3	-.019	4	-.141	2	-.452	4	
243	2	max	461.559	2	594.279	3	504.404	4	.019	3	.141	1	.291	1	
244		min	-572.263	1	-560.887	4	-487.362	3	-.019	4	-.143	2	-.226	2	
245	3	max	461.548	2	595.959	3	504.404	4	.019	3	.158	1	.311	1	
246		min	-572.253	1	-559.208	4	-487.362	3	-.019	4	-.147	2	-.251	2	
247	4	max	461.538	2	597.639	3	504.404	4	.019	3	.177	1	.334	1	
248		min	-572.242	1	-557.528	4	-487.362	3	-.019	4	-.152	2	-.279	2	
249	5	max	461.527	2	599.318	3	504.404	4	.019	3	.199	1	.588	4	
250		min	-572.232	1	-555.848	4	-487.362	3	-.019	4	-.16	2	-.54	3	
251	MP4A	1	max	0	11	.019	4	.093	1	0	11	0	11	0	11
252		min	0	1	-.024	7	-.094	2	0	1	0	1	0	1	
253	2	max	42.922	8	34.96	4	35.034	1	0	11	.035	1	.035	3	
254		min	13.148	1	-34.961	3	-35.035	2	0	1	-.035	2	-.035	4	
255	3	max	636.016	2	442.336	4	216.459	4	.721	2	.143	6	.169	1	
256		min	-423.057	1	-343.638	3	-143.115	3	-.694	1	-.035	1	-.211	2	
257	4	max	-13.148	10	34.955	3	35.042	2	0	11	.035	1	.035	3	
258		min	-42.922	5	-34.95	4	-35.034	1	0	1	-.035	2	-.035	4	
259	5	max	0	11	.042	7	.126	6	0	11	0	11	0	11	
260		min	0	1	-.009	4	-.093	1	0	1	0	1	0	1	
261	MP1A	1	max	0	11	.02	4	.088	5	0	11	0	11	0	11
262		min	0	1	-.02	7	-.076	2	0	1	0	1	0	1	
263	2	max	42.922	8	34.96	4	35.021	1	0	11	.035	1	.035	3	
264		min	13.148	1	-34.961	3	-35.017	2	0	1	-.035	2	-.035	4	
265	3	max	561.568	2	346.51	4	212.365	3	.579	1	.189	2	.163	2	
266		min	-386.375	1	-420.986	3	-168.66	4	-.601	2	-.108	1	-.12	1	
267	4	max	-13.148	10	34.95	3	35.035	2	0	11	.035	1	.035	3	



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Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
268		min	-42.922	5	-34.955	4	-35.03	1	0	1	-.035	2	-.035	4
269	5	max	0	11	.009	3	.104	6	0	11	0	11	0	11
270		min	0	1	-.032	8	-.089	1	0	1	0	1	0	1
271	MP3A	1	max	0	.23	8	1.403	1	0	11	0	11	0	11
272		min	0	1	-.267	7	-1.695	6	0	1	0	1	0	1
273	2	max	415.297	8	300.5	4	651.3	1	0	11	.96	1	.433	3
274		min	86.828	1	-300.503	3	-651.321	2	0	1	-.96	2	-.433	4
275	3	max	390.834	8	522.796	4	251.403	1	.239	2	.915	1	.211	3
276		min	-1.025	3	-496.278	3	-219.128	2	-.223	1	-.844	2	-.22	4
277	4	max	-86.828	10	300.22	3	650.465	2	0	11	.958	1	.433	3
278		min	-415.297	5	-300.211	4	-650.397	1	0	1	-.959	2	-.433	4
279	5	max	0	11	.118	8	1.28	6	0	11	0	11	0	11
280		min	0	1	-.061	3	-.5	1	0	1	0	1	0	1
281	MP2A	1	max	0	.09	8	.469	1	0	11	0	11	0	11
282		min	0	1	-.053	3	-.538	6	0	1	0	1	0	1
283	2	max	166.008	8	100.319	4	236.243	1	0	11	.237	1	.1	3
284		min	37.568	1	-100.316	3	-236.247	2	0	1	-.237	2	-.1	4
285	3	max	263.335	7	487.268	4	227.314	1	.36	1	.475	1	.099	3
286		min	-100.83	4	-573.72	3	-196.293	2	-.393	2	-.404	2	-.075	4
287	4	max	-13.148	10	34.943	3	35.066	2	0	11	.035	1	.035	3
288		min	-42.922	5	-34.947	4	-35.057	1	0	1	-.035	2	-.035	4
289	5	max	0	11	.002	3	.154	6	0	11	0	11	0	11
290		min	0	1	-.025	8	-.116	1	0	1	0	1	0	1
291	MP4C	1	max	0	.071	4	.04	5	0	11	0	11	0	11
292		min	0	1	-.07	3	-.037	2	0	1	0	1	0	1
293	2	max	42.922	8	35.011	4	34.979	1	0	11	.035	1	.035	3
294		min	13.148	1	-35.011	3	-34.978	2	0	1	-.035	2	-.035	4
295	3	max	613.331	3	57.794	1	347.258	1	.597	3	.162	4	-.004	1
296		min	-398.734	4	-44.608	2	-468.339	2	-.571	4	-.235	3	-.069	7
297	4	max	-13.148	10	35.01	3	34.977	2	0	11	.035	1	.035	3
298		min	-42.922	5	-35.006	4	-34.986	1	0	1	-.035	2	-.035	4
299	5	max	0	11	.078	7	.036	2	0	11	0	11	0	11
300		min	0	1	-.065	4	-.085	5	0	1	0	1	0	1
301	MP1C	1	max	0	.082	8	.042	3	0	11	0	11	0	11
302		min	0	1	-.074	3	-.045	8	0	1	0	1	0	1
303	2	max	42.922	8	35.018	4	34.967	1	0	11	.035	1	.035	3
304		min	13.148	1	-35.015	3	-34.969	2	0	1	-.035	2	-.035	4
305	3	max	571.216	3	345.323	1	229.743	4	.542	4	.063	1	.123	4
306		min	-391.615	4	-270.981	2	-188.452	3	-.565	3	-.068	2	-.214	3
307	4	max	-13.148	10	35.036	3	34.959	2	0	11	.035	1	.035	3
308		min	-42.922	5	-35.029	4	-34.958	1	0	1	-.035	2	-.035	4
309	5	max	0	11	.109	7	.042	4	0	11	0	11	0	11
310		min	0	1	-.088	4	-.04	3	0	1	0	1	0	1
311	MP3C	1	max	0	1.052	4	.647	5	0	11	0	11	0	11
312		min	0	1	-1.288	7	-.468	2	0	1	0	1	0	1
313	2	max	415.297	8	563.545	4	388.167	1	0	11	.565	1	.828	3
314		min	86.828	1	-563.562	3	-388.153	2	0	1	-.565	2	-.828	4
315	3	max	393.044	6	293.891	4	428.193	1	.314	3	.333	1	.587	3
316		min	-8.37	1	-276.774	3	-468.326	2	-.297	4	-.376	2	-.644	4
317	4	max	-86.828	10	562.906	3	387.726	2	0	11	.564	1	.827	3
318		min	-415.297	5	-562.851	4	-387.769	1	0	1	-.564	2	-.827	4
319	5	max	0	11	.975	7	.272	4	0	11	0	11	0	11



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Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC	
320		min	0	1	-.358	4	-.686	7	0	1	0	1	0	1	
321	MP2C	1	max	0	.387	4	.195	7	0	11	0	11	0	11	
322		min	0	1	-.46	7	-.199	8	0	1	0	1	0	1	
323		2	max	166.008	8	202.283	4	134.256	1	0	11	.134	1	.203	3
324		min	37.568	1	-202.289	3	-134.256	2	0	1	-.134	2	-.203	4	
325		3	max	269.063	8	371.43	4	465.5	1	.233	2	.13	3	.298	3
326		min	-127.425	3	-301.272	3	-407.655	2	-.267	1	-.145	4	-.371	4	
327		4	max	-13.148	10	35.047	3	34.964	2	0	11	.035	1	.035	3
328		min	-42.922	5	-35.036	4	-34.966	1	0	1	-.035	2	-.035	4	
329		5	max	0	11	.14	7	.055	4	0	11	0	11	0	11
330		min	0	1	-.096	4	-.056	3	0	1	0	1	0	1	
331	MP4B	1	max	0	.079	4	.05	4	0	11	0	11	0	11	
332		min	0	1	-.078	3	-.05	3	0	1	0	1	0	1	
333		2	max	42.922	8	35.019	4	34.974	1	0	11	.035	1	.035	3
334		min	13.148	1	-35.018	3	-34.974	2	0	1	-.035	2	-.035	4	
335		3	max	523.42	4	267.697	2	245.175	1	.603	4	.107	4	.174	1
336		min	-305.364	3	-379.255	1	-199.055	2	-.574	3	-.104	3	-.091	2	
337		4	max	-13.148	10	35.024	3	34.965	2	0	11	.035	1	.035	3
338		min	-42.922	5	-35.034	4	-34.965	1	0	1	-.035	2	-.035	4	
339		5	max	0	11	.083	3	.039	3	0	11	0	11	0	11
340		min	0	1	-.128	8	-.038	4	0	1	0	1	0	1	
341	MP1B	1	max	0	.054	4	.041	1	0	11	0	11	0	11	
342		min	0	1	-.067	7	-.049	6	0	1	0	1	0	1	
343		2	max	42.922	8	34.995	4	34.982	1	0	11	.035	1	.035	3
344		min	13.148	1	-34.998	3	-34.984	2	0	1	-.035	2	-.035	4	
345		3	max	472.175	4	47.116	3	383.727	1	.435	3	.168	3	.099	5
346		min	-296.319	3	-49.115	4	-468.572	2	-.457	4	-.246	4	-.03	2	
347		4	max	-13.148	10	34.998	3	34.984	2	0	11	.035	1	.035	3
348		min	-42.922	5	-.35	4	-34.991	1	0	1	-.035	2	-.035	4	
349		5	max	0	11	.057	3	.043	2	0	11	0	11	0	11
350		min	0	1	-.061	8	-.071	5	0	1	0	1	0	1	
351	MP3B	1	max	0	1.364	8	.572	5	0	11	0	11	0	11	
352		min	0	1	-1.086	3	-.448	2	0	1	0	1	0	1	
353		2	max	415.297	8	563.601	4	388.142	1	0	11	.565	1	.828	3
354		min	86.828	1	-563.58	3	-388.133	2	0	1	-.565	2	-.828	4	
355		3	max	389.222	7	287.168	4	446.983	1	.255	1	.302	1	.696	3
356		min	11.866	2	-329.005	3	-442.908	2	-.238	2	-.33	2	-.63	4	
357		4	max	-86.828	10	562.851	3	387.737	2	0	11	.564	1	.827	3
358		min	-415.297	5	-562.916	4	-387.765	1	0	1	-.564	2	-.827	4	
359		5	max	0	11	.358	3	.306	3	0	11	0	11	0	11
360		min	0	1	-1.057	8	-.615	8	0	1	0	1	0	1	
361	MP2B	1	max	0	.378	8	.228	5	0	11	0	11	0	11	
362		min	0	1	-.337	7	-.167	2	0	1	0	1	0	1	
363		2	max	166.008	8	202.226	4	134.313	1	0	11	.134	1	.203	3
364		min	37.568	1	-202.223	3	-134.308	2	0	1	-.134	2	-.203	4	
365		3	max	270.881	6	274.168	4	464.088	1	.369	3	.156	1	.295	3
366		min	-139.15	1	-259.329	3	-553.7	2	-.405	4	-.211	2	-.245	4	
367		4	max	-13.148	10	35.022	3	34.974	2	0	11	.035	1	.035	3
368		min	-42.922	5	-35.029	4	-34.982	1	0	1	-.035	2	-.035	4	
369		5	max	0	11	.082	3	.041	3	0	11	0	11	0	11
370		min	0	1	-.107	8	-.084	8	0	1	0	1	0	1	
371	M38	1	max	212.219	3	588.512	2	490.247	3	.792	3	.56	1	.303	4



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Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC	
372		min	-167.877	4	-360.069	1	-416.206	4	-.617	4	-.602	2	-.397	3	
373	2	max	212.219	3	588.512	2	490.247	3	.792	3	.565	1	.291	4	
374		min	-167.877	4	-360.069	1	-416.206	4	-.617	4	-.602	2	-.401	3	
375	3	max	212.219	3	588.512	2	490.247	3	.792	3	.57	1	.279	4	
376		min	-167.877	4	-360.069	1	-416.206	4	-.617	4	-.601	2	-.405	3	
377	4	max	212.219	3	588.512	2	490.247	3	.792	3	.574	1	.267	4	
378		min	-167.877	4	-360.069	1	-416.206	4	-.617	4	-.601	2	-.409	3	
379	5	max	212.219	3	588.512	2	490.247	3	.792	3	.579	1	.259	1	
380		min	-167.877	4	-360.069	1	-416.206	4	-.617	4	-.601	2	-.415	2	
381	M39	1	max	553.772	1	728.374	7	810.19	3	1.23	3	.351	1	.894	2
382		min	-525.879	2	74.548	4	-725.022	4	-1.055	4	-.407	2	-.9	1	
383	2	max	553.772	1	728.374	7	810.19	3	1.23	3	.353	1	.884	2	
384		min	-525.879	2	74.548	4	-725.022	4	-1.055	4	-.404	2	-.92	1	
385	3	max	553.772	1	728.374	7	810.19	3	1.23	3	.355	1	.874	2	
386		min	-525.879	2	74.548	4	-725.022	4	-1.055	4	-.4	2	-.94	1	
387	4	max	553.772	1	728.374	7	810.19	3	1.23	3	.358	1	.865	2	
388		min	-525.879	2	74.548	4	-725.022	4	-1.055	4	-.397	2	-.96	1	
389	5	max	553.772	1	728.374	7	810.19	3	1.23	3	.36	1	.855	2	
390		min	-525.879	2	74.548	4	-725.022	4	-1.055	4	-.393	2	-.98	1	
391	M40	1	max	1014.587	1	1076.67	8	904.364	3	.689	3	.448	4	.309	2
392		min	-982.3	2	210.552	3	-930.218	4	-.745	4	-.425	3	-.286	1	
393	2	max	1014.587	1	1076.67	8	904.364	3	.689	3	.384	4	.291	2	
394		min	-982.3	2	210.552	3	-930.218	4	-.745	4	-.362	3	-.305	1	
395	3	max	1014.587	1	1076.67	8	904.364	3	.689	3	.32	4	.272	2	
396		min	-982.3	2	210.552	3	-930.218	4	-.745	4	-.3	3	-.324	1	
397	4	max	1014.587	1	1076.67	8	904.364	3	.689	3	.255	4	.253	2	
398		min	-982.3	2	210.552	3	-930.218	4	-.745	4	-.237	3	-.343	1	
399	5	max	1014.587	1	1076.67	8	904.364	3	.689	3	.239	2	.234	2	
400		min	-982.3	2	210.552	3	-930.218	4	-.745	4	-.223	1	-.362	1	
401	M41	1	max	215.759	4	739.594	6	486.966	3	.656	3	.725	2	.287	3
402		min	-142.883	3	-337.593	1	-584.322	4	-.873	4	-.672	1	-.377	4	
403	2	max	215.759	4	739.594	6	486.966	3	.656	3	.724	2	.279	3	
404		min	-142.883	3	-337.593	1	-584.322	4	-.873	4	-.677	1	-.396	4	
405	3	max	215.759	4	739.594	6	486.966	3	.656	3	.723	2	.271	3	
406		min	-142.883	3	-337.593	1	-584.322	4	-.873	4	-.683	1	-.416	4	
407	4	max	215.759	4	739.594	6	486.966	3	.656	3	.722	2	.263	3	
408		min	-142.883	3	-337.593	1	-584.322	4	-.873	4	-.689	1	-.435	4	
409	5	max	215.759	4	739.594	6	486.966	3	.656	3	.721	2	.255	3	
410		min	-142.883	3	-337.593	1	-584.322	4	-.873	4	-.694	1	-.455	4	
411	M42	1	max	152.797	1	596.218	3	423.724	1	.765	1	.445	4	.273	2
412		min	-107.927	2	-367.241	4	-353.421	2	-.597	2	-.489	3	-.369	1	
413	2	max	152.797	1	596.218	3	423.724	1	.765	1	.469	4	.279	2	
414		min	-107.927	2	-367.241	4	-353.421	2	-.597	2	-.508	3	-.391	1	
415	3	max	152.797	1	596.218	3	423.724	1	.765	1	.494	4	.285	2	
416		min	-107.927	2	-367.241	4	-353.421	2	-.597	2	-.527	3	-.413	1	
417	4	max	152.797	1	596.218	3	423.724	1	.765	1	.518	4	.291	2	
418		min	-107.927	2	-367.241	4	-353.421	2	-.597	2	-.546	3	-.435	1	
419	5	max	152.797	1	596.218	3	423.724	1	.765	1	.542	4	.297	2	
420		min	-107.927	2	-367.241	4	-353.421	2	-.597	2	-.565	3	-.457	1	
421	M43	1	max	520.72	4	733.767	8	722.041	1	1.096	1	.409	2	.814	3
422		min	-496.459	3	40.054	3	-637.609	2	-.922	2	-.467	1	-.819	4	
423	2	max	520.72	4	733.767	8	722.041	1	1.096	1	.365	2	.811	3	



Company : Tower Engineering Solutions, LLC
 Designer :
 Job Number : TES Project No. 110405
 Model Name :

July 8, 2021
 9:09 AM
 Checked By: _____

9bj YcdYA Ya Vyf GYVjcb : cfWVg fT cbhpi YXL

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC	
424		min	-496.459	3	40.054	3	-637.609	2	-.922	2	-.417	1	-.847	4	
425	3	max	520.72	4	733.767	8	722.041	1	1.096	1	.321	2	.808	3	
426		min	-496.459	3	40.054	3	-637.609	2	-.922	2	-.367	1	-.874	4	
427	4	max	520.72	4	733.767	8	722.041	1	1.096	1	.277	2	.805	3	
428		min	-496.459	3	40.054	3	-637.609	2	-.922	2	-.317	1	-.901	4	
429	5	max	520.72	4	733.767	8	722.041	1	1.096	1	.233	2	.802	3	
430		min	-496.459	3	40.054	3	-637.609	2	-.922	2	-.267	1	-.928	4	
431	M44	1	max	802.01	4	1078.81	6	838.648	1	.489	1	.505	3	.238	3
432		min	-766.186	3	200.464	1	-863.479	2	-.542	2	-.483	4	-.216	4	
433	2	max	802.01	4	1078.81	6	838.648	1	.489	1	.457	3	.216	3	
434		min	-766.186	3	200.464	1	-863.479	2	-.542	2	-.436	4	-.232	4	
435	3	max	802.01	4	1078.81	6	838.648	1	.489	1	.409	3	.195	1	
436		min	-766.186	3	200.464	1	-863.479	2	-.542	2	-.39	4	-.251	2	
437	4	max	802.01	4	1078.81	6	838.648	1	.489	1	.361	3	.181	1	
438		min	-766.186	3	200.464	1	-863.479	2	-.542	2	-.344	4	-.277	2	
439	5	max	802.01	4	1078.81	6	838.648	1	.489	1	.314	3	.168	1	
440		min	-766.186	3	200.464	1	-863.479	2	-.542	2	-.297	4	-.314	8	
441	M45	1	max	281.7	2	730.505	7	473.677	1	.544	1	.701	3	.297	1
442		min	-206.355	1	-311.211	4	-571.828	2	-.76	2	-.649	4	-.385	2	
443	2	max	281.7	2	730.505	7	473.677	1	.544	1	.675	3	.272	1	
444		min	-206.355	1	-311.211	4	-571.828	2	-.76	2	-.63	4	-.387	2	
445	3	max	281.7	2	730.505	7	473.677	1	.544	1	.649	3	.246	1	
446		min	-206.355	1	-311.211	4	-571.828	2	-.76	2	-.61	4	-.389	2	
447	4	max	281.7	2	730.505	7	473.677	1	.544	1	.623	3	.221	1	
448		min	-206.355	1	-311.211	4	-571.828	2	-.76	2	-.59	4	-.391	2	
449	5	max	281.7	2	730.505	7	473.677	1	.544	1	.597	3	.218	4	
450		min	-206.355	1	-311.211	4	-571.828	2	-.76	2	-.571	4	-.417	3	
451	M46	1	max	238.166	2	499.813	4	485.923	2	.724	2	.493	3	.311	3
452		min	-189.726	1	-269.232	3	-410.844	1	-.55	1	-.534	4	-.406	4	
453	2	max	238.166	2	499.813	4	485.923	2	.724	2	.478	3	.33	3	
454		min	-189.726	1	-269.232	3	-410.844	1	-.55	1	-.515	4	-.441	4	
455	3	max	238.166	2	499.813	4	485.923	2	.724	2	.464	3	.348	3	
456		min	-189.726	1	-269.232	3	-410.844	1	-.55	1	-.495	4	-.475	4	
457	4	max	238.166	2	499.813	4	485.923	2	.724	2	.449	3	.367	3	
458		min	-189.726	1	-269.232	3	-410.844	1	-.55	1	-.476	4	-.51	4	
459	5	max	238.166	2	499.813	4	485.923	2	.724	2	.435	3	.385	3	
460		min	-189.726	1	-269.232	3	-410.844	1	-.55	1	-.457	4	-.544	4	
461	M47	1	max	443.041	3	735.846	6	737.356	2	1.128	2	.495	3	.647	4
462		min	-410.445	4	33.958	1	-653.774	1	-.956	1	-.552	4	-.653	3	
463	2	max	443.041	3	735.846	6	737.356	2	1.128	2	.463	3	.629	4	
464		min	-410.445	4	33.958	1	-653.774	1	-.956	1	-.515	4	-.665	3	
465	3	max	443.041	3	735.846	6	737.356	2	1.128	2	.432	3	.611	4	
466		min	-410.445	4	33.958	1	-653.774	1	-.956	1	-.478	4	-.677	3	
467	4	max	443.041	3	735.846	6	737.356	2	1.128	2	.401	3	.593	4	
468		min	-410.445	4	33.958	1	-653.774	1	-.956	1	-.441	4	-.689	3	
469	5	max	443.041	3	735.846	6	737.356	2	1.128	2	.369	3	.575	4	
470		min	-410.445	4	33.958	1	-653.774	1	-.956	1	-.405	4	-.701	3	
471	M48	1	max	857.118	3	1074.658	7	878.522	2	.55	2	.505	1	.357	4
472		min	-826.293	4	217.319	4	-903.062	1	-.604	1	-.481	2	-.332	3	
473	2	max	857.118	3	1074.658	7	878.522	2	.55	2	.442	1	.342	4	
474		min	-826.293	4	217.319	4	-903.062	1	-.604	1	-.42	2	-.356	3	
475	3	max	857.118	3	1074.658	7	878.522	2	.55	2	.38	1	.327	4	



9bj YcdYA Ya VYf GYVjcb : cfWkg f7 cbh7bi YXL

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC	
476		min	-826.293	4	217.319	4	-903.062	1	-.604	1	-.359	2	-.379	3	
477	4	max	857.118	3	1074.658	7	878.522	2	.55	2	.318	1	.312	4	
478		min	-826.293	4	217.319	4	-903.062	1	-.604	1	-.299	2	-.402	3	
479	5	max	857.118	3	1074.658	7	878.522	2	.55	2	.255	1	.297	4	
480		min	-826.293	4	217.319	4	-903.062	1	-.604	1	-.238	2	-.425	3	
481	M49	1	max	289.429	3	713.079	8	452.282	2	.675	2	.511	4	.22	2
482		min	-207.35	4	-220.86	3	-545.609	1	-.885	1	-.456	3	-.311	1	
483	2	max	289.429	3	713.079	8	452.282	2	.675	2	.534	4	.229	2	
484		min	-207.35	4	-220.86	3	-545.609	1	-.885	1	-.485	3	-.348	1	
485	3	max	289.429	3	713.079	8	452.282	2	.675	2	.557	4	.238	2	
486		min	-207.35	4	-220.86	3	-545.609	1	-.885	1	-.515	3	-.384	1	
487	4	max	289.429	3	713.079	8	452.282	2	.675	2	.58	4	.247	2	
488		min	-207.35	4	-220.86	3	-545.609	1	-.885	1	-.545	3	-.42	1	
489	5	max	289.429	3	713.079	8	452.282	2	.675	2	.603	4	.256	2	
490		min	-207.35	4	-220.86	3	-545.609	1	-.885	1	-.574	3	-.457	1	
491	M50	1	max	167.969	4	411.152	1	276.886	4	.682	3	.602	2	.307	4
492		min	-212.097	3	-537.243	2	-350.05	3	-.596	4	-.563	1	-.331	3	
493	2	max	167.969	4	411.152	1	276.886	4	.682	3	.602	2	.314	4	
494		min	-212.097	3	-537.243	2	-350.05	3	-.596	4	-.567	1	-.331	3	
495	3	max	167.969	4	411.152	1	276.886	4	.682	3	.601	2	.321	4	
496		min	-212.097	3	-537.243	2	-350.05	3	-.596	4	-.571	1	-.33	3	
497	4	max	167.969	4	411.152	1	276.886	4	.682	3	.601	2	.328	4	
498		min	-212.097	3	-537.243	2	-350.05	3	-.596	4	-.575	1	-.33	3	
499	5	max	167.969	4	411.152	1	276.886	4	.682	3	.601	2	.336	4	
500		min	-212.097	3	-537.243	2	-350.05	3	-.596	4	-.579	1	-.33	3	
501	M51	1	max	48.279	4	151.731	4	352.081	4	1.005	3	.406	2	.226	2
502		min	-79.59	3	-145.845	3	-437.616	3	-.877	4	-.352	1	-.21	1	
503	2	max	48.279	4	151.731	4	352.081	4	1.005	3	.403	2	.222	2	
504		min	-79.59	3	-145.845	3	-437.616	3	-.877	4	-.354	1	-.205	1	
505	3	max	48.279	4	151.731	4	352.081	4	1.005	3	.399	2	.218	2	
506		min	-79.59	3	-145.845	3	-437.616	3	-.877	4	-.356	1	-.201	1	
507	4	max	48.279	4	151.731	4	352.081	4	1.005	3	.396	2	.213	2	
508		min	-79.59	3	-145.845	3	-437.616	3	-.877	4	-.358	1	-.197	1	
509	5	max	48.279	4	151.731	4	352.081	4	1.005	3	.393	2	.209	2	
510		min	-79.59	3	-145.845	3	-437.616	3	-.877	4	-.36	1	-.193	1	
511	M52	1	max	436.035	1	106.756	7	186.907	4	1.14	3	.225	1	.639	2
512		min	-468.75	2	-52.942	4	-160.754	3	-1.177	4	-.247	2	-.62	1	
513	2	max	436.035	1	106.756	7	186.907	4	1.14	3	.224	1	.638	2	
514		min	-468.75	2	-52.942	4	-160.754	3	-1.177	4	-.245	2	-.621	1	
515	3	max	436.035	1	106.756	7	186.907	4	1.14	3	.224	1	.638	2	
516		min	-468.75	2	-52.942	4	-160.754	3	-1.177	4	-.243	2	-.621	1	
517	4	max	436.035	1	106.756	7	186.907	4	1.14	3	.223	1	.637	2	
518		min	-468.75	2	-52.942	4	-160.754	3	-1.177	4	-.241	2	-.622	1	
519	5	max	436.035	1	106.756	7	186.907	4	1.14	3	.223	1	.637	2	
520		min	-468.75	2	-52.942	4	-160.754	3	-1.177	4	-.239	2	-.622	1	
521	M53	1	max	277.1	1	507.706	1	297.724	4	.601	3	.675	1	.26	3
522		min	-361.572	2	-552.544	2	-200.623	3	-.73	4	-.726	2	-.327	4	
523	2	max	277.1	1	507.706	1	297.724	4	.601	3	.68	1	.256	3	
524		min	-361.572	2	-552.544	2	-200.623	3	-.73	4	-.725	2	-.321	4	
525	3	max	277.1	1	507.706	1	297.724	4	.601	3	.685	1	.253	3	
526		min	-361.572	2	-552.544	2	-200.623	3	-.73	4	-.724	2	-.315	4	
527	4	max	277.1	1	507.706	1	297.724	4	.601	3	.69	1	.249	3	



Company : Tower Engineering Solutions, LLC
 Designer :
 Job Number : TES Project No. 110405
 Model Name :

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9bj YcdYA Ya VYf GYVJcb : cfWVg fT cbhpi YXL

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC	
528		min	-361.572	2	-552.544	2	-200.623	3	-.73	4	-.723	2	-.309	4	
529	5	max	277.1	1	507.706	1	297.724	4	.601	3	.695	1	.246	3	
530		min	-361.572	2	-552.544	2	-200.623	3	-.73	4	-.721	2	-.303	4	
531	M54	1	max	178.938	2	418.27	4	231.809	2	.631	4	.518	3	.238	2
532		min	-224.147	1	-545.25	3	-302.587	1	-.548	3	-.478	4	-.262	1	
533	2	max	178.938	2	418.27	4	231.809	2	.631	4	.53	3	.23	2	
534		min	-224.147	1	-545.25	3	-302.587	1	-.548	3	-.494	4	-.247	1	
535	3	max	178.938	2	418.27	4	231.809	2	.631	4	.541	3	.222	2	
536		min	-224.147	1	-545.25	3	-302.587	1	-.548	3	-.51	4	-.232	1	
537	4	max	178.938	2	418.27	4	231.809	2	.631	4	.553	3	.234	3	
538		min	-224.147	1	-545.25	3	-302.587	1	-.548	3	-.526	4	-.235	4	
539	5	max	178.938	2	418.27	4	231.809	2	.631	4	.565	3	.265	3	
540		min	-224.147	1	-545.25	3	-302.587	1	-.548	3	-.542	4	-.259	4	
541	M55	1	max	40.655	2	178.001	3	298.62	2	.948	1	.356	1	.251	3
542		min	-74.969	1	-174.316	4	-383.442	1	-.822	2	-.301	2	-.234	4	
543	2	max	40.655	2	178.001	3	298.62	2	.948	1	.333	1	.241	3	
544		min	-74.969	1	-174.316	4	-383.442	1	-.822	2	-.284	2	-.224	4	
545	3	max	40.655	2	178.001	3	298.62	2	.948	1	.311	1	.231	3	
546		min	-74.969	1	-174.316	4	-383.442	1	-.822	2	-.267	2	-.214	4	
547	4	max	40.655	2	178.001	3	298.62	2	.948	1	.289	1	.22	3	
548		min	-74.969	1	-174.316	4	-383.442	1	-.822	2	-.25	2	-.204	4	
549	5	max	40.655	2	178.001	3	298.62	2	.948	1	.267	1	.21	3	
550		min	-74.969	1	-174.316	4	-383.442	1	-.822	2	-.233	2	-.194	4	
551	M56	1	max	352.38	4	109.051	5	91.354	2	1.077	1	.296	4	.461	3
552		min	-388.365	3	-60.074	2	-66.676	1	-1.113	2	-.32	3	-.442	4	
553	2	max	352.38	4	109.051	5	91.354	2	1.077	1	.297	4	.463	3	
554		min	-388.365	3	-60.074	2	-66.676	1	-1.113	2	-.318	3	-.445	4	
555	3	max	352.38	4	109.051	5	91.354	2	1.077	1	.297	4	.464	3	
556		min	-388.365	3	-60.074	2	-66.676	1	-1.113	2	-.317	3	-.449	4	
557	4	max	352.38	4	109.051	5	91.354	2	1.077	1	.297	4	.466	3	
558		min	-388.365	3	-60.074	2	-66.676	1	-1.113	2	-.315	3	-.452	4	
559	5	max	352.38	4	109.051	5	91.354	2	1.077	1	.297	4	.468	3	
560		min	-388.365	3	-60.074	2	-66.676	1	-1.113	2	-.314	3	-.455	4	
561	M57	1	max	315.437	4	484.051	4	281.659	2	.673	1	.585	4	.256	4
562		min	-396.611	3	-528.725	3	-183.294	1	-.8	2	-.635	3	-.322	3	
563	2	max	315.437	4	484.051	4	281.659	2	.673	1	.582	4	.242	1	
564		min	-396.611	3	-528.725	3	-183.294	1	-.8	2	-.625	3	-.305	2	
565	3	max	315.437	4	484.051	4	281.659	2	.673	1	.578	4	.254	1	
566		min	-396.611	3	-528.725	3	-183.294	1	-.8	2	-.616	3	-.314	2	
567	4	max	315.437	4	484.051	4	281.659	2	.673	1	.574	4	.265	1	
568		min	-396.611	3	-528.725	3	-183.294	1	-.8	2	-.606	3	-.323	2	
569	5	max	315.437	4	484.051	4	281.659	2	.673	1	.571	4	.276	1	
570		min	-396.611	3	-528.725	3	-183.294	1	-.8	2	-.596	3	-.331	2	
571	M58	1	max	213.518	3	321.045	3	290.284	1	.764	2	.506	4	.317	1
572		min	-262.694	4	-447.655	4	-363.829	2	-.68	1	-.466	3	-.34	2	
573	2	max	213.518	3	321.045	3	290.284	1	.764	2	.493	4	.339	1	
574		min	-262.694	4	-447.655	4	-363.829	2	-.68	1	-.458	3	-.354	2	
575	3	max	213.518	3	321.045	3	290.284	1	.764	2	.481	4	.361	1	
576		min	-262.694	4	-447.655	4	-363.829	2	-.68	1	-.45	3	-.369	2	
577	4	max	213.518	3	321.045	3	290.284	1	.764	2	.469	4	.384	1	
578		min	-262.694	4	-447.655	4	-363.829	2	-.68	1	-.442	3	-.383	2	
579	5	max	213.518	3	321.045	3	290.284	1	.764	2	.457	4	.406	1	



Company : Tower Engineering Solutions, LLC
 Designer :
 Job Number : TES Project No. 110405
 Model Name :

July 8, 2021
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 Checked By: _____

9bj YcdYA Ya Vyf GYVjcb : cfWkg f7 cbh7bi YXL

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC	
580		min	-262.694	4	-447.655	4	-363.829	2	-.68	1	-.434	3	-.398	2	
581	M59	1	max	67.011	3	190.464	1	314.656	1	.969	2	.461	4	.179	1
582		min	-99.38	4	-182.4	2	-398.568	2	-.843	1	-.406	3	-.162	2	
583		2	max	67.011	3	190.464	1	314.656	1	.969	2	.447	4	.168	1
584		min	-99.38	4	-182.4	2	-398.568	2	-.843	1	-.397	3	-.151	2	
585		3	max	67.011	3	190.464	1	314.656	1	.969	2	.433	4	.158	1
586		min	-99.38	4	-182.4	2	-398.568	2	-.843	1	-.388	3	-.141	2	
587		4	max	67.011	3	190.464	1	314.656	1	.969	2	.419	4	.147	1
588		min	-99.38	4	-182.4	2	-398.568	2	-.843	1	-.379	3	-.13	2	
589		5	max	67.011	3	190.464	1	314.656	1	.969	2	.405	4	.146	4
590		min	-99.38	4	-182.4	2	-398.568	2	-.843	1	-.369	3	-.129	3	
591	M60	1	max	298.639	3	102.558	8	131.023	1	1.151	2	.262	2	.535	4
592		min	-329.908	4	-44.939	1	-103.942	2	-1.187	1	-.285	1	-.515	3	
593		2	max	298.639	3	102.558	8	131.023	1	1.151	2	.256	2	.531	4
594		min	-329.908	4	-44.939	1	-103.942	2	-1.187	1	-.278	1	-.513	3	
595		3	max	298.639	3	102.558	8	131.023	1	1.151	2	.25	2	.526	4
596		min	-329.908	4	-44.939	1	-103.942	2	-1.187	1	-.27	1	-.51	3	
597		4	max	298.639	3	102.558	8	131.023	1	1.151	2	.244	2	.522	4
598		min	-329.908	4	-44.939	1	-103.942	2	-1.187	1	-.263	1	-.508	3	
599		5	max	298.639	3	102.558	8	131.023	1	1.151	2	.238	2	.518	4
600		min	-329.908	4	-44.939	1	-103.942	2	-1.187	1	-.255	1	-.505	3	
601	M61	1	max	215.718	2	392.384	3	256.291	1	.58	4	.525	3	.241	2
602		min	-291.294	1	-437.439	4	-160.625	2	-.705	3	-.577	4	-.308	1	
603		2	max	215.718	2	392.384	3	256.291	1	.58	4	.537	3	.223	2
604		min	-291.294	1	-437.439	4	-160.625	2	-.705	3	-.583	4	-.288	1	
605		3	max	215.718	2	392.384	3	256.291	1	.58	4	.55	3	.206	2
606		min	-291.294	1	-437.439	4	-160.625	2	-.705	3	-.59	4	-.267	1	
607		4	max	215.718	2	392.384	3	256.291	1	.58	4	.562	3	.188	2
608		min	-291.294	1	-437.439	4	-160.625	2	-.705	3	-.597	4	-.247	1	
609		5	max	215.718	2	392.384	3	256.291	1	.58	4	.574	3	.17	2
610		min	-291.294	1	-437.439	4	-160.625	2	-.705	3	-.603	4	-.227	1	
611	M62	1	max	419.434	1	452.999	2	627.098	4	.139	3	.77	3	.297	4
612		min	-507.813	2	-404.015	1	-699.501	3	-.136	4	-.703	4	-.296	3	
613		2	max	419.434	1	452.999	2	627.098	4	.139	3	.747	3	.287	4
614		min	-507.813	2	-404.015	1	-699.501	3	-.136	4	-.682	4	-.288	3	
615		3	max	419.434	1	452.999	2	627.098	4	.139	3	.724	3	.277	4
616		min	-507.813	2	-404.015	1	-699.501	3	-.136	4	-.662	4	-.28	3	
617		4	max	419.434	1	452.999	2	627.098	4	.139	3	.702	3	.267	4
618		min	-507.813	2	-404.015	1	-699.501	3	-.136	4	-.642	4	-.272	3	
619		5	max	419.434	1	452.999	2	627.098	4	.139	3	.679	3	.258	4
620		min	-507.813	2	-404.015	1	-699.501	3	-.136	4	-.621	4	-.263	3	
621	M63	1	max	661.133	1	490.059	2	486.868	4	.105	2	.532	3	.278	2
622		min	-772.461	2	-511.364	1	-448.33	3	-.133	1	-.571	4	-.331	1	
623		2	max	661.133	1	490.059	2	486.868	4	.105	2	.518	3	.263	2
624		min	-772.461	2	-511.364	1	-448.33	3	-.133	1	-.556	4	-.315	1	
625		3	max	661.133	1	490.059	2	486.868	4	.105	2	.503	3	.247	2
626		min	-772.461	2	-511.364	1	-448.33	3	-.133	1	-.54	4	-.298	1	
627		4	max	661.133	1	490.059	2	486.868	4	.105	2	.489	3	.231	2
628		min	-772.461	2	-511.364	1	-448.33	3	-.133	1	-.524	4	-.281	1	
629		5	max	661.133	1	490.059	2	486.868	4	.105	2	.474	3	.215	2
630		min	-772.461	2	-511.364	1	-448.33	3	-.133	1	-.508	4	-.265	1	
631	M64	1	max	359.908	2	601.496	3	455.697	3	.188	4	.49	4	.438	3



9bj YcdYA Ya VYf GYVJcb : cfWVg fT cbhpi YXL

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC	
632		min	-445.893	1	-553.705	4	-532.976	4	-.185	3	-.419	3	-.437	4	
633	2	max	359.908	2	601.496	3	455.697	3	.188	4	.473	4	.418	3	
634		min	-445.893	1	-553.705	4	-532.976	4	-.185	3	-.404	3	-.419	4	
635	3	max	359.908	2	601.496	3	455.697	3	.188	4	.456	4	.399	3	
636		min	-445.893	1	-553.705	4	-532.976	4	-.185	3	-.389	3	-.401	4	
637	4	max	359.908	2	601.496	3	455.697	3	.188	4	.438	4	.379	3	
638		min	-445.893	1	-553.705	4	-532.976	4	-.185	3	-.374	3	-.383	4	
639	5	max	359.908	2	601.496	3	455.697	3	.188	4	.421	4	.359	3	
640		min	-445.893	1	-553.705	4	-532.976	4	-.185	3	-.36	3	-.365	4	
641	M65	1	max	671.42	4	414.354	1	526.223	2	.155	1	.555	1	.35	1
642		min	-780.155	3	-442.646	2	-485.213	1	-.184	2	-.594	2	-.403	2	
643	2	max	671.42	4	414.354	1	526.223	2	.155	1	.539	1	.337	1	
644		min	-780.155	3	-442.646	2	-485.213	1	-.184	2	-.577	2	-.389	2	
645	3	max	671.42	4	414.354	1	526.223	2	.155	1	.523	1	.323	1	
646		min	-780.155	3	-442.646	2	-485.213	1	-.184	2	-.56	2	-.375	2	
647	4	max	671.42	4	414.354	1	526.223	2	.155	1	.508	1	.31	1	
648		min	-780.155	3	-442.646	2	-485.213	1	-.184	2	-.543	2	-.36	2	
649	5	max	671.42	4	414.354	1	526.223	2	.155	1	.492	1	.296	1	
650		min	-780.155	3	-442.646	2	-485.213	1	-.184	2	-.525	2	-.346	2	
651	M66	1	max	494.362	3	524.117	1	682.965	1	.198	2	.803	2	.442	1
652		min	-581.935	4	-476.278	2	-757.173	2	-.195	1	-.736	1	-.441	2	
653	2	max	494.362	3	524.117	1	682.965	1	.198	2	.778	2	.425	1	
654		min	-581.935	4	-476.278	2	-757.173	2	-.195	1	-.714	1	-.426	2	
655	3	max	494.362	3	524.117	1	682.965	1	.198	2	.753	2	.408	1	
656		min	-581.935	4	-476.278	2	-757.173	2	-.195	1	-.692	1	-.41	2	
657	4	max	494.362	3	524.117	1	682.965	1	.198	2	.729	2	.391	1	
658		min	-581.935	4	-476.278	2	-757.173	2	-.195	1	-.67	1	-.395	2	
659	5	max	494.362	3	524.117	1	682.965	1	.198	2	.704	2	.374	1	
660		min	-581.935	4	-476.278	2	-757.173	2	-.195	1	-.647	1	-.379	2	
661	M67	1	max	422.124	2	565.567	4	387.743	3	.165	4	.321	4	.397	4
662		min	-527.493	1	-589.93	3	-340.284	4	-.194	3	-.365	3	-.45	3	
663	2	max	422.124	2	565.567	4	387.743	3	.165	4	.31	4	.379	4	
664		min	-527.493	1	-589.93	3	-340.284	4	-.194	3	-.352	3	-.431	3	
665	3	max	422.124	2	565.567	4	387.743	3	.165	4	.299	4	.36	4	
666		min	-527.493	1	-589.93	3	-340.284	4	-.194	3	-.339	3	-.412	3	
667	4	max	422.124	2	565.567	4	387.743	3	.165	4	.288	4	.342	4	
668		min	-527.493	1	-589.93	3	-340.284	4	-.194	3	-.327	3	-.393	3	
669	5	max	422.124	2	565.567	4	387.743	3	.165	4	.276	4	.324	4	
670		min	-527.493	1	-589.93	3	-340.284	4	-.194	3	-.314	3	-.373	3	
671	M68	1	max	479.792	1	515.671	1	511.291	2	.017	1	.17	4	.549	4
672		min	-591.668	2	-485.055	2	-499.335	1	-.017	2	-.187	3	-.483	3	
673	2	max	483.587	1	517.351	1	513.488	2	.017	1	.169	2	.438	4	
674		min	-595.463	2	-483.375	2	-501.532	1	-.017	2	-.172	3	-.375	3	
675	3	max	487.382	1	519.031	1	515.685	2	.017	1	.177	2	.329	4	
676		min	-599.258	2	-481.696	2	-503.729	1	-.017	2	-.167	1	-.269	3	
677	4	max	491.177	1	520.71	1	517.882	2	.017	1	.186	2	.556	2	
678		min	-603.053	2	-480.016	2	-505.926	1	-.017	2	-.163	1	-.504	1	
679	5	max	494.972	1	522.39	1	520.079	2	.017	1	.196	2	.8	2	
680		min	-606.848	2	-478.336	2	-508.123	1	-.017	2	-.16	1	-.756	1	
681	M69	1	max	568.477	4	443.741	2	405.877	1	.014	2	.141	3	.649	2
682		min	-679.266	3	-413.08	1	-383.942	2	-.015	1	-.153	4	-.584	1	
683	2	max	572.262	4	445.421	2	403.698	1	.014	2	.17	3	.446	2	



Company : Tower Engineering Solutions, LLC
 Designer :
 Job Number : TES Project No. 110405
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9bj YcdYA Ya VYf GYVJcb : cfWVg f7 cbh7bi YXL

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC	
684		min	-683.05	3	-411.4	1	-381.763	2	-.015	1	-.171	4	-.384	1	
685	3	max	576.047	4	447.101	2	401.519	1	.014	2	.201	3	.371	3	
686		min	-686.835	3	-409.721	1	-379.584	2	-.015	1	-.191	4	-.311	4	
687	4	max	579.831	4	448.78	2	399.34	1	.014	2	.234	3	.53	3	
688		min	-690.619	3	-408.041	1	-384.691	4	-.015	1	-.211	4	-.477	4	
689	5	max	583.616	4	450.46	2	403.014	3	.014	2	.269	3	.69	3	
690		min	-694.404	3	-406.361	1	-391.264	4	-.015	1	-.233	4	-.645	4	
691	M70	1	max	402.1	4	243.515	1	931.634	3	.082	1	.178	4	.28	2
692		min	-327.209	3	-855.875	6	-988.618	4	-.095	2	-.168	3	-.306	1	
693	2	max	402.1	4	243.515	1	931.634	3	.082	1	.133	4	.312	2	
694		min	-327.209	3	-855.875	6	-988.618	4	-.095	2	-.126	3	-.317	1	
695	3	max	402.1	4	243.515	1	931.634	3	.082	1	.089	4	.344	2	
696		min	-327.209	3	-855.875	6	-988.618	4	-.095	2	-.084	3	-.328	1	
697	4	max	402.1	4	243.515	1	931.634	3	.082	1	.044	4	.375	2	
698		min	-327.209	3	-855.875	6	-988.618	4	-.095	2	-.042	3	-.339	1	
699	5	max	402.1	4	243.515	1	931.634	3	.082	1	0	6	.407	2	
700		min	-327.209	3	-855.875	6	-988.618	4	-.095	2	0	4	-.35	1	
701	M71	1	max	359.985	3	253.22	1	983.84	3	.091	2	.166	4	.29	2
702		min	-306.702	4	-774.667	10	-921.247	4	-.079	1	-.177	3	-.29	1	
703	2	max	359.985	3	253.22	1	983.84	3	.091	2	.124	4	.314	2	
704		min	-306.702	4	-774.667	10	-921.247	4	-.079	1	-.133	3	-.302	1	
705	3	max	359.985	3	253.22	1	983.84	3	.091	2	.083	4	.339	2	
706		min	-306.702	4	-774.667	10	-921.247	4	-.079	1	-.089	3	-.313	1	
707	4	max	359.985	3	253.22	1	983.84	3	.091	2	.041	4	.363	2	
708		min	-306.702	4	-774.667	10	-921.247	4	-.079	1	-.044	3	-.324	1	
709	5	max	359.985	3	253.22	1	983.84	3	.091	2	0	3	.388	2	
710		min	-306.702	4	-774.667	10	-921.247	4	-.079	1	0	1	-.336	1	
711	M72	1	max	335.6	2	355.061	4	829.664	1	.064	4	.159	2	.199	1
712		min	-259.831	1	-885.919	7	-884.599	2	-.077	3	-.149	1	-.222	2	
713	2	max	335.6	2	355.061	4	829.664	1	.064	4	.119	2	.228	3	
714		min	-259.831	1	-885.919	7	-884.599	2	-.077	3	-.112	1	-.232	4	
715	3	max	335.6	2	355.061	4	829.664	1	.064	4	.08	2	.264	3	
716		min	-259.831	1	-885.919	7	-884.599	2	-.077	3	-.075	1	-.248	4	
717	4	max	335.6	2	355.061	4	829.664	1	.064	4	.04	2	.301	3	
718		min	-259.831	1	-885.919	7	-884.599	2	-.077	3	-.037	1	-.264	4	
719	5	max	335.6	2	355.061	4	829.664	1	.064	4	0	4	.338	3	
720		min	-259.831	1	-885.919	7	-884.599	2	-.077	3	0	3	-.28	4	
721	M73	1	max	360.643	1	273.702	2	921.862	1	.097	3	.154	2	.337	3
722		min	-303.178	2	-579.196	5	-852.769	2	-.084	4	-.166	1	-.336	4	
723	2	max	360.643	1	273.702	2	921.862	1	.097	3	.115	2	.353	3	
724		min	-303.178	2	-579.196	5	-852.769	2	-.084	4	-.124	1	-.339	4	
725	3	max	360.643	1	273.702	2	921.862	1	.097	3	.077	2	.37	3	
726		min	-303.178	2	-579.196	5	-852.769	2	-.084	4	-.083	1	-.343	4	
727	4	max	360.643	1	273.702	2	921.862	1	.097	3	.038	2	.386	3	
728		min	-303.178	2	-579.196	5	-852.769	2	-.084	4	-.041	1	-.346	4	
729	5	max	360.643	1	273.702	2	921.862	1	.097	3	0	3	.403	3	
730		min	-303.178	2	-579.196	5	-852.769	2	-.084	4	0	4	-.35	4	
731	M74	1	max	330.688	1	266.903	2	770.753	2	.072	3	.151	1	.299	4
732		min	-250.392	2	-865.893	5	-838.235	1	-.085	4	-.139	2	-.323	3	
733	2	max	330.688	1	266.903	2	770.753	2	.072	3	.113	1	.32	4	
734		min	-250.392	2	-865.893	5	-838.235	1	-.085	4	-.104	2	-.323	3	
735	3	max	330.688	1	266.903	2	770.753	2	.072	3	.075	1	.341	4	



Company : Tower Engineering Solutions, LLC
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9bj YcdYA Ya VYf GYVJcb : cfWkg fT cbhpi YXL

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC	
736		min	-250.392	2	-865.893	5	-838.235	1	-.085	4	-.069	2	-.324	3	
737	4	max	330.688	1	266.903	2	770.753	2	.072	3	.038	1	.362	4	
738		min	-250.392	2	-865.893	5	-838.235	1	-.085	4	-.035	2	-.324	3	
739	5	max	330.688	1	266.903	2	770.753	2	.072	3	0	3	.383	4	
740		min	-250.392	2	-865.893	5	-838.235	1	-.085	4	0	1	-.324	3	
741	M75	1	max	351.6	4	354.734	3	765.607	2	.074	4	.126	1	.256	1
742		min	-287.515	3	-646.561	4	-701.946	1	-.061	3	-.138	2	-.253	2	
743	2	max	351.6	4	354.734	3	765.607	2	.074	4	.095	1	.263	1	
744		min	-287.515	3	-646.561	4	-701.946	1	-.061	3	-.103	2	-.247	2	
745	3	max	351.6	4	354.734	3	765.607	2	.074	4	.063	1	.27	1	
746		min	-287.515	3	-646.561	4	-701.946	1	-.061	3	-.069	2	-.24	2	
747	4	max	351.6	4	354.734	3	765.607	2	.074	4	.032	1	.276	1	
748		min	-287.515	3	-646.561	4	-701.946	1	-.061	3	-.034	2	-.234	2	
749	5	max	351.6	4	354.734	3	765.607	2	.074	4	0	10	.301	4	
750		min	-287.515	3	-646.561	4	-701.946	1	-.061	3	0	1	-.248	3	
751	M76	1	max	954.834	1	-28.46	4	815.444	2	.007	1	.173	1	.206	2
752		min	-926.025	2	-984.812	7	-1080.64	1	-.008	2	-.13	2	-.275	1	
753	2	max	954.834	1	-28.46	4	815.444	2	.007	1	.13	1	.217	2	
754		min	-926.025	2	-984.812	7	-1080.64	1	-.008	2	-.098	2	-.265	1	
755	3	max	954.834	1	-28.46	4	815.444	2	.007	1	.086	1	.229	2	
756		min	-926.025	2	-984.812	7	-1080.64	1	-.008	2	-.065	2	-.255	1	
757	4	max	954.834	1	-28.46	4	815.444	2	.007	1	.043	1	.24	2	
758		min	-926.025	2	-984.812	7	-1080.64	1	-.008	2	-.033	2	-.246	1	
759	5	max	954.834	1	-28.46	4	815.444	2	.007	1	0	3	.251	2	
760		min	-926.025	2	-984.812	7	-1080.64	1	-.008	2	0	1	-.236	1	
761	M77	1	max	1228.271	1	-36.698	3	1501.105	1	.007	2	.191	2	.183	2
762		min	-1215.454	2	-1004.214	8	-1193.939	2	-.007	1	-.24	1	-.253	1	
763	2	max	1228.271	1	-36.698	3	1501.105	1	.007	2	.143	2	.195	2	
764		min	-1215.454	2	-1004.214	8	-1193.939	2	-.007	1	-.18	1	-.244	1	
765	3	max	1228.271	1	-36.698	3	1501.105	1	.007	2	.096	2	.207	2	
766		min	-1215.454	2	-1004.214	8	-1193.939	2	-.007	1	-.12	1	-.235	1	
767	4	max	1228.271	1	-36.698	3	1501.105	1	.007	2	.048	2	.219	2	
768		min	-1215.454	2	-1004.214	8	-1193.939	2	-.007	1	-.06	1	-.226	1	
769	5	max	1228.271	1	-36.698	3	1501.105	1	.007	2	0	2	.231	2	
770		min	-1215.454	2	-1004.214	8	-1193.939	2	-.007	1	0	1	-.218	1	
771	M78	1	max	972.662	4	-63.516	2	817.015	1	.005	4	.167	2	.21	3
772		min	-947.258	3	-981.343	5	-1044.555	2	-.006	3	-.131	1	-.279	4	
773	2	max	972.662	4	-63.516	2	817.015	1	.005	4	.125	2	.217	3	
774		min	-947.258	3	-981.343	5	-1044.555	2	-.006	3	-.098	1	-.264	4	
775	3	max	972.662	4	-63.516	2	817.015	1	.005	4	.084	2	.224	3	
776		min	-947.258	3	-981.343	5	-1044.555	2	-.006	3	-.065	1	-.25	4	
777	4	max	972.662	4	-63.516	2	817.015	1	.005	4	.042	2	.23	3	
778		min	-947.258	3	-981.343	5	-1044.555	2	-.006	3	-.033	1	-.235	4	
779	5	max	972.662	4	-63.516	2	817.015	1	.005	4	0	4	.237	3	
780		min	-947.258	3	-981.343	5	-1044.555	2	-.006	3	0	3	-.22	4	
781	M79	1	max	890.377	4	-93.016	1	1739.044	4	.007	3	.232	3	.138	3
782		min	-870.907	3	-988.61	6	-1449.875	3	-.007	4	-.278	4	-.209	4	
783	2	max	890.377	4	-93.016	1	1739.044	4	.007	3	.174	3	.154	3	
784		min	-870.907	3	-988.61	6	-1449.875	3	-.007	4	-.209	4	-.204	4	
785	3	max	890.377	4	-93.016	1	1739.044	4	.007	3	.116	3	.171	3	
786		min	-870.907	3	-988.61	6	-1449.875	3	-.007	4	-.139	4	-.199	4	
787	4	max	890.377	4	-93.016	1	1739.044	4	.007	3	.058	3	.187	3	



9bj YcdYA Ya VYf GYVJcb: cfWkg fT cbhpi YXL

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC	
788		min	-870.907	3	-988.61	6	-1449.875	3	-.007	4	-.07	4	-.195	4	
789	5	max	890.377	4	-93.016	1	1739.044	4	.007	3	0	1	.204	3	
790		min	-870.907	3	-988.61	6	-1449.875	3	-.007	4	0	4	-.19	4	
791	M80	1	max	647.093	3	-77.015	1	1141.29	4	.003	3	.222	3	.141	4
792		min	-623.641	4	-970.628	6	-1390.195	3	-.004	4	-.183	4	-.211	3	
793	2	max	647.093	3	-77.015	1	1141.29	4	.003	3	.167	3	.157	4	
794		min	-623.641	4	-970.628	6	-1390.195	3	-.004	4	-.137	4	-.206	3	
795	3	max	647.093	3	-77.015	1	1141.29	4	.003	3	.111	3	.173	4	
796		min	-623.641	4	-970.628	6	-1390.195	3	-.004	4	-.091	4	-.2	3	
797	4	max	647.093	3	-77.015	1	1141.29	4	.003	3	.056	3	.189	4	
798		min	-623.641	4	-970.628	6	-1390.195	3	-.004	4	-.046	4	-.195	3	
799	5	max	647.093	3	-77.015	1	1141.29	4	.003	3	0	2	.205	4	
800		min	-623.641	4	-970.628	6	-1390.195	3	-.004	4	0	3	-.19	3	
801	M81	1	max	1113.506	3	-57.127	2	1241.437	2	.009	4	.158	1	.177	4
802		min	-1091.3	4	-1002.989	5	-985.059	1	-.008	3	-.199	2	-.248	3	
803	2	max	1113.506	3	-57.127	2	1241.437	2	.009	4	.118	1	.185	4	
804		min	-1091.3	4	-1002.989	5	-985.059	1	-.008	3	-.149	2	-.234	3	
805	3	max	1113.506	3	-57.127	2	1241.437	2	.009	4	.079	1	.192	4	
806		min	-1091.3	4	-1002.989	5	-985.059	1	-.008	3	-.099	2	-.219	3	
807	4	max	1113.506	3	-57.127	2	1241.437	2	.009	4	.039	1	.199	4	
808		min	-1091.3	4	-1002.989	5	-985.059	1	-.008	3	-.05	2	-.205	3	
809	5	max	1113.506	3	-57.127	2	1241.437	2	.009	4	0	1	.206	4	
810		min	-1091.3	4	-1002.989	5	-985.059	1	-.008	3	0	2	-.191	3	
811	M82	1	max	59.814	8	707.471	2	1194.939	2	.02	2	.157	1	.124	2
812		min	-4.73	3	-545.004	1	-893.81	1	-.037	1	-.209	2	-.096	1	
813	2	max	59.814	8	707.471	2	1194.939	2	.02	2	.118	1	.093	2	
814		min	-4.73	3	-545.004	1	-893.81	1	-.037	1	-.156	2	-.072	1	
815	3	max	59.814	8	707.471	2	1194.939	2	.02	2	.079	1	.062	2	
816		min	-4.73	3	-545.004	1	-893.81	1	-.037	1	-.104	2	-.048	1	
817	4	max	59.814	8	707.471	2	1194.939	2	.02	2	.04	1	.031	2	
818		min	-4.73	3	-545.004	1	-893.81	1	-.037	1	-.052	2	-.024	1	
819	5	max	59.814	8	707.471	2	1194.939	2	.02	2	.027	3	.014	4	
820		min	-4.73	3	-545.004	1	-893.81	1	-.037	1	-.026	4	-.015	3	
821	M83	1	max	46.082	7	462.145	1	1029.972	2	.042	5	.139	1	.085	1
822		min	-8.774	4	-612.866	2	-746.595	1	-.017	2	-.178	2	-.106	2	
823	2	max	46.082	7	462.145	1	1029.972	2	.042	5	.106	1	.065	1	
824		min	-8.774	4	-612.866	2	-746.595	1	-.017	2	-.133	2	-.08	2	
825	3	max	46.082	7	462.145	1	1029.972	2	.042	5	.074	1	.045	1	
826		min	-8.774	4	-612.866	2	-746.595	1	-.017	2	-.088	2	-.053	2	
827	4	max	46.082	7	462.145	1	1029.972	2	.042	5	.041	1	.025	1	
828		min	-8.774	4	-612.866	2	-746.595	1	-.017	2	-.044	2	-.026	2	
829	5	max	46.082	7	462.145	1	1029.972	2	.042	5	.028	4	.016	4	
830		min	-8.774	4	-612.866	2	-746.595	1	-.017	2	-.019	3	-.011	3	
831	M84	1	max	203.949	5	797.18	4	1725.515	1	.229	4	.455	6	.194	4
832		min	32.867	2	-811.072	3	-2309.86	2	-.223	3	-.167	1	-.19	3	
833	2	max	203.949	5	797.18	4	1725.515	1	.229	4	.389	6	.16	4	
834		min	32.867	2	-811.072	3	-2309.86	2	-.223	3	-.092	1	-.154	3	
835	3	max	203.949	5	797.18	4	1725.515	1	.229	4	.323	6	.125	4	
836		min	32.867	2	-811.072	3	-2309.86	2	-.223	3	-.016	1	-.119	3	
837	4	max	203.949	5	797.18	4	1725.515	1	.229	4	.257	6	.09	4	
838		min	32.867	2	-811.072	3	-2309.86	2	-.223	3	.059	1	-.084	3	
839	5	max	203.949	5	797.18	4	1725.515	1	.229	4	.232	5	.055	4	



Company : Tower Engineering Solutions, LLC
 Designer :
 Job Number : TES Project No. 110405
 Model Name :

July 8, 2021
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9bj YcdYA Ya VYf GYVJcb : cfWVg fT cbhji YXL

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC	
840		min	32.867	2	-811.072	3	-2309.86	2	-.223	3	-.015	2	-.048	3	
841	M85	1	max	462.158	1	-9.458	3	788.929	1	.01	3	.036	3	.073	5
842		min	-612.885	2	-106.839	8	-1072.635	2	-.125	5	-.062	4	-.006	3	
843		2	max	462.158	1	-9.483	3	788.929	1	.01	3	.056	3	.077	5
844		min	-612.885	2	-106.927	8	-1072.635	2	-.125	5	-.094	4	-.006	3	
845		3	max	545.013	1	101.054	7	1237.129	2	.107	7	.044	1	.081	8
846		min	-707.458	2	-107.014	8	-936.431	1	-.125	5	-.146	3	-.003	2	
847		4	max	545.013	1	100.966	7	1237.129	2	.107	7	.07	4	.066	7
848		min	-707.458	2	7.746	4	-936.431	1	-.014	4	-.101	3	-.008	4	
849		5	max	545.013	1	100.879	7	1237.129	2	.107	7	.037	4	.062	7
850		min	-707.458	2	7.721	4	-936.431	1	-.014	4	-.055	3	-.008	4	
851	M86	1	max	852.052	4	878.231	6	666.59	3	.188	1	.199	4	.725	2
852		min	-758.048	3	-234.905	1	-680.813	4	-.118	2	-.212	3	-.405	1	
853		2	max	849.597	4	875.177	6	662.296	3	.188	1	.135	4	.659	2
854		min	-755.594	3	-236.053	1	-676.519	4	-.118	2	-.15	3	-.383	1	
855		3	max	847.143	4	872.124	6	658.002	3	.188	1	.072	4	.593	2
856		min	-753.14	3	-237.202	1	-672.224	4	-.118	2	-.088	3	-.361	1	
857		4	max	844.689	4	869.071	6	653.708	3	.188	1	.01	1	.526	2
858		min	-750.686	3	-238.35	1	-667.93	4	-.118	2	-.035	7	-.338	1	
859		5	max	842.235	4	866.018	6	649.413	3	.188	1	.035	3	.46	2
860		min	-748.231	3	-239.498	1	-663.636	4	-.118	2	-.053	4	-.316	1	
861	M87	1	max	624.01	4	652.713	4	559.528	2	.163	1	.191	1	.611	4
862		min	-530.431	3	-347.596	3	-528.539	1	-.194	2	-.192	2	-.396	3	
863		2	max	626.49	4	651.565	4	558.082	2	.163	1	.142	1	.55	4
864		min	-532.91	3	-348.745	3	-527.093	1	-.194	2	-.139	2	-.363	3	
865		3	max	628.969	4	650.416	4	556.636	2	.163	1	.092	1	.489	4
866		min	-535.389	3	-349.893	3	-525.647	1	-.194	2	-.087	2	-.33	3	
867		4	max	631.448	4	649.268	4	555.19	2	.163	1	.043	1	.428	4
868		min	-537.869	3	-351.042	3	-524.201	1	-.194	2	-.035	2	-.298	3	
869		5	max	633.927	4	648.119	4	553.744	2	.163	1	.053	4	.367	4
870		min	-540.348	3	-352.19	3	-522.755	1	-.194	2	-.04	3	-.265	3	
871	M88	1	max	1872.475	1	1018.965	8	660.852	2	.176	2	.499	1	.478	8
872		min	-1588.967	2	41.259	3	-581.725	1	-.232	1	-.486	2	.02	3	
873		2	max	1871.619	1	1017.826	8	658.852	2	.176	2	.476	1	.439	8
874		min	-1588.111	2	40.901	3	-579.726	1	-.232	1	-.46	2	.018	3	
875		3	max	1870.764	1	1016.686	8	656.853	2	.176	2	.454	1	.4	6
876		min	-1587.256	2	40.544	3	-577.726	1	-.232	1	-.435	2	.015	1	
877		4	max	1869.909	1	1015.546	8	654.854	2	.176	2	.432	1	.362	6
878		min	-1586.401	2	40.186	3	-575.727	1	-.232	1	-.409	2	.005	1	
879		5	max	1869.054	1	1014.407	8	652.854	2	.176	2	.409	1	.325	6
880		min	-1585.546	2	39.828	3	-573.727	1	-.232	1	-.384	2	-.004	1	
881	M89	1	max	1535.836	1	1014.316	8	1167.235	2	.231	2	.409	1	.335	8
882		min	-1232.767	2	39.658	3	-1243.961	1	-.218	1	-.384	2	.013	3	
883		2	max	1535.684	1	1011.889	8	1162.202	2	.231	2	.306	1	.251	8
884		min	-1232.615	2	38.897	3	-1238.929	1	-.218	1	-.287	2	.009	3	
885		3	max	1535.532	1	1009.462	8	1157.17	2	.231	2	.204	1	.167	8
886		min	-1232.463	2	38.135	3	-1233.896	1	-.218	1	-.191	2	.006	3	
887		4	max	1535.38	1	1007.035	8	1152.137	2	.231	2	.102	1	.083	8
888		min	-1232.311	2	37.373	3	-1228.864	1	-.218	1	-.095	2	.003	3	
889		5	max	1535.228	1	1004.608	8	1147.105	2	.231	2	0	11	0	11
890		min	-1232.159	2	36.612	3	-1223.831	1	-.218	1	0	1	0	1	
891	M90	1	max	1548.559	3	985.713	6	355.753	2	.195	3	.223	4	.478	8



Company : Tower Engineering Solutions, LLC
 Designer :
 Job Number : TES Project No. 110405
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9bj YcdYA Ya VYf GYVJcb : cfWkg f7 cbh7bi YXL

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC	
892		min	-1313.137	4	85.416	1	-414.047	1	-.141	4	-.228	3	0	3	
893	2	max	1547.424	3	984.573	6	354.238	2	.195	3	.217	4	.44	8	
894		min	-1312.002	4	85.058	1	-412.532	1	-.141	4	-.225	3	-.006	3	
895	3	max	1546.289	3	983.433	6	352.723	2	.195	3	.211	4	.402	8	
896		min	-1310.867	4	84.7	1	-411.017	1	-.141	4	-.221	3	-.012	3	
897	4	max	1545.154	3	982.294	6	351.208	2	.195	3	.205	4	.365	8	
898		min	-1309.732	4	84.343	1	-409.503	1	-.141	4	-.218	3	-.017	3	
899	5	max	1544.019	3	981.154	6	349.694	2	.195	3	.2	4	.327	8	
900		min	-1308.597	4	83.985	1	-407.988	1	-.141	4	-.215	3	-.023	3	
901	M91	1	max	1408.822	3	981.159	6	652.269	3	.19	3	.2	4	.326	6
902		min	-1163.318	4	83.903	1	-605.597	4	-.205	4	-.215	3	.027	1	
903	2	max	1406.556	3	978.718	6	648.603	3	.19	3	.149	4	.244	6	
904		min	-1161.052	4	83.137	1	-601.931	4	-.205	4	-.161	3	.021	1	
905	3	max	1404.29	3	976.277	6	644.937	3	.19	3	.099	4	.162	6	
906		min	-1158.786	4	82.371	1	-598.266	4	-.205	4	-.107	3	.014	1	
907	4	max	1402.024	3	973.837	6	641.271	3	.19	3	.049	4	.081	6	
908		min	-1156.521	4	81.605	1	-594.6	4	-.205	4	-.053	3	.007	1	
909	5	max	1399.759	3	971.396	6	637.605	3	.19	3	0	11	0	11	
910		min	-1154.255	4	80.839	1	-590.934	4	-.205	4	0	1	0	1	
911	M92	1	max	1167.247	4	117.502	6	17.629	1	0	6	-.01	1	.15	6
912		min	-1506.437	3	17.213	1	-28.745	2	0	1	-.075	8	-.034	1	
913	2	max	1157.993	4	89.241	6	12.26	1	0	6	.011	1	.059	2	
914		min	-1497.184	3	8.318	1	-23.377	2	0	1	-.017	2	-.033	1	
915	3	max	1148.74	4	43.818	6	6.892	1	0	6	.026	5	.012	2	
916		min	-1487.931	3	-8.204	1	-21.391	8	0	1	-.002	2	-.026	1	
917	4	max	1139.487	4	11.957	2	22.018	3	0	6	.021	7	-.009	1	
918		min	-1478.678	3	-29.254	1	-33.375	4	0	1	-.005	4	-.04	6	
919	5	max	1130.234	4	-1.168	2	37.966	3	0	6	.024	3	.024	3	
920		min	-1469.425	3	-59.753	5	-49.323	4	0	1	-.044	4	-.033	4	
921	M93	1	max	1529.734	2	36.814	2	111.23	8	0	2	-.007	3	.023	3
922		min	-1911.645	1	-45.365	1	21.912	3	0	1	-.07	6	-.124	8	
923	2	max	1529.68	2	15.502	2	82.78	8	0	2	.011	3	.032	3	
924		min	-1911.591	1	-24.053	1	12.933	3	0	1	-.014	4	-.049	4	
925	3	max	1529.626	2	5.914	3	36.647	8	0	2	.03	6	.032	3	
926		min	-1911.537	1	-16.442	8	-3.906	3	0	1	0	4	-.012	4	
927	4	max	1529.573	2	18.571	1	1.235	4	0	2	.02	5	.039	5	
928		min	-1911.483	1	-27.122	2	-33.449	7	0	1	-.004	2	.003	2	
929	5	max	1529.519	2	39.883	1	-13.057	4	0	2	.029	1	.013	4	
930		min	-1911.429	1	-48.434	2	-73.852	7	0	1	-.055	2	-.017	9	
931	M94	1	max	1059.186	4	865.911	6	165.379	4	.359	1	.035	3	.277	6
932		min	-985.397	3	-238.727	1	-107.099	3	-.418	2	-.053	4	-.078	1	
933	2	max	1058.103	4	863.286	6	165.631	4	.359	1	.026	3	.208	6	
934		min	-984.313	3	-239.714	1	-107.352	3	-.418	2	-.04	4	-.058	1	
935	3	max	1057.019	4	860.661	6	165.884	4	.359	1	.017	3	.138	6	
936		min	-983.229	3	-240.702	1	-107.605	3	-.418	2	-.027	4	-.039	1	
937	4	max	1055.935	4	858.037	6	166.137	4	.359	1	.009	3	.069	6	
938		min	-982.145	3	-241.689	1	-107.858	3	-.418	2	-.013	4	-.02	1	
939	5	max	1054.851	4	855.412	6	166.39	4	.359	1	0	11	0	11	
940		min	-981.061	3	-242.676	1	-108.111	3	-.418	2	0	1	0	1	
941	M95	1	max	807.854	2	646.098	4	116.793	3	.31	4	.053	4	.206	4
942		min	-731.664	1	-354.046	3	-156.897	4	-.255	3	-.04	3	-.114	3	
943	2	max	806.507	2	645.116	4	121.256	3	.31	4	.04	4	.155	4	



9bj YcdYA Ya VYf GYVJcb: cfWVg fT cbhpi YXL

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome... LC		
944		min	-730.318	1	-355.028	3	-161.36	4	-.255	3	-.031	3	-.086	3	
945	3	max	805.161	2	644.135	4	125.719	3	.31	4	.027	4	.103	4	
946		min	-728.972	1	-356.009	3	-165.823	4	-.255	3	-.021	3	-.057	3	
947	4	max	803.815	2	643.153	4	130.182	3	.31	4	.014	4	.051	4	
948		min	-727.626	1	-356.991	3	-170.286	4	-.255	3	-.011	3	-.029	3	
949	5	max	802.469	2	642.171	4	134.645	3	.31	4	0	11	0	11	
950		min	-726.279	1	-357.973	3	-174.749	4	-.255	3	0	1	0	1	
951	M96	1	max	340.488	1	-40.889	3	1926.585	1	-.006	1	.486	2	.148	2
952		min	-480.511	2	-1018.109	8	-1657.366	2	-.467	6	-.499	1	-.235	1	
953	2	max	1337.412	1	-91.573	3	294.77	1	-.054	2	.319	1	.536	6	
954		min	-1294.009	2	-1108.272	8	-360.894	2	-.564	5	-.223	2	-.237	1	
955	3	max	1348.718	1	-100.449	3	301.288	1	-.054	2	.512	1	1.228	6	
956		min	-1305.316	2	-1132.012	8	-367.412	2	-.564	5	-.458	2	-.061	1	
957	4	max	1360.024	1	-109.325	3	307.806	1	-.054	2	.708	1	1.945	8	
958		min	-1316.622	2	-1155.752	8	-373.93	2	-.564	5	-.697	2	.092	3	
959	5	max	1371.331	1	-118.201	3	314.324	1	-.054	2	.909	1	2.698	8	
960		min	-1327.928	2	-1179.492	8	-380.448	2	-.564	5	-.94	2	.165	3	
961	M97	1	max	704.194	3	1129.6	6	444.19	4	.523	7	1.094	3	2.634	8
962		min	-648.632	4	162.601	1	-370.062	3	.122	4	-1.149	4	.157	3	
963	2	max	692.872	3	1105.86	6	424.607	4	.523	7	.861	3	1.921	8	
964		min	-637.31	4	153.726	1	-350.479	3	.122	4	-.869	4	.025	3	
965	3	max	681.549	3	1082.12	6	405.025	4	.523	7	.641	3	1.222	8	
966		min	-625.987	4	144.85	1	-330.897	3	.122	4	-.601	4	-.101	3	
967	4	max	670.226	3	1058.38	6	385.442	4	.523	7	.434	3	.539	8	
968		min	-614.664	4	135.974	1	-311.314	3	.122	4	-.346	4	-.222	3	
969	5	max	321.663	2	984.89	6	1322.031	4	.469	8	.223	4	.109	1	
970		min	-405.264	1	84.748	1	-1546.978	3	-.023	3	-.228	3	-.193	3	
971	M98	1	max	71.944	6	1911.568	1	44.231	2	.027	1	.007	1	.32	1
972		min	13.573	4	-1529.614	2	-35.681	1	-.044	2	-.008	2	-.233	2	
973	2	max	71.944	6	1911.568	1	44.231	2	.027	1	.005	1	.236	1	
974		min	13.573	4	-1529.614	2	-35.681	1	-.044	2	-.006	2	-.166	2	
975	3	max	71.944	6	1911.568	1	44.231	2	.027	1	.004	1	.153	1	
976		min	13.573	4	-1529.614	2	-35.681	1	-.044	2	-.004	2	-.099	2	
977	4	max	71.944	6	1911.568	1	44.231	2	.027	1	.002	1	.07	1	
978		min	13.573	4	-1529.614	2	-35.681	1	-.044	2	-.002	2	-.033	2	
979	5	max	71.944	6	1911.568	1	44.231	2	.027	1	0	1	.034	2	
980		min	13.573	4	-1529.614	2	-35.681	1	-.044	2	0	2	-.014	1	
981	M99	1	max	59.011	5	706.737	3	1288.853	3	.055	4	.168	4	.123	3
982		min	1.147	2	-522.796	4	-1003.339	4	-.034	3	-.225	3	-.087	4	
983	2	max	59.011	5	706.737	3	1288.853	3	.055	4	.125	4	.092	3	
984		min	1.147	2	-522.796	4	-1003.339	4	-.034	3	-.169	3	-.064	4	
985	3	max	59.011	5	706.737	3	1288.853	3	.055	4	.081	4	.061	3	
986		min	1.147	2	-522.796	4	-1003.339	4	-.034	3	-.113	3	-.042	4	
987	4	max	59.011	5	706.737	3	1288.853	3	.055	4	.037	4	.031	3	
988		min	1.147	2	-522.796	4	-1003.339	4	-.034	3	-.056	3	-.019	4	
989	5	max	59.011	5	706.737	3	1288.853	3	.055	4	.015	2	.013	1	
990		min	1.147	2	-522.796	4	-1003.339	4	-.034	3	-.023	1	-.009	2	
991	M100	1	max	225.281	8	1923.965	1	1283.481	3	.208	2	.113	4	.406	5
992		min	56.961	3	-1380.386	2	-990.789	4	-.206	1	-.254	7	-.163	2	
993	2	max	225.281	8	1923.965	1	1283.481	3	.208	2	.07	4	.352	5	
994		min	56.961	3	-1380.386	2	-990.789	4	-.206	1	-.22	7	-.103	2	
995	3	max	225.281	8	1923.965	1	1283.481	3	.208	2	.026	4	.298	5	



Company : Tower Engineering Solutions, LLC
 Designer :
 Job Number : TES Project No. 110405
 Model Name :

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9bj YcdYA Ya VYf GYVJcb: cfWVg fT cbhji YXL

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC	
996		min	56.961	3	-1380.386	2	-990.789	4	-.206	1	-.186	7	-.042	2	
997	4	max	225.281	8	1923.965	1	1283.481	3	.208	2	.013	1	.243	5	
998		min	56.961	3	-1380.386	2	-990.789	4	-.206	1	-.158	6	.018	2	
999	5	max	225.281	8	1923.965	1	1283.481	3	.208	2	.018	1	.211	8	
1000		min	56.961	3	-1380.386	2	-990.789	4	-.206	1	-.138	6	0	3	
1001	M101	1	max	570.514	4	-17.128	1	1019.279	4	.015	1	.031	1	.079	6
1002		min	-725.801	3	-117.971	6	-1318.854	3	-.137	6	-.057	2	-.009	1	
1003	2	max	570.514	4	-17.178	1	1019.279	4	.015	1	.029	1	.084	6	
1004		min	-725.801	3	-118.084	6	-1318.854	3	-.137	6	-.076	7	-.008	1	
1005	3	max	729.16	2	111.548	8	1680.457	1	.109	5	.132	2	.089	6	
1006		min	-912.854	1	-118.196	6	-1345.112	2	-.137	6	-.179	1	.016	3	
1007	4	max	729.16	2	111.435	8	1680.457	1	.118	8	.076	2	.073	8	
1008		min	-912.854	1	21.996	3	-1345.112	2	-.01	3	-.109	1	-.005	3	
1009	5	max	729.16	2	111.323	8	1680.457	1	.118	8	.021	3	.068	8	
1010		min	-912.854	1	21.946	3	-1345.112	2	-.01	3	-.04	5	-.006	3	
1011	M102	1	max	751.146	2	908.326	7	591.945	1	.188	2	.183	2	.74	3
1012		min	-657.464	1	-347.19	4	-604.758	2	-.119	1	-.197	1	-.419	4	
1013	2	max	748.687	2	905.283	7	590.525	1	.188	2	.127	2	.663	3	
1014		min	-655.006	1	-348.334	4	-603.339	2	-.119	1	-.142	1	-.386	4	
1015	3	max	746.229	2	902.24	7	589.106	1	.188	2	.07	2	.586	3	
1016		min	-652.548	1	-349.479	4	-601.92	2	-.119	1	-.086	1	-.354	4	
1017	4	max	743.771	2	899.198	7	587.687	1	.188	2	.014	2	.51	3	
1018		min	-650.089	1	-350.623	4	-600.5	2	-.119	1	-.035	5	-.321	4	
1019	5	max	741.312	2	896.155	7	586.268	1	.188	2	.023	1	.433	3	
1020		min	-647.631	1	-351.768	4	-599.081	2	-.119	1	-.042	2	-.288	4	
1021	M103	1	max	816.22	3	783.25	10	694.316	3	.146	2	.218	4	.616	2
1022		min	-738.051	4	-246.153	1	-664.331	4	-.177	1	-.218	3	-.401	1	
1023	2	max	813.744	3	782.098	10	690.029	3	.146	2	.156	4	.564	2	
1024		min	-735.576	4	-247.306	1	-660.044	4	-.177	1	-.153	3	-.377	1	
1025	3	max	811.269	3	780.945	10	685.741	3	.146	2	.094	4	.513	2	
1026		min	-733.1	4	-248.458	1	-655.756	4	-.177	1	-.089	3	-.354	1	
1027	4	max	808.794	3	779.793	10	681.454	3	.146	2	.043	2	.461	2	
1028		min	-730.625	4	-249.611	1	-651.469	4	-.177	1	-.033	1	-.331	1	
1029	5	max	806.319	3	778.64	10	677.167	3	.146	2	.055	2	.41	2	
1030		min	-728.15	4	-250.763	1	-647.182	4	-.177	1	-.041	1	-.307	1	
1031	M104	1	max	1965.878	4	1003.632	6	334.748	1	.138	3	.308	4	.485	7
1032		min	-1697.236	3	100.208	1	-268.085	2	-.193	4	-.302	3	-.008	4	
1033	2	max	1964.743	4	1002.493	6	333.233	1	.138	3	.302	4	.447	7	
1034		min	-1696.101	3	99.85	1	-266.57	2	-.193	4	-.293	3	-.013	4	
1035	3	max	1963.608	4	1001.353	6	331.718	1	.138	3	.297	4	.408	7	
1036		min	-1694.966	3	99.492	1	-265.055	2	-.193	4	-.284	3	-.018	4	
1037	4	max	1962.473	4	1000.214	6	330.203	1	.138	3	.291	4	.369	7	
1038		min	-1693.831	3	99.135	1	-263.54	2	-.193	4	-.275	3	-.023	4	
1039	5	max	1961.338	4	999.074	6	328.688	1	.138	3	.286	4	.331	7	
1040		min	-1692.696	3	98.777	1	-262.025	2	-.193	4	-.266	3	-.028	4	
1041	M105	1	max	1776.637	4	998.964	6	810.572	3	.204	3	.286	4	.33	6
1042		min	-1491.723	3	98.818	1	-869.192	4	-.19	4	-.266	3	.032	1	
1043	2	max	1774.384	4	996.537	6	806.928	3	.204	3	.214	4	.247	6	
1044		min	-1489.47	3	98.057	1	-865.548	4	-.19	4	-.199	3	.024	1	
1045	3	max	1772.131	4	994.11	6	803.284	3	.204	3	.142	4	.164	6	
1046		min	-1487.217	3	97.295	1	-861.904	4	-.19	4	-.133	3	.016	1	
1047	4	max	1769.878	4	991.683	6	799.64	3	.204	3	.071	4	.082	6	



Company : Tower Engineering Solutions, LLC
 Designer :
 Job Number : TES Project No. 110405
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9bj YcdYA Ya VYf GYVJcb: cfWVg f7 cbh7bi YXL

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC	
1048		min	-1484.964	3	96.534	1	-858.26	4	-.19	4	-.066	3	.008	1	
1049	5	max	1767.625	4	989.256	6	795.996	3	.204	3	0	11	0	11	
1050		min	-1482.71	3	95.772	1	-854.616	4	-.19	4	0	1	0	1	
1051	M106	1	max	1378.135	1	999.543	7	488.667	1	.252	1	.383	2	.471	7
1052		min	-1127.477	2	32.842	4	-550.029	2	-.197	2	-.394	1	.026	4	
1053		2	max	1377.28	1	998.404	7	486.668	1	.252	1	.362	2	.432	7
1054		min	-1126.621	2	32.485	4	-548.03	2	-.197	2	-.375	1	.025	4	
1055		3	max	1376.425	1	997.264	7	484.668	1	.252	1	.341	2	.395	6
1056		min	-1125.766	2	32.127	4	-546.03	2	-.197	2	-.356	1	.016	1	
1057		4	max	1375.569	1	996.125	7	482.669	1	.252	1	.32	2	.358	6
1058		min	-1124.911	2	31.769	4	-544.031	2	-.197	2	-.337	1	.005	1	
1059		5	max	1374.714	1	994.985	7	480.669	1	.252	1	.298	2	.322	6
1060		min	-1124.056	2	31.412	4	-542.031	2	-.197	2	-.318	1	-.005	1	
1061	M107	1	max	1106.934	1	994.979	7	965.027	1	.236	1	.298	2	.33	7
1062		min	-845.744	2	31.141	4	-904.917	2	-.251	2	-.318	1	.01	4	
1063		2	max	1106.782	1	992.539	7	959.965	1	.236	1	.223	2	.247	7
1064		min	-845.592	2	30.375	4	-899.855	2	-.251	2	-.238	1	.007	4	
1065		3	max	1106.63	1	990.098	7	954.904	1	.236	1	.148	2	.165	7
1066		min	-845.441	2	29.609	4	-894.793	2	-.251	2	-.158	1	.005	4	
1067		4	max	1106.478	1	987.657	7	949.842	1	.236	1	.074	2	.082	7
1068		min	-845.289	2	28.843	4	-889.732	2	-.251	2	-.079	1	.002	4	
1069		5	max	1106.327	1	985.216	7	944.781	1	.236	1	0	11	0	11
1070		min	-845.137	2	28.077	4	-884.67	2	-.251	2	0	1	0	1	
1071	M108	1	max	979.537	2	116.819	7	34.685	2	0	5	-.005	4	.148	7
1072		min	-1334.739	1	19.987	4	-46.022	1	0	2	-.075	6	-.027	4	
1073		2	max	979.491	2	88.557	7	13.368	2	0	5	.012	4	.061	3
1074		min	-1334.693	1	11.092	4	-25.081	5	0	2	-.018	3	-.035	4	
1075		3	max	979.446	2	43.135	7	6.3	4	0	5	.026	6	.018	3
1076		min	-1334.648	1	-5.43	4	-21.197	7	0	2	-.001	3	-.032	4	
1077		4	max	979.4	2	9.217	3	17.929	1	0	5	.019	5	-.005	10
1078		min	-1334.602	1	-26.48	4	-29.266	2	0	2	0	2	-.041	5	
1079		5	max	979.355	2	-3.909	3	39.246	1	0	5	.027	1	.014	4
1080		min	-1334.557	1	-59.187	8	-50.582	2	0	2	-.047	2	-.03	6	
1081	M109	1	max	1586.464	3	16.424	3	111.89	6	0	3	-.009	1	.03	1
1082		min	-1953.767	4	-24.889	4	18.755	1	0	8	-.07	7	-.125	6	
1083		2	max	1577.209	3	10.917	1	83.44	6	0	3	.012	1	.03	1
1084		min	-1944.512	4	-19.179	2	9.776	1	0	8	-.015	2	-.047	2	
1085		3	max	1567.953	3	6.986	4	37.307	6	0	3	.03	5	.031	8
1086		min	-1935.257	4	-16.796	7	-7.063	1	0	8	.001	2	-.008	3	
1087		4	max	1558.698	3	22.923	4	4.359	2	0	3	.021	8	.038	8
1088		min	-1926.002	4	-31.388	3	-34.205	5	0	8	-.007	3	.01	3	
1089		5	max	1549.443	3	38.86	4	-9.932	2	0	3	.025	4	.023	3
1090		min	-1916.746	4	-47.325	3	-74.608	5	0	8	-.052	3	-.026	4	
1091	M110	1	max	943.09	2	896.12	7	130.463	2	.288	4	.023	1	.287	7
1092		min	-871.583	1	-352.895	4	-73.156	1	-.347	3	-.042	2	-.114	4	
1093		2	max	941.73	2	893.495	7	130.051	2	.288	4	.017	1	.215	7
1094		min	-870.223	1	-353.883	4	-72.744	1	-.347	3	-.031	2	-.086	4	
1095		3	max	940.371	2	890.87	7	129.639	2	.288	4	.012	1	.143	7
1096		min	-868.864	1	-354.87	4	-72.332	1	-.347	3	-.021	2	-.057	4	
1097		4	max	939.011	2	888.245	7	129.226	2	.288	4	.006	1	.071	7
1098		min	-867.504	1	-355.857	4	-71.92	1	-.347	3	-.01	2	-.029	4	
1099		5	max	937.652	2	885.621	7	128.814	2	.288	4	0	11	0	11



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9bj YcdYA Ya Vyf GYVjcb : cfWVg fT cbhji YXL

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC	
1100		min	-866.144	1	-356.844	4	-71.508	1	-.347	3	0	1	0	1	
1101	M111	1	max	1045.227	3	778.653	10	120.086	1	.399	2	.055	2	.249	10
1102		min	-970.65	4	-251.781	1	-163.368	2	-.345	1	-.041	1	-.081	1	
1103		2	max	1044.144	3	777.672	10	124.7	1	.399	2	.042	2	.187	10
1104		min	-969.567	4	-252.763	1	-167.982	2	-.345	1	-.032	1	-.061	1	
1105		3	max	1043.06	3	776.69	10	129.315	1	.399	2	.028	2	.124	10
1106		min	-968.483	4	-253.745	1	-172.597	2	-.345	1	-.021	1	-.041	1	
1107		4	max	1041.977	3	775.709	10	133.929	1	.399	2	.014	2	.062	10
1108		min	-967.4	4	-254.726	1	-177.212	2	-.345	1	-.011	1	-.02	1	
1109		5	max	1040.893	3	774.727	10	138.544	1	.399	2	0	11	0	11
1110		min	-966.316	4	-255.708	1	-181.826	2	-.345	1	0	1	0	1	
1111	M112	1	max	223.096	2	-99.73	1	1968.018	4	.031	4	.302	3	.104	3
1112		min	-318.677	1	-1002.559	6	-1712.834	3	-.476	7	-.308	4	-.191	4	
1113		2	max	898.89	4	-154.075	1	345.134	4	-.075	3	.532	4	.544	7
1114		min	-855.347	3	-1092.095	6	-411.642	3	-.558	8	-.434	3	-.269	4	
1115		3	max	910.199	4	-162.946	1	364.721	4	-.075	3	.76	4	1.252	7
1116		min	-866.656	3	-1115.823	6	-431.229	3	-.558	8	-.706	3	-.158	4	
1117		4	max	921.508	4	-171.817	1	384.309	4	-.075	3	1.002	4	1.975	7
1118		min	-877.965	3	-1139.551	6	-450.817	3	-.558	8	-.99	3	-.041	4	
1119		5	max	932.816	4	-180.689	1	403.896	4	-.075	3	1.256	4	2.714	7
1120		min	-889.273	3	-1163.279	6	-470.404	3	-.558	8	-1.287	3	.081	4	
1121	M113	1	max	1056.67	1	1144.415	7	387.568	2	.524	5	.813	1	2.629	7
1122		min	-995.537	2	107.189	4	-314.438	1	.127	2	-.865	2	.173	4	
1123		2	max	1045.35	1	1120.663	7	381.032	2	.524	5	.612	1	1.898	7
1124		min	-984.217	2	98.309	4	-307.903	1	.127	2	-.617	2	.107	4	
1125		3	max	1034.03	1	1096.911	7	374.496	2	.524	5	.415	1	1.198	6
1126		min	-972.897	2	89.429	4	-301.367	1	.127	2	-.374	2	-.008	1	
1127		4	max	1022.71	1	1073.16	7	367.961	2	.524	5	.223	1	.532	6
1128		min	-961.576	2	80.548	4	-294.831	1	.127	2	-.134	2	-.195	1	
1129		5	max	312.747	1	998.916	7	1185.426	2	.461	6	.383	2	.168	2
1130		min	-418.329	2	32.475	4	-1425.813	1	.006	1	-.394	1	-.254	1	
1131	M114	1	max	74.097	5	931.836	4	1365.091	3	.036	4	.293	4	.162	4
1132		min	10.136	2	-734.762	3	-1675.436	4	-.053	3	-.221	3	-.118	3	
1133		2	max	74.097	5	931.836	4	1365.091	3	.036	4	.22	4	.122	4
1134		min	10.136	2	-734.762	3	-1675.436	4	-.053	3	-.161	3	-.086	3	
1135		3	max	74.097	5	931.836	4	1365.091	3	.036	4	.147	4	.081	4
1136		min	10.136	2	-734.762	3	-1675.436	4	-.053	3	-.102	3	-.054	3	
1137		4	max	74.097	5	931.836	4	1365.091	3	.036	4	.073	4	.04	4
1138		min	10.136	2	-734.762	3	-1675.436	4	-.053	3	-.042	3	-.022	3	
1139		5	max	74.097	5	931.836	4	1365.091	3	.036	4	.026	1	.015	1
1140		min	10.136	2	-734.762	3	-1675.436	4	-.053	3	-.007	2	-.005	2	
1141	M115	1	max	58.777	8	1334.655	1	36.191	1	.047	6	.009	2	.221	1
1142		min	3.632	3	-979.481	2	-48.8	2	-.026	1	-.007	1	-.151	2	
1143		2	max	58.777	8	1334.655	1	36.191	1	.047	6	.007	2	.162	1
1144		min	3.632	3	-979.481	2	-48.8	2	-.026	1	-.005	1	-.108	2	
1145		3	max	58.777	8	1334.655	1	36.191	1	.047	6	.004	2	.104	1
1146		min	3.632	3	-979.481	2	-48.8	2	-.026	1	-.004	1	-.065	2	
1147		4	max	58.777	8	1334.655	1	36.191	1	.047	6	.002	2	.046	1
1148		min	3.632	3	-979.481	2	-48.8	2	-.026	1	-.002	1	-.023	3	
1149		5	max	58.777	8	1334.655	1	36.191	1	.047	6	0	2	.02	2
1150		min	3.632	3	-979.481	2	-48.8	2	-.026	1	0	5	-.012	1	
1151	M116	1	max	219.272	7	1658.91	4	1349.005	3	.166	1	.314	4	.395	5



9bj YcdYA Ya VYf GYWJcb: cfWwg fT cbhpi YXL

Member	Sec	Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
1152		min 32.468	4	-1151.735	3	-1669.64	4	-.157	2	-.186	3	-.062	3
1153	2	max 219.272	7	1658.91	4	1349.005	3	.166	1	.241	4	.346	5
1154		min 32.468	4	-1151.735	3	-1669.64	4	-.157	2	-.127	3	-.022	2
1155	3	max 219.272	7	1658.91	4	1349.005	3	.166	1	.178	8	.297	5
1156		min 32.468	4	-1151.735	3	-1669.64	4	-.157	2	-.068	3	.013	2
1157	4	max 219.272	7	1658.91	4	1349.005	3	.166	1	.14	6	.248	5
1158		min 32.468	4	-1151.735	3	-1669.64	4	-.157	2	-.009	3	.048	2
1159	5	max 219.272	7	1658.91	4	1349.005	3	.166	1	.118	6	.222	7
1160		min 32.468	4	-1151.735	3	-1669.64	4	-.157	2	-.012	1	-.004	4
1161	M117	1 max 458.077	2	-20.024	4	866.652	2	.014	4	.023	4	.079	7
1162		min -624.795	1	-117.093	7	-1180.177	1	-.137	7	-.052	5	-.008	4
1163	2	max 458.077	2	-20.074	4	866.652	2	.014	4	.05	2	.084	7
1164		min -624.795	1	-117.206	7	-1180.177	1	-.137	7	-.089	1	-.007	4
1165	3	max 777.935	3	112.314	6	1706.812	4	.083	2	.104	3	.089	7
1166		min -948.149	4	-117.318	7	-1384.053	3	-.137	7	-.149	4	.017	4
1167	4	max 777.935	3	112.202	6	1706.812	4	.118	6	.046	3	.073	6
1168		min -948.149	4	18.722	1	-1384.053	3	-.012	1	-.078	4	-.006	1
1169	5	max 777.935	3	112.089	6	1706.812	4	.118	6	.028	1	.068	6
1170		min -948.149	4	18.672	1	-1384.053	3	-.012	1	-.046	2	-.007	1

9bj YcdY5-G7 % h fl * \$!% L @F: 8 GhY 7 cXY7\ YWg

Member	Shape	Code Check	Loc[ft]	LC	Shear ...Loc[ft]	Dir	LC	phi*Pnc ...	phi*Pnt [...]	phi*Mn y...	phi*Mn z...	Cb	Eqn
1	M88	PL3/8x6	.893	0	1	.540	0	y 1	72418.6...	72900	.57	9.113	1...H1-1b
2	M5	PL3/8x6	.866	0	3	.522	0	y 3	72418.6...	72900	.57	9.113	1...H1-1b
3	M7	PL3/8x6	.791	0	4	.590	0	y 4	72418.6...	72900	.57	9.113	1...H1-1b
4	M89	PL3/8x6	.738	0	1	.539	0	y 2	69656.14	72900	.57	9.113	1...H1-1b
5	M106	PL3/8x6	.706	0	2	.585	0	y 1	72418.6...	72900	.57	9.113	1...H1-1b
6	M6	PL3/8x6	.665	0	3	.477	0	y 4	69656.14	72900	.57	9.113	1...H1-1b
7	M24	PIPE 2.0	.622	11.328	1	.339	.781	3	6295.422	32130	1.872	1.872	3...H3-6
8	M22	PIPE 2.0	.600	4.557	2	.329	1.302	2	6295.422	32130	1.872	1.872	3...H3-6
9	M8	PL3/8x6	.592	0	4	.547	0	y 3	69619.5...	72900	.57	9.113	1...H1-1b
10	M107	PL3/8x6	.577	0	1	.585	0	y 2	69619.5...	72900	.57	9.113	1...H1-1b
11	M104	PL3/8x6	.571	0	3	.446	0	y 4	72418.6...	72900	.57	9.113	1...H1-1b
12	M23	PIPE 2.0	.559	4.557	3	.328	11.328	3	6295.422	32130	1.872	1.872	3...H3-6
13	M69	L2.5x2.5x4	.532	1.383	3	.108	1.383	y 2	37553.0...	38556	1.114	2.537	1...H2-1
14	M105	PL3/8x6	.519	0	4	.480	0	y 3	69656.14	72900	.57	9.113	1...H1-1b
15	M68	L2.5x2.5x4	.507	1.383	2	.128	1.383	z 2	37553.0...	38556	1.114	2.537	1...H2-1
16	M90	PL3/8x6	.430	0	4	.450	0	y 3	72418.6...	72900	.57	9.113	1...H1-1b
17	MP3A	PIPE 2.5	.416	5.75	1	.118	2.25	2	30038.4...	50715	3.596	3.596	3...H1-1b
18	MP3B	PIPE 2.5	.414	5.75	3	.118	5.75	1	30038.4...	50715	3.596	3.596	1...H1-1b
19	M91	PL3/8x6	.393	0	3	.484	0	y 4	69619.5...	72900	.57	9.113	1...H1-1b
20	MP3C	PIPE 2.5	.382	5.75	4	.136	2.25	3	30038.4...	50715	3.596	3.596	1...H1-1b
21	MP2B	PIPE 2.5	.368	5.75	2	.170	5.75	4	30038.4...	50715	3.596	3.596	3...H1-1b
22	MP2A	PIPE 2.5	.366	5.75	3	.156	5.75	2	30038.4...	50715	3.596	3.596	3...H1-1b
23	MP2C	PIPE 2.5	.354	5.75	4	.130	5.75	1	30038.4...	50715	3.596	3.596	2...H1-1b
24	M25	L2.5x2.5x4	.335	1.383	1	.143	1.383	y 3	37553.0...	38556	1.114	2.537	1...H2-1
25	MP4B	PIPE 2.5	.292	5.75	1	.214	5.75	4	30038.4...	50715	3.596	3.596	3...H1-1b
26	MP4A	PIPE 2.5	.289	5.75	4	.237	2.25	2	30038.4...	50715	3.596	3.596	4...H1-1b
27	M92	L2x2x3	.276	0	6	.022	0	y 6	16076.33	23392.8	.558	1.239	2...H2-1
28	M108	L2x2x3	.270	0	7	.022	0	y 5	16076.33	23392.8	.558	1.239	2...H2-1



Company : Tower Engineering Solutions, LLC
 Designer :
 Job Number : TES Project No. 110405
 Model Name :

July 8, 2021
 9:09 AM
 Checked By: _____

9bj YcdY5=G7 %h fl * \$!%L @F : 8 GhY 7cXY7\ YWg f7 cbhjbi YXL

Member	Shape	Code Check	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc ...	phi*Pnt [...]	phi*Mn y...	phi*Mn z...	Cb	Eqn	
29	MP1A	PIPE 2.5	.260	5.75	3	.199	2.25	2	30038.4...	50715	3.596	3.596	4...	H1-1b	
30	MP1C	PIPE 2.5	.259	5.75	1	.196	5.75	3	30038.4...	50715	3.596	3.596	3...	H1-1b	
31	M9	L2x2x3	.257	0	8	.021	0	y	8	16076.33	23392.8	.558	1.239	2...	H2-1
32	MP4C	PIPE 2.5	.250	5.75	2	.212	5.75	3	30038.4...	50715	3.596	3.596	3...	H1-1b	
33	M109	L2x2x3	.249	0	6	.019	0	z	6	16079.0...	23392.8	.558	1.239	2...	H2-1
34	M93	L2x2x3	.247	0	5	.019	0	z	5	16079.0...	23392.8	.558	1.231	2...	H2-1
35	M13	HSS4X4X4	.243	5.532	4	.122	5.532	z	4	79314.1...	139518	16.181	16.181	2...	H1-1b
36	M4	PL1/2x6	.239	0	1	.300	.375	y	4	95121.1...	97200	1.012	12.15	1...	H1-1b
37	M103	PL1/2x6	.235	0	3	.237	.376	y	1	95107.0...	97200	1.012	12.15	1...	H1-1b
38	M10	L2x2x3	.233	0	7	.018	0	z	7	16079.0...	23392.8	.558	1.237	2...	H2-1
39	MP1B	PIPE 2.5	.233	5.75	2	.165	2.25	4	30038.4...	50715	3.596	3.596	3...	H1-1b	
40	M86	PL1/2x6	.227	0	4	.256	0	y	9	95121.1...	97200	1.012	12.15	1...	H1-1b
41	M3	PL1/2x6	.222	0	1	.295	.375	y	3	95121.1...	97200	1.012	12.15	1...	H1-1b
42	M102	PL1/2x6	.221	0	1	.252	0	y	2	95135.1...	97200	1.012	12.15	1...	H1-1b
43	M87	PL1/2x6	.217	0	1	.257	0	y	2	95121.08	97200	1.012	12.15	1...	H1-1b
44	M112	HSS4X4X4	.191	2.579	7	.070	2.579	y	6	135688...	139518	16.181	16.181	1...	H1-1b
45	M97	HSS4X4X4	.187	0	8	.067	0	y	6	135684...	139518	16.181	16.181	1...	H1-1b
46	M14	HSS4X4X4	.184	2.58	5	.070	2.58	y	7	135684...	139518	16.181	16.181	1...	H1-1b
47	M96	HSS4X4X4	.183	2.58	6	.070	2.58	y	5	135684...	139518	16.181	16.181	1...	H1-1b
48	M15	HSS4X4X4	.180	0	5	.066	0	y	8	135684...	139518	16.181	16.181	1...	H1-1b
49	M113	HSS4X4X4	.180	0	6	.067	0	y	7	135681...	139518	16.181	16.181	1...	H1-1b
50	M1	HSS4X4X4	.173	5.53	1	.105	5.53	z	2	79340.8...	139518	16.181	16.181	1...	H1-1b
51	M16	PIPE 3.0	.161	4.687	4	.147	4.427	3	28250.5...	65205	5.749	5.749	3...	H1-1b	
52	M17	PIPE 3.0	.142	7.812	4	.175	8.073	4	28250.5...	65205	5.749	5.749	2...	H1-1b	
53	M2	HSS4X4X4	.134	5.532	6	.084	5.532	z	1	79314.1...	139518	16.181	16.181	2...	H1-1b
54	M18	PIPE 3.0	.133	4.687	2	.180	8.073	2	28250.5...	65205	5.749	5.749	3...	H1-1b	
55	M20	LL2.5x2.5x3...	.131	0	5	.006	0	z	4	44189.5...	58320	3.954	2.55	1	H1-1b*
56	M21	LL2.5x2.5x3...	.131	0	7	.006	4.664	z	1	44189.7...	58320	3.954	2.55	1...	H1-1b*
57	M19	LL2.5x2.5x3...	.131	0	8	.006	4.662	z	2	44201.5...	58320	3.954	2.55	1...	H1-1b*
58	M95	PL1/2x6	.073	0	4	.420	0	y	4	94902.3...	97200	1.012	12.15	1...	H1-1b
59	M94	PL1/2x6	.073	0	4	.563	0	y	2	94875.8...	97200	1.012	12.15	1...	H1-1b
60	M111	PL1/2x6	.071	0	2	.534	0	y	2	94902.3...	97200	1.012	12.15	1...	H1-1b
61	M11	PL1/2x6	.067	0	1	.523	0	y	4	94875.8...	97200	1.012	12.15	1...	H1-1b
62	M110	PL1/2x6	.062	0	6	.473	0	y	3	94875.8...	97200	1.012	12.15	1...	H1-1b
63	M12	PL1/2x6	.061	0	1	.550	0	y	3	94902.3...	97200	1.012	12.15	1...	H1-1b

EXHIBIT 10

Construction Drawings

CTNL162B

229-231 ASHFORD CENTER ROAD
ASHFORD, CT 06278
WINDHAM COUNTY

SITE NO.: CTNL162B

RF DESIGN GUIDELINE: 67E5A998E 6160

SCOPE OF WORK

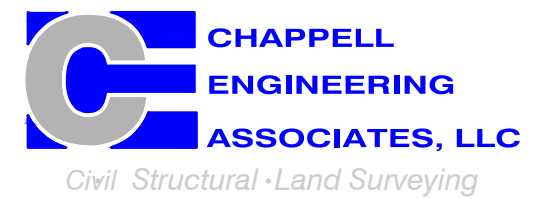
- INSTALL:
- 9 ANTENNAS
 - 6 RRU's
 - 1 B160 BATTERY CABINET
 - 1 6160 CABINET
 - 1 PPC CABINET
 - 1 PURCELL CABINET
 - 1 GPS ANTENNA
 - 3 HYBRID CABLES
 - 1 LOW-PROFILE MOUNT
 - 1 10'x15' CONCRETE PAD
 - 1 8'x10' ICE CANOPY
 - 1 ICE BRIDGE
 - 1 GENERATOR
 - 1 ATS

T-MOBILE NORTHEAST LLC

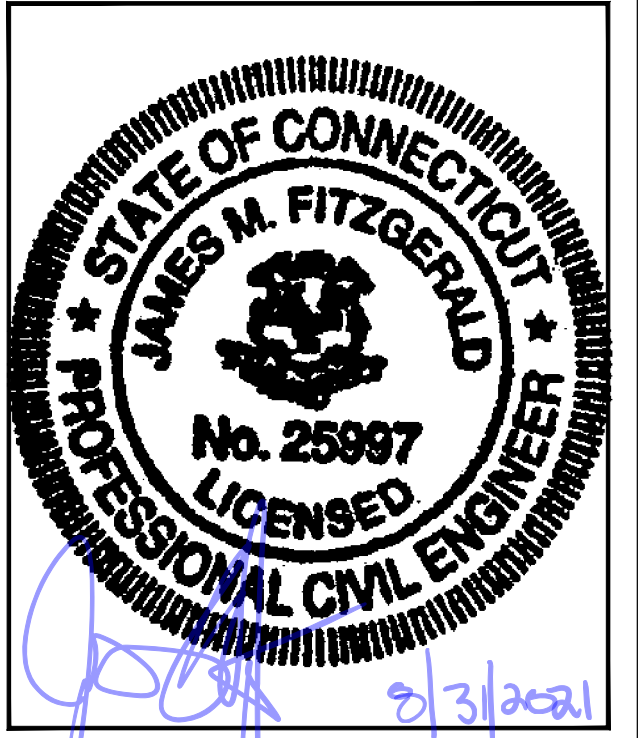
15 COMMERCE WAY, SUITE B
NORTON, MA 02766
(508) 286-2700



SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE 125
WESTBOROUGH, MA 01581
(508) 251-0720



R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com



CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
1	08/31/21	ISSUED FOR CONSTRUCTION	JRV
0	08/11/21	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CTNL162B

SITE ADDRESS:
229-231 ASHFORD CENTER ROAD
ASHFORD, CT 06278

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

APPROVALS			
PROJECT MANAGER:	DATE:	ZONING/SITE ACQ.:	DATE:
CONSTRUCTION:	DATE:	OPERATIONS:	DATE:
RF ENGINEERING:	DATE:	TOWER OWNER:	DATE:

T-MOBILE TECHNICIAN SITE SAFETY NOTES	
LOCATION	SPECIAL RESTRICTIONS
SECTOR A:	ACCESS BY CERTIFIED CLIMBER
SECTOR B:	ACCESS BY CERTIFIED CLIMBER
SECTOR C:	ACCESS BY CERTIFIED CLIMBER
GPS/LMU:	UNRESTRICTED
RADIO CABINETS:	UNRESTRICTED
PPC DISCONNECT:	UNRESTRICTED
MAIN CIRCUIT D/C:	UNRESTRICTED
NIU/T DEMARC:	UNRESTRICTED
OTHER/SPECIAL:	NONE

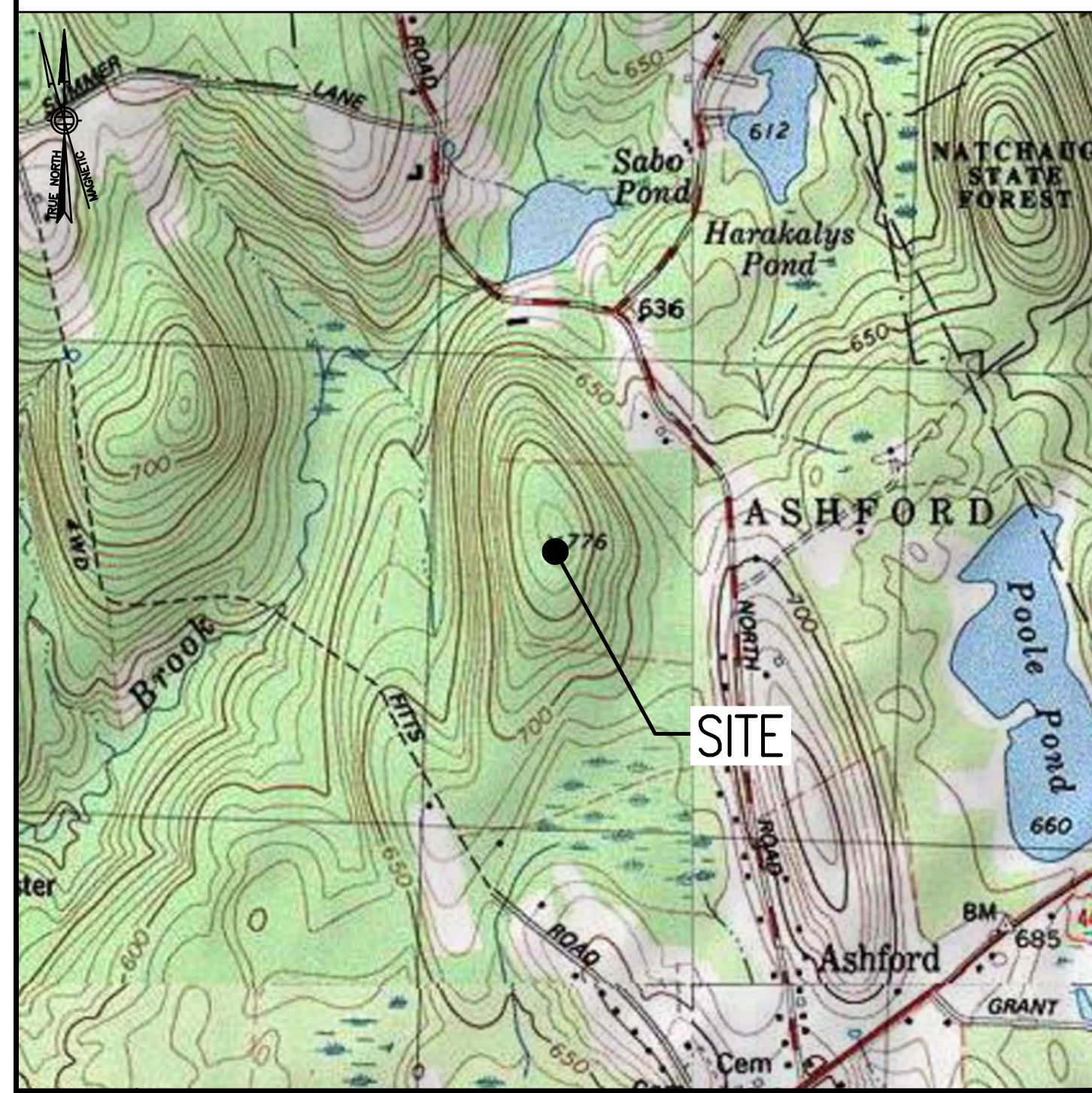
GENERAL NOTES

- THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.
- THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
- THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE ONPOINT REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
- THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.
- THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
- THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
- THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY CONSTRUCTION CONTROL SURVEYS, ESTABLISHING AND MAINTAINING ALL LINES AND GRADES REQUIRED TO CONSTRUCT ALL IMPROVEMENTS AS SHOWN HEREIN.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.
- THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
- THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
- THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
- THE CONTRACTOR SHALL NOTIFY THE PROJECT OWNER'S REPRESENTATIVE WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE LESSEE/LICENSEE REPRESENTATIVE.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.
- ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED FROM SURFACE INVESTIGATIONS AND EXISTING PLANS OF RECORD. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY SITE WORK.

AT LEAST 72 HOURS PRIOR TO DIGGING, THE CONTRACTOR IS REQUIRED TO CALL DIG SAFE AT 811



VICINITY MAP



DIRECTIONS

TURN LEFT ONTO S WASHINGTON ST. TURN RIGHT ONTO MA-123 E. TURN LEFT TO MERGE ONTO I-495 NORTH TOWARD MANSFIELD/MARLBORO. MERGE ONTO I-495 NORTH. TAKE EXIT 33B TO MERGE ONTO I-95 SOUTH TOWARD PROVIDENCE RI. TAKE EXIT 6 FOR I-295 SOUTH TOWARD WOONSOCKET. TAKE EXIT 9C-A FOR US-6 WEST TOWARD HARTFORD CT. KEEP RIGHT AT THE FORK FOLLOW SIGNS FOR JOHNSTON. MERGE ONTO US-6 WEST. CONTINUE STRAIGHT ONTO RI-101 WEST/HARTFORD PIKE. CONTINUE ONTO US-44 WEST. TURN RIGHT ONTO FITTS ROAD. SITE WILL BE ON THE RIGHT.

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DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE PROJECT OWNER'S REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

PROJECT SUMMARY

SITE NUMBER:	CTNL162B
SBA SITE NUMBER:	CT13611-A
SBA SITE NAME:	BSA
SITE ADDRESS:	229-231 ASHFORD CENTER ROAD ASHFORD, CT 06278
PROPERTY OWNER:	CONNECTICUT RIVERS COUNCIL INC. BSA 60 DARLIN STREET EAST HARTFORD, CT 06108
TOWER OWNER:	SBA TOWERS V, LLC 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561-226-9523 WINDHAM COUNTY
COUNTY:	RESIDENTIAL/AGRICULTURAL
ZONING DISTRICT:	MONOPOLE
STRUCTURE TYPE:	176'
STRUCTURE HEIGHT:	T-MOBILE NORTHEAST LLC 15 COMMERCE WAY, SUITE B NORTON, MA 02766
APPLICANT:	STEPHEN ROTH PHONE: 860-539-4920 EMAIL: SRoth@sbsite.com
SBA RSM:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 200 BOSTON POST ROAD WEST, SUITE 000 MARLBOROUGH, MA 00752
ARCHITECT:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 200 BOSTON POST ROAD WEST, SUITE 000 MARLBOROUGH, MA 00752
STRUCTURAL ENGINEER:	LATITUDE: N.41.880444° N.41°52'49.60" LONGITUDE: W.72.128499° W.72°07'42.60"
SITE CONTROL POINT:	

SPECIAL ZONING NOTE:

BASED ON INFORMATION PROVIDED BY T-MOBILE REGULATORY COMPLIANCE PROFESSIONALS AND LEGAL COUNSEL, THIS TELECOMMUNICATIONS EQUIPMENT DEPLOYMENT IS CONSIDERED AN ELIGIBLE FACILITY UNDER THE MIDDLE CLASS TAX RELIEF AND JOB CREATION ACT OF 2012, 47 USC 1455(A), SECTION 6409(A), AND IS SUBJECT TO AN ELIGIBLE FACILITY REQUEST, EXPEDITED REVIEW, AND LIMITED/PARTIAL ZONING PRE-EMPTION FOR LOCAL DISCRETIONARY PERMITS (VARIANCE, SPECIAL PERMIT, SITE PLAN REVIEW, OR ADMINISTRATIVE REVIEW).

GENERAL NOTES:

- FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR – T-MOBILE
SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
OWNER – T-MOBILE
OEM – ORIGINAL EQUIPMENT MANUFACTURER
- PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR 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 CONTRACTOR.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR 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, STATE AND FEDERAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
- DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.
- SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER, T1 CABLES AND GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR AND/OR LANDLORD PRIOR TO CONSTRUCTION.
- THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
- SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY.
- SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION AND RETURN DISTURBED AREAS TO ORIGINAL CONDITIONS.
- THE SUBCONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
- SUBCONTRACTOR SHALL NOTIFY CHAPPELL ENGINEERING ASSOCIATES, LLC 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING TRENCHES, SEALING ROOF AND WALL PENETRATIONS AND POST DOWNS, FINISHING NEW WALLS OR FINAL ELECTRICAL CONNECTIONS FOR ENGINEERING REVIEW.
- CONSTRUCTION SHALL COMPLY WITH ALL T-MOBILE STANDARDS AND SPECIFICATIONS.
- SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
- THE EXISTING CELL SITES ARE IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
- IF THE EXISTING CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

SITE WORK GENERAL NOTES:

- THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
- ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR 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.
- ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
- IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
- THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
- 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.
- THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
- 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 ENGINEERING, OWNER AND/OR LOCAL UTILITIES.
- 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 IN THE PROJECT SPECIFICATIONS.
- SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
- THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE T-MOBILE SPECIFICATION FOR SITE SIGNAGE.

CONCRETE AND REINFORCING STEEL NOTES:

- 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.
- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (400PSI) MAY BE USED. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 381 CODE REQUIREMENTS
- REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.
- THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
CONCRETE CAST AGAINST EARTH.....3 IN.
CONCRETE EXPOSED TO EARTH OR WEATHER:
#6 AND LARGER2 IN.
#5 AND SMALLER & WWF1½ IN.
CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
SLAB AND WALL¾ IN.
BEAMS AND COLUMNS½ IN.
- A CHAMFER ¼" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
- INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHORS SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO THE MANUFACTURERS RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY SIMPSON OR APPROVED EQUAL.
- CONCRETE CYLINDER TIES ARE NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER;
(A) RESULTS OF CONCRETE CYLINDER TEST PERFORMED AT THE SUPPLIER'S PLANT.
(B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.
FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.
- AS AN ALTERNATIVE TO ITEM 7. TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.
- EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY CYLINDER TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

STRUCTURAL STEEL NOTES:

- ALL STEEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS AND T-MOBILE SPECIFICATIONS UNLESS OTHERWISE NOTED. STRUCTURAL STEEL SHALL BE ASTM-A-36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".
- ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 9TH EDITION. PAINTED SURFACES SHALL BE TOUCHED UP.
- BOLTED CONNECTIONS SHALL USE BEARING TYPE ASTM A325 BOLTS (¾") AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE. ALL BOLTS SHALL BE GALVANIZED OR STAINLESS STEEL.
- NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE ¾" DIA. ASTM A 307 BOLTS (GALV) UNLESS NOTED OTHERWISE.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL.
- ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

- EXCAVATE AS REQUIRED TO REMOVE VEGETATION AND TOPSOIL TO EXPOSE NATURAL SUBGRADE AND PLACE CRUSHED STONE AS REQUIRED.
- COMPACTION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.
- AS AN ALTERNATE TO INSPECTION AND WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH "COMPACTION EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557 METHOD C.
- COMPACTED SUBBASE SHALL BE UNIFORM AND LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN 3" LIFTS ABOVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING #1 SIEVE.
- AS AN ALTERNATE TO ITEMS 2 AND 3, THE SUBGRADE SOILS WITH 5 PASSES OR A MEDIUM SIZED VIBRATORY PLATE COMPACTOR (SUCH AS BOMAG BPR 30/38) OR HAND-OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E). AND SOFT AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED AND REPLACED WITH A WELL-GRADED GRANULAR FILL AND COMPACTED AS STATED ABOVE.

COMPACTION EQUIPMENT:

- HAND OPERATED DOUBLE DRUM, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

CONSTRUCTION NOTES:

- FIELD VERIFICATION:
SUBCONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, T-MOBILE ANTENNA PLATFORM LOCATION AND UTILITY TRENCHWORK.
- COORDINATION OF WORK:
SUBCONTRACTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH CONTRACTOR.
- CABLE LADDER RACK:
SUBCONTRACTOR SHALL FURNISH AND INSTALL CABLE LADDER RACK, CABLE TRAY AND/OR ICE BRIDGE, AND CONDUIT AS REQUIRED TO SUPPORT CABLES TO THE NEW BTS LOCATION.

ELECTRICAL INSTALLATION NOTES:

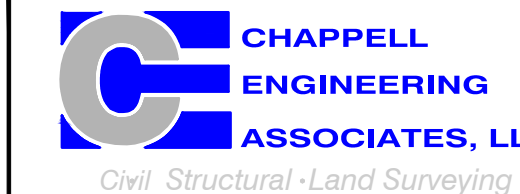
- WIRING, RACEWAY, AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.
- SUBCONTRACTOR SHALL MODIFY OR INSTALL CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLEING TO THE NEW BTS EQUIPMENT. SUBCONTRACTOR SHALL SUBMIT MODIFICATIONS TO CONTRACTOR FOR APPROVAL.
- ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.
- CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
- EACH END OF EVERY POWER, GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA, AND MATCH INSTALLATION REQUIREMENTS.
- POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, ½ INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC AND OSHA.
- ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S).
- PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.
- ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
- POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#34 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.
- POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#34 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.
- ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY HARGER (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).
- RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANS/IEEE AND NEC.
- NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
- ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
- ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
- GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.
- RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.
- LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.
- CABINETS, BOXES AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANS/IEEE AND NEC.
- CABINETS, BOXES AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
- WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
- EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
- 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 RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
- NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
- THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
- THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.
- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.
- CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.

**T-MOBILE
NORTHEAST LLC**

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SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-1

SPECIAL PRE-CONSTRUCTION WORK NOTE (SBA-PROVIDED TOWER STRUCTURAL ANALYSIS SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
 GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY SPECIAL SHIELDING OF TOWER TOP EQUIPMENT AND FOR ANY SPECIAL FEEDLINE BUNDLING OR RELOCATION.

SPECIAL CONSTRUCTION NOTE:
 GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ANTENNA MOUNT STRUCTURAL AUGMENTS (STRUCTURAL MODIFICATIONS) AT T-MOBILE'S RAD/VERTICAL EQUIPMENT SPACE PER RECOMMENDATIONS FROM SBA-PROVIDED ANTENNA MOUNT STRUCTURAL ANALYSIS AND ANY SUPPLEMENTAL CONSTRUCTION DRAWINGS (PROVIDED BY OTHERS).

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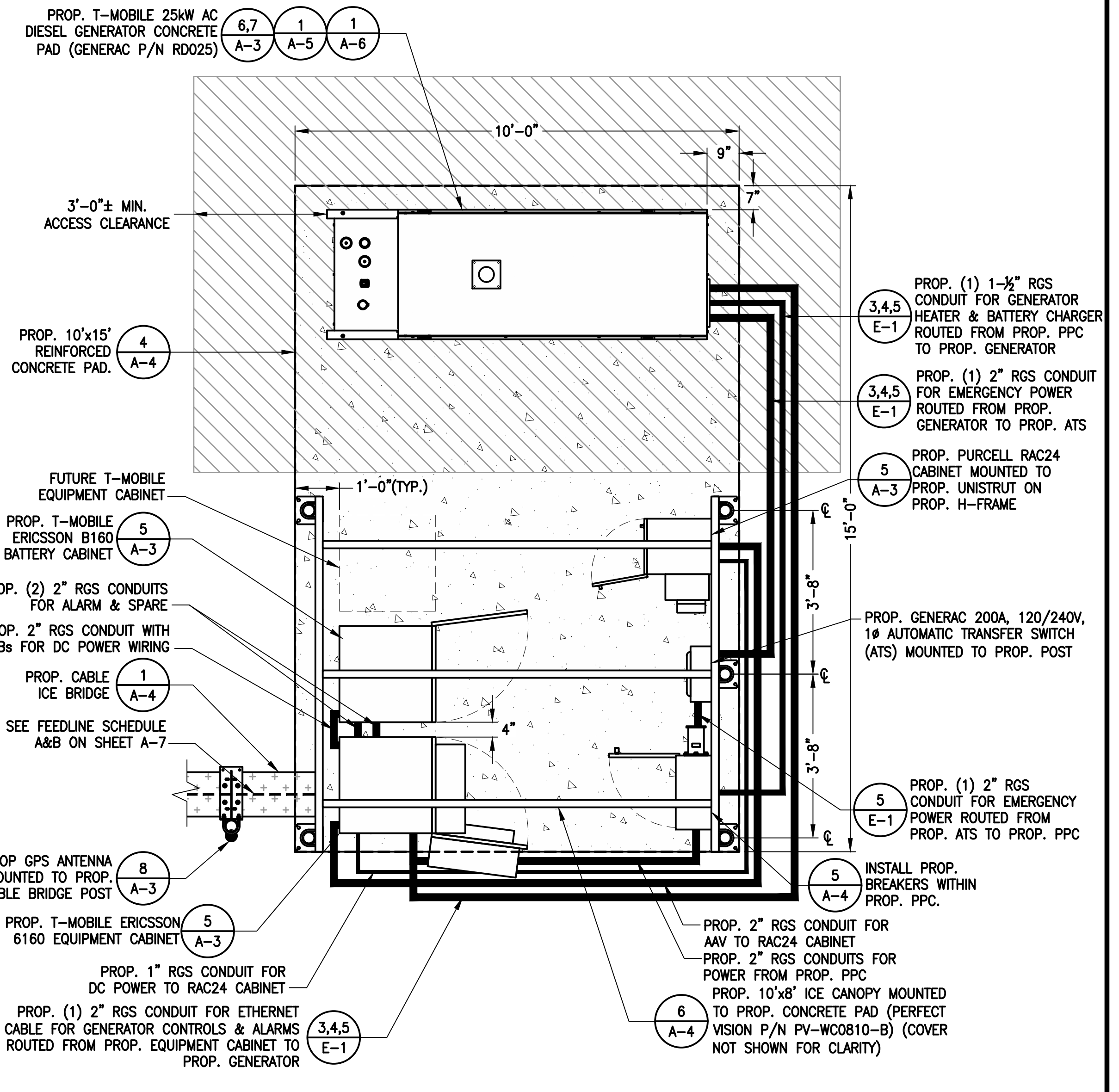
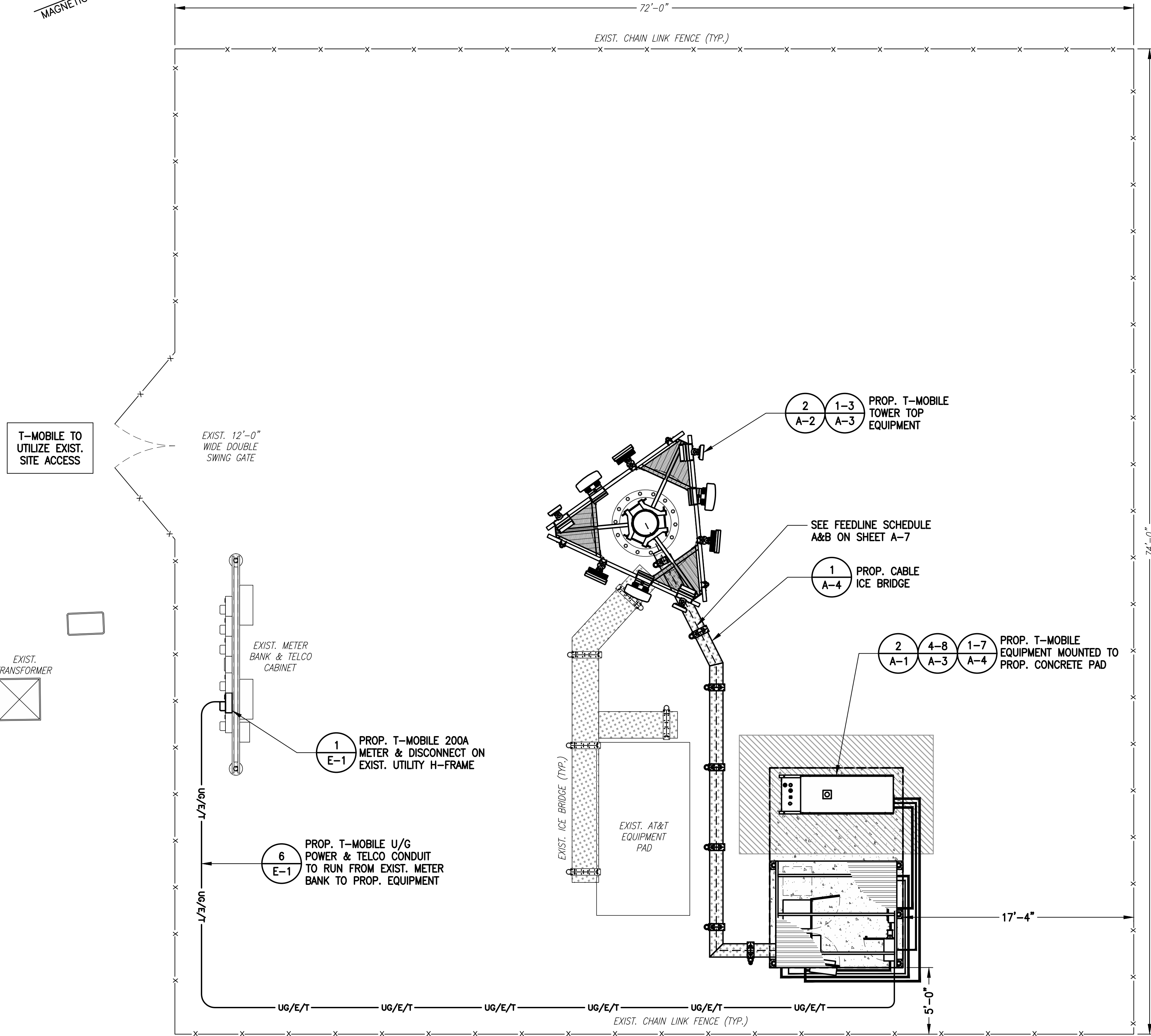
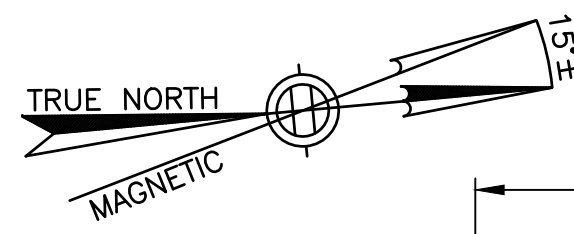
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SHEET TITLE
**COMPOUND &
 EQUIPMENT PLAN**

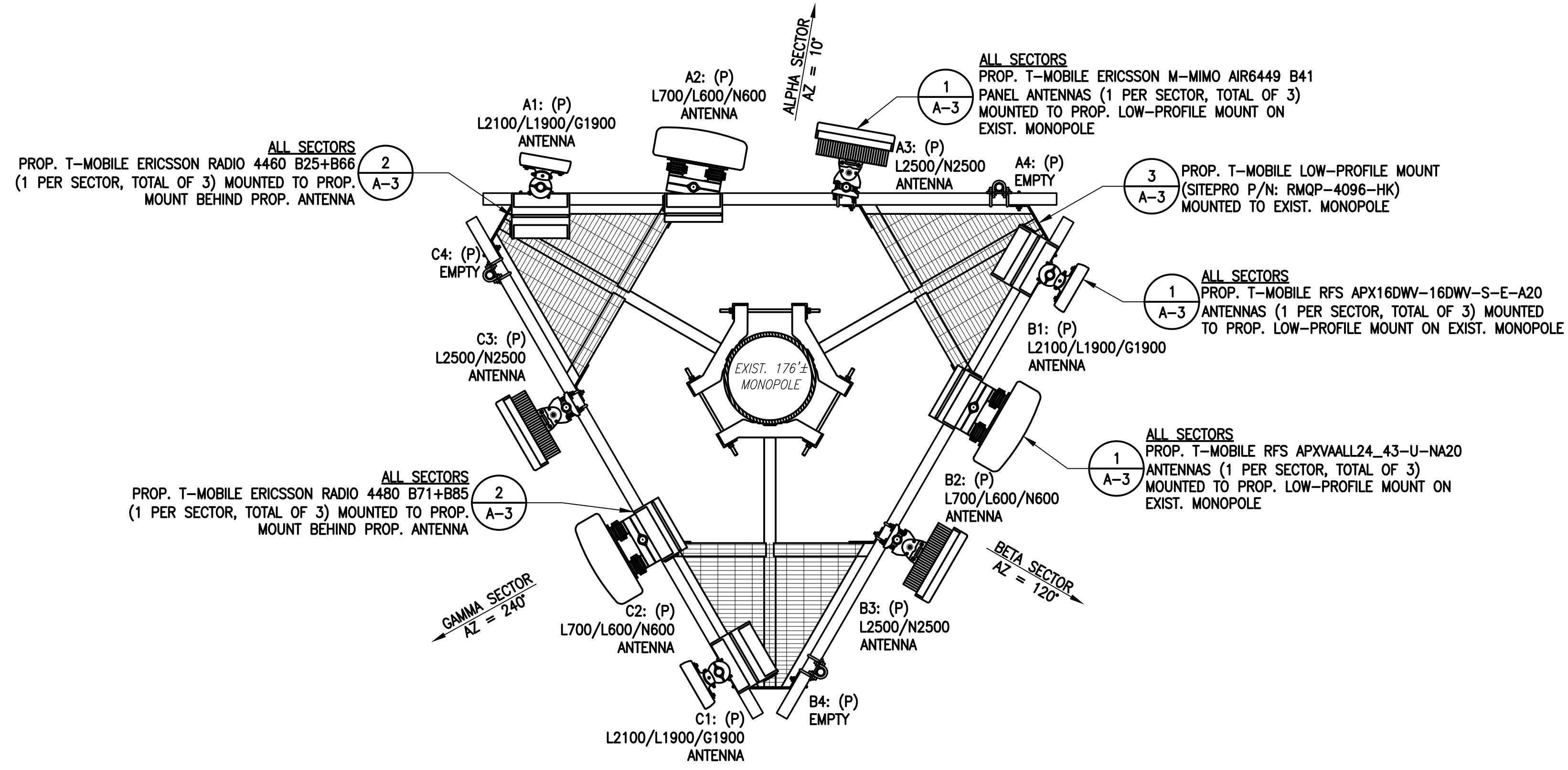
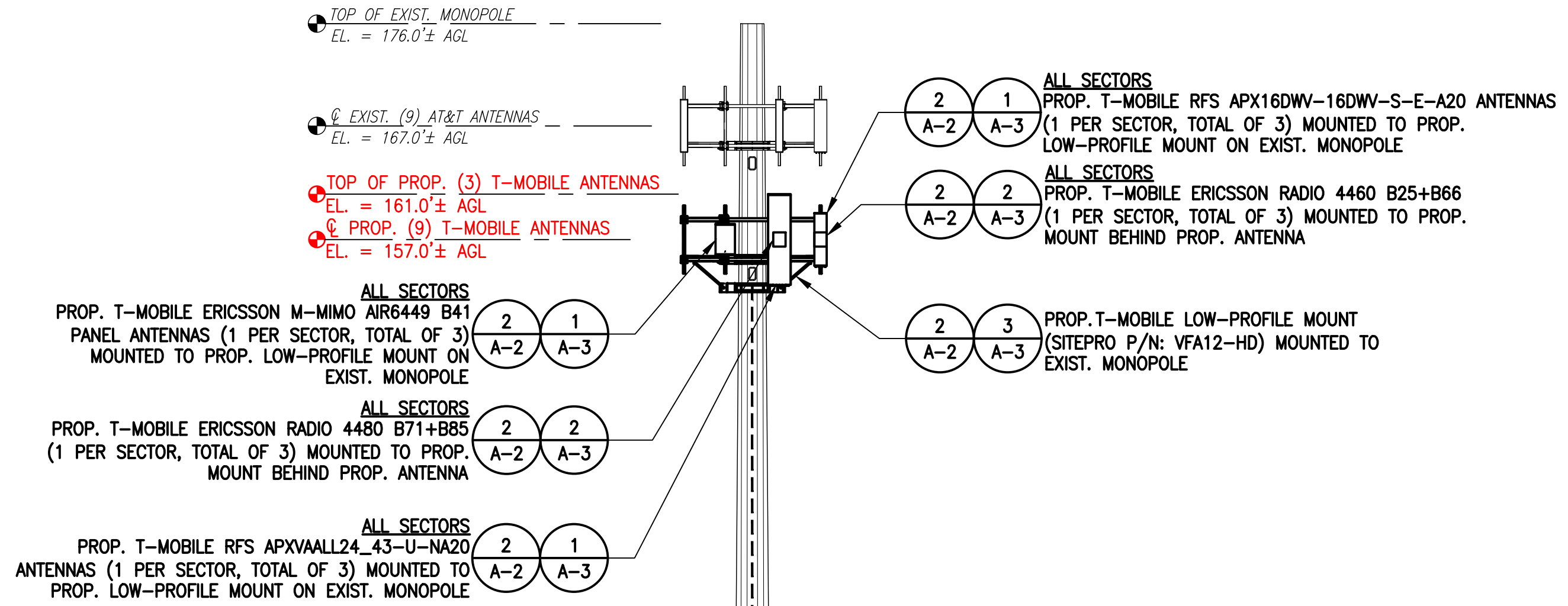
SHEET NUMBER
A-1



SPECIAL PRE-CONSTRUCTION WORK NOTE (SBA-PROVIDED TOWER STRUCTURAL ANALYSIS SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
 GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY SPECIAL SHIELDING OF TOWER TOP EQUIPMENT AND FOR ANY SPECIAL FEEDLINE BUNDLING OR RELOCATION.

SPECIAL CONSTRUCTION NOTE:
 GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ANTENNA MOUNT STRUCTURAL AUGMENTS (STRUCTURAL MODIFICATIONS) AT T-MOBILE'S RAD/VERTICAL EQUIPMENT SPACE PER RECOMMENDATIONS FROM SBA-PROVIDED ANTENNA MOUNT STRUCTURAL ANALYSIS AND ANY SUPPLEMENTAL CONSTRUCTION DRAWINGS (PROVIDED BY OTHERS).

RAD CENTER NOTE:
 T-MOBILE RAD CENTER SHOWN IN RED TEXT BASED ON SBA-PROVIDED CO-LOCATION APPLICATION, EQUIPMENT DATABASE, AND STRUCTURAL ANALYSIS. THE SBA-PROVIDED ANTENNA RAD CENTER SHALL SUPERSEDE ANY CONFLICTING INFORMATION DERIVED FROM THE T-MOBILE RFDS.

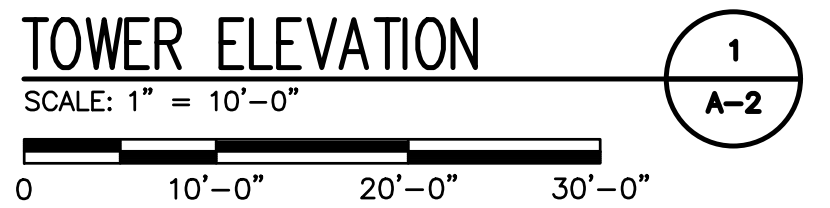


PROPOSED ANTENNA PLAN
 SCALE: 1/2" = 1'-0"

SEE FEEDLINE SCHEDULE A&B ON SHEET A-7

EXIST. 176' MONOPOLE

NOTE:
GROUND EQUIPMENT NOT SHOWN, FOR CLARITY.



NOTE:
VERIFY PROPOSED AZIMUTHS WITH RF ENGINEER PRIOR TO INSTALLATION.

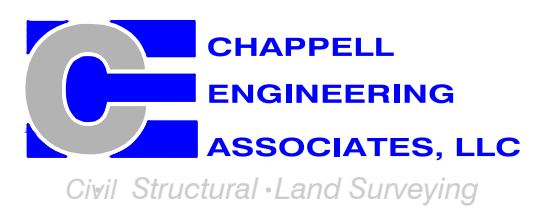
ANTENNA STATUS LEGEND:
 EMPTY - EMPTY PIPE
 (E) - EXISTING
 (P) - INSTALL
 (F) - FUTURE

**T-MOBILE
NORTHEAST LLC**

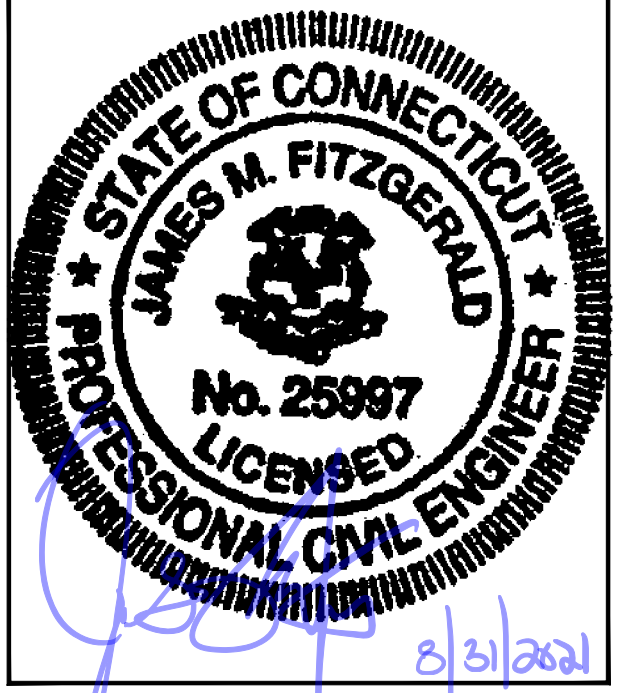
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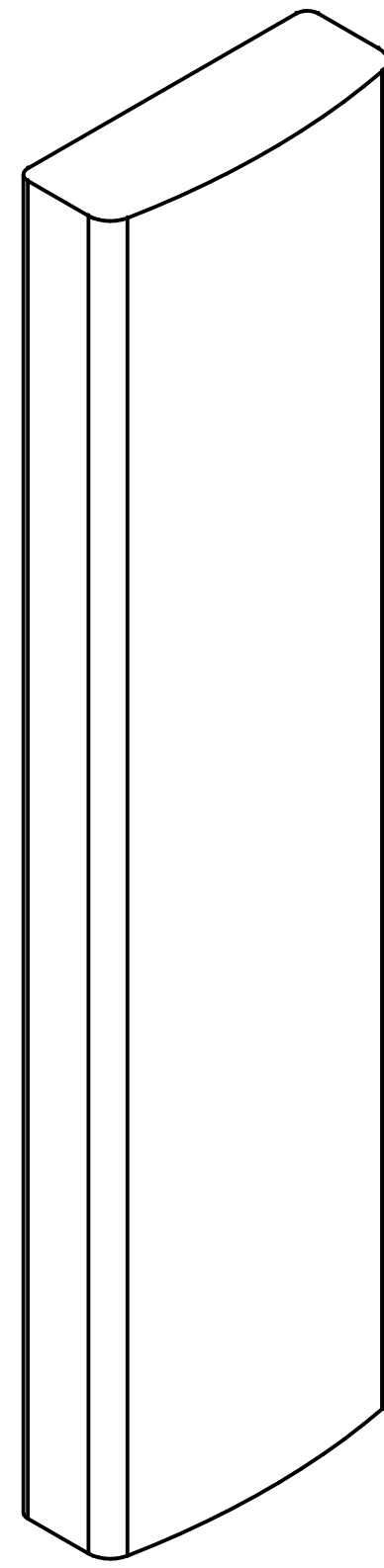
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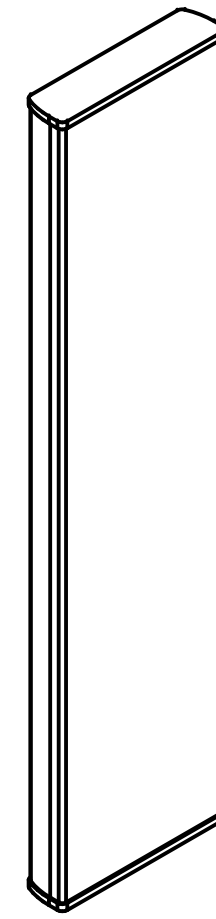
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SHEET TITLE
**TOWER ELEVATION &
ANTENNA PLAN**

SHEET NUMBER
A-2



RFS APXVAALL24_43-U-NA20 ANTENNA
 DIMENSIONS: 95.9"H x 24.0"W x 8.7"D
 WEIGHT: 128.0 lbs
 QUANTITY: 1 PER SECTOR, TOTAL OF 3

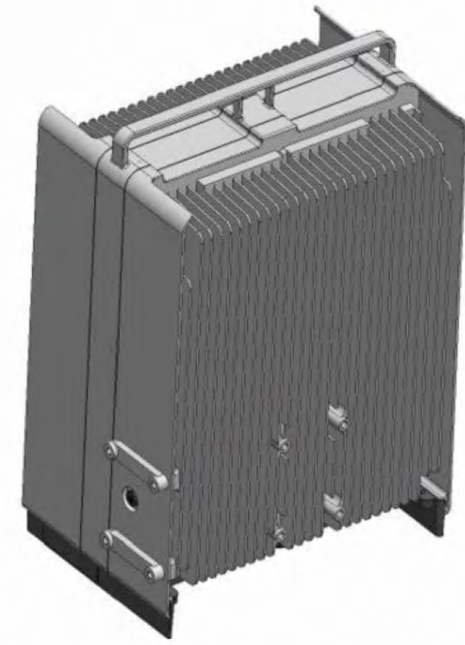


RFS APX16DWV-16DWV-S-E-A20 ANTENNA
 DIMENSIONS: 55.9"H x 13.0"W x 3.15"D
 WEIGHT: 40.7 lbs
 QUANTITY: 1 PER SECTOR, TOTAL OF 3



ERICSSON M-MIMO AIR6449 B41 ANTENNA
 DIMENSIONS: 33.1"H x 20.5"W x 8.3"D
 WEIGHT: 103.0 lbs
 QUANTITY: 1 PER SECTOR, TOTAL OF 3

ANTENNA DETAILS
 SCALE: N.T.S. 1
A-3



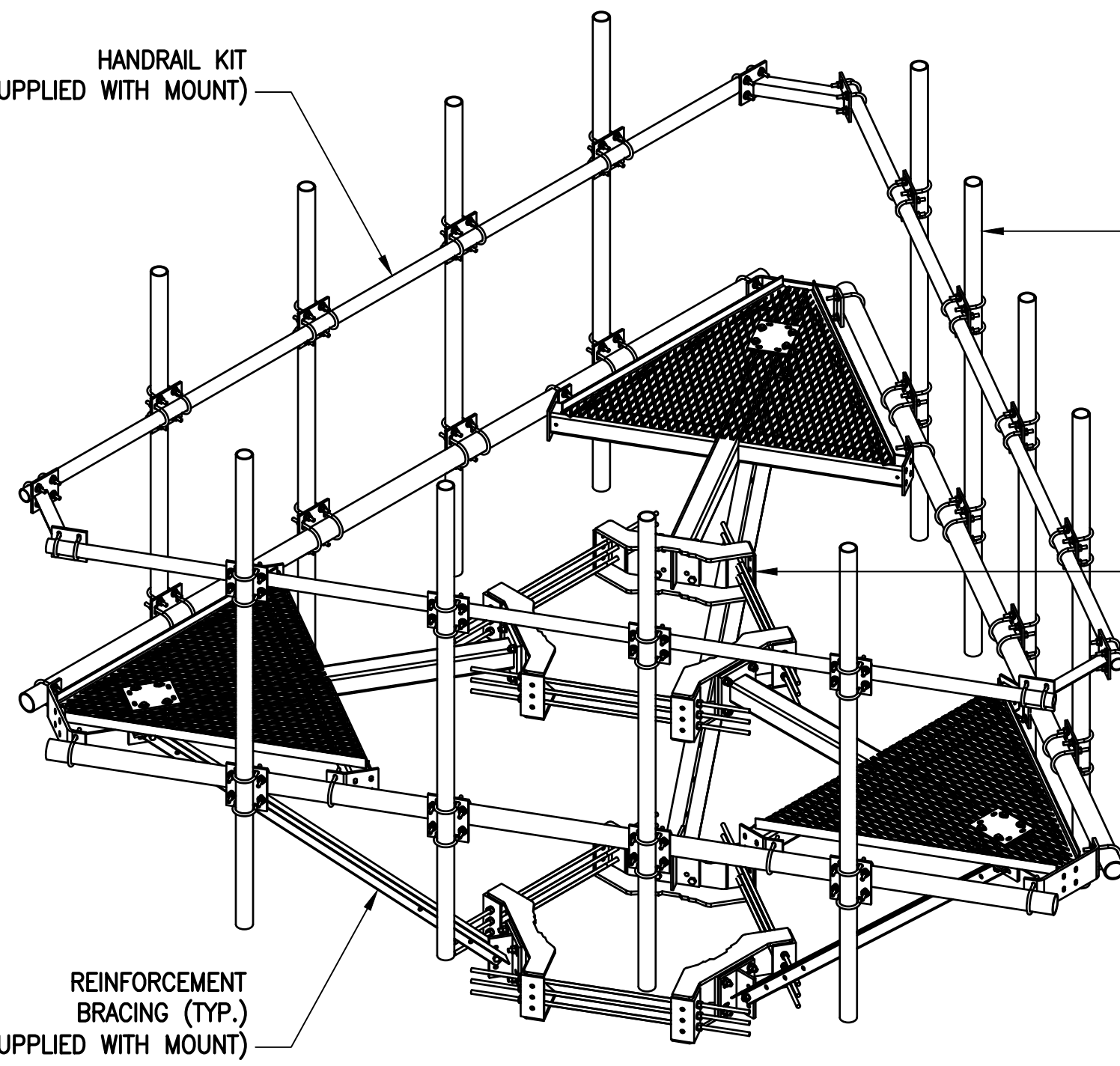
ERICSSON RADIO 4460 B25+B66
 DIMENSIONS: 17.0"H x 15.1"W x 11.9"D
 WEIGHT: 104.0 lbs
 QUANTITY: 1 PER SECTOR, TOTAL OF 3



ERICSSON RADIO 4480 B71+B85
 DIMENSIONS: 19.2"H x 15.1"W x 7.5"D
 WEIGHT: 92.6 lbs
 QUANTITY: 1 PER SECTOR, TOTAL OF 3

RADIO DETAILS
 SCALE: N.T.S. 2
A-3

HANDRAIL KIT
(SUPPLIED WITH MOUNT)



PROP. 3"Ø SCH. 40 PIPE, 96" LONG
(TOTAL OF 12)

NOTE:
ANTENNAS NOT SHOWN, FOR CLARITY.

UNIVERSAL RING MOUNT (TYP.)
(SUPPLIED WITH MOUNT)

REINFORCEMENT BRACING (TYP.)
(SUPPLIED WITH MOUNT)

SITE-PRO 1 12'-6" LOW-PROFILE CO-LOCATION PLATFORM W/HANDRAIL KIT
 PART NUMBERS: RMQP-4096-HK
 (TOTAL OF 1 REQUIRED)

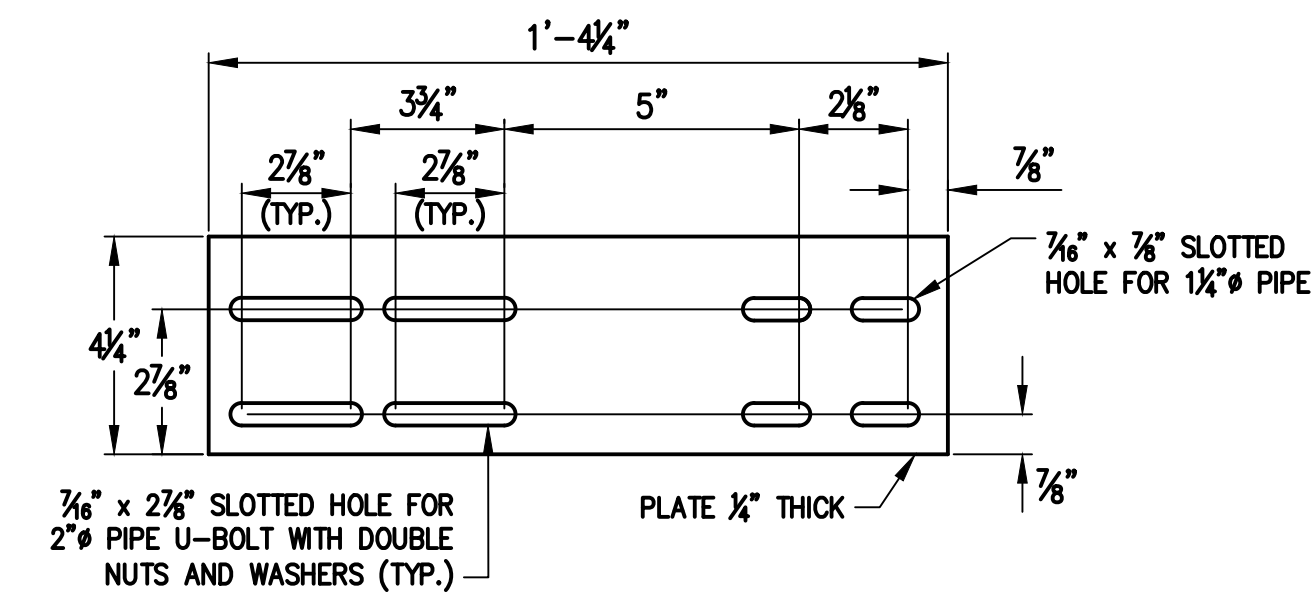
TYPICAL SITE PRO 1 12'-6" PLATFORM MOUNT
 SCALE: N.T.S. 3
A-3



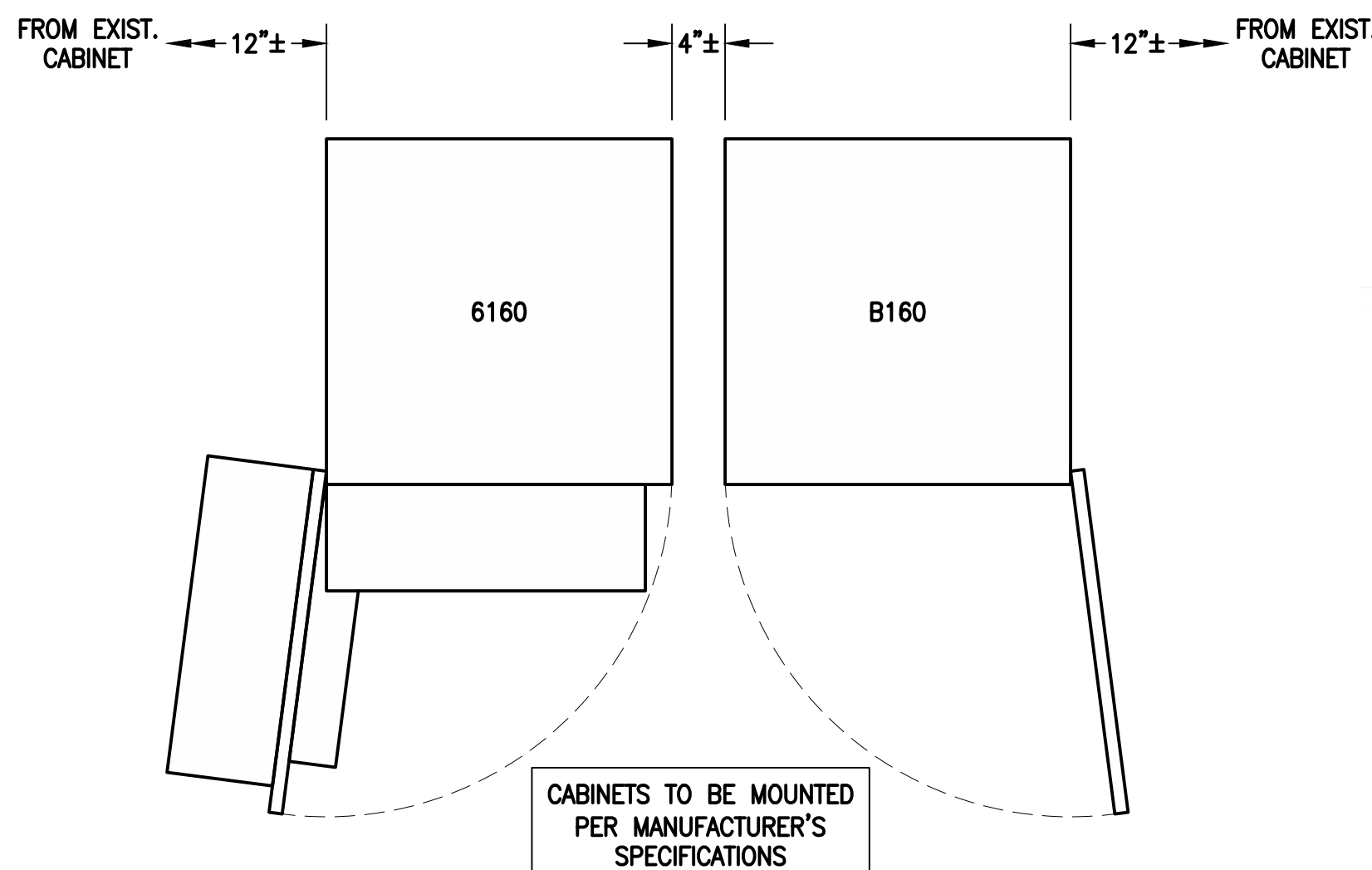
PURCELL SITE SUPPORT CABINET RAC24

DIMENSIONS: 24.0"H x 15.7"W x 20.0"D
 QUANTITY: TOTAL OF 1

SSC DETAILS
 SCALE: N.T.S. 5
A-3



MOUNTING BRACKET PLATE



ERICSSON 6160 SITE SUPPORT CABINET

DIMENSIONS: 63.25"H x 26.0"W x 34.0"D
 WEIGHT: 680.0 lbs
 QUANTITY: TOTAL OF 1

ERICSSON B160 BATTERY CABINET

DIMENSIONS: 63.25"H x 26.0"W x 26.0"D
 WEIGHT: 1771.0 lbs
 QUANTITY: TOTAL OF 1

EQUIPMENT DETAIL
 SCALE: N.T.S. 4
A-3

NOTE:
GENERATOR DIESEL TANK TO BE FILLED BY CONTRACTOR

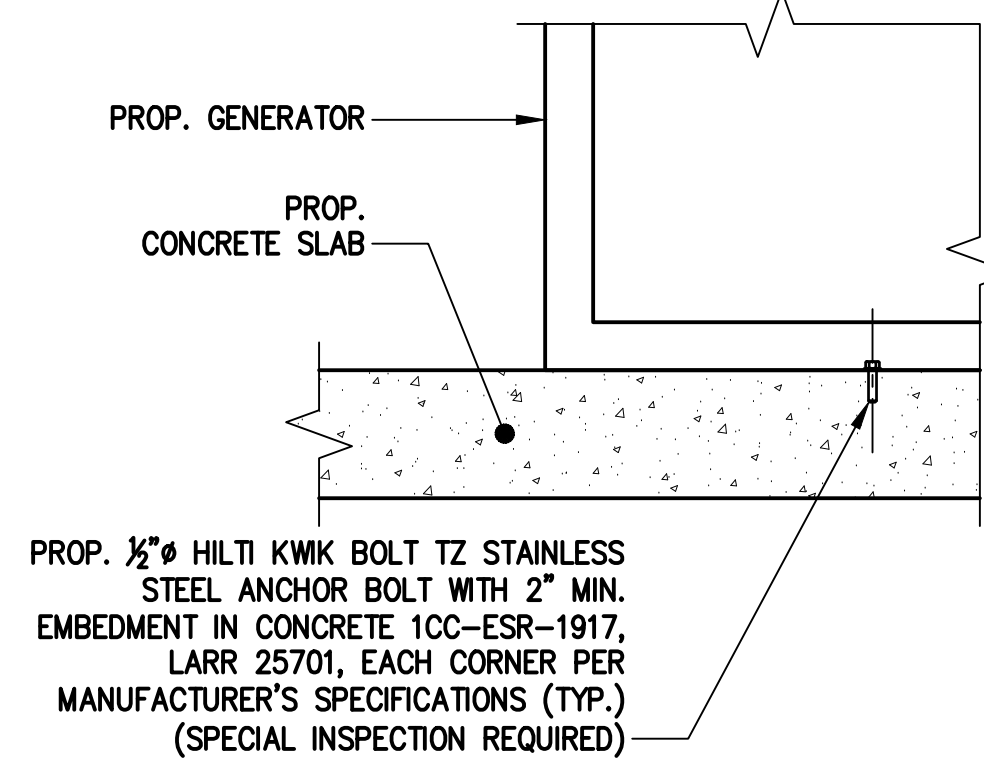


GENERAC RD025 25kW AC DIESEL GENERATOR

DIMENSIONS: 103.4"L x 35.0"W x 91.7"H
 WEIGHT: 2,946 lbs
 QUANTITY: TOTAL OF 1

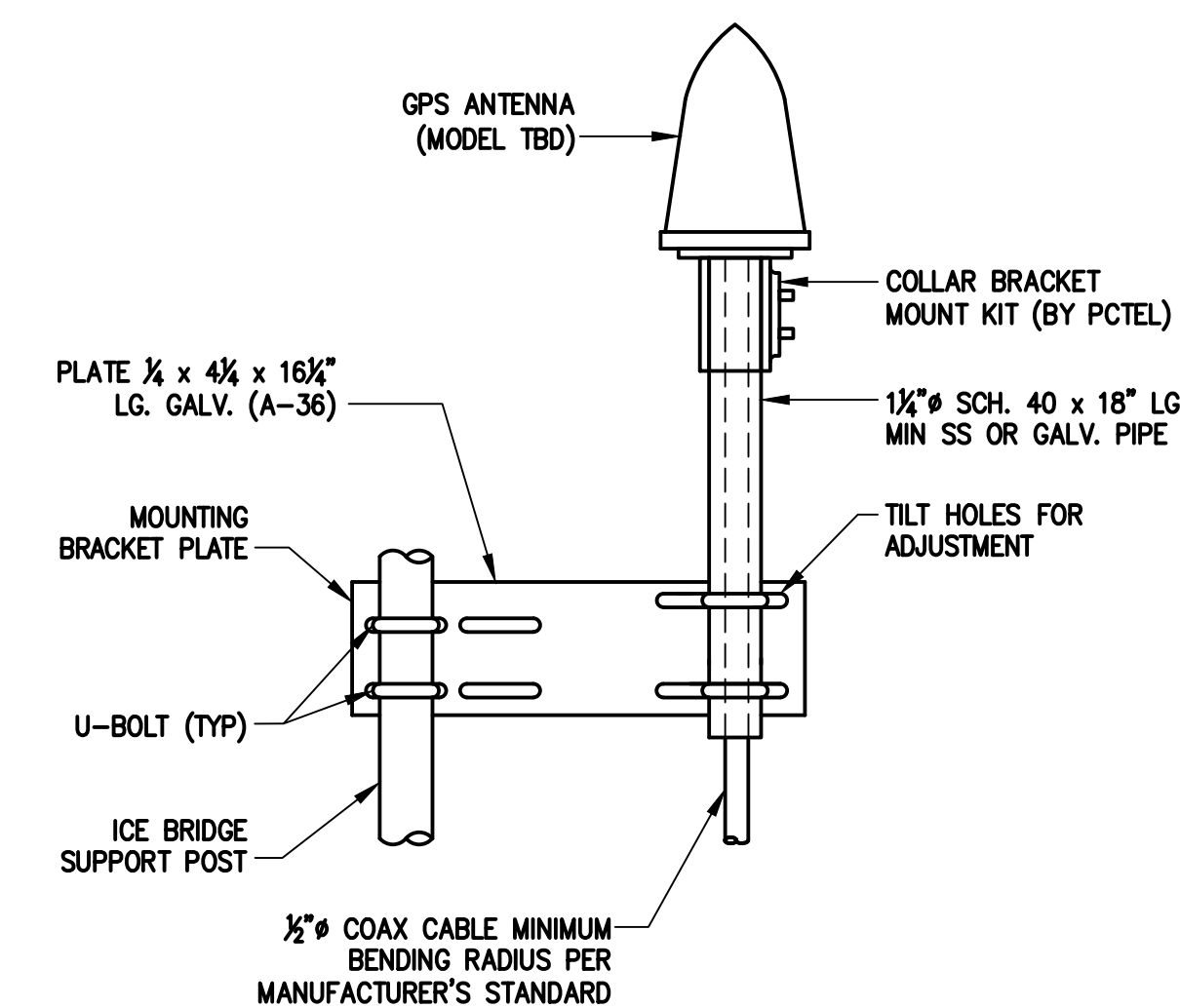
GENERATOR DETAIL
 SCALE: N.T.S. 6
A-3

NOTE:
CONTRACTOR TO VERIFY 3" MIN. FROM EDGE OF CONCRETE TO NEW MOUNTING BOLT.



PROP. 1/2"Ø HILTI KWIK BOLT TZ STAINLESS STEEL ANCHOR BOLT WITH 2" MIN. EMBEDMENT IN CONCRETE 10C-ESR-1917, LARR 25701, EACH CORNER PER MANUFACTURER'S SPECIFICATIONS (TYP.) (SPECIAL INSPECTION REQUIRED)

GENERATOR MOUNTING DETAIL
 SCALE: N.T.S. 7
A-3



GPS ANTENNA MOUNTING BRACKET

- THE GPS ANTENNA MOUNT IS DESIGNED TO FASTEN TO A STANDARD 1"-1 1/2" DIAMETER GALVANIZED STEEL OR STAINLESS STEEL PIPE. THE PIPE MUST NOT BE THREADED AT THE ANTENNA MOUNT END. THE PIPE SHALL BE CUT TO THE REQUIRED LENGTH USING A HAND OR ROTARY PIPE CUTTER TO ASSURE A SMOOTH AND PERPENDICULAR CUT. THE CUT PIPE END SHALL BE DEBURRED AND SMOOTH IN ORDER TO SEAL AGAINST THE NEOPRENE GASKET ATTACHED TO THE ANTENNA MOUNT.
- THE MOUNTING PLATE SHALL BE FASTENED AS SHOWN AND ATTACHED TO THE APPROPRIATE SUPPORT STRUCTURE USING U-BOLTS. THE SUPPORT PIPE SHALL THEN BE ATTACHED TO THE MOUNTING PLATE USING THE OVERSIZE U-BOLTS PROVIDED TO ALLOW ADJUSTMENT. IT IS CRITICAL THAT THE GPS ANTENNA IS MOUNTED WITHIN 2 DEGREES OF VERTICAL AND THE BASE OF THE ANTENNA IS WITHIN 2 DEGREES OF LEVEL.

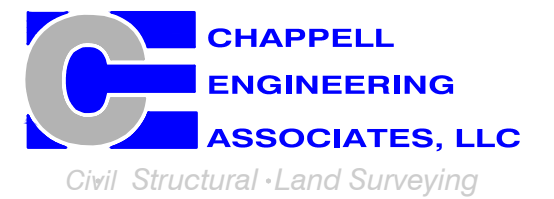
GPS MOUNTING DETAIL
 SCALE: N.T.S. 8
A-3

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SHEET TITLE
SITE DETAILS
1 OF 2

SHEET NUMBER

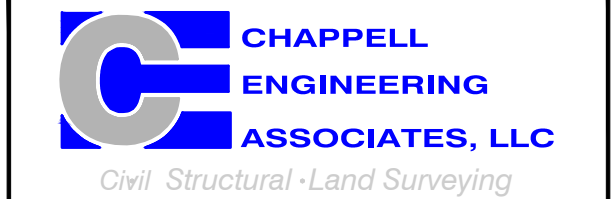
A-3

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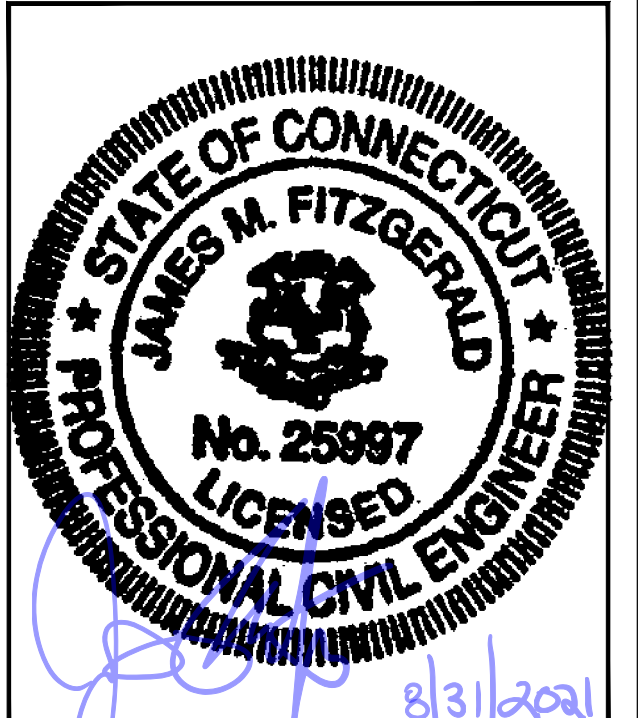
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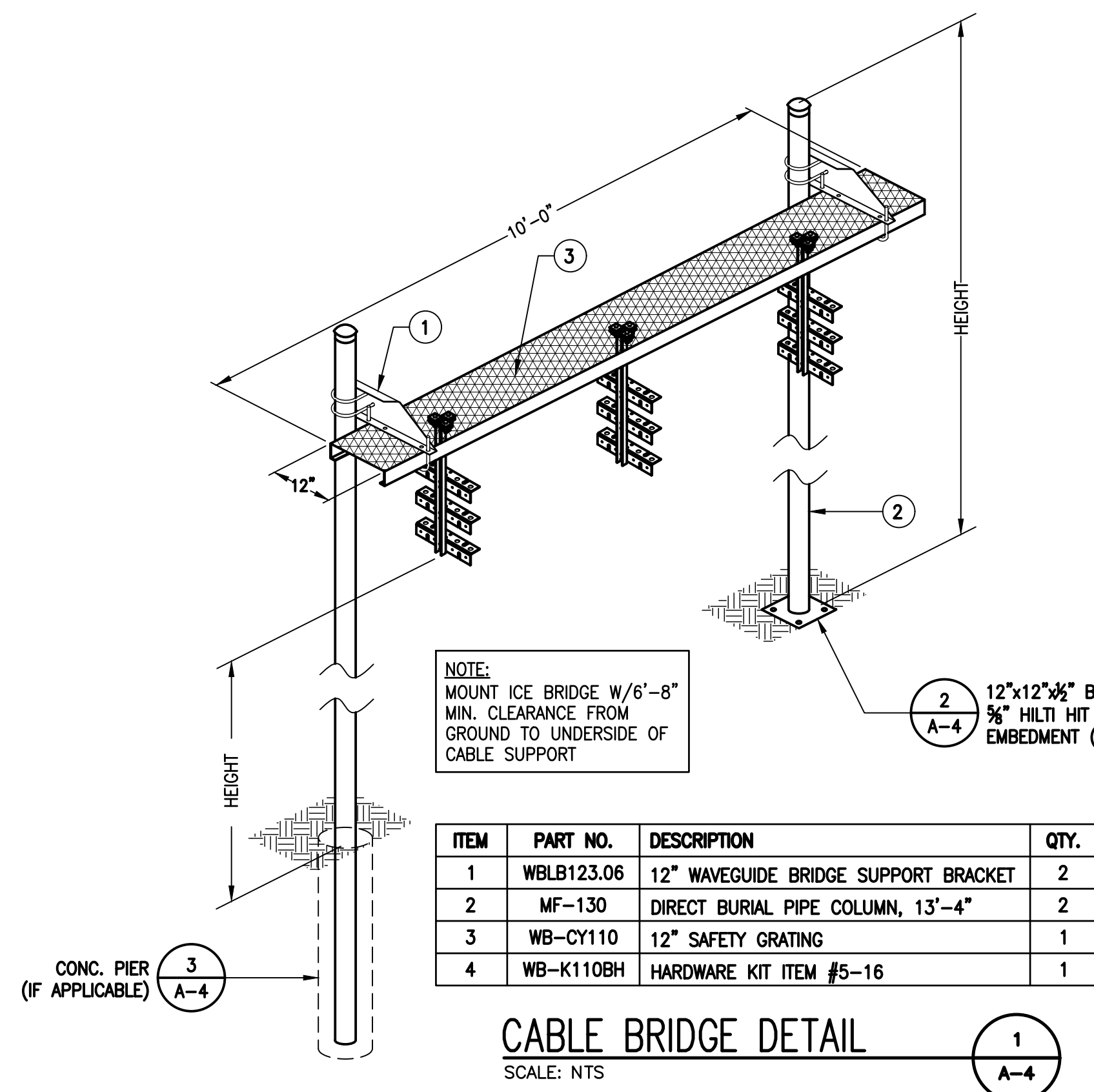
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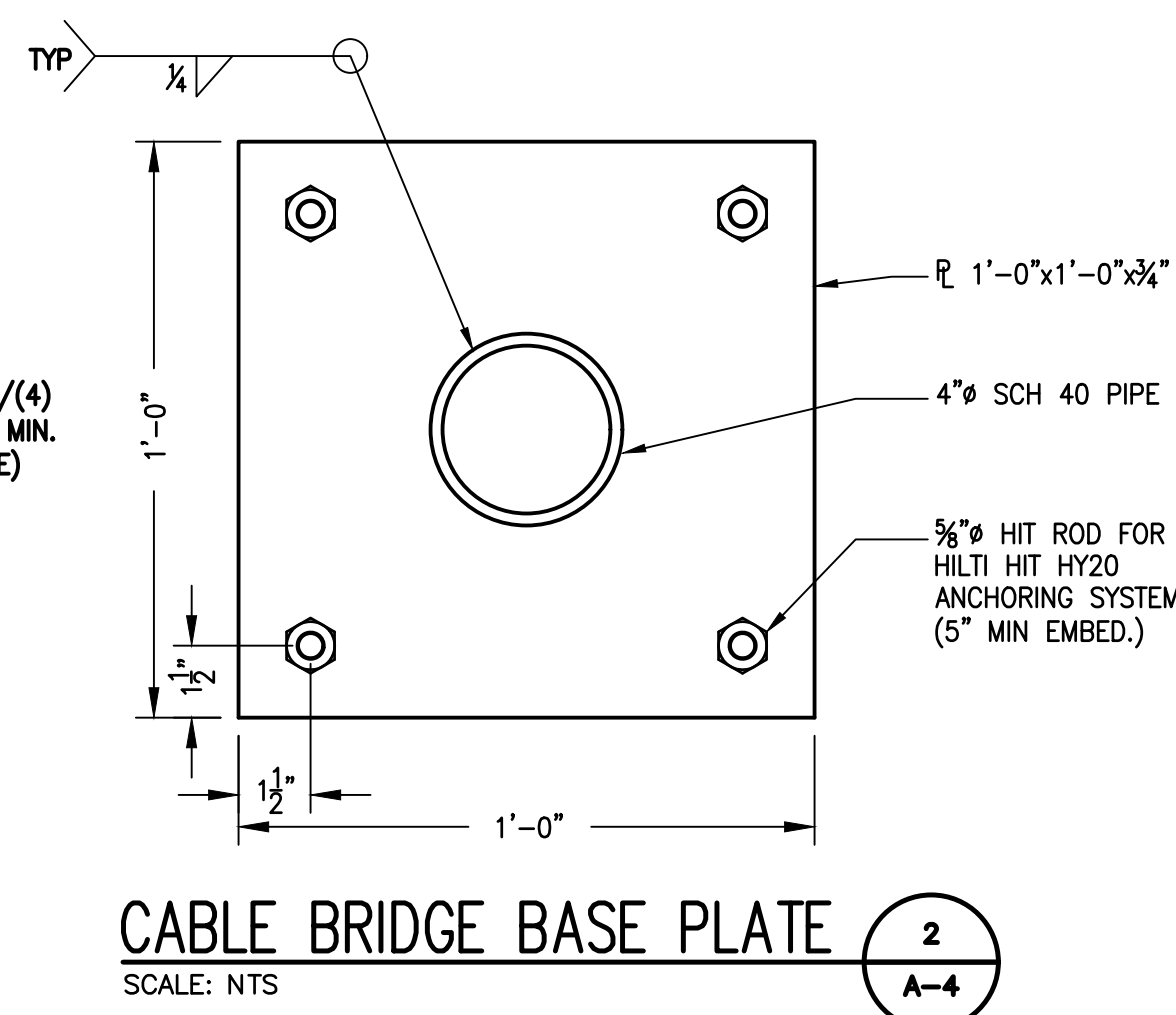
SHEET TITLE
SITE DETAILS
2 OF 2

SHEET NUMBER
A-4

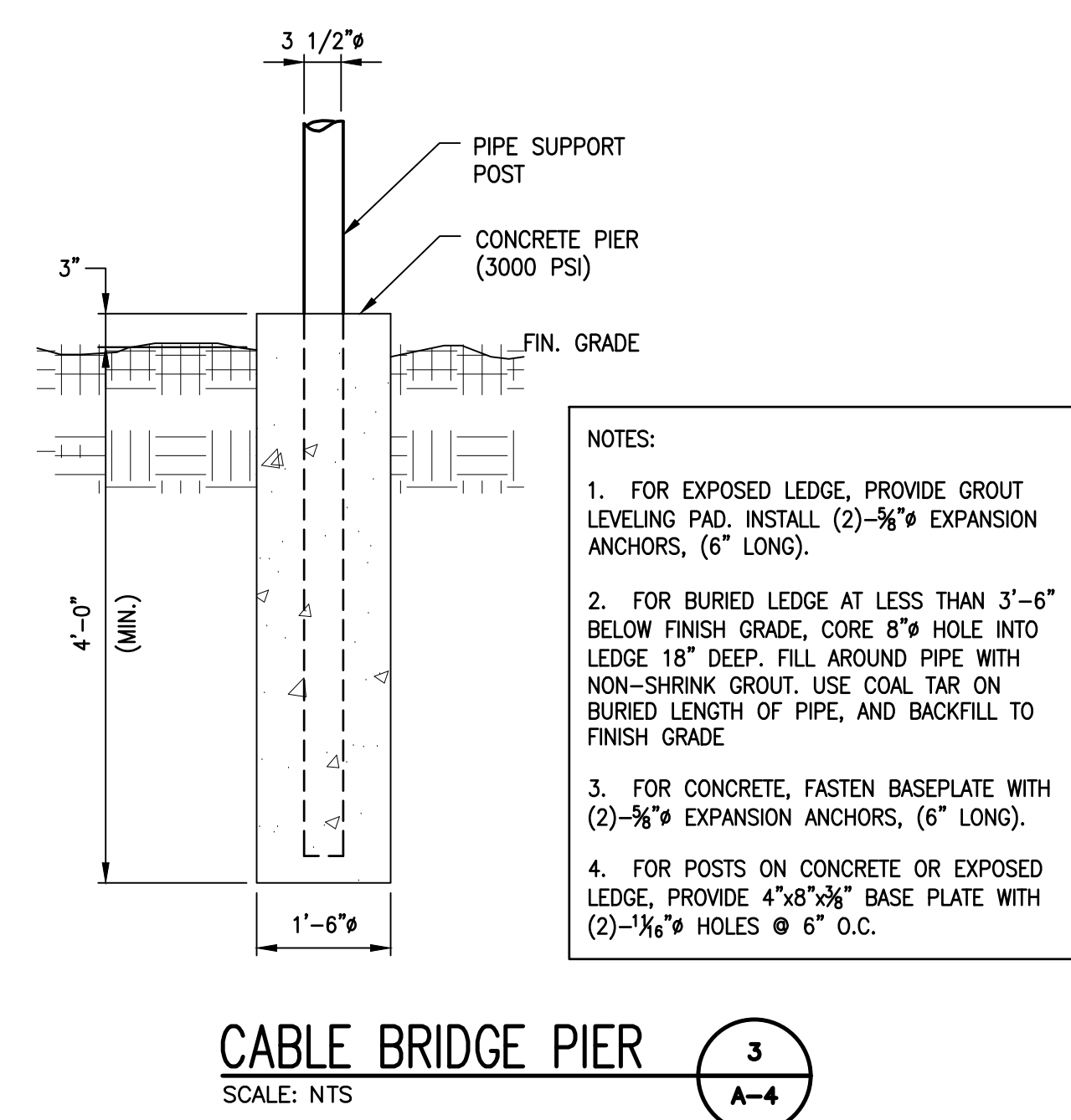


ITEM	PART NO.	DESCRIPTION	QTY.
1	WBLB123.06	12" WAVEGUIDE BRIDGE SUPPORT BRACKET	2
2	MF-130	DIRECT BURIAL PIPE COLUMN, 13'-4"	2
3	WB-CY110	12" SAFETY GRATING	1
4	WB-K110BH	HARDWARE KIT ITEM #5-16	1

CABLE BRIDGE DETAIL 1
SCALE: N.T.S.



CABLE BRIDGE BASE PLATE 2
SCALE: N.T.S.



CABLE BRIDGE PIER 3
SCALE: N.T.S.



EMERSON CAC-A752Q1090 PPC
DIMENSIONS: 24.0"H x 15.7"W x 20.0"D
QUANTITY: TOTAL OF 1

PPC DETAIL 5
SCALE: N.T.S.

- NOTES:
- FOR EXPOSED LEDGE, PROVIDE GROUT LEVELING PAD. INSTALL (2)-3/8" EXPANSION ANCHORS, (6" LONG).
 - FOR BURIED LEDGE AT LESS THAN 3'-6" BELOW FINISH GRADE, CORE 8" HOLE INTO LEDGE 18" DEEP. FILL AROUND PIPE WITH NON-SHRINK GROUT. USE COAL TAR ON BURIED LENGTH OF PIPE, AND BACKFILL TO FINISH GRADE.
 - FOR CONCRETE, FASTEN BASEPLATE WITH (2)-3/8" EXPANSION ANCHORS, (6" LONG).
 - FOR POSTS ON CONCRETE OR EXPOSED LEDGE, PROVIDE 4"x8"x3/8" BASE PLATE WITH (2)-3/8" HOLES @ 6" O.C.

CONCRETE GENERAL NOTES

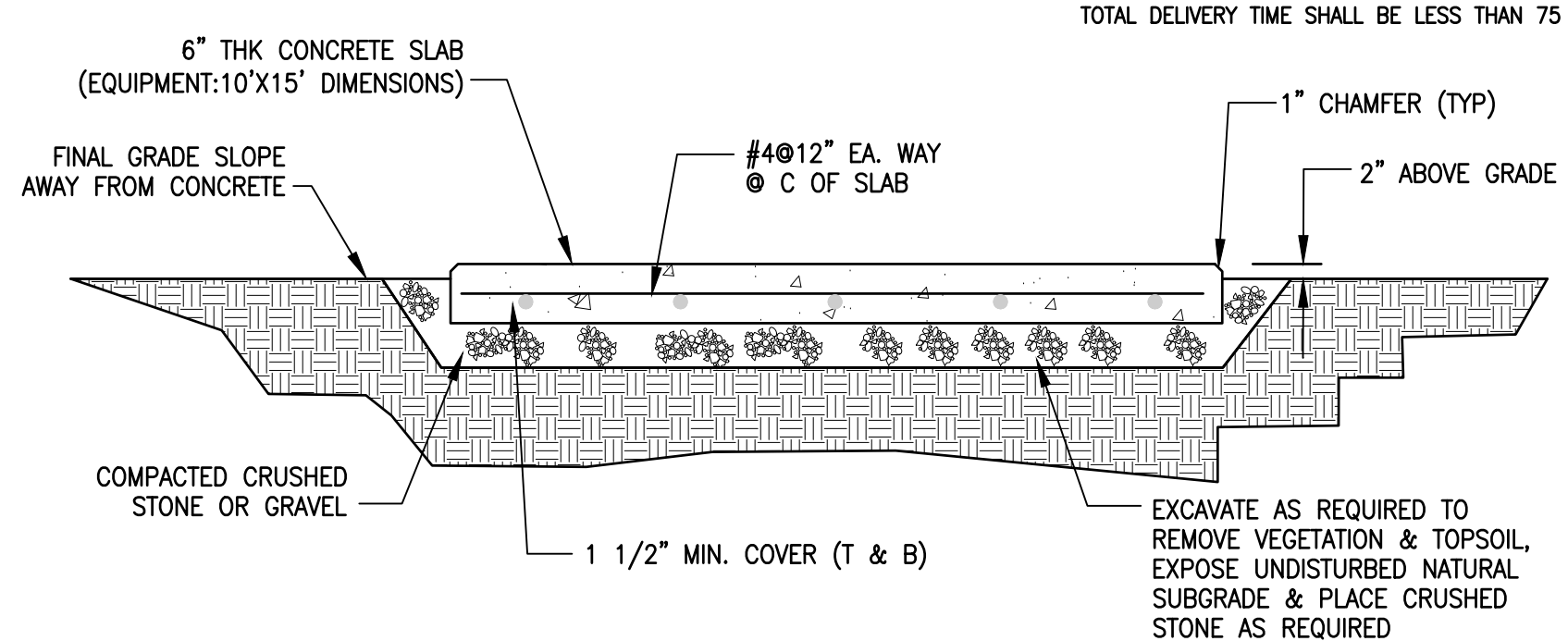
- ALL CONCRETE WORK SHALL CONFORM TO ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" AND TO THE PROJECT SPECIFICATIONS.
- ALL CONCRETE IS TO BE NORMAL DENSITY CONCRETE WITH A MAXIMUM SLUMP OF 4 INCHES. MAXIMUM AGGREGATE SIZE 3/4 INCH. NO ADDITIONAL WATER SHALL BE ADDED TO THE CONCRETE AT THE JOB SITE.
- PROVIDE AIR ENTRAINMENT OF 4 TO 6 PERCENT IN ALL EXPOSED CONCRETE WORK WITH AIR-ENTRAINING ADMIXTURE COMPLYING WITH ASTM C 260. AT TROWEL-FINISHED FLOORS, DO NOT EXCEED AIR-ENTRAINMENT CONTENT OF 3 PERCENT.
- NO HOLES OR SLEEVES SHALL BE MADE THROUGH CONCRETE WORK OTHER THAN THOSE INDICATED ON THE STRUCTURAL DRAWINGS WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER.
- ALL FORMWORK OFFSET TOLERANCES (PER ACI 117) TO BE CLASS A.
- FLOOR SLAB TOLERANCES TO ASTM E1155; SPECIFIED OVERALL MINIMUM VALUE OF FLATNESS F F=25 WITH LOCAL MINIMUM F F=17, AND MINIMUM VALUE OF LEVELNESS F F=20 WITH LOCAL MINIMUM F F AND F F WITHIN 72 HOURS OF SLAB CONSTRUCTION.
- CABINETS ON SLAB (IF APPLICABLE). ALLOWABLE CAPACITY OF CONCRETE USED IN DESIGN MIN. 4000 PSI.

- FOUNDATION NOTES:**
- DESIGN INFORMATION AND GENERAL REQUIREMENTS**
 - 1.1 CODES**
 - DESIGN CONFORMS TO INTERNATIONAL BUILDING CODE 2012.
 - AMERICAN CONCRETE INSTITUTE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE," ACI 318-08.
 - 2.1 FOUNDATIONS**
 - FOUNDATIONS HAVE BEEN DESIGNED TO BEAR ON (UNDISTURBED RESIDUAL SOILS/COMPACTED STRUCTURAL FILL), CAPABLE OF SAFELY SUPPORTING A NET ALLOWABLE BEARING PRESSURE OF 2000 PSF. IF FOUNDATION CONDITIONS PROVE UNACCEPTABLE AT ELEVATIONS SHOWN, EXCAVATION SHALL BE CARRIED DEEPER AND SHALL BE BACKFILLED WITH LEAN CONCRETE TO PLAN FOOTING BOTTOM, OR REDESIGN OF FOUNDATIONS WILL BE REQUIRED AT THE DIRECTION OF THE ENGINEER.
 - DESIGN, FURNISH AND INSTALL ALL TEMPORARY SHEETING, SHORING AND DRAINAGE NECESSARY TO MAINTAIN THE EXCAVATION AND PROTECT SURROUNDING STRUCTURES AND UTILITIES.
 - THOROUGHLY COMPACT ALL BOTTOM OF FOOTINGS PRIOR TO PLACING ANY CONCRETE.
 - CONCRETE**
 - FOUNDATIONS SHALL BE CAST AGAINST GROUND. CONCRETE TO BE IN CONTACT WITH GROUND OR WEATHER AT BARS GREATER THAN #5 AT BARS #5 OR LESS CONCRETE NOT TO BE EXPOSED TO GROUND OR WEATHER BEAMS, BIRDERS & COLUMNS SLABS & WALLS

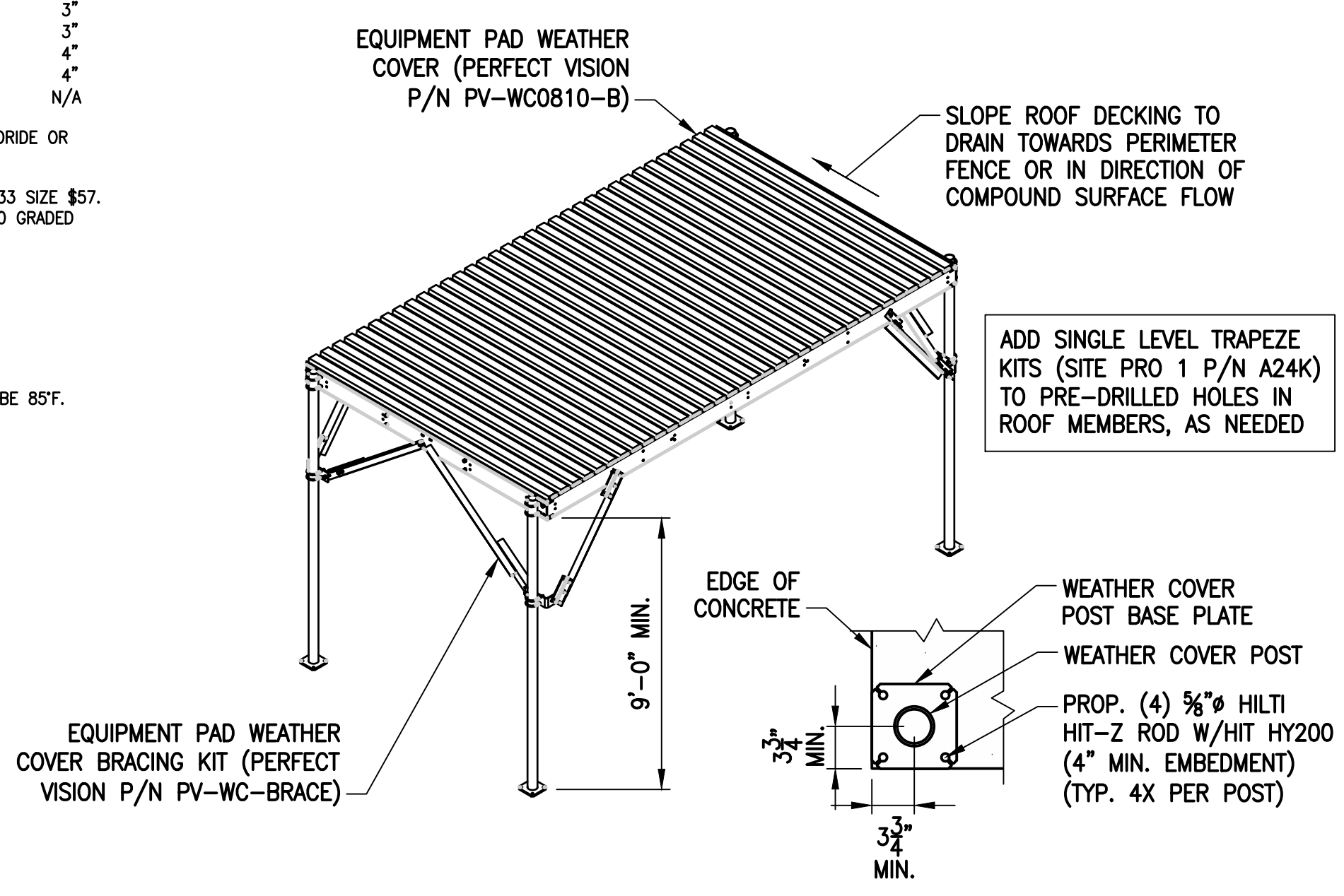
- 3.1 FORMWORK**
 - CONCRETE CONSTRUCTION SHALL CONFORM TO "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS," (ACI 301-89).
 - FORMWORK SHALL CONFORM TO ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS."
- 3.2 REINFORCEMENT**
 - REINFORCING STEEL ASTM A615, GRADE 60. WELDED WIRE ASTM A185 (FLAT SHEET). LAPS 40 BAR DIAMETERS UNLESS NOTED. BARS SHALL BE SECURELY HELD IN ACCURATE POSITION BY SUITABLE ACCESSORIES, THE BARS, SUPPORT BARS, ETC. HOOK LENGTHS SHALL BE 12 BAR DIAMETERS.
 - CONCRETE COVER FOR REINFORCING BARS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED:

FOOTINGS & SLABS CAST AGAINST GROUND	3"
OR WEATHER AT BARS GREATER THAN #5	2"
AT BARS #5 OR LESS	1-1/2"
CONCRETE NOT TO BE EXPOSED TO GROUND OR WEATHER BEAMS, BIRDERS & COLUMNS	1-1/2"
SLABS & WALLS	3/4"
- 3.3 CAST-IN-PLACE-CONCRETE**
 - MINIMUM 28 DAY CYLINDER STRENGTH AND MAXIMUM SLUMP, PRIOR TO ADDITION OF SUPER PLASTICIZERS, AS FOLLOWS:

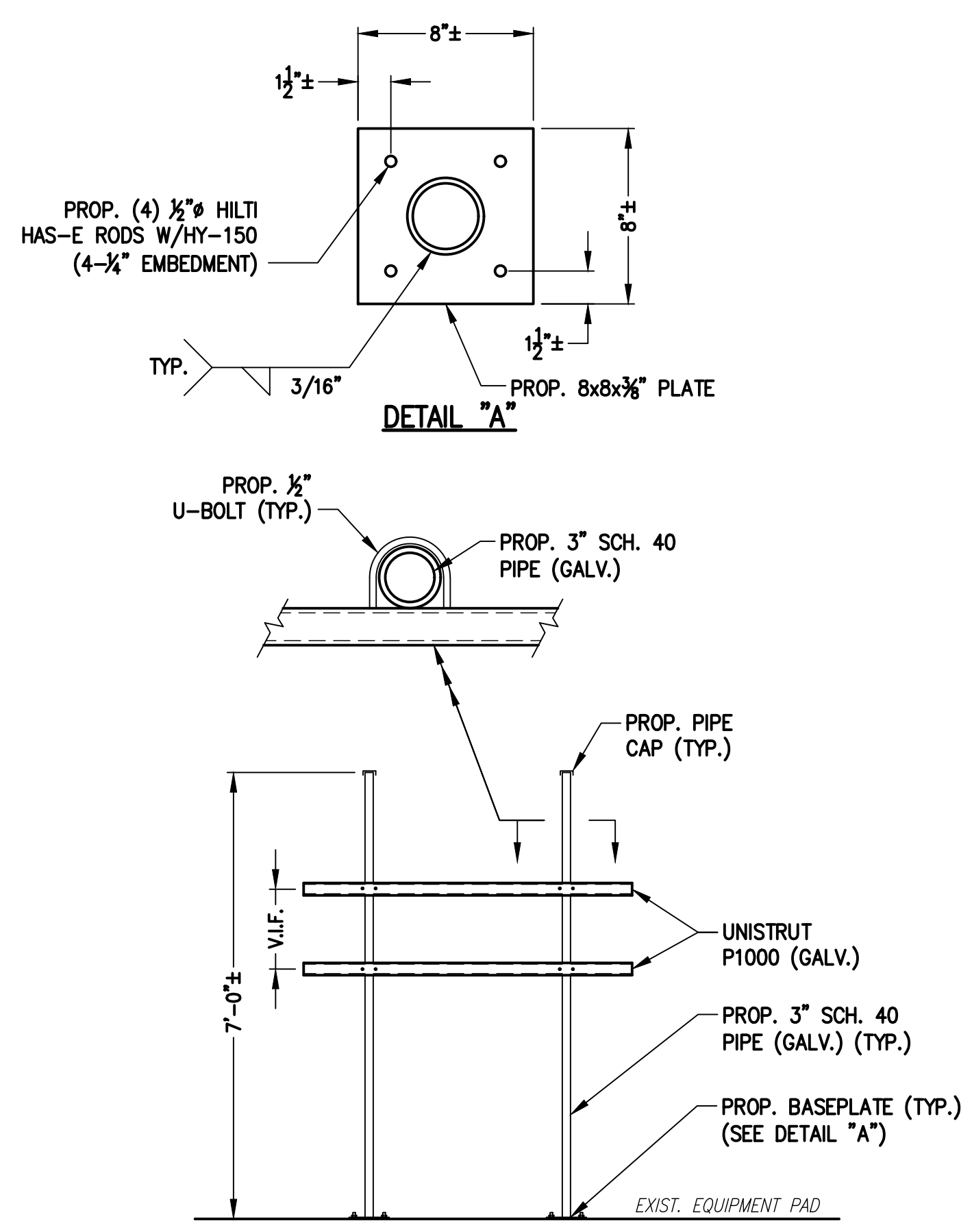
	F'C (PSI)	SLUMP
CLASS I FOOTINGS	4000	3"
CLASS II FOOTINGS	4000	3"
CLASS III INTERIOR ELEVATED SLABS & WALLS	4000	4"
CLASS V OTHER WORK	4000	4"
CLASS VI LEAN CONCRETE FOR OVER EXCAVATION OF FOUNDATIONS	2000	N/A
 - MIX DESIGN TO BE IN ACCORDANCE WITH ACI 318, CHAPTER 5. NO CALCIUM CHLORIDE OR ADMIXTURE CONTAINING CHLORIDES SHALL BE USED IN ANY CONCRETE.
 - COARSE AGGREGATE FOR NORMAL WEIGHT CONCRETE SHALL CONFORM TO ASTM C33 SIZE #57. COARSE AGGREGATE FOR LIGHT WEIGHT CONCRETE SHALL CONFORM TO ASTM C330 GRADED 3/4" TO 1/4".
 - COLD WEATHER PLACEMENT SHALL COMPLY WITH ACI 306.1.
 - HOT WEATHER PLACEMENT SHALL COMPLY WITH ACI 305 R.
 - CHAMFER ALL EXPOSED EDGES 3/4".
 - THE MAXIMUM TEMPERATURE OF ALL CONCRETE AT DELIVERY TO THE SITE SHALL BE 85F. TOTAL DELIVERY TIME SHALL BE LESS THAN 75 MINUTES.



CONCRETE PAD DETAIL 4
SCALE: N.T.S.



EQUIPMENT PAD WEATHER COVER DETAIL 6
SCALE: N.T.S.



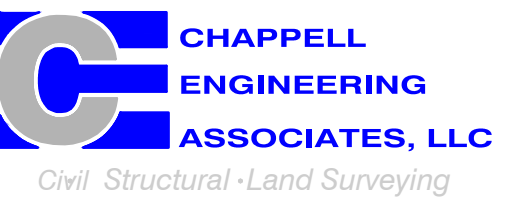
H-FRAME DETAIL 7
SCALE: N.T.S.

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SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
1	08/31/21	ISSUED FOR CONSTRUCTION	JRV
0	08/11/21	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CTNL162B

SITE ADDRESS:
229-231 ASHFORD CENTER ROAD
ASHFORD, CT 06278

SHEET TITLE
GENERATOR SPECIFICATIONS 1

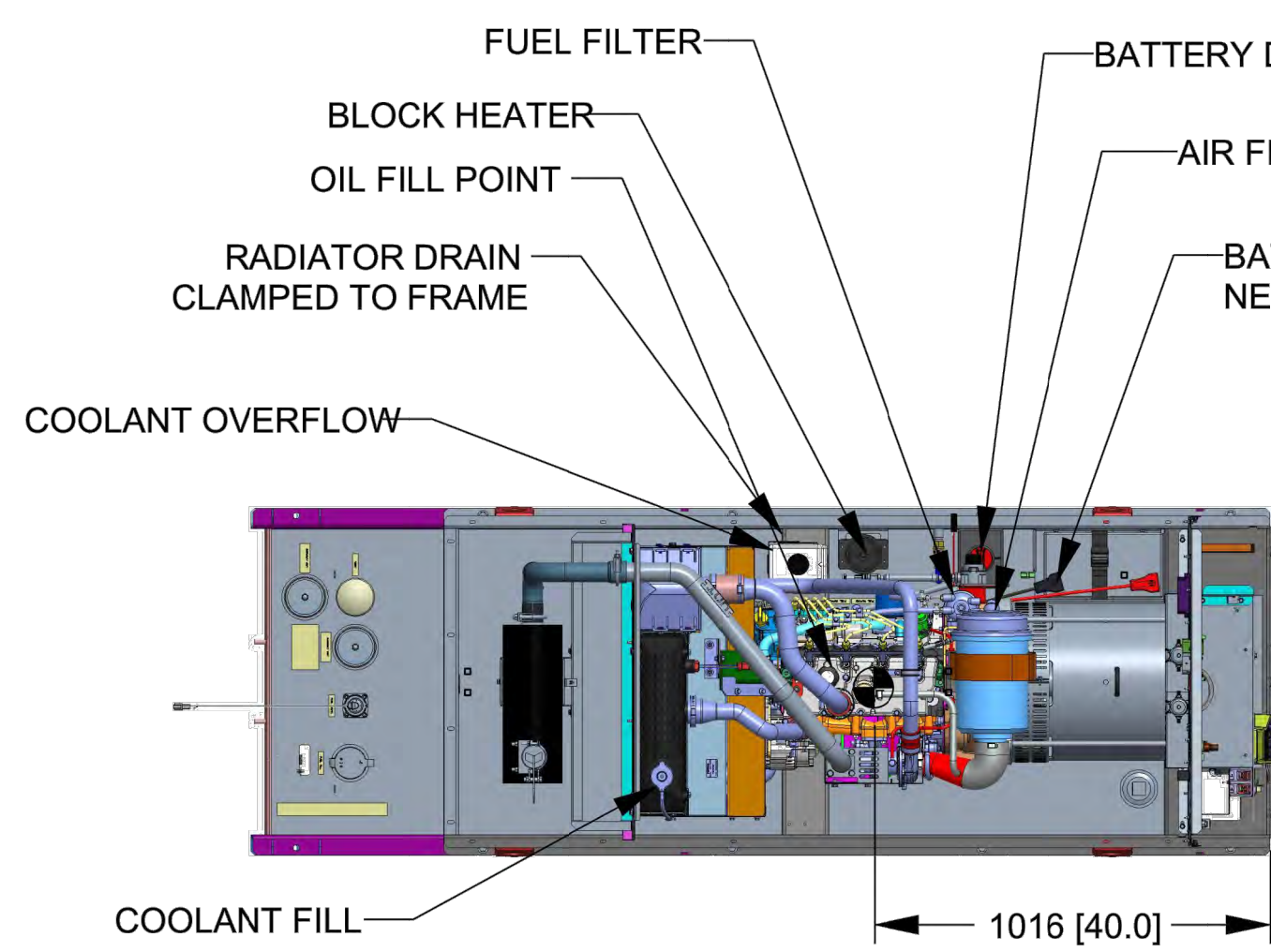
SHEET NUMBER
A-5

SH 1/2 REV 2 WINDCHILL VERSION 2.12

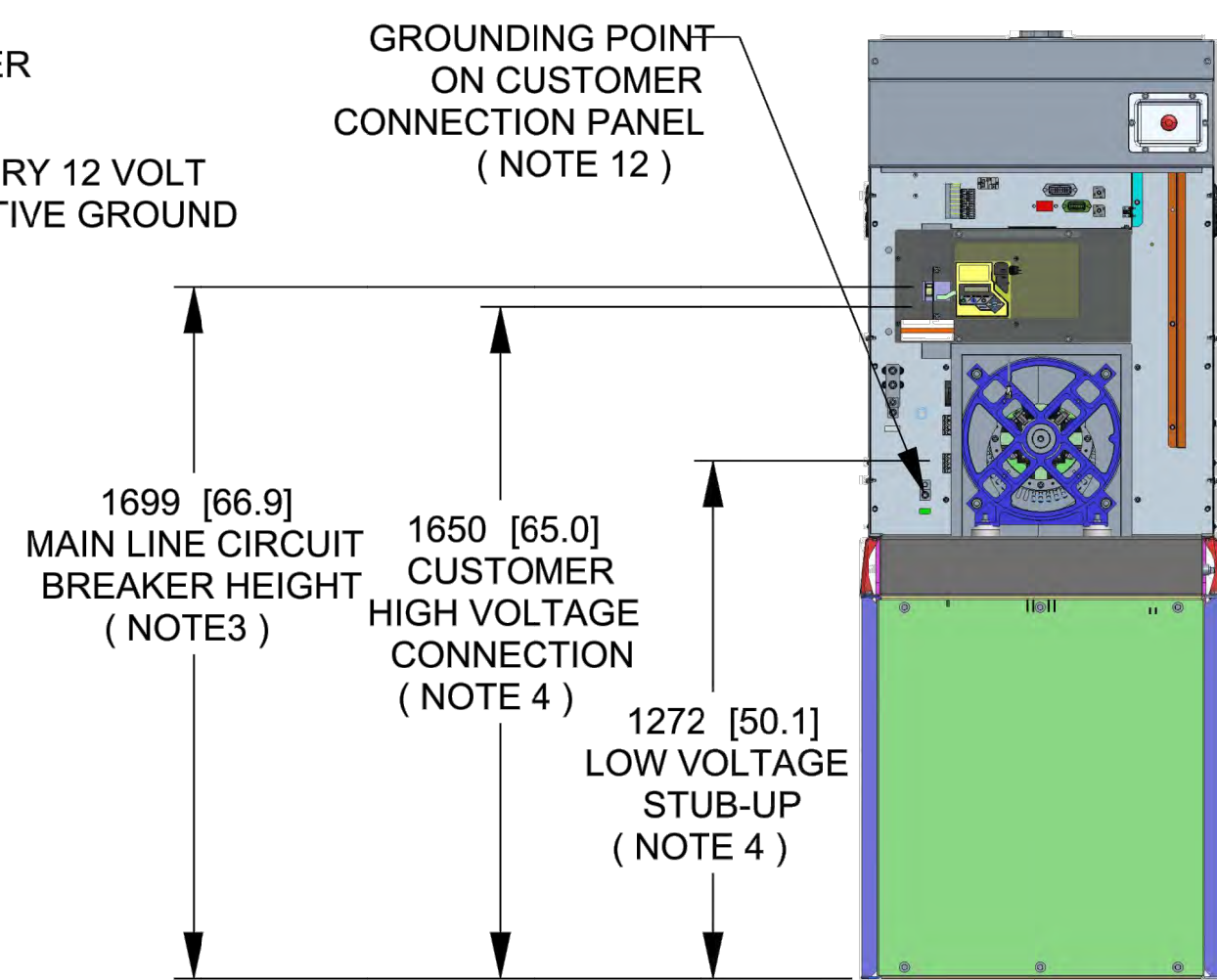
WEIGHT DATA WITH EMPTY BASETANK (SEE NOTE 6)	
GENERATOR AS SHOWN	1336 [2946]
WITH WOODEN SHIPPING SKID	1354 [2984]

WEIGHT: KG [LBS]
DIMENSIONS: MM [INCHES]

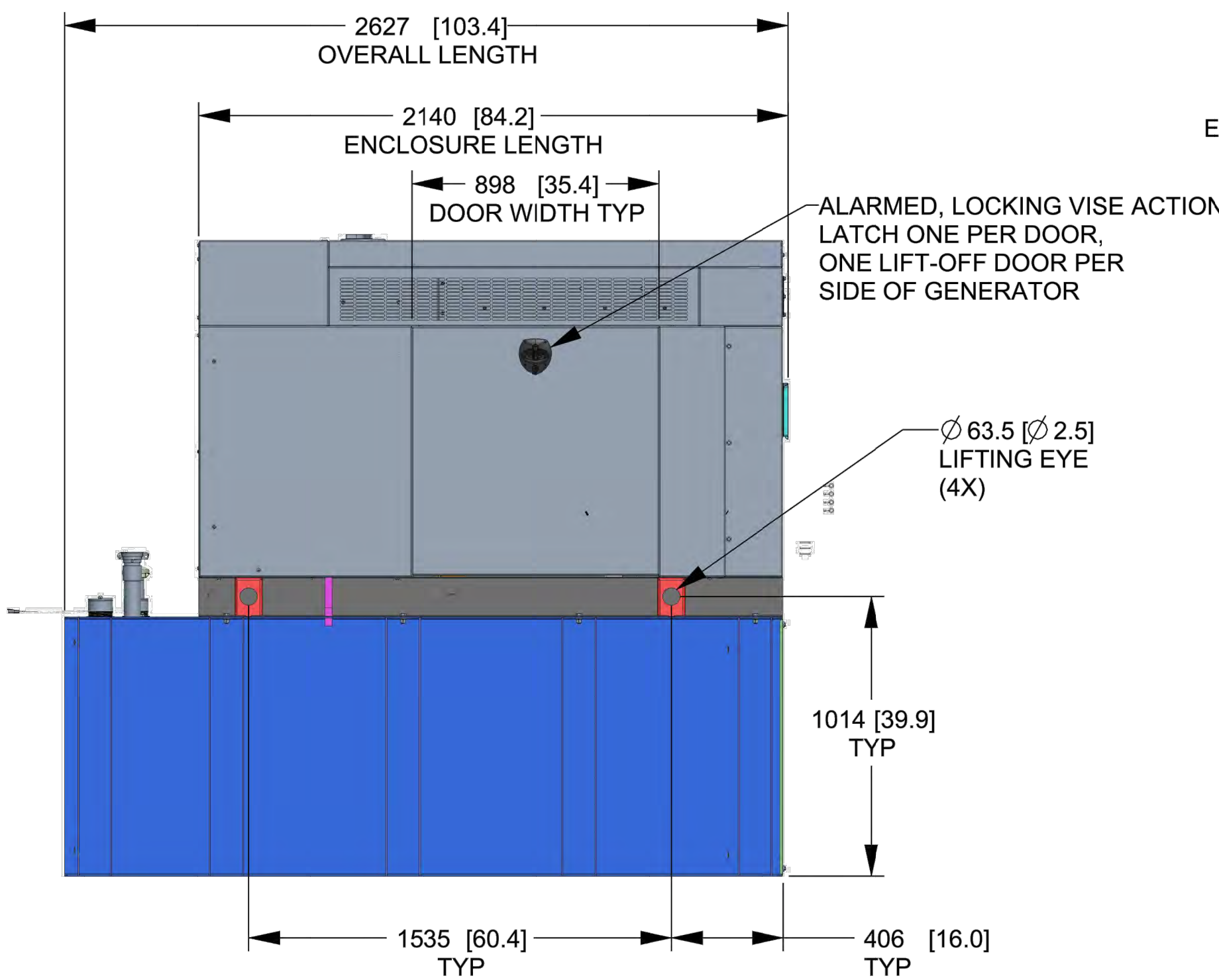
- NOTES:
- THIS UNIT MUST BE INSTALLED IN ACCORDANCE WITH CURRENT APPLICABLE NFPA 37 AND NFPA 70 STANDARDS AS WELL AS ANY OTHER FEDERAL, STATE, AND LOCAL CODES.
 - BATTERY (12 VOLT NEGATIVE GROUND SYSTEM).
 - CONTROL PANEL / CIRCUIT BREAKER INFORMATION:
 - MAIN LINE CIRCUIT BREAKER 125 AMPS
 - SEE SPECIFICATION SHEET OR OWNERS MANUAL
 - ACCESSIBLE THROUGH CUSTOMER ACCESS ASSEMBLY DOOR ON REAR OF GENERATOR.
 - CONTROL PANEL INCLUDES INTEGRATED BATTERY CHARGER
 - REMOVE THE REAR STUB-UP AND REAR ENCLOSURE COVER PANEL TO ACCESS THE STUB-UP AREAS AS FOLLOWS:
 - HIGH VOLTAGE CONNECTION INCLUDING AC LOAD LEAD CONDUIT CONNECTION, NEUTRAL CONNECTION, AND BATTERY CHARGER 120 VOLT AC (0.5 AMP MAX) CONNECTION.
 - LOW VOLTAGE CONNECTION INCLUDING TRANSFER SWITCH CONTROL WIRES
 - ENGINE SERVICE CONNECTIONS
 - OIL DRAIN: 1/2" NPT
 - RADIATOR DRAIN : HOSE CLAMPED TO FRAME
 - CENTER OF GRAVITY AND WEIGHT MAY CHANGE DUE TO UNIT OPTIONS.
 - BOTTOM OF GENERATOR SET MUST BE ENCLOSED TO PREVENT PEST INTRUSION AND RECIRCULATION OF DISCHARGE AIR AND/OR IMPROPER COOLING AIR FLOW.
 - REFERENCE OWNERS MANUAL FOR LIFTING WARNINGS.
 - MOUNTING BOLTS OR STUDS TO MOUNTING SURFACE SHALL BE 5/8-11 GRADE 5 (USE STANDARD SAE TORQUE SPECS)
 - MUST ALLOW FREE FLOW OF INTAKE AIR, DISCHARGE AIR AND EXHAUST. SEE SPEC SHEET FOR MINIMUM AIR FLOW AND MAXIMUM RESTRICTION REQUIREMENTS.
 - GENERATOR MUST BE INSTALLED SUCH THAT FRESH COOLING AIR IS AVAILABLE AND THAT DISCHARGE AIR FROM RADIATOR IS NOT RECIRCULATED. RECOMMENDED MINIMUM PERIMETER(3FT) AND VERTICAL OVER EXHAUST (5FT) CLEARANCE FOR SITE LOCATION.
 - GENERATOR MUST BE GROUNDED.



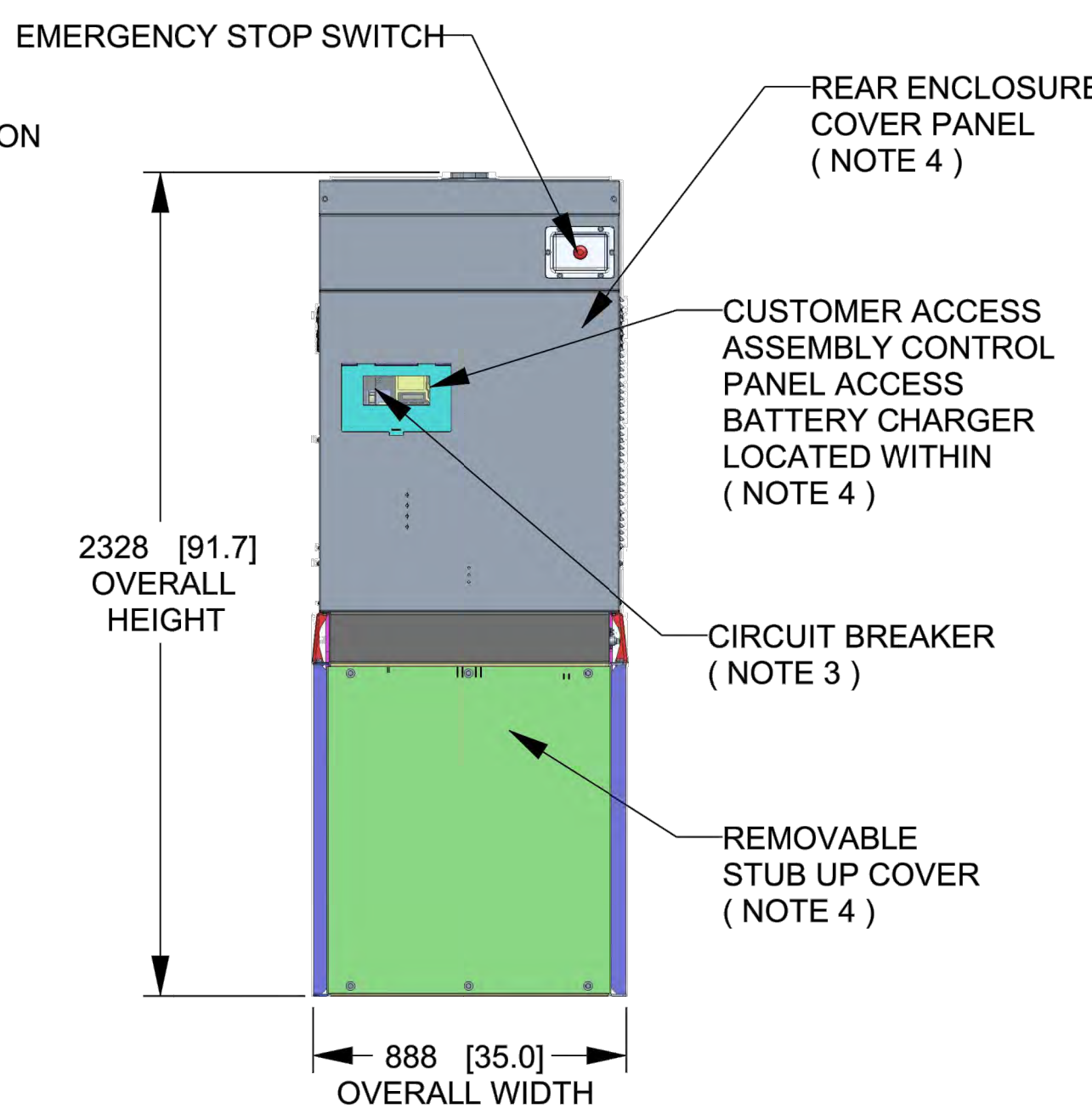
TOP VIEW (SHOWN WITH ENCLOSURE REMOVED)



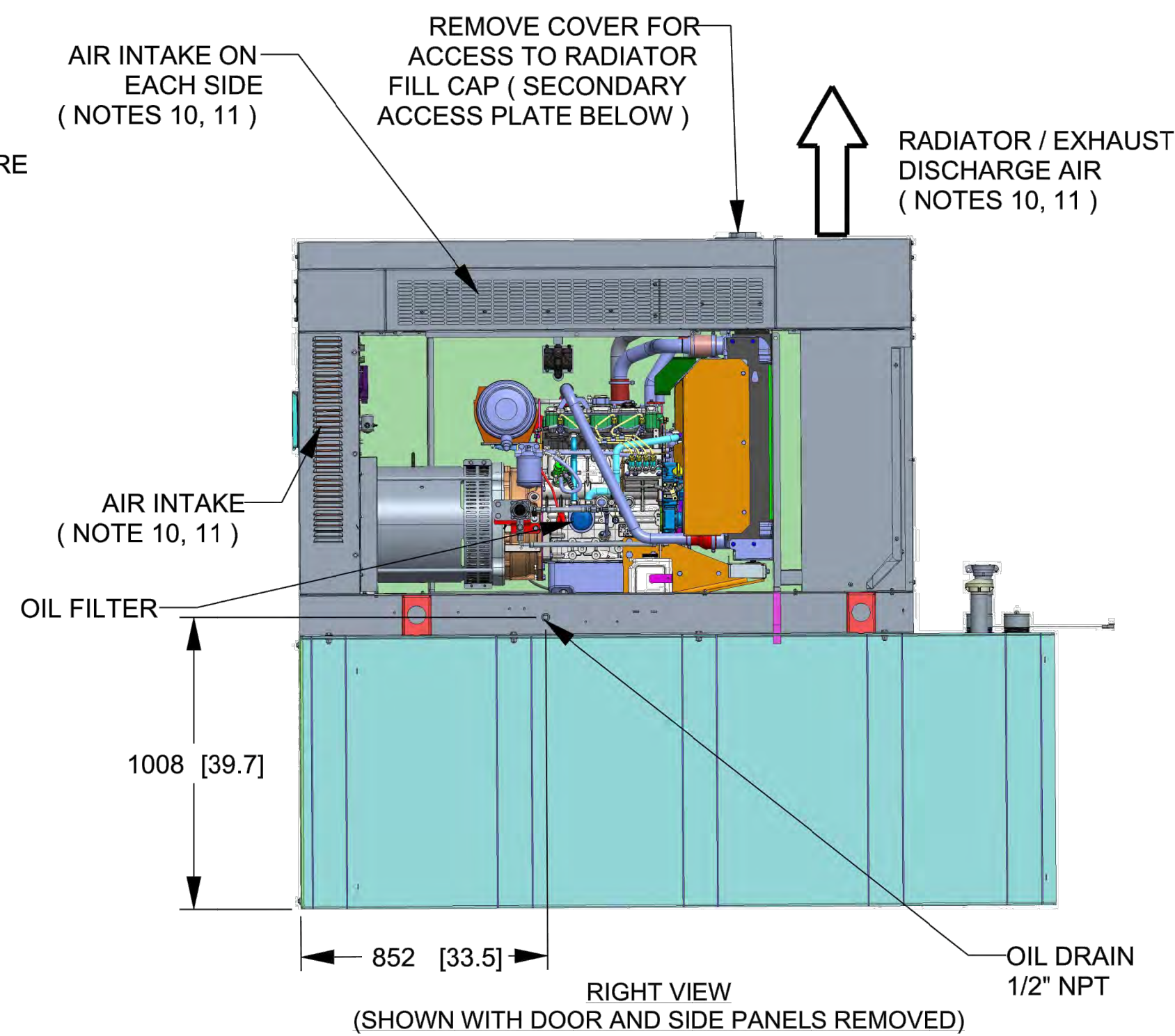
REAR VIEW (SHOWN WITH REAR COVER PANEL REMOVED)



LEFT VIEW



REAR VIEW



RIGHT VIEW (SHOWN WITH DOOR AND SIDE PANELS REMOVED)

DRAWING CREATED FROM PRO/ENGINEER 3D FILE. ECO MODIFICATION TO BE APPLIED TO SOLID MODEL ONLY.

INSTALLATION DRAWING

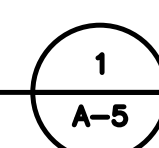
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TITLE			
INSTALLATION D2.2L 25KW Y06 PD			
ISSUE DATE: 5/10/18			
SIZE	CAGE NO	DWG NO	REV
B	N/A	10000036728	2
SCALE	WT-KG	SEE ABOVE	SHEET 1 of 2
0.031			

GENERATOR SPECIFICATIONS
SCALE: N.T.S.

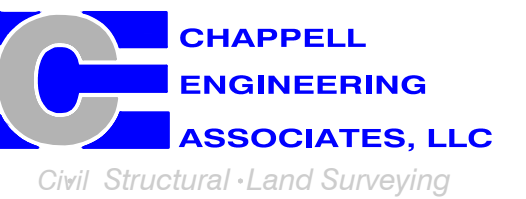


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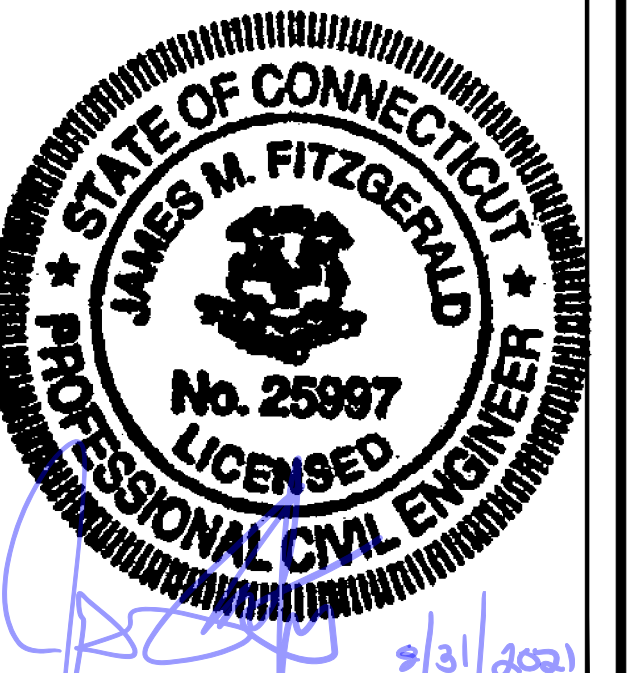
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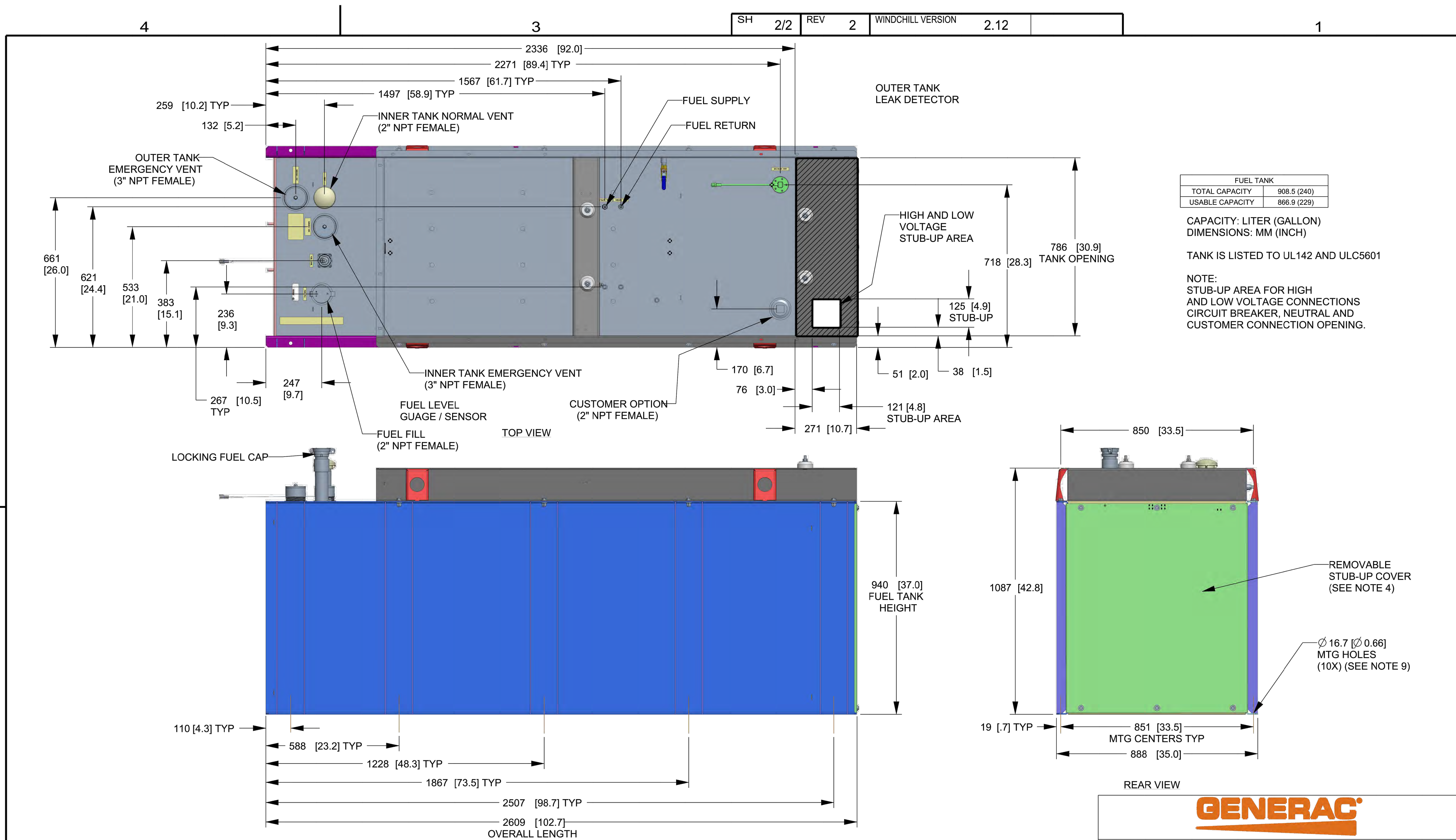
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ASHFORD, CT 06278

SHEET TITLE
GENERATOR SPECIFICATIONS 2

SHEET NUMBER
A-6



FUEL TANK	
TOTAL CAPACITY	908.5 (240)
USABLE CAPACITY	866.9 (229)

CAPACITY: LITER (GALLON)
DIMENSIONS: MM (INCH)

TANK IS LISTED TO UL142 AND ULC5601

NOTE:
STUB-UP AREA FOR HIGH AND LOW VOLTAGE CONNECTIONS
CIRCUIT BREAKER, NEUTRAL AND CUSTOMER CONNECTION OPENING.

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GENERAC

TITLE
**INSTALLATION D2.2L
25KW Y06 PD**

ISSUE DATE: 5/10/18

SIZE B	CAGE NO N/A	DWG NO 10000036728	REV 2
SCALE 0.063	WT-KG	SEE ABOVE	SHEET 2 of 2

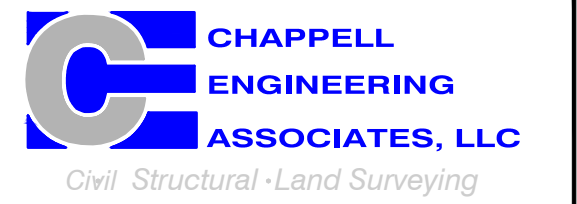
INSTALLATION DRAWING

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SHEET TITLE
**ANTENNA &
FEEDLINE CHARTS**

SHEET NUMBER
A-7

FINAL ANTENNA CONFIGURATION								
SECTOR	ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	TMA/RADIOS	SIGNAL CABLES
ALPHA	A1 RFS APX16DW-16DW-S-E-A20	157'± AGL	10°	0°	2'	L2100/L1900/G1900	RADIO 4460 B25+B66	(3) 2" (6x24) HCS FIBER CABLES
	A2 RFS APXVAALL24_43-U-NA20	157'± AGL	10°	0°	2'	L700/L600/N600	RADIO 4480 B71+B85	
	A3 ERICSSON M-MIMO AIR6449 B41	157'± AGL	10°	0°	2'	L2500/N2500	-	
	A4 EMPTY PIPE	-	-	-	-	-	-	
BETA	B1 RFS APX16DW-16DW-S-E-A20	157'± AGL	120°	0°	2'	L2100/L1900/G1900	RADIO 4460 B25+B66	
	B2 RFS APXVAALL24_43-U-NA20	157'± AGL	120°	0°	2'	L700/L600/N600	RADIO 4480 B71+B85	
	B3 ERICSSON M-MIMO AIR6449 B41	157'± AGL	120°	0°	2'	L2500/N2500	-	
	B4 EMPTY PIPE	-	-	-	-	-	-	
GAMMA	C1 RFS APX16DW-16DW-S-E-A20	157'± AGL	240°	0°	2'	L2100/L1900/G1900	RADIO 4460 B25+B66	
	C2 RFS APXVAALL24_43-U-NA20	157'± AGL	240°	0°	2'	L700/L600/N600	RADIO 4480 B71+B85	
	C3 ERICSSON M-MIMO AIR6449 B41	157'± AGL	240°	0°	2'	L2500/N2500	-	
	C4 EMPTY PIPE	-	-	-	-	-	-	

CABLE NOTE: SEE FEEDLINE SCHEDULE A & B BELOW.

NOTE: RFDS REV1 - 05/17/21

FEEDLINE SCHEDULE		
SCHEDULE	FEEDLINES	LOCATION
A	EXISTING TO REMAIN: NONE EXISTING TO BE REMOVED: NONE	ROUTED PER STRUCTURAL ANALYSIS
B	PROPOSED: (3) 2" (6x24) HCS FIBER CABLES (1) ½" COAX CABLE FOR GPS ANTENNA	
NOTE: EXISTING T-MOBILE EQUIPMENT FEEDLINE INVENTORY BASED ON OBSERVED FIELD CONDITIONS. RFDS AND FEEDLINE LEASING ENTITLEMENTS MAY DIFFER.		

NOTES TO CONTRACTOR:

- CONTRACTOR SHALL INSPECT THE EXISTING CONDITIONS PRIOR TO SUBMITTING BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTORS FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE ENGINEER FOR CLARIFICATION, NOT AFTER THE CONTRACT HAS BEEN AWARDED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND PAY ALL FEES AS MAY BE REQUIRED FOR ELECTRICAL WORK AND FOR SCHEDULING OF ALL INSPECTIONS AS REQUIRED WITH LOCAL AUTHORITY.
- UTILITY SERVICES SHOWN ARE PROPOSED, THE ELECTRIC CONTRACTOR SHALL COORDINATE EXACT TELEPHONE AND ELECTRIC SERVICE CONNECTION POINTS, ROUTING AND ASSOCIATED REQUIREMENTS WITH LOCAL UTILITY COMPANIES & SPRINT CONSTRUCTION MANAGER.
- THE CONTRACTOR SHALL PROVIDE TEMPORARY POWER AND LIGHTING AS REQUIRED FOR THE WORK.
- LOCATION OF EQUIPMENT, CONDUIT AND DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND SHALL BE COORDINATED WITH FIELD CONDITIONS PRIOR TO ROUGH-IN.
- THE CONDUIT RUNS AS SHOWN ON THE PLANS ARE APPROXIMATE. EXACT LOCATION AND ROUTING SHALL BE PER EXISTING FIELD CONDITIONS.
- PROVIDE PULL BOXES AND JUNCTION BOXES WHERE SHOWN OR REQUIRED BY NEC.
- ALL CONDUITS SHALL BE MET WITH STANDARDS MADE IN ACCORDANCE WITH NEC TABLE 346-10. NO RIGHT ANGLE DEVICE OTHER THAN STANDARD CONDUIT ELBOWS WITH 12" MINIMUM INSIDE SWEEPS FOR ALL CONDUITS 2" OR LARGER.
- ALL CONDUIT TERMINATIONS SHALL BE PROVIDED WITH PLASTIC THROAT INSULATING GROUNDING BUSHINGS.
- ALL WIRE SHALL BE TYPE THWN, SOLID, ANNEALED COPPER UP TO SIZE #10 AWG (#8 AND LARGER SHALL BE CONCENTRIC STRANDED) 75 DEGREE C, (167 DEGREES F), 98% CONDUCTIVITY, MINIMUM #12.
- ALL WIRES SHALL BE TAGGED AT ALL PULL BOXES, J-BOXES, EQUIPMENT BOXES AND CABINETS WITH APPROVED PLASTIC TAGS, ACTION CRAFT, BRADY, OR APPROVED EQUAL.
- ALL NEW MATERIAL SHALL HAVE A U.L. LABEL.
- CONDUIT ROUGH-IN SHALL BE COORDINATED WITH THE MECHANICAL EQUIPMENT TO AVOID LOCATION CONFLICTS. VERIFY WITH MECHANICAL CONTRACTOR AND COMPLY AS REQUIRED.
- ALL PANEL DIRECTORIES SHALL BE TYPEWRITTEN NOT HAND WRITTEN.
- INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS PER THE SPECIFICATIONS AND NEC. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULLBOXES, AND ALL DISCONNECT SWITCHES, STARTERS, AND EQUIPMENT CABINETS.
- THE CONTRACTOR SHALL PREPARE AS-BUILT DRAWINGS, DOCUMENT ANY AND ALL WIRING AND EQUIPMENT CONDITIONS AND CHANGES WHILE COMPLETING THIS CONTRACT. SUBMIT AT SUBSTANTIAL COMPLETION.
- ALL DISCONNECT SWITCHES AND OTHER CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED LAMICOID NAMEPLATES INDICATING EQUIPMENT CONTROLLED, BRANCH CIRCUITS INSTALLED ON, AND PANEL LOCATIONS FED FROM (NO EXCEPTIONS.)
- PROVIDE CORE DRILLING AS NECESSARY FOR PENETRATIONS OR RISERS THROUGH BUILDING. DO NOT PENETRATE STRUCTURAL MEMBERS WITHOUT CONSTRUCTION MANAGERS APPROVAL. SLEEVES AND/OR PENETRATIONS IN FIRE RATED CONSTRUCTION SHALL BE PACKED WITH FIRE RATED MATERIAL WHICH SHALL MAINTAIN THE FIRE RATING OF THE WALL OR STRUCTURE. FILL FOR FLOOR PENETRATIONS SHALL PREVENT PASSAGE OF WATER, SMOKE, FIRE AND FUMES. ALL MATERIAL SHALL BE UL APPROVED FOR THIS PURPOSE.

NOTE: ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT (NEW AND EXISTING) SHALL BE FIELD VERIFIED WITH THE OWNER'S REPRESENTATIVE AND EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN OF CONDUIT AND WIRE. ALL EQUIPMENT SHALL BE PROPERLY CONNECTED ACCORDING TO THE NAMEPLATE DATA FURNISHED ON THE EQUIPMENT (THE DESIGN OF THESE PLANS ARE BASED UPON BEST AVAILABLE INFORMATION AT THE TIME OF DESIGN AND SOME EQUIPMENT CHARACTERISTICS MAY NOT BE CORRECT AS SHOWN ON THESE DRAWINGS). LOCATION OF OUTLETS, BOXES, ETC. AND THE TYPE OF CONNECTION (PLUG OR DIRECT) SHALL BE CONFIRMED WITH THE OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN.

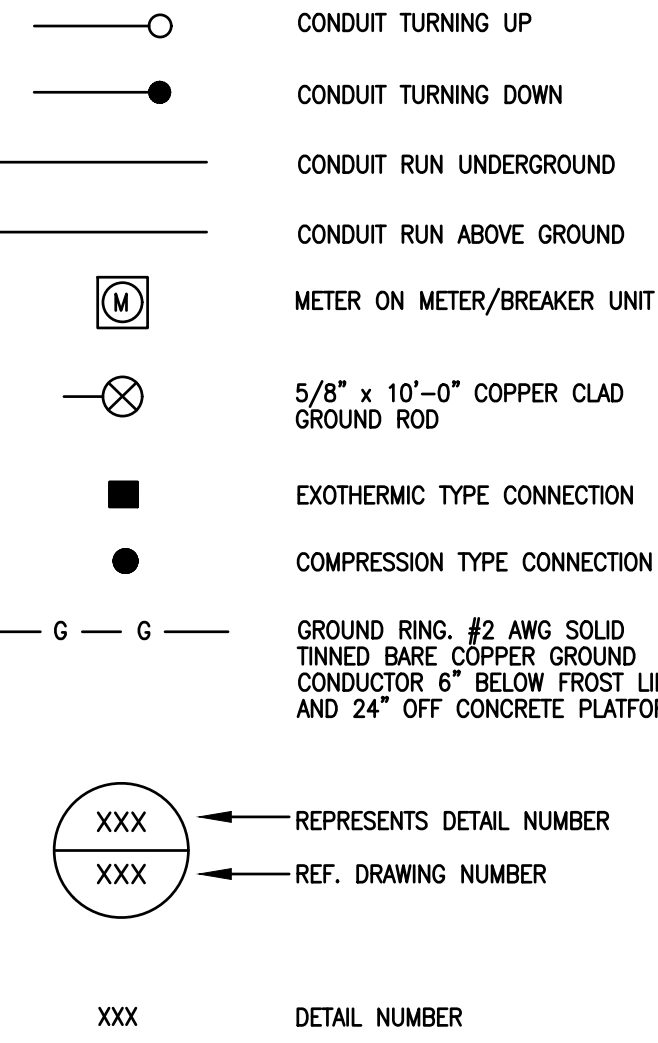
- ALL UNDERGROUND CONDUIT ROUTING SHALL BE COORDINATED IN FIELD BETWEEN SPRINT WIE, CONTRACTOR, AND RESPECTIVE UTILITY COMPANIES.
- ALL CONDUITS ROUTED BELOW GRADE SHALL TRANSITION TO RIGID GALVANIZED ELBOWS WITH RIGID GALVANIZED STEEL CONDUIT ABOVE GRADE.
- CONTRACTOR SHALL PROVIDE ALL DIRECT BURIED CONDUITS WITH 6" WIDE, 6 MIL THICK ALUMINIZED PLASTIC WARNING TAPE IDENTIFYING CONTENTS. TAPE COLORS SHALL BE ORANGE FOR TELEPHONE AND RED FOR ELECTRIC.
- ELECTRICAL CONTRACTOR SHALL PROVIDE A SECTION OF SEALTITE CONDUIT FOR TELCO CONNECTION TO THE PRIMARY RADIO CABINET. COORDINATE EXACT CONNECTION TYPE WITH LUCENT.
- ELECTRICAL CONTRACTOR SHALL PROVIDE A SECTION OF SEALTITE CONDUIT FOR POWER CONNECTION TO THE PRIMARY RADIO CABINET. THE CONTRACTOR SHALL PROVIDE AN ADDITIONAL 6"-0" COIL OF WIRE AT THE END OF THE SEALTITE.
- GROUND IN ACCORD W/LOCAL CODE & SHEET E-2.
- PROVIDE (2) 4" GALVANIZED RIGID STEEL CONDUIT RISER WITH 1/4" NYLON DRAG LINE INCLUDING 90° GRC SWEEP AT POLE (UP TO 20'-0" AFG). SECURE TO POLE PER UTILITY COMPANY REQUIREMENTS. PRIMARY CABLES BY UTILITY COMPANY.

ELECTRICAL SPECIFICATIONS

- SECTION 16010 - GENERAL PROVISIONS
- REQUIREMENTS: FURNISH ALL LABOR, MATERIALS, SERVICE, EQUIPMENT, AND APPLIANCES REQUIRED TO COMPLETE THE INSTALLATION OF THE COMPLETE ELECTRICAL SYSTEM IN ACCORDANCE WITH THE SPECIFICATIONS AND CONTRACT DRAWINGS.
 - REQUIREMENTS OF REGULATORY AGENCIES AND STANDARDS: INSTALLATION, MATERIAL, EQUIPMENT AND WORKMANSHIP SHALL CONFORM TO THE APPLICABLE PROVISIONS OF THE NATIONAL ELECTRICAL CODE (NEC) - APPLICABLE STATE ELECTRIC CODES, THE NATIONAL ELECTRICAL SAFETY CODE (NECS), AND THE TERMS AND THE CONDITIONS OF THE AUTHORITIES HAVING LAWFUL JURISDICTION PERTAINING TO THE WORK REQUIRED. ALL MODIFICATIONS REQUIRED BY THESE CODES, RULES, REGULATIONS, AND AUTHORITIES SHALL BE MADE BY THE CONTRACTOR WITHOUT ADDITIONAL CHARGE TO THE OWNER.
 - UNDERWRITER'S LABORATORIES (UL): ALL MATERIALS, APPLIANCES, EQUIPMENT, OR DEVICES SHALL CONFORM TO THE APPLICABLE STANDARDS OF UNDERWRITER'S LABORATORIES, INC. THE LABEL OF, OR LISTING BY, UL, IS REQUIRED.
- SECTION 16110 - RACEWAYS, BOXES AND FITTINGS
- CONDUIT FITTINGS, CONNECTORS AND COUPLINGS, EMT COUPLINGS AND CONNECTORS EITHER STEEL OR MALLEABLE IRON ONLY, "CONCRETE TIGHT" OR "RAIN TIGHT" AND EITHER THE GLAND AND RING COMPRESSION TYPE OR STAINLESS STEEL MULTIPLE POINT LOCKING TYPE. CONNECTORS TO HAVE INSULATED THROATS, EMT FITTINGS USING SET SCREWS OR INDENTATIONS AS A MEANS OF ATTACHMENT ARE NOT PERMITTED.
 - BUSHINGS: INSULATED TYPE, DESIGNED TO PREVENT ABRASION OF WIRES WITHOUT IMPAIRING THE CONTINUITY OF THE CONDUIT GROUNDING SYSTEM, FOR RIGID STEEL CONDUIT, IMC AND RIGID ALUMINUM CONDUIT.
 - CONDUIT INSTALLATIONS: CONDUIT SYSTEMS, EMT, OR RIGID NON-METALLIC CONDUIT UNLESS NOTED, INSTALL CONCEALED CONDUIT AND EMT IN AS DIRECT LINES AS POSSIBLE. INSTALL EXPOSED CONDUITS AND EMT PARALLEL TO OR AT RIGHT ANGLES TO THE LINES OF THE BUILDING. RIGHT ANGLE BENDS IN EXPOSED CONDUIT AND EMT RUNS SHALL BE MADE WITH STANDARD ELBOWS, SCREW JOINTED CONDUIT FITTINGS OR CONDUIT BENT TO RADIUS NO LESS THAN THOSE OF STANDARD ELBOWS.
 - CONDUIT SUPPORTS: PROVIDE SUPPORTS FOR HORIZONTAL CONDUITS AND EMT NOT MORE THAN 8 FEET APART WITH NOT LESS THAN TWO SUPPORTS FOR EACH 10 FOOT STRAIGHT LENGTH AND ONE SUPPORT NEAR EACH ELBOW OR BEND INCLUDING RUNS ABOVE SUSPENDED CEILINGS AND WITHIN 3 FEET OF ALL JUNCTION BOXES, SWITCHES, FITTINGS, ETC. INSTALL ONE HOLE PIPE STRAPS ON CONDUITS 1 INCH OR SMALLER INSTALL INDIVIDUAL PIPE HANGERS FOR CONDUITS LARGER THAN 1 INCH. SPRING STEEL FASTENERS WITH HANGER RODS MAY BE USED IN DRY LOCATIONS IN LIEU OF PIPE STRAPS.
- SECTION 16120 - CONDUCTORS
- WIRES AND CABLES (600 VOLTS): CONFORM TO THE APPLICABLE UL AND ICEA STANDARDS FOR THE USE INTENDED. USE COPPER CONDUCTORS WITH 600 VOLTS INSULATION UNLESS OTHERWISE SPECIFIED OR NOTED ON THE DRAWINGS. USE STRANDED CONDUCTORS FOR NO. 8 OR LARGER WHERE ELSEWHERE SPECIFIED OR NOTED OTHERWISE ON THE DRAWINGS. USE OF ALUMINUM CONDUCTORS WILL NOT BE PERMITTED. INSULATION SHALL BE TYPE THHN/THWN, 75°C, FOR ALL CONDUCTORS, UNLESS OTHERWISE SPECIFIED OR NOTED ON THE DRAWINGS.
 - COLOR CODING, PHASE, NEUTRAL, AND GROUND CONDUCTORS COLOR-CODED IN ACCORDANCE WITH NEC. CONNECT ALL CONDUCTORS OF THE SAME COLOR TO THE SAME PHASE CONDUCTOR, COLOR CODING SHALL BE BLACK, RED, BLUE, WHITE (120/208) OR BROWN ORANGE, YELLOW, GRAY (277/480) WITH GREEN FOR ALL GROUND CONDUCTORS.
 - CONNECTORS AND LUGS: FOR COPPER CONDUCTORS NO. 6 AND SMALLER: 3M SCOTCH-LOK OR T & B STA-KON COMPRESSION OR INDENT TYPE CONNECTORS WITH INTEGRAL OR SEPARATE INSULATING CAPS. FOR COPPER CONDUCTORS LARGER THAN NO. 6 SOLDERLESS, INDENT, HEX SCREW OR BOLT TYPE PRESSURE CONNECTORS, PROPERLY TAPED OR INSULATED.
 - SPLICES: (480 VOLTS AND UNDER): CONDUCTOR LENGTHS SHALL BE CONTINUOUS FROM TERMINATION TO TERMINATION WITHOUT SPLICES UNLESS APPROVED BY THE BUILDING INSPECTOR.
- SECTION 16220 - CIRCUIT BREAKERS
- PROVIDE MOLDED CASE, BOLT-ON, THERMAL MAGNETIC TRIP, SINGLE, TWO OR THREE POLE BRANCH CIRCUIT BREAKERS AS SHOWN ON DRAWINGS. MULTIPLE POLE BREAKERS SHALL BE SINGLE HANDLE, COMMON TRIP. AC RATING TO MATCH EXISTING OR AS REQUIRED FOR AVAILABLE FAULT CURRENTS.

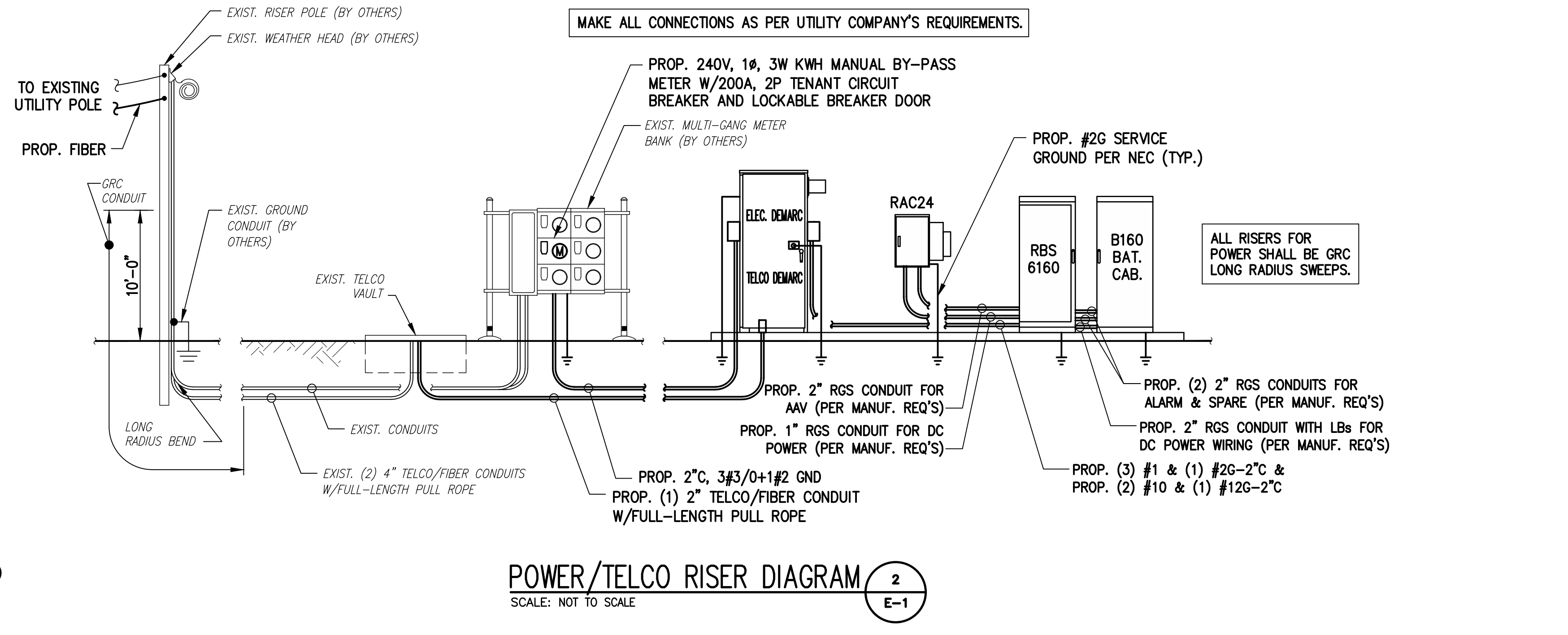
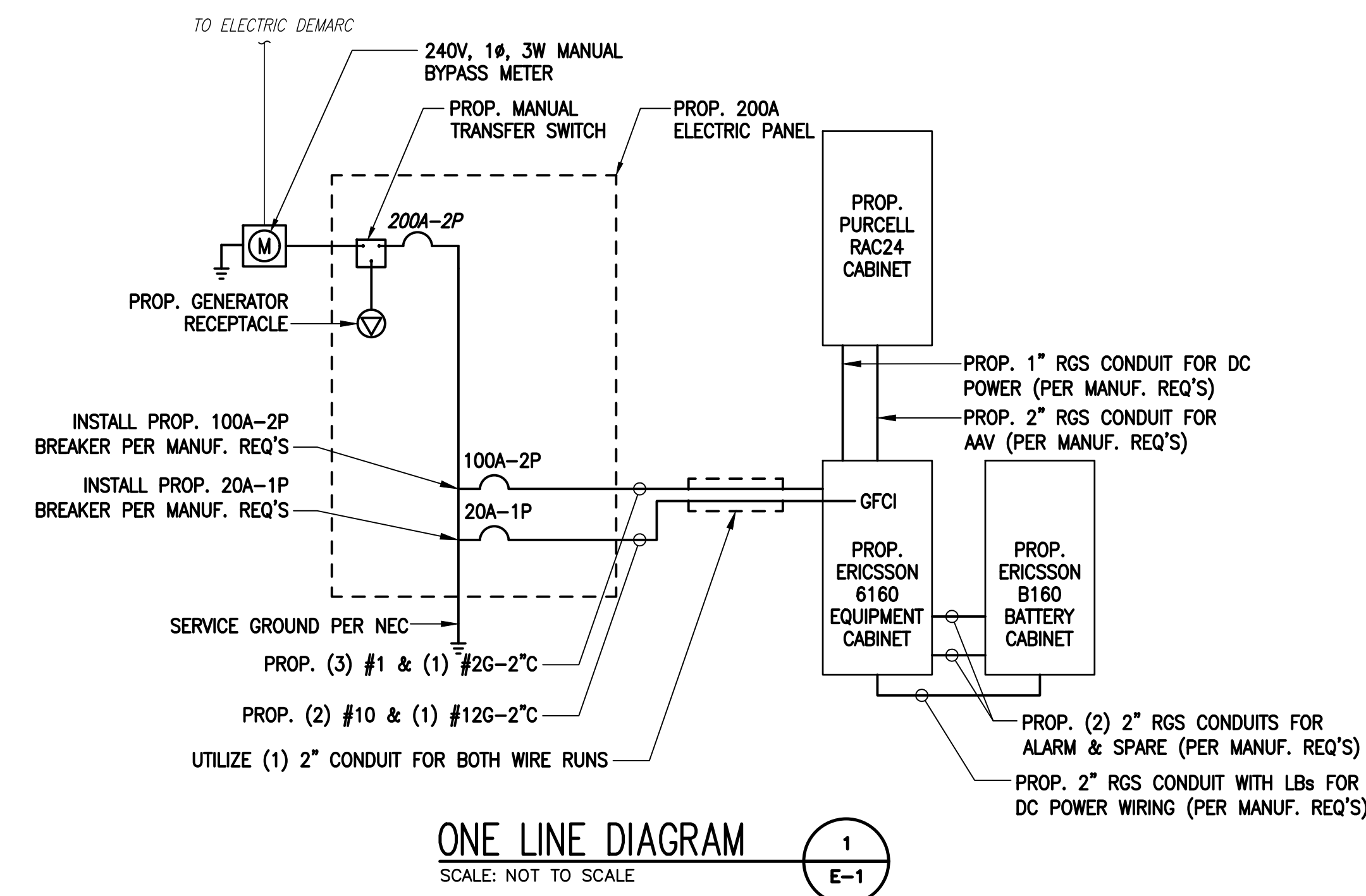
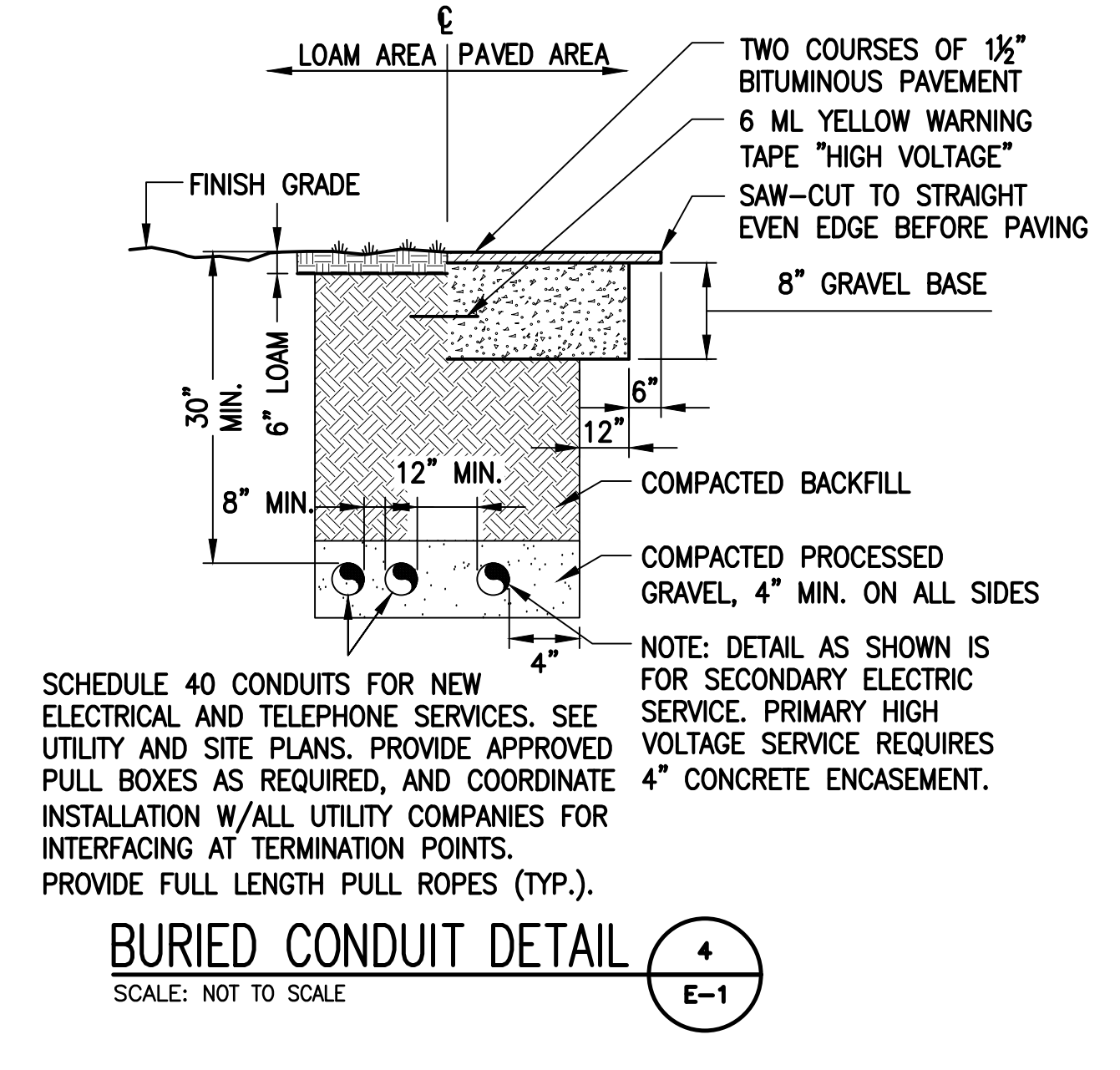
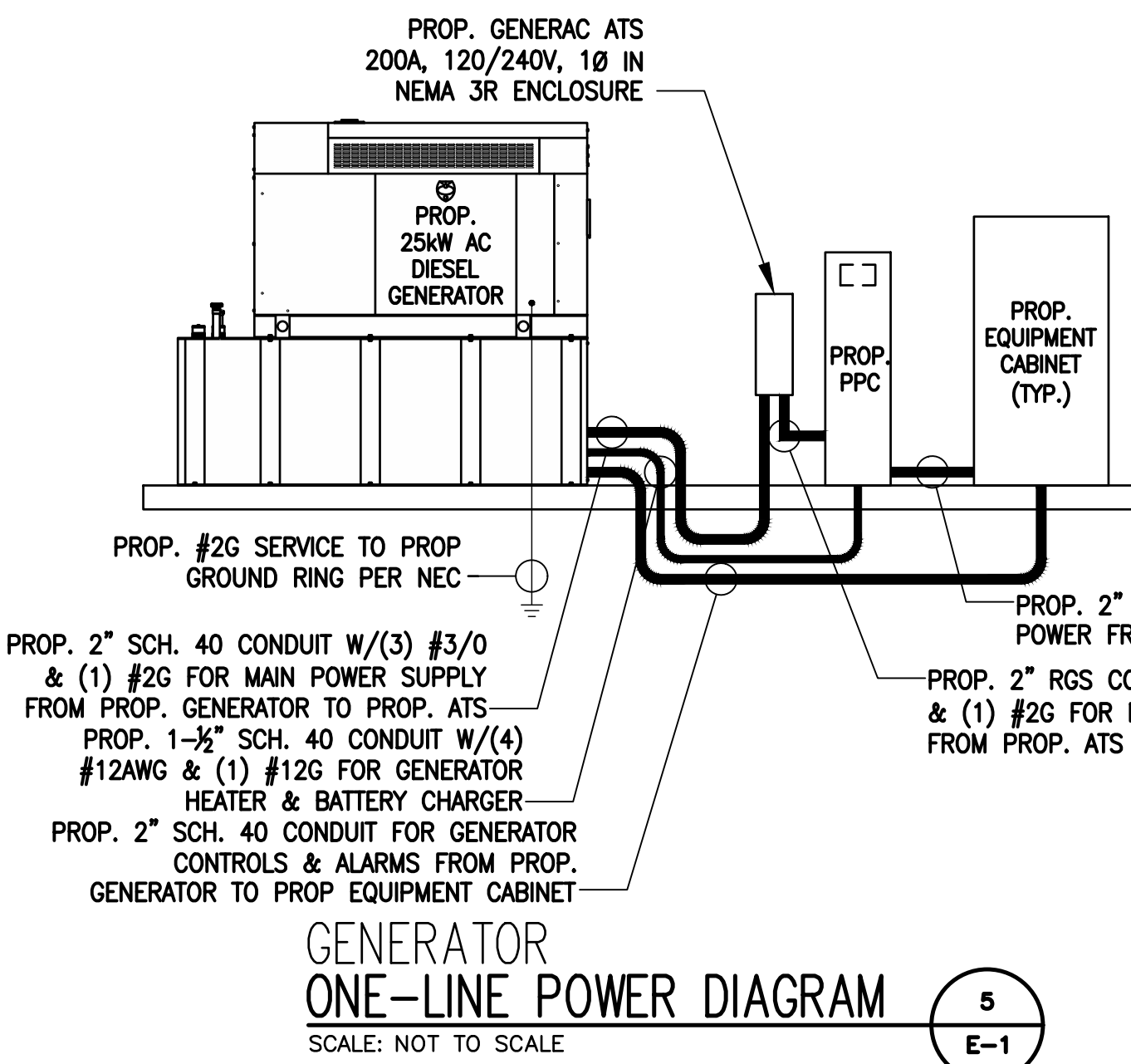
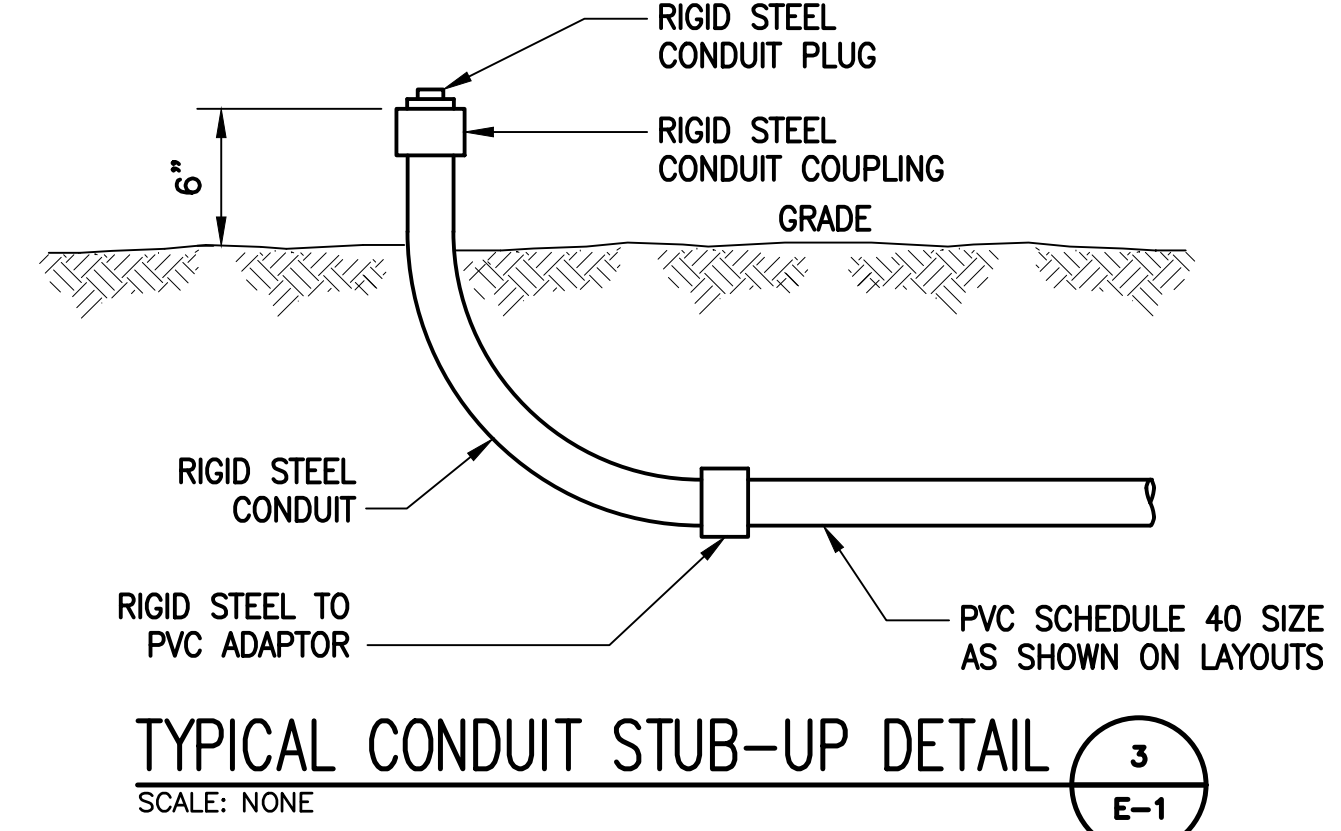
ELECTRICAL LEGEND

SYMBOLS



ABBREVIATIONS

- ACCA ANTENNA CABLE COVER ASSEMBLY
AGB COPPER ANTENNA GROUND BAR
AWG AMERICAN WIRE GAUGE
BCW BARE COPPER WIRE
BTS BASE TRANSMISSION SYSTEM
CIBGE COAX ISOLATED GROUND BAR EXTERNAL DRAWING
DWT ELECTRICAL METALLIC TUBING
GEN GENERATOR
GPS GLOBAL POSITIONING SYSTEM
GR GROWTH
IGR INTERIOR GROUND RING (HALO)
LAGB LOWER ANTENNA COPPER GROUND BAR
MIGB MASTER ISOLATED GROUND BAR
PCS PERSONAL COMMUNICATION SYSTEM
PPC POWER PROTECTION CABINET
PRC PRIMARY RADIO CABINET
RGS RIGID GALVANIZED STEEL
RWY RACEWAY
TYP TYPICAL
SSLP SPRINT SPECTRUM LIMITED PARTNERSHIP
UAGB UPPER ANTENNA COPPER GROUND BAR
EXIST. EXISTING
PROP. PROPOSED

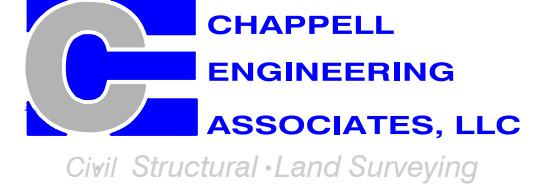


T-MOBILE NORTHEAST LLC

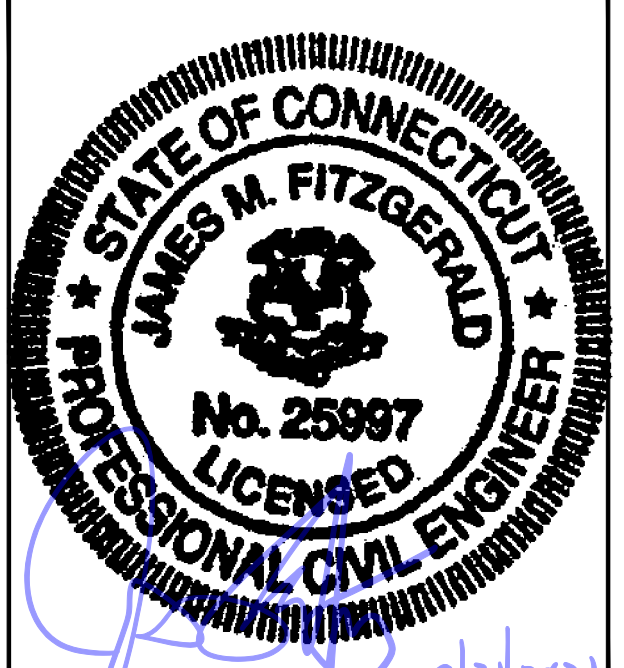
15 COMMERCE WAY, SUITE B
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(508) 286-2700



SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE 125
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SUBMITTALS			
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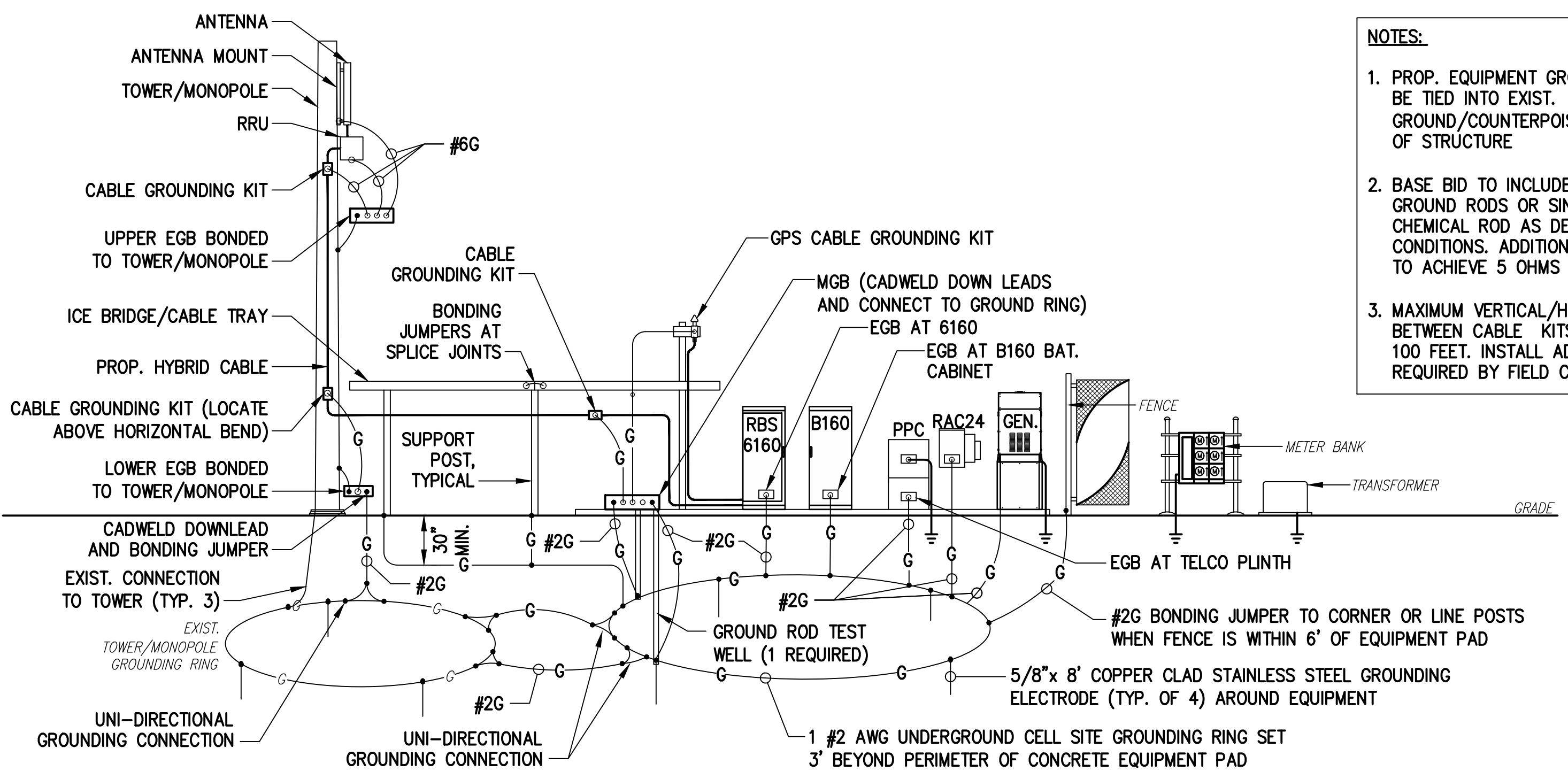
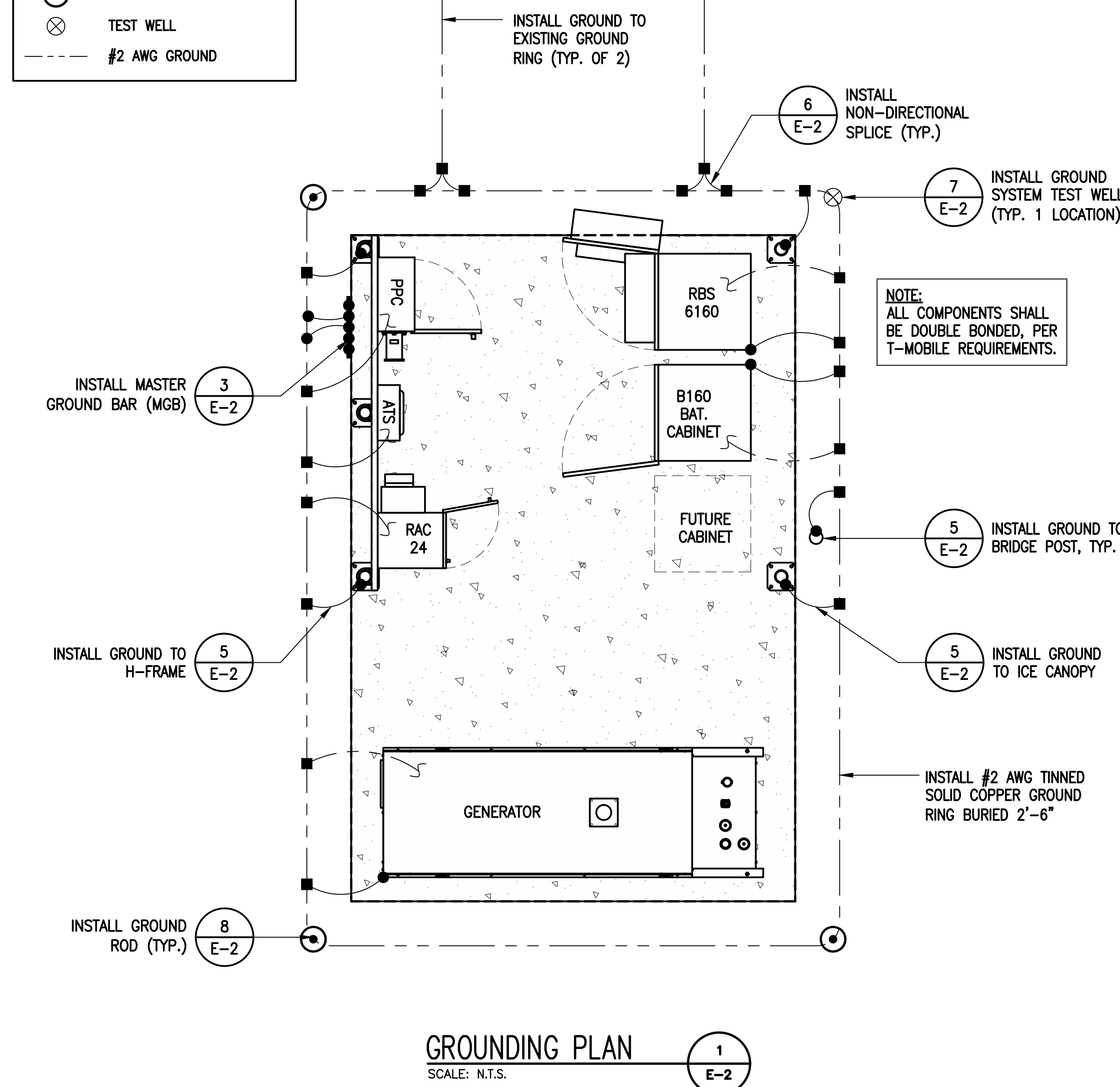
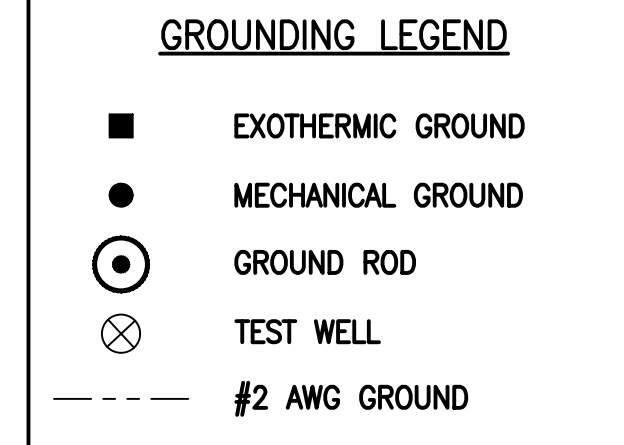
SITE NUMBER:
CTNL162B
SITE ADDRESS:
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ASHFORD, CT 06278

SHEET TITLE
SITE ELECTRIC & GROUNDING DETAILS
1 OF 2

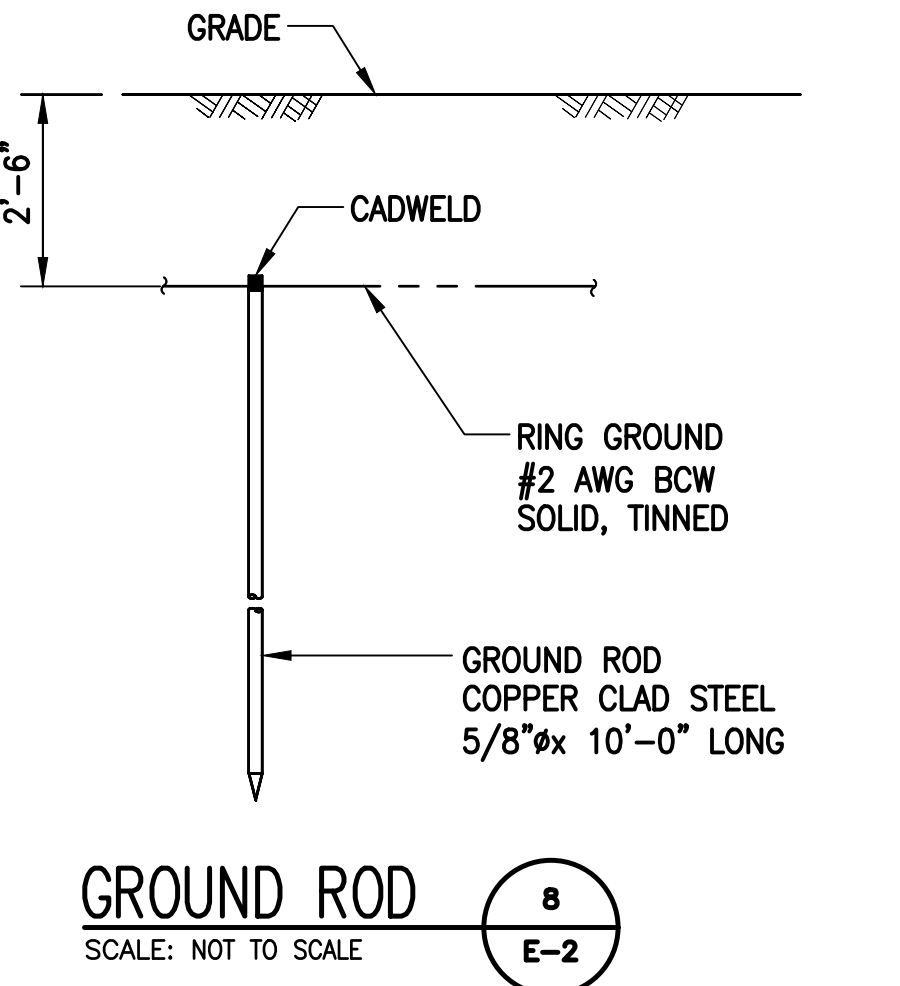
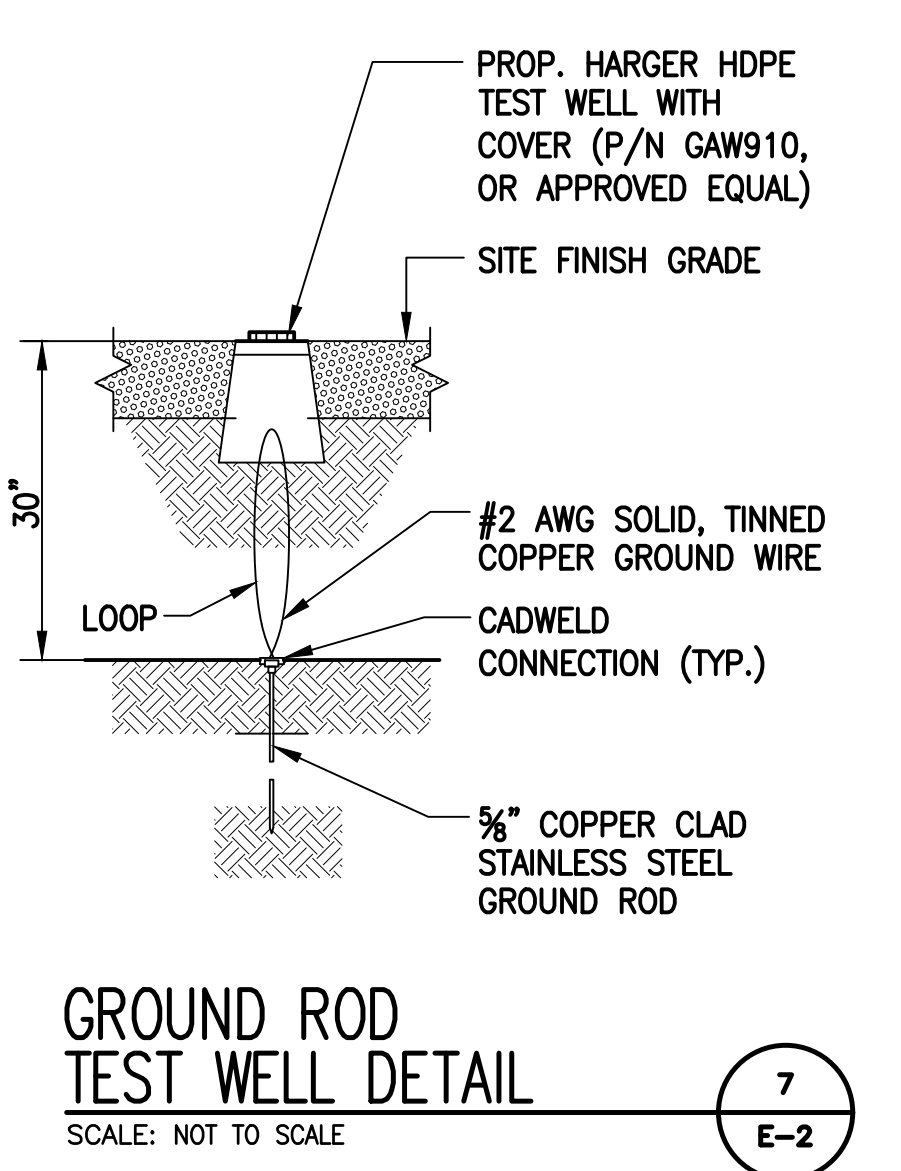
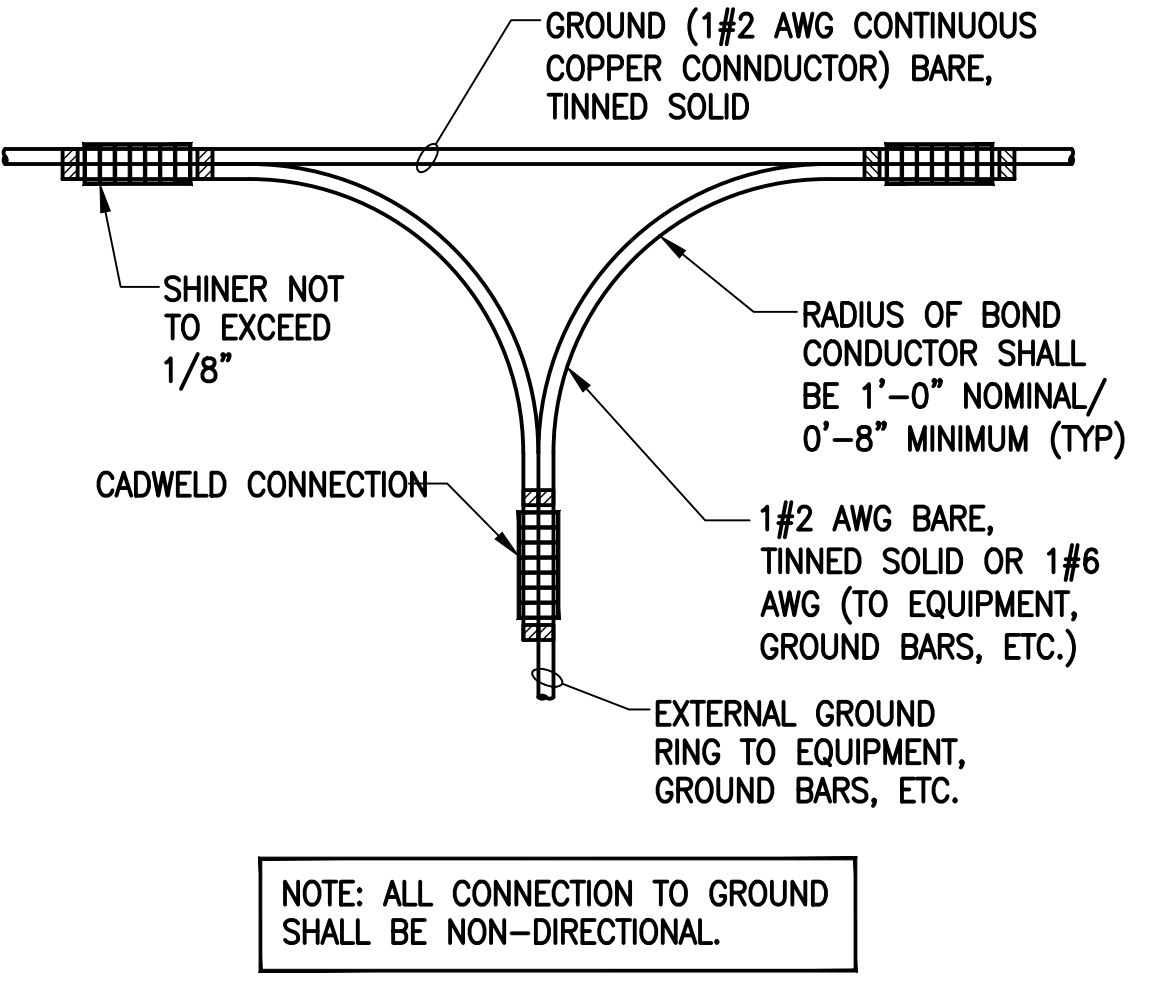
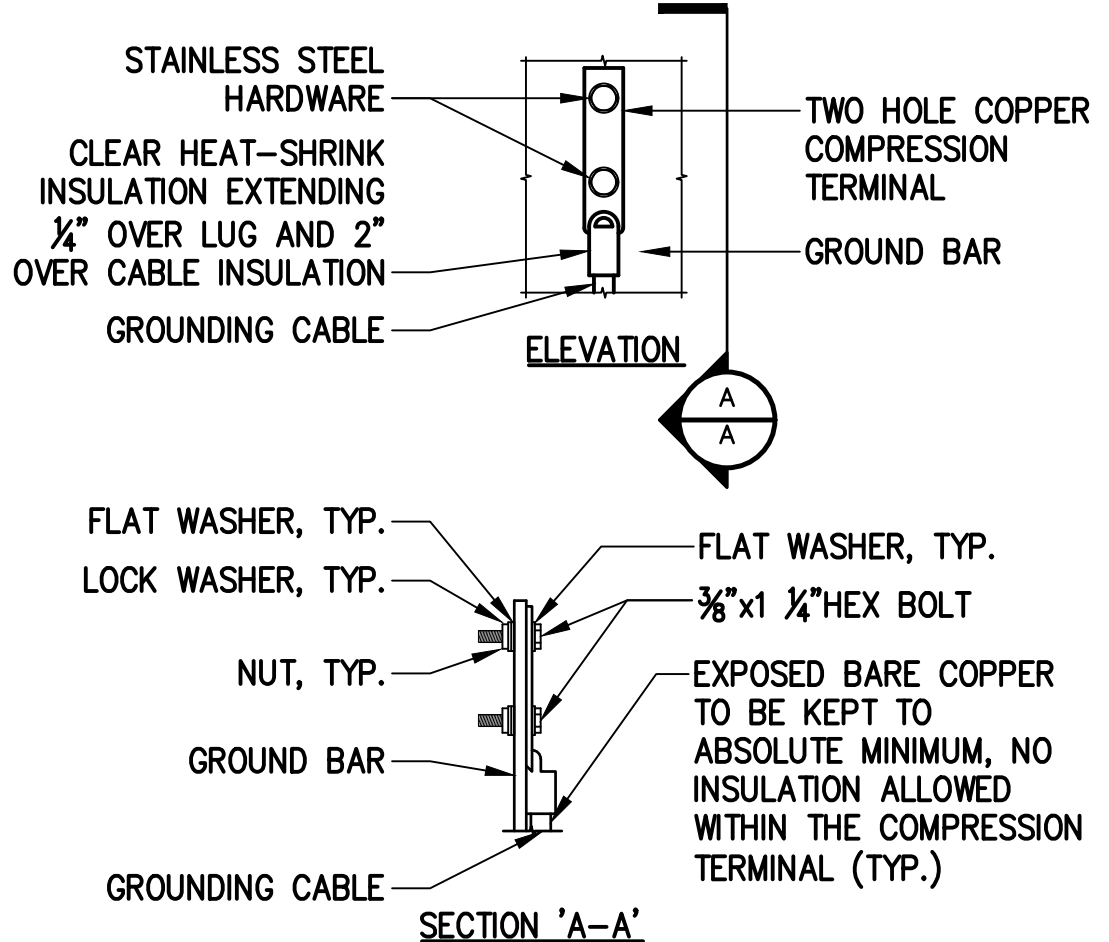
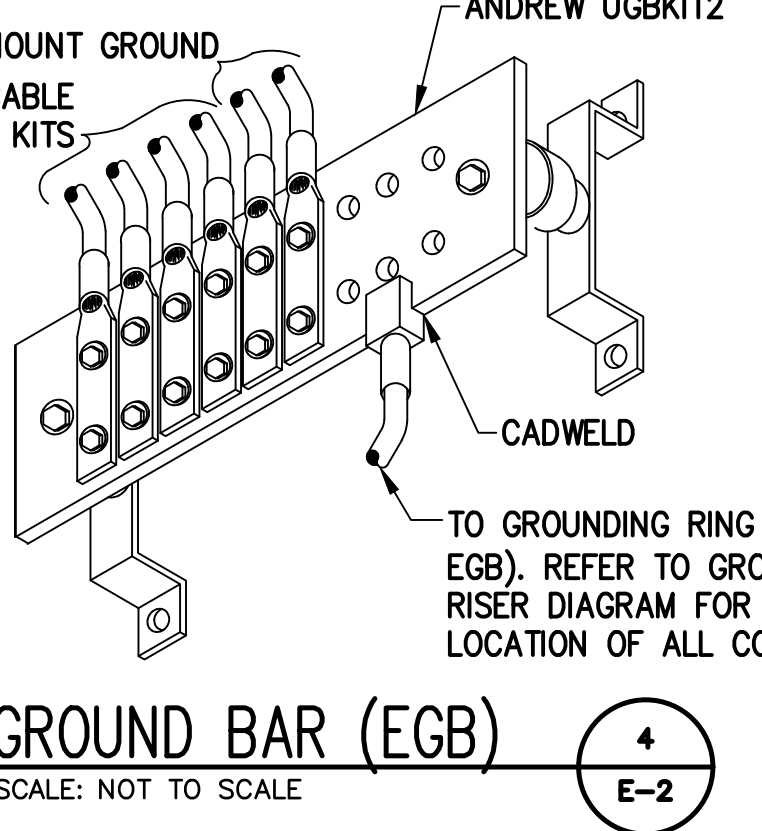
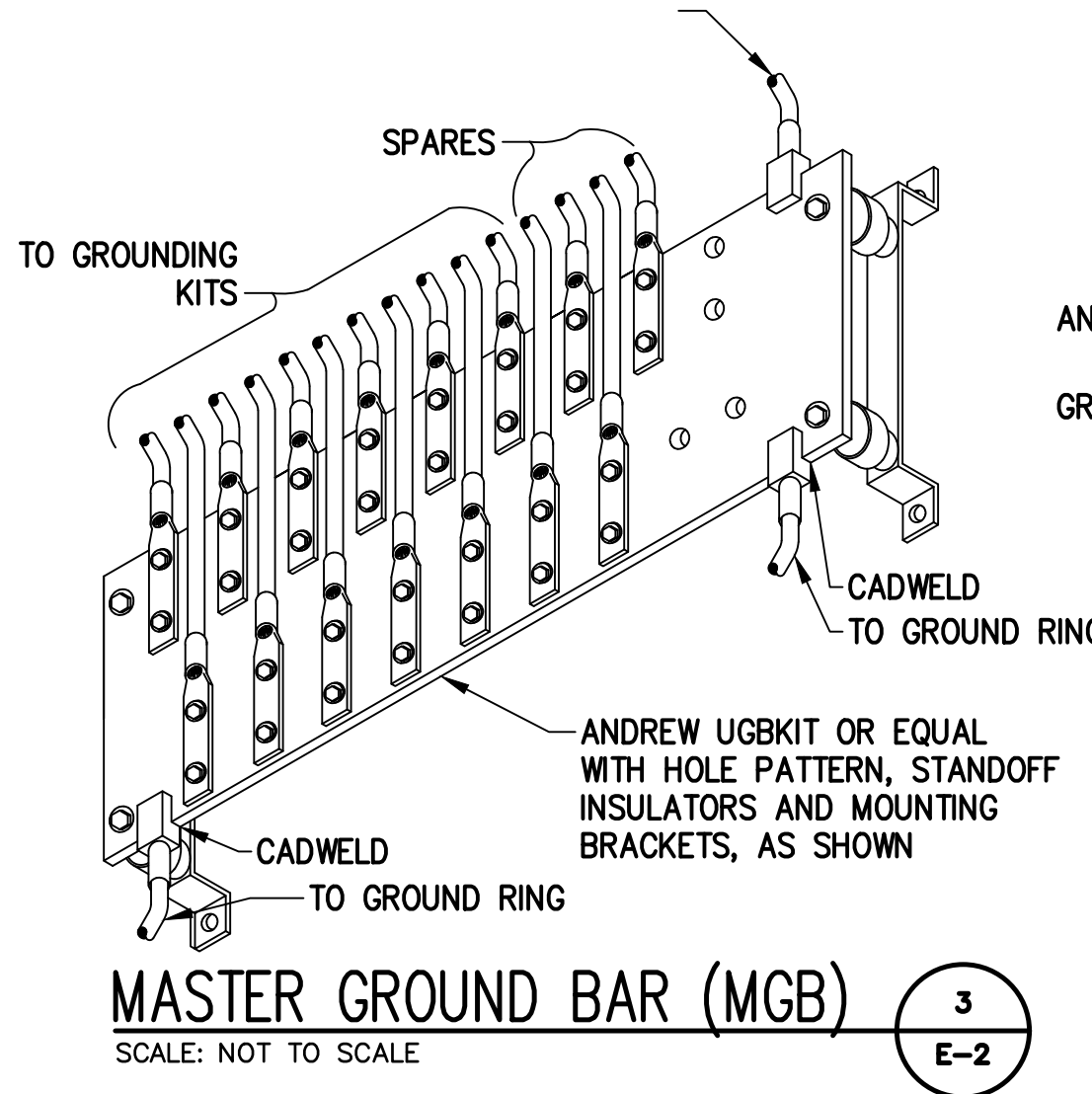
SHEET NUMBER
E-1

PROTECTIVE GROUNDING SYSTEMS GENERAL NOTES

- GROUNDING SHALL BE IN ACCORDANCE WITH NEC ARTICLE 250-GROUNDING AND BONDING.
- GROUNDING SHALL BE IN ACCORDANCE WITH SPRINT SSEO DOCUMENTS 3.018.02.004 "BONDING, GROUNDING AND TRANSIENT PROTECTION FOR CELL SITES" AND 3.018.10.002 "SITE RESISTANCE TO EARTH TESTING".
- PROVIDE GROUND CONNECTIONS FOR ALL METALLIC STRUCTURES, ENCLOSURES, RACEWAYS AND OTHER CONDUCTIVE ITEMS ASSOCIATED WITH THE INSTALLATION OF CARRIER'S EQUIPMENT.
- GROUND CONNECTIONS: CLEAN SURFACES THOROUGHLY BEFORE APPLYING GROUND LUGS OR CLAMPS. IF SURFACE IS COATED, REMOVE THE COATING, APPLY A NON-CORROSIVE APPROVED COMPOUND TO CLEAN SURFACE AND INSTALL LUGS OR CLAMPS. WHERE GALVANIZING IS REMOVED FROM METAL, IT SHALL BE PAINTED OR TOUCHED UP WITH "GALVAMOX" OR EQUAL.
- ALL GROUNDING WIRES SHALL PROVIDE A STRAIGHT, DOWNWARD PATH TO GROUND WITH GRADUAL BENDS AS REQUIRED. GROUND WIRES SHALL NOT BE LOOPED OR SHARPLY BENT.
- ALL CLAMPS AND SUPPORTS USED TO SUPPORT THE GROUNDING SYSTEM CONDUCTORS AND PVC CONDUITS SHALL BE PVC TYPE (NON CONDUCTIVE). DO NOT USE METAL BRACKETS OR SUPPORTS WHICH WOULD FORM A COMPLETE RING AROUND ANY GROUNDING CONDUCTOR.
- ALL GROUND WIRES SHALL BE #2 SOLID TINNED COPPER UNLESS NOTED OTHERWISE.
- PROVIDE DEDICATED #2 AWG COPPER GROUND WIRE FROM EACH ANTENNA MOUNTING PIPE TO ASSOCIATED CIGBE.
- GROUND ANTENNA BASES, FRAMES, CABLE RACKS, AND OTHER METALLIC COMPONENTS WITH #2 INSULATED TINNED STRANDED COPPER GROUNDING CONDUCTORS AND CONNECT TO INSULATED SURFACE MOUNTED GROUND BARS. CONNECTION DETAILS SHALL FOLLOW MANUFACTURER'S SPECIFICATIONS FOR GROUNDING.
- EACH EQUIPMENT CABINET SHALL BE CONNECTED TO THE MASTER ISOLATION GROUND BAR (MGB) WITH #2 SOLID TINNED COPPER EQUIPMENT CABINETS WILL HAVE (2) CONNECTIONS.
- GROUND HYBRIFLEX SHIELD AT TOP, BOTTOM AND AT TRANSITION TO HYBRIFLEX JUMPER CABLES AT EQUIPMENT CABINET ENTRANCE USING MANUFACTURER'S GUIDELINES. WHEN HYBRIFLEX CABLE EXCEEDS 200', GROUND AT INTERVALS NOT EXCEEDING 100'.
- THE CONTRACTOR SHALL VERIFY THAT THE EXISTING GROUND BARS HAVE ENOUGH SPACE/HOLES FOR ADDITIONAL TWO HOLE LUGS.
- EXOTHERMIC WELDING IS RECOMMENDED FOR GROUNDING CONNECTION WHERE PRACTICAL OTHERWISE. THE CONNECTION SHALL BE MADE USING COMPRESSION TYPE-2 HOLES, LONG BARREL LUGS OR DOUBLE CRIMP "C" CLAMP. THE COPPER CABLES SHALL BE COATED WITH AN ANTI-OXIDANT (THOMAS BETTS KOPR-SHIELD) BEFORE MAKING THE CRIMP CONNECTIONS THE CONTRACTOR SHALL FOLLOW MANUFACTURER'S RECOMMENDED TORQUES ON THE BOLT ASSEMBLY TO SECURE CONNECTIONS.
- AT ALL TERMINATIONS AT EQUIPMENT ENCLOSURES, PANEL, AND FRAMES OF EQUIPMENT AND WHERE EXPOSED FOR GROUNDING, CONDUCTOR TERMINATION SHALL BE PERFORMED UTILIZING TWO HOLE BOLTED TONGUE COMPRESSION TYPE LUGS WITH STAINLESS STEEL SELF-TAPPING SCREWS.
- THE MASTER GROUND BAR (MGB) SHALL BE MADE OF BARE 1/4"x2" COPPER (FOR OUTDOOR APPLICATIONS IT SHALL BE TINNED COPPER) AND LARGE ENOUGH TO ACCOMMODATE THE REQUIRED NUMBER OF GROUND CONNECTIONS. THE HARDWARE SECURING THE MGB SHALL ELECTRICAL INSULATE THE MGB FROM ANY STRUCTURE TO WHICH IT IS FASTENED.
- ALL BOLTS, WASHERS, AND NUTS USED ON GROUNDING CONNECTIONS SHALL BE STAINLESS STEEL.
- ALL GROUNDING CONNECTIONS SHALL BE COATED WITH A COPPER SHIELD ANTI-CORROSIVE AGENT SUCH AS T&B KOPR SHIELD. VERIFY PRODUCT WITH SPRINT CONSTRUCTION MANAGER.
- FOR NEW OR REPAIRED GROUNDING EQUIPMENT. REFER TO SPRINT GROUNDING STANDARDS AND FOLLOWING (SUPPLEMENTS):
-ANTI-THEFT UPDATE TO SPRINT GROUNDING DATED 08-24-12
-SPRINT ENGINEERING LETTER EL-0504 DATED 04-20-12



- NOTES:**
- PROP. EQUIPMENT GROUNDING SYSTEM TO BE TIED INTO EXIST. GROUND/COUNTERPOISE SYSTEM AT BASE OF STRUCTURE
 - BASE BID TO INCLUDE INSTALLATION OF (4) GROUND RODS OR SINGLE XIT HORIZONTAL CHEMICAL ROD AS DETERMINED BY CONDITIONS. ADDITIONAL RODS AS REQUIRED TO ACHIEVE 5 OHMS RESISTANCE.
 - MAXIMUM VERTICAL/HORIZONTAL DISTANCE BETWEEN CABLE KITS SHALL NOT EXCEED 100 FEET. INSTALL ADDITIONAL KITS AS REQUIRED BY FIELD CONDITIONS.



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Civil Structural-Land Surveying

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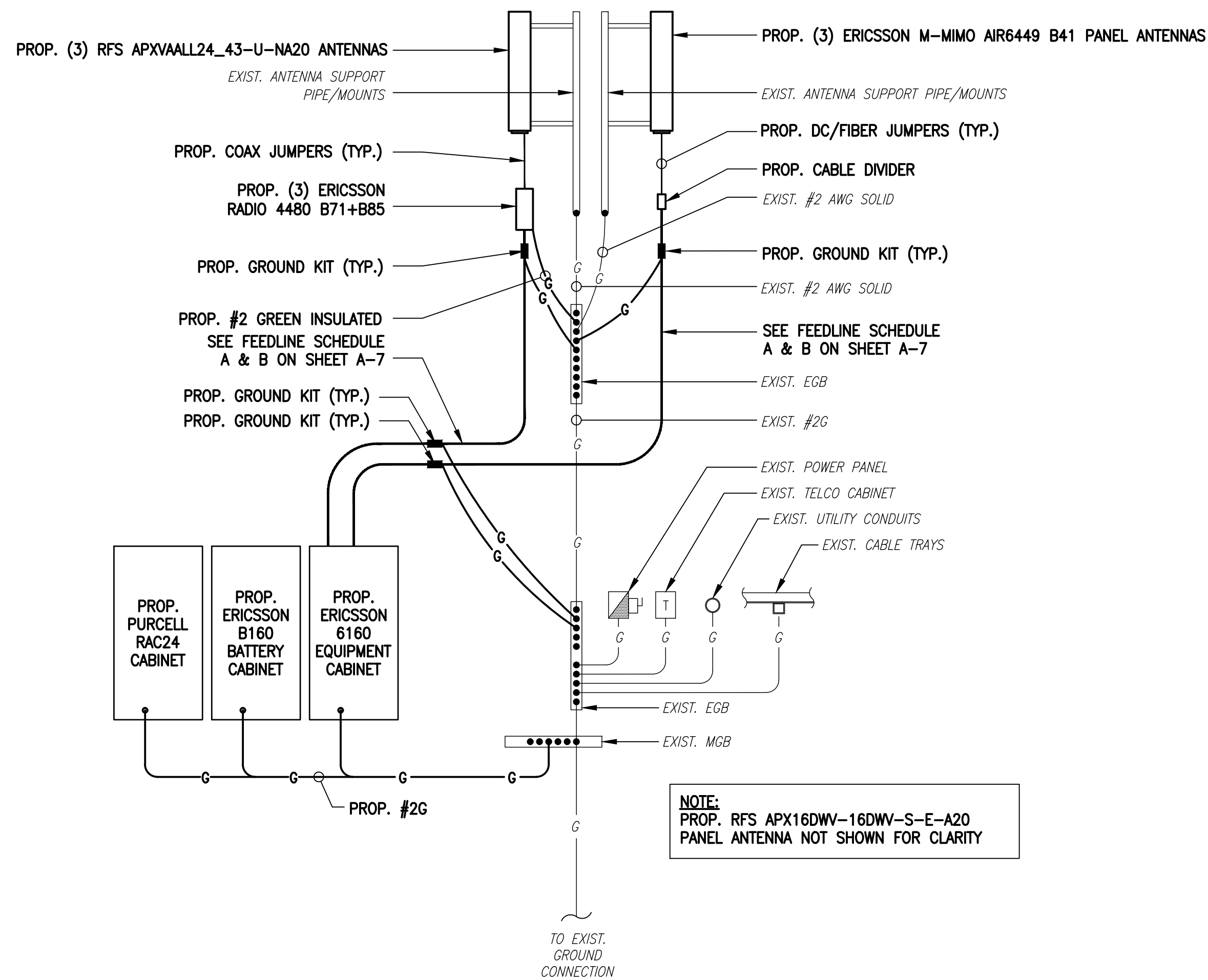
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SHEET TITLE
SITE ELECTRIC & GROUNDING DETAILS
2 OF 2

SHEET NUMBER
E-2

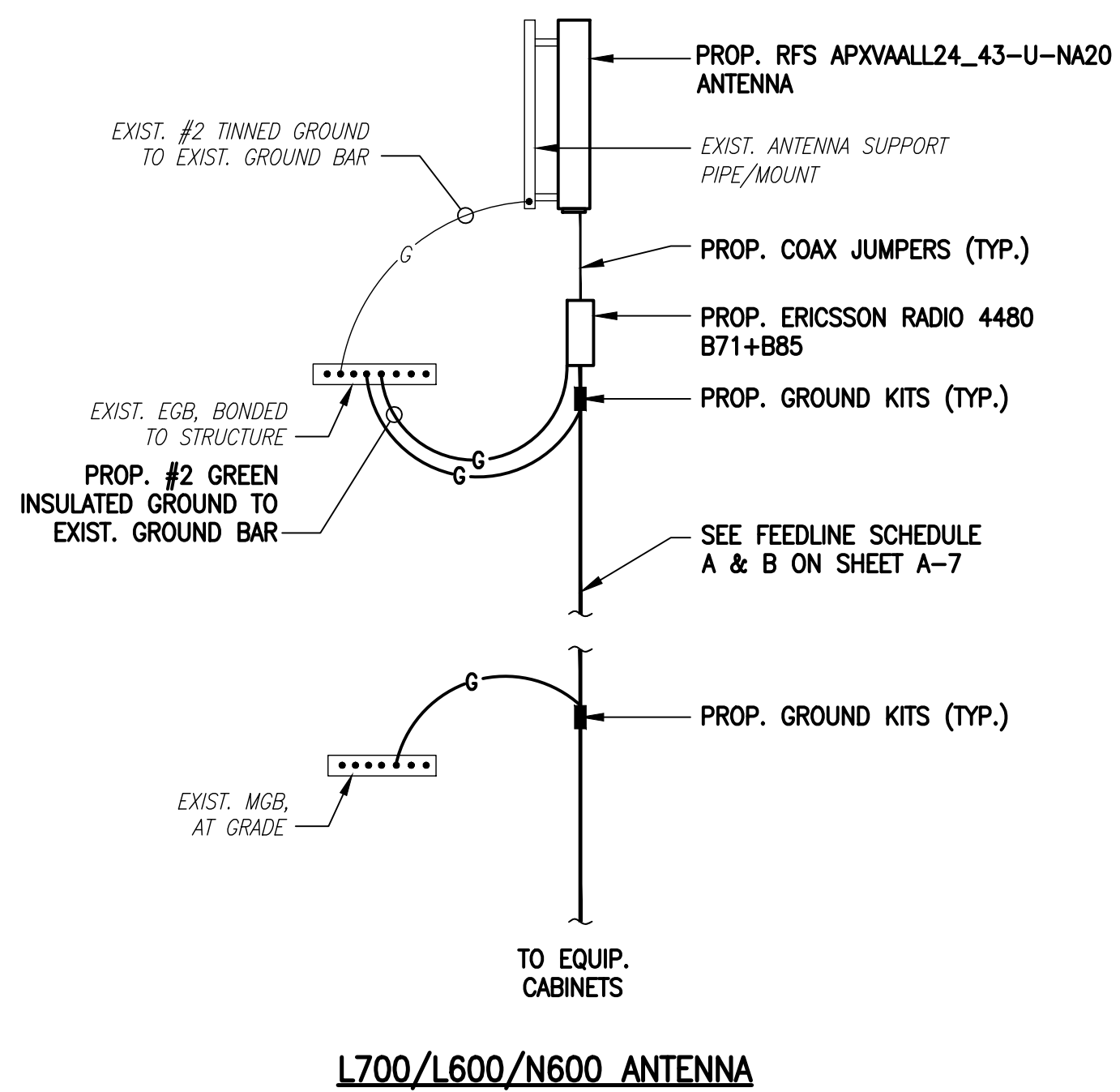


GROUNDING RISER DIAGRAM
SCALE: NOT TO SCALE

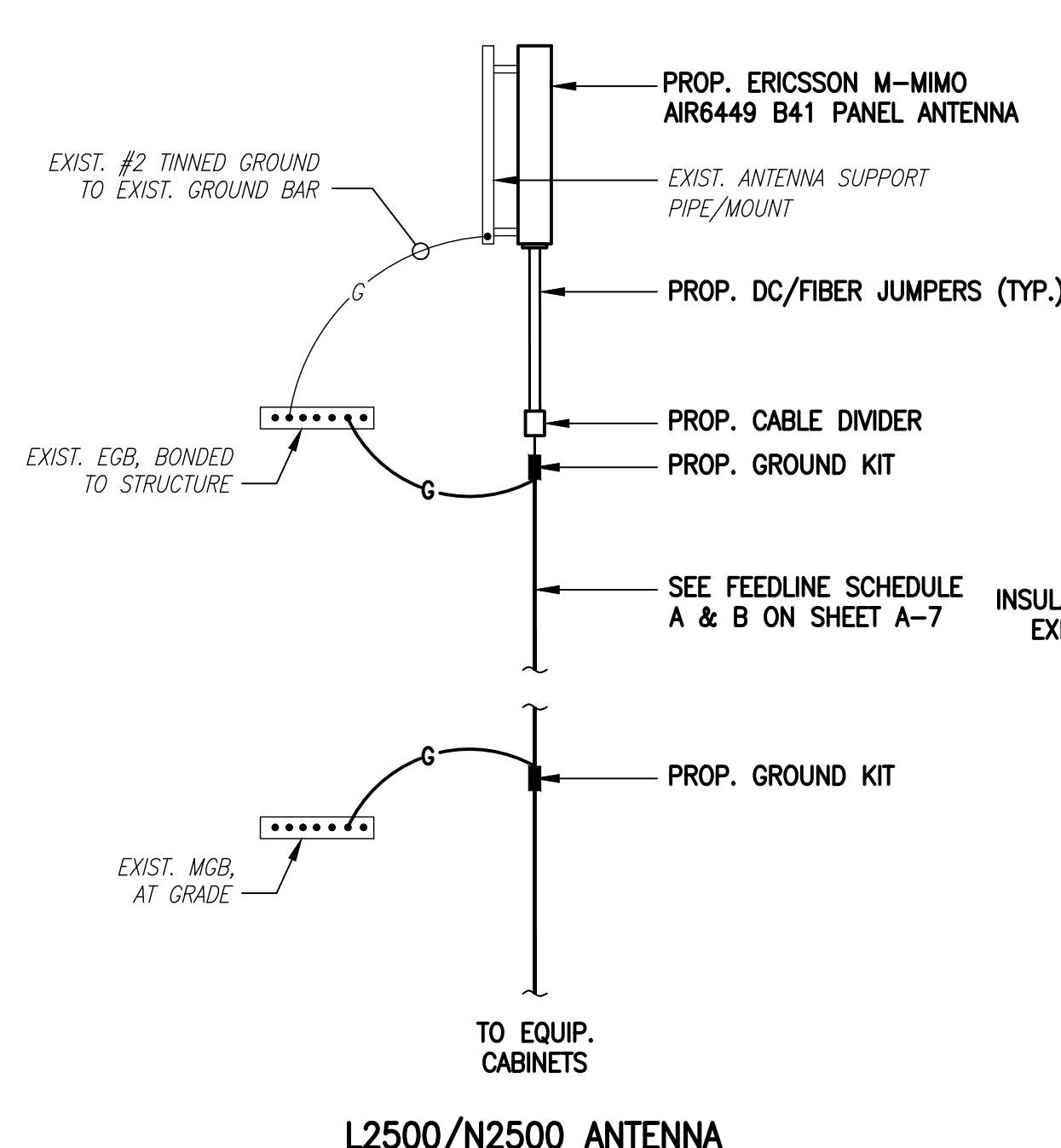
NOTE:
PROP. RFS APX16DWV-16DWV-S-E-A20
PANEL ANTENNA NOT SHOWN FOR CLARITY

ELECTRICAL AND GROUNDING NOTES

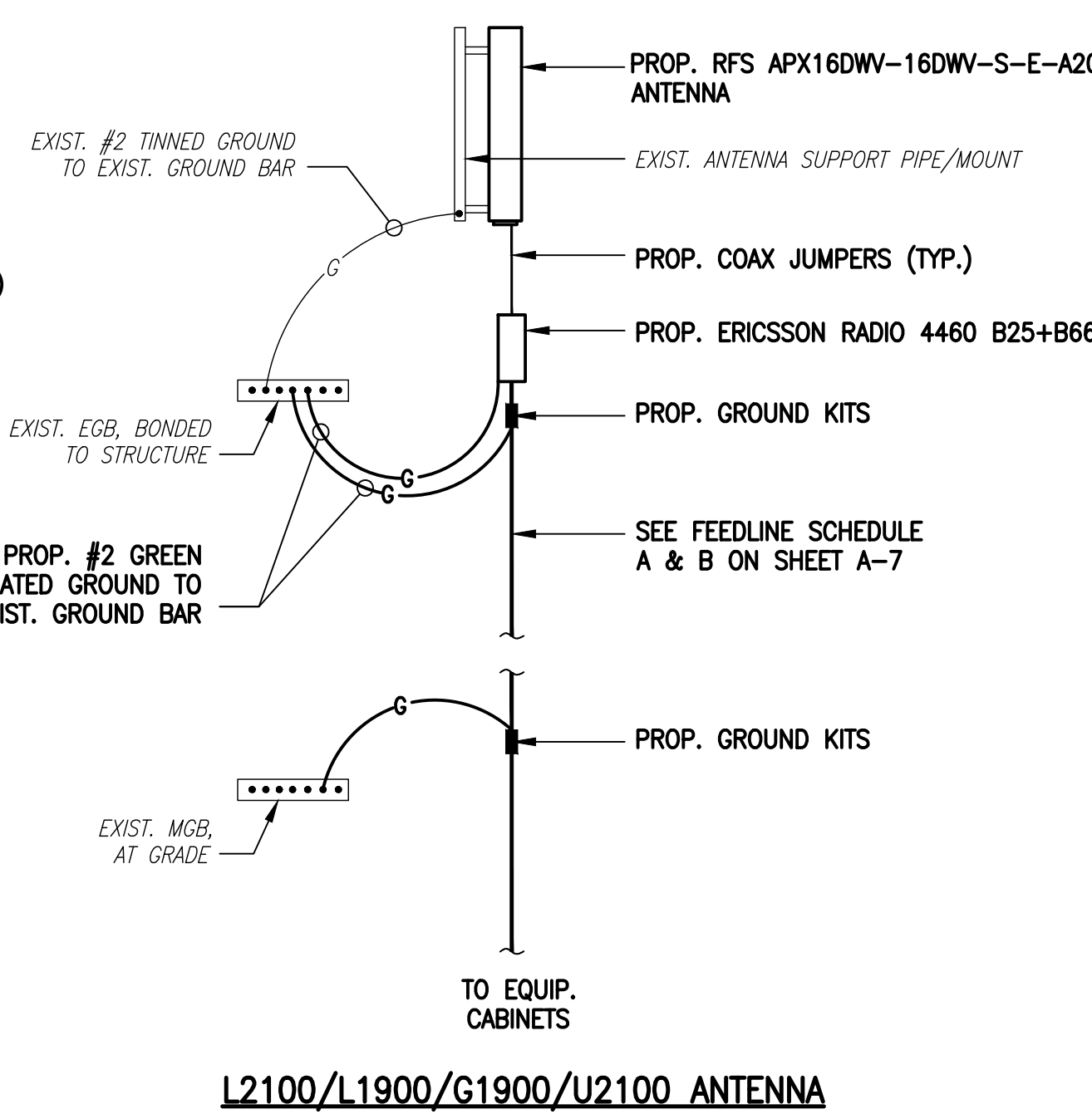
- ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
- ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
- THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
- GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
- ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
- BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
- ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THINSULATION.
- RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
- RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
- WHERE CONDUIT BETWEEN BTS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.
- ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
- PPC SUPPLIED BY PROJECT OWNER.
- GROUNDING SHALL COMPLY WITH NEC ART. 250. ADDITIONALLY, GROUNDING, BONDING AND LIGHTNING PROTECTION SHALL BE DONE IN ACCORDANCE WITH "T-MOBILE BTS SITE GROUNDING STANDARDS".
- GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
- USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
- ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
- ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.
- CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
- APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
- CONTRACTOR SHALL PROVIDE AND INSTALL OMNI DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALLS OVER EACH GROUND ROD AND BONDING POINT BETWEEN PROP. TOWER/ MONOPOLE GROUNDING RING AND EQUIPMENT GROUNDING RING.
- CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMS MINIMUM RESISTANCE REQUIRED.
- CONTRACTOR SHALL CONDUCT ANTENNA, COAX, AND LNA RETURN-LOSS AND DISTANCE- TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.



L700/L600/N600 ANTENNA



L2500/N2500 ANTENNA



L2100/L1900/G1900/U2100 ANTENNA

COAX CABLE CONNECTION AND GROUNDING DETAIL
SCALE: NOT TO SCALE

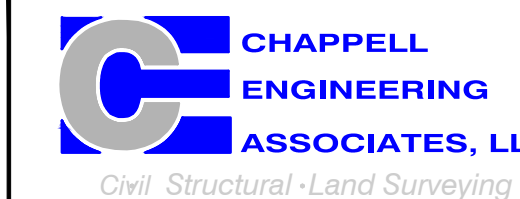
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E-3

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ASHFORD, CT 06278

SHEET TITLE:
**ANTENNA ELECTRIC &
GROUNDING DETAILS**

SHEET NUMBER:
E-3

EXHIBIT 11

Generac RD025 25 KW
25kw Diesel Specifications

RD025 | 2.2L | 25 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC® | **INDUSTRIAL
POWER**

Standby Power Rating

25 kW, 31.25 kVA, 60 Hz



Image used for illustration purposes only



Codes and Standards

Not all codes and standards apply to all configurations.
Contact factory for details.



UL2200, UL508, UL489, UL142



CSA 22.2



BS5514 and DIN 6271



SAE J1349



NFPA 37, 70, 99



ISO 3046, 8528, 9001



NEMA ICS1, ICS10, MG1, 250, ICS6, AB1



ANSI/IEEE C62.41

Powering Ahead

For over 50 years, Generac has led the industry with innovative design and superior manufacturing.

Generac ensures superior quality by designing and manufacturing most of its generator components, including alternators, enclosures and base tanks, control systems and communications software.

Generac's gensets utilize a wide variety of options, configurations and arrangements, allowing us to meet the standby power needs of practically every application.

Generac searched globally to ensure the most reliable engines power our generators. We choose only engines that have already been proven in heavy-duty industrial application under adverse conditions.

Generac is committed to ensuring our customers' service support continues after their generator purchase.

Standard Features

ENGINE SYSTEM

- Cold Weather Kit
- Oil Drain Extension
- Heavy Duty Air Cleaner
- Fan Guard
- Stainless Steel Flexible Exhaust Connection
- Factory Filled Oil & Coolant
- Critical Exhaust Silencer

GENERATOR SET

- Sound Attenuated Aluminum Enclosure
- Internal Genset Vibration Isolation
- Separation of Circuits - High/Low Voltage
- Wrapped Exhaust Piping
- Standard Factory Testing
- 5 Year Limited Warranty
- Ready to Accept Full Load in <10 Seconds
- E-Stop

Electrical System

- Battery Charging Alternator
- Battery Cables
- Battery Tray
- Rubber-Booted Engine Electrical Connections
- Solenoid Activated Starter Motor
- Smart Battery Charger

ALTERNATOR SYSTEM

- Class H Insulation Material
- 2/3 Pitch
- Skewed Stator
- Sealed Bearings
- Low Temperature Rise (>120°C)
- Low THD (<5%)

Cooling System

- Closed Coolant Recovery System
- Factory-Installed Radiator
- 50/50 Ethylene Glycol Antifreeze
- Radiator Drain Extension
- Can Operate at up to 122°F (50°C) Ambient Temperature

Fuel System

- Fuel Lockoff Solenoid
- Primary Fuel Filter
- Stainless Steel Fuel Lines

TANKS

- 24 Hour Run Time Tank
- UL142 Listed Tank

CONTROL SYSTEM



Evolution™ Controller

- Two-Line Plain Text LCD Display
- Programmable Start Delay Between 10-30 seconds
- 10 second Engine Start Sequence
- 5 second Engine Warm Up
- 1 minute Engine Cool-Down
- Starter Lock-Out
- Smart Battery Charger
- Automatic Voltage Regulation with Over and Under Protection
- Automatic Low Oil Pressure Shutdown
- Overspeed Shutdown
- High Temperature Shutdown
- Overcrank Protection
- Safety Fused
- Failure to Transfer Protection
- Low Battery Protection
- 50 Even Run Log
- Future Set Capable Exerciser
- Incorrect Wiring Protection
- Internal Fault Protection
- Common External Fault Capability
- Governor Failure Protection

Optional Shipped Loose and Field Install Kits

ENGINE SYSTEM

- Base Plug Kit

GENERATOR SET

- Paint Kit
- Scheduled Maintenance Kit

CONTROL SYSTEM

- Mobile Link™ and Adapter Kit

TANKS

- Spill Box
- 90% Fuel Alarm
- Tank Risers
- Spill Box Drainback Kit
- Vent Extension Support Kit
- 5 Day Run Time Tank

APPLICATION AND ENGINEERING DATA

ENGINE SPECIFICATIONS

General

Make	Perkins
EPA Emission Compliance	Tier 4 Interim
Cylinder #	4
Type	In-Line
Displacement - in ³ (L)	2.22 (135)
Bore - in (mm)	3.3 (84.0)
Stroke - in (mm)	3.9 (100.0)
Compression Ratio	23.3:1
Intake Air Method	Turbocharged/Aftercooled
Piston Type	Aluminum
Crankshaft Type	Forged Steel
Engine Block Type	Cast Iron

Engine Governing

Governor	Electronic
Frequency Regulation (Steady State)	±0.25%

Lubrication System

Oil Pump Type	Gear
Oil Filter Type	Full Flow Cartridge
Crankcase Capacity with Filters- qt (L)	11.2 (10.6)

Cooling System

Cooling System Type	Closed Recovery
Fan Type	Pusher
Fan Speed- rpm	1,980
Fan Diameter - in (mm)	18.0 (457.2)

Fuel System

Fuel Type	Ultra Low Sulfur Diesel Fuel
Fuel Specification	ASTM
Fuel Pump Type	Mechanical Engine Driven Gear
Injector Type	Mechanical
Fuel Supply Lin (mm/in)	7.94/0.31 (ID)
Fuel Return Line (mm/in)	4.76/.19 (ID)
Fuel Filtering (microns)	25

Engine Electrical System

System Voltage	12 VDC
Battery Charger Alternator	Standard
Battery Size	See Battery Index 0161970SBY
Battery Voltage	12 VDC
Ground Polarity	Negative

ALTERNATOR SPECIFICATIONS

Standard Model	Generac
Poles	4
Field Type	Rotating
Insulation Class - Rotor	H
Insulation Class - Stator	H
Total Harmonic Distortion	<5%
Telephone Interference Factor (TIF)	<50

Standard Excitation	Direct
Bearings	Single Sealed
Coupling	Flexible Disc
Prototype Short Circuit Test	Yes
Voltage Regulator Type	Full Digital
Number of Sensed Phases	2
Regulation Accuracy (Steady State)	±1%

RD025 | 2.2L | 25 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

OPERATING DATA

POWER RATINGS

		Standby
Single-Phase 120/480 VAC @0.1pf	25 kW	Amps: 104
Three-Phase 120/208 VAC @0.8pf	25 kW	Amps: 87
Three-Phase 120/240 VAC @0.8pf	25 kW	Amps: 75
Three-Phase 277/480 VAC @0.8pf	25 kW	Amps: 37

MOTOR STARTING CAPABILITIES (sKVA)

sKVA vs. Voltage Dip at 30%

120/240 V, Single-Phase at 0.4pf	168
120/208 V, Three-Phase at 0.4pf	144
120/240 V, Three-Phase at 0.4pf	125
120/240 V, Three-Phase at 0.4pf	64

FUEL CONSUMPTION RATES*

Percent Load	Diesel gal/hr (L/hr)
25%	0.97 (3.67)
50%	1.37 (5.19)
75%	1.97 (7.46)
100%	2.77 (10.49)

* Fuel supply installation must accommodate fuel consumption rates at 100% load.

COOLING

		Standby
Air Flow (Radiator and Alternator)	ft ³ /min (m ³ /min)	2800 (79)
Coolant System Capacity	gal (L)	2.5 (9.5)
Heat Rejection to Coolant	BTU/hr (MJ/hr)	128,638 (135.7)
Max. Operating Ambient Temperature	°F (°C)	122 (50)
Maximum Operating Ambient Temperature (Before Derate)	See Bulletin No. 0199270SSD	
Maximum Radiator Backpressure	in H ₂ O (kPa)	0.50 (0.12)

COMBUSTION AIR REQUIREMENTS

	Standby
Flow at Rated Power ft ³ /min (m ³ /min)	88 (2.5)

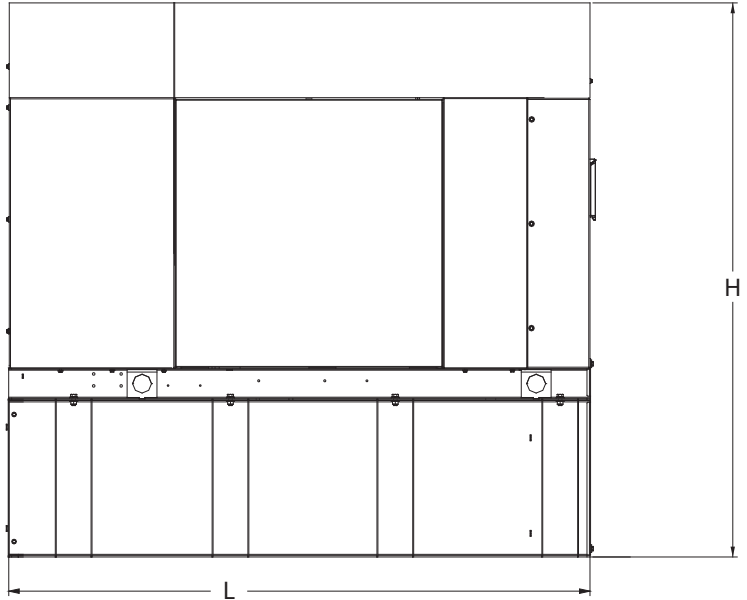
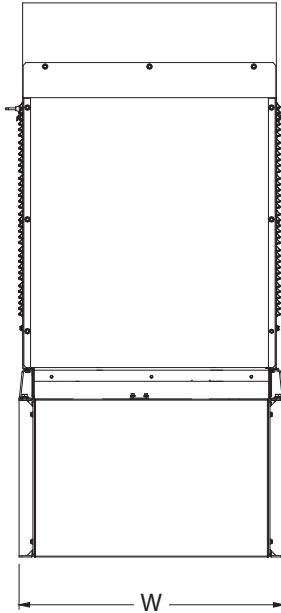
ENGINE

EXHAUST

ENGINE			EXHAUST		
		Standby			Standby
Rated Engine Speed	rpm	1,800	Exhaust Flow (Rated Output)	ft ³ /min (m ³ /min)	296.6 (8.4)
			Exhaust Temp (Rated Output - Post Silencer)	°F (°C)	930 (499)

Deration – Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions. Please consult a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528 and DIN6271 standards. Standby - See Bulletin 0187500SSB

DIMENSIONS AND WEIGHTS*



Weights and Dimensions

Unit Weight - lbs	Unit Weight with Skid - lbs	Dimensions (L x W x H) in
2,811	2,849	84.2 x 35.0 x 91.7

25kW Fuel Consumption

Fuel Tank Gross Total Capacity	240
Fuel Tank Gross Usable Capacity	229
Fuel Tank Net Usable Capacity (Run Hours Based on Net Usable Capacity)	206
Run Hours 100% Load	98
Run Hours 75% Load	125
Run Hours 50% Load	161

**with fuel tank
103.4" 35" x 91.7"**

Sound Emission Data

Rated Load Sound Output at 23ft - dB(A)	65
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* All measurements are approximate and for estimation purposes only. Drawing is for illustration purposes only, not to scale.

YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER

Specification characteristics may change without notice. Dimensions and weights are for preliminary purposes only. Please consult a Generac Power Systems Industrial Dealer for detailed installation drawings.

EXHIBIT 12
Wetlands Map



National Wetlands Inventory

surface waters and wetlands

ABOUT

GET DATA

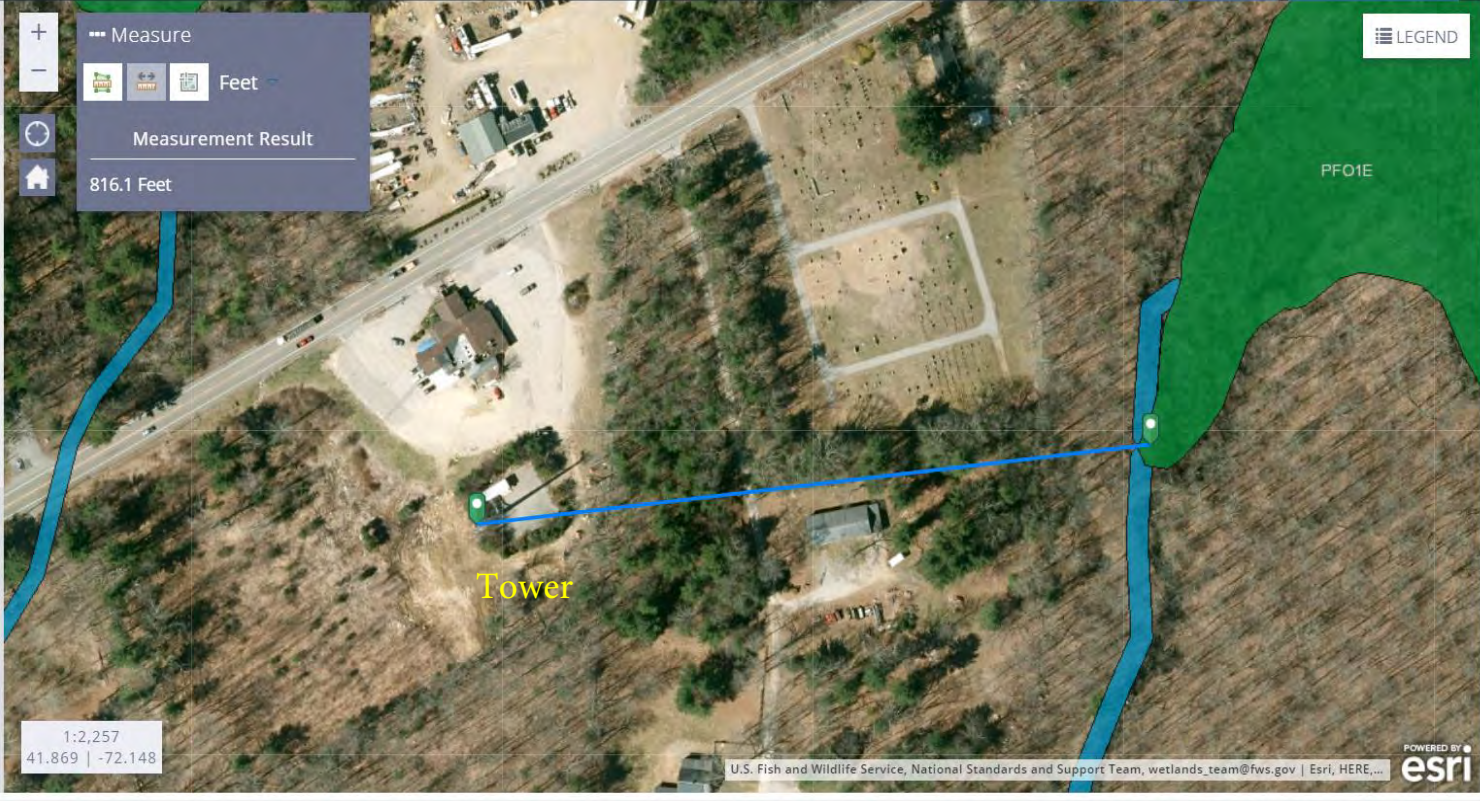
PRINT

FIND LOCATION

BASEMAPS >

MAP LAYERS >

- Wetlands
- Riparian
- Riparian Mapping Areas
- Data Source
 - Source Type
 - Image Scale
 - Image Year
- Areas of Interest
- FWS Managed Lands
- Historic Wetland Data



Measure

Feet

Measurement Result

816.1 Feet

Tower

PFO1E

1:2,257
41.869 | -72.148

U.S. Fish and Wildlife Service, National Standards and Support Team, wetlands_team@fws.gov | Esri, HERE,...

