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

September 8, 2021

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

Application for Tower Share
165 Huntington Rd. Scotland CT
Latitude: 41.695911
Longitude: -72.097069
T-Mobile/Sprint #: CTNL257A

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 240-foot PIROD Self Supporting Tower at 165 Huntington Rd., Scotland, CT.

- **The new antennas would support 5G services and would be installed at the 218-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

This facility was originally approved by the Town of Scotland on September 9, 1998 for the construction of a telecommunications tower with the following conditions:

- ✓ Town Staff notified of impending construction one week prior to disturbance of soil.
- ✓ Pre construction meeting with contractor, engineer and Town staff.
- ✓ No disturbance of soil work on the site until contractor receives approval of sediment and erosion control measures.
- ✓ Prior zoning compliance for certificate of occupancy.
- ✓ A visual border of landscaping trees or material at least 6 feet high.
- ✓ Bond for removal of tower for $30,000 (attached).
- ✓ Zoning compliance is void if construction is not complete two years from issuance.

- Latitude / Longitude: 41.695911 / -72.097069
- Height of Tower: 240'
- Owned/operated by: SBA Towers VII, LLC
- Property Owner: Pauline M. & Guy T. Passarello.
- Size/Components of existing equipment compound:

  - 69' 5" x 69' 6" fenced compound with 12' wide chain link area containing:
    - 240-foot PIROD Self-Supporting Tower
    - AT&T equipment shelter [southeast of tower w/in compound]
    - 4' x 11' concrete pad [southeast of tower w/in compound]
  - Components of existing tower:
    - AT&T:
    - 238'

- **AT&T Equipment:**
- **238'**

238.0	3	Powerwave 7770 Panel	Platform w/ Handrail (Site Pro 1 XAHCP, SCX1-K, SCX4-K, SCX2-K)	(2) 1/2" Fiber (6) 3/4" DC (12) 1 5/8"	AT&T
	6	CCI DMP65R-BU8DA Panel			
	6	Powerwave LGP21401 TMA			
	3	Ericsson RRUS 4478 B14 RRU			
	3	Ericsson RRUS 8843 B2 B66A RRU			
	3	Ericsson RRUS 4449 B5/B12 RRU			
	3	Raycap DC6-48-60-18-8F OVP			

- **Verizon Equipment:**
- **228"**

228.0	6	Antel LPA-80080/6CF Panel	(3) T-Frames	(18) 1 5/8"	Verizon
	3	Antel BXA-171085-12BF Panel			
	3	Antel BXA-70063/6CF Panel			

B. Nature and Extent of Proposed Modifications

T-Mobile/Sprint proposes to install (6) panel antennas at the 218' level of the existing 240'-foot PIROD Self- supporting Tower and occupy a ground lease area of 10'x20' within the existing 69' 5" x 69' 6" fenced compound. T-Mobile's fully proposed scope of work is as follows:

Remove:

- N/A

Remove and Replace:

- N/A

Install: Tower: *At 218'*:

Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
218.0	3	RFS APX16DWV-16DWVS-E-A20 Panel	(3) Sector Frames (Site Pro 1 VFA12-HD)	(3) 1.99" 6x24 Hybrid	T-Mobile Sprint
	3	RFS APXVAALL24-43-U-NA20 Panel			
	3	Ericsson AIR6449 B41 Panel			
	3	Ericsson 4460 B25 + B66 RRU			
	3	Ericsson 4480 B71 + B85 RRU			

Ground (within existing compound):

- 10'x20' reinforced concrete pad (w/space reserved for a future generator)
- 10' x 20' Ice canopy mounted to proposed concrete pad
- Underground power & Telco conduit from existing meter bank to proposed equipment
- Future T-Mobile automatic transfer switch (ATS) mounted proposed H-Frame
- Breakers within Proposed PPC
- Purcell RAC24 cabinet mounted to proposed unistrut on H-Frame
- 2" RGS conduit for AAV to RAC24 cabinet
- 2" RGS conduit for power from existing PPC
- Ericsson B160 Battery cabinet
- 2" conduit for alarm & Spare
- 2" RGS conduit with LBs for DC Power wiring
- Ericsson 6160 Equipment cabinet
- Cable ice bridge
- GPS antenna mounted proposed cable bridge post

Existing Equipment to Remain: N / A

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

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 Scotland 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 165 Huntington Rd site is ideally suited for the proposed PIROD Self Supporting tower facility. One carrier is currently on the tower.

The proposed collocation meets with all legal and technical requirements. This Application contains all required information and statements per R.C.S.A §16-50j-89 and the proposed installation has been drafted per current code, and studied with regard to structural feasibility and RF emissions output. Drawings and Reports are attached. 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.

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 0.18351500% of the allowable FCC established general public limit. The anticipated composite MPE value for this site assuming all carriers present is 0.27661200% 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 Scotland's First Selectman, Gary Greenberg
      ii. The Town of Scotland's Zoning Officer, Melissa Gil
      iii. The Property Owner, Pauline M. & Guy T. Passarello
      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.

G. Scott Shepherd

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

Attachments

cc: Gary Greenberg, First Selectman / with attachments
Scotland Town Hall 9 Devotion Road, Scotland, CT 06264
Melissa Gil, Zoning Enforcement Officer / with attachments
Town Scotland Town Hall 9 Devotion Road, Scotland, CT 06264
Pauline M. & Guy T. Passarello
165 Huntington Rd., Scotland, CT 06264-2202

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	Special Relief #4286,Town of Scotland 9/9/98
Exhibit 7	EME Report	Centerline 8/26/21
Exhibit 8	Structural Analysis	TES 8/3/21
Exhibit 9	Mount Analysis	TES 7/6/21
Exhibit 10	Construction Drawings	Chappell 8/31/21

EXHIBIT 1

Copy of check

EXHIBIT 2
Letter of Intent

September 8, 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: 165 Huntington Rd., Scotland, CT
T-Mobile No: CTNL257A
SBA Site No: CT00990-S

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 **165 Huntington Rd., Scotland, CT**.

SBA Towers VIII, LLC ("Owner") and T-Mobile ("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 218' for antennas and associated equipment.

Thank you,

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

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

EXHIBIT 3

Fedex Labels

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FedEx

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774741225786

ADD NICKNAME

Scheduled delivery:
Thursday, September 9, 2021 before 10:30 am

PICKED UP
FRAMINGHAM, MA

GET STATUS UPDATES

FROM	TO
WESTBOROUGH, MA US	NEW BRITAIN, CT US

MANAGE DELIVERY

Travel History

TIME ZONE
Local Scan Time

Wednesday, September 8, 2021

4:17 PM	FRAMINGHAM, MA	Picked up
9:41 AM		Shipment information sent to FedEx

Shipment Facts

TRACKING NUMBER
774741225786

SERVICE
FedEx Priority Overnight

WEIGHT
5 lbs / 2.27 kgs

TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
5 lbs / 2.27 kgs

TERMS
Shipper

SHIPPER REFERENCE
10-56-92009-6089

PACKAGING
FedEx Box

SPECIAL HANDLING SECTION
Deliver Weekday

ACTUAL PICK UP
9/8/21

STANDARD TRANSIT
9/9/21 before 10:30 am

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TRACKING NUMBER
774741240102

SERVICE
FedEx Priority Overnight

WEIGHT
5 lbs / 2.27 kgs

TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
5 lbs / 2.27 kgs

TERMS
Shipper

SHIPPER REFERENCE
10-56-92009-6089

PACKAGING
FedEx Box

SPECIAL HANDLING SECTION
Deliver Weekday

ACTUAL PICK UP
9/8/21

STANDARD TRANSIT
9/9/21 before 10:30 am

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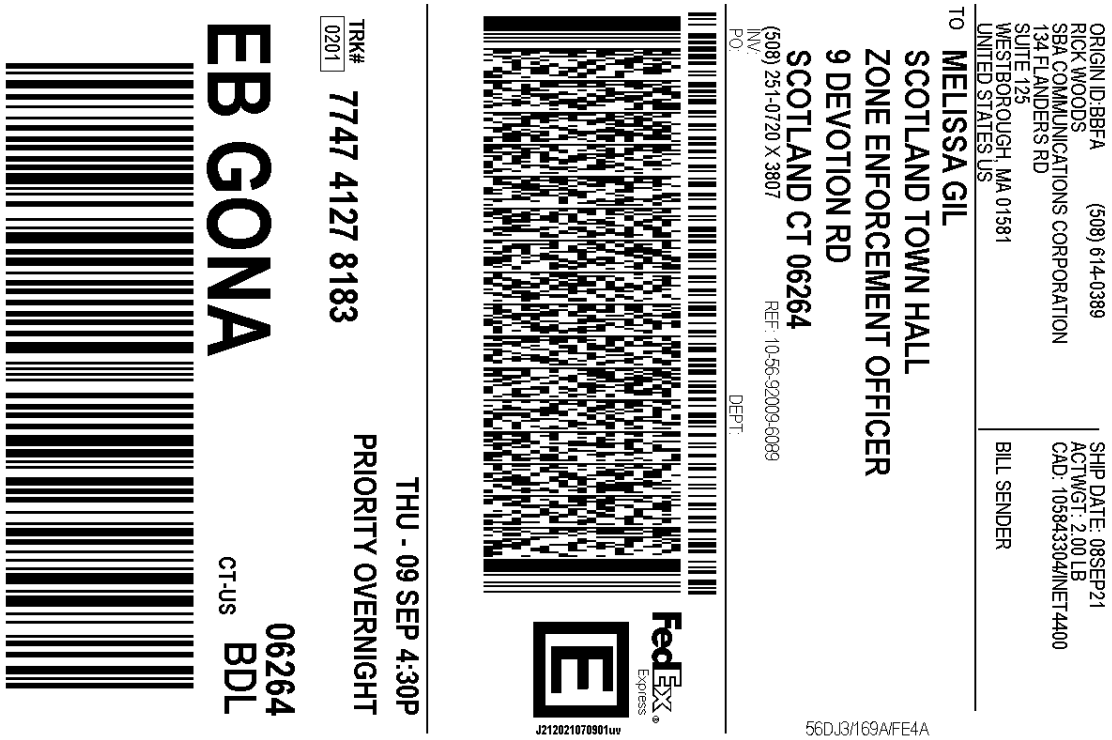

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Shipment Facts

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774741278183	FedEx Priority Overnight	2 lbs / 0.91 kgs
TOTAL PIECES	**TOTAL SHIPMENT WEIGHT**	**TERMS**
1	2 lbs / 0.91 kgs	Shipper
SHIPPER REFERENCE	**PACKAGING**	**SPECIAL HANDLING SECTION**
10-56-92009-6089	FedEx Pak	Deliver Weekday
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TRACKING NUMBER	**SERVICE**	**WEIGHT**
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TOTAL PIECES	**TOTAL SHIPMENT WEIGHT**	**TERMS**
1	2 lbs / 0.91 kgs	Shipper
SHIPPER REFERENCE	**PACKAGING**	**SPECIAL HANDLING SECTION**
10-56-92009-6089	FedEx Pak	Deliver Weekday
ACTUAL PICK UP	**STANDARD TRANSIT**	**SCHEDULED DELIVERY**

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 2018.

TOWN OF SCOTLAND, CT

Information on the Property Records for the Municipality of Scotland was last updated on 8/28/2021.

Parcel Information

Location:	165 HUNTINGTON RD	Property Use:	Residential	Primary Use:	Residential
Unique ID:	00070900	Map Block Lot:	21 19 5	Acres:	21.51
490 Acres:	0.00	Zone:	RA	Volume / Page:	0051/0604
Developers Map / Lot:		Census:	8250		

Value Information

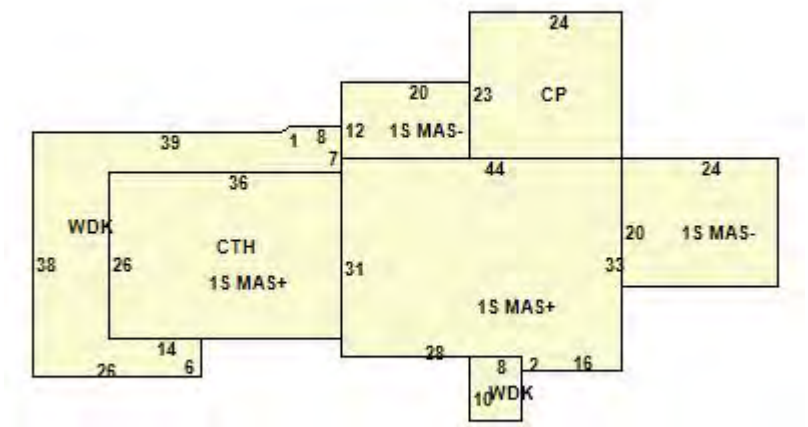
	Appraised Value	Assessed Value
Land	222,200	155,600
Buildings	282,900	198,100
Detached Outbuildings	198,700	139,100

	Appraised Value	Assessed Value
Total	703,800	492,800

Owner's Information

Owner's Data
PASSARELLO PAULINE M & GUY T PO BOX 153 SCOTLAND, CT 06264

Building 1



Building Use:	Single Family	Style:	Ranch	Living Area:	3,052

Stories:	1.00	Construction:	Masonry	Year Built:	1953
Total Rooms:	7	Bedrooms:	3	Full Baths:	3
Half Baths:	1	Fireplaces:	0	Heating:	Forced Hot Air
Fuel:	Oil	Cooling Percent:	100	Basement Area:	2,332
Basement Finished Area:	0	Basement Garages:	0	Roof Material:	Asphalt
Siding:	Brick/Masonry/Vinyl Siding	Units:			

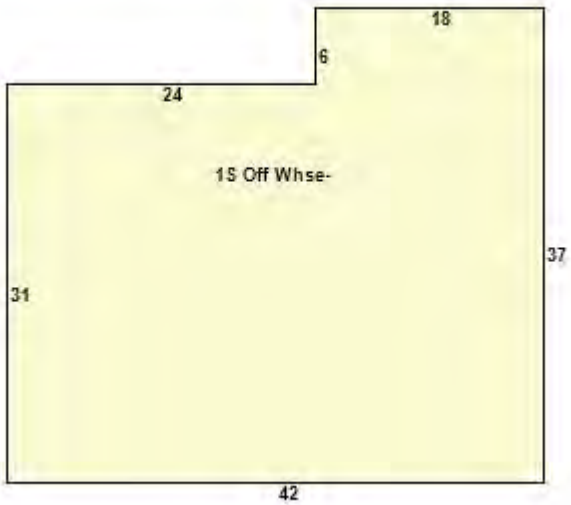
Special Features

Bsmt Gar 2 Car	1
Extra Fixtures	2
Unfinished Basement	2332

Attached Components

Type:	Year Built:	Area:
Cathedral	1953	936
Wood Deck	1953	764
Wood Deck	1953	80
Concrete Patio	1953	552

Building 2



Category:	Industrial	Use:	Office Warehouse	GLA:	1,410
Stories:	1.00	Construction:	Steel	Year Built:	1951
Heating:	None	Fuel:	Electric	Cooling Percent:	0
Siding:	Pre-Finish Metal	Roof Material:	Metal	Beds/Units:	0

Special Features

Attached Components

Detached Outbuildings

Type:	Year Built:	Length:	Width:	Area:
Better Quality Shed	1971	14.00	13.00	182
Cell Tower	1999	0.00	0.00	240

Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Sale Price
PASSARELLO PAULINE M & GUY T	0051	0604	01/02/2003		$0

Building Permits

Permit Number	Permit Type	Date Opened	Reason
1901A	Commercial New	01/15/2020	Commercial, CELL TOWER CHANGES REPLACE 6 EXISTING ANTENNAS; REMOVE 6 DUPLES, 6 REMOTE RADIO UNITS +
1627	Electrical	11/18/2015	Electric, SOLAR PANELS. VERIFIED WORK DONE WITH MR PASSARRELO 10-4-2017.
1335	Generator	09/05/2012	GENERATOR

EXHIBIT 5

Property Map

Google Maps 165 Huntington Rd

Map data ©2021 200 ft

165 Huntington Rd

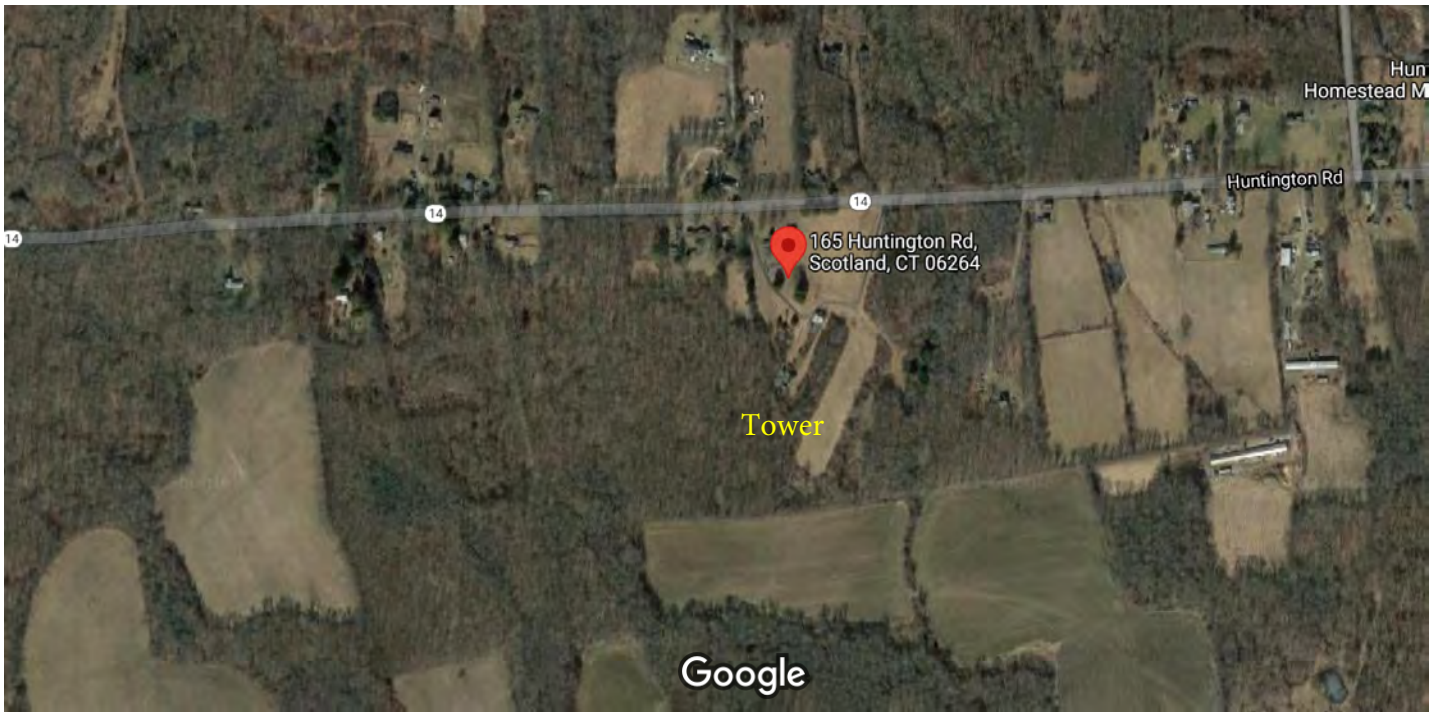
Directions Save Nearby Send to your phone Share

165 Huntington Rd, Scotland, CT 06264

MWW3+V9 Scotland, Connecticut

Photos

Google Maps 165 Huntington Rd



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

EXHIBIT 6

Zoning Approval

SITE ID #4286

SITE NAME: Scotland

CT00990-3

JOB COST #000990

ZONING/PERMITTING COMPLETION FORM

Zoning Classification for Site: R

Special Relief (setback, height variance, special use permit, wetlands permit etc.):

Building Permit

* Date of Zoning Decision: 9/9/98

Summary of zoning conditions **(Include details of any conditions relative to time restrictions, expiration dates, renewal obligations, monetary obligations, performance obligation, inspection fees).**

See attached

Submitted by: Esther McNany

Title: Territory Manager

Territory Manager Approval:

* Attach a copy of the Zoning decision and forward to the Regional Compliance Manager as soon as possible, after the decision.

Scotland/CT00990-S
Zoning

February 16, 2005

Town of Scotland
Town Hall, 9 Devotion Road
Scotland, CT 06264

ATTN: Carl Fontneau
Zoning Official

SUBJECT: SBA Towers, Inc. Removal Bond Compliance

Dear Mr. Fontneau:

SBA Towers, Inc. submitted Tower/Structure Removal Bond No. 104251436-138 in the amount of $30,000 to the Town of Scotland pursuant to Condition No. 6 of the Zoning Compliance approval dated 07/12/2004 for Cingular's antenna and ground equipment. The removal bond was sent to your office on 09/29/2004. We have regularly requested notification that the removal bond is in compliance with the approval. We feel SBA Towers, Inc. has acted in good faith to comply with the requirements of the approval and are anxious to complete this transaction. We are requesting that by your signature below and return of this document, the Town of Scotland is in agreement that SBA Towers, Inc. is in compliance with Condition No. 6 of the approval.

If you have any questions or require additional information, please do not hesitate to contact me at 1-800-487-7483, ext. 9486.

Sincerely,

Diane E. Borchardt, AICP
Zoning Manager

Carl Fontneau AICP, ZEO
Carl Fontneau, Zoning Official

2/23/2005
Date

cc: Nancy O'Connor, Town Clerk

Scotland/CT00990-S

CONDITIONS OF APPROVAL FOR ZONING COMPLIANCE

Installation of antennae on existing platform at 240 feet, associated ground equipment such as 12x20 equipment shelter, ice bridge, generator, and connecting cables for function
SBA, Inc. owner; Cingular/S. Howard, applicant.
July 12, 2004 csf

THE ITEMS CHECKED ARE REQUIRED:

✓ 1. Town Staff notified of impending construction one week prior to expected disturbance of soil. Meeting with Zoning Official (Carl Fontneau 423-9634 and Town Clerk will forward message).

NA 2. Pre-construction meeting with contractor, engineer, and town staff.

✓ 3. No disturbance of soil work on the site until contractor receives approval of sediment and erosion control structures for compound area including silt fence pattern shown on site construction plan. Call ZEO (Carl Fontneau through Town Clerk Nancy O'Connor 423-9634 in advance for site inspection on a Wednesday). Any field adjustment of sedimentation and erosion control structure must have ZEO approval in writing to building file.

✓ 4. Prior to zoning compliance for certificate of occupancy , SBA Inc. to supply a site plan with A-2 level of accurancy of the land parcel showing outside boundaries, location to tower, leased area, house, outbuildings, home driveway, tower service driveway and power poles, and other major land features.

✓ 5. SBA Inc. to plant a visual border of landscaping trees or material at least 6 feet high with review and approval of ZEO and to be maintained by tower owner before zoning compliance for certificate of occupancy.

✓ 6. SBA Inc. to submit in a form reviewed and approved by PZC attorney an irrevocable letter of credit in the amount of $30,000 for the removal of their tower in the event that there are no antennae or other permitted uses of this Pirod 240 foot tower for a continuous period of more than 12 months.

✓ 7. Zoning compliance is void should construction not commence in one year and be completed within two year of signature by ZEO.

✓ 8. Scotland PZC does not concede Connecticut Siting Council jurisdiction over this or any new telecommunications tower by their agent's signature on this building permit for an "existing" tower.

✓ 9. Antenna coverage RF plots (and any other basic information submitted to CT Siting Council) that are necessary for devising future Scotland Telecommunications Coverage Plan in response to PA 04-226 and updated POCD.

PERMIT COVERS CONSTRUCTION OF ANTENNAE ARRAY AT 240 FEET, GROUND EQUIPMENT INCLUDING A 12 x 20 EQUIPMENT SHELTER, ICEBRIDGE, GENERATOR, AND ASSOCIATED POWER SOURCE/SIGNAL CABLING ONLY. NO OTHER USE OR CONSTRUCTION HAS BEEN AUTHORIZED BY THIS APPROVAL.

Cingular165huntington

860 513 7190

360

BUILDING PERMIT

AMOUNT PAID 4286

VALIDATION

LICANT Pauline Passarello DATE 9/9/ 1998 PERMIT NO. 360

ADDRESS 165 Huntington Rd (NO.) (STREET) (CONTR'S LICENSE)

MIT TO telecommunications tower (TYPE OF IMPROVEMENT) NO. STORY tower (PROPOSED USE) NUMBER OF DWELLING UNITS

T (LOCATION) 165 Huntington Rd (NO.) (STREET) ZONING DISTRICT

ETWEEN (CROSS STREET) AND (CROSS STREET)

IDIVISION LOT BLOCK LOT SIZE

LDING IS TO BE FT. WIDE BY FT. LONG BY FT. IN HEIGHT AND SHALL CONFORM IN CONSTRUCTION

TYPE USE GROUP BASEMENT WALLS OR FOUNDATION (TYPE)

MARKS:

EA OR UME 200 sq. feet (CUBIC/SQUARE FEET) ESTIMATED COST $170,000.00 PERMIT FEE $ 895.00

NER Pauline Passarello

DRESS 165 Huntington Rd

BUILDING DEPT. BY George Guay

George Guay

IMUM OF THREE CALLED SPECTIONS REQUIRED FOR CONSTRUCTION WORK:
OUNDATIONS OR FOOTINGS.
RIOR TO COVERING STRUCTURAL EMBERS (READY FOR LATH OR INISH COVERING).
INAL INSPECTION BEFORE CCUPANCY.

APPROVED PLANS MUST BE RETAINED ON JOB AND THIS CARD KEPT POSTED UNTIL FINAL INSPECTION HAS BEEN MADE. WHERE A CERTIFICATE OF OCCUPANCY IS REQUIRED, SUCH BUILDING SHALL NOT BE OCCUPIED UNTIL FINAL INSPECTION HAS BEEN MADE.

WHERE APPLICABLE SEPARATE PERMITS ARE REQUIRED FOR ELECTRICAL, PLUMBING AND MECHANICAL INSTALLATIONS.

POST THIS CARD SO IT IS VISIBLE FROM STREET

BUILDING INSPECTION APPROVALS	PLUMBING INSPECTION APPROVALS	ELECTRICAL INSPECTION APPROVALS
	1	1
	2	2
	HEATING INSPECTING APPROVALS	REFRIGERATION INSPECTION APPROVALS
	1	1
HER	2	2

APPLICATION FOR SCOTLAND PLANNING & ZONING APPROVAL

JOB LOCATION: 165 Huntington Rd						MAP # 21	BLOCK # 19
OWNERS NAME: SBA, INC						LOT # 5	ZONE RA
ADDRESS: 80 Eastern Blvd, Glastonbury CT 06033							
BUILDERS NAME: DICW Electric CO., INC							
ADDRESS: 156 Cross Road Waterford, CT 06385						TELEPHONE (860) 338 0256	
TYPE OF BUILDING OR IMPROVEMENT: Complete installation of top 60' of Telecommunications tower 240' Lattice tower			BASEMENT: N/A	USE		CONFORMING / NON-CONFORMING	
FLOOR AREA	SIZE	FRONT	DEPTH	WING	STORIES: 240'	# BDRMS	#BATHS
1ST: N/A							
2ND: N/A							
GARAGE / SHED / POOL / SIGN	SPECIFY TYPE	SIZE	SQ FEET	ATTACHED / DETACHED	CONFORMING / NON-CONFORMING		
DISTANCE FROM PROPERTY LINES			FRONT	RIGHT SIDE	LEFT SIDE	REAR	

EXHIBIT 7

EME Report

Radio Frequency Emissions Analysis Report

August 26, 2021

Centerline Communications on behalf of T-Mobile
Centerline Communications Project Number: 950003-007

Site Name: CTNL257A
Site Address: 177 Huntington Rd, Scotland, CT 06264

Site Compliance Summary

Compliance Status:	Compliant
Carrier MPE% of FCC General Population Allowable Limit:	0.18351500%
Composite MPE% of FCC General Population Allowable Limit:	0.27661200%

August 26, 2021

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

Emissions Analysis for Site: **CTNL257A**

Centerline Communications, LLC ("Centerline") was directed to analyze the proposed T-Mobile facility to be located a tower near **177 Huntington Rd, Scotland CT 06264** 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 (µW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 600MHz (LTE and NR) is 400 µW/cm2, 700MHz (LTE) is 467 µW/cm2, 1900MHz (PCS), 2100MHz (B46), and 2500MHz (LTE and NR) bands is 1000 µW/cm2.

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. Since T-Mobile is proposing focused omnidirectional antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. This is a very conservative estimate since the gain reduction in actual applications is typically greater than 10 dB in the direction of ground immediately surrounding the facility. 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	LTE	4	40
1	1900	LTE	4	40
2	1900	GSM	1	15
3	700	LTE	4	40
3	600	LTE	2	40
3	600	NR	2	30
4	2500	LTE	1	30
4	2500	NR	1	30
4	2500	LTE	1	90
4	2500	NR	1	90
5	2100	LTE	4	40
5	1900	LTE	4	40
6	1900	GSM	1	15
7	700	LTE	4	40
7	600	LTE	2	40
7	600	NR	2	30
8	2500	LTE	1	30
8	2500	NR	1	30

8	2500	LTE	1	90
8	2500	NR	1	90
9	2100	LTE	4	40
9	1900	LTE	4	40
10	1900	GSM	1	15
11	700	LTE	4	40
11	600	LTE	2	40
11	600	NR	2	30
12	2500	LTE	1	30
12	2500	NR	1	30
12	2500	LTE	1	90
12	2500	NR	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 600MHz (LTE and NR), 700MHz (LTE), 1900MHz (PCS), 2100MHz (B46), and 2500MHz (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	218.0
A	1	RFS APX16DWV-16DWVS-E-A20	218.0
A	1	RFS APX16DWV-16DWVS-E-A20	218.0
A	2	RFS APXVAALL24 43-U-NA20	218.0
A	2	RFS APXVAALL24 43-U-NA20	218.0
A	2	RFS APXVAALL24 43-U-NA20	218.0
A	3	ERICSSON AIR6449 LTE BrM 02DT	218.0
A	3	ERICSSON AIR6449 NR BrM 02DT	218.0
A	3	ERICSSON SON_AIR6449 2500 LTE TB	218.0
A	3	ERICSSON SON_AIR6449 2500 NR TB	218.0
B	4	RFS APX16DWV-16DWVS-E-A20	218.0
B	4	RFS APX16DWV-16DWVS-E-A20	218.0
B	4	RFS APX16DWV-16DWVS-E-A20	218.0
B	5	RFS APXVAALL24 43-U-NA20	218.0
B	5	RFS APXVAALL24 43-U-NA20	218.0
B	5	RFS APXVAALL24 43-U-NA20	218.0
B	6	ERICSSON AIR6449 LTE BrM 02DT	218.0
B	6	ERICSSON AIR6449 NR BrM 02DT	218.0
B	6	ERICSSON SON_AIR6449 2500 LTE TB	218.0
B	6	ERICSSON SON_AIR6449 2500 NR TB	218.0
C	7	RFS APX16DWV-16DWVS-E-A20	218.0
C	7	RFS APX16DWV-16DWVS-E-A20	218.0
C	7	RFS APX16DWV-16DWVS-E-A20	218.0
C	8	RFS APXVAALL24 43-U-NA20	218.0
C	8	RFS APXVAALL24 43-U-NA20	218.0
C	8	RFS APXVAALL24 43-U-NA20	218.0
C	9	ERICSSON AIR6449 LTE BrM 02DT	218.0
C	9	ERICSSON AIR6449 NR BrM 02DT	218.0
C	9	ERICSSON SON_AIR6449 2500 LTE TB	218.0
C	9	ERICSSON SON_AIR6449 2500 NR TB	218.0

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	Frequency Band	Gain (dBd)	Centerline (ft)	Channel Count	TX Power (W)	ERP (W)	MPE %
T-Mobile 1	RFS APX16DWV-16DWVS-E-A20	2100	16.25	218.0	4	40	6747.1441	0.003670000
T-Mobile 1	RFS APX16DWV-16DWVS-E-A20	1900	16.25	218.0	4	40	6747.1441	0.003636000
T-Mobile 1	RFS APX16DWV-16DWVS-E-A20	1900	16.25	218.0	1	15	632.5448	0.000341000
T-Mobile 2	RFS APXVAALL24 43-U-NA20	700	13.65	218.0	4	40	3707.8314	0.005035000
T-Mobile 2	RFS APXVAALL24 43-U-NA20	600	12.95	218.0	2	40	1577.9382	0.003099000
T-Mobile 2	RFS APXVAALL24 43-U-NA20	600	12.95	218.0	2	30	1183.4536	0.002323000
T-Mobile 3	ERICSSON AIR6449	2500	15.15	218.0	1	30	982.0221	0.001088000
T-Mobile 3	ERICSSON AIR6449	2500	15.15	218.0	1	30	982.0221	0.001088000
T-Mobile 3	ERICSSON AIR6449	2500	22.35	218.0	1	90	15461.1755	0.020464000
T-Mobile 3	ERICSSON AIR6449	2500	22.35	218.0	1	90	15461.1755	0.020464000
T-Mobile 4	RFS APX16DWV-16DWVS-E-A20	2100	16.25	218.0	4	40	6747.1441	0.003656000
T-Mobile 4	RFS APX16DWV-16DWVS-E-A20	1900	16.25	218.0	4	40	6747.1441	0.003622000
T-Mobile 4	RFS APX16DWV-16DWVS-E-A20	1900	16.25	218.0	1	15	632.5448	0.000340000
T-Mobile 5	RFS APXVAALL24 43-U-NA20	700	13.65	218.0	4	40	3707.8314	0.005016000
T-Mobile 5	RFS APXVAALL24 43-U-NA20	600	12.95	218.0	2	40	1577.9382	0.003087000
T-Mobile 5	RFS APXVAALL24 43-U-NA20	600	12.95	218.0	2	30	1183.4536	0.002314000
T-Mobile 6	ERICSSON AIR6449	2500	15.15	218.0	1	30	982.0221	0.001101000
T-Mobile 6	ERICSSON AIR6449	2500	15.15	218.0	1	30	982.0221	0.001101000
T-Mobile 6	ERICSSON AIR6449	2500	22.35	218.0	1	90	15461.1755	0.020702000
T-Mobile 6	ERICSSON AIR6449	2500	22.35	218.0	1	90	15461.1755	0.020702000
T-Mobile 7	RFS APX16DWV-16DWVS-E-A20	2100	16.25	218.0	4	40	6747.1441	0.003578000
T-Mobile 7	RFS APX16DWV-16DWVS-E-A20	1900	16.25	218.0	4	40	6747.1441	0.003586000
T-Mobile 7	RFS APX16DWV-16DWVS-E-A20	1900	16.25	218.0	1	15	632.5448	0.000337000
T-Mobile 8	RFS APXVAALL24 43-U-NA20	700	13.65	218.0	4	40	3707.8314	0.004932000
T-Mobile 8	RFS APXVAALL24 43-U-NA20	600	12.95	218.0	2	40	1577.9382	0.003071000
T-Mobile 8	RFS APXVAALL24 43-U-NA20	600	12.95	218.0	2	30	1183.4536	0.002302000
T-Mobile 9	ERICSSON AIR6449	2500	15.15	218.0	1	30	982.0221	0.001060000
T-Mobile 9	ERICSSON AIR6449	2500	15.15	218.0	1	30	982.0221	0.001060000
T-Mobile 9	ERICSSON AIR6449	2500	22.35	218.0	1	90	15461.1755	0.020370000
T-Mobile 9	ERICSSON AIR6449	2500	22.35	218.0	1	90	15461.1755	0.020370000
T-Mobile MPE%								**0.18351500 %**

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 ($\mu W/cm^2$)	Allowable MPE ($\mu W/cm^2$)	MPE %
2100	LTE	218.0	4	1686.786014	0.0366970	1000	0.00367000
1900	LTE	218.0	4	1686.786014	0.0363600	1000	0.00363600
1900	GSM	218.0	1	632.5447551	0.0034120	1000	0.00034100
700	LTE	218.0	4	926.95786	0.0234960	467	0.00503500
600	LTE	218.0	2	788.9690944	0.0123960	400	0.00309900
600	NR	218.0	2	591.7268208	0.0092930	400	0.00232300
2500	LTE	218.0	1	982.0220846	0.0108760	1000	0.00108800
2500	NR	218.0	1	982.0220846	0.0108760	1000	0.00108800
2500	LTE	218.0	1	15461.17548	0.2046360	1000	0.02046400
2500	NR	218.0	1	15461.17548	0.2046360	1000	0.02046400
2100	LTE	218.0	4	1686.786014	0.0365560	1000	0.00365600
1900	LTE	218.0	4	1686.786014	0.0362210	1000	0.00362200
1900	GSM	218.0	1	632.5447551	0.0033990	1000	0.00034000
700	LTE	218.0	4	926.95786	0.0234070	467	0.00501600
600	LTE	218.0	2	788.9690944	0.0123490	400	0.00308700
600	NR	218.0	2	591.7268208	0.0092580	400	0.00231400
2500	LTE	218.0	1	982.0220846	0.0110080	1000	0.00110100
2500	NR	218.0	1	982.0220846	0.0110080	1000	0.00110100
2500	LTE	218.0	1	15461.17548	0.2070190	1000	0.02070200
2500	NR	218.0	1	15461.17548	0.2070190	1000	0.02070200
2100	LTE	218.0	4	1686.786014	0.0357790	1000	0.00357800
1900	LTE	218.0	4	1686.786014	0.0358610	1000	0.00358600
1900	GSM	218.0	1	632.5447551	0.0033660	1000	0.00033700
700	LTE	218.0	4	926.95786	0.0230140	467	0.00493200
600	LTE	218.0	2	788.9690944	0.0122820	400	0.00307100
600	NR	218.0	2	591.7268208	0.0092080	400	0.00230200
2500	LTE	218.0	1	982.0220846	0.0106040	1000	0.00106000
2500	NR	218.0	1	982.0220846	0.0106040	1000	0.00106000
2500	LTE	218.0	1	15461.17548	0.2036950	1000	0.02037000
2500	NR	218.0	1	15461.17548	0.2036950	1000	0.02037000
T-Mobile MPE%							**0.18351500 %**

Table 4: T-Mobile Maximum Sector MPE Power Values

AT&T Results

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

ID	Make / Model	Frequency Band	Gain (dBd)	Centerline (ft)	Channel Count	TX Power (W)	ERP (W)	MPE %
AT&T 10	POWERWAVE 7770 00	850	11.35	238.0	4	40	2183.3330	0.004319000
AT&T 11	CCI DMP65R-BU8D	700	12.25	238.0	4	40	2686.0864	0.003304000
AT&T 11	CCI DMP65R-BU8D	1900	14.15	238.0	4	40	4160.2553	0.001705000
AT&T 12	CCI DMP65R-BU8D	2100	15.15	238.0	4	40	5237.4511	0.001544000
AT&T 12	CCI DMP65R-BU8D	850	12.55	238.0	4	40	2878.1935	0.002777000
AT&T 12	CCI DMP65R-BU8D	2300	14.25	238.0	4	25	2660.7251	0.001138000
AT&T 13	POWERWAVE 7770 00	850	11.35	238.0	4	40	2183.3330	0.004303000
AT&T 14	CCI DMP65R-BU8D	700	12.25	238.0	4	40	2686.0864	0.003291000
AT&T 14	CCI DMP65R-BU8D	1900	14.15	238.0	4	40	4160.2553	0.001698000
AT&T 15	CCI DMP65R-BU8D	2100	15.15	238.0	4	40	5237.4511	0.001539000
AT&T 15	CCI DMP65R-BU8D	850	12.55	238.0	4	40	2878.1935	0.002766000
AT&T 15	CCI DMP65R-BU8D	2300	14.25	238.0	4	25	2660.7251	0.001134000
AT&T 16	POWERWAVE 7770 00	850	11.35	238.0	4	40	2183.3330	0.004420000
AT&T 17	CCI DMP65R-BU8D	700	12.25	238.0	4	40	2686.0864	0.003396000
AT&T 17	CCI DMP65R-BU8D	1900	14.15	238.0	4	40	4160.2553	0.001741000
AT&T 18	CCI DMP65R-BU8D	2100	15.15	238.0	4	40	5237.4511	0.001580000
AT&T 18	CCI DMP65R-BU8D	850	12.55	238.0	4	40	2878.1935	0.002796000
AT&T 18	CCI DMP65R-BU8D	2300	14.25	238.0	4	25	2660.7251	0.001200000
AT&T 10	POWERWAVE 7770 00	850	11.35	238.0	4	40	2183.3330	0.004319000
AT&T 11	CCI DMP65R-BU8D	700	12.25	238.0	4	40	2686.0864	0.003304000
AT&T 11	CCI DMP65R-BU8D	1900	14.15	238.0	4	40	4160.2553	0.001705000
AT&T 12	CCI DMP65R-BU8D	2100	15.15	238.0	4	40	5237.4511	0.001544000
AT&T 12	CCI DMP65R-BU8D	850	12.55	238.0	4	40	2878.1935	0.002777000
AT&T 12	CCI DMP65R-BU8D	2300	14.25	238.0	4	25	2660.7251	0.001138000
AT&T 13	POWERWAVE 7770 00	850	11.35	238.0	4	40	2183.3330	0.004303000
AT&T 14	CCI DMP65R-BU8D	700	12.25	238.0	4	40	2686.0864	0.003291000
AT&T 14	CCI DMP65R-BU8D	1900	14.15	238.0	4	40	4160.2553	0.001698000
AT&T 15	CCI DMP65R-BU8D	2100	15.15	238.0	4	40	5237.4511	0.001539000
AT&T 15	CCI DMP65R-BU8D	850	12.55	238.0	4	40	2878.1935	0.002766000
AT&T 15	CCI DMP65R-BU8D	2300	14.25	238.0	4	25	2660.7251	0.001134000
AT&T 16	POWERWAVE 7770 00	850	11.35	238.0	4	40	2183.3330	0.004420000
AT&T 17	CCI DMP65R-BU8D	700	12.25	238.0	4	40	2686.0864	0.003396000
AT&T 17	CCI DMP65R-BU8D	1900	14.15	238.0	4	40	4160.2553	0.001741000
AT&T 18	CCI DMP65R-BU8D	2100	15.15	238.0	4	40	5237.4511	0.001580000
AT&T 18	CCI DMP65R-BU8D	850	12.55	238.0	4	40	2878.1935	0.002796000
AT&T 18	CCI DMP65R-BU8D	2300	14.25	238.0	4	25	2660.7251	0.001200000
AT&T MPE%								**0.04465100%**

Table 3: AT&T 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 AT&T sector(s).

Frequency Band	Technology	Centerline (ft.)	# of Channels	ERP W (Per Channel)	Total Power Density ($\mu W/cm^2$)	Allowable MPE ($\mu W/cm^2$)	MPE %
850	0	238.0	4	545.8332546	0.0244760	567	0.00431900
700	0	238.0	4	671.5216072	0.0154170	467	0.00330400
1900	0	238.0	4	1040.063825	0.0170490	1000	0.00170500
2100	0	238.0	4	1309.36278	0.0154430	1000	0.00154400
850	0	238.0	4	719.5483661	0.0157340	567	0.00277700
2300	0	238.0	4	665.1812649	0.0113820	1000	0.00113800
850	0	238.0	4	545.8332546	0.0243830	567	0.00430300
700	0	238.0	4	671.5216072	0.0153580	467	0.00329100
1900	0	238.0	4	1040.063825	0.0169850	1000	0.00169800
2100	0	238.0	4	1309.36278	0.0153850	1000	0.00153900
850	0	238.0	4	719.5483661	0.0156730	567	0.00276600
2300	0	238.0	4	665.1812649	0.0113390	1000	0.00113400
850	0	238.0	4	545.8332546	0.0250460	567	0.00442000
700	0	238.0	4	671.5216072	0.0158490	467	0.00339600
1900	0	238.0	4	1040.063825	0.0174060	1000	0.00174100
2100	0	238.0	4	1309.36278	0.0158030	1000	0.00158000
850	0	238.0	4	719.5483661	0.0158430	567	0.00279600
2300	0	238.0	4	665.1812649	0.0120010	1000	0.00120000
AT&T MPE%							**0.04465100%**

Table 4: AT&T Maximum Sector MPE Power Values

Verizon Results

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

ID	Make / Model	Frequency Band	Gain (dBd)	Centerline (ft)	Channel Count	TX Power (W)	ERP (W)	MPE %
Verizon 19	AMPHENOL LPA-80080-6CF-EDIN-0	850	14	228.0	4	40	4019.0183	0.003958000
Verizon 20	ANTEL BXA-70063-6CF-EDIN-0	700	14	228.0	4	40	4019.0183	0.006044000
Verizon 21	AMPHENOL BXA-185085-12CF-EDIN-0	1900	16	228.0	4	40	6369.7147	0.002162000
Verizon 22	AMPHENOL LPA-80080-6CF-EDIN-0	850	14	228.0	4	40	4019.0183	0.003958000
Verizon 23	AMPHENOL LPA-80080-6CF-EDIN-0	850	14	228.0	4	40	4019.0183	0.003943000
Verizon 24	ANTEL BXA-70063-6CF-EDIN-0	700	14	228.0	4	40	4019.0183	0.006021000
Verizon 25	AMPHENOL BXA-185085-12CF-EDIN-0	1900	16	228.0	4	40	6369.7147	0.002154000
Verizon 26	AMPHENOL LPA-80080-6CF-EDIN-0	850	14	228.0	4	40	4019.0183	0.003943000
Verizon 27	AMPHENOL LPA-80080-6CF-EDIN-0	850	14	228.0	4	40	4019.0183	0.003958000
Verizon 28	ANTEL BXA-70063-6CF-EDIN-0	700	14	228.0	4	40	4019.0183	0.006185000
Verizon 29	AMPHENOL BXA-185085-12CF-EDIN-0	1900	16	228.0	4	40	6369.7147	0.002162000
Verizon 30	AMPHENOL LPA-80080-6CF-EDIN-0	850	14	228.0	4	40	4019.0183	0.003958000
Verizon 19	AMPHENOL LPA-80080-6CF-EDIN-0	850	14	228.0	4	40	4019.0183	0.003958000
Verizon 20	ANTEL BXA-70063-6CF-EDIN-0	700	14	228.0	4	40	4019.0183	0.006044000
Verizon 21	AMPHENOL BXA-185085-12CF-EDIN-0	1900	16	228.0	4	40	6369.7147	0.002162000
Verizon 22	AMPHENOL LPA-80080-6CF-EDIN-0	850	14	228.0	4	40	4019.0183	0.003958000
Verizon 23	AMPHENOL LPA-80080-6CF-EDIN-0	850	14	228.0	4	40	4019.0183	0.003943000
Verizon 24	ANTEL BXA-70063-6CF-EDIN-0	700	14	228.0	4	40	4019.0183	0.006021000
Verizon 25	AMPHENOL BXA-185085-12CF-EDIN-0	1900	16	228.0	4	40	6369.7147	0.002154000
Verizon 26	AMPHENOL LPA-80080-6CF-EDIN-0	850	14	228.0	4	40	4019.0183	0.003943000
Verizon 27	AMPHENOL LPA-80080-6CF-EDIN-0	850	14	228.0	4	40	4019.0183	0.003958000
Verizon 28	ANTEL BXA-70063-6CF-EDIN-0	700	14	228.0	4	40	4019.0183	0.006185000
Verizon 29	AMPHENOL BXA-185085-12CF-EDIN-0	1900	16	228.0	4	40	6369.7147	0.002162000
Verizon 30	AMPHENOL LPA-80080-6CF-EDIN-0	850	14	228.0	4	40	4019.0183	0.003958000
Verizon MPE%								**0.04844600%**

Table 3: Verizon 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 Verizon sector(s).

Frequency Band	Technology	Centerline (ft.)	# of Channels	ERP W (Per Channel)	Total Power Density ($\mu W/cm^2$)	Allowable MPE ($\mu W/cm^2$)	MPE %
850	0	228.0	4	1004.754573	0.0224260	567	0.00395800
700	0	228.0	4	1004.754573	0.0282060	467	0.00604400
1900	0	228.0	4	1592.428682	0.0216210	1000	0.00216200
850	0	228.0	4	1004.754573	0.0224260	567	0.00395800
850	0	228.0	4	1004.754573	0.0223420	567	0.00394300
700	0	228.0	4	1004.754573	0.0280990	467	0.00602100
1900	0	228.0	4	1592.428682	0.0215400	1000	0.00215400
850	0	228.0	4	1004.754573	0.0223420	567	0.00394300
850	0	228.0	4	1004.754573	0.0224260	567	0.00395800
700	0	228.0	4	1004.754573	0.0288630	467	0.00618500
1900	0	228.0	4	1592.428682	0.0216210	1000	0.00216200
850	0	228.0	4	1004.754573	0.0224260	567	0.00395800
Verizon MPE%							**0.04844600%**

Table 4: Verizon Maximum Sector MPE Power Values

Summary

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

The anticipated maximum composite contributions from the 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	0.18351500%
AT&T	0.04465100%
Verizon	0.04844600%
Composite	**0.27661200%**

Table 5: Total Predicted MPE(%) by Carrier

Compliance Status:

The anticipated composite MPE value for this site assuming all carriers present is **0.27661200%** 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.

Samuel Cosgrove
RF Compliance Consultant
Centerline Communications, LLC
750 West Center St. Suite 301
West Bridgewater, MA 02379

EXHIBIT 8

Structural Analysis

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

Structural Analysis Report

Existing 240 ft PIROD Self Supporting Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT00990-S

Customer Site Name: Scotland

Carrier Name: T-Mobile Sprint (App#: 160650, V1)

Carrier Site ID / Name: CTNL257A

Site Location: 165 Huntington Road

Scotland, Connecticut

Windham County

Latitude: 41.695911

Longitude: -72.097069

Analysis Result:

Max Structural Usage: 82.9% [Pass]

Max Foundation Usage: 62% [Pass]

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

Report Prepared By: Stacey Hesselbein

Introduction

The purpose of this report is to summarize the analysis results on the 240 ft PIROD Self Supporting Tower 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	Pirod, Eng File # A-115649 Dated 05/05/1999
Foundation Drawing	Pirod, Eng File # A-115649 Dated 05/05/1999
Geotechnical Report	Jaworski Geotech, inc., Project # 99222G Dated 04/28/1999
Modification Drawings	N/A
Mount Analysis	TES, Project # 110406 Dated 07/06/2021

Analysis Criteria

The rigorous analysis was performed in accordance with the requirements and stipulations of the TIA-222-G-2**.** In accordance with this standard, the structure was analyzed using **TESTowers,** 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 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 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	S_S = 0.172, S_1 = 0.062

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

Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	238.0	3	Powerwave 7770 Panel	Platform w/ Handrail (Site Pro 1 XAHCP, SCX1-K, SCX4-K, SCX2-K)	(2) 1/2" Fiber (6) 3/4" DC (12) 1 5/8"	AT&T
2		6	CCI DMP65R-BU8DA Panel			
3		6	Powerwave LGP21401 TMA			
4		3	Ericsson RRUS 4478 B14 RRU			
5		3	Ericsson RRUS 8843 B2 B66A RRU			
6		3	Ericsson RRUS 4449 B5/B12 RRU			
7		3	Raycap DC6-48-60-18-8F OVP			
8	228.0	6	Antel LPA-80080/6CF Panel	(3) T-Frames	(18) 1 5/8"	Verizon
9		3	Antel BXA-171085-12BF Panel			
10		3	Antel BXA-70063/6CF Panel			

Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier's final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
11	218.0	3	RFS APX16DWV-16DWVS-E-A20 Panel	(3) Sector Frames (Site Pro 1 VFA12-HD)	(3) 1.99" 6x24 Hybrid	T-Mobile Sprint
12		3	RFS APXVAALL24-43-U-NA20 Panel			
13		3	Ericsson AIR6449 B41 Panel			
14		3	Ericsson 4460 B25 + B66 RRU			
15		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:

Tower Component	Legs	Diagonals	Horizontals
Max. Usage:	**67.1%**	**82.9%**	**55.0%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Compression (Kips)	Uplift (Kips)	Shear (Kips)
Analysis Reactions	498.0	426.6	50.0

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 0.3260 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.

Structure: CT00990-S-SBA

Site Name:	Scotland			**Code:**	EIA/TIA-222-G	8/3/2021
Type:	Self Support	**Base Shape:**	Triangle	**Basic WS:**	101.00	
Height:	240.00 (ft)	**Base Width:**	26.00	**Basic Ice WS:**	50.00	
Base Elev:	0.00 (ft)	**Top Width:**	4.50	**Operational WS:**	60.00	Page: 1

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Section Properties

Sect	Leg Members	Diagonal Members	Horizontal Members
1-2	18B 18"BD 2.75"	DAE 3.5X3.5X0.3125	
3-4	18B 18"BD 2.5"	DAE 3.5X3.5X0.3125	
5-6	12B 12"BD 2.25"	SAE 3.5X3.5X0.3125	
7-8	12B 12"BD 2"	SAE 3X3X0.3125	
9	12B 12"BD 1.75"	SAE 3X3X0.1875	
10	12B 12"BD 1.5"	SAE 3X3X0.1875	
11	12B 12"BD 1.25"	SAE 3X3X0.1875	
12	SOL 2" SOLID	SOL 1" SOLID	SOL 1" SOLID
13	SOL 1 3/4" SOLID	SOL 3/4" SOLID	SOL 3/4" SOLID

Discrete Appurtenances

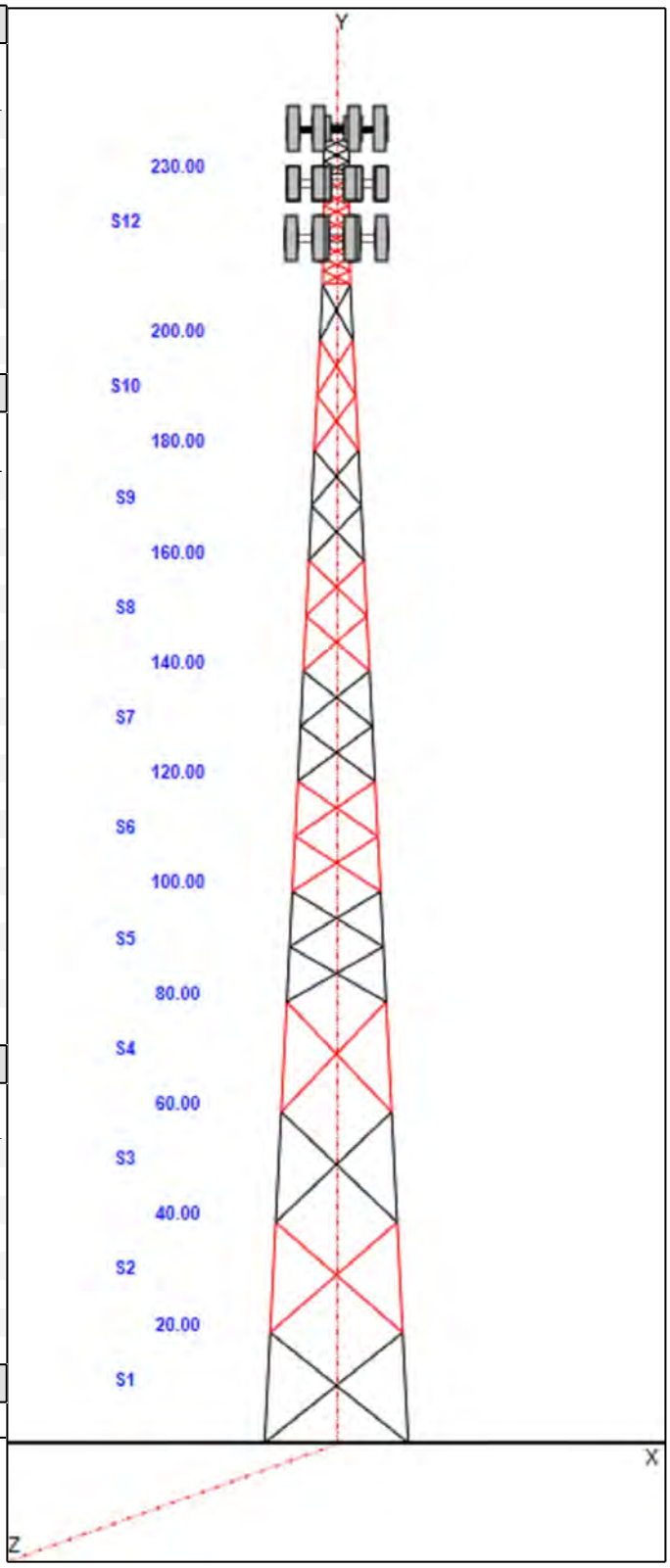
Attach Elev (ft)	Force Elev (ft)	Qty	Description
240.00	240.00	1	6' Lightning rod
240.00	240.00	1	Beacon
238.00	238.00	3	7770.00
238.00	238.00	6	LGP21401
238.00	238.00	3	DC6-48-60-18-8F
238.00	238.00	6	DMP65R-BU8DA
238.00	238.00	3	RRUS 4478 B14
238.00	238.00	3	B2 B66A 8843
238.00	238.00	3	4449 B5/B12
238.00	238.00	1	Platform w/ Hand Rail (round)
228.00	228.00	6	LPA-80080/6CF ___
228.00	228.00	3	BXA-171085-12BF-EDIN-X
228.00	228.00	3	BXA-70063/6CF_
228.00	228.00	3	T-Frames
218.00	218.00	3	APX16DWV-16DWVS-E-A20
218.00	218.00	3	APXVAALL24-43-U-NA20
218.00	218.00	3	AIR6449 B41
218.00	218.00	3	4460 B25 + B66
218.00	218.00	3	4480 B71 + B85
218.00	218.00	1	(3) VFA12-HD

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Qty	Description
0.00	238.00	2	1/2" Fiber
0.00	238.00	6	3/4" DC
0.00	238.00	1	W/G Ladder
228.00	238.00	12	1 5/8" Coax
0.00	228.00	18	1 5/8" Coax
0.00	228.00	12	1 5/8" Coax
0.00	228.00	1	W/G Ladder
0.00	218.00	3	6x24 Hybrid

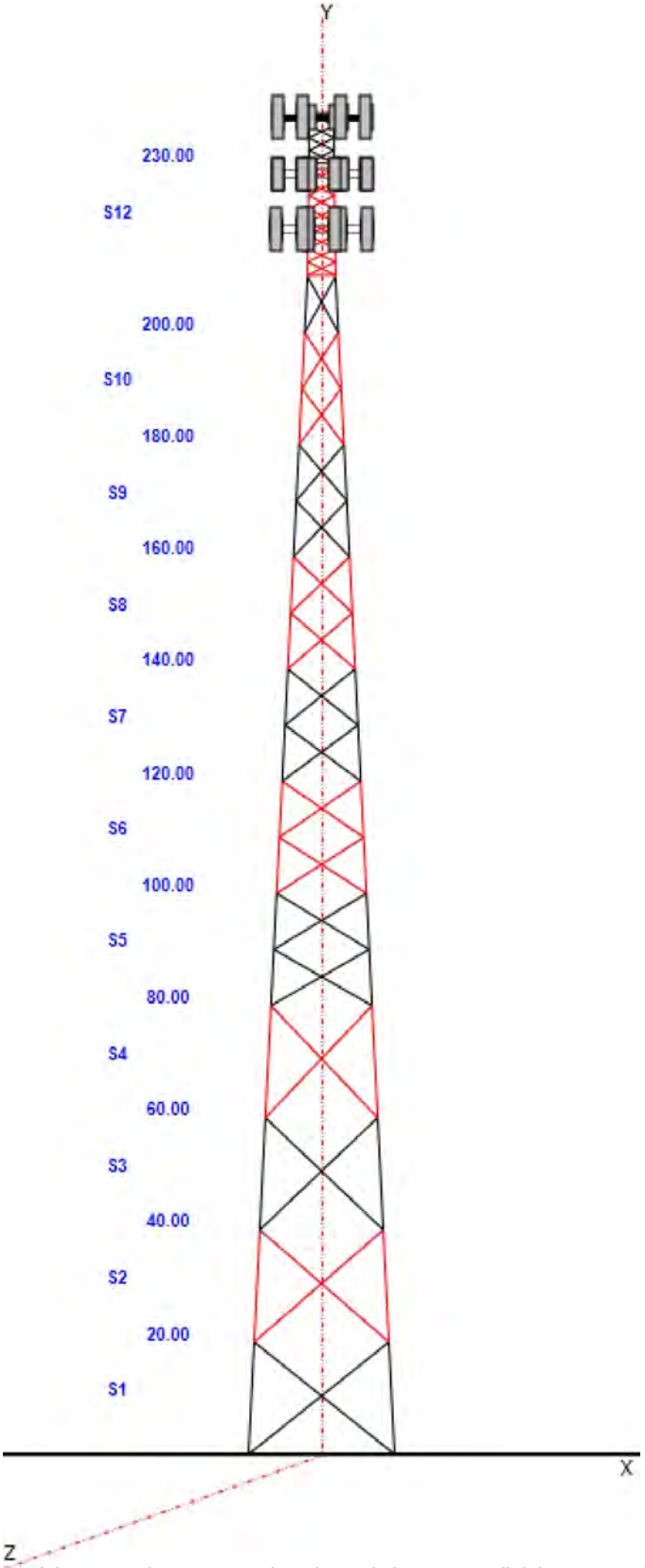
Base Reactions

Leg		Overturning	
Max Uplift:	-426.63 (kips	Moment:	10525.20 (ft-kips)
Max Down:	498.05 (kips	Total Down:	91.82 (kips)
Max Shear:	50.04 (kips	Total Shear:	73.03 (kips)



Structure: CT00990-S-SBA

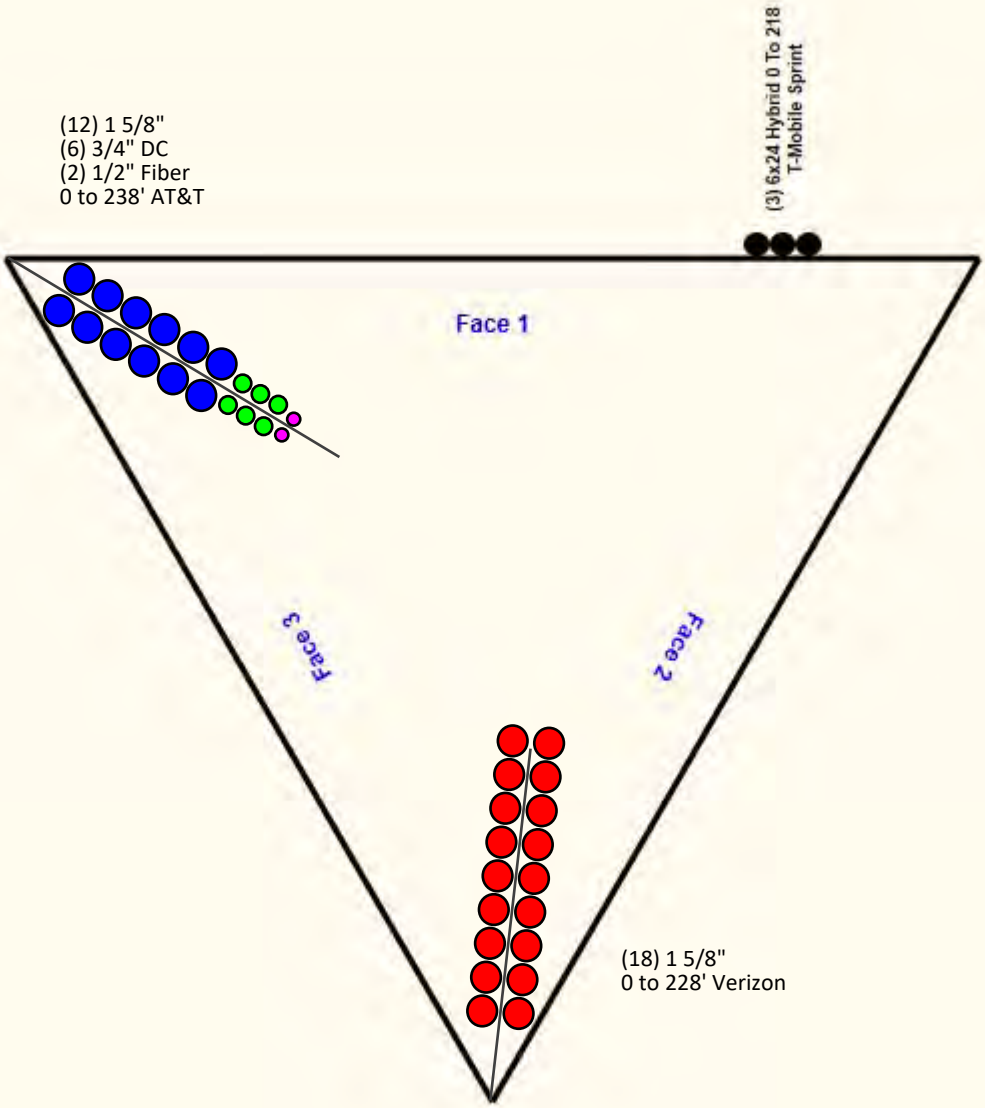
Site Name:	Scotland			**Code:**	EIA/TIA-222-G	8/3/2021
Type:	Self Support	**Base Shape:**	Triangle	**Basic WS:**	101.00	
Height:	240.00 (ft)	**Base Width:**	26.00	**Basic Ice WS:**	50.00	
Base Elev:	0.00 (ft)	**Top Width:**	4.50	**Operational WS:**	60.00	Page: 2



Structure: CT00990-S-SBA - Coax Line Placement

Type: Self Support
Site Name: Scotland
Height: 240.00 (ft)

8/3/2021



Loading Summary

Structure:	CT00990-S-SBA		**Code:**	EIA/TIA-222-G	8/3/2021
Site Name:	Scotland		**Exposure:**	C	
Height:	240.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	0.85	**Topography:** 1	**Struct Class:**	II	Page: 4

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Discrete Appurtenances Properties

Attach Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice CaAa (sf)	Ice Weight (lb)	Ice CaAa (sf)	Len (in)	Width (in)	Depth (in)	Ka	Orientation Factor	Vert Ecc (ft)
240.00	6' Lightning rod	1	6.50	0.380	44.47	1.518	72.000	0.600	0.600	1.00	1.00	0.000
240.00	Beacon	1	36.00	2.720	175.31	3.713	28.000	17.500	17.500	1.00	1.00	0.000
238.00	7770.00	3	35.00	5.500	177.86	6.617	55.000	11.000	5.000	0.80	0.73	0.000
238.00	LGP21401	6	14.10	1.290	40.25	2.164	14.400	9.200	2.600	0.80	0.75	0.000
238.00	DC6-48-60-18-8F	3	31.80	0.920	96.46	1.378	24.000	11.000	11.000	0.80	1.00	0.000
238.00	DMP65R-BU8DA	6	95.70	17.870	511.10	19.749	96.000	20.700	7.700	0.80	0.73	0.000
238.00	RRUS 4478 B14	3	59.40	1.650	102.77	2.192	15.000	13.200	7.300	0.80	0.67	0.000
238.00	B2 B66A 8843	3	70.00	1.640	118.09	2.180	15.000	13.200	9.300	0.80	0.67	0.000
238.00	4449 B5/B12	3	71.00	1.970	126.83	2.543	17.900	13.200	9.400	0.80	0.67	0.000
238.00	Platform w/ Hand Rail (round)	1	1600.0	32.000	3796.26	61.206	0.000	0.000	0.000	1.00	1.00	0.000
228.00	LPA-80080/6CF ___	6	21.00	4.330	225.10	5.561	70.900	5.500	13.200	0.80	1.70	0.000
228.00	BXA-171085-12BF-EDIN-X	3	15.00	4.740	113.64	7.181	71.700	6.100	4.100	0.80	0.84	0.000
228.00	BXA-70063/6CF_	3	17.00	7.570	164.24	10.442	71.000	11.200	4.500	0.80	0.70	0.000
228.00	T-Frames	3	500.00	15.000	1044.01	35.310	0.000	0.000	0.000	0.75	0.75	0.000
218.00	APX16DWV-16DWVS-E-A20	3	40.70	6.610	162.33	8.873	55.900	13.300	3.100	0.80	0.62	0.000
218.00	APXVAALL24-43-U-NA20	3	143.30	20.240	615.30	22.193	95.900	24.000	8.500	0.80	0.72	0.000
218.00	AIR6449 B41	3	103.00	5.650	245.47	6.638	33.100	20.500	8.300	0.80	0.71	0.000
218.00	4460 B25 + B66	3	88.00	2.050	178.57	2.671	17.100	14.400	11.300	0.80	0.67	0.000
218.00	4480 B71 + B85	3	93.00	2.850	167.74	3.551	21.800	15.700	7.500	0.80	0.67	0.000
218.00	(3) VFA12-HD	1	2322.0	50.700	4679.94	116.89	0.000	0.000	0.000	0.75	1.00	0.000
	Totals:	**61**	**8,550.90**		**23,294.64**						**Number of Appurtenances :**	**20**

Linear Appurtenances Properties

Elev. From (ft)	Elev. To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Pct In Block	Spread On Faces	Bundling Arrangement	Cluster Dia (in)	Out of Zone	Spacing (in)	Orientation Factor	Ka Override
0.00	238.00	1/2" Fiber	2	0.65	0.16	100.00	3	Individual NR		N	1.00	1.00	
0.00	238.00	3/4" DC	6	0.75	0.40	50.00	3	Block		N	0.50	1.00	
0.00	238.00	W/G Ladder	1	2.00	6.00	100.00	3	Individual NR		N	1.00	1.00	
228.00	238.00	1 5/8" Coax	12	1.98	1.04	50.00	3	Block		N	0.50	1.00	
0.00	228.00	1 5/8" Coax	18	1.98	1.04	50.00	2	Block		N	0.50	1.00	
0.00	228.00	1 5/8" Coax	12	1.98	1.04	50.00	3	Block		N	0.50	0.58	
0.00	228.00	W/G Ladder	1	2.00	6.00	100.00	2	Individual NR		N	1.00	1.00	
0.00	218.00	6x24 Hybrid	3	2.00	1.10	100.00	1	Individual NR		N	1.00	0.60	

Section Forces

Structure:	CT00990-S-SBA	**Code:**	EIA/TIA-222-G	8/3/2021	
Site Name:	Scotland	**Exposure:**	C		
Height:	240.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 6	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W Normal Wind — 1.2D + 1.6W 101 mph Wind at Normal To Face

Wind Load Factor: 1.60 — **Wind Importance Factor:** 1.00

Dead Load Factor: 1.20

Ice Dead Load Factor: 0.00 — **Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	10.0	18.87	18.274	27.83	0.00	0.09	3.01	1.00	1.00	0.00	29.14	84.58	0.00	11,100.	0.0	2247.86	1716.04	3,963.90
2	30.0	21.80	17.378	27.83	0.00	0.10	2.98	1.00	1.00	0.00	28.32	84.58	0.00	10,940.	0.0	2504.31	1983.04	4,487.35
3	50.0	24.28	16.527	26.21	0.00	0.10	2.97	1.00	1.00	0.00	26.87	84.58	0.00	10,044.	0.0	2634.12	2208.19	4,842.31
4	70.0	26.06	15.714	26.21	0.00	0.11	2.94	1.00	1.00	0.00	26.15	84.58	0.00	9,898.2	0.0	2722.03	2370.28	5,092.32
5	90.0	27.48	22.308	23.64	0.00	0.13	2.84	1.00	1.00	0.00	31.98	84.58	0.00	7,193.2	0.0	3398.76	2499.07	5,897.82
6	110.0	28.66	20.349	23.64	0.00	0.14	2.80	1.00	1.00	0.00	30.14	84.58	0.00	7,017.5	0.0	3295.24	2606.91	5,902.14
7	130.0	29.69	15.847	22.04	0.00	0.14	2.81	1.00	1.00	0.00	24.96	84.58	0.00	5,940.0	0.0	2831.41	2700.22	5,531.63
8	150.0	30.60	14.323	22.04	0.00	0.16	2.74	1.00	1.00	0.00	23.63	84.58	0.00	5,805.2	0.0	2698.94	2782.81	5,481.74
9	170.0	31.41	12.972	18.83	0.00	0.17	2.71	1.00	1.00	0.00	21.66	84.58	0.00	4,446.3	0.0	2504.60	2857.11	5,361.71
10	190.0	32.16	11.777	17.23	0.00	0.20	2.61	1.00	1.00	0.00	20.23	84.58	0.00	3,925.4	0.0	2311.59	2924.80	5,236.39
11	205.0	32.68	5.503	7.81	0.00	0.23	2.51	1.00	1.00	0.00	9.57	42.29	0.00	1,725.0	0.0	1068.48	1485.98	2,554.46
12	220.0	33.17	0.000	14.30	0.00	0.15	2.79	1.00	1.00	0.00	8.25	74.61	0.00	2,754.2	0.0	1037.66	2696.81	3,734.47
13	235.0	33.63	0.000	5.90	0.00	0.13	2.86	1.00	1.00	0.00	3.39	13.95	0.00	764.5	0.0	443.01	585.52	1,028.53
														81,555.1	**0.0**			**59,114.79**

Load Case: 1.2D + 1.6W 60° Wind — 1.2D + 1.6W 101 mph Wind at 60° From Face

Wind Load Factor: 1.60 — **Wind Importance Factor:** 1.00

Dead Load Factor: 1.20

Ice Dead Load Factor: 0.00 — **Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	10.0	18.87	18.274	27.83	0.00	0.09	3.01	0.80	1.00	0.00	25.49	84.58	0.00	11,100.	0.0	1965.98	1716.04	3,682.02
2	30.0	21.80	17.378	27.83	0.00	0.10	2.98	0.80	1.00	0.00	24.84	84.58	0.00	10,940.	0.0	2196.92	1983.04	4,179.96
3	50.0	24.28	16.527	26.21	0.00	0.10	2.97	0.80	1.00	0.00	23.56	84.58	0.00	10,044.	0.0	2310.05	2208.19	4,518.24
4	70.0	26.06	15.714	26.21	0.00	0.11	2.94	0.80	1.00	0.00	23.00	84.58	0.00	9,898.2	0.0	2394.84	2370.28	4,765.12
5	90.0	27.48	22.308	23.64	0.00	0.13	2.84	0.80	1.00	0.00	27.52	84.58	0.00	7,193.2	0.0	2924.57	2499.07	5,423.64
6	110.0	28.66	20.349	23.64	0.00	0.14	2.80	0.80	1.00	0.00	26.07	84.58	0.00	7,017.5	0.0	2850.29	2606.91	5,457.20
7	130.0	29.69	15.847	22.04	0.00	0.14	2.81	0.80	1.00	0.00	21.79	84.58	0.00	5,940.0	0.0	2471.89	2700.22	5,172.11
8	150.0	30.60	14.323	22.04	0.00	0.16	2.74	0.80	1.00	0.00	20.77	84.58	0.00	5,805.2	0.0	2371.80	2782.81	5,154.61
9	170.0	31.41	12.972	18.83	0.00	0.17	2.71	0.80	1.00	0.00	19.07	84.58	0.00	4,446.3	0.0	2204.60	2857.11	5,061.71
10	190.0	32.16	11.777	17.23	0.00	0.20	2.61	0.80	1.00	0.00	17.88	84.58	0.00	3,925.4	0.0	2042.51	2924.80	4,967.31
11	205.0	32.68	5.503	7.81	0.00	0.23	2.51	0.80	1.00	0.00	8.47	42.29	0.00	1,725.0	0.0	945.65	1485.98	2,431.63
12	220.0	33.17	0.000	14.30	0.00	0.15	2.79	0.80	1.00	0.00	8.25	74.61	0.00	2,754.2	0.0	1037.66	2696.81	3,734.47
13	235.0	33.63	0.000	5.90	0.00	0.13	2.86	0.80	1.00	0.00	3.39	13.95	0.00	764.5	0.0	443.01	585.52	1,028.53
														81,555.1	**0.0**			**55,576.56**

Section Forces

Structure:	CT00990-S-SBA	**Code:**	EIA/TIA-222-G	8/3/2021	
Site Name:	Scotland	**Exposure:**	C		
Height:	240.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 7	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 90° Wind — 1.2D + 1.6W 101 mph Wind at 90° From Face

Wind Load Factor: 1.60
Dead Load Factor: 1.20
Ice Dead Load Factor: 0.00
Wind Importance Factor: 1.00
Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	10.0	18.87	18.274	27.83	0.00	0.09	3.01	0.85	1.00	0.00	26.40	84.58	0.00	11,100.	0.0	2036.45	1716.04	3,752.49
2	30.0	21.80	17.378	27.83	0.00	0.10	2.98	0.85	1.00	0.00	25.71	84.58	0.00	10,940.	0.0	2273.77	1983.04	4,256.81
3	50.0	24.28	16.527	26.21	0.00	0.10	2.97	0.85	1.00	0.00	24.39	84.58	0.00	10,044.	0.0	2391.07	2208.19	4,599.26
4	70.0	26.06	15.714	26.21	0.00	0.11	2.94	0.85	1.00	0.00	23.79	84.58	0.00	9,898.2	0.0	2476.64	2370.28	4,846.92
5	90.0	27.48	22.308	23.64	0.00	0.13	2.84	0.85	1.00	0.00	28.63	84.58	0.00	7,193.2	0.0	3043.12	2499.07	5,542.19
6	110.0	28.66	20.349	23.64	0.00	0.14	2.80	0.85	1.00	0.00	27.09	84.58	0.00	7,017.5	0.0	2961.53	2606.91	5,568.44
7	130.0	29.69	15.847	22.04	0.00	0.14	2.81	0.85	1.00	0.00	22.58	84.58	0.00	5,940.0	0.0	2561.77	2700.22	5,261.99
8	150.0	30.60	14.323	22.04	0.00	0.16	2.74	0.85	1.00	0.00	21.48	84.58	0.00	5,805.2	0.0	2453.59	2782.81	5,236.39
9	170.0	31.41	12.972	18.83	0.00	0.17	2.71	0.85	1.00	0.00	19.71	84.58	0.00	4,446.3	0.0	2279.60	2857.11	5,136.71
10	190.0	32.16	11.777	17.23	0.00	0.20	2.61	0.85	1.00	0.00	18.47	84.58	0.00	3,925.4	0.0	2109.78	2924.80	5,034.58
11	205.0	32.68	5.503	7.81	0.00	0.23	2.51	0.85	1.00	0.00	8.75	42.29	0.00	1,725.0	0.0	976.36	1485.98	2,462.34
12	220.0	33.17	0.000	14.30	0.00	0.15	2.79	0.85	1.00	0.00	8.25	74.61	0.00	2,754.2	0.0	1037.66	2696.81	3,734.47
13	235.0	33.63	0.000	5.90	0.00	0.13	2.86	0.85	1.00	0.00	3.39	13.95	0.00	764.5	0.0	443.01	585.52	1,028.53
														81,555.1	**0.0**			**56,461.12**

Load Case: 0.9D + 1.6W Normal Wind — 0.9D + 1.6W 101 mph Wind at Normal To Face

Wind Load Factor: 1.60
Dead Load Factor: 0.90
Ice Dead Load Factor: 0.00
Wind Importance Factor: 1.00
Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	10.0	18.87	18.274	27.83	0.00	0.09	3.01	1.00	1.00	0.00	29.14	84.58	0.00	8,325.1	0.0	2247.86	1716.04	3,963.90
2	30.0	21.80	17.378	27.83	0.00	0.10	2.98	1.00	1.00	0.00	28.32	84.58	0.00	8,205.7	0.0	2504.31	1983.04	4,487.35
3	50.0	24.28	16.527	26.21	0.00	0.10	2.97	1.00	1.00	0.00	26.87	84.58	0.00	7,533.5	0.0	2634.12	2208.19	4,842.31
4	70.0	26.06	15.714	26.21	0.00	0.11	2.94	1.00	1.00	0.00	26.15	84.58	0.00	7,423.6	0.0	2722.03	2370.28	5,092.32
5	90.0	27.48	22.308	23.64	0.00	0.13	2.84	1.00	1.00	0.00	31.98	84.58	0.00	5,394.9	0.0	3398.76	2499.07	5,897.82
6	110.0	28.66	20.349	23.64	0.00	0.14	2.80	1.00	1.00	0.00	30.14	84.58	0.00	5,263.1	0.0	3295.24	2606.91	5,902.14
7	130.0	29.69	15.847	22.04	0.00	0.14	2.81	1.00	1.00	0.00	24.96	84.58	0.00	4,455.0	0.0	2831.41	2700.22	5,531.63
8	150.0	30.60	14.323	22.04	0.00	0.16	2.74	1.00	1.00	0.00	23.63	84.58	0.00	4,353.9	0.0	2698.94	2782.81	5,481.74
9	170.0	31.41	12.972	18.83	0.00	0.17	2.71	1.00	1.00	0.00	21.66	84.58	0.00	3,334.7	0.0	2504.60	2857.11	5,361.71
10	190.0	32.16	11.777	17.23	0.00	0.20	2.61	1.00	1.00	0.00	20.23	84.58	0.00	2,944.1	0.0	2311.59	2924.80	5,236.39
11	205.0	32.68	5.503	7.81	0.00	0.23	2.51	1.00	1.00	0.00	9.57	42.29	0.00	1,293.7	0.0	1068.48	1485.98	2,554.46
12	220.0	33.17	0.000	14.30	0.00	0.15	2.79	1.00	1.00	0.00	8.25	74.61	0.00	2,065.6	0.0	1037.66	2696.81	3,734.47
13	235.0	33.63	0.000	5.90	0.00	0.13	2.86	1.00	1.00	0.00	3.39	13.95	0.00	573.3	0.0	443.01	585.52	1,028.53
														61,166.4	**0.0**			**59,114.79**

Section Forces

Structure:	CT00990-S-SBA	**Code:**	EIA/TIA-222-G	8/3/2021	
Site Name:	Scotland	**Exposure:**	C		
Height:	240.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 8	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 60° Wind — 0.9D + 1.6W 101 mph Wind at 60° From Face

Wind Load Factor: 1.60 — **Wind Importance Factor:** 1.00

Dead Load Factor: 0.90

Ice Dead Load Factor: 0.00 — **Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	10.0	18.87	18.274	27.83	0.00	0.09	3.01	0.80	1.00	0.00	25.49	84.58	0.00	8,325.1	0.0	1965.98	1716.04	3,682.02
2	30.0	21.80	17.378	27.83	0.00	0.10	2.98	0.80	1.00	0.00	24.84	84.58	0.00	8,205.7	0.0	2196.92	1983.04	4,179.96
3	50.0	24.28	16.527	26.21	0.00	0.10	2.97	0.80	1.00	0.00	23.56	84.58	0.00	7,533.5	0.0	2310.05	2208.19	4,518.24
4	70.0	26.06	15.714	26.21	0.00	0.11	2.94	0.80	1.00	0.00	23.00	84.58	0.00	7,423.6	0.0	2394.84	2370.28	4,765.12
5	90.0	27.48	22.308	23.64	0.00	0.13	2.84	0.80	1.00	0.00	27.52	84.58	0.00	5,394.9	0.0	2924.57	2499.07	5,423.64
6	110.0	28.66	20.349	23.64	0.00	0.14	2.80	0.80	1.00	0.00	26.07	84.58	0.00	5,263.1	0.0	2850.29	2606.91	5,457.20
7	130.0	29.69	15.847	22.04	0.00	0.14	2.81	0.80	1.00	0.00	21.79	84.58	0.00	4,455.0	0.0	2471.89	2700.22	5,172.11
8	150.0	30.60	14.323	22.04	0.00	0.16	2.74	0.80	1.00	0.00	20.77	84.58	0.00	4,353.9	0.0	2371.80	2782.81	5,154.61
9	170.0	31.41	12.972	18.83	0.00	0.17	2.71	0.80	1.00	0.00	19.07	84.58	0.00	3,334.7	0.0	2204.60	2857.11	5,061.71
10	190.0	32.16	11.777	17.23	0.00	0.20	2.61	0.80	1.00	0.00	17.88	84.58	0.00	2,944.1	0.0	2042.51	2924.80	4,967.31
11	205.0	32.68	5.503	7.81	0.00	0.23	2.51	0.80	1.00	0.00	8.47	42.29	0.00	1,293.7	0.0	945.65	1485.98	2,431.63
12	220.0	33.17	0.000	14.30	0.00	0.15	2.79	0.80	1.00	0.00	8.25	74.61	0.00	2,065.6	0.0	1037.66	2696.81	3,734.47
13	235.0	33.63	0.000	5.90	0.00	0.13	2.86	0.80	1.00	0.00	3.39	13.95	0.00	573.3	0.0	443.01	585.52	1,028.53
														61,166.4	**0.0**			**55,576.56**

Load Case: 0.9D + 1.6W 90° Wind — 0.9D + 1.6W 101 mph Wind at 90° From Face

Wind Load Factor: 1.60 — **Wind Importance Factor:** 1.00

Dead Load Factor: 0.90

Ice Dead Load Factor: 0.00 — **Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	10.0	18.87	18.274	27.83	0.00	0.09	3.01	0.85	1.00	0.00	26.40	84.58	0.00	8,325.1	0.0	2036.45	1716.04	3,752.49
2	30.0	21.80	17.378	27.83	0.00	0.10	2.98	0.85	1.00	0.00	25.71	84.58	0.00	8,205.7	0.0	2273.77	1983.04	4,256.81
3	50.0	24.28	16.527	26.21	0.00	0.10	2.97	0.85	1.00	0.00	24.39	84.58	0.00	7,533.5	0.0	2391.07	2208.19	4,599.26
4	70.0	26.06	15.714	26.21	0.00	0.11	2.94	0.85	1.00	0.00	23.79	84.58	0.00	7,423.6	0.0	2476.64	2370.28	4,846.92
5	90.0	27.48	22.308	23.64	0.00	0.13	2.84	0.85	1.00	0.00	28.63	84.58	0.00	5,394.9	0.0	3043.12	2499.07	5,542.19
6	110.0	28.66	20.349	23.64	0.00	0.14	2.80	0.85	1.00	0.00	27.09	84.58	0.00	5,263.1	0.0	2961.53	2606.91	5,568.44
7	130.0	29.69	15.847	22.04	0.00	0.14	2.81	0.85	1.00	0.00	22.58	84.58	0.00	4,455.0	0.0	2561.77	2700.22	5,261.99
8	150.0	30.60	14.323	22.04	0.00	0.16	2.74	0.85	1.00	0.00	21.48	84.58	0.00	4,353.9	0.0	2453.59	2782.81	5,236.39
9	170.0	31.41	12.972	18.83	0.00	0.17	2.71	0.85	1.00	0.00	19.71	84.58	0.00	3,334.7	0.0	2279.60	2857.11	5,136.71
10	190.0	32.16	11.777	17.23	0.00	0.20	2.61	0.85	1.00	0.00	18.47	84.58	0.00	2,944.1	0.0	2109.78	2924.80	5,034.58
11	205.0	32.68	5.503	7.81	0.00	0.23	2.51	0.85	1.00	0.00	8.75	42.29	0.00	1,293.7	0.0	976.36	1485.98	2,462.34
12	220.0	33.17	0.000	14.30	0.00	0.15	2.79	0.85	1.00	0.00	8.25	74.61	0.00	2,065.6	0.0	1037.66	2696.81	3,734.47
13	235.0	33.63	0.000	5.90	0.00	0.13	2.86	0.85	1.00	0.00	3.39	13.95	0.00	573.3	0.0	443.01	585.52	1,028.53
														61,166.4	**0.0**			**56,461.12**

Section Forces

Structure:	CT00990-S-SBA	**Code:**	EIA/TIA-222-G	8/3/2021	
Site Name:	Scotland	**Exposure:**	C		
Height:	240.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 9	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi Normal Wind — 1.2D + 1.0Di + 1.0Wi 50 mph Wind at Normal From Face

Wind Load Factor: 1.00
Dead Load Factor: 1.20
Ice Dead Load Factor: 1.00
Wind Importance Factor: 1.00
Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	10.0	4.62	18.274	50.92	23.10	0.13	2.83	1.00	1.00	1.33	47.10	106.77	22.19	16,925.	5824.8	524.48	451.17	975.64
2	30.0	5.34	17.378	52.85	25.02	0.15	2.78	1.00	1.00	1.49	47.35	109.35	24.76	17,396.	6455.9	598.73	541.94	1,140.66
3	50.0	5.95	16.527	51.77	25.56	0.16	2.75	1.00	1.00	1.56	45.94	110.64	26.06	16,690.	6645.7	639.00	614.26	1,253.26
4	70.0	6.39	15.714	51.88	25.67	0.17	2.70	1.00	1.00	1.62	45.28	111.54	26.95	16,663.	6765.1	663.82	665.30	1,329.12
5	90.0	6.73	22.308	56.52	32.88	0.22	2.53	1.00	1.00	1.66	55.00	112.22	27.64	13,760.	6566.9	796.03	695.14	1,491.16
6	110.0	7.02	20.349	55.28	31.64	0.24	2.47	1.00	1.00	1.69	52.53	112.78	28.20	13,506.	6488.7	775.76	726.32	1,502.08
7	130.0	7.28	15.847	52.34	30.31	0.25	2.45	1.00	1.00	1.72	46.42	113.26	28.67	12,004.	6064.2	702.90	755.30	1,458.21
8	150.0	7.50	14.323	50.99	28.96	0.28	2.36	1.00	1.00	1.75	44.50	113.67	29.09	11,778.	5973.3	670.03	774.00	1,444.02
9	170.0	7.70	12.972	46.49	27.66	0.30	2.28	1.00	1.00	1.77	40.88	114.04	29.45	10,202.	5756.6	611.07	789.64	1,400.71
10	190.0	7.88	11.777	43.72	26.49	0.36	2.15	1.00	1.00	1.79	38.86	114.37	29.78	9,533.4	5608.0	559.87	793.88	1,353.75
11	205.0	8.01	5.503	20.68	12.86	0.42	2.02	1.00	1.00	1.80	18.87	57.30	15.00	4,470.1	2745.2	259.51	382.41	641.92
12	220.0	8.13	0.000	54.97	40.67	0.53	1.87	1.00	1.00	1.81	38.64	103.63	19.34	7,763.7	5009.5	498.61	551.70	1,050.31
13	235.0	8.24	0.000	26.96	21.06	0.54	1.85	1.00	1.00	1.83	19.21	21.25	4.87	2,422.5	1658.0	248.75	125.53	374.28
														153,117.0	**71561.9**			**15,415.14**

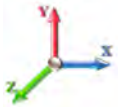
Load Case: 1.2D + 1.0Di + 1.0Wi 60° Wind — 1.2D + 1.0Di + 1.0Wi 50 mph Wind at 60° From Face

Wind Load Factor: 1.00
Dead Load Factor: 1.20
Ice Dead Load Factor: 1.00
Wind Importance Factor: 1.00
Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	10.0	4.62	18.274	50.92	23.10	0.13	2.83	0.80	1.00	1.33	43.45	106.77	22.19	16,925.	5824.8	483.78	451.17	934.95
2	30.0	5.34	17.378	52.85	25.02	0.15	2.78	0.80	1.00	1.49	43.88	109.35	24.76	17,396.	6455.9	554.78	541.94	1,096.72
3	50.0	5.95	16.527	51.77	25.56	0.16	2.75	0.80	1.00	1.56	42.63	110.64	26.06	16,690.	6645.7	593.03	614.26	1,207.28
4	70.0	6.39	15.714	51.88	25.67	0.17	2.70	0.80	1.00	1.62	42.14	111.54	26.95	16,663.	6765.1	617.74	665.30	1,283.05
5	90.0	6.73	22.308	56.52	32.88	0.22	2.53	0.80	1.00	1.66	50.54	112.22	27.64	13,760.	6566.9	731.45	695.14	1,426.59
6	110.0	7.02	20.349	55.28	31.64	0.24	2.47	0.80	1.00	1.69	48.46	112.78	28.20	13,506.	6488.7	715.66	726.32	1,441.98
7	130.0	7.28	15.847	52.34	30.31	0.25	2.45	0.80	1.00	1.72	43.25	113.26	28.67	12,004.	6064.2	654.92	755.30	1,410.22
8	150.0	7.50	14.323	50.99	28.96	0.28	2.36	0.80	1.00	1.75	41.64	113.67	29.09	11,778.	5973.3	626.90	774.00	1,400.89
9	170.0	7.70	12.972	46.49	27.66	0.30	2.28	0.80	1.00	1.77	38.29	114.04	29.45	10,202.	5756.6	572.30	789.64	1,361.93
10	190.0	7.88	11.777	43.72	26.49	0.36	2.15	0.80	1.00	1.79	36.50	114.37	29.78	9,533.4	5608.0	525.93	793.88	1,319.81
11	205.0	8.01	5.503	20.68	12.86	0.42	2.02	0.80	1.00	1.80	17.77	57.30	15.00	4,470.1	2745.2	244.38	382.41	626.79
12	220.0	8.13	0.000	54.97	40.67	0.53	1.87	0.80	1.00	1.81	38.64	103.63	19.34	7,763.7	5009.5	498.61	551.70	1,050.31
13	235.0	8.24	0.000	26.96	21.06	0.54	1.85	0.80	1.00	1.83	19.21	21.25	4.87	2,422.5	1658.0	248.75	125.53	374.28
														153,117.0	**71561.9**			**14,934.80**

Section Forces

Structure:	CT00990-S-SBA	**Code:**	EIA/TIA-222-G	8/3/2021	
Site Name:	Scotland	**Exposure:**	C		
Height:	240.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 10	



Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 90° Wind — 1.2D + 1.0Di + 1.0Wi 50 mph Wind at 90° From Face

Wind Load Factor: 1.00 — **Wind Importance Factor:** 1.00

Dead Load Factor: 1.20

Ice Dead Load Factor: 1.00 — **Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	10.0	4.62	18.274	50.92	23.10	0.13	2.83	0.85	1.00	1.33	44.36	106.77	22.19	16,925.	5824.8	493.95	451.17	945.12
2	30.0	5.34	17.378	52.85	25.02	0.15	2.78	0.85	1.00	1.49	44.75	109.35	24.76	17,396.	6455.9	565.77	541.94	1,107.70
3	50.0	5.95	16.527	51.77	25.56	0.16	2.75	0.85	1.00	1.56	43.46	110.64	26.06	16,690.	6645.7	604.52	614.26	1,218.78
4	70.0	6.39	15.714	51.88	25.67	0.17	2.70	0.85	1.00	1.62	42.92	111.54	26.95	16,663.	6765.1	629.26	665.30	1,294.56
5	90.0	6.73	22.308	56.52	32.88	0.22	2.53	0.85	1.00	1.66	51.65	112.22	27.64	13,760.	6566.9	747.60	695.14	1,442.73
6	110.0	7.02	20.349	55.28	31.64	0.24	2.47	0.85	1.00	1.69	49.48	112.78	28.20	13,506.	6488.7	730.69	726.32	1,457.01
7	130.0	7.28	15.847	52.34	30.31	0.25	2.45	0.85	1.00	1.72	44.04	113.26	28.67	12,004.	6064.2	666.91	755.30	1,422.22
8	150.0	7.50	14.323	50.99	28.96	0.28	2.36	0.85	1.00	1.75	42.35	113.67	29.09	11,778.	5973.3	637.68	774.00	1,411.68
9	170.0	7.70	12.972	46.49	27.66	0.30	2.28	0.85	1.00	1.77	38.94	114.04	29.45	10,202.	5756.6	581.99	789.64	1,371.63
10	190.0	7.88	11.777	43.72	26.49	0.36	2.15	0.85	1.00	1.79	37.09	114.37	29.78	9,533.4	5608.0	534.42	793.88	1,328.29
11	205.0	8.01	5.503	20.68	12.86	0.42	2.02	0.85	1.00	1.80	18.04	57.30	15.00	4,470.1	2745.2	248.16	382.41	630.57
12	220.0	8.13	0.000	54.97	40.67	0.53	1.87	0.85	1.00	1.81	38.64	103.63	19.34	7,763.7	5009.5	498.61	551.70	1,050.31
13	235.0	8.24	0.000	26.96	21.06	0.54	1.85	0.85	1.00	1.83	19.21	21.25	4.87	2,422.5	1658.0	248.75	125.53	374.28
														153,117.0	**71561.9**			**15,054.88**

Load Case: 1.0D + 1.0W Normal Wind — 1.0D + 1.0W 60 mph Wind at Normal To Face

Wind Load Factor: 1.00 — **Wind Importance Factor:** 1.00

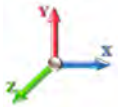
Dead Load Factor: 1.00

Ice Dead Load Factor: 0.00 — **Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	10.0	6.66	18.274	27.83	0.00	0.09	3.01	1.00	1.00	0.00	33.00	84.58	0.00	9,250.1	0.0	561.47	378.50	939.97
2	30.0	7.69	17.378	27.83	0.00	0.10	2.98	1.00	1.00	0.00	31.69	84.58	0.00	9,117.4	0.0	618.29	437.39	1,055.68
3	50.0	8.57	16.527	26.21	0.00	0.10	2.97	1.00	1.00	0.00	30.06	84.58	0.00	8,370.6	0.0	650.04	487.05	1,137.09
4	70.0	9.20	15.714	26.21	0.00	0.11	2.94	1.00	1.00	0.00	29.07	84.58	0.00	8,248.5	0.0	667.65	522.81	1,190.46
5	90.0	9.70	22.308	23.64	0.00	0.13	2.84	1.00	1.00	0.00	34.83	84.58	0.00	5,994.3	0.0	816.47	551.21	1,367.68
6	110.0	10.12	20.349	23.64	0.00	0.14	2.80	1.00	1.00	0.00	32.82	84.58	0.00	5,847.9	0.0	791.39	575.00	1,366.39
7	130.0	10.48	15.847	22.04	0.00	0.14	2.81	1.00	1.00	0.00	27.68	84.58	0.00	4,950.0	0.0	692.62	595.58	1,288.20
8	150.0	10.80	14.323	22.04	0.00	0.16	2.74	1.00	1.00	0.00	26.17	84.58	0.00	4,837.7	0.0	659.19	613.79	1,272.98
9	170.0	11.09	12.972	18.83	0.00	0.17	2.71	1.00	1.00	0.00	23.57	84.58	0.00	3,705.2	0.0	601.15	630.18	1,231.33
10	190.0	11.35	11.777	17.23	0.00	0.20	2.61	1.00	1.00	0.00	21.66	84.58	0.00	3,271.2	0.0	545.79	645.11	1,190.90
11	205.0	11.53	5.503	7.81	0.00	0.23	2.51	1.00	1.00	0.00	10.03	42.29	0.00	1,437.5	0.0	246.91	327.76	574.67
12	220.0	11.70	0.000	14.30	0.00	0.15	2.79	1.00	1.00	0.00	8.25	74.61	0.00	2,295.2	0.0	228.87	594.83	823.70
13	235.0	11.87	0.000	5.90	0.00	0.13	2.86	1.00	1.00	0.00	3.39	13.95	0.00	637.0	0.0	97.71	129.15	226.86
														67,962.6	**0.0**			**13,665.91**

Section Forces

Structure:	CT00990-S-SBA	**Code:**	EIA/TIA-222-G	8/3/2021	
Site Name:	Scotland	**Exposure:**	C		
Height:	240.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 11	



Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60° Wind — 1.0D + 1.0W 60 mph Wind at 60° From Face

Wind Load Factor: 1.00 — **Wind Importance Factor:** 1.00

Dead Load Factor: 1.00

Ice Dead Load Factor: 0.00 — **Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	10.0	6.66	18.274	27.83	0.00	0.09	3.01	0.80	1.00	0.00	29.35	84.58	0.00	9,250.1	0.0	499.29	378.50	877.79
2	30.0	7.69	17.378	27.83	0.00	0.10	2.98	0.80	1.00	0.00	28.22	84.58	0.00	9,117.4	0.0	550.49	437.39	987.88
3	50.0	8.57	16.527	26.21	0.00	0.10	2.97	0.80	1.00	0.00	26.75	84.58	0.00	8,370.6	0.0	578.56	487.05	1,065.61
4	70.0	9.20	15.714	26.21	0.00	0.11	2.94	0.80	1.00	0.00	25.93	84.58	0.00	8,248.5	0.0	595.48	522.81	1,118.29
5	90.0	9.70	22.308	23.64	0.00	0.13	2.84	0.80	1.00	0.00	30.37	84.58	0.00	5,994.3	0.0	711.88	551.21	1,263.09
6	110.0	10.12	20.349	23.64	0.00	0.14	2.80	0.80	1.00	0.00	28.75	84.58	0.00	5,847.9	0.0	693.25	575.00	1,268.25
7	130.0	10.48	15.847	22.04	0.00	0.14	2.81	0.80	1.00	0.00	24.51	84.58	0.00	4,950.0	0.0	613.32	595.58	1,208.90
8	150.0	10.80	14.323	22.04	0.00	0.16	2.74	0.80	1.00	0.00	23.31	84.58	0.00	4,837.7	0.0	587.03	613.79	1,200.83
9	170.0	11.09	12.972	18.83	0.00	0.17	2.71	0.80	1.00	0.00	20.97	84.58	0.00	3,705.2	0.0	534.98	630.18	1,165.16
10	190.0	11.35	11.777	17.23	0.00	0.20	2.61	0.80	1.00	0.00	19.30	84.58	0.00	3,271.2	0.0	486.44	645.11	1,131.55
11	205.0	11.53	5.503	7.81	0.00	0.23	2.51	0.80	1.00	0.00	8.93	42.29	0.00	1,437.5	0.0	219.82	327.76	547.58
12	220.0	11.70	0.000	14.30	0.00	0.15	2.79	0.80	1.00	0.00	8.25	74.61	0.00	2,295.2	0.0	228.87	594.83	823.70
13	235.0	11.87	0.000	5.90	0.00	0.13	2.86	0.80	1.00	0.00	3.39	13.95	0.00	637.0	0.0	97.71	129.15	226.86
														67,962.6	**0.0**			**12,885.49**

Load Case: 1.0D + 1.0W 90° Wind — 1.0D + 1.0W 60 mph Wind at 90° From Face

Wind Load Factor: 1.00 — **Wind Importance Factor:** 1.00

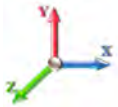
Dead Load Factor: 1.00

Ice Dead Load Factor: 0.00 — **Ice Importance Factor:** 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	10.0	6.66	18.274	27.83	0.00	0.09	3.01	0.85	1.00	0.00	30.26	84.58	0.00	9,250.1	0.0	514.84	378.50	893.34
2	30.0	7.69	17.378	27.83	0.00	0.10	2.98	0.85	1.00	0.00	29.09	84.58	0.00	9,117.4	0.0	567.44	437.39	1,004.83
3	50.0	8.57	16.527	26.21	0.00	0.10	2.97	0.85	1.00	0.00	27.58	84.58	0.00	8,370.6	0.0	596.43	487.05	1,083.48
4	70.0	9.20	15.714	26.21	0.00	0.11	2.94	0.85	1.00	0.00	26.72	84.58	0.00	8,248.5	0.0	613.53	522.81	1,136.33
5	90.0	9.70	22.308	23.64	0.00	0.13	2.84	0.85	1.00	0.00	31.48	84.58	0.00	5,994.3	0.0	738.03	551.21	1,289.24
6	110.0	10.12	20.349	23.64	0.00	0.14	2.80	0.85	1.00	0.00	29.77	84.58	0.00	5,847.9	0.0	717.79	575.00	1,292.78
7	130.0	10.48	15.847	22.04	0.00	0.14	2.81	0.85	1.00	0.00	25.31	84.58	0.00	4,950.0	0.0	633.15	595.58	1,228.73
8	150.0	10.80	14.323	22.04	0.00	0.16	2.74	0.85	1.00	0.00	24.02	84.58	0.00	4,837.7	0.0	605.07	613.79	1,218.86
9	170.0	11.09	12.972	18.83	0.00	0.17	2.71	0.85	1.00	0.00	21.62	84.58	0.00	3,705.2	0.0	551.52	630.18	1,181.70
10	190.0	11.35	11.777	17.23	0.00	0.20	2.61	0.85	1.00	0.00	19.89	84.58	0.00	3,271.2	0.0	501.28	645.11	1,146.39
11	205.0	11.53	5.503	7.81	0.00	0.23	2.51	0.85	1.00	0.00	9.21	42.29	0.00	1,437.5	0.0	226.59	327.76	554.35
12	220.0	11.70	0.000	14.30	0.00	0.15	2.79	0.85	1.00	0.00	8.25	74.61	0.00	2,295.2	0.0	228.87	594.83	823.70
13	235.0	11.87	0.000	5.90	0.00	0.13	2.86	0.85	1.00	0.00	3.39	13.95	0.00	637.0	0.0	97.71	129.15	226.86
														67,962.6	**0.0**			**13,080.60**

Force/Stress Compression Summary

Structure:	CT00990-S-SBA	**Code:**	EIA/TIA-222-G	8/3/2021	
Site Name:	Scotland	**Exposure:**	C		
Height:	240.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 12	



Tower Engineering Solutions

LEG MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fy (ksi)	Mem Cap (kips)	Leg Use %	Controls
1	20	18B - 18"BD 2.75"	-477.70	1.2D + 1.6W Normal Wind	20.03	100	100	100	32.57	50.00	742.04	64.4	Member X
2	40	18B - 18"BD 2.75"	-450.07	1.2D + 1.6W Normal Wind	20.03	100	100	100	32.57	50.00	742.04	60.7	Member X
3	60	18B - 18"BD 2.5"	-410.79	1.2D + 1.6W Normal Wind	20.03	100	100	100	32.60	50.00	612.89	67.0	Member X
4	80	18B - 18"BD 2.5"	-370.18	1.2D + 1.6W Normal Wind	20.03	100	100	100	32.60	50.00	612.89	60.4	Member X
5	100	12B - 12"BD 2.25"	-344.88	1.2D + 1.6W Normal Wind	10.02	100	100	100	24.38	50.00	514.03	67.1	Member X
6	120	12B - 12"BD 2.25"	-306.36	1.2D + 1.6W Normal Wind	10.02	100	100	100	24.38	50.00	514.03	59.6	Member X
7	140	12B - 12"BD 2"	-267.95	1.2D + 1.6W Normal Wind	10.02	100	100	100	24.41	50.00	405.83	66.0	Member X
8	160	12B - 12"BD 2"	-229.40	1.2D + 1.6W Normal Wind	10.02	100	100	100	24.41	50.00	405.83	56.5	Member X
9	180	12B - 12"BD 1.75"	-188.40	1.2D + 1.6W Normal Wind	10.02	100	100	100	25.99	50.00	308.82	61.0	Member X
10	200	12B - 12"BD 1.5"	-144.36	1.2D + 1.6W Normal Wind	10.02	100	100	100	30.32	50.00	222.99	64.7	Member X
11	210	12B - 12"BD 1.25"	-89.56	1.2D + 1.6W Normal Wind	10.02	100	100	100	36.38	50.00	150.33	59.6	Member X
12	230	SOL - 2" SOLID	-74.64	1.2D + 1.6W Normal Wind	2.37	100	100	100	56.88	50.00	111.59	66.9	Member X
13	240	SOL - 1 3/4" SOLID	-11.08	1.2D + 1.6W Normal Wind	2.24	100	100	100	61.43	50.00	82.14	13.5	Member X

Splices

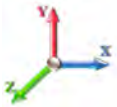
		Top Splice						Bottom Splice					
Sect	Top Elev	Load Case	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts	Load Case	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts
1	20	1.2D + 1.6W Normal Wind	466.12	0.00	0.0			1.2D + 1.6W Normal Wind	498.21	0.00			
2	40	1.2D + 1.6W Normal Wind	432.03	0.00	0.0			1.2D + 1.6W Normal Wind	466.12	0.00		1/4 A325	12
3	60	1.2D + 1.6W Normal Wind	393.01	0.00	0.0			1.2D + 1.6W Normal Wind	432.03	0.00		1/4 A325	12
4	80	1.2D + 1.6W Normal Wind	355.01	0.00	0.0			1.2D + 1.6W Normal Wind	393.01	0.00		1/4 A325	12
5	100	1.2D + 1.6W Normal Wind	315.98	0.00	0.0			1.2D + 1.6W Normal Wind	355.01	0.00		1/4 A325	6
6	120	1.2D + 1.6W Normal Wind	278.08	0.00	0.0			1.2D + 1.6W Normal Wind	315.98	0.00		1/4 A325	6
7	140	1.2D + 1.6W Normal Wind	239.72	0.00	0.0			1.2D + 1.6W Normal Wind	278.08	0.00		1/4 A325	6
8	160	1.2D + 1.6W Normal Wind	199.57	0.00	0.0			1.2D + 1.6W Normal Wind	239.72	0.00		1/4 A325	6
9	180	1.2D + 1.6W Normal Wind	157.42	0.00	0.0			1.2D + 1.6W Normal Wind	199.57	0.00		1 A325	6
10	200	1.2D + 1.6W Normal Wind	108.32	0.00	0.0			1.2D + 1.6W Normal Wind	157.42	0.00		1 A325	6
11	210	1.2D + 1.6W Normal Wind	80.17	0.00	0.0			1.2D + 1.6W Normal Wind	108.32	0.00		1 A325	6
12	230	1.2D + 1.6W Normal Wind	13.71	0.00	0.0			1.2D + 1.6W Normal Wind	80.17	0.00		1 A325	6
13	240	1.2D + 1.0E	0.25	0.00	0.0			1.2D + 1.6W Normal Wind	13.71	0.00			

HORIZONTAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	Use %	Controls
1	20										0.00	0	0				
2	40										0.00	0	0				
3	60										0.00	0	0				
4	80										0.00	0	0				
5	100										0.00	0	0				
6	120										0.00	0	0				
7	140										0.00	0	0				
8	160										0.00	0	0				
9	180										0.00	0	0				
10	200										0.00	0	0				
11	210										0.00	0	0				
12	230	SOL - 1" SOLID	-2.09	1.2D + 1.6W 60° Wind	4.52	100	100	100	151.90	50.00	7.69	0	0			27	Member X
13	240	SOL - 3/4" SOLID	-1.35	1.2D + 1.6W Normal Wind	4.50	100	100	100	201.60	50.00	2.46	0	0			55	Member X

Force/Stress Compression Summary

Structure:	CT00990-S-SBA	**Code:**	EIA/TIA-222-G	8/3/2021	
Site Name:	Scotland	**Exposure:**	C		
Height:	240.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 13	



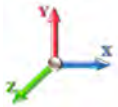
Tower Engineering Solutions

DIAGONAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	Use %	Controls
1	20	DAE - 3.5X3.5X0.3125	-15.4	1.2D + 1.6W Normal Wind	32.02	49	49	25	176.80	36.00	30.21	2	2	63.62	118.	51	Member Y
2	40	DAE - 3.5X3.5X0.3125	-13.5	0.9D + 1.6W 90° Wind	30.48	48	48	24	163.66	36.00	35.25	2	2	63.62	118.	38	Member Y
3	60	DAE - 3.5X3.5X0.3125	-14.5	1.2D + 1.6W 90° Wind	29.01	48	48	24	156.31	36.00	38.65	2	2	63.62	118.	38	Member Y
4	80	DAE - 3.5X3.5X0.3125	-13.9	1.2D + 1.6W Normal Wind	27.59	48	48	24	149.29	36.00	42.37	2	2	63.62	118.	33	Member Y
5	100	SAE - 3.5X3.5X0.3125	-9.18	0.9D + 1.6W 90° Wind	20.16	48	48	48	168.27	36.00	16.67	1	1	43.49	33.1	55	Member Z
6	120	SAE - 3.5X3.5X0.3125	-9.10	1.2D + 1.6W 90° Wind	18.45	48	48	48	154.00	36.00	19.91	1	1	43.49	33.1	46	Member Z
7	140	SAE - 3X3X0.3125	-8.59	1.2D + 1.6W 90° Wind	16.80	47	47	47	160.90	36.00	15.53	1	1	43.49	33.1	55	Member Z
8	160	SAE - 3X3X0.3125	-8.14	1.2D + 1.6W 90° Wind	15.24	47	47	47	145.96	36.00	18.88	1	1	43.49	33.1	43	Member Z
9	180	SAE - 3X3X0.1875	-7.85	1.2D + 1.6W 90° Wind	13.80	46	46	46	127.78	36.00	14.95	1	1	31.81	17.9	52	Member Z
10	200	SAE - 3X3X0.1875	-8.67	0.9D + 1.6W 90° Wind	11.93	46	46	46	112.87	36.00	18.06	1	1	31.81	17.9	48	Bolt Bear
11	210	SAE - 3X3X0.1875	-10.5	1.2D + 1.6W Normal Wind	11.42	46	46	46	109.30	36.00	18.83	1	1	31.81	17.9	59	Bolt Bear
12	230	SOL - 1" SOLID	-6.42	1.2D + 1.6W 90° Wind	5.50	46	46	46	85.04	50.00	20.83	0	0			31	Member X
13	240	SOL - 3/4" SOLID	-3.05	1.2D + 1.6W 90° Wind	5.03	46	46	46	103.59	50.00	9.07	0	0			34	Member X

Force/Stress Tension Summary

Structure:	CT00990-S-SBA	**Code:**	EIA/TIA-222-G	8/3/2021	
Site Name:	Scotland	**Exposure:**	C		
Height:	240.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 14	



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LEG MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Leg Use %	Controls
1	20	18B - 18"BD 2.75"	411.93	0.9D + 1.6W 60° Wind	50	801.90	51.4	Member
2	40	18B - 18"BD 2.75"	388.34	0.9D + 1.6W 60° Wind	50	801.90	48.4	Member
3	60	18B - 18"BD 2.5"	358.23	0.9D + 1.6W 60° Wind	50	662.40	54.1	Member
4	80	18B - 18"BD 2.5"	325.92	0.9D + 1.6W 60° Wind	50	662.40	49.2	Member
5	100	12B - 12"BD 2.25"	306.72	0.9D + 1.6W 60° Wind	50	536.85	57.1	Member
6	120	12B - 12"BD 2.25"	274.49	0.9D + 1.6W 60° Wind	50	536.85	51.1	Member
7	140	12B - 12"BD 2"	242.16	0.9D + 1.6W 60° Wind	50	423.90	57.1	Member
8	160	12B - 12"BD 2"	208.70	0.9D + 1.6W 60° Wind	50	423.90	49.2	Member
9	180	12B - 12"BD 1.75"	172.72	0.9D + 1.6W 60° Wind	50	324.45	53.2	Member
10	200	12B - 12"BD 1.5"	132.85	0.9D + 1.6W 60° Wind	50	238.50	55.7	Member
11	210	12B - 12"BD 1.25"	81.88	0.9D + 1.6W 60° Wind	50	165.60	49.4	Member
12	230	SOL - 2" SOLID	71.73	0.9D + 1.6W 60° Wind	50	141.37	50.7	Member
13	240	SOL - 1 3/4" SOLID	11.07	0.9D + 1.6W 60° Wind	50	108.24	10.2	Member

Splices

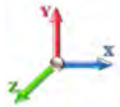
		Top Splice						Bottom Splice					
Sect	Top Elev	Load Case	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts	Load Case	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts
1	20	0.9D + 1.6W 60° Wind	399.86	0.00	0.0			0.9D + 1.6W 60° Wind	429.8	0.00			
2	40	0.9D + 1.6W 60° Wind	371.06	0.00	0.0			0.9D + 1.6W 60° Wind	399.8	915.84	43.7	1 1/4 A325	12
3	60	0.9D + 1.6W 60° Wind	340.63	0.00	0.0			0.9D + 1.6W 60° Wind	371.0	915.84	40.5	1 1/4 A325	12
4	80	0.9D + 1.6W 60° Wind	310.46	0.00	0.0			0.9D + 1.6W 60° Wind	340.6	915.84	37.2	1 1/4 A325	12
5	100	0.9D + 1.6W 60° Wind	281.31	0.00	0.0			0.9D + 1.6W 60° Wind	310.4	457.92	67.8	1 1/4 A325	6
6	120	0.9D + 1.6W 60° Wind	249.45	0.00	0.0			0.9D + 1.6W 60° Wind	281.3	457.92	61.4	1 1/4 A325	6
7	140	0.9D + 1.6W 60° Wind	216.55	0.00	0.0			0.9D + 1.6W 60° Wind	249.4	457.92	54.5	1 1/4 A325	6
8	160	0.9D + 1.6W 60° Wind	181.35	0.00	0.0			0.9D + 1.6W 60° Wind	216.5	457.92	47.3	1 1/4 A325	6
9	180	0.9D + 1.6W 60° Wind	143.53	0.00	0.0			0.9D + 1.6W 60° Wind	181.3	318.06	57.0	1 A325	6
10	200	0.9D + 1.6W 60° Wind	97.98	0.00	0.0			0.9D + 1.6W 60° Wind	143.5	318.06	45.1	1 A325	6
11	210	0.9D + 1.6W 60° Wind	71.05	0.00	0.0			0.9D + 1.6W 60° Wind	97.98	318.06	30.8	1 A325	6
12	230	0.9D + 1.6W 60° Wind	11.05	0.00	0.0			0.9D + 1.6W 60° Wind	71.05	318.06	22.3	1 A325	6
13	240		0.00	0.00	0.0			0.9D + 1.6W 60° Wind	11.05	0.00			

HORIZONTAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	B.S. Cap (kips)	Use %	Controls
1	20	-			36	0.00	0	0					
2	40	-			36	0.00	0	0					
3	60	-			36	0.00	0	0					
4	80	-			36	0.00	0	0					
5	100	-			36	0.00	0	0					
6	120	-			36	0.00	0	0					
7	140	-			36	0.00	0	0					
8	160	-			36	0.00	0	0					
9	180	-			36	0.00	0	0					
10	200	-			36	0.00	0	0					
11	210	-			36	0.00	0	0					
12	230	SOL - 1" SOLID	2.11	1.2D + 1.6W Normal Wi	50	35.34	0	0				6.0	Member
13	240	SOL - 3/4" SOLID	1.35	1.2D + 1.6W 60° Wind	50	19.88	0	0				6.8	Member

Force/Stress Tension Summary

Structure:	CT00990-S-SBA	**Code:**	EIA/TIA-222-G	8/3/2021	
Site Name:	Scotland	**Exposure:**	C		
Height:	240.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 15	



Tower Engineering Solutions

DIAGONAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	B.S. Cap (kips)	Use %	Controls
1	20	DAE - 3.5X3.5X0.3125	13.48	0.9D + 1.6W 60° Wind	36	135.43	2	2	63.62	118.54	71.05	21.2	Bolt Shear
2	40	DAE - 3.5X3.5X0.3125	13.16	1.2D + 1.6W 90° Wind	36	135.43	2	2	63.62	118.54	71.05	20.7	Bolt Shear
3	60	DAE - 3.5X3.5X0.3125	13.76	0.9D + 1.6W 90° Wind	36	135.43	2	2	63.62	118.54	71.05	21.6	Bolt Shear
4	80	DAE - 3.5X3.5X0.3125	12.75	0.9D + 1.6W 90° Wind	36	135.43	2	2	63.62	118.54	71.05	20.0	Bolt Shear
5	100	SAE - 3.5X3.5X0.3125	9.48	0.9D + 1.6W 90° Wind	36	67.72	1	1	43.49	33.17	22.44	42.3	Blck Shear
6	120	SAE - 3.5X3.5X0.3125	8.84	1.2D + 1.6W 90° Wind	36	54.17	1	1	43.49	33.17	22.44	39.4	Blck Shear
7	140	SAE - 3X3X0.3125	8.21	0.9D + 1.6W 90° Wind	36	44.05	1	1	43.49	33.17	19.04	43.1	Blck Shear
8	160	SAE - 3X3X0.3125	7.80	1.2D + 1.6W 90° Wind	36	44.05	1	1	43.49	33.17	19.04	41.0	Blck Shear
9	180	SAE - 3X3X0.1875	7.58	1.2D + 1.6W 90° Wind	36	28.68	1	1	31.81	17.94	11.68	64.9	Blck Shear
10	200	SAE - 3X3X0.1875	8.52	1.2D + 1.6W 90° Wind	36	28.68	1	1	31.81	17.94	11.68	72.9	Blck Shear
11	210	SAE - 3X3X0.1875	9.68	0.9D + 1.6W 60° Wind	36	28.68	1	1	31.81	17.94	11.68	82.9	Blck Shear
12	230	SOL - 1" SOLID	6.34	1.2D + 1.6W 90° Wind	50	35.34	0	0				18.0	Member
13	240	SOL - 3/4" SOLID	3.05	1.2D + 1.6W 90° Wind	50	19.88	0	0				15.4	Member

Seismic Section Forces

Structure:	CT00990-S-SBA	**Code:**	EIA/TIA-222-G	8/3/2021	
Site Name:	Scotland	**Exposure:**	C		
Height:	240.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 16	

TES Tower Engineering Solutions

Load Case: 1.2D + 1.0E

Dead Load Factor	1.20	**Sds**	0.183	**Ss**	0.1720	**Fa**	1.6000	**Ke**	0.0000
Seismic Load Factor	1.00	**Sd1**	0.099	**S1**	0.0620	**Fv**	2.4000	**Kg**	0.0000
Seismic Importance Factor	1.00	**SA**	0.102	**R**	3.0000	**Vs**	3.1403	**f1**	1.0338

Sect #	Elev (ft)	Wz (lb)	a	b	c	Lateral Fsz (lb)
1	10.00	9250.1	0.00	0.04	0.02	38.73
2	30.00	9117.4	0.03	0.07	0.04	72.51
3	50.00	8370.6	0.08	0.07	0.04	83.90
4	70.00	8248.4	0.16	0.07	0.03	101.30
5	90.00	5994.2	0.27	0.05	0.02	86.76
6	110.00	5847.8	0.40	0.02	0.01	90.63
7	130.00	4949.9	0.55	-0.04	0.01	73.07
8	150.00	4837.6	0.74	-0.10	0.04	66.42
9	170.00	3705.2	0.95	-0.12	0.11	62.00
10	190.00	3271.1	1.18	-0.01	0.24	96.85
11	205.00	1437.4	1.38	0.25	0.41	69.94
12	220.00	7743.1	1.59	0.74	0.65	596.81
13	235.00	3739.9	1.81	1.59	1.00	431.77

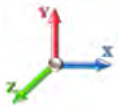
Load Case: 0.9D + 1.0E

Dead Load Factor	0.90	**Sds**	0.183	**Ss**	0.1720	**Fa**	1.6000	**Ke**	0.0000
Seismic Load Factor	1.00	**Sd1**	0.099	**S1**	0.0620	**Fv**	2.4000	**Kg**	0.0000
Seismic Importance Factor	1.00	**SA**	0.102	**R**	3.0000	**Vs**	3.1403	**f1**	1.0338

Sect #	Elev (ft)	Wz (lb)	a	b	c	Lateral Fsz (lb)
1	10.00	9250.1	0.00	0.04	0.02	38.73
2	30.00	9117.4	0.03	0.07	0.04	72.51
3	50.00	8370.6	0.08	0.07	0.04	83.90
4	70.00	8248.4	0.16	0.07	0.03	101.30
5	90.00	5994.2	0.27	0.05	0.02	86.76
6	110.00	5847.8	0.40	0.02	0.01	90.63
7	130.00	4949.9	0.55	-0.04	0.01	73.07
8	150.00	4837.6	0.74	-0.10	0.04	66.42
9	170.00	3705.2	0.95	-0.12	0.11	62.00
10	190.00	3271.1	1.18	-0.01	0.24	96.85
11	205.00	1437.4	1.38	0.25	0.41	69.94
12	220.00	7743.1	1.59	0.74	0.65	596.81
13	235.00	3739.9	1.81	1.59	1.00	431.77

Support Forces Summary

Structure:	CT00990-S-SBA		**Code:**	EIA/TIA-222-G	8/3/2021
Site Name:	Scotland		**Exposure:**	C	
Height:	240.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	0.85	**Topography:** 1	**Struct Class:**	II	Page: 17



Tower Engineering Solutions

Load Case	Node	FX (kips)	FY (kips)	FZ (kips)	(-) = Uplift (+) = Down
1.2D + 1.6W Normal Wind	1	0.00	498.05	-50.04	
	1a	18.34	-203.11	-11.49	
	1b	-18.34	-203.11	-11.49	
1.2D + 1.6W 60° Wind	1	-0.60	255.76	-25.09	
	1a	-22.03	255.76	12.02	
	1b	-37.55	-419.70	-21.68	
1.2D + 1.6W 90° Wind	1	-0.75	30.63	-2.28	
	1a	-36.77	424.27	20.81	
	1b	-32.85	-363.08	-18.53	
0.9D + 1.6W Normal Wind	1	0.00	489.66	-49.43	
	1a	18.84	-210.40	-11.80	
	1b	-18.84	-210.40	-11.80	
0.9D + 1.6W 60° Wind	1	-0.62	247.75	-24.48	
	1a	-21.51	247.75	11.71	
	1b	-38.05	-426.63	-21.97	
0.9D + 1.6W 90° Wind	1	-0.77	22.98	-1.68	
	1a	-36.24	415.99	20.49	
	1b	-33.36	-370.11	-18.81	
1.2D + 1.0Di + 1.0Wi Normal Wind	1	0.00	179.19	-12.85	
	1a	4.69	-1.15	-2.91	
	1b	-4.69	-1.15	-2.91	
1.2D + 1.0Di + 1.0Wi 60° Wind	1	-0.15	117.93	-6.59	
	1a	-5.78	117.93	3.16	
	1b	-9.82	-58.98	-5.67	
1.2D + 1.0Di + 1.0Wi 90° Wind	1	-0.18	58.96	-0.61	
	1a	-9.59	161.59	5.43	
	1b	-8.54	-43.67	-4.82	
1.2D + 1.0E	1	0.00	45.11	5.04	
	1a	6.05	23.35	-3.43	
	1b	-6.05	23.35	-3.43	
0.9D + 1.0E	1	0.00	37.44	5.65	
	1a	6.57	15.71	-3.73	
	1b	-6.57	15.71	-3.73	
1.0D + 1.0W Normal Wind	1	0.00	131.33	-12.91	
	1a	2.89	-27.41	-1.91	
	1b	-2.89	-27.41	-1.91	
1.0D + 1.0W 60° Wind	1	-0.17	76.52	-7.22	
	1a	-6.34	76.52	3.46	
	1b	-7.31	-76.53	-4.22	
1.0D + 1.0W 90° Wind	1	-0.21	25.51	-2.00	
	1a	-9.70	114.69	5.48	
	1b	-6.24	-63.68	-3.48	

Max Reactions

Leg			Overturning		
Max Uplift:	-426.63	(kips)	Moment:	10525.20	(ft-kips)
Max Down:	498.05	(kips)	Total Down:	91.82	(kips)
Max Shear:	50.04	(kips)	Total Shear:	73.03	(kips)

Analysis Summary

Structure:	CT00990-S-SBA	**Code:**	EIA/TIA-222-G	8/3/2021	
Site Name:	Scotland	**Exposure:**	C		
Height:	240.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	0.85 **Topography:** 1	**Struct Class:**	II	Page: 19	

Max Reactions

Leg			Overturning		
Max Uplift:	-426.63	(kips)	Moment:	10525.20	(ft-kips)
Max Down:	498.05	(kips)	Total Down:	91.82	(kips)
Max Shear:	50.04	(kips)	Total Shear:	73.03	(kips)

Anchor Bolts

Bolt Size (in.):	2.00	Number Bolts:	6
Yield Strength (Ksi):	105.00	Tensile Strength (Ksi):	150.00
Detail Type:	C		

Interaction Ratio: 0.29

Max Usages

Max Leg: 67.1% (1.2D + 1.6W Normal Wind - Sect 5)
Max Diag: 82.9% (0.9D + 1.6W 60° Wind - Sect 11)
Max Horiz: 55.0% (1.2D + 1.6W Normal Wind - Sect 13)

Max Deflection, Twist and Sway

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)
0.9D + 1.0E - Normal To Face	217.32	0.0800	0.0027	0.0637
	229.17	0.0937	0.0036	0.0924
	236.93	0.1034	0.0030	0.0653
	240.00	0.1072	0.0028	0.0807
0.9D + 1.6W 101 mph Wind at 60° From Face	217.32	2.0532	-0.0807	1.4417
	229.17	2.3598	-0.1171	1.8974
	236.93	2.5751	-0.1196	1.5129
	240.00	2.6570	-0.1206	1.5761
0.9D + 1.6W 101 mph Wind at 90° From Face	217.32	2.0638	-0.0931	1.4460
	229.17	2.3712	-0.1338	1.8939
	236.93	2.5872	-0.1384	1.5234
	240.00	2.6687	-0.1384	1.5645
0.9D + 1.6W 101 mph Wind at Normal To Face	217.32	2.0997	0.0811	1.4597
	229.17	2.4102	0.1155	1.9171
	236.93	2.6284	0.1208	1.5311
	240.00	2.7097	0.1198	1.5939
1.0D + 1.0W 60 mph Wind at 60° From Face	217.32	0.4607	-0.0179	0.3212
	229.17	0.5290	-0.0257	0.4227
	236.93	0.5771	-0.0264	0.3370
	240.00	0.5952	-0.0265	0.3513
1.0D + 1.0W 60 mph Wind at 90° From Face	217.32	0.4634	-0.0208	0.3226
	229.17	0.5320	-0.0298	0.4220
	236.93	0.5803	-0.0307	0.3397
	240.00	0.5983	-0.0307	0.3490

1.0D + 1.0W 60 mph Wind at Normal To Face	217.32	0.4718	0.0182	0.3260
	229.17	0.5411	0.0260	0.4264
	236.93	0.5898	0.0268	0.3417
	240.00	0.6080	0.0268	0.3553
1.2D + 1.0Di + 1.0Wi 50 mph Wind at 60° From Face	217.32	0.5356	-0.0208	0.3726
	229.17	0.6148	-0.0298	0.4877
	236.93	0.6701	-0.0306	0.3888
	240.00	0.6913	-0.0306	0.4110
1.2D + 1.0Di + 1.0Wi 50 mph Wind at 90° From Face	217.32	0.5371	-0.0241	0.3734
	229.17	0.6164	-0.0344	0.4861
	236.93	0.6718	-0.0355	0.3911
	240.00	0.6929	-0.0355	0.4081
1.2D + 1.0Di + 1.0Wi 50 mph Wind at Normal From Face	217.32	0.5418	0.0209	0.3755
	229.17	0.6216	-0.0299	0.4871
	236.93	0.6774	0.0309	0.3917
	240.00	0.6984	0.0308	0.4118
1.2D + 1.0E - Normal To Face	217.32	0.0802	0.0027	0.0639
	229.17	0.0939	0.0036	0.0926
	236.93	0.1037	0.0030	0.0655
	240.00	0.1075	0.0029	0.0810
1.2D + 1.6W 101 mph Wind at 60° From Face	217.32	2.0586	-0.0810	1.4465
	229.17	2.3663	-0.1177	1.9049
	236.93	2.5823	-0.1202	1.5181
	240.00	2.6645	-0.1212	1.5816
1.2D + 1.6W 101 mph Wind at 90° From Face	217.32	2.0692	-0.0935	1.4509
	229.17	2.3777	-0.1344	1.9011
	236.93	2.5944	-0.1390	1.5286
	240.00	2.6762	-0.1390	1.5699
1.2D + 1.6W 101 mph Wind at Normal To Face	217.32	2.1052	0.0814	1.4646
	229.17	2.4167	0.1161	1.9245
	236.93	2.6357	0.1214	1.5363
	240.00	2.7172	0.1204	1.5993

Mat Foundation Design for Self Supporting Tower

			Date 8/3/2021
Customer Name:	**SBA Communications Corp**	**EIA/TIA Standard:**	EIA-222-G
Site Name:	Scotland	**Structure Height (Ft.):**	240
Site Nmber:	CT00990-S-SBA	**Engineer Name:**	S. Hesselbein
Engr. Number:	111955	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Analysis or Design? Analysis

Number of Tower Legs: 3 Legs

Base Reactions (Factored):

(1). Individual Leg:

Axial Load (Kips):	498.0	Uplift Force (Kips):	426.6
Shear Force (Kips):	50.0		

(2). Tower Base:

Total Vertical Load (Kips):	91.8	Total Shear Force (Kips):	73.0
Moment (Kips-ft):	10525.2		

Foundation Geometries:

Leg distance (Center-to-Center ft.):		26.0	Mods required -Yes/No ?:	No	
Diameter of Pier (ft.):	Round	4.5	Pier Height A. G. (ft.):	0.50	
Tower center to mat center (ft):		3.75521	Depth of Base BG (ft.):	7.0	
Length of Pad (ft.):		34	Width of Pad (ft.):	34	
Thickness of Pad (ft):		2.50			

Material Properties and Reabr Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	9	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	21	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	9	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf

Rebar at the bottom of the concrete pad:

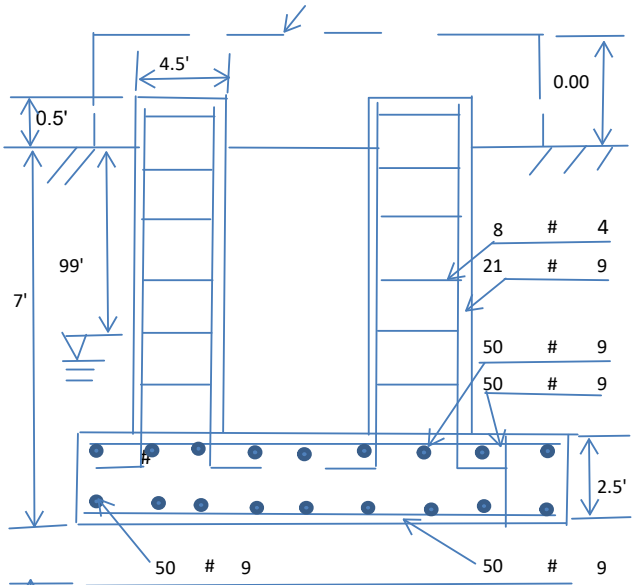
Qty. of Rebar in Pad (L):	50	Qty. of Rebar in Pad (W):	50

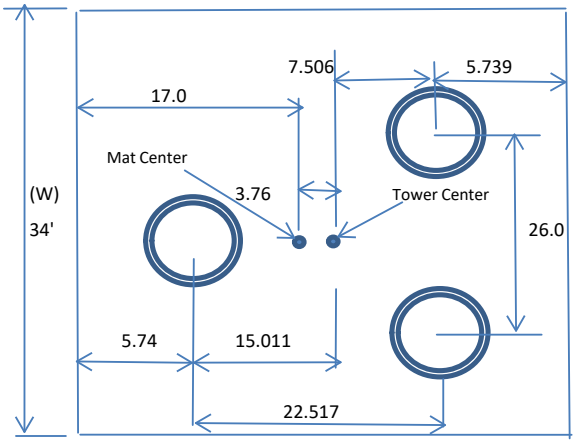
Rebar at the top of the concrete pad:

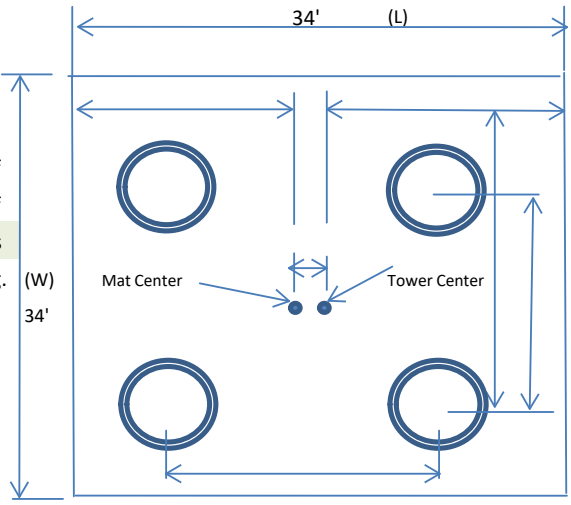
Qty. of Rebar in Pad (L):	50	Qty. of Rebar in Pad (W):	50

Soil Design Parameters:

Soil Unit Weight (pcf):	125.0	Soil Buoyant Weight:	62.6	Pcf
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf
Ultimate Bearing Pressure (psf):	16000	Consider ties in concrete shear strength:		Yes
Consider Soil Lateral Resistance ?	Yes	Enter soil C (psf) or Phi (deg.):	30.0	Deg.
		Depth to ignor lateral resistance	1.0	Ft.







Apply 1.35 for e/w per G/H: 1.35

Foundation Analysis and Design:	Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75			
Total Dry Soil Volume (cu. Ft.):		4987.29	Total Dry Soil Weight (Kips):	623.41			
Total Buoyant Soil Volume (cu. Ft.):		0.00	Total Buoyant Soil Weight (Kips):	0.00			
Total Effective Soil Weight (Kips):		623.41	Weight from the Concrete Block at Top (K):	0.00			
Total Dry Concrete Volume (cu. Ft.):		3128.56	Total Dry Concrete Weight (Kips):	469.28			
Total Buoyant Concrete Volume (cu. Ft.):		0.00	Total Buoyant Concrete Weight (Kips):	0.00			
Total Effective Concrete Weight (Kips):		469.28	Total Vertical Load on Base (Kips):	1184.51			
Check Soil Capacities:						Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):		3115.81	<	Allowable Factored Soil Bearing (psf):	12000	0.26	OK!
Allowable Foundation Overturning Resistance (kips-ft.):		18279.1	>	Design Factored Momont (kips-ft):	11332	0.62	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):		1.61	OK!				
Check the capacities of Reinforceing Concrete:							
Strength reduction factor (Flexure and axial tension):		0.90	Strength reduction factor (Shear):		0.75		
Strength reduction factor (Axial compresion):		0.65	Wind Load Factor on Concrete Design:		1.00		
(1) Concrete Pier:						Load/ Capacity Ratio	
Vertical Steel Rebar Area (sq. in./each):		1.00		Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):		1285.0	>	Design Factored Moment (Mu, Kips-Ft)	241.2	0.19	OK!
Calculated Shear Capacity (Kips):		192.6	>	Design Factored Shear (Kips):	50.0	0.26	OK!
Calculated Tension Capacity (Tn, Kips):		1134.0	>	Design Factored Tension (Tu Kips):	426.6	0.38	OK!
Calculated Compression Capacity (Pn, Kips):		4012.0	>	Design Factored Axial Load (Pu Kips):	498.0	0.12	OK!
Moment & Tension Strength Combination:		0.19	OK!	Check Tie Spacing (Design/Req'd):	1.00		
Pier Reinforcement Ratio:		0.009	Reinforcement Ratio is satisfied per ACI				
(2).Concrete Pad:							
One-Way Design Shear Capacity (L or W Direction, Kips):		1023.3	>	One-Way Factored Shear (L/W-Dir Kips	238.7	0.23	OK!
One-Way Design Shear Capacity (Diagonal Dir., Kips):		913.4	>	One-Way Factored Shear (Dia. Dir, Kips	441.3	0.48	OK!
Lower Steel Pad Reinforcement Ratio (L or W-Direct.):		0.0046		Lower Steel Reinf. Ratio (Dia. Dir.):	0.0042		
Lower Steel Pad Moment Capacity (L or W-Dir. Kips-ft):		5705.1	>	Moment at Bottom (L-Direct. K-Ft):	750.7	0.13	OK!
Lower Steel Pad Moment Capacity (Dia. Direction,K-ft):		5447.5	>	Moment at Bottom (Dia. Dir. K-Ft):	3271.9	0.60	OK!
Upper Steel Pad Reinforcement Ratio (L or W -Direction):		0.0046		Upper Steel Reinf. Ratio (Dia. Dir.):	0.0042		
Upper Steel Pad Moment Capacity (L or W-Dir., Kips-ft):		5705.1	>	Moment at the top (L-Dir Kips-Ft):	278.2	0.05	OK!
Upper Steel Pad Moment Capacity (Dia. Direction, K-ft):		5447.5	>	Moment at the top (Dia. Dir., K-Ft):	976.6	0.18	OK!
Punching Failure Capacity (Kips):		1266.1	>	Punch. Failure Factored Shear (K):	498.0	0.39	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 Self Support Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT00990-S-SBA / Scotland

Customer Site Name: Scotland

Carrier Name: T-Mobile (App#: 160650-1, V1)

Carrier Site ID / Name: CTNL257A / _

Site Location: 165 Huntington Road

Scotland, Connecticut

Windham County

Latitude: 41.695911

Longitude: -72.097069

Exp.10/31/2021

07/06/2021

Analysis Result:

Max Structural Usage: 59.1% [Pass]

Report Prepared By: Progesh Roka

NOTE: The proposed [(3) SitePro1 VFA12-HD] mounts were not currently installed on the tower. The proposed mounts were assumed to be installed per the manufacturer's instructions, and it was assumed that they can be installed properly on the tower. TES cannot verify that the proposed mount 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 (3) SitePro1 VFA12-HD at 218.00' 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 provided by SBA, Application #: 160650, v1 dated 6/15/2021
Antenna Loading	Provided by SBA, Application #: 160650, v1 dated 6/15/2021
Modification Drawings	N/A

Analysis Criteria

Basic Wind Speed Used in the Analysis: V_{ULT} = 129 mph (3-Sec. Gust) / Equivalent to
V_{ASD} = 100 mph (3-Sec. Gust)
Basic Wind Speed with Ice: 50 mph (3-Sec. Gust) with 0.75" radial ice concurrent
Operational Wind Speed: 60 mph +0" Radial ice
Standard/Codes: ANSI/TIA/EIA 222-G/2015 IBC/2018 Connecticut State Building Code
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

(3) SitePro1 VFA12-HD at 218.00' 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 59.1%, which occurs in the mount pipe. 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 [(3) SitePro1 VFA12-HD] mounts were not currently installed on the tower. The proposed mounts were assumed to be installed per the manufacturer's instructions, and it was assumed that they can be installed properly on the tower. TES cannot verify that the proposed mount will fit properly and is not liable for any fit-up issues during installation.

Attachments

1. Mount Diagram
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.

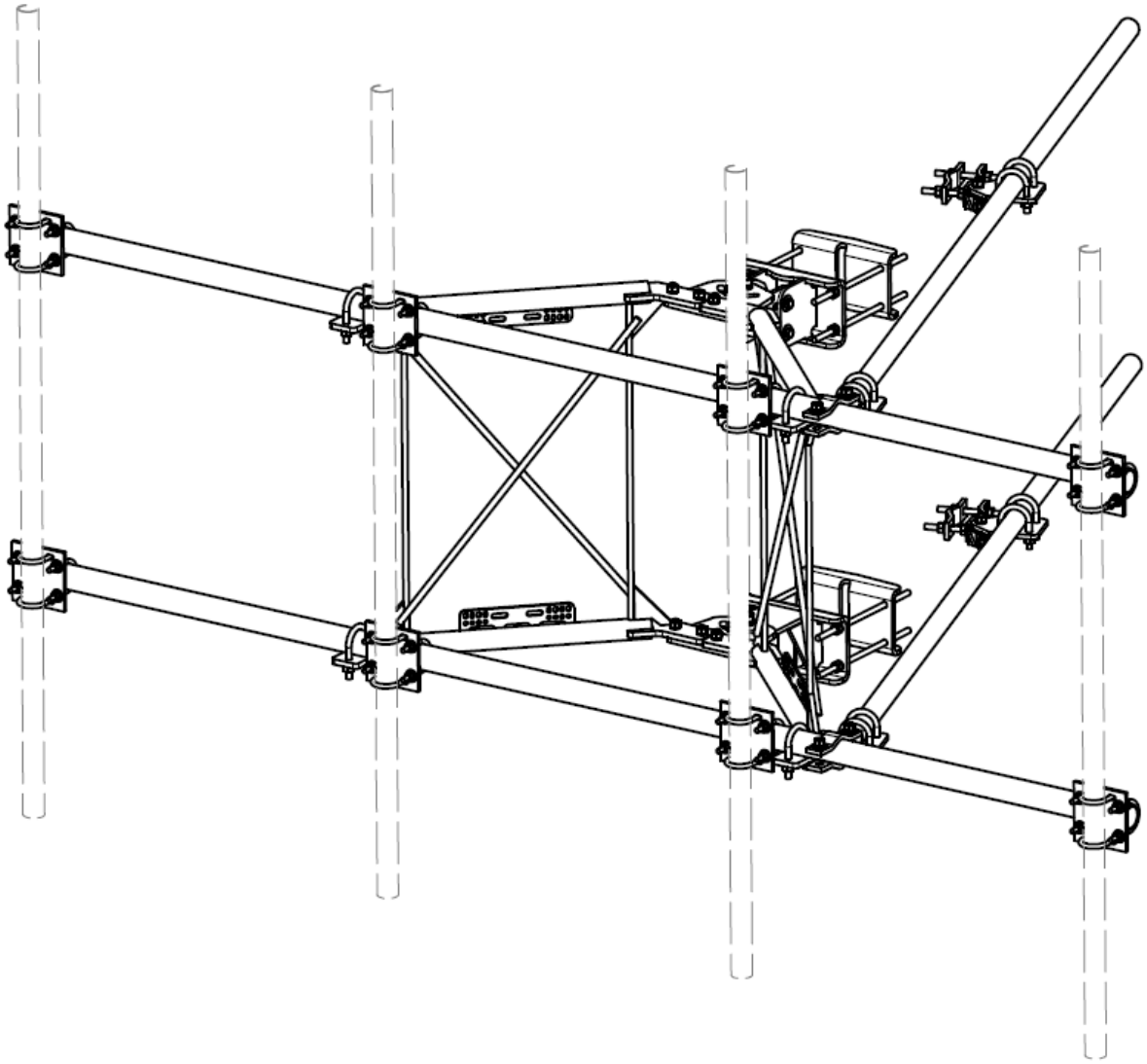
5. If the mount is modified, installation must adhere to the configuration communicated in the modification drawings.

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.



Site Pro1 VFA12-HD

Structure: CT00990-S-SBA - Scotland

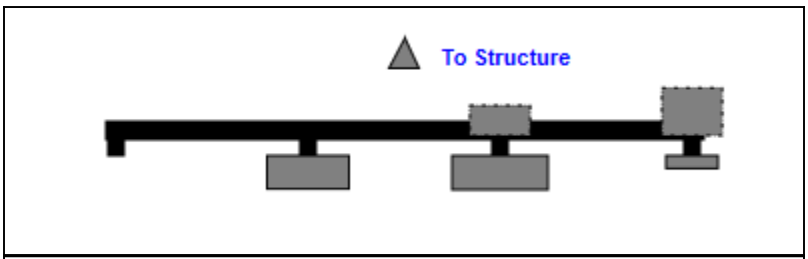
Sector: A

Structure Type: Self Support

Mount Elev: 218.00

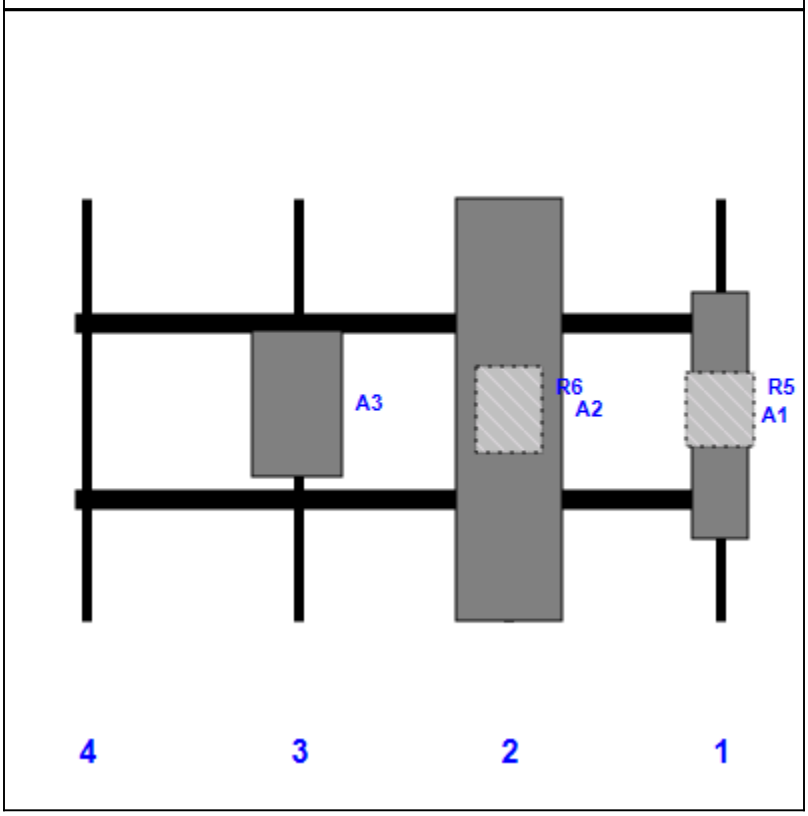
7/6/2021

Plan View



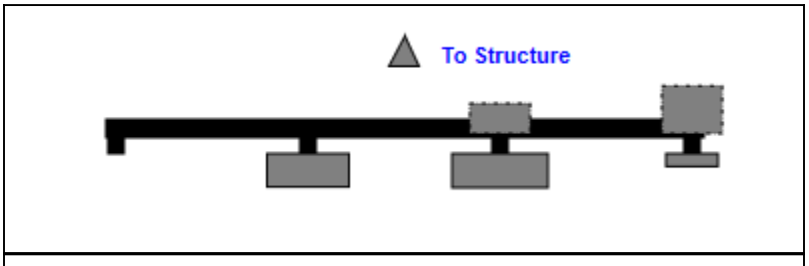
Front View

Looking Toward Structure



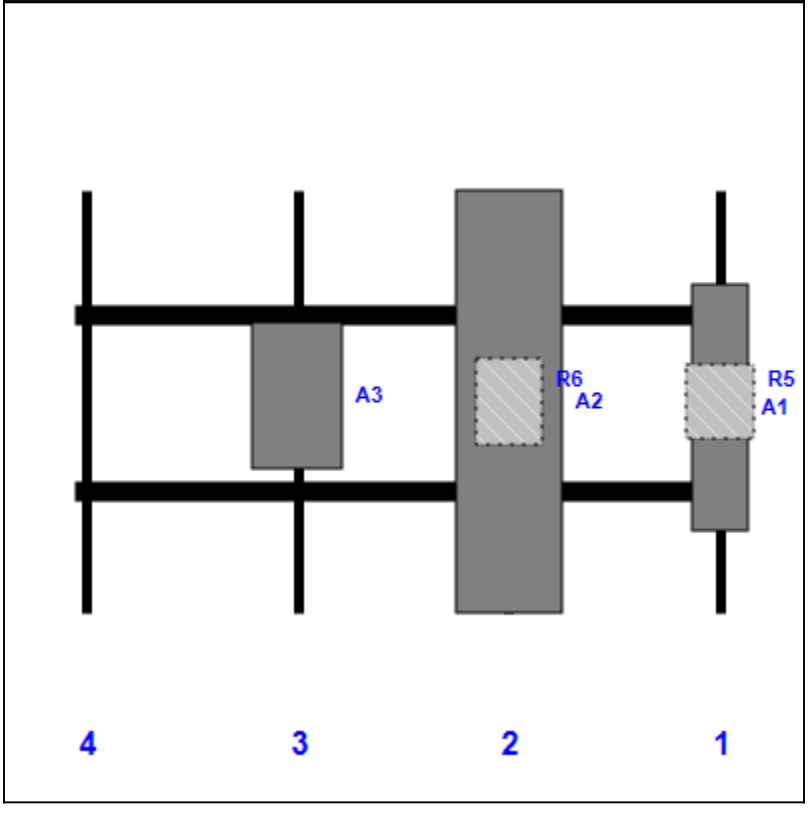
Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	APX16DWV-16DWVS-E-A20	55.90	13.00	147.00	1	a	Front	49.50			
R5	4460 B25 + B66	17.00	15.10	147.00	1	a	Behind	48.00			
A2	APXVAALL24-43-U-NA20	95.90	24.00	99.00	2	a	Front	48.00			
R6	4480 B71 + B85	19.20	15.10	99.00	2	a	Behind	48.00			
A3	AIR6449 B41	33.10	20.50	51.00	3	a	Front	46.50			

Plan View



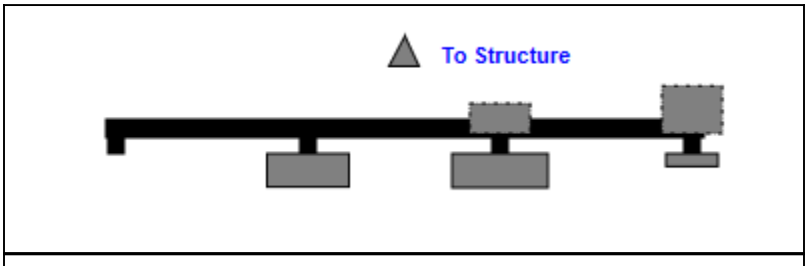
Front View

Looking Toward Structure



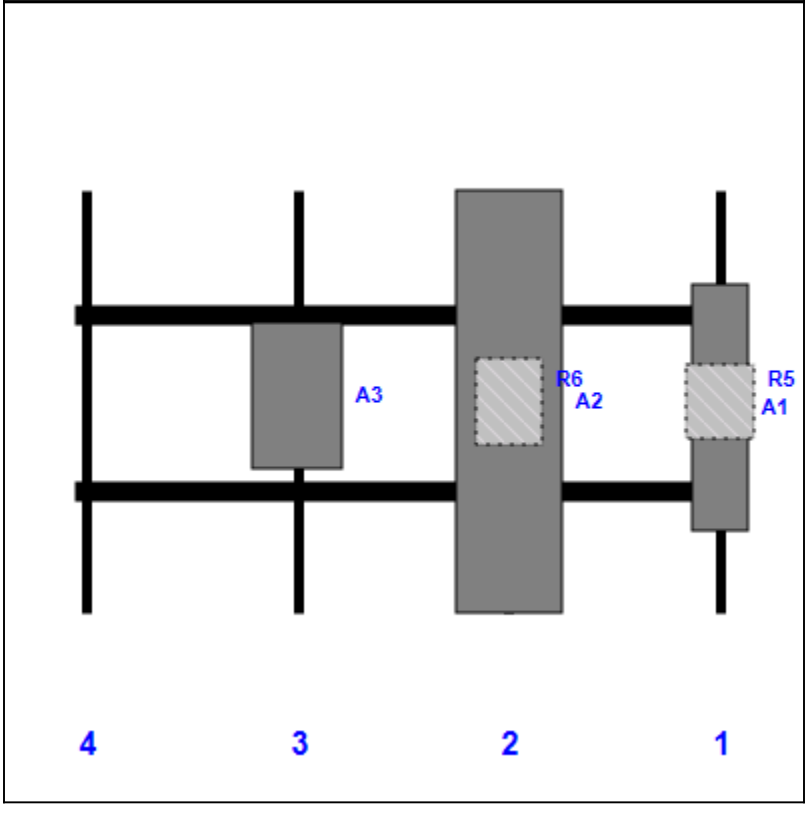
Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	APX16DWV-16DWVS-E-A20	55.90	13.00	147.00	1	a	Front	49.50			
R5	4460 B25 + B66	17.00	15.10	147.00	1	a	Behind	48.00			
A2	APXVAALL24-43-U-NA20	95.90	24.00	99.00	2	a	Front	48.00			
R6	4480 B71 + B85	19.20	15.10	99.00	2	a	Behind	48.00			
A3	AIR6449 B41	33.10	20.50	51.00	3	a	Front	46.50			

Plan View

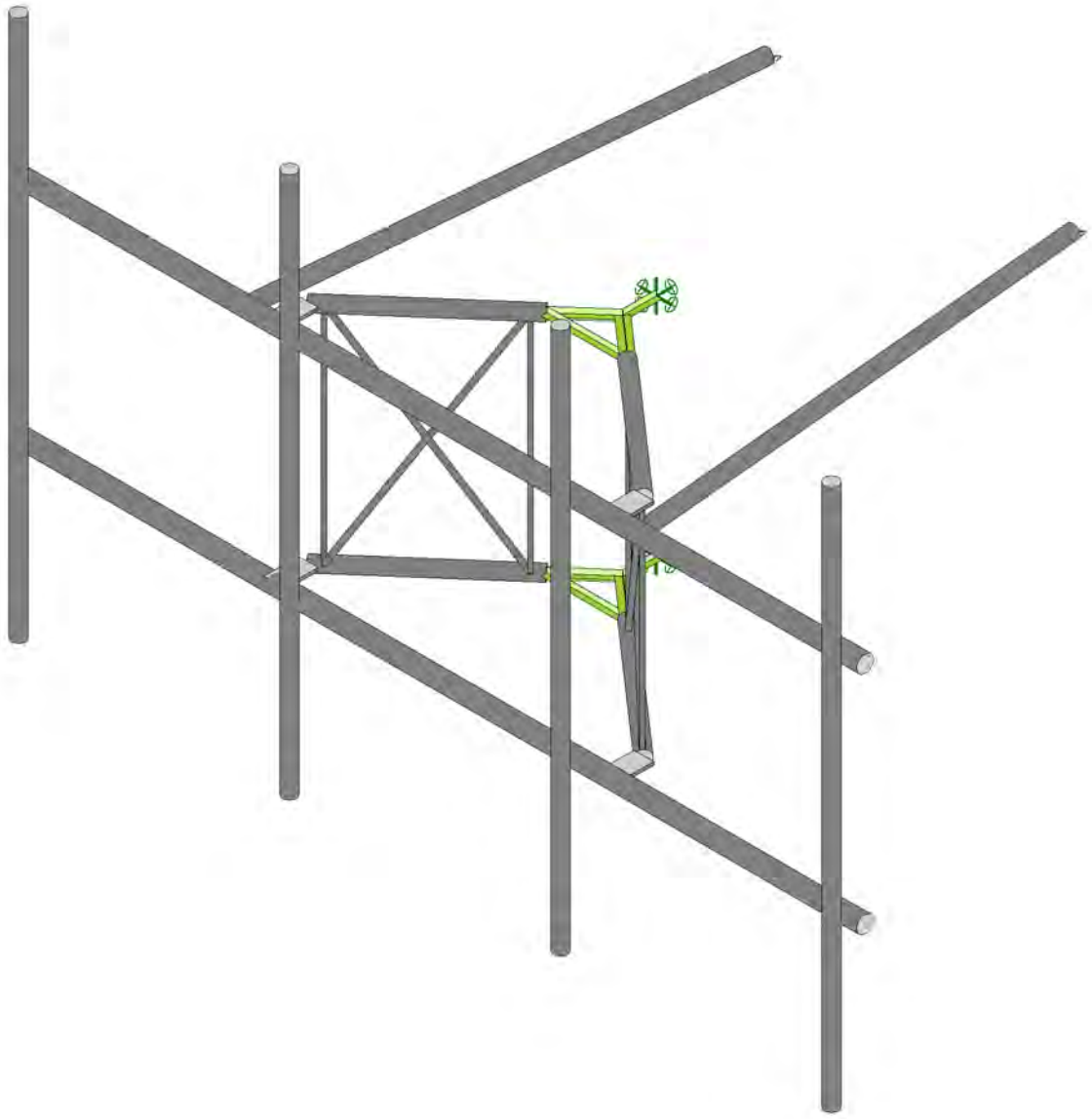


Front View

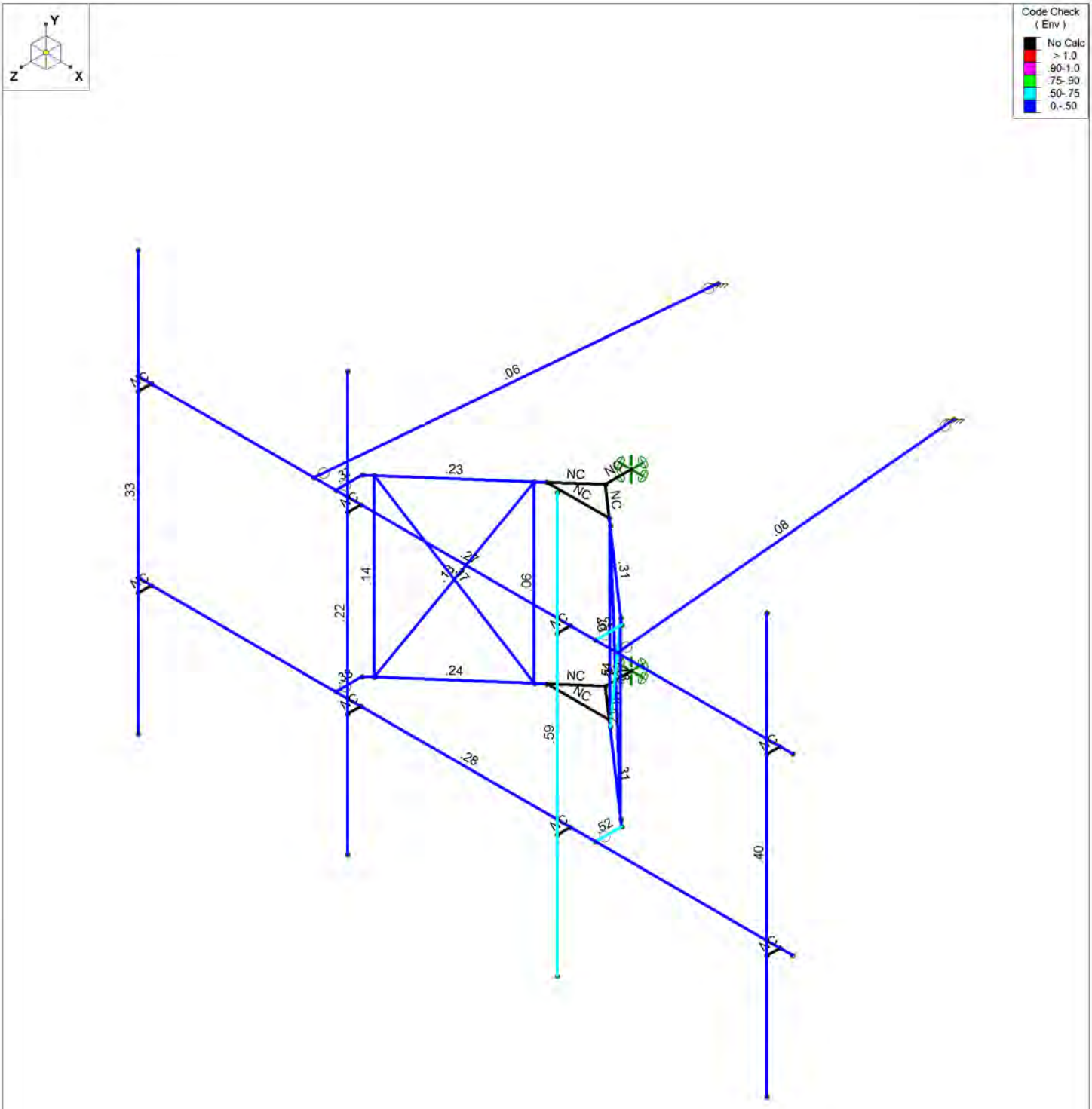
Looking Toward Structure



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	147.00	1	a	Front	49.50			
R5	4460 B25 + B66	17.00	15.10	147.00	1	a	Behind	48.00			
A2	APXVAALL24-43-U-NA20	95.90	24.00	99.00	2	a	Front	48.00			
R6	4480 B71 + B85	19.20	15.10	99.00	2	a	Behind	48.00			
A3	AIR6449 B41	33.10	20.50	51.00	3	a	Front	46.50			

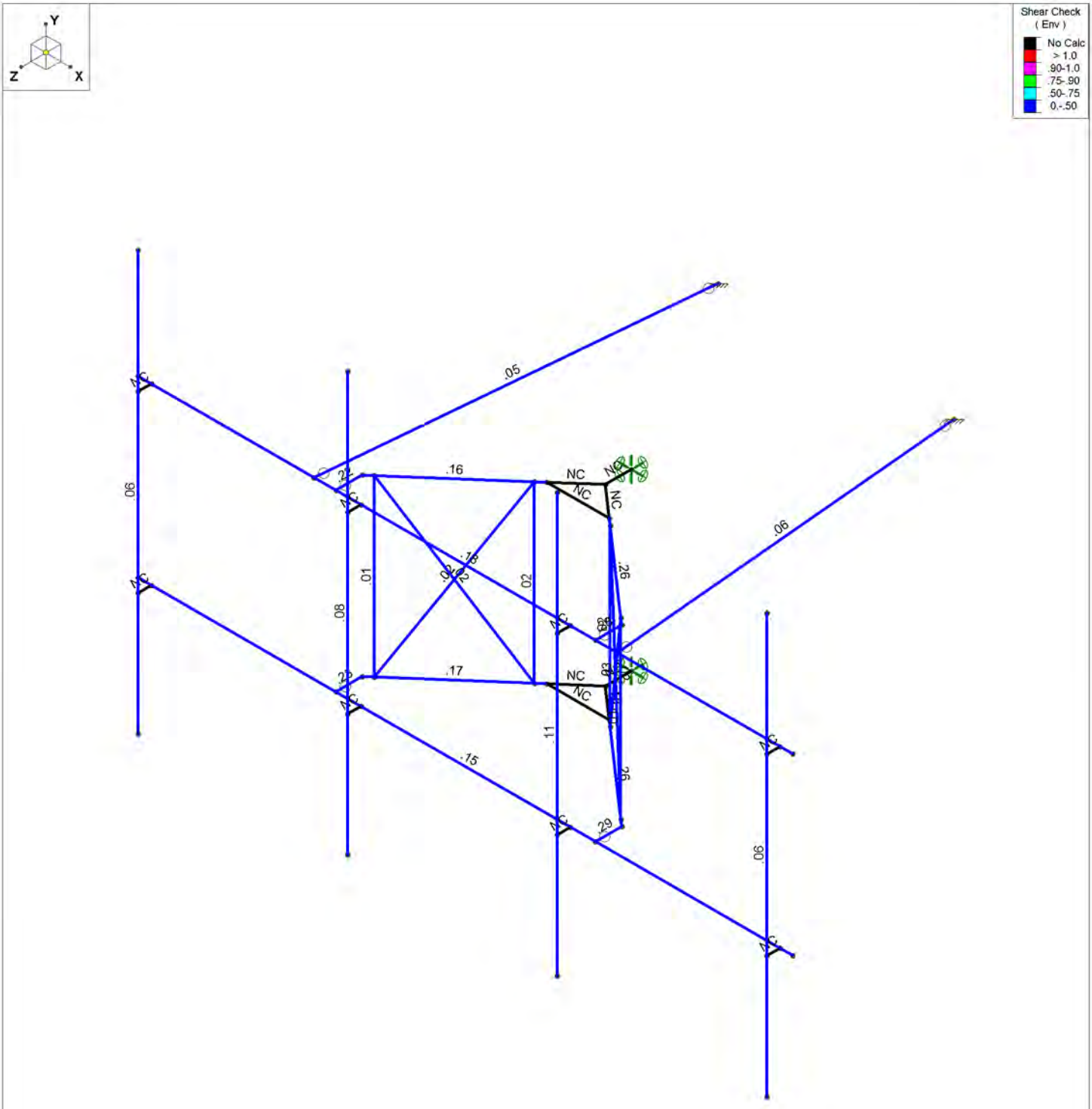


Tower Engineering Solutio...	CT00990-S-SBA_MT_LOT_Loads Only_Sector A_G	SK - 3
		July 6, 2021 at 3:46 PM
TES Project No. 110406	RENDER	CT00990-S-SBA_110406_G_RISA_...



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

Tower Engineering Solutio...		SK - 4
	CT00990-S-SBA_MT_LOT_Loads Only_Sector A_G	July 6, 2021 at 3:55 PM
TES Project No. 110406	UNITY	CT00990-S-SBA_110406_G_RISA_...



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

Tower Engineering Solutio...	CT00990-S-SBA_MT_LOT_Loads Only_Sector A_G	SK - 5
		July 6, 2021 at 3:56 PM
TES Project No. 110406	Shear	CT00990-S-SBA_110406_G_RISA_...

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribu...	Area(M...	Surface...
1	Antenna D	None					8			
2	Antenna Di	None					8			
3	Antenna W Front	None					8			
4	Antenna Wi Front	None					8			
5	Antenna W Side	None					8			
6	Antenna Wi Side	None					8			
7	Service Lm1	None					1			
8	Service Lm2	None					1			
9	Structure D	None		-1						
10	Structure Di	None						24		
11	Structure W Front	None						24		
12	Structure Wi Front	None						24		
13	Structure W Side	None						24		
14	Structure Wi Side	None						24		

Load Combinations

	Description	So..	P...	S...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..
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 (Mai...	Yes	Y		1	1.2	9	1.2	7	1.5	3	.16	11	.16										
10	1.2D+1.5L2+.16W (Mai...	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																

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	N2	0	0	3.098075	0	
2	N3	-2.479167	0	5.263436	0	
3	N5	2.479167	0	5.263436	0	
4	N5A	-2.479167	0	5.763436	0	
5	N6	2.479167	0	5.763436	0	
6	N7	-6.25	0	5.763436	0	
7	N9	6.25	0	5.763436	0	
8	N16	0	3.333333	3.098075	0	
9	N17	-2.479167	3.333333	5.263436	0	
10	N18	2.479167	3.333333	5.263436	0	
11	N19	-2.479167	3.333333	5.763436	0	
12	N20	2.479167	3.333333	5.763436	0	
13	N21	-6.25	3.333333	5.763436	0	
14	N22	6.25	3.333333	5.763436	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
15	N29	-6	0	5.763436	0	
16	N30	-6	3.333333	5.763436	0	
17	N19A	-0.596256	3.333333	3.618858	0	
18	N20A	-0.596256	0	3.618858	0	
19	N21A	0.596256	3.333333	3.618858	0	
20	N22A	0.596256	0	3.618858	0	
21	N23	-2	0	5.763436	0	
22	N24	-2	3.333333	5.763436	0	
23	N25	6	0	5.763436	0	
24	N26	6	3.333333	5.763436	0	
25	N27	2	0	5.763436	0	
26	N28	2	3.333333	5.763436	0	
27	N29A	-6	5.666667	6.013436	0	
28	N30A	-2	5.666667	6.013436	0	
29	N31	6	5.666667	6.013436	0	
30	N32	2	5.666667	6.013436	0	
31	N33	-6	-2.333333	6.013436	0	
32	N34	-2	-2.333333	6.013436	0	
33	N35	6	-2.333333	6.013436	0	
34	N36	2	-2.333333	6.013436	0	
35	N41	0	0	2.598075	0	
36	N42	0	3.333333	2.598075	0	
37	N45	-0.721783	3.333333	3.728496	0	
38	N46	-0.721783	0	3.728496	0	
39	N47	0.721783	3.333333	3.728496	0	
40	N48	0.721783	0	3.728496	0	
41	N49	-2.353641	3.333333	5.153798	0	
42	N50	-2.353641	0	5.153798	0	
43	N51	2.353641	3.333333	5.153798	0	
44	N52	2.353641	0	5.153798	0	
45	N51A	-6	0	6.013436	0	
46	N52A	-6	3.333333	6.013436	0	
47	N53B	-2	0	6.013436	0	
48	N54A	-2	3.333333	6.013436	0	
49	N55	6	0	6.013436	0	
50	N56	6	3.333333	6.013436	0	
51	N57	2	0	6.013436	0	
52	N58	2	3.333333	6.013436	0	
53	N57A	-2.895833	3.333333	5.763436	0	
54	N58A	2.895834	3.333333	5.763436	0	
55	N57C	2.25	3.333333	-1.299425	0	
56	N58B	-2.25	3.333333	-1.299425	0	

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Mount Pipe	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
2	Standoff Horizontal	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
3	Stanodff Vertical	SR 0.625	Beam	BAR	A36 Gr.36	Typical	.307	.007	.007	.015
4	Standoff Diagonal	SR 0.75	Beam	BAR	A36 Gr.36	Typical	.442	.016	.016	.031
5	Face Horizontal	PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
6	Tie-back	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
7	Connection Plate	PL5/8x3.5	Beam	RECT	A36 Gr.36	Typical	2.188	.071	2.233	.253

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E...	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Rul...
1	M1	N3	N5A		90	Connection Plate	Beam	RECT	A36 Gr.36	Typical
2	M2	N5	N6		90	Connection Plate	Beam	RECT	A36 Gr.36	Typical
3	M3	N17	N19		90	Connection Plate	Beam	RECT	A36 Gr.36	Typical
4	M4	N18	N20		90	Connection Plate	Beam	RECT	A36 Gr.36	Typical
5	M5	N19A	N17			Standoff Horizontal	Beam	Pipe	A53 Gr.B	Typical
6	M6	N20A	N3			Standoff Horizontal	Beam	Pipe	A53 Gr.B	Typical
7	M7	N21A	N18			Standoff Horizontal	Beam	Pipe	A53 Gr.B	Typical
8	M8	N22A	N5			Standoff Horizontal	Beam	Pipe	A53 Gr.B	Typical
9	M9	N16	N19A			RIGID	Beam	None	RIGID	DR1
10	M10	N16	N21A			RIGID	Beam	None	RIGID	DR1
11	M11	N2	N20A			RIGID	Beam	None	RIGID	DR1
12	M12	N2	N22A			RIGID	Beam	None	RIGID	DR1
13	MP4A	N29A	N33			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
14	MP3A	N30A	N34			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
15	MP2A	N32	N36			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
16	MP1A	N31	N35			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
17	M17	N42	N16			RIGID	Beam	None	RIGID	DR1
18	M18	N41	N2			RIGID	Beam	None	RIGID	DR1
19	M19	N58A	N57C			Tie-back	Beam	Pipe	A53 Gr.B	Typical
20	M20	N45	N46			Stanodff Vertical	Beam	BAR	A36 Gr.36	Typical
21	M21	N49	N50			Stanodff Vertical	Beam	BAR	A36 Gr.36	Typical
22	M22	N47	N48			Stanodff Vertical	Beam	BAR	A36 Gr.36	Typical
23	M23	N51	N52			Stanodff Vertical	Beam	BAR	A36 Gr.36	Typical
24	M24	N45	N50			Standoff Diagonal	Beam	BAR	A36 Gr.36	Typical
25	M25	N49	N46			Standoff Diagonal	Beam	BAR	A36 Gr.36	Typical
26	M26	N47	N52			Standoff Diagonal	Beam	BAR	A36 Gr.36	Typical
27	M27	N51	N48			Standoff Diagonal	Beam	BAR	A36 Gr.36	Typical
28	M28	N19A	N21A			RIGID	Beam	None	RIGID	DR1
29	M29	N20A	N22A			RIGID	Beam	None	RIGID	DR1
30	M30	N57A	N58B			Tie-back	Beam	Pipe	A53 Gr.B	Typical
31	M31	N26	N56			RIGID	Beam	None	RIGID	DR1
32	M32	N25	N55			RIGID	Beam	None	RIGID	DR1
33	M33	N28	N58			RIGID	Beam	None	RIGID	DR1
34	M34	N27	N57			RIGID	Beam	None	RIGID	DR1

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Rul...
35	M35	N24	N54A			RIGID	Beam	None	RIGID	DR1
36	M36	N23	N53B			RIGID	Beam	None	RIGID	DR1
37	M37	N30	N52A			RIGID	Beam	None	RIGID	DR1
38	M38	N29	N51A			RIGID	Beam	None	RIGID	DR1
39	M39	N21	N22			Face Horizontal	Beam	Pipe	A53 Gr.B	Typical
40	M40	N7	N9			Face Horizontal	Beam	Pipe	A53 Gr.B	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1		BenPIN				Yes				None
2	M2		BenPIN				Yes				None
3	M3		BenPIN				Yes				None
4	M4		BenPIN				Yes				None
5	M5						Yes				None
6	M6						Yes				None
7	M7						Yes				None
8	M8						Yes				None
9	M9						Yes				None
10	M10						Yes				None
11	M11						Yes				None
12	M12						Yes				None
13	MP4A						Yes				None
14	MP3A						Yes				None
15	MP2A						Yes				None
16	MP1A						Yes				None
17	M17						Yes	Default			None
18	M18						Yes	Default			None
19	M19	BenPIN	BenPIN				Yes				None
20	M20						Yes				None
21	M21						Yes				None
22	M22						Yes				None
23	M23						Yes				None
24	M24						Yes				None
25	M25						Yes				None
26	M26						Yes				None
27	M27						Yes				None
28	M28						Yes				None
29	M29						Yes				None
30	M30	BenPIN	BenPIN				Yes				None
31	M31						Yes				None
32	M32						Yes				None
33	M33						Yes				None
34	M34						Yes				None
35	M35						Yes				None
36	M36						Yes				None
37	M37						Yes				None
38	M38						Yes				None
39	M39						Yes				None
40	M40						Yes				None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
1	M1	Connection ...	.5			Lbyy						Lateral
2	M2	Connection ...	.5			Lbyy						Lateral
3	M3	Connection ...	.5			Lbyy						Lateral
4	M4	Connection ...	.5			Lbyy						Lateral
5	M5	Standoff Ho...	2.5			Lbyy						Lateral
6	M6	Standoff Ho...	2.5			Lbyy						Lateral
7	M7	Standoff Ho...	2.5			Lbyy						Lateral
8	M8	Standoff Ho...	2.5			Lbyy						Lateral
9	MP4A	Mount Pipe	8			Lbyy						Lateral
10	MP3A	Mount Pipe	8			Lbyy						Lateral
11	MP2A	Mount Pipe	8			Lbyy						Lateral
12	MP1A	Mount Pipe	8			Lbyy						Lateral
13	M19	Tie-back	7.092			Lbyy						Lateral
14	M20	Stanodff Ve...	3.333			Lbyy			.65	.65		Lateral
15	M21	Stanodff Ve...	3.333			Lbyy			.65	.65		Lateral
16	M22	Stanodff Ve...	3.333			Lbyy			.65	.65		Lateral
17	M23	Stanodff Ve...	3.333			Lbyy			.65	.65		Lateral
18	M24	Standoff Dia...	3.976			Lbyy			.65	.65		Lateral
19	M25	Standoff Dia...	3.976			Lbyy			.65	.65		Lateral
20	M26	Standoff Dia...	3.976			Lbyy			.65	.65		Lateral
21	M27	Standoff Dia...	3.976			Lbyy			.65	.65		Lateral
22	M30	Tie-back	7.092			Lbyy						Lateral
23	M39	Face Horizo...	12.5			Lbyy			1	1		Lateral
24	M40	Face Horizo...	12.5			Lbyy			1	1		Lateral

Joint Boundary Conditions

	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	N42	Reaction	Reaction	Reaction	Reaction		Reaction
2	N41	Reaction	Reaction	Reaction	Reaction		Reaction
3	N57C	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N58B	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N42	max	714.939	9	1432.918	6	-28.143	2	-.483	1	0	11	.538	10
2		min	-1401.522	10	342.609	1	-1686.459	5	-1.704	6	0	1	-.337	9
3	N41	max	1389.963	10	1449.686	5	1979.276	5	-.472	2	0	11	.54	10
4		min	-727.078	9	347.44	2	-565.396	2	-1.727	5	0	1	-.303	9
5	N57C	max	135.377	1	48.302	6	1482.511	1	.009	10	0	11	.1	10
6		min	-139.613	2	13.951	1	-1530.693	2	0	9	0	1	-.005	9
7	N58B	max	35.775	3	47.742	7	746.657	4	.007	9	0	11	.028	10
8		min	-31.427	4	14.69	1	-798.408	3	-.003	10	0	1	-.077	9
9	Totals:	max	1404.039	4	2915.935	8	2359.053	1						
10		min	-1404.041	3	1023.84	3	-2359.051	2						

Envelope Member Section Forces

	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	333.305	1	269.38	1	44.343	10	.027	10	.337	9	.135	1
2			min	-382.387	2	-272.833	2	-676.303	9	-.145	9	-.023	10	-.136	2
3		2	max	333.305	1	269.38	1	45.46	10	.027	10	.253	9	.101	1
4			min	-382.387	2	-272.833	2	-675.186	9	-.145	9	-.018	10	-.102	2
5		3	max	333.305	1	269.38	1	46.576	10	.027	10	.168	9	.067	1
6			min	-382.387	2	-272.833	2	-674.07	9	-.145	9	-.012	10	-.068	2
7		4	max	333.305	1	269.38	1	47.693	10	.027	10	.084	9	.034	1
8			min	-382.387	2	-272.833	2	-672.953	9	-.145	9	-.006	10	-.034	2
9		5	max	333.305	1	269.38	1	48.809	10	.027	10	0	11	0	11
10			min	-382.387	2	-272.833	2	-671.837	9	-.145	9	0	1	0	1
11	M2	1	max	809.07	1	529.73	2	-31.441	1	.185	10	.475	6	.265	2
12			min	-655.131	2	-624.697	1	-954.909	6	.005	3	.015	1	-.312	1
13		2	max	809.07	1	529.73	2	-30.325	1	.185	10	.356	6	.199	2
14			min	-655.131	2	-624.697	1	-952.428	6	.005	3	.011	1	-.234	1
15		3	max	809.07	1	529.73	2	-29.208	1	.185	10	.237	6	.132	2
16			min	-655.131	2	-624.697	1	-949.947	6	.005	3	.007	1	-.156	1
17		4	max	809.07	1	529.73	2	-28.092	1	.185	10	.118	6	.066	2
18			min	-655.131	2	-624.697	1	-947.465	6	.005	3	.003	1	-.078	1
19		5	max	809.07	1	529.73	2	-26.975	1	.185	10	0	11	0	11
20			min	-655.131	2	-624.697	1	-944.984	6	.005	3	0	1	0	1
21	M3	1	max	743.328	3	551.476	3	33.992	10	.025	10	.331	9	.273	3
22			min	-638.382	4	-505.218	4	-664.121	9	-.14	9	-.018	10	-.249	4
23		2	max	743.328	3	548.258	3	35.109	10	.025	10	.248	9	.204	3
24			min	-638.382	4	-502	4	-663.005	9	-.14	9	-.014	10	-.186	4
25		3	max	743.328	3	545.04	3	36.225	10	.025	10	.165	9	.135	3
26			min	-638.382	4	-498.782	4	-661.888	9	-.14	9	-.009	10	-.124	4
27		4	max	743.328	3	541.822	3	37.342	10	.025	10	.083	9	.068	3
28			min	-638.382	4	-495.564	4	-660.772	9	-.14	9	-.005	10	-.062	4
29		5	max	743.328	3	538.604	3	38.458	10	.025	10	0	11	0	11
30			min	-638.382	4	-492.346	4	-659.655	9	-.14	9	0	1	0	1
31	M4	1	max	727.693	4	621.148	3	-177.802	9	.181	10	.466	8	.307	3
32			min	-832.322	3	-571.696	4	-936.6	8	.016	9	.088	9	-.283	4
33		2	max	727.693	4	617.93	3	-176.685	9	.181	10	.349	8	.23	3
34			min	-832.322	3	-568.478	4	-934.118	8	.016	9	.066	9	-.211	4
35		3	max	727.693	4	614.712	3	-175.568	9	.181	10	.232	8	.153	3
36			min	-832.322	3	-565.26	4	-931.637	8	.016	9	.044	9	-.141	4
37		4	max	727.693	4	611.494	3	-174.452	9	.181	10	.116	8	.076	3
38			min	-832.322	3	-562.042	4	-929.156	8	.016	9	.022	9	-.07	4
39		5	max	727.693	4	608.276	3	-173.335	9	.181	10	0	11	0	11
40			min	-832.322	3	-558.824	4	-926.674	8	.016	9	0	1	0	1
41	M5	1	max	538.09	3	693.169	9	107.035	4	.132	5	.229	10	.021	9
42			min	-1342.542	9	-22.097	10	-159.989	3	.008	2	-.141	9	-.067	10
43		2	max	695.705	3	.456	2	123.671	4	.132	9	.149	10	.013	9
44			min	-822.029	4	-235.245	9	-174.614	3	.004	2	-.087	9	-.059	10
45		3	max	692.459	3	-2.147	2	126.505	4	.132	9	.082	10	.16	9
46			min	-818.783	4	-237.848	9	-177.449	3	.004	2	-.045	9	-.052	10
47		4	max	689.213	3	-4.75	2	129.34	4	.132	9	.16	4	.31	9
48			min	-815.537	4	-240.451	9	-180.284	3	.004	2	-.152	3	-.043	10
49		5	max	903.326	3	664.942	9	148.977	4	.157	9	.249	4	.323	9
50			min	-801.479	4	-34.102	10	-196.683	3	-.003	2	-.273	3	-.031	10
51	M6	1	max	1410.782	9	690.266	9	151.9	2	.129	6	.16	9	.035	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
52			min	-404.744	2	-12.705	10	-112.984	1	.016	1	-.22	10	-.063	10
53		2	max	807.944	9	-5.358	10	133.939	2	.133	9	.095	9	.012	9
54			min	-412.672	2	-240.63	9	-97.85	1	.017	10	-.149	10	-.058	10
55		3	max	807.619	9	-7.961	10	130.223	2	.133	9	.043	9	.163	9
56			min	-409.426	2	-243.233	9	-94.134	1	.017	10	-.089	10	-.054	10
57		4	max	807.294	9	-10.564	10	126.507	2	.133	9	.063	2	.316	9
58			min	-406.18	2	-245.836	9	-90.418	1	.017	10	-.083	1	-.048	10
59		5	max	421.592	1	675.213	9	109.076	2	.158	9	.136	2	.331	9
60			min	-457.935	2	-44.298	10	-73.461	1	0	10	-.135	1	-.035	10
61	M7	1	max	167.511	4	1026.208	6	122.35	4	.003	2	.258	10	.092	2
62			min	-2018.561	7	155.942	1	-188.768	3	-.232	5	-.113	9	-.069	1
63		2	max	520.454	4	-60.161	2	143.299	4	-.017	2	.159	10	.03	2
64			min	-1232.956	3	-304.774	10	-200.134	3	-.24	5	-.078	9	-.045	9
65		3	max	517.208	4	-62.764	2	146.134	4	-.017	2	.086	4	.217	10
66			min	-1229.71	3	-312.278	5	-202.969	3	-.24	5	-.05	9	.005	9
67		4	max	513.962	4	-65.367	2	148.969	4	-.017	2	.178	4	.41	10
68			min	-1226.464	3	-320.673	5	-205.804	3	-.24	5	-.174	3	.057	9
69		5	max	908.032	4	935.856	8	171.388	4	-.042	2	.283	4	.424	10
70			min	-1016.59	3	177.668	9	-218.731	3	-.267	8	-.307	3	.07	9
71	M8	1	max	2059.328	5	1036.323	8	228.98	1	-.002	1	.105	9	.045	8
72			min	-109.777	2	191.171	9	-150.363	2	-.229	6	-.275	10	-.043	9
73		2	max	1236.01	5	-13.869	1	217.115	1	-.004	1	.077	9	.026	10
74			min	-421.137	2	-310.581	6	-144.471	2	-.24	6	-.168	10	-.044	9
75		3	max	1234.729	5	-16.473	1	213.399	1	-.004	1	.055	9	.215	10
76			min	-417.891	2	-318.976	6	-140.755	2	-.24	6	-.086	2	-.002	9
77		4	max	1233.449	5	-19.076	1	209.683	1	-.004	1	.183	1	.406	10
78			min	-414.646	2	-327.371	6	-137.039	2	-.24	6	-.173	2	.01	1
79		5	max	1002.827	1	954.353	6	198.949	1	-.002	1	.312	1	.421	10
80			min	-829.305	2	31.222	1	-144.118	2	-.271	6	-.265	2	.02	1
81	M9	1	max	705.378	3	673.151	9	223.621	4	.155	5	.328	10	.557	9
82			min	-1438.771	9	47.158	10	-361.998	3	.046	3	-.2	9	-.008	10
83		2	max	705.378	3	673.151	9	223.621	4	.155	5	.258	10	.423	9
84			min	-1438.771	9	47.158	10	-361.998	3	.046	3	-.157	9	-.018	10
85		3	max	705.378	3	673.151	9	223.621	4	.155	5	.189	10	.29	9
86			min	-1438.771	9	47.158	10	-361.998	3	.046	3	-.113	9	-.027	10
87		4	max	705.378	3	673.151	9	223.621	4	.155	5	.119	10	.157	9
88			min	-1438.771	9	47.158	10	-361.998	3	.046	3	-.07	9	-.036	10
89		5	max	705.378	3	673.151	9	223.621	4	.155	5	.052	2	.024	1
90			min	-1438.771	9	47.158	10	-361.998	3	.046	3	-.026	9	-.046	10
91	M10	1	max	278.276	4	978.874	6	172.695	4	-.019	2	.372	10	.83	6
92			min	-2151.999	7	85.243	1	-407.8	10	-.152	5	-.157	9	.085	1
93		2	max	278.276	4	978.874	6	172.695	4	-.019	2	.291	10	.636	6
94			min	-2151.999	7	85.243	1	-407.8	10	-.152	5	-.124	9	.068	1
95		3	max	278.276	4	978.874	6	172.695	4	-.019	2	.21	10	.445	8
96			min	-2151.999	7	85.243	1	-407.8	10	-.152	5	-.092	9	.049	9
97		4	max	278.276	4	978.874	6	172.695	4	-.019	2	.13	10	.254	8
98			min	-2151.999	7	85.243	1	-407.8	10	-.152	5	-.059	9	.011	9
99		5	max	278.276	4	978.874	6	172.695	4	-.019	2	.049	10	.063	5
100			min	-2151.999	7	85.243	1	-407.8	10	-.152	5	-.027	2	-.026	9
101	M11	1	max	1535.975	9	657.438	9	358.992	10	.156	6	.205	9	.541	9
102			min	-756.945	2	17.361	4	-213.418	9	.043	1	-.327	10	-.011	4
103		2	max	1535.975	9	657.438	9	358.992	10	.156	6	.162	9	.411	9

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
104			min	-756.945	2	17.361	4	-213.418	9	.043	1	-.256	10	-.015	10
105		3	max	1535.975	9	657.438	9	358.992	10	.156	6	.12	9	.281	9
106			min	-756.945	2	17.361	4	-213.418	9	.043	1	-.185	10	-.025	10
107		4	max	1535.975	9	657.438	9	358.992	10	.156	6	.078	9	.151	9
108			min	-756.945	2	17.361	4	-213.418	9	.043	1	-.114	10	-.036	10
109		5	max	1535.975	9	657.438	9	358.992	10	.156	6	.083	1	.021	9
110			min	-756.945	2	17.361	4	-213.418	9	.043	1	-.103	2	-.046	10
111	M12	1	max	2272.47	5	973.226	8	393.711	10	-.034	1	.161	9	.836	8
112			min	-376.337	2	219.039	3	-178.107	9	-.15	6	-.37	10	.15	9
113		2	max	2272.47	5	973.226	8	393.711	10	-.034	1	.126	9	.643	8
114			min	-376.337	2	219.039	3	-178.107	9	-.15	6	-.293	10	.105	9
115		3	max	2272.47	5	973.226	8	393.711	10	-.034	1	.09	9	.45	8
116			min	-376.337	2	219.039	3	-178.107	9	-.15	6	-.215	10	.061	9
117		4	max	2272.47	5	973.226	8	393.711	10	-.034	1	.055	9	.258	8
118			min	-376.337	2	219.039	3	-178.107	9	-.15	6	-.137	10	.017	9
119		5	max	2272.47	5	973.226	8	393.711	10	-.034	1	.073	2	.066	6
120			min	-376.337	2	219.039	3	-178.107	9	-.15	6	-.1	1	-.027	9
121	MP4A	1	max	0	11	.029	9	.012	1	0	11	0	11	0	11
122			min	0	1	-.025	8	-.039	8	0	1	0	1	0	1
123		2	max	26.864	8	20.952	4	20.975	1	0	11	.021	1	.021	3
124			min	8.33	1	-20.957	3	-20.981	2	0	1	-.021	2	-.021	4
125		3	max	16.614	2	3.903	3	48.176	9	.03	9	.094	1	.004	2
126			min	-382.694	9	-359.538	9	-49.826	4	-.007	1	-.092	2	-.002	1
127		4	max	-8.33	10	20.954	3	20.964	2	0	11	.021	1	.021	3
128			min	-26.864	5	-20.949	4	-20.957	1	0	1	-.021	2	-.021	4
129		5	max	0	11	.027	8	.041	8	0	11	0	11	0	11
130			min	0	1	-.029	9	-.016	9	0	1	0	1	0	1
131	MP3A	1	max	0	11	.015	9	.018	1	0	11	0	11	0	11
132			min	0	1	-.024	8	-.031	6	0	1	0	1	0	1
133		2	max	26.864	8	20.954	4	20.98	1	0	11	.021	1	.021	3
134			min	8.33	1	-20.959	3	-20.985	2	0	1	-.021	2	-.021	4
135		3	max	77.462	4	112.321	3	51.116	9	.063	9	.18	1	.021	1
136			min	-66.518	3	-185.732	10	-58.672	10	-.084	4	-.177	2	-.022	2
137		4	max	-8.33	10	20.96	3	20.953	2	0	11	.021	1	.021	3
138			min	-26.864	5	-20.955	4	-20.948	1	0	1	-.021	2	-.021	4
139		5	max	0	11	.027	8	.029	5	0	11	0	11	0	11
140			min	0	1	-.016	9	-.009	2	0	1	0	1	0	1
141	MP2A	1	max	296.736	8	192.899	4	447.807	1	0	11	0	11	0	11
142			min	73.68	1	-193.039	3	-447.787	2	0	1	0	1	0	1
143		2	max	323.599	8	213.862	4	468.769	1	0	11	.917	1	.407	3
144			min	82.01	1	-214.002	3	-468.749	2	0	1	-.917	2	-.407	4
145		3	max	201.339	2	187.622	9	109.661	8	.073	1	.473	1	.029	3
146			min	-297.663	1	-158.722	4	-30.27	9	-.107	2	-.47	2	-.029	4
147		4	max	-82.01	10	213.281	3	466.164	2	0	11	.911	1	.406	3
148			min	-323.599	5	-213.142	4	-466.176	1	0	1	-.911	2	-.405	4
149		5	max	-73.68	10	192.318	3	445.201	2	0	11	0	11	0	11
150			min	-296.736	5	-192.179	4	-445.214	1	0	1	0	1	0	1
151	MP1A	1	max	0	11	.019	9	.098	8	0	11	0	11	0	11
152			min	0	1	-.305	8	-.04	3	0	1	0	1	0	1
153		2	max	123.004	8	68.838	4	163.544	1	0	11	.057	1	.033	3
154			min	32.75	1	-68.897	3	-163.534	2	0	1	-.057	2	-.033	4
155		3	max	-13.852	3	436.711	10	102.385	2	.015	1	.268	1	.052	4

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
156			min	-450.243	10	33.778	4	-56.641	1	-.028	10	-.267	2	-.051	3
157		4	max	-32.75	10	68.896	3	163.353	2	0	11	.092	1	.045	3
158			min	-123.004	5	-68.838	4	-163.363	1	0	1	-.092	2	-.045	4
159		5	max	0	11	.311	8	.147	1	0	11	0	11	0	11
160			min	0	1	-.019	9	-.159	6	0	1	0	1	0	1
161	M17	1	max	-28.143	2	1432.918	6	1399.986	10	.538	10	0	11	1.704	6
162			min	-1686.459	5	342.609	1	-714.096	9	-.337	9	0	1	.483	1
163		2	max	-28.143	2	1432.918	6	1399.986	10	.538	10	.175	10	1.525	6
164			min	-1686.459	5	342.609	1	-714.096	9	-.337	9	-.089	9	.44	1
165		3	max	-28.143	2	1432.918	6	1399.986	10	.538	10	.35	10	1.345	6
166			min	-1686.459	5	342.609	1	-714.096	9	-.337	9	-.179	9	.397	1
167		4	max	-28.143	2	1432.918	6	1399.986	10	.538	10	.525	10	1.169	8
168			min	-1686.459	5	342.609	1	-714.096	9	-.337	9	-.268	9	.354	1
169		5	max	-28.143	2	1432.918	6	1399.986	10	.538	10	.7	10	.993	8
170			min	-1686.459	5	342.609	1	-714.096	9	-.337	9	-.357	9	.311	1
171	M18	1	max	1979.276	5	1449.686	5	730.859	9	.54	10	0	9	1.727	5
172			min	-565.396	2	347.44	2	-1395.568	10	-.303	9	0	10	.472	2
173		2	max	1979.276	5	1449.686	5	730.859	9	.54	10	.091	9	1.546	5
174			min	-565.396	2	347.44	2	-1395.568	10	-.303	9	-.174	10	.429	2
175		3	max	1979.276	5	1449.686	5	730.859	9	.54	10	.183	9	1.365	5
176			min	-565.396	2	347.44	2	-1395.568	10	-.303	9	-.349	10	.385	2
177		4	max	1979.276	5	1449.686	5	730.859	9	.54	10	.274	9	1.184	5
178			min	-565.396	2	347.44	2	-1395.568	10	-.303	9	-.523	10	.342	2
179		5	max	1979.276	5	1449.686	5	730.859	9	.54	10	.365	9	1.004	7
180			min	-565.396	2	347.44	2	-1395.568	10	-.303	9	-.698	10	.298	2
181	M19	1	max	1481.939	1	47.632	8	36.86	4	.1	10	0	11	0	11
182			min	-1530.305	2	14.77	1	-36.86	3	-.005	9	0	1	0	1
183		2	max	1483.624	1	23.816	8	18.43	4	.1	10	.049	4	-.02	10
184			min	-1531.991	2	7.385	1	-18.43	3	-.005	9	-.049	3	-.063	5
185		3	max	1485.309	1	0	11	0	11	.1	10	.065	4	-.026	10
186			min	-1533.676	2	0	1	0	1	-.005	9	-.065	3	-.084	5
187		4	max	1486.994	1	-7.385	10	18.43	3	.1	10	.049	4	-.02	10
188			min	-1535.361	2	-23.816	5	-18.43	4	-.005	9	-.049	3	-.063	5
189		5	max	1488.68	1	-14.77	10	36.86	3	.1	10	0	11	0	11
190			min	-1537.047	2	-47.632	5	-36.86	4	-.005	9	0	1	0	1
191	M20	1	max	10.148	2	5.397	3	3.964	6	.001	9	.004	5	.004	3
192			min	-15.378	1	-6.419	8	-5.538	5	-.002	10	-.002	9	-.005	4
193		2	max	11.192	2	3.098	3	1.522	6	.001	9	.001	10	.002	9
194			min	-14.333	1	-4.021	4	-3.097	5	-.002	10	-.001	9	-.002	10
195		3	max	12.237	2	1.852	9	1.165	9	.001	9	.001	6	.001	8
196			min	-13.289	1	-2.371	10	-1.627	10	-.002	10	-.001	5	-.001	7
197		4	max	13.282	2	1.852	9	2.732	1	.001	9	0	9	.002	10
198			min	-12.244	1	-3.234	7	-3.36	6	-.002	10	-.001	10	-.002	9
199		5	max	14.326	2	3.346	8	5.03	1	.001	9	.003	1	.004	7
200			min	-11.199	1	-5.675	7	-5.801	6	-.002	10	-.004	2	-.003	9
201	M21	1	max	45.717	1	6.401	3	7.338	9	0	1	.007	10	.006	3
202			min	-49.081	2	-6.812	4	-4.235	10	0	2	-.013	9	-.006	4
203		2	max	46.762	1	4.102	3	7.568	9	0	1	.003	10	.002	9
204			min	-48.036	2	-4.514	4	-4.005	10	0	2	-.007	9	-.002	10
205		3	max	47.807	1	2.077	9	7.798	9	0	1	.002	2	.001	8
206			min	-46.991	2	-2.465	10	-3.776	10	0	2	-.002	1	-.001	7
207		4	max	48.851	1	2.077	9	8.028	9	0	1	.006	9	.002	4

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
208			min	-45.947	2	-2.465	10	-4.501	2	0	2	-.003	10	-.002	3
209		5	max	49.896	1	3.881	8	8.258	9	0	1	.013	9	.004	10
210			min	-44.902	2	-4.696	7	-6.799	2	0	2	-.006	10	-.003	9
211	M22	1	max	38.78	2	5.167	3	6.181	6	.001	9	.003	1	.003	3
212			min	-43.543	1	-7.037	8	-4.906	1	-.002	10	-.005	6	-.006	8
213		2	max	39.825	2	2.868	3	3.739	6	.001	9	0	9	.001	9
214			min	-42.499	1	-4.596	8	-2.608	1	-.002	10	-.002	10	-.002	10
215		3	max	40.87	2	1.44	9	1.776	10	.001	9	.001	6	.001	8
216			min	-41.454	1	-2.783	10	-1.015	9	-.002	10	-.001	5	-.001	7
217		4	max	41.914	2	1.44	9	3.473	5	.001	9	.001	10	.002	10
218			min	-40.41	1	-3.85	7	-1.143	6	-.002	10	0	9	-.001	9
219		5	max	42.959	2	2.728	8	5.914	5	.001	9	.004	5	.005	7
220			min	-39.365	1	-6.291	7	-3.584	6	-.002	10	-.001	9	-.002	9
221	M23	1	max	204.024	1	5.61	3	15.203	6	0	9	.002	9	.004	3
222			min	-209.546	2	-8.231	8	-4.291	1	0	10	-.02	6	-.008	8
223		2	max	205.069	1	3.311	3	12.761	6	0	9	0	9	.001	9
224			min	-208.502	2	-5.789	8	-1.993	1	0	10	-.009	8	-.003	6
225		3	max	206.114	1	1.59	9	10.716	8	0	9	.002	2	.001	8
226			min	-207.457	2	-3.348	8	-1.104	9	0	10	-.002	1	-.001	7
227		4	max	207.158	1	1.59	9	11.52	5	0	9	.009	6	.003	8
228			min	-206.413	2	-4.585	7	-.874	9	0	10	-.001	1	-.001	9
229		5	max	208.203	1	1.59	9	13.961	5	0	9	.018	8	.006	7
230			min	-205.368	2	-7.026	7	-.644	9	0	10	-.002	9	-.003	9
231	M24	1	max	23.682	10	10.42	7	7.089	3	.002	9	.014	10	.006	7
232			min	-1102.439	9	-2.068	4	-8.154	4	-.002	10	-.012	9	-.002	4
233		2	max	25.076	10	4.645	7	6.525	9	.002	9	.007	10	0	9
234			min	-1101.045	9	-1.152	4	-6.18	4	-.002	10	-.006	9	-.002	5
235		3	max	26.47	10	-.051	10	6.756	9	.002	9	.004	6	.002	9
236			min	-1099.651	9	-2.251	9	-5.919	10	-.002	10	-.002	1	-.003	7
237		4	max	27.864	10	.682	4	6.987	9	.002	9	.007	9	.004	9
238			min	-1098.257	9	-6.905	7	-5.688	10	-.002	10	-.004	10	0	10
239		5	max	29.258	10	1.598	4	7.219	9	.002	9	.014	9	.01	7
240			min	-1096.863	9	-12.68	7	-7.376	2	-.002	10	-.01	10	-.001	4
241	M25	1	max	1097.886	9	12.581	8	8.919	4	.002	9	.014	9	.01	8
242			min	-20.05	10	-1.103	3	-7.929	3	-.002	10	-.011	4	0	10
243		2	max	1099.5	9	6.806	8	6.946	4	.002	9	.008	9	.004	9
244			min	-18.436	10	-.187	3	-6.587	9	-.002	10	-.004	10	0	2
245		3	max	1101.114	9	2.195	9	5.802	10	.002	9	.003	8	.002	9
246			min	-16.822	10	-.015	2	-6.819	9	-.002	10	-.001	3	-.004	8
247		4	max	1102.728	9	1.647	3	6.392	2	.002	9	.007	10	0	3
248			min	-15.208	10	-4.744	8	-7.05	9	-.002	10	-.006	9	-.002	8
249		5	max	1104.342	9	2.563	3	8.705	2	.002	9	.013	10	.006	8
250			min	-13.594	10	-10.518	8	-7.768	1	-.002	10	-.013	9	-.002	3
251	M26	1	max	-285.466	9	8.654	8	7.19	1	0	9	.019	2	.005	8
252			min	-1543.437	6	-3.452	2	-13.335	6	-.003	10	-.008	1	-.003	2
253		2	max	-284.072	9	2.967	5	4.877	1	0	9	.009	10	0	10
254			min	-1536.204	6	-2.736	2	-11.227	6	-.003	10	-.005	9	-.001	5
255		3	max	-282.678	9	-.058	1	3.152	9	0	9	.001	1	.002	2
256			min	-1528.972	6	-2.989	6	-9.52	10	-.003	10	-.004	6	-.002	1
257		4	max	-281.284	9	.286	3	2.921	9	0	9	.003	1	.006	10
258			min	-1521.74	6	-8.671	8	-9.752	10	-.003	10	-.012	6	0	1
259		5	max	-279.891	9	1.203	3	2.69	9	0	9	.004	9	.016	8

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
260			min	-1514.508	6	-14.446	8	-11.178	5	-.003	10	-.02	10	0	3
261	M27	1	max	1542.604	8	14.319	7	13.081	8	0	9	.004	9	.016	7
262			min	298.171	9	-.704	4	-5.403	3	-.003	10	-.023	8	.002	4
263		2	max	1549.955	8	8.544	7	11.283	8	0	9	.001	9	.006	10
264			min	299.785	9	.213	4	-3.43	3	-.003	10	-.011	8	0	9
265		3	max	1557.306	8	2.93	5	9.735	10	0	9	.002	2	.002	10
266			min	301.399	9	.506	2	-2.888	9	-.003	10	-.004	1	-.001	3
267		4	max	1564.657	8	2.301	1	9.966	10	0	9	.009	10	0	4
268			min	303.013	9	-3.006	7	-2.657	9	-.003	10	-.005	9	-.001	7
269		5	max	1572.008	8	3.017	1	11.852	5	0	9	.019	10	.005	6
270			min	304.628	9	-8.781	7	-2.426	9	-.003	10	-.007	9	-.003	1
271	M28	1	max	125.984	1	70.654	1	326.522	10	.032	9	.115	9	.028	2
272			min	-166.991	2	-32.306	2	-169.096	9	-.057	10	-.18	10	-.032	9
273		2	max	125.984	1	70.654	1	326.522	10	.032	9	.065	9	.038	2
274			min	-166.991	2	-32.306	2	-169.096	9	-.057	10	-.083	10	-.05	1
275		3	max	125.984	1	70.654	1	326.522	10	.032	9	.032	1	.048	2
276			min	-166.991	2	-32.306	2	-169.096	9	-.057	10	-.02	2	-.071	1
277		4	max	125.984	1	70.654	1	326.522	10	.032	9	.112	10	.057	2
278			min	-166.991	2	-32.306	2	-169.096	9	-.057	10	-.036	9	-.092	1
279		5	max	125.984	1	70.654	1	326.522	10	.032	9	.209	10	.067	2
280			min	-166.991	2	-32.306	2	-169.096	9	-.057	10	-.087	9	-.114	1
281	M29	1	max	410.774	2	65.689	10	175.108	9	.031	9	.177	10	.038	1
282			min	-403.742	1	-32.693	9	-330.038	10	-.056	10	-.124	9	-.037	2
283		2	max	410.774	2	65.689	10	175.108	9	.031	9	.079	10	.042	1
284			min	-403.742	1	-32.693	9	-330.038	10	-.056	10	-.072	9	-.052	2
285		3	max	410.774	2	65.689	10	175.108	9	.031	9	.054	2	.045	1
286			min	-403.742	1	-32.693	9	-330.038	10	-.056	10	-.072	1	-.067	2
287		4	max	410.774	2	65.689	10	175.108	9	.031	9	.034	2	.049	1
288			min	-403.742	1	-32.693	9	-330.038	10	-.056	10	-.118	10	-.082	2
289		5	max	410.774	2	65.689	10	175.108	9	.031	9	.085	9	.052	1
290			min	-403.742	1	-32.693	9	-330.038	10	-.056	10	-.216	10	-.097	2
291	M30	1	max	753.158	4	47.632	8	36.86	4	.028	10	0	11	0	11
292			min	-805.089	3	14.77	1	-36.86	3	-.077	9	0	1	0	1
293		2	max	751.472	4	23.816	8	18.43	4	.028	10	.049	4	-.02	10
294			min	-803.404	3	7.385	1	-18.43	3	-.077	9	-.049	3	-.063	5
295		3	max	749.787	4	0	11	0	11	.028	10	.065	4	-.026	10
296			min	-801.719	3	0	1	0	1	-.077	9	-.065	3	-.084	5
297		4	max	748.102	4	-7.385	10	18.43	3	.028	10	.049	4	-.02	10
298			min	-800.033	3	-23.816	5	-18.43	4	-.077	9	-.049	3	-.063	5
299		5	max	746.416	4	-14.77	10	36.86	3	.028	10	0	11	0	11
300			min	-798.348	3	-47.632	5	-36.86	4	-.077	9	0	1	0	1
301	M31	1	max	241.089	1	491.448	10	435.298	10	-.13	2	.016	4	.291	1
302			min	-286.865	2	54.989	3	-56.122	4	-.727	10	-.081	10	-.313	2
303		2	max	241.089	1	491.448	10	435.298	10	-.13	2	.012	4	.284	1
304			min	-286.865	2	54.989	3	-56.122	4	-.727	10	-.057	7	-.32	2
305		3	max	241.089	1	491.448	10	435.298	10	-.13	2	.009	4	.278	1
306			min	-286.865	2	54.989	3	-56.122	4	-.727	10	-.039	7	-.326	2
307		4	max	241.089	1	491.448	10	435.298	10	-.13	2	.01	2	.271	1
308			min	-286.865	2	54.989	3	-56.122	4	-.727	10	-.023	1	-.333	2
309		5	max	241.089	1	491.448	10	435.298	10	-.13	2	.028	10	.265	1
310			min	-286.865	2	54.989	3	-56.122	4	-.727	10	-.015	1	-.34	2
311	M32	1	max	175.034	1	271.506	7	-4.993	3	-.074	4	.081	10	.075	3

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
312			min	-129.272	2	-278.674	10	-435.4	10	-.729	10	.003	2	-.141	10
313		2	max	175.034	1	271.506	7	-4.993	3	-.074	4	.054	10	.065	3
314			min	-129.272	2	-278.674	10	-435.4	10	-.729	10	-.001	2	-.123	10
315		3	max	175.034	1	271.506	7	-4.993	3	-.074	4	.037	5	.055	2
316			min	-129.272	2	-278.674	10	-435.4	10	-.729	10	-.006	2	-.106	4
317		4	max	175.034	1	271.506	7	-4.993	3	-.074	4	.023	1	.049	2
318			min	-129.272	2	-278.674	10	-435.4	10	-.729	10	-.01	2	-.113	1
319		5	max	175.034	1	271.506	7	-4.993	3	-.074	4	.015	1	.042	2
320			min	-129.272	2	-278.674	10	-435.4	10	-.729	10	-.028	10	-.12	8
321	M33	1	max	492.627	1	469.169	5	411.25	3	.188	2	.188	4	.435	2
322			min	-563.183	2	-114.722	2	-393.197	4	-.313	9	-.157	3	-.484	1
323		2	max	492.627	1	469.169	5	411.25	3	.188	2	.163	4	.442	2
324			min	-563.183	2	-114.722	2	-393.197	4	-.313	9	-.132	3	-.508	1
325		3	max	492.627	1	469.169	5	411.25	3	.188	2	.138	4	.449	2
326			min	-563.183	2	-114.722	2	-393.197	4	-.313	9	-.106	3	-.532	1
327		4	max	492.627	1	469.169	5	411.25	3	.188	2	.114	2	.456	2
328			min	-563.183	2	-114.722	2	-393.197	4	-.313	9	-.082	1	-.556	1
329		5	max	492.627	1	469.169	5	411.25	3	.188	2	.107	2	.463	2
330			min	-563.183	2	-114.722	2	-393.197	4	-.313	9	-.073	1	-.58	1
331	M34	1	max	537.64	1	510.213	6	118.835	2	.61	4	.107	1	.475	1
332			min	-467.079	2	-90.547	1	-187.605	9	-.639	3	-.137	2	-.517	2
333		2	max	537.64	1	510.213	6	118.835	2	.61	4	.099	1	.481	1
334			min	-467.079	2	-90.547	1	-187.605	9	-.639	3	-.129	2	-.543	2
335		3	max	537.64	1	510.213	6	118.835	2	.61	4	.09	1	.486	1
336			min	-467.079	2	-90.547	1	-187.605	9	-.639	3	-.122	2	-.568	2
337		4	max	537.64	1	510.213	6	118.835	2	.61	4	.082	1	.492	1
338			min	-467.079	2	-90.547	1	-187.605	9	-.639	3	-.114	2	-.594	2
339		5	max	537.64	1	510.213	6	118.835	2	.61	4	.073	1	.498	1
340			min	-467.079	2	-90.547	1	-187.605	9	-.639	3	-.107	2	-.619	2
341	M35	1	max	116.997	1	192.015	7	207.668	3	.309	10	.152	4	.128	10
342			min	-114.365	2	1.07	4	-271.509	4	-.168	1	-.105	3	-.082	2
343		2	max	116.997	1	192.015	7	207.668	3	.309	10	.135	4	.123	10
344			min	-114.365	2	1.07	4	-271.509	4	-.168	1	-.092	3	-.086	2
345		3	max	116.997	1	192.015	7	207.668	3	.309	10	.118	4	.119	10
346			min	-114.365	2	1.07	4	-271.509	4	-.168	1	-.079	3	-.089	2
347		4	max	116.997	1	192.015	7	207.668	3	.309	10	.101	4	.114	10
348			min	-114.365	2	1.07	4	-271.509	4	-.168	1	-.066	3	-.093	2
349		5	max	116.997	1	192.015	7	207.668	3	.309	10	.084	4	.11	10
350			min	-114.365	2	1.07	4	-271.509	4	-.168	1	-.063	9	-.097	2
351	M36	1	max	216.198	1	226.158	8	185.836	10	.31	10	.057	3	.326	2
352			min	-218.834	2	11.903	3	-88.286	1	-.199	3	-.122	10	-.282	1
353		2	max	216.198	1	226.158	8	185.836	10	.31	10	.056	3	.32	2
354			min	-218.834	2	11.903	3	-88.286	1	-.199	3	-.11	10	-.287	1
355		3	max	216.198	1	226.158	8	185.836	10	.31	10	.056	9	.314	2
356			min	-218.834	2	11.903	3	-88.286	1	-.199	3	-.098	10	-.292	1
357		4	max	216.198	1	226.158	8	185.836	10	.31	10	.059	9	.308	2
358			min	-218.834	2	11.903	3	-88.286	1	-.199	3	-.089	4	-.296	1
359		5	max	216.198	1	226.158	8	185.836	10	.31	10	.063	9	.302	2
360			min	-218.834	2	11.903	3	-88.286	1	-.199	3	-.084	4	-.301	1
361	M37	1	max	49.833	4	399.43	9	45.8	3	.599	9	.06	9	.092	4
362			min	-45.074	9	-.028	2	-358.552	9	.003	1	-.013	3	-.068	3
363		2	max	49.833	4	399.43	9	45.8	3	.599	9	.038	9	.091	4

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
364			min	-45.074	9	-.028	2	-358.552	9	.003	1	-.01	3	-.068	3
365		3	max	49.833	4	399.43	9	45.8	3	.599	9	.015	9	.09	4
366			min	-45.074	9	-.028	2	-358.552	9	.003	1	-.007	3	-.082	9
367		4	max	49.833	4	399.43	9	45.8	3	.599	9	.007	1	.089	4
368			min	-45.074	9	-.028	2	-358.552	9	.003	1	-.007	9	-.107	9
369		5	max	49.833	4	399.43	9	45.8	3	.599	9	.007	1	.088	4
370			min	-45.074	9	-.028	2	-358.552	9	.003	1	-.03	9	-.132	9
371	M38	1	max	54.893	1	60.851	6	358.607	9	.6	9	-.006	4	.123	2
372			min	-63.723	2	-366.214	9	-.015	1	-.017	3	-.06	9	-.12	9
373		2	max	54.893	1	60.851	6	358.607	9	.6	9	-.003	2	.121	2
374			min	-63.723	2	-366.214	9	-.015	1	-.017	3	-.038	9	-.101	1
375		3	max	54.893	1	60.851	6	358.607	9	.6	9	.001	2	.119	2
376			min	-63.723	2	-366.214	9	-.015	1	-.017	3	-.015	9	-.101	1
377		4	max	54.893	1	60.851	6	358.607	9	.6	9	.007	9	.116	2
378			min	-63.723	2	-366.214	9	-.015	1	-.017	3	-.007	1	-.101	1
379		5	max	54.893	1	60.851	6	358.607	9	.6	9	.03	9	.114	2
380			min	-63.723	2	-366.214	9	-.015	1	-.017	3	-.007	1	-.101	1
381	M39	1	max	0	11	0	11	0	11	0	11	0	11	0	11
382			min	0	1	0	1	0	1	0	1	0	1	0	1
383		2	max	45.822	3	-20.69	2	59.705	2	.092	4	.129	3	.574	9
384			min	-358.536	9	-417.315	9	-68.61	1	-.068	3	-.17	4	-.064	2
385		3	max	55.297	1	148.567	9	89.309	10	.198	10	.084	2	.128	10
386			min	-348.989	10	-180.72	10	-61.435	9	-.125	2	-.099	1	-.045	4
387		4	max	56.257	4	507.834	10	279.886	1	.313	2	.881	2	.706	10
388			min	-435.282	10	75.422	3	-325.995	2	-.291	1	-.801	1	.001	3
389		5	max	0	11	0	11	0	11	0	11	0	11	0	11
390			min	0	1	0	1	0	1	0	1	0	1	0	1
391	M40	1	max	0	11	0	11	0	11	0	11	0	11	0	11
392			min	0	1	0	1	0	1	0	1	0	1	0	1
393		2	max	358.536	9	-23.664	1	103.434	2	.123	2	.252	2	.543	9
394			min	.12	1	-407.03	9	-94.543	1	-.12	9	-.213	1	-.042	4
395		3	max	484.587	2	145.242	9	57.381	3	.449	2	.207	2	.135	9
396			min	-356.773	1	-194.866	4	-97.831	4	-.383	1	-.215	1	-.05	3
397		4	max	435.282	10	496.13	10	215.724	1	.141	10	.439	2	.67	10
398			min	4.958	3	73.819	4	-169.537	2	-.075	3	-.521	1	.099	9
399		5	max	0	11	0	11	0	11	0	11	0	11	0	11
400			min	0	1	0	1	0	1	0	1	0	1	0	1

Envelope AISC 14th(360-10): LRFD Steel Code Checks

	Member	Shape	Cod...	Loc[ft]	LC	Shear Check	Loc.....		LC	phi*P...	phi*P...	phi*M...	phi*M.....		Eqn
1	MP2A	PIPE_2.0	.591	5.667	2	.113	2.3...		2	14916...	32130	1.872	1.872	...	H1-1b
2	M27	SR 0.75	.535	0	8	.025	0		10	3758.9	14320...	.184	.184	...	H1-1a
3	M2	PL5/8x3.5	.523	0	8	.289	0	y	10	66866...	70875	.923	5.168	...	H1-1b
4	M4	PL5/8x3.5	.518	0	5	.282	0	y	10	66866...	70875	.923	5.168	...	H1-1b
5	MP1A	PIPE_2.0	.403	2.333	10	.063	5.6...		10	14916...	32130	1.872	1.872	...	H1-1b
6	M1	PL5/8x3.5	.377	0	9	.225	0	y	9	66866...	70875	.923	5.168	...	H1-1b
7	M25	SR 0.75	.369	0	9	.018	0		9	3758.9	14320...	.184	.184	...	H1-1a
8	M3	PL5/8x3.5	.366	0	9	.216	0	y	9	66866...	70875	.923	5.168	...	H1-1b
9	MP4A	PIPE_2.0	.333	2.333	9	.055	5.6...		9	14916...	32130	1.872	1.872	...	H1-1b
10	M7	PIPE_2.0	.312	2.318	10	.258	2.3...		8	29810...	32130	1.872	1.872	...	H1-1b

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

	Member	Shape	Cod...	Loc[ft]	LC	Shear Check	Loc...		LC	phi*P...	phi*P...	phi*M...	phi*M...	...	Eqn
11	M8	PIPE_2.0	.311	2.318	10	.262	2.3...		6	29810...	32130	1.872	1.872	...	H1-1b
12	M40	PIPE_2.5	.282	8.854	10	.148	8.2...		2	14558...	50715	3.596	3.596	...	H1-1b
13	M39	PIPE_2.5	.266	9.245	2	.177	9.1...		2	14558...	50715	3.596	3.596	...	H1-1b
14	M6	PIPE_2.0	.242	2.318	9	.166	2.3...		9	29810...	32130	1.872	1.872	2	H1-1b
15	M5	PIPE_2.0	.235	2.318	9	.164	2.3...		9	29810...	32130	1.872	1.872	...	H1-1b
16	MP3A	PIPE_2.0	.218	5.667	2	.077	2.3...		4	14916...	32130	1.872	1.872	...	H1-1b
17	M23	SR_0.625	.213	0	6	.012	3.3...		10	2339....	9946.8	.097	.097	...	H1-1b
18	M26	SR_0.75	.183	3.976	8	.025	3.9...		10	3758.9	14320...	.184	.184	...	H1-1b
19	M21	SR_0.625	.142	3.333	9	.012	3.3...		2	2339....	9946.8	.097	.097	...	H1-1b
20	M24	SR_0.75	.129	3.976	9	.018	3.9...		9	3758.9	14320...	.184	.184	...	H1-1b
21	M19	PIPE_2.0	.085	7.092	1	.062	0		10	17578...	32130	1.872	1.872	...	H1-1...
22	M22	SR_0.625	.070	0	8	.025	3.3...		10	2339....	9946.8	.097	.097	...	H1-1b
23	M20	SR_0.625	.061	0	4	.025	0		10	2339....	9946.8	.097	.097	...	H1-1b
24	M30	PIPE_2.0	.059	3.546	4	.048	0		9	17578...	32130	1.872	1.872	...	H1-1b

EXHIBIT 10

Construction Drawings

CTNL257A

165 HUNTINGTON ROAD
SCOTLAND, CT 06264
WINDHAM COUNTY

SITE NO.: CTNL257A

RF DESIGN GUIDELINE: 67E5A998E 6160

SCOPE OF WORK

INSTALL:
- 9 ANTENNAS
- 6 RRUs
- 1 B160 BATTERY CABINET
- 1 6160 CABINET
- 1 PPC CABINET
- 1 PURCELL CABINET
- 1 GPS ANTENNA
- 3 HYBRID CABLES
- 3 SECTOR FRAME MOUNTS
- 1 10'x15' CONCRETE PAD
- 1 8'x10' ICE CANOPY
- 1 ICE BRIDGE
- 1 GENERATOR
- 1 ATS

SITE NOTES

1. THIS IS AN UNMANNED AND RESTRICTED ACCESS TELECOMMUNICATION FACILITY, AND IS NOT FOR HUMAN HABITATION. IT WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNAL FOR THE PURPOSE OF PROVIDING PUBLIC CELLULAR SERVICE.
   - ADA COMPLIANCE NOT REQUIRED.
   - POTABLE WATER OR SANITARY SERVICE IS NOT REQUIRED.
   - NO OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES REQUIRED.
2. CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON JOB SITE. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK. FAILURE TO NOTIFY THE ARCHITECT/ENGINEER PLACE THE RESPONSIBILITY ON THE CONTRACTOR TO CORRECT THE DISCREPANCIES AT THE CONTRACTOR'S EXPENSE.
3. NEW CONSTRUCTION WILL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES.
   - BUILDING CODE: 2018 CONNECTICUT STATE BUILDING CODE
   - ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE
   - STRUCTURAL CODE: TIA/EIA-222-G STRUCTURAL STANDARDS FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.

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

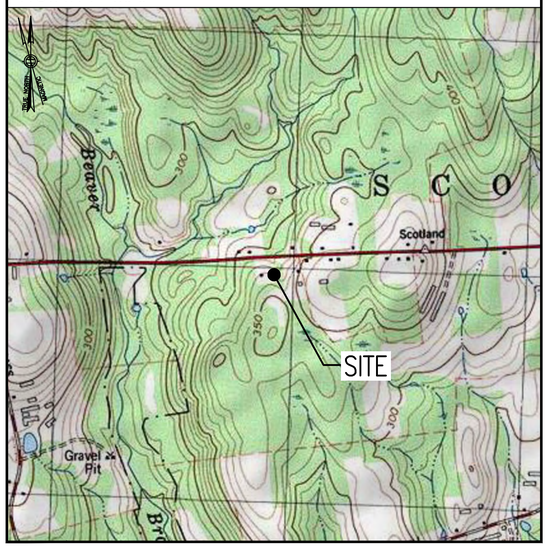
GENERAL NOTES

1. 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.
2. 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.
3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE OMNIPOINT 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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.
11. 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.
12. 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.
13. 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.
14. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
15. 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.
16. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.
17. 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

SCALE: 1" = 1000'-0"



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. TAKE EXIT ON THE LEFT FOR I-395 SOUTH. TAKE EXIT 32 TO MERGE ONTO CT-14 WEST. TURN RIGHT ONTO CT-12 NORTH. SLIGHT LEFT ONTO CT-14 WEST. TURN RIGHT TO STAY ON CT-14 WEST. SITE WILL BE ON THE LEFT.

SHEET INDEX

SHT. NO.	DESCRIPTION	VER.
T-1	TITLE SHEET	1
GN-1	GENERAL NOTES	1
A-1	COMPOUND & EQUIPMENT PLANS	1
A-2	TOWER ELEVATION & ANTENNA PLANS	1
A-3	SITE DETAILS 1 OF 2	1
A-4	SITE DETAILS 2 OF 2	1
A-5	GENERATOR SPECIFICATIONS 1	1
A-6	GENERATOR SPECIFICATIONS 2	1
A-7	ANTENNA & FEEDLINE CHARTS	1
E-1	SITE ELECTRIC & GROUNDING DETAILS 1 OF 2	1
E-2	SITE ELECTRIC & GROUNDING DETAILS 2 OF 2	1
E-3	ANTENNA ELECTRIC & GROUNDING DETAILS	1

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:	CTNL257A
SBA SITE NUMBER:	CT00990-S
SBA SITE NAME:	SCOTLAND
SITE ADDRESS:	165 HUNTINGTON ROAD SCOTLAND, CT 06264
PROPERTY OWNER:	PASSARELLO PAULINE M. & GUY T. PO BOX 153 SCOTLAND, CT 06264
TOWER OWNER:	SBA TOWERS VII, LLC 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561-226-9523
COUNTY:	WINDHAM COUNTY
ZONING DISTRICT:	RESIDENTIAL/AGRICULTURAL
STRUCTURE TYPE:	SELF-SUPPORT TOWER
STRUCTURE HEIGHT:	240'
APPLICANT:	T-MOBILE NORTHEAST LLC 15 COMMERCE WAY, SUITE B NORTON, MA 02766
SBA RSM:	STEPHEN ROTH PHONE: 860-539-4920 EMAIL: SRoth@sbasite.com
ARCHITECT:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 200 BOSTON POST ROAD WEST, SUITE 000 MARLBOROUGH, MA 00752
STRUCTURAL ENGINEER:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 200 BOSTON POST ROAD WEST, SUITE 000 MARLBOROUGH, MA 00752
SITE CONTROL POINT:	LATITUDE: N.41.695910° N.41°41'45.28" LONGITUDE W.72.097070° W.72°05'49.45"

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).

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

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil ·Structural ·Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED PROFESSIONAL CIVIL ENGINEER
8/31/2021

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	08/31/21	ISSUED FOR CONSTRUCTION	JRV
0	08/10/21	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CTNL257A

SITE ADDRESS:
165 HUNTINGTON ROAD
SCOTLAND, CT 06264

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

1815.244

GENERAL NOTES:

1. 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

2. 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.

3. 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.

4. 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.

5. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

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

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

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.

9. 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.

10. 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.

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION AND RETURN DISTURBED AREAS TO ORIGINAL CONDITIONS.

13. 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.

14. 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.

15. CONSTRUCTION SHALL COMPLY WITH ALL T–MOBILE STANDARDS AND SPECIFICATIONS.

16. 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.

17. 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.

18. 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:

1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.

2. 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.

3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.

4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.

5. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.

6. 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.

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

8. 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.

9. 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.

10. 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.

11. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE T–MOBILE SPECIFICATION FOR SITE SIGNAGE.

CONCRETE AND REINFORCING STEEL NOTES:

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

2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (4000PSI) MAY BE USED. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 381 CODE REQUIREMENTS

3. 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.

4. 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 LARGER .....2 IN.
   #5 AND SMALLER & WWF .....1½ IN.
   CONCRETE NOT EXPOSED TO EARTH OR WEATHER
   OR NOT CAST AGAINST THE GROUND:
   SLAB AND WALL .....¾ IN.
   BEAMS AND COLUMNS .....1½ IN.

5. A CHAMFER ¾" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

6. 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.

7. 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 SUPPLIERS 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.

8. 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.

9. 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:

1. 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".

2. 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.

3. BOLTED CONNECTIONS SHALL USE BEARING TYPE ASTM A325 BOLTS (⅞"ø) AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE. ALL BOLTS SHALL BE GALVANIZED OR STAINLESS STEEL.

4. NON–STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE ⅝" DIA. ASTM A 307 BOLTS (GALV) UNLESS NOTED OTHERWISE.

5. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL

6. ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

1. EXCAVATE AS REQUIRED TO REMOVE VEGETATION AND TOPSOIL TO EXPOSE NATURAL SUBGRADE AND PLACE CRUSHED STONE AS REQUIRED.

2. COMPACTION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.

3. 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.

4. 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.

5. 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:

1. HAND OPERATED DOUBLE DRUN, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

CONSTRUCTION NOTES:

1. FIELD VERIFICATION:
SUBCONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, T–MOBILE ANTENNA PLATFORM LOCATION AND UTILITY TRENCHWORK.

2. COORDINATION OF WORK:
SUBCONTRACTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH CONTRACTOR.

3. 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:

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

2. SUBCONTRACTOR SHALL MODIFY OR INSTALL CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLING TO THE NEW BTS EQUIPMENT. SUBCONTRACTOR SHALL SUBMIT MODIFICATIONS TO CONTRACTOR FOR APPROVAL.

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

4. CABLES SHALL NOT BE ROUTED THROUGH LADDER–STYLE CABLE TRAY RUNGS.

5. 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.

6. 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.

7. 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).

8. PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.

9. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.

10. 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.

11. 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.

12. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.

13. 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.

14. 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).

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

16. NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.

17. 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.

18. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.

19. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.

20. 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.

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

22. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION–TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.

23. CABINETS, BOXES AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.

24. CABINETS, BOXES AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.

25. 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.

26. 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.

27. 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.

28. 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.

29. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.

30. 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.

31. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.

32. CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.

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STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25937
LICENSED
PROFESSIONAL CIVIL ENGINEER
8/31/2021

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	08/31/21	ISSUED FOR CONSTRUCTION	JRV
0	08/10/21	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CTNL257A

SITE ADDRESS:
165 HUNTINGTON ROAD
SCOTLAND, CT 06264

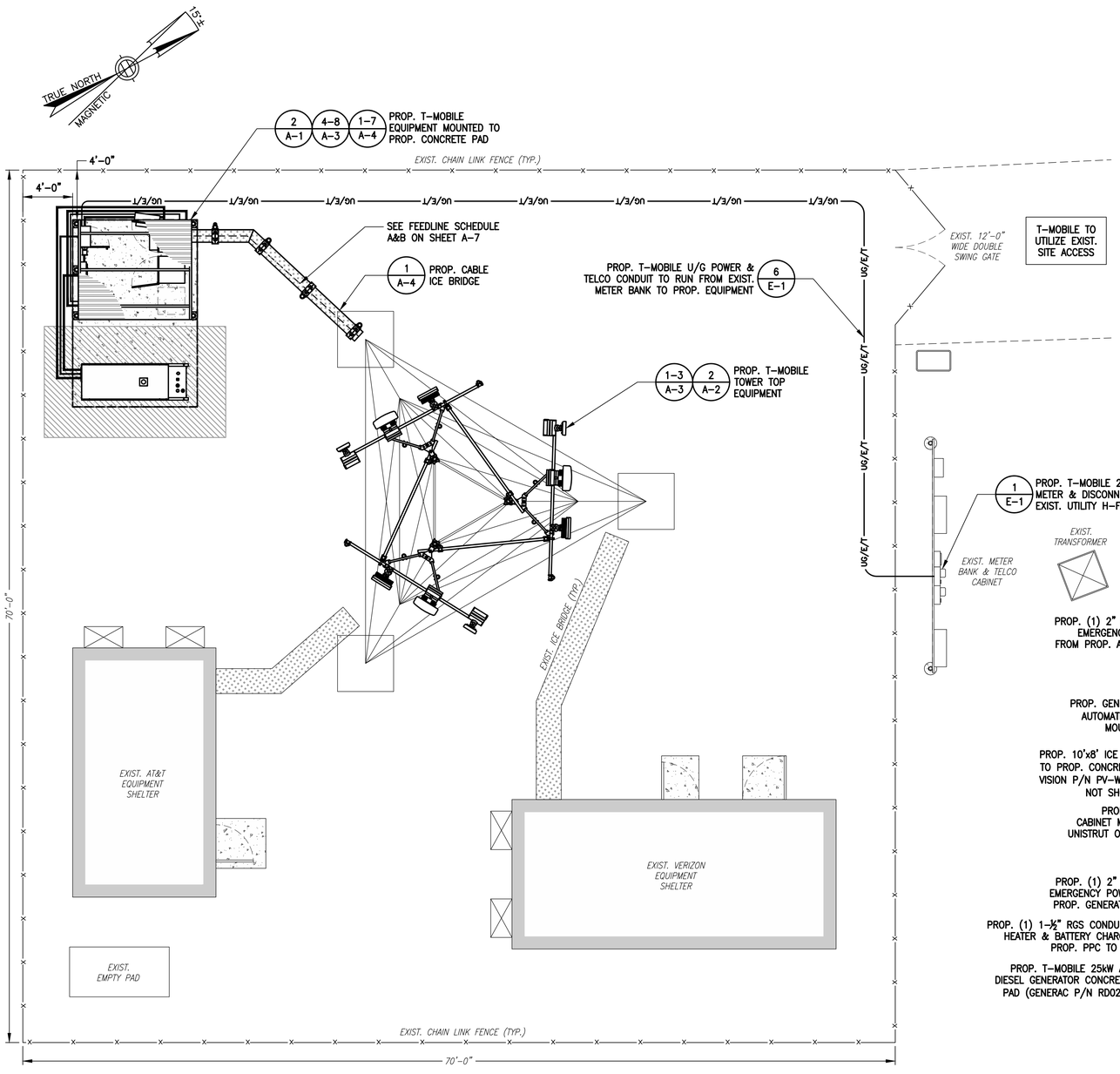
SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-1

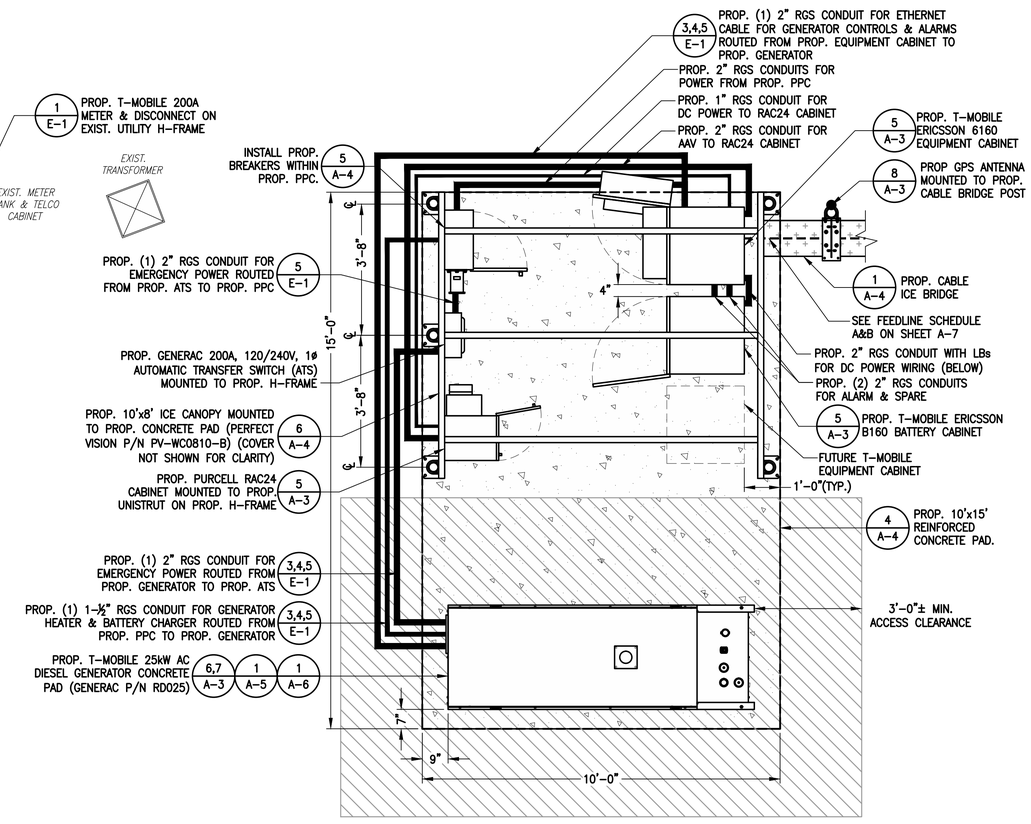
1815.244

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).



COMPOUND PLAN
SCALE: 1" = 5'-0"
1 A-1
0 5'-0" 10'-0 15'-0"



PROPOSED EQUIPMENT PLAN
SCALE: 1/2" = 1'-0"
2 A-1
0 2'-0" 4'-0" 6'-0"

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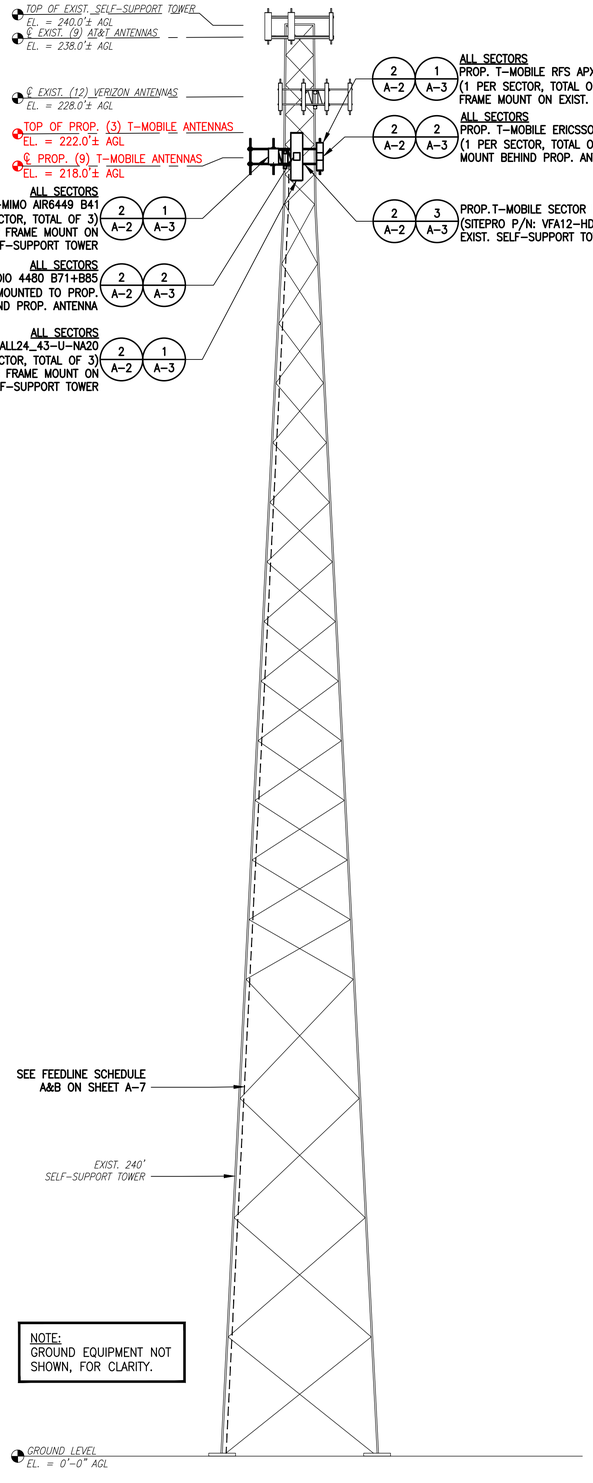
SCOTLAND, CT 06264

SHEET TITLE
COMPOUND & EQUIPMENT PLAN

SHEET NUMBER
A-1

1815.244



NOTE:
GROUND EQUIPMENT NOT SHOWN, FOR CLARITY.

TOWER ELEVATION
SCALE: 1" = 10'-0"
1 A-2
0 10'-0" 20'-0" 30'-0"

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.

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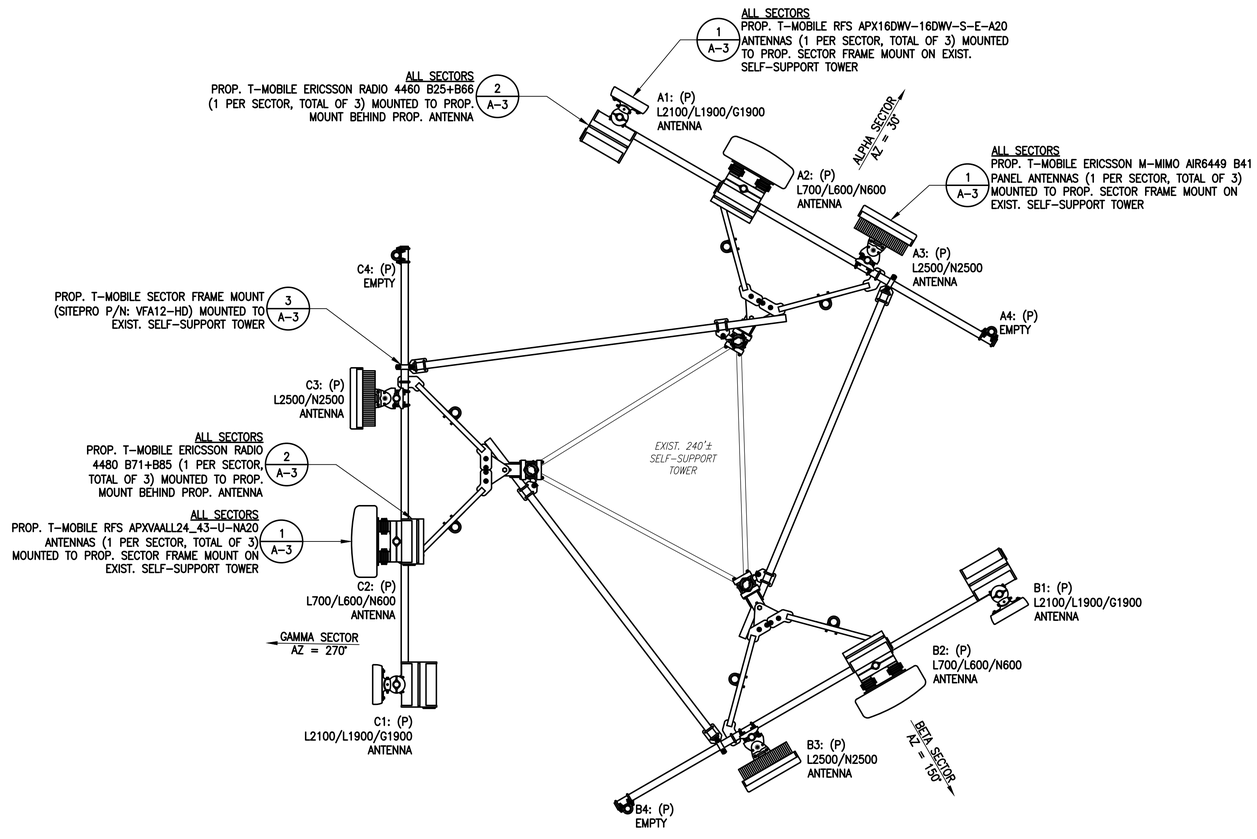
RAD CENTER NOTE:
T-MOBILE RAD CENTER SHOWN IN RED TEXT BASED ON SBA-PROVIDED CO-LOCATION APPLICATION, EQUIPMENT DATABASE, AND STRUCTURAL ANALYSIS. THE SBA-PROVIDED ANTENNA RAD CENTER SHALL SUPERSEDE ANY CONFLICTING INFORMATION DERIVED FROM THE T-MOBILE RFDS.



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

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

ANTENNA STATUS LEGEND:

EMPTY - EMPTY PIPE

(E) - EXISTING
(P) - INSTALL
(F) - FUTURE

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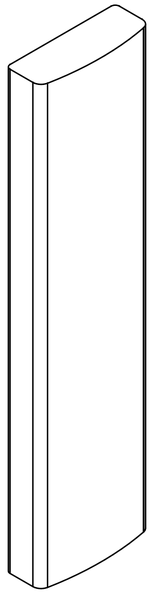
SITE ADDRESS:
165 HUNTINGTON ROAD
SCOTLAND, CT 06264

SHEET TITLE
TOWER ELEVATION & ANTENNA PLAN

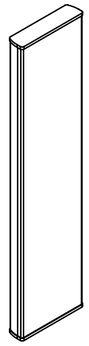
SHEET NUMBER
A-2

1815.244



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



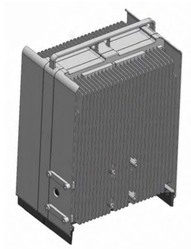
RFS APX16DWV-16DWV-S-E-A20 ANTENNA

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



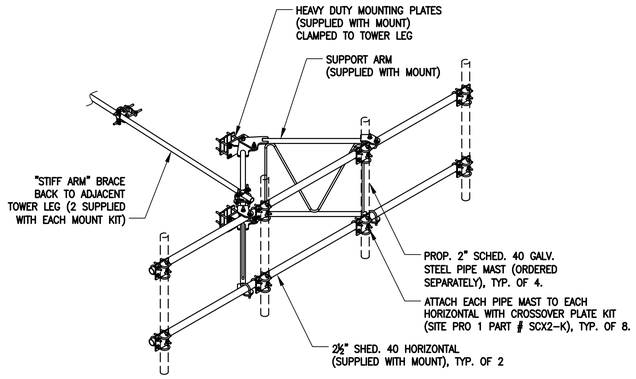
ERICSSON RADIO 4460 B25+B66

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



SITE-PRO 1 12'-6" HEAVY-DUTY V-FRAME

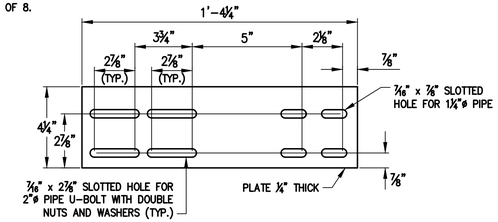
PART NUMBER: VFA12-HD
(TOTAL OF 3 REQUIRED)

TYPICAL SITE PRO 1, 12'-6" HEAVY DUTY V-FRAME ASSEMBLY
SCALE: N.T.S.
3 / A-3

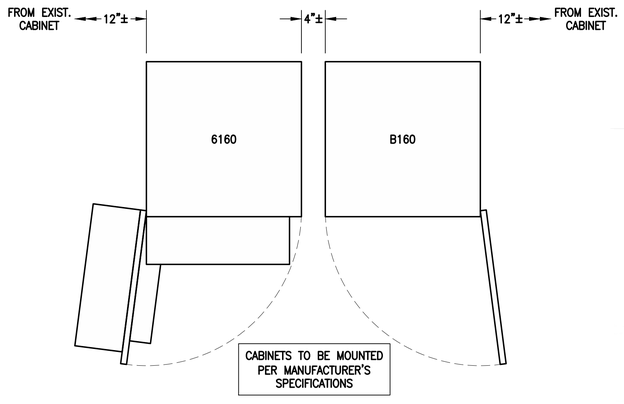
PURCELL SITE SUPPORT CABINET RAC24

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

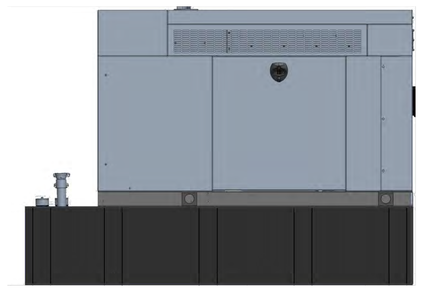
DIMENSIONS: 63.25"H x 26.0"W x 34.0"D
WEIGHT: 680.0 lbs
QUANTITY: TOTAL OF 1

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

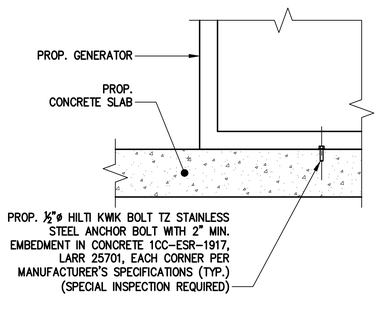


GENERAC RD025 25kW AC DIESEL GENERATOR

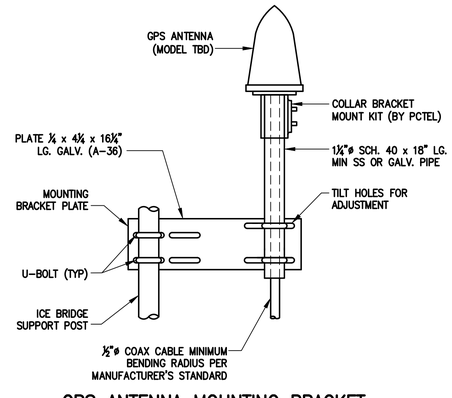
DIMENSIONS: 103.4"L x 35.0"W x 91.7"H
WEIGHT: 2,946 lbs
QUANTITY: TOTAL OF 1

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

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



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



GPS ANTENNA MOUNTING BRACKET

1. THE GPS ANTENNA MOUNT IS DESIGNED TO FASTEN TO A STANDARD 1"-1½" 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.
2. 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: NTS
8 / A-3

T-MOBILE NORTHEAST LLC
15 COMMERCE WAY, SUITE B
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STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25937
LICENSED PROFESSIONAL CIVIL ENGINEER
8/31/2021

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	08/31/21	ISSUED FOR CONSTRUCTION	JRV
0	08/10/21	ISSUED FOR REVIEW	JRV

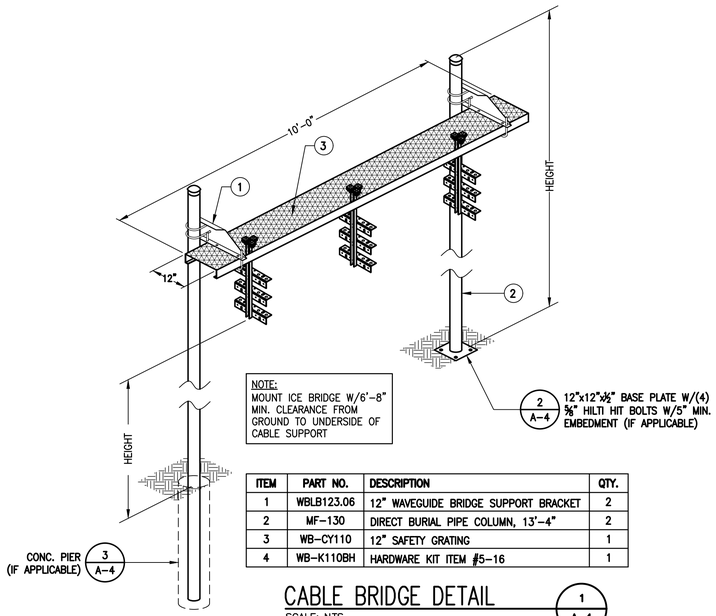
SITE NUMBER:
CTNL257A

SITE ADDRESS:
165 HUNTINGTON ROAD
SCOTLAND, CT 06264

SHEET TITLE
SITE DETAILS
1 OF 2

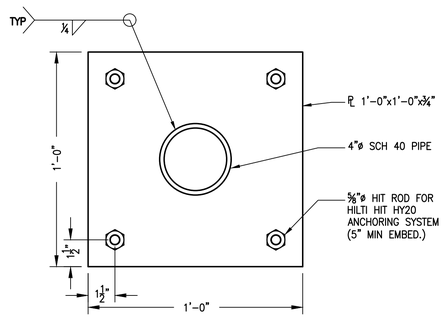
SHEET NUMBER
A-3

1815.244

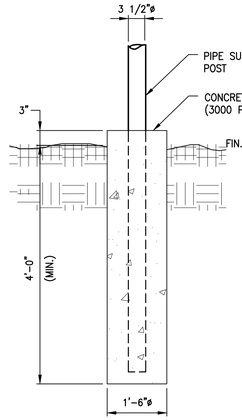


ITEM	PART NO.	DESCRIPTION	QTY.
1	WBLB123.06	12" WAVEGUIDE BRIDGE SUPPORT BRACKET	2
2	MF-130	DIRECT BURIAL PIPE COLUMN, 13'-4"	2
3	WB-CY110	12" SAFETY GRATING	1
4	WB-K110BH	HARDWARE KIT ITEM #5-16	1

CABLE BRIDGE DETAIL 1 A-4
SCALE: NTS



CABLE BRIDGE BASE PLATE 2 A-4
SCALE: NTS



NOTES:

1. FOR EXPOSED LEDGE, PROVIDE GROUT LEVELING PAD. INSTALL (2)-⅝"ø EXPANSION ANCHORS, (6" LONG).
2. FOR BURIED LEDGE AT LESS THAN 3'-6" BELOW FINISH GRADE, CORE 8"ø 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
3. FOR CONCRETE, FASTEN BASEPLATE WITH (2)-⅝"ø EXPANSION ANCHORS, (6" LONG).
4. FOR POSTS ON CONCRETE OR EXPOSED LEDGE, PROVIDE 4"x8"x⅜" BASE PLATE WITH (2)-1⅛"ø HOLES @ 6" O.C.

CABLE BRIDGE PIER 3 A-4
SCALE: NTS

EMERSON CAC-A75201090 PPC
DIMENSIONS: 24.0"H x 15.7"W x 20.0"D
QUANTITY: TOTAL OF 1

PPC DETAIL 5 A-4
SCALE: N.T.S.

CONCRETE GENERAL NOTES

1. ALL CONCRETE WORK SHALL CONFORM TO ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" AND TO THE PROJECT SPECIFICATIONS.
2. ALL CONCRETE IS TO BE NORMAL DENSITY CONCRETE WITH A MAXIMUM SLUMP OF 4 INCHES. MAXIMUM AGGREGATE SIZE ¾ INCH. NO ADDITIONAL WATER SHALL BE ADDED TO THE CONCRETE AT THE JOB SITE.
3. 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.
4. 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.
5. ALL FORMWORK OFFSET TOLERANCES (PER ACI 117) TO BE CLASS A.
6. 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 I AND F F WITHIN 72 HOURS OF SLAB CONSTRUCTION.
7. CABINETS ON SLAB (IF APPLICABLE). ALLOWABLE CAPACITY OF CONCRETE USED IN DESIGN MIN. 4000 PSI.

FOUNDATION NOTES:

1. DESIGN INFORMATION AND GENERAL REQUIREMENTS

   1.1 CODES

   A. DESIGN CONFORMS TO INTERNATIONAL BUILDING CODE 2012.

   B. AMERICAN CONCRETE INSTITUTE "BUILDING COADE REQUIREMENTS FOR REINFORCED CONCRETE," ACI 318-08.

2. EARTHWORK

   2.1 FOUNDATIONS

   A. 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.

   B. DESIGN, FURNISH AND INSTALL ALL TEMPORARY SHEETING, SHORING AND DRAINAGE NECESSARY TO MAINTAIN THE EXCAVATION AND PROTECT SURROUNDING STRUCTURES AND UTILITIES.

   C. THOROUGHLY COMPACT ALL BOTTOM OF FOOTINGS PRIOR TO PLACING ANY CONCRETE.

3. CONCRETE

   3.1 FORMWORK

   A. CONCRETE CONSTRUCTION SHALL CONFORM TO "SPECIFICATIONS FOR STRUCTURAL, CONCRETE FOR BUILDINGS," (ACI 301-89).

   B. FORMWORK SHALL CONFORM TO ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS."

   3.2 REINFORCEMENT

   A. 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, TIE BARS, SUPPORT BARS, ETC. HOOK LENGTHS SHALL BE 12 BAR DIAMETERS.

   B. CONCRETE COVER FOR REINFORCING BARS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED:

   FOOTINGS & SLABS CAST AGAINST GROUND . . . . . 3"
   CONCRETE TO BE IN CONTACT WITH GROUND
   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, GIRDERS & COLUMNS . . . . . 1-1/2"
   SLABS & WALLS . . . . . 3/4"

   3.3 CAST-IN-PLACE-CONCRETE

   A. MINIMUM 28 DAY CYLINDER STRENGHT 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

   B. MIX DESIGN TO BE IN ACCORDANCE WITH ACI 318, CHAPTER 5. NO CALCIUM CHLORIDE OR ADMIXTURE CONTAINING CHLORIDES SHALL BE USED IN ANY CONCRETE.

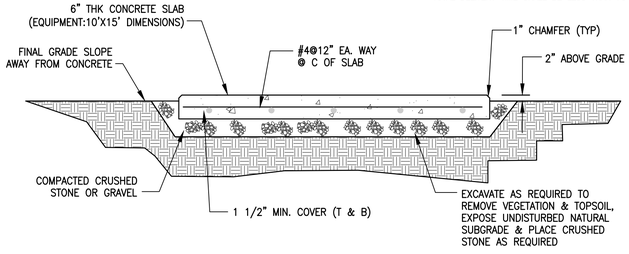
   C. COARSE AGGREGATE FOR NORMAL WEIGHT CONCRETE SHALL CONFORM TO ASTM C33 SIZE $57. COARSE AGGREGATE FOR LIGHT WEIGHT CONCRETE SHALL CONFORM TO ASTM C330 GRADED 3/4" TO 1/4".

   D. COLD WEATHER PLACEMENT SHALL COMPLY WITH ACI 306.1.

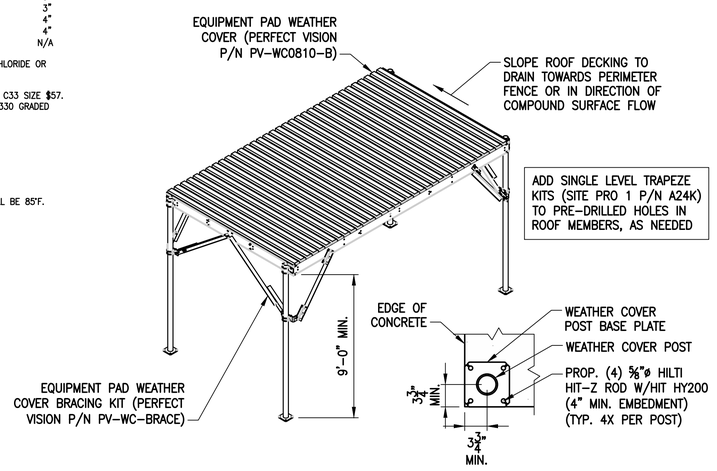
   E. HOT WEATHER PLACEMENT SHALL COMPLY WITH ACI 305 R.

   F. CHAMFER ALL EXPOSED EDGES 3/4".

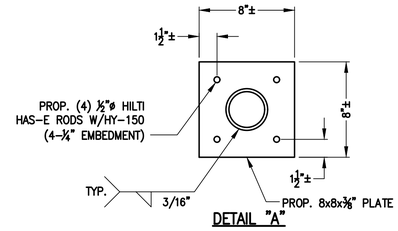
   G. THE MAXIMUM TEMPERATURE OF ALL CONCRETE AT DELIVERY TO THE SITE SHALL BE 85°F. TOTAL DELIVERY TIME SHALL BE LESS THAN 75 MINUTES.



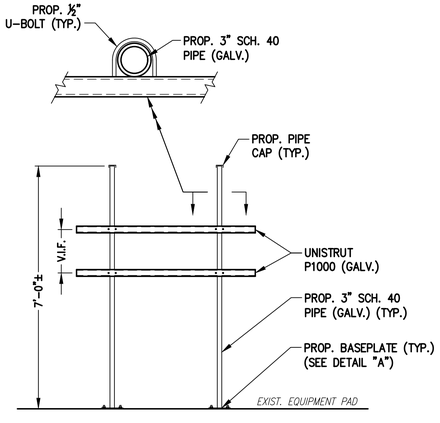
CONCRETE PAD DETAIL 4 A-4
SCALE: N.T.S.



EQUIPMENT PAD WEATHER COVER DETAIL 6 A-4
SCALE: N.T.S.



DETAIL "A"



H-FRAME DETAIL 6 A-4
SCALE: N.T.S.

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

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MARLBOROUGH, MA 01752
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www.chappellengineering.com

STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25937
LICENSED
PROFESSIONAL CIVIL ENGINEER
8/31/2021

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	08/31/21	ISSUED FOR CONSTRUCTION	JRV
0	08/10/21	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CTNL257A

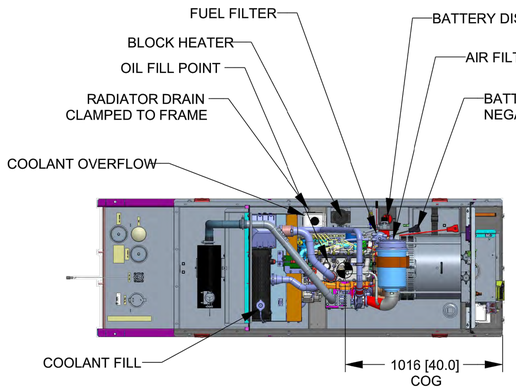
SITE ADDRESS:
165 HUNTINGTON ROAD
SCOTLAND, CT 06264

SHEET TITLE
SITE DETAILS
2 OF 2

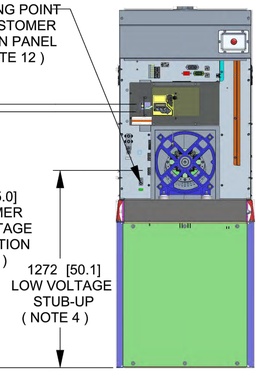
SHEET NUMBER
A-4

1815.244

SH 1/2 | REV 2 | WINDCHILL VERSION 2.12



TOP VIEW
(SHOWN WITH ENCLOSURE REMOVED)

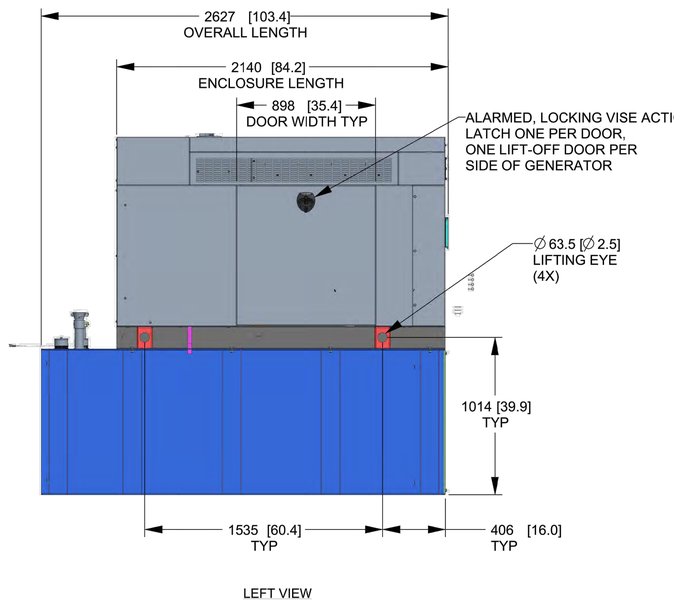


REAR VIEW
(SHOWN WITH REAR COVER PANEL REMOVED)

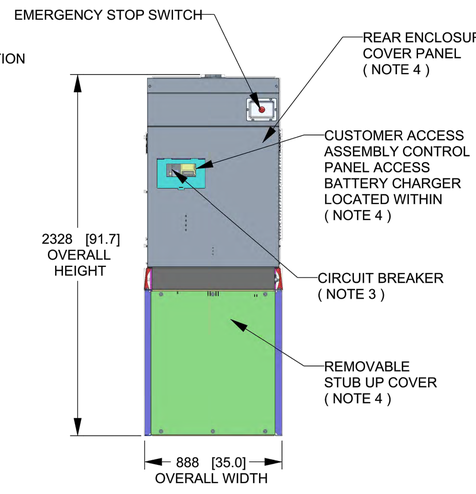
WEIGHT DATA WITH EMPTY BASETANK (SEE NOTE 6)	
GENERATOR AS SHOWN	1336 [2946]
WITH WOODEN SHIPPING SKID	1354 [2984]

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

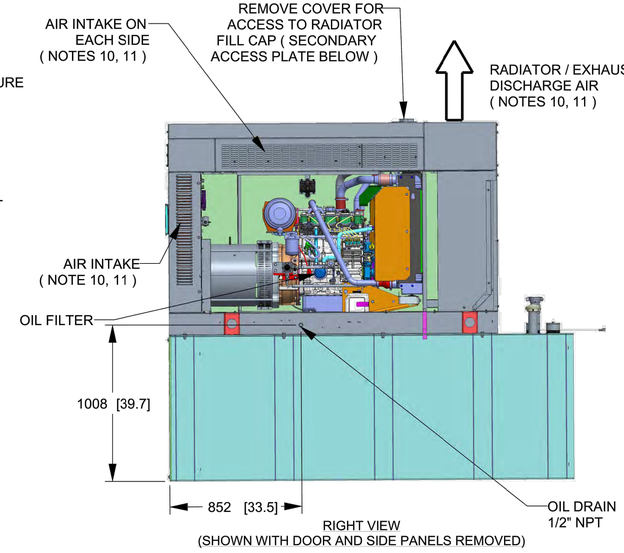
NOTES:
1. THIS UNIT MUST BE INSTALLED IN ACCORDANCE WITH CURRENT APPLICABLE NFPA 37 AND NFPA 70 STANDARDS AS WELL AS ANY OTHER FEDERAL, STATE, AND LOCAL CODES.
2. BATTERY (12 VOLT NEGATIVE GROUND SYSTEM).
3. CONTROL PANEL / CIRCUIT BREAKER INFORMATION:
   - MAIN LINE CIRCUIT BREAKER 125 AMPS
   - SEE SPECIFICATION SHEET OR OWNERS MANUAL
   - ACCESSIBLE THROUGH CUSTOMER ACCESS ASSEMBLY DOOR ON REAR OF GENERATOR.
   - CONTROL PANEL INCLUDES INTEGRATED BATTERY CHARGER
4. 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
5. ENGINE SERVICE CONNECTIONS
   OIL DRAIN: 1/2" NPT
   RADIATOR DRAIN : HOSE CLAMPED TO FRAME
6. CENTER OF GRAVITY AND WEIGHT MAY CHANGE DUE TO UNIT OPTIONS.
7. BOTTOM OF GENERATOR SET MUST BE ENCLOSED TO PREVENT PEST INTRUSION AND RECIRCULATION OF DISCHARGE AIR AND/OR IMPROPER COOLING AIR FLOW.
8. REFERENCE OWNERS MANUAL FOR LIFTING WARNINGS.
9. MOUNTING BOLTS OR STUDS TO MOUNTING SURFACE SHALL BE 5/8-11 GRADE 5 (USE STANDARD SAE TORQUE SPECS)
10. MUST ALLOW FREE FLOW OF INTAKE AIR, DISCHARGE AIR AND EXHAUST. SEE SPEC SHEET FOR MINIMUM AIR FLOW AND MAXIMUM RESTRICTION REQUIREMENTS.
11. 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.
12. GENERATOR MUST BE GROUNDED.



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

ELECTRONICALLY APPROVED
INSIDE WINDCHILL

GENERAC

TITLE
INSTALLATION D2.2L
25KW Y06 PD

ISSUE DATE: 5/10/18

SIZE	CAGE NO	DWG NO	REV
B	N/A	10000036728	2

SCALE 0.031 | WT-KG SEE ABOVE | SHEET 1 of 2

GENERATOR SPECIFICATIONS 1
SCALE: N.T.S.

T-MOBILE NORTHEAST LLC
15 COMMERCE WAY, SUITE B
NORTON, MA 02766
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8/31/2021

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SUBMITTALS

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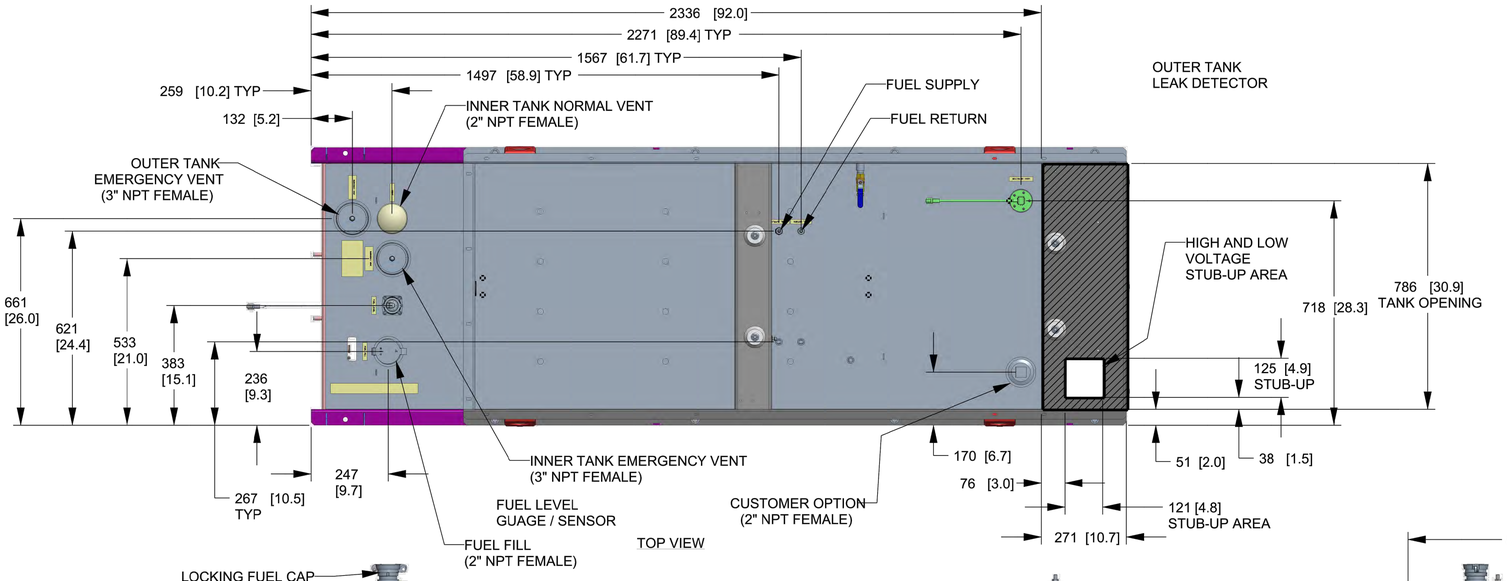
SITE ADDRESS:
165 HUNTINGTON ROAD
SCOTLAND, CT 06264

SHEET TITLE
GENERATOR SPECIFICATIONS 1

SHEET NUMBER
A-5

1815.244

SH	REV	WINDCHILL VERSION
2/2	2	2.12

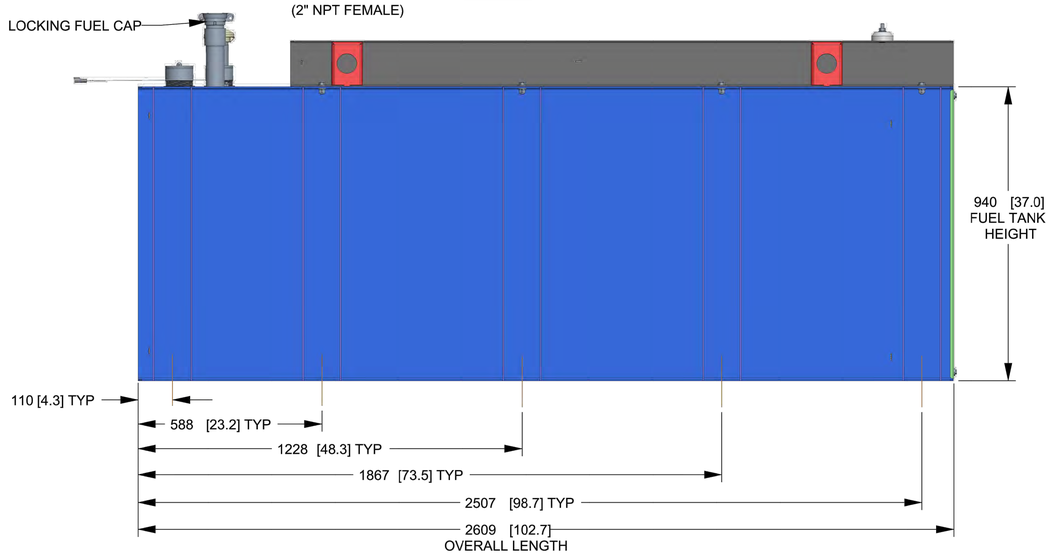


FUEL TANK	
TOTAL CAPACITY	908.5 (240)
USABLE CAPACITY	866.9 (229)

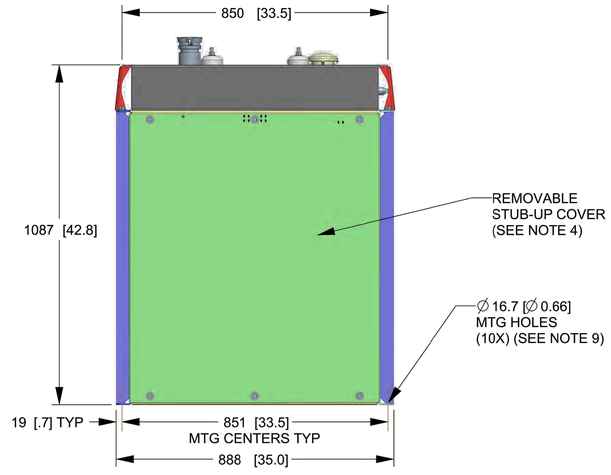
CAPACITY: LITER (GALLON)
DIMENSIONS: MM (INCH)

TANK IS LISTED TO UL142 AND ULC5601

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



LEFT VIEW



REAR VIEW

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

INSTALLATION DRAWING

ELECTRONICALLY APPROVED
INSIDE WINDCHILL

GENERAC

TITLE
INSTALLATION D2.2L
25KW Y06 PD

ISSUE DATE: 5/10/18

SIZE	CAGE NO	DWG NO	REV
B	N/A	10000036728	2

SCALE 0.063 | WT-KG SEE ABOVE | SHEET 2 of 2

GENERATOR SPECIFICATIONS
SCALE: N.T.S.

1
A-6

T-MOBILE
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8/31/2021

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	08/31/21	ISSUED FOR CONSTRUCTION	JRV
0	08/10/21	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CTNL257A

SITE ADDRESS:
165 HUNTINGTON ROAD
SCOTLAND, CT 06264

SHEET TITLE
GENERATOR
SPECIFICATIONS 2

SHEET NUMBER
A-6

1815.244

FINAL ANTENNA CONFIGURATION

SECTOR	ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	TMA/RADIOS	SIGNAL CABLES
ALPHA	A1 RFS APX16DWV-16DWV-S-E-A20	218'± AGL	30°	0°	2°	L2100/L1900/G1900	RADIO 4460 B25+B66	(3) 2" (6x24) HCS FIBER CABLES
	A2 RFS APXVAALL24_43-U-NA20	218'± AGL	30°	0°	2°	L700/L600/N600	RADIO 4480 B71+B85	
	A3 ERICSSON M-MIMO AIR6449 B41	218'± AGL	30°	0°	2°	L2500/N2500	–	
	A4 EMPTY PIPE	–	–	–	–	–	–	
BETA	B1 RFS APX16DWV-16DWV-S-E-A20	218'± AGL	150°	0°	2°	L2100/L1900/G1900	RADIO 4460 B25+B66	
	B2 RFS APXVAALL24_43-U-NA20	218'± AGL	150°	0°	2°	L700/L600/N600	RADIO 4480 B71+B85	
	B3 ERICSSON M-MIMO AIR6449 B41	218'± AGL	150°	0°	2°	L2500/N2500	–	
	B4 EMPTY PIPE	–	–	–	–	–	–	
GAMMA	C1 RFS APX16DWV-16DWV-S-E-A20	218'± AGL	270°	0°	2°	L2100/L1900/G1900	RADIO 4460 B25+B66	
	C2 RFS APXVAALL24_43-U-NA20	218'± AGL	270°	0°	2°	L700/L600/N600	RADIO 4480 B71+B85	
	C3 ERICSSON M-MIMO AIR6449 B41	218'± AGL	270°	0°	2°	L2500/N2500	–	
	C4 EMPTY PIPE	–	–	–	–	–	–	

CABLE NOTE: SEE FEEDLINE SCHEDULE A & B BELOW.

NOTE: RFDS REV1 – 05/13/21

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.

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STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED PROFESSIONAL CIVIL ENGINEER
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SITE ADDRESS:
165 HUNTINGTON ROAD
SCOTLAND, CT 06264

SHEET TITLE
ANTENNA & FEEDLINE CHARTS

SHEET NUMBER
A-7

1815.244

NOTES TO CONTRACTOR:

1. 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.
2. 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.
3. 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.
4. THE CONTRACTOR SHALL PROVIDE TEMPORARY POWER AND LIGHTING AS REQUIRED FOR THE WORK.
5. LOCATION OF EQUIPMENT, CONDUIT AND DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND SHALL BE COORDINATED WITH FIELD CONDITIONS PRIOR TO ROUGH-IN.
6. THE CONDUIT RUNS AS SHOWN ON THE PLANS ARE APPROXIMATE. EXACT LOCATION AND ROUTING SHALL BE PER EXISTING FIELD CONDITIONS.
7. PROVIDE PULL BOXES AND JUNCTION BOXES WHERE SHOWN OR REQUIRED BY NEC.
8. ALL CONDUITS SHALL BE MET WITH BENDS 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.
9. ALL CONDUIT TERMINATIONS SHALL BE PROVIDED WITH PLASTIC THROAT INSULATING GROUNDING BUSHINGS.
10. 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.
11. 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.
12. ALL NEW MATERIAL SHALL HAVE A U.L. LABEL.
13. CONDUIT ROUGH-IN SHALL BE COORDINATED WITH THE MECHANICAL EQUIPMENT TO AVOID LOCATION CONFLICTS. VERIFY WITH MECHANICAL CONTRACTOR AND COMPLY AS REQUIRED.
14. ALL PANEL DIRECTORIES SHALL BE TYPEWRITTEN NOT HAND WRITTEN.
15. 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.
16. 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.
17. 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.)
18. 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.
19. ALL UNDERGROUND CONDUIT ROUTING SHALL BE COORDINATED IN FIELD BETWEEN SPRINT WIE, CONTRACTOR, AND RESPECTIVE UTILITY COMPANIES.
20. ALL CONDUITS ROUTED BELOW GRADE SHALL TRANSITION TO RIGID GALVANIZED ELBOWS WITH RIGID GALVANIZED STEEL CONDUIT ABOVE GRADE.
21. 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.
22. ELECTRICAL CONTRACTOR SHALL PROVIDE A SECTION OF SEALTITE CONDUIT FOR TELCO CONNECTION TO THE PRIMARY RADIO CABINET. COORDINATE EXACT CONNECTION TYPE WITH LUCENT.
23. 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.
24. GROUND IN ACCORD W/LOCAL CODE & SHEET E-2.
25. 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

A. 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.

B. 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 (NESC), 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.

C. UNDERWRITER'S LABORATORIES (UL): ALL MATERIALS, APPLIANCES, EQUIPMENT, OR 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

A. 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.

B. 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.

C. 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.

D. 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

A. 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, USELESS OTHERWISE SPECIFIED OR NOTED ON THE DRAWINGS.

B. 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.

C. 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.

D. 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

A. 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. AIC RATING TO MATCH EXISTING OR AS REQUIRED FOR AVAILABLE FAULT CURRENTS.

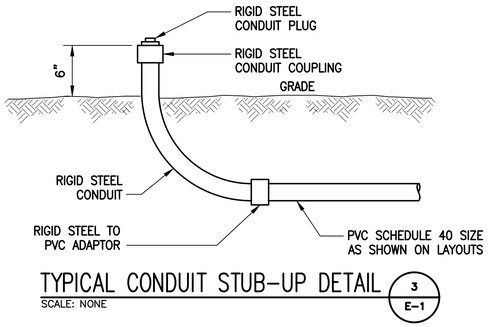
ELECTRICAL LEGEND

SYMBOLS

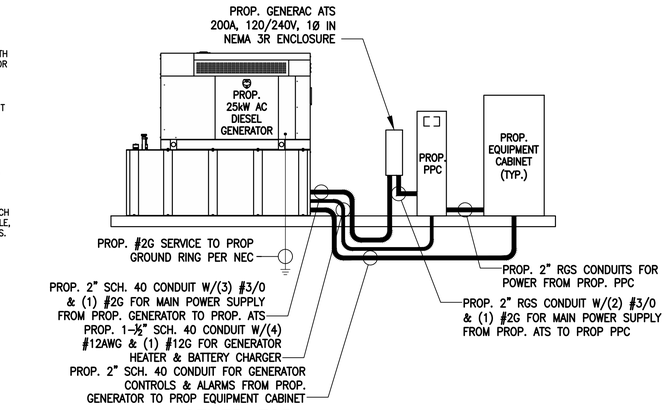
- CONDUIT TURNING UP
- CONDUIT TURNING DOWN
- CONDUIT RUN UNDERGROUND
- CONDUIT RUN ABOVE GROUND
- (M) METER ON METER/BREAKER UNIT
- 5/8" x 10'-0" COPPER CLAD GROUND ROD
- EXOTHERMIC TYPE CONNECTION
- COMPRESSION TYPE CONNECTION
- G — G GROUND RING, #2 AWG SOLID TINNED BARE COPPER GROUND CONDUCTOR 6" BELOW FROST LINE AND 24" OFF CONCRETE PLATFORM
- XXX / XXX REPRESENTS DETAIL NUMBER; REF. DRAWING NUMBER
- XXX DETAIL NUMBER

ABBREVIATIONS

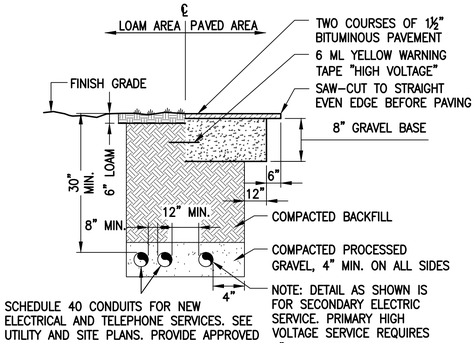
ACCA	ANTENNA CABLE COVER ASSEMBLY
AGB	COPPER ANTENNA GROUND BAR
AWG	AMERICAN WIRE GAUGE
BCW	BARE COPPER WIRE
BTS	BASE TRANSMISSION SYSTEM
CIBGE	COAX ISOLATED GROUND BAR EXTERNAL
DWG	DRAWING
EMT	ELECTRICAL METALLIC TUBING
GEN	GENERATOR
GPS	GLOBAL POSITIONING SYSTEM
GR	GROWTH
IGR	INTERIOR GROUND RING (HALO)
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



TYPICAL CONDUIT STUB-UP DETAIL (3 / E-1)
SCALE: NONE

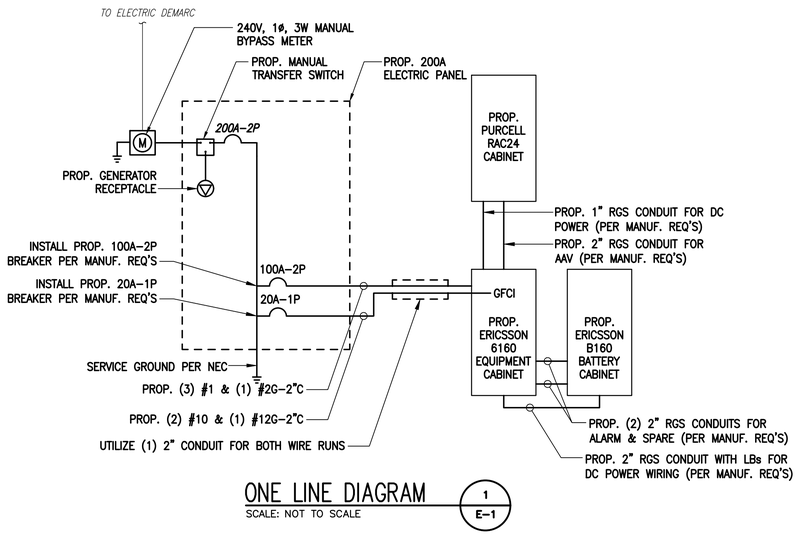


GENERATOR ONE-LINE POWER DIAGRAM (5 / E-1)
SCALE: NOT TO SCALE



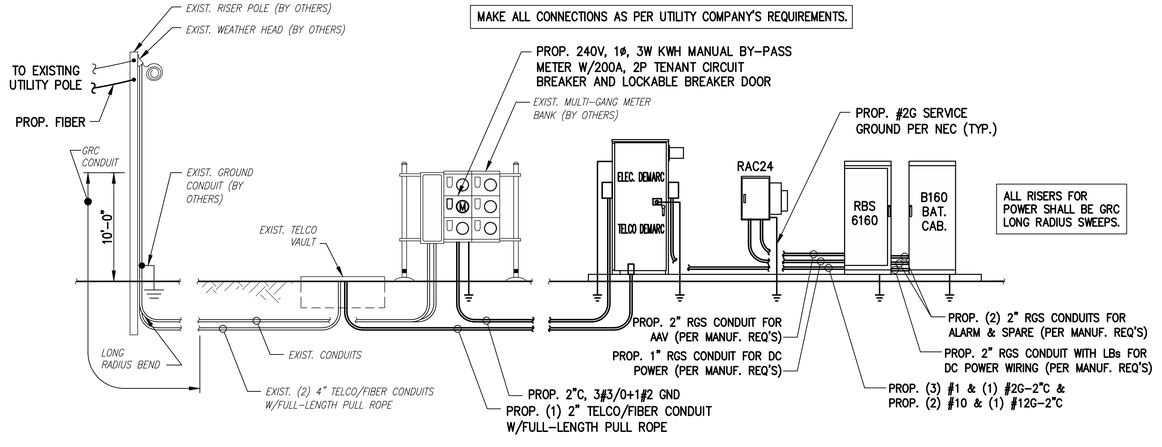
SCHEDULE 40 CONDUITS FOR NEW ELECTRICAL AND TELEPHONE SERVICES. SEE UTILITY AND SITE PLANS. PROVIDE APPROVED PULL BOXES AS REQUIRED, AND COORDINATE INSTALLATION W/ALL UTILITY COMPANIES FOR INTERFACING AT TERMINATION POINTS. PROVIDE FULL LENGTH PULL ROPES (TYP.).

BURIED CONDUIT DETAIL (4 / E-1)
SCALE: NOT TO SCALE



ONE LINE DIAGRAM (1 / E-1)
SCALE: NOT TO SCALE

MAKE ALL CONNECTIONS AS PER UTILITY COMPANY'S REQUIREMENTS.



POWER/TELCO RISER DIAGRAM (2 / E-1)
SCALE: NOT TO SCALE

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STATE OF CONNECTICUT * JAMES M. FITZGERALD * No. 25937 LICENSED PROFESSIONAL CIVIL ENGINEER
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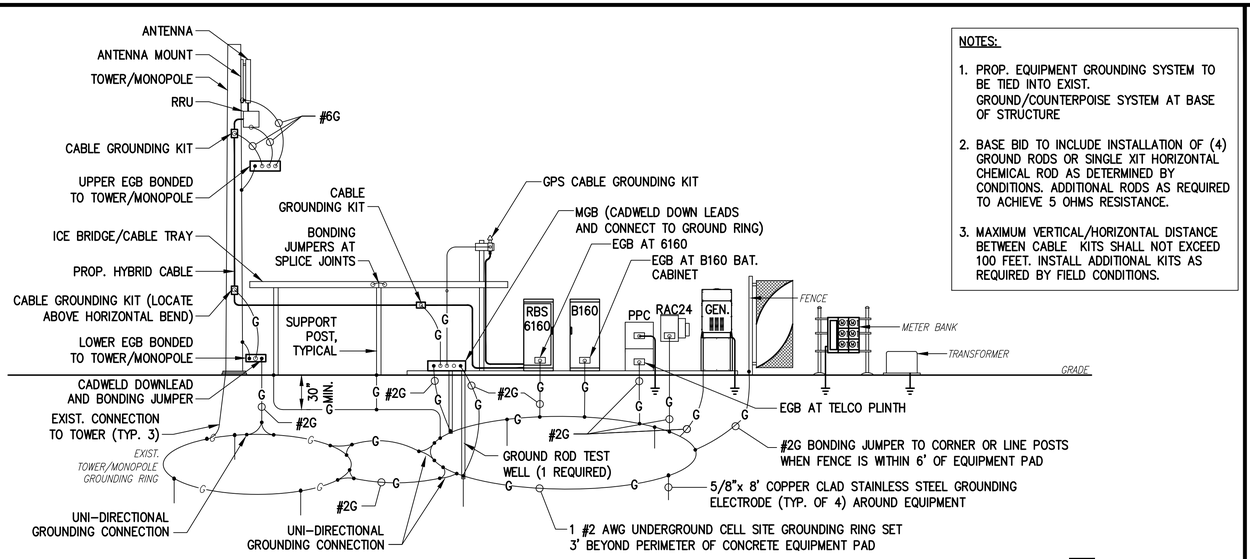
SHEET TITLE
SITE ELECTRIC & GROUNDING DETAILS
1 OF 2

SHEET NUMBER
E-1

1815.244

PROTECTIVE GROUNDING SYSTEMS GENERAL NOTES

1. GROUNDING SHALL BE IN ACCORDANCE WITH NEC ARTICLE 250–GROUNDING AND BONDING.
2. 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".
3. PROVIDE GROUND CONNECTIONS FOR ALL METALLIC STRUCTURES, ENCLOSURES, RACEWAYS AND OTHER CONDUCTIVE ITEMS ASSOCIATED WITH THE INSTALLATION OF CARRIER'S EQUIPMENT.
4. 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.
5. 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.
6. 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.
7. ALL GROUND WIRES SHALL BE #2 SOLID TINNED BCW UNLESS NOTED OTHERWISE.
8. PROVIDE DEDICATED #2 AWG COPPER GROUND WIRE FROM EACH ANTENNA MOUNTING PIPE TO ASSOCIATED CIGBE.
9. 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.
10. EACH EQUIPMENT CABINET SHALL BE CONNECTED TO THE MASTER ISOLATION GROUND BAR (MGB) WITH #2 SOLID TINNED BCW EQUIPMENT CABINETS WALL HAVE (2) CONNECTIONS.
11. 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'.
12. THE CONTRACTOR SHALL VERIFY THAT THE EXISTING GROUND BARS HAVE ENOUGH SPACE/HOLES FOR ADDITIONAL TWO HOLE LUGS.
13. 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–SHILD) BEFORE MAKING THE CRIMP CONNECTIONS THE CONTRACTOR SHALL FOLLOW MANUFACTURER'S RECOMMENDED TORQUES ON THE BOLT ASSEMBLY TO SECURE CONNECTIONS.
14. 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.
15. 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.
16. ALL BOLTS, WASHERS, AND NUTS USED ON GROUNDING CONNECTIONS SHALL BE STAINLESS STEEL.
17. 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.
18. 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:

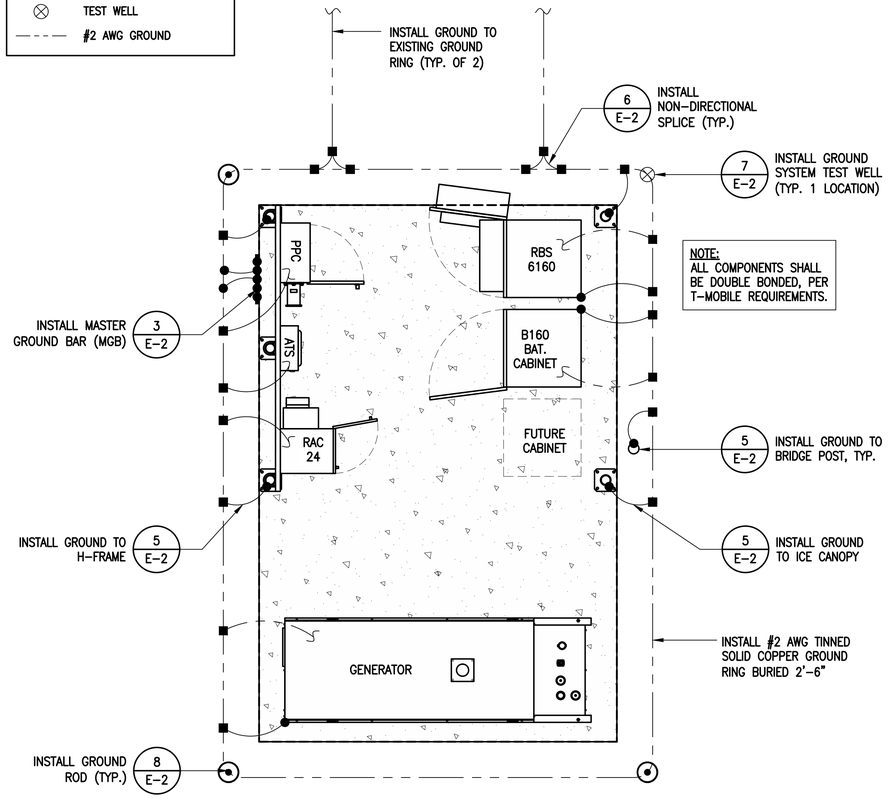
1. PROP. EQUIPMENT GROUNDING SYSTEM TO BE TIED INTO EXIST. GROUND/COUNTERPOISE SYSTEM AT BASE OF STRUCTURE
2. BASE BID TO INCLUDE INSTALLATION OF (4) GROUND RODS OR SINGLE XIT HORIZONTAL CHEMICAL ROD AS DETERMINED BY CONDITIONS. ADDITIONAL RODS AS REQUIRED TO ACHIEVE 5 OHMS RESISTANCE.
3. MAXIMUM VERTICAL/HORIZONTAL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

GROUNDING RISER DIAGRAM

SCALE: NOT TO SCALE — 2 / E–2

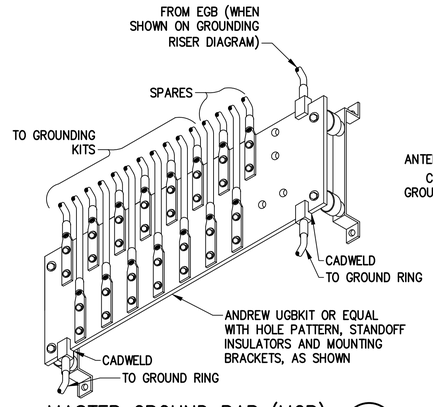
GROUNDING LEGEND

- EXOTHERMIC GROUND
- MECHANICAL GROUND
- GROUND ROD
- TEST WELL
- #2 AWG GROUND



GROUNDING PLAN

SCALE: N.T.S. — 1 / E–2

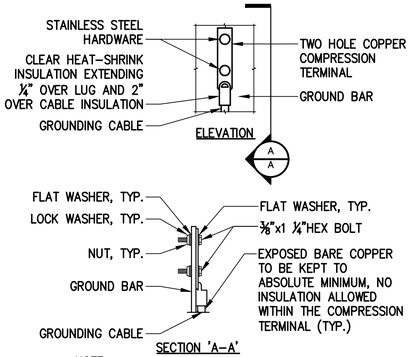


MASTER GROUND BAR (MGB)

SCALE: NOT TO SCALE — 3 / E–2

GROUND BAR (EGB)

SCALE: NOT TO SCALE — 4 / E–2

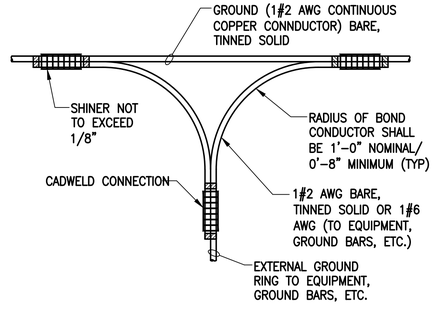


SECTION 'A–A'

NOTE:
1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELL DOWNLEADS FROM UPPER EGB, LOWER EGB AND MGB.

TYPICAL GROUND BAR CONNECTIONS DETAIL

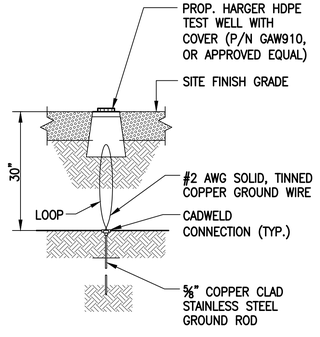
SCALE: NOT TO SCALE — 5 / E–2



NOTE: ALL CONNECTION TO GROUND SHALL BE NON–DIRECTIONAL.

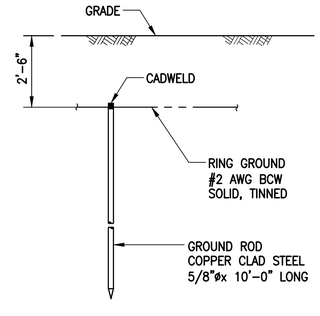
NON–DIRECTIONAL SPLICE

SCALE: NOT TO SCALE — 6 / E–2



GROUND ROD TEST WELL DETAIL

SCALE: NOT TO SCALE — 7 / E–2



GROUND ROD

SCALE: NOT TO SCALE — 8 / E–2

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STATE OF CONNECTICUT ★ JAMES M. FITZGERALD ★ No. 25997 LICENSED PROFESSIONAL CIVIL ENGINEER

8/31/2021

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	08/31/21	ISSUED FOR CONSTRUCTION	JRV
0	08/10/21	ISSUED FOR REVIEW	JRV

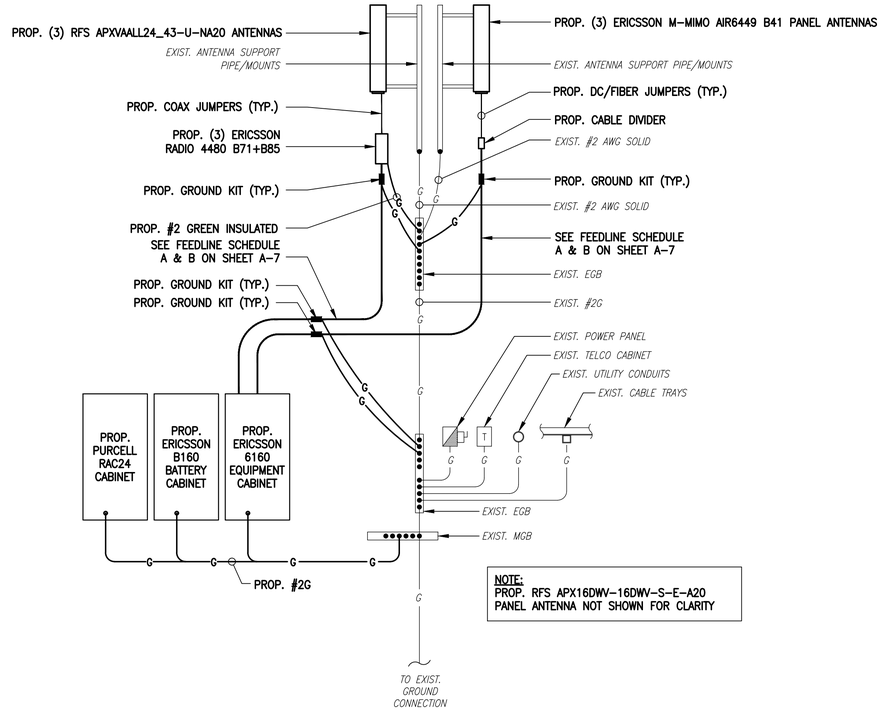
SITE NUMBER:
CTNL257A

SITE ADDRESS:
165 HUNTINGTON ROAD
SCOTLAND, CT 06264

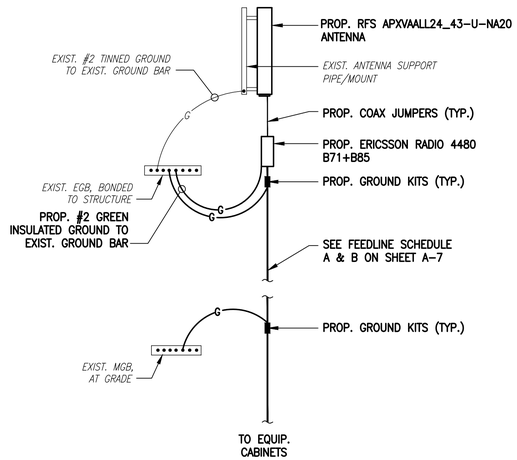
SHEET TITLE
SITE ELECTRIC & GROUNDING DETAILS 2 OF 2

SHEET NUMBER
E–2

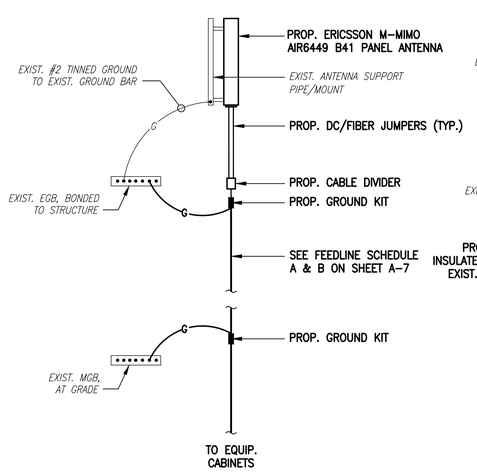
1815.244



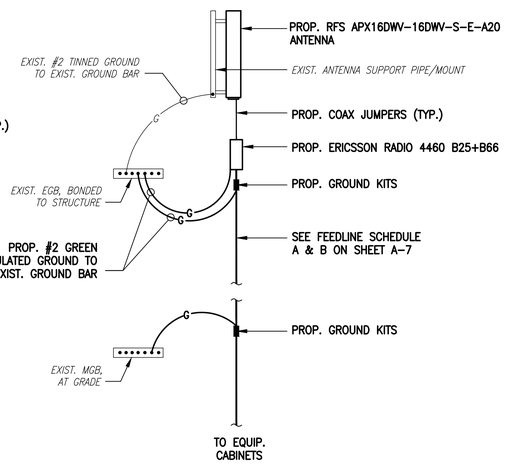
GROUNDING RISER DIAGRAM (1 / E-3)
SCALE: NOT TO SCALE



L700/L600/N600 ANTENNA



L2500/N2500 ANTENNA



L2100/L1900/G1900/U2100 ANTENNA

COAX CABLE CONNECTION AND GROUNDING DETAIL (2 / E-3)
SCALE: NOT TO SCALE

ELECTRICAL AND GROUNDING NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
5. 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.
6. BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
7. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THHNINSULATION.
8. 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.
9. 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.
10. 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.
11. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
12. PPC SUPPLIED BY PROJECT OWNER.
13. 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".
14. GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
15. 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.
16. 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.
17. 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.
18. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
19. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
20. 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.
21. CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMNS MINIMUM RESISTANCE REQUIRED.
22. CONTRACTOR SHALL CONDUCT ANTENNA, COAX, AND LNA RETURN-LOSS AND DISTANCE- TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.

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SCOTLAND, CT 06264

SHEET TITLE
ANTENNA ELECTRIC & GROUNDING DETAILS

SHEET NUMBER
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