10 INDUSTRIAL AVENUE,
SUITE 3
MAHWAH, NJ 07430

PHONE: 201.684.0055
FAX: 201.684.0066

July 28, 2020

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

Notice of Exempt Modification
623 Pine Street, Bridgeport, CT
Latitude- 41.16567777
Longitude- -73.216627777
T-Mobile Site ID: CT11014B / Anchor

Dear Ms. Bachman,

T-Mobile currently maintains (9) existing antennas at the 180' level of the existing 250' self-support lattice at 623 Pine Street in Bridgeport, Connecticut. The tower and property is owned by Radio Communications Corp. T-Mobile now intends to replace (3) of its existing antennas with (3) new 2500 MHz antennas. The new antennas would be installed at the 180-foot level of the tower.

Planned Modifications:

Remove:
(6) 1-5/8" coax cables

Install New:
(3) Commscope -SDX 1926 Q-43(E14F05P86) Diplexers
(3) 6x12 Hybrid cable

Remove/Replace:
Antennas:
AIR21 KRC118023-1_B2A_B4P (Remove) - (3) Air6449 B41- 2500 MHz / 2500 MHz (Replace)
RRUs:
(3) RRUS32 B2 (Remove) - (3) Radio 4424 B25 (Replace)

Ground:
Remove (2) Nortel Cabinets, add (1) Battery cabinet, (1) enclosure to contain (3) BB6630 for L2500 and (1) BB6648 for N2500 on new slab

This facility was approved by the City of Bridgeport Zoning Board of Appeals in 1999, with no record of conditions that would restrict exempt modifications. Therefore this modification complies with the aforementioned approval.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. 16-50j-72(b)(2). In accordance with R.C.S.A. 16-50j-73, a copy of this letter is being sent to Joseph P. Ganim, Mayor of the City of Bridgeport, as well as the tower and property owner.

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 modification will not result in an increase in the height of the existing structure

2. The proposed modifications 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 change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, T-Mobile respectfully submits that the proposed modifications to the above-referenced telecommunications facility constitute an exempt modification under R.C.S.A. 16-50j-72(b)(2).

Sincerely,

Elizabeth Jamieson
Transcend Wireless
10 Industrial Ave., Suite 3
Mahwah, New Jersey 07430
860-605-7808
EJamieson@TranscendWireless.com

cc:
Mayor Joseph P. Ganim- as elected official
RCC Communications Corp/Bob Knapp - as tower and property owner
Thomas F. Gill- Director of Office of Planning and Economic Development

Exhibit A

Original Facility Approval

Exhibit B

Property card

623 PINE ST

Location	623 PINE ST	**Mblu**	19/ 307/ 25/ /
Acct#	RK-0259405	**Owner**	KNAPP ANDREW & LILLIAN &
Assessment	$224,850	**Appraisal**	$321,210
PID	2504	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$251,840	$69,370	$321,210
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$176,290	$48,560	$224,850

Owner of Record

Owner	KNAPP ANDREW & LILLIAN &	**Sale Price**	$90,000
Co-Owner	ROBERT KNAPP (SURV OF THEM)	**Certificate**	
Address	24 ROCKDALE RD WEST HAVEN, CT 06516	**Book & Page**	2838/ 116
		Sale Date	09/24/1990

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
KNAPP ANDREW & LILLIAN &	$90,000		2838/ 116	09/24/1990

Building Information

Building 1 : Section 1

Year Built:	1964
Living Area:	2,625
Replacement Cost:	$237,462
Building Percent Good:	85
Replacement Cost Less Depreciation:	$201,840

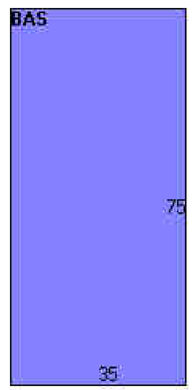
Building Attributes	
Field	**Description**

STYLE	Telephone Bldg
MODEL	Ind/Comm
Grade:	Above Ave
Stories:	1
Occupancy:	1
Exterior Wall 1:	Concr/CinderBl
Exterior Wall 2:	
Roof Struct:	Flat
Roof Cover:	T+G/Rubber
Interior Wall 1:	Minim/Masonry
Interior Wall 2:	
Interior Floor 1:	Concr-Finished
Interior Floor 2:	
Heating Fuel:	Gas
Heating Type:	Forced Air
AC Type:	Central
Bldg Use:	Industrial Mdl 96
Ttl Rooms:	
Ttl Bedrms:	00
Ttl Baths:	0
Ttl Half Baths:	0
Ttl Xtra Fix:	0
1st Floor Use:	
Heat/AC:	Heat/Ac Pkgs
Frame Type:	Masonry
Baths/Plumbing:	Average
Ceiling/Wall:	Ceil & Walls
Rooms/Prtns:	Average
Wall Height:	14
% Comn Wall:	

Building Photo

(http://images.vgsi.com/photos2/BridgeportCTPhotos//\00\08\9

Building Layout



(http://images.vgsi.com/photos2/BridgeportCTPhotos//Sketches/

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	2,625	2,625
		2,625	2,625

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code 300

Land Line Valuation

Size (Acres) 0.09

Description	Industrial Mdl 96	**Frontage**	0
Zone	ILI	**Depth**	0
Neighborhood	IND	**Assessed Value**	$48,560
Alt Land Appr Category	No	**Appraised Value**	$69,370

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
TWR	Tower			250 LF	$50,000	1

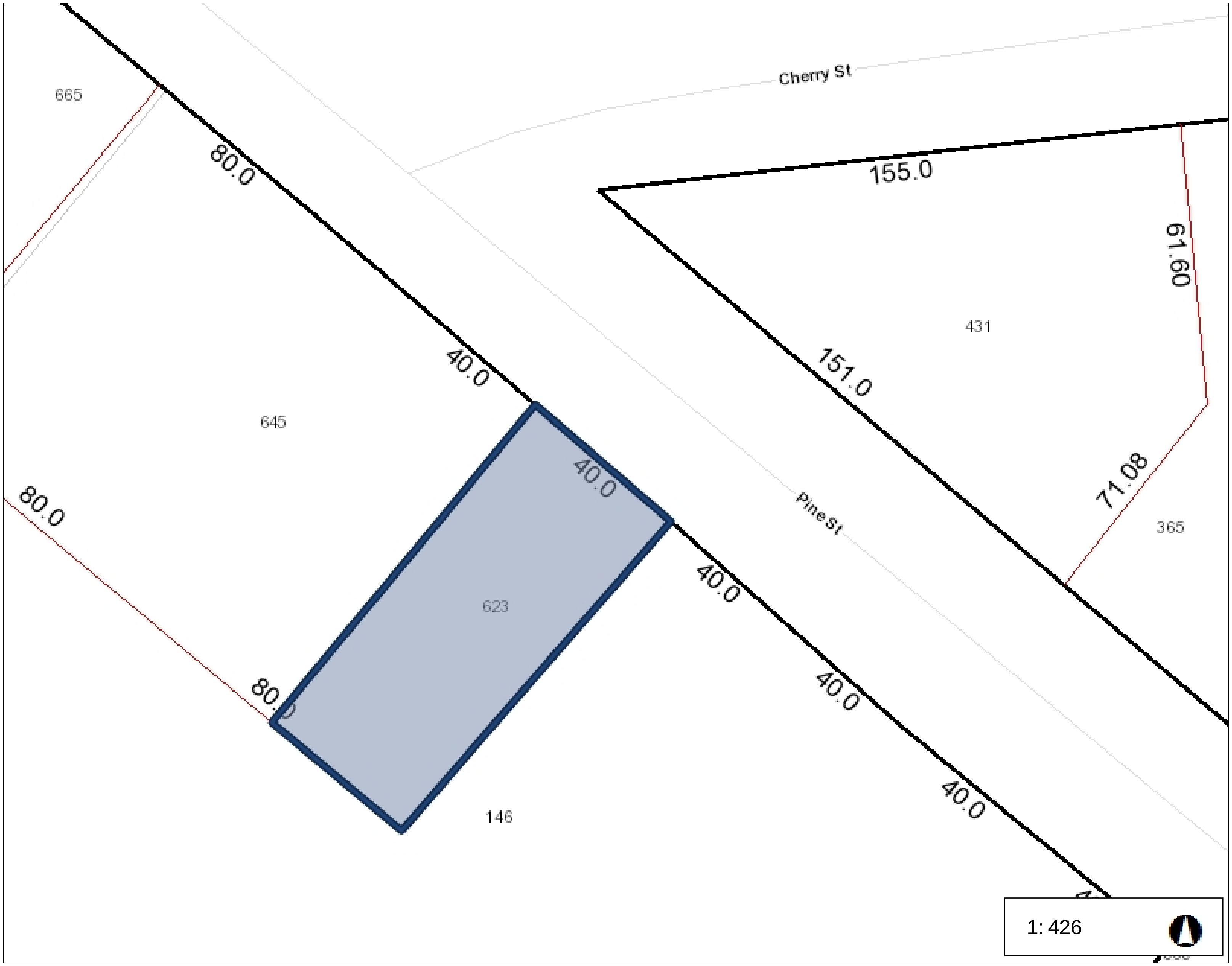
Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$251,840	$69,370	$321,210
2016	$251,840	$69,370	$321,210
2015	$251,840	$69,370	$321,210

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$176,290	$48,560	$224,850
2016	$176,290	$48,560	$224,850
2015	$176,290	$48,560	$224,850

City of Bridgeport

My Map



Legend

- Parcels
- Streetname
- Roadways
  - Local
  - Collector
  - Minor Collector
  - Minor Arterial
  - Major Collector
  - PA Other
  - PA Other Expwy
  - PA Interstate

71.0 0 35.49 71.0 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere
Created by Connecticut Metropolitan Council of Governments

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION

METROCOG
Connecticut Metropolitan Council of Governments

Exhibit C
Construction Drawings

BRIDGEPORT

623 PINE STREET
BRIDGEPORT, CT 06605
SITE ID: CT11014B

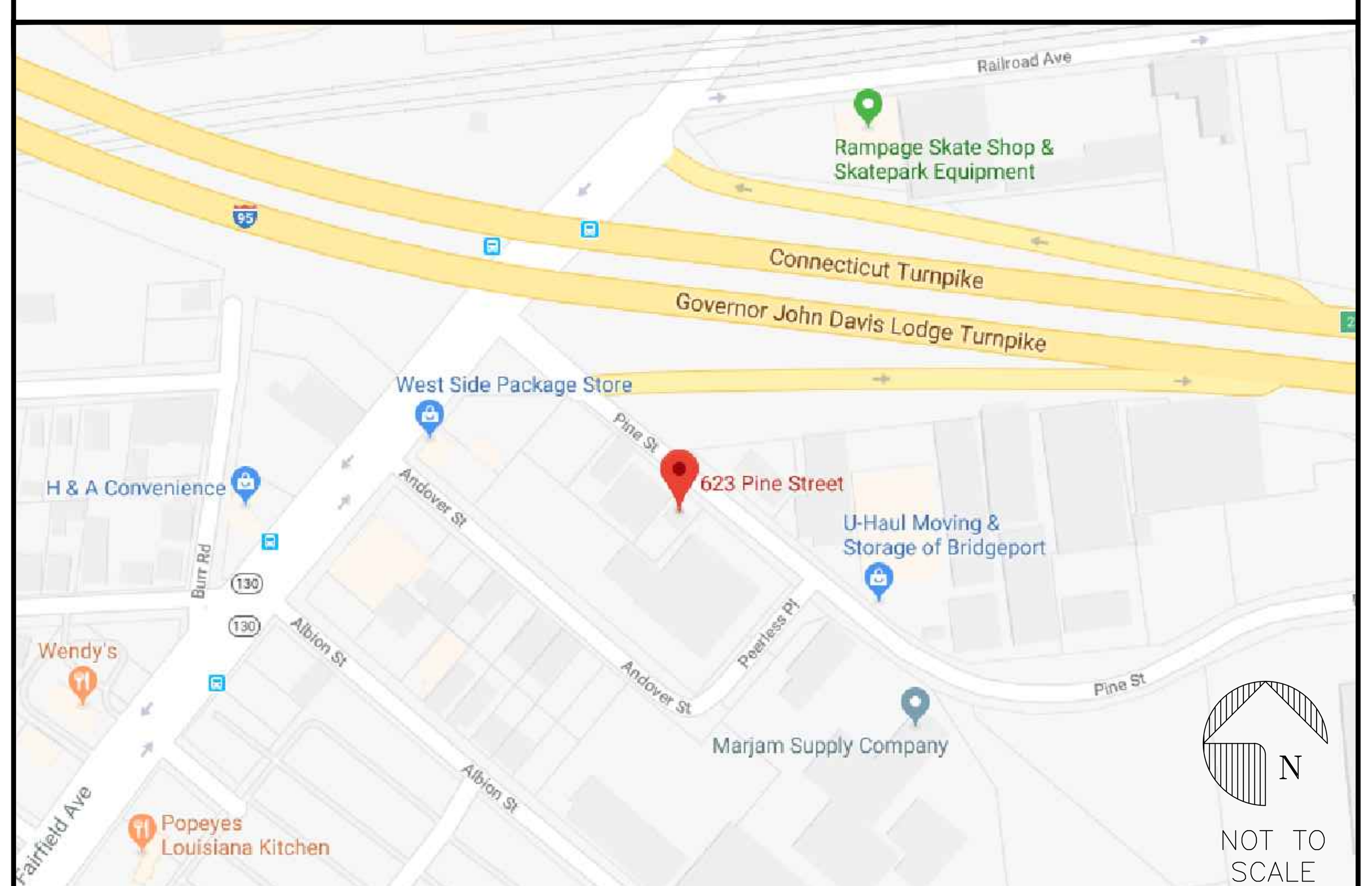
PROJECT DESCRIPTION

T–MOBILE IS PROPOSING TO REMOVE (1) EXISTING AIR 21 PANEL ANTENNA AND REPLACE WITH (1) PROPOSED AIR6449 PANEL ANTENNA FOR POSITION 1 AT EACH SECTOR. (1) EXISTING RRUS 32 B2 TO BE REMOVED AND REPLACED WITH (1) RADIO 4424 B25 AT POSITION 4 FOR EACH SECTOR. (1) PROPOSED SDX1926Q–43 DIPLEXER TO BE INSTALLED AT POSITION 4 FOR EACH SECTOR. (1) EXISTING TWIN STYLE 1B AWS TMA TO BE RELOCATED TO POSITION 4 FOR EACH SECTOR.

(12) EXISTING T–MOBILE 1–5/8" COAX LINES TO BE REMAIN, (6) EXISTING 1–5/8" COAX LINES TO BE REMOVED. (4) EXISTING 6X12 HYBRIDS LINES TO REMAIN, (3) PROPOSED 6X12 HYBRID CABLES TO BE INSTALLED.

(2) EXISTING T–MOBILE NORTEL S12000 EQUIPMENT CABINETS TO BE REMOVED AND REPLACED WITH (1) B160 CABINET AND (1) 6160 CABINET.

A TOTAL OF (3) ANTENNAS REPLACED, (3) RRUs REPLACED, (3) DIPLEXERS INSTALLED, AND (3) TMAs RELOCATED.



LOCATION MAP

DRAWING INDEX

SHEET	SHEET TITLE
T–1	TITLE SHEET
S–1	EXISTING SITE PLAN
S–2	PROPOSED SITE PLAN
S–3	TOWER ELEVATION
A–1	ANTENNA PLAN AND DETAILS
A–2	ANTENNA AND EQUIPMENT DETAILS
G–1	GROUNDING DETAILS
GN–1	GENERAL NOTES

SITE INFORMATION

PROPERTY OWNER:	RADIO COMMUNICATIONS SERVICES 24 ROCKDALE ROAD WEST HAVEN, CT 06516	LATITUDE:	41° 9' 56.7" N
APPLICANT:	T–MOBILE NORTHEAST LLC 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002	LONGITUDE:	73° 13' 0.0" W
ARCHITECT/ ENGINEER:	KM CONSULTING ENGINEERS 262 UPPER FERRY ROAD EWING, NJ 08628	POWER COMPANY:	TBD
SITE ADDRESS:	623 PINE STREET BRIDGEPORT, CT 06605	T–MOBILE CONTACT:	TBD
COUNTY:	FAIRFIELD	EXISTING/PROPOSED USE:	UNMANNED TELECOMMUNICATIONS FACILITY
GROUND ELEVATION:	11'		

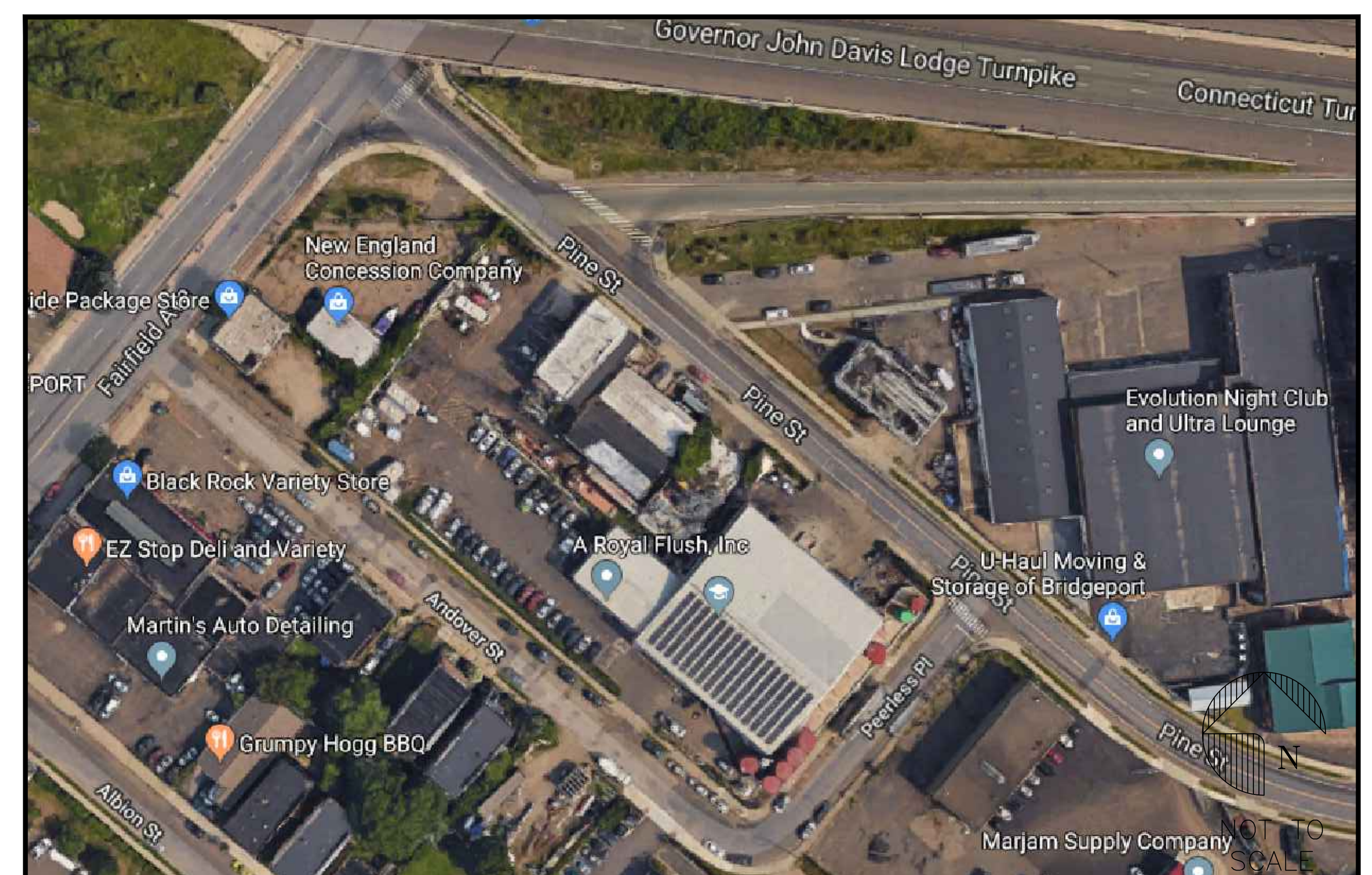
APPROVALS

LANDLORD: ____________

CHAIRPERSON: ____________

BOARD SECRETARY: ____________

BOARD ENGINEER: ____________



AERIAL MAP

CLIENT:

Transcend Wireless

10 INDUSTRIAL AVE
MAHWAH, NJ 07430
TEL: (201) 684–0055
FAX: (201) 684–0066

KM Consulting Engineers, Inc.
Wireless Engineering and Project Management

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PHONE: (609) 538–0400
WEB PAGE: http://www.kmengr.com

MICHAEL L. BOHLINGER, PE
CONNECTICUT PROFESSIONAL ENGINEER
LICENSE # 20405

STATE OF CONNECTICUT
MICHAEL L. BOHLINGER
20405
LICENSED
PROFESSIONAL ENGINEER
7/20/20

REVISIONS

NO.	DATE:	DRN.:	DESCRIPTION:
1	7/20/20	JTH	REVISED AS PER COMMENT
1	7/14/20	JTH	REVISED AS PER COMMENT

PROJECT PARTICIPANTS

SITE ACQUISITION: ____________
SIGN OFF INITL. ______ DATE: ______

RF ENGINEER.: ____________
SIGN OFF INITL. ______ DATE: ______

CONSTR. SUPV.: ____________
SIGN OFF INITL. ______ DATE: ______

A & E: KM CONSULTING ENGR.'S INC.

P.C.:	CHKD.:	DRN.:	DATE:
	MLB	JTH	6/11/20

PROJECT NAME: BRIDGEPORT

SITE ADDRESS: 623 PINE STREET BRIDGEPORT, CT 06605

DRAWING TITLE: TITLE SHEET

SITE ID #: CT11014B

PROJECT #: 180416.02

DRAWING #: T-1

REV. #: 2

FILE NAME: Bridgeport (CT11014B) CDs.dwg

LAST PLOTTED: Monday, 20–July–2020, 13:22
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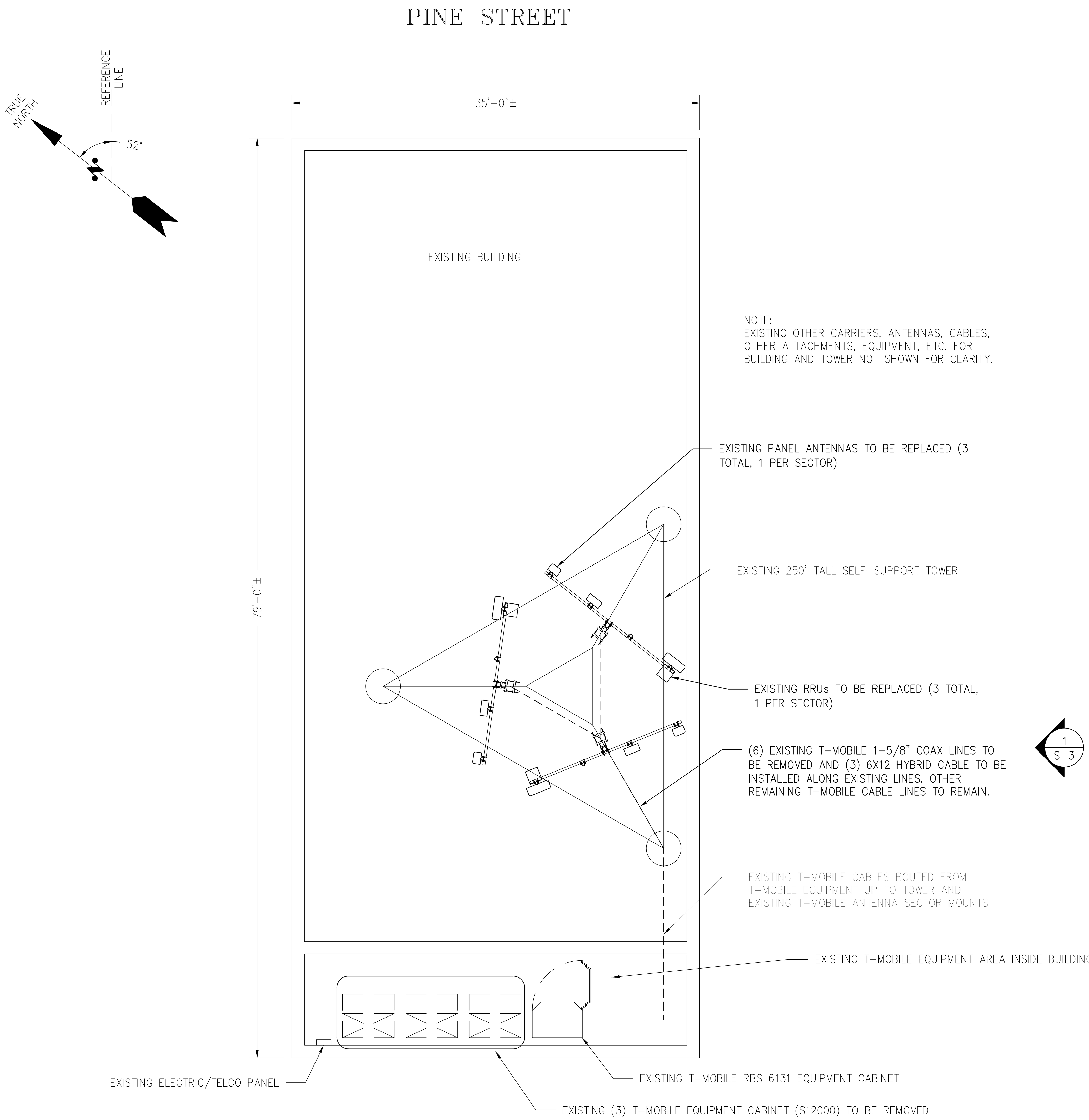

1 S-1 EXISTING SITE PLAN

SCALE: 3/16" = 1'-0"

NOTE:

GENERAL CONTRACTOR TO REFER TO THE STRUCTURAL ANALYSIS BY KM CONSULTING ENGINEERS, INC. DATED 7/7/20 AND EQUIPMENT INSTALLATION RECOMMENDATIONS PRIOR TO COMMENCING CONSTRUCTION.

GENERAL NOTES:

LIGHTING: EXISTING FACILITY WILL MEET OR EXCEED ALL FAA AND FCC REGULATORY REQUIREMENTS.

GRADE: EXISTING GRADE WILL BE MAINTAINED FOR PROPOSED CONSTRUCTION.

SIGNAGE: EXTERIOR SIGNS ARE NOT PROPOSED EXCEPT AS REQUIRED BY THE FCC.

STORM WATER CONTROL: THE PROPOSED FACILITY WILL RESULT IN AN INSIGNIFICANT INCREASE IN STORM WATER RUNOFF. CONSEQUENTLY, NO WATER QUALITY CONTROL DEVICES ARE PROPOSED.

UTILITIES: SANITARY SEWER SERVICES AND POTABLE WATER ARE NOT APPLICABLE PER THE USE. IF APPLICABLE, SUBCONTRACTOR SHALL LOCATE ALL UTLITIES PRIOR TO EXCAVATING.

DRIVEWAY: A DRIVEWAY PERMIT IS NOT REQUIRED FOR THIS PROJECT. THE PROJECT WILL NOT REQUIRE RIGHT OF WAY OR PROPERTY TO BE DEDICATED FOR PUBLIC USE.

MISC: NO NOISE, SMOKE, DUST, VAPORS OR ODOR WILL RESULT FROM THIS PROJECT.

CLIENT:
Transcend Wireless
10 INDUSTRIAL AVE
MAHWAH, NJ 07430
TEL: (201) 684-0055
FAX: (201) 684-0066

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MICHAEL L. BOHLINGER, PE
CONNECTICUT PROFESSIONAL ENGINEER
LICENSE #

STATE OF CONNECTICUT · MICHAEL L. BOHLINGER · 20405 · LICENSED · PROFESSIONAL ENGINEER

7/20/20

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1	7/14/20	JTH	REVISED AS PER COMMENT

PROJECT PARTICIPANTS

SITE ACQUISITION: ____________

SIGN OFF INITL. ______ DATE: ______

RF ENGINEER.: ____________

SIGN OFF INITL. ______ DATE: ______

CONSTR. SUPV.: ____________

SIGN OFF INITL. ______ DATE: ______

A & E: KM CONSULTING ENGR.'S INC.

P.C.:	CHKD.:	DRN.:	DATE:
	MLB	JTH	6/11/20

PROJECT NAME:
BRIDGEPORT

SITE ADDRESS:
623 PINE STREET
BRIDGEPORT, CT 06605

DRAWING TITLE:

SITE PLAN

SITE ID #:	DRAWING #:	REV. #:
CT11014B	S-1	2
PROJECT #: 180416.02		

FILE NAME: Bridgeport (CT11014B) CDs.dwg

LAST PLOTTED: Monday, 20-July-2020, 13:22
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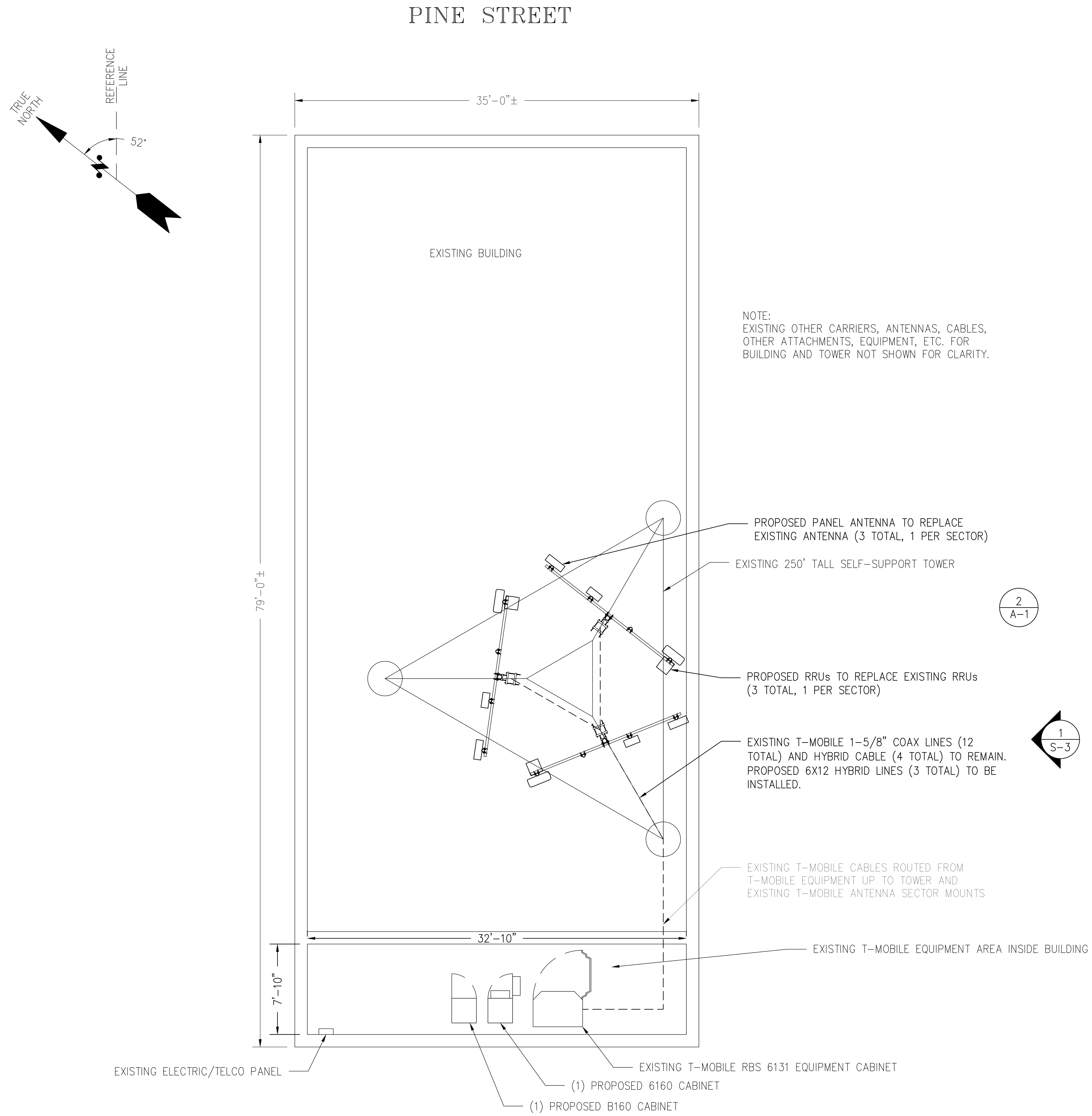

1 S-2 PROPOSED SITE PLAN
SCALE: 3/16" = 1'-0"

GENERAL NOTES:

LIGHTING: EXISTING FACILITY WILL MEET OR EXCEED ALL FAA AND FCC REGULATORY REQUIREMENTS.

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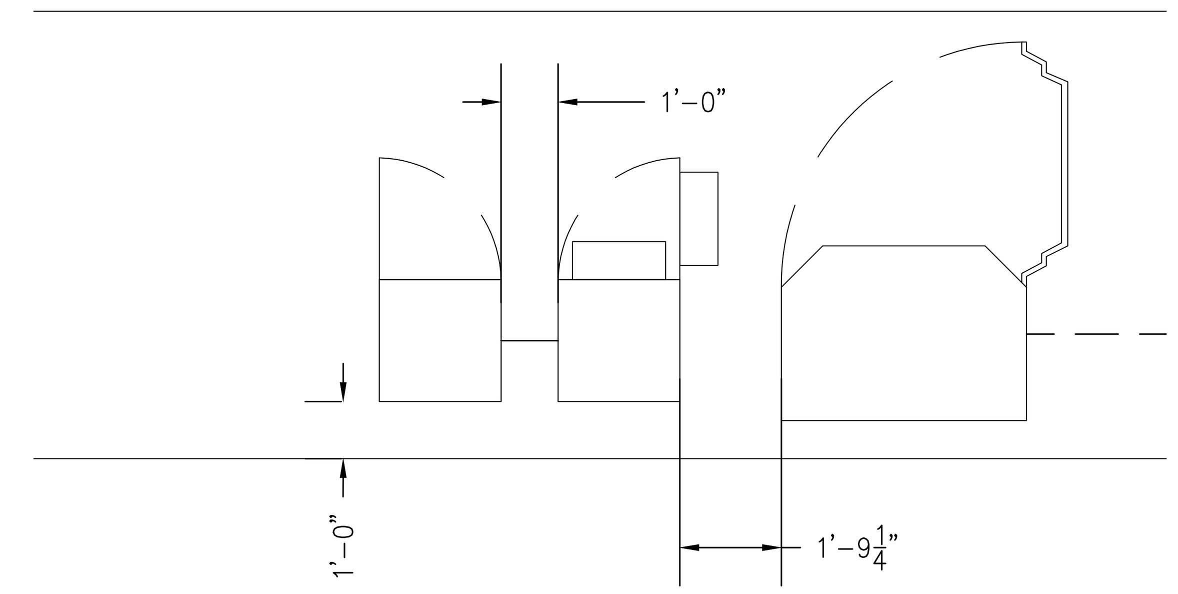

2 S-2 ENLARGED EQUIPMENT PLAN
SCALE: 3/16" = 1'-0"

CLIENT:
Transcend Wireless
10 INDUSTRIAL AVE
MAHWAH, NJ 07430
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1	7/20/20	JTH	REVISED AS PER COMMENT
1	7/14/20	JTH	REVISED AS PER COMMENT

PROJECT PARTICIPANTS

SITE ACQUISITION: ______
SIGN OFF INITL. ______ DATE: ______
RF ENGINEER.: ______
SIGN OFF INITL. ______ DATE: ______
CONSTR. SUPV.: ______
SIGN OFF INITL. ______ DATE: ______
A & E: KM CONSULTING ENGR.'S INC.

P.C.:	CHKD.:	DRN.:	DATE:
	MLB	JTH	6/11/20

PROJECT NAME:
BRIDGEPORT

SITE ADDRESS:
623 PINE STREET
BRIDGEPORT, CT 06605

DRAWING TITLE:
PROPOSED SITE PLAN

SITE ID #: CT11014B
PROJECT #: 180416.02
DRAWING #: S-2
REV. #: 2

FILE NAME: Bridgeport (CT11014B) CDs.dwg

LAST PLOTTED: Monday, 20-July-2020, 13:22
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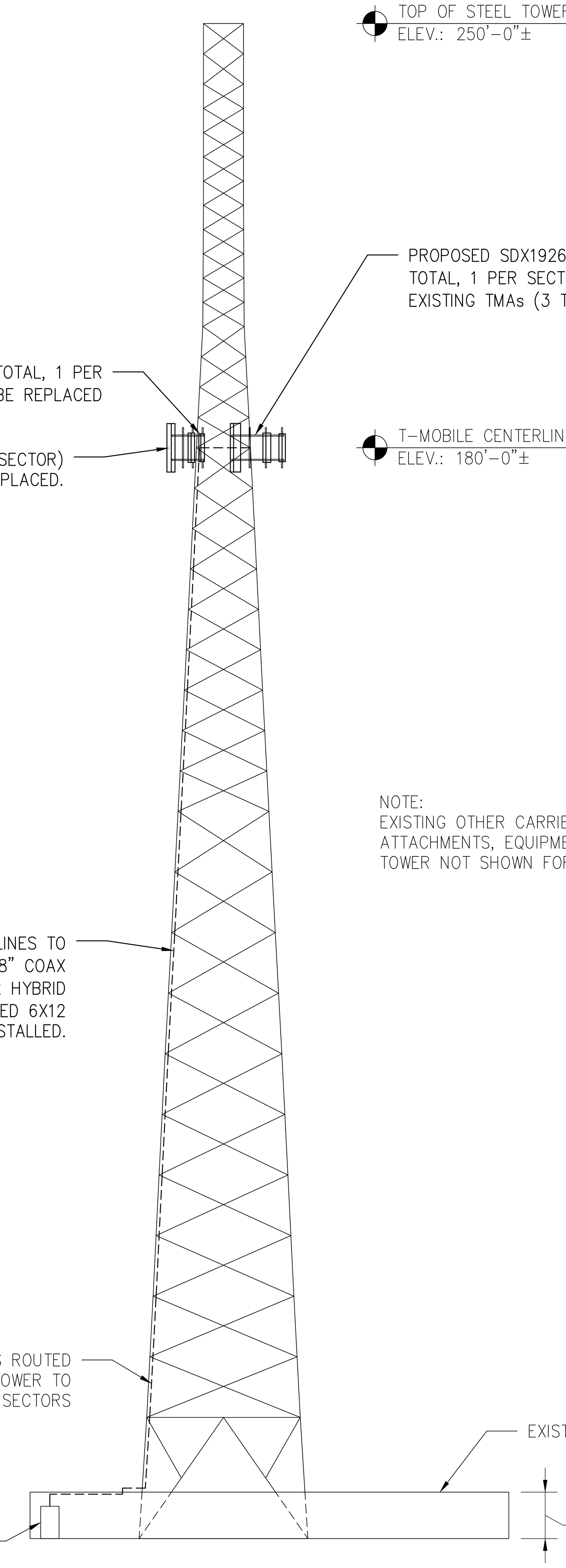
NOTE:

GENERAL CONTRACTOR TO REFER TO THE STRUCTURAL ANALYSIS BY KM CONSULTING ENGINEERS, INC. DATED 7/7/20 AND EQUIPMENT INSTALLATION RECOMMENDATIONS PRIOR TO COMMENCING CONSTRUCTION.



NOTE:
EXISTING OTHER CARRIERS, ANTENNAS, CABLES, OTHER ATTACHMENTS, EQUIPMENT, ETC. FOR BUILDING AND TOWER NOT SHOWN FOR CLARITY.

1 / S-3 TOWER ELEVATION
SCALE: 1/16" = 1'-0"

LAST PLOTTED: Monday, 20-July-2020, 13:22
C:\Users\Engineer\Desktop\Bridgeport\CAD

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PROJECT PARTICIPANTS

SITE ACQUISITION: ____________
SIGN OFF INITL. ______ DATE: ______

RF ENGINEER.: ____________
SIGN OFF INITL. ______ DATE: ______

CONSTR. SUPV.: ____________
SIGN OFF INITL. ______ DATE: ______

A & E: KM CONSULTING ENGR.'S INC.

P.C.:	CHKD.:	DRN.:	DATE:
	MLB	JTH	6/11/20

PROJECT NAME:
BRIDGEPORT

SITE ADDRESS:
623 PINE STREET
BRIDGEPORT, CT 06605

DRAWING TITLE:

TOWER ELEVATION

SITE ID #: CT11014B
PROJECT #: 180416.02
DRAWING #: S-3
REV. #: 2

FILE NAME: Bridgeport (CT11014B) CDs.dwg

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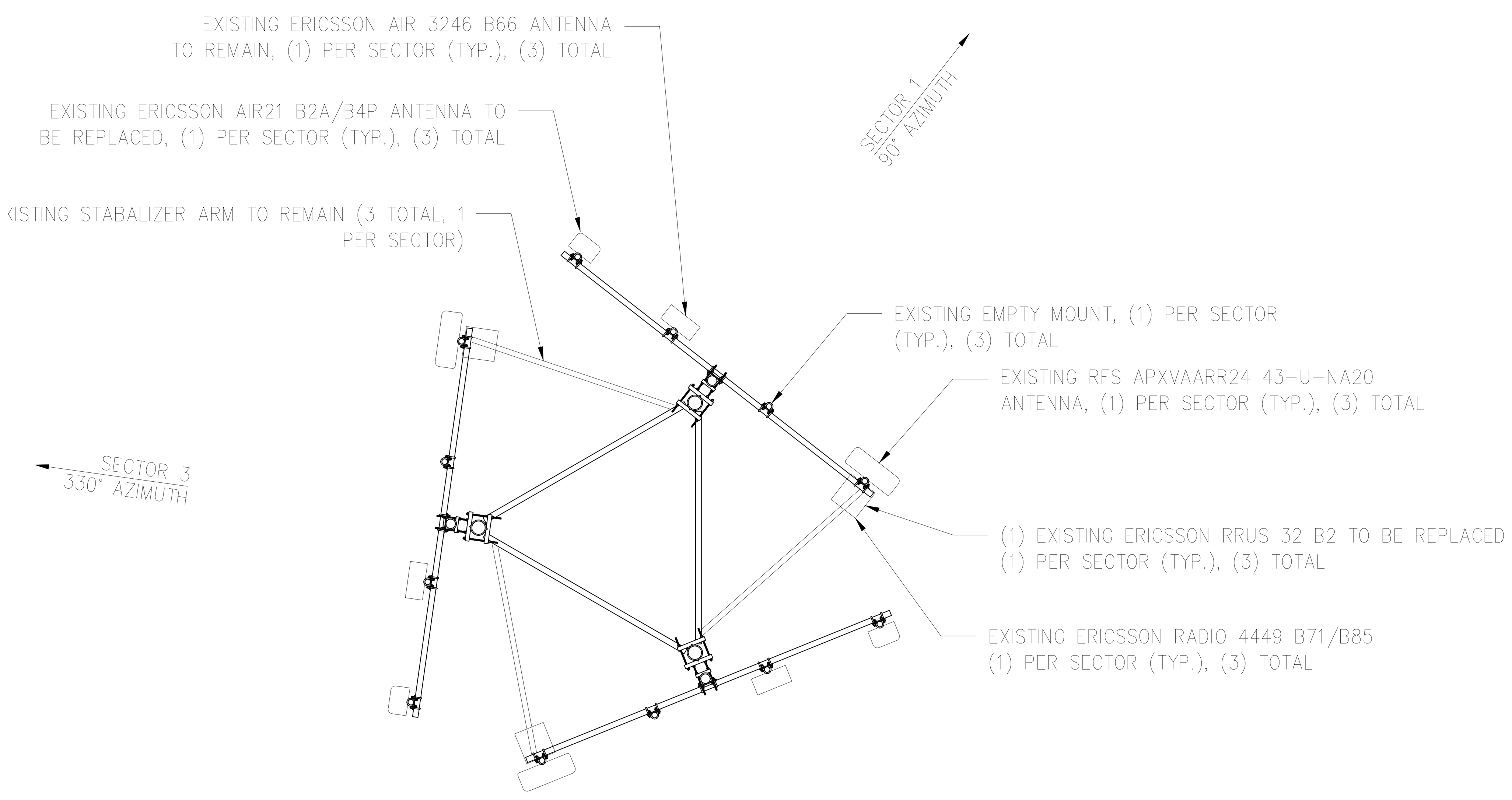
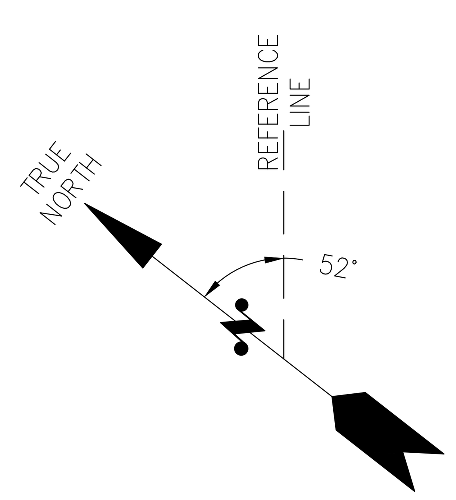
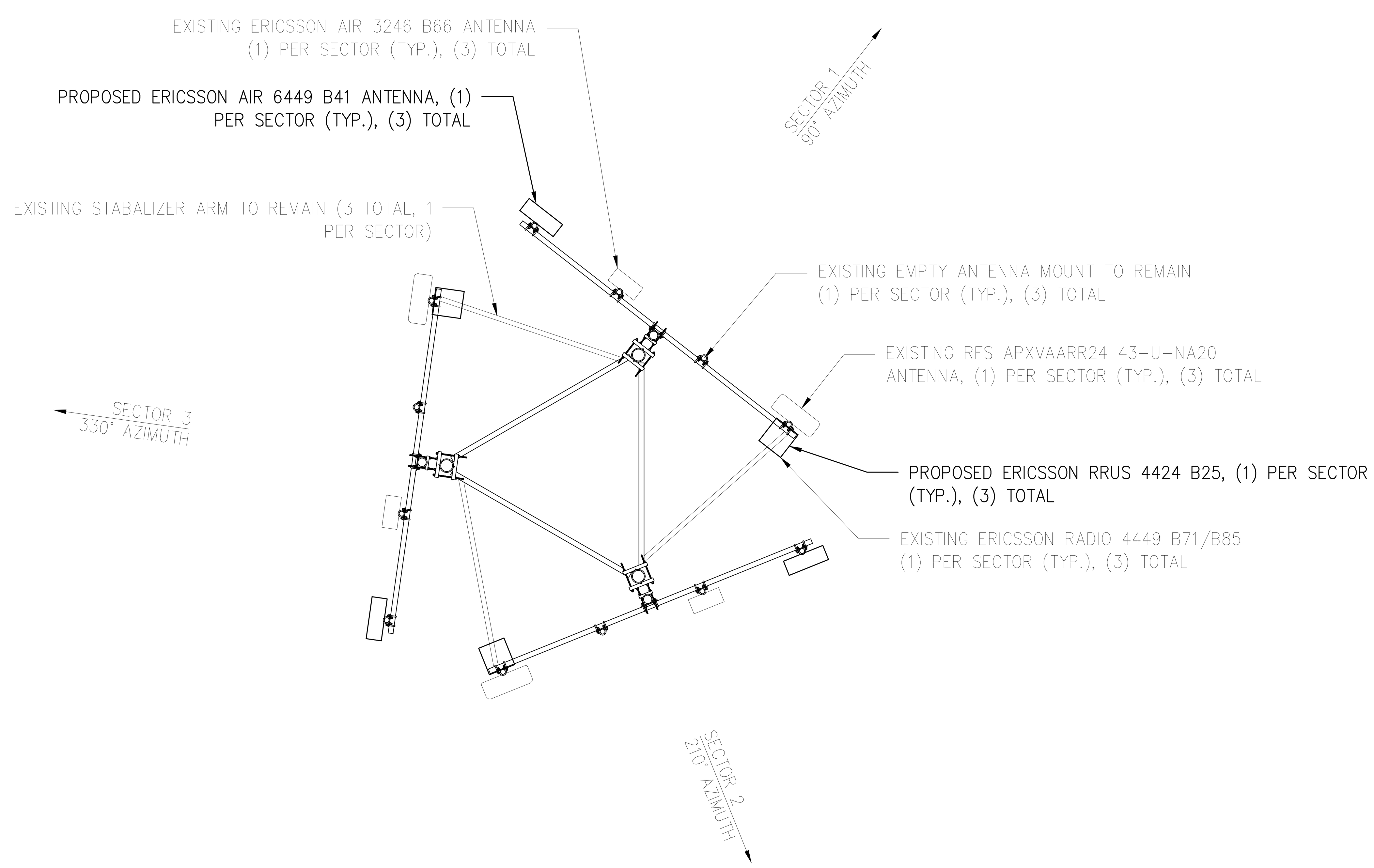




1 A-1 EXISTING ANTENNA PLAN
SCALE: 1/4" = 1'-0"

NOTE:

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA CONFIGURATION



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

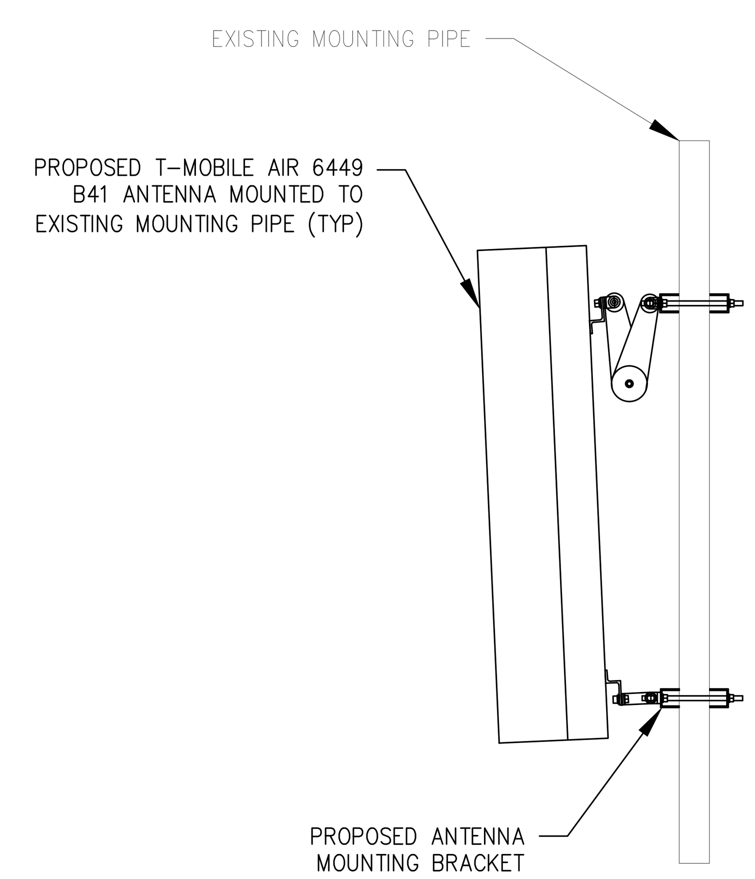
EXISTING ANTENNA SCHEDULE

SECTOR	POSITION	MANUFACTURER	MODEL	TMA/RRH	SIZE (HxWxD)
1	1	ERICSSON	AIR 21 B2A/B4P	TWIN STYLE 1B AWS TMA	55"x12"x7.9"
	2	ERICSSON	AIR 3246 B66		58.1"x15.75"x9.4"
	3	EMPTY MOUNT			
	4	RFS	APXVAARR24 43-U-NA20	RRUS 32 B2 RADIO 4449 B71/B85	95.9"X24"X8.7"
2	1	ERICSSON	AIR 21 B2A/B4P	TWIN STYLE 1B AWS TMA	55"x12"x7.9"
	2	ERICSSON	AIR 3246 B66		58.1"x15.75"x9.4"
	3	EMPTY MOUNT			
	4	RFS	APXVAARR24 43-U-NA20	RRUS 32 B2 RADIO 4449 B71/B85	95.9"X24"X8.7"
3	1	ERICSSON	AIR 21 B2A/B4P	TWIN STYLE 1B AWS TMA	55"x12"x7.9"
	2	ERICSSON	AIR 3246 B66		58.1"x15.75"x9.4"
	3	EMPTY MOUNT			
	4	RFS	APXVAARR24 43-U-NA20	RRUS 32 B2 RADIO 4449 B71/B85	95.9"X24"X8.7"

PROPOSED ANTENNA SCHEDULE

SECTOR	POSITION	MANUFACTURER	MODEL	TMA/RRH	SIZE (HxWxD)
1	1	ERICSSON	AIR 6449 B41		33.1"x20.6"x8.6"
	2	ERICSSON	AIR 3246 B66		58.1"x15.75"x9.4"
	3	EMPTY MOUNT			
	4	RFS	APXVAARR24 43-U-NA20	RADIO 4424 B25 RADIO 4449 B71/B85 TWIN STYLE 1BX TMA SDX1926Q-43 DIXPLEXER	95.9"x24"x8.7"
2	1	ERICSSON	AIR 6449 B41		33.1"x20.6"x8.6"
	2	ERICSSON	AIR 3246 B66		58.1"x15.75"x9.4"
	3	EMPTY MOUNT			
	4	RFS	APXVAARR24 43-U-NA20	RADIO 4424 B25 RADIO 4449 B71/B85 TWIN STYLE 1BX TMA SDX1926Q-43 DIXPLEXER	95.9"x24"x8.7"
3	1	ERICSSON	AIR 6449 B41		33.1"x20.6"x8.6"
	2	ERICSSON	AIR 3246 B66		58.1"x15.75"x9.4"
	3	EMPTY MOUNT			
	4	RFS	APXVAARR24 43-U-NA20	RADIO 4424 B25 RADIO 4449 B71/B85 TWIN STYLE 1BX TMA SDX1926Q-43 DIXPLEXER	95.9"x24"x8.7"

3 A-1 ANTENNA SPECIFICATION TABLE
SCALE:



4 A-1 ANTENNA MOUNTING DETAIL
SCALE: N.T.S.

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STATE OF CONNECTICUT · MICHAEL L. BOHLINGER · 20405 · LICENSED · PROFESSIONAL ENGINEER
7/20/20

REVISIONS

NO.	DATE:	DRN.:	DESCRIPTION:
1	7/20/20	JTH	REVISED AS PER COMMENT
1	7/14/20	JTH	REVISED AS PER COMMENT

PROJECT PARTICIPANTS

SITE ACQUISITION: ______
SIGN OFF INITL. ______ DATE: ______
RF ENGINEER.: ______
SIGN OFF INITL. ______ DATE: ______
CONSTR. SUPV.: ______
SIGN OFF INITL. ______ DATE: ______
A & E: KM CONSULTING ENGR.'S INC.

P.C.:	CHKD.:	DRN.:	DATE:
	MLB	JTH	6/11/20

PROJECT NAME:
BRIDGEPORT

SITE ADDRESS:
623 PINE STREET
BRIDGEPORT, CT 06605

DRAWING TITLE:
ANTENNA PLAN & DETAILS

SITE ID #: CT11014B
PROJECT #: 180416.02
DRAWING #: A-1
REV. #: 2

FILE NAME: Bridgeport (CT11014B) CDs.dwg

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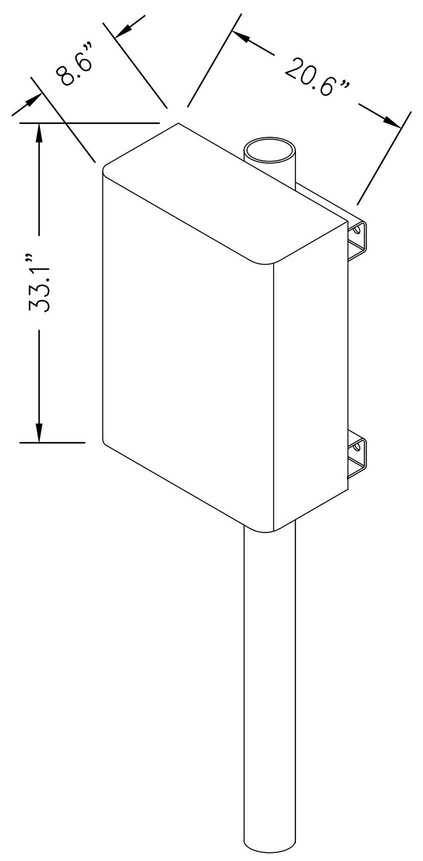
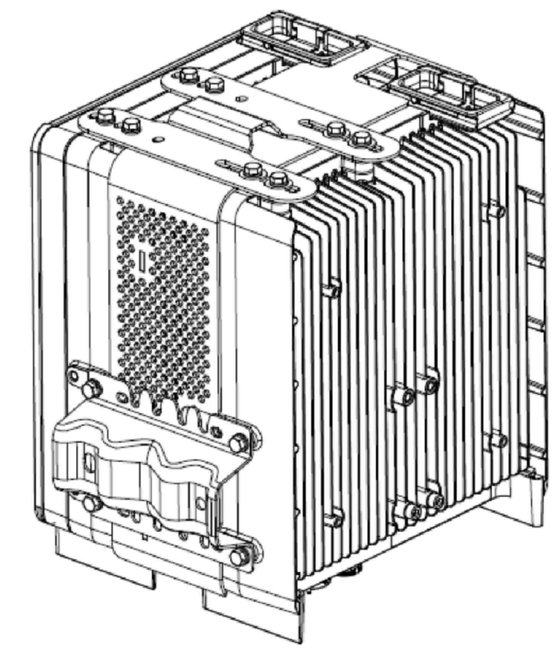


ANTENNA WEIGHT = 104 LBS.

1 A-2 ERICSSON AIR 6449 B41
NOT TO SCALE



ERICSSON 4424 B25 RRU

COLOR: LIGHT GREY
DIMENSIONS (HxWxD): 17.1" X 14.4" X 11.3"
WEIGHT: 86 lbs WITHOUT MOUNTING HARDWARE
CONNECTOR: 4.3-10 FEMALE CONNECTORS
RF OUTPUT POWER: UP TO 4x80W

2 A-2 ERICSSON 4424 B25 RRU DETAIL
NOT TO SCALE

SDX1926Q-43 DIPLEXER

COLOR: GREY
DIMENSIONS (HxWxD): 4.173" X 6.929" X 2.913"
WEIGHT: 6.173 lbs WITHOUT MOUNTING HARDWARE
CONNECTOR: 4.3-10 FEMALE CONNECTORS

3 A-2 SDX1926Q-43 DIPLEXER DETAIL
NOT TO SCALE

NOTE: THE IMAGES ARE NOT REPRESENTATIVE OF THE DOORS THAT WILL BE INSTALLED ON SITE.

Specification

Numbers of power pairs / fiber pairs		6/12
Material		plastic PPE black
Pulling force	radio end	2000 N (short-term during installation)
Temperature range	operation	–40 ℃ to +75 ℃
	installtion	–25 ℃ to +65℃
Cable retention force at enclosure	fiber break-out cable	500 N
	power break-out cable	500 N
	hybrid cable	2000 N
Ingress protection	radio end	IP 68
	base station	IP 65 (with protection tube)
IK class		IK 10
Flammability		UL94-V0
UV resistant		ISO 4892-2
Salt mist, IEC 61300-2-26		96 h
Vibration, IEC 61300-2-1		10 – 500 Hz / 10 g
Shock, IEC 61300-2-9		100 g

Hybrid cable specifications (standard cable)

Hybrid cable specification

Jacket material	Heat, moisture, and sunlight resistant polyvinyl chloride (PVC) jacket
Temperature range	-40℉ to + 158℉ (-40℃ to + 75℃)
Operating voltage	48VDC
Rated voltage	0,6kV/1kV (1.2kV)
Cable shielding	copper foil > 100% coverage
Fiber optic	4.8 mm loose-tube cable with up to 24 fibers single mode
Flame retardant	IEC 60332-1-2:2004
UV resistant	Yes, according IEC 68-2-5
UL approved	Yes

4 A-2 ERICSSON 6x12 HYBRID CABLE SPECS
NOT TO SCALE

ERICSSON RBS6160 EQUIPMENT CABINET

ENCLOSURE: ALUMINUM
DIMENSIONS (HxWxD): 63" X 25.6" X 25.6"
WEIGHT: 188 lbs (EXCLUDES EQUIPMENT)
WEATHER TIGHTNESS: NEMA TYPE 3R

5 A-2 ERICSSON RBS6160 EQUIPMENT CABINET
NOT TO SCALE

ERICSSON B160 EQUIPMENT CABINET

ENCLOSURE: ALUMINUM
DIMENSIONS (HxWxD): 63" X 25.6" X 25.6"
WEIGHT: 188 lbs (EXCLUDES EQUIPMENT)
WEATHER TIGHTNESS: NEMA TYPE 3R

6 A-2 ERICSSON B160 EQUIPMENT CABINET
NOT TO SCALE

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PROJECT PARTICIPANTS

SITE ACQUISITION: ____
SIGN OFF INITL. ____ DATE: ____
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SIGN OFF INITL. ____ DATE: ____
CONSTR. SUPV.: ____
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A & E: KM CONSULTING ENGR.'S INC.

P.C.:	CHKD.:	DRN.:	DATE:
	MLB	JTH	6/11/20

PROJECT NAME:
BRIDGEPORT

SITE ADDRESS:
623 PINE STREET
BRIDGEPORT, CT 06605

DRAWING TITLE:
ANTENNA AND EQUIPMENT DETAILS

SITE ID #:	DRAWING #:	REV. #:
CT11014B	A-2	2
PROJECT #: 180416.02		

FILE NAME: Bridgeport (CT11014B) CDs.dwg

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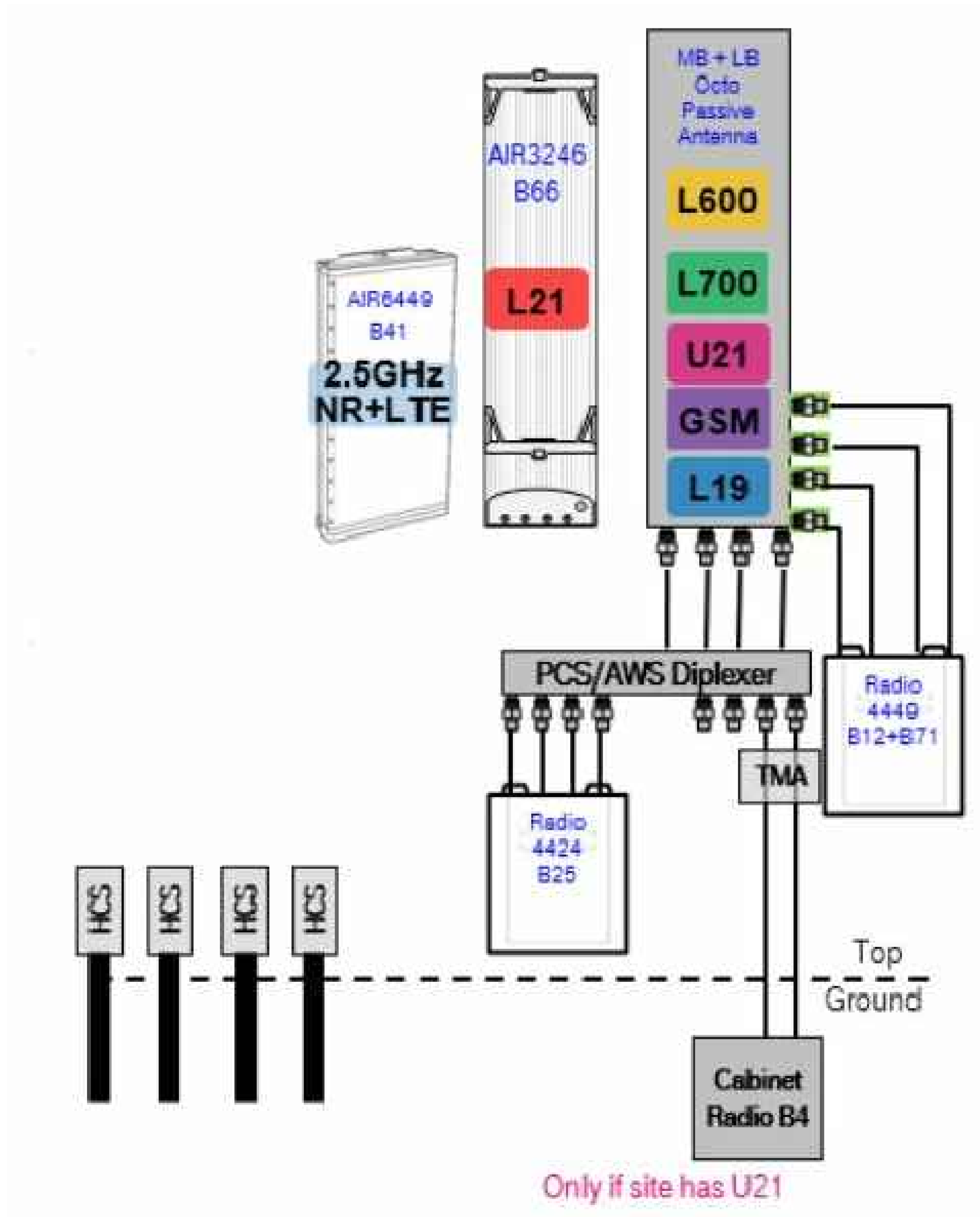
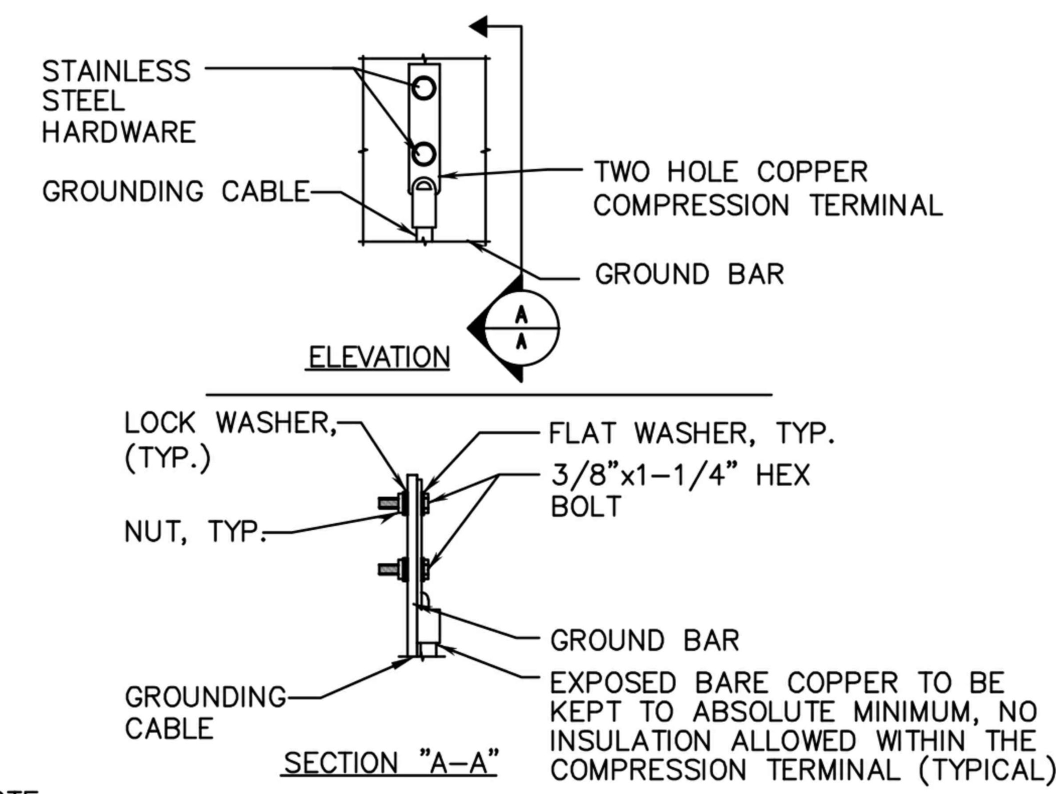
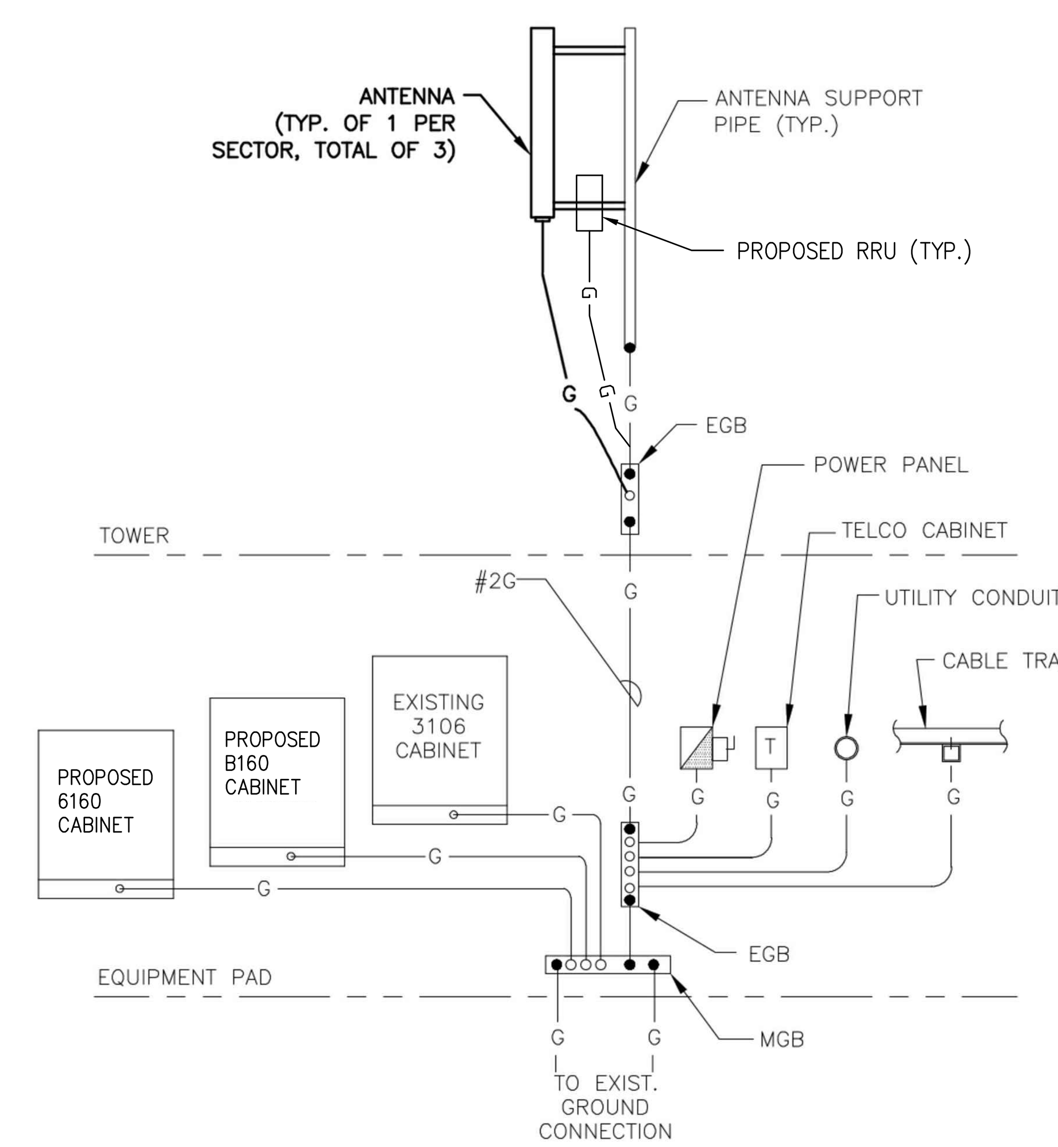


1 G-1 PLUMBING DIAGRAM
SCALE: N.T.S.



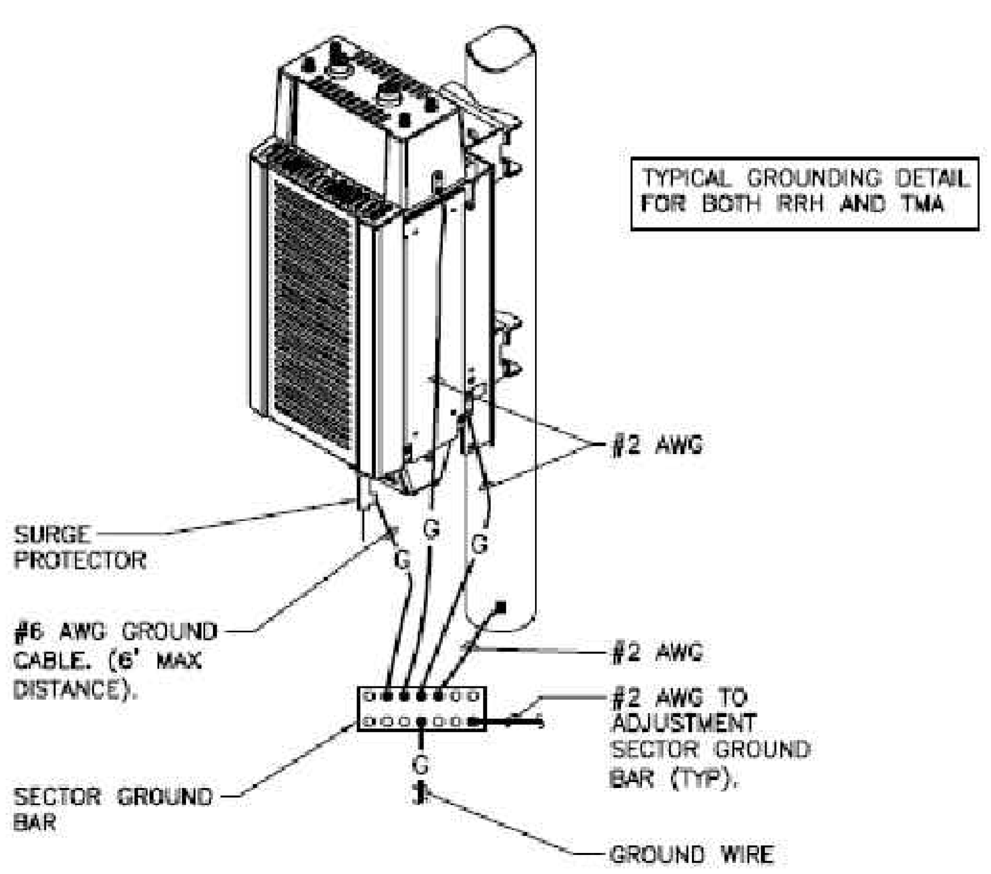
NOTE:
1. "DOUBLING UP" OR "STACKING " OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB.

2 G-1 GROUND BAR CONNECTION DETAIL
SCALE: N.T.S.

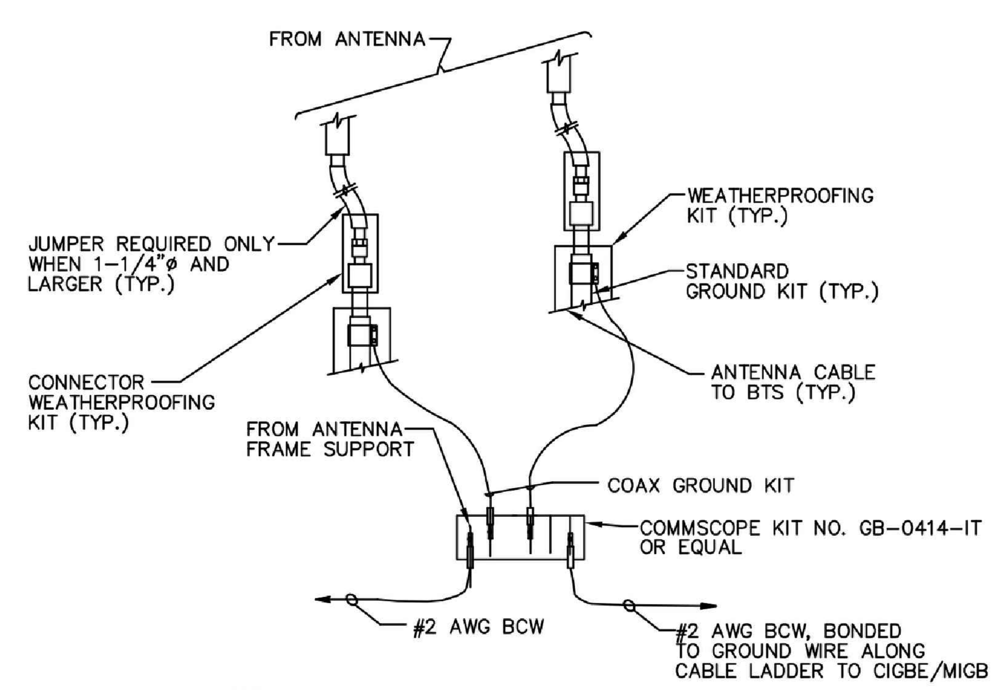


3 G-1 GROUND RISER DIAGRAM
SCALE: N.T.S.

EACH RRH CABINET SHALL BE GROUNDED IN THE FOLLOWING MANNER:
1. AT TOP OF THE CABINET
2. AT RIGHT SIDE OF THE CABINET.

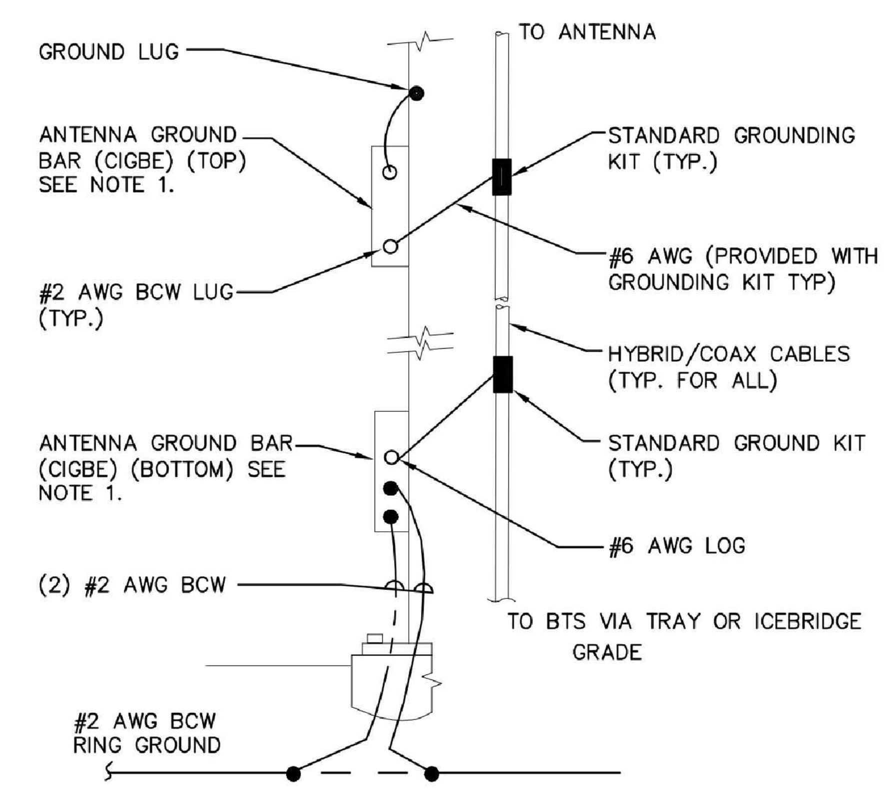


4 G-1 RRU GROUNDING DETAIL
SCALE: N.T.S.



NOTE:
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE.

5 G-1 GROUND WIRE TO GROUND BAR CONNECTION DETAIL
SCALE: N.T.S.



NOTE:
1. NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATION AND CONNECTION ANTENNA LOCATION AND CONNECTION ORIENTATION. PROVIDE AS REQUIRED.
2. A SEPARATE GROUND BAR TO BE USED FOR GPS ANTENNA IF REQUIRED.

6 G-1 ANTENNA CABLE GROUNDING
SCALE: N.T.S.

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SIGN OFF INITL. ____ DATE: ____
RF ENGINEER.: ____
SIGN OFF INITL. ____ DATE: ____
CONSTR. SUPV.: ____
SIGN OFF INITL. ____ DATE: ____
A & E: KM CONSULTING ENGR.'S INC.

P.C.:	CHKD.:	DRN.:	DATE:
	MLB	JTH	6/11/20

PROJECT NAME:
BRIDGEPORT

SITE ADDRESS:
623 PINE STREET
BRIDGEPORT, CT 06605

DRAWING TITLE:
GROUNDING DETAILS

SITE ID #: CT11014B
PROJECT #: 180416.02
DRAWING #: G-1
REV. #: 2

FILE NAME: Bridgeport (CT11014B) CDs.dwg

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUNDING ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATIONS, RADIO, LIGHTNING PROTECTION, AND AC POWER GEC"S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS, 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RUNG, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTING OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWS COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

ELECTRICAL AND GROUNDING NOTES

1. CONNECTIONS TO MGB SHALL BE ARRANGED IN THREE MAIN GROUPS: SURGE PRODUCERS (COAXIAL CABLE GROUND KITS, TELCO AND POWER PANEL GROUNDS); GROUNDING ELECTRODE OR BUILDING STEEL; NON-SURGING OBJECTS (EGB GROUND IN BTS UNIT).
2. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
3. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
4. BOND ANTENNA MOUNTING BRACKETS, COAXIAL CABLE GROUND KITS, AND ALNA TO EGB PLACED NEAR THE ANTENNA LOCATION.
5. BOND ANTENNA EGB'S AND MGB TO WATER MAIN
6. TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION.
7. BOND ANY METAL OBJECTS WITHIN 7 FEET OF PROPOSED EQUIPMENT OR CABINET TO MASTER GROUND BAR.
8. VERIFY PROPOSED SERVICE UPGRADE WITH LOCATION UTILITY COMPANY PRIOR TO CONSTRUCTION.

GENERAL NOTES

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

   CONTRACTOR – TRANSCEND WIRELESS
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – T-MOBILE

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 LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES, AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY THE CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
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 PROPOSED AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWINGS. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
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 OWNER.
11. SUBCONTRACTORS SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. SUBCONTRACTOR SHALL LEAVE PREMISED IN CLEAN CONDITION.
13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLES OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE 3 (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
16. CONSTRUCTION SHALL COMPLY WITH UMTS SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF T-MOBILE SITES."
17. 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 WITH ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATIONS. ANY CONSTRUCTIN 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 WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
19. SINCE THE 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 ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
20. APPLICABLE BUILDING CODES:
    SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF THE CONTRACT AWARD SHALL GOVERN THE DESIGN.

    BUILDING CODE: 2018 CONNECTICUT STATE BUILDING CODE.
    ELECTRICAL CODE: REFER TO ELECTRICAL DRAWINGS
    LIGHTNING CODE: REFER TO ELECTRICAL DRAWINGS

    SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

    AMERICAN CONCRETE INSTITUTE (ACI) 318: BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE

    AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

    MANUAL OF STEEL CONSTRUCTION, ASD, 14TH EDITION

    ANSI/TIA-222-G, STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES

    FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHOD OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MORE RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

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LICENSE # 20405

STATE OF CONNECTICUT ★ MICHAEL L. BOHLINGER ★ 20405 LICENSED ★ PROFESSIONAL ENGINEER

7/20/20

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NO.	DATE:	DRN.:	DESCRIPTION:
1	7/20/20	JTH	REVISED AS PER COMMENT
1	7/14/20	JTH	REVISED AS PER COMMENT

PROJECT PARTICIPANTS

SITE ACQUISITION: ____________
SIGN OFF INITL. ______ DATE: ______

RF ENGINEER.: ____________
SIGN OFF INITL. ______ DATE: ______

CONSTR. SUPV.: ____________
SIGN OFF INITL. ______ DATE: ______

A & E: KM CONSULTING ENGR.'S INC.

P.C.:	CHKD.:	DRN.:	DATE:
	MLB	JTH	6/11/20

PROJECT NAME:
BRIDGEPORT

SITE ADDRESS:
623 PINE STREET
BRIDGEPORT, CT 06605

DRAWING TITLE:

GENERAL NOTES

SITE ID #:	DRAWING #:	REV. #:
CT11014B	GN-1	2

PROJECT #: 180416.02

FILE NAME: Bridgeport (CT11014B) CDs.dwg

LAST PLOTTED: Monday, 20-July-2020, 13:23
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Exhibit D
Structural Analysis Report

STRUCTURAL ANALYSIS REPORT

for

T-Mobile

Transcend Wireless
10 Industrial Ave., Suite 3
Mahwah, NJ 07430

Bridgeport (CT11014B)
KM No. 180416.02

250' Self-Support Tower
623 Pine Street
Bridgeport, CT 06605
41.16573, -73.21666

Prepared By:

KM CONSULTING ENGINEERS, INC.

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Ph: (609) 538-0400 www.kmengr.com

July 7, 2020

Prepared to ANSI/TIA-222-G-4 December 2014
Structural Standards for Antenna Supporting
Structures and Antennas

Transcend Wireless
Bridgeport (CT11014B)

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2.0 TOWER INVENTORY 4

3.0 COMMENTARY 6

4.0 ANALYSIS PROCEDURE 7

5.0 TOWER ANALYSIS RESULTS 8

6.0 RECOMMENDATIONS 9

7.0 APPENDIX 10

Load Case No. 1: Existing tower superstructure with existing inventory and proposed T-Mobile installation.

1.0 EXECUTIVE SUMMARY

Structure

Owner:	Radio Communications Tower
Location:	623 Pine Street Bridgeport, CT 06605 41.16573, -73.21666
Manufacturer:	Rohn Eng. File No. 37679AE dated 7/1/98

Equipment

Existing tower inventory plus the proposed installation are detailed in Section 2.0 "Tower Inventory."

Synopsis

Load Case No. 1: The existing tower superstructure with the current inventory and proposed T-Mobile installation.

The existing tower superstructure and base foundation have sufficient capacity and therefore meet the current ANSI/TIA-222-G design standards. The tower superstructure is rated at 95.0% and the foundation is rated at 64.5%.

2.0 TOWER INVENTORY

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
yaggi in radom	256	mounting frames w/stable bar (MetroPCS)	138
Beacon	256	mounting frames w/stable bar (MetroPCS)	138
Omni antenna	256	VHLP1-23-2WH (Clearwire)	121
Omni antenna	256	VHLP1-23-2WH (Clearwire)	121
Omni antenna	256	VHLP2.5-11-4WH (Clearwire)	121
Omni antenna	256 - 239	Panel Antenna w/mount pipe (Clearwire)	118
Top Platform	256	Panel Antenna w/mount pipe (Clearwire)	118
Omni antenna	248 - 238	Panel Antenna w/mount pipe (Clearwire)	118
mounting frames w/stable bar (T-Mobile)	180	800 10736V01 (Verizon)	110
mounting frames w/stable bar (T-Mobile)	180	800 10736V01 (Verizon)	110
mounting frames w/stable bar (T-Mobile)	180	800 10736V01 (Verizon)	110
AIR 3246 B66 (T-Mobile)	180	(2) APL-866513-42T9 (Verizon)	110
AIR 3246 B66 (T-Mobile)	180	(2) APL-866513-42T6 (Verizon)	110
AIR 3246 B66 (T-Mobile)	180	(2) APL-866513-42T9 (Verizon)	110
APXVAARR24_43-U-NA20 (T-Mobile)	180	Rohn 6'x15' Boom Gate (Verizon)	110
APXVAARR24_43-U-NA20 (T-Mobile)	180	Rohn 6'x15' Boom Gate (Verizon)	110
APXVAARR24_43-U-NA20 (T-Mobile)	180	Rohn 6'x15' Boom Gate (Verizon)	110
AIR6449 B41 (T-Mobile)	180	Distribution Box (Verizon)	110
AIR6449 B41 (T-Mobile)	180	2x60 700 RRH B13 (Verizon)	110
AIR6449 B41 (T-Mobile)	180	2x60 700 RRH B13 (Verizon)	110
Radio 4449 B71/B85 (T-Mobile)	180	2x60 700 RRH B13 (Verizon)	110
Radio 4449 B71/B85 (T-Mobile)	180	GPS antenna (Verizon)	110
Radio 4449 B71/B85 (T-Mobile)	180	(2) HBXX-6516DS-A2M (Verizon)	110
Radio 4424 B25 (T-Mobile)	180	2x60 PCS RRH B25 (Verizon)	110
Radio 4424 B25 (T-Mobile)	180	2x60 PCS RRH B25 (Verizon)	110
Radio 4424 B25 (T-Mobile)	180	Distribution Box (Verizon)	110
Twin style 1B TMA (T-Mobile)	180	2x60 AWS RRH (Verizon)	110
Twin style 1B TMA (T-Mobile)	180	2x60 AWS RRH (Verizon)	110
Twin style 1B TMA (T-Mobile)	180	2x60 AWS RRH (Verizon)	110
SBX1926Q-43 (T-Mobile)	180	(2) HBXX-6516DS-A2M (Verizon)	110
SBX1926Q-43 (T-Mobile)	180	(2) HBXX-6516DS-A2M (Verizon)	110
SBX1926Q-43 (T-Mobile)	180	2x60 PCS RRH B25 (Verizon)	110
(2) MetroPCS Antenna (MetroPCS)	138	TV 65 antenna	100
(2) MetroPCS Antenna (MetroPCS)	138	4' Side Arm	100
(2) MetroPCS Antenna (MetroPCS)	138	TV 65 antenna	100
mounting frames w/stable bar (MetroPCS)	138		

Proposed T-Mobile Installation:

*(3) AIR6449 B41 panel antennas @ 180' AGL
*(3) Radio 4424 B25's @ 180' AGL
*(3) SBX1926Q-43 diplexers @ 180' AGL
*(3) 6x12 hybrid cables up to 180' AGL
*removal of (3) AIR 21 B2A/B4P panel antennas @ 180' AGL
*removal of (3) RRUS 32 B2's @ 180' AGL
*removal of (6) 1-5/8" coax lines up to 180' AGL

3.0 COMMENTARY

Our scope of work is to determine if the existing structure is capable of withstanding the additional stresses/forces imposed by the installation of the proposed T-Mobile equipment noted in the tower inventory. The tower is a 250' tall Rohn self-support tower with a triangular platform located at the top.

Tower member sizes, layout and foundation information was taken from previous structural analysis by KM Consulting Engineers, Inc. (KMCE) dated 1/21/19. Existing antenna inventory and coax cable layout was also taken from the above mentioned analysis. Proposed equipment was obtained from a draft T-Mobile RFDS dated 6/2/20 and by correspondence with the client.

The following report will provide analytical calculations and commentary regarding the capacity of the proposed tower and subsequent recommendations.

4.0 ANALYSIS PROCEDURE

KM Consulting Engineers, Inc. carried out their structural analysis by correlating field inspection and tower member data into proprietary software designed specifically for communication tower analysis.

These programs run in conjunction with the guidelines set down in the ANSI/TIA-222-G Standard entitled "Structural Standards for Antenna Supporting Structures and Antennas."

The existing tower is analyzed by placing wind forces on the structure in 30° positional increments around the tower (i.e. wind pressure directly onto the tower corners, faces and parallel to the faces). This enables the user to "create" a three-dimensional representation, yielding results for worst case scenarios. In effect, the production of these results allows the user to study the structural integrity of the tower when influenced by wind forces from any direction.

The proceeding report includes analysis for the tower with the addition of antennas in the scenarios stated. For clarity, the analysis shall include worst case loadings and a typical elevation view with maximum foundation loads tabulated.

Should the client require to be furnished with a full copy of our analysis, we will gladly do so.

Codes and Standards

ACI - American Concrete Institute - Building Code Requirements for Structural Concrete (ACI 318-14), 2014

AISC - American Institute of Steel Construction - Manual of Steel Construction, 14th edition, 2011

TIA - Telecommunications Industry Association – ANSI/TIA-222-G-4 Structural Standards for Antenna Supporting Structures and Antennas, 2014

CSBC - Connecticut State Building Code 2018

5.0 TOWER ANALYSIS RESULTS

The tower was analyzed for the inventory detailed in Section 2.0 "Tower Inventory".

The basic wind speed of 97 MPH with no radial ice in accordance with ANSI/TIA-222-G is taken from Appendix N in the 2018 Connecticut State Building Code for the nominal design wind speed for the municipality of Bridgeport, CT. The basic wind speed of 50 MPH concurrent with ¾" design ice thickness is taken from the ANSI/TIA-222-G listing applicable for Fairfield County, CT. Additional criteria include Structure Class II, Exposure Category C, and Topographic Category 1.

Load Case No. 1: Existing inventory and the proposed T-Mobile installation includes the additions of (3) existing AIR6449 B41 panel antennas, (3) Radio 4424 B25's, (3) SBX1926Q-43 diplexers, and (3) 6x12 hybrid cables, and the removal of (3) AIR 21 B2A/B4P panel antennas, (3) RRUS 32 B2's, and (6) 1-5/8" coax lines.

The existing tower superstructure and base foundation have sufficient capacity and therefore meet the current ANSI/TIA-222-G design standards. The tower superstructure is rated at 95.0% and the foundation is rated at 64.5%.

Table 1. Base Foundation Rating

Force	Actual (kip·ft)	Allowable (kip·ft)	Capacity
Overturning Moment	11,290	17,504	**64.5%**

6.0 RECOMMENDATIONS

Further to our calculations, we conclude that the existing tower superstructure and base foundation have adequate capacity and therefore meet the current ANSI/TIA-222-G design standards. The tower and foundation are acceptable to support the proposed T-Mobile installation.

Please do not hesitate to contact our office with any questions or concerns regarding this report.

Sincerely,
KM CONSULTING ENGINEERS, INC.

Domenic Aversa, PE
Project Manager

Reviewed and Approved by:

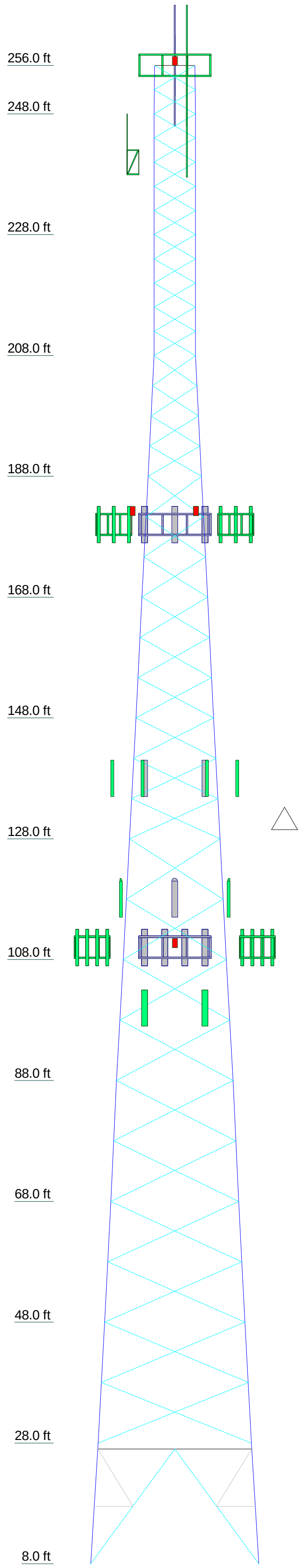
Michael L. Bohlinger, PE
Principal
CT License No. 20405

STATE OF CONNECTICUT
MICHAEL L. BOHLINGER
20405
LICENSED
PROFESSIONAL ENGINEER
7/7/20

7.0 APPENDIX

LOAD CASE 1

Section	Legs	Leg Grade	Diagonals	Diagonal Grade	Top Girts	Red. Horizontals	Red. Diagonals	Red. Hips	Inner Bracing	Face Width (ft)	# Panels @ (ft)	Weight (lb)
T1	A		B		C					6.604		478.2
T2	ROHN 3 EH									6.9	12 @ 4	1379.5
T3	ROHN 4 EH		L2x2x1/4									1660.8
T4	ROHN 5 EH									6.833	4 @ 5	1965.2
T5			L2 1/2x2 1/2x1/4							8.916		2590.2
T6	ROHN 6 EH		L3x3x1/4							10.916	9 @ 6.66667	2923.5
T7		A572-50		A572-50	N.A.	N.A.	N.A.	N.A.	N.A.	12.916		3083.2
T8	ROHN 8 EHS		L4x4x3/8							14.989		4195.6
T9	ROHN 8 EH		L4x4x0.31							17.0833		4629.8
T10										19.25	10 @ 10	6622.3
T11	P10x.5		L5x5x3/8							21.25		6887.4
T12										23.229		7164.6
T13			ROHN 3 STD		ROHN 3 STD	ROHN 1.5 STD	ROHN 1.5 STD	ROHN 1.5 STD	ROHN 3 STD	25.333	1 @ 19	5631.7
										27.8333		49211.9



DESIGNED APPURTENANCE LOADING

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Omni antenna	256	VHLP1-23-2WH (Clearwire)	121
Omni antenna	256	VHLP2.5-11-4WH (Clearwire)	121
Omni antenna	256 - 239	Panel Antenna w/mount pipe (Clearwire)	118
Top Platform	256	Panel Antenna w/mount pipe (Clearwire)	118
Omni antenna	248 - 238	Panel Antenna w/mount pipe (Clearwire)	118
mounting frames w/stable bar (T-Mobile)	180	800 10736V01 (Verizon)	110
mounting frames w/stable bar (T-Mobile)	180	800 10736V01 (Verizon)	110
mounting frames w/stable bar (T-Mobile)	180	800 10736V01 (Verizon)	110
AIR 3246 B66 (T-Mobile)	180	(2) APL-866513-42T9 (Verizon)	110
AIR 3246 B66 (T-Mobile)	180	(2) APL-866513-42T6 (Verizon)	110
AIR 3246 B66 (T-Mobile)	180	(2) APL-866513-42T9 (Verizon)	110
APXVAARR24_43-U-NA20 (T-Mobile)	180	Rohn 6'x15' Boom Gate (Verizon)	110
APXVAARR24_43-U-NA20 (T-Mobile)	180	Rohn 6'x15' Boom Gate (Verizon)	110
APXVAARR24_43-U-NA20 (T-Mobile)	180	Rohn 6'x15' Boom Gate (Verizon)	110
AIR6449 B41 (T-Mobile)	180	Distribution Box (Verizon)	110
AIR6449 B41 (T-Mobile)	180	2x60 700 RRH B13 (Verizon)	110
AIR6449 B41 (T-Mobile)	180	2x60 700 RRH B13 (Verizon)	110
Radio 4449 B71/B85 (T-Mobile)	180	2x60 700 RRH B13 (Verizon)	110
Radio 4449 B71/B85 (T-Mobile)	180	GPS antenna (Verizon)	110
Radio 4449 B71/B85 (T-Mobile)	180	(2) HBXX-6516DS-A2M (Verizon)	110
Radio 4424 B25 (T-Mobile)	180	2x60 PCS RRH B25 (Verizon)	110
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Twin style 1B TMA (T-Mobile)	180	2x60 AWS RRH (Verizon)	110
Twin style 1B TMA (T-Mobile)	180	2x60 AWS RRH (Verizon)	110
Twin style 1B TMA (T-Mobile)	180	2x60 AWS RRH (Verizon)	110
SBX1926Q-43 (T-Mobile)	180	(2) HBXX-6516DS-A2M (Verizon)	110
SBX1926Q-43 (T-Mobile)	180	(2) HBXX-6516DS-A2M (Verizon)	110
SBX1926Q-43 (T-Mobile)	180	2x60 PCS RRH B25 (Verizon)	110
(2) MetroPCS Antenna (MetroPCS)	138	TV 65 antenna	100
(2) MetroPCS Antenna (MetroPCS)	138	4' Side Arm	100
(2) MetroPCS Antenna (MetroPCS)	138	TV 65 antenna	100
mounting frames w/stable bar (MetroPCS)	138		

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	ROHN 3 STD	C	L3x3x1/4
B	L1 3/4x1 3/4x3/16		

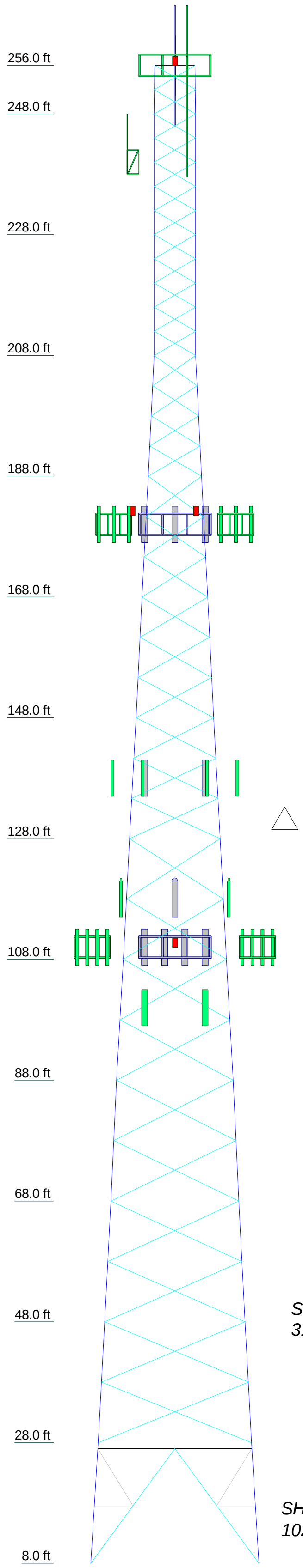
MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi			

KM Consulting Engineers, Inc.
Consulting Engineers
262 Upper Ferry Road
Ewing, NJ 08628
Phone: (609) 538-0400
FAX:

Job: **Bridgeport LC1**			
Project: **250' Rohn Self Support Tower**			
Client: Transcend Wireless	Drawn by: DCA	App'd:	
Code: TIA-222-G	Date: 07/07/20	Scale: NTS	
Path: I:\Doug\Transcend Wireless\Bridgeport (CT11014B)\Engineering\Bridgeport LC1.eri		Dwg No. E-1	

Section	Legs	Leg Grade	Diagonals	Diagonal Grade	Top Girts	Red. Horizontals	Red. Diagonals	Red. Hips	Inner Bracing	Face Width (ft)	# Panels @ (ft)	Weight (lb)
T1	A		B		C					6.604		478.2
T2	ROHN 3 EH									6.9	12 @ 4	1379.5
T3	ROHN 4 EH		L2x2x1/4									1660.8
T4	ROHN 5 EH									6.833	4 @ 5	1965.2
T5			L2 1/2x2 1/2x1/4							8.916		2590.2
T6	ROHN 6 EH									10.916	9 @ 6.66667	2923.5
T7		A572-50	L3x3x1/4	A572-50	N.A.	N.A.	N.A.	N.A.	N.A.	12.916		3083.2
T8	ROHN 8 EHS		L4x4x3/8							14.989		4195.6
T9	ROHN 8 EH		L4x4x0.31							17.0833		4629.8
T10										19.25	10 @ 10	6622.3
T11			L5x5x3/8							21.25		6887.4
T12	P10x.5									23.229		7164.6
T13			ROHN 3 STD		ROHN 3 STD	ROHN 1.5 STD	ROHN 1.5 STD	ROHN 1.5 STD	ROHN 3 STD	25.333	1 @ 19	5631.7
										27.8333		49211.9



SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	ROHN 3 STD	C	L3x3x1/4
B	L1 3/4x1 3/4x3/16		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi			

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 97 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 95%

ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 494540 lb
SHEAR: 61106 lb

UPLIFT: -426123 lb
SHEAR: 55207 lb

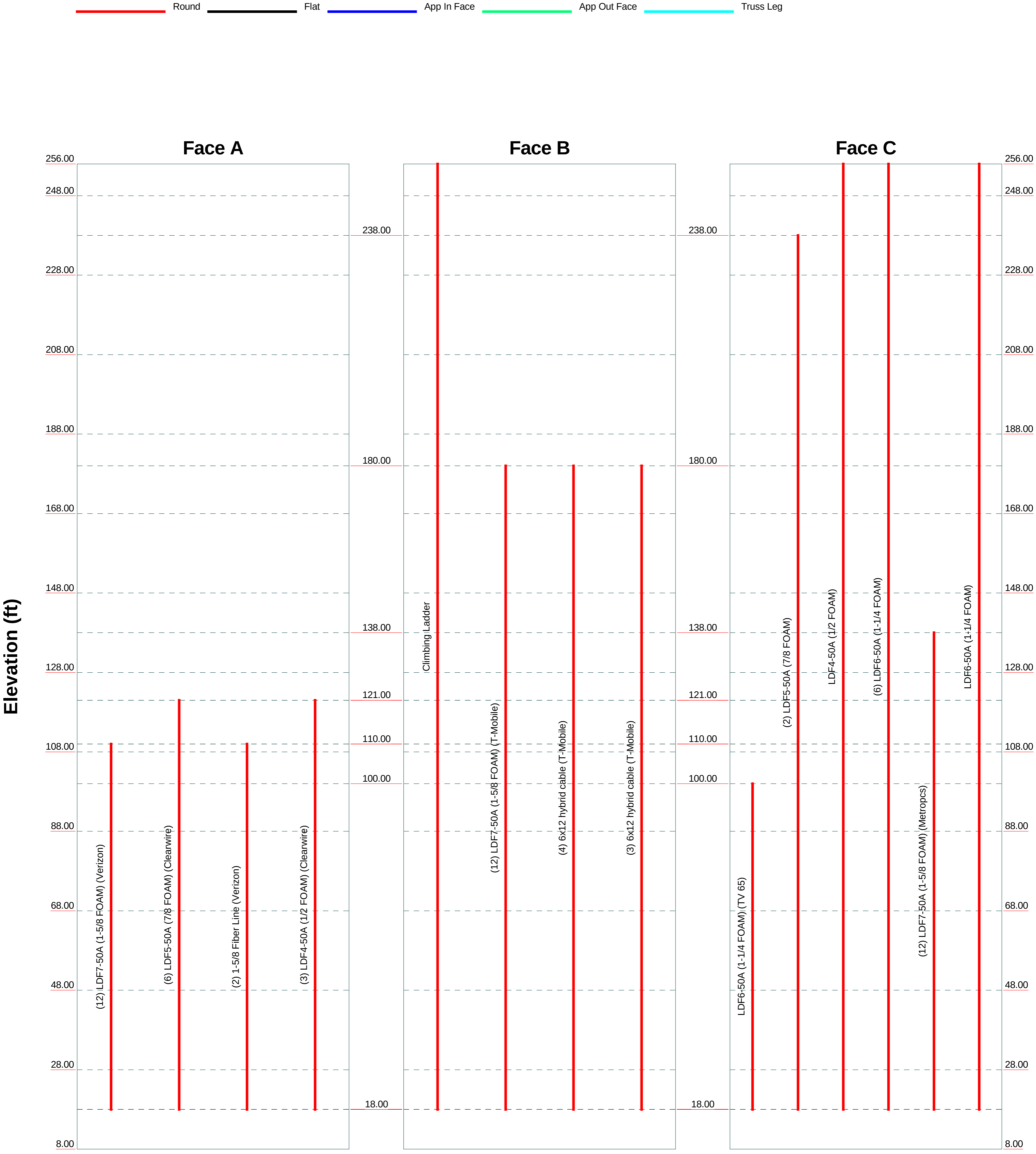
AXIAL 193099 lb
SHEAR 31525 lb
MOMENT 3660859 lb-ft
TORQUE 46861 lb-ft
50 mph WIND - 0.7500 in ICE

AXIAL 78315 lb
SHEAR 102533 lb
MOMENT 11291341 lb-ft
TORQUE 155391 lb-ft
REACTIONS - 97 mph WIND

KM Consulting Engineers, Inc.
262 Upper Ferry Road
Ewing, NJ 08628
Phone: (609) 538-0400
FAX:
Consulting Engineers

Job: **Bridgeport LC1**			
Project: **250' Rohn Self Support Tower**			
Client: Transcend Wireless	Drawn by: DCA	App'd:	
Code: TIA-222-G	Date: 07/07/20	Scale: NTS	
Path: I:\Doug\Transcend Wireless\Bridgeport (CT11014B)\Engineering\Bridgeport LC1.eri		Dwg No. E-1	

Feed Line Distribution Chart
8' - 256'



KM Consulting Engineers, Inc.
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262 Upper Ferry Road
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Phone: (609) 538-0400
FAX:

Job: **Bridgeport LC1**		
Project: **250' Rohn Self Support Tower**		
Client: Transcend Wireless	Drawn by: DCA	App'd:
Code: TIA-222-G	Date: 07/07/20	Scale: NTS
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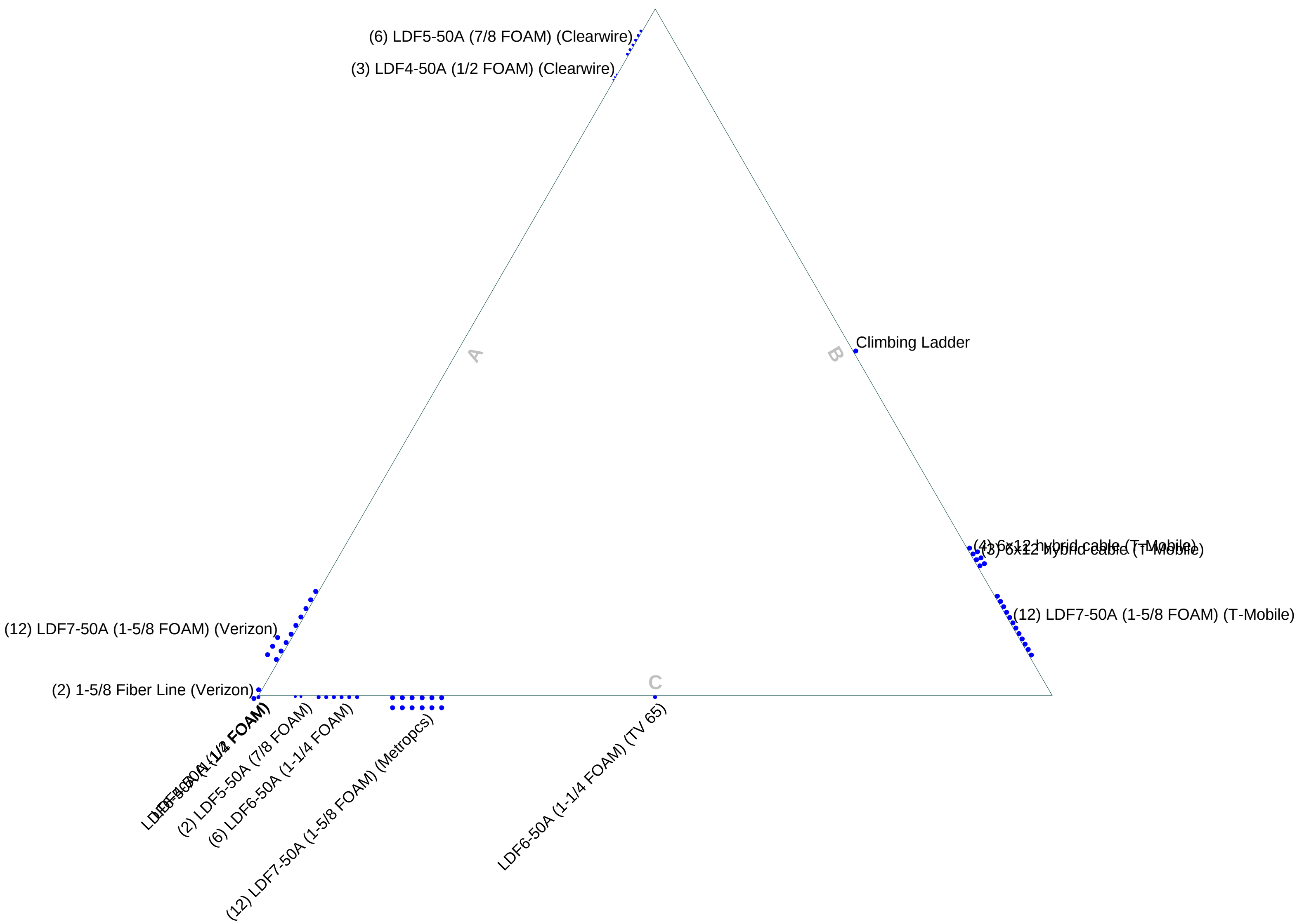
Feed Line Plan

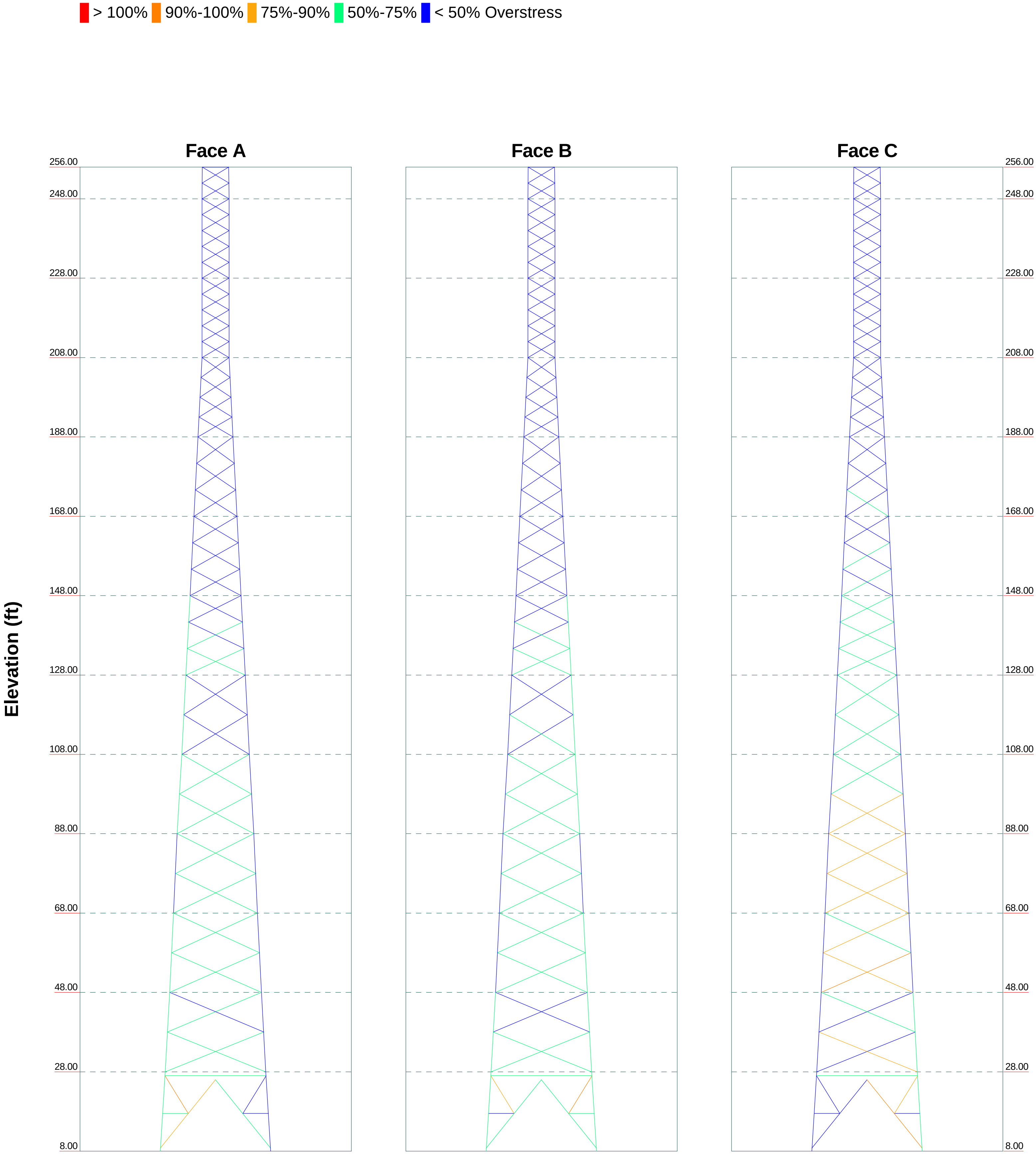
Round Flat App In Face App Out Face



KM Consulting Engineers, Inc. 262 Upper Ferry Road, Ewing, NJ 08628, Phone: (609) 538-0400, FAX:	Job: **Bridgeport LC1**		
	Project: **250' Rohn Self Support Tower**		
	Client: Transcend Wireless	Drawn by: DCA	App'd:
	Code: TIA-222-G	Date: 07/07/20	Scale: NTS
	Path: I:\Doug\Transcend Wireless\Bridgeport (CT11014B)\Engineering\Bridgeport LC1.eri		Dwg No. E-7

Consulting Engineers

Stress Distribution Chart
8' - 256'



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Consulting Engineers

Job: **Bridgeport LC1**		
Project: **250' Rohn Self Support Tower**		
Client: Transcend Wireless	Drawn by: DCA	App'd:
Code: TIA-222-G	Date: 07/07/20	Scale: NTS
Path: I:\Doug\Transcend Wireless\Bridgeport (CT11014B)\Engineering\Bridgeport LC1.eri		Dwg No. E-8

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$øP_{allow}$ lb	% Capacity	Pass Fail
T1	256 - 248	Leg	ROHN 3 STD	3	-4732.89	88543.60	5.3	Pass
		Diagonal	L1 3/4x1 3/4x3/16	8	-1856.19	7836.45	23.7	Pass
		Top Girt	L3x3x1/4	4	-677.51	19705.80	3.4	Pass
T2	248 - 228	Leg	ROHN 3 EH	21	-27575.00	119117.00	23.1	Pass
		Diagonal	L2x2x1/4	23	-3461.67	15423.50	22.4 29.5 (b)	Pass
T3	228 - 208	Leg	ROHN 4 EH	54	-62342.70	183589.00	34.0	Pass
		Diagonal	L2x2x1/4	59	-5027.34	16011.80	31.4 41.1 (b)	Pass
T4	208 - 188	Leg	ROHN 5 EH	87	-85982.10	254372.00	33.8	Pass
		Diagonal	L2x2x1/4	89	-3330.49	9442.17	35.3	Pass
T5	188 - 168	Leg	ROHN 6 EH	114	-112684.00	343100.00	32.8	Pass
		Diagonal	L2 1/2x2 1/2x1/4	116	-6283.06	11996.10	52.4	Pass
T6	168 - 148	Leg	ROHN 6 EH	135	-146112.00	343100.00	42.6	Pass
		Diagonal	L3x3x1/4	137	-7668.72	16173.10	47.4 53.6 (b)	Pass
T7	148 - 128	Leg	ROHN 6 EH	156	-182000.00	343092.00	53.0	Pass
		Diagonal	L3x3x1/4	158	-9395.99	12584.10	74.7	Pass
T8	128 - 108	Leg	ROHN 8 EHS	177	-219205.00	386381.00	56.7	Pass
		Diagonal	L4x4x3/8	179	-13060.00	30486.60	42.8 60.7 (b)	Pass
T9	108 - 88	Leg	ROHN 8 EH	192	-266591.00	505517.00	52.7	Pass
		Diagonal	L4x4x0.31	194	-16460.90	21205.70	77.6 78.9 (b)	Pass
T10	88 - 68	Leg	P10x.5	207	-319868.00	668659.00	47.8	Pass
		Diagonal	L5x5x3/8	209	-19973.90	43484.70	45.9 82.0 (b)	Pass
T11	68 - 48	Leg	P10x.5	222	-376841.00	668663.00	56.4	Pass
		Diagonal	L5x5x3/8	224	-22730.10	37294.00	60.9 90.1 (b)	Pass
T12	48 - 28	Leg	P10x.5	237	-434722.00	668640.00	65.0	Pass
		Diagonal	L5x5x3/8	239	-25514.30	31978.80	79.8	Pass
T13	28 - 8	Leg	P10x.5	252	-452442.00	711505.00	63.6	Pass
		Diagonal	ROHN 3 STD	259	-36105.70	38509.50	93.8	Pass
		Top Girt	ROHN 3 STD	253	-21664.80	31030.70	69.8	Pass
		Redund Horz 1 Bracing	ROHN 1.5 STD	271	-7851.80	13888.30	56.5	Pass
		Redund Diag 1 Bracing	ROHN 1.5 STD	267	-6859.68	7217.78	95.0	Pass
		Redund Hip 1 Bracing	ROHN 1.5 STD	278	-115.66	12002.20	1.0	Pass
		Redund Hip Diagonal 1 Bracing	ROHN 1.5 STD	279	-68.66	2211.89	3.1	Pass
		Inner Bracing	ROHN 3 STD	280	-375.25	29213.70	17.6	Pass
							Summary	
						Leg (T12)	65.0	Pass
						Diagonal (T13)	93.8	Pass
						Top Girt (T13)	69.8	Pass
						Redund Horz 1 Bracing (T13)	56.5	Pass
						Redund Diag 1 Bracing	95.0	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$øP_{allow}$ lb	% Capacity	Pass Fail
						(T13)		
						Redund Hip 1 Bracing (T13)	1.0	Pass
						Redund Hip Diagonal 1 Bracing (T13)	3.1	Pass
						Inner Bracing (T13)	17.6	Pass
						Bolt Checks	90.1	Pass
						RATING =	**95.0**	**Pass**

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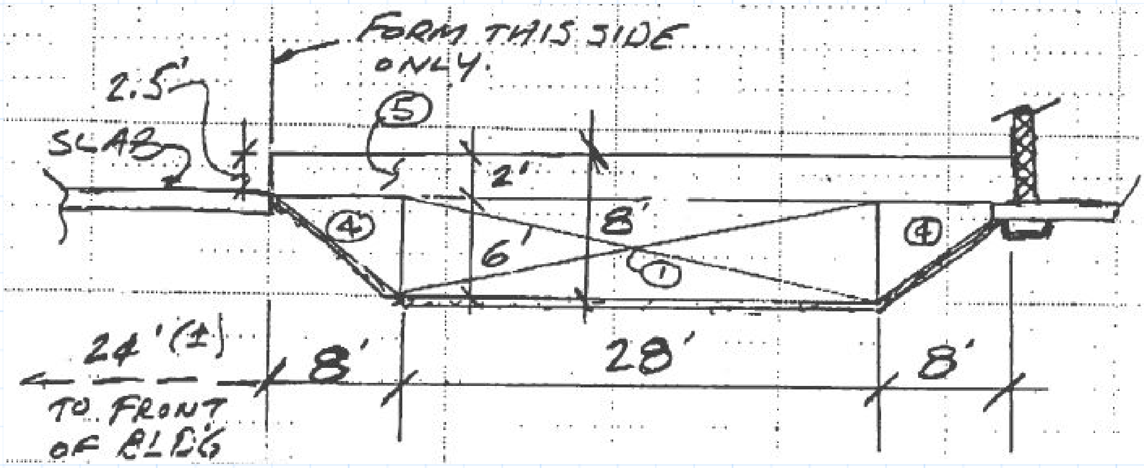
Foundation Calculations



Volume of Foundation:

$V_1 := 6\ \text{ft} \cdot 28\ \text{ft} \cdot 31\ \text{ft} = 5208.0\ \text{ft}^3$

$V_2 := -1 \cdot \frac{1}{2} \cdot 2.83\ \text{ft} \cdot 4\ \text{ft} \cdot 28\ \text{ft} \cdot 2 = -317.0\ \text{ft}^3$

$V_3 := 1\ \text{ft} \cdot 1.67\ \text{ft} \cdot 44\ \text{ft} \cdot 2 = 147.0\ \text{ft}^3$

$V_4 := \frac{1}{2} \cdot 6\ \text{ft} \cdot 8\ \text{ft} \cdot 31\ \text{ft} \cdot 2 = 1488.0\ \text{ft}^3$

$V_5 := 2\ \text{ft} \cdot 33\ \text{ft} \cdot 44\ \text{ft} = 2904.0\ \text{ft}^3$

$V_{total} := V_1 + V_2 + V_3 + V_4 + V_5 = 9430.0\ \text{ft}^3$

Weight of Foundation:

$W_{found} := V_{total} \cdot 150\ \frac{\text{lbf}}{\text{ft}^3} = 1414.5\ \text{kip}$

Resisting Moment:

$\phi := 0.75$

$M_{found} := W_{found} \cdot 16.5\ \text{ft} \cdot \phi = 17504.4\ \text{kip} \cdot \text{ft}$

Exhibit E

Mount Analysis

Centered on Solutions℠

Structural Analysis Report

Antenna Mount Analysis

T-Mobile Site #: CT11014B

623 Pine Street
Bridgeport, CT 06605

Centek Project No. 20074.32

Date: June 8, 2020

Max Stress Ratio = 65.0%

STATE OF CONNECTICUT
TIMOTHY J. LYNN
No. 29336
LICENSED
PROFESSIONAL ENGINEER

Prepared for:

T-Mobile USA
35 Griffin Road
Bloomfield, CT 06002

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- ANTENNA AND APPURTENANCE SUMMARY
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- RISA3D OUTPUT REPORT

SECTION 3 – REFERENCE MATERIALS (NOT INCLUDED WITHIN REPORT)

- RF DATA SHEET, DATED 6/2/2020

June 8, 2020

Mr. Dan Reid
Transcend Wireless
10 Industrial Ave
Mahwah, NJ 07430

Re: Structural Letter ~ Antenna Mount
T-Mobile – Site Ref: CT11014B
623 Pine Street
Bridgeport, CT 06605

Centek Project No. 20074.32

Dear Mr. Reid,

Centek Engineering, Inc. has reviewed the T-Mobile antenna installation at the above referenced site. The purpose of the review is to determine the structural adequacy of the existing mount, consisting of three (3) 14.5-ft sector frames to support the equipment configuration. The review considered the effects of wind load, dead load and ice load in accordance with the 2012 International Building Code as modified by the 2016 Connecticut State Building Code (CTBC) including ASCE 7-10 and ANSI/TIA-222-G *Structural Standards for Steel Antenna Towers and Supporting Structures*.

The loads considered in this analysis consist of the following:

- T-Mobile:
  Sector Frame: Three (3) Ericsson AIR6449 panel antennas, three (3) Ericsson AIR3246 B66 panel antennas, three (3) RFS APXVAARR24-43-NA20 panel antennas, three (3) KRY111-144/2 TMAs, three (3) Ericsson 4424 remote radio units, three (3) Ericsson 4449 B71_B12 remote radio units and three (3) Commscope SDX1926Q-43 diplexers mounted on three (3) sector frames with a RAD center elevation of 180-ft +/- AGL.
  (NOTE: APXVAARR24-43 antenna must be mounted on the same side of the sector frame as the stabilizer arm)

The antenna mount was analyzed per the requirements of the 2015 International Building Code as modified by the 2018 Connecticut State Building Code considering a nominal design wind speed of 97 mph for Bridgeport as required in Appendix N of the 2016 Connecticut State Building Code.

A structural analysis of tower and foundation needs to be completed prior to any work.

Based on our review of the installation, it is our opinion that the subject antenna mount has sufficient capacity to support the aforementioned antenna configuration. If there are any questions regarding this matter, please feel free to call.

Respectfully Submitted by:

Timothy J. Lynn, PE
Structural Engineer

STATE OF CONNECTICUT
TIMOTHY J. LYNN
No. 29336
LICENSED
PROFESSIONAL ENGINEER

Section 2 - Calculations

Development of Design Heights, Exposure Coefficients, and Velocity Pressures Per TIA-222-G

Wind Speeds

Basic Wind Speed $V := 97$ mph (User Input - 2016 CSBC Appendix N)

Basic Wind Speed with Ice $V_i := 50$ mph (User Input per Annex B of TIA-222-G)

Input

Structure Type = $Structure\_Type := Pole$ (User Input)

Structure Category = $SC := II$ (User Input)

Exposure Category = $Exp := D$ (User Input)

Structure Height = $h := 250$ ft (User Input)

Height to Center of Antennas = $z_{AT\&T} := 180$ ft (User Input)

Radial Ice Thickness = $t_i := 0.75$ in (User Input per Annex B of TIA-222-G)

Radial Ice Density = $Id := 56.00$ pcf (User Input)

Topograpic Factor = $K_{zt} := 1.0$ (User Input)

$K_a := 1.0$ (User Input)

Gust Response Factor = $G_H = 1.1$ (User Input)

Output

Wind Direction Probability Factor = $K_d := \begin{cases} 0.95 & \text{if } Structure\_Type = Pole \\ 0.85 & \text{if } Structure\_Type = Lattice \end{cases} = 0.95$ (Per Table 2-2 of TIA-222-G)

Importance Factors = $I_{Wind} := \begin{cases} 0.87 & \text{if } SC = 1 \\ 1.00 & \text{if } SC = 2 \\ 1.15 & \text{if } SC = 3 \end{cases} = 1$ (Per Table 2-3 of TIA-222-G)

$$I_{Wind\_w\_Ice} := \begin{cases} 0 & \text{if } SC = 1 \\ 1.00 & \text{if } SC = 2 \\ 1.00 & \text{if } SC = 3 \end{cases} = 1$$

$$I_{ice} := \begin{cases} 0 & \text{if } SC = 1 \\ 1.00 & \text{if } SC = 2 \\ 1.25 & \text{if } SC = 3 \end{cases} = 1$$

$$K_{iz} := \left(\frac{z_{AT\&T}}{33}\right)^{0.1} = 1.185 \qquad t_{iz} := 2.0 \cdot t_i \cdot I_{ice} \cdot K_{iz} \cdot K_{zt}^{0.35} = 1.777$$

Velocity Pressure Coefficient Antennas = $Kz_{AT\&T} := 2.01\left(\left(\frac{z_{AT\&T}}{zg}\right)\right)^{\frac{2}{\alpha}} = 1.587$

Velocity Pressure w/o Ice Antennas = $qz_{AT\&T} := 0.00256 \cdot K_d \cdot Kz_{AT\&T} \cdot V^2 \cdot I_{Wind} = 36.318$

Velocity Pressure with Ice Antennas = $qz_{ice.AT\&T} := 0.00256 \cdot K_d \cdot Kz_{AT\&T} \cdot V_i^2 \cdot I_{Wind} = 9.65$

Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	Ericsson AIR6449		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 33.1$	in	(User Input)
Antenna Width =	$W_{ant} := 20.5$	in	(User Input)
Antenna Thickness =	$T_{ant} := 8.3$	in	(User Input)
Antenna Weight =	$WT_{ant} := 103$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 1$		(User Input)
Antenna Aspect Ratio =	$Ar_{ant} := \frac{L_{ant}}{W_{ant}} = 1.6$		
Antenna Force Coefficient =	$Ca_{ant} = 1.2$		

Wind Load (without ice)

Surface Area for One Antenna =	$SA_{antF} := \frac{L_{ant} \cdot W_{ant}}{144} = 4.7$	sf
Total Antenna Wind Force =	$F_{ant} := qz_{AT\&T} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antF} = 226$	lbs
Surface Area for One Antenna =	$SA_{antS} := \frac{L_{ant} \cdot T_{ant}}{144} = 1.9$	sf
Total Antenna Wind Force =	$F_{ant} := qz_{AT\&T} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antS} = 91$	lbs

Wind Load (with ice)

Surface Area for One Antenna w/ Ice =	$SA_{ICEantF} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (W_{ant} + 2 \cdot t_{iz})}{144} = 6.1$	sf
Total Antenna Wind Force w/ Ice =	$Fi_{ant} := qz_{ice.AT\&T} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantF} = 78$	lbs
Surface Area for One Antenna w/ Ice =	$SA_{ICEantS} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz})}{144} = 3$	sf
Total Antenna Wind Force w/ Ice =	$Fi_{ant} := qz_{ice.AT\&T} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantS} = 38$	lbs

Gravity Load (without ice)

Weight of All Antennas =	$WT_{ant} \cdot N_{ant} = 103$	lbs

Gravity Loads (ice only)

Volume of Each Antenna =	$V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 5632$	cu in
Volume of Ice on Each Antenna =	$V_{ice} := (L_{ant} + 2 \cdot t_{iz})(W_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz}) - V_{ant} = 4820$	cu in
Weight of Ice on Each Antenna =	$W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 156$	lbs
Weight of Ice on All Antennas =	$W_{ICEant} \cdot N_{ant} = 156$	lbs

Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	Ericsson AIR3246-B66		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 58.1$	in	(User Input)
Antenna Width =	$W_{ant} := 15.7$	in	(User Input)
Antenna Thickness =	$T_{ant} := 9.4$	in	(User Input)
Antenna Weight =	$WT_{ant} := 180$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 1$		(User Input)

Antenna Aspect Ratio = $Ar_{ant} := \frac{L_{ant}}{W_{ant}} = 3.7$

Antenna Force Coefficient = $Ca_{ant} = 1.25$

Wind Load (without ice)

Surface Area for One Antenna = $SA_{antF} := \frac{L_{ant} \cdot W_{ant}}{144} = 6.3$ sf

Total Antenna Wind Force = $F_{ant} := qz_{AT\&T} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antF} = 317$ lbs

Surface Area for One Antenna = $SA_{antS} := \frac{L_{ant} \cdot T_{ant}}{144} = 3.8$ sf

Total Antenna Wind Force = $F_{ant} := qz_{AT\&T} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antS} = 190$ lbs

Wind Load (with ice)

Surface Area for One Antenna w/ Ice = $SA_{ICEantF} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (W_{ant} + 2 \cdot t_{iz})}{144} = 8.2$ sf

Total Antenna Wind Force w/ Ice = $Fi_{ant} := qz_{ice.AT\&T} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantF} = 110$ lbs

Surface Area for One Antenna w/ Ice = $SA_{ICEantS} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz})}{144} = 5.5$ sf

Total Antenna Wind Force w/ Ice = $Fi_{ant} := qz_{ice.AT\&T} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantS} = 74$ lbs

Gravity Load (without ice)

Weight of All Antennas = $WT_{ant} \cdot N_{ant} = 180$ lbs

Gravity Loads (ice only)

Volume of Each Antenna = $V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 8574$ cu in

Volume of Ice on Each Antenna = $V_{ice} := (L_{ant} + 2 \cdot t_{iz})(W_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz}) - V_{ant} = 6805$ cu in

Weight of Ice on Each Antenna = $W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 221$ lbs

Weight of Ice on All Antennas = $W_{ICEant} \cdot N_{ant} = 221$ lbs

Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	RFSAPXVAARR24-43		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 95.9$	in	(User Input)
Antenna Width =	$W_{ant} := 24$	in	(User Input)
Antenna Thickness =	$T_{ant} := 8.7$	in	(User Input)
Antenna Weight =	$WT_{ant} := 153$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 1$		(User Input)
Antenna Aspect Ratio =	$Ar_{ant} := \frac{L_{ant}}{W_{ant}} = 4.0$		
Antenna Force Coefficient =	$Ca_{ant} = 1.27$		

Wind Load (without ice)

Surface Area for One Antenna = $SA_{antF} := \frac{L_{ant} \cdot W_{ant}}{144} = 16$ sf

Total Antenna Wind Force = $F_{ant} := qz_{AT\&T} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antF} = 809$ lbs

Surface Area for One Antenna = $SA_{antS} := \frac{L_{ant} \cdot T_{ant}}{144} = 5.8$ sf

Total Antenna Wind Force = $F_{ant} := qz_{AT\&T} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antS} = 293$ lbs

Wind Load (with ice)

Surface Area for One Antenna w/ Ice = $SA_{ICEantF} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (W_{ant} + 2 \cdot t_{iz})}{144} = 19$ sf

Total Antenna Wind Force w/ Ice = $Fi_{ant} := qz_{ice.AT\&T} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantF} = 256$ lbs

Surface Area for One Antenna w/ Ice = $SA_{ICEantS} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz})}{144} = 8.5$ sf

Total Antenna Wind Force w/ Ice = $Fi_{ant} := qz_{ice.AT\&T} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantS} = 114$ lbs

Gravity Load (without ice)

Weight of All Antennas = $WT_{ant} \cdot N_{ant} = 153$ lbs

Gravity Loads (ice only)

Volume of Each Antenna = $V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 2 \times 10^4$ cu in

Volume of Ice on Each Antenna = $V_{ice} := (L_{ant} + 2 \cdot t_{iz})(W_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz}) - V_{ant} = 1 \times 10^4$ cu in

Weight of Ice on Each Antenna = $W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 439$ lbs

Weight of Ice on All Antennas = $W_{ICEant} \cdot N_{ant} = 439$ lbs

Development of Wind & Ice Load on TMA's

TMA Data:

TMA Model =	Ericsson KRY112 144/1 TMA		
TMA Shape =	Flat		(User Input)
TMA Height =	$L_{TMA} := 7.7$	in	(User Input)
TMA Width =	$W_{TMA} := 7.5$	in	(User Input)
TMA Thickness =	$T_{TMA} := 3.4$	in	(User Input)
TMA Weight =	$WT_{TMA} := 11$	lbs	(User Input)
Number of TMA's =	$N_{TMA} := 1$		(User Input)
TMA Aspect Ratio =	$Ar_{TMA} := \frac{L_{TMA}}{W_{TMA}} = 1$		
TMA Force Coefficient =	$Ca_{TMA} = 1.2$		

Wind Load (without ice)

Surface Area for One TMA =	$SA_{TMAF} := \frac{L_{TMA} \cdot W_{TMA}}{144} = 0.4$	sf
Total TMA Wind Force =	$F_{TMA} := qz_{AT\&T} \cdot G_H \cdot Ca_{TMA} \cdot K_a \cdot SA_{TMAF} = 19$	lbs
Surface Area for One TMA =	$SA_{TMAS} := \frac{L_{TMA} \cdot T_{TMA}}{144} = 0.2$	sf
Total TMA Wind Force =	$F_{TMA} := qz_{AT\&T} \cdot G_H \cdot Ca_{TMA} \cdot K_a \cdot SA_{TMAS} = 9$	lbs

Wind Load (with ice)

Surface Area for One TMA w/ Ice =	$SA_{ICETMAF} := \frac{(L_{TMA} + 2 \cdot t_{iz}) \cdot (W_{TMA} + 2 \cdot t_{iz})}{144} = 0.9$	sf
Total TMA Wind Force w/ Ice =	$Fi_{TMA} := qz_{ice.AT\&T} \cdot G_H \cdot Ca_{TMA} \cdot K_a \cdot SA_{ICETMAF} = 11$	lbs
Surface Area for One TMA w/ Ice =	$SA_{ICETMAS} := \frac{(L_{TMA} + 2 \cdot t_{iz}) \cdot (T_{TMA} + 2 \cdot t_{iz})}{144} = 0.5$	sf
Total TMA Wind Force w/ Ice =	$Fi_{TMA} := qz_{ice.AT\&T} \cdot G_H \cdot Ca_{TMA} \cdot K_a \cdot SA_{ICETMAS} = 7$	lbs

Gravity Load (without ice)

Weight of All TMAs =	$WT_{TMA} \cdot N_{TMA} = 11$	lbs

Gravity Loads (ice only)

Volume of Each TMA =	$V_{TMA} := L_{TMA} \cdot W_{TMA} \cdot T_{TMA} = 196$	cu in
Volume of Ice on Each TMA =	$V_{ice} := (L_{TMA} + 2 \cdot t_{iz})(W_{TMA} + 2 \cdot t_{iz}) \cdot (T_{TMA} + 2 \cdot t_{iz}) - V_{TMA} = 669$	cu in
Weight of Ice on Each TMA =	$W_{ICETMA} := \frac{V_{ice}}{1728} \cdot Id = 22$	lbs
Weight of Ice on All TMAs =	$W_{ICETMA} \cdot N_{TMA} = 22$	lbs

CENTEK engineering
Centered on Solutions™ www.centekeng.com
63-2 North Branford Road P: (203) 488-0580
Branford, CT 06405 F: (203) 488-8587

Development of Wind & Ice Load on RRUS's

RRUS Data:

RRUS Model = Ericsson 4449 B71B12

RRUS Shape = Flat (User Input)

RRUS Height = $L_{RRUS} := 14.9$ in (User Input)

RRUS Width = $W_{RRUS} := 13.2$ in (User Input)

RRUS Thickness = $T_{RRUS} := 10.4$ in (User Input)

RRUS Weight = $WT_{RRUS} := 74$ lbs (User Input)

Number of RRUS's = $N_{RRUS} := 1$ (User Input)

RRUS Aspect Ratio = $Ar_{RRUS} := \frac{L_{RRUS}}{W_{RRUS}} = 1.1$

RRUS Force Coefficient = $Ca_{RRUS} = 1.2$

Wind Load (without ice)

Surface Area for One RRUS = $SA_{RRUSF} := \frac{L_{RRUS} \cdot W_{RRUS}}{144} = 1.4$ sf

Total RRUS Wind Force = $F_{RRUS} := qz_{AT\&T} \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{RRUSF} = 65$ lbs

Surface Area for One RRUS = $SA_{RRUSS} := \frac{L_{RRUS} \cdot T_{RRUS}}{144} = 1.1$ sf

Total RRUS Wind Force = $F_{RRUS} := qz_{AT\&T} \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{RRUSS} = 52$ lbs

Wind Load (with ice)

Surface Area for One RRUS w/ Ice = $SA_{ICERRUSF} := \frac{(L_{RRUS} + 2 \cdot t_{iz}) \cdot (W_{RRUS} + 2 \cdot t_{iz})}{144} = 2.1$ sf

Total RRUS Wind Force w/ Ice = $Fi_{RRUS} := qz_{ice.AT\&T} \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{ICERRUSF} = 27$ lbs

Surface Area for One RRUS w/ Ice = $SA_{ICERRUSS} := \frac{(L_{RRUS} + 2 \cdot t_{iz}) \cdot (T_{RRUS} + 2 \cdot t_{iz})}{144} = 1.8$ sf

Total RRUS Wind Force w/ Ice = $Fi_{RRUS} := qz_{ice.AT\&T} \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{ICERRUSS} = 23$ lbs

Gravity Load (without ice)

Weight of All RRUSs = $WT_{RRUS} \cdot N_{RRUS} = 74$ lbs

Gravity Loads (ice only)

Volume of Each RRUS = $V_{RRUS} := L_{RRUS} \cdot W_{RRUS} \cdot T_{RRUS} = 2045$ cu in

Volume of Ice on Each RRUS = $V_{ice} := (L_{RRUS} + 2 \cdot t_{iz})(W_{RRUS} + 2 \cdot t_{iz}) \cdot (T_{RRUS} + 2 \cdot t_{iz}) - V_{RRUS} = 2260$ cu in

Weight of Ice on Each RRUS = $W_{ICERRUS} := \frac{V_{ice}}{1728} \cdot Id = 74$ lbs

Weight of Ice on All RRUSs = $W_{ICERRUS} \cdot N_{RRUS} = 74$ lbs

Development of Wind & Ice Load on RRUS's

RRUS Data:

RRUS Model = 4424

RRUS Shape = Flat (User Input)

RRUS Height = $L_{RRUS} := 17.1$ in (User Input)

RRUS Width = $W_{RRUS} := 14.4$ in (User Input)

RRUS Thickness = $T_{RRUS} := 11.3$ in (User Input)

RRUS Weight = $WT_{RRUS} := 86$ lbs (User Input)

Number of RRUS's = $N_{RRUS} := 1$ (User Input)

RRUS Aspect Ratio = $Ar_{RRUS} := \frac{L_{RRUS}}{W_{RRUS}} = 1.2$

RRUS Force Coefficient = $Ca_{RRUS} = 1.2$

Wind Load (without ice)

Surface Area for One RRUS = $SA_{RRUSF} := \frac{L_{RRUS} \cdot W_{RRUS}}{144} = 1.7$ sf

Total RRUS Wind Force = $F_{RRUS} := qz_{AT\&T} \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{RRUSF} = 82$ lbs

Surface Area for One RRUS = $SA_{RRUSS} := \frac{L_{RRUS} \cdot T_{RRUS}}{144} = 1.3$ sf

Total RRUS Wind Force = $F_{RRUS} := qz_{AT\&T} \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{RRUSS} = 64$ lbs

Wind Load (with ice)

Surface Area for One RRUS w/ Ice = $SA_{ICERRUSF} := \frac{(L_{RRUS} + 2 \cdot t_{iz}) \cdot (W_{RRUS} + 2 \cdot t_{iz})}{144} = 2.6$ sf

Total RRUS Wind Force w/ Ice = $Fi_{RRUS} := qz_{ice.AT\&T} \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{ICERRUSF} = 33$ lbs

Surface Area for One RRUS w/ Ice = $SA_{ICERRUSS} := \frac{(L_{RRUS} + 2 \cdot t_{iz}) \cdot (T_{RRUS} + 2 \cdot t_{iz})}{144} = 2.1$ sf

Total RRUS Wind Force w/ Ice = $Fi_{RRUS} := qz_{ice.AT\&T} \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{ICERRUSS} = 27$ lbs

Gravity Load (without ice)

Weight of All RRUSs = $WT_{RRUS} \cdot N_{RRUS} = 86$ lbs

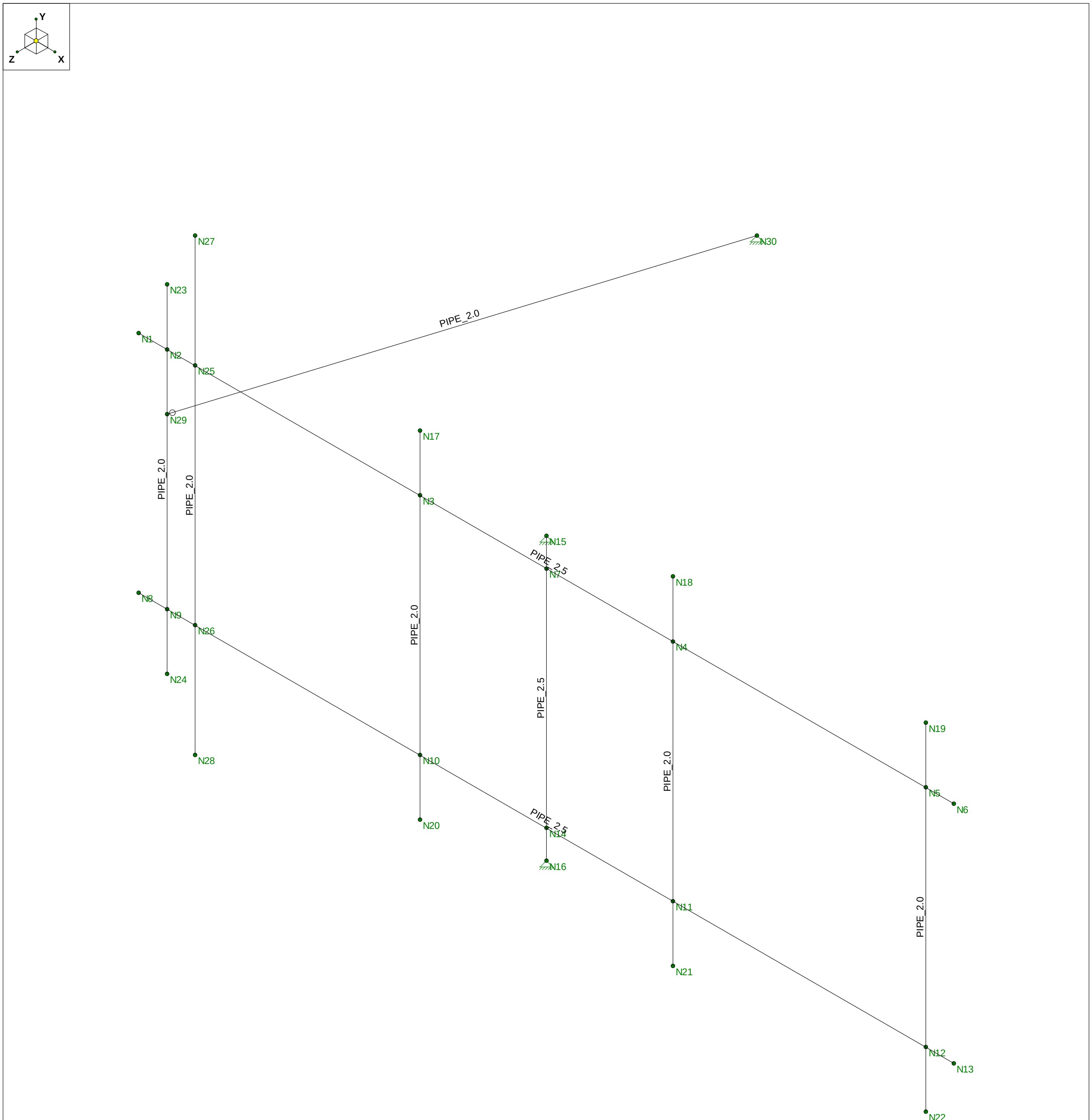
Gravity Loads (ice only)

Volume of Each RRUS = $V_{RRUS} := L_{RRUS} \cdot W_{RRUS} \cdot T_{RRUS} = 2783$ cu in

Volume of Ice on Each RRUS = $V_{ice} := (L_{RRUS} + 2 \cdot t_{iz})(W_{RRUS} + 2 \cdot t_{iz}) \cdot (T_{RRUS} + 2 \cdot t_{iz}) - V_{RRUS} = 2726$ cu in

Weight of Ice on Each RRUS = $W_{ICERRUS} := \frac{V_{ice}}{1728} \cdot Id = 88$ lbs

Weight of Ice on All RRUSs = $W_{ICERRUS} \cdot N_{RRUS} = 88$ lbs



Envelope Only Solution

Centek	CT11014B - Mount	
TJL		June 8, 2020 at 11:46 AM
20074.32	Member Framing	Mount.r3d

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (ft/sec^2)	32.2
Wall Mesh Size (in)	12
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 14th(360-10): LRFD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 14th(360-10): ASD
Cold Formed Steel Code	AISI S100-10: ASD
Wood Code	AWC NDS-12: ASD
Wood Temperature	< 100F
Concrete Code	ACI 318-11
Masonry Code	ACI 530-11: ASD
Aluminum Code	AA ADM1-10: ASD - Building
Stainless Steel Code	AISC 14th(360-10): ASD
Adjust Stiffness?	Yes(Iterative)

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	No
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8

(Global) Model Settings, Continued

Seismic Code	ASCE 7-10
Seismic Base Elevation (ft)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	4
Cd X	4
Rho Z	1
Rho X	1
Footing Overturning Safety Factor	1
Optimize for OTM/Sliding	No
Check Concrete Bearing	No
Footing Concrete Weight (k/ft^3)	150.001
Footing Concrete f'c (ksi)	4
Footing Concrete Ec (ksi)	3644
Lambda	1
Footing Steel fy (ksi)	60
Minimum Steel	0.0018
Maximum Steel	0.0075
Footing Top Bar	#3
Footing Top Bar Cover (in)	2
Footing Bottom Bar	#3
Footing Bottom Bar Cover (in)	3.5
Pedestal Bar	#3
Pedestal Bar Cover (in)	1.5
Pedestal Ties	#3

Hot Rolled Steel Properties

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

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rul...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Horz	PIPE_2.5	Beam	Pipe	A53 Grade B	Typical	1.61	1.45	1.45	2.89
2	Antenna Mast	PIPE_2.0	Column	Wide Flange	A53 Grade B	Typical	1.02	.627	.627	1.25
3	Vert	PIPE_2.5	Column	Wide Flange	A53 Grade B	Typical	1.61	1.45	1.45	2.89
4	Stablizer Arm	PIPE_2.0	Beam	Pipe	A53 Grade B	Typical	1.02	.627	.627	1.25

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[...	Lcomp bot[...	L-torq...	Kyy	Kzz	Cb	Functi...
1	M1	Horz	14.5			Lbyy						Lateral
2	M2	Horz	14.5			Lbyy						Lateral
3	M3	Antenna Mast	6			Lbyy						Lateral
4	M4	Antenna Mast	6			Lbyy						Lateral
5	M5	Antenna Mast	6			Lbyy						Lateral
6	M6	Antenna Mast	6			Lbyy						Lateral
7	M7	Vert	5			Lbyy						Lateral
8	M8	Antenna Mast	8			Lbyy						Lateral
9	M9	Stablizer Arm	8.382			Lbyy						Lateral

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Rul...
1	M1	N1	N6			Horz	Beam	Pipe	A53 Gra...	Typical
2	M2	N8	N13			Horz	Beam	Pipe	A53 Gra...	Typical
3	M3	N23	N24			Antenna Mast	Column	Wide Flange	A53 Gra...	Typical
4	M4	N17	N20			Antenna Mast	Column	Wide Flange	A53 Gra...	Typical
5	M5	N18	N21			Antenna Mast	Column	Wide Flange	A53 Gra...	Typical
6	M6	N19	N22			Antenna Mast	Column	Wide Flange	A53 Gra...	Typical
7	M7	N15	N16			Vert	Column	Wide Flange	A53 Gra...	Typical
8	M8	N27	N28			Antenna Mast	Column	Wide Flange	A53 Gra...	Typical
9	M9	N29	N30			Stablizer Arm	Beam	Pipe	A53 Gra...	Typical

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Dia...
1	N1	0	0	0	0	
2	N2	.5	0	0	0	
3	N3	5	0	0	0	
4	N4	9.5	0	0	0	
5	N5	14	0	0	0	
6	N6	14.5	0	0	0	
7	N7	7.25	0	0	0	
8	N8	0	-4	0	0	
9	N9	.5	-4	0	0	
10	N10	5	-4	0	0	
11	N11	9.5	-4	0	0	
12	N12	14	-4	0	0	
13	N13	14.5	-4	0	0	
14	N14	7.25	-4	0	0	
15	N15	7.25	.5	0	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Dia...
16	N16	7.25	-4.5	0	0	
17	N17	5	1	0	0	
18	N18	9.5	1	0	0	
19	N19	14	1	0	0	
20	N20	5	-5	0	0	
21	N21	9.5	-5	0	0	
22	N22	14	-5	0	0	
23	N23	.5	1	0	0	
24	N24	.5	-5	0	0	
25	N25	1	0	0	0	
26	N26	1	-4	0	0	
27	N27	1	2	0	0	
28	N28	1	-6	0	0	
29	N29	.5	-1	0	0	
30	N30	3	-1	-8	0	

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	N15	Reaction	Reaction	Reaction			
2	N16	Reaction	Reaction	Reaction			
3	N30	Reaction	Reaction	Reaction			

Member Point Loads (BLC 2 : Dead Load)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M8	Y	-.077	.5
2	M8	Y	-.077	7.5
3	M4	Y	-.09	.5
4	M4	Y	-.09	5.5
5	M5	Y	-.052	.5
6	M5	Y	-.052	3.5
7	M8	Y	-.074	1.5
8	M8	Y	-.086	%50

Member Point Loads (BLC 3 : Ice Load)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M8	Y	-.22	.5
2	M8	Y	-.22	7.5
3	M4	Y	-.111	.5
4	M4	Y	-.111	5.5
5	M5	Y	-.078	.5
6	M5	Y	-.078	3.5
7	M8	Y	-.074	1.5
8	M8	Y	-.088	%50

Member Point Loads (BLC 4 : Wind with Ice X)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M8	X	.057	.5
2	M8	X	.057	7.5

Member Point Loads (BLC 4 : Wind with Ice X) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
3	M4	X	.037	.5
4	M4	X	.037	5.5
5	M5	X	.019	.5
6	M5	X	.019	3.5
7	M8	X	.023	1.5
8	M8	X	.027	%50

Member Point Loads (BLC 5 : Wind X)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M8	X	.147	.5
2	M8	X	.147	7.5
3	M4	X	.095	.5
4	M4	X	.095	5.5
5	M5	X	.046	.5
6	M5	X	.046	3.5
7	M8	X	.052	1.5
8	M8	X	.064	%50

Member Point Loads (BLC 6 : Wind with Ice Z)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M8	Z	.128	.5
2	M8	Z	.128	7.5
3	M4	Z	.055	.5
4	M4	Z	.055	5.5
5	M5	Z	.039	.5
6	M5	Z	.039	3.5

Member Point Loads (BLC 7 : Wind Z)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M8	Z	.405	.5
2	M8	Z	.405	7.5
3	M4	Z	.159	.5
4	M4	Z	.159	5.5
5	M5	Z	.113	.5
6	M5	Z	.113	3.5

Member Distributed Loads (BLC 4 : Wind with Ice X)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M9	X	.003	.003	0	0
2	M3	X	.003	.003	0	0
3	M8	X	.003	.003	0	0
4	M4	X	.003	.003	0	0
5	M7	X	.003	.003	0	0
6	M5	X	.003	.003	0	0
7	M6	X	.003	.003	0	0

Member Distributed Loads (BLC 5 : Wind X)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]

Member Distributed Loads (BLC 5 : Wind X) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M9	X	.009	.009	0	0
2	M3	X	.009	.009	0	0
3	M8	X	.009	.009	0	0
4	M4	X	.009	.009	0	0
5	M7	X	.009	.009	0	0
6	M5	X	.009	.009	0	0
7	M6	X	.009	.009	0	0

Member Distributed Loads (BLC 6 : Wind with Ice Z)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M9	Z	.003	.003	0	0
2	M1	Z	.003	.003	0	0
3	M2	Z	.003	.003	0	0
4	M7	Z	.003	.003	0	0
5	M8	Z	.003	.003	0	0
6	M3	Z	.003	.003	0	0

Member Distributed Loads (BLC 7 : Wind Z)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M9	Z	.009	.009	0	0
2	M1	Z	.009	.009	0	0
3	M2	Z	.009	.009	0	0
4	M7	Z	.009	.009	0	0
5	M8	Z	.009	.009	0	0
6	M3	Z	.009	.009	0	0

Basic Load Cases

	BLC Description	Category	X Gra...	Y Gra...	Z Gra...	Joint	Point	Distrib..	Area(...	Surfa...
1	Self Weight	DL		-1						
2	Dead Load	None					8			
3	Ice Load	None					8			
4	Wind with Ice X	None					8	7		
5	Wind X	None					8	7		
6	Wind with Ice Z	None					6	6		
7	Wind Z	None					6	6		

Load Combinations

	Description	Solve	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 (X-direc...	Yes	Y		1	1.2	2	1.2	5	1.6														
2	0.9D + 1.6W (X-direc...	Yes	Y		1	.9	2	.9	5	1.6														
3	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	2	1.2	3	1	4	1												
4	1.2D + 1.6W (Z-direc...	Yes	Y		1	1.2	2	1.2	7	1.6														
5	0.9D + 1.6W (Z-direc...	Yes	Y		1	.9	2	.9	7	1.6														
6	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	2	1.2	3	1	6	1												

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N15	max	1.292	6	1.045	3	0	1	0	6	0	6	0	6
2		min	-.497	2	.41	5	-.489	5	0	1	0	1	0	1
3	N16	max	-.571	5	1.029	6	0	1	0	6	0	6	0	6
4		min	-1.54	3	.396	2	-.923	5	0	1	0	1	0	1
5	N30	max	.47	4	.022	4	0	3	0	6	0	6	0	6
6		min	-.06	2	.013	2	-1.567	4	0	1	0	1	0	1
7	Totals:	max	0	6	2.089	6	0	3						
8		min	-1.761	1	.832	2	-2.978	4						

Envelope Joint Displacements

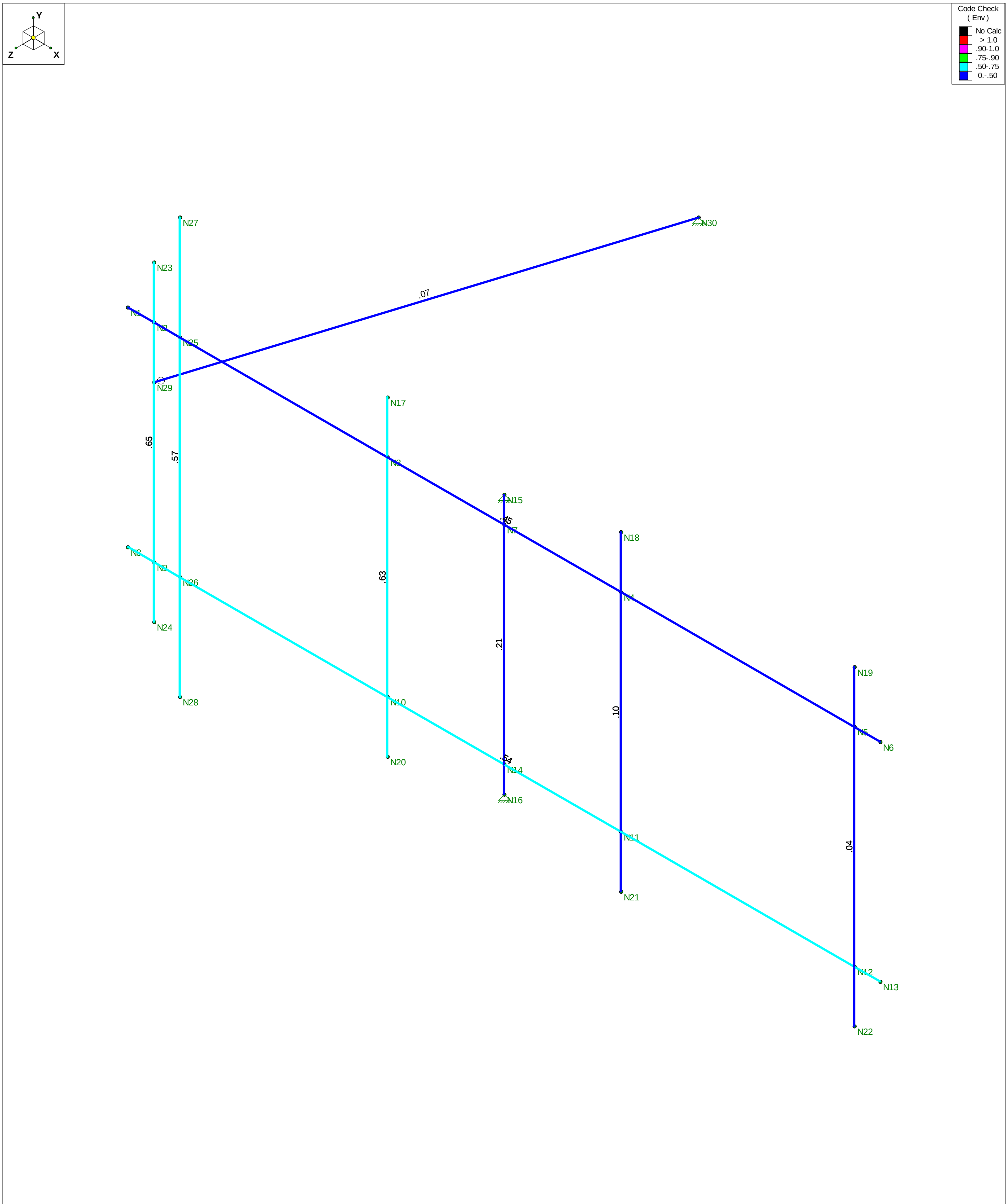
	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotatio...	LC	Z Rotatio...	LC
1	N1	max	.008	1	-.226	2	.006	3	-6.765e-07	2	7.276e-05	3	3.683e-03	6
2		min	.002	6	-.659	6	-.055	5	-2.121e-03	4	-2.531e-03	5	1.154e-03	2
3	N2	max	.008	1	-.219	2	.006	3	-6.765e-07	2	7.276e-05	3	3.683e-03	6
4		min	.002	6	-.637	6	-.04	5	-2.121e-03	4	-2.532e-03	5	1.154e-03	2
5	N3	max	.008	1	-.057	2	.027	4	-2.354e-07	2	1.093e-03	4	7.636e-03	6
6		min	.003	6	-.161	3	.001	2	-9.625e-04	4	5.471e-05	2	2.48e-03	2
7	N4	max	.008	1	-.005	6	.068	5	1.143e-03	4	7.301e-05	3	-5.397e-04	5
8		min	.003	5	-.009	1	-.002	3	1.375e-07	2	-3.433e-03	5	-8.887e-04	1
9	N5	max	.008	1	-.039	5	.269	5	2.187e-03	4	7.312e-05	3	-3.247e-04	2
10		min	.003	5	-.057	1	-.006	3	2.18e-07	2	-3.76e-03	5	-5.964e-04	6
11	N6	max	.008	1	-.041	5	.291	5	2.187e-03	4	7.312e-05	3	-3.251e-04	2
12		min	.003	5	-.059	1	-.006	3	2.18e-07	2	-3.762e-03	5	-5.97e-04	6
13	N7	max	.008	1	0	5	.004	5	4.423e-08	2	7.275e-05	3	1.324e-03	3
14		min	.003	5	0	3	0	1	-4.879e-04	5	-2.252e-04	5	6.064e-04	5
15	N8	max	.006	2	-.227	2	.753	4	-9.706e-07	2	5.84e-03	4	3.61e-03	3
16		min	-.001	6	-.658	6	.005	2	-2.383e-02	4	5.513e-05	2	1.243e-03	5
17	N9	max	.006	2	-.219	2	.718	4	-9.706e-07	2	5.839e-03	4	3.609e-03	3
18		min	-.001	6	-.636	6	.004	2	-2.383e-02	4	5.513e-05	2	1.242e-03	5
19	N10	max	.005	2	-.057	2	.226	4	-3.711e-07	2	1.013e-02	4	7.694e-03	3
20		min	-.002	6	-.161	3	.001	2	-7.946e-03	4	5.531e-05	2	2.744e-03	5
21	N11	max	.004	2	-.005	6	-.001	2	1.793e-03	4	7.334e-05	3	-4.469e-04	5
22		min	-.003	6	-.009	1	-.025	4	5.785e-08	2	-1.513e-03	5	-7.703e-04	3
23	N12	max	.004	2	-.039	5	.142	5	2.509e-03	4	7.316e-05	3	-4.211e-04	5
24		min	-.003	6	-.057	1	-.006	3	1.785e-07	2	-3.751e-03	5	-6.467e-04	1
25	N13	max	.004	2	-.041	5	.165	5	2.509e-03	4	7.316e-05	3	-4.215e-04	5
26		min	-.003	6	-.061	1	-.006	3	1.785e-07	2	-3.752e-03	5	-6.473e-04	1
27	N14	max	.004	2	0	2	.002	5	-9.59e-08	2	4.475e-03	4	1.168e-03	6
28		min	-.003	6	0	6	0	1	-1.387e-04	4	5.504e-05	2	-1.282e-04	2
29	N15	max	0	6	0	6	0	6	6.132e-08	2	7.275e-05	3	1.3e-03	1
30		min	0	1	0	1	0	1	-7.482e-04	5	-2.252e-04	5	5.331e-04	6
31	N16	max	0	6	0	6	0	6	3.557e-04	5	4.475e-03	4	4.27e-04	6
32		min	0	1	0	1	0	1	-1.257e-07	1	5.504e-05	2	-7.711e-04	2
33	N17	max	-.02	2	-.057	2	.019	4	-2.354e-07	2	1.093e-03	4	7.64e-03	6
34		min	-.089	6	-.161	3	.001	2	-6.479e-04	4	5.471e-05	2	2.269e-03	2
35	N18	max	.02	1	-.005	6	.084	5	1.367e-03	4	7.301e-05	3	-5.398e-04	5
36		min	.01	5	-.009	1	-.002	3	1.375e-07	2	-3.433e-03	5	-1.004e-03	1
37	N19	max	.014	1	-.039	5	.295	5	2.187e-03	4	7.312e-05	3	-3.485e-04	2
38		min	.008	5	-.057	1	-.006	3	2.18e-07	2	-3.76e-03	5	-5.964e-04	6

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotatio...	LC	Z Rotatio...	LC
39	N20	max	.092	3	-.057	2	.325	4	-3.711e-07	2	1.013e-02	4	7.741e-03	3
40		min	.033	5	-.161	3	.001	2	-8.258e-03	4	5.531e-05	2	2.743e-03	5
41	N21	max	-.001	2	-.005	6	-.001	2	1.793e-03	4	7.334e-05	3	-4.341e-04	2
42		min	-.012	6	-.009	1	-.046	4	5.785e-08	2	-1.513e-03	5	-7.676e-04	6
43	N22	max	-.002	2	-.039	5	.112	5	2.509e-03	4	7.316e-05	3	-4.211e-04	5
44		min	-.011	6	-.057	1	-.006	3	1.785e-07	2	-3.751e-03	5	-6.254e-04	3
45	N23	max	-.006	2	-.219	2	.006	3	-6.765e-07	2	7.276e-05	3	3.683e-03	6
46		min	-.042	6	-.637	6	-.065	5	-2.097e-03	4	-2.532e-03	5	1.13e-03	2
47	N24	max	.043	3	-.219	2	1.005	4	-9.706e-07	2	5.839e-03	4	3.614e-03	3
48		min	.015	5	-.636	6	.004	2	-2.386e-02	4	5.513e-05	2	1.242e-03	5
49	N25	max	.008	1	-.211	2	.005	3	-6.718e-07	2	7.272e-05	3	4.786e-03	6
50		min	.002	6	-.611	6	-.024	5	-1.745e-03	4	-2.455e-03	5	1.247e-03	2
51	N26	max	.006	2	-.21	2	.682	4	-9.228e-07	2	6.471e-03	4	4.822e-03	3
52		min	-.001	6	-.611	6	.004	2	-2.353e-02	4	5.516e-05	2	1.731e-03	5
53	N27	max	.032	2	-.211	2	.07	5	5.685e-03	5	7.272e-05	3	4.809e-03	6
54		min	-.113	6	-.612	6	.004	2	-2.061e-06	3	-2.455e-03	5	-1.667e-03	2
55	N28	max	.128	3	-.21	2	1.382	4	-9.221e-07	2	6.471e-03	4	5.48e-03	3
56		min	.042	5	-.611	6	.004	2	-3.091e-02	4	5.516e-05	2	1.73e-03	5
57	N29	max	.022	4	-.219	2	.014	4	-8.373e-07	2	7.299e-05	3	5.38e-04	5
58		min	.014	2	-.637	6	.004	2	-8.749e-03	4	-4.427e-04	5	-4.598e-04	3
59	N30	max	0	6	0	6	0	6	7.133e-03	3	3.509e-03	1	4.121e-03	4
60		min	0	1	0	1	0	1	1.942e-03	5	4.29e-04	6	8.22e-04	2

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

	Member	Shape	Code Check	Lo...	LC	She...	Lo...	...	...	phi*P...	phi*P...	phi*...	phi*...	Cb	Eqn
1	M1	PIPE_2.5	.447	7.25	6	.119	.604		5	10.82	50.715	3.596	3.596	1.8...	H1-...
2	M2	PIPE_2.5	.536	7.25	4	.298	4....		4	10.82	50.715	3.596	3.596	1.8...	H3-6
3	M3	PIPE_2.0	.650	2	4	.229	2		5	20.867	32.13	1.872	1.872	1.8...	H1-...
4	M4	PIPE_2.0	.627	5	3	.160	1		4	20.867	32.13	1.872	1.872	1.7...	H1-...
5	M5	PIPE_2.0	.096	5	4	.047	1		4	20.867	32.13	1.872	1.872	1.7...	H1-...
6	M6	PIPE_2.0	.045	1	1	.007	1		1	20.867	32.13	1.872	1.872	1.8...	H1-...
7	M7	PIPE_2.5	.213	4....	3	.101	5		3	41.332	50.715	3.596	3.596	2.5...	H1-...
8	M8	PIPE_2.0	.574	2	4	.200	2		4	14.916	32.13	1.872	1.872	1.4...	H1-...
9	M9	PIPE_2.0	.067	4....	1	.006	8....		1	13.839	32.13	1.872	1.872	1.1...	H1-...



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Centek	CT11014B - Mount Unity Check	
TJL		June 8, 2020 at 11:45 AM
20074.32		Mount.r3d

Exhibit F

Power Density/RF Emissions Report

EBI Consulting

environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CT11014B

CT014/ I-95/ X24/ Bla
645 Pine Street
Bridgeport, Connecticut 06605

July 24, 2020

EBI Project Number: 6220003389

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**19.63%**

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

July 24, 2020

T-Mobile
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, Connecticut 06002

Emissions Analysis for Site: CT11014B - CT014/ I-95/ X24/ Bla

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **645 Pine Street** in **Bridgeport, Connecticut** for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 645 Pine Street in Bridgeport, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.

3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

4) 4 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

5) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

6) 2 UMTS channels (AWS Band - 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

7) 4 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

8) 2 LTE channels (BRS Band - 2500 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

9) 2 NR channels (BRS Band - 2500 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

10) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

11) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

12) The antennas used in this modeling are the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the Ericsson AIR 3246 for the 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector A, the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the Ericsson AIR 3246 for the 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector B, the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the Ericsson AIR 3246 for the 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative

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

13) The antenna mounting height centerline of the proposed antennas is 180 feet above ground level (AGL).

14) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

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T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz
Gain:	22.05 dBd / 22.05 dBd	Gain:	22.05 dBd / 22.05 dBd	Gain:	22.05 dBd / 22.05 dBd
Height (AGL):	180 feet	Height (AGL):	180 feet	Height (AGL):	180 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	160 Watts	Total TX Power (W):	160 Watts	Total TX Power (W):	160 Watts
ERP (W):	25,651.93	ERP (W):	25,651.93	ERP (W):	25,651.93
Antenna A1 MPE %:	**2.85%**	Antenna B1 MPE %:	**2.85%**	Antenna C1 MPE %:	**2.85%**
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Ericsson AIR 3246	Make / Model:	Ericsson AIR 3246	Make / Model:	Ericsson AIR 3246
Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz
Gain:	15.85 dBd	Gain:	15.85 dBd	Gain:	15.85 dBd
Height (AGL):	180 feet	Height (AGL):	180 feet	Height (AGL):	180 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	160 Watts	Total TX Power (W):	160 Watts	Total TX Power (W):	160 Watts
ERP (W):	6,153.47	ERP (W):	6,153.47	ERP (W):	6,153.47
Antenna A2 MPE %:	**0.68%**	Antenna B2 MPE %:	**0.68%**	Antenna C2 MPE %:	**0.68%**
Antenna #:	4	Antenna #:	4	Antenna #:	4
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd / 16.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd / 16.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd / 16.35 dBd
Height (AGL):	180 feet	Height (AGL):	180 feet	Height (AGL):	180 feet
Channel Count:	13	Channel Count:	13	Channel Count:	13
Total TX Power (W):	500 Watts	Total TX Power (W):	500 Watts	Total TX Power (W):	500 Watts
ERP (W):	15,462.91	ERP (W):	15,462.91	ERP (W):	15,462.91
Antenna A4 MPE %:	**2.34%**	Antenna B4 MPE %:	**2.34%**	Antenna C4 MPE %:	**2.34%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	5.87%
Sprint	4.49%
Verizon	6.41%
Unknown	1.58%
Metro PCS	1.28%
Site Total MPE % :	19.63%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	5.87%
T-Mobile Sector B Total:	5.87%
T-Mobile Sector C Total:	5.87%
Site Total MPE % :	19.63%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (µW/cm²)	Frequency (MHz)	Allowable MPE (µW/cm²)	Calculated % MPE
T-Mobile 2500 MHz LTE	2	6412.98	180.0	14.23	2500 MHz LTE	1000	1.42%
T-Mobile 2500 MHz NR	2	6412.98	180.0	14.23	2500 MHz NR	1000	1.42%
T-Mobile 2100 MHz LTE	4	1538.37	180.0	6.83	2100 MHz LTE	1000	0.68%
T-Mobile 600 MHz LTE	2	591.73	180.0	1.31	600 MHz LTE	400	0.33%
T-Mobile 600 MHz NR	1	1577.94	180.0	1.75	600 MHz NR	400	0.44%
T-Mobile 700 MHz LTE	2	648.82	180.0	1.44	700 MHz LTE	467	0.31%
T-Mobile 1900 MHz GSM	4	1101.85	180.0	4.89	1900 MHz GSM	1000	0.49%
T-Mobile 1900 MHz LTE	2	2203.69	180.0	4.89	1900 MHz LTE	1000	0.49%
T-Mobile 2100 MHz UMTS	2	1294.56	180.0	2.87	2100 MHz UMTS	1000	0.29%
						Total:	**5.87%**

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

Summary

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

The anticipated maximum composite contributions from the 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:

T-Mobile Sector	Power Density Value (%)
Sector A:	5.87%
Sector B:	5.87%
Sector C:	5.87%
T-Mobile Maximum MPE % (Sector A):	5.87%
Site Total:	19.63%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **19.63%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

Exhibit G

Mailing Receipts/Proof of Notice

View/Print Label

1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialogue box that appears. Note: If your browser does not support this function, select Print from the File menu to print the label.

2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

3. **GETTING YOUR SHIPMENT TO UPS**
   Customers with a scheduled Pickup
   - Your driver will pickup your shipment(s) as usual.

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   - Schedule a Pickup on ups.com to have a UPS driver pickup all of your packages.
   - Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. To find the location nearest you, please visit the 'Locations' Quick link at ups.com.

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75 INTERSTATE SHOP CTR
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115 FRANKLIN TPKE
MAHWAH NJ

UPS Access Point™
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RAMSEY NJ

FOLD HERE

NEIL GUERRIERO
3473040176
TRANSCEND WIRELESS
10 INDUSTRIAL AVE
MAHWAH NJ 07430

0.0 LBS LTR 1 OF 1

SHIP TO:
ROBERT KNAPP
2036402050
RADIO COMMUNICATIONS CORP
21 BIRCHWOOD DRIVE
ANSONIA CT 06401

CT 064 7-02

UPS 2ND DAY AIR 2
TRACKING #: 1Z V25 742 02 9594 0328

BILLING: P/P
UPS CARBON NEUTRAL SHIPMENT

Reference #1: CT11014B
Reference #2: LL

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3473040176
TRANSCEND WIRELESS
10 INDUSTRIAL AVE
MAHWAH NJ 07430

0.0 LBS LTR 1 OF 1

SHIP TO:
CONNECTICUT SITING COUNCIL
10 FRANKLIN SQUARE
NEW BRITAIN CT 06051

CT 067 9-06

UPS NEXT DAY AIR SAVER 1P

TRACKING #: 1Z V25 742 13 9529 0313

BILLING: P/P
UPS CARBON NEUTRAL SHIPMENT

Reference #1: CT11014B
Reference #2: CSC

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120 E MAIN ST
RAMSEY NJ

FOLD HERE

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TRANSCEND WIRELESS
10 INDUSTRIAL AVE
MAHWAH NJ 07430

SHIP TO:
JOSEPH GANIM, MAYOR
CITY OF BRIDGEPORT
MARGARET E MORTON GOVERNMENT CENTER
999 BROAD ST
BRIDGEPORT CT 06604

CT 066 9-04

UPS 2ND DAY AIR 2
TRACKING #: 1Z V25 742 02 9091 5445

BILLING: P/P
UPS CARBON NEUTRAL SHIPMENT

Reference #1: CT11014B
Reference #2: Mayor

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SHIP TO:
THOMAS F. GILL
CITY OF BRIDGEPORT
OFFICE OF PLANNING AND DEV
999 BROAD ST
BRIDGEPORT CT 06604

CT 066 9-04

UPS 2ND DAY AIR 2

TRACKING #: 1Z V25 742 02 9966 0301

BILLING: P/P
UPS CARBON NEUTRAL SHIPMENT

Reference #1: CT11014B
Reference #2: Planner

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