CROWN CASTLE

1 Cityplace Dr, Suite 490
Creve Coeur, MO 63141

Phone: (314) 513-0147
www.crowncastle.com

November 15th, 2021

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

RE: **Notice of Exempt Modification for T-Mobile**
Crown Site ID# 876313; T-Mobile Site ID# CTHA453A
1394 Meriden Waterbury Tpk, Southington, Ct 06489
Latitude: 41.564275 / Longitude: -72.891861

Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 148-foot mount on the existing 160-foot Monopole Tower located at 1394 Meriden Waterbury Tpk, Southington, CT. The property is owned by Southington Tower Development LLC and the Tower by Crown Castle. T-Mobile now intends to replace six (6) existing antennas and add three (3) antennas. This modification/proposal includes hardware that is both 4G(LTE) and 5G capable through remote software configuration and either or both services may be turned on or off at various times.

Planned Modifications:
Tower:

Remove and Replace:
(3) RFS APXVTM14-C-120 Antennas **(REMOVE) –** (3) RFS APXVAALL24_43-U-NA20 Antennas **(REPLACE)**

(3) RFS APXVSPP18-C-A20 Antennas **(REMOVE) –** (3) Ericsson AIR6449 B41 Antennas **(REPLACE)**

(3) Alcatel Lucent TD-RRH8X20-25 Radios **(REMOVE) -** (3) Ericsson 4480 B71+B85 RRU Radios **(REPLACE)**

Remove:
(3) RFS IBC1900BB-1 Combiners
(3) RFS IBC1900HG-2A Combers

Add:
(3) RFS APX16DWV-16DWV-S-E-A20 Antennas
(3) Ericsson 4460 B25+B66 RRU Radios

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Ground:

Install New:
(3) Hybrid Cables (6x12)
(1) 6160 Cabinet
(1) RBS 6601 in 6160 cabinet
(3) BB6648 in 6160 cabinet
(1) DUG20 in 6160 cabinet
(1) IXRE V2 Router in 6160 cabinet
(1) B160 Battery Cabinet

Remove:
(1) BBU Cabinet
(1) MMBTS Cabinet

The facility was previously approved by Connecticut Siting Council by way of a Exempt Modification application on November 10th, 2014

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 Victoria Triano, Chair of the Town of Southington and Maryellen Edwards Director of Planning for the Town of Southington. A copy will also be sent to the property owner.

1. The proposed modifications will not result in an increase in the height of the existing tower.

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modification 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 Communication Commission safety standard.

5. The proposed modifications 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-reference telecommunications facility constitutes an exempt modification under R.C.S.A. §16-50j-72(b)(2).

Sincerely,

Colin Robinson

Colin Robinson
Project Manager
NETWORK BUILDING + CONSULTING
100 Apollo Drive Suite 303
Chelmsford, MA 01824
crobinson@nbcllc.com
(360) 561-3311

cc:

Victoria Triano, Chair *(Via Federal Express)*
Municipal Center
196 North Main Street
Southington, CT 06489
(860) 276-6200

Maryellen Edwards Director of Planning *(Via Federal Express)*
Municipal Center
196 North Main Street
Southington, CT 06489
(860) 276-6248

Southington Tower Development LLC *(Via Federal Express)*
754 Peachtree St, NE
16th Floor
Atlanta, GA 30308

Colin Robinson

From: TrackingUpdates@fedex.com
Sent: Tuesday, November 16, 2021 11:16 AM
To: Colin Robinson
Subject: FedEx Shipment 775211302550: Your package has been delivered

Hi. Your package was delivered Tue, 11/16/2021 at 11:14am.

Delivered to 196 N MAIN ST, SOUTHINGTON, CT 06489
Received by V.TRIANO

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER	775211302550
FROM	NB+C 100 Apollo Dr. Suite 303 CHELMSFORD, MA, US, 01824
TO	Victoria Triano 196 North Main Street

	Municipal Center SOUTHINGTON, CT, US, 06489
REFERENCE	100788 Southington CT 876313
SHIPPER REFERENCE	100788 Southington CT 876313
SHIP DATE	Mon 11/15/2021 06:29 PM
DELIVERED TO	Receptionist/Front Desk
PACKAGING TYPE	FedEx Envelope
ORIGIN	CHELMSFORD, MA, US, 01824
DESTINATION	SOUTHINGTON, CT, US, 06489
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Priority Overnight

Colin Robinson

From: TrackingUpdates@fedex.com
Sent: Tuesday, November 16, 2021 11:16 AM
To: Colin Robinson
Subject: FedEx Shipment 775211343045: Your package has been delivered

Hi. Your package was delivered Tue, 11/16/2021 at 11:14am.

Delivered to 196 N MAIN ST, SOUTHINGTON, CT 06489
Received by V.TRIANO

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER	775211343045
FROM	NB+C 100 Apollo Dr. Suite 303 CHELMSFORD, MA, US, 01824
TO	Director of Planning Maryellen Edwards

	196 North Main Street Municipal Center SOUTHINGTON, CT, US, 06489
REFERENCE	Southington CT 876313
SHIPPER REFERENCE	Southington CT 876313
SHIP DATE	Mon 11/15/2021 06:29 PM
DELIVERED TO	Receptionist/Front Desk
PACKAGING TYPE	FedEx Envelope
ORIGIN	CHELMSFORD, MA, US, 01824
DESTINATION	SOUTHINGTON, CT, US, 06489
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Priority Overnight

Colin Robinson

From: TrackingUpdates@fedex.com
Sent: Tuesday, November 16, 2021 12:47 PM
To: Colin Robinson
Subject: FedEx Shipment 775211376334: Your package has been delivered

Hi. Your package was delivered Tue, 11/16/2021 at 12:45pm.

Delivered to 754 PEACHTREE ST NE, ATLANTA, GA 30308
Received by W.SHAW

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER	775211376334
FROM	NB+C 100 Apollo Dr. Suite 303 CHELMSFORD, MA, US, 01824
TO	Southington Tower Development LLC 754 Peachtree St, NE

	16th Floor ATLANTA, GA, US, 30308
REFERENCE	Southington CT 876313
SHIPPER REFERENCE	Southington CT 876313
SHIP DATE	Mon 11/15/2021 06:29 PM
DELIVERED TO	Mailroom
PACKAGING TYPE	FedEx Envelope
ORIGIN	CHELMSFORD, MA, US, 01824
DESTINATION	ATLANTA, GA, US, 30308
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Priority Overnight

Exhibit A

Original Facility Approval

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

November 10, 2014

Donna Neal
Crown Castle
3530 Torrington Way, Suite 300
Charlotte, NC 28277

RE: **EM-SPRINT-131-141022** – Sprint PCS notice of intent to modify an existing telecommunications facility located at 1394 Meriden Waterbury Turnpike, Southington, Connecticut.

Dear Ms. Neal:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

- Reinforce the tower in accordance with the structural analysis report prepared by Paul J. Ford and Co., stamped by Justin Kline on August 22, 2014, prior to the installation of Sprint's equipment;
- Within 45 days following completion of the equipment installation, Sprint shall provide documentation that its installation complied with the recommendations of the Structural Analysis Report;
- Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by Sprint shall be removed within 60 days of the date the antenna ceased to function.
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated October 21, 2014. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site by any dimension, increase noise levels at the tower site boundary by six decibels or more, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standards adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996 and by the state Department of Energy and Environmental Protection pursuant to Connecticut General Statutes § 22a-162. This facility has also been

carefully modeled to ensure that radio frequency emissions are conservatively below state and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Very truly yours,

Melanie A. Bachman
Acting Executive Director

MAB/RDM/cm

c: The Honorable Michael Riccio, Chairman, Town of Southington
Garry Brumback, Town Manager, Town of Southington
Robert Phillips, Town Planner, Town of Southington
Southington Tower Development, LLC

Exhibit B

Property Card

1394 MERIDEN WATERBURY TPKE

Location	1394 MERIDEN WATERBURY TPKE	**Mblu**	032/ / 103/ 0004/
		Acct#	18522
Owner	SOUTHINGTON TOWER DEVELOPMENT LLC	**Assessment**	$207,490
		Appraisal	$296,420
PID	1752	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$0	$296,420	$296,420
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$0	$207,490	$207,490

Owner of Record

Owner	SOUTHINGTON TOWER DEVELOPMENT LLC	**Sale Price**	$90,000
Co-Owner		**Certificate**	
Address	754 PEACHTREE ST, NE 16TH FLOOR ATLANTA, GA 30308	**Book & Page**	0997/1112
		Sale Date	01/18/2005
		Instrument	03

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
SOUTHINGTON TOWER DEVELOPMENT LLC	$90,000		0997/1112	03	01/18/2005

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0
Building Percent Good:

Building Attributes

Field	Description
Style	Vacant
Model	
Grade:	
Stories	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Full Bthrms:	
Half Baths:	
Extra Fixtures	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Total Kitchens	
Fireplaces	
Whirlpool Tubs	
Fin Bsmt Area	
Fin Bsmt Quality	
Bsmt Garages	
.	
Bsmt Type	
Attic Type	
Cath Ceiling	
Fndtn Cndtn	
Basement	

Building Photo

(http://images.vgsi.com/photos2/SouthingtonCTPhotos//\0057\IMG_2279_5

Building Layout

(ParcelSketch.ashx?pid=1752&bid=1752)

Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Extra Features

Extra Features	Legend

No Data for Extra Features

Land

Land Use

Use Code	391
Description	Vac Com Lnd wAcc
Zone	B
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	0.83
Depth	

Outbuildings

Outbuildings	Legend
No Data for Outbuildings	

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$0	$296,420	$296,420
2019	$0	$204,320	$204,320
2018	$0	$204,320	$204,320
2017	$0	$204,320	$204,320
2016	$0	$204,320	$204,320

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$0	$207,490	$207,490
2019	$0	$143,020	$143,020
2018	$0	$143,020	$143,020
2017	$0	$143,020	$143,020
2016	$0	$143,020	$143,020

Exhibit C

Construction Drawings

T-Mobile

35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

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

T-MOBILE SITE NUMBER: CTHA453A
T-MOBILE SITE NAME: CTHA453A
SITE TYPE: MONOPOLE
TOWER HEIGHT: 160'-0"

BUSINESS UNIT #: 876313
SITE ADDRESS: 1394 MERIDEN WATERBURY TPK SOUTHINGTON, CT 06489
COUNTY: HARTFORD
JURISDICTION: TOWN OF SOUTHINGTON

T-MOBILE SPRINT RETAIN SITE CONFIGURATION: 67E5A998E 6160

SITE INFORMATION

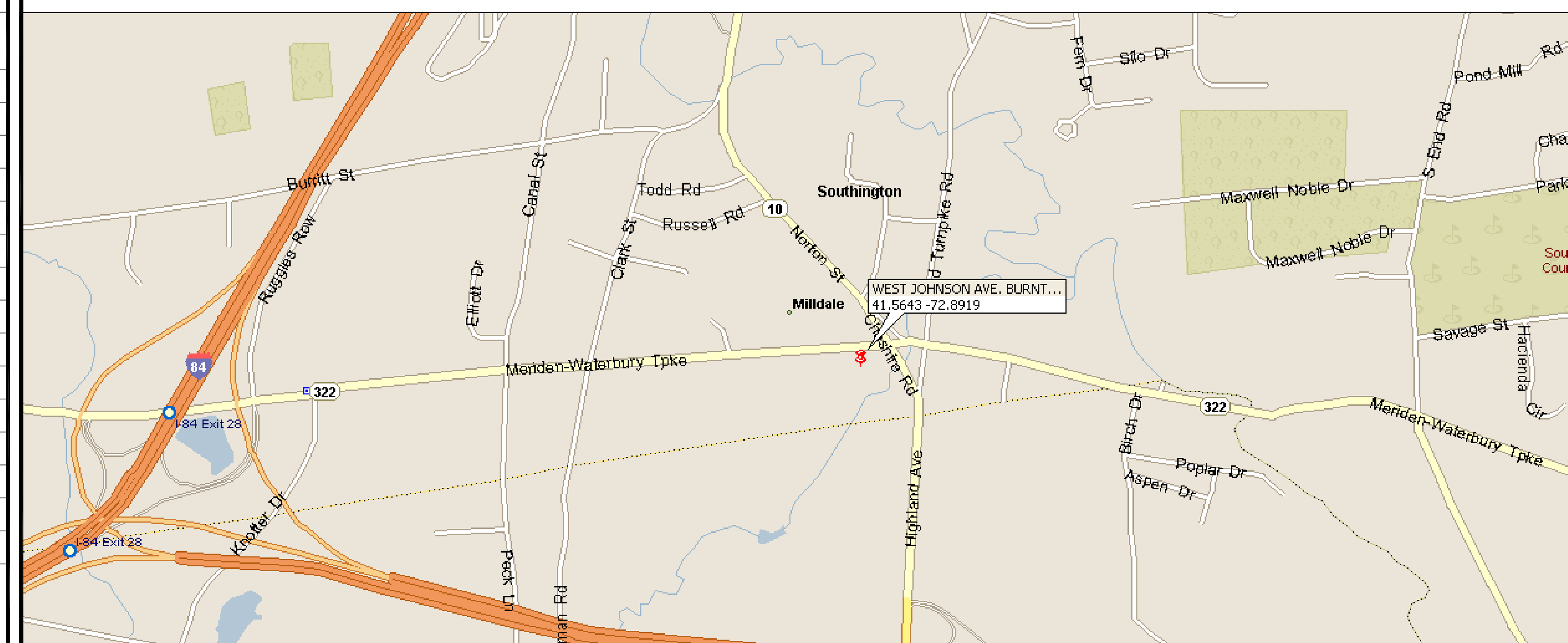
CROWN CASTLE USA INC. SITE NAME:	WEST JOHNSON AVE. BURNT HOUSE
SITE ADDRESS:	1394 MERIDEN WATERBURY TPK SOUTHINGTON, CT 06489
COUNTY:	HARTFORD
MAP/PARCEL #:	0321030004
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41.564275
LONGITUDE:	-72.891861
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	129 FT
CURRENT ZONING:	B
JURISDICTION:	TOWN OF SOUTHINGTON
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	SOUTHINGTON TOWER DEVELOPMENT LLC 754 PEACHTREE ST, NE 16TH FLOOR ATLANTA, GA 30308
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	T-MOBILE 35 GRIFFIN ROAD BLOOMFIELD, CT 06002
ELECTRIC PROVIDER:	EVERSOURCE ENERGY
TELCO PROVIDER:	CLEARWIRE

DRAWING INDEX

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1.1	OVERALL SITE PLAN
C-1.2	SITE PLAN & ENLARGED SITE PLAN
C-2	FINAL ELEVATION & ANTENNA PLANS
C-3	ANTENNA & CABLE SCHEDULE
C-4	PLUMBING DIAGRAM
C-5	EQUIPMENT SPECS
E-1	AC PANEL SCHEDULES & ONE LINE DIAGRAM
G-1	ANTENNA GROUNDING DIAGRAM
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS
ATTACHED	MOUNT MOD DESIGN

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR FULL SIZE. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

LOCATION MAP



NO SCALE

PROJECT TEAM

A&E FIRM:	B+T GROUP 1717 S. BOULDER AVE. TULSA, OK 74119 MARVIN PHILLIPS marvin.phillips@btgrp.com
CROWN CASTLE USA INC. DISTRICT CONTACTS:	3 CORPORATE PARK DRIVE, SUITE 101 CLIFTON PARK, NY 12065 TRICIA PELON - PROJECT MANAGER TRICIA.PELON@CROWNCASTLE.COM

NOTE:
PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN NOC AT (800) 788-7011 & CROWN CONSTRUCTION MANAGER.

PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS TO ENHANCE BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY.

TOWER SCOPE OF WORK:
- REMOVE (6) ANTENNAS
- REMOVE (6) COMBINERS
- REMOVE (3) RADIOS
- REMOVE (4) HYBRID CABLES (1-1/4")
- INSTALL (9) ANTENNAS
- INSTALL (6) RADIOS
- INSTALL (3) HYBRID CABLES (6X24)
- INSTALL MOUNT MODIFICATIONS PER MOUNT MODIFICATION DESIGN BY INFINIGY ENGINEERING, PLLC DATED 9/1/21

GROUND SCOPE OF WORK:
- REMOVE (1) MMBS CABINET
- REMOVE (1) BATTERY CABINET
- INSTALL (1) 6160 CABINET
- INSTALL (1) B160 BATTERY CABINET
- INSTALL (1) RBS 6601 INSIDE 6160 SSC
- INSTALL (1) DUG20 IN RBS 6601 INSIDE 6160 SSC
- INSTALL (3) BB 6648 IN 6160 SSC
- INSTALL (1) CSR IXRE V2 TRANSPORT SYSTEM
- UPGRADE 100A PANEL TO 200A SERVICE

NOTE:
THE POWER DESIGN FOR ANY AC ELECTRICAL POWER CHANGES IS TO BE PERFORMED BY OTHERS AND IS SHOWN HERE FOR REFERENCE PURPOSES ONLY. T-MOBILE IS SOLELY RESPONSIBLE FOR THE ELECTRICAL POWER DESIGN.

APPLICABLE CODES/REFERENCE DOCUMENTS

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

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

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS:	B+T GROUP
DATED:	10/20/21
MOUNT ANALYSIS:	INFINIGY ENGINEERING, PLLC
DATED:	9/1/21
AC ELECTRICAL POWER DESIGN:	BY OTHERS
DATED:	
RFDS REVISION:	1
DATED:	9/16/21
ORDER ID:	575187
REVISION:	1

CALL CONNECTICUT ONE CALL
(800) 922-4455 CBYD.COM
CALL 2 WORKING DAYS
BEFORE YOU DIG!
811

APPROVALS

APPROVAL	SIGNATURE	DATE
PROPERTY OWNER OR REP.		
LAND USE PLANNER		
T-MOBILE		
OPERATIONS		
RF		
NETWORK		
BACKHAUL		
CONSTRUCTION MANAGER		

THE PARTIES ABOVE HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL CONSTRUCTION DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND ANY CHANGES AND MODIFICATIONS THEY MAY IMPOSE.

T-MOBILE
SITE NUMBER: **CTHA453A**

BU #: **876313**
WEST JOHNSON AVE. BURNT HOUSE

1394 MERIDEN WATERBURY TPK
SOUTHINGTON, CT 06489

EXISTING
160'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	9/3/21	NA/SRB	CONSTRUCTION	JHW
1	10/6/21	JHW	CONSTRUCTION	JHW

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

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER:	REVISION:
T-1	1

CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

1. NOTICE TO PROCEED– NO WORK SHALL COMMENCE PRIOR TO CROWN CASTLE USA INC. WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN CASTLE USA INC. NOC AT 800–788–7011 & THE CROWN CASTLE USA INC. CONSTRUCTION MANAGER.
2. "LOOK UP" – CROWN CASTLE USA INC. SAFETY CLIMB REQUIREMENT:
THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR CROWN CASTLE USA INC. POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.
3. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.
4. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND CROWN CASTLE USA INC. STANDARD CED–STD–10253, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA–322 (LATEST EDITION).
5. ALL SITE WORK TO COMPLY WITH QAS–STD–10068 "INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON CROWN CASTLE USA INC. TOWER SITE," CED–STD–10294 "STANDARD FOR INSTALLATION OF MOUNTS AND APPURTENANCES," AND LATEST VERSION OF ANSI/TIA–1019–A–2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY CROWN CASTLE USA INC. PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.
11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
13. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, TOWER OWNER, CROWN CASTLE USA INC., AND/OR LOCAL UTILITIES.
14. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.
15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.
16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
17. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.
18. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
22. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR: GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION
   CARRIER: T–MOBILE
   TOWER OWNER: CROWN CASTLE USA INC.
2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
4. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.
6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CROWN CASTLE.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND CROWN CASTLE PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION AND IS TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.
12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF CROWN CASTLE USA INC.
13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST–IN–PLACE CONCRETE.
2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF PLACEMENT.
4. CONCRETE EXPOSED TO FREEZE–THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER–TO–CEMENT RATIO (W/C) OF 0.45.
5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:
   #4 BARS AND SMALLER.......................40 ksi
   #5 BARS AND LARGER.......................60 ksi
6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
   CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH.......................3"
   CONCRETE EXPOSED TO EARTH OR WEATHER:
      #6 BARS AND LARGER.......................2"
      #5 BARS AND SMALLER.......................1–1/2"
   CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
      SLAB AND WALLS.......................3/4"
      BEAMS AND COLUMNS.......................1–1/2"
7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

GREENFIELD GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE CONTRACTOR SHALL PERFORM IEEE FALL–OF–POTENTAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.
7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
17. MISCELLANEOUS ELECTRICAL AND NON–ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.
19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON–METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON–METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD–WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).
21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY).

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
   4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
   4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERYIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.
5. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).
7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
8. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN–2, XHHW, XHHW–2, THW, THW–2, RHW, OR RHW–2 INSULATION UNLESS OTHERWISE SPECIFIED.
10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN–2, XHHW, XHHW–2, THW, THW–2, RHW, OR RHW–2 INSULATION UNLESS OTHERWISE SPECIFIED.
11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI–CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI–CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN–2, XHHW, XHHW–2, THW, THW–2, RHW, OR RHW–2 INSULATION UNLESS OTHERWISE SPECIFIED.
13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP–STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
16. ELECTRICAL METALLIC TUBING (EMT) OR METAL–CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
18. LIQUID–TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID–TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION–TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.
21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).
22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON–PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER–ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY–COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3R (OR BETTER) FOR EXTERIOR LOCATIONS.
25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY–COATED OR NON–CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR CROWN CASTLE USA INC. BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "T–MOBILE".
30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

CONDUCTOR COLOR CODE		
SYSTEM	CONDUCTOR	COLOR
120/240V, 1Ø	A PHASE	BLACK
	B PHASE	RED
	NEUTRAL	WHITE
	GROUND	GREEN
120/208V, 3Ø	A PHASE	BLACK
	B PHASE	RED
	C PHASE	BLUE
	NEUTRAL	WHITE
	GROUND	GREEN
277/480V, 3Ø	A PHASE	BROWN
	B PHASE	ORANGE OR PURPLE
	C PHASE	YELLOW
	NEUTRAL	GREY
	GROUND	GREEN
DC VOLTAGE	POS (+)	RED**
	NEG (–)	BLACK**

* SEE NEC 210.5(C)(1) AND (2)
** POLARITY MARKED AT TERMINATION

APWA UNIFORM COLOR CODE:

WHITE	PROPOSED EXCAVATION
PINK	TEMPORARY SURVEY MARKINGS
RED	ELECTRIC POWER LINES, CABLES, CONDUIT, AND LIGHTING CABLES
YELLOW	GAS, OIL, STEAM, PETROLEUM, OR GASEOUS MATERIALS
ORANGE	COMMUNICATION, ALARM OR SIGNAL LINES, CABLES, OR CONDUIT AND TRAFFIC LOOPS
BLUE	POTABLE WATER
PURPLE	RECLAIMED WATER, IRRIGATION, AND SLURRY LINES
GREEN	SEWERS AND DRAIN LINES

ABBREVIATIONS:

ANT	ANTENNA
(E)	EXISTING
FIF	FACILITY INTERFACE FRAME
GEN	GENERATOR
GPS	GLOBAL POSITIONING SYSTEM
GSM	GLOBAL SYSTEM FOR MOBILE
LTE	LONG TERM EVOLUTION
MGB	MASTER GROUND BAR
MW	MICROWAVE
(N)	NEW
NEC	NATIONAL ELECTRIC CODE
(P)	PROPOSED
PP	POWER PLANT
QTY	QUANTITY
RECT	RECTIFIER
RBS	RADIO BASE STATION
RET	REMOTE ELECTRIC TILT
RFDS	RADIO FREQUENCY DATA SHEET
RRH	REMOTE RADIO HEAD
RRU	REMOTE RADIO UNIT
SIAD	SMART INTEGRATED DEVICE
TMA	TOWER MOUNTED AMPLIFIER
TYP	TYPICAL
UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
W.P.	WORK POINT

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

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

T-MOBILE
SITE NUMBER: **CTHA453A**

BU #: **876313**
WEST JOHNSON AVE. BURNT HOUSE

1394 MERIDEN WATERBURY TPK
SOUTHINGTON, CT 06489

EXISTING
160'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	9/3/21	NA/SRB	CONSTRUCTION	JHW
1	10/6/21	JHW	CONSTRUCTION	JHW

10/6/21

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

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER:	REVISION:
T-2	1

SITE PLAN DISCLAIMER:

PROPERTY LINES AND STRUCTURES HAVE BEEN DIGITIZED FROM PREVIOUS PLAN SETS. CROWN CASTLE USA INC. HAS NOT COMPLETED A SITE SURVEY AND THEREFORE MAKES NO CLAIMS AS TO THE ACCURACY OF INFORMATION DEPICTED ON THIS SHEET.

1 OVERALL SITE PLAN
SCALE: 30' 15' 0 30' 1"=30'-0" (FULL SIZE) 1"=60'-0" (11x17)

N

T · · Mobile · · ·
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
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EXISTING
160'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	9/3/21	NA/SRB	CONSTRUCTION	JHW
1	10/6/21	JHW	CONSTRUCTION	JHW

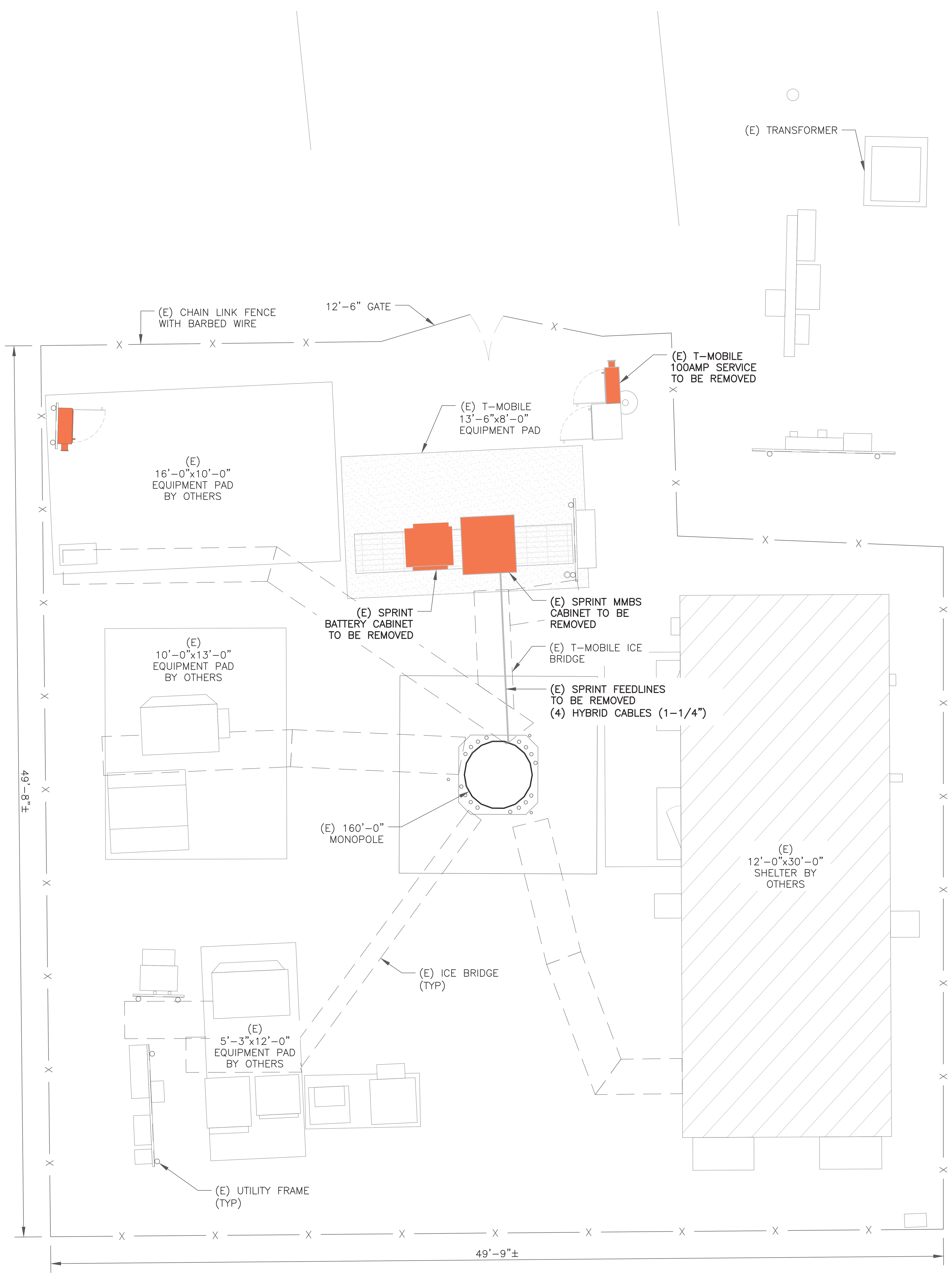
STATE OF CONNECTICUT
PROFESSIONAL ENGINEER
No. 23024
LICENSED
10/6/21

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

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER: C-1.1

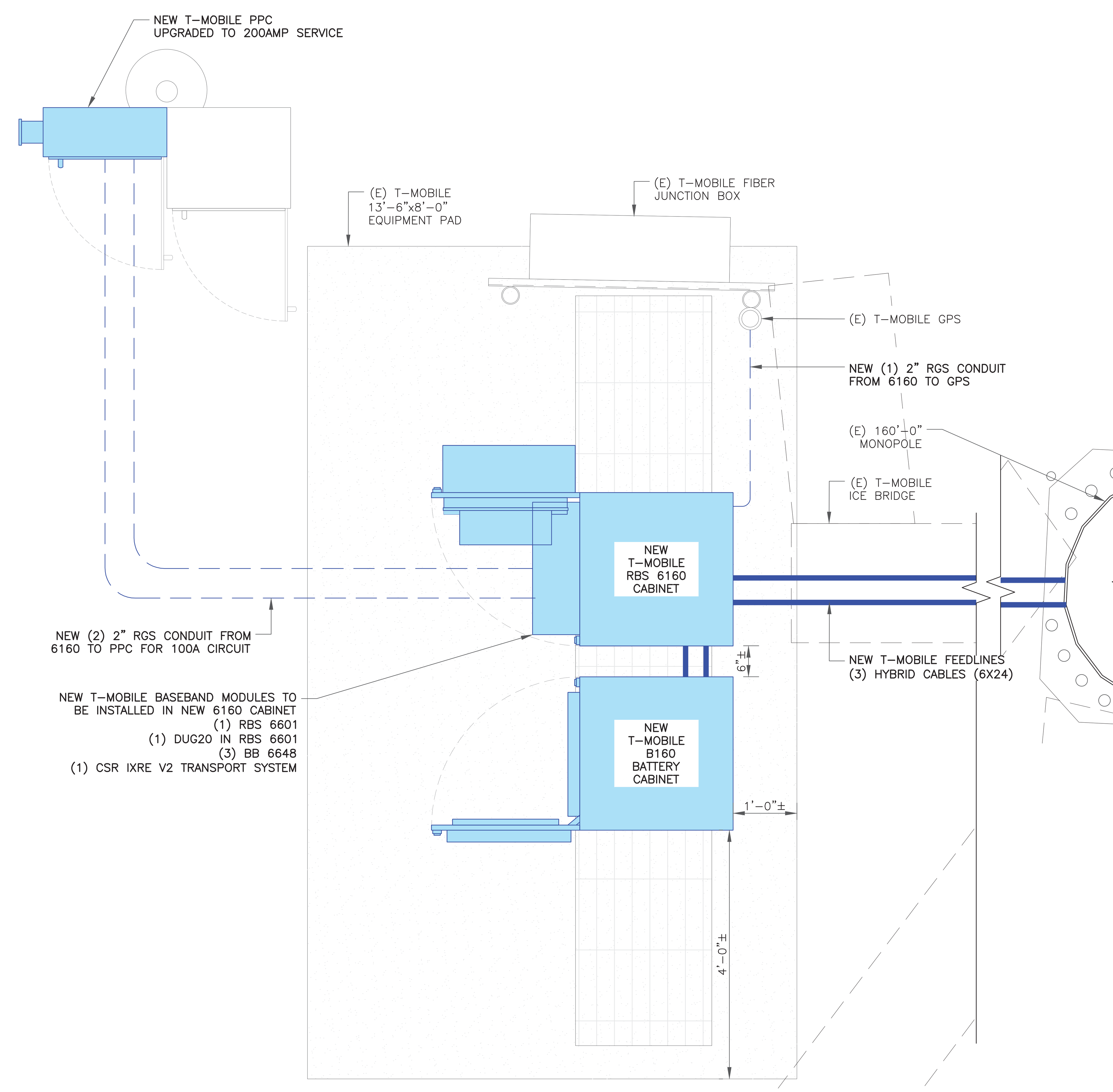
REVISION: 1



1 SITE PLAN
SCALE: 4' 3' 2' 1' 0 4' — 1/4"=1'–0" (FULL SIZE) 1/8"=1'–0" (11x17)

NOTES:

THE POWER DESIGN FOR ANY AC ELECTRICAL POWER CHANGES IS TO BE PERFORMED BY OTHERS AND IS SHOWN HERE FOR REFERENCE PURPOSES ONLY. T–MOBILE IS SOLELY RESPONSIBLE FOR THE ELECTRICAL POWER DESIGN.



2 ENLARGED SITE PLAN
SCALE: 1' 6" 0 1' — 3/4"=1'–0" (FULL SIZE) 3/8"=1'–0" (11x17)

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

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

T-MOBILE
SITE NUMBER: **CTHA453A**

BU #: **876313**

WEST JOHNSON AVE. BURNT HOUSE

1394 MERIDEN WATERBURY TPK
SOUTHINGTON, CT 06489

EXISTING
160'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	9/3/21	NA/SRB	CONSTRUCTION	JHW
1	10/6/21	JHW	CONSTRUCTION	JHW

B&T ENGINEERING, INC.
PEC.0001564
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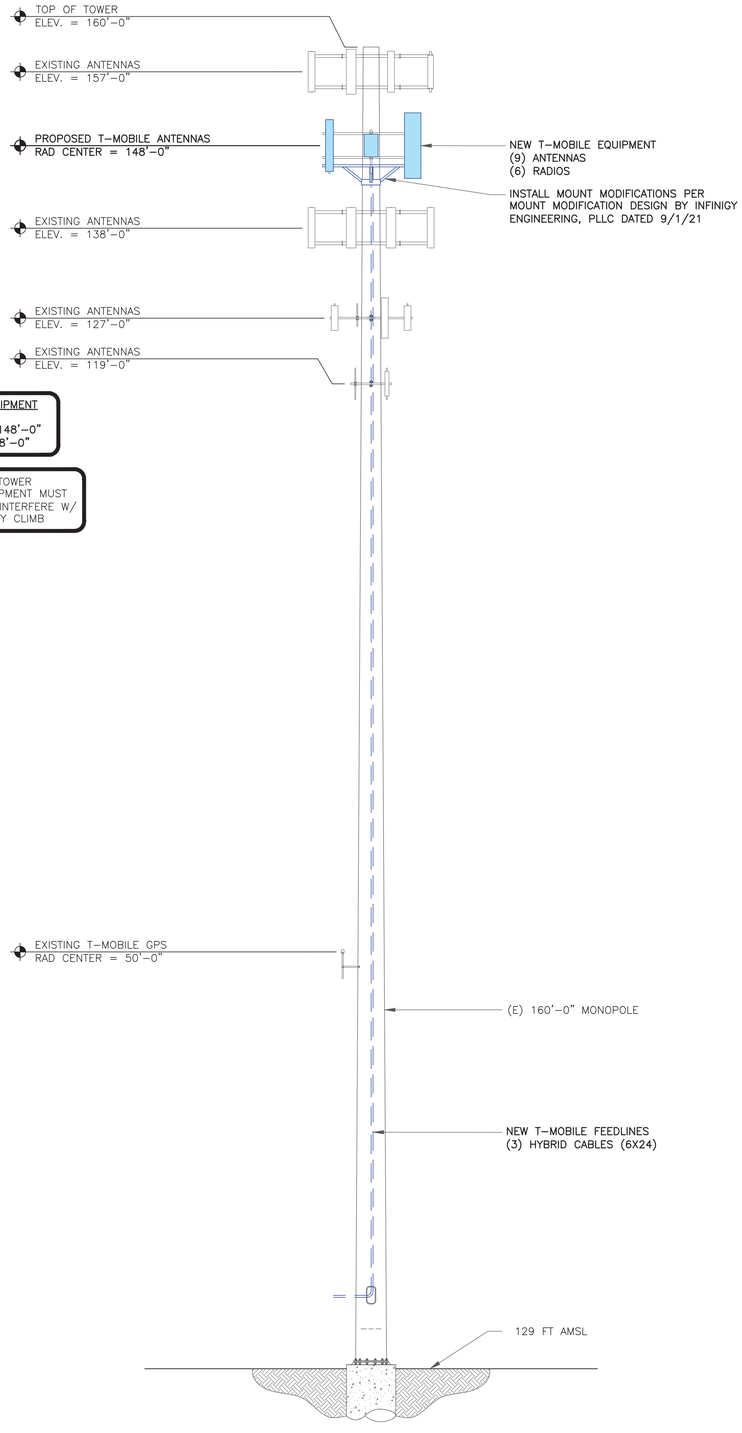
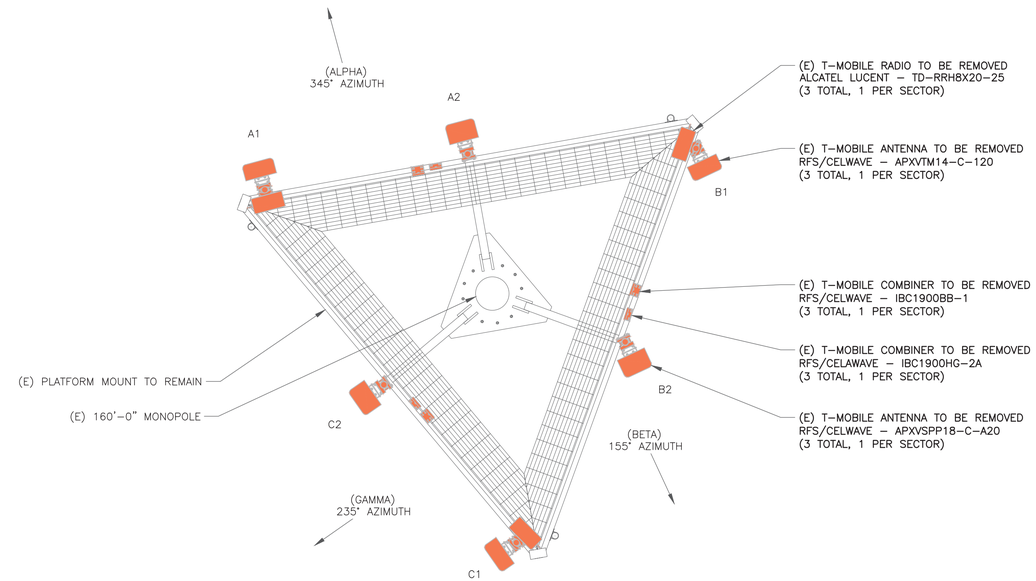
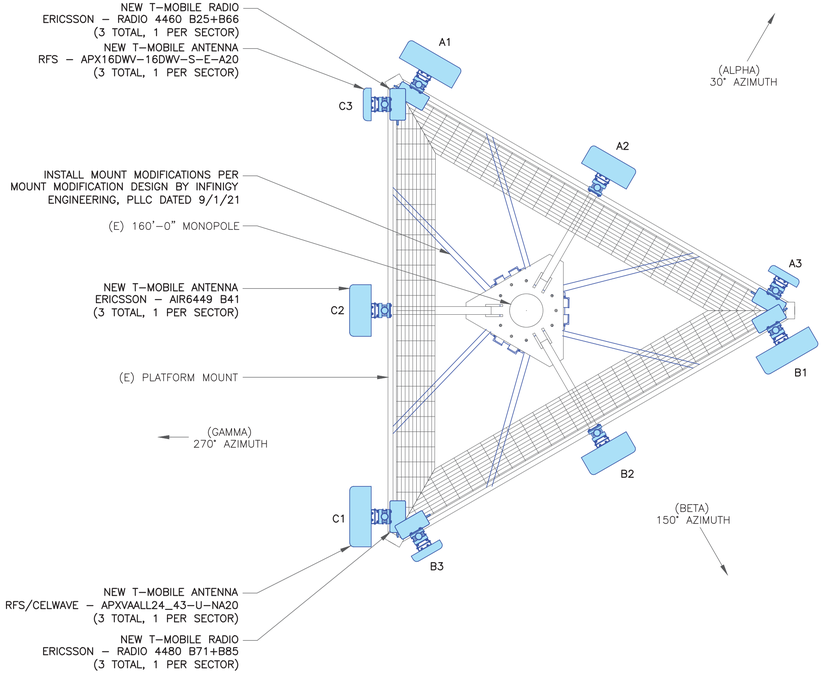
SHEET NUMBER: C-1.2
REVISION: 1



1 FINAL ELEVATION
SCALE: NOT TO SCALE



2 EXISTING ANTENNA LAYOUT
SCALE: NOT TO SCALE



3 FINAL ANTENNA LAYOUT
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

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T-MOBILE
SITE NUMBER: **CTHA453A**

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EXISTING
160'-0" MONOPOLE

ISSUED FOR:

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

SHEET NUMBER: C-2

REVISION: 1

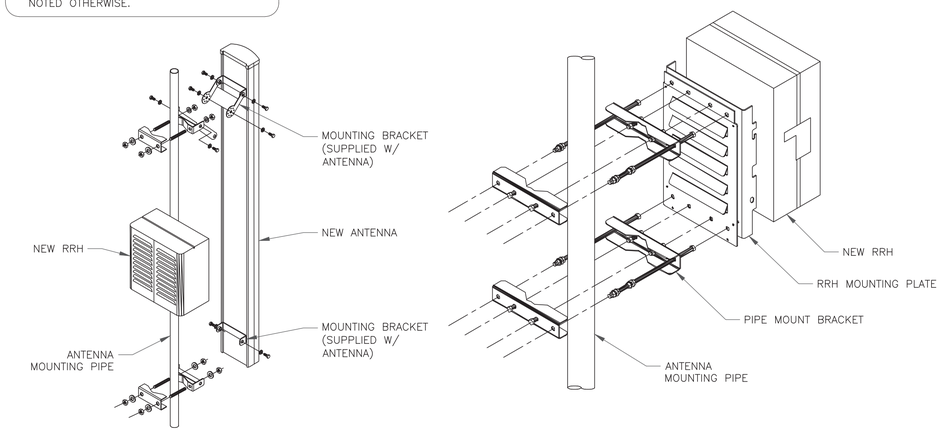
RF SYSTEM SCHEDULE

SECTOR	ANTENNA	TECH	MANUFACTURER	ANTENNA MODEL	AZIMUTH	M-TILT	E-TILT	RAD CENTER	TMA/RRU	FEEDLINE TYPE
ALPHA	A1	L700/L600/N600	RFS	APXVAALL24_43-U-NA20	30°	–	2°/2°	148'-0"	(1) ERICSSON – RADIO 4480 B71+B85	(1) HYBRID CABLE (6X24)
	A2	L2500/N2500	ERICSSON	AIR6449 B71	30°	–	2°/2°	148'-0"	–	
	A3	L2100/L1900/ G1900	RFS	APX16DWV-16DWV-S-E-A20	30°	–	2°/2°	148'-0"	(1) ERICSSON – RADIO 4460 B25+B66	
BETA	B1	L700/L600/N600	RFS	APXVAALL24_43-U-NA20	150°	–	2°/2°	148'-0"	(1) ERICSSON – RADIO 4480 B71+B85	(1) HYBRID CABLE (6X24)
	B2	L2500/N2500	ERICSSON	AIR6449 B71	150°	–	2°/2°	148'-0"	–	
	B3	L2100/L1900/ G1900	RFS	APX16DWV-16DWV-S-E-A20	150°	–	2°/2°	148'-0"	(1) ERICSSON – RADIO 4460 B25+B66	
GAMMA	C1	L700/L600/N600	RFS	APXVAALL24_43-U-NA20	270°	–	2°/2°	148'-0"	(1) ERICSSON – RADIO 4480 B71+B85	(1) HYBRID CABLE (6X24)
	C2	L2500/N2500	ERICSSON	AIR6449 B71	270°	–	2°/2°	148'-0"	–	
	C3	L2100/L1900/ G1900	RFS	APX16DWV-16DWV-S-E-A20	270°	–	2°/2°	148'-0"	(1) ERICSSON – RADIO 4460 B25+B66	

1 ANTENNA AND CABLE SCHEDULE
SCALE: NOT TO SCALE

INSTALLER NOTES:

1. COMPLY WITH MANUFACTURERS INSTRUCTIONS TO ENSURE THAT ALL RRHs RECEIVE ELECTRICAL POWER WITHIN 24 HOURS OF BEING REMOVED FROM THE MANUFACTURER'S PACKAGING.
2. DO NOT OPEN RRH PACKAGES IN THE RAIN.
3. ALL PIPES, BRACKETS, AND MISCELLANEOUS HARDWARE TO BE GALVANIZED UNLESS NOTED OTHERWISE.



2 ANTENNA WITH RRH MOUNTING DETAIL
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

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

T-MOBILE
SITE NUMBER: **CTHA453A**

BU #: **876313**
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1394 MERIDEN WATERBURY TPK
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EXISTING
160'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
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1	10/6/21	JHW	CONSTRUCTION	JHW

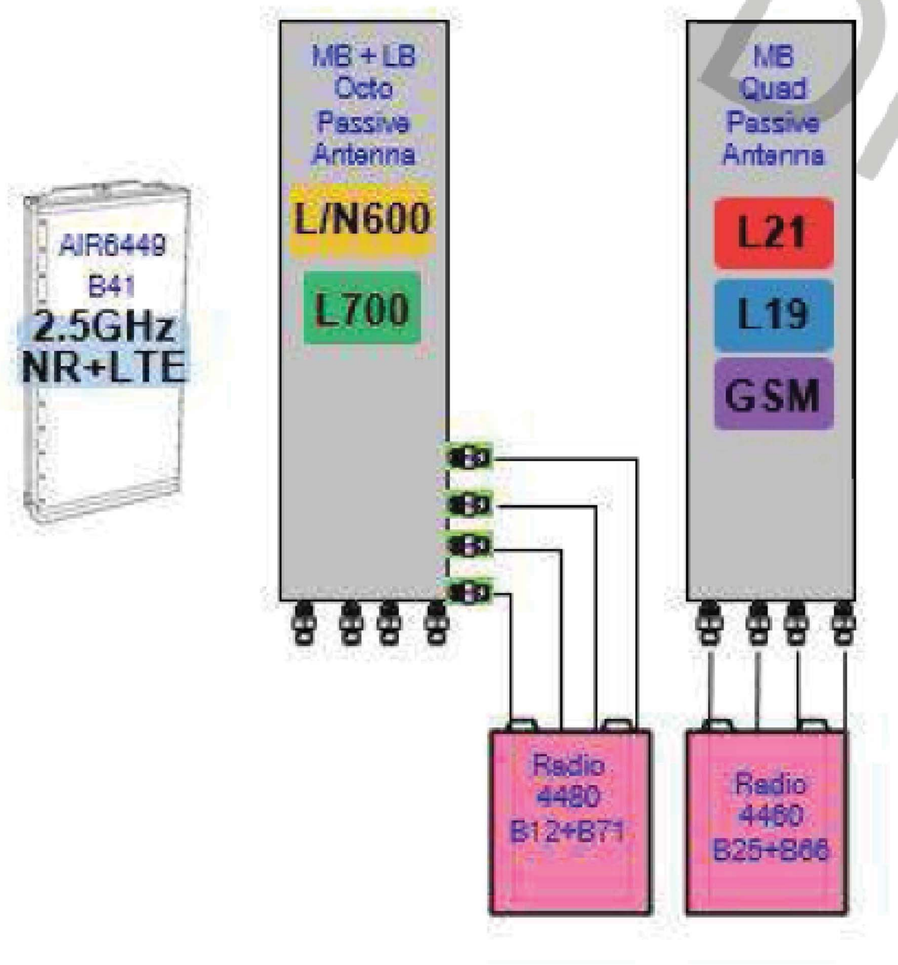
STATE OF CONNECTICUT
JOHN H. WILLIAMS
No. 23824
LICENSED
PROFESSIONAL ENGINEER
10/6/21

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

SHEET NUMBER: C-3

REVISION: 1

67E5A998E.JPG



Notes:

1 PLUMBING DIAGRAM
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
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T-MOBILE
SITE NUMBER: **CTHA453A**

BU #: **876313**
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1394 MERIDEN WATERBURY TPK
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EXISTING
160'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
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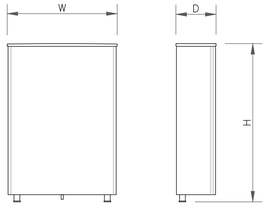
1	10/6/21	JHW	CONSTRUCTION	JHW

STATE OF CONNECTICUT
JOSEPH H. WILLIAMS
No. 23024
LICENSED
PROFESSIONAL ENGINEER
10/6/21

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

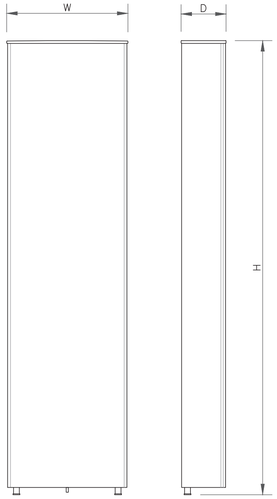
SHEET NUMBER: C-4

REVISION: 1



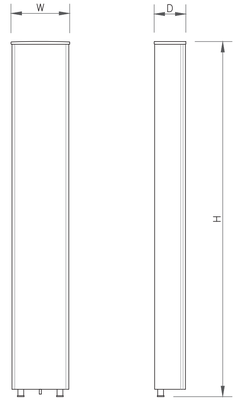
ANTENNA SPECS	
MANUFACTURER	ERICSSON
MODEL #	AIR6449 B41
WIDTH	20.51"
DEPTH	8.54"
HEIGHT	33.11"
WEIGHT	114.63 LBS

1 ANTENNA SPECS
SCALE: NOT TO SCALE



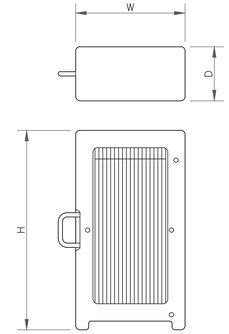
ANTENNA SPECS	
MANUFACTURER	RFS
MODEL #	APXVAALL24_43-U-NA20
WIDTH	24.00"
DEPTH	8.50"
HEIGHT	95.90"
WEIGHT	149.90 LBS

2 ANTENNA SPECS
SCALE: NOT TO SCALE



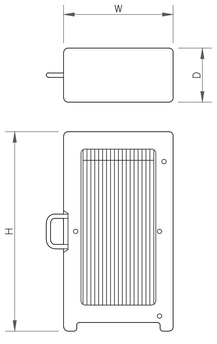
ANTENNA SPECS	
MANUFACTURER	RFS
MODEL #	APX16DWV-16DWV-S-E-A20
WIDTH	13.30"
DEPTH	3.15"
HEIGHT	55.90"
WEIGHT	41.00 LBS

3 ANTENNA SPECS
SCALE: NOT TO SCALE



RRU SPECIFICATIONS	
MANUFACTURER	ERICSSON
MODEL #	RADIO 4460 B25+B66
WIDTH	15.10"
DEPTH	11.90"
HEIGHT	17.00"
WEIGHT	109.00 LBS

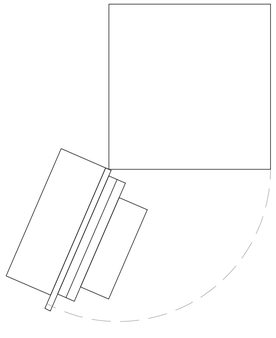
4 RRU SPECS
SCALE: NOT TO SCALE



RRU SPECIFICATIONS	
MANUFACTURER	ERICSSON
MODEL #	RADIO 4480 B71+B85
WIDTH	15.70"
DEPTH	7.50"
HEIGHT	21.80"
WEIGHT	92.60 LBS

5 RRU SPECS
SCALE: NOT TO SCALE

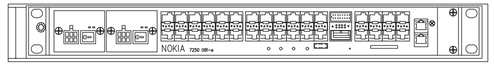
ERICSSON 6160 SSC
WEIGHT: 60.0 LBS
SIZE (HxWxD): 63"x25.6"x33.5" IN.



6 ERICSSON 6160 SSC
SCALE: NOT TO SCALE

BATTERY CABINET SPECIFICATIONS	
MODEL #	B160
MANUF.	ERICSSON
HEIGHT	63"
WIDTH	26"
DEPTH	26"
WEIGHT	

7 ERICSSON B160 BATTERY CABINET
SCALE: NOT TO SCALE



NOKIA CSR IXRE V1 ROUTER
WEIGHT: 11.2 LBS.
SIZE (HxWxD): 1.75x17.25x10.0 IN.

8 NOKIA CSR IXR3 V1 ROUTER
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

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

T-MOBILE
SITE NUMBER: **CTHA453A**

BU #: **876313**
WEST JOHNSON AVE. BURNT HOUSE

1394 MERIDEN WATERBURY TPK
SOUTHINGTON, CT 06489

EXISTING
160'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	9/3/21	NA/SRB	CONSTRUCTION	JHW
1	10/6/21	JHW	CONSTRUCTION	JHW

STATE OF CONNECTICUT
JAMES H. WILLIAMS
No. 23924
LICENSED
PROFESSIONAL ENGINEER
10/6/21

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

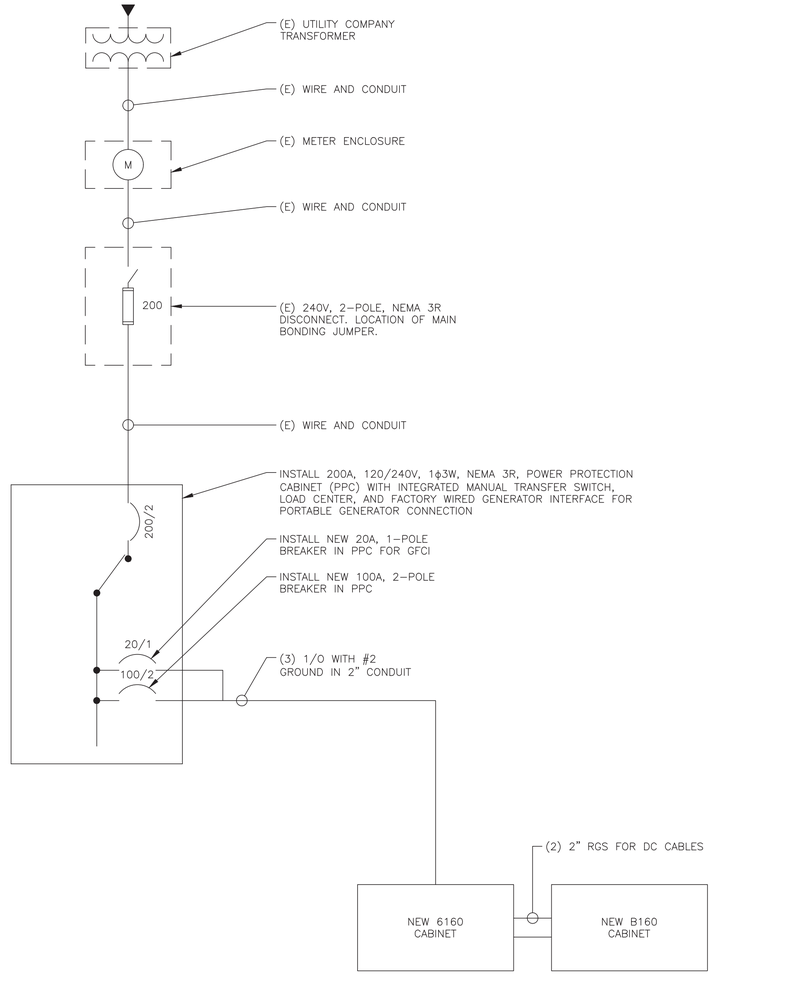
SHEET NUMBER: C-5
REVISION: 1

FINAL PANEL SCHEDULE							
LOAD	POLES	AMPS	BUS L1	BUS L2	AMPS	POLES	LOAD
			1	2	30A	2	N/A
			3	4			
			5	6			
			7	8			
			9	10	50A	2	BTS
			11	12			
			13	14			
			15	16			
			17	18			
			19	20			
LIGHT & GFI	1	20A	21	22			
			23	24			

RATED VOLTAGE: ■120/240 □_____, 1 PHASE, 3 WIRE	BRANCH POLES: □12 ■24 □30 □42	APPROVED MF'RS
RATED AMPS: □100 ■200 □400 □_____,	CABINET: ■SURFACE □FLUSH	NEMA □1 ■3R □4X
□MAIN LUGS ONLY ■MAIN 200 AMPS ■BREAKER □FUSED SWITCH	■HINGED DOOR	■KEYED DOOR LATCH
□FUSED ■CIRCUIT BREAKER BRANCH DEVICES	□_____ TO BE GFCI BREAKERS	FULL NEUTRAL BUS GROUND BAR
ALL BREAKERS MUST BE RATED TO INTERRUPT A SHORT CIRCUIT ISC OF 10,000 AMPS SYMMETRICAL		

EXISTING 100A BREAKER PANEL TO BE REPLACED W/ NEW 200A BREAKER PANEL. SQUARE D P/N: QO12040M200RB (OR APPROVED EQUAL)
REPLACE EXISTING BREAKERS W/ NEW BREAKERS OF SAME AMPERAGE INSIDE NEW PANEL
REPLACE EXISTING BREAKERS IN POSITION 20 & 22 W/ NEW 100A 2 POLE BREAKER FOR NEW 6160 CABINET
INSTALL NEW 20A BREAKER IN POSITION 23 FOR NEW GFI (B160 CABINET).
REPLACE EXISTING WIRES FOR NEW 6160 CABINET WITH (3) 1/0 AWG THWN (COPPER) AND (1) #2G AWG. MINIMUM CONDUIT SIZE TO BE 2"
UPGRADE FEEDER WIRES TO MEET AMPACITY.
FINAL PANEL DESIGN AND CALCULATIONS FOR WIRE SIZE WERE BASED OFF OF EXISTING DOCUMENTS AND PHOTOS

1 AC PANEL SCHEDULE
SCALE: NOT TO SCALE



NOTES:

1. ALL NEW CONDUCTORS TO BE INSTALLED SHALL BE COPPER. ALL CONDUCTORS SHALL BE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 UNLESS NOTED OTHERWISE.
2. CONTRACTOR IS TO FIELD VERIFY ALL EXISTING ITEMS SHOWN ON THE ELECTRICAL ONE-LINE DIAGRAM AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
3. ALL GROUNDING AND BONDING PER THE NEC.

2 ONE LINE DIAGRAM
SCALE: NOT TO SCALE

T-Mobile
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T-MOBILE
SITE NUMBER: **CTHA453A**

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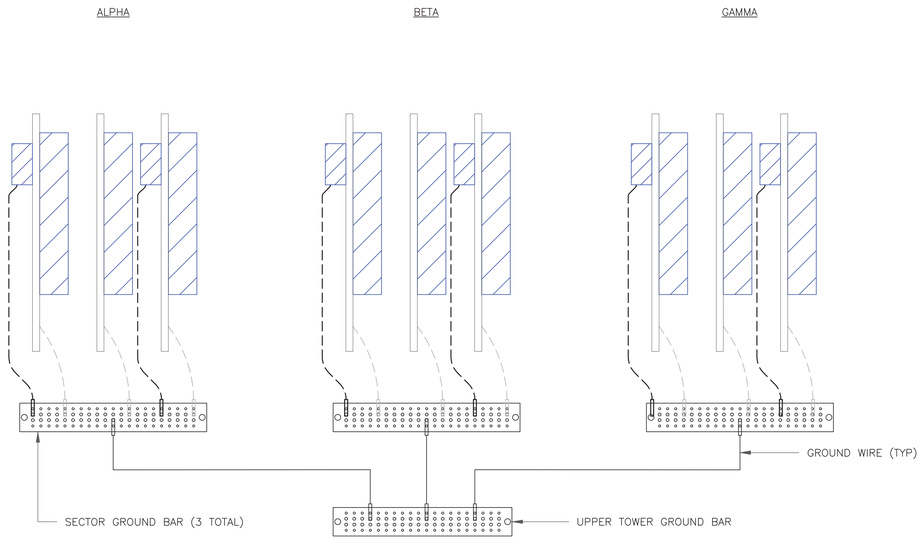
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

SHEET NUMBER: E-1
REVISION: 1



NOTE:

ALL NEW GROUNDS TO BE #6 STRANDED COPPER WITH GREEN INSULATION UNLESS NOTED OTHERWISE.

1 ANTENNA GROUNDING DIAGRAM
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

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3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

B+T GRP
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SUITE 300
TULSA, OK 74119
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T-MOBILE
SITE NUMBER: **CTHA453A**

BU #: **876313**
WEST JOHNSON AVE. BURNT HOUSE

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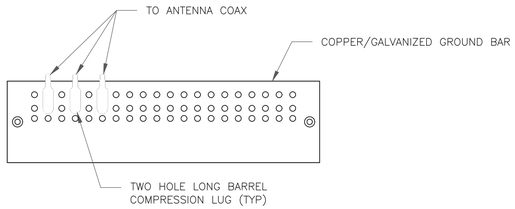
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

SHEET NUMBER: G-1

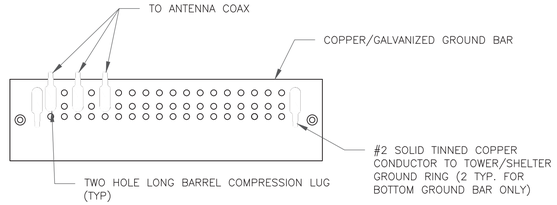
REVISION: 1



NOTES:

1. DOUBLING UP "OR STACKING" OF CONNECTIONS IS NOT PERMITTED.
2. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
3. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO ANTENNA MOUNT STEEL.

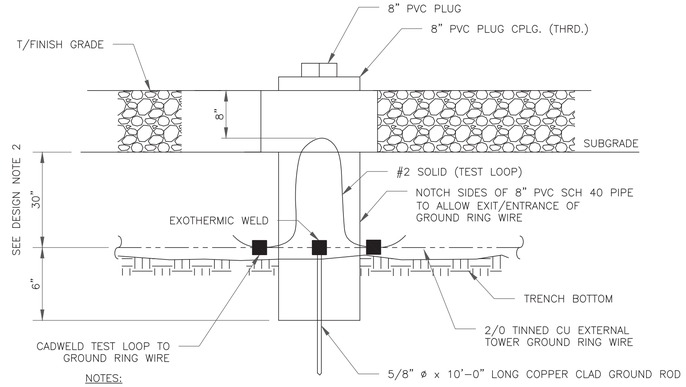
1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

1. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
2. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL (TOWER ONLY).
3. GROUND BAR SHALL BE ISOLATED FROM BUILDING OR SHELTER.

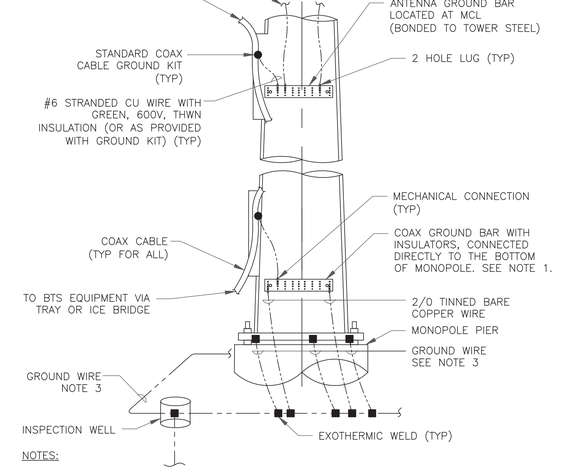
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL
2. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D)

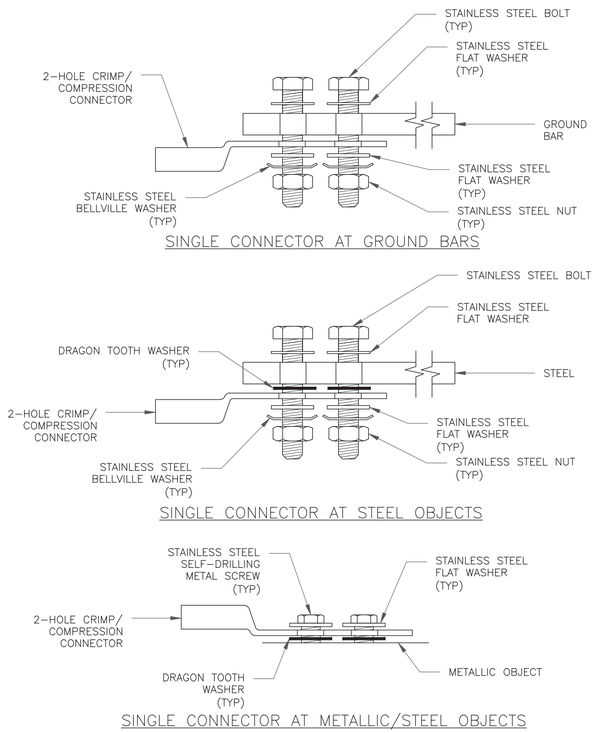
3 INSPECTION WELL DETAIL
SCALE: NOT TO SCALE



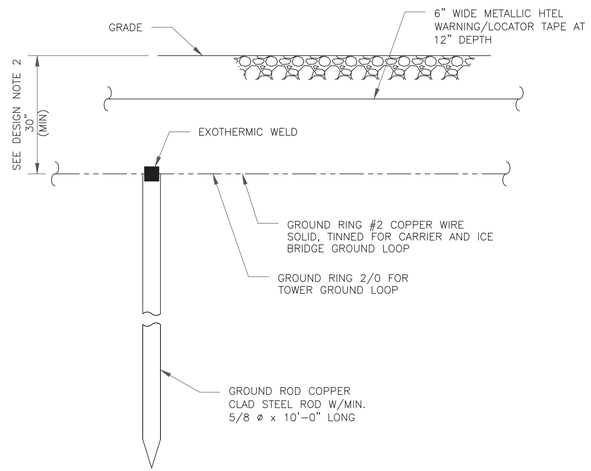
NOTES:

1. NUMBER OF GROUNDING BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATIONS AND CONNECTION ORIENTATION. COAXIAL CABLES EXCEEDING 200 FEET ON THE TOWER SHALL HAVE GROUND KITS AT THE MIDPOINT. PROVIDE AS REQUIRED.
2. ONLY MECHANICAL CONNECTIONS ARE ALLOWED TO BE MADE TO CROWN CASTLE USA INC. TOWERS. ALL MECHANICAL CONNECTIONS SHALL BE TREATED WITH AN ANTI-OXIDANT COATING.
3. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF THE RECOGNIZED EDITION OF ANSI/TIA 222 AND NFPA 780.

4 TYPICAL ANTENNA CABLE GROUNDING
SCALE: NOT TO SCALE



5 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL
2. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D)

6 GROUND ROD DETAIL
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

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

T-MOBILE
SITE NUMBER: **CTHA453A**

BU #: **876313**
WEST JOHNSON AVE. BURNT HOUSE

1394 MERIDEN WATERBURY TPK
SOUTHINGTON, CT 06489

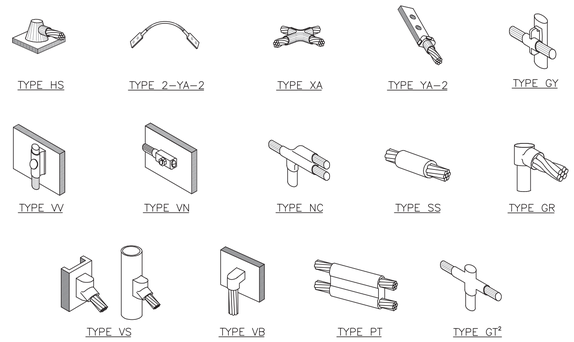
EXISTING
160'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	9/3/21	NA/SRB	CONSTRUCTION	JHW
1	10/6/21	JHW	CONSTRUCTION	JHW

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

SHEET NUMBER: G-2
REVISION: 1

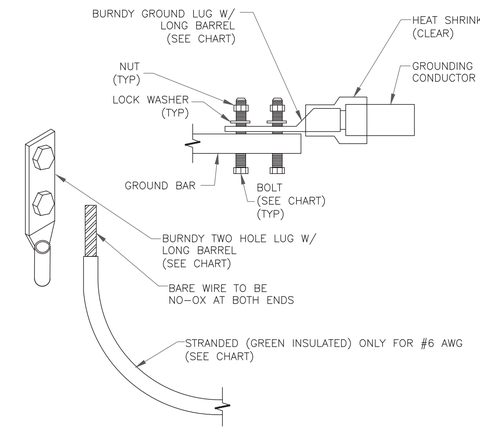


NOTE:

1. ERICO EXOTHERMIC "MOLD TYPES" SHOWN HERE ARE EXAMPLES. CONSULT WITH CONSTRUCTION MANAGER FOR SPECIFIC MOLDS TO BE USED FOR THIS PROJECT.
2. MOLD TYPE ONLY TO BE USED BELOW GRADE WHEN CONNECTING GROUND RING TO GROUND ROD.

1 CADWELD GROUNDING CONNECTIONS
SCALE: NOT TO SCALE

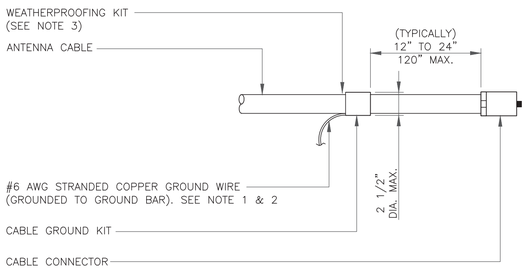
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26-2TC38	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA28-2N	1/2" - 16 NC S 2 BOLT



NOTES:

1. ALL GROUNDING LUGS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. ALL HARDWARE BOLTS, NUTS, LOCK WASHERS SHALL BE STAINLESS STEEL. ALL HARDWARE ARE TO BE AS FOLLOWS: BOLT, FLAT WASHER,GROUND BAR, GROUND LUG, FLAT WASHER AND NUT.

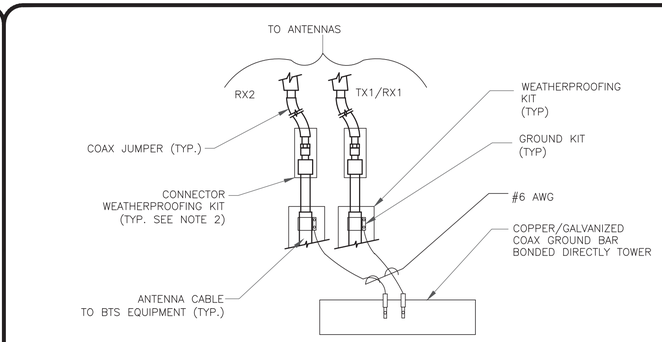
2 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
3. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT, COLD SHRINK SHALL NOT BE USED.

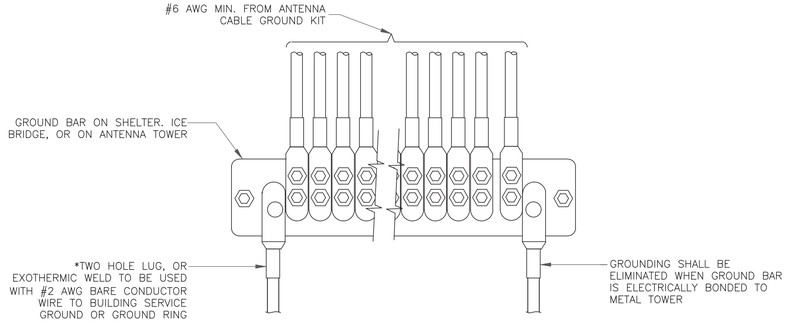
3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



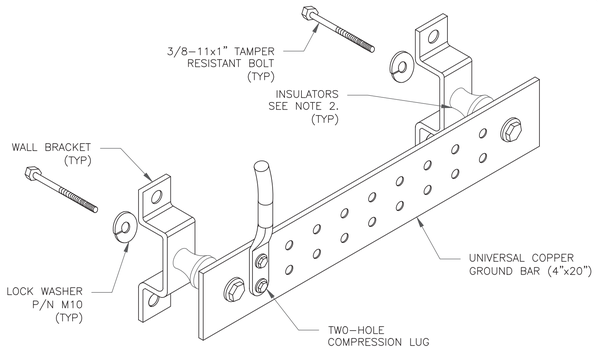
NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE USED.

4 GROUND CABLE CONNECTION
SCALE: NOT TO SCALE



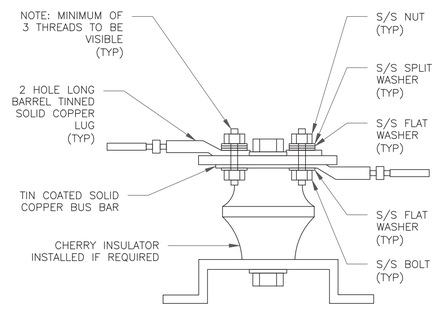
5 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



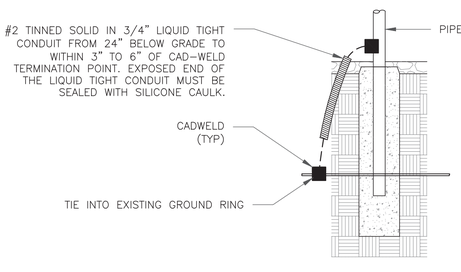
NOTES:

1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE USA INC. TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY QAS-STD-10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION, CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.
2. OMIT INSULATOR WHEN MOUNTING TO TOWER STEEL OR PLATFORM STEEL USE INSULATORS WHEN ATTACHING TO BUILDING OR SHELTERS.

6 GROUND BAR DETAIL
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE



8 TRANSITIONING GROUND DETAIL
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

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PH: (918) 587-4630
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T-MOBILE
SITE NUMBER: **CTHA453A**

BU #: **876313**
WEST JOHNSON AVE. BURNT HOUSE

1394 MERIDEN WATERBURY TPK
SOUTHINGTON, CT 06489

EXISTING
160'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	9/3/21	NA/SRB	CONSTRUCTION	JHW
1	10/6/21	JHW	CONSTRUCTION	JHW

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

SHEET NUMBER: G-3
REVISION: 1

GENERAL NOTES:

1. THESE DOCUMENTS WERE DESIGNED IN ACCORDANCE WITH THE LATEST VERSION OF APPLICABLE LOCAL/STATE/COUNTY/CITY BUILDING CODES, AS WELL AS ANSI/TIA-222 STANDARD, AWWA-D100 STANDARD, NDS, NEC, MSJC, AND/OR THE LATEST VERSION OF THE INTERNATIONAL BUILDING CODE, UNLESS NOTED OTHERWISE IN THE CORRESPONDING STRUCTURAL REPORT.
2. ALL CONSTRUCTION METHODS SHOULD FOLLOW STANDARDS OF GOOD CONSTRUCTION PRACTICE.
3. ALL WORK INDICATED ON THESE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN SIMILAR CONSTRUCTION.
4. ALL NEW WORK SHALL ACCOMMODATE EXISTING CONDITIONS. IF OBSTRUCTIONS ARE FOUND, CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD PRIOR TO CONTINUING WORK.
5. ANY CHANGES OR ADDITIONS MUST CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS, AND SHOULD BE SIMILAR TO THOSE SHOWN. ALL CHANGES OR ADDITIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO FABRICATION AND/OR CONSTRUCTION.
6. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND EXECUTION OF ALL MISCELLANEOUS SHORING, BRACING, TEMPORARY SUPPORTS, ETC. NECESSARY TO PROVIDE A COMPLETE AND STABLE STRUCTURE DURING CONSTRUCTION. TIA-1019-A-2011 IS AN APPROPRIATE REFERENCE FOR THOSE DESIGNS MEETING TIA STANDARDS. THE ENGINEER OF RECORD MAY PROVIDE FORMAL RIGGING PLANS AT THE REQUEST AND EXPENSE OF THE CONTRACTOR.
7. INSTALLATION SHALL NOT INTERFERE NOR DENY ADEQUATE ACCESS TO OR FROM ANY EXISTING OR PROPOSED OPERATIONAL AND SAFETY EQUIPMENT.
8. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO ANY FABRICATION. CONTACT INFINIGY ENGINEERING IF ANY DISCREPANCIES EXIST.

STEEL CONSTRUCTION NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO THE AISC MANUAL OF STEEL CONSTRUCTION 14TH EDITION, FOR THE DESIGN AND FABRICATION OF STEEL COMPONENTS.
2. ALL FIELD CUT SURFACES, FIELD DRILLED HOLES, AND GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS' RECOMMENDATIONS.
3. ALL FIELD DRILLED HOLES TO BE USED FOR FIELD BOLTING INSTALLATION SHALL BE STANDARD HOLES, AS DEFINED BY AISC, UNLESS NOTED OTHERWISE.
4. ALL EXTERIOR STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123.
5. ALL STEEL MEMBERS AND CONNECTIONS SHALL MEET THE FOLLOWING GRADES:
   - ANGLES, CHANNELS, PLATES AND BARS TO BE A36. Fy=36 KSI, U.N.O.
   - W SHAPES TO BE A992. Fy=50 KSI, U.N.O.
   - RECTANGULAR HSS TO BE A500, GRADE B. FY=46 KSI, U.N.O.
   - ROUND HSS TO BE A500, GRADE B. FY=42 KSI, U.N.O.
   - STEEL PIPE TO BE A53, GRADE B. Fy=35 KSI, U.N.O.
   - BOLTS TO BE A325-X. Fu=120 KSI, U.N.O.
   - U-BOLTS AND LAG SCREWS TO BE A307 GR A. Fu=60 KSI, U.N.O.
6. ALL WELDING SHALL BE DONE USING E70XX ELECTRODES, U.N.O.
7. ALL WELDING SHALL CONFORM TO AISC AND AWS D1.1 LATEST EDITION.
8. ALL HILTI ANCHORS TO BE CARBON STEEL, U.N.O.
   - MECHANICAL ANCHORS: KWIK BOLT-TZ, U.N.O.
   - CMU BLOCK ANCHORS: ADHESIVE - HY120, U.N.O.
   - CONCRETE ANCHORS: ADHESIVE - HY150, U.N.O.
   - CONCRETE REBAR: ADHESIVE - RE500, U.N.O.
9. ALL STUDS TO BE NELSON CAPACITOR DISCHARGE 1/4"-20 LOW CARBON STEEL COPPER-FLASH AT 55 KSI ULT/50 KSI YIELD, U.N.O.
10. BOLTS SHALL BE TIGHTENED TO A "SNUG TIGHT" CONDITION AS DEFINED BY AISC.
11. MINIMUM EDGE DISTANCES SHALL CONFORM TO AISC TABLE J3.4.
12. REMOVAL/REPLACEMENT OF STRUCTURAL MEMBERS SHALL BE DONE ONE MEMBER AT A TIME. CONTRACTOR IS RESPONSIBLE FOR ENSURING THE STRUCTURAL INTEGRITY OF THE STRUCTURE DURING ALL PHASES OF CONSTRUCTION.

CONCRETE CONSTRUCTION NOTES:

1. CONCRETE TO BE 4000 PSI @ 28 DAYS. REINFORCING BAR TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. CONCRETE INSTALLATION TO CONFORM TO ACI-318 BUILDING REQUIREMENTS FOR REINFORCED CONCRETE. ALL CONCRETE TO BE PLACED AGAINST UNDISTURBED EARTH FREE OF WATER AND ALL FOREIGN OBJECTS AND MATERIALS. A MINIMUM OF THREE INCHES OF CONCRETE SHALL COVER ALL REINFORCEMENT. WELDING OF REBAR IS NOT PERMITTED.
2. EXISTING CONCRETE SURFACES THAT ARE TO BE IN CONTACT WITH NEW PROPOSED CONCRETE SHOULD BE WIRE BRUSHED CLEAN AND TREATED WITH APPROPRIATE MECHANICAL SCRATCH COAT AND REPAIR MATERIALS OR APPROPRIATE CHEMICAL METHODS SUCH AS THE APPLICATION OF A BONDING AGENT, EX. SAKRETE OR EQUIVALENT, TO ENSURE A QUALITY BOND BETWEEN EXISTING AND PROPOSED CONCRETE SURFACES.

FIBER REINFORCED POLYMER (FRP) NOTES:

1. FRP PLATES, SHAPES, BOLTS AND NUTS (STUD/NUT ASSEMBLIES) SHALL CONFORM TO ASTM D638, 695, 790. PLATES AND SHAPES TO BE FY = 5.35 KSI LW (SAFETY FACTOR OF 8), .945 KSI CW (SAFETY FACTOR OF 8) MIN.
2. IF FIELD FABRICATION IS REQUIRED, ALL CUT EDGES AND DRILLED HOLES TO BE SEALED USING VINYL ESTER SEALING KIT SUPPLIED BY THE MANUFACTURER.
3. ALL FASTENERS TO BE 1/2" DIA FRP THREADED ROD WITH FIBER REINFORCED THERMOPLASTIC NUT, SPACED AT 12 INCHES ON CENTER MAXIMUM, U.N.O., FOR PANELS AND AS DESIGNED FOR STRUCTURAL MEMBERS.
4. THE COLOR AND SURFACE PATTERN OF EXPOSED FRP PANELS SHALL MATCH THE EXTERIOR OF THE EXISTING BUILDING, U.N.O.
5. STUD/NUT ASSEMBLIES SHOULD BE LUBRICATED FOR INSTALLATION
6. ENSURE BEARING SURFACES OF THE NUTS ARE PARALLEL TO THE SURFACES BEING FASTENED.
7. TORQUE BOLTS ACCORDING TO THE FOLLOWING TABLE:

INSTALLATION TORQUE TABLE		
SIZE	**ULTIMATE TORQUE STRENGTH**	**RECOMMENDED MAXIMUM INSTALLATION TORQUE**
3/8-16 UNC	8 FT-LBS	4 FT-LBS
1/2-13 UNC	18 FT-LBS	8 FT-LBS
5/8-11 UNC	35 FT-LBS	16 FT-LBS
3/4-10 UNC	50 FT-LBS	24 FT-LBS
1-8 UNC	110 FT-LBS	50 FT-LBS

8. WHEN TIGHTENING FRP STUD/NUT ASSEMBLIES, WRENCHES MUST MAKE FULL CONTACT WITH ALL NUT EDGES. A STANDARD SIX POINT SOCKET IS RECOMMENDED.
9. STUD/NUT ASSEMBLIES SHOULD BE BONDED BY APPLYING BONDING AGENT TO ENTIRE NUT AND EXPOSED STUD.
10. ALL FRP MATERIALS TO BE PROVIDED BY FIBERGRATE COMPOSITE STRUCTURES, DALLAS TX, OR APPROVED EQUAL.
11. ALL FRP SHAPES TO BE DYNAFORM PULTRUDED STRUCTURAL SHAPES.
12. ALL FRP PLATES TO BE FIBERPLATE MOLDED FRP PLATE.
13. ALL FRP PANELS TO BE FIBERPLATE CLADDING PANEL.
14. EACH FRP PANEL TO BE IDENTIFIED WITH LARR#25536 AND FIBERGRATE COMPOSITE STRUCTURAL LABEL.
15. FRP MATERIAL TO BE CLASSIFIED AS CC1 OR BETTER, AND HAVE MAXIMUM FLAME SPREAD OF 50.
16. ALL DESIGN AND CONSTRUCTION TO BE COMPLETED IN ACCORDANCE WITH LOS ANGELES RESEARCH REPORT RR25536, DATED FEBRUARY 1, 2016.
17. SPECIAL INSPECTIONS MUST BE PROVIDED FOR ALL FRP INSTALLMENTS. SEE SPECIAL INSPECTION SECTION, THIS SHEET.

RATIO OF EDGE DISTANCE TO FRP FASTENER DIAMETER		
	RANGE	**RECOMMENDED**
EDGE DISTANCE - CL* BOLT TO END	2.0-4.0	3.0
EDGE DISTANCE - CL* BOLT TO SIDE	1.5-3.5	2.5
BOLT PITCH - CL* TO CL*	4.0-5.0	5.0

WOOD CONSTRUCTION NOTES:

1. ALL EXISTING WOOD SHAPES ARE ASSUMED TO BE DOUGLAS FIR-LARCH WITH A REFERENCE DESIGN BENDING VALUE OF 1000 PSI MIN.
2. ALL PROPOSED WOOD SHAPES ARE TO BE DOUGLAS FIR-LARCH WITH A REFERENCE DESIGN BENDING VALUE OF 1000 PSI MIN. U.N.O.
3. ALL EXISTING AND PROPOSED GLUED LAMINATED TIMBERS ARE TO BE 24F-1.8C DOUGLAS FIR BALANCED WITH A REFERENCE DESIGN BENDING VALUE OF 2400 PSI MIN. U.N.O.

MASONRY CONSTRUCTION NOTES:

1. ALL BRICK TO BE 1500 PSI MIN. REINFORCING BAR (IF APPLICABLE) TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. ALL MORTAR TO BE 2000 PSI MIN.
   - FOR INTERIOR/ABOVE GRADE APPLICATIONS TYPE N MORTAR HAVING MINIMUM MODULUS OF RUPTURE OF 100 PSI SHALL BE USED. FOR EXTERIOR/BELOW GRADE APPLICATIONS TYPE M OR S MORTAR HAVING A MINIMUM MODULUS OF RUPTURE OF 133 PSI.
   - BRICK AND MORTAR INSTALLATION TO CONFORM TO MSJC BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES.
2. ALL CMU TO BE 1500 PSI MIN. REINFORCING BAR (IF APPLICABLE) TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. ALL MORTAR TO BE 2000 PSI MIN.
   - FOR INTERIOR/ABOVE GRADE APPLICATIONS, TYPE N MORTAR HAVING MINIMUM MODULUS OF RUPTURE OF 64 PSI SHALL BE USED FOR UNGROUTED BLOCKS, AND 158 PSI FOR FULLY GROUTED BLOCKS.
   - FOR EXTERIOR/BELOW GRADE APPLICATIONS TYPE M OR S MORTAR HAVING A MINIMUM MODULUS OF RUPTURE OF 84 PSI SHALL BE USED FOR UNGROUTED BLOCKS, AND 163 PSI FOR FULLY GROUTED BLOCKS.
   - BRICK AND MORTAR INSTALLATION TO CONFORM TO MSJC BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES.

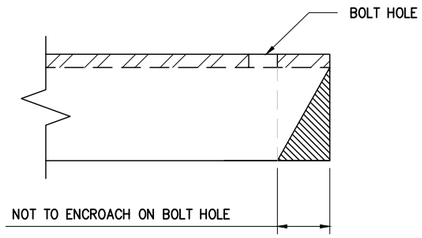
TOWER PLUMB & TENSION NOTES:

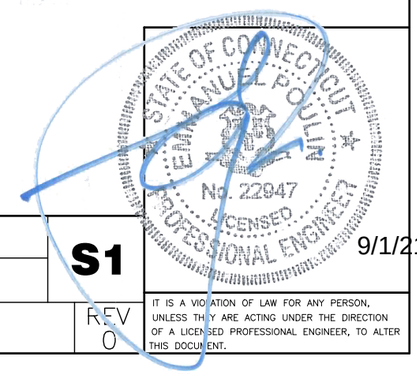
1. PLUMB AND TENSION TOWER UPON COMPLETION OF STRUCTURAL MODIFICATIONS DETAILED IN THESE DRAWINGS.
2. RETENSIONING OF EXISTING GUY WIRES SHALL BE PERFORMED AT A TIME WHEN THE WIND VELOCITY IS LESS THAN 10 MPH AT GROUND LEVEL AND WITH NO ICE ON THE STRUCTURE AND GUY WIRES.
3. PLUMB THE TOWER WHILE RETENSIONING THE EXISTING GUY WIRES. THE HORIZONTAL DISTANCE BETWEEN THE VERTICAL CENTERLINES AT ANY TWO ELEVATIONS SHALL NOT EXCEED 0.25% OF THE VERTICAL DISTANCE BETWEEN TWO ELEVATIONS FOR LATTICED STRUCTURES.
4. THE TWIST BETWEEN ANY TWO ELEVATIONS THROUGHOUT THE HEIGHT OF A LATTICE STRUCTURE SHALL NOT EXCEED 0.5 DEGREES IN 10 FEET. THE MAXIMUM TWIST OVER THE LATTICE STRUCTURE HEIGHT SHALL NOT EXCEED 5 DEGREES.

SPECIAL INSPECTIONS NOTES:

1. A QUALIFIED INDEPENDENT TESTING LABORATORY, EMPLOYED BY THE OWNER AND APPROVED BY THE JURISDICTION, SHALL PERFORM INSPECTION AND TESTING IN ACCORDANCE WITH THE THE GOVERNING BUILDING CODE, APPLICABLE SECTION(S) AS REQUIRED BY PROJECT SPECIFICATIONS FOR THE FOLLOWING CONSTRUCTION WORK:
   a. STRUCTURAL WELDING (CONTINUOUS INSPECTION OF FIELD WELDS ONLY).
   b. HIGH STRENGTH BOLTS (PERIODIC INSPECTION OF A325 AND/OR A490 BOLTS) TO BE TIGHTENED PER "TURN-OF-THE-NUT" METHOD.
   c. MECHANICAL AND EPOXIED ANCHORAGES.
   d. FIBER REINFORCED POLYMER.
      - THE SPECIAL INSPECTOR MUST VERIFY THAT THE FRP MATERIAL SPECIFIED ON THE APPROVED DESIGN DOCUMENTS IS BEING INSTALLED.
      - THE SPECIAL INSPECTOR MUST VERIFY THAT ALL CUT EDGES AND DRILLED HOLES ARE PROPERLY SEALED USING A VINYL ESTER SEALING KIT SUPPLIED BY THE MANUFACTURER.
      - THE SPECIAL INSPECTOR MUST VERIFY THAT THE STRUCTURE IS BUILT IN ACCORDANCE WITH THE APPROVED DESIGN DOCUMENTS.
2. THE INSPECTION AGENCY SHALL SUBMIT INSPECTION AND TEST REPORTS TO THE BUILDING DEPARTMENT, THE ENGINEER OF RECORD, AND THE OWNER UNLESS THE FABRICATOR IS APPROVED BY THE BUILDING OFFICIAL TO PERFORM WORK WITHOUT THE SPECIAL INSPECTIONS.

MAXIMUM ALLOWABLE ANGLE CLIP





9/1/21

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	08/24/21	ISSUED FOR REVIEW	DMB	AM	LM

INFINIGY Design. Build. Deliver.
2255 SEWELL MILL ROAD, SUITE 130
MARIETTA, GA 30062
OFFICE: (678) 444-4463
FAX: (678) 444-4472

1039-Z0001-B

CROWN CASTLE

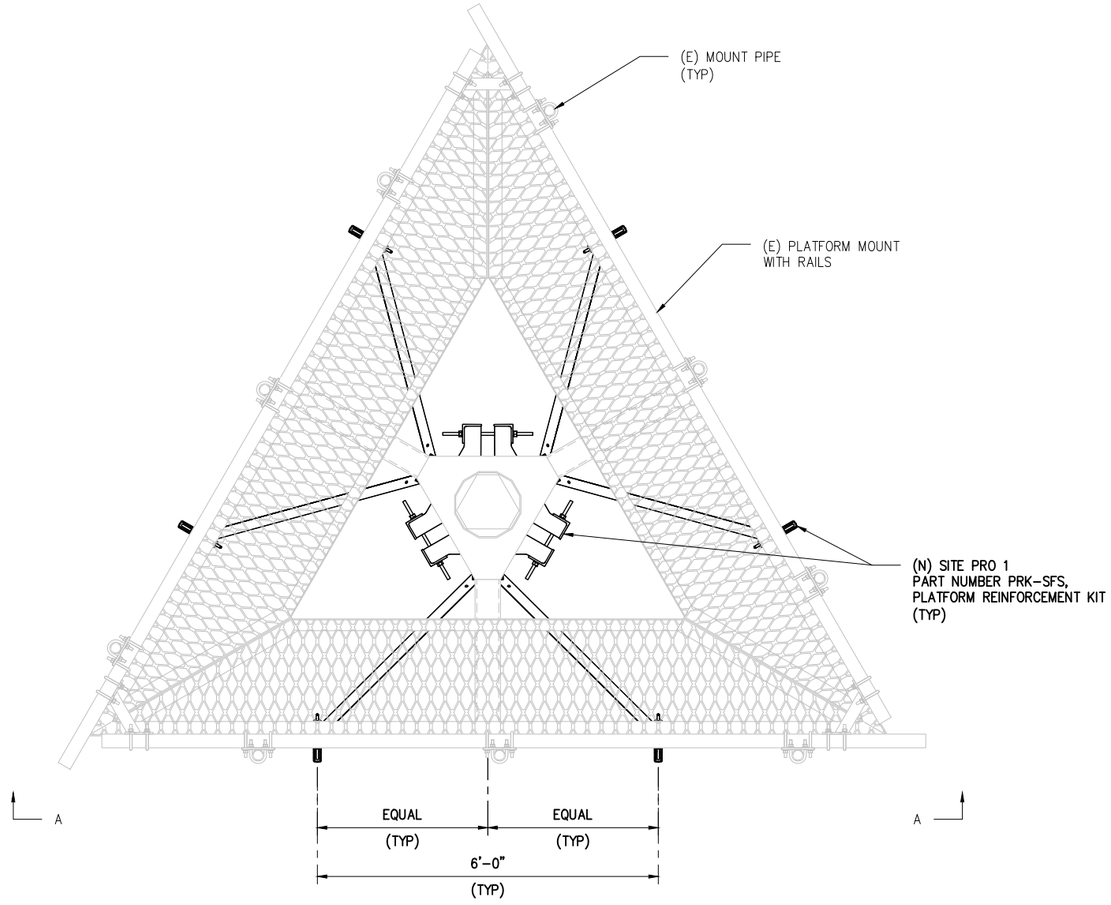
T-Mobile

876313
WEST JOHNSON AVE. BURNT HOUSE
1394 MERIDEN WATERBURY TPK
SOUTHINGTON, CT 06489

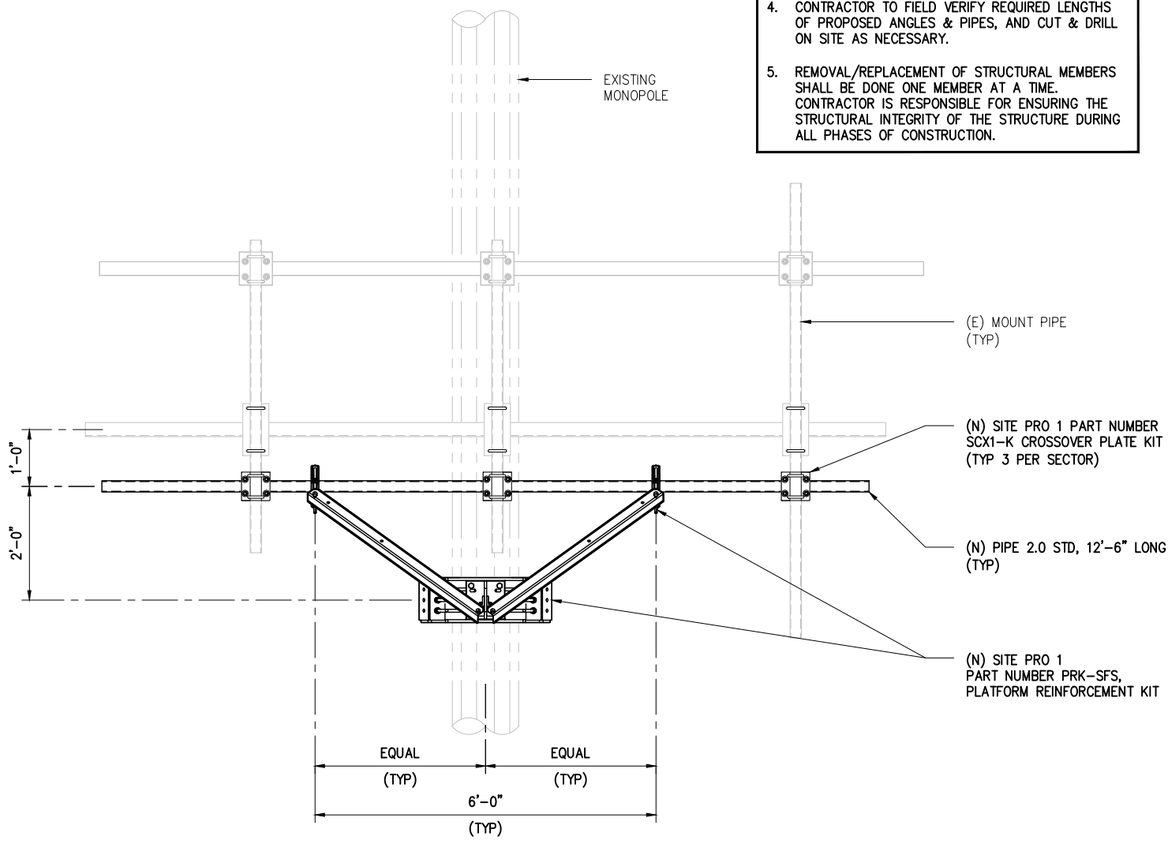
GENERAL NOTES

S1

REV 0



1 SITE PLAN
SCALE: NOT TO SCALE



2 SECTION A-A
SCALE: NOT TO SCALE

NOTES:

1. MODIFICATIONS SHOWN ARE TYPICAL FOR ALL SECTORS. SEE THIS SHEET AND SHEET S-2 FOR LAYOUT DETAILS.
2. VARIOUS EXISTING CONDITIONS AND PROPOSED MODIFICATIONS NOT SHOWN FOR CLARITY.
3. ALL DESIGNATED PARTS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS, UNLESS OTHERWISE NOTED.
4. CONTRACTOR TO FIELD VERIFY REQUIRED LENGTHS OF PROPOSED ANGLES & PIPES, AND CUT & DRILL ON SITE AS NECESSARY.
5. REMOVAL/REPLACEMENT OF STRUCTURAL MEMBERS SHALL BE DONE ONE MEMBER AT A TIME. CONTRACTOR IS RESPONSIBLE FOR ENSURING THE STRUCTURAL INTEGRITY OF THE STRUCTURE DURING ALL PHASES OF CONSTRUCTION.

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	08/24/21	ISSUED FOR REVIEW	DMB	AM	LM

INFINIGY Design. Build. Deliver.
2255 SEWELL MILL ROAD, SUITE 130
MARIETTA, GA 30062
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FAX: (678) 444-4472
1039-Z0001-B

CROWN CASTLE

T-Mobile

876313
WEST JOHNSON AVE. BURNT HOUSE
1394 MERIDEN WATERBURY TPK
SOUTHINGTON, CT 06489

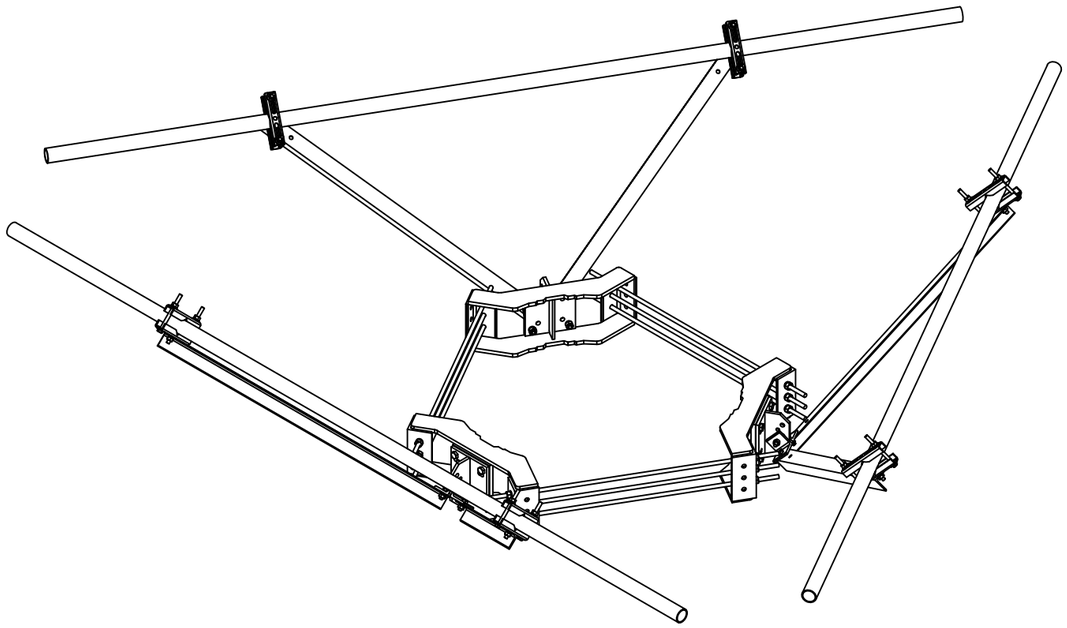
ANTENNA MOUNT DETAILS

S2

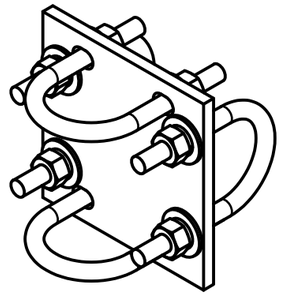
REV 0

STATE OF CONNECTICUT
EMANUEL POULIA
No. 22947
LICENSED PROFESSIONAL ENGINEER

9/1/21



1 SITE PRO 1 P/N PRK-SFS
SCALE: NOT TO SCALE



2 SITE PRO 1 P/N SCX1-K
SCALE: NOT TO SCALE

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	08/24/21	ISSUED FOR REVIEW	DMB	AM	LM

INFINIGY Design. Build. Deliver.
2255 SEWELL MILL ROAD, SUITE 130
MARIETTA, GA 30062
OFFICE: (678) 444-4463
FAX: (678) 444-4472

1039-Z0001-B

CROWN CASTLE

T-Mobile

876313
WEST JOHNSON AVE. BURNT HOUSE
1394 MERIDEN WATERBURY TPK
SOUTHINGTON, CT 06489

REQUIRED PARTS

S3

REV 0

STATE OF CONNECTICUT
EMANUEL POULIN
No. 22947
LICENSED
PROFESSIONAL ENGINEER

9/1/21

Exhibit D

Structural Analysis Report

Date: **October 20th, 2021**

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

Subject:	**Structural Modification Report**	
Carrier Designation:		
	Site Number:	CTHA453A
	Site Name:	CT03XC015
Crown Castle Designation:	**BU Number:**	876313
	Site Name:	West Johnson Ave. Burnt House
	JDE Job Number:	673845
	Work Order Number:	2027876
	Order Number:	575187 Rev. 1
Engineering Firm Designation:	**B+T Group Project Number:**	137177.008.01
Site Data:	**1394 Meriden Waterbury Tpk, SOUTHINGTON, CT, Hartford County** **Latitude *41° 33' 51.39"*, Longitude *-72° 53' 30.7"*** **160 Foot - Monopole**	

B+T Group is pleased to submit this **"Structural Modification Report"** to determine the structural integrity of the above-mentioned tower.

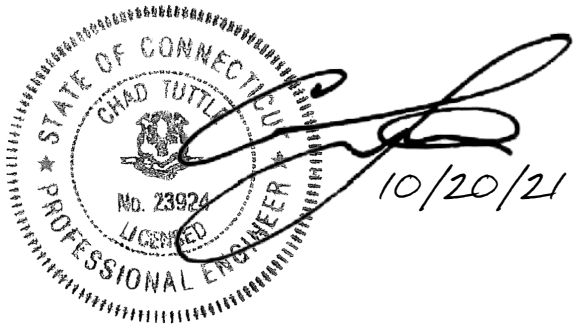
The purpose of the analysis is to determine acceptability of the tower stress level including the proposed modifications as outlined in the attached drawings, "Appendix D". Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC4.7: Modified Structure w/ Proposed Equipment Configuration **Sufficient Capacity – 98.3%**

This analysis utilizes an ultimate 3-second gust wind speed of 118 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural modification prepared by: Tharun Cheriyan, E.I.T.

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



Chad E. Tuttle, P.E.

tnxTower Report - version 8.1.1.0

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 160 ft. monopole designed by Summit.

The tower has been modified multiple times in the past to accommodate additional loading.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	118 mph
Exposure Category:	B
Topographic Factor:	1
Ice Thickness:	1 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
148.0	148.0	3	Ericsson	AIR6449 B41_T-MOBILE	3	1-5/8
		3	Ericsson	RADIO 4460 B2/B25 B66_TMO		
		3	Ericsson	RADIO 4480 B71_TMO		
		3	RFS Celwave	APX16DWV-16DWV-S-E-A20		
		3	RFS Celwave	APXVAALL24_43-U-NA20_TMO		
		1	--	Platform Mount [LP 1201-1_HR-1]		
147.0	147.0	3	--	12.5' x 2.0 STD Rail		
145.0	145.0	1	Site Pro 1	PRK-SFS Reinforcement Kit		

Table 2 - Equipment to Be Removed

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
150.0	150.0	3	Alcatel Lucent	800MHZ 2X50W RRH W/FILTER	--	--
		3	Alcatel Lucent	PCS 1900MHZ 4X45W-65MHZ		
		1	--	Side Arm Mount [SO 102-3]		
148.0	148.0	3	Alcatel Lucent	TD-RRH8X20-25	4	1-1/4
		3	RFS Celwave	APXVSPP18-C-A20		
		3	RFS Celwave	APXVTM14-C-120		
		3	RFS Celwave	IBC1900BB-1		
		3	RFS Celwave	IBC1900HG-2A		

Table 3 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
157.0	158.0	3	CCI Antennas	HPA-85R-BUU-H8	6 8 3	1-5/8 3/4 3/8
		3	CCI Antennas	TPA-65R-LCUUUU-H8-K		
		3	Ericsson	RRUS 32		
		3	Ericsson	RRUS 4449 B5/B12		
		3	Ericsson	RRUS 4478 B14		
		3	Ericsson	RRUS 8843 B2/B66A		
		3	Ericsson	RRUS-11		
		3	Kathrein	800 10121		
		3	Kathrein	80010966		
		6	Powerwave Tech.	LGP21401		
		4	Raycap	DC6-48-60-18-8F		
	157.0	1	--	Sector Mount [SM 503-3]		
138.0	142.0	1	lucent	KS24019-L112A	1 6 1	2-1/4 1-5/8 1/2
	138.0	6	Commscope	NNHH-65B-R4		
		1	Raycap	RVZDC-6627-PF-48		
		3	Samsung Telecomm.	CBRS		
		3	Samsung Telecomm.	MT6407-77A		
		3	Samsung Telecomm.	RFV01U-D1A		
		3	Samsung Telecomm.	RFV01U-D2A		
		1	--	Platform Mount [LP 303-1_KCKR-HR-1]		
127.0	129.0	3	Ericsson	AIR -32 B2A/B66AA	9 1	1-5/8 1-1/4
		3	Ericsson	ERICSSON AIR 21 B2A B4P		
		3	Ericsson	KRY 112 144/1		
		3	Ericsson	RADIO 4449 B12/B71		
		3	RFS Celwave	APXVAARR24_43-U-NA20		
	127.0	1	--	Platform Mount [LP 1201-1]		
119.0	119.0	3	Commscope	MC-K6MHDX-9-96	1	1-1/2
		3	Fujitsu	TA08025-B604		
		3	Fujitsu	TA08025-B605		
		3	JMA Wireless	MX08FRO665-21		
		1	Raycap	RDIDC-9181-PF-48		
48.0	50.0	1	Lucent	KS24019-L112A	1	1/2
	48.0	1	--	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Reference	Source
Tower Manufacturer Drawing	2134246	CCIsites
Mount Analysis Report	9966987	CCIsites
Tower Modification Drawing	3348783	CCIsites
Post Modification Inspection	3846956	CCIsites
Tower Modification Drawing	4077469	CCIsites
Post Modification Inspection	4077468	CCIsites
Tower Modification Drawing	4094328	CCIsites
Post Modification Inspection	4600286	CCIsites
Tower Modification Drawing	5105790	CCIsites
Post Modification Inspection	5380973	CCIsites
Tower Modification Drawing	5266558	CCIsites
Post Modification Inspection	5617077	CCIsites
Foundation Drawing	1633746	CCIsites
Geotech Report	5939573	CCIsites
Crown CAD Package	Date: 09/08/2021	CCIsites

3.1) Analysis Method

tnxTower (version 8.1.1.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 standard.

tnxTower was used to determine the loads on the modified structure. Additional calculations were performed to determine the stresses in the pole and in the reinforcing elements. These calculations are presented in Appendix C.

3.2) Assumptions

1) The tower and structures were maintained in accordance with the - TIA-222 standard.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.

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

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	160 - 155	Pole	TP10.75x10.75x0.349	1	-4.577	--	22.4	Pass[1]
L2	155 - 150	Pole	TP10.75x10.75x0.349	2	-5.387	--	61.2	Pass[1]
L3	150 - 148.5	Pole	TP10.75x10.75x0.349	3	-5.637	--	73.4	Pass[1]
L4	148.5 - 148	Pole	TP23x23x0.349	4	-5.752	--	17.1	Pass[1]
L5	148 - 143	Pole	TP23.81x23x0.25	5	-11.777	--	23.5	Pass[1]
L6	143 - 138	Pole	TP24.62x23.81x0.25	6	-12.556	--	32.3	Pass[1]
L7	138 - 133	Pole	TP25.43x24.62x0.25	7	-16.761	--	44.2	Pass[1]
L8	133 - 128	Pole	TP26.24x25.43x0.25	8	-17.391	--	54.6	Pass[1]
L9	128 - 123	Pole	TP27.05x26.24x0.25	9	-22.295	--	66.4	Pass[1]
L10	123 - 118	Pole	TP27.86x27.05x0.25	10	-25.341	--	77.2	Pass[1]
L11	118 - 114.75	Pole	TP28.994x27.86x0.25	11	-25.879	--	84.1	Pass[1]
L12	114.75 - 109.75	Pole	TP28.696x27.887x0.313	12	-27.090	--	75.1	Pass[1]
L13	109.75 - 105.33	Pole	TP29.412x28.696x0.313	13	-27.944	--	80.9	Pass[1]
L14	105.33 - 105.08	Pole + Reinf.	TP29.452x29.412x0.469	14	-28.021	--	76.9	Pass[1]
L15	105.08 - 100.08	Pole + Reinf.	TP30.262x29.452x0.463	15	-29.186	--	83.2	Pass[1]
L16	100.08 - 95.08	Pole + Reinf.	TP31.072x30.262x0.463	16	-30.388	--	89.0	Pass[1]
L17	95.08 - 92.5	Pole + Reinf.	TP31.491x31.072x0.456	17	-31.014	--	91.7	Pass[1]
L18	92.5 - 92.25	Pole + Reinf.	TP31.531x31.491x0.638	18	-31.107	--	81.4	Pass[1]
L19	92.25 - 87.25	Pole + Reinf.	TP32.341x31.531x0.625	19	-32.595	--	86.4	Pass[1]
L20	87.25 - 82.25	Pole + Reinf.	TP33.151x32.341x0.613	20	-34.118	--	91.0	Pass[1]
L21	82.25 - 81	Pole + Reinf.	TP34.042x33.151x0.613	21	-34.500	--	92.1	Pass[1]
L22	81 - 75.75	Pole	TP33.579x32.729x0.375	22	-36.697	--	86.7	Pass[1]
L23	75.75 - 70.75	Pole	TP34.389x33.579x0.375	23	-37.937	--	89.2	Pass[1]
L24	70.75 - 70.58	Pole	TP34.416x34.389x0.375	24	-37.998	--	89.2	Pass[1]
L25	70.58 - 70.33	Pole + Reinf.	TP34.456x34.416x0.675	25	-38.092	--	78.0	Pass[1]
L26	70.33 - 70	Pole + Reinf.	TP34.51x34.456x0.675	26	-38.215	--	78.2	Pass[1]
L27	70 - 69.75	Pole	TP34.551x34.51x0.375	27	-38.276	--	89.6	Pass[1]
L28	69.75 - 64.75	Pole	TP35.361x34.551x0.375	28	-39.528	--	91.7	Pass[1]
L29	64.75 - 59.75	Pole	TP36.171x35.361x0.375	29	-40.820	--	93.6	Pass[1]
L30	59.75 - 54.75	Pole	TP36.981x36.171x0.375	30	-42.135	--	95.7	Pass[1]
L31	54.75 - 49.75	Pole	TP37.791x36.981x0.375	31	-43.472	--	97.7	Pass[1]
L32	49.75 - 48	Pole	TP38.884x37.791x0.375	32	-43.928	--	98.3	Pass[1]
L33	48 - 42	Pole	TP38.296x37.324x0.438	33	-46.639	--	88.0	Pass[1]
L34	42 - 37	Pole	TP39.106x38.296x0.438	34	-48.147	--	88.8	Pass[1]
L35	37 - 32	Pole	TP39.916x39.106x0.438	35	-49.678	--	89.5	Pass[1]
L36	32 - 27.91	Pole	TP40.578x39.916x0.438	36	-50.947	--	90.0	Pass[1]
L37	27.91 - 27.66	Pole + Reinf.	TP40.619x40.578x0.675	37	-51.072	--	87.7	Pass[1]
L38	27.66 - 27.25	Pole + Reinf.	TP40.686x40.619x0.675	38	-51.249	--	87.8	Pass[1]
L39	27.25 - 26.98	Pole + Reinf.	TP40.729x40.686x0.675	39	-51.358	--	85.9	Pass[1]
L40	26.98 - 26.83	Pole + Reinf.	TP40.753x40.729x0.663	40	-51.420	--	86.0	Pass[1]
L41	26.83 - 21.83	Pole + Reinf.	TP41.563x40.753x0.663	41	-53.434	--	87.0	Pass[1]

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L42	21.83 - 16.83	Pole + Reinf.	TP42.373x41.563x0.663	42	-55.482	--	87.9	Pass[1]
L43	16.83 - 16	Pole + Reinf.	TP42.508x42.373x0.663	43	-55.828	--	88.0	Pass[1]
L44	16 - 15.75	Pole + Reinf.	TP42.549x42.508x0.813	44	-55.957	--	78.8	Pass[1]
L45	15.75 - 14.75	Pole + Reinf.	TP42.711x42.549x0.813	45	-56.433	--	79.0	Pass[1]
L46	14.75 - 14.5	Pole + Reinf.	TP42.752x42.711x0.488	46	-56.536	--	89.7	Pass[1]
L47	14.5 - 12.08	Pole + Reinf.	TP43.143x42.752x0.488	47	-57.461	--	90.1	Pass[1]
L48	12.08 - 11.83	Pole + Reinf.	TP43.183x43.143x0.738	48	-57.592	--	80.7	Pass[1]
L49	11.83 - 10	Pole + Reinf.	TP43.48x43.183x0.738	49	-58.398	--	80.9	Pass[1]
L50	10 - 9.75	Pole + Reinf.	TP43.521x43.48x0.738	50	-58.529	--	81.0	Pass[1]
L51	9.75 - 4.75	Pole + Reinf.	TP44.331x43.521x0.725	51	-60.783	--	81.7	Pass[1]
L52	4.75 - 0	Pole + Reinf.	TP45.1x44.331x0.713	52	-62.955	--	82.3	Pass[1]
							Summary	
						Pole (L32)	98.3	Pass[1]
						Rating =	98.3	Pass[1]

Table 6 - Tower Component Stresses vs. Capacity (Monopole) - LC4.7

Notes	Component		Elevation	% Capacity	Pass / Fail
1,2	Flange Connection		148’	29.9	Pass
1,2	Anchor Rods		Base	82.0	Pass
1,2	Base Plate		Base	61.7	Pass
1,2	Base Foundation	Structure	Base	78.1	Pass
		Soil	Base	74.6	Pass

Structure Rating (max from all components) =	98.3%

Notes:
1) See additional documentation in “Appendix C – Additional Calculations” for calculations supporting the % capacity consumed.
2) Rating per TIA-222-H Section 15.5.

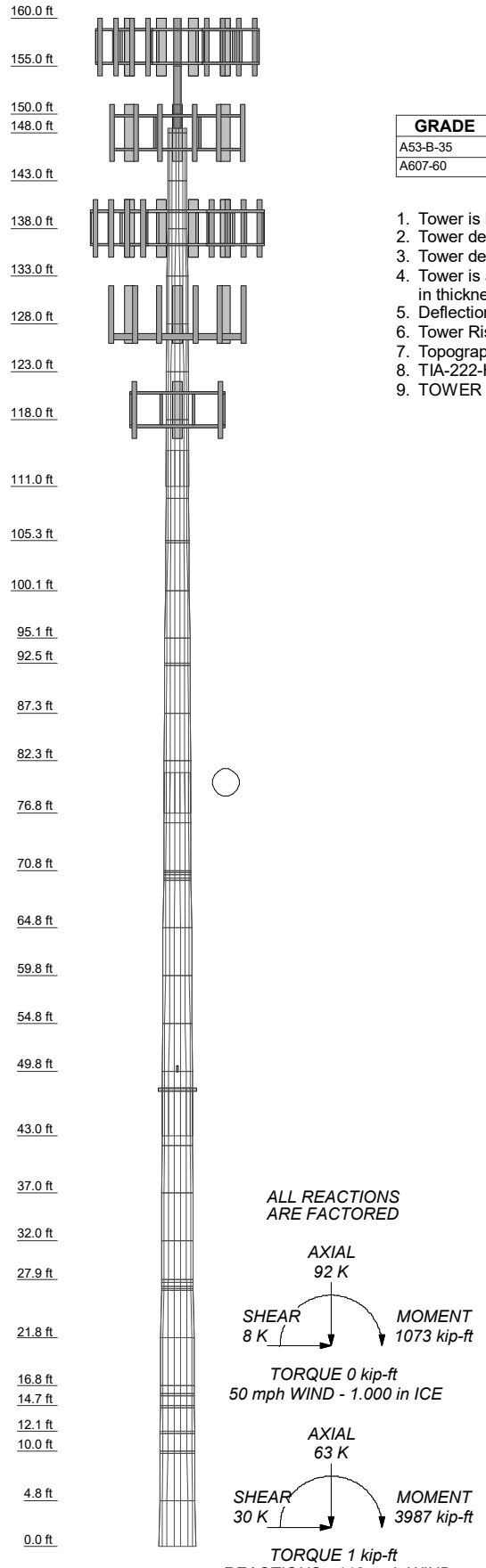
4.1) Recommendations

Perform the modifications detailed in "Appendix D" to remedy the deficiencies identified in Crown Castle Work Order No. 1999971.

APPENDIX A

tnxTOWER OUTPUT

Section	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Length (ft)	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	4.750
Number of Sides	0	0	0	0	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
Thickness (in)	0.349	0.349	0.349	0.349	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.313	0.313	0.469	0.468	0.463	0.456	0.449	0.628	0.613	0.613	0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.438	0.438	0.438	0.438	0.438	0.438	0.438	0.438	0.660	0.662	0.662	0.662	0.662	0.662	0.662	0.662	0.662	0.726	0.713
Socket Length (ft)											3.750										4.250										5.000																									
Top Dia (in)	10.750	10.750	10.750	10.750	23.000	23.810	24.620	25.430	26.240	27.050	27.860	27.887	28.696	29.452	30.229	31.072	31.907	32.341	31.531	32.341	33.151	33.729	34.539	34.539	34.539	34.539	34.539	35.361	36.171	36.981	37.791	38.237	38.237	39.106	39.916	39.916	39.916	40.726	41.563	41.563	41.563	41.563	41.563	41.563	41.563	41.563	41.563	41.563	41.563	43.524	44.331
Bot Dia (in)	10.750	10.750	10.750	10.750	23.810	24.620	25.430	26.240	27.050	27.860	28.994	28.696	29.452	30.229	31.072	31.907	32.341	33.151	32.341	33.151	34.042	34.539	35.361	35.361	35.361	35.361	35.361	36.171	36.981	37.791	38.638	39.106	39.106	39.916	39.916	39.916	40.726	41.563	42.373	42.373	42.373	42.373	42.373	42.373	42.373	42.373	42.373	42.373	42.373	44.334	45.100
Grade	A53-B-35										A607-60																																												A607-65	
Weight (K)	0.2	0.2	0.1	0.1	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.4	0.0	0.7	0.7	0.4	0.0	1.0	1.0	1.1	0.7	0.7	0.0	0.0	0.0	0.0	0.7	0.7	0.7	1.0	1.1	1.1	0.9	0.9	0.8	1.1	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.6	1.5	26.5



ALL REACTIONS ARE FACTORED

TORQUE 0 kip-ft
50 mph WIND - 1.000 in ICE

TORQUE 1 kip-ft
REACTIONS - 118 mph WIND

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B-35	35 ksi	63 ksi	A607-65	65 ksi	80 ksi
A607-60	60 ksi	75 ksi			

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 118 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TIA-222-H Annex S
9. TOWER RATING: 98.3%

B+T GRP

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Phone: (918) 587-4630
FAX: (918) 295-0265

Job:	***137177.008.01 - WEST JOHNSON AVE. BURNT HOUSE, CT (BU# 876313***		
Project:			
Client: Crown Castle		Drawn by: VP	App'd:
Code: TIA-222-H		Date: 10/14/21	Scale: NTS
Path:			Dwg No. E-1

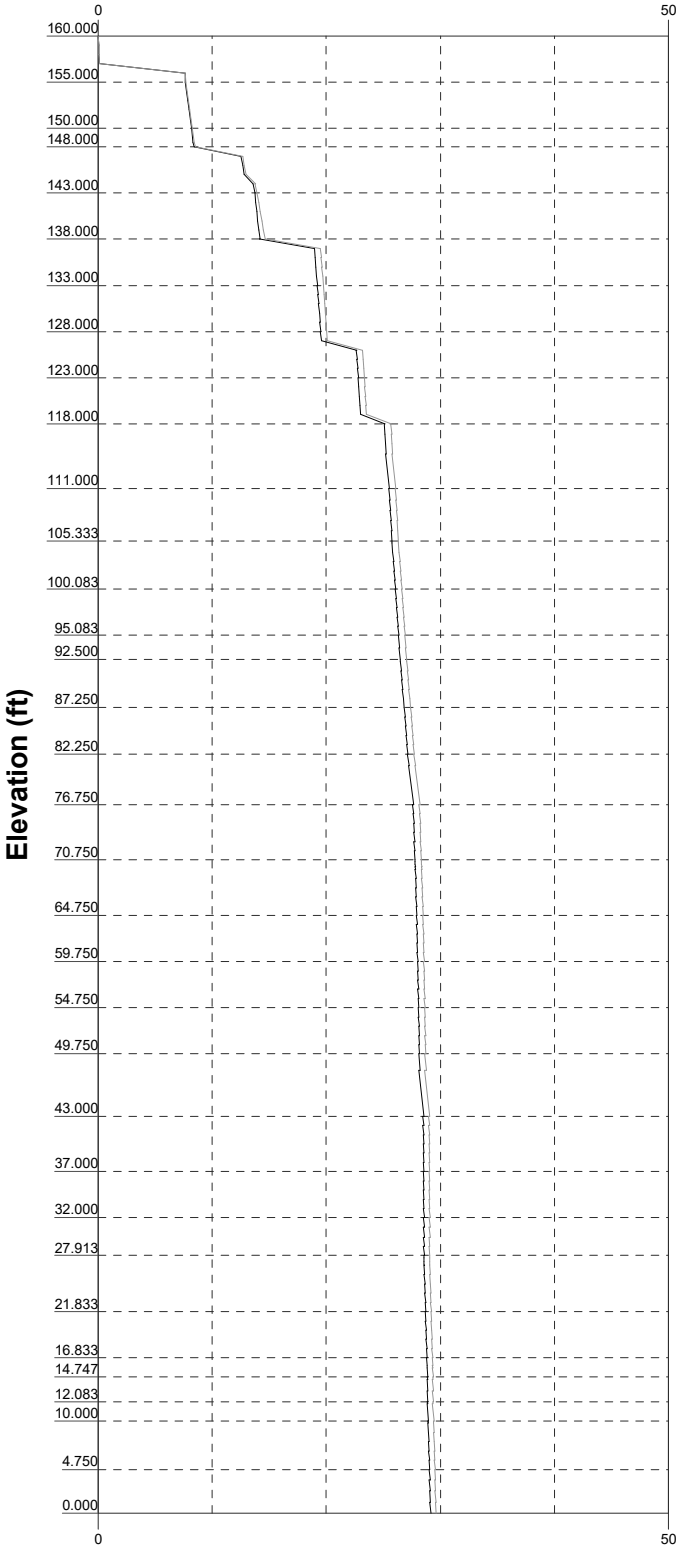
TIA-222-H - 118 mph/50 mph 1.000 in Ice Exposure B

Vx Vz

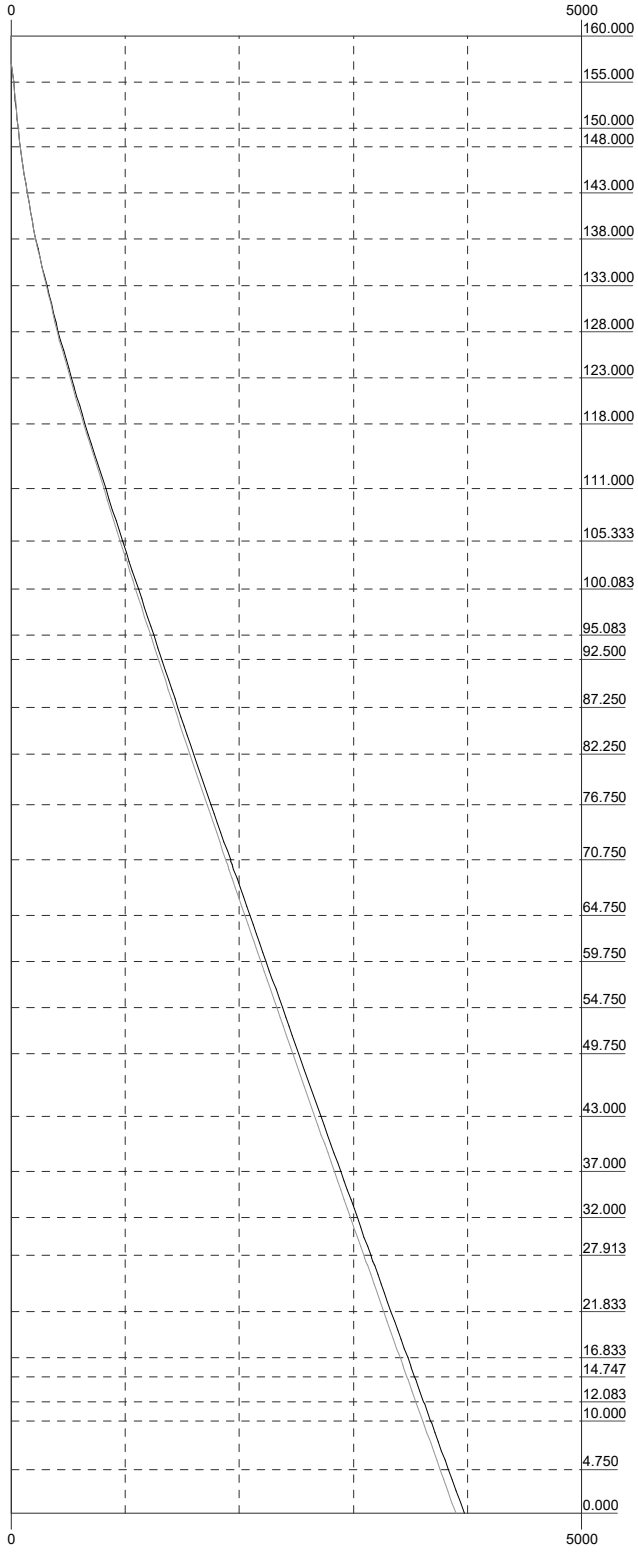
Maximum Values

Mx Mz

Global Mast Shear (K)



Global Mast Moment (kip-ft)



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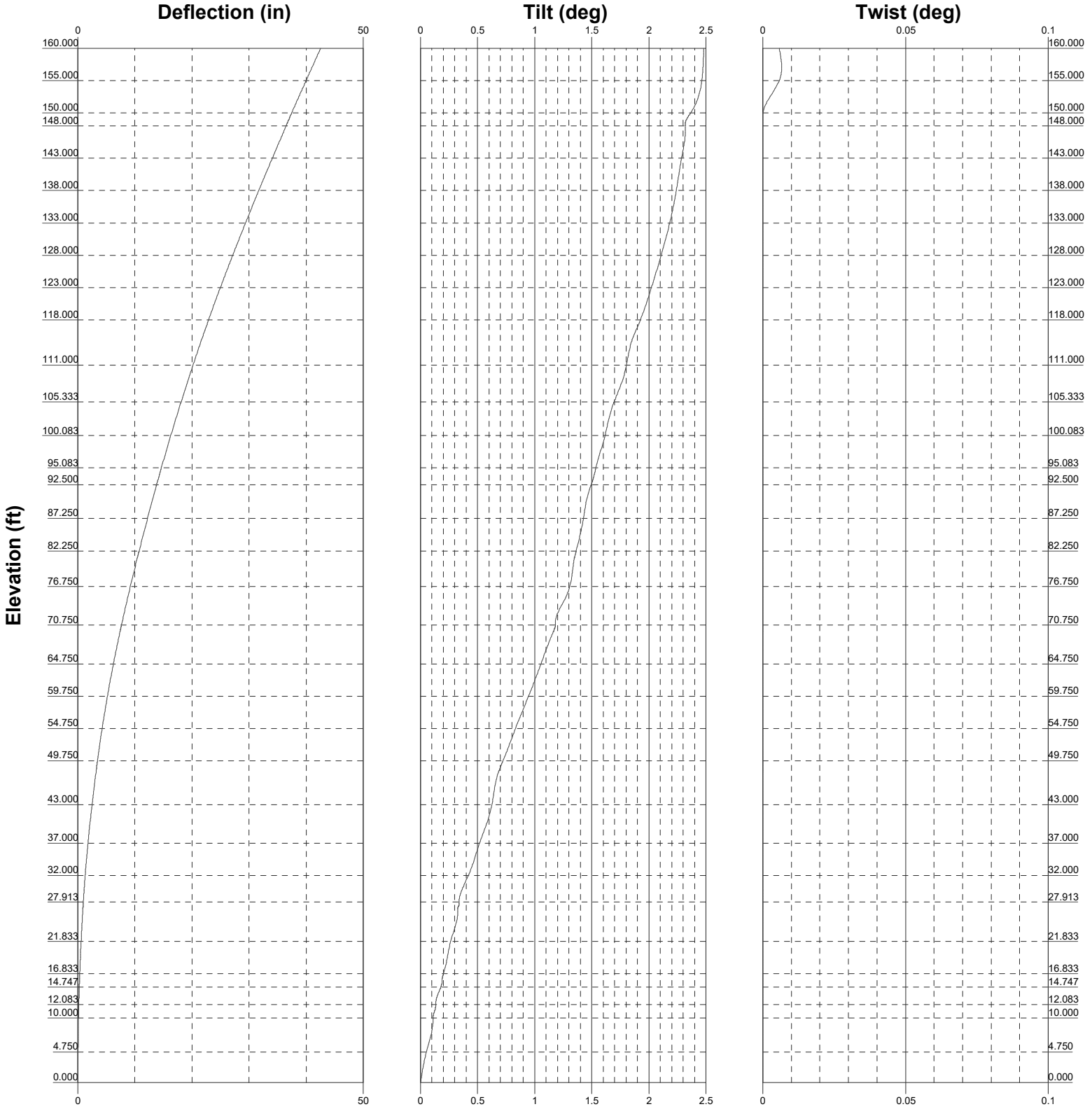
FAX: (918) 295-0265

Job: *137177.008.01 - WEST JOHNSON AVE. BURNT HOUSE, CT (BU# 876313*		
Project:		
Client: Crown Castle	Drawn by: VP	App'd:
Code: TIA-222-H	Date: 10/14/21	Scale: NTS
Path:		Dwg No. E-4

TIA-222-H - Service - 60 mph

Maximum Values



B+T GRP

B+T Group
1717 S. Boulder, Suite 300
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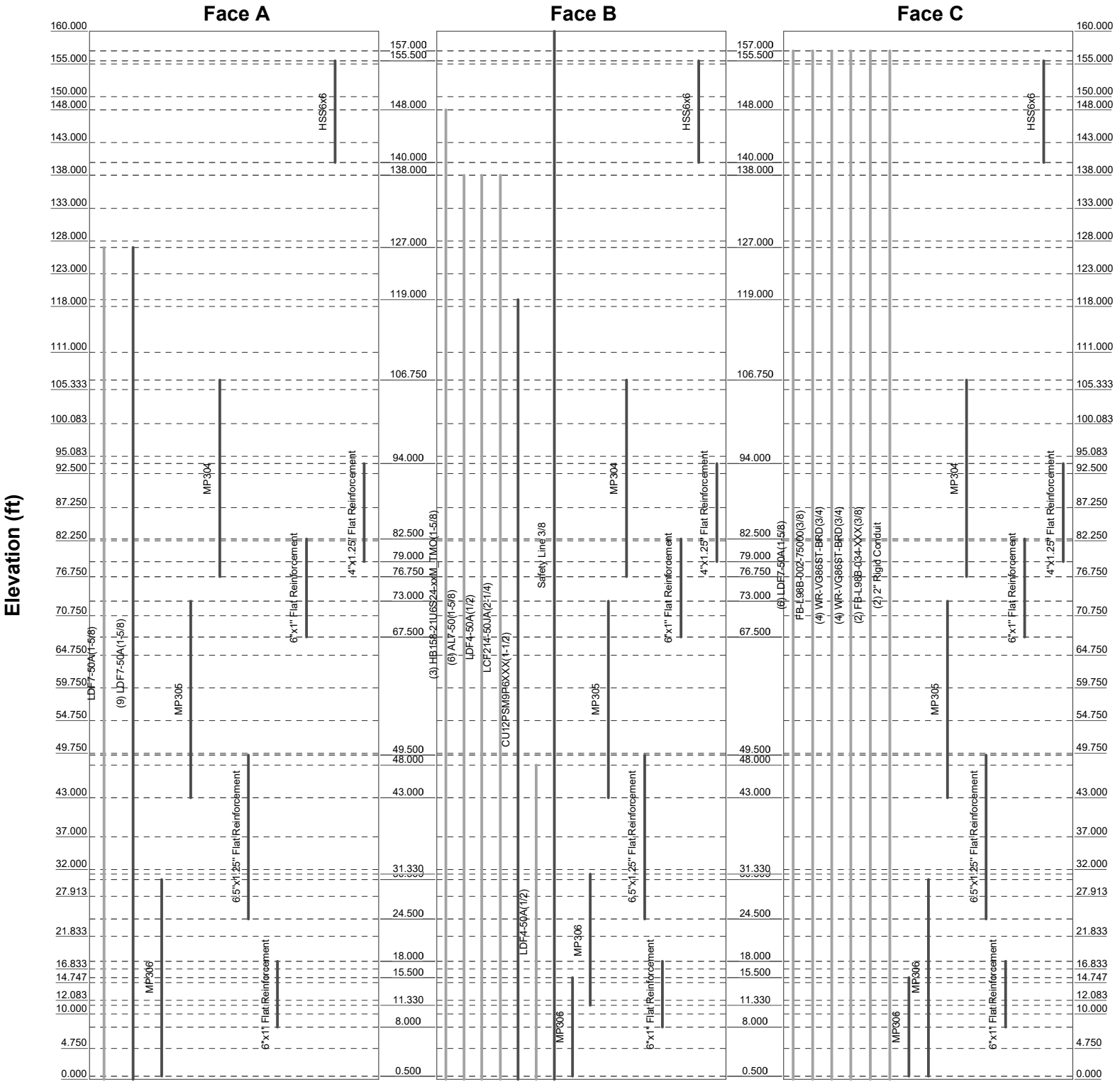
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: *137177.008.01 - WEST JOHNSON AVE. BURNT HOUSE, CT (BU# 876313*			
Project:			
Client: Crown Castle	Drawn by: VP	App'd:	
Code: TIA-222-H	Date: 10/14/21	Scale: NTS	
Path: C:\VP\Sterling 30137177_876313_West Johnson Ave, Burnt House\008.01_MODS\137177_008_01_CC\pole\137177_008_01_WEST JOHNSON AVE, BURNT HOUSE, CT_Modified.eri		Dwg No. E-5	

Feed Line Distribution Chart
0' - 160'

Round | Flat | App In Face | App Out Face | Truss Leg



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Job: 137177.008.01 - WEST JOHNSON AVE. BURNT HOUSE, CT (BU# 876313			
Project:			
Client: Crown Castle	Drawn by: VP	App'd:	
Code: TIA-222-H	Date: 10/14/21	Scale: NTS	
Path:		Dwg No. E-7	

Tower Input Data

The tower is a monopole.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

1) Tower is located in Hartford County, Connecticut.
2) Tower base elevation above sea level: 133.000 ft.
3) Basic wind speed of 118 mph.
4) Risk Category II.
5) Exposure Category B.
6) Simplified Topographic Factor Procedure for wind speed-up calculations is used.
7) Topographic Category: 1.
8) Crest Height: 0.000 ft.
9) Nominal ice thickness of 1.000 in.
10) Ice thickness is considered to increase with height.
11) Ice density of 56.000 pcf.
12) A wind speed of 50 mph is used in combination with ice.
13) Temperature drop of 50.000 °F.
14) Deflections calculated using a wind speed of 60 mph.
15) TIA-222-H Annex S.
16) A non-linear (P-delta) analysis was used.
17) Pressures are calculated at each section.
18) Stress ratio used in pole design is 1.
19) Tower analysis based on target reliabilities in accordance with Annex S.
20) Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
21) Maximum demand-capacity ratio is: 1.05.
22) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Horizontals	Assume Legs Pinned	Calculate Redundant Bracing Forces
Consider Moments - Diagonals	√ Assume Rigid Index Plate	Ignore Redundant Members in FEA
Use Moment Magnification	√ Use Clear Spans For Wind Area	SR Leg Bolts Resist Compression
√ Use Code Stress Ratios	Use Clear Spans For KL/r	All Leg Panels Have Same Allowable
√ Use Code Safety Factors - Guys	Retension Guys To Initial Tension	Offset Girt At Foundation
Escalate Ice	√ Bypass Mast Stability Checks	√ Consider Feed Line Torque
Always Use Max Kz	√ Use Azimuth Dish Coefficients	Include Angle Block Shear Check
Use Special Wind Profile	√ Project Wind Area of Appurt.	Use TIA-222-H Bracing Resist. Exemption
Include Bolts In Member Capacity	Autocalc Torque Arm Areas	Use TIA-222-H Tension Splice Exemption
Leg Bolts Are At Top Of Section	Add IBC .6D+W Combination	Poles
Secondary Horizontal Braces Leg	Sort Capacity Reports By Component	√ Include Shear-Torsion Interaction
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Always Use Sub-Critical Flow
SR Members Have Cut Ends	Treat Feed Line Bundles As Cylinder	Use Top Mounted Sockets
SR Members Are Concentric	Ignore KL/ry For 60 Deg. Angle Legs	Pole Without Linear Attachments
		Pole With Shroud Or No Appurtenances
		Outside and Inside Corner Radii Are Known

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	160.000-155.000	5.000	0.000	Round	10.750	10.750	0.349		A53-B-35 (35 ksi)
L2	155.000-150.000	5.000	0.000	Round	10.750	10.750	0.349		A53-B-35 (35 ksi)
L3	150.000-148.500	1.500	0.000	Round	10.750	10.750	0.349		A53-B-35 (35 ksi)
L4	148.500-148.000	0.500	0.000	Round	23.000	23.000	0.349		A53-B-35 (35 ksi)
L5	148.000-143.000	5.000	0.000	18	23.000	23.810	0.250	1.000	A607-60 (60 ksi)
L6	143.000-138.000	5.000	0.000	18	23.810	24.620	0.250	1.000	A607-60 (60 ksi)
L7	138.000-133.000	5.000	0.000	18	24.620	25.430	0.250	1.000	A607-60 (60 ksi)
L8	133.000-128.000	5.000	0.000	18	25.430	26.240	0.250	1.000	A607-60 (60 ksi)
L9	128.000-123.000	5.000	0.000	18	26.240	27.050	0.250	1.000	A607-60 (60 ksi)
L10	123.000-118.000	5.000	0.000	18	27.050	27.860	0.250	1.000	A607-60 (60 ksi)
L11	118.000-111.000	7.000	3.750	18	27.860	28.994	0.250	1.000	A607-60 (60 ksi)
L12	111.000-109.750	5.000	0.000	18	27.887	28.696	0.313	1.250	A607-60 (60 ksi)
L13	109.750-105.333	4.417	0.000	18	28.696	29.412	0.313	1.250	A607-60 (60 ksi)
L14	105.333-105.083	0.250	0.000	18	29.412	29.452	0.469	1.875	A607-60 (60 ksi)
L15	105.083-100.083	5.000	0.000	18	29.452	30.262	0.463	1.850	A607-60 (60 ksi)
L16	100.083-95.083	5.000	0.000	18	30.262	31.072	0.463	1.850	A607-60 (60 ksi)
L17	95.083-92.500	2.583	0.000	18	31.072	31.491	0.456	1.825	A607-60 (60 ksi)
L18	92.500-92.250	0.250	0.000	18	31.491	31.531	0.637	2.550	A607-60 (60 ksi)
L19	92.250-87.250	5.000	0.000	18	31.531	32.341	0.625	2.500	A607-60 (60 ksi)
L20	87.250-82.250	5.000	0.000	18	32.341	33.151	0.613	2.450	A607-60 (60 ksi)
L21	82.250-76.750	5.500	4.250	18	33.151	34.042	0.613	2.450	A607-60 (60 ksi)
L22	76.750-75.750	5.250	0.000	18	32.729	33.579	0.375	1.500	A607-65 (65 ksi)
L23	75.750-70.750	5.000	0.000	18	33.579	34.389	0.375	1.500	A607-65 (65 ksi)
L24	70.750-70.583	0.167	0.000	18	34.389	34.416	0.375	1.500	A607-65 (65 ksi)
L25	70.583-70.333	0.250	0.000	18	34.416	34.456	0.675	2.700	A607-65 (65 ksi)
L26	70.333-70.000	0.333	0.000	18	34.456	34.510	0.675	2.700	A607-65 (65 ksi)
L27	70.000-69.750	0.250	0.000	18	34.510	34.551	0.375	1.500	A607-65 (65 ksi)
L28	69.750-64.750	5.000	0.000	18	34.551	35.361	0.375	1.500	A607-65 (65 ksi)
L29	64.750-59.750	5.000	0.000	18	35.361	36.171	0.375	1.500	A607-65 (65 ksi)

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L30	59.750-54.750	5.000	0.000	18	36.171	36.981	0.375	1.500	A607-65 (65 ksi)
L31	54.750-49.750	5.000	0.000	18	36.981	37.791	0.375	1.500	A607-65 (65 ksi)
L32	49.750-43.000	6.750	5.000	18	37.791	38.884	0.375	1.500	A607-65 (65 ksi)
L33	43.000-42.000	6.000	0.000	18	37.324	38.296	0.438	1.750	A607-65 (65 ksi)
L34	42.000-37.000	5.000	0.000	18	38.296	39.106	0.438	1.750	A607-65 (65 ksi)
L35	37.000-32.000	5.000	0.000	18	39.106	39.916	0.438	1.750	A607-65 (65 ksi)
L36	32.000-27.913	4.087	0.000	18	39.916	40.578	0.438	1.750	A607-65 (65 ksi)
L37	27.913-27.663	0.250	0.000	18	40.578	40.619	0.675	2.700	A607-65 (65 ksi)
L38	27.663-27.250	0.413	0.000	18	40.619	40.686	0.675	2.700	A607-65 (65 ksi)
L39	27.250-26.983	0.267	0.000	18	40.686	40.729	0.675	2.700	A607-65 (65 ksi)
L40	26.983-26.833	0.150	0.000	18	40.729	40.753	0.662	2.650	A607-65 (65 ksi)
L41	26.833-21.833	5.000	0.000	18	40.753	41.563	0.662	2.650	A607-65 (65 ksi)
L42	21.833-16.833	5.000	0.000	18	41.563	42.373	0.662	2.650	A607-65 (65 ksi)
L43	16.833-16.000	0.833	0.000	18	42.373	42.508	0.662	2.650	A607-65 (65 ksi)
L44	16.000-15.750	0.250	0.000	18	42.508	42.549	0.813	3.250	A607-65 (65 ksi)
L45	15.750-14.747	1.003	0.000	18	42.549	42.711	0.813	3.250	A607-65 (65 ksi)
L46	14.747-14.497	0.250	0.000	18	42.711	42.752	0.487	1.950	A607-65 (65 ksi)
L47	14.497-12.083	2.414	0.000	18	42.752	43.143	0.487	1.950	A607-65 (65 ksi)
L48	12.083-11.833	0.250	0.000	18	43.143	43.183	0.738	2.950	A607-65 (65 ksi)
L49	11.833-10.000	1.833	0.000	18	43.183	43.480	0.738	2.950	A607-65 (65 ksi)
L50	10.000-9.750	0.250	0.000	18	43.480	43.521	0.738	2.950	A607-65 (65 ksi)
L51	9.750-4.750	5.000	0.000	18	43.521	44.331	0.725	2.900	A607-65 (65 ksi)
L52	4.750-0.000	4.750		18	44.331	45.100	0.713	2.850	A607-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	10.750	11.404	154.383	3.679	5.375	28.722	308.766	5.699	0.000	0
	10.750	11.404	154.383	3.679	5.375	28.722	308.766	5.699	0.000	0
L2	10.750	11.404	154.383	3.679	5.375	28.722	308.766	5.699	0.000	0
	10.750	11.404	154.383	3.679	5.375	28.722	308.766	5.699	0.000	0
L3	10.750	11.404	154.383	3.679	5.375	28.722	308.766	5.699	0.000	0

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
	10.750	11.404	154.383	3.679	5.375	28.722	308.766	5.699	0.000	0
L4	23.000	24.835	1593.128	8.009	11.500	138.533	3186.255	12.410	0.000	0
	23.000	24.835	1593.128	8.009	11.500	138.533	3186.255	12.410	0.000	0
L5	23.316	18.052	1180.398	8.076	11.684	101.027	2362.350	9.028	3.608	14.432
	24.139	18.695	1311.023	8.364	12.095	108.389	2623.771	9.349	3.751	15.002
L6	24.139	18.695	1311.023	8.364	12.095	108.389	2623.771	9.349	3.751	15.002
	24.961	19.338	1450.945	8.651	12.507	116.011	2903.799	9.671	3.893	15.572
L7	24.961	19.338	1450.945	8.651	12.507	116.011	2903.799	9.671	3.893	15.572
	25.784	19.980	1600.485	8.939	12.918	123.891	3203.076	9.992	4.036	16.143
L8	25.784	19.980	1600.485	8.939	12.918	123.891	3203.076	9.992	4.036	16.143
	26.606	20.623	1759.962	9.226	13.330	132.031	3522.239	10.313	4.178	16.713
L9	26.606	20.623	1759.962	9.226	13.330	132.031	3522.239	10.313	4.178	16.713
	27.429	21.266	1929.695	9.514	13.741	140.429	3861.930	10.635	4.321	17.283
L10	27.429	21.266	1929.695	9.514	13.741	140.429	3861.930	10.635	4.321	17.283
	28.251	21.909	2110.006	9.802	14.153	149.087	4222.788	10.956	4.463	17.853
L11	28.251	21.909	2110.006	9.802	14.153	149.087	4222.788	10.956	4.463	17.853
	29.403	22.808	2380.817	10.204	14.729	161.642	4764.767	11.406	4.663	18.652
L12	28.885	27.350	2627.203	9.789	14.166	185.454	5257.864	13.678	4.358	13.946
	29.091	28.153	2865.578	10.076	14.578	196.571	5734.926	14.079	4.501	14.402
L13	29.091	28.153	2865.578	10.076	14.578	196.571	5734.926	14.079	4.501	14.402
	29.817	28.863	3087.791	10.330	14.941	206.662	6179.644	14.434	4.626	14.805
L14	29.793	43.062	4557.476	10.275	14.941	305.026	9120.949	21.535	4.351	9.283
	29.834	43.122	4576.633	10.289	14.962	305.887	9159.288	21.565	4.359	9.298
L15	29.835	42.556	4518.533	10.291	14.962	302.004	9043.012	21.282	4.370	9.448
	30.658	43.745	4907.935	10.579	15.373	319.251	9822.329	21.877	4.512	9.756
L16	30.658	43.745	4907.935	10.579	15.373	319.251	9822.329	21.877	4.512	9.756
	31.480	44.934	5319.091	10.866	15.785	336.977	10645.180	22.471	4.655	10.064
L17	31.481	44.336	5250.426	10.869	15.785	332.627	10507.760	22.172	4.666	10.226
	31.906	44.942	5468.645	11.017	15.997	341.848	10944.485	22.475	4.739	10.388
L18	31.878	62.429	7508.022	10.953	15.997	469.331	15025.922	31.221	4.420	6.934
	31.919	62.511	7537.625	10.967	16.018	470.577	15085.167	31.261	4.427	6.945
L19	31.921	61.310	7398.802	10.972	16.018	461.910	14807.339	30.661	4.449	7.119
	32.744	62.917	7995.862	11.259	16.429	486.683	16002.245	31.464	4.592	7.347
L20	32.746	61.683	7845.213	11.264	16.429	477.514	15700.750	30.847	4.614	7.533
	33.568	63.257	8461.473	11.551	16.841	502.441	16934.079	31.635	4.757	7.766
L21	33.568	63.257	8461.473	11.551	16.841	502.441	16934.079	31.635	4.757	7.766
	34.473	64.989	9175.719	11.867	17.293	530.593	18363.512	32.501	4.913	8.022
L22	33.875	38.509	5092.625	11.486	16.626	306.303	10191.951	19.258	5.100	13.601
	34.039	39.521	5504.857	11.787	17.058	322.712	11016.957	19.764	5.250	14
L23	34.039	39.521	5504.857	11.787	17.058	322.712	11016.957	19.764	5.250	14
	34.862	40.485	5917.594	12.075	17.470	338.737	11842.974	20.246	5.392	14.38
L24	34.862	40.485	5917.594	12.075	17.470	338.737	11842.974	20.246	5.392	14.38
	34.889	40.517	5931.724	12.085	17.483	339.279	11871.253	20.262	5.397	14.393
L25	34.843	72.288	10397.295	11.978	17.483	594.698	20808.270	36.151	4.869	7.214
	34.884	72.375	10434.777	11.992	17.504	596.141	20883.284	36.194	4.876	7.224
L26	34.884	72.375	10434.777	11.992	17.504	596.141	20883.284	36.194	4.876	7.224
	34.939	72.491	10484.842	12.012	17.531	598.065	20983.481	36.252	4.886	7.238
L27	34.985	40.630	5981.229	12.118	17.531	341.175	11970.328	20.319	5.414	14.437
	35.026	40.678	6002.542	12.132	17.552	341.989	12012.982	20.343	5.421	14.456
L28	35.026	40.678	6002.542	12.132	17.552	341.989	12012.982	20.343	5.421	14.456
	35.848	41.642	6439.494	12.420	17.963	358.481	12887.461	20.825	5.564	14.836
L29	35.848	41.642	6439.494	12.420	17.963	358.481	12887.461	20.825	5.564	14.836
	36.671	42.606	6897.153	12.707	18.375	375.361	13803.381	21.307	5.706	15.216
L30	36.671	42.606	6897.153	12.707	18.375	375.361	13803.381	21.307	5.706	15.216
	37.493	43.570	7375.998	12.995	18.786	392.629	14761.701	21.789	5.849	15.596
L31	37.493	43.570	7375.998	12.995	18.786	392.629	14761.701	21.789	5.849	15.596
	38.316	44.534	7876.508	13.283	19.198	410.286	15763.381	22.271	5.991	15.976
L32	38.316	44.534	7876.508	13.283	19.198	410.286	15763.381	22.271	5.991	15.976
	39.426	45.835	8587.413	13.671	19.753	434.738	17186.126	22.922	6.184	16.49
L33	38.655	51.222	8804.959	13.095	18.961	464.381	17621.505	25.616	5.799	13.255
	38.819	52.571	9519.515	13.440	19.454	489.325	19051.557	26.291	5.970	13.646
L34	38.819	52.571	9519.515	13.440	19.454	489.325	19051.557	26.291	5.970	13.646

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
	39.642	53.696	10143.698	13.727	19.866	510.609	20300.743	26.853	6.113	13.972
L35	39.642	53.696	10143.698	13.727	19.866	510.609	20300.743	26.853	6.113	13.972
	40.464	54.821	10794.585	14.015	20.277	532.347	21603.375	27.416	6.255	14.298
L36	40.464	54.821	10794.585	14.015	20.277	532.347	21603.375	27.416	6.255	14.298
	41.137	55.740	11346.847	14.250	20.614	550.452	22708.624	27.875	6.372	14.564
L37	41.100	85.490	17197.656	14.166	20.614	834.283	34417.940	42.753	5.954	8.82
	41.141	85.577	17250.073	14.180	20.634	835.992	34522.844	42.797	5.961	8.831
L38	41.141	85.577	17250.073	14.180	20.634	835.992	34522.844	42.797	5.961	8.831
	41.209	85.721	17336.900	14.204	20.668	838.818	34696.612	42.868	5.973	8.848
L39	41.209	85.721	17336.900	14.204	20.668	838.818	34696.612	42.868	5.973	8.848
	41.253	85.813	17393.187	14.219	20.690	840.647	34809.260	42.915	5.980	8.86
L40	41.255	84.250	17087.078	14.224	20.690	825.853	34196.640	42.133	6.002	9.06
	41.280	84.302	17118.187	14.232	20.703	826.863	34258.898	42.159	6.007	9.066
L41	41.280	84.302	17118.187	14.232	20.703	826.863	34258.898	42.159	6.007	9.066
	42.102	86.005	18176.861	14.520	21.114	860.889	36377.640	43.011	6.149	9.282
L42	42.102	86.005	18176.861	14.520	21.114	860.889	36377.640	43.011	6.149	9.282
	42.925	87.708	19278.309	14.807	21.526	895.602	38581.984	43.862	6.292	9.497
L43	42.925	87.708	19278.309	14.807	21.526	895.602	38581.984	43.862	6.292	9.497
	43.062	87.992	19466.026	14.855	21.594	901.452	38957.666	44.004	6.315	9.533
L44	43.038	107.528	23617.616	14.802	21.594	1093.708	47266.309	53.774	6.051	7.448
	43.080	107.632	23686.504	14.816	21.615	1095.854	47404.175	53.826	6.059	7.457
L45	43.080	107.632	23686.504	14.816	21.615	1095.854	47404.175	53.826	6.059	7.457
	43.245	108.051	23964.227	14.874	21.697	1104.485	47959.987	54.036	6.087	7.492
L46	43.295	65.333	14715.735	14.989	21.697	678.232	29450.832	32.673	6.659	13.66
	43.336	65.396	14758.120	15.004	21.718	679.541	29535.659	32.704	6.666	13.674
L47	43.336	65.396	14758.120	15.004	21.718	679.541	29535.659	32.704	6.666	13.674
	43.733	66.001	15171.588	15.143	21.916	692.247	30363.139	33.007	6.735	13.816
L48	43.694	99.263	22550.689	15.054	21.916	1028.940	45131.052	49.641	6.295	8.536
	43.735	99.358	22615.363	15.068	21.937	1030.923	45260.485	49.688	6.302	8.545
L49	43.735	99.358	22615.363	15.068	21.937	1030.923	45260.485	49.688	6.302	8.545
	44.037	100.053	23093.333	15.174	22.088	1045.522	46217.053	50.036	6.354	8.616
L50	44.037	100.053	23093.333	15.174	22.088	1045.522	46217.053	50.036	6.354	8.616
	44.078	100.148	23159.040	15.188	22.108	1047.521	46348.553	50.083	6.362	8.626
L51	44.080	98.479	22786.475	15.192	22.108	1030.669	45602.933	49.249	6.384	8.805
	44.903	100.343	24104.960	15.480	22.520	1070.385	48241.637	50.181	6.526	9.002
L52	44.904	98.641	23709.735	15.484	22.520	1052.835	47450.668	49.330	6.548	9.19
	45.686	100.381	24986.838	15.758	22.911	1090.614	50006.554	50.200	6.684	9.38

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 160.000-155.000				1	1	1			
L2 155.000-150.000				1	1	1			
L3 150.000-148.500				1	1	1			
L4 148.500-148.000				1	1	1			
L5 148.000-143.000				1	1	1			
L6 143.000-138.000				1	1	1			

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L7 138.000-133.000				1	1	1			
L8 133.000-128.000				1	1	1			
L9 128.000-123.000				1	1	1			
L10 123.000-118.000				1	1	1			
L11 118.000-111.000				1	1	1			
L12 111.000-109.750				1	1	1			
L13 109.750-105.333				1	1	1			
L14 105.333-105.083				1	1	0.957593			
L15 105.083-100.083				1	1	0.962316			
L16 100.083-95.083				1	1	0.954732			
L17 95.083-92.500				1	1	0.963802			
L18 92.500-92.250				1	1	0.933531			
L19 92.250-87.250				1	1	0.940278			
L20 87.250-82.250				1	1	0.947916			
L21 82.250-76.750				1	1	0.945209			
L22 76.750-75.750				1	1	1			
L23 75.750-70.750				1	1	1			
L24 70.750-70.583				1	1	1			
L25 70.583-70.333				1	1	1.04341			
L26 70.333-70.000				1	1	1.04263			
L27 70.000-69.750				1	1	1			
L28 69.750-64.750				1	1	1			
L29 64.750-59.750				1	1	1			
L30 59.750-54.750				1	1	1			
L31				1	1	1			

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
54.750-49.750									
L32				1	1	1			
49.750-43.000									
L33				1	1	1			
43.000-42.000									
L34				1	1	1			
42.000-37.000									
L35				1	1	1			
37.000-32.000									
L36				1	1	1			
32.000-27.913									
L37				1	1	1.03582			
27.913-27.663									
L38				1	1	1.03517			
27.663-27.250									
L39				1	1	0.94811			
27.250-26.983									
L40				1	1	0.965513			
26.983-26.833									
L41				1	1	0.95947			
26.833-21.833									
L42				1	1	0.953662			
21.833-16.833									
L43				1	1	0.952716			
16.833-16.000									
L44				1	1	0.946633			
16.000-15.750									
L45				1	1	0.94505			
15.750-14.747									
L46				1	1	1.15754			
14.747-14.497									
L47				1	1	1.15516			
14.497-12.083									
L48				1	1	0.938416			
12.083-11.833									
L49				1	1	0.936018			
11.833-10.000									
L50				1	1	0.935693			
10.000-9.750									
L51				1	1	0.945082			
9.750-4.750									
L52				1	1	0.955365			
4.750-0.000									

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
LDF7-50A(1-5/8)	A	No	Surface Ar (CaAa)	127.000 - 0.000	9	9	0.000 0.350	1.980		0.001
*										
CU12PSM9P6XXX(1-1/2)	B	No	Surface Ar (CaAa)	119.000 - 0.000	1	1	-0.240 -0.200	1.600		0.002

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
*										
Safety Line 3/8	B	No	Surface Ar (CaAa)	160.000 - 0.000	1	1	0.340 0.350	0.375		0.000
*										
MP306	B	No	Surface Af (CaAa)	15.500 - 0.500	1	1	0.000 0.050	6.890	19.000	0.000
MP306	C	No	Surface Af (CaAa)	15.500 - 0.500	1	1	-0.350 -0.300	6.890	19.000	0.000
*										
MP306	A	No	Surface Af (CaAa)	30.500 - 0.500	1	1	0.350 0.400	6.890	19.000	0.000
MP306	C	No	Surface Af (CaAa)	30.500 - 0.500	1	1	0.350 0.400	6.890	19.000	0.000
*										
MP306	B	No	Surface Af (CaAa)	31.330 - 11.330	1	1	0.350 0.400	6.890	19.000	0.000
*										
MP305	A	No	Surface Af (CaAa)	73.000 - 43.000	1	1	0.350 0.400	5.330	14.840	0.000
MP305	B	No	Surface Af (CaAa)	73.000 - 43.000	1	1	0.350 0.400	5.330	14.840	0.000
MP305	C	No	Surface Af (CaAa)	73.000 - 43.000	1	1	0.350 0.400	5.330	14.840	0.000
*										
MP304	A	No	Surface Af (CaAa)	106.750 - 76.750	1	1	0.350 0.400	4.780	12.780	0.000
MP304	B	No	Surface Af (CaAa)	106.750 - 76.750	1	1	0.350 0.400	4.780	12.780	0.000
MP304	C	No	Surface Af (CaAa)	106.750 - 76.750	1	1	0.350 0.400	4.780	12.780	0.000
*										
6.5"x1.25" Flat Reinforcement	A	No	Surface Af (CaAa)	49.500 - 24.500	1	1	-0.200 -0.150	6.500	15.500	0.000
6.5"x1.25" Flat Reinforcement	B	No	Surface Af (CaAa)	49.500 - 24.500	1	1	-0.200 -0.150	6.500	15.500	0.000
6.5"x1.25" Flat Reinforcement	C	No	Surface Af (CaAa)	49.500 - 24.500	1	1	-0.200 -0.150	6.500	15.500	0.000
*										
6"x1" Flat Reinforcement	A	No	Surface Af (CaAa)	18.000 - 8.000	1	1	-0.200 -0.150	6.000	14.000	0.000
6"x1" Flat Reinforcement	B	No	Surface Af (CaAa)	18.000 - 8.000	1	1	-0.200 -0.150	6.000	14.000	0.000
6"x1" Flat Reinforcement	C	No	Surface Af (CaAa)	18.000 - 8.000	1	1	-0.200 -0.150	6.000	14.000	0.000
*										
6"x1" Flat Reinforcement	A	No	Surface Af (CaAa)	82.500 - 67.500	1	1	-0.350 -0.300	6.000	14.000	0.000
6"x1" Flat Reinforcement	B	No	Surface Af (CaAa)	82.500 - 67.500	1	1	0.000 0.050	6.000	14.000	0.000
6"x1" Flat Reinforcement	C	No	Surface Af (CaAa)	82.500 - 67.500	1	1	-0.350 -0.300	6.000	14.000	0.000
*										
HSS6x6	A	No	Surface Af (CaAa)	155.500 - 140.000	1	1	-0.100 0.000	6.000	24.000	0.029
HSS6x6	B	No	Surface Af (CaAa)	155.500 - 140.000	1	1	-0.100 0.000	6.000	24.000	0.029
HSS6x6	C	No	Surface Af (CaAa)	155.500 - 140.000	1	1	-0.100 0.000	6.000	24.000	0.029
*										
4"x1.25" Flat	A	No	Surface Af	94.000 -	1	1	-0.200	4.000	10.500	0.000

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
Reinforcement			(CaAa)	79.000			-0.150			
4"x1.25" Flat	B	No	Surface Af	94.000 -	1	1	-0.200	4.000	10.500	0.000
Reinforcement			(CaAa)	79.000			-0.150			
4"x1.25" Flat	C	No	Surface Af	94.000 -	1	1	-0.200	4.000	10.500	0.000
Reinforcement			(CaAa)	79.000			-0.150			
*										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
LDF7-50A(1-5/8)	C	No	No	Inside Pole	157.000 - 0.000	6	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
FB-L98B-002-75000 (3/8)	C	No	No	Inside Pole	157.000 - 0.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
WR-VG86ST-BRD(3/4)	C	No	No	Inside Pole	157.000 - 0.000	4	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
WR-VG86ST-BRD(3/4)	C	No	No	Inside Pole	157.000 - 0.000	4	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
FB-L98B-034-XXX(3/8)	C	No	No	Inside Pole	157.000 - 0.000	2	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
2" Rigid Conduit	C	No	No	Inside Pole	157.000 - 0.000	2	No Ice	0.000	0.003
							1/2" Ice	0.000	0.003
							1" Ice	0.000	0.003
*									
HB158-21U6S24-xx M_TMO(1-5/8)	B	No	No	Inside Pole	148.000 - 0.000	3	No Ice	0.000	0.003
							1/2" Ice	0.000	0.003
							1" Ice	0.000	0.003
*									
AL7-50(1-5/8)	B	No	No	Inside Pole	138.000 - 0.000	6	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
LDF4-50A(1/2)	B	No	No	Inside Pole	138.000 - 0.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
LCF214-50JA(2-1/4)	B	No	No	Inside Pole	138.000 - 0.000	1	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
*									
LDF7-50A(1-5/8)	A	No	No	Inside Pole	127.000 - 0.000	1	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
*									
LDF4-50A(1/2)	B	No	No	Inside Pole	48.000 - 0.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
*									

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	160.000-155.000	A	0.000	0.000	0.474	0.000	0.015
		B	0.000	0.000	0.662	0.000	0.016
		C	0.000	0.000	0.474	0.000	0.045
L2	155.000-150.000	A	0.000	0.000	4.743	0.000	0.146
		B	0.000	0.000	4.931	0.000	0.148
		C	0.000	0.000	4.743	0.000	0.223
L3	150.000-148.500	A	0.000	0.000	1.423	0.000	0.044
		B	0.000	0.000	1.479	0.000	0.044
		C	0.000	0.000	1.423	0.000	0.067
L4	148.500-148.000	A	0.000	0.000	0.474	0.000	0.015
		B	0.000	0.000	0.493	0.000	0.015
		C	0.000	0.000	0.474	0.000	0.022
L5	148.000-143.000	A	0.000	0.000	4.743	0.000	0.146
		B	0.000	0.000	4.931	0.000	0.185
		C	0.000	0.000	4.743	0.000	0.223
L6	143.000-138.000	A	0.000	0.000	2.846	0.000	0.088
		B	0.000	0.000	3.034	0.000	0.127
		C	0.000	0.000	2.846	0.000	0.165
L7	138.000-133.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.188	0.000	0.061
		C	0.000	0.000	0.000	0.000	0.077
L8	133.000-128.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.188	0.000	0.061
		C	0.000	0.000	0.000	0.000	0.077
L9	128.000-123.000	A	0.000	0.000	7.128	0.000	0.033
		B	0.000	0.000	0.188	0.000	0.061
		C	0.000	0.000	0.000	0.000	0.077
L10	123.000-118.000	A	0.000	0.000	8.910	0.000	0.041
		B	0.000	0.000	0.347	0.000	0.063
		C	0.000	0.000	0.000	0.000	0.077
L11	118.000-111.000	A	0.000	0.000	12.474	0.000	0.057
		B	0.000	0.000	1.383	0.000	0.101
		C	0.000	0.000	0.000	0.000	0.108
L12	111.000-109.750	A	0.000	0.000	2.228	0.000	0.010
		B	0.000	0.000	0.247	0.000	0.018
		C	0.000	0.000	0.000	0.000	0.019
L13	109.750-105.333	A	0.000	0.000	9.000	0.000	0.036
		B	0.000	0.000	2.001	0.000	0.064
		C	0.000	0.000	1.129	0.000	0.068
L14	105.333-105.083	A	0.000	0.000	0.645	0.000	0.002
		B	0.000	0.000	0.249	0.000	0.004
		C	0.000	0.000	0.199	0.000	0.004
L15	105.083-100.083	A	0.000	0.000	12.893	0.000	0.041
		B	0.000	0.000	4.971	0.000	0.072
		C	0.000	0.000	3.983	0.000	0.077
L16	100.083-95.083	A	0.000	0.000	12.893	0.000	0.041
		B	0.000	0.000	4.971	0.000	0.072
		C	0.000	0.000	3.983	0.000	0.077
L17	95.083-92.500	A	0.000	0.000	7.661	0.000	0.021
		B	0.000	0.000	3.568	0.000	0.037
		C	0.000	0.000	3.058	0.000	0.040
L18	92.500-92.250	A	0.000	0.000	0.811	0.000	0.002
		B	0.000	0.000	0.415	0.000	0.004
		C	0.000	0.000	0.366	0.000	0.004
L19	92.250-87.250	A	0.000	0.000	16.227	0.000	0.041

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B	0.000	0.000	8.304	0.000	0.072
		C	0.000	0.000	7.317	0.000	0.077
L20	87.250-82.250	A	0.000	0.000	16.477	0.000	0.041
		B	0.000	0.000	8.554	0.000	0.072
		C	0.000	0.000	7.567	0.000	0.077
L21	82.250-76.750	A	0.000	0.000	21.849	0.000	0.045
		B	0.000	0.000	13.135	0.000	0.080
		C	0.000	0.000	12.048	0.000	0.085
L22	76.750-75.750	A	0.000	0.000	2.782	0.000	0.008
		B	0.000	0.000	1.198	0.000	0.014
		C	0.000	0.000	1.000	0.000	0.015
L23	75.750-70.750	A	0.000	0.000	15.909	0.000	0.041
		B	0.000	0.000	7.986	0.000	0.072
		C	0.000	0.000	6.999	0.000	0.077
L24	70.750-70.583	A	0.000	0.000	0.613	0.000	0.001
		B	0.000	0.000	0.348	0.000	0.002
		C	0.000	0.000	0.315	0.000	0.003
L25	70.583-70.333	A	0.000	0.000	0.918	0.000	0.002
		B	0.000	0.000	0.521	0.000	0.004
		C	0.000	0.000	0.472	0.000	0.004
L26	70.333-70.000	A	0.000	0.000	1.222	0.000	0.003
		B	0.000	0.000	0.695	0.000	0.005
		C	0.000	0.000	0.629	0.000	0.005
L27	70.000-69.750	A	0.000	0.000	0.918	0.000	0.002
		B	0.000	0.000	0.521	0.000	0.004
		C	0.000	0.000	0.472	0.000	0.004
L28	69.750-64.750	A	0.000	0.000	15.602	0.000	0.041
		B	0.000	0.000	7.679	0.000	0.072
		C	0.000	0.000	6.692	0.000	0.077
L29	64.750-59.750	A	0.000	0.000	13.352	0.000	0.041
		B	0.000	0.000	5.429	0.000	0.072
		C	0.000	0.000	4.442	0.000	0.077
L30	59.750-54.750	A	0.000	0.000	13.352	0.000	0.041
		B	0.000	0.000	5.429	0.000	0.072
		C	0.000	0.000	4.442	0.000	0.077
L31	54.750-49.750	A	0.000	0.000	13.352	0.000	0.041
		B	0.000	0.000	5.429	0.000	0.072
		C	0.000	0.000	4.442	0.000	0.077
L32	49.750-43.000	A	0.000	0.000	25.066	0.000	0.055
		B	0.000	0.000	14.371	0.000	0.098
		C	0.000	0.000	13.038	0.000	0.104
L33	43.000-42.000	A	0.000	0.000	2.865	0.000	0.008
		B	0.000	0.000	1.281	0.000	0.015
		C	0.000	0.000	1.083	0.000	0.015
L34	42.000-37.000	A	0.000	0.000	14.327	0.000	0.041
		B	0.000	0.000	6.404	0.000	0.073
		C	0.000	0.000	5.417	0.000	0.077
L35	37.000-32.000	A	0.000	0.000	14.327	0.000	0.041
		B	0.000	0.000	6.404	0.000	0.073
		C	0.000	0.000	5.417	0.000	0.077
L36	32.000-27.913	A	0.000	0.000	14.681	0.000	0.034
		B	0.000	0.000	9.159	0.000	0.060
		C	0.000	0.000	7.398	0.000	0.063
L37	27.913-27.663	A	0.000	0.000	1.003	0.000	0.002
		B	0.000	0.000	0.607	0.000	0.004
		C	0.000	0.000	0.558	0.000	0.004
L38	27.663-27.250	A	0.000	0.000	1.658	0.000	0.003
		B	0.000	0.000	1.003	0.000	0.006
		C	0.000	0.000	0.922	0.000	0.006
L39	27.250-26.983	A	0.000	0.000	1.072	0.000	0.002
		B	0.000	0.000	0.649	0.000	0.004

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C	0.000	0.000	0.596	0.000	0.004
L40	26.983-26.833	A	0.000	0.000	0.602	0.000	0.001
		B	0.000	0.000	0.364	0.000	0.002
		C	0.000	0.000	0.335	0.000	0.002
L41	26.833-21.833	A	0.000	0.000	17.179	0.000	0.041
		B	0.000	0.000	9.257	0.000	0.073
		C	0.000	0.000	8.269	0.000	0.077
L42	21.833-16.833	A	0.000	0.000	15.716	0.000	0.041
		B	0.000	0.000	7.794	0.000	0.073
		C	0.000	0.000	6.806	0.000	0.077
L43	16.833-16.000	A	0.000	0.000	3.201	0.000	0.007
		B	0.000	0.000	1.881	0.000	0.012
		C	0.000	0.000	1.716	0.000	0.013
L44	16.000-15.750	A	0.000	0.000	0.961	0.000	0.002
		B	0.000	0.000	0.564	0.000	0.004
		C	0.000	0.000	0.515	0.000	0.004
L45	15.750-14.747	A	0.000	0.000	3.854	0.000	0.008
		B	0.000	0.000	3.121	0.000	0.015
		C	0.000	0.000	2.923	0.000	0.015
L46	14.747-14.497	A	0.000	0.000	0.961	0.000	0.002
		B	0.000	0.000	0.849	0.000	0.004
		C	0.000	0.000	0.799	0.000	0.004
L47	14.497-12.083	A	0.000	0.000	9.276	0.000	0.020
		B	0.000	0.000	8.197	0.000	0.035
		C	0.000	0.000	7.720	0.000	0.037
L48	12.083-11.833	A	0.000	0.000	0.961	0.000	0.002
		B	0.000	0.000	0.849	0.000	0.004
		C	0.000	0.000	0.799	0.000	0.004
L49	11.833-10.000	A	0.000	0.000	7.043	0.000	0.015
		B	0.000	0.000	4.696	0.000	0.027
		C	0.000	0.000	5.862	0.000	0.028
L50	10.000-9.750	A	0.000	0.000	0.961	0.000	0.002
		B	0.000	0.000	0.562	0.000	0.004
		C	0.000	0.000	0.799	0.000	0.004
L51	9.750-4.750	A	0.000	0.000	16.248	0.000	0.041
		B	0.000	0.000	8.271	0.000	0.073
		C	0.000	0.000	13.025	0.000	0.077
L52	4.750-0.000	A	0.000	0.000	13.345	0.000	0.039
		B	0.000	0.000	5.772	0.000	0.069
		C	0.000	0.000	9.715	0.000	0.073

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	160.000-155.000	A	0.994	0.000	0.000	0.537	0.000	0.020
		B		0.000	0.000	1.718	0.000	0.029
		C		0.000	0.000	0.537	0.000	0.051
L2	155.000-150.000	A	0.991	0.000	0.000	5.370	0.000	0.200
		B		0.000	0.000	6.548	0.000	0.209
		C		0.000	0.000	5.370	0.000	0.277
L3	150.000-148.500	A	0.988	0.000	0.000	1.611	0.000	0.060
		B		0.000	0.000	1.963	0.000	0.063
		C		0.000	0.000	1.611	0.000	0.083
L4	148.500-148.000	A	0.988	0.000	0.000	0.537	0.000	0.020
		B		0.000	0.000	0.654	0.000	0.021
		C		0.000	0.000	0.537	0.000	0.028

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L5	148.000-143.000	A	0.986	0.000	0.000	5.367	0.000	0.200
		B		0.000	0.000	6.541	0.000	0.246
		C		0.000	0.000	5.367	0.000	0.276
L6	143.000-138.000	A	0.982	0.000	0.000	3.219	0.000	0.120
		B		0.000	0.000	4.389	0.000	0.166
		C		0.000	0.000	3.219	0.000	0.196
L7	138.000-133.000	A	0.979	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	1.166	0.000	0.069
		C		0.000	0.000	0.000	0.000	0.077
L8	133.000-128.000	A	0.975	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	1.163	0.000	0.069
		C		0.000	0.000	0.000	0.000	0.077
L9	128.000-123.000	A	0.971	0.000	0.000	9.881	0.000	0.105
		B		0.000	0.000	1.159	0.000	0.069
		C		0.000	0.000	0.000	0.000	0.077
L10	123.000-118.000	A	0.968	0.000	0.000	12.347	0.000	0.131
		B		0.000	0.000	1.509	0.000	0.074
		C		0.000	0.000	0.000	0.000	0.077
L11	118.000-111.000	A	0.963	0.000	0.000	17.277	0.000	0.183
		B		0.000	0.000	4.078	0.000	0.133
		C		0.000	0.000	0.000	0.000	0.108
L12	111.000-109.750	A	0.959	0.000	0.000	3.085	0.000	0.033
		B		0.000	0.000	0.728	0.000	0.024
		C		0.000	0.000	0.000	0.000	0.019
L13	109.750-105.333	A	0.957	0.000	0.000	12.295	0.000	0.124
		B		0.000	0.000	3.962	0.000	0.093
		C		0.000	0.000	1.400	0.000	0.077
L14	105.333-105.083	A	0.954	0.000	0.000	0.863	0.000	0.008
		B		0.000	0.000	0.392	0.000	0.006
		C		0.000	0.000	0.247	0.000	0.005
L15	105.083-100.083	A	0.952	0.000	0.000	17.263	0.000	0.160
		B		0.000	0.000	7.827	0.000	0.125
		C		0.000	0.000	4.935	0.000	0.107
L16	100.083-95.083	A	0.947	0.000	0.000	17.252	0.000	0.160
		B		0.000	0.000	7.813	0.000	0.125
		C		0.000	0.000	4.931	0.000	0.107
L17	95.083-92.500	A	0.944	0.000	0.000	10.191	0.000	0.090
		B		0.000	0.000	5.313	0.000	0.072
		C		0.000	0.000	3.828	0.000	0.063
L18	92.500-92.250	A	0.942	0.000	0.000	1.076	0.000	0.009
		B		0.000	0.000	0.604	0.000	0.008
		C		0.000	0.000	0.460	0.000	0.007
L19	92.250-87.250	A	0.939	0.000	0.000	21.507	0.000	0.184
		B		0.000	0.000	12.062	0.000	0.150
		C		0.000	0.000	9.196	0.000	0.132
L20	87.250-82.250	A	0.934	0.000	0.000	21.784	0.000	0.185
		B		0.000	0.000	12.334	0.000	0.151
		C		0.000	0.000	9.479	0.000	0.134
L21	82.250-76.750	A	0.928	0.000	0.000	28.159	0.000	0.224
		B		0.000	0.000	17.760	0.000	0.187
		C		0.000	0.000	14.632	0.000	0.168
L22	76.750-75.750	A	0.924	0.000	0.000	3.634	0.000	0.032
		B		0.000	0.000	1.743	0.000	0.025
		C		0.000	0.000	1.175	0.000	0.022
L23	75.750-70.750	A	0.921	0.000	0.000	20.569	0.000	0.173
		B		0.000	0.000	11.110	0.000	0.140
		C		0.000	0.000	8.281	0.000	0.123
L24	70.750-70.583	A	0.917	0.000	0.000	0.785	0.000	0.006
		B		0.000	0.000	0.469	0.000	0.005
		C		0.000	0.000	0.375	0.000	0.005
L25	70.583-70.333	A	0.917	0.000	0.000	1.175	0.000	0.010

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B		0.000	0.000	0.702	0.000	0.008
		C		0.000	0.000	0.561	0.000	0.007
L26	70.333-70.000	A	0.917	0.000	0.000	1.566	0.000	0.013
		B		0.000	0.000	0.935	0.000	0.010
		C		0.000	0.000	0.748	0.000	0.009
L27	70.000-69.750	A	0.916	0.000	0.000	1.175	0.000	0.010
		B		0.000	0.000	0.702	0.000	0.008
		C		0.000	0.000	0.561	0.000	0.007
L28	69.750-64.750	A	0.913	0.000	0.000	20.272	0.000	0.173
		B		0.000	0.000	10.806	0.000	0.140
		C		0.000	0.000	7.993	0.000	0.123
L29	64.750-59.750	A	0.906	0.000	0.000	17.617	0.000	0.158
		B		0.000	0.000	8.146	0.000	0.126
		C		0.000	0.000	5.347	0.000	0.109
L30	59.750-54.750	A	0.898	0.000	0.000	17.600	0.000	0.157
		B		0.000	0.000	8.124	0.000	0.125
		C		0.000	0.000	5.340	0.000	0.109
L31	54.750-49.750	A	0.890	0.000	0.000	17.582	0.000	0.156
		B		0.000	0.000	8.099	0.000	0.124
		C		0.000	0.000	5.332	0.000	0.108
L32	49.750-43.000	A	0.879	0.000	0.000	31.888	0.000	0.251
		B		0.000	0.000	19.076	0.000	0.209
		C		0.000	0.000	15.368	0.000	0.188
L33	43.000-42.000	A	0.872	0.000	0.000	3.707	0.000	0.031
		B		0.000	0.000	1.808	0.000	0.025
		C		0.000	0.000	1.259	0.000	0.022
L34	42.000-37.000	A	0.865	0.000	0.000	18.501	0.000	0.154
		B		0.000	0.000	9.000	0.000	0.124
		C		0.000	0.000	6.282	0.000	0.108
L35	37.000-32.000	A	0.854	0.000	0.000	18.475	0.000	0.153
		B		0.000	0.000	8.965	0.000	0.123
		C		0.000	0.000	6.270	0.000	0.108
L36	32.000-27.913	A	0.842	0.000	0.000	18.486	0.000	0.142
		B		0.000	0.000	11.798	0.000	0.125
		C		0.000	0.000	8.522	0.000	0.107
L37	27.913-27.663	A	0.836	0.000	0.000	1.251	0.000	0.009
		B		0.000	0.000	0.774	0.000	0.008
		C		0.000	0.000	0.641	0.000	0.007
L38	27.663-27.250	A	0.835	0.000	0.000	2.066	0.000	0.015
		B		0.000	0.000	1.279	0.000	0.013
		C		0.000	0.000	1.060	0.000	0.012
L39	27.250-26.983	A	0.833	0.000	0.000	1.335	0.000	0.010
		B		0.000	0.000	0.827	0.000	0.008
		C		0.000	0.000	0.685	0.000	0.008
L40	26.983-26.833	A	0.833	0.000	0.000	0.750	0.000	0.006
		B		0.000	0.000	0.464	0.000	0.005
		C		0.000	0.000	0.385	0.000	0.004
L41	26.833-21.833	A	0.824	0.000	0.000	21.646	0.000	0.168
		B		0.000	0.000	12.115	0.000	0.141
		C		0.000	0.000	9.478	0.000	0.126
L42	21.833-16.833	A	0.806	0.000	0.000	19.858	0.000	0.158
		B		0.000	0.000	10.312	0.000	0.132
		C		0.000	0.000	7.713	0.000	0.118
L43	16.833-16.000	A	0.793	0.000	0.000	3.940	0.000	0.029
		B		0.000	0.000	2.348	0.000	0.025
		C		0.000	0.000	1.920	0.000	0.023
L44	16.000-15.750	A	0.790	0.000	0.000	1.182	0.000	0.009
		B		0.000	0.000	0.704	0.000	0.008
		C		0.000	0.000	0.576	0.000	0.007
L45	15.750-14.747	A	0.787	0.000	0.000	4.741	0.000	0.035
		B		0.000	0.000	3.746	0.000	0.035

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C		0.000	0.000	3.232	0.000	0.032
L46	14.747-14.497	A	0.784	0.000	0.000	1.181	0.000	0.009
		B		0.000	0.000	1.009	0.000	0.009
		C		0.000	0.000	0.882	0.000	0.008
L47	14.497-12.083	A	0.776	0.000	0.000	11.396	0.000	0.084
		B		0.000	0.000	9.732	0.000	0.088
		C		0.000	0.000	8.506	0.000	0.081
L48	12.083-11.833	A	0.768	0.000	0.000	1.179	0.000	0.009
		B		0.000	0.000	1.006	0.000	0.009
		C		0.000	0.000	0.880	0.000	0.008
L49	11.833-10.000	A	0.761	0.000	0.000	8.638	0.000	0.063
		B		0.000	0.000	5.637	0.000	0.057
		C		0.000	0.000	6.447	0.000	0.061
L50	10.000-9.750	A	0.753	0.000	0.000	1.177	0.000	0.008
		B		0.000	0.000	0.678	0.000	0.007
		C		0.000	0.000	0.879	0.000	0.008
L51	9.750-4.750	A	0.730	0.000	0.000	20.257	0.000	0.150
		B		0.000	0.000	10.278	0.000	0.128
		C		0.000	0.000	14.302	0.000	0.147
L52	4.750-0.000	A	0.653	0.000	0.000	16.792	0.000	0.123
		B		0.000	0.000	7.325	0.000	0.105
		C		0.000	0.000	10.581	0.000	0.119

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	160.000-155.000	0.238	0.048	0.703	0.142
L2	155.000-150.000	0.050	0.010	0.264	0.053
L3	150.000-148.500	0.050	0.010	0.263	0.053
L4	148.500-148.000	0.082	0.017	0.449	0.090
L5	148.000-143.000	0.083	0.017	0.454	0.092
L6	143.000-138.000	0.108	0.022	0.585	0.118
L7	138.000-133.000	0.295	0.060	0.979	0.197
L8	133.000-128.000	0.295	0.060	0.980	0.198
L9	128.000-123.000	-3.985	-5.086	-2.689	-3.898
L10	123.000-118.000	-4.438	-5.831	-3.069	-4.565
L11	118.000-111.000	-4.069	-6.147	-2.637	-4.977
L12	111.000-109.750	-4.081	-6.165	-2.645	-4.993
L13	109.750-105.333	-3.416	-5.161	-2.337	-4.404
L14	105.333-105.083	-2.538	-3.834	-1.865	-3.514
L15	105.083-100.083	-2.561	-3.870	-1.883	-3.545
L16	100.083-95.083	-2.605	-3.937	-1.916	-3.606
L17	95.083-92.500	-2.227	-3.366	-1.686	-3.170
L18	92.500-92.250	-2.013	-3.042	-1.549	-2.910
L19	92.250-87.250	-2.032	-3.071	-1.564	-2.937
L20	87.250-82.250	-1.917	-2.996	-1.481	-2.888
L21	82.250-76.750	0.190	-1.308	0.185	-1.532
L22	76.750-75.750	0.286	-1.967	0.262	-2.170
L23	75.750-70.750	0.248	-1.697	0.231	-1.927
L24	70.750-70.583	0.214	-1.454	0.203	-1.695
L25	70.583-70.333	0.214	-1.455	0.204	-1.696
L26	70.333-70.000	0.215	-1.457	0.204	-1.698
L27	70.000-69.750	0.215	-1.458	0.204	-1.699
L28	69.750-64.750	-1.134	-2.682	-0.872	-2.715
L29	64.750-59.750	-2.751	-4.159	-2.070	-3.858

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L30	59.750-54.750	-2.790	-4.218	-2.102	-3.910
L31	54.750-49.750	-2.828	-4.275	-2.135	-3.962
L32	49.750-43.000	-1.985	-3.002	-1.622	-3.003
L33	43.000-42.000	-2.645	-4.000	-2.057	-3.807
L34	42.000-37.000	-2.667	-4.032	-2.080	-3.836
L35	37.000-32.000	-2.702	-4.086	-2.112	-3.884
L36	32.000-27.913	-1.696	-2.687	-1.410	-2.784
L37	27.913-27.663	-1.902	-2.876	-1.605	-2.937
L38	27.663-27.250	-1.904	-2.879	-1.607	-2.939
L39	27.250-26.983	-1.905	-2.882	-1.608	-2.942
L40	26.983-26.833	-1.907	-2.883	-1.610	-2.944
L41	26.833-21.833	-2.272	-3.436	-1.866	-3.405
L42	21.833-16.833	-2.536	-3.836	-2.058	-3.736
L43	16.833-16.000	-2.057	-3.112	-1.756	-3.177
L44	16.000-15.750	-2.061	-3.117	-1.760	-3.182
L45	15.750-14.747	1.339	-2.727	0.962	-2.859
L46	14.747-14.497	2.273	-2.623	1.738	-2.769
L47	14.497-12.083	2.282	-2.633	1.742	-2.779
L48	12.083-11.833	2.291	-2.643	1.747	-2.789
L49	11.833-10.000	1.232	-4.302	0.808	-4.213
L50	10.000-9.750	0.794	-4.999	0.424	-4.804
L51	9.750-4.750	0.940	-5.912	0.480	-5.501
L52	4.750-0.000	0.710	-6.649	0.230	-6.004

Note: For pole sections, center of pressure calculations do not consider feed line shielding.

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	26	Safety Line 3/8	155.00 - 160.00	1.0000	1.0000
L1	56	HSS6x6	155.00 - 155.50	1.0000	1.0000
L1	57	HSS6x6	155.00 - 155.50	1.0000	1.0000
L1	58	HSS6x6	155.00 - 155.50	1.0000	1.0000
L2	26	Safety Line 3/8	150.00 - 155.00	1.0000	1.0000
L2	56	HSS6x6	150.00 - 155.00	1.0000	1.0000
L2	57	HSS6x6	150.00 - 155.00	1.0000	1.0000
L2	58	HSS6x6	150.00 - 155.00	1.0000	1.0000
L3	26	Safety Line 3/8	148.50 - 150.00	1.0000	1.0000
L3	56	HSS6x6	148.50 - 150.00	1.0000	1.0000
L3	57	HSS6x6	148.50 - 150.00	1.0000	1.0000
L3	58	HSS6x6	148.50 - 150.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L4	26	Safety Line 3/8	148.00 - 148.50	1.0000	1.0000
L4	56	HSS6x6	148.00 - 148.50	1.0000	1.0000
L4	57	HSS6x6	148.00 - 148.50	1.0000	1.0000
L4	58	HSS6x6	148.00 - 148.50	1.0000	1.0000
L5	26	Safety Line 3/8	143.00 - 148.00	1.0000	1.0000
L5	56	HSS6x6	143.00 - 148.00	1.0000	1.0000
L5	57	HSS6x6	143.00 - 148.00	1.0000	1.0000
L5	58	HSS6x6	143.00 - 148.00	1.0000	1.0000
L6	26	Safety Line 3/8	138.00 - 143.00	1.0000	1.0000
L6	56	HSS6x6	140.00 - 143.00	1.0000	1.0000
L6	57	HSS6x6	140.00 - 143.00	1.0000	1.0000
L6	58	HSS6x6	140.00 - 143.00	1.0000	1.0000
L7	26	Safety Line 3/8	133.00 - 138.00	1.0000	1.0000
L8	26	Safety Line 3/8	128.00 - 133.00	1.0000	1.0000
L9	16	LDF7-50A(1-5/8)	123.00 - 127.00	1.0000	1.0000
L9	26	Safety Line 3/8	123.00 - 128.00	1.0000	1.0000
L10	16	LDF7-50A(1-5/8)	118.00 - 123.00	1.0000	1.0000
L10	22	CU12PSM9P6XXX(1-1/2)	118.00 - 119.00	1.0000	1.0000
L10	26	Safety Line 3/8	118.00 - 123.00	1.0000	1.0000
L11	16	LDF7-50A(1-5/8)	111.00 - 118.00	1.0000	1.0000
L11	22	CU12PSM9P6XXX(1-1/2)	111.00 - 118.00	1.0000	1.0000
L11	26	Safety Line 3/8	111.00 - 118.00	1.0000	1.0000
L12	16	LDF7-50A(1-5/8)	109.75 - 111.00	1.0000	1.0000
L12	22	CU12PSM9P6XXX(1-1/2)	109.75 - 111.00	1.0000	1.0000
L12	26	Safety Line 3/8	109.75 - 111.00	1.0000	1.0000
L13	16	LDF7-50A(1-5/8)	105.33 - 109.75	1.0000	1.0000
L13	22	CU12PSM9P6XXX(1-1/2)	105.33 - 109.75	1.0000	1.0000
L13	26	Safety Line 3/8	105.33 - 109.75	1.0000	1.0000
L13	40	MP304	105.33 - 106.75	1.0000	1.0000
L13	41	MP304	105.33 - 106.75	1.0000	1.0000
L13	42	MP304	105.33 - 106.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L14	16	LDF7-50A(1-5/8)	105.08 - 105.33	1.0000	1.0000
L14	22	CU12PSM9P6XXX(1-1/2)	105.08 - 105.33	1.0000	1.0000
L14	26	Safety Line 3/8	105.08 - 105.33	1.0000	1.0000
L14	40	MP304	105.08 - 105.33	1.0000	1.0000
L14	41	MP304	105.08 - 105.33	1.0000	1.0000
L14	42	MP304	105.08 - 105.33	1.0000	1.0000
L15	16	LDF7-50A(1-5/8)	100.08 - 105.08	1.0000	1.0000
L15	22	CU12PSM9P6XXX(1-1/2)	100.08 - 105.08	1.0000	1.0000
L15	26	Safety Line 3/8	100.08 - 105.08	1.0000	1.0000
L15	40	MP304	100.08 - 105.08	1.0000	1.0000
L15	41	MP304	100.08 - 105.08	1.0000	1.0000
L15	42	MP304	100.08 - 105.08	1.0000	1.0000
L16	16	LDF7-50A(1-5/8)	95.08 - 100.08	1.0000	1.0000
L16	22	CU12PSM9P6XXX(1-1/2)	95.08 - 100.08	1.0000	1.0000
L16	26	Safety Line 3/8	95.08 - 100.08	1.0000	1.0000
L16	40	MP304	95.08 - 100.08	1.0000	1.0000
L16	41	MP304	95.08 - 100.08	1.0000	1.0000
L16	42	MP304	95.08 - 100.08	1.0000	1.0000
L17	16	LDF7-50A(1-5/8)	92.50 - 95.08	1.0000	1.0000
L17	22	CU12PSM9P6XXX(1-1/2)	92.50 - 95.08	1.0000	1.0000
L17	26	Safety Line 3/8	92.50 - 95.08	1.0000	1.0000
L17	40	MP304	92.50 - 95.08	1.0000	1.0000
L17	41	MP304	92.50 - 95.08	1.0000	1.0000
L17	42	MP304	92.50 - 95.08	1.0000	1.0000
L17	60	4"x1.25" Flat Reinforcement	92.50 - 94.00	1.0000	1.0000
L17	61	4"x1.25" Flat Reinforcement	92.50 - 94.00	1.0000	1.0000
L17	62	4"x1.25" Flat Reinforcement	92.50 - 94.00	1.0000	1.0000
L18	16	LDF7-50A(1-5/8)	92.25 - 92.50	1.0000	1.0000
L18	22	CU12PSM9P6XXX(1-1/2)	92.25 - 92.50	1.0000	1.0000
L18	26	Safety Line 3/8	92.25 - 92.50	1.0000	1.0000
L18	40	MP304	92.25 - 92.50	1.0000	1.0000
L18	41	MP304	92.25 - 92.50	1.0000	1.0000
L18	42	MP304	92.25 - 92.50	1.0000	1.0000
L18	60	4"x1.25" Flat Reinforcement	92.25 - 92.50	1.0000	1.0000
L18	61	4"x1.25" Flat Reinforcement	92.25 - 92.50	1.0000	1.0000
L18	62	4"x1.25" Flat Reinforcement	92.25 - 92.50	1.0000	1.0000
L19	16	LDF7-50A(1-5/8)	87.25 - 92.25	1.0000	1.0000
L19	22	CU12PSM9P6XXX(1-1/2)	87.25 - 92.25	1.0000	1.0000
L19	26	Safety Line 3/8	87.25 - 92.25	1.0000	1.0000
L19	40	MP304	87.25 - 92.25	1.0000	1.0000
L19	41	MP304	87.25 - 92.25	1.0000	1.0000
L19	42	MP304	87.25 - 92.25	1.0000	1.0000
L19	60	4"x1.25" Flat Reinforcement	87.25 - 92.25	1.0000	1.0000
L19	61	4"x1.25" Flat Reinforcement	87.25 - 92.25	1.0000	1.0000
L19	62	4"x1.25" Flat Reinforcement	87.25 - 92.25	1.0000	1.0000
L20	16	LDF7-50A(1-5/8)	82.25 - 87.25	1.0000	1.0000
L20	22	CU12PSM9P6XXX(1-1/2)	82.25 - 87.25	1.0000	1.0000
L20	26	Safety Line 3/8	82.25 - 87.25	1.0000	1.0000
L20	40	MP304	82.25 - 87.25	1.0000	1.0000
L20	41	MP304	82.25 - 87.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L20	42	MP304	82.25 - 87.25	1.0000	1.0000
L20	52	6"x1" Flat Reinforcement	82.25 - 82.50	1.0000	1.0000
L20	53	6"x1" Flat Reinforcement	82.25 - 82.50	1.0000	1.0000
L20	54	6"x1" Flat Reinforcement	82.25 - 82.50	1.0000	1.0000
L20	60	4"x1.25" Flat Reinforcement	82.25 - 87.25	1.0000	1.0000
L20	61	4"x1.25" Flat Reinforcement	82.25 - 87.25	1.0000	1.0000
L20	62	4"x1.25" Flat Reinforcement	82.25 - 87.25	1.0000	1.0000
L21	16	LDF7-50A(1-5/8)	76.75 - 82.25	1.0000	1.0000
L21	22	CU12PSM9P6XXX(1-1/2)	76.75 - 82.25	1.0000	1.0000
L21	26	Safety Line 3/8	76.75 - 82.25	1.0000	1.0000
L21	40	MP304	76.75 - 82.25	1.0000	1.0000
L21	41	MP304	76.75 - 82.25	1.0000	1.0000
L21	42	MP304	76.75 - 82.25	1.0000	1.0000
L21	52	6"x1" Flat Reinforcement	76.75 - 82.25	1.0000	1.0000
L21	53	6"x1" Flat Reinforcement	76.75 - 82.25	1.0000	1.0000
L21	54	6"x1" Flat Reinforcement	76.75 - 82.25	1.0000	1.0000
L21	60	4"x1.25" Flat Reinforcement	79.00 - 82.25	1.0000	1.0000
L21	61	4"x1.25" Flat Reinforcement	79.00 - 82.25	1.0000	1.0000
L21	62	4"x1.25" Flat Reinforcement	79.00 - 82.25	1.0000	1.0000
L22	16	LDF7-50A(1-5/8)	75.75 - 76.75	1.0000	1.0000
L22	22	CU12PSM9P6XXX(1-1/2)	75.75 - 76.75	1.0000	1.0000
L22	26	Safety Line 3/8	75.75 - 76.75	1.0000	1.0000
L22	52	6"x1" Flat Reinforcement	75.75 - 76.75	1.0000	1.0000
L22	53	6"x1" Flat Reinforcement	75.75 - 76.75	1.0000	1.0000
L22	54	6"x1" Flat Reinforcement	75.75 - 76.75	1.0000	1.0000
L23	16	LDF7-50A(1-5/8)	70.75 - 75.75	1.0000	1.0000
L23	22	CU12PSM9P6XXX(1-1/2)	70.75 - 75.75	1.0000	1.0000
L23	26	Safety Line 3/8	70.75 - 75.75	1.0000	1.0000
L23	36	MP305	70.75 - 73.00	1.0000	1.0000
L23	37	MP305	70.75 - 73.00	1.0000	1.0000
L23	38	MP305	70.75 - 73.00	1.0000	1.0000
L23	52	6"x1" Flat Reinforcement	70.75 - 75.75	1.0000	1.0000
L23	53	6"x1" Flat Reinforcement	70.75 - 75.75	1.0000	1.0000
L23	54	6"x1" Flat Reinforcement	70.75 - 75.75	1.0000	1.0000
L24	16	LDF7-50A(1-5/8)	70.58 - 70.75	1.0000	1.0000
L24	22	CU12PSM9P6XXX(1-1/2)	70.58 - 70.75	1.0000	1.0000
L24	26	Safety Line 3/8	70.58 - 70.75	1.0000	1.0000
L24	36	MP305	70.58 - 70.75	1.0000	1.0000
L24	37	MP305	70.58 - 70.75	1.0000	1.0000
L24	38	MP305	70.58 - 70.75	1.0000	1.0000
L24	52	6"x1" Flat Reinforcement	70.58 - 70.75	1.0000	1.0000
L24	53	6"x1" Flat Reinforcement	70.58 - 70.75	1.0000	1.0000
L24	54	6"x1" Flat Reinforcement	70.58 - 70.75	1.0000	1.0000
L25	16	LDF7-50A(1-5/8)	70.33 - 70.58	1.0000	1.0000
L25	22	CU12PSM9P6XXX(1-1/2)	70.33 - 70.58	1.0000	1.0000
L25	26	Safety Line 3/8	70.33 - 70.58	1.0000	1.0000
L25	36	MP305	70.33 - 70.58	1.0000	1.0000
L25	37	MP305	70.33 - 70.58	1.0000	1.0000
L25	38	MP305	70.33 - 70.58	1.0000	1.0000
L25	52	6"x1" Flat Reinforcement	70.33 - 70.58	1.0000	1.0000
L25	53	6"x1" Flat Reinforcement	70.33 - 70.58	1.0000	1.0000
L25	54	6"x1" Flat Reinforcement	70.33 - 70.58	1.0000	1.0000
L26	16	LDF7-50A(1-5/8)	70.00 - 70.33	1.0000	1.0000
L26	22	CU12PSM9P6XXX(1-1/2)	70.00 - 70.33	1.0000	1.0000
L26	26	Safety Line 3/8	70.00 - 70.33	1.0000	1.0000
L26	36	MP305	70.00 - 70.33	1.0000	1.0000
L26	37	MP305	70.00 - 70.33	1.0000	1.0000
L26	38	MP305	70.00 - 70.33	1.0000	1.0000
L26	52	6"x1" Flat Reinforcement	70.00 - 70.33	1.0000	1.0000
L26	53	6"x1" Flat Reinforcement	70.00 - 70.33	1.0000	1.0000
L26	54	6"x1" Flat Reinforcement	70.00 - 70.33	1.0000	1.0000
L27	16	LDF7-50A(1-5/8)	69.75 - 70.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L27	22	CU12PSM9P6XXX(1-1/2)	69.75 - 70.00	1.0000	1.0000
L27	26	Safety Line 3/8	69.75 - 70.00	1.0000	1.0000
L27	36	MP305	69.75 - 70.00	1.0000	1.0000
L27	37	MP305	69.75 - 70.00	1.0000	1.0000
L27	38	MP305	69.75 - 70.00	1.0000	1.0000
L27	52	6"x1" Flat Reinforcement	69.75 - 70.00	1.0000	1.0000
L27	53	6"x1" Flat Reinforcement	69.75 - 70.00	1.0000	1.0000
L27	54	6"x1" Flat Reinforcement	69.75 - 70.00	1.0000	1.0000
L28	16	LDF7-50A(1-5/8)	64.75 - 69.75	1.0000	1.0000
L28	22	CU12PSM9P6XXX(1-1/2)	64.75 - 69.75	1.0000	1.0000
L28	26	Safety Line 3/8	64.75 - 69.75	1.0000	1.0000
L28	36	MP305	64.75 - 69.75	1.0000	1.0000
L28	37	MP305	64.75 - 69.75	1.0000	1.0000
L28	38	MP305	64.75 - 69.75	1.0000	1.0000
L28	52	6"x1" Flat Reinforcement	67.50 - 69.75	1.0000	1.0000
L28	53	6"x1" Flat Reinforcement	67.50 - 69.75	1.0000	1.0000
L28	54	6"x1" Flat Reinforcement	67.50 - 69.75	1.0000	1.0000
L29	16	LDF7-50A(1-5/8)	59.75 - 64.75	1.0000	1.0000
L29	22	CU12PSM9P6XXX(1-1/2)	59.75 - 64.75	1.0000	1.0000
L29	26	Safety Line 3/8	59.75 - 64.75	1.0000	1.0000
L29	36	MP305	59.75 - 64.75	1.0000	1.0000
L29	37	MP305	59.75 - 64.75	1.0000	1.0000
L29	38	MP305	59.75 - 64.75	1.0000	1.0000
L30	16	LDF7-50A(1-5/8)	54.75 - 59.75	1.0000	1.0000
L30	22	CU12PSM9P6XXX(1-1/2)	54.75 - 59.75	1.0000	1.0000
L30	26	Safety Line 3/8	54.75 - 59.75	1.0000	1.0000
L30	36	MP305	54.75 - 59.75	1.0000	1.0000
L30	37	MP305	54.75 - 59.75	1.0000	1.0000
L30	38	MP305	54.75 - 59.75	1.0000	1.0000
L31	16	LDF7-50A(1-5/8)	49.75 - 54.75	1.0000	1.0000
L31	22	CU12PSM9P6XXX(1-1/2)	49.75 - 54.75	1.0000	1.0000
L31	26	Safety Line 3/8	49.75 - 54.75	1.0000	1.0000
L31	36	MP305	49.75 - 54.75	1.0000	1.0000
L31	37	MP305	49.75 - 54.75	1.0000	1.0000
L31	38	MP305	49.75 - 54.75	1.0000	1.0000
L32	16	LDF7-50A(1-5/8)	43.00 - 49.75	1.0000	1.0000
L32	22	CU12PSM9P6XXX(1-1/2)	43.00 - 49.75	1.0000	1.0000
L32	26	Safety Line 3/8	43.00 - 49.75	1.0000	1.0000
L32	36	MP305	43.00 - 49.75	1.0000	1.0000
L32	37	MP305	43.00 - 49.75	1.0000	1.0000
L32	38	MP305	43.00 - 49.75	1.0000	1.0000
L32	44	6.5"x1.25" Flat Reinforcement	43.00 - 49.50	1.0000	1.0000
L32	45	6.5"x1.25" Flat Reinforcement	43.00 - 49.50	1.0000	1.0000
L32	46	6.5"x1.25" Flat Reinforcement	43.00 - 49.50	1.0000	1.0000
L33	16	LDF7-50A(1-5/8)	42.00 - 43.00	1.0000	1.0000
L33	22	CU12PSM9P6XXX(1-1/2)	42.00 - 43.00	1.0000	1.0000
L33	26	Safety Line 3/8	42.00 - 43.00	1.0000	1.0000
L33	44	6.5"x1.25" Flat Reinforcement	42.00 - 43.00	1.0000	1.0000
L33	45	6.5"x1.25" Flat Reinforcement	42.00 - 43.00	1.0000	1.0000
L33	46	6.5"x1.25" Flat Reinforcement	42.00 - 43.00	1.0000	1.0000
L34	16	LDF7-50A(1-5/8)	37.00 - 42.00	1.0000	1.0000
L34	22	CU12PSM9P6XXX(1-1/2)	37.00 - 42.00	1.0000	1.0000
L34	26	Safety Line 3/8	37.00 - 42.00	1.0000	1.0000
L34	44	6.5"x1.25" Flat Reinforcement	37.00 - 42.00	1.0000	1.0000
L34	45	6.5"x1.25" Flat	37.00 - 42.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L34	46	6.5"x1.25" Flat Reinforcement	37.00 - 42.00	1.0000	1.0000
L35	16	LDF7-50A(1-5/8)	32.00 - 37.00	1.0000	1.0000
L35	22	CU12PSM9P6XXX(1-1/2)	32.00 - 37.00	1.0000	1.0000
L35	26	Safety Line 3/8	32.00 - 37.00	1.0000	1.0000
L35	44	6.5"x1.25" Flat Reinforcement	32.00 - 37.00	1.0000	1.0000
L35	45	6.5"x1.25" Flat Reinforcement	32.00 - 37.00	1.0000	1.0000
L35	46	6.5"x1.25" Flat Reinforcement	32.00 - 37.00	1.0000	1.0000
L36	16	LDF7-50A(1-5/8)	27.91 - 32.00	1.0000	1.0000
L36	22	CU12PSM9P6XXX(1-1/2)	27.91 - 32.00	1.0000	1.0000
L36	26	Safety Line 3/8	27.91 - 32.00	1.0000	1.0000
L36	31	MP306	27.91 - 30.50	1.0000	1.0000
L36	32	MP306	27.91 - 30.50	1.0000	1.0000
L36	34	MP306	27.91 - 31.33	1.0000	1.0000
L36	44	6.5"x1.25" Flat Reinforcement	27.91 - 32.00	1.0000	1.0000
L36	45	6.5"x1.25" Flat Reinforcement	27.91 - 32.00	1.0000	1.0000
L36	46	6.5"x1.25" Flat Reinforcement	27.91 - 32.00	1.0000	1.0000
L37	16	LDF7-50A(1-5/8)	27.66 - 27.91	1.0000	1.0000
L37	22	CU12PSM9P6XXX(1-1/2)	27.66 - 27.91	1.0000	1.0000
L37	26	Safety Line 3/8	27.66 - 27.91	1.0000	1.0000
L37	31	MP306	27.66 - 27.91	1.0000	1.0000
L37	32	MP306	27.66 - 27.91	1.0000	1.0000
L37	34	MP306	27.66 - 27.91	1.0000	1.0000
L37	44	6.5"x1.25" Flat Reinforcement	27.66 - 27.91	1.0000	1.0000
L37	45	6.5"x1.25" Flat Reinforcement	27.66 - 27.91	1.0000	1.0000
L37	46	6.5"x1.25" Flat Reinforcement	27.66 - 27.91	1.0000	1.0000
L38	16	LDF7-50A(1-5/8)	27.25 - 27.66	1.0000	1.0000
L38	22	CU12PSM9P6XXX(1-1/2)	27.25 - 27.66	1.0000	1.0000
L38	26	Safety Line 3/8	27.25 - 27.66	1.0000	1.0000
L38	31	MP306	27.25 - 27.66	1.0000	1.0000
L38	32	MP306	27.25 - 27.66	1.0000	1.0000
L38	34	MP306	27.25 - 27.66	1.0000	1.0000
L38	44	6.5"x1.25" Flat Reinforcement	27.25 - 27.66	1.0000	1.0000
L38	45	6.5"x1.25" Flat Reinforcement	27.25 - 27.66	1.0000	1.0000
L38	46	6.5"x1.25" Flat Reinforcement	27.25 - 27.66	1.0000	1.0000
L39	16	LDF7-50A(1-5/8)	26.98 - 27.25	1.0000	1.0000
L39	22	CU12PSM9P6XXX(1-1/2)	26.98 - 27.25	1.0000	1.0000
L39	26	Safety Line 3/8	26.98 - 27.25	1.0000	1.0000
L39	31	MP306	26.98 - 27.25	1.0000	1.0000
L39	32	MP306	26.98 - 27.25	1.0000	1.0000
L39	34	MP306	26.98 - 27.25	1.0000	1.0000
L39	44	6.5"x1.25" Flat Reinforcement	26.98 - 27.25	1.0000	1.0000
L39	45	6.5"x1.25" Flat Reinforcement	26.98 - 27.25	1.0000	1.0000
L39	46	6.5"x1.25" Flat Reinforcement	26.98 - 27.25	1.0000	1.0000
L40	16	LDF7-50A(1-5/8)	26.83 - 26.98	1.0000	1.0000
L40	22	CU12PSM9P6XXX(1-1/2)	26.83 - 26.98	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L40	26	Safety Line 3/8	26.83 - 26.98	1.0000	1.0000
L40	31	MP306	26.83 - 26.98	1.0000	1.0000
L40	32	MP306	26.83 - 26.98	1.0000	1.0000
L40	34	MP306	26.83 - 26.98	1.0000	1.0000
L40	44	6.5"x1.25" Flat Reinforcement	26.83 - 26.98	1.0000	1.0000
L40	45	6.5"x1.25" Flat Reinforcement	26.83 - 26.98	1.0000	1.0000
L40	46	6.5"x1.25" Flat Reinforcement	26.83 - 26.98	1.0000	1.0000
L41	16	LDF7-50A(1-5/8)	21.83 - 26.83	1.0000	1.0000
L41	22	CU12PSM9P6XXX(1-1/2)	21.83 - 26.83	1.0000	1.0000
L41	26	Safety Line 3/8	21.83 - 26.83	1.0000	1.0000
L41	31	MP306	21.83 - 26.83	1.0000	1.0000
L41	32	MP306	21.83 - 26.83	1.0000	1.0000
L41	34	MP306	21.83 - 26.83	1.0000	1.0000
L41	44	6.5"x1.25" Flat Reinforcement	24.50 - 26.83	1.0000	1.0000
L41	45	6.5"x1.25" Flat Reinforcement	24.50 - 26.83	1.0000	1.0000
L41	46	6.5"x1.25" Flat Reinforcement	24.50 - 26.83	1.0000	1.0000
L42	16	LDF7-50A(1-5/8)	16.83 - 21.83	1.0000	1.0000
L42	22	CU12PSM9P6XXX(1-1/2)	16.83 - 21.83	1.0000	1.0000
L42	26	Safety Line 3/8	16.83 - 21.83	1.0000	1.0000
L42	31	MP306	16.83 - 21.83	1.0000	1.0000
L42	32	MP306	16.83 - 21.83	1.0000	1.0000
L42	34	MP306	16.83 - 21.83	1.0000	1.0000
L42	48	6"x1" Flat Reinforcement	16.83 - 18.00	1.0000	1.0000
L42	49	6"x1" Flat Reinforcement	16.83 - 18.00	1.0000	1.0000
L42	50	6"x1" Flat Reinforcement	16.83 - 18.00	1.0000	1.0000
L43	16	LDF7-50A(1-5/8)	16.00 - 16.83	1.0000	1.0000
L43	22	CU12PSM9P6XXX(1-1/2)	16.00 - 16.83	1.0000	1.0000
L43	26	Safety Line 3/8	16.00 - 16.83	1.0000	1.0000
L43	31	MP306	16.00 - 16.83	1.0000	1.0000
L43	32	MP306	16.00 - 16.83	1.0000	1.0000
L43	34	MP306	16.00 - 16.83	1.0000	1.0000
L43	48	6"x1" Flat Reinforcement	16.00 - 16.83	1.0000	1.0000
L43	49	6"x1" Flat Reinforcement	16.00 - 16.83	1.0000	1.0000
L43	50	6"x1" Flat Reinforcement	16.00 - 16.83	1.0000	1.0000
L44	16	LDF7-50A(1-5/8)	15.75 - 16.00	1.0000	1.0000
L44	22	CU12PSM9P6XXX(1-1/2)	15.75 - 16.00	1.0000	1.0000
L44	26	Safety Line 3/8	15.75 - 16.00	1.0000	1.0000
L44	31	MP306	15.75 - 16.00	1.0000	1.0000
L44	32	MP306	15.75 - 16.00	1.0000	1.0000
L44	34	MP306	15.75 - 16.00	1.0000	1.0000
L44	48	6"x1" Flat Reinforcement	15.75 - 16.00	1.0000	1.0000
L44	49	6"x1" Flat Reinforcement	15.75 - 16.00	1.0000	1.0000
L44	50	6"x1" Flat Reinforcement	15.75 - 16.00	1.0000	1.0000
L45	16	LDF7-50A(1-5/8)	14.75 - 15.75	1.0000	1.0000
L45	22	CU12PSM9P6XXX(1-1/2)	14.75 - 15.75	1.0000	1.0000
L45	26	Safety Line 3/8	14.75 - 15.75	1.0000	1.0000
L45	28	MP306	14.75 - 15.50	1.0000	1.0000
L45	29	MP306	14.75 - 15.50	1.0000	1.0000
L45	31	MP306	14.75 - 15.75	1.0000	1.0000
L45	32	MP306	14.75 - 15.75	1.0000	1.0000
L45	34	MP306	14.75 - 15.75	1.0000	1.0000
L45	48	6"x1" Flat Reinforcement	14.75 - 15.75	1.0000	1.0000
L45	49	6"x1" Flat Reinforcement	14.75 - 15.75	1.0000	1.0000
L45	50	6"x1" Flat Reinforcement	14.75 - 15.75	1.0000	1.0000
L46	16	LDF7-50A(1-5/8)	14.50 - 14.75	1.0000	1.0000
L46	22	CU12PSM9P6XXX(1-1/2)	14.50 - 14.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L46	26	Safety Line 3/8	14.50 - 14.75	1.0000	1.0000
L46	28	MP306	14.50 - 14.75	1.0000	1.0000
L46	29	MP306	14.50 - 14.75	1.0000	1.0000
L46	31	MP306	14.50 - 14.75	1.0000	1.0000
L46	32	MP306	14.50 - 14.75	1.0000	1.0000
L46	34	MP306	14.50 - 14.75	1.0000	1.0000
L46	48	6"x1" Flat Reinforcement	14.50 - 14.75	1.0000	1.0000
L46	49	6"x1" Flat Reinforcement	14.50 - 14.75	1.0000	1.0000
L46	50	6"x1" Flat Reinforcement	14.50 - 14.75	1.0000	1.0000
L47	16	LDF7-50A(1-5/8)	12.08 - 14.50	1.0000	1.0000
L47	22	CU12PSM9P6XXX(1-1/2)	12.08 - 14.50	1.0000	1.0000
L47	26	Safety Line 3/8	12.08 - 14.50	1.0000	1.0000
L47	28	MP306	12.08 - 14.50	1.0000	1.0000
L47	29	MP306	12.08 - 14.50	1.0000	1.0000
L47	31	MP306	12.08 - 14.50	1.0000	1.0000
L47	32	MP306	12.08 - 14.50	1.0000	1.0000
L47	34	MP306	12.08 - 14.50	1.0000	1.0000
L47	48	6"x1" Flat Reinforcement	12.08 - 14.50	1.0000	1.0000
L47	49	6"x1" Flat Reinforcement	12.08 - 14.50	1.0000	1.0000
L47	50	6"x1" Flat Reinforcement	12.08 - 14.50	1.0000	1.0000
L48	16	LDF7-50A(1-5/8)	11.83 - 12.08	1.0000	1.0000
L48	22	CU12PSM9P6XXX(1-1/2)	11.83 - 12.08	1.0000	1.0000
L48	26	Safety Line 3/8	11.83 - 12.08	1.0000	1.0000
L48	28	MP306	11.83 - 12.08	1.0000	1.0000
L48	29	MP306	11.83 - 12.08	1.0000	1.0000
L48	31	MP306	11.83 - 12.08	1.0000	1.0000
L48	32	MP306	11.83 - 12.08	1.0000	1.0000
L48	34	MP306	11.83 - 12.08	1.0000	1.0000
L48	48	6"x1" Flat Reinforcement	11.83 - 12.08	1.0000	1.0000
L48	49	6"x1" Flat Reinforcement	11.83 - 12.08	1.0000	1.0000
L48	50	6"x1" Flat Reinforcement	11.83 - 12.08	1.0000	1.0000
L49	16	LDF7-50A(1-5/8)	10.00 - 11.83	1.0000	1.0000
L49	22	CU12PSM9P6XXX(1-1/2)	10.00 - 11.83	1.0000	1.0000
L49	26	Safety Line 3/8	10.00 - 11.83	1.0000	1.0000
L49	28	MP306	10.00 - 11.83	1.0000	1.0000
L49	29	MP306	10.00 - 11.83	1.0000	1.0000
L49	31	MP306	10.00 - 11.83	1.0000	1.0000
L49	32	MP306	10.00 - 11.83	1.0000	1.0000
L49	34	MP306	11.33 - 11.83	1.0000	1.0000
L49	48	6"x1" Flat Reinforcement	10.00 - 11.83	1.0000	1.0000
L49	49	6"x1" Flat Reinforcement	10.00 - 11.83	1.0000	1.0000
L49	50	6"x1" Flat Reinforcement	10.00 - 11.83	1.0000	1.0000
L50	16	LDF7-50A(1-5/8)	9.75 - 10.00	1.0000	1.0000
L50	22	CU12PSM9P6XXX(1-1/2)	9.75 - 10.00	1.0000	1.0000
L50	26	Safety Line 3/8	9.75 - 10.00	1.0000	1.0000
L50	28	MP306	9.75 - 10.00	1.0000	1.0000
L50	29	MP306	9.75 - 10.00	1.0000	1.0000
L50	31	MP306	9.75 - 10.00	1.0000	1.0000
L50	32	MP306	9.75 - 10.00	1.0000	1.0000
L50	48	6"x1" Flat Reinforcement	9.75 - 10.00	1.0000	1.0000
L50	49	6"x1" Flat Reinforcement	9.75 - 10.00	1.0000	1.0000
L50	50	6"x1" Flat Reinforcement	9.75 - 10.00	1.0000	1.0000
L51	16	LDF7-50A(1-5/8)	4.75 - 9.75	1.0000	1.0000
L51	22	CU12PSM9P6XXX(1-1/2)	4.75 - 9.75	1.0000	1.0000
L51	26	Safety Line 3/8	4.75 - 9.75	1.0000	1.0000
L51	28	MP306	4.75 - 9.75	1.0000	1.0000
L51	29	MP306	4.75 - 9.75	1.0000	1.0000
L51	31	MP306	4.75 - 9.75	1.0000	1.0000
L51	32	MP306	4.75 - 9.75	1.0000	1.0000
L51	48	6"x1" Flat Reinforcement	8.00 - 9.75	1.0000	1.0000
L51	49	6"x1" Flat Reinforcement	8.00 - 9.75	1.0000	1.0000
L51	50	6"x1" Flat Reinforcement	8.00 - 9.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L52	16	LDF7-50A(1-5/8)	0.00 - 4.75	1.0000	1.0000
L52	22	CU12PSM9P6XXX(1-1/2)	0.00 - 4.75	1.0000	1.0000
L52	26	Safety Line 3/8	0.00 - 4.75	1.0000	1.0000
L52	28	MP306	0.50 - 4.75	1.0000	1.0000
L52	29	MP306	0.50 - 4.75	1.0000	1.0000
L52	31	MP306	0.50 - 4.75	1.0000	1.0000
L52	32	MP306	0.50 - 4.75	1.0000	1.0000

Effective Width of Flat Linear Attachments / Feed Lines

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L1	56	HSS6x6	155.00 - 155.50	Auto	1.0000
L1	57	HSS6x6	155.00 - 155.50	Auto	1.0000
L1	58	HSS6x6	155.00 - 155.50	Auto	1.0000
L2	56	HSS6x6	150.00 - 155.00	Auto	1.0000
L2	57	HSS6x6	150.00 - 155.00	Auto	1.0000
L2	58	HSS6x6	150.00 - 155.00	Auto	1.0000
L3	56	HSS6x6	148.50 - 150.00	Auto	1.0000
L3	57	HSS6x6	148.50 - 150.00	Auto	1.0000
L3	58	HSS6x6	148.50 - 150.00	Auto	1.0000
L4	56	HSS6x6	148.00 - 148.50	Auto	1.0000
L4	57	HSS6x6	148.00 - 148.50	Auto	1.0000
L4	58	HSS6x6	148.00 - 148.50	Auto	1.0000
L5	56	HSS6x6	143.00 - 148.00	Auto	0.3868
L5	57	HSS6x6	143.00 - 148.00	Auto	0.3868
L5	58	HSS6x6	143.00 - 148.00	Auto	0.3868
L6	56	HSS6x6	140.00 - 143.00	Auto	0.3678
L6	57	HSS6x6	140.00 - 143.00	Auto	0.3678
L6	58	HSS6x6	140.00 - 143.00	Auto	0.3678
L13	40	MP304	105.33 - 106.75	Auto	0.0363
L13	41	MP304	105.33 - 106.75	Auto	0.0363
L13	42	MP304	105.33 -	Auto	0.0363

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
			106.75		
L14	40	MP304	105.08 - 105.33	Auto	0.0889
L14	41	MP304	105.08 - 105.33	Auto	0.0889
L14	42	MP304	105.08 - 105.33	Auto	0.0889
L15	40	MP304	100.08 - 105.08	Auto	0.0709
L15	41	MP304	100.08 - 105.08	Auto	0.0709
L15	42	MP304	100.08 - 105.08	Auto	0.0709
L16	40	MP304	95.08 - 100.08	Auto	0.0411
L16	41	MP304	95.08 - 100.08	Auto	0.0411
L16	42	MP304	95.08 - 100.08	Auto	0.0411
L17	40	MP304	92.50 - 95.08	Auto	0.0162
L17	41	MP304	92.50 - 95.08	Auto	0.0162
L17	42	MP304	92.50 - 95.08	Auto	0.0162
L17	60	4"x1.25" Flat Reinforcement	92.50 - 94.00	Auto	0.0000
L17	61	4"x1.25" Flat Reinforcement	92.50 - 94.00	Auto	0.0000
L17	62	4"x1.25" Flat Reinforcement	92.50 - 94.00	Auto	0.0000
L18	40	MP304	92.25 - 92.50	Auto	0.0745
L18	41	MP304	92.25 - 92.50	Auto	0.0745
L18	42	MP304	92.25 - 92.50	Auto	0.0745
L18	60	4"x1.25" Flat Reinforcement	92.25 - 92.50	Auto	0.0000
L18	61	4"x1.25" Flat Reinforcement	92.25 - 92.50	Auto	0.0000
L18	62	4"x1.25" Flat Reinforcement	92.25 - 92.50	Auto	0.0000
L19	40	MP304	87.25 - 92.25	Auto	0.0542
L19	41	MP304	87.25 - 92.25	Auto	0.0542
L19	42	MP304	87.25 - 92.25	Auto	0.0542
L19	60	4"x1.25" Flat Reinforcement	87.25 - 92.25	Auto	0.0000
L19	61	4"x1.25" Flat Reinforcement	87.25 - 92.25	Auto	0.0000
L19	62	4"x1.25" Flat Reinforcement	87.25 - 92.25	Auto	0.0000
L20	40	MP304	82.25 - 87.25	Auto	0.0198
L20	41	MP304	82.25 - 87.25	Auto	0.0198
L20	42	MP304	82.25 - 87.25	Auto	0.0198
L20	52	6"x1" Flat Reinforcement	82.25 - 82.50	Auto	0.2078
L20	53	6"x1" Flat Reinforcement	82.25 - 82.50	Auto	0.2078
L20	54	6"x1" Flat Reinforcement	82.25 - 82.50	Auto	0.2078
L20	60	4"x1.25" Flat Reinforcement	82.25 - 87.25	Auto	0.0000
L20	61	4"x1.25" Flat Reinforcement	82.25 - 87.25	Auto	0.0000
L20	62	4"x1.25" Flat Reinforcement	82.25 - 87.25	Auto	0.0000
L21	40	MP304	76.75 - 82.25	Auto	0.0004
L21	41	MP304	76.75 - 82.25	Auto	0.0004
L21	42	MP304	76.75 - 82.25	Auto	0.0004
L21	52	6"x1" Flat Reinforcement	76.75 - 82.25	Auto	0.1942
L21	53	6"x1" Flat Reinforcement	76.75 - 82.25	Auto	0.1942
L21	54	6"x1" Flat Reinforcement	76.75 - 82.25	Auto	0.1942
L21	60	4"x1.25" Flat Reinforcement	79.00 - 82.25	Auto	0.0000
L21	61	4"x1.25" Flat Reinforcement	79.00 - 82.25	Auto	0.0000
L21	62	4"x1.25" Flat Reinforcement	79.00 - 82.25	Auto	0.0000
L22	52	6"x1" Flat Reinforcement	75.75 - 76.75	Auto	0.1274
L22	53	6"x1" Flat Reinforcement	75.75 - 76.75	Auto	0.1274
L22	54	6"x1" Flat Reinforcement	75.75 - 76.75	Auto	0.1274
L23	36	MP305	70.75 - 73.00	Auto	0.0000
L23	37	MP305	70.75 - 73.00	Auto	0.0000
L23	38	MP305	70.75 - 73.00	Auto	0.0000
L23	52	6"x1" Flat Reinforcement	70.75 - 75.75	Auto	0.1131
L23	53	6"x1" Flat Reinforcement	70.75 - 75.75	Auto	0.1131
L23	54	6"x1" Flat Reinforcement	70.75 - 75.75	Auto	0.1131

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L24	36	MP305	70.58 - 70.75	Auto	0.0000
L24	37	MP305	70.58 - 70.75	Auto	0.0000
L24	38	MP305	70.58 - 70.75	Auto	0.0000
L24	52	6"x1" Flat Reinforcement	70.58 - 70.75	Auto	0.1009
L24	53	6"x1" Flat Reinforcement	70.58 - 70.75	Auto	0.1009
L24	54	6"x1" Flat Reinforcement	70.58 - 70.75	Auto	0.1009
L25	36	MP305	70.33 - 70.58	Auto	0.0858
L25	37	MP305	70.33 - 70.58	Auto	0.0858
L25	38	MP305	70.33 - 70.58	Auto	0.0858
L25	52	6"x1" Flat Reinforcement	70.33 - 70.58	Auto	0.1879
L25	53	6"x1" Flat Reinforcement	70.33 - 70.58	Auto	0.1879
L25	54	6"x1" Flat Reinforcement	70.33 - 70.58	Auto	0.1879
L26	36	MP305	70.00 - 70.33	Auto	0.0842
L26	37	MP305	70.00 - 70.33	Auto	0.0842
L26	38	MP305	70.00 - 70.33	Auto	0.0842
L26	52	6"x1" Flat Reinforcement	70.00 - 70.33	Auto	0.1865
L26	53	6"x1" Flat Reinforcement	70.00 - 70.33	Auto	0.1865
L26	54	6"x1" Flat Reinforcement	70.00 - 70.33	Auto	0.1865
L27	36	MP305	69.75 - 70.00	Auto	0.0000
L27	37	MP305	69.75 - 70.00	Auto	0.0000
L27	38	MP305	69.75 - 70.00	Auto	0.0000
L27	52	6"x1" Flat Reinforcement	69.75 - 70.00	Auto	0.0971
L27	53	6"x1" Flat Reinforcement	69.75 - 70.00	Auto	0.0971
L27	54	6"x1" Flat Reinforcement	69.75 - 70.00	Auto	0.0971
L28	36	MP305	64.75 - 69.75	Auto	0.0000
L28	37	MP305	64.75 - 69.75	Auto	0.0000
L28	38	MP305	64.75 - 69.75	Auto	0.0000
L28	52	6"x1" Flat Reinforcement	67.50 - 69.75	Auto	0.0912
L28	53	6"x1" Flat Reinforcement	67.50 - 69.75	Auto	0.0912
L28	54	6"x1" Flat Reinforcement	67.50 - 69.75	Auto	0.0912
L29	36	MP305	59.75 - 64.75	Auto	0.0000
L29	37	MP305	59.75 - 64.75	Auto	0.0000
L29	38	MP305	59.75 - 64.75	Auto	0.0000
L30	36	MP305	54.75 - 59.75	Auto	0.0000
L30	37	MP305	54.75 - 59.75	Auto	0.0000
L30	38	MP305	54.75 - 59.75	Auto	0.0000
L31	36	MP305	49.75 - 54.75	Auto	0.0000
L31	37	MP305	49.75 - 54.75	Auto	0.0000
L31	38	MP305	49.75 - 54.75	Auto	0.0000
L32	36	MP305	43.00 - 49.75	Auto	0.0000
L32	37	MP305	43.00 - 49.75	Auto	0.0000
L32	38	MP305	43.00 - 49.75	Auto	0.0000
L32	44	6.5"x1.25" Flat Reinforcement	43.00 - 49.50	Auto	0.0629
L32	45	6.5"x1.25" Flat Reinforcement	43.00 - 49.50	Auto	0.0629
L32	46	6.5"x1.25" Flat Reinforcement	43.00 - 49.50	Auto	0.0629
L33	44	6.5"x1.25" Flat Reinforcement	42.00 - 43.00	Auto	0.0837
L33	45	6.5"x1.25" Flat Reinforcement	42.00 - 43.00	Auto	0.0837
L33	46	6.5"x1.25" Flat Reinforcement	42.00 - 43.00	Auto	0.0837
L34	44	6.5"x1.25" Flat Reinforcement	37.00 - 42.00	Auto	0.0706
L34	45	6.5"x1.25" Flat Reinforcement	37.00 - 42.00	Auto	0.0706
L34	46	6.5"x1.25" Flat Reinforcement	37.00 - 42.00	Auto	0.0706
L35	44	6.5"x1.25" Flat	32.00 - 37.00	Auto	0.0486

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
		Reinforcement			
L35	45	6.5"x1.25" Flat	32.00 - 37.00	Auto	0.0486
		Reinforcement			
L35	46	6.5"x1.25" Flat	32.00 - 37.00	Auto	0.0486
		Reinforcement			
L36	31	MP306	27.91 - 30.50	Auto	0.0806
L36	32	MP306	27.91 - 30.50	Auto	0.0806
L36	34	MP306	27.91 - 31.33	Auto	0.0823
L36	44	6.5"x1.25" Flat	27.91 - 32.00	Auto	0.0287
		Reinforcement			
L36	45	6.5"x1.25" Flat	27.91 - 32.00	Auto	0.0287
		Reinforcement			
L36	46	6.5"x1.25" Flat	27.91 - 32.00	Auto	0.0287
		Reinforcement			
L37	31	MP306	27.66 - 27.91	Auto	0.1354
L37	32	MP306	27.66 - 27.91	Auto	0.1354
L37	34	MP306	27.66 - 27.91	Auto	0.1354
L37	44	6.5"x1.25" Flat	27.66 - 27.91	Auto	0.0835
		Reinforcement			
L37	45	6.5"x1.25" Flat	27.66 - 27.91	Auto	0.0835
		Reinforcement			
L37	46	6.5"x1.25" Flat	27.66 - 27.91	Auto	0.0835
		Reinforcement			
L38	31	MP306	27.25 - 27.66	Auto	0.1340
L38	32	MP306	27.25 - 27.66	Auto	0.1340
L38	34	MP306	27.25 - 27.66	Auto	0.1340
L38	44	6.5"x1.25" Flat	27.25 - 27.66	Auto	0.0820
		Reinforcement			
L38	45	6.5"x1.25" Flat	27.25 - 27.66	Auto	0.0820
		Reinforcement			
L38	46	6.5"x1.25" Flat	27.25 - 27.66	Auto	0.0820
		Reinforcement			
L39	31	MP306	26.98 - 27.25	Auto	0.1326
L39	32	MP306	26.98 - 27.25	Auto	0.1326
L39	34	MP306	26.98 - 27.25	Auto	0.1326
L39	44	6.5"x1.25" Flat	26.98 - 27.25	Auto	0.0805
		Reinforcement			
L39	45	6.5"x1.25" Flat	26.98 - 27.25	Auto	0.0805
		Reinforcement			
L39	46	6.5"x1.25" Flat	26.98 - 27.25	Auto	0.0805
		Reinforcement			
L40	31	MP306	26.83 - 26.98	Auto	0.1285
L40	32	MP306	26.83 - 26.98	Auto	0.1285
L40	34	MP306	26.83 - 26.98	Auto	0.1285
L40	44	6.5"x1.25" Flat	26.83 - 26.98	Auto	0.0762
		Reinforcement			
L40	45	6.5"x1.25" Flat	26.83 - 26.98	Auto	0.0762
		Reinforcement			
L40	46	6.5"x1.25" Flat	26.83 - 26.98	Auto	0.0762
		Reinforcement			
L41	31	MP306	21.83 - 26.83	Auto	0.1179
L41	32	MP306	21.83 - 26.83	Auto	0.1179
L41	34	MP306	21.83 - 26.83	Auto	0.1179
L41	44	6.5"x1.25" Flat	24.50 - 26.83	Auto	0.0708
		Reinforcement			
L41	45	6.5"x1.25" Flat	24.50 - 26.83	Auto	0.0708
		Reinforcement			
L41	46	6.5"x1.25" Flat	24.50 - 26.83	Auto	0.0708
		Reinforcement			
L42	31	MP306	16.83 - 21.83	Auto	0.0972
L42	32	MP306	16.83 - 21.83	Auto	0.0972

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L42	34	MP306	16.83 - 21.83	Auto	0.0972
L42	48	6"x1" Flat Reinforcement	16.83 - 18.00	Auto	0.0000
L42	49	6"x1" Flat Reinforcement	16.83 - 18.00	Auto	0.0000
L42	50	6"x1" Flat Reinforcement	16.83 - 18.00	Auto	0.0000
L43	31	MP306	16.00 - 16.83	Auto	0.0851
L43	32	MP306	16.00 - 16.83	Auto	0.0851
L43	34	MP306	16.00 - 16.83	Auto	0.0851
L43	48	6"x1" Flat Reinforcement	16.00 - 16.83	Auto	0.0000
L43	49	6"x1" Flat Reinforcement	16.00 - 16.83	Auto	0.0000
L43	50	6"x1" Flat Reinforcement	16.00 - 16.83	Auto	0.0000
L44	31	MP306	15.75 - 16.00	Auto	0.1212
L44	32	MP306	15.75 - 16.00	Auto	0.1212
L44	34	MP306	15.75 - 16.00	Auto	0.1212
L44	48	6"x1" Flat Reinforcement	15.75 - 16.00	Auto	0.0000
L44	49	6"x1" Flat Reinforcement	15.75 - 16.00	Auto	0.0000
L44	50	6"x1" Flat Reinforcement	15.75 - 16.00	Auto	0.0000
L45	28	MP306	14.75 - 15.50	Auto	0.1181
L45	29	MP306	14.75 - 15.50	Auto	0.1181
L45	31	MP306	14.75 - 15.75	Auto	0.1186
L45	32	MP306	14.75 - 15.75	Auto	0.1186
L45	34	MP306	14.75 - 15.75	Auto	0.1186
L45	48	6"x1" Flat Reinforcement	14.75 - 15.75	Auto	0.0000
L45	49	6"x1" Flat Reinforcement	14.75 - 15.75	Auto	0.0000
L45	50	6"x1" Flat Reinforcement	14.75 - 15.75	Auto	0.0000
L46	28	MP306	14.50 - 14.75	Auto	0.0330
L46	29	MP306	14.50 - 14.75	Auto	0.0330
L46	31	MP306	14.50 - 14.75	Auto	0.0330
L46	32	MP306	14.50 - 14.75	Auto	0.0330
L46	34	MP306	14.50 - 14.75	Auto	0.0330
L46	48	6"x1" Flat Reinforcement	14.50 - 14.75	Auto	0.0000
L46	49	6"x1" Flat Reinforcement	14.50 - 14.75	Auto	0.0000
L46	50	6"x1" Flat Reinforcement	14.50 - 14.75	Auto	0.0000
L47	28	MP306	12.08 - 14.50	Auto	0.0275
L47	29	MP306	12.08 - 14.50	Auto	0.0275
L47	31	MP306	12.08 - 14.50	Auto	0.0275
L47	32	MP306	12.08 - 14.50	Auto	0.0275
L47	34	MP306	12.08 - 14.50	Auto	0.0275
L47	48	6"x1" Flat Reinforcement	12.08 - 14.50	Auto	0.0000
L47	49	6"x1" Flat Reinforcement	12.08 - 14.50	Auto	0.0000
L47	50	6"x1" Flat Reinforcement	12.08 - 14.50	Auto	0.0000
L48	28	MP306	11.83 - 12.08	Auto	0.0858
L48	29	MP306	11.83 - 12.08	Auto	0.0858
L48	31	MP306	11.83 - 12.08	Auto	0.0858
L48	32	MP306	11.83 - 12.08	Auto	0.0858
L48	34	MP306	11.83 - 12.08	Auto	0.0858
L48	48	6"x1" Flat Reinforcement	11.83 - 12.08	Auto	0.0000
L48	49	6"x1" Flat Reinforcement	11.83 - 12.08	Auto	0.0000
L48	50	6"x1" Flat Reinforcement	11.83 - 12.08	Auto	0.0000
L49	28	MP306	10.00 - 11.83	Auto	0.0815
L49	29	MP306	10.00 - 11.83	Auto	0.0815
L49	31	MP306	10.00 - 11.83	Auto	0.0815
L49	32	MP306	10.00 - 11.83	Auto	0.0815
L49	34	MP306	11.33 - 11.83	Auto	0.0843
L49	48	6"x1" Flat Reinforcement	10.00 - 11.83	Auto	0.0000
L49	49	6"x1" Flat Reinforcement	10.00 - 11.83	Auto	0.0000
L49	50	6"x1" Flat Reinforcement	10.00 - 11.83	Auto	0.0000
L50	28	MP306	9.75 - 10.00	Auto	0.0772
L50	29	MP306	9.75 - 10.00	Auto	0.0772
L50	31	MP306	9.75 - 10.00	Auto	0.0772
L50	32	MP306	9.75 - 10.00	Auto	0.0772
L50	48	6"x1" Flat Reinforcement	9.75 - 10.00	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L50	49	6"x1" Flat Reinforcement	9.75 - 10.00	Auto	0.0000
L50	50	6"x1" Flat Reinforcement	9.75 - 10.00	Auto	0.0000
L51	28	MP306	4.75 - 9.75	Auto	0.0632
L51	29	MP306	4.75 - 9.75	Auto	0.0632
L51	31	MP306	4.75 - 9.75	Auto	0.0632
L51	32	MP306	4.75 - 9.75	Auto	0.0632
L51	48	6"x1" Flat Reinforcement	8.00 - 9.75	Auto	0.0000
L51	49	6"x1" Flat Reinforcement	8.00 - 9.75	Auto	0.0000
L51	50	6"x1" Flat Reinforcement	8.00 - 9.75	Auto	0.0000
L52	28	MP306	0.50 - 4.75	Auto	0.0408
L52	29	MP306	0.50 - 4.75	Auto	0.0408
L52	31	MP306	0.50 - 4.75	Auto	0.0408
L52	32	MP306	0.50 - 4.75	Auto	0.0408

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
800 10121 w/ Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	157.000	No Ice 1/2" Ice 1" Ice	3.600 4.000 4.420	2.950 3.340 3.740	0.072 0.115 0.166
800 10121 w/ Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	157.000	No Ice 1/2" Ice 1" Ice	3.600 4.000 4.420	2.950 3.340 3.740	0.072 0.115 0.166
800 10121 w/ Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	157.000	No Ice 1/2" Ice 1" Ice	3.600 4.000 4.420	2.950 3.340 3.740	0.072 0.115 0.166
HPA-85R-BUU-H8 w/ Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	157.000	No Ice 1/2" Ice 1" Ice	12.040 12.990 13.970	8.130 9.040 9.970	0.100 0.188 0.289
HPA-85R-BUU-H8 w/ Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	157.000	No Ice 1/2" Ice 1" Ice	12.040 12.990 13.970	8.130 9.040 9.970	0.100 0.188 0.289
HPA-85R-BUU-H8 w/ Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	157.000	No Ice 1/2" Ice 1" Ice	12.040 12.990 13.970	8.130 9.040 9.970	0.100 0.188 0.289
TPA-65R-LCUUUU-H8-K w/ Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	157.000	No Ice 1/2" Ice 1" Ice	11.850 12.770 13.710	8.990 9.880 10.790	0.127 0.223 0.332
TPA-65R-LCUUUU-H8-K w/ Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	157.000	No Ice 1/2" Ice 1" Ice	11.850 12.770 13.710	8.990 9.880 10.790	0.127 0.223 0.332
TPA-65R-LCUUUU-H8-K w/ Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	157.000	No Ice 1/2" Ice 1" Ice	11.850 12.770 13.710	8.990 9.880 10.790	0.127 0.223 0.332
80010966 w/ Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	157.000	No Ice 1/2" Ice 1" Ice	14.610 15.470 16.350	6.840 7.630 8.420	0.159 0.267 0.389
80010966 w/ Mount Pipe	B	From Leg	4.000	0.000	157.000	No Ice	14.610	6.840	0.159

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000			1/2" Ice	15.470	7.630	0.267
			1.000			1" Ice	16.350	8.420	0.389
80010966 w/ Mount Pipe	C	From Leg	4.000	0.000	157.000	No Ice	14.610	6.840	0.159
			0.000			1/2" Ice	15.470	7.630	0.267
			1.000			1" Ice	16.350	8.420	0.389
(2) LGP21401	A	From Leg	4.000	0.000	157.000	No Ice	1.104	0.207	0.014
			0.000			1/2" Ice	1.239	0.274	0.021
			1.000			1" Ice	1.381	0.348	0.030
(4) LGP21401	B	From Leg	4.000	0.000	157.000	No Ice	1.104	0.207	0.014
			0.000			1/2" Ice	1.239	0.274	0.021
			1.000			1" Ice	1.381	0.348	0.030
RRUS 32	A	From Leg	4.000	0.000	157.000	No Ice	2.857	1.777	0.055
			0.000			1/2" Ice	3.083	1.968	0.077
			1.000			1" Ice	3.316	2.166	0.103
RRUS 32	B	From Leg	4.000	0.000	157.000	No Ice	2.857	1.777	0.055
			0.000			1/2" Ice	3.083	1.968	0.077
			1.000			1" Ice	3.316	2.166	0.103
RRUS 32	C	From Leg	4.000	0.000	157.000	No Ice	2.857	1.777	0.055
			0.000			1/2" Ice	3.083	1.968	0.077
			1.000			1" Ice	3.316	2.166	0.103
(2) DC6-48-60-18-8F	A	From Leg	2.000	0.000	157.000	No Ice	1.212	1.212	0.033
			0.000			1/2" Ice	1.892	1.892	0.055
			1.000			1" Ice	2.105	2.105	0.080
(2) DC6-48-60-18-8F	C	From Leg	2.000	0.000	157.000	No Ice	1.212	1.212	0.033
			0.000			1/2" Ice	1.892	1.892	0.055
			1.000			1" Ice	2.105	2.105	0.080
RRUS-11	A	From Leg	4.000	0.000	157.000	No Ice	2.784	1.187	0.048
			0.000			1/2" Ice	2.992	1.334	0.068
			1.000			1" Ice	3.207	1.490	0.092
RRUS-11	B	From Leg	4.000	0.000	157.000	No Ice	2.784	1.187	0.048
			0.000			1/2" Ice	2.992	1.334	0.068
			1.000			1" Ice	3.207	1.490	0.092
RRUS-11	C	From Leg	4.000	0.000	157.000	No Ice	2.784	1.187	0.048
			0.000			1/2" Ice	2.992	1.334	0.068
			1.000			1" Ice	3.207	1.490	0.092
(3) RRUS 4449 B5/B12	A	From Leg	4.000	0.000	157.000	No Ice	1.968	1.408	0.071
			0.000			1/2" Ice	2.144	1.564	0.090
			1.000			1" Ice	2.328	1.727	0.111
(3) RRUS 4478 B14	B	From Leg	4.000	0.000	157.000	No Ice	1.843	1.059	0.060
			0.000			1/2" Ice	2.012	1.197	0.076
			1.000			1" Ice	2.190	1.342	0.094
(2) RRUS 8843 B2/B66A	B	From Leg	4.000	0.000	157.000	No Ice	1.639	1.353	0.072
			0.000			1/2" Ice	1.799	1.500	0.090
			1.000			1" Ice	1.966	1.655	0.110
RRUS 8843 B2/B66A	C	From Leg	4.000	0.000	157.000	No Ice	1.639	1.353	0.072
			0.000			1/2" Ice	1.799	1.500	0.090
			1.000			1" Ice	1.966	1.655	0.110
5' x 2" Pipe Mount	A	From Leg	4.000	0.000	157.000	No Ice	1.188	1.188	0.018
			0.000			1/2" Ice	1.496	1.496	0.027
			0.000			1" Ice	1.807	1.807	0.040
5' x 2" Pipe Mount	B	From Leg	4.000	0.000	157.000	No Ice	1.188	1.188	0.018
			0.000			1/2" Ice	1.496	1.496	0.027
			0.000			1" Ice	1.807	1.807	0.040
5' x 2" Pipe Mount	C	From Leg	4.000	0.000	157.000	No Ice	1.188	1.188	0.018
			0.000			1/2" Ice	1.496	1.496	0.027
			0.000			1" Ice	1.807	1.807	0.040
5' x 2" Pipe Mount	A	From Leg	2.000	0.000	157.000	No Ice	1.188	1.188	0.018

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000			1/2" Ice	1.496	1.496	0.027
			0.000			1" Ice	1.807	1.807	0.040
5' x 2" Pipe Mount	B	From Leg	2.000	0.000	157.000	No Ice	1.188	1.188	0.018
			0.000			1/2" Ice	1.496	1.496	0.027
			0.000			1" Ice	1.807	1.807	0.040
Sector Mount [SM 503-3]	C	None		0.000	157.000	No Ice	30.430	30.430	1.690
						1/2" Ice	43.020	43.020	2.296
						1" Ice	55.430	55.430	3.097
Pipe Mount [PM 601-3]	C	None		0.000	157.000	No Ice	3.170	3.170	0.195
						1/2" Ice	3.790	3.790	0.232
						1" Ice	4.420	4.420	0.279
(2) Side Arm Mount [SO 102-3]	C	None		0.000	157.000	No Ice	3.600	3.600	0.075
						1/2" Ice	4.180	4.180	0.105
						1" Ice	4.750	4.750	0.135
*									
*									
AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Leg	4.000	0.000	148.000	No Ice	5.190	2.710	0.128
			0.000			1/2" Ice	5.590	3.040	0.174
			0.000			1" Ice	6.020	3.380	0.227
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Leg	4.000	0.000	148.000	No Ice	5.190	2.710	0.128
			0.000			1/2" Ice	5.590	3.040	0.174
			0.000			1" Ice	6.020	3.380	0.227
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Leg	4.000	0.000	148.000	No Ice	5.190	2.710	0.128
			0.000			1/2" Ice	5.590	3.040	0.174
			0.000			1" Ice	6.020	3.380	0.227
APXVAALL24_43-U-NA20 _TMO w/ Mount Pipe	A	From Leg	4.000	0.000	148.000	No Ice	14.690	6.870	0.183
			0.000			1/2" Ice	15.460	7.550	0.311
			0.000			1" Ice	16.230	8.250	0.453
APXVAALL24_43-U-NA20 _TMO w/ Mount Pipe	B	From Leg	4.000	0.000	148.000	No Ice	14.690	6.870	0.183
			0.000			1/2" Ice	15.460	7.550	0.311
			0.000			1" Ice	16.230	8.250	0.453
APXVAALL24_43-U-NA20 _TMO w/ Mount Pipe	C	From Leg	4.000	0.000	148.000	No Ice	14.690	6.870	0.183
			0.000			1/2" Ice	15.460	7.550	0.311
			0.000			1" Ice	16.230	8.250	0.453
APX16DWV-16DWV-S-E-A 20 w/ Mount Pipe	A	From Leg	4.000	0.000	148.000	No Ice	6.290	2.760	0.061
			0.000			1/2" Ice	6.860	3.270	0.105
			0.000			1" Ice	7.450	3.790	0.157
APX16DWV-16DWV-S-E-A 20 w/ Mount Pipe	B	From Leg	4.000	0.000	148.000	No Ice	6.290	2.760	0.061
			0.000			1/2" Ice	6.860	3.270	0.105
			0.000			1" Ice	7.450	3.790	0.157
APX16DWV-16DWV-S-E-A 20 w/ Mount Pipe	C	From Leg	4.000	0.000	148.000	No Ice	6.290	2.760	0.061
			0.000			1/2" Ice	6.860	3.270	0.105
			0.000			1" Ice	7.450	3.790	0.157
RADIO 4480 B71_TMO	A	From Leg	4.000	0.000	148.000	No Ice	2.852	1.383	0.093
			0.000			1/2" Ice	3.064	1.543	0.114
			0.000			1" Ice	3.284	1.710	0.139
RADIO 4480 B71_TMO	B	From Leg	4.000	0.000	148.000	No Ice	2.852	1.383	0.093
			0.000			1/2" Ice	3.064	1.543	0.114
			0.000			1" Ice	3.284	1.710	0.139
RADIO 4480 B71_TMO	C	From Leg	4.000	0.000	148.000	No Ice	2.852	1.383	0.093
			0.000			1/2" Ice	3.064	1.543	0.114
			0.000			1" Ice	3.284	1.710	0.139
RADIO 4460 B2/B25 B66_TMO	A	From Leg	4.000	0.000	148.000	No Ice	2.139	1.686	0.109
			0.000			1/2" Ice	2.321	1.850	0.131
			0.000			1" Ice	2.511	2.022	0.156
RADIO 4460 B2/B25 B66_TMO	B	From Leg	4.000	0.000	148.000	No Ice	2.139	1.686	0.109
			0.000			1/2" Ice	2.321	1.850	0.131

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000			1" Ice	2.511	2.022	0.156
RADIO 4460 B2/B25 B66_TMO	C	From Leg	4.000 0.000 0.000	0.000	148.000	No Ice 1/2" Ice 1" Ice	2.139 2.321 2.511	1.686 1.850 2.022	0.109 0.131 0.156
Platform Mount [LP 1201-1_HR-1]	C	None		0.000	148.000	No Ice 1/2" Ice 1" Ice	26.390 31.400 36.200	26.390 31.400 36.200	2.356 3.061 3.864
(2) L3x3x1/4x6'	A	From Leg	2.000 0.000 0.000	0.000	145.000	No Ice 1/2" Ice 1" Ice	1.800 2.220 2.648	0.008 0.030 0.058	0.070 0.080 0.095
(2) L3x3x1/4x6'	B	From Leg	2.000 0.000 0.000	0.000	145.000	No Ice 1/2" Ice 1" Ice	1.800 2.220 2.648	0.008 0.030 0.058	0.070 0.080 0.095
(2) L3x3x1/4x6'	C	From Leg	2.000 0.000 0.000	0.000	145.000	No Ice 1/2" Ice 1" Ice	1.800 2.220 2.648	0.008 0.030 0.058	0.070 0.080 0.095
Side Arm Mount [SO 102-3]	C	None		0.000	145.000	No Ice 1/2" Ice 1" Ice	3.600 4.180 4.750	3.600 4.180 4.750	0.075 0.105 0.135
Miscellaneous [NA 507-1]	C	None		0.000	145.000	No Ice 1/2" Ice 1" Ice	4.560 6.390 8.180	4.560 6.390 8.180	0.245 0.311 0.402
*									
(2) NNHH-65B-R4 w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	138.000	No Ice 1/2" Ice 1" Ice	7.550 8.040 8.530	4.230 4.670 5.120	0.110 0.197 0.296
(2) NNHH-65B-R4 w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	138.000	No Ice 1/2" Ice 1" Ice	7.550 8.040 8.530	4.230 4.670 5.120	0.110 0.197 0.296
(2) NNHH-65B-R4 w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	138.000	No Ice 1/2" Ice 1" Ice	7.550 8.040 8.530	4.230 4.670 5.120	0.110 0.197 0.296
KS24019-L112A w/Mount Pipe	C	From Leg	4.000 0.000 4.000	0.000	138.000	No Ice 1/2" Ice 1" Ice	1.407 1.909 2.301	1.566 2.123 2.556	0.027 0.044 0.065
RFV01U-D1A	A	From Leg	4.000 0.000 0.000	0.000	138.000	No Ice 1/2" Ice 1" Ice	1.875 2.045 2.223	1.250 1.393 1.543	0.084 0.103 0.124
RFV01U-D1A	B	From Leg	4.000 0.000 0.000	0.000	138.000	No Ice 1/2" Ice 1" Ice	1.875 2.045 2.223	1.250 1.393 1.543	0.084 0.103 0.124
RFV01U-D1A	C	From Leg	4.000 0.000 0.000	0.000	138.000	No Ice 1/2" Ice 1" Ice	1.875 2.045 2.223	1.250 1.393 1.543	0.084 0.103 0.124
RVZDC-6627-PF-48	A	From Leg	4.000 0.000 0.000	0.000	138.000	No Ice 1/2" Ice 1" Ice	3.792 4.044 4.303	2.514 2.727 2.947	0.032 0.063 0.099
RFV01U-D2A	A	From Leg	4.000 0.000 0.000	0.000	138.000	No Ice 1/2" Ice 1" Ice	1.875 2.045 2.223	1.013 1.145 1.284	0.070 0.087 0.106
RFV01U-D2A	B	From Leg	4.000 0.000 0.000	0.000	138.000	No Ice 1/2" Ice 1" Ice	1.875 2.045 2.223	1.013 1.145 1.284	0.070 0.087 0.106
RFV01U-D2A	C	From Leg	4.000 0.000 0.000	0.000	138.000	No Ice 1/2" Ice 1" Ice	1.875 2.045 2.223	1.013 1.145 1.284	0.070 0.087 0.106
CBRS w/ Mount Pipe	A	From Leg	4.000	0.000	138.000	No Ice	1.450	0.990	0.032

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000			1/2" Ice	1.670	1.180	0.048
			0.000			1" Ice	1.900	1.390	0.068
CBRS w/ Mount Pipe	B	From Leg	4.000	0.000	138.000	No Ice	1.450	0.990	0.032
			0.000			1/2" Ice	1.670	1.180	0.048
			0.000			1" Ice	1.900	1.390	0.068
CBRS w/ Mount Pipe	C	From Leg	4.000	0.000	138.000	No Ice	1.450	0.990	0.032
			0.000			1/2" Ice	1.670	1.180	0.048
			0.000			1" Ice	1.900	1.390	0.068
MT6407-77A w/ Mount Pipe	A	From Leg	4.000	0.000	138.000	No Ice	4.907	2.682	0.096
			0.000			1/2" Ice	5.256	3.145	0.136
			0.000			1" Ice	5.615	3.624	0.180
MT6407-77A w/ Mount Pipe	B	From Leg	4.000	0.000	138.000	No Ice	4.907	2.682	0.096
			0.000			1/2" Ice	5.256	3.145	0.136
			0.000			1" Ice	5.615	3.624	0.180
MT6407-77A w/ Mount Pipe	C	From Leg	4.000	0.000	138.000	No Ice	4.907	2.682	0.096
			0.000			1/2" Ice	5.256	3.145	0.136
			0.000			1" Ice	5.615	3.624	0.180
Platform Mount [LP 303-1_KCKR-HR-1]	C	None		0.000	138.000	No Ice	28.310	28.310	1.770
						1/2" Ice	35.690	35.690	2.297
						1" Ice	43.110	43.110	2.943
Mount Reinforcement Specifications	C	None		0.000	138.000	No Ice	28.630	28.630	0.280
						1/2" Ice	37.310	37.310	0.670
						1" Ice	45.800	45.800	0.940
*									
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Leg	4.000	0.000	127.000	No Ice	3.140	2.590	0.112
			0.000			1/2" Ice	3.450	2.880	0.164
			2.000			1" Ice	3.770	3.190	0.225
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Leg	4.000	0.000	127.000	No Ice	3.140	2.590	0.112
			0.000			1/2" Ice	3.450	2.880	0.164
			2.000			1" Ice	3.770	3.190	0.225
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Leg	4.000	0.000	127.000	No Ice	3.140	2.590	0.112
			0.000			1/2" Ice	3.450	2.880	0.164
			2.000			1" Ice	3.770	3.190	0.225
KRY 112 144/1	A	From Leg	4.000	0.000	127.000	No Ice	0.350	0.175	0.011
			0.000			1/2" Ice	0.426	0.234	0.014
			2.000			1" Ice	0.509	0.301	0.019
KRY 112 144/1	B	From Leg	4.000	0.000	127.000	No Ice	0.350	0.175	0.011
			0.000			1/2" Ice	0.426	0.234	0.014
			2.000			1" Ice	0.509	0.301	0.019
KRY 112 144/1	C	From Leg	4.000	0.000	127.000	No Ice	0.350	0.175	0.011
			0.000			1/2" Ice	0.426	0.234	0.014
			2.000			1" Ice	0.509	0.301	0.019
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.000	0.000	127.000	No Ice	14.690	6.870	0.186
			0.000			1/2" Ice	15.460	7.550	0.315
			2.000			1" Ice	16.230	8.250	0.458
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.000	0.000	127.000	No Ice	14.690	6.870	0.186
			0.000			1/2" Ice	15.460	7.550	0.315
			2.000			1" Ice	16.230	8.250	0.458
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.000	0.000	127.000	No Ice	14.690	6.870	0.186
			0.000			1/2" Ice	15.460	7.550	0.315
			2.000			1" Ice	16.230	8.250	0.458
AIR -32 B2A/B66AA w/ Mount Pipe	A	From Leg	4.000	0.000	127.000	No Ice	3.760	3.150	0.194
			0.000			1/2" Ice	4.120	3.490	0.252
			2.000			1" Ice	4.480	3.840	0.320
AIR -32 B2A/B66AA w/ Mount Pipe	B	From Leg	4.000	0.000	127.000	No Ice	3.760	3.150	0.194
			0.000			1/2" Ice	4.120	3.490	0.252
			2.000			1" Ice	4.480	3.840	0.320

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
AIR -32 B2A/B66AA w/ Mount Pipe	C	From Leg	4.000 0.000 2.000	0.000	127.000	No Ice 1/2" Ice 1" Ice	3.760 4.120 4.480	3.150 3.490 3.840	0.194 0.252 0.320
RADIO 4449 B12/B71	A	From Leg	4.000 0.000 2.000	0.000	127.000	No Ice 1/2" Ice 1" Ice	1.650 1.810 1.978	1.163 1.301 1.447	0.074 0.090 0.109
RADIO 4449 B12/B71	B	From Leg	4.000 0.000 2.000	0.000	127.000	No Ice 1/2" Ice 1" Ice	1.650 1.810 1.978	1.163 1.301 1.447	0.074 0.090 0.109
RADIO 4449 B12/B71	C	From Leg	4.000 0.000 2.000	0.000	127.000	No Ice 1/2" Ice 1" Ice	1.650 1.810 1.978	1.163 1.301 1.447	0.074 0.090 0.109
Platform Mount [LP 1201-1]	C	None		0.000	127.000	No Ice 1/2" Ice 1" Ice	18.380 22.110 25.870	18.380 22.110 25.870	2.100 2.652 3.263
*									
*									
MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	119.000	No Ice 1/2" Ice 1" Ice	8.010 8.520 9.040	4.230 4.690 5.160	0.108 0.194 0.292
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	119.000	No Ice 1/2" Ice 1" Ice	8.010 8.520 9.040	4.230 4.690 5.160	0.108 0.194 0.292
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	119.000	No Ice 1/2" Ice 1" Ice	8.010 8.520 9.040	4.230 4.690 5.160	0.108 0.194 0.292
TA08025-B605	A	From Leg	4.000 0.000 0.000	0.000	119.000	No Ice 1/2" Ice 1" Ice	1.964 2.138 2.320	1.129 1.267 1.411	0.075 0.093 0.114
TA08025-B605	B	From Leg	4.000 0.000 0.000	0.000	119.000	No Ice 1/2" Ice 1" Ice	1.964 2.138 2.320	1.129 1.267 1.411	0.075 0.093 0.114
TA08025-B605	C	From Leg	4.000 0.000 0.000	0.000	119.000	No Ice 1/2" Ice 1" Ice	1.964 2.138 2.320	1.129 1.267 1.411	0.075 0.093 0.114
TA08025-B604	A	From Leg	4.000 0.000 0.000	0.000	119.000	No Ice 1/2" Ice 1" Ice	1.964 2.138 2.320	0.981 1.112 1.250	0.064 0.081 0.100
TA08025-B604	B	From Leg	4.000 0.000 0.000	0.000	119.000	No Ice 1/2" Ice 1" Ice	1.964 2.138 2.320	0.981 1.112 1.250	0.064 0.081 0.100
TA08025-B604	C	From Leg	4.000 0.000 0.000	0.000	119.000	No Ice 1/2" Ice 1" Ice	1.964 2.138 2.320	0.981 1.112 1.250	0.064 0.081 0.100
RDIDC-9181-PF-48	A	From Leg	4.000 0.000 0.000	0.000	119.000	No Ice 1/2" Ice 1" Ice	1.867 2.037 2.215	1.067 1.204 1.348	0.022 0.038 0.057
(2) 8' x 2" Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	119.000	No Ice 1/2" Ice 1" Ice	1.900 2.728 3.401	1.900 2.728 3.401	0.029 0.044 0.063
(2) 8' x 2" Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	119.000	No Ice 1/2" Ice 1" Ice	1.900 2.728 3.401	1.900 2.728 3.401	0.029 0.044 0.063
(2) 8' x 2" Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	119.000	No Ice 1/2" Ice 1" Ice	1.900 2.728 3.401	1.900 2.728 3.401	0.029 0.044 0.063
Commscope	C	None		0.000	119.000	No Ice	15.300	15.300	1.192

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
MC-K6MHDX-9-96 (3)						1/2" Ice	20.480	20.480	1.705
						1" Ice	25.660	25.660	2.219
*									
KS24019-L112A	A	From Leg	3.000	0.000	48.000	No Ice	0.141	0.141	0.005
			0.000			1/2" Ice	0.198	0.198	0.007
			2.000			1" Ice	0.262	0.262	0.009
2' x 2" Pipe Mount	A	From Leg	3.000	0.000	48.000	No Ice	0.023	0.023	0.007
			0.000			1/2" Ice	0.049	0.049	0.008
			0.000			1" Ice	0.085	0.085	0.009
Side Arm Mount [SO 701-1]	A	From Leg	1.500	0.000	48.000	No Ice	0.850	1.670	0.065
			0.000			1/2" Ice	1.140	2.340	0.079
			0.000			1" Ice	1.430	3.010	0.093
*									

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp

Comb. No.	Description
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	160 - 155	Pole	Max Tension	8	0.000	0.000	-0.000
			Max. Compression	26	-10.717	-1.959	0.404
			Max. Mx	8	-4.618	-21.515	-0.099
			Max. My	2	-4.596	-0.926	20.450
			Max. Vy	8	7.654	-21.515	-0.099
			Max. Vx	14	7.670	-1.457	-20.045
			Max. Torque	12			0.817
L2	155 - 150	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-11.811	-1.991	0.426
			Max. Mx	8	-5.438	-61.063	-0.543
			Max. My	2	-5.404	-0.490	60.212
			Max. Vy	20	-8.178	58.478	0.895
			Max. Vx	14	8.264	-1.928	-59.882
			Max. Torque	12			0.817
L3	150 - 148.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-12.139	-1.997	0.432
			Max. Mx	8	-5.691	-73.409	-0.677
			Max. My	2	-5.654	-0.357	72.676
			Max. Vy	20	-8.330	70.849	1.034
			Max. Vx	14	8.436	-2.068	-72.397
			Max. Torque	12			0.817
L4	148.5 - 148	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-12.283	-1.999	0.435
			Max. Mx	8	-5.807	-77.580	-0.722
			Max. My	2	-5.768	-0.312	76.891
			Max. Vy	20	-8.404	75.030	1.081
			Max. Vx	14	8.517	-2.114	-76.633
			Max. Torque	12			0.817
L5	148 - 143	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-22.924	-2.030	0.471
			Max. Mx	8	-11.861	-142.403	-1.186
			Max. My	2	-11.795	0.148	142.410
			Max. Vy	20	-13.745	139.985	1.571
			Max. Vx	14	13.945	-2.608	-142.404
			Max. Torque	12			0.819
L6	143 - 138	Pole	Max Tension	1	0.000	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	26	-24.024	-2.059	0.510
			Max. Mx	8	-12.683	-212.021	-1.653
			Max. My	14	-12.561	-3.105	-213.835
			Max. Vy	20	-14.170	209.754	2.066
			Max. Vx	14	14.636	-3.105	-213.835
			Max. Torque	12			0.819
L7	138 - 133	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-32.665	-1.789	0.907
			Max. Mx	8	-16.904	-307.224	-2.084
			Max. My	14	-16.762	-3.535	-311.830
			Max. Vy	20	-19.225	305.393	2.669
			Max. Vx	14	19.746	-3.535	-311.830
			Max. Torque	12			0.818
L8	133 - 128	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-33.414	-1.817	0.955
			Max. Mx	8	-17.531	-403.893	-2.576
			Max. My	14	-17.392	-4.059	-411.258
			Max. Vy	20	-19.521	402.218	3.193
			Max. Vx	14	20.042	-4.059	-411.258
			Max. Torque	12			0.759
L9	128 - 123	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-41.631	-1.732	1.074
			Max. Mx	8	-22.440	-517.404	-3.055
			Max. My	14	-22.296	-4.559	-527.599
			Max. Vy	20	-22.815	515.960	3.751
			Max. Vx	14	23.349	-4.559	-527.599
			Max. Torque	12			0.758
L10	123 - 118	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-47.086	-1.619	1.526
			Max. Mx	8	-25.502	-633.863	-3.416
			Max. My	14	-25.354	-5.051	-646.795
			Max. Vy	20	-25.117	632.669	4.430
			Max. Vx	14	25.680	-5.051	-646.795
			Max. Torque	22			-0.903
L11	118 - 111	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-47.715	-1.558	1.630
			Max. Mx	8	-26.035	-715.520	-3.722
			Max. My	14	-25.893	-5.379	-730.383
			Max. Vy	20	-25.252	714.475	4.806
			Max. Vx	14	25.814	-5.379	-730.383
			Max. Torque	22			-0.903
L12	111 - 109.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-49.274	-1.462	1.790
			Max. Mx	8	-27.241	-842.400	-4.190
			Max. My	14	-27.102	-5.883	-860.235
			Max. Vy	20	-25.595	841.586	5.383
			Max. Vx	14	26.157	-5.883	-860.235
			Max. Torque	22			-0.902
L13	109.75 - 105.333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-50.271	-1.374	1.931
			Max. Mx	8	-28.088	-955.576	-4.603
			Max. My	14	-27.956	-6.324	-976.036
			Max. Vy	20	-25.778	954.969	5.891
			Max. Vx	14	26.339	-6.324	-976.036
			Max. Torque	22			-0.902
L14	105.333 - 105.083	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-50.343	-1.369	1.942
			Max. Mx	8	-28.164	-962.008	-4.626
			Max. My	14	-28.033	-6.349	-982.614

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	20	-25.774	961.411	5.920
			Max. Vx	14	26.335	-6.349	-982.614
			Max. Torque	22			-0.901
L15	105.083 - 100.083	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-51.803	-1.264	2.099
			Max. Mx	8	-29.324	-1091.381	-5.090
			Max. My	14	-29.198	-6.844	-1114.956
			Max. Vy	20	-26.077	1091.022	6.492
			Max. Vx	14	26.637	-6.844	-1114.956
			Max. Torque	22			-0.901
L16	100.083 - 95.083	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-53.281	-1.155	2.260
			Max. Mx	8	-30.520	-1222.178	-5.552
			Max. My	14	-30.399	-7.336	-1248.718
			Max. Vy	20	-26.356	1222.057	7.063
			Max. Vx	14	26.917	-7.336	-1248.718
			Max. Torque	22			-0.900
L17	95.083 - 92.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-54.077	-1.097	2.344
			Max. Mx	20	-31.138	1290.287	7.358
			Max. My	14	-31.026	-7.588	-1318.355
			Max. Vy	20	-26.500	1290.287	7.358
			Max. Vx	14	27.060	-7.588	-1318.355
			Max. Torque	22			-0.899
L18	92.5 - 92.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-54.171	-1.092	2.357
			Max. Mx	20	-31.230	1296.911	7.387
			Max. My	14	-31.119	-7.613	-1325.114
			Max. Vy	20	-26.499	1296.911	7.387
			Max. Vx	14	27.058	-7.613	-1325.114
			Max. Torque	22			-0.898
L19	92.25 - 87.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-56.059	-0.977	2.516
			Max. Mx	20	-32.717	1430.260	7.957
			Max. My	14	-32.609	-8.100	-1461.184
			Max. Vy	20	-26.845	1430.260	7.957
			Max. Vx	14	27.405	-8.100	-1461.184
			Max. Torque	22			-0.898
L20	87.25 - 82.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-57.969	-0.860	2.679
			Max. Mx	20	-34.236	1565.258	8.527
			Max. My	14	-34.133	-8.586	-1598.903
			Max. Vy	20	-27.169	1565.258	8.527
			Max. Vx	14	27.729	-8.586	-1598.903
			Max. Torque	22			-0.897
L21	82.25 - 76.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-58.466	-0.834	2.714
			Max. Mx	20	-34.618	1599.259	8.670
			Max. My	14	-34.516	-8.706	-1633.583
			Max. Vy	20	-27.252	1599.259	8.670
			Max. Vx	14	27.812	-8.706	-1633.583
			Max. Torque	22			-0.897
L22	76.75 - 75.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-61.298	-0.724	2.860
			Max. Mx	20	-36.811	1743.471	9.270
			Max. My	14	-36.713	-9.215	-1780.655
			Max. Vy	20	-27.669	1743.471	9.270
			Max. Vx	14	28.230	-9.215	-1780.655
			Max. Torque	22			-0.896

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L23	75.75 - 70.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-62.787	-0.617	2.999
			Max. Mx	20	-38.041	1882.033	9.839
			Max. My	14	-37.951	-9.696	-1921.932
			Max. Vy	20	-27.799	1882.033	9.839
			Max. Vx	14	28.357	-9.696	-1921.932
			Max. Torque	22			-0.896
L24	70.75 - 70.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-62.839	-0.613	3.009
			Max. Mx	20	-38.101	1886.672	9.858
			Max. My	14	-38.012	-9.712	-1926.662
			Max. Vy	20	-27.781	1886.672	9.858
			Max. Vx	14	28.339	-9.712	-1926.662
			Max. Torque	22			-0.895
L25	70.583 - 70.333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-62.952	-0.608	3.016
			Max. Mx	20	-38.195	1893.619	9.887
			Max. My	14	-38.105	-9.736	-1933.744
			Max. Vy	20	-27.794	1893.619	9.887
			Max. Vx	14	28.351	-9.736	-1933.744
			Max. Torque	22			-0.894
L26	70.333 - 70	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-63.104	-0.601	3.024
			Max. Mx	20	-38.318	1902.878	9.924
			Max. My	14	-38.229	-9.768	-1943.183
			Max. Vy	20	-27.815	1902.878	9.924
			Max. Vx	14	28.373	-9.768	-1943.183
			Max. Torque	22			-0.894
L27	70 - 69.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-63.181	-0.595	3.030
			Max. Mx	20	-38.379	1909.833	9.952
			Max. My	14	-38.290	-9.791	-1950.273
			Max. Vy	20	-27.824	1909.833	9.952
			Max. Vx	14	28.381	-9.791	-1950.273
			Max. Torque	22			-0.894
L28	69.75 - 64.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-64.698	-0.476	3.180
			Max. Mx	20	-39.621	2049.222	10.515
			Max. My	14	-39.540	-10.264	-2092.353
			Max. Vy	20	-27.956	2049.222	10.515
			Max. Vx	14	28.509	-10.264	-2092.353
			Max. Torque	22			-0.894
L29	64.75 - 59.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-66.193	-0.347	3.344
			Max. Mx	20	-40.904	2189.121	11.072
			Max. My	14	-40.831	-10.729	-2234.918
			Max. Vy	20	-28.050	2189.121	11.072
			Max. Vx	14	28.599	-10.729	-2234.918
			Max. Torque	22			-0.893
L30	59.75 - 54.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-67.710	-0.217	3.475
			Max. Mx	20	-42.209	2329.446	11.624
			Max. My	14	-42.145	-11.187	-2377.885
			Max. Vy	20	-28.128	2329.446	11.624
			Max. Vx	14	28.672	-11.187	-2377.885
			Max. Torque	22			-0.892
L31	54.75 - 49.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-69.246	-0.086	3.609
			Max. Mx	20	-43.536	2470.114	12.170
			Max. My	14	-43.481	-11.638	-2521.167

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	20	-28.188	2470.114	12.170
			Max. Vx	14	28.727	-11.638	-2521.167
			Max. Torque	22			-0.891
L32	49.75 - 43	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-69.821	-0.039	3.656
			Max. Mx	20	-43.990	2519.412	12.359
			Max. My	14	-43.937	-11.794	-2571.374
			Max. Vy	20	-28.230	2519.412	12.359
			Max. Vx	14	28.767	-11.794	-2571.374
			Max. Torque	22			-0.890
L33	43 - 42	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-73.210	0.122	4.227
			Max. Mx	20	-46.694	2689.777	13.306
			Max. My	14	-46.648	-12.325	-2744.396
			Max. Vy	20	-28.536	2689.777	13.306
			Max. Vx	14	29.048	-12.325	-2744.396
			Max. Torque	22			-1.047
L34	42 - 37	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-74.931	0.256	4.362
			Max. Mx	20	-48.193	2832.439	13.840
			Max. My	14	-48.155	-12.762	-2889.506
			Max. Vy	20	-28.577	2832.439	13.840
			Max. Vx	14	29.083	-12.762	-2889.506
			Max. Torque	22			-1.046
L35	37 - 32	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-76.673	0.391	4.499
			Max. Mx	20	-49.716	2975.250	14.367
			Max. My	14	-49.685	-13.192	-3034.736
			Max. Vy	20	-28.597	2975.250	14.367
			Max. Vx	14	29.097	-13.192	-3034.736
			Max. Torque	22			-1.046
L36	32 - 27.913	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-78.175	0.490	4.611
			Max. Mx	20	-50.978	3092.022	14.794
			Max. My	14	-50.952	-13.537	-3153.463
			Max. Vy	20	-28.598	3033.636	14.581
			Max. Vx	14	29.097	-13.278	-3064.420
			Max. Torque	22			-1.045
L37	27.913 - 27.663	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-78.303	0.497	4.621
			Max. Mx	20	-51.102	3099.166	14.820
			Max. My	14	-51.077	-13.558	-3160.726
			Max. Vy	20	-28.575	3099.166	14.820
			Max. Vx	14	29.070	-13.558	-3160.726
			Max. Torque	22			-1.045
L38	27.663 - 27.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-78.513	0.509	4.631
			Max. Mx	20	-51.278	3110.970	14.863
			Max. My	14	-51.254	-13.592	-3172.727
			Max. Vy	20	-28.589	3110.970	14.863
			Max. Vx	14	29.084	-13.592	-3172.727
			Max. Torque	22			-1.045
L39	27.25 - 26.983	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-78.642	0.516	4.639
			Max. Mx	20	-51.388	3118.604	14.890
			Max. My	14	-51.363	-13.615	-3180.487
			Max. Vy	20	-28.593	3118.604	14.890
			Max. Vx	14	29.087	-13.615	-3180.487
			Max. Torque	22			-1.045
L40	26.983 -	Pole	Max Tension	1	0.000	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
	26.833						
			Max. Compression	26	-78.714	0.520	4.645
			Max. Mx	20	-51.449	3122.894	14.906
			Max. My	14	-51.425	-13.627	-3184.848
			Max. Vy	20	-28.595	3122.894	14.906
			Max. Vx	14	29.090	-13.627	-3184.848
			Max. Torque	22			-1.045
L41	26.833 - 21.833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-81.069	0.659	4.781
			Max. Mx	20	-53.458	3266.181	15.423
			Max. My	14	-53.438	-14.043	-3330.498
			Max. Vy	20	-28.730	3266.181	15.423
			Max. Vx	14	29.221	-14.043	-3330.498
			Max. Torque	22			-1.045
L42	21.833 - 16.833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-83.418	0.799	4.921
			Max. Mx	20	-55.500	3410.031	15.936
			Max. My	14	-55.485	-14.454	-3476.691
			Max. Vy	20	-28.839	3410.031	15.936
			Max. Vx	14	29.326	-14.454	-3476.691
			Max. Torque	22			-1.045
L43	16.833 - 16	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-83.822	0.822	4.945
			Max. Mx	20	-55.845	3434.049	16.021
			Max. My	14	-55.831	-14.521	-3501.097
			Max. Vy	20	-28.853	3434.049	16.021
			Max. Vx	14	29.339	-14.521	-3501.097
			Max. Torque	22			-1.044
L44	16 - 15.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-83.961	0.829	4.953
			Max. Mx	20	-55.973	3441.260	16.046
			Max. My	14	-55.960	-14.542	-3508.425
			Max. Vy	20	-28.845	3441.260	16.046
			Max. Vx	14	29.331	-14.542	-3508.425
			Max. Torque	22			-1.044
L45	15.75 - 14.747	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-84.531	0.843	4.975
			Max. Mx	20	-56.449	3470.211	16.149
			Max. My	14	-56.436	-14.623	-3537.842
			Max. Vy	20	-28.891	3470.211	16.149
			Max. Vx	14	29.376	-14.623	-3537.842
			Max. Torque	22			-1.044
L46	14.747 - 14.497	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-84.648	0.845	4.981
			Max. Mx	20	-56.552	3477.432	16.174
			Max. My	14	-56.539	-14.643	-3545.178
			Max. Vy	20	-28.880	3477.432	16.174
			Max. Vx	14	29.365	-14.643	-3545.178
			Max. Torque	22			-1.044
L47	14.497 - 12.083	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-85.768	0.867	5.031
			Max. Mx	20	-57.474	3547.158	16.419
			Max. My	14	-57.464	-14.838	-3616.022
			Max. Vy	20	-28.918	3547.158	16.419
			Max. Vx	14	29.401	-14.838	-3616.022
			Max. Torque	22			-1.044
L48	12.083 -	Pole	Max Tension	1	0.000	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
	11.833						
			Max. Compression	26	-85.902	0.869	5.038
			Max. Mx	20	-57.604	3554.381	16.444
			Max. My	14	-57.594	-14.858	-3623.359
			Max. Vy	20	-28.890	3554.381	16.444
			Max. Vx	14	29.372	-14.858	-3623.359
			Max. Torque	22			-1.044
L49	11.833 - 10	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-86.871	0.907	5.077
			Max. Mx	20	-58.408	3607.384	16.629
			Max. My	14	-58.399	-15.005	-3677.207
			Max. Vy	20	-28.971	3607.384	16.629
			Max. Vx	14	29.452	-15.005	-3677.207
			Max. Torque	22			-1.044
L50	10 - 9.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-87.003	0.913	5.084
			Max. Mx	20	-58.539	3614.620	16.654
			Max. My	14	-58.531	-15.025	-3684.557
			Max. Vy	20	-28.941	3614.620	16.654
			Max. Vx	14	29.421	-15.025	-3684.557
			Max. Torque	22			-1.044
L51	9.75 - 4.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-89.585	1.036	5.196
			Max. Mx	20	-60.789	3759.630	17.156
			Max. My	14	-60.784	-15.421	-3831.851
			Max. Vy	20	-29.072	3759.630	17.156
			Max. Vx	14	29.548	-15.421	-3831.851
			Max. Torque	22			-1.044
L52	4.75 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-91.987	1.151	5.302
			Max. Mx	20	-62.956	3897.888	17.629
			Max. My	14	-62.955	-15.793	-3972.257
			Max. Vy	20	-29.174	3897.888	17.629
			Max. Vx	14	29.646	-15.793	-3972.257
			Max. Torque	22			-1.044

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	27	91.987	0.018	7.665
	Max. H_x	21	47.227	29.145	0.088
	Max. H_z	2	62.969	0.088	29.563
	Max. M_x	2	3967.594	0.088	29.563
	Max. M_z	8	3893.209	-29.113	-0.088
	Max. Torsion	10	1.034	-25.671	-14.894
	Min. Vert	23	47.227	25.718	14.921
	Min. H_x	8	62.969	-29.113	-0.088
	Min. H_z	15	47.227	-0.088	-29.616
	Min. M_x	14	-3972.257	-0.088	-29.616
	Min. M_z	20	-3897.888	29.145	0.088
	Min. Torsion	22	-1.044	25.718	14.921

Tower Mast Reaction Summary

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead Only	52.474	0.000	-0.000	-1.641	-0.168	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	62.969	-0.088	-29.563	-3967.594	15.202	0.546
0.9 Dead+1.0 Wind 0 deg - No Ice	47.227	-0.088	-29.563	-3858.371	14.828	0.491
1.2 Dead+1.0 Wind 30 deg - No Ice	62.969	14.529	-25.291	-3381.857	-1938.296	0.032
0.9 Dead+1.0 Wind 30 deg - No Ice	47.227	14.529	-25.291	-3288.752	-1885.173	-0.004
1.2 Dead+1.0 Wind 60 deg - No Ice	62.969	25.892	-14.920	-1984.450	-3441.764	-0.477
0.9 Dead+1.0 Wind 60 deg - No Ice	47.227	25.892	-14.920	-1929.703	-3347.570	-0.486
1.2 Dead+1.0 Wind 90 deg - No Ice	62.969	29.113	0.088	13.373	-3893.209	-0.869
0.9 Dead+1.0 Wind 90 deg - No Ice	47.227	29.113	0.088	13.468	-3786.487	-0.848
1.2 Dead+1.0 Wind 120 deg - No Ice	62.969	25.671	14.894	1996.450	-3438.923	-1.034
0.9 Dead+1.0 Wind 120 deg - No Ice	47.227	25.671	14.894	1942.256	-3344.651	-0.988
1.2 Dead+1.0 Wind 150 deg - No Ice	62.969	14.655	25.334	3388.989	-1962.769	-0.921
0.9 Dead+1.0 Wind 150 deg - No Ice	47.227	14.655	25.334	3296.661	-1908.870	-0.863
1.2 Dead+1.0 Wind 180 deg - No Ice	62.969	0.088	29.616	3972.257	-15.793	-0.567
0.9 Dead+1.0 Wind 180 deg - No Ice	47.227	0.088	29.616	3863.928	-15.202	-0.511
1.2 Dead+1.0 Wind 210 deg - No Ice	62.969	-14.514	25.264	3373.018	1935.057	-0.041
0.9 Dead+1.0 Wind 210 deg - No Ice	47.227	-14.514	25.264	3281.207	1882.232	-0.005
1.2 Dead+1.0 Wind 240 deg - No Ice	62.969	-25.845	14.893	1975.720	3433.422	0.489
0.9 Dead+1.0 Wind 240 deg - No Ice	47.227	-25.845	14.893	1922.261	3339.674	0.497
1.2 Dead+1.0 Wind 270 deg - No Ice	62.969	-29.145	-0.088	-17.629	3897.888	0.890
0.9 Dead+1.0 Wind 270 deg - No Ice	47.227	-29.145	-0.088	-16.568	3791.225	0.867
1.2 Dead+1.0 Wind 300 deg - No Ice	62.969	-25.718	-14.921	-2005.173	3446.073	1.044
0.9 Dead+1.0 Wind 300 deg - No Ice	47.227	-25.718	-14.921	-1949.694	3351.793	0.997
1.2 Dead+1.0 Wind 330 deg - No Ice	62.969	-14.639	-25.306	-3388.698	1959.552	0.910
0.9 Dead+1.0 Wind 330 deg - No Ice	47.227	-14.639	-25.306	-3295.343	1905.945	0.852
1.2 Dead+1.0 Ice+1.0 Temp	91.987	0.000	-0.000	-5.302	1.151	0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	91.987	-0.018	-7.665	-1073.431	4.622	0.154
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	91.987	3.787	-6.581	-920.218	-524.106	0.007
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	91.987	6.621	-3.815	-536.142	-919.905	-0.133
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	91.987	7.592	0.018	-2.063	-1053.251	-0.242

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	91.987	6.629	3.840	530.071	-921.579	-0.286
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	91.987	3.815	6.595	911.859	-529.616	-0.249
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	91.987	0.018	7.677	1064.457	-2.266	-0.154
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	91.987	-3.783	6.575	908.165	525.862	-0.007
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	91.987	-6.611	3.810	524.107	920.493	0.134
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	91.987	-7.599	-0.018	-8.951	1056.799	0.244
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	91.987	-6.639	-3.846	-542.104	925.698	0.287
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	91.987	-3.812	-6.589	-921.837	531.374	0.249
Dead+Wind 0 deg - Service	52.474	-0.021	-7.214	-956.238	3.477	0.124
Dead+Wind 30 deg - Service	52.474	3.546	-6.172	-815.161	-466.666	-0.003
Dead+Wind 60 deg - Service	52.474	6.318	-3.641	-478.914	-828.591	-0.127
Dead+Wind 90 deg - Service	52.474	7.105	0.021	1.947	-937.144	-0.219
Dead+Wind 120 deg - Service	52.474	6.264	3.634	479.282	-827.924	-0.252
Dead+Wind 150 deg - Service	52.474	3.576	6.182	814.407	-472.559	-0.217
Dead+Wind 180 deg - Service	52.474	0.021	7.227	954.866	-3.951	-0.126
Dead+Wind 210 deg - Service	52.474	-3.542	6.165	810.521	465.554	0.003
Dead+Wind 240 deg - Service	52.474	-6.307	3.634	474.297	826.244	0.128
Dead+Wind 270 deg - Service	52.474	-7.112	-0.021	-5.481	937.946	0.220
Dead+Wind 300 deg - Service	52.474	-6.276	-3.641	-483.899	829.325	0.253
Dead+Wind 330 deg - Service	52.474	-3.572	-6.175	-816.838	471.449	0.216

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.000	-52.474	0.000	-0.000	52.474	0.000	0.000%
2	-0.088	-62.969	-29.563	0.088	62.969	29.563	0.000%
3	-0.088	-47.227	-29.563	0.088	47.227	29.563	0.000%
4	14.529	-62.969	-25.291	-14.529	62.969	25.291	0.000%
5	14.529	-47.227	-25.291	-14.529	47.227	25.291	0.000%
6	25.892	-62.969	-14.920	-25.892	62.969	14.920	0.000%
7	25.892	-47.227	-14.920	-25.892	47.227	14.920	0.000%
8	29.113	-62.969	0.088	-29.113	62.969	-0.088	0.000%
9	29.113	-47.227	0.088	-29.113	47.227	-0.088	0.000%
10	25.671	-62.969	14.894	-25.671	62.969	-14.894	0.000%
11	25.671	-47.227	14.894	-25.671	47.227	-14.894	0.000%
12	14.655	-62.969	25.334	-14.655	62.969	-25.334	0.000%
13	14.655	-47.227	25.334	-14.655	47.227	-25.334	0.000%
14	0.088	-62.969	29.616	-0.088	62.969	-29.616	0.000%
15	0.088	-47.227	29.616	-0.088	47.227	-29.616	0.000%
16	-14.514	-62.969	25.264	14.514	62.969	-25.264	0.000%
17	-14.514	-47.227	25.264	14.514	47.227	-25.264	0.000%
18	-25.845	-62.969	14.893	25.845	62.969	-14.893	0.000%
19	-25.845	-47.227	14.893	25.845	47.227	-14.893	0.000%
20	-29.145	-62.969	-0.088	29.145	62.969	0.088	0.000%
21	-29.145	-47.227	-0.088	29.145	47.227	0.088	0.000%
22	-25.718	-62.969	-14.921	25.718	62.969	14.921	0.000%
23	-25.718	-47.227	-14.921	25.718	47.227	14.921	0.000%
24	-14.639	-62.969	-25.306	14.639	62.969	25.306	0.000%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
25	-14.639	-47.227	-25.306	14.639	47.227	25.306	0.000%
26	0.000	-91.987	0.000	-0.000	91.987	0.000	0.000%
27	-0.018	-91.987	-7.665	0.018	91.987	7.665	0.000%
28	3.787	-91.987	-6.581	-3.787	91.987	6.581	0.000%
29	6.621	-91.987	-3.815	-6.621	91.987	3.815	0.000%
30	7.592	-91.987	0.018	-7.592	91.987	-0.018	0.000%
31	6.629	-91.987	3.840	-6.629	91.987	-3.840	0.000%
32	3.815	-91.987	6.595	-3.815	91.987	-6.595	0.000%
33	0.018	-91.987	7.677	-0.018	91.987	-7.677	0.000%
34	-3.783	-91.987	6.575	3.783	91.987	-6.575	0.000%
35	-6.611	-91.987	3.810	6.611	91.987	-3.810	0.000%
36	-7.599	-91.987	-0.018	7.599	91.987	0.018	0.000%
37	-6.639	-91.987	-3.846	6.639	91.987	3.846	0.000%
38	-3.812	-91.987	-6.589	3.812	91.987	6.589	0.000%
39	-0.021	-52.474	-7.214	0.021	52.474	7.214	0.000%
40	3.546	-52.474	-6.172	-3.546	52.474	6.172	0.000%
41	6.318	-52.474	-3.641	-6.318	52.474	3.641	0.000%
42	7.105	-52.474	0.021	-7.105	52.474	-0.021	0.000%
43	6.264	-52.474	3.634	-6.264	52.474	-3.634	0.000%
44	3.576	-52.474	6.182	-3.576	52.474	-6.182	0.000%
45	0.021	-52.474	7.227	-0.021	52.474	-7.227	0.000%
46	-3.542	-52.474	6.165	3.542	52.474	-6.165	0.000%
47	-6.307	-52.474	3.634	6.307	52.474	-3.634	0.000%
48	-7.112	-52.474	-0.021	7.112	52.474	0.021	0.000%
49	-6.276	-52.474	-3.641	6.276	52.474	3.641	0.000%
50	-3.572	-52.474	-6.175	3.572	52.474	6.175	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00001063
2	Yes	6	0.00000001	0.00065092
3	Yes	6	0.00000001	0.00018523
4	Yes	9	0.00000001	0.00011664
5	Yes	8	0.00000001	0.00017199
6	Yes	9	0.00000001	0.00011926
7	Yes	8	0.00000001	0.00017506
8	Yes	6	0.00000001	0.00062705
9	Yes	6	0.00000001	0.00017394
10	Yes	9	0.00000001	0.00011793
11	Yes	8	0.00000001	0.00017274
12	Yes	9	0.00000001	0.00011828
13	Yes	8	0.00000001	0.00017422
14	Yes	7	0.00000001	0.00019418
15	Yes	6	0.00000001	0.00052513
16	Yes	9	0.00000001	0.00011604
17	Yes	8	0.00000001	0.00017136
18	Yes	9	0.00000001	0.00011778
19	Yes	8	0.00000001	0.00017292
20	Yes	7	0.00000001	0.00022505
21	Yes	6	0.00000001	0.00062987
22	Yes	9	0.00000001	0.00012047
23	Yes	8	0.00000001	0.00017657
24	Yes	9	0.00000001	0.00011614
25	Yes	8	0.00000001	0.00017094

26	Yes	5	0.00000001	0.00037040
27	Yes	8	0.00000001	0.00065251
28	Yes	9	0.00000001	0.00021786
29	Yes	9	0.00000001	0.00022191
30	Yes	8	0.00000001	0.00064156
31	Yes	9	0.00000001	0.00021907
32	Yes	9	0.00000001	0.00021822
33	Yes	8	0.00000001	0.00064646
34	Yes	8	0.00000001	0.00099388
35	Yes	9	0.00000001	0.00021597
36	Yes	8	0.00000001	0.00064047
37	Yes	9	0.00000001	0.00022486
38	Yes	9	0.00000001	0.00021855
39	Yes	6	0.00000001	0.00012001
40	Yes	7	0.00000001	0.00012571
41	Yes	7	0.00000001	0.00013391
42	Yes	6	0.00000001	0.00012264
43	Yes	7	0.00000001	0.00013058
44	Yes	7	0.00000001	0.00013024
45	Yes	6	0.00000001	0.00012570
46	Yes	7	0.00000001	0.00012329
47	Yes	7	0.00000001	0.00012844
48	Yes	6	0.00000001	0.00013085
49	Yes	7	0.00000001	0.00013760
50	Yes	7	0.00000001	0.00012498

Maximum Tower Deflections - Service Wind

Section No.	*Elevation* ft	*Horz. Deflection* in	*Gov. Load Comb.*	*Tilt* °	*Twist* °
L1	160 - 155	42.541	49	2.481	0.005
L2	155 - 150	39.979	49	2.466	0.005
L3	150 - 148.5	37.459	49	2.368	0.003
L4	148.5 - 148	36.724	49	2.321	0.002
L5	148 - 143	36.482	49	2.319	0.002
L6	143 - 138	34.073	49	2.288	0.002
L7	138 - 133	31.703	49	2.243	0.002
L8	133 - 128	29.385	49	2.183	0.002
L9	128 - 123	27.138	49	2.110	0.002
L10	123 - 118	24.973	49	2.023	0.001
L11	118 - 111	22.907	49	1.924	0.001
L12	114.75 - 109.75	21.622	49	1.853	0.001
L13	109.75 - 105.333	19.710	49	1.788	0.001
L14	105.333 - 105.083	18.100	49	1.695	0.001
L15	105.083 - 100.083	18.011	49	1.691	0.001
L16	100.083 - 95.083	16.280	49	1.615	0.001
L17	95.083 - 92.5	14.630	49	1.536	0.001
L18	92.5 - 92.25	13.810	49	1.494	0.001
L19	92.25 - 87.25	13.732	49	1.491	0.001
L20	87.25 - 82.25	12.203	49	1.429	0.001
L21	82.25 - 76.75	10.741	49	1.365	0.001
L22	81 - 75.75	10.385	49	1.349	0.001
L23	75.75 - 70.75	8.927	49	1.292	0.001
L24	70.75 - 70.583	7.633	49	1.181	0.001
L25	70.583 - 70.333	7.591	49	1.177	0.001
L26	70.333 - 70	7.530	49	1.174	0.001
L27	70 - 69.75	7.448	49	1.170	0.001
L28	69.75 - 64.75	7.387	49	1.165	0.001
L29	64.75 - 59.75	6.226	49	1.054	0.000

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L30	59.75 - 54.75	5.181	49	0.943	0.000
L31	54.75 - 49.75	4.252	49	0.832	0.000
L32	49.75 - 43	3.438	49	0.722	0.000
L33	48 - 42	3.180	49	0.684	0.000
L34	42 - 37	2.361	49	0.612	0.000
L35	37 - 32	1.771	49	0.514	0.000
L36	32 - 27.913	1.284	49	0.417	0.000
L37	27.913 - 27.663	0.960	49	0.339	0.000
L38	27.663 - 27.25	0.943	49	0.336	0.000
L39	27.25 - 26.983	0.914	49	0.330	0.000
L40	26.983 - 26.833	0.896	49	0.327	0.000
L41	26.833 - 21.833	0.885	49	0.325	0.000
L42	21.833 - 16.833	0.578	49	0.262	0.000
L43	16.833 - 16	0.336	49	0.200	0.000
L44	16 - 15.75	0.303	49	0.189	0.000
L45	15.75 - 14.747	0.293	49	0.187	0.000
L46	14.747 - 14.497	0.255	49	0.177	0.000
L47	14.497 - 12.083	0.245	49	0.172	0.000
L48	12.083 - 11.833	0.168	49	0.133	0.000
L49	11.833 - 10	0.161	49	0.130	0.000
L50	10 - 9.75	0.115	49	0.110	0.000
L51	9.75 - 4.75	0.110	49	0.107	0.000
L52	4.75 - 0	0.026	49	0.052	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
157.000	800 10121 w/ Mount Pipe	49	41.002	2.476	0.005	5229
148.000	AIR6449 B41_T-MOBILE w/ Mount Pipe	49	36.482	2.319	0.002	3864
145.000	(2) L3x3x1/4x6'	49	35.033	2.305	0.002	7522
138.000	(2) NNHH-65B-R4 w/ Mount Pipe	49	31.703	2.243	0.002	5494
127.000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	49	26.698	2.093	0.002	3448
119.000	MX08FRO665-21 w/ Mount Pipe	49	23.311	1.946	0.001	2813
48.000	KS24019-L112A	49	3.180	0.684	0.000	3626

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	160 - 155	176.524	22	10.271	0.024
L2	155 - 150	165.895	22	10.220	0.021
L3	150 - 148.5	155.456	22	9.846	0.013
L4	148.5 - 148	152.416	22	9.664	0.010
L5	148 - 143	151.413	22	9.657	0.010
L6	143 - 138	141.441	22	9.533	0.009
L7	138 - 133	131.627	22	9.350	0.008
L8	133 - 128	122.031	22	9.105	0.007

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L9	128 - 123	112.720	22	8.798	0.006
L10	123 - 118	103.751	22	8.435	0.006
L11	118 - 111	95.182	22	8.021	0.005
L12	114.75 - 109.75	89.851	22	7.727	0.005
L13	109.75 - 105.333	81.922	22	7.455	0.004
L14	105.333 - 105.083	75.235	22	7.066	0.004
L15	105.083 - 100.083	74.867	22	7.051	0.004
L16	100.083 - 95.083	67.679	22	6.733	0.004
L17	95.083 - 92.5	60.826	22	6.404	0.003
L18	92.5 - 92.25	57.421	22	6.227	0.003
L19	92.25 - 87.25	57.097	22	6.215	0.003
L20	87.25 - 82.25	50.744	22	5.957	0.003
L21	82.25 - 76.75	44.665	22	5.689	0.003
L22	81 - 75.75	43.188	22	5.622	0.003
L23	75.75 - 70.75	37.127	22	5.384	0.003
L24	70.75 - 70.583	31.744	22	4.922	0.002
L25	70.583 - 70.333	31.572	22	4.906	0.002
L26	70.333 - 70	31.316	22	4.893	0.002
L27	70 - 69.75	30.976	22	4.876	0.002
L28	69.75 - 64.75	30.722	22	4.852	0.002
L29	64.75 - 59.75	25.893	22	4.389	0.002
L30	59.75 - 54.75	21.546	22	3.926	0.002
L31	54.75 - 49.75	17.681	22	3.465	0.001
L32	49.75 - 43	14.296	22	3.006	0.001
L33	48 - 42	13.225	22	2.847	0.001
L34	42 - 37	9.816	22	2.548	0.001
L35	37 - 32	7.364	22	2.139	0.001
L36	32 - 27.913	5.336	22	1.735	0.001
L37	27.913 - 27.663	3.992	22	1.409	0.001
L38	27.663 - 27.25	3.918	22	1.396	0.001
L39	27.25 - 26.983	3.798	22	1.374	0.001
L40	26.983 - 26.833	3.722	22	1.360	0.001
L41	26.833 - 21.833	3.679	22	1.352	0.001
L42	21.833 - 16.833	2.402	22	1.089	0.000
L43	16.833 - 16	1.398	22	0.829	0.000
L44	16 - 15.75	1.257	22	0.787	0.000
L45	15.75 - 14.747	1.216	22	0.776	0.000
L46	14.747 - 14.497	1.058	22	0.734	0.000
L47	14.497 - 12.083	1.020	22	0.717	0.000
L48	12.083 - 11.833	0.699	22	0.552	0.000
L49	11.833 - 10	0.670	22	0.540	0.000
L50	10 - 9.75	0.479	22	0.458	0.000
L51	9.75 - 4.75	0.455	22	0.446	0.000
L52	4.75 - 0	0.108	22	0.217	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
157.000	800 10121 w/ Mount Pipe	22	170.138	10.256	0.022	1505
148.000	AIR6449 B41_T-MOBILE w/ Mount Pipe	22	151.413	9.657	0.010	1035
145.000	(2) L3x3x1/4x6'	22	145.416	9.602	0.010	1983
138.000	(2) NNHH-65B-R4 w/ Mount Pipe	22	131.627	9.350	0.008	1419
127.000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	22	110.897	8.729	0.007	873

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
119.000	MX08FRO665-21 w/ Mount Pipe	22	96.860	8.113	0.006	705
48.000	KS24019-L112A	22	13.225	2.847	0.001	875

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	160 - 159	TP10.75x10.75x0.349	5.000	0.000	0.0	11.404	-0.060	359.220	0.000
	159 - 158					11.404	-0.120	359.220	0.000
	158 - 157					11.404	-0.180	359.220	0.001
	157 - 156					11.404	-4.555	359.220	0.013
	156 - 155					11.404	-4.577	359.220	0.013
L2	155 - 154	TP10.75x10.75x0.349	5.000	0.000	0.0	11.404	-4.734	359.220	0.013
	154 - 153					11.404	-4.894	359.220	0.014
	153 - 152					11.404	-5.056	359.220	0.014
	152 - 151					11.404	-5.220	359.220	0.015
	151 - 150					11.404	-5.387	359.220	0.015
L3	150 - 148.5 (3)	TP10.75x10.75x0.349	1.500	0.000	0.0	11.404	-5.637	359.220	0.016
L4	148.5 - 148 (4)	TP23x23x0.349	0.500	0.000	0.0	24.835	-5.752	782.300	0.007
L5	148 - 147	TP23.81x23x0.25	5.000	0.000	0.0	18.181	-10.226	981.756	0.010
	147 - 146					18.309	-10.414	988.698	0.011
	146 - 145					18.438	-10.602	995.639	0.011
	145 - 144					18.566	-11.586	1002.580	0.012
	144 - 143					18.695	-11.777	1009.520	0.012
L6	143 - 142	TP24.62x23.81x0.25	5.000	0.000	0.0	18.823	-11.931	1016.460	0.012
	142 - 141					18.952	-12.085	1023.410	0.012
	141 - 140					19.080	-12.241	1030.350	0.012
	140 - 139					19.209	-12.398	1037.290	0.012
	139 - 138					19.338	-12.556	1044.230	0.012
L7	138 - 137	TP25.43x24.62x0.25	5.000	0.000	0.0	19.466	-16.282	1051.170	0.015
	137 - 136					19.595	-16.400	1058.110	0.015
	136 - 135					19.723	-16.519	1065.050	0.016
	135 - 134					19.852	-16.639	1072.000	0.016
	134 - 133					19.980	-16.761	1078.940	0.016
L8	133 - 132	TP26.24x25.43x0.25	5.000	0.000	0.0	20.109	-16.884	1085.880	0.016
	132 - 131					20.237	-17.009	1092.820	0.016
	131 - 130					20.366	-17.135	1099.760	0.016
	130 - 129					20.494	-17.262	1106.700	0.016
	129 - 128					20.623	-17.391	1113.650	0.016
L9	128 - 127	TP27.05x26.24x0.25	5.000	0.000	0.0	20.752	-17.529	1120.590	0.016
	127 - 126					20.880	-21.856	1127.530	0.019
	126 - 125					21.009	-22.001	1134.470	0.019
	125 - 124					21.137	-22.147	1141.410	0.019
	124 - 123					21.266	-22.295	1148.350	0.019
L10	123 - 122	TP27.86x27.05x0.25	5.000	0.000	0.0	21.394	-22.432	1155.290	0.019
	122 - 121					21.523	-22.585	1162.240	0.019
	121 - 120					21.651	-22.740	1169.180	0.019
	120 - 119					21.780	-22.896	1176.120	0.019
	119 - 118					21.909	-25.341	1183.060	0.021
L11	118 - 116.917	TP28.994x27.86x0.25	7.000	0.000	0.0	22.048	-25.517	1190.580	0.021
	116.917 -					22.187	-25.698	1198.100	0.021

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	115.833								
	115.833 - 114.75					22.326	-25.879	1205.620	0.021
	114.75 - 111					22.808	-12.099	1231.650	0.010
L12	114.75 - 111	TP28.696x27.887x0.313	5.000	0.000	0.0	27.952	-14.739	1509.430	0.010
	111 - 109.75					28.153	-27.090	1520.280	0.018
L13	109.75 - 108.646	TP29.412x28.696x0.313	4.417	0.000	0.0	28.331	-27.303	1529.860	0.018
	108.646 - 107.542					28.508	-27.515	1539.440	0.018
	107.542 - 106.437					28.686	-27.729	1549.020	0.018
	106.437 - 105.333					28.863	-27.944	1558.600	0.018
L14	105.333 - 105.083 (14)	TP29.452x29.412x0.469	0.250	0.000	0.0	43.122	-28.021	2328.600	0.012
L15	105.083 - 104.083	TP30.262x29.452x0.463	5.000	0.000	0.0	42.794	-28.243	2310.890	0.012
	104.083 - 103.083					43.032	-28.477	2323.730	0.012
	103.083 - 102.083					43.270	-28.712	2336.570	0.012
	102.083 - 101.083					43.508	-28.948	2349.410	0.012
	101.083 - 100.083					43.745	-29.186	2362.250	0.012
L16	100.083 - 99.083	TP31.072x30.262x0.463	5.000	0.000	0.0	43.983	-29.424	2375.100	0.012
	99.083 - 98.083					44.221	-29.663	2387.940	0.012
	98.083 - 97.083					44.459	-29.903	2400.780	0.012
	97.083 - 96.083					44.697	-30.145	2413.620	0.012
	96.083 - 95.083					44.934	-30.388	2426.460	0.013
L17	95.083 - 93.7915	TP31.491x31.072x0.456	2.583	0.000	0.0	44.639	-30.698	2410.520	0.013
	93.7915 - 92.5					44.942	-31.014	2426.880	0.013
L18	92.5 - 92.25 (18)	TP31.531x31.491x0.638	0.250	0.000	0.0	62.511	-31.107	3375.600	0.009
L19	92.25 - 91.25	TP32.341x31.531x0.625	5.000	0.000	0.0	61.632	-31.395	3328.100	0.009
	91.25 - 90.25					61.953	-31.692	3345.450	0.009
	90.25 - 89.25					62.274	-31.992	3362.810	0.010
	89.25 - 88.25					62.596	-32.293	3380.160	0.010
	88.25 - 87.25					62.917	-32.595	3397.510	0.010
L20	87.25 - 86.25	TP33.151x32.341x0.613	5.000	0.000	0.0	61.998	-32.897	3347.880	0.010
	86.25 - 85.25					62.313	-33.200	3364.880	0.010
	85.25 - 84.25					62.628	-33.504	3381.890	0.010
	84.25 - 83.25					62.943	-33.810	3398.900	0.010
	83.25 - 82.25					63.257	-34.118	3415.900	0.010
L21	82.25 - 81	TP34.042x33.151x0.613	5.500	0.000	0.0	63.651	-34.500	3437.160	0.010
	81 - 76.75					64.990	-22.722	3509.430	0.006
L22	81 - 76.75	TP33.579x32.729x0.375	5.250	0.000	0.0	39.328	-13.717	2300.700	0.006
	76.75 - 75.75					39.521	-36.697	2311.980	0.016
L23	75.75 - 74.75	TP34.389x33.579x0.375	5.000	0.000	0.0	39.714	-36.943	2323.260	0.016
	74.75 - 73.75					39.907	-37.190	2334.540	0.016
	73.75 - 72.75					40.099	-37.438	2345.820	0.016
	72.75 - 71.75					40.292	-37.687	2357.100	0.016
	71.75 - 70.75					40.485	-37.937	2368.380	0.016

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L24	70.75 - 70.583 (24)	TP34.416x34.389x0.375	0.167	0.000	0.0	40.517	-37.998	2370.260	0.016
L25	70.583 - 70.333 (25)	TP34.456x34.416x0.675	0.250	0.000	0.0	72.375	-38.092	4233.940	0.009
L26	70.333 - 70 (26)	TP34.51x34.456x0.675	0.333	0.000	0.0	72.491	-38.215	4240.700	0.009
L27	70 - 69.75 (27)	TP34.551x34.51x0.375	0.250	0.000	0.0	40.678	-38.276	2379.650	0.016
L28	69.75 - 68.75	TP35.361x34.551x0.375	5.000	0.000	0.0	40.871	-38.511	2390.930	0.016
	68.75 - 67.75					41.063	-38.763	2402.210	0.016
	67.75 - 66.75					41.256	-39.017	2413.490	0.016
	66.75 - 65.75					41.449	-39.272	2424.770	0.016
	65.75 - 64.75					41.642	-39.528	2436.050	0.016
L29	64.75 - 63.75	TP36.171x35.361x0.375	5.000	0.000	0.0	41.835	-39.784	2447.330	0.016
	63.75 - 62.75					42.028	-40.042	2458.610	0.016
	62.75 - 61.75					42.220	-40.300	2469.890	0.016
	61.75 - 60.75					42.413	-40.560	2481.170	0.016
	60.75 - 59.75					42.606	-40.820	2492.440	0.016
L30	59.75 - 58.75	TP36.981x36.171x0.375	5.000	0.000	0.0	42.799	-41.081	2503.720	0.016
	58.75 - 57.75					42.992	-41.343	2515.000	0.016
	57.75 - 56.75					43.184	-41.606	2526.280	0.016
	56.75 - 55.75					43.377	-41.870	2537.560	0.017
	55.75 - 54.75					43.570	-42.135	2548.840	0.017
L31	54.75 - 53.75	TP37.791x36.981x0.375	5.000	0.000	0.0	43.763	-42.401	2560.120	0.017
	53.75 - 52.75					43.956	-42.667	2571.400	0.017
	52.75 - 51.75					44.148	-42.935	2582.680	0.017
	51.75 - 50.75					44.341	-43.203	2593.960	0.017
	50.75 - 49.75					44.534	-43.472	2605.230	0.017
L32	49.75 - 48	TP38.884x37.791x0.375	6.750	0.000	0.0	44.871	-43.928	2624.970	0.017
	48 - 43					45.835	-21.677	2681.370	0.008
L33	48 - 43	TP38.296x37.324x0.438	6.000	0.000	0.0	52.346	-24.629	3062.260	0.008
	43 - 42					52.571	-46.639	3075.420	0.015
L34	42 - 41	TP39.106x38.296x0.438	5.000	0.000	0.0	52.796	-46.938	3088.580	0.015
	41 - 40					53.021	-47.239	3101.740	0.015
	40 - 39					53.246	-47.541	3114.900	0.015
	39 - 38					53.471	-47.843	3128.060	0.015
	38 - 37					53.696	-48.147	3141.220	0.015
L35	37 - 36	TP39.916x39.106x0.438	5.000	0.000	0.0	53.921	-48.451	3154.380	0.015
	36 - 35					54.146	-48.757	3167.540	0.015
	35 - 34					54.371	-49.063	3180.700	0.015
	34 - 33					54.596	-49.370	3193.860	0.015
	33 - 32					54.821	-49.678	3207.020	0.015
L36	32 - 30.9782	TP40.578x39.916x0.438	4.087	0.000	0.0	55.051	-49.994	3220.470	0.016
	30.9782 - 29.9565					55.281	-50.310	3233.910	0.016
	29.9565 - 28.9348					55.510	-50.628	3247.360	0.016
	28.9348 - 27.913					55.740	-50.947	3260.810	0.016
L37	27.913 - 27.663 (37)	TP40.619x40.578x0.675	0.250	0.000	0.0	85.577	-51.072	5006.270	0.010
L38	27.663 - 27.25 (38)	TP40.686x40.619x0.675	0.413	0.000	0.0	85.721	-51.249	5014.650	0.010
L39	27.25 - 26.983 (39)	TP40.729x40.686x0.675	0.267	0.000	0.0	85.813	-51.358	5020.080	0.010
L40	26.983 - 26.833 (40)	TP40.753x40.729x0.663	0.150	0.000	0.0	84.301	-51.420	4931.640	0.010
L41	26.833 - 25.833	TP41.563x40.753x0.663	5.000	0.000	0.0	84.642	-51.811	4951.570	0.010
	25.833 - 24.833					84.983	-52.215	4971.490	0.011

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	24.833 - 23.833					85.323	-52.620	4991.420	0.011
	23.833 - 22.833					85.664	-53.026	5011.350	0.011
	22.833 - 21.833					86.005	-53.434	5031.280	0.011
L42	21.833 - 20.833	TP42.373x41.563x0.663	5.000	0.000	0.0	86.345	-53.841	5051.200	0.011
	20.833 - 19.833					86.686	-54.249	5071.130	0.011
	19.833 - 18.833					87.027	-54.658	5091.060	0.011
	18.833 - 17.833					87.367	-55.069	5110.990	0.011
	17.833 - 16.833					87.708	-55.482	5130.920	0.011
L43	16.833 - 16 (43)	TP42.508x42.373x0.663	0.833	0.000	0.0	87.992	-55.828	5147.520	0.011
L44	16 - 15.75 (44)	TP42.549x42.508x0.813	0.250	0.000	0.0	107.632	-55.957	6296.470	0.009
L45	15.75 - 14.747 (45)	TP42.711x42.549x0.813	1.003	0.000	0.0	108.051	-56.433	6320.980	0.009
L46	14.747 - 14.497 (46)	TP42.752x42.711x0.488	0.250	0.000	0.0	65.396	-56.536	3825.680	0.015
L47	14.497 - 13.29	TP43.143x42.752x0.488	2.414	0.000	0.0	65.699	-56.990	3843.370	0.015
	13.29 - 12.083					66.001	-57.461	3861.070	0.015
L48	12.083 - 11.833 (48)	TP43.183x43.143x0.738	0.250	0.000	0.0	99.358	-57.592	5812.420	0.010
L49	11.833 - 10 (49)	TP43.48x43.183x0.738	1.833	0.000	0.0	100.053	-58.398	5853.090	0.010
L50	10 - 9.75 (50)	TP43.521x43.48x0.738	0.250	0.000	0.0	100.148	-58.529	5858.630	0.010
L51	9.75 - 8.75	TP44.331x43.521x0.725	5.000	0.000	0.0	98.852	-58.970	5782.820	0.010
	8.75 - 7.75					99.225	-59.421	5804.630	0.010
	7.75 - 6.75					99.597	-59.874	5826.440	0.010
	6.75 - 5.75					99.970	-60.328	5848.250	0.010
	5.75 - 4.75					100.343	-60.783	5870.050	0.010
L52	4.75 - 3.5625	TP45.1x44.331x0.713	4.750	0.000	0.0	99.076	-61.322	5795.950	0.011
	3.5625 - 2.375					99.511	-61.864	5821.400	0.011
	2.375 - 1.1875					99.946	-62.408	5846.850	0.011
	1.1875 - 0					100.381	-62.955	5872.300	0.011

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	160 - 159	TP10.75x10.75x0.349	0.016	99.144	0.000	0.000	99.144	0.000
	159 - 158		0.065	99.144	0.001	0.000	99.144	0.000
	158 - 157		0.146	99.144	0.001	0.000	99.144	0.000
	157 - 156		13.878	99.144	0.140	0.000	99.144	0.000
	156 - 155		21.503	99.144	0.217	0.000	99.144	0.000
L2	155 - 154	TP10.75x10.75x0.349	29.301	99.144	0.296	0.000	99.144	0.000
	154 - 153		37.214	99.144	0.375	0.000	99.144	0.000
	153 - 152		45.241	99.144	0.456	0.000	99.144	0.000
	152 - 151		53.379	99.144	0.538	0.000	99.144	0.000
	151 - 150		61.627	99.144	0.622	0.000	99.144	0.000
L3	150 - 148.5 (3)	TP10.75x10.75x0.349	74.198	99.144	0.748	0.000	99.144	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L4	148.5 - 148 (4)	TP23x23x0.349	78.449	458.290	0.171	0.000	458.290	0.000
L5	148 - 147	TP23.81x23x0.25	91.052	585.666	0.155	0.000	585.666	0.000
	147 - 146		103.816	594.022	0.175	0.000	594.022	0.000
	146 - 145		116.743	602.438	0.194	0.000	602.438	0.000
	145 - 144		130.458	610.912	0.214	0.000	610.912	0.000
	144 - 143		144.335	619.446	0.233	0.000	619.446	0.000
L6	143 - 142	TP24.62x23.81x0.25	158.363	628.039	0.252	0.000	628.039	0.000
	142 - 141		172.528	636.691	0.271	0.000	636.691	0.000
	141 - 140		186.830	645.403	0.289	0.000	645.403	0.000
	140 - 139		201.270	654.173	0.308	0.000	654.173	0.000
	139 - 138		215.848	663.003	0.326	0.000	663.003	0.000
L7	138 - 137	TP25.43x24.62x0.25	235.305	671.892	0.350	0.000	671.892	0.000
	137 - 136		254.814	680.840	0.374	0.000	680.840	0.000
	136 - 135		274.386	688.778	0.398	0.000	688.778	0.000
	135 - 134		294.019	696.739	0.422	0.000	696.739	0.000
	134 - 133		313.713	704.731	0.445	0.000	704.731	0.000
L8	133 - 132	TP26.24x25.43x0.25	333.467	712.753	0.468	0.000	712.753	0.000
	132 - 131		353.282	720.806	0.490	0.000	720.806	0.000
	131 - 130		373.155	728.888	0.512	0.000	728.888	0.000
	130 - 129		393.087	737.000	0.533	0.000	737.000	0.000
	129 - 128		413.076	745.141	0.554	0.000	745.141	0.000
L9	128 - 127	TP27.05x26.24x0.25	433.115	753.311	0.575	0.000	753.311	0.000
	127 - 126		459.622	761.509	0.604	0.000	761.509	0.000
	126 - 125		482.808	769.736	0.627	0.000	769.736	0.000
	125 - 124		506.044	777.991	0.650	0.000	777.991	0.000
	124 - 123		529.332	786.274	0.673	0.000	786.274	0.000
L10	123 - 122	TP27.86x27.05x0.25	552.691	794.584	0.696	0.000	794.584	0.000
	122 - 121		576.155	802.922	0.718	0.000	802.922	0.000
	121 - 120		599.667	811.287	0.739	0.000	811.287	0.000
	120 - 119		623.226	819.678	0.760	0.000	819.678	0.000
	119 - 118		648.974	828.096	0.784	0.000	828.096	0.000
L11	118 - 116.917	TP28.994x27.86x0.25	676.840	837.242	0.808	0.000	837.242	0.000
	116.917 - 115.833		704.753	846.425	0.833	0.000	846.425	0.000
	115.833 - 114.75		732.713	855.633	0.856	0.000	855.633	0.000
	114.75 - 111		381.302	887.742	0.430	0.000	887.742	0.000
L12	114.75 - 111	TP28.696x27.887x0.313	448.818	1107.350	0.405	0.000	1107.350	0.000
	111 - 109.75		862.800	1123.408	0.768	0.000	1123.408	0.000
L13	109.75 - 108.646	TP29.412x28.696x0.313	891.725	1137.692	0.784	0.000	1137.692	0.000
	108.646 - 107.542		920.708	1152.058	0.799	0.000	1152.058	0.000
	107.542 - 106.437		949.733	1166.525	0.814	0.000	1166.525	0.000
	106.437 - 105.333		978.808	1181.075	0.829	0.000	1181.075	0.000
L14	105.333 - 105.083 (14)	TP29.452x29.412x0.469	985.400	1748.142	0.564	0.000	1748.142	0.000
L15	105.083 - 104.083	TP30.262x29.452x0.463	1011.800	1745.450	0.580	0.000	1745.450	0.000
	104.083 - 103.083		1038.258	1765.050	0.588	0.000	1765.050	0.000
	103.083 - 102.083		1064.775	1784.767	0.597	0.000	1784.767	0.000
	102.083 - 101.083		1091.350	1804.583	0.605	0.000	1804.583	0.000
	101.083 - 100.083		1117.983	1824.517	0.613	0.000	1824.517	0.000
L16	100.083 -	TP31.072x30.262x0.463	1144.667	1844.558	0.621	0.000	1844.558	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
	99.083							
	99.083 - 98.083		1171.417	1864.717	0.628	0.000	1864.717	0.000
	98.083 - 97.083		1198.217	1884.975	0.636	0.000	1884.975	0.000
	97.083 - 96.083		1225.067	1905.342	0.643	0.000	1905.342	0.000
	96.083 - 95.083		1251.983	1925.825	0.650	0.000	1925.825	0.000
L17	95.083 - 93.7915	TP31.491x31.072x0.456	1286.817	1927.225	0.668	0.000	1927.225	0.000
	93.7915 - 92.5		1321.750	1953.667	0.677	0.000	1953.667	0.000
L18	92.5 - 92.25 (18)	TP31.531x31.491x0.638	1328.525	2689.342	0.494	0.000	2689.342	0.000
L19	92.25 - 91.25	TP32.341x31.531x0.625	1355.658	2667.833	0.508	0.000	2667.833	0.000
	91.25 - 90.25		1382.867	2696.000	0.513	0.000	2696.000	0.000
	90.25 - 89.25		1410.150	2724.317	0.518	0.000	2724.317	0.000
	89.25 - 88.25		1437.500	2752.783	0.522	0.000	2752.783	0.000
	88.25 - 87.25		1464.925	2781.392	0.527	0.000	2781.392	0.000
L20	87.25 - 86.25	TP33.151x32.341x0.613	1492.425	2757.192	0.541	0.000	2757.192	0.000
	86.25 - 85.25		1519.983	2785.542	0.546	0.000	2785.542	0.000
	85.25 - 84.25		1547.617	2814.033	0.550	0.000	2814.033	0.000
	84.25 - 83.25		1575.317	2842.667	0.554	0.000	2842.667	0.000
	83.25 - 82.25		1603.092	2871.450	0.558	0.000	2871.450	0.000
L21	82.25 - 81	TP34.042x33.151x0.613	1637.892	2907.625	0.563	0.000	2907.625	0.000
	81 - 76.75		1104.517	3032.342	0.364	0.000	3032.342	0.000
L22	81 - 76.75	TP33.579x32.729x0.375	652.697	1978.433	0.330	0.000	1978.433	0.000
	76.75 - 75.75		1785.500	1997.992	0.894	0.000	1997.992	0.000
L23	75.75 - 74.75	TP34.389x33.579x0.375	1813.808	2017.642	0.899	0.000	2017.642	0.000
	74.75 - 73.75		1842.142	2037.392	0.904	0.000	2037.392	0.000
	73.75 - 72.75		1870.500	2057.233	0.909	0.000	2057.233	0.000
	72.75 - 71.75		1898.883	2077.175	0.914	0.000	2077.175	0.000
	71.75 - 70.75		1927.292	2097.208	0.919	0.000	2097.208	0.000
L24	70.75 - 70.583 (24)	TP34.416x34.389x0.375	1932.033	2100.567	0.920	0.000	2100.567	0.000
L25	70.583 - 70.333 (25)	TP34.456x34.416x0.675	1939.142	3690.858	0.525	0.000	3690.858	0.000
L26	70.333 - 70 (26)	TP34.51x34.456x0.675	1948.617	3702.767	0.526	0.000	3702.767	0.000
L27	70 - 69.75 (27)	TP34.551x34.51x0.375	1955.733	2117.342	0.924	0.000	2117.342	0.000
L28	69.75 - 68.75	TP35.361x34.551x0.375	1984.208	2137.567	0.928	0.000	2137.567	0.000
	68.75 - 67.75		2012.708	2157.892	0.933	0.000	2157.892	0.000
	67.75 - 66.75		2041.225	2178.317	0.937	0.000	2178.317	0.000
	66.75 - 65.75		2069.767	2198.833	0.941	0.000	2198.833	0.000
	65.75 - 64.75		2098.325	2219.442	0.945	0.000	2219.442	0.000
L29	64.75 - 63.75	TP36.171x35.361x0.375	2126.908	2240.150	0.949	0.000	2240.150	0.000
	63.75 - 62.75		2155.508	2260.958	0.953	0.000	2260.958	0.000
	62.75 - 61.75		2184.125	2281.858	0.957	0.000	2281.858	0.000
	61.75 - 60.75		2212.758	2302.858	0.961	0.000	2302.858	0.000
	60.75 - 59.75		2241.408	2321.658	0.965	0.000	2321.658	0.000
L30	59.75 - 58.75	TP36.981x36.171x0.375	2270.075	2340.292	0.970	0.000	2340.292	0.000
	58.75 - 57.75		2298.758	2358.967	0.974	0.000	2358.967	0.000
	57.75 - 56.75		2327.450	2377.692	0.979	0.000	2377.692	0.000
	56.75 - 55.75		2356.167	2396.475	0.983	0.000	2396.475	0.000
	55.75 - 54.75		2384.892	2415.300	0.987	0.000	2415.300	0.000
L31	54.75 - 53.75	TP37.791x36.981x0.375	2413.625	2434.175	0.992	0.000	2434.175	0.000
	53.75 - 52.75		2442.375	2453.100	0.996	0.000	2453.100	0.000
	52.75 - 51.75		2471.133	2472.075	1.000	0.000	2472.075	0.000
	51.75 - 50.75		2499.900	2491.092	1.004	0.000	2491.092	0.000
	50.75 - 49.75		2528.683	2510.158	1.007	0.000	2510.158	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L32	49.75 - 48	TP38.884x37.791x0.375	2579.075	2543.642	1.014	0.000	2543.642	0.000
	48 - 43		1301.258	2640.083	0.493	0.000	2640.083	0.000
L33	48 - 43	TP38.296x37.324x0.438	1422.942	3003.508	0.474	0.000	3003.508	0.000
	43 - 42		2753.333	3029.533	0.909	0.000	3029.533	0.000
L34	42 - 41	TP39.106x38.296x0.438	2782.483	3055.658	0.911	0.000	3055.658	0.000
	41 - 40		2811.633	3081.908	0.912	0.000	3081.908	0.000
	40 - 39		2840.783	3108.258	0.914	0.000	3108.258	0.000
	39 - 38		2869.950	3134.725	0.916	0.000	3134.725	0.000
	38 - 37		2899.117	3161.308	0.917	0.000	3161.308	0.000
L35	37 - 36	TP39.916x39.106x0.438	2928.292	3188.000	0.919	0.000	3188.000	0.000
	36 - 35		2957.475	3214.808	0.920	0.000	3214.808	0.000
	35 - 34		2986.650	3241.725	0.921	0.000	3241.725	0.000
	34 - 33		3015.833	3268.750	0.923	0.000	3268.750	0.000
	33 - 32		3045.017	3295.892	0.924	0.000	3295.892	0.000
L36	32 - 30.9782	TP40.578x39.916x0.438	3074.842	3323.742	0.925	0.000	3323.742	0.000
	30.9782 - 29.9565		3104.658	3351.708	0.926	0.000	3351.708	0.000
	29.9565 - 28.9348		3134.475	3379.783	0.927	0.000	3379.783	0.000
	28.9348 - 27.913		3164.292	3407.983	0.928	0.000	3407.983	0.000
L37	27.913 - 27.663 (37)	TP40.619x40.578x0.675	3171.592	5175.833	0.613	0.000	5175.833	0.000
L38	27.663 - 27.25 (38)	TP40.686x40.619x0.675	3183.650	5193.333	0.613	0.000	5193.333	0.000
L39	27.25 - 26.983 (39)	TP40.729x40.686x0.675	3191.442	5204.658	0.613	0.000	5204.658	0.000
L40	26.983 - 26.833 (40)	TP40.753x40.729x0.663	3195.825	5119.317	0.624	0.000	5119.317	0.000
L41	26.833 - 25.833	TP41.563x40.753x0.663	3225.050	5161.108	0.625	0.000	5161.108	0.000
	25.833 - 24.833		3254.292	5203.075	0.625	0.000	5203.075	0.000
	24.833 - 23.833		3283.558	5245.208	0.626	0.000	5245.208	0.000
	23.833 - 22.833		3312.850	5287.508	0.627	0.000	5287.508	0.000
	22.833 - 21.833		3342.158	5329.983	0.627	0.000	5329.983	0.000
L42	21.833 - 20.833	TP42.373x41.563x0.663	3371.492	5372.625	0.628	0.000	5372.625	0.000
	20.833 - 19.833		3400.850	5415.442	0.628	0.000	5415.442	0.000
	19.833 - 18.833		3430.225	5458.425	0.628	0.000	5458.425	0.000
	18.833 - 17.833		3459.625	5501.575	0.629	0.000	5501.575	0.000
	17.833 - 16.833		3489.042	5544.900	0.629	0.000	5544.900	0.000
L43	16.833 - 16 (43)	TP42.508x42.373x0.663	3513.558	5581.117	0.630	0.000	5581.117	0.000
L44	16 - 15.75 (44)	TP42.549x42.508x0.813	3520.925	6784.708	0.519	0.000	6784.708	0.000
L45	15.75 - 14.747 (45)	TP42.711x42.549x0.813	3550.483	6838.141	0.519	0.000	6838.141	0.000
L46	14.747 - 14.497 (46)	TP42.752x42.711x0.488	3557.850	4207.208	0.846	0.000	4207.208	0.000
L47	14.497 - 13.29	TP43.143x42.752x0.488	3593.442	4246.450	0.846	0.000	4246.450	0.000
	13.29 - 12.083		3629.033	4285.875	0.847	0.000	4285.875	0.000
L48	12.083 - 11.833 (48)	TP43.183x43.143x0.738	3636.408	6382.700	0.570	0.000	6382.700	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L49	11.833 - 10 (49)	TP43.48x43.183x0.738	3690.517	6473.091	0.570	0.000	6473.091	0.000
L50	10 - 9.75 (50)	TP43.521x43.48x0.738	3697.900	6485.467	0.570	0.000	6485.467	0.000
L51	9.75 - 8.75	TP44.331x43.521x0.725	3727.458	6429.941	0.580	0.000	6429.941	0.000
	8.75 - 7.75		3757.042	6478.933	0.580	0.000	6478.933	0.000
	7.75 - 6.75		3786.642	6528.108	0.580	0.000	6528.108	0.000
	6.75 - 5.75		3816.267	6577.475	0.580	0.000	6577.475	0.000
	5.75 - 4.75		3845.908	6627.017	0.580	0.000	6627.017	0.000
L52	4.75 - 3.5625	TP45.1x44.331x0.713	3881.142	6576.450	0.590	0.000	6576.450	0.000
	3.5625 - 2.375		3916.400	6634.800	0.590	0.000	6634.800	0.000
	2.375 - 1.1875		3951.683	6693.400	0.590	0.000	6693.400	0.000
	1.1875 - 0		3986.992	6752.267	0.590	0.000	6752.267	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	160 - 159	TP10.75x10.75x0.349	0.032	107.766	0.000	0.000	98.546	0.000
	159 - 158		0.065	107.766	0.001	0.000	98.546	0.000
	158 - 157		0.098	107.766	0.001	0.000	98.546	0.000
	157 - 156		7.624	107.766	0.071	0.248	98.546	0.003
	156 - 155		7.744	107.766	0.072	0.615	98.546	0.006
L2	155 - 154	TP10.75x10.75x0.349	7.860	107.766	0.073	0.615	98.546	0.006
	154 - 153		7.974	107.766	0.074	0.615	98.546	0.006
	153 - 152		8.087	107.766	0.075	0.615	98.546	0.006
	152 - 151		8.198	107.766	0.076	0.615	98.546	0.006
	151 - 150		8.307	107.766	0.077	0.615	98.546	0.006
L3	150 - 148.5 (3)	TP10.75x10.75x0.349	8.469	107.766	0.079	0.615	98.546	0.006
L4	148.5 - 148 (4)	TP23x23x0.349	8.545	234.690	0.036	0.615	467.371	0.001
L5	148 - 147	TP23.81x23x0.25	12.685	294.527	0.043	0.615	590.973	0.001
	147 - 146		12.848	296.609	0.043	0.615	599.360	0.001
	146 - 145		13.011	298.692	0.044	0.615	607.806	0.001
	145 - 144		13.799	300.774	0.046	0.615	616.310	0.001
	144 - 143		13.962	302.857	0.046	0.616	624.874	0.001
L6	143 - 142	TP24.62x23.81x0.25	14.100	304.939	0.046	0.616	633.497	0.001
	142 - 141		14.237	307.022	0.046	0.616	642.179	0.001
	141 - 140		14.375	309.104	0.047	0.616	650.920	0.001
	140 - 139		14.513	311.187	0.047	0.616	659.720	0.001
	139 - 138		14.652	313.269	0.047	0.616	668.579	0.001
L7	138 - 137	TP25.43x24.62x0.25	19.485	315.352	0.062	0.742	677.497	0.001
	137 - 136		19.547	317.434	0.062	0.741	686.475	0.001
	136 - 135		19.610	319.516	0.061	0.741	695.512	0.001
	135 - 134		19.671	321.599	0.061	0.741	704.607	0.001
	134 - 133		19.733	323.681	0.061	0.741	713.762	0.001
L8	133 - 132	TP26.24x25.43x0.25	19.793	325.764	0.061	0.741	722.976	0.001
	132 - 131		19.852	327.846	0.061	0.741	732.248	0.001
	131 - 130		19.912	329.929	0.060	0.741	741.581	0.001
	130 - 129		19.970	332.011	0.060	0.741	750.972	0.001
	129 - 128		20.029	334.094	0.060	0.740	760.422	0.001
L9	128 - 127	TP27.05x26.24x0.25	20.087	336.176	0.060	0.740	769.931	0.001
	127 - 126		23.182	338.259	0.069	0.741	779.499	0.001
	126 - 125		23.234	340.341	0.068	0.741	789.127	0.001
	125 - 124		23.285	342.424	0.068	0.741	798.813	0.001
	124 - 123		23.336	344.506	0.068	0.741	808.558	0.001
L10	123 - 122	TP27.86x27.05x0.25	23.445	346.588	0.068	0.750	818.363	0.001

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
	122 - 121		23.494	348.671	0.067	0.750	828.227	0.001
	121 - 120		23.542	350.753	0.067	0.749	838.150	0.001
	120 - 119		23.590	352.836	0.067	0.749	848.133	0.001
	119 - 118		25.710	354.918	0.072	0.903	858.175	0.001
L11	118 - 116.917	TP28.994x27.86x0.25	25.757	357.174	0.072	0.903	869.117	0.001
	116.917 - 115.833		25.801	359.430	0.072	0.903	880.133	0.001
	115.833 - 114.75		25.844	361.686	0.071	0.903	891.217	0.001
	114.75 - 111		12.075	369.496	0.033	0.414	930.117	0.000
L12	114.75 - 111	TP28.696x27.887x0.313	14.073	452.830	0.031	0.488	1117.583	0.000
	111 - 109.75		26.188	456.084	0.057	0.902	1133.700	0.001
L13	109.75 - 108.646	TP29.412x28.696x0.313	26.232	458.958	0.057	0.902	1148.033	0.001
	108.646 - 107.542		26.279	461.832	0.057	0.901	1162.458	0.001
	107.542 - 106.437		26.324	464.706	0.057	0.901	1176.967	0.001
	106.437 - 105.333		26.369	467.581	0.056	0.901	1191.575	0.001
L14	105.333 - 105.083 (14)	TP29.452x29.412x0.469	26.367	698.581	0.038	0.901	1773.167	0.001
L15	105.083 - 104.083	TP30.262x29.452x0.463	26.435	693.267	0.038	0.901	1769.900	0.001
	104.083 - 103.083		26.493	697.120	0.038	0.900	1789.617	0.001
	103.083 - 102.083		26.552	700.972	0.038	0.900	1809.450	0.000
	102.083 - 101.083		26.610	704.824	0.038	0.900	1829.400	0.000
	101.083 - 100.083		26.668	708.676	0.038	0.900	1849.450	0.000
L16	100.083 - 99.083	TP31.072x30.262x0.463	26.724	712.529	0.038	0.900	1869.608	0.000
	99.083 - 98.083		26.780	716.381	0.037	0.899	1889.883	0.000
	98.083 - 97.083		26.836	720.233	0.037	0.899	1910.258	0.000
	97.083 - 96.083		26.892	724.085	0.037	0.899	1930.750	0.000
	96.083 - 95.083		26.947	727.938	0.037	0.899	1951.350	0.000
L17	95.083 - 93.7915	TP31.491x31.072x0.456	27.024	723.155	0.037	0.899	1952.175	0.000
	93.7915 - 92.5		27.096	728.063	0.037	0.898	1978.758	0.000
L18	92.5 - 92.25 (18)	TP31.531x31.491x0.638	27.097	1012.680	0.027	0.898	2739.817	0.000
L19	92.25 - 91.25	TP32.341x31.531x0.625	27.177	998.431	0.027	0.898	2716.525	0.000
	91.25 - 90.25		27.249	1003.640	0.027	0.898	2744.925	0.000
	90.25 - 89.25		27.321	1008.840	0.027	0.898	2773.475	0.000
	89.25 - 88.25		27.393	1014.050	0.027	0.898	2802.175	0.000
	88.25 - 87.25		27.465	1019.250	0.027	0.898	2831.017	0.000
L20	87.25 - 86.25	TP33.151x32.341x0.613	27.534	1004.360	0.027	0.897	2805.008	0.000
	86.25 - 85.25		27.603	1009.470	0.027	0.897	2833.575	0.000
	85.25 - 84.25		27.672	1014.570	0.027	0.897	2862.292	0.000
	84.25 - 83.25		27.741	1019.670	0.027	0.897	2891.150	0.000
	83.25 - 82.25		27.809	1024.770	0.027	0.897	2920.150	0.000
L21	82.25 - 81	TP34.042x33.151x0.613	27.893	1031.150	0.027	0.897	2956.608	0.000
	81 - 76.75		17.842	1052.830	0.017	0.563	3082.250	0.000
L22	81 - 76.75	TP33.579x32.729x0.375	10.462	690.211	0.015	0.333	1997.225	0.000

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
	76.75 - 75.75		28.314	693.594	0.041	0.896	2016.858	0.000
L23	75.75 - 74.75	TP34.389x33.579x0.375	28.340	696.978	0.041	0.896	2036.583	0.000
	74.75 - 73.75		28.365	700.362	0.041	0.895	2056.408	0.000
	73.75 - 72.75		28.390	703.745	0.040	0.895	2076.325	0.000
	72.75 - 71.75		28.415	707.129	0.040	0.895	2096.342	0.000
	71.75 - 70.75		28.440	710.513	0.040	0.895	2116.450	0.000
L24	70.75 - 70.583 (24)	TP34.416x34.389x0.375	28.421	711.078	0.040	0.895	2119.817	0.000
L25	70.583 - 70.333 (25)	TP34.456x34.416x0.675	28.435	1270.180	0.022	0.894	3757.717	0.000
L26	70.333 - 70 (26)	TP34.51x34.456x0.675	28.456	1272.210	0.022	0.894	3769.733	0.000
L27	70 - 69.75 (27)	TP34.551x34.51x0.375	28.464	713.896	0.040	0.894	2136.658	0.000
L28	69.75 - 68.75	TP35.361x34.551x0.375	28.507	717.280	0.040	0.894	2156.958	0.000
	68.75 - 67.75		28.529	720.664	0.040	0.894	2177.358	0.000
	67.75 - 66.75		28.550	724.047	0.039	0.894	2197.850	0.000
	66.75 - 65.75		28.571	727.431	0.039	0.893	2218.442	0.000
	65.75 - 64.75		28.592	730.815	0.039	0.893	2239.133	0.000
L29	64.75 - 63.75	TP36.171x35.361x0.375	28.610	734.199	0.039	0.893	2259.917	0.000
	63.75 - 62.75		28.628	737.582	0.039	0.893	2280.792	0.000
	62.75 - 61.75		28.646	740.966	0.039	0.893	2301.767	0.000
	61.75 - 60.75		28.664	744.350	0.039	0.892	2322.833	0.000
	60.75 - 59.75		28.681	747.733	0.038	0.892	2344.000	0.000
L30	59.75 - 58.75	TP36.981x36.171x0.375	28.696	751.117	0.038	0.892	2365.267	0.000
	58.75 - 57.75		28.711	754.501	0.038	0.892	2386.625	0.000
	57.75 - 56.75		28.725	757.884	0.038	0.891	2408.075	0.000
	56.75 - 55.75		28.739	761.268	0.038	0.891	2429.625	0.000
	55.75 - 54.75		28.753	764.652	0.038	0.891	2451.275	0.000
L31	54.75 - 53.75	TP37.791x36.981x0.375	28.765	768.035	0.037	0.891	2473.017	0.000
	53.75 - 52.75		28.776	771.419	0.037	0.891	2494.858	0.000
	52.75 - 51.75		28.787	774.803	0.037	0.890	2516.792	0.000
	51.75 - 50.75		28.797	778.187	0.037	0.890	2538.825	0.000
	50.75 - 49.75		28.808	781.570	0.037	0.890	2560.950	0.000
L32	49.75 - 48	TP38.884x37.791x0.375	28.851	787.492	0.037	0.890	2599.900	0.000
	48 - 43		14.036	804.410	0.017	0.500	2712.817	0.000
L33	48 - 43	TP38.296x37.324x0.438	15.170	918.679	0.017	0.547	3032.817	0.000
	43 - 42		29.160	922.627	0.032	1.047	3058.933	0.000
L34	42 - 41	TP39.106x38.296x0.438	29.168	926.575	0.031	1.046	3085.167	0.000
	41 - 40		29.175	930.523	0.031	1.046	3111.517	0.000
	40 - 39		29.182	934.471	0.031	1.046	3137.975	0.000
	39 - 38		29.188	938.419	0.031	1.046	3164.550	0.000
	38 - 37		29.195	942.367	0.031	1.046	3191.233	0.000
L35	37 - 36	TP39.916x39.106x0.438	29.198	946.315	0.031	1.046	3218.025	0.000
	36 - 35		29.201	950.263	0.031	1.046	3244.933	0.000
	35 - 34		29.204	954.211	0.031	1.046	3271.950	0.000
	34 - 33		29.206	958.159	0.030	1.045	3299.083	0.000
	33 - 32		29.208	962.107	0.030	1.045	3326.325	0.000
L36	32 - 30.9782	TP40.578x39.916x0.438	29.208	966.141	0.030	1.045	3354.275	0.000
	30.9782 - 29.9565		29.207	970.174	0.030	1.045	3382.342	0.000
	29.9565 - 28.9348		29.205	974.208	0.030	1.045	3410.525	0.000
	28.9348 - 27.913		29.203	978.242	0.030	1.045	3438.833	0.000
L37	27.913 - 27.663 (37)	TP40.619x40.578x0.675	29.180	1501.880	0.019	1.045	5253.675	0.000
L38	27.663 - 27.25 (38)	TP40.686x40.619x0.675	29.195	1504.400	0.019	1.045	5271.283	0.000
L39	27.25 - 26.983 (39)	TP40.729x40.686x0.675	29.199	1506.020	0.019	1.045	5282.692	0.000

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L40	26.983 - 26.833 (40)	TP40.753x40.729x0.663	29.201	1479.490	0.020	1.045	5194.392	0.000
L41	26.833 - 25.833	TP41.563x40.753x0.663	29.244	1485.470	0.020	1.045	5236.458	0.000
	25.833 - 24.833		29.267	1491.450	0.020	1.045	5278.692	0.000
	24.833 - 23.833		29.290	1497.430	0.020	1.045	5321.092	0.000
	23.833 - 22.833		29.312	1503.400	0.019	1.045	5363.667	0.000
	22.833 - 21.833		29.334	1509.380	0.019	1.045	5406.408	0.000
L42	21.833 - 20.833	TP42.373x41.563x0.663	29.356	1515.360	0.019	1.045	5449.325	0.000
	20.833 - 19.833		29.377	1521.340	0.019	1.045	5492.408	0.000
	19.833 - 18.833		29.398	1527.320	0.019	1.045	5535.658	0.000
	18.833 - 17.833		29.419	1533.300	0.019	1.044	5579.075	0.000
	17.833 - 16.833		29.439	1539.270	0.019	1.044	5622.667	0.000
L43	16.833 - 16 (43)	TP42.508x42.373x0.663	29.453	1544.250	0.019	1.044	5659.108	0.000
L44	16 - 15.75 (44)	TP42.549x42.508x0.813	29.445	1888.940	0.016	1.044	6904.141	0.000
L45	15.75 - 14.747 (45)	TP42.711x42.549x0.813	29.491	1896.300	0.016	1.044	6958.000	0.000
L46	14.747 - 14.497 (46)	TP42.752x42.711x0.488	29.479	1147.700	0.026	1.044	4247.958	0.000
L47	14.497 - 13.29	TP43.143x42.752x0.488	29.515	1153.010	0.026	1.044	4287.350	0.000
	13.29 - 12.083		29.517	1158.320	0.025	1.044	4326.933	0.000
L48	12.083 - 11.833 (48)	TP43.183x43.143x0.738	29.488	1743.730	0.017	1.044	6481.725	0.000
L49	11.833 - 10 (49)	TP43.48x43.183x0.738	29.570	1755.930	0.017	1.044	6572.733	0.000
L50	10 - 9.75 (50)	TP43.521x43.48x0.738	29.539	1757.590	0.017	1.044	6585.200	0.000
L51	9.75 - 8.75	TP44.331x43.521x0.725	29.579	1734.850	0.017	1.044	6526.500	0.000
	8.75 - 7.75		29.601	1741.390	0.017	1.044	6575.817	0.000
	7.75 - 6.75		29.623	1747.930	0.017	1.044	6625.317	0.000
	6.75 - 5.75		29.644	1754.470	0.017	1.044	6675.008	0.000
	5.75 - 4.75		29.665	1761.020	0.017	1.044	6724.883	0.000
L52	4.75 - 3.5625	TP45.1x44.331x0.713	29.694	1738.790	0.017	1.044	6671.183	0.000
	3.5625 - 2.375		29.717	1746.420	0.017	1.044	6729.900	0.000
	2.375 - 1.1875		29.740	1754.060	0.017	1.044	6788.875	0.000
	1.1875 - 0		29.763	1761.690	0.017	1.044	6848.100	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	160 - 159	0.000	0.000	0.000	0.000	0.000	0.000 ✔	1.050	4.8.2 ✔
	159 - 158	0.000	0.001	0.000	0.001	0.000	0.001	1.050	4.8.2 ✔

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	158 - 157	0.001	0.001	0.000	0.001	0.000	0.002 ✔	1.050	4.8.2 ✔
	157 - 156	0.013	0.140	0.000	0.071	0.003	0.158 ✔	1.050	4.8.2 ✔
	156 - 155	0.013	0.217	0.000	0.072	0.006	0.236 ✔	1.050	4.8.2 ✔
L2	155 - 154	0.013	0.296	0.000	0.073	0.006	0.315 ✔	1.050	4.8.2 ✔
	154 - 153	0.014	0.375	0.000	0.074	0.006	0.395 ✔	1.050	4.8.2 ✔
	153 - 152	0.014	0.456	0.000	0.075	0.006	0.477 ✔	1.050	4.8.2 ✔
	152 - 151	0.015	0.538	0.000	0.076	0.006	0.560 ✔	1.050	4.8.2 ✔
	151 - 150	0.015	0.622	0.000	0.077	0.006	0.644 ✔	1.050	4.8.2 ✔
L3	150 - 148.5 (3)	0.016	0.748	0.000	0.079	0.006	0.771 ✔	1.050	4.8.2 ✔
L4	148.5 - 148 (4)	0.007	0.171	0.000	0.036	0.001	0.180 ✔	1.050	4.8.2 ✔
L5	148 - 147	0.010	0.155	0.000	0.043	0.001	0.168 ✔	1.050	4.8.2 ✔
	147 - 146	0.011	0.175	0.000	0.043	0.001	0.187 ✔	1.050	4.8.2 ✔
	146 - 145	0.011	0.194	0.000	0.044	0.001	0.206 ✔	1.050	4.8.2 ✔
	145 - 144	0.012	0.214	0.000	0.046	0.001	0.227 ✔	1.050	4.8.2 ✔
	144 - 143	0.012	0.233	0.000	0.046	0.001	0.247 ✔	1.050	4.8.2 ✔
L6	143 - 142	0.012	0.252	0.000	0.046	0.001	0.266 ✔	1.050	4.8.2 ✔
	142 - 141	0.012	0.271	0.000	0.046	0.001	0.285 ✔	1.050	4.8.2 ✔
	141 - 140	0.012	0.289	0.000	0.047	0.001	0.304 ✔	1.050	4.8.2 ✔
	140 - 139	0.012	0.308	0.000	0.047	0.001	0.322 ✔	1.050	4.8.2 ✔
	139 - 138	0.012	0.326	0.000	0.047	0.001	0.340 ✔	1.050	4.8.2 ✔
L7	138 - 137	0.015	0.350	0.000	0.062	0.001	0.370 ✔	1.050	4.8.2 ✔
	137 - 136	0.015	0.374	0.000	0.062	0.001	0.394 ✔	1.050	4.8.2 ✔
	136 - 135	0.016	0.398	0.000	0.061	0.001	0.418 ✔	1.050	4.8.2 ✔
	135 - 134	0.016	0.422	0.000	0.061	0.001	0.441 ✔	1.050	4.8.2 ✔
	134 - 133	0.016	0.445	0.000	0.061	0.001	0.465 ✔	1.050	4.8.2 ✔
L8	133 - 132	0.016	0.468	0.000	0.061	0.001	0.487 ✔	1.050	4.8.2 ✔

Section No.	Elevation ft	Ratio $P_u/\phi P_n$	Ratio $M_{ux}/\phi M_{nx}$	Ratio $M_{uy}/\phi M_{ny}$	Ratio $V_u/\phi V_n$	Ratio $T_u/\phi T_n$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	132 - 131	0.016	0.490	0.000	0.061	0.001	0.509 ✔	1.050	4.8.2 ✔
	131 - 130	0.016	0.512	0.000	0.060	0.001	0.531 ✔	1.050	4.8.2 ✔
	130 - 129	0.016	0.533	0.000	0.060	0.001	0.553 ✔	1.050	4.8.2 ✔
	129 - 128	0.016	0.554	0.000	0.060	0.001	0.574 ✔	1.050	4.8.2 ✔
L9	128 - 127	0.016	0.575	0.000	0.060	0.001	0.594 ✔	1.050	4.8.2 ✔
	127 - 126	0.019	0.604	0.000	0.069	0.001	0.628 ✔	1.050	4.8.2 ✔
	126 - 125	0.019	0.627	0.000	0.068	0.001	0.651 ✔	1.050	4.8.2 ✔
	125 - 124	0.019	0.650	0.000	0.068	0.001	0.675 ✔	1.050	4.8.2 ✔
	124 - 123	0.019	0.673	0.000	0.068	0.001	0.697 ✔	1.050	4.8.2 ✔
L10	123 - 122	0.019	0.696	0.000	0.068	0.001	0.720 ✔	1.050	4.8.2 ✔
	122 - 121	0.019	0.718	0.000	0.067	0.001	0.742 ✔	1.050	4.8.2 ✔
	121 - 120	0.019	0.739	0.000	0.067	0.001	0.763 ✔	1.050	4.8.2 ✔
	120 - 119	0.019	0.760	0.000	0.067	0.001	0.784 ✔	1.050	4.8.2 ✔
	119 - 118	0.021	0.784	0.000	0.072	0.001	0.811 ✔	1.050	4.8.2 ✔
L11	118 - 116.917	0.021	0.808	0.000	0.072	0.001	0.835 ✔	1.050	4.8.2 ✔
	116.917 - 115.833	0.021	0.833	0.000	0.072	0.001	0.859 ✔	1.050	4.8.2 ✔
	115.833 - 114.75	0.021	0.856	0.000	0.071	0.001	0.883 ✔	1.050	4.8.2 ✔
	114.75 - 111	0.010	0.430	0.000	0.033	0.000	0.440 ✔	1.050	4.8.2 ✔
L12	114.75 - 111	0.010	0.405	0.000	0.031	0.000	0.416 ✔	1.050	4.8.2 ✔
	111 - 109.75	0.018	0.768	0.000	0.057	0.001	0.789 ✔	1.050	4.8.2 ✔
L13	109.75 - 108.646	0.018	0.784	0.000	0.057	0.001	0.805 ✔	1.050	4.8.2 ✔
	108.646 - 107.542	0.018	0.799	0.000	0.057	0.001	0.820 ✔	1.050	4.8.2 ✔
	107.542 - 106.437	0.018	0.814	0.000	0.057	0.001	0.835 ✔	1.050	4.8.2 ✔
	106.437 - 105.333	0.018	0.829	0.000	0.056	0.001	0.850 ✔	1.050	4.8.2 ✔
L14	105.333 - 105.083 (14)	0.012	0.564	0.000	0.038	0.001	0.577 ✔	1.050	4.8.2 ✔
L15	105.083 -	0.012	0.580	0.000	0.038	0.001	0.593	1.050	4.8.2 ✔

Section No.	Elevation ft	Ratio $P_u/\phi P_n$	Ratio $M_{ux}/\phi M_{nx}$	Ratio $M_{uy}/\phi M_{ny}$	Ratio $V_u/\phi V_n$	Ratio $T_u/\phi T_n$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	104.083						✔		
	104.083 - 103.083	0.012	0.588	0.000	0.038	0.001	0.602 ✔	1.050	4.8.2 ✔
	103.083 - 102.083	0.012	0.597	0.000	0.038	0.000	0.610 ✔	1.050	4.8.2 ✔
	102.083 - 101.083	0.012	0.605	0.000	0.038	0.000	0.619 ✔	1.050	4.8.2 ✔
	101.083 - 100.083	0.012	0.613	0.000	0.038	0.000	0.627 ✔	1.050	4.8.2 ✔
L16	100.083 - 99.083	0.012	0.621	0.000	0.038	0.000	0.634 ✔	1.050	4.8.2 ✔
	99.083 - 98.083	0.012	0.628	0.000	0.037	0.000	0.642 ✔	1.050	4.8.2 ✔
	98.083 - 97.083	0.012	0.636	0.000	0.037	0.000	0.650 ✔	1.050	4.8.2 ✔
	97.083 - 96.083	0.012	0.643	0.000	0.037	0.000	0.657 ✔	1.050	4.8.2 ✔
	96.083 - 95.083	0.013	0.650	0.000	0.037	0.000	0.664 ✔	1.050	4.8.2 ✔
L17	95.083 - 93.7915	0.013	0.668	0.000	0.037	0.000	0.682 ✔	1.050	4.8.2 ✔
	93.7915 - 92.5	0.013	0.677	0.000	0.037	0.000	0.691 ✔	1.050	4.8.2 ✔
L18	92.5 - 92.25 (18)	0.009	0.494	0.000	0.027	0.000	0.504 ✔	1.050	4.8.2 ✔
L19	92.25 - 91.25	0.009	0.508	0.000	0.027	0.000	0.518 ✔	1.050	4.8.2 ✔
	91.25 - 90.25	0.009	0.513	0.000	0.027	0.000	0.523 ✔	1.050	4.8.2 ✔
	90.25 - 89.25	0.010	0.518	0.000	0.027	0.000	0.528 ✔	1.050	4.8.2 ✔
	89.25 - 88.25	0.010	0.522	0.000	0.027	0.000	0.533 ✔	1.050	4.8.2 ✔
	88.25 - 87.25	0.010	0.527	0.000	0.027	0.000	0.537 ✔	1.050	4.8.2 ✔
L20	87.25 - 86.25	0.010	0.541	0.000	0.027	0.000	0.552 ✔	1.050	4.8.2 ✔
	86.25 - 85.25	0.010	0.546	0.000	0.027	0.000	0.556 ✔	1.050	4.8.2 ✔
	85.25 - 84.25	0.010	0.550	0.000	0.027	0.000	0.561 ✔	1.050	4.8.2 ✔
	84.25 - 83.25	0.010	0.554	0.000	0.027	0.000	0.565 ✔	1.050	4.8.2 ✔
	83.25 - 82.25	0.010	0.558	0.000	0.027	0.000	0.569 ✔	1.050	4.8.2 ✔
L21	82.25 - 81	0.010	0.563	0.000	0.027	0.000	0.574 ✔	1.050	4.8.2 ✔
	81 - 76.75	0.006	0.364	0.000	0.017	0.000	0.371 ✔	1.050	4.8.2 ✔
L22	81 - 76.75	0.006	0.330	0.000	0.015	0.000	0.336 ✔	1.050	4.8.2 ✔
	76.75 - 75.75	0.016	0.894	0.000	0.041	0.000	0.911	1.050	4.8.2 ✔

Section No.	Elevation ft	Ratio $P_u/\phi P_n$	Ratio $M_{ux}/\phi M_{nx}$	Ratio $M_{uy}/\phi M_{ny}$	Ratio $V_u/\phi V_n$	Ratio $T_u/\phi T_n$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L23	75.75 - 74.75	0.016	0.899	0.000	0.041	0.000	0.917	1.050	4.8.2
	74.75 - 73.75	0.016	0.904	0.000	0.041	0.000	0.922	1.050	4.8.2
	73.75 - 72.75	0.016	0.909	0.000	0.040	0.000	0.927	1.050	4.8.2
	72.75 - 71.75	0.016	0.914	0.000	0.040	0.000	0.932	1.050	4.8.2
	71.75 - 70.75	0.016	0.919	0.000	0.040	0.000	0.937	1.050	4.8.2
L24	70.75 - 70.583 (24)	0.016	0.920	0.000	0.040	0.000	0.937	1.050	4.8.2
L25	70.583 - 70.333 (25)	0.009	0.525	0.000	0.022	0.000	0.535	1.050	4.8.2
L26	70.333 - 70 (26)	0.009	0.526	0.000	0.022	0.000	0.536	1.050	4.8.2
L27	70 - 69.75 (27)	0.016	0.924	0.000	0.040	0.000	0.941	1.050	4.8.2
L28	69.75 - 68.75	0.016	0.928	0.000	0.040	0.000	0.946	1.050	4.8.2
	68.75 - 67.75	0.016	0.933	0.000	0.040	0.000	0.950	1.050	4.8.2
	67.75 - 66.75	0.016	0.937	0.000	0.039	0.000	0.955	1.050	4.8.2
	66.75 - 65.75	0.016	0.941	0.000	0.039	0.000	0.959	1.050	4.8.2
	65.75 - 64.75	0.016	0.945	0.000	0.039	0.000	0.963	1.050	4.8.2
L29	64.75 - 63.75	0.016	0.949	0.000	0.039	0.000	0.967	1.050	4.8.2
	63.75 - 62.75	0.016	0.953	0.000	0.039	0.000	0.971	1.050	4.8.2
	62.75 - 61.75	0.016	0.957	0.000	0.039	0.000	0.975	1.050	4.8.2
	61.75 - 60.75	0.016	0.961	0.000	0.039	0.000	0.979	1.050	4.8.2
	60.75 - 59.75	0.016	0.965	0.000	0.038	0.000	0.983	1.050	4.8.2
L30	59.75 - 58.75	0.016	0.970	0.000	0.038	0.000	0.988	1.050	4.8.2
	58.75 - 57.75	0.016	0.974	0.000	0.038	0.000	0.992	1.050	4.8.2
	57.75 - 56.75	0.016	0.979	0.000	0.038	0.000	0.997	1.050	4.8.2
	56.75 - 55.75	0.017	0.983	0.000	0.038	0.000	1.001	1.050	4.8.2
	55.75 - 54.75	0.017	0.987	0.000	0.038	0.000	1.005	1.050	4.8.2
L31	54.75 - 53.75	0.017	0.992	0.000	0.037	0.000	1.010	1.050	4.8.2
	53.75 - 52.75	0.017	0.996	0.000	0.037	0.000	1.014	1.050	4.8.2

Section No.	Elevation ft	Ratio $P_u/\phi P_n$	Ratio $M_{ux}/\phi M_{nx}$	Ratio $M_{uy}/\phi M_{ny}$	Ratio $V_u/\phi V_n$	Ratio $T_u/\phi T_n$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	52.75 - 51.75	0.017	1.000	0.000	0.037	0.000	1.018 ✔	1.050	4.8.2 ✔
	51.75 - 50.75	0.017	1.004	0.000	0.037	0.000	1.022 ✔	1.050	4.8.2 ✔
	50.75 - 49.75	0.017	1.007	0.000	0.037	0.000	1.025 ✔	1.050	4.8.2 ✔
L32	49.75 - 48	0.017	1.014	0.000	0.037	0.000	1.032 ✔	1.050	4.8.2 ✔
	48 - 43	0.008	0.493	0.000	0.017	0.000	0.501 ✔	1.050	4.8.2 ✔
L33	48 - 43	0.008	0.474	0.000	0.017	0.000	0.482 ✔	1.050	4.8.2 ✔
	43 - 42	0.015	0.909	0.000	0.032	0.000	0.925 ✔	1.050	4.8.2 ✔
L34	42 - 41	0.015	0.911	0.000	0.031	0.000	0.927 ✔	1.050	4.8.2 ✔
	41 - 40	0.015	0.912	0.000	0.031	0.000	0.929 ✔	1.050	4.8.2 ✔
	40 - 39	0.015	0.914	0.000	0.031	0.000	0.930 ✔	1.050	4.8.2 ✔
	39 - 38	0.015	0.916	0.000	0.031	0.000	0.932 ✔	1.050	4.8.2 ✔
	38 - 37	0.015	0.917	0.000	0.031	0.000	0.933 ✔	1.050	4.8.2 ✔
L35	37 - 36	0.015	0.919	0.000	0.031	0.000	0.935 ✔	1.050	4.8.2 ✔
	36 - 35	0.015	0.920	0.000	0.031	0.000	0.936 ✔	1.050	4.8.2 ✔
	35 - 34	0.015	0.921	0.000	0.031	0.000	0.938 ✔	1.050	4.8.2 ✔
	34 - 33	0.015	0.923	0.000	0.030	0.000	0.939 ✔	1.050	4.8.2 ✔
	33 - 32	0.015	0.924	0.000	0.030	0.000	0.940 ✔	1.050	4.8.2 ✔
L36	32 - 30.9782	0.016	0.925	0.000	0.030	0.000	0.942 ✔	1.050	4.8.2 ✔
	30.9782 - 29.9565	0.016	0.926	0.000	0.030	0.000	0.943 ✔	1.050	4.8.2 ✔
	29.9565 - 28.9348	0.016	0.927	0.000	0.030	0.000	0.944 ✔	1.050	4.8.2 ✔
	28.9348 - 27.913	0.016	0.928	0.000	0.030	0.000	0.945 ✔	1.050	4.8.2 ✔
L37	27.913 - 27.663 (37)	0.010	0.613	0.000	0.019	0.000	0.623 ✔	1.050	4.8.2 ✔
L38	27.663 - 27.25 (38)	0.010	0.613	0.000	0.019	0.000	0.624 ✔	1.050	4.8.2 ✔
L39	27.25 - 26.983 (39)	0.010	0.613	0.000	0.019	0.000	0.624 ✔	1.050	4.8.2 ✔
L40	26.983 - 26.833 (40)	0.010	0.624	0.000	0.020	0.000	0.635 ✔	1.050	4.8.2 ✔
L41	26.833 -	0.010	0.625	0.000	0.020	0.000	0.636	1.050	4.8.2 ✔

Section No.	Elevation ft	Ratio $P_u/\phi P_n$	Ratio $M_{ux}/\phi M_{nx}$	Ratio $M_{uy}/\phi M_{ny}$	Ratio $V_u/\phi V_n$	Ratio $T_u/\phi T_n$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	25.833						✔		
	25.833 - 24.833	0.011	0.625	0.000	0.020	0.000	0.636 ✔	1.050	4.8.2 ✔
	24.833 - 23.833	0.011	0.626	0.000	0.020	0.000	0.637 ✔	1.050	4.8.2 ✔
	23.833 - 22.833	0.011	0.627	0.000	0.019	0.000	0.638 ✔	1.050	4.8.2 ✔
	22.833 - 21.833	0.011	0.627	0.000	0.019	0.000	0.638 ✔	1.050	4.8.2 ✔
L42	21.833 - 20.833	0.011	0.628	0.000	0.019	0.000	0.639 ✔	1.050	4.8.2 ✔
	20.833 - 19.833	0.011	0.628	0.000	0.019	0.000	0.639 ✔	1.050	4.8.2 ✔
	19.833 - 18.833	0.011	0.628	0.000	0.019	0.000	0.640 ✔	1.050	4.8.2 ✔
	18.833 - 17.833	0.011	0.629	0.000	0.019	0.000	0.640 ✔	1.050	4.8.2 ✔
	17.833 - 16.833	0.011	0.629	0.000	0.019	0.000	0.640 ✔	1.050	4.8.2 ✔
L43	16.833 - 16 (43)	0.011	0.630	0.000	0.019	0.000	0.641 ✔	1.050	4.8.2 ✔
L44	16 - 15.75 (44)	0.009	0.519	0.000	0.016	0.000	0.528 ✔	1.050	4.8.2 ✔
L45	15.75 - 14.747 (45)	0.009	0.519	0.000	0.016	0.000	0.528 ✔	1.050	4.8.2 ✔
L46	14.747 - 14.497 (46)	0.015	0.846	0.000	0.026	0.000	0.861 ✔	1.050	4.8.2 ✔
L47	14.497 - 13.29	0.015	0.846	0.000	0.026	0.000	0.862 ✔	1.050	4.8.2 ✔
	13.29 - 12.083	0.015	0.847	0.000	0.025	0.000	0.862 ✔	1.050	4.8.2 ✔
L48	12.083 - 11.833 (48)	0.010	0.570	0.000	0.017	0.000	0.580 ✔	1.050	4.8.2 ✔
L49	11.833 - 10 (49)	0.010	0.570	0.000	0.017	0.000	0.580 ✔	1.050	4.8.2 ✔
L50	10 - 9.75 (50)	0.010	0.570	0.000	0.017	0.000	0.580 ✔	1.050	4.8.2 ✔
L51	9.75 - 8.75	0.010	0.580	0.000	0.017	0.000	0.590 ✔	1.050	4.8.2 ✔
	8.75 - 7.75	0.010	0.580	0.000	0.017	0.000	0.590 ✔	1.050	4.8.2 ✔
	7.75 - 6.75	0.010	0.580	0.000	0.017	0.000	0.591 ✔	1.050	4.8.2 ✔
	6.75 - 5.75	0.010	0.580	0.000	0.017	0.000	0.591 ✔	1.050	4.8.2 ✔
	5.75 - 4.75	0.010	0.580	0.000	0.017	0.000	0.591 ✔	1.050	4.8.2 ✔
L52	4.75 - 3.5625	0.011	0.590	0.000	0.017	0.000	0.601 ✔	1.050	4.8.2 ✔
	3.5625 - 2.375	0.011	0.590	0.000	0.017	0.000	0.601 ✔	1.050	4.8.2 ✔
	2.375 - 1.1875	0.011	0.590	0.000	0.017	0.000	0.601 ✔	1.050	4.8.2 ✔

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	1.1875 - 0	0.011	0.590	0.000	0.017	0.000	0.601	1.050	4.8.2

Section Capacity Table

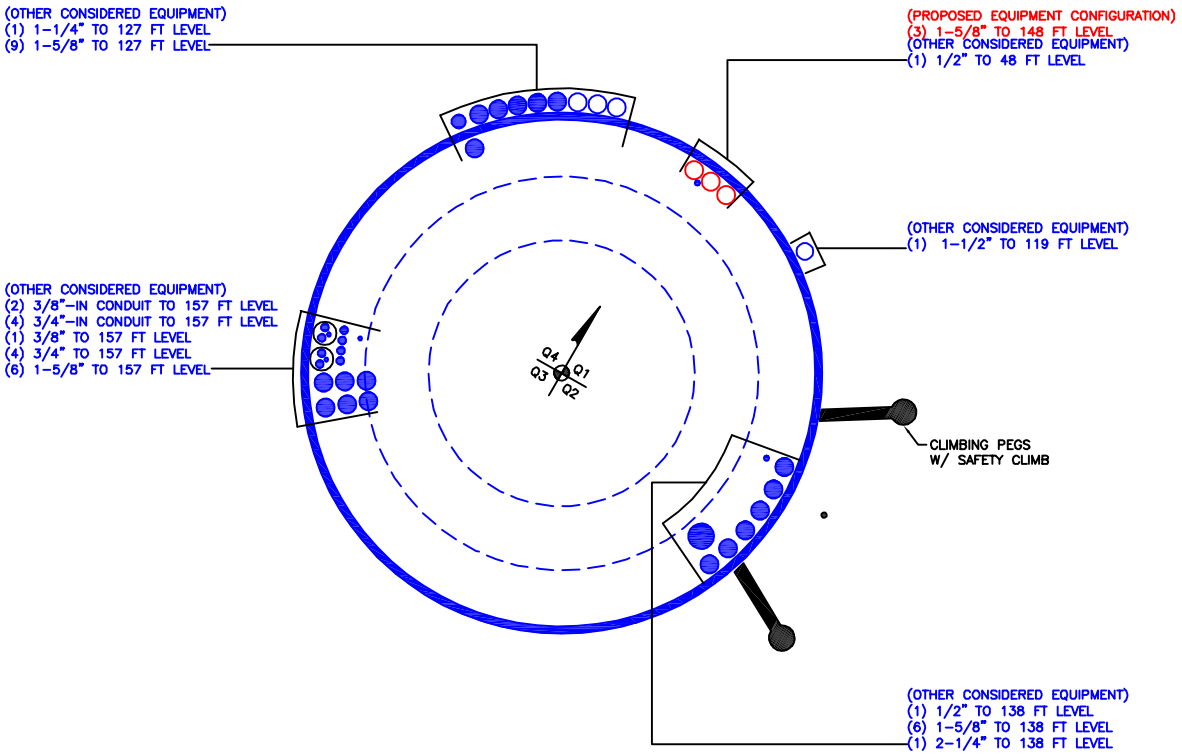
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	160 - 155	Pole	TP10.75x10.75x0.349	1	-4.577	--	22.4	Pass[1]
L2	155 - 150	Pole	TP10.75x10.75x0.349	2	-5.387	--	61.2	Pass[1]
L3	150 - 148.5	Pole	TP10.75x10.75x0.349	3	-5.637	--	73.4	Pass[1]
L4	148.5 - 148	Pole	TP23x23x0.349	4	-5.752	--	17.1	Pass[1]
L5	148 - 143	Pole	TP23.81x23x0.25	5	-11.777	--	23.5	Pass[1]
L6	143 - 138	Pole	TP24.62x23.81x0.25	6	-12.556	--	32.3	Pass[1]
L7	138 - 133	Pole	TP25.43x24.62x0.25	7	-16.761	--	44.2	Pass[1]
L8	133 - 128	Pole	TP26.24x25.43x0.25	8	-17.391	--	54.6	Pass[1]
L9	128 - 123	Pole	TP27.05x26.24x0.25	9	-22.295	--	66.4	Pass[1]
L10	123 - 118	Pole	TP27.86x27.05x0.25	10	-25.341	--	77.2	Pass[1]
L11	118 - 114.75	Pole	TP28.994x27.86x0.25	11	-25.879	--	84.1	Pass[1]
L12	114.75 - 109.75	Pole	TP28.696x27.887x0.313	12	-27.090	--	75.1	Pass[1]
L13	109.75 - 105.33	Pole	TP29.412x28.696x0.313	13	-27.944	--	80.9	Pass[1]
L14	105.33 - 105.08	Pole + Reinf.	TP29.452x29.412x0.469	14	-28.021	--	76.9	Pass[1]
L15	105.08 - 100.08	Pole + Reinf.	TP30.262x29.452x0.463	15	-29.186	--	83.2	Pass[1]
L16	100.08 - 95.08	Pole + Reinf.	TP31.072x30.262x0.463	16	-30.388	--	89.0	Pass[1]
L17	95.08 - 92.5	Pole + Reinf.	TP31.491x31.072x0.456	17	-31.014	--	91.7	Pass[1]
L18	92.5 - 92.25	Pole + Reinf.	TP31.531x31.491x0.638	18	-31.107	--	81.4	Pass[1]
L19	92.25 - 87.25	Pole + Reinf.	TP32.341x31.531x0.625	19	-32.595	--	86.4	Pass[1]
L20	87.25 - 82.25	Pole + Reinf.	TP33.151x32.341x0.613	20	-34.118	--	91.0	Pass[1]
L21	82.25 - 81	Pole + Reinf.	TP34.042x33.151x0.613	21	-34.500	--	92.1	Pass[1]
L22	81 - 75.75	Pole	TP33.579x32.729x0.375	22	-36.697	--	86.7	Pass[1]
L23	75.75 - 70.75	Pole	TP34.389x33.579x0.375	23	-37.937	--	89.2	Pass[1]
L24	70.75 - 70.58	Pole	TP34.416x34.389x0.375	24	-37.998	--	89.2	Pass[1]
L25	70.58 - 70.33	Pole + Reinf.	TP34.456x34.416x0.675	25	-38.092	--	78.0	Pass[1]
L26	70.33 - 70	Pole + Reinf.	TP34.51x34.456x0.675	26	-38.215	--	78.2	Pass[1]
L27	70 - 69.75	Pole	TP34.551x34.51x0.375	27	-38.276	--	89.6	Pass[1]
L28	69.75 - 64.75	Pole	TP35.361x34.551x0.375	28	-39.528	--	91.7	Pass[1]
L29	64.75 - 59.75	Pole	TP36.171x35.361x0.375	29	-40.820	--	93.6	Pass[1]
L30	59.75 - 54.75	Pole	TP36.981x36.171x0.375	30	-42.135	--	95.7	Pass[1]
L31	54.75 - 49.75	Pole	TP37.791x36.981x0.375	31	-43.472	--	97.7	Pass[1]
L32	49.75 - 48	Pole	TP38.884x37.791x0.375	32	-43.928	--	98.3	Pass[1]
L33	48 - 42	Pole	TP38.296x37.324x0.438	33	-46.639	--	88.0	Pass[1]
L34	42 - 37	Pole	TP39.106x38.296x0.438	34	-48.147	--	88.8	Pass[1]
L35	37 - 32	Pole	TP39.916x39.106x0.438	35	-49.678	--	89.5	Pass[1]
L36	32 - 27.91	Pole	TP40.578x39.916x0.438	36	-50.947	--	90.0	Pass[1]
L37	27.91 - 27.66	Pole + Reinf.	TP40.619x40.578x0.675	37	-51.072	--	87.7	Pass[1]
L38	27.66 - 27.25	Pole + Reinf.	TP40.686x40.619x0.675	38	-51.249	--	87.8	Pass[1]
L39	27.25 - 26.98	Pole + Reinf.	TP40.729x40.686x0.675	39	-51.358	--	85.9	Pass[1]
L40	26.98 - 26.83	Pole + Reinf.	TP40.753x40.729x0.663	40	-51.420	--	86.0	Pass[1]
L41	26.83 - 21.83	Pole + Reinf.	TP41.563x40.753x0.663	41	-53.434	--	87.0	Pass[1]
L42	21.83 - 16.83	Pole + Reinf.	TP42.373x41.563x0.663	42	-55.482	--	87.9	Pass[1]
L43	16.83 - 16	Pole + Reinf.	TP42.508x42.373x0.663	43	-55.828	--	88.0	Pass[1]
L44	16 - 15.75	Pole + Reinf.	TP42.549x42.508x0.813	44	-55.957	--	78.8	Pass[1]
L45	15.75 - 14.75	Pole + Reinf.	TP42.711x42.549x0.813	45	-56.433	--	79.0	Pass[1]

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L46	14.75 - 14.5	Pole + Reinf.	TP42.752x42.711x0.488	46	-56.536	--	89.7	Pass[1]
L47	14.5 - 12.08	Pole + Reinf.	TP43.143x42.752x0.488	47	-57.461	--	90.1	Pass[1]
L48	12.08 - 11.83	Pole + Reinf.	TP43.183x43.143x0.738	48	-57.592	--	80.7	Pass[1]
L49	11.83 - 10	Pole + Reinf.	TP43.48x43.183x0.738	49	-58.398	--	80.9	Pass[1]
L50	10 - 9.75	Pole + Reinf.	TP43.521x43.48x0.738	50	-58.529	--	81.0	Pass[1]
L51	9.75 - 4.75	Pole + Reinf.	TP44.331x43.521x0.725	51	-60.783	--	81.7	Pass[1]
L52	4.75 - 0	Pole + Reinf.	TP45.1x44.331x0.713	52	-62.955	--	82.3	Pass[1]
							Summary	
						Pole (L32)	98.3	Pass[1]
						Rating =	98.3	Pass[1]

Notes:
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 876313

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- H

Site BU: 876313

Work Order: 2027876

Pole Geometry

	Pole Height Above Base (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Bend Radius (in)	Pole Material
1	160	11.5	0	0	10.75	10.75	0.349		A53-B-35
2	148.5	0.5	0	0	23.00	23	0.349		A53-B-35
3	148	37	3.75	18	23.00	28.994	0.25	Auto	A607-60
4	114.75	38	4.25	18	27.89	34.042	0.3125	Auto	A607-60
5	81	38	5	18	32.73	38.884	0.375	Auto	A607-65
6	48	48	0	18	37.32	45.1	0.4375	Auto	A607-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Pole Flat Width (in)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	0	27.083	channel	MP3-06 (1.1875in)	7.18			E1						E1									
2	0	12.083	channel	MP3-06 (1.1875in)	7.61													E1				E1	
3	14.747	27.913	channel	MP3-06 (1.1875in)	7.16															E1			
4	45.417	70.583	channel	MP3-05 (1.1875in)	6.07			E1						E1						E1			
5	78.167	105.333	channel	MP3-04 (1.1875in)	5.19			E1						E1						E1			
6	27.25	46.75	plate	CCI-SFP-065125	6.75						E3						E3						E3
7	10	16	plate	CCI-SFP-060100	7.5						E4						E4						E4
8	70	80	plate	CCI-AFP-060100	5.91	E5						E5				E5							
9	80.5	92.5	plate	CCI-SFP-040125	5.55				P						P						P		
10																							

Reinforcement Details

	B (in)	H (in)	Gross Area (in^2)	Pole Face to Centroid (in)	Bottom Termination Type	Bottom Termination Length (in)	Top Termination Type	Top Termination Length (in)	Lu (in)	Net Area (in2)	Bolt Hole Size (in)	Reinforcement Material
1	6.89	2.61	8.47	0.93	PC 8.8 - M20 (100)	41	PC 8.8 - M20 (100)	41.000	24.000	7.670	1.1875	A572-65
2	6.89	2.61	8.47	0.93	PC 8.8 - M20 (100)	41	PC 8.8 - M20 (100)	41.000	24.000	7.670	1.1875	A572-65
3	6.89	2.61	8.47	0.93	PC 8.8 - M20 (100)	41	PC 8.8 - M20 (100)	41.000	24.000	7.670	1.1875	A572-65
4	5.33	2.09	5.65	0.79	PC 8.8 - M20 (100)	29	PC 8.8 - M20 (100)	29.000	18.000	5.025	1.1875	A572-65
5	4.78	1.61	4.13	0.61	PC 8.8 - M20 (100)	17	PC 8.8 - M20 (100)	17.000	18.000	3.593	1.1875	A572-65
6	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	33	PC 8.8 - M20 (100)	33.000	19.000	6.563	1.1875	A572-65
7	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.000	4.750	1.1875	A572-65
8	6	1	6	0.5	PC 8.8 - M20 (100)	30	PC 8.8 - M20 (100)	30.000	16.000	4.750	1.1875	A572-65
9	4	1.25	5	0.625	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	27.000	3.438	1.1875	A572-65

TNX Geometry Input

Increment (ft): 5 Export to TNX

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	160 - 155	5		0	10.750	10.750	0.349	A53-B-35	1.000
2	155 - 150	5		0	10.750	10.750	0.349	A53-B-35	1.000
3	150 - 148.5	1.5	0	0	10.750	10.750	0.349	A53-B-35	1.000
4	148.5 - 148	0.5	0	0	23.000	23.000	0.349	A53-B-35	1.000
5	148 - 143	5		18	23.000	23.810	0.25	A607-60	1.000
6	143 - 138	5		18	23.810	24.620	0.25	A607-60	1.000
7	138 - 133	5		18	24.620	25.430	0.25	A607-60	1.000
8	133 - 128	5		18	25.430	26.240	0.25	A607-60	1.000
9	128 - 123	5		18	26.240	27.050	0.25	A607-60	1.000
10	123 - 118	5		18	27.050	27.860	0.25	A607-60	1.000
11	118 - 114.75	7	3.75	18	27.860	28.994	0.25	A607-60	1.000
12	114.75 - 109.75	5		18	27.887	28.696	0.3125	A607-60	1.000
13	109.75 - 105.333	4.417		18	28.696	29.412	0.3125	A607-60	1.000
14	105.333 - 105.083	0.25		18	29.412	29.452	0.46875	A607-60	0.958
15	105.083 - 100.083	5		18	29.452	30.262	0.4625	A607-60	0.962
16	100.083 - 95.083	5		18	30.262	31.072	0.4625	A607-60	0.955
17	95.083 - 92.5	2.583		18	31.072	31.491	0.45625	A607-60	0.964
18	92.5 - 92.25	0.25		18	31.491	31.531	0.6375	A607-60	0.934
19	92.25 - 87.25	5		18	31.531	32.341	0.625	A607-60	0.940
20	87.25 - 82.25	5		18	32.341	33.151	0.6125	A607-60	0.948
21	82.25 - 81	5.5	4.25	18	33.151	34.042	0.6125	A607-60	0.945
22	81 - 75.75	5.25		18	32.729	33.579	0.375	A607-65	1.000
23	75.75 - 70.75	5		18	33.579	34.389	0.375	A607-65	1.000
24	70.75 - 70.583	0.167		18	34.389	34.416	0.375	A607-65	1.000
25	70.583 - 70.333	0.25		18	34.416	34.456	0.675	A607-65	1.043
26	70.333 - 70	0.333		18	34.456	34.510	0.675	A607-65	1.043
27	70 - 69.75	0.25		18	34.510	34.551	0.375	A607-65	1.000
28	69.75 - 64.75	5		18	34.551	35.361	0.375	A607-65	1.000
29	64.75 - 59.75	5		18	35.361	36.171	0.375	A607-65	1.000
30	59.75 - 54.75	5		18	36.171	36.981	0.375	A607-65	1.000
31	54.75 - 49.75	5		18	36.981	37.791	0.375	A607-65	1.000
32	49.75 - 48	6.75	5	18	37.791	38.884	0.375	A607-65	1.000
33	48 - 42	6		18	37.324	38.296	0.4375	A607-65	1.000
34	42 - 37	5		18	38.296	39.106	0.4375	A607-65	1.000
35	37 - 32	5		18	39.106	39.916	0.4375	A607-65	1.000
36	32 - 27.913	4.087		18	39.916	40.578	0.4375	A607-65	1.000
37	27.913 - 27.663	0.25		18	40.578	40.619	0.675	A607-65	1.036
38	27.663 - 27.25	0.413		18	40.619	40.686	0.675	A607-65	1.035
39	27.25 - 26.983	0.267		18	40.686	40.729	0.675	A607-65	0.948
40	26.983 - 26.833	0.15		18	40.729	40.753	0.6625	A607-65	0.966
41	26.833 - 21.833	5		18	40.753	41.563	0.6625	A607-65	0.959
42	21.833 - 16.833	5		18	41.563	42.373	0.6625	A607-65	0.954
43	16.833 - 16	0.833		18	42.373	42.508	0.6625	A607-65	0.953
44	16 - 15.75	0.25		18	42.508	42.549	0.8125	A607-65	0.947
45	15.75 - 14.747	1.003		18	42.549	42.711	0.8125	A607-65	0.945
46	14.747 - 14.497	0.25		18	42.711	42.752	0.4875	A607-65	1.158
47	14.497 - 12.083	2.414		18	42.752	43.143	0.4875	A607-65	1.155
48	12.083 - 11.833	0.25		18	43.143	43.183	0.7375	A607-65	0.938
49	11.833 - 10	1.833		18	43.183	43.480	0.7375	A607-65	0.936
50	10 - 9.75	0.25		18	43.480	43.521	0.7375	A607-65	0.936
51	9.75 - 4.75	5		18	43.521	44.331	0.725	A607-65	0.945
52	4.75 - 0	4.75		18	44.331	45.100	0.7125	A607-65	0.955

TNX Section Forces

Increment (ft):	5	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	160 - 155	4.62	21.52	7.65
2	155 - 150	5.39	61.63	8.31
3	150 - 148.5	5.64	74.20	8.47
4	148.5 - 148	5.75	78.45	8.55
5	148 - 143	11.78	144.34	13.96
6	143 - 138	12.56	215.85	14.65
7	138 - 133	16.76	313.71	19.73
8	133 - 128	17.39	413.08	20.03
9	128 - 123	22.29	529.33	23.34
10	123 - 118	25.34	648.97	25.71
11	118 - 114.75	25.88	732.71	25.84
12	114.75 - 109.75	27.09	862.80	26.19
13	109.75 - 105.333	27.94	978.81	26.37
14	105.333 - 105.083	28.02	985.40	26.37
15	105.083 - 100.083	29.19	1117.98	26.67
16	100.083 - 95.083	30.39	1251.98	26.95
17	95.083 - 92.5	31.01	1321.75	27.10
18	92.5 - 92.25	31.11	1328.52	27.10
19	92.25 - 87.25	32.60	1464.93	27.46
20	87.25 - 82.25	34.12	1603.09	27.81
21	82.25 - 81	34.50	1637.89	27.89
22	81 - 75.75	36.70	1785.50	28.31
23	75.75 - 70.75	37.94	1927.29	28.44
24	70.75 - 70.583	38.00	1932.04	28.42
25	70.583 - 70.333	38.09	1939.14	28.43
26	70.333 - 70	38.21	1948.62	28.46
27	70 - 69.75	38.28	1955.73	28.46
28	69.75 - 64.75	39.53	2098.33	28.59
29	64.75 - 59.75	40.82	2241.41	28.68
30	59.75 - 54.75	42.13	2384.89	28.75
31	54.75 - 49.75	43.47	2528.68	28.81
32	49.75 - 48	43.93	2579.07	28.85
33	48 - 42	46.64	2753.34	29.16
34	42 - 37	48.15	2899.12	29.19
35	37 - 32	49.68	3045.02	29.21
36	32 - 27.913	50.95	3164.29	29.20
37	27.913 - 27.663	51.07	3171.59	29.18
38	27.663 - 27.25	51.25	3183.65	29.20
39	27.25 - 26.983	51.36	3191.44	29.20
40	26.983 - 26.833	51.42	3195.82	29.20
41	26.833 - 21.833	53.43	3342.16	29.33
42	21.833 - 16.833	55.48	3489.04	29.44
43	16.833 - 16	55.83	3513.56	29.45
44	16 - 15.75	55.96	3520.92	29.44
45	15.75 - 14.747	56.43	3550.48	29.49
46	14.747 - 14.497	56.54	3557.85	29.48
47	14.497 - 12.083	57.46	3629.03	29.52
48	12.083 - 11.833	57.59	3636.41	29.49
49	11.833 - 10	58.40	3690.52	29.57
50	10 - 9.75	58.53	3697.90	29.54
51	9.75 - 4.75	60.78	3845.91	29.67
52	4.75 - 0	62.95	3987.00	29.76

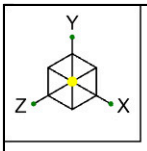
Analysis Results

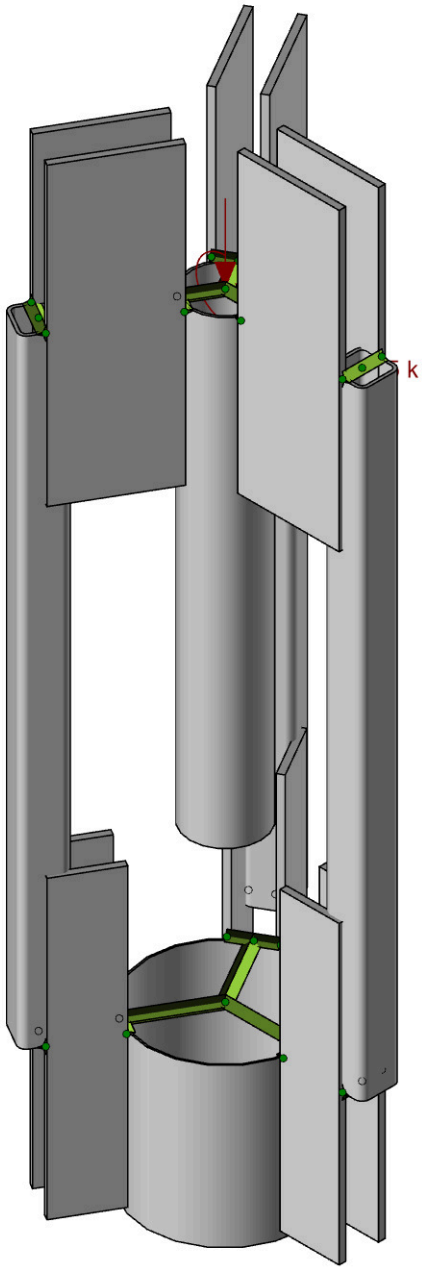
Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
160 - 155	Pole	TP10.75x10.75x0.349	Pole	22.4%	Pass
155 - 150	Pole	TP10.75x10.75x0.349	Pole	61.2%	Pass
150 - 148.5	Pole	TP10.75x10.75x0.349	Pole	73.4%	Pass
148.5 - 148	Pole	TP23x23x0.349	Pole	17.1%	Pass
148 - 143	Pole	TP23.81x23x0.25	Pole	23.5%	Pass
143 - 138	Pole	TP24.62x23.81x0.25	Pole	32.3%	Pass
138 - 133	Pole	TP25.43x24.62x0.25	Pole	44.2%	Pass
133 - 128	Pole	TP26.24x25.43x0.25	Pole	54.6%	Pass
128 - 123	Pole	TP27.05x26.24x0.25	Pole	66.4%	Pass
123 - 118	Pole	TP27.86x27.05x0.25	Pole	77.2%	Pass
118 - 114.75	Pole	TP28.994x27.86x0.25	Pole	84.1%	Pass
114.75 - 109.75	Pole	TP28.696x27.887x0.3125	Pole	75.1%	Pass
109.75 - 105.33	Pole	TP29.412x28.696x0.3125	Pole	80.9%	Pass
105.33 - 105.08	Pole + Reinf.	TP29.452x29.412x0.4688	Reinf. 5 Tension Rupture	76.9%	Pass
105.08 - 100.08	Pole + Reinf.	TP30.262x29.452x0.4625	Reinf. 5 Tension Rupture	83.2%	Pass
100.08 - 95.08	Pole + Reinf.	TP31.072x30.262x0.4625	Reinf. 5 Tension Rupture	89.0%	Pass
95.08 - 92.5	Pole + Reinf.	TP31.491x31.072x0.4563	Reinf. 5 Tension Rupture	91.7%	Pass
92.5 - 92.25	Pole + Reinf.	TP31.531x31.491x0.6375	Reinf. 9 Tension Rupture	81.4%	Pass
92.25 - 87.25	Pole + Reinf.	TP32.341x31.531x0.625	Reinf. 9 Tension Rupture	86.4%	Pass
87.25 - 82.25	Pole + Reinf.	TP33.151x32.341x0.6125	Reinf. 9 Tension Rupture	91.0%	Pass
82.25 - 81	Pole + Reinf.	TP34.042x33.151x0.6125	Reinf. 9 Tension Rupture	92.1%	Pass
81 - 75.75	Pole	TP33.579x32.729x0.375	Pole	86.7%	Pass
75.75 - 70.75	Pole	TP34.389x33.579x0.375	Pole	89.2%	Pass
70.75 - 70.58	Pole	TP34.416x34.389x0.375	Pole	89.2%	Pass
70.58 - 70.33	Pole + Reinf.	TP34.456x34.416x0.675	Reinf. 4 Tension Rupture	78.0%	Pass
70.33 - 70	Pole + Reinf.	TP34.51x34.456x0.675	Reinf. 4 Tension Rupture	78.2%	Pass
70 - 69.75	Pole	TP34.551x34.51x0.375	Pole	89.6%	Pass
69.75 - 64.75	Pole	TP35.361x34.551x0.375	Pole	91.7%	Pass
64.75 - 59.75	Pole	TP36.171x35.361x0.375	Pole	93.6%	Pass
59.75 - 54.75	Pole	TP36.981x36.171x0.375	Pole	95.7%	Pass
54.75 - 49.75	Pole	TP37.791x36.981x0.375	Pole	97.7%	Pass
49.75 - 48	Pole	TP38.884x37.791x0.375	Pole	98.3%	Pass
48 - 42	Pole	TP38.296x37.324x0.4375	Pole	88.0%	Pass
42 - 37	Pole	TP39.106x38.296x0.4375	Pole	88.8%	Pass
37 - 32	Pole	TP39.916x39.106x0.4375	Pole	89.5%	Pass
32 - 27.91	Pole	TP40.578x39.916x0.4375	Pole	90.0%	Pass
27.91 - 27.66	Pole + Reinf.	TP40.619x40.578x0.675	Reinf. 6 Tension Rupture	87.7%	Pass
27.66 - 27.25	Pole + Reinf.	TP40.686x40.619x0.675	Reinf. 6 Tension Rupture	87.8%	Pass
27.25 - 26.98	Pole + Reinf.	TP40.729x40.686x0.675	Reinf. 1 Tension Rupture	85.9%	Pass
26.98 - 26.83	Pole + Reinf.	TP40.753x40.729x0.6625	Reinf. 1 Tension Rupture	86.0%	Pass
26.83 - 21.83	Pole + Reinf.	TP41.563x40.753x0.6625	Reinf. 1 Tension Rupture	87.0%	Pass
21.83 - 16.83	Pole + Reinf.	TP42.373x41.563x0.6625	Reinf. 1 Tension Rupture	87.9%	Pass
16.83 - 16	Pole + Reinf.	TP42.508x42.373x0.6625	Reinf. 1 Tension Rupture	88.0%	Pass
16 - 15.75	Pole + Reinf.	TP42.549x42.508x0.8125	Reinf. 7 Tension Rupture	78.8%	Pass
15.75 - 14.75	Pole + Reinf.	TP42.711x42.549x0.8125	Reinf. 7 Tension Rupture	79.0%	Pass
14.75 - 14.5	Pole + Reinf.	TP42.752x42.711x0.4875	Pole	89.7%	Pass
14.5 - 12.08	Pole + Reinf.	TP43.143x42.752x0.4875	Pole	90.1%	Pass
12.08 - 11.83	Pole + Reinf.	TP43.183x43.143x0.7375	Reinf. 1 Tension Rupture	80.7%	Pass
11.83 - 10	Pole + Reinf.	TP43.48x43.183x0.7375	Reinf. 1 Tension Rupture	80.9%	Pass
10 - 9.75	Pole + Reinf.	TP43.521x43.48x0.7375	Reinf. 1 Tension Rupture	81.0%	Pass
9.75 - 4.75	Pole + Reinf.	TP44.331x43.521x0.725	Reinf. 1 Tension Rupture	81.7%	Pass
4.75 - 0	Pole + Reinf.	TP45.1x44.331x0.7125	Reinf. 1 Tension Rupture	82.3%	Pass
				Summary	
			Pole	98.3%	Pass
			Reinforcement	92.1%	Pass
			Overall	98.3%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in^4)			Area (in^2)			% Capacity*									
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9
160 - 155	154	n/a	154	11.40	n/a	11.40	22.4%									
155 - 150	154	n/a	154	11.40	n/a	11.40	61.2%									
150 - 148.5	154	n/a	154	11.40	n/a	11.40	73.4%									
148.5 - 148	1593	n/a	1593	24.83	n/a	24.83	17.1%									
148 - 143	1311	n/a	1311	18.69	n/a	18.69	23.5%									
143 - 138	1450	n/a	1450	19.34	n/a	19.34	32.3%									
138 - 133	1600	n/a	1600	19.98	n/a	19.98	44.2%									
133 - 128	1759	n/a	1759	20.62	n/a	20.62	54.6%									
128 - 123	1929	n/a	1929	21.27	n/a	21.27	66.4%									
123 - 118	2109	n/a	2109	21.91	n/a	21.91	77.2%									
118 - 114.75	2232	n/a	2232	22.33	n/a	22.33	84.1%									
114.75 - 109.75	2865	n/a	2865	28.15	n/a	28.15	75.1%									
109.75 - 105.33	3087	n/a	3087	28.86	n/a	28.86	80.9%									
105.33 - 105.08	3100	1464	4563	28.90	12.39	41.29	54.3%					76.9%				
105.08 - 100.08	3365	1542	4907	29.71	12.39	42.10	58.8%					83.2%				
100.08 - 95.08	3646	1622	5268	30.51	12.39	42.90	62.9%					89.0%				
95.08 - 92.5	3797	1664	5460	30.92	12.39	43.31	65.1%					91.7%				
92.5 - 92.25	3811	3694	7505	30.96	27.39	58.35	47.7%					67.2%				81.4%
92.25 - 87.25	4116	3878	7994	31.77	27.39	59.16	50.9%					71.3%				86.4%
87.25 - 82.25	4436	4066	8502	32.57	27.39	59.96	54.0%					75.1%				91.0%
82.25 - 81	4519	4114	8633	32.77	27.39	60.16	54.8%					76.0%				92.1%
81 - 75.75	5503	n/a	5503	39.52	n/a	39.52	86.7%									
75.75 - 70.75	5916	n/a	5916	40.48	n/a	40.48	89.2%									
70.75 - 70.58	5930	n/a	5930	40.52	n/a	40.52	89.2%									
70.58 - 70.33	5976	4418	10394	40.56	34.95	75.51	53.2%				78.0%				72.8%	
70.33 - 70	6005	4431	10436	40.63	34.95	75.58	53.3%				78.2%				73.0%	
70 - 69.75	6000	n/a	6000	40.68	n/a	40.68	89.6%									
69.75 - 64.75	6437	n/a	6437	41.64	n/a	41.64	91.7%									
64.75 - 59.75	6895	n/a	6895	42.60	n/a	42.60	93.6%									
59.75 - 54.75	7373	n/a	7373	43.57	n/a	43.57	95.7%									
54.75 - 49.75	7874	n/a	7874	44.53	n/a	44.53	97.7%									
49.75 - 48	8054	n/a	8054	44.87	n/a	44.87	98.3%									
48 - 42	9516	n/a	9516	52.57	n/a	52.57	88.0%									
42 - 37	10140	n/a	10140	53.69	n/a	53.69	88.8%									
37 - 32	10791	n/a	10791	54.82	n/a	54.82	89.5%									
32 - 27.91	11343	n/a	11343	55.74	n/a	55.74	90.0%									
27.91 - 27.66	11404	5776	17180	55.79	32.85	88.64	61.5%			65.9%			87.7%			
27.66 - 27.25	11461	5795	17256	55.89	32.85	88.73	61.6%			66.0%			87.8%			
27.25 - 26.98	11471	5787	17258	55.95	25.41	81.36	59.0%	85.9%		85.9%						
26.98 - 26.83	11492	5793	17285	55.98	25.41	81.39	59.0%	86.0%		86.0%						
26.83 - 21.83	12199	6015	18213	57.11	25.41	82.52	59.8%	87.0%		87.0%						
21.83 - 16.83	12934	6240	19174	58.23	25.41	83.64	60.6%	87.9%		87.9%						
16.83 - 16	13059	6278	19337	58.42	25.41	83.83	60.7%	88.0%		88.0%						
16 - 15.75	13097	10584	23681	58.47	43.41	101.88	49.8%	72.1%		72.1%				78.8%		
15.75 - 14.75	13249	10662	23911	58.70	43.41	102.11	50.0%	72.3%		72.3%				79.0%		
14.75 - 14.5	13650	1331	14981	58.76	16.94	75.70	89.7%	89.5%								
14.5 - 12.08	14026	1359	15386	59.30	16.94	76.24	90.1%	89.9%								
12.08 - 11.83	13727	8795	22521	59.36	33.88	93.24	57.6%	80.7%	78.6%							
11.83 - 10	14014	8911	22925	59.77	33.88	93.65	57.9%	80.9%	78.9%							
10 - 9.75	14054	8927	22981	59.82	33.88	93.70	58.0%	81.0%	78.9%							
9.75 - 4.75	14861	9248	24108	60.95	33.88	94.83	58.8%	81.7%	79.7%							
4.75 - 0	15655	9558	25213	62.02	33.88	95.90	59.6%	82.3%	80.3%							

Note: Section capacity checked using 5 degree increments.
Rating per TIA-222-H Section 15.5.





Loads: BLC 1, 1
Envelope Only Solution

B+T Group	876313 - WEST JOHNSON AVE. BURNT HOUSE	SK-3
VP		Oct 14, 2021
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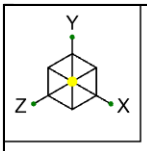

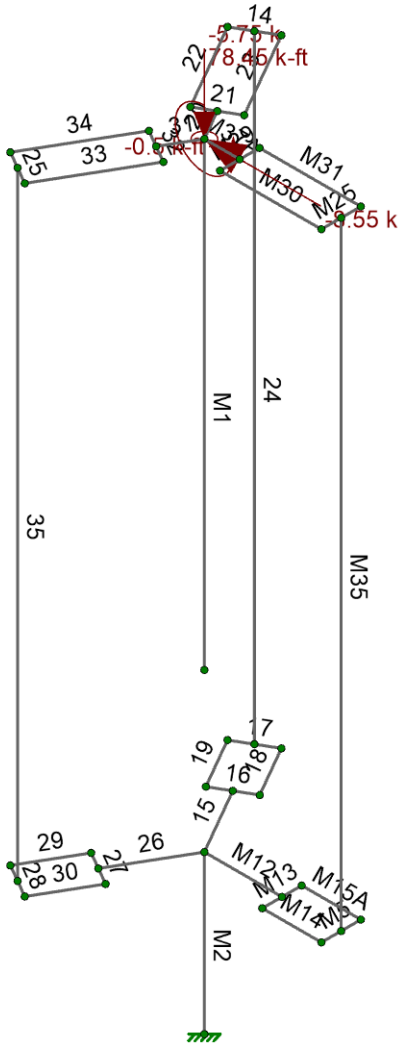

Loads: BLC 1, 1
Envelope Only Solution

B+T Group	876313 - WEST JOHNSON AVE. BURNT HOUSE	SK-2
VP		Oct 14, 2021
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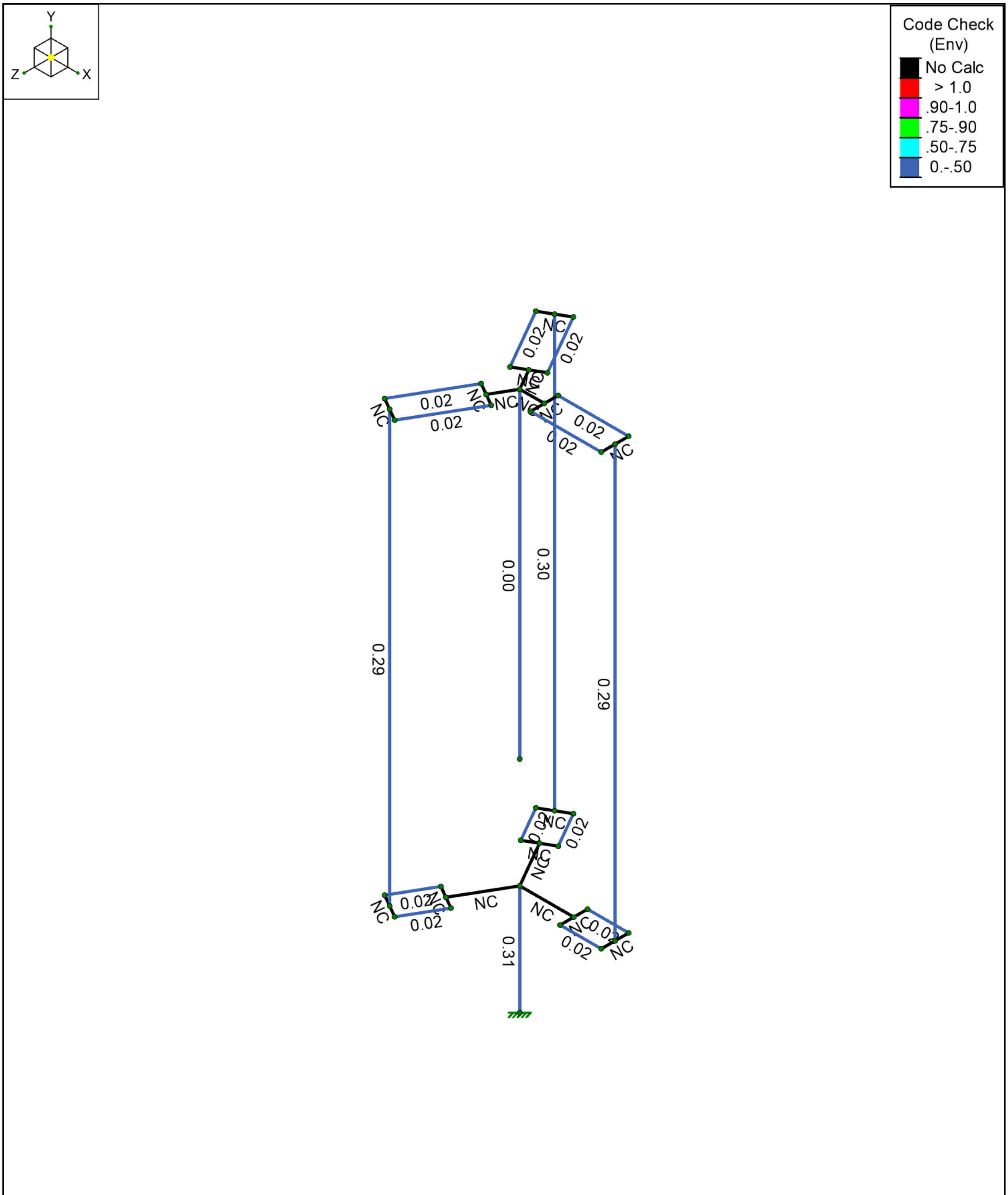


Member Code Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	876313 - WEST JOHNSON AVE. BURNT HOUSE	SK-4
VP		Oct 14, 2021
137177.008.01		137177_008_01_WEST_JOHNSO...

Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	BASE	0	0	0	
2	T_T	0	2	0	
3	E_T	0	9.833	0	
4	E_B	0	4	0	
5	N24	0.984375	2	0	
6	N24A	0.984375	2	0.25	
7	N25	0.984375	2	-0.25	
8	N36A	0.447917	9.833	0	
9	N37A	0.447917	9.833	0.25	
10	N38	0.447917	9.833	-0.25	
11	17	1.734375	9.833	0.25	
12	18	1.734375	9.833	0	
13	19	1.734375	9.833	-0.25	
14	20	1.734375	2	0.25	
15	21	1.734375	2	0	
16	22	1.734375	2	-0.25	
17	23	-0.223959	9.833	-0.387908	
18	24	-1.083694	2	-1.377013	
19	25	-0.650681	2	-1.627013	
20	26	-0.275681	2	-0.977494	
21	27	-0.492188	2	-0.852494	
22	28	-0.708694	2	-0.727494	
23	29	-0.867188	2	-1.502013	
24	30	-0.007452	9.833	-0.512907	
25	31	-0.440465	9.833	-0.262908	
26	32	-0.650681	9.833	-1.627013	
27	33	-0.867188	9.833	-1.502013	
28	34	-1.083694	9.833	-1.377013	
29	35	-0.223959	9.833	0.387908	
30	36	-0.650681	2	1.627013	
31	37	-1.083694	2	1.377013	
32	38	-0.708694	2	0.727494	
33	39	-0.492188	2	0.852494	
34	40	-0.275681	2	0.977494	
35	41	-0.867188	2	1.502013	
36	42	-0.440465	9.833	0.262907	
37	43	-0.007452	9.833	0.512908	
38	44	-1.083694	9.833	1.377013	
39	45	-0.867188	9.833	1.502013	
40	46	-0.650681	9.833	1.627013	

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	BASE	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Hot Rolled Steel Properties

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

Hot Rolled Steel Properties (Continued)

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [k/ft³]	Yield [ksi]	Ry	Fu [ksi]	Rt
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3
8	A572 Gr. 65	29000	11154	0.3	0.65	0.49	65	1.5	80	1.2
9	A607-60	29000	11154	0.3	0.65	0.49	60	1.5	75	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	Existing pole	Pole 23.8128x0.25	Column	Pipe	A607-60	Typical	18.506	1284.519	1284.519	2569.038
2	Extension pole	Pipe 10.75x0.349	Column	Pipe	A53 Gr.B	Typical	11.404	154.383	154.383	308.766
3	HSS	HSS6X6X8	Column	Tube	A500 Gr.B Rect	Typical	9.74	48.3	48.3	81.1
4	Plate Top	BP 1"x45"	Beam	RECT	A572 Gr. 65	Typical	45	3.75	7593.75	14.79
5	Plate Bottom	BP 1"x45"	Beam	RECT	A572 Gr. 65	Typical	45	3.75	7593.75	14.79

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	M1	E_T	E_B		Extension pole	Column	Pipe	A53 Gr.B	Typical
2	M2	T_T	BASE		Existing pole	Column	Pipe	A607-60	Typical
3	M5	20	22		RIGID	None	None	RIGID	Typical
4	M35	18	21		HSS	Column	Tube	A500 Gr.B Rect	Typical
5	M12	T_T	N24		RIGID	None	None	RIGID	Typical
6	M13	N24A	N25		RIGID	None	None	RIGID	Typical
7	M14	N24A	20		Plate Bottom	Beam	RECT	A572 Gr. 65	Typical
8	M15A	N25	22		Plate Bottom	Beam	RECT	A572 Gr. 65	Typical
9	M25	17	19		RIGID	None	None	RIGID	Typical
10	M29	N37A	N38		RIGID	None	None	RIGID	Typical
11	M30	N37A	17		Plate Top	Beam	RECT	A572 Gr. 65	Typical
12	M31	N38	19		Plate Top	Beam	RECT	A572 Gr. 65	Typical
13	M37A	E_T	N36A		RIGID	None	None	RIGID	Typical
14	14	32	34		RIGID	None	None	RIGID	Typical
15	15	T_T	27		RIGID	None	None	RIGID	Typical
16	16	26	28		RIGID	None	None	RIGID	Typical
17	17	25	24		RIGID	None	None	RIGID	Typical
18	18	26	25		Plate Bottom	Beam	RECT	A572 Gr. 65	Typical
19	19	28	24		Plate Bottom	Beam	RECT	A572 Gr. 65	Typical
20	20	E_T	23		RIGID	None	None	RIGID	Typical
21	21	30	31		RIGID	None	None	RIGID	Typical
22	22	31	34		Plate Top	Beam	RECT	A572 Gr. 65	Typical
23	23	30	32		Plate Top	Beam	RECT	A572 Gr. 65	Typical
24	24	33	29	330	HSS	Column	Tube	A500 Gr.B Rect	Typical
25	25	44	46		RIGID	None	None	RIGID	Typical
26	26	T_T	39		RIGID	None	None	RIGID	Typical
27	27	38	40		RIGID	None	None	RIGID	Typical
28	28	37	36		RIGID	None	None	RIGID	Typical
29	29	38	37		Plate Bottom	Beam	RECT	A572 Gr. 65	Typical
30	30	40	36		Plate Bottom	Beam	RECT	A572 Gr. 65	Typical
31	31	E_T	35		RIGID	None	None	RIGID	Typical
32	32	42	43		RIGID	None	None	RIGID	Typical
33	33	43	46		Plate Top	Beam	RECT	A572 Gr. 65	Typical
34	34	42	44		Plate Top	Beam	RECT	A572 Gr. 65	Typical
35	35	45	41	30	HSS	Column	Tube	A500 Gr.B Rect	Typical

Member Advanced Data

	Label	Physical	Deflection Ratio Options	Seismic DR
1	M1	Yes	** NA **	None
2	M2	Yes	** NA **	None
3	M5	Yes	** NA **	None
4	M35	Yes	** NA **	None
5	M12	Yes	** NA **	None
6	M13	Yes	** NA **	None
7	M14	Yes	Default	None
8	M15A	Yes	Default	None
9	M25	Yes	** NA **	None
10	M29	Yes	** NA **	None
11	M30	Yes	Default	None
12	M31	Yes	Default	None
13	M37A	Yes	** NA **	None
14	14	Yes	** NA **	None
15	15	Yes	** NA **	None
16	16	Yes	** NA **	None
17	17	Yes	** NA **	None
18	18	Yes	Default	None
19	19	Yes	Default	None
20	20	Yes	** NA **	None
21	21	Yes	** NA **	None
22	22	Yes	Default	None
23	23	Yes	Default	None
24	24	Yes	** NA **	None
25	25	Yes	** NA **	None
26	26	Yes	** NA **	None
27	27	Yes	** NA **	None
28	28	Yes	** NA **	None
29	29	Yes	Default	None
30	30	Yes	Default	None
31	31	Yes	** NA **	None
32	32	Yes	** NA **	None
33	33	Yes	Default	None
34	34	Yes	Default	None
35	35	Yes	** NA **	None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [ft]	Lb y-y [ft]	Lb z-z [ft]	Lcomp top [ft]	Function
1	M1	Extension pole	5.833				Lateral
2	M2	Existing pole	2				Lateral
3	M35	HSS	7.833	4.5	4.5		Lateral
4	M14	Plate Bottom	0.75			Lbyy	Lateral
5	M15A	Plate Bottom	0.75			Lbyy	Lateral
6	M30	Plate Top	1.286			Lbyy	Lateral
7	M31	Plate Top	1.286			Lbyy	Lateral
8	18	Plate Bottom	0.75			Lbyy	Lateral
9	19	Plate Bottom	0.75			Lbyy	Lateral
10	22	Plate Top	1.286			Lbyy	Lateral
11	23	Plate Top	1.286			Lbyy	Lateral
12	24	HSS	7.833	4.5	4.5		Lateral
13	29	Plate Bottom	0.75			Lbyy	Lateral
14	30	Plate Bottom	0.75			Lbyy	Lateral
15	33	Plate Top	1.286			Lbyy	Lateral
16	34	Plate Top	1.286			Lbyy	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [ft]	Lb y-y [ft]	Lb z-z [ft]	Lcomp top [ft]	Function
17	35	HSS	7.833	4.5	4.5		Lateral

Member Point Loads

No Data to Print...

Member Distributed Loads

No Data to Print...

Member Area Loads

No Data to Print...

Node Loads and Enforced Displacements (BLC 1 : 1)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	E_T	L	Y	-5.75
2	E_T	L	X	-8.55
3	E_T	L	MZ	78.45
4	E_T	L	MY	-0.5

Node Loads and Enforced Displacements (BLC 2 : 2)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	E_T	L	Y	-5.75
2	E_T	L	X	-7.405
3	E_T	L	Z	-4.275
4	E_T	L	MZ	67.94
5	E_T	L	MX	-39.225
6	E_T	L	MY	-0.5

Node Loads and Enforced Displacements (BLC 3 : 3)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	E_T	L	Y	-5.75
2	E_T	L	X	-6.046
3	E_T	L	Z	-6.046
4	E_T	L	MZ	55.473
5	E_T	L	MX	-55.473
6	E_T	L	MY	-0.5

Node Loads and Enforced Displacements (BLC 4 : 4)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	E_T	L	Y	-5.75
2	E_T	L	X	-4.275
3	E_T	L	Z	-7.405
4	E_T	L	MZ	39.225
5	E_T	L	MX	-67.94
6	E_T	L	MY	-0.5

Node Loads and Enforced Displacements (BLC 5 : 5)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	E_T	L	Y	-5.75
2	E_T	L	Z	-8.55
3	E_T	L	MX	-78.45
4	E_T	L	MY	-0.5

Node Loads and Enforced Displacements (BLC 6 : 6)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	E_T	L	Y	-5.75
2	E_T	L	X	4.275
3	E_T	L	Z	-7.405
4	E_T	L	MZ	-39.225
5	E_T	L	MX	-67.94
6	E_T	L	MY	-0.5

Node Loads and Enforced Displacements (BLC 7 : 7)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	E_T	L	Y	-5.75
2	E_T	L	X	6.046
3	E_T	L	Z	-6.046
4	E_T	L	MZ	-55.473
5	E_T	L	MX	-55.473
6	E_T	L	MY	-0.5

Node Loads and Enforced Displacements (BLC 8 : 8)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	E_T	L	Y	-5.75
2	E_T	L	X	7.405
3	E_T	L	Z	-4.275
4	E_T	L	MZ	-67.94
5	E_T	L	MX	-39.225
6	E_T	L	MY	-0.5

Node Loads and Enforced Displacements (BLC 9 : 9)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	E_T	L	Y	-5.75
2	E_T	L	X	8.55
3	E_T	L	MZ	-78.45
4	E_T	L	MY	-0.5

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal
1	1	None	-1	4
2	2	None	-1	6
3	3	None	-1	6
4	4	None	-1	6
5	5	None	-1	4
6	6	None	-1	6
7	7	None	-1	6

Basic Load Cases (Continued)

	BLC Description	Category	Y Gravity	Nodal
8	8	None	-1	6
9	9	None	-1	4

Load Combinations

	Description	Solve	P-Delta	BLC	Factor
1	1	Yes	Y	1	1
2	2	Yes	Y	2	1
3	3	Yes	Y	3	1
4	4	Yes	Y	4	1
5	5	Yes	Y	5	1
6	6	Yes	Y	6	1
7	7	Yes	Y	7	1
8	8	Yes	Y	8	1
9	9	Yes	Y	9	1

Envelope Member Section Forces

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k-ft]	LC	z-z Moment[k-ft]	LC
1	M1	1	max	-0.226	9	0	9	0	9	0	9	0.002	5	0.002	9
2			min	-0.226	1	0	1	0	5	0	1	0	9	-0.002	1
3		2	max	-0.17	9	0	9	0	9	0	9	0.001	5	0.001	9
4			min	-0.17	1	0	1	0	5	0	1	0	9	-0.001	1
5		3	max	-0.113	9	0	9	0	9	0	9	0.001	5	0.001	9
6			min	-0.113	1	0	1	0	5	0	1	0	9	-0.001	1
7		4	max	-0.057	9	0	9	0	9	0	9	0	5	0	9
8			min	-0.057	1	0	1	0	5	0	1	0	9	0	1
9		5	max	0	9	0	9	0	9	0	9	0	9	0	9
10			min	0	1	0	1	0	5	0	1	0	1	0	1
11	M2	1	max	8.685	9	8.558	1	8.557	5	0.5	5	145.658	5	145.677	9
12			min	8.685	2	-8.558	9	0	1	0.5	2	-0.014	9	-145.639	1
13		2	max	8.716	9	8.558	1	8.557	5	0.5	5	149.936	5	149.956	9
14			min	8.716	2	-8.558	9	0	1	0.5	2	-0.014	9	-149.918	1
15		3	max	8.748	9	8.558	1	8.557	5	0.5	5	154.215	5	154.234	9
16			min	8.748	2	-8.558	9	0	1	0.5	2	-0.014	9	-154.197	1
17		4	max	8.779	9	8.558	1	8.557	5	0.5	5	158.494	5	158.513	9
18			min	8.779	2	-8.558	9	0	1	0.5	2	-0.014	9	-158.476	1
19		5	max	8.811	9	8.558	1	8.557	5	0.5	5	162.772	5	162.792	9
20			min	8.811	2	-8.558	9	0	1	0.5	2	-0.014	9	-162.754	1
21	M5	1	max	0.019	1	22.622	9	1.833	1	6.51	1	0.488	5	0.236	5
22			min	-1.313	5	-28.729	3	-2.139	6	-10.24	7	-0.007	1	-0.003	9
23		2	max	0.019	1	22.622	9	1.833	1	6.51	1	0.348	3	3.757	3
24			min	-1.313	5	-28.729	3	-2.139	6	-10.24	7	-0.157	9	-2.831	9
25		3	max	-0.018	9	22.622	9	0.586	2	6.522	9	0.452	1	7.348	3
26			min	-1.313	5	-31.398	7	-1.712	5	-10.24	7	-0.41	9	-8.016	7
27		4	max	1.312	5	19.942	1	1.667	9	6.522	9	0.178	1	2.496	1
28			min	-0.019	1	-31.398	7	-2.319	3	-10.236	3	-0.326	6	-4.091	7
29		5	max	1.312	5	19.942	1	1.667	9	6.522	9	0.007	1	0.003	9
30			min	-0.019	1	-31.398	7	-2.319	3	-10.236	3	-0.488	5	-0.236	5
31	M35	1	max	44.396	9	3.046	1	2.635	5	0.12	5	0.146	9	11.048	1
32			min	-39.611	1	-3.051	9	-0.038	9	0.103	1	-9.349	5	-11.069	9
33		2	max	44.465	9	3.046	1	2.635	5	0.12	5	0.072	9	5.083	1
34			min	-39.541	1	-3.051	9	-0.038	9	0.103	1	-4.189	5	-5.094	9
35		3	max	44.535	9	3.046	1	2.635	5	0.12	5	0.97	5	0.881	9
36			min	-39.471	1	-3.051	9	-0.038	9	0.103	1	-0.002	9	-0.882	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k-ft]	LC	z-z Moment[k-ft]	LC
37		4	max	44.605	9	3.046	1	2.635	5	0.12	5	6.129	5	6.855	9
38			min	-39.401	1	-3.051	9	-0.038	9	0.103	1	-0.075	9	-6.848	1
39		5	max	44.675	9	3.046	1	2.635	5	0.12	5	11.288	5	12.83	9
40			min	-39.331	1	-3.051	9	-0.038	9	0.103	1	-0.149	9	-12.813	1
41	M12	1	max	3.204	1	44.9	9	2.625	5	11.288	5	0.168	1	90.617	9
42			min	-2.873	9	-39.106	1	-0.038	1	-0.149	9	-4.432	5	-80.724	1
43		2	max	3.204	1	44.9	9	2.625	5	11.288	5	0.158	1	79.568	9
44			min	-2.873	9	-39.106	1	-0.038	1	-0.149	9	-3.786	5	-71.101	1
45		3	max	3.204	1	44.9	9	2.625	5	11.288	5	0.149	1	68.518	9
46			min	-2.873	9	-39.106	1	-0.038	1	-0.149	9	-3.14	5	-61.477	1
47		4	max	3.204	1	44.9	9	2.625	5	11.288	5	0.14	1	57.468	9
48			min	-2.873	9	-39.106	1	-0.038	1	-0.149	9	-2.494	5	-51.853	1
49		5	max	3.204	1	44.9	9	2.625	5	11.288	5	0.131	1	46.419	9
50			min	-2.873	9	-39.106	1	-0.038	1	-0.149	9	-1.848	5	-42.229	1
51	M13	1	max	1.313	5	28.614	3	2.139	6	23.316	9	0.496	5	0.003	9
52			min	-0.019	1	-22.737	9	-1.833	1	-22.15	2	-0.008	1	-0.236	5
53		2	max	1.313	5	28.614	3	2.139	6	23.316	9	0.71	5	2.845	9
54			min	-0.019	1	-22.737	9	-1.833	1	-22.15	2	-0.237	1	-3.743	3
55		3	max	1.313	5	31.513	7	1.712	5	23.316	9	0.95	6	8.044	7
56			min	0.018	9	-22.737	9	-0.586	2	-24.242	8	-1.013	4	-7.32	3
57		4	max	0.019	1	31.513	7	2.319	3	21.218	1	0.216	9	4.105	7
58			min	-1.312	5	-19.827	1	-1.667	9	-24.242	8	-0.727	4	-2.481	1
59		5	max	0.019	1	31.513	7	2.319	3	21.218	1	0.008	1	0.236	5
60			min	-1.312	5	-19.827	1	-1.667	9	-24.242	8	-0.496	5	-0.003	9
61	M14	1	max	1.833	1	22.735	9	1.312	5	0.236	5	0.008	1	23.316	9
62			min	-2.139	6	-28.613	3	-0.019	1	-0.003	9	-0.496	5	-22.15	2
63		2	max	1.833	1	22.707	9	1.312	5	0.236	5	0.004	1	19.056	9
64			min	-2.139	6	-28.642	3	-0.019	1	-0.003	9	-0.25	5	-17.394	1
65		3	max	1.833	1	22.678	9	1.312	5	0.236	5	0.001	1	14.801	9
66			min	-2.139	6	-28.671	3	-0.019	1	-0.003	9	-0.004	5	-13.771	1
67		4	max	1.833	1	22.649	9	1.312	5	0.236	5	0.242	5	11.219	8
68			min	-2.139	6	-28.699	3	-0.019	1	-0.003	9	-0.003	1	-10.143	1
69		5	max	1.833	1	22.621	9	1.312	5	0.236	5	0.488	5	10.24	7
70			min	-2.139	6	-28.728	3	-0.019	1	-0.003	9	-0.007	1	-6.51	1
71	M15A	1	max	2.319	3	31.514	7	1.312	5	0.236	5	0.008	1	24.242	8
72			min	-1.667	9	-19.829	1	-0.019	1	-0.003	9	-0.496	5	-21.218	1
73		2	max	2.319	3	31.485	7	1.312	5	0.236	5	0.004	1	18.949	9
74			min	-1.667	9	-19.858	1	-0.019	1	-0.003	9	-0.25	5	-17.497	1
75		3	max	2.319	3	31.457	7	1.312	5	0.236	5	0.001	1	14.801	9
76			min	-1.667	9	-19.887	1	-0.019	1	-0.003	9	-0.004	5	-13.771	1
77		4	max	2.319	3	31.428	7	1.312	5	0.236	5	0.242	5	10.659	9
78			min	-1.667	9	-19.915	1	-0.019	1	-0.003	9	-0.003	1	-10.708	2
79		5	max	2.319	3	31.399	7	1.312	5	0.236	5	0.488	5	6.522	9
80			min	-1.667	9	-19.944	1	-0.019	1	-0.003	9	-0.007	1	-10.236	3
81	M25	1	max	1.311	5	20.076	1	3.308	6	5.698	1	0.012	1	0.201	5
82			min	-0.019	1	-28.616	7	-1.854	1	-12.707	6	-0.837	5	-0.003	9
83		2	max	1.311	5	20.076	1	3.308	6	5.698	1	0.159	9	3.719	7
84			min	-0.019	1	-28.616	7	-1.854	1	-12.707	6	-0.5	4	-2.513	1
85		3	max	0.019	1	22.477	9	3.526	4	5.713	9	0.41	9	7.296	7
86			min	-1.314	5	-28.616	7	-1.854	1	-12.707	6	-0.452	1	-6.698	3
87		4	max	0.019	1	22.477	9	3.526	4	5.713	9	0.472	6	2.813	9
88			min	-1.314	5	-26.226	3	-1.685	9	-12.707	4	-0.18	1	-3.42	3
89		5	max	0.019	1	22.477	9	3.526	4	5.713	9	0.837	5	0.003	9
90			min	-1.314	5	-26.226	3	-1.685	9	-12.707	4	-0.012	1	-0.201	5
91	M29	1	max	0.019	1	28.419	7	1.854	1	20.261	1	0.013	1	0.003	9

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k-ft]	LC	z-z Moment[k-ft]	LC
92			min	-1.311	5	-20.273	1	-3.308	6	-25.679	8	-0.851	5	-0.201	5
93		2	max	0.019	1	28.419	7	1.854	1	20.261	1	0.245	1	2.537	1
94			min	-1.311	5	-20.273	1	-3.308	6	-25.679	8	-1.24	5	-3.694	7
95		3	max	1.314	5	28.419	7	1.854	1	23.07	9	1.64	4	6.747	3
96			min	-0.019	1	-22.28	9	-3.526	4	-25.679	8	-1.54	6	-7.246	7
97		4	max	1.314	5	26.423	3	1.685	9	23.07	9	1.24	5	3.444	3
98			min	-0.019	1	-22.28	9	-3.526	4	-22.873	2	-0.223	9	-2.788	9
99		5	max	1.314	5	26.423	3	1.685	9	23.07	9	0.851	5	0.201	5
100			min	-0.019	1	-22.28	9	-3.526	4	-22.873	2	-0.013	1	-0.003	9
101	M30	1	max	3.308	6	20.277	1	0.019	1	0.201	5	0.851	5	20.261	1
102			min	-1.854	1	-28.416	7	-1.312	5	-0.003	9	-0.013	1	-25.679	8
103		2	max	3.308	6	20.228	1	0.019	1	0.201	5	0.429	5	13.747	1
104			min	-1.854	1	-28.465	7	-1.312	5	-0.003	9	-0.007	1	-16.668	8
105		3	max	3.308	6	20.179	1	0.019	1	0.201	5	0.007	5	7.249	1
106			min	-1.854	1	-28.514	7	-1.312	5	-0.003	9	-0.001	1	-8.71	9
107		4	max	3.308	6	20.129	1	0.019	1	0.201	5	0.006	1	5.377	5
108			min	-1.854	1	-28.563	7	-1.312	5	-0.003	9	-0.415	5	-1.685	9
109		5	max	3.308	6	20.08	1	0.019	1	0.201	5	0.012	1	12.707	6
110			min	-1.854	1	-28.613	7	-1.312	5	-0.003	9	-0.837	5	-5.698	1
111	M31	1	max	1.685	9	26.426	3	0.019	1	0.201	5	0.851	5	22.873	2
112			min	-3.526	4	-22.276	9	-1.312	5	-0.003	9	-0.013	1	-23.07	9
113		2	max	1.685	9	26.377	3	0.019	1	0.201	5	0.429	5	14.518	2
114			min	-3.526	4	-22.325	9	-1.312	5	-0.003	9	-0.007	1	-15.898	9
115		3	max	1.685	9	26.328	3	0.019	1	0.201	5	0.007	5	7.249	1
116			min	-3.526	4	-22.374	9	-1.312	5	-0.003	9	-0.001	1	-8.71	9
117		4	max	1.685	9	26.279	3	0.019	1	0.201	5	0.006	1	0.942	1
118			min	-3.526	4	-22.423	9	-1.312	5	-0.003	9	-0.415	5	-6.131	5
119		5	max	1.685	9	26.229	3	0.019	1	0.201	5	0.012	1	5.713	9
120			min	-3.526	4	-22.473	9	-1.312	5	-0.003	9	-0.837	5	-12.707	4
121	M37A	1	max	2.873	9	40.012	1	0.038	1	9.349	5	4.432	5	58.094	1
122			min	-3.204	1	-43.995	9	-2.625	5	-0.146	9	-0.168	1	-65.488	9
123		2	max	2.873	9	40.012	1	0.038	1	9.349	5	4.138	5	53.614	1
124			min	-3.204	1	-43.995	9	-2.625	5	-0.146	9	-0.164	1	-60.562	9
125		3	max	2.873	9	40.012	1	0.038	1	9.349	5	3.844	5	49.133	1
126			min	-3.204	1	-43.995	9	-2.625	5	-0.146	9	-0.16	1	-55.635	9
127		4	max	2.873	9	40.012	1	0.038	1	9.349	5	3.55	5	44.653	1
128			min	-3.204	1	-43.995	9	-2.625	5	-0.146	9	-0.156	1	-50.709	9
129		5	max	2.873	9	40.012	1	0.038	1	9.349	5	3.256	5	40.172	1
130			min	-3.204	1	-43.995	9	-2.625	5	-0.146	9	-0.151	1	-45.782	9
131	14	1	max	1.098	1	25.313	9	3.307	1	13.06	9	0.86	8	0.174	1
132			min	-1.35	8	-28.193	2	-4.029	9	-12.708	1	-0.701	1	-0.208	8
133		2	max	1.098	1	25.313	9	3.307	1	13.06	9	0.436	7	3.623	2
134			min	-1.35	8	-28.193	2	-4.029	9	-12.708	1	-0.288	1	-3.344	9
135		3	max	0.018	4	28.748	5	3.307	1	13.061	6	0.41	4	7.292	5
136			min	-1.35	8	-28.193	2	-4.029	9	-12.708	1	-0.239	9	-6.509	9
137		4	max	1.349	8	28.748	5	1.83	1	13.061	6	0.472	1	3.699	5
138			min	-1.1	1	-3.77	1	-3.829	7	-7.178	1	-0.46	9	-0.645	1
139		5	max	1.349	8	28.748	5	1.83	1	13.061	6	0.701	1	0.208	8
140			min	-1.1	1	-3.77	1	-3.829	7	-7.178	1	-0.86	8	-0.174	1
141	15	1	max	1.563	9	44.9	4	2.197	1	9.757	1	4.765	8	90.617	4
142			min	-2.873	4	-18.113	9	-2.699	8	-11.581	8	-3.694	1	-37.918	9
143		2	max	1.563	9	44.9	4	2.197	1	9.757	1	4.101	8	79.567	4
144			min	-2.873	4	-18.113	9	-2.699	8	-11.581	8	-3.153	1	-33.46	9
145		3	max	1.563	9	44.9	4	2.197	1	9.757	1	3.437	8	68.517	4
146			min	-2.873	4	-18.113	9	-2.699	8	-11.581	8	-2.612	1	-29.003	9

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k-ft]	LC	z-z Moment[k-ft]	LC
147		4	max	1.563	9	44.9	4	2.197	1	9.757	1	2.773	8	57.468	4
148			min	-2.873	4	-18.113	9	-2.699	8	-11.581	8	-2.071	1	-24.545	9
149		5	max	1.563	9	44.9	4	2.197	1	9.757	1	2.109	8	46.418	4
150			min	-2.873	4	-18.113	9	-2.699	8	-11.581	8	-1.53	1	-20.087	9
151	16	1	max	1.099	1	6.752	1	2.139	1	24.454	5	0.415	1	0.242	8
152			min	-1.349	8	-31.207	6	-2.747	9	-2.825	9	-0.511	8	-0.204	1
153		2	max	1.099	1	6.752	1	2.139	1	24.454	5	0.683	1	4.111	6
154			min	-1.349	8	-31.207	6	-2.747	9	-2.825	9	-0.8	9	-1.048	1
155		3	max	1.35	8	30.644	1	1.206	4	24.454	5	1.102	7	8.012	6
156			min	0.018	4	-31.207	6	-2.175	8	-24.475	3	-1.144	9	-7.287	9
157		4	max	1.35	8	30.644	1	0.661	1	17.262	9	0.794	7	4.035	1
158			min	-1.099	1	-28.308	9	-2.599	6	-24.475	3	-0.498	1	-3.749	9
159		5	max	1.35	8	30.644	1	0.661	1	17.262	9	0.511	8	0.204	1
160			min	-1.099	1	-28.308	9	-2.599	6	-24.475	3	-0.415	1	-0.242	8
161	17	1	max	1.349	8	31.092	6	2.747	9	10.427	9	0.409	1	0.204	1
162			min	-1.099	1	-6.867	1	-2.139	1	-10.217	1	-0.501	8	-0.242	8
163		2	max	1.349	8	31.092	6	2.747	9	10.427	9	0.141	1	1.063	1
164			min	-1.099	1	-6.867	1	-2.139	1	-10.217	1	-0.281	6	-4.097	6
165		3	max	-0.018	4	31.092	6	2.175	8	10.427	6	0.239	9	7.316	9
166			min	-1.35	8	-30.529	1	-1.206	4	-10.217	1	-0.41	4	-7.983	6
167		4	max	1.099	1	28.423	9	2.599	6	10.427	6	0.3	9	3.763	9
168			min	-1.35	8	-30.529	1	-0.661	1	-3.808	1	-0.326	1	-4.02	1
169		5	max	1.099	1	28.423	9	2.599	6	10.427	6	0.501	8	0.242	8
170			min	-1.35	8	-30.529	1	-0.661	1	-3.808	1	-0.409	1	-0.204	1
171	18	1	max	2.747	9	31.21	6	1.099	1	0.204	1	0.511	8	24.454	5
172			min	-2.139	1	-6.752	1	-1.349	8	-0.242	8	-0.415	1	-2.825	9
173		2	max	2.747	9	31.181	6	1.099	1	0.204	1	0.258	8	19.056	4
174			min	-2.139	1	-6.78	1	-1.349	8	-0.242	8	-0.209	1	-4.734	9
175		3	max	2.747	9	31.152	6	1.099	1	0.204	1	0.005	8	14.801	4
176			min	-2.139	1	-6.809	1	-1.349	8	-0.242	8	-0.003	1	-6.637	9
177		4	max	2.747	9	31.124	6	1.099	1	0.204	1	0.203	1	11.263	3
178			min	-2.139	1	-6.838	1	-1.349	8	-0.242	8	-0.248	8	-8.534	9
179		5	max	2.747	9	31.095	6	1.099	1	0.204	1	0.409	1	10.217	1
180			min	-2.139	1	-6.867	1	-1.349	8	-0.242	8	-0.501	8	-10.427	9
181	19	1	max	0.661	1	30.646	1	1.099	1	0.204	1	0.511	8	24.475	3
182			min	-2.599	6	-28.305	9	-1.349	8	-0.242	8	-0.415	1	-17.262	9
183		2	max	0.661	1	30.618	1	1.099	1	0.204	1	0.258	8	19.392	3
184			min	-2.599	6	-28.334	9	-1.349	8	-0.242	8	-0.209	1	-11.952	9
185		3	max	0.661	1	30.589	1	1.099	1	0.204	1	0.005	8	14.801	4
186			min	-2.599	6	-28.363	9	-1.349	8	-0.242	8	-0.003	1	-6.637	9
187		4	max	0.661	1	30.56	1	1.099	1	0.204	1	0.203	1	11.325	5
188			min	-2.599	6	-28.391	9	-1.349	8	-0.242	8	-0.248	8	-1.316	9
189		5	max	0.661	1	30.531	1	1.099	1	0.204	1	0.409	1	10.427	6
190			min	-2.599	6	-28.42	9	-1.349	8	-0.242	8	-0.501	8	-3.808	1
191	20	1	max	2.873	4	19.017	9	2.699	8	8.079	1	3.694	1	27.196	9
192			min	-1.562	9	-43.994	4	-2.197	1	-9.636	8	-4.765	8	-65.488	4
193		2	max	2.873	4	19.017	9	2.699	8	8.079	1	3.448	1	25.066	9
194			min	-1.562	9	-43.994	4	-2.197	1	-9.636	8	-4.463	8	-60.562	4
195		3	max	2.873	4	19.017	9	2.699	8	8.079	1	3.202	1	22.937	9
196			min	-1.562	9	-43.994	4	-2.197	1	-9.636	8	-4.161	8	-55.635	4
197		4	max	2.873	4	19.017	9	2.699	8	8.079	1	2.956	1	20.807	9
198			min	-1.562	9	-43.994	4	-2.197	1	-9.636	8	-3.859	8	-50.709	4
199		5	max	2.873	4	19.017	9	2.699	8	8.079	1	2.71	1	18.678	9
200			min	-1.562	9	-43.994	4	-2.197	1	-9.636	8	-3.556	8	-45.782	4
201	21	1	max	1.35	8	27.996	2	4.029	9	19.633	9	0.876	8	0.208	8

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k-ft]	LC	z-z Moment[k-ft]	LC
202			min	-1.098	1	-25.51	9	-3.307	1	-25.679	2	-0.713	1	-0.174	1
203		2	max	1.35	8	27.996	2	4.029	9	19.633	9	1.327	8	3.369	9
204			min	-1.098	1	-25.51	9	-3.307	1	-25.679	2	-1.126	1	-3.599	2
205		3	max	1.35	8	27.996	2	4.029	9	26.036	5	1.791	9	6.558	9
206			min	-0.018	4	-28.551	5	-3.307	1	-25.679	2	-1.791	7	-7.243	5
207		4	max	1.1	1	3.967	1	3.829	7	26.036	5	0.942	1	0.67	1
208			min	-1.349	8	-28.551	5	-1.83	1	0.955	9	-1.327	8	-3.674	5
209		5	max	1.1	1	3.967	1	3.829	7	26.036	5	0.713	1	0.174	1
210			min	-1.349	8	-28.551	5	-1.83	1	0.955	9	-0.876	8	-0.208	8
211	22	1	max	3.828	7	3.962	1	1.349	8	0.174	1	0.713	1	-0.955	9
212			min	-1.83	1	-28.545	5	-1.099	1	-0.208	8	-0.876	8	-26.036	5
213		2	max	3.828	7	3.913	1	1.349	8	0.174	1	0.359	1	1.142	9
214			min	-1.83	1	-28.595	5	-1.099	1	-0.208	8	-0.442	8	-16.847	5
215		3	max	3.828	7	3.864	1	1.349	8	0.174	1	0.006	1	3.255	9
216			min	-1.83	1	-28.644	5	-1.099	1	-0.208	8	-0.008	8	-8.71	4
217		4	max	3.828	7	3.815	1	1.349	8	0.174	1	0.426	8	5.553	8
218			min	-1.83	1	-28.693	5	-1.099	1	-0.208	8	-0.347	1	-5.959	1
219		5	max	3.828	7	3.765	1	1.349	8	0.174	1	0.86	8	13.061	6
220			min	-1.83	1	-28.742	5	-1.099	1	-0.208	8	-0.701	1	-7.178	1
221	23	1	max	3.307	1	25.512	9	1.349	8	0.174	1	0.713	1	19.633	9
222			min	-4.029	9	-27.991	2	-1.099	1	-0.208	8	-0.876	8	-25.679	2
223		2	max	3.307	1	25.463	9	1.349	8	0.174	1	0.359	1	11.436	9
224			min	-4.029	9	-28.04	2	-1.099	1	-0.208	8	-0.442	8	-16.73	3
225		3	max	3.307	1	25.413	9	1.349	8	0.174	1	0.006	1	3.255	9
226			min	-4.029	9	-28.09	2	-1.099	1	-0.208	8	-0.008	8	-8.71	4
227		4	max	3.307	1	25.364	9	1.349	8	0.174	1	0.426	8	3.984	1
228			min	-4.029	9	-28.139	2	-1.099	1	-0.208	8	-0.347	1	-6.427	7
229		5	max	3.307	1	25.315	9	1.349	8	0.174	1	0.86	8	12.708	1
230			min	-4.029	9	-28.188	2	-1.099	1	-0.208	8	-0.701	1	-13.06	9
231	24	1	max	44.396	4	2.277	1	3.051	4	0.117	1	5.533	9	8.079	1
232			min	-18.621	9	-2.709	8	-1.525	9	0.085	8	-11.068	4	-9.636	8
233		2	max	44.465	4	2.277	1	3.051	4	0.117	1	2.545	9	3.62	1
234			min	-18.551	9	-2.709	8	-1.525	9	0.085	8	-5.094	4	-4.332	8
235		3	max	44.535	4	2.277	1	3.051	4	0.117	1	0.881	4	0.973	8
236			min	-18.481	9	-2.709	8	-1.525	9	0.085	8	-0.442	9	-0.839	1
237		4	max	44.605	4	2.277	1	3.051	4	0.117	1	6.855	4	6.277	8
238			min	-18.412	9	-2.709	8	-1.525	9	0.085	8	-3.429	9	-5.298	1
239		5	max	44.675	4	2.277	1	3.051	4	0.117	1	12.829	4	11.581	8
240			min	-18.342	9	-2.709	8	-1.525	9	0.085	8	-6.417	9	-9.757	1
241	25	1	max	1.168	9	26.344	5	1.965	9	13.06	4	0.86	2	0.174	9
242			min	-1.35	2	-6.144	9	-4.028	4	-7.179	9	-0.746	9	-0.208	2
243		2	max	1.168	9	26.344	5	1.965	9	13.06	4	0.432	1	0.942	9
244			min	-1.35	2	-6.144	9	-4.028	4	-7.179	9	-0.5	9	-3.398	5
245		3	max	0.019	6	27.703	1	3.527	9	13.062	1	0.228	1	7.106	1
246			min	-1.35	2	-25.8	8	-4.028	4	-12.707	9	-0.452	6	-6.691	5
247		4	max	1.349	2	27.703	1	3.527	9	13.062	1	0.305	9	3.643	1
248			min	-1.171	9	-25.8	8	-3.806	1	-12.707	9	-0.46	4	-3.324	8
249		5	max	1.349	2	27.703	1	3.527	9	13.062	1	0.746	9	0.208	2
250			min	-1.171	9	-25.8	8	-3.806	1	-12.707	9	-0.86	2	-0.174	9
251	26	1	max	3.204	6	23.89	1	2.339	9	9.755	9	4.765	2	47.753	1
252			min	-1.476	1	-39.106	6	-2.699	2	-11.581	2	-3.938	9	-80.724	6
253		2	max	3.204	6	23.89	1	2.339	9	9.755	9	4.101	2	41.874	1
254			min	-1.476	1	-39.106	6	-2.699	2	-11.581	2	-3.363	9	-71.1	6
255		3	max	3.204	6	23.89	1	2.339	9	9.755	9	3.437	2	35.995	1
256			min	-1.476	1	-39.106	6	-2.699	2	-11.581	2	-2.787	9	-61.476	6

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k-ft]	LC	z-z Moment[k-ft]	LC
257		4	max	3.204	6	23.89	1	2.339	9	9.755	9	2.773	2	30.115	1
258			min	-1.476	1	-39.106	6	-2.699	2	-11.581	2	-2.211	9	-51.852	6
259		5	max	3.204	6	23.89	1	2.339	9	9.755	9	2.109	2	24.236	1
260			min	-1.476	1	-39.106	6	-2.699	2	-11.581	2	-1.636	9	-42.229	6
261	27	1	max	1.17	9	27.749	9	0.723	9	19.343	1	0.442	9	0.242	2
262			min	-1.349	2	-31.208	1	-2.746	4	-22.381	7	-0.511	2	-0.204	9
263		2	max	1.17	9	27.749	9	0.723	9	19.343	1	0.532	9	4.111	1
264			min	-1.349	2	-31.208	1	-2.746	4	-22.381	7	-0.819	3	-3.673	9
265		3	max	1.35	2	27.749	9	1.371	6	22.359	5	1.08	1	8.012	1
266			min	0.019	6	-31.208	1	-2.175	2	-22.381	7	-1.144	4	-7.287	4
267		4	max	1.35	2	9.638	9	2.284	9	22.359	5	0.783	2	1.409	9
268			min	-1.169	9	-28.307	4	-2.599	1	-4.894	1	-0.728	9	-3.749	4
269		5	max	1.35	2	9.638	9	2.284	9	22.359	5	0.511	2	0.204	9
270			min	-1.169	9	-28.307	4	-2.599	1	-4.894	1	-0.442	9	-0.242	2
271	28	1	max	1.349	2	31.093	1	2.746	4	10.426	4	0.435	9	0.204	9
272			min	-1.17	9	-27.864	9	-0.723	9	-3.803	9	-0.501	2	-0.242	2
273		2	max	1.349	2	31.093	1	2.746	4	10.426	4	0.345	9	3.687	9
274			min	-1.17	9	-27.864	9	-0.723	9	-3.803	9	-0.281	1	-4.097	1
275		3	max	-0.019	6	31.093	1	2.175	2	10.427	1	0.452	6	7.316	4
276			min	-1.35	2	-27.864	9	-1.371	6	-10.216	9	-0.228	1	-7.984	1
277		4	max	1.169	9	28.422	4	2.599	1	10.427	1	0.3	4	3.763	4
278			min	-1.35	2	-9.523	9	-2.284	9	-10.216	9	-0.15	9	-1.395	9
279		5	max	1.169	9	28.422	4	2.599	1	10.427	1	0.501	2	0.242	2
280			min	-1.35	2	-9.523	9	-2.284	9	-10.216	9	-0.435	9	-0.204	9
281	29	1	max	2.746	4	31.21	1	1.17	9	0.204	9	0.511	2	19.343	1
282			min	-0.723	9	-27.747	9	-1.349	2	-0.242	2	-0.442	9	-22.381	7
283		2	max	2.746	4	31.181	1	1.17	9	0.204	9	0.258	2	13.493	1
284			min	-0.723	9	-27.775	9	-1.349	2	-0.242	2	-0.223	9	-17.836	7
285		3	max	2.746	4	31.153	1	1.17	9	0.204	9	0.005	2	7.65	1
286			min	-0.723	9	-27.804	9	-1.349	2	-0.242	2	-0.003	9	-13.771	6
287		4	max	2.746	4	31.124	1	1.17	9	0.204	9	0.216	9	1.811	1
288			min	-0.723	9	-27.833	9	-1.349	2	-0.242	2	-0.248	2	-10.813	5
289		5	max	2.746	4	31.095	1	1.17	9	0.204	9	0.435	9	3.803	9
290			min	-0.723	9	-27.861	9	-1.349	2	-0.242	2	-0.501	2	-10.426	4
291	30	1	max	2.284	9	9.638	9	1.17	9	0.204	9	0.511	2	4.894	1
292			min	-2.599	1	-28.305	4	-1.349	2	-0.242	2	-0.442	9	-22.359	5
293		2	max	2.284	9	9.609	9	1.17	9	0.204	9	0.258	2	6.269	1
294			min	-2.599	1	-28.334	4	-1.349	2	-0.242	2	-0.223	9	-17.497	6
295		3	max	2.284	9	9.58	9	1.17	9	0.204	9	0.005	2	7.65	1
296			min	-2.599	1	-28.362	4	-1.349	2	-0.242	2	-0.003	9	-13.771	6
297		4	max	2.284	9	9.552	9	1.17	9	0.204	9	0.216	9	9.035	1
298			min	-2.599	1	-28.391	4	-1.349	2	-0.242	2	-0.248	2	-10.75	7
299		5	max	2.284	9	9.523	9	1.17	9	0.204	9	0.435	9	10.427	1
300			min	-2.599	1	-28.42	4	-1.349	2	-0.242	2	-0.501	2	-10.216	9
301	31	1	max	1.476	1	40.012	6	2.699	2	8.075	9	3.937	9	58.094	6
302			min	-3.204	6	-22.986	1	-2.339	9	-9.636	2	-4.765	2	-34.595	1
303		2	max	1.476	1	40.012	6	2.699	2	8.075	9	3.675	9	53.614	6
304			min	-3.204	6	-22.986	1	-2.339	9	-9.636	2	-4.463	2	-32.021	1
305		3	max	1.476	1	40.012	6	2.699	2	8.075	9	3.413	9	49.133	6
306			min	-3.204	6	-22.986	1	-2.339	9	-9.636	2	-4.161	2	-29.447	1
307		4	max	1.476	1	40.012	6	2.699	2	8.075	9	3.151	9	44.653	6
308			min	-3.204	6	-22.986	1	-2.339	9	-9.636	2	-3.859	2	-26.873	1
309		5	max	1.476	1	40.012	6	2.699	2	8.075	9	2.89	9	40.172	6
310			min	-3.204	6	-22.986	1	-2.339	9	-9.636	2	-3.556	2	-24.299	1
311	32	1	max	1.35	2	5.947	9	4.028	4	23.222	5	0.876	2	0.208	2

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k-ft]	LC	z-z Moment[k-ft]	LC
312			min	-1.168	9	-26.541	5	-1.965	9	-1.851	1	-0.758	9	-0.174	9
313		2	max	1.35	2	5.947	9	4.028	4	23.222	5	1.353	3	3.423	5
314			min	-1.168	9	-26.541	5	-1.965	9	-1.851	1	-1.004	9	-0.917	9
315		3	max	1.35	2	25.997	8	4.028	4	23.222	5	1.846	3	6.74	5
316			min	-0.019	6	-27.506	1	-3.527	9	-22.873	8	-1.689	1	-7.057	1
317		4	max	1.171	9	25.997	8	3.806	1	22.448	1	1.199	9	3.349	8
318			min	-1.349	2	-27.506	1	-3.527	9	-22.873	8	-1.327	2	-3.619	1
319		5	max	1.171	9	25.997	8	3.806	1	22.448	1	0.758	9	0.174	9
320			min	-1.349	2	-27.506	1	-3.527	9	-22.873	8	-0.876	2	-0.208	2
321	33	1	max	3.806	1	26.002	8	1.349	2	0.174	9	0.758	9	22.873	8
322			min	-3.526	9	-27.504	1	-1.169	9	-0.208	2	-0.876	2	-22.448	1
323		2	max	3.806	1	25.953	8	1.349	2	0.174	9	0.382	9	14.582	7
324			min	-3.526	9	-27.553	1	-1.169	9	-0.208	2	-0.442	2	-13.595	1
325		3	max	3.806	1	25.904	8	1.349	2	0.174	9	0.006	9	7.249	6
326			min	-3.526	9	-27.603	1	-1.169	9	-0.208	2	-0.008	2	-4.725	1
327		4	max	3.806	1	25.855	8	1.349	2	0.174	9	0.426	2	5.671	3
328			min	-3.526	9	-27.652	1	-1.169	9	-0.208	2	-0.37	9	-4.734	9
329		5	max	3.806	1	25.805	8	1.349	2	0.174	9	0.86	2	13.062	1
330			min	-3.526	9	-27.701	1	-1.169	9	-0.208	2	-0.746	9	-12.707	9
331	34	1	max	1.965	9	26.547	5	1.349	2	0.174	9	0.758	9	23.222	5
332			min	-4.029	4	-5.952	9	-1.169	9	-0.208	2	-0.876	2	-1.851	1
333		2	max	1.965	9	26.497	5	1.349	2	0.174	9	0.382	9	14.693	5
334			min	-4.029	4	-6.001	9	-1.169	9	-0.208	2	-0.442	2	-3.296	1
335		3	max	1.965	9	26.448	5	1.349	2	0.174	9	0.006	9	7.249	6
336			min	-4.029	4	-6.05	9	-1.169	9	-0.208	2	-0.008	2	-4.725	1
337		4	max	1.965	9	26.399	5	1.349	2	0.174	9	0.426	2	5.209	9
338			min	-4.029	4	-6.1	9	-1.169	9	-0.208	2	-0.37	9	-6.309	2
339		5	max	1.965	9	26.35	5	1.349	2	0.174	9	0.86	2	7.179	9
340			min	-4.029	4	-6.149	9	-1.169	9	-0.208	2	-0.746	9	-13.06	4
341	35	1	max	23.382	1	2.709	2	3.046	6	0.118	9	5.526	1	9.636	2
342			min	-39.611	6	-2.276	9	-1.523	1	0.085	2	-11.048	6	-8.075	9
343		2	max	23.452	1	2.709	2	3.046	6	0.118	9	2.543	1	4.332	2
344			min	-39.541	6	-2.276	9	-1.523	1	0.085	2	-5.083	6	-3.618	9
345		3	max	23.522	1	2.709	2	3.046	6	0.118	9	0.882	6	0.84	9
346			min	-39.471	6	-2.276	9	-1.523	1	0.085	2	-0.44	1	-0.973	2
347		4	max	23.592	1	2.709	2	3.046	6	0.118	9	6.848	6	5.297	9
348			min	-39.401	6	-2.276	9	-1.523	1	0.085	2	-3.422	1	-6.277	2
349		5	max	23.661	1	2.709	2	3.046	6	0.118	9	12.813	6	9.755	9
350			min	-39.331	6	-2.276	9	-1.523	1	0.085	2	-6.405	1	-11.581	2

Envelope Node Reactions

	Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	BASE	max	8.55	1	8.811	9	8.55	5	162.772	5	0.5	5	162.792	9
2		min	-8.55	9	8.811	2	0	1	-0.014	9	0.5	2	-162.754	1
3	Totals:	max	8.55	1	8.811	9	8.55	5						
4		min	-8.55	9	8.811	2	0	1						

Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	M1	Pipe 10.75x0.349	0.001	0	9	0	5.833		9	352.628	359.22	99.144	99.144	1.667	H1-1b*
2	M2	Pole 23.8128x0.25	0.308	2	9	0.029	2		5	858.298	999.342	537.209	537.209	1.044	H1-1b
3	M35	HSS6X6X8	0.295	7.833	8	0.03	7.833	y	9	387.597	403.236	68.31	68.31	2.245	H1-1b
4	M14	BP 1"x45"	0.015	0	4	0.031	0.75	y	4	2400.178	2632.5	54.844	2467.969	1.956	H1-1b

Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
5	M15A	BP 1"x45"	0.015	0	6	0.034	0	y	6	2400.178	2632.5	54.844	2467.969	1.923	H1-1b
6	M30	BP 1"x45"	0.023	0	6	0.03	1.286	y	7	2005.921	2632.5	54.844	2467.969	2.186	H1-1b
7	M31	BP 1"x45"	0.022	0	4	0.028	0	y	3	2005.921	2632.5	54.844	2467.969	2.207	H1-1b
8	18	BP 1"x45"	0.016	0	6	0.035	0	y	6	2400.178	2632.5	54.844	2467.969	1.936	H1-1b
9	19	BP 1"x45"	0.016	0	9	0.034	0	y	1	2400.178	2632.5	54.844	2467.969	1.97	H1-1b
10	22	BP 1"x45"	0.024	0	7	0.03	1.286	y	6	2005.921	2632.5	54.844	2467.969	2.21	H1-1b
11	23	BP 1"x45"	0.023	0	9	0.03	1.286	y	1	2005.921	2632.5	54.844	2467.969	2.208	H1-1b
12	24	HSS6X6X8	0.299	7.833	5	0.03	7.833	z	4	387.597	403.236	68.31	68.31	2.239	H1-1b
13	29	BP 1"x45"	0.016	0	1	0.035	0	y	1	2400.178	2632.5	54.844	2467.969	1.936	H1-1b
14	30	BP 1"x45"	0.016	0	4	0.032	0.75	y	4	2400.178	2632.5	54.844	2467.969	1.97	H1-1b
15	33	BP 1"x45"	0.023	0	1	0.03	1.286	y	1	2005.921	2632.5	54.844	2467.969	2.187	H1-1b
16	34	BP 1"x45"	0.023	0	4	0.028	0	y	4	2005.921	2632.5	54.844	2467.969	2.208	H1-1b
17	35	HSS6X6X8	0.29	7.833	5	0.03	7.833	z	6	387.597	403.236	68.31	68.31	2.239	H1-1b

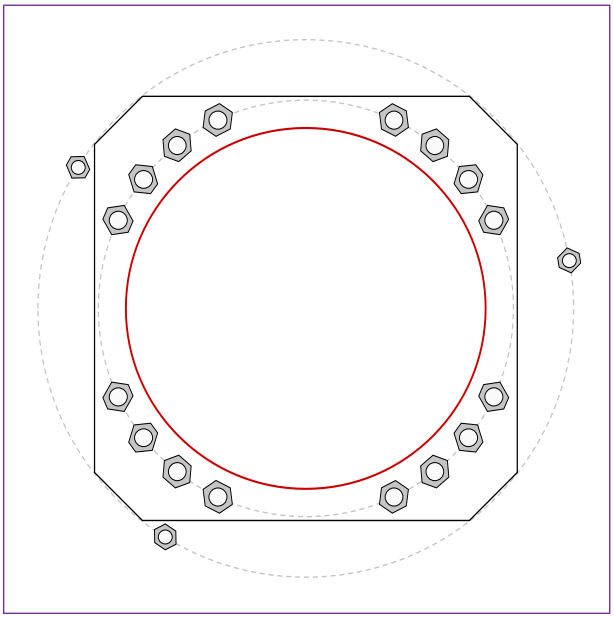
Monopole Base Plate Connection

Site Info	
BU #	876313
Site Name	HNSON AVE. BURNT H
Order #	575187 Rev. 1

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	See Custom Sheet
l_{ar} (in)	See Custom Sheet

Applied Loads	
Moment (kip-ft)	3987.00
Axial Force (kips)	62.95
Shear Force (kips)	29.76

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

GROUP 1: (16) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 52" BC
Anchor Spacing: 6 in
GROUP 2: (3) 1-3/4" ø bolts (Williams R71 N N; Fy=120 ksi, Fu=125 ksi) on 67.1" BC
pos. (deg): 10.3, 148.3, 238.3

Base Plate Data

53" W x 3" Plate (A572-50; Fy=50 ksi, Fu=65 ksi); Clip: 6 in

Stiffener Data

N/A

Pole Data

45.1" x 0.4375" 18-sided pole (A607-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Anchor Rod Summary *(units of kips, kip-in)*

GROUP 1:		
Pu_t = 191.68	ϕPn_t = 243.75	**Stress Rating**
Vu = 1.86	ϕVn = 149.1	**74.9%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 2:		
Pu_c = 190.41	ϕPn_c = 221.02	**Stress Rating**
Vu = 0	ϕVn = 126.36	**82.0%**
Mu = 0	ϕMn = 108.42	**Pass**

Base Plate Summary

Max Stress (ksi):	29.17	(Flexural)
Allowable Stress (ksi):	45	
Stress Rating:	**61.7%**	**Pass**

CCIplate

Elevation (ft)	0	*(Base)*

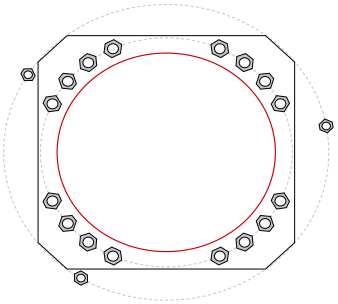
note: Bending interaction not considered when Grout Considered = "Yes"

Bolt Group	Resist Axial	Resist Shear	Induce Plate Bending	Grout Considered	Apply at BARB Elevation	BARB CL Elevation (ft)
1	Yes	Yes	Yes	No	No	
2	No	No	No	No	No	

Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, n:	l_{ar} (in):	Thread Type	Area Override, in^2	Tension Only
1	1	25.122571	2.25	A615-75	52	0.5	2.25	N-Included		No
2	1	38.37419	2.25	A615-75	52	0.5	2.25	N-Included		No
3	1	51.62581	2.25	A615-75	52	0.5	2.25	N-Included		No
4	1	64.877429	2.25	A615-75	52	0.5	2.25	N-Included		No
5	1	115.12257	2.25	A615-75	52	0.5	2.25	N-Included		No
6	1	128.37419	2.25	A615-75	52	0.5	2.25	N-Included		No
7	1	141.62581	2.25	A615-75	52	0.5	2.25	N-Included		No
8	1	154.87743	2.25	A615-75	52	0.5	2.25	N-Included		No
9	1	205.12257	2.25	A615-75	52	0.5	2.25	N-Included		No
10	1	218.37419	2.25	A615-75	52	0.5	2.25	N-Included		No
11	1	231.62581	2.25	A615-75	52	0.5	2.25	N-Included		No
12	1	244.87743	2.25	A615-75	52	0.5	2.25	N-Included		No
13	1	295.12257	2.25	A615-75	52	0.5	2.25	N-Included		No
14	1	308.37419	2.25	A615-75	52	0.5	2.25	N-Included		No
15	1	321.62581	2.25	A615-75	52	0.5	2.25	N-Included		No
16	1	334.87743	2.25	A615-75	52	0.5	2.25	N-Included		No
17	2	10.3	1.75	Williams R71 N	67.1	0.5	14	N-Included	2.6	No
18	2	148.3	1.75	Williams R71 N	67.1	0.5	14	N-Included	2.6	No
19	2	238.3	1.75	Williams R71 N	67.1	0.5	14	N-Included	2.6	No

Plot Graphic



PROJECT	**137177.008.01 - WEST JOHNSON AVE. BURNT HOUSE, CT**
SUBJECT	**Anchor Rod Bracket Analysis**
DATE	**10-14-21**
v4.6.1	

TIA-222 Rev. H
Apply TIA-222-H Section 15.5? Yes

B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

Analysis Criteria		
Design/Analysis	Analysis	
Load Type	Current Load	
Current load	190.41	kips
AR Capacity	259.8	kips

Tower Type	Monopole

Manufacturers Tower Prop.		
Pole Thickness	0.4375	in
Pole Grade	Custom	
Fy	65	ksi
Fu	80	ksi
Base Plate Gr.	A572-50	
Fy	50	ksi
Fu	65	ksi

Post-Installed Adhesive AR Mod.		
ARB Type	Welded	
Size	1.75	in
Grade	Custom	
Fy	120	ksi
Fu	125	ksi

Anchor Rod Bracket Analysis Checks		
Tube Bearing	37.1%	-
Tube Compression	55.6%	-
Gusset Shear	16.8%	-
Gusset Flexure	N/A	-
Welds: Gusset to Tower and BP	29.3%	-
Welds: Gusset to Tube	33.9%	-
Welds: Geometry	N/A	
Tower Punching	17.5%	-
Tube Punching	18.1%	-
Utilization	**55.6%**	

Bracket Properties

Gusset		
Thickness	1.25	in
Width at Tube	7.75	in
Height at Pole	45	in
Height at Tube	24	in
Grade	A572-65	
Fy	65	ksi
Fu	80	ksi

Pipe/Tube		
Size	HSS5x5x1/2	
Total Length	24	in
Length above Gusset	0	in
Length below Gusset	9	in
Grade	A500 Grade B (Square)	
Fy	46	ksi
Fu	58	ksi

Weld - Gusset to Pipe/Tube		
FEXX	70	ksi
Weld Type	Double Fillet	
Fillet Size	1/2	in

Weld - Gusset to Tower		
FEXX	80	ksi
Weld Type	Double Fillet	
Fillet Size	3/8	in

Weld - Gusset to Base Plate		
FEXX	80	ksi
Weld Type	CJP - Double Bevel	
Fillet Size	5/8	in
Bevel Depth	5/8	in
Gap	0	in
Notch (horiz)	0.75	in
Notch (vert)	0.75	in
Pipe/Tube Welded to Base/Footpad?	No	

Drilled Pier Foundation

BU # :	876313
Site Name:	WEST JOHNSON AVE. BU
Order Number:	586465, Rev. 0
TIA-222 Revison:	H
Tower Type:	Monopole

Applied Loads	Comp.	Uplift
Moment (kip-ft)	3987	
Axial Force (kips)	62.95	
Shear Force (kips)	29.76	

Material Properties		
Concrete Strength, f'c:	3	ksi
Rebar Strength, Fy:	60	ksi
Tie Yield Strength, Fyt:	40	ksi

Pier Design Data		
Depth	25.5	ft
Ext. Above Grade	0.5	ft
Pier Section 1		
From 0.5' above grade to 6.5' below grade		
Pier Diameter	11	ft
Rebar Quantity	20	
Rebar Size	11	
Clear Cover to Ties	28	in
Tie Size	5	
Tie Spacing	18	in

Rebar & Pier Options

Embedded Pole Inputs

Belled Pier Inputs

Pier Section 2		
From 6.5' below grade to 25.5' below grade		
Pier Diameter	7	ft
Rebar Quantity	20	
Rebar Size	11	
Clear Cover to Ties	4	in
Tie Size	5	
Tie Spacing	18	in

Analysis Results		
Soil Lateral Check	*Compression*	*Uplift*
$D_{v=0}$ (ft from TOC)	6.10	-
Soil Safety Factor	1.70	-
Max Moment (kip-ft)	4158.12	-
Rating*	*74.6%*	-
Soil Vertical Check	*Compression*	*Uplift*
Skin Friction (kips)	236.44	-
End Bearing (kips)	123.82	-
Weight of Concrete (kips)	206.61	-
Total Capacity (kips)	360.27	-
Axial (kips)	269.56	-
Rating*	*71.3%*	-
Reinforced Concrete Flexure	*Compression*	*Uplift*
Critical Depth (ft from TOC)	7.01	-
Critical Moment (kip-ft)	4136.61	-
Critical Moment Capacity	5125.18	-
Rating*	*76.9%*	-
Reinforced Concrete Shear	*Compression*	*Uplift*
Critical Depth (ft from TOC)	13.21	-
Critical Shear (kip)	411.23	-
Critical Shear Capacity	501.69	-
Rating*	*78.1%*	-

Structural Foundation Rating*	**78.1%**
Soil Interaction Rating*	**74.6%**

*Rating per TIA-222-H Section 15.5

Check Limitation	
Apply TIA-222-H Section 15.5:	☑
N/A	☐
Additional Longitudinal Rebar	
Input Effective Depths (else Actual):	☐
Shear Design Options	
Check Shear along Depth of Pier:	☑
Utilize Shear-Friction Methodology:	☐
Override Critical Depth:	☐

Go to Soil Calculations

Soil Profile

Groundwater Depth	10

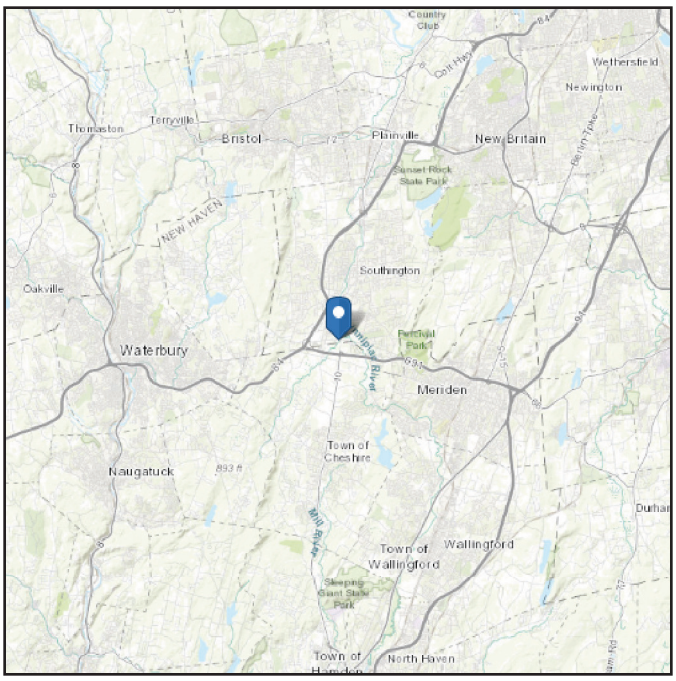
# of Layers	10

Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	2	2	105	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	2	3.5	1.5	110	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
3	3.5	4	0.5	110	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
4	4	4.7	0.7	110	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
5	4.7	6	1.3	110	150	0	31	0.000	0.000	0.10	0.08			Cohesionless
6	6	8	2	120	150	2.5	0	1.375	1.375	1.48	1.48			Cohesive
7	8	10	2	115	150	2.25	0	1.24	1.24	1.23	1.23			Cohesive
8	10	15	5	48	87.6	1	0	0.55	0.55	0.55	0.55			Cohesive
9	15	20	5	48	87.6	1.25	0	0.69	0.69	0.66	0.66			Cohesive
10	20	25.5	5.5	43	87.6	0.75	0	0.41	0.41	0.41	0.41	4.29		Cohesive

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-16	**Elevation:**	133.13 ft (NAVD 88)
Risk Category:	II	**Latitude:**	41.564275
Soil Class:	D - Default (see Section 11.4.3)	**Longitude:**	-72.891861



Wind

Results:

Wind Speed:	118 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	97 Vmph

Data Source:	ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed:	Thu Sep 30 2021

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

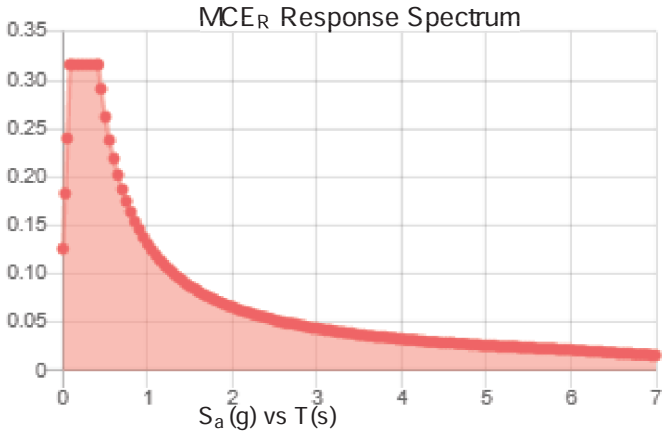
Seismic

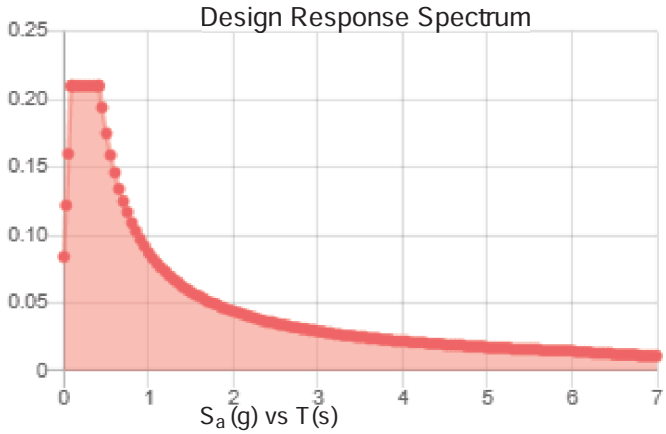
Site Soil Class: D - Default (see Section 11.4.3)

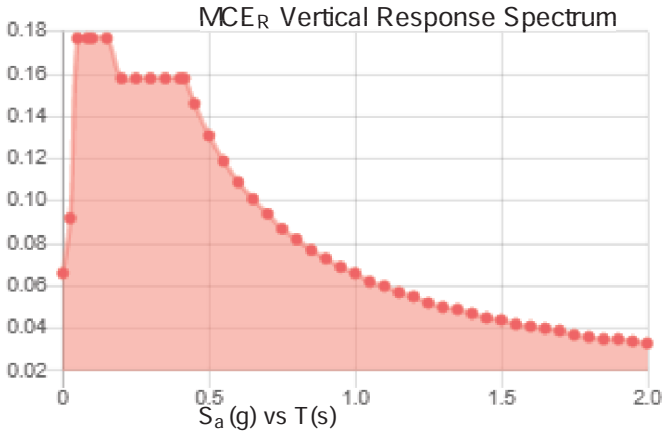
Results:

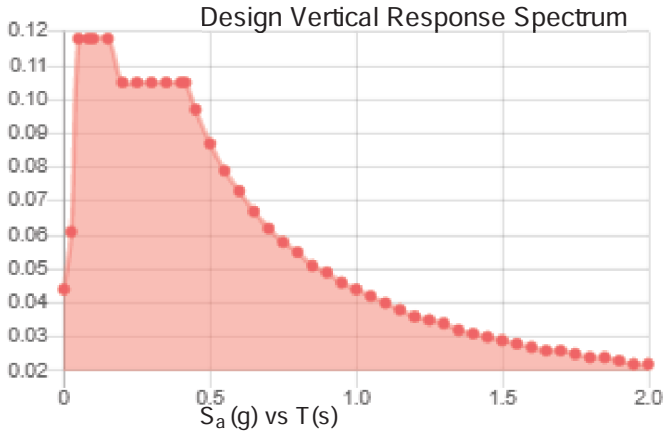
S_S :	0.197	S_{D1} :	0.087
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.109
F_v :	2.4	PGA_M :	0.172
S_{MS} :	0.316	F_{PGA} :	1.583
S_{M1} :	0.131	I_e :	1
S_{DS} :	0.21	C_v :	0.7

Seismic Design Category B









Data Accessed: Thu Sep 30 2021

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Thu Sep 30 2021

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

APPENDIX D

MODIFICATION DRAWINGS

TOWER MODIFICATION DRAWINGS PREPARED FOR: CROWN CASTLE

SAFETY CLIMB: 'LOOK UP'
THE INTEGRITY OF THE WIRE ROPE SAFETY CLIMB SYSTEM SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION AND INSPECTION. TOWER REINFORCEMENTS AND EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF ANY WIRE ROPE SAFETY CLIMB ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, OR IMPACT TO THE ANCHORAGE POINTS IN ANY WAY. ANY COMPROMISED SAFETY CLIMB MUST BE REPORTED TO YOUR CROWN POC FOR RESOLUTION, INCLUDING EXISTING CONDITIONS.

SITE NAME:
WEST JOHNSON AVE. BURNT HOUSE
BU NUMBER:
876313

SITE ADDRESS:
1394 MERIDEN WATERBURY TPK
SOUTHINGTON, CT 06489
HARTFORD COUNTY, USA

PROJECT CONTACTS:

CROWN PROJECT MANAGER
JOHN MCGEE
(704) 877-8397
JOHN.MCGEE@CROWNCASTLE.COM

ENGINEERING RFI CONTACT
THARUN CHERIYAN, E.I.T
(918) 587-4630
TCHERIYAN@BTGRP.COM
MODDWGS@BTGRP.COM
1717 S BOULDER AVENUE, SUITE 300
TULSA, OK 74119

ATTENTION ALL CONTRACTORS, ANYTIME YOU ACCESS A CROWN SITE FOR ANY REASON YOU ARE TO CALL THE CROWN NOC UPON ARRIVAL AND DEPARTURE, DAILY AT 800-788-7011.

HOT WORK INCLUDED	
N/A	BASE GRINDING ONLY
N/A	BASE WELDING (AND GRINDING)
N/A	AERIAL GRINDING ONLY
N/A	AERIAL WELDING (AND GRINDING)

TOWER INFORMATION

TOWER MANUFACTURER / JOB #:	SUMMIT MANUFACTURING INC. / 3899
TOWER HEIGHT / TYPE:	160' MONOPOLE
TOWER LOCATION:	LAT. 41° 33' 51.39"
	LONG. -72° 53' 30.70"
STRUCTURAL DESIGN DRAWING REPORT:	B+T GROUP / WO. # 2027876
ORDER ID / REVISION #:	575187 / 1

CODE COMPLIANCE

THIS REINFORCEMENT DESIGN HAS BEEN PERFORMED IN ACCORDANCE WITH THE TIA-222-H STANDARD. THIS REINFORCEMENT DESIGN UTILIZES AN ULTIMATE 3-SECOND GUST WIND SPEED OF 118 MPH AS REQUIRED BY THE 2018 CONNECTICUT STATE BUILDING CODE. EXPOSURE CATEGORY B AND RISK CATEGORY II WERE USED IN THIS REINFORCEMENT DESIGN.

DRAWINGS INCLUDED

SHEET	DESCRIPTION
TS	TITLE SHEET
MI	MODIFICATION INSPECTION NOTES AND CHECKLIST
GN	GENERAL NOTES
S1	TOWER ELEVATION, SCHEDULES AND TX LINE DISTRIBUTION DIAGRAM
S2	TOWER SECTION (79'-94')

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

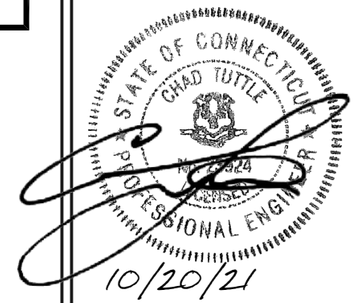
CROWN CASTLE

ISSUED FOR:

REV	DATE	DESCRIPTION
0	10/20/21	ISSUED FOR CONSTRUCTION

PROJECT NO:	137177.008.01
PROJECT ENG:	THARUN CHERIYAN
DRAWN BY:	MG
CHECKED BY:	VKP / PPK

B+T ENGINEERING, INC.
PEC.0001564
Expires 02/10/22



WEST JOHNSON AVE.
BURNT HOUSE
876313
1394 MERIDEN WATERBURY TPK
SOUTHINGTON, CT
EXISTING 160' MONOPOLE

SHEET TITLE
TITLE SHEET

SHEET NUMBER: TS
REVISION: 0

CED-FRM-10354 MI CHECKLIST

REQUIRED	REPORT ITEM	APPLICABLE CROWN DOC #	BRIEF DESCRIPTION
PRE-CONSTRUCTION			
X	MI CHECKLIST DRAWING	CED-SOW-10007	THIS CHECKLIST SERVES AS A GUIDELINE FOR THE REQUIRED CONSTRUCTION DOCUMENTS AND INSPECTIONS FOR THIS MODIFICATION
X	EOR APPROVED SHOP DRAWINGS	CED-SOW-10007	ONCE THE PRE-MODIFICATION MAPPING IS COMPLETE AND PRIOR TO FABRICATION, THE CONTRACTOR SHALL PROVIDE DETAILED ASSEMBLY DRAWINGS AND/OR SHOP DRAWINGS. THESE ARE TO INCLUDE, BUT ARE NOT LIMITED TO, A VISUAL LAYOUT OF NEW REINFORCEMENT, EXISTING REINFORCEMENT CONFIGURATION, PORTHOLES, MOUNTS, STEP PEGS, SAFETY CLIMBS AND ANY OTHER MISCELLANEOUS ITEMS WHICH MAY AFFECT SUCCESSFUL INSTALLATION OF MODIFICATIONS ON THE TOWER. THESE DRAWINGS SHALL BE SUBMITTED TO THE EOR FOR APPROVAL. SHOP DRAWING SUBMISSION SHALL INCLUDE THE EOR RFI FORM DETAILING ANY CHANGES FROM THE ORIGINAL DESIGN
X	FABRICATION INSPECTION	CED-SOW-10007	A LETTER FROM THE FABRICATOR, STATING THAT THE WORK WAS PERFORMED IN ACCORDANCE WITH INDUSTRY STANDARDS AND THE CONTRACT DOCUMENTS, SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	FABRICATOR CERTIFIED WELD INSPECTION	CED-SOW-10007 CED-STD-10069	A CWI SHALL INSPECT ALL WELDING PERFORMED ON STRUCTURAL MEMBERS DURING FABRICATION. A WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	MATERIAL TEST REPORTS (MTR)	CED-SOW-10007	MATERIAL TEST REPORTS SHALL BE PROVIDED FOR MATERIAL USED AS REQUIRED PER SECTION 9.2.5 OF CED-SOW-10007. MTRS SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	FABRICATOR NDE INSPECTION REPORT	CED-SOW-10066 CED-STD-10069	CRITICAL SHOP WELDS THAT REQUIRE TESTING ARE NOTED ON THESE CONTRACT DRAWINGS. A CERTIFIED NDT INSPECTOR SHALL PERFORM NON-DESTRUCTIVE EXAMINATION AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	NDE OF MONOPOLE BASE PLATE	ENG-SOW-10033	A NDE OF THE POLE TO BASE PLATE CONNECTION IS REQUIRED AND A WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	PACKING SLIPS	CED-SOW-10007	PACKING/SHIPPING LIST FOR ALL MATERIAL USED DURING CONSTRUCTION OF THE MODIFICATION
ADDITIONAL TESTING AND INSPECTIONS:			
N/A			
CONSTRUCTION			
N/A	FOUNDATION INSPECTIONS	CED-SOW-10144	A VISUAL OBSERVATION OF THE EXCAVATION AND REBAR SHALL BE PERFORMED BEFORE PLACING THE CONCRETE. A VISUAL OBSERVATION OF THE REBAR SHALL BE PERFORMED BEFORE PLACING THE EPOXY. A SEALED WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	CONCRETE COMP. STRENGTH AND SLUMP TEST	CED-SOW-10144	THE CONCRETE MIX DESIGN, SLUMP TEST, AND COMPRESSIVE STRENGTH TESTS SHALL BE PROVIDED AS PART OF THE FOUNDATION REPORT.
N/A	EARTHWORK	CED-SOW-10144	FOUNDATION SUB-GRADES SHALL BE INSPECTED AND APPROVED BY AN APPROVED FOUNDATION INSPECTOR AND RESULTS INCLUDED AS PART OF THE FOUNDATION REPORT.
N/A	MICROPILE/ROCK ANCHOR	CED-SOW-10144	MICROPILES/ROCK ANCHORS SHALL BE INSPECTED BY THE FOUNDATION INSPECTION VENDOR AND SHALL BE INCLUDED AS PART OF THE FOUNDATION INSPECTION REPORT, ADDITIONAL TESTING AND/OR INSPECTION REQUIREMENTS ARE NOTED IN THESE CONTRACT DOCUMENTS.
N/A	POST-INSTALLED ANCHOR ROD VERIFICATION	CED-SOW-10007 CED-FRM-10358	POST INSTALLED ANCHOR ROD VERIFICATION SHALL BE PERFORMED IN ACCORDANCE WITH CROWN REQUIREMENTS AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	BASE PLATE GROUT VERIFICATION	ENG-STD-10323	THE GENERAL CONTRACTOR SHALL PROVIDE DOCUMENTATION TO THE MI INSPECTOR THAT CERTIFIES THAT THE GROUT WAS REMOVED AND/OR INSTALLED IN ACCORDANCE WITH CROWN REQUIREMENTS FOR INCLUSION IN THE MI REPORT.
N/A	FIELD CERTIFIED WELD INSPECTION	CED-SOW-10066 CED-STD-10069	A CROWN APPROVED CERTIFIED WELD INSPECTOR SHALL INSPECT AND TEST FIELD WELDS, FOLLOWING ALL PROCEDURES SPECIFIED IN CROWN STANDARD DOCUMENTS APPLICABLE TO WELD INSPECTIONS. A REPORT SHALL BE PROVIDED. NDE OF FIELD WELDS SHALL BE PERFORMED AS REQUIRED BY CROWN STANDARDS AND CONTRACT DOCUMENTS. THE NDE REPORT SHALL BE INCLUDED IN THE CWI REPORT.
X	ON-SITE COLD GALVANIZING VERIFICATION	ENG-STD-10149 CED-FRM-10358	THE GENERAL CONTRACTOR SHALL PROVIDE WRITTEN AND PHOTOGRAPHIC DOCUMENTATION TO THE MI INSPECTOR VERIFYING THAT ANY ON-SITE COLD GALVANIZING WAS APPLIED PER MANUFACTURER SPECIFICATIONS AND APPLICABLE STANDARDS.
N/A	TENSION TWIST AND PLUMB	CED-PRC-10182 CED-STD-10261	THE GENERAL CONTRACTOR SHALL PROVIDE A REPORT IN ACCORDANCE WITH APPLICABLE STANDARDS DOCUMENTING TENSION TWIST AND PLUMB.
X	GC AS-BUILT DRAWINGS	CED-SOW-10007	THE GENERAL CONTRACTOR SHALL SUBMIT A LEGIBLE COPY OF THE ORIGINAL DESIGN DRAWINGS EITHER STATING "INSTALLED AS DESIGNED" OR NOTING ANY CHANGES THAT WERE REQUIRED AND APPROVED BY THE ENGINEER OF RECORD. EOR/RFI FORMS APPROVING ALL CHANGES SHALL BE SUBMITTED
ADDITIONAL TESTING AND INSPECTIONS:			
N/A	NDE OF EXTENSION FLANGE	ENG-SOW-10033	A CROWN APPROVED CERTIFIED WELD INSPECTOR SHALL INSPECT AND TEST SHOP WELDS, FOLLOWING ALL PROCEDURES SPECIFIED IN CROWN STANDARD DOCUMENT APPLICABLE TO WELD INSPECTIONS. THE REFERENCE STANDARD DOCUMENT IS FOR BASE PLATE, BUT CERTIFIED WELD INSPECTOR TO FOLLOW THE GENERAL REQUIREMENT AS APPLICABLE TO THE FLANGE PLATE.
POST-CONSTRUCTION			
X	CONSTRUCTION COMPLIANCE LETTER	CED-SOW-10007 CED-FRM-10358	A LETTER FROM THE GENERAL CONTRACTOR STATING THAT THE WORKMANSHIP WAS PERFORMED IN ACCORDANCE WITH INDUSTRY STANDARDS AND THESE CONTRACT DRAWINGS, INCLUDING LISTING ADDITIONAL PARTIES TO THE MODIFICATION PROCESS.
N/A	POST-INSTALLED ANCHOR ROD PULL TESTS	CED-PRC-10119	POST-INSTALLED ANCHOR RODS SHALL BE TESTED BY A CROWN APPROVED PULL TEST INSPECTOR AND A REPORT SHALL BE PROVIDED INDICATING TESTING RESULTS.
X	PHOTOGRAPHS	CED-SOW-10007	PHOTOGRAPHS SHALL BE SUBMITTED TO THE MI. PHOTOS SHALL DOCUMENT ALL PHASES OF THE CONSTRUCTION. THE PHOTOS SHALL BE ORGANIZED IN A MANNER THAT EASILY IDENTIFIES THE EXACT LOCATION OF THE PHOTO.
N/A	BOLT HOLE INSTALLATION VERIFICATION REPORT	CED-SOW-10007	THE MI INSPECTOR SHALL VERIFY THE INSTALLATION AND TIGHTNESS 10% OF ALL NON PRE-TENSIONED BOLTS INSTALLED AS PART OF THE MODIFICATION. THE MI INSPECTOR SHALL LOOSEN THE NUT AND VERIFY THE BOLT HOLE SIZE AND CONDITION. THE MI REPORT SHALL CONTAIN THE COMPLETED BOLT INSTALLATION VERIFICATION REPORT, INCLUDING THE SUPPORTING PHOTOGRAPHS.
X	PUNCH LIST DEVELOPMENT AND CORRECTION DOCUMENTATION	CED-PRC-10283 CED-FRM-10285	FINAL PUNCH LIST INDICATING ALL NONCONFORMANCE(S) IDENTIFIED AND THE FINAL RESOLUTION/APPROVAL.
X	MI INSPECTOR REDLINE OR RECORD DRAWING(S)	CED-SOW-10007	THE MI INSPECTOR SHALL OBSERVE AND REPORT ANY DISCREPANCIES BETWEEN THE CONTRACTOR'S REDLINE DRAWING AND THE ACTUAL COMPLETED INSTALLATION.
ADDITIONAL TESTING AND INSPECTIONS:			
"N/A"			

THE MI CHECKLIST SHALL BE REVIEWED PRIOR TO THE START OF CONSTRUCTION. ALL PARTIES TO THE MODIFICATION SHALL UNDERSTAND CROWN REQUIREMENTS AND INSPECTION/DOCUMENTATION THAT IS APPLICABLE TO THE SCOPE OF WORK THEY ARE PERFORMING. ERRORS ON THE MI CHECKLIST SHALL BE BROUGHT TO THE ATTENTION OF THE CROWN POC AND EOR AS SOON AS POSSIBLE.

MODIFICATION INSPECTION NOTES

GENERAL

THE MI IS AN ON-SITE VISUAL AND HANDS-ON INSPECTION OF TOWER MODIFICATIONS INCLUDING A REVIEW OF CONSTRUCTION REPORTS AND ADDITIONAL PERTINENT DOCUMENTATION PROVIDED BY THE GENERAL CONTRACTOR (GC), AS WELL AS ANY INSPECTION DOCUMENTS PROVIDED BY 3RD PARTY INSPECTORS. THE MI IS TO ENSURE THE INSTALLATION WAS CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, NAMELY THE MODIFICATION DRAWINGS; IN ACCORDANCE WITH APPLICABLE CROWN STANDARDS; AND AS DESIGNED BY THE ENGINEER OF RECORD (EOR).

NO DOCUMENT, CODE OR POLICY CAN ANTICIPATE EVERY SITUATION THAT MAY ARISE. ACCORDINGLY, THIS CHECKLIST IS INTENDED TO SERVE AS A SOURCE OF GUIDING PRINCIPLES IN ESTABLISHING GUIDELINES FOR MODIFICATION INSPECTION.

THE MI IS TO CONFIRM INSTALLATION CONFIGURATION AND WORKMANSHIP ONLY AND IS NOT A REVIEW OF THE MODIFICATION DESIGN ITSELF, AND THE MI INSPECTOR DOES NOT TAKE OWNERSHIP OF THE MODIFICATION DESIGN. OWNERSHIP OF THE STRUCTURAL MODIFICATION DESIGN EFFECTIVENESS AND INTEGRITY RESIDES WITH THE EOR AT ALL TIMES. THE MI INSPECTOR SHALL INSPECT AND NOTE CONFORMANCE/NONCONFORMANCE AND PROVIDE TO THE CROWN POINT OF CONTACT (CROWN POC) FOR EVALUATION.

ALL MI'S SHALL BE CONDUCTED BY A CROWN APPROVED MI INSPECTOR, WORKING FOR A CROWN APPROVED MI VENDOR. SEE CROWN CED-LST-10173, "APPROVED MI VENDORS".

TO ENSURE THAT THE REQUIREMENTS OF THE MI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR (GC) AND THE MI INSPECTOR BEGIN COMMUNICATING AND COORDINATING AS SOON AS A PURCHASE ORDER (PO) IS RECEIVED. IT IS EXPECTED THAT EACH PARTY WILL BE PROACTIVE IN REACHING OUT TO THE OTHER PARTY. IF CONTACT INFORMATION IS NOT KNOWN THE GC AND/OR INSPECTOR SHALL CONTACT THE CROWN POINT OF CONTACT (CROWN POC).

REFER TO CROWN CED-SOW-10007, "MODIFICATION INSPECTION SOW", FOR FURTHER DETAILS AND REQUIREMENTS.

SERVICE LEVEL COMMITMENT

THE FOLLOWING RECOMMENDATIONS AND SUGGESTIONS ARE OFFERED TO ENHANCE THE EFFICIENCY AND EFFECTIVENESS OF DELIVERING AN MI REPORT:

- THE GC SHALL PROVIDE A MINIMUM OF 5 BUSINESS DAYS NOTICE, PREFERABLY 10, TO THE MI INSPECTOR AS TO WHEN THE SITE WILL BE READY FOR THE MI TO BE CONDUCTED.
- THE GC AND MI INSPECTOR COORDINATE CLOSELY THROUGHOUT THE ENTIRE PROJECT.
- WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE SIMULTANEOUSLY FOR ANY GUY WIRE TENSIONING OR RE-TENSIONING OPERATIONS.
- WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE DURING THE MI TO HAVE ANY MINOR DEFICIENCIES CORRECTED DURING THE INITIAL MI. THEREFORE, THE GC MAY CHOOSE TO COORDINATE THE MI CAREFULLY TO ENSURE ALL CONSTRUCTION FACILITIES ARE AT THEIR DISPOSAL WHEN THE MI INSPECTOR IS ON SITE.

REQUIRED PHOTOS

BETWEEN THE GC AND THE MI INSPECTOR THE FOLLOWING PHOTOGRAPHS, AT A MINIMUM, ARE TO BE TAKEN AND INCLUDED IN THE MI REPORT:

- PRE-CONSTRUCTION GENERAL SITE CONDITION
- PHOTOGRAPHS DURING THE REINFORCEMENT MODIFICATION CONSTRUCTION/ERECTION AND INSPECTION
  - RAW MATERIALS
  - PHOTOS OF ALL CRITICAL DETAILS
  - FOUNDATION MODIFICATIONS
  - WELD PREPARATION
  - BOLT INSTALLATION
  - FINAL INSTALLED CONDITION
  - SURFACE COATING REPAIR
- POST CONSTRUCTION PHOTOGRAPHS
  - FINAL INFIELD CONDITION

PHOTOS OF ELEVATED MODIFICATIONS TAKEN ONLY FROM THE GROUND SHALL BE CONSIDERED INADEQUATE.

THIS IS NOT A COMPLETE LIST OF REQUIRED PHOTOS, FOR A COMPLETE LIST OF PHOTOS SEE CROWN DOCUMENT # CED-SOW-10007.

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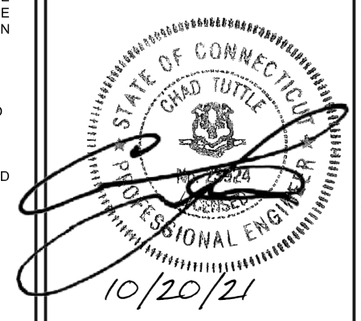
CROWN CASTLE

ISSUED FOR:

REV	DATE	DESCRIPTION
0	10/20/21	ISSUED FOR CONSTRUCTION

PROJECT NO:	137177.008.01
PROJECT ENG:	THARUN CHERIYAN
DRAWN BY:	MG
CHECKED BY:	VKP / PPK

B+T ENGINEERING, INC.
PEC.0001564
Expires 02/10/22



WEST JOHNSON AVE.
BURNT HOUSE
876313
1394 MERIDEN WATERBURY TPK
SOUTHINGTON, CT

EXISTING 160' MONOPOLE

SHEET TITLE

MODIFICATION INSPECTION NOTES AND CHECKLIST

SHEET NUMBER:	REVISION:
MI	0

GENERAL NOTES

1. The General Contractor (GC) shall reference CED–STD–10159, "Tower Modification Construction Specifications", as a continuation of the following General Notes. The GC shall keep a copy of this document with the Structural Design Drawings (SDD) at all times, and shall ensure that all Contractor Personnel are aware of the information enclosed within the General Notes and CED–STD–10159.
2. The Contract Documents are the property of Crown Castle (Crown). They are provided to the GC and its Lower Tier Contractors and material suppliers for the limited purpose of use in completing the Work for this Site, and shall be kept in strict confidence and not disclosed to any third parties. The Contract Documents shall not be used for any other purpose whatsoever without the prior written consent of Crown.
3. Detail drawings, including notes and tables, shall govern over general notes and typical details. Contact the Crown Point of Contact (POC) and Engineer of Record (EOR) for clarification as needed.
4. Do not scale drawings.
5. Any Work performed without a prefabrication mapping is done at the risk of the GC and/or fabricator. All dimensions of existing structural elements are assumed based on the available documentation and are preliminary until field–verified by the GC, unless noted otherwise (UNO). Where discrepancies are found, GC shall contact the Crown POC and EOR through RFI.
6. For this analysis and modification, the tower has been assumed to be in good condition without any structural defects, UNO. If the GC discovers any indication of an existing structural defect, contact the Crown POC and EOR immediately.
7. All construction means and methods, including but not limited to erection plans, rigging plans, climbing plans, and rescue plans, shall be the responsibility of the GC responsible for the execution of the Work contained herein, and shall meet ANSI/ASSE A10.48 (latest edition); federal, state, and local regulations; and any applicable industry consensus standards related to the construction activities being performed. All rigging plans shall adhere to ANSI/ASSE A10.48 (latest edition) and Crown standard CED–STD–10253, "Rigging Program", including the required involvement of a qualified engineer for class IV construction to certify the supporting structure(s) in accordance with the ANSI/TIA–322 (latest edition).
8. The structural integrity of the modification design extends to the complete condition only. The GC must be cognizant that the removal of any structural component of an existing tower has the potential to cause the partial or complete collapse of the structure. All necessary precautions must be taken to ensure structural integrity, including, but not limited to, engineering assessment of construction stresses with installation maximum wind speed and/or temporary bracing and shoring.
9. Aerial and underground utilities and facilities may or may not be shown on the drawings. The GC shall take every precaution to preserve and protect these items, which may include aerial or underground power lines, telephone lines, water lines, sewer lines, cable television facilities, pipelines, structures and other public and private improvements within or adjacent to the Work area. The responsibility for determining the actual on–site location of these items shall rest exclusively with the GC.
10. All manufacturer's hardware assembly instructions shall be followed, UNO. Conflicting notes shall be brought to the attention of the EOR and the Crown POC.
11. The GC shall fabricate all required items per the materials specified below, UNO on the detail drawing sheets. If the GC finds for any component that the materials have not been clearly specified, the GC shall submit an RFI to the EOR to confirm the required material.

    All structural elements shall be new and shall conform to the following requirements, UNO:

    Monopoles:

    - Structural shapes and plates: ASTM A572 Grade 65 (FY = 65 KSI)
    - Welding electrodes, SMAW: E80XX
    - Welding electrodes, FCAW: E8XT–XX
    - Welding elcctrodes, GMAW: ER80S–X

    Self–Support and Guyed Towers:

    - Structural shapes and plates: ASTM A572 Grade 50 (FY = 50 KSI)
    - Welding electrodes, SMAW: E70XX
    - Welding electrodes, FCAW: E7XT–XX
    - Welding elcctrodes, GMAW: ER70S–X

    All tower types:

    - Steel angle: ASTM A572 Grade 50 (FY = 50 KSI)
    - Solid rod: ASTM A36 (FY = 36 KSI)
    - Pipe/tube (round): ASTM A500 Grade C (FY = 46 KSI)
    - Pipe/tube (square): ASTM A500 Grade C (FY = 50 KSI)
    - Bolts: ASTM F3125 Grade A325 Type 1
    - U–bolts: Grade 2 ASTM A307 Grade A, or SAE J429
    - Nuts: ASTM A563 Grade DH
    - Washers: F436 Type 1
    - Guy Wires: ASTM A475 Grade EHS
    - Bridge Strand: ASTM A586 Grade 1
12. After fabrication, hot–dip galvanize all steel items, UNO. Galvanize per ASTM A123, ASTM A153/A153M, or ASTM A653 G90, as applicable. ASTM A490 bolts shall not be hot–dip galvanized, but shall instead be coated with Magni 565 or EOR approved equivalent, per ASTM F2833.
13. Contractor Personnel shall not drill holes in any new or existing structural members, other than those drilled holes shown on structural drawings, without the approval of the EOR.
14. For a list of Crown–approved cold galvanizing compounds, refer to ENG–STD–10149, "Tower Protective Coatings Guidelines".
15. All exposed structural steel as the result of this scope of Work including welds (after final inspection of the weld by the CWI), field drilled holes, and shaft interiors (where accessible), shall be cleaned and two (2) coats cold galvanizing shall be applied by brush in accordance with ENG–STD–10149, "Tower Protective Coatings Guidelines". Photo documentation is required to be submitted to the MI Inspector.
16. If removal of existing modifications is required per the modification scope, the GC shall clean and cold galvanize any existing empty bolt holes, UNO. If additional unexpected, oversized, or slotted holes are found, the GC shall contact the EOR and Crown POC for guidance prior to proceeding with the modifications.
17. All Work involving base plate grout scope items or resulting in disturbance of base plate grout shall reference ENG–STD–10323, "Base Plate Grout", and shall follow any Base Plate Grout Removal Notes contained herein.
18. All tower grounding affected by the Work shall be repaired or replaced in accordance with OPS–STD–10090, "Tower Grounding", and OPS–BUL–10133, "Grounding Repair Recommendation".
19. If scope of modification requires removal or covering of tower ID tag, the tag must be replaced.
20. Any hardware removed from the existing tower shall be replaced with new hardware of equal size and quality, UNO. No existing fasteners shall be reused.
21. All joints using ASTM A325 or A490 bolts, U–bolts, V–bolts, and threaded rods shall be snug tightened, UNO.
22. A nut locking device shall be installed on all proposed and/or replaced snug tightened ASTM A325 or A490 bolts, U–bolts, V–bolts, and threaded rods.
23. All joints are bearing type connections UNO. If no bolt length is given in the Bill of Materials, the connection may include threads in the shear planes, and the GC is responsible for sizing the length of the bolt.
24. Blind bolts shall be installed per the installation specifications on the corresponding Approved Fastener sheets contained in CED–CAT–10300, "Monopole Standard Drawings and Approved Reinforcement Components".
25. If ASTM A325 or A490 bolts, and/or threaded rods are specified to be pre–tensioned, these shall be installed and tightened to the pretensioned condition according to the requirements of the RCSC Specification for Structural Joints Using ASTM High Strength Bolts.
26. All proposed and/or replaced bolts shall be of sufficient length such that the end of the bolt be at least flush with the face of the nut. It is not permitted for the bolt end to be below the face of the nut after tightening is completed.

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CROWN CASTLE

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REV	DATE	DESCRIPTION
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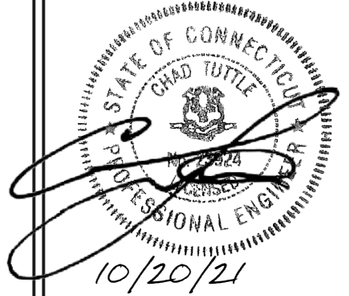
PROJECT NO:	137177.008.01
PROJECT ENG:	THARUN CHERIYAN
DRAWN BY:	MG
CHECKED BY:	VKP / PPK

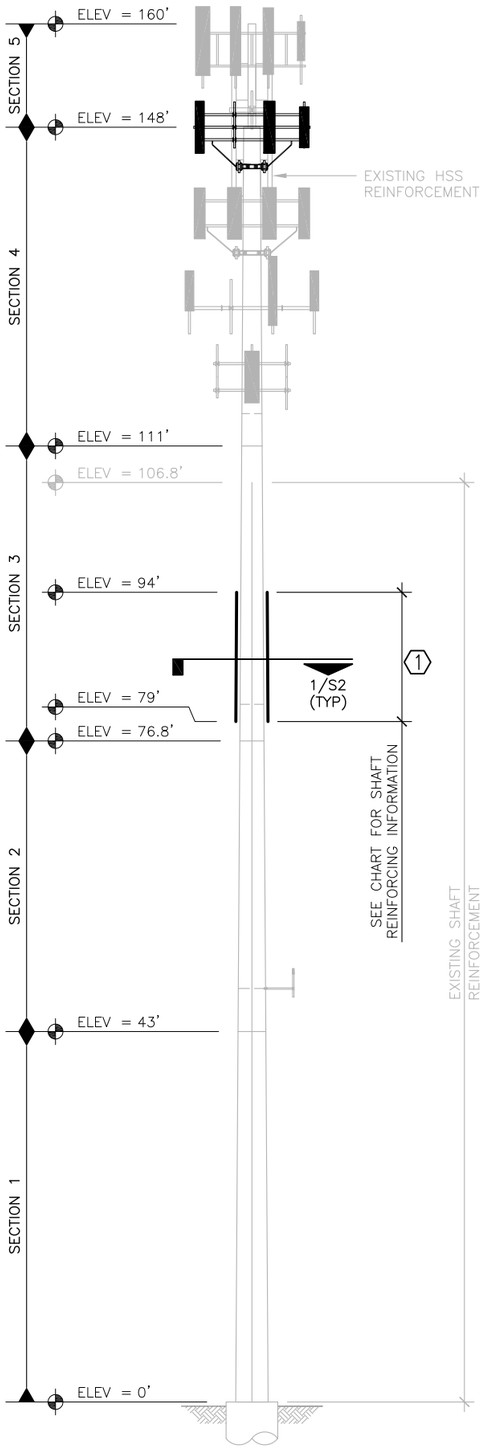
B+T ENGINEERING, INC.
PEC.0001564
Expires 02/10/22



WEST JOHNSON AVE.
BURNT HOUSE
876313
1394 MERIDEN WATERBURY TPK
SOUTHINGTON, CT
EXISTING 160' MONOPOLE

SHEET TITLE
GENERAL NOTES

SHEET NUMBER:	REVISION:
GN	0



1 TOWER ELEVATION
SCALE: N.T.S.

CCI FLAT PLATE (65 KSI) REINFORCING SCHEDULE

BOTTOM ELEVATION	TOP ELEVATION	PART NUMBER	FLAT / DEGREES (°)	TERMINATION BOLTS (BOTTOM)	TERMINATION BOLTS (TOP)	MAX INTERMEDIATE BOLT SPACING	BOLT QUANTITY PER PLATE	STEEL WEIGHT PER PLATE (BLACK)	TOTAL BOLT QUANTITY	TOTAL STEEL WEIGHT (BLACK)
79'-0" *	94'-0"	CCI-SFP-04012515	4, 10 & 16	6	6	2'-3"	17	255.6	51	766.8
								TOTAL	51	766.8

* STARTING ELEVATION DEPENDENT ON EXISTING LAP SPLICE ELEVATION. FIELD VERIFY ELEVATION PRIOR TO INSTALLATION AND COORDINATE WITH E.O.R. ALL BOLTS SHALL BE PRE-APPROVED BLIND M20 BOLTS WITH HIGH STRENGTH SHEAR SLEEVES (ASTM A519 WITH MIN. FU=120 KSI). CONTACT SUPPLIER FOR MATERIAL (PLATE AND BOLTS) AND INSTALLATION PROCEDURES.

SITE360 THIS TOWER WAS SCANNED IN APRIL 2021 FOR SITE 360. CONTACT B+T GROUP OR CROWN CASTLE FOR ACCESS.

MANUFACTURER POLE SPECIFICATIONS

TOWER TAPER:	0.161993 IN/FT
BASE PLATE STEEL:	ASTM A572 GRADE 50 (50 KSI)
ANCHOR RODS:	2 1/4"ø #18J ASTM A615 GRADE 75

MANUFACTURER SHAFT SECTION DATA

SHAFT SECTION	SECTION SHAPE	SECTION LENGTH (FT)	PLATE THICKNESS (IN)	SECTION GRADE (KSI)	FLANGE PLATE GRADE (KSI)	LAP SPLICE (IN)	DIAMETER ACROSS FLATS OR OF ROUND SECTION (IN) @ TOP	DIAMETER ACROSS FLATS OR OF ROUND SECTION (IN) @ BOTTOM
1	18-SIDED	48.00	0.4375	65	---	60	37.324	45.100
2	18-SIDED	38.00	0.3750	65	---	51	32.729	38.884
3	18-SIDED	38.00	0.3125	60	---	45	27.886	34.042
4	18-SIDED	37.00	0.2500	60	---	---	23.000	28.994
5	ROUND	12.00	0.3490	35	---	---	10.750	10.750

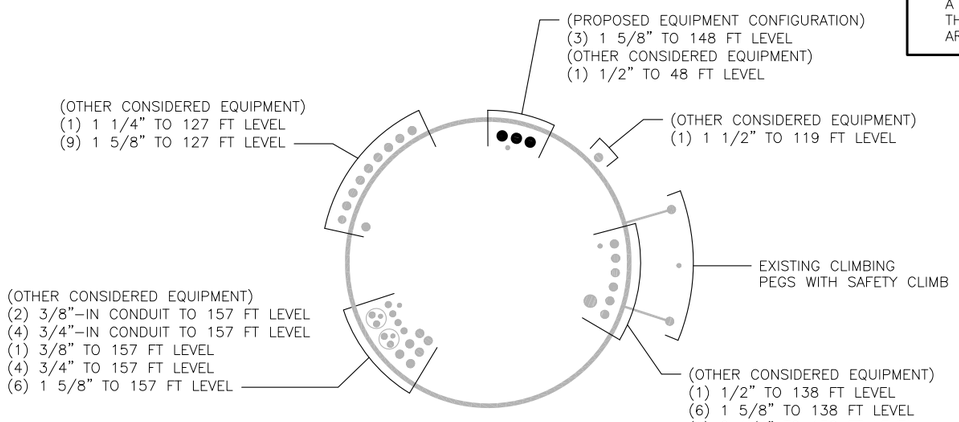
NOTE: DIMENSIONS SHOWN DO NOT INCLUDE GALVANIZING TOLERANCES.

MODIFICATION SCHEDULE

ITEM	ELEVATION (FT)	MODIFICATION	REFERENCE SHEET
1	79'-94'	INSTALL NEW FLAT PLATE REINFORCING ELEMENTS	S2

PRIOR TO FABRICATION AND INSTALLATION, CONTRACTOR SHALL FIELD VERIFY ALL LENGTHS AND QUANTITIES GIVEN. LENGTH AND QUANTITIES PROVIDED ARE FOR QUOTING PURPOSES ONLY, AND SHALL NOT BE USED FOR FABRICATION.

FOR PARTS NOT DETAILED WITHIN THE DRAWING AND STARTING WITH "CCI-", SEE THE FOLLOWING CATALOG FOR DETAILS: CED-CAT-10300, MONOPOLE STANDARD DRAWINGS AND APPROVED REINFORCEMENT COMPONENTS.



2 TX LINE DISTRIBUTION DIAGRAM
SCALE: N.T.S.

NOTES FOR CROWN (65 KSI) FLAT PLATES INCLUDING BOLTED BRIDGE STIFFENERS:

1. APPROVED FASTENERS MAY BE USED ON THIS PROJECT AS INDICATED IN THE FOLLOWING TABLE:

NEXGEN2	APPROVED
SPECIALTY FASTNERS	NA / REQUIRED AS NOTED

ORDERING INFORMATION AND INSTALLATION DETAILS FOR NEXGEN2 FASTENERS CAN BE FOUND IN CED-CAT-10300.

2. ALL FLAT PLATE REINFORCEMENT IS TO BE INSTALLED CENTERED ON ITS DESIGNATED FLAT OR AZIMUTH, UNO, WITH A TOLERANCE FROM CENTER OF THE FLAT OR AZIMUTH AS FOLLOWS:

ALLOWABLE FLAT PLATE CENTERING TOLERANCE	3/8"

GC SHALL REDLINE ALL DEVIATIONS FROM CENTER, INCLUDING THOSE WITHIN TOLERANCE.
3. GC SHALL REPLACE ANY STEP BOLTS AND STEP BOLT CLIPS THAT INTERFERE WITH THE INSTALLATION OF FLAT PLATE. REFERENCE CED-CAT-10300 FOR APPROVED OPTIONS. CCI-SB-0100 IS THE DEFAULT OPTION; OTHER OPTIONS MAY BE REQUIRED FOR FIT-UP.
4. FOR PLATES STARTING AT 6", THE BOTTOM OF THE FLAT PLATE SHALL BEGIN AT 6" +/- 1". FOR SINGLE PLATES OR MULTIPLE PLATES SPLICED TOGETHER, THE BOTTOM OF THE FLAT PLATE RUN SHALL BEGIN AT THE PROPOSED ELEVATION +/- 3". FOR MULTIPLE PLATES SPLICED TOGETHER, THE TOP OF THE FLAT PLATE IS TO BE PLACED SUCH THAT THERE IS NO MORE THAN 3" DIFFERENCE BETWEEN THE ACTUAL OVERALL LENGTH OF THE SPAN AND THE PROPOSED OVERALL LENGTH OF THE SPAN, FROM THE BOTTOM OF THE BOTTOM PLATE TO THE TOP OF THE TOP PLATE.
5. SHIMS FOR MONOPOLE REINFORCEMENT MEMBER SHALL BE REQUIRED WHERE GAPS BETWEEN THE POLE SHAFT AND REINFORCING MEMBER EXIST AT FASTENER LOCATIONS. FOR INTERMEDIATE CONNECTIONS, THE MINIMUM SHIM LENGTH AND WIDTH SHALL BE THE WIDTH OF THE REINFORCING MEMBER. FOR TERMINATION CONNECTIONS, A CONTINUOUS SHIM PLATE (PREFERRED) OR EQUIVALENT INDIVIDUAL SHIM PLATES THE WIDTH OF THE REINFORCING MEMBER MAY BE USED. SHIM THICKNESSES SHALL BE NO LESS THAN 1/16". STACKING OF SHIMS IS PERMITTED. FINGER SHIMS AND HORSESHOE SHIMS ARE PERMITTED. SINGLE AND STACKED SHIMS IN BOLT TERMINATION REGIONS SHALL BE NO GREATER THAN A TOTAL OF ¼" WITHOUT EOR APPROVAL. SINGLE AND STACKED SHIMS AT INTERMEDIATE CONNECTIONS SHALL BE NO GREATER THAN A TOTAL OF 5/8" WITHOUT EOR APPROVAL.
6. SHIM MATERIAL SHALL BE STEEL GRADE A36 OR GREATER IF WELDED, UNO, AND SHALL REQUIRE MTR; IF SHIMS ARE NOT WELDED, THERE IS NO MINIMUM REQUIRED STEEL GRADE.
7. IF UNEXPECTED HOLES ARE FOUND IN A LOCATION WHERE FLAT PLATE IS PROPOSED TO BE INSTALLED, THE GC SHALL NOT PLACE NEW BOLT HOLES WITHIN A CENTER-TO-CENTER DISTANCE OF 3 TIMES THE DIAMETER OF THE LARGER OF THE TWO HOLES, WITHOUT EOR APPROVAL. EXISTING HOLES MAY INCLUDE BUT ARE NOT LIMITED TO EMPTY BOLT HOLES AND JACKING NUTS WITH CENTER HOLES.

EXISTING TOWER HAS BEEN PREVIOUSLY MODIFIED

REFERENCE DRAWINGS BY:	DATE
GPD GROUP	08/01/12
AERO SOLUTIONS LLC	07/23/13
PAUL J. FORD AND COMPANY	09/13/13
FDH ENGINEERING INNOVATION	06/05/14
PAUL J. FORD AND COMPANY	08/22/14

BOLT COUNT BY LENGTH

LENGTH	QUANTITY
SHORT	51
MEDIUM	0
LONG	0
TOTAL	51

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CROWN CASTLE

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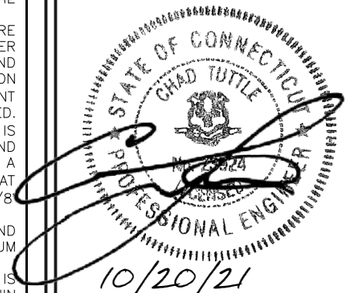

WEST JOHNSON AVE.
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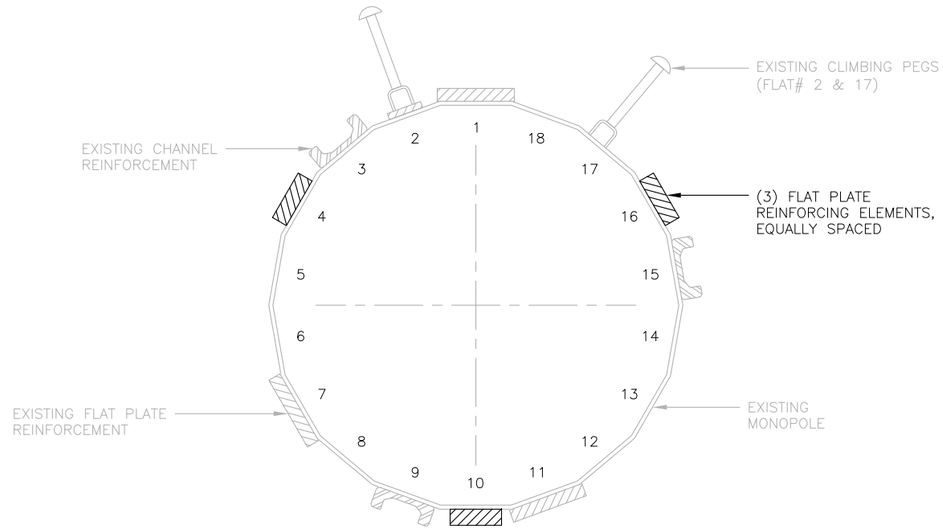
SOUTHINGTON, CT
EXISTING 160' MONOPOLE

SHEET TITLE
TOWER ELEVATION, SCHEDULES AND TX LINE DISTRIBUTION DIAGRAM

SHEET NUMBER: S1
REVISION: 0



1 TOWER SECTION (79'-94')
SCALE: N.T.S.

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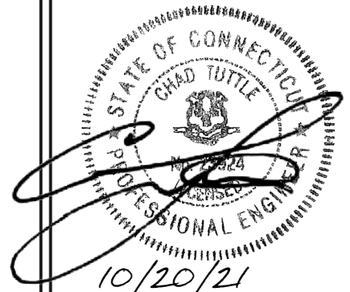

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876313
1394 MERIDEN WATERBURY TPK
SOUTHINGTON, CT

EXISTING 160' MONOPOLE

SHEET TITLE
TOWER SECTION
79'-94'

SHEET NUMBER: S2

REVISION: 0

Exhibit E

Mount Analysis

GENERAL NOTES:

1. THESE DOCUMENTS WERE DESIGNED IN ACCORDANCE WITH THE LATEST VERSION OF APPLICABLE LOCAL/STATE/COUNTY/CITY BUILDING CODES, AS WELL AS ANSI/TIA-222 STANDARD, AWWA-D100 STANDARD, NDS, NEC, MSJC, AND/OR THE LATEST VERSION OF THE INTERNATIONAL BUILDING CODE, UNLESS NOTED OTHERWISE IN THE CORRESPONDING STRUCTURAL REPORT.
2. ALL CONSTRUCTION METHODS SHOULD FOLLOW STANDARDS OF GOOD CONSTRUCTION PRACTICE.
3. ALL WORK INDICATED ON THESE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN SIMILAR CONSTRUCTION.
4. ALL NEW WORK SHALL ACCOMMODATE EXISTING CONDITIONS. IF OBSTRUCTIONS ARE FOUND, CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD PRIOR TO CONTINUING WORK.
5. ANY CHANGES OR ADDITIONS MUST CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS, AND SHOULD BE SIMILAR TO THOSE SHOWN. ALL CHANGES OR ADDITIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO FABRICATION AND/OR CONSTRUCTION.
6. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND EXECUTION OF ALL MISCELLANEOUS SHORING, BRACING, TEMPORARY SUPPORTS, ETC. NECESSARY TO PROVIDE A COMPLETE AND STABLE STRUCTURE DURING CONSTRUCTION. TIA-1019-A-2011 IS AN APPROPRIATE REFERENCE FOR THOSE DESIGNS MEETING TIA STANDARDS. THE ENGINEER OF RECORD MAY PROVIDE FORMAL RIGGING PLANS AT THE REQUEST AND EXPENSE OF THE CONTRACTOR.
7. INSTALLATION SHALL NOT INTERFERE NOR DENY ADEQUATE ACCESS TO OR FROM ANY EXISTING OR PROPOSED OPERATIONAL AND SAFETY EQUIPMENT.
8. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO ANY FABRICATION. CONTACT INFINIGY ENGINEERING IF ANY DISCREPANCIES EXIST.

STEEL CONSTRUCTION NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO THE AISC MANUAL OF STEEL CONSTRUCTION 14TH EDITION, FOR THE DESIGN AND FABRICATION OF STEEL COMPONENTS.
2. ALL FIELD CUT SURFACES, FIELD DRILLED HOLES, AND GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS' RECOMMENDATIONS.
3. ALL FIELD DRILLED HOLES TO BE USED FOR FIELD BOLTING INSTALLATION SHALL BE STANDARD HOLES, AS DEFINED BY AISC, UNLESS NOTED OTHERWISE.
4. ALL EXTERIOR STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123.
5. ALL STEEL MEMBERS AND CONNECTIONS SHALL MEET THE FOLLOWING GRADES:
   - ANGLES, CHANNELS, PLATES AND BARS TO BE A36. Fy=36 KSI, U.N.O.
   - W SHAPES TO BE A992. Fy=50 KSI, U.N.O.
   - RECTANGULAR HSS TO BE A500, GRADE B. FY=46 KSI, U.N.O.
   - ROUND HSS TO BE A500, GRADE B. FY=42 KSI, U.N.O.
   - STEEL PIPE TO BE A53, GRADE B. Fy=35 KSI, U.N.O.
   - BOLTS TO BE A325-X. Fu=120 KSI, U.N.O.
   - U-BOLTS AND LAG SCREWS TO BE A307 GR A. Fu=60 KSI, U.N.O.
6. ALL WELDING SHALL BE DONE USING E70XX ELECTRODES, U.N.O.
7. ALL WELDING SHALL CONFORM TO AISC AND AWS D1.1 LATEST EDITION.
8. ALL HILTI ANCHORS TO BE CARBON STEEL, U.N.O.
   - MECHANICAL ANCHORS: KWIK BOLT-TZ, U.N.O.
   - CMU BLOCK ANCHORS: ADHESIVE - HY120, U.N.O.
   - CONCRETE ANCHORS: ADHESIVE - HY150, U.N.O.
   - CONCRETE REBAR: ADHESIVE - RE500, U.N.O.
9. ALL STUDS TO BE NELSON CAPACITOR DISCHARGE 1/4"-20 LOW CARBON STEEL COPPER-FLASH AT 55 KSI ULT/50 KSI YIELD, U.N.O.
10. BOLTS SHALL BE TIGHTENED TO A "SNUG TIGHT" CONDITION AS DEFINED BY AISC.
11. MINIMUM EDGE DISTANCES SHALL CONFORM TO AISC TABLE J3.4.
12. REMOVAL/REPLACEMENT OF STRUCTURAL MEMBERS SHALL BE DONE ONE MEMBER AT A TIME. CONTRACTOR IS RESPONSIBLE FOR ENSURING THE STRUCTURAL INTEGRITY OF THE STRUCTURE DURING ALL PHASES OF CONSTRUCTION.

CONCRETE CONSTRUCTION NOTES:

1. CONCRETE TO BE 4000 PSI @ 28 DAYS. REINFORCING BAR TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. CONCRETE INSTALLATION TO CONFORM TO ACI-318 BUILDING REQUIREMENTS FOR REINFORCED CONCRETE. ALL CONCRETE TO BE PLACED AGAINST UNDISTURBED EARTH FREE OF WATER AND ALL FOREIGN OBJECTS AND MATERIALS. A MINIMUM OF THREE INCHES OF CONCRETE SHALL COVER ALL REINFORCEMENT. WELDING OF REBAR IS NOT PERMITTED.
2. EXISTING CONCRETE SURFACES THAT ARE TO BE IN CONTACT WITH NEW PROPOSED CONCRETE SHOULD BE WIRE BRUSHED CLEAN AND TREATED WITH APPROPRIATE MECHANICAL SCRATCH COAT AND REPAIR MATERIALS OR APPROPRIATE CHEMICAL METHODS SUCH AS THE APPLICATION OF A BONDING AGENT, EX. SAKRETE OR EQUIVALENT, TO ENSURE A QUALITY BOND BETWEEN EXISTING AND PROPOSED CONCRETE SURFACES.

FIBER REINFORCED POLYMER (FRP) NOTES:

1. FRP PLATES, SHAPES, BOLTS AND NUTS (STUD/NUT ASSEMBLIES) SHALL CONFORM TO ASTM D638, 695, 790. PLATES AND SHAPES TO BE FY = 5.35 KSI LW (SAFETY FACTOR OF 8), .945 KSI CW (SAFETY FACTOR OF 8) MIN.
2. IF FIELD FABRICATION IS REQUIRED, ALL CUT EDGES AND DRILLED HOLES TO BE SEALED USING VINYL ESTER SEALING KIT SUPPLIED BY THE MANUFACTURER.
3. ALL FASTENERS TO BE 1/2" DIA FRP THREADED ROD WITH FIBER REINFORCED THERMOPLASTIC NUT, SPACED AT 12 INCHES ON CENTER MAXIMUM, U.N.O., FOR PANELS AND AS DESIGNED FOR STRUCTURAL MEMBERS.
4. THE COLOR AND SURFACE PATTERN OF EXPOSED FRP PANELS SHALL MATCH THE EXTERIOR OF THE EXISTING BUILDING, U.N.O.
5. STUD/NUT ASSEMBLIES SHOULD BE LUBRICATED FOR INSTALLATION
6. ENSURE BEARING SURFACES OF THE NUTS ARE PARALLEL TO THE SURFACES BEING FASTENED.
7. TORQUE BOLTS ACCORDING TO THE FOLLOWING TABLE:

INSTALLATION TORQUE TABLE

SIZE	ULTIMATE TORQUE STRENGTH	RECOMMENDED MAXIMUM INSTALLATION TORQUE
3/8-16 UNC	8 FT-LBS	4 FT-LBS
1/2-13 UNC	18 FT-LBS	8 FT-LBS
5/8-11 UNC	35 FT-LBS	16 FT-LBS
3/4-10 UNC	50 FT-LBS	24 FT-LBS
1-8 UNC	110 FT-LBS	50 FT-LBS

8. WHEN TIGHTENING FRP STUD/NUT ASSEMBLIES, WRENCHES MUST MAKE FULL CONTACT WITH ALL NUT EDGES. A STANDARD SIX POINT SOCKET IS RECOMMENDED.
9. STUD/NUT ASSEMBLIES SHOULD BE BONDED BY APPLYING BONDING AGENT TO ENTIRE NUT AND EXPOSED STUD.
10. ALL FRP MATERIALS TO BE PROVIDED BY FIBERGRATE COMPOSITE STRUCTURES, DALLAS TX, OR APPROVED EQUAL.
11. ALL FRP SHAPES TO BE DYNAFORM PULTRUDED STRUCTURAL SHAPES.
12. ALL FRP PLATES TO BE FIBERPLATE MOLDED FRP PLATE.
13. ALL FRP PANELS TO BE FIBERPLATE CLADDING PANEL.
14. EACH FRP PANEL TO BE IDENTIFIED WITH LARR#25536 AND FIBERGRATE COMPOSITE STRUCTURAL LABEL.
15. FRP MATERIAL TO BE CLASSIFIED AS CC1 OR BETTER, AND HAVE MAXIMUM FLAME SPREAD OF 50.
16. ALL DESIGN AND CONSTRUCTION TO BE COMPLETED IN ACCORDANCE WITH LOS ANGELES RESEARCH REPORT RR25536, DATED FEBRUARY 1, 2016.
17. SPECIAL INSPECTIONS MUST BE PROVIDED FOR ALL FRP INSTALLMENTS. SEE SPECIAL INSPECTION SECTION, THIS SHEET.

RATIO OF EDGE DISTANCE TO FRP FASTENER DIAMETER

	RANGE	RECOMMENDED
EDGE DISTANCE - CL* BOLT TO END	2.0-4.0	3.0
EDGE DISTANCE - CL* BOLT TO SIDE	1.5-3.5	2.5
BOLT PITCH - CL* TO CL*	4.0-5.0	5.0

WOOD CONSTRUCTION NOTES:

1. ALL EXISTING WOOD SHAPES ARE ASSUMED TO BE DOUGLAS FIR-LARCH WITH A REFERENCE DESIGN BENDING VALUE OF 1000 PSI MIN.
2. ALL PROPOSED WOOD SHAPES ARE TO BE DOUGLAS FIR-LARCH WITH A REFERENCE DESIGN BENDING VALUE OF 1000 PSI MIN. U.N.O.
3. ALL EXISTING AND PROPOSED GLUED LAMINATED TIMBERS ARE TO BE 24F-1.8C DOUGLAS FIR BALANCED WITH A REFERENCE DESIGN BENDING VALUE OF 2400 PSI MIN. U.N.O.

MASONRY CONSTRUCTION NOTES:

1. ALL BRICK TO BE 1500 PSI MIN. REINFORCING BAR (IF APPLICABLE) TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. ALL MORTAR TO BE 2000 PSI MIN.
   - FOR INTERIOR/ABOVE GRADE APPLICATIONS TYPE N MORTAR HAVING MINIMUM MODULUS OF RUPTURE OF 100 PSI SHALL BE USED. FOR EXTERIOR/BELOW GRADE APPLICATIONS TYPE M OR S MORTAR HAVING A MINIMUM MODULUS OF RUPTURE OF 133 PSI.
   - BRICK AND MORTAR INSTALLATION TO CONFORM TO MSJC BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES.
2. ALL CMU TO BE 1500 PSI MIN. REINFORCING BAR (IF APPLICABLE) TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. ALL MORTAR TO BE 2000 PSI MIN.
   - FOR INTERIOR/ABOVE GRADE APPLICATIONS, TYPE N MORTAR HAVING MINIMUM MODULUS OF RUPTURE OF 64 PSI SHALL BE USED FOR UNGROUTED BLOCKS, AND 158 PSI FOR FULLY GROUTED BLOCKS.
   - FOR EXTERIOR/BELOW GRADE APPLICATIONS TYPE M OR S MORTAR HAVING A MINIMUM MODULUS OF RUPTURE OF 84 PSI SHALL BE USED FOR UNGROUTED BLOCKS, AND 163 PSI FOR FULLY GROUTED BLOCKS.
   - BRICK AND MORTAR INSTALLATION TO CONFORM TO MSJC BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES.

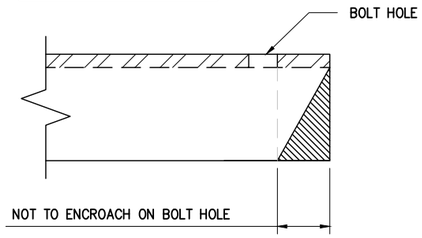
TOWER PLUMB & TENSION NOTES:

1. PLUMB AND TENSION TOWER UPON COMPLETION OF STRUCTURAL MODIFICATIONS DETAILED IN THESE DRAWINGS.
2. RETENSIONING OF EXISTING GUY WIRES SHALL BE PERFORMED AT A TIME WHEN THE WIND VELOCITY IS LESS THAN 10 MPH AT GROUND LEVEL AND WITH NO ICE ON THE STRUCTURE AND GUY WIRES.
3. PLUMB THE TOWER WHILE RETENSIONING THE EXISTING GUY WIRES. THE HORIZONTAL DISTANCE BETWEEN THE VERTICAL CENTERLINES AT ANY TWO ELEVATIONS SHALL NOT EXCEED 0.25% OF THE VERTICAL DISTANCE BETWEEN TWO ELEVATIONS FOR LATTICED STRUCTURES.
4. THE TWIST BETWEEN ANY TWO ELEVATIONS THROUGHOUT THE HEIGHT OF A LATTICE STRUCTURE SHALL NOT EXCEED 0.5 DEGREES IN 10 FEET. THE MAXIMUM TWIST OVER THE LATTICE STRUCTURE HEIGHT SHALL NOT EXCEED 5 DEGREES.

SPECIAL INSPECTIONS NOTES:

1. A QUALIFIED INDEPENDENT TESTING LABORATORY, EMPLOYED BY THE OWNER AND APPROVED BY THE JURISDICTION, SHALL PERFORM INSPECTION AND TESTING IN ACCORDANCE WITH THE THE GOVERNING BUILDING CODE, APPLICABLE SECTION(S) AS REQUIRED BY PROJECT SPECIFICATIONS FOR THE FOLLOWING CONSTRUCTION WORK:
   a. STRUCTURAL WELDING (CONTINUOUS INSPECTION OF FIELD WELDS ONLY).
   b. HIGH STRENGTH BOLTS (PERIODIC INSPECTION OF A325 AND/OR A490 BOLTS) TO BE TIGHTENED PER "TURN-OF-THE-NUT" METHOD.
   c. MECHANICAL AND EPOXIED ANCHORAGES.
   d. FIBER REINFORCED POLYMER.
      - THE SPECIAL INSPECTOR MUST VERIFY THAT THE FRP MATERIAL SPECIFIED ON THE APPROVED DESIGN DOCUMENTS IS BEING INSTALLED.
      - THE SPECIAL INSPECTOR MUST VERIFY THAT ALL CUT EDGES AND DRILLED HOLES ARE PROPERLY SEALED USING A VINYL ESTER SEALING KIT SUPPLIED BY THE MANUFACTURER.
      - THE SPECIAL INSPECTOR MUST VERIFY THAT THE STRUCTURE IS BUILT IN ACCORDANCE WITH THE APPROVED DESIGN DOCUMENTS.
2. THE INSPECTION AGENCY SHALL SUBMIT INSPECTION AND TEST REPORTS TO THE BUILDING DEPARTMENT, THE ENGINEER OF RECORD, AND THE OWNER UNLESS THE FABRICATOR IS APPROVED BY THE BUILDING OFFICIAL TO PERFORM WORK WITHOUT THE SPECIAL INSPECTIONS.

MAXIMUM ALLOWABLE ANGLE CLIP



STATE OF CONNECTICUT · SAMUEL POULIN · No. 22947 · LICENSED PROFESSIONAL ENGINEER

9/1/21

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	08/24/21	ISSUED FOR REVIEW	DMB	AM	LM

INFINIGY Design. Build. Deliver.
2255 SEWELL MILL ROAD, SUITE 130
MARIETTA, GA 30062
OFFICE: (678) 444-4463
FAX: (678) 444-4472

1039-Z0001-B

CROWN CASTLE

T-Mobile

876313
WEST JOHNSON AVE. BURNT HOUSE
1394 MERIDEN WATERBURY TPK
SOUTHINGTON, CT 06489

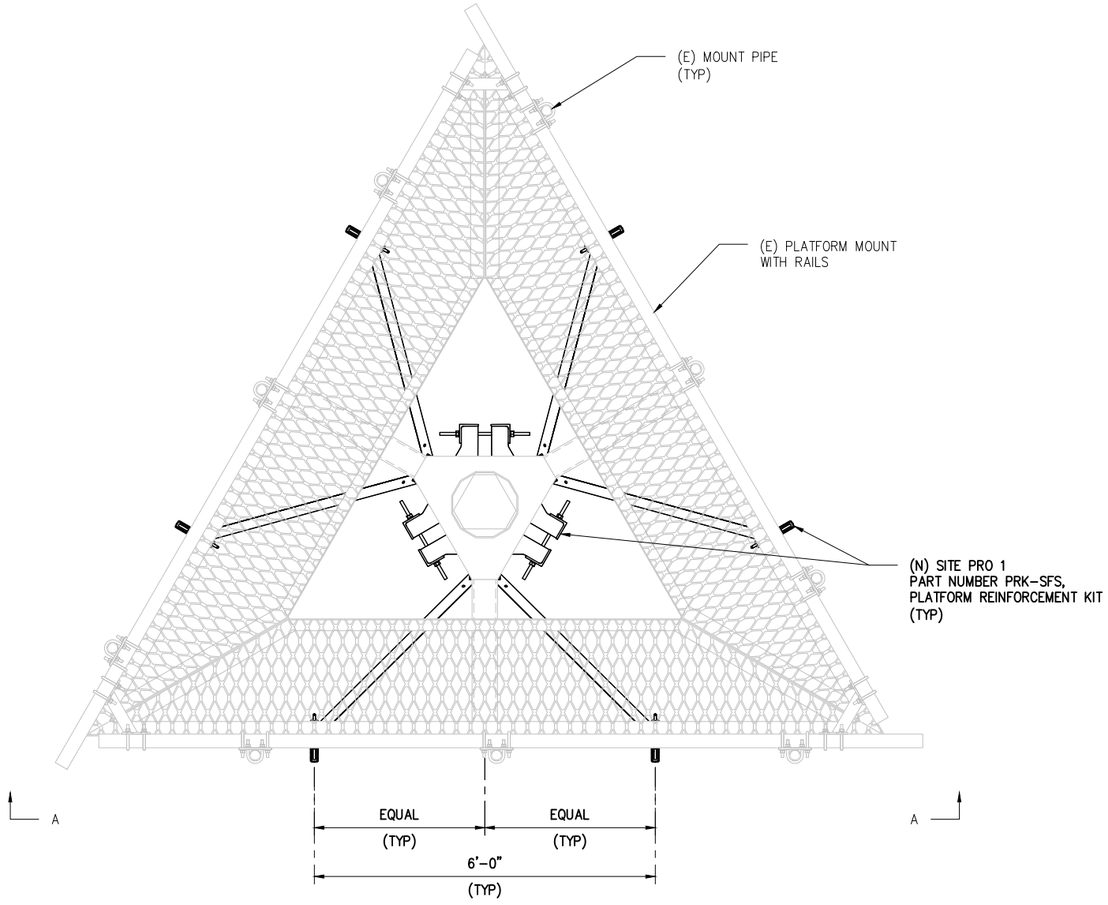
GENERAL NOTES

S1

REV 0

NOTES:

1. MODIFICATIONS SHOWN ARE TYPICAL FOR ALL SECTORS. SEE THIS SHEET AND SHEET S-2 FOR LAYOUT DETAILS.
2. VARIOUS EXISTING CONDITIONS AND PROPOSED MODIFICATIONS NOT SHOWN FOR CLARITY.
3. ALL DESIGNATED PARTS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS, UNLESS OTHERWISE NOTED.
4. CONTRACTOR TO FIELD VERIFY REQUIRED LENGTHS OF PROPOSED ANGLES & PIPES, AND CUT & DRILL ON SITE AS NECESSARY.
5. REMOVAL/REPLACEMENT OF STRUCTURAL MEMBERS SHALL BE DONE ONE MEMBER AT A TIME. CONTRACTOR IS RESPONSIBLE FOR ENSURING THE STRUCTURAL INTEGRITY OF THE STRUCTURE DURING ALL PHASES OF CONSTRUCTION.



1 SITE PLAN
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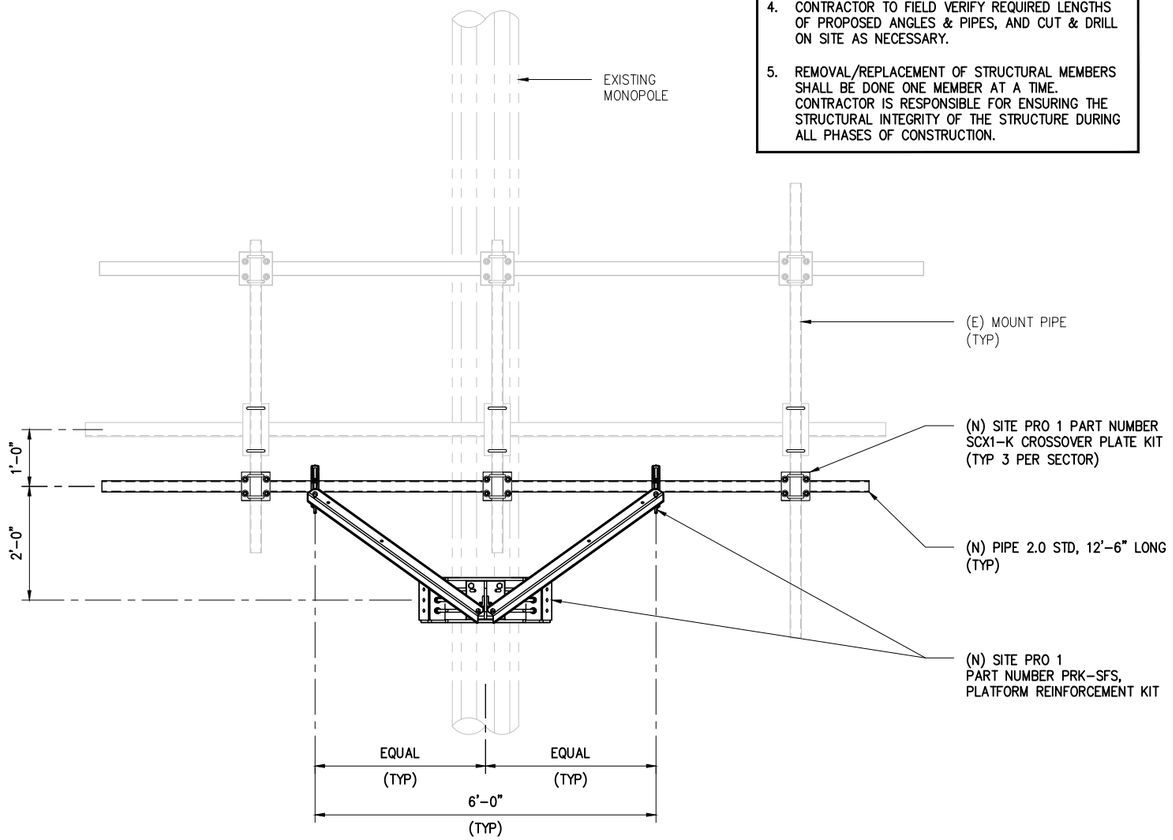

2 SECTION A-A
SCALE: NOT TO SCALE

STATE OF CONNECTICUT
ANUEL POULIN
No. 22947
LICENSED
PROFESSIONAL ENGINEER
9/1/21

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T-Mobile

876313
WEST JOHNSON AVE. BURNT HOUSE
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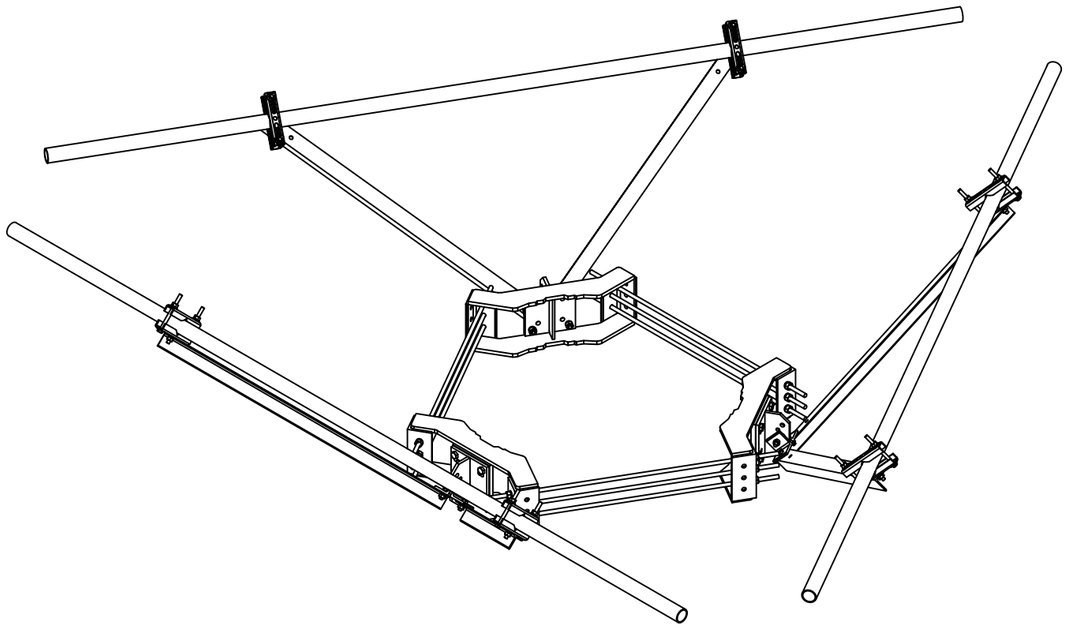
SOUTHINGTON, CT 06489

ANTENNA MOUNT DETAILS

S2

REV 0



1 SITE PRO 1 P/N PRK-SFS
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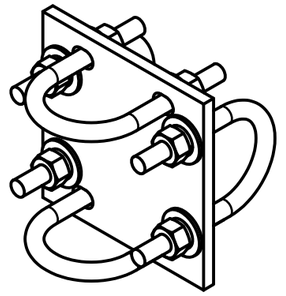

2 SITE PRO 1 P/N SCX1-K
SCALE: NOT TO SCALE

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0	08/24/21	ISSUED FOR REVIEW	DMB	AM	LM

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SOUTHINGTON, CT 06489

REQUIRED PARTS

S3

REV 0

STATE OF CONNECTICUT
EMANUEL POULIN
No. 22947
LICENSED PROFESSIONAL ENGINEER

9/1/21

Date: **September 1, 2021**

Darcy Tarr
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277
(704) 405-6589

Infinigy Engineering, PLLC
1033 Watervliet Shaker Road
Albany, NY 12205
518-690-0790
structural@infinigy.com

Subject:	**Mount Modification Report**	
Carrier Designation:	**T-Mobile Keep**	
	Carrier Site Number:	CTHA453A
	Carrier Site Name:	CT03XC015
Crown Castle Designation:	**Crown Castle BU Number:**	876313
	Crown Castle Site Name:	WEST JOHNSON AVE. BURNT HOUSE
	Crown Castle JDE Job Number:	673845
	Crown Castle Order Number:	575187 Rev.1
Engineering Firm Designation:	**Infinigy Engineering, PLLC Report Designation:**	1039-Z0001-B
Site Data:	**1394 Meriden Waterbury Tpk, Southington, Hartford County, CT, 06489** **Latitude 41°33'51.39" Longitude -72°53'30.70"**	
Structure Information:	**Tower Height & Type:**	**160.0 ft Monopole**
	Mount Elevation:	**148.0 ft**
	Mount Type:	**14.0 ft Platform**

Dear Darcy Tarr,

Infinigy Engineering, PLLC is pleased to submit this **"Mount Modification Report"** to determine the structural integrity of T-Mobile's antenna mounting system with the proposed appurtenance and equipment addition on the abovementioned supporting tower structure. Analysis of the existing supporting tower structure is to be completed by others and therefore is not part of this analysis. Analysis of the antenna mounting system as a tie-off point for fall protection or rigging is not part of this document.

The purpose of the analysis is to determine acceptability of the mount stress level. Based on our analysis we have determined the mount stress level to be:

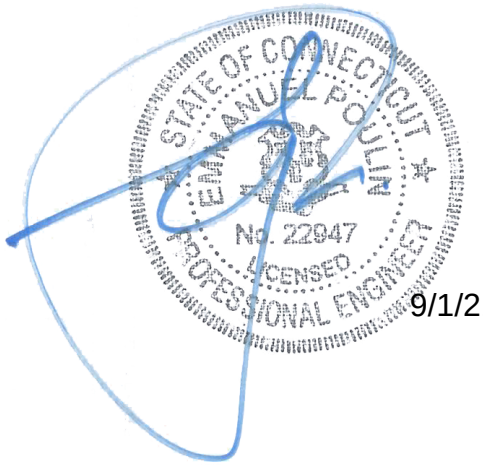
Platform	**Sufficient**

***Sufficient upon completion of the changes listed in the 'Recommendations' section of this report.**

This analysis utilizes an ultimate 3-second gust wind speed of 125 mph as required by the 2018 Connecticut State Building Code and Appendix N. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Alex Mercado, E.I.T.

Respectfully Submitted by:
Emmanuel Poulin, P.E.
518-690-0790
structural@infinigy.com
CT PE License No. 22947



9/1/21

TABLE OF CONTENTS

1) INTRODUCTION

This is an existing 3 sector 14.0 ft Platform, designed by Summit Manufacturing.

Proposed modifications are being considered in the analysis per Engineering detail drawings provided in Appendix E – Mount Modification Design Drawings.

2) ANALYSIS CRITERIA

Building Code:	2015 IBC / 2018 Connecticut State Building Code and Appendix N
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	125 mph
Exposure Category:	B
Topographic Factor at Base:	1.0
Topographic Factor at Mount:	1.0
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.181
Seismic S_1:	0.064
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb
Man Live Load at Mount Pipes:	500 lb

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
148.0	148.0	3	ERICSSON	AIR6449 B41_T-MOBILE	14.0 ft Platform
		3	RFS/CELWAVE	APX16DWV-16DWV-S-E-A20	
		3	RFS/CELWAVE	APXVAALL24_43-U-NA20_TMO	
		3	ERICSSON	RADIO 4460 B2/B25 B66_TMO	
		3	ERICSSON	RADIO 4480 B71_TMO	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Crown Application	T-Mobile Application	575187 Rev.1	CCI Sites
Tower Manufacturer Drawings	Summit Manufacturing	2134246	CCI Sites
Mount Modification Drawings	Infinigy Engineering, PLLC	Appendix E	Infinigy
Loading Documents	T-Mobile	RFDS Version 1	TSA

3.1) Analysis Method

RISA-3D (Version 17.0.4), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

Infinigy Mount Analysis Tool V2.1.6, a tool internally developed by Infinigy, was used to calculate wind loading on all appurtenances, dishes and mount members for various loading cases. Selected output from the analysis is included in Appendix B “Software Input Calculations”.

This analysis was performed in accordance with Crown Castle’s ENG-SOW-10208 *Tower Mount Analysis* (Revision B).

3.2) Assumptions

1) The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design and manufacturer's specifications.
2) The configuration of antennas, mounts, and other appurtenances are as specified in Table 1 and the referenced drawings.
3) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
4) The analysis will be required to be revised if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members.
5) Prior structural modifications to the tower mounting system are assumed to be installed as shown per available data.
6) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Rectangular)	ASTM A500 (GR B-46)
Pipe	ASTM A53 (GR 35)
Connection Bolts	ASTM A325

This analysis may be affected if any assumptions are not valid or have been made in error. Infinigy Engineering, PLLC should be notified to determine the effect on the structural integrity of the antenna mounting system.

4) ANALYSIS RESULTS

Table 3 - Mount Component Stresses vs. Capacity (Platform, All Sectors)

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1,2,3	Mount Pipe(s)	MP4	148.0	52.6	Pass
	Horizontal(s)	MH1		67.3	Pass
	Standoff(s)	MS2		51.9	Pass
	Proposed Horizontal(s)	RH3		45.1	Pass
	Handrail(s)	HR3		31.7	Pass
	Kicker(s)	K1		10.9	Pass
	Mount Connection(s)	--		31.2	Pass

Structure Rating (max from all components) =	67.3%

Notes:
1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
2) See additional documentation in “Appendix D – Additional Calculations” for detailed mount connection calculations.
3) All sectors are typical

4.1) Recommendations

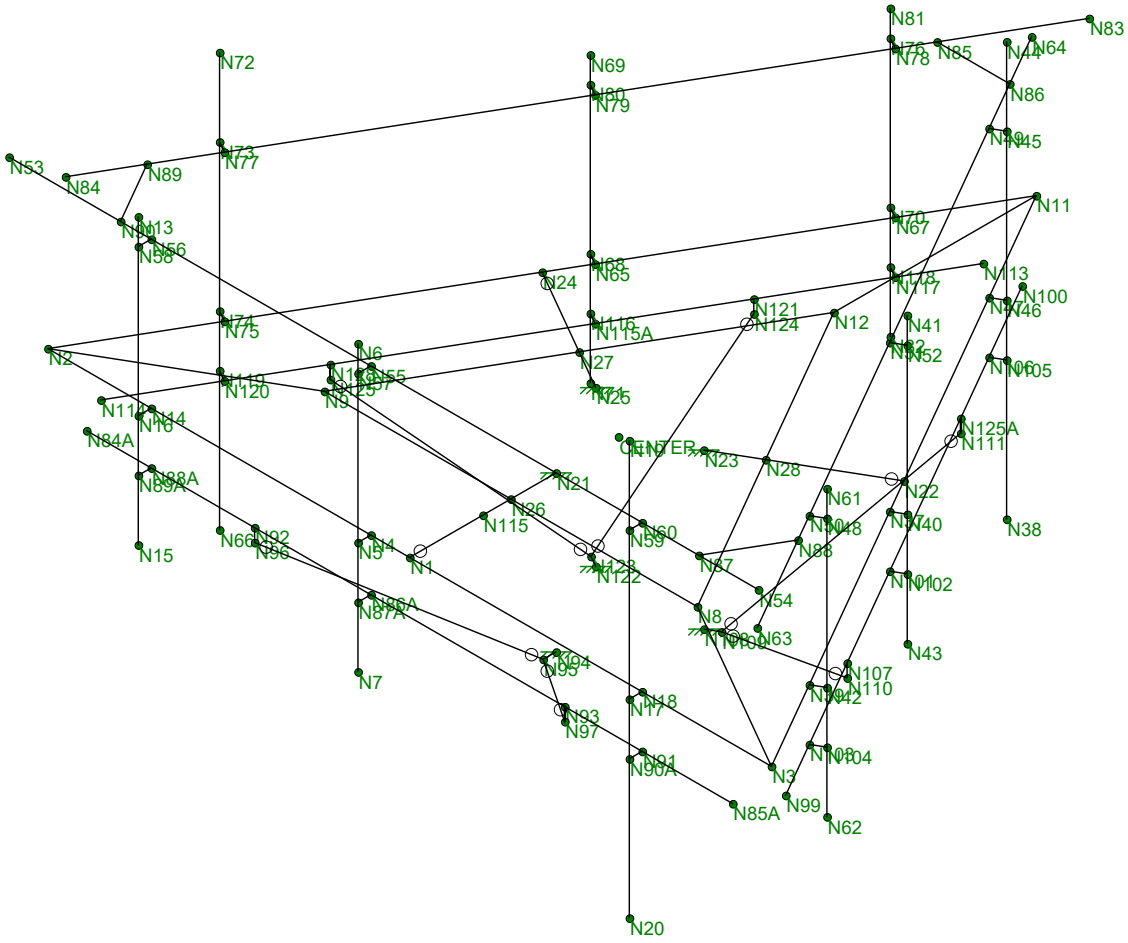
The mount has sufficient capacity to carry the proposed loading configuration. In order for the results of the analysis to be considered valid, the structural modifications listed below must be completed.

1. Installation of (1) Site Pro 1 PRK-SFS Reinforcement Kit.
2. Installation of (1) 2.0 STD 12.5’ long horizontal pipe with (3) Site Pro 1 SCX1-K Crossover Plates per sector.

Engineering detail drawings have been provided in Appendix E – Mount Modification Design Drawings. Connection from the mount to the tower and local stresses on the tower are sufficient.

APPENDIX A

WIRE FRAME AND RENDERED MODELS



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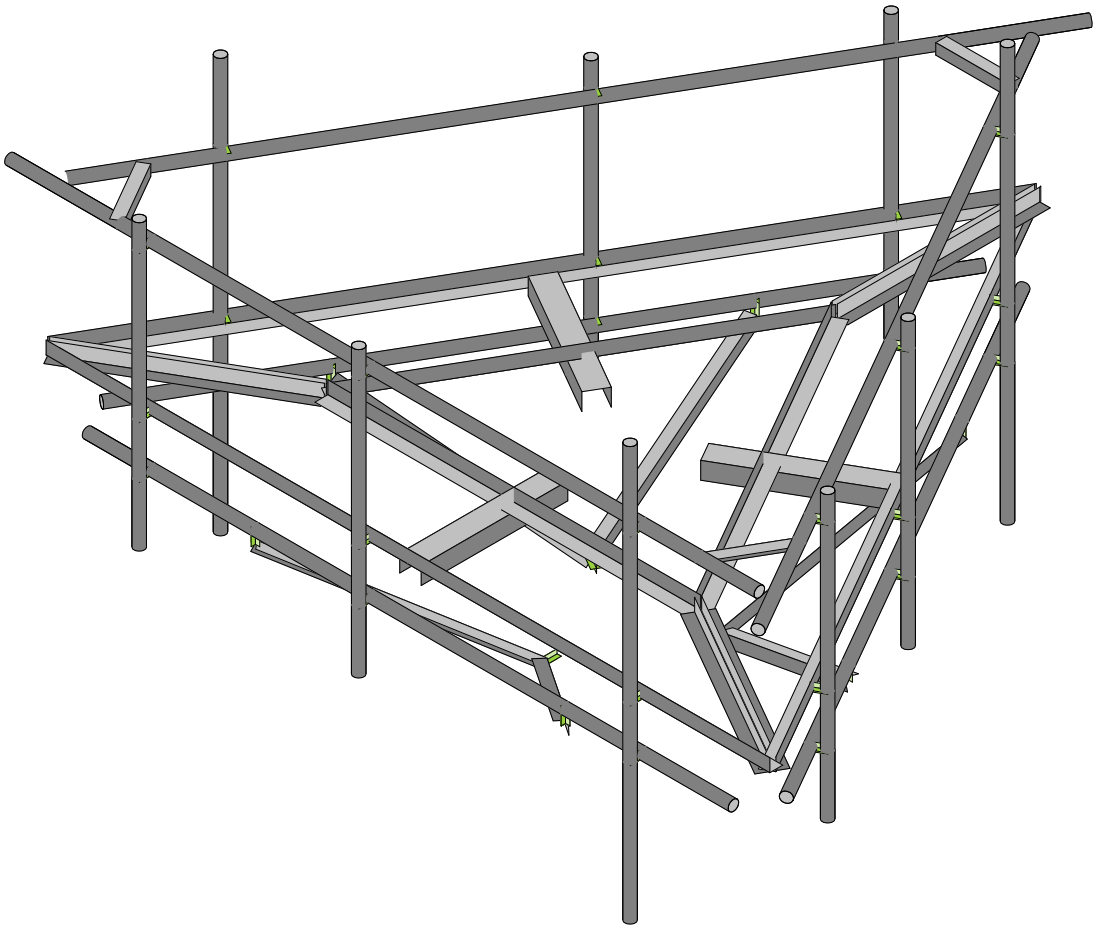

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APPENDIX B

SOFTWARE INPUT CALCULATIONS

Program Inputs

PROJECT INFORMATION	
Client:	Crown Castle
Carrier:	T-Mobile
Engineer:	Andrew Gloriani

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	B	
Topo Factor Procedure:	Method 1, Category 1	
Site Class:	D - Stiff Soil (Assumed)	
Ground Elevation:	133.13	ft *Rev H

MOUNT INFORMATION		
Mount Type:	Platform	
Num Sectors:	3	
Centerline AGL:	148.00	ft
Tower Height AGL:	160.00	ft

TOPOGRAPHIC DATA		
Topo Feature:	N/A	
Slope Distance:	N/A	ft
Crest Distance:	N/A	ft
Crest Height:	N/A	ft

FACTORS		
Directionality Fact. (K_d):	0.950	
Ground Ele. Factor (K_e):	0.995	*Rev H Only
Rooftop Speed-Up (K_s):	1.000	*Rev H Only
Topographic Factor (K_{zt}):	1.000	
Gust Effect Factor (G_h):	1.000	

CODE STANDARDS		
Building Code:	2015 IBC	
TIA Standard:	TIA-222-H	
ASCE Standard:	ASCE 7-10	

WIND AND ICE DATA		
Ultimate Wind (V_{ult}):	125	mph
Design Wind (V):	N/A	mph
Ice Wind (V_{ice}):	50	mph
Base Ice Thickness (t_i):	1.5	in
Flat Pressure:	83.604	psf
Round Pressure:	50.162	psf
Ice Wind Pressure:	8.026	psf

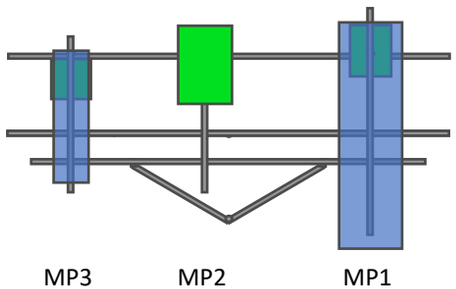
SEISMIC DATA		
Short-Period Accel. (S_s):	0.185	g
1-Second Accel. (S_1):	0.064	g
Short-Period Design (S_{DS}):	0.197	
1-Second Design (S_{D1}):	0.102	
Short-Period Coeff. (F_a):	1.600	
1-Second Coeff. (F_v):	2.400	
Amplification Factor (A_s):	3.000	
Response Mod. Coeff. (R):	2.000	

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

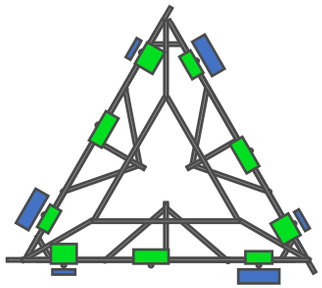
Infinigy Load Calculator V2.1.6

Program Inputs

ELEVATION VIEW



PLAN VIEW



INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

Infinigy Load Calculator V2.1.6

APPURTENANCE INFORMATION

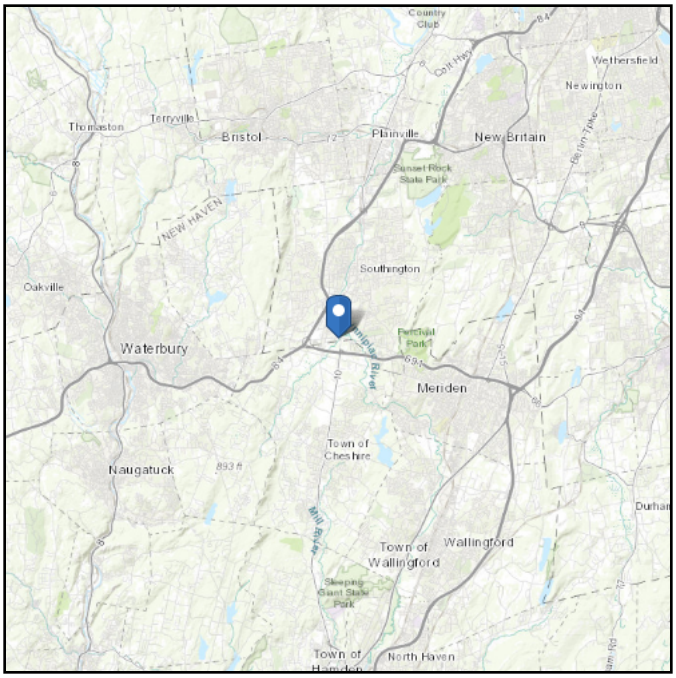
Appurtenance Name	Elevation	Qty.	K_a	q_z (psf)	EPA_N (ft^2)	EPA_T (ft^2)	Wind F_z (lbs)	Wind F_x (lbs)	Weight (lbs)	Seismic F (lbs)	Member (α sector)
ERICSSON AIR6449 B41_T-MOBILE	148.0	3	0.90	41.80	5.27	2.03	198.27	76.37	114.63	33.93	MP2
RFS/CELWAVE APX16DWV-16DWV-S-E-A20	148.0	3	0.90	41.80	6.26	1.50	235.51	56.43	41.00	12.14	MP3
RFS/CELWAVE APXVAALL24_43-U-NA20_TMO	148.0	3	0.90	41.80	14.67	5.32	551.91	200.15	149.90	44.37	MP1
ERICSSON RADIO 4460 B2/B25 B66_TMO	148.0	3	0.90	41.80	2.14	1.69	80.48	63.42	109.00	32.26	MP3
ERICSSON RADIO 4480 B71_TMO	148.0	3	0.90	41.80	2.85	1.38	107.30	52.03	92.60	27.41	MP1

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 133.13 ft (NAVD 88)
Latitude: 41.564275
Longitude: -72.891861



Wind

Results:

Wind Speed:	125 Vmph per Hartford County Requirements
10-year MRI	76 Vmph
25-year MRI	86 Vmph
50-year MRI	92 Vmph
100-year MRI	99 Vmph

Data Source: ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, and Section 26.5.2, incorporating errata of March 12, 2014

Date Accessed: Fri Jul 16 2021

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-10 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

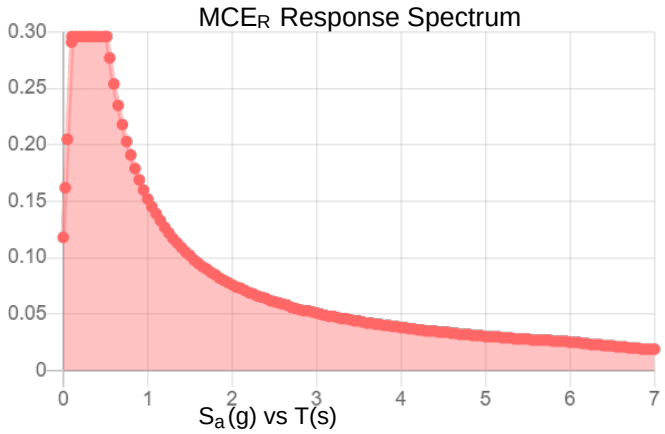
Seismic

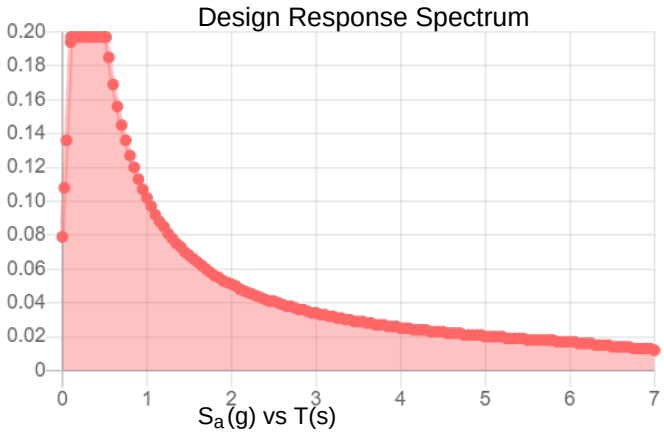
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.185	S_{DS} :	0.197
S_1 :	0.064	S_{D1} :	0.102
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.095
S_{MS} :	0.296	PGA_M :	0.152
S_{M1} :	0.152	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Fri Jul 16 2021

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Fri Jul 16 2021

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 50-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Ru...
1	MH1	N2	N3		270	Horizontals	Beam	Single Angle	A36 Gr.36	Typical
2	M2	N4	N5			RIGID	None	None	RIGID	Typical
3	MP2	N6	N7			Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
4	M4	N8	N3		180	Corner Horizontals	Beam	Double Angl...	A36 Gr.36	Typical
5	M5	N9	N2		180	Corner Horizontals	Beam	Double Angl...	A36 Gr.36	Typical
6	MH2	N8	N9		270	Horizontals	Beam	Single Angle	A36 Gr.36	Typical
7	MH4	N3	N11		270	Horizontals	Beam	Single Angle	A36 Gr.36	Typical
8	MH3	N11	N2		270	Horizontals	Beam	Single Angle	A36 Gr.36	Typical
9	MH5	N9	N12		270	Horizontals	Beam	Single Angle	A36 Gr.36	Typical
10	MH6	N12	N8		270	Horizontals	Beam	Single Angle	A36 Gr.36	Typical
11	M11	N12	N11		180	Corner Horizontals	Beam	Double Angl...	A36 Gr.36	Typical
12	M12	N14	N16			RIGID	None	None	RIGID	Typical
13	MP3	N13	N15			Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
14	MS3	N21	N1		90	Standoff 1	Beam	Channel	A36 Gr.36	Typical
15	M15	N18	N17			RIGID	None	None	RIGID	Typical
16	MP1	N19	N20			Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
17	MS1	N23	N22		90	Standoff 1	Beam	Channel	A36 Gr.36	Typical
18	MS2	N25	N24		90	Standoff 1	Beam	Channel	A36 Gr.36	Typical
19	HR1	N53	N54		270	Handrail	Beam	Pipe	A53 Gr.B	Typical
20	M32	N55	N57			RIGID	None	None	RIGID	Typical
21	M33	N60	N59			RIGID	None	None	RIGID	Typical
22	M34	N56	N58			RIGID	None	None	RIGID	Typical
23	MP8	N41	N43			Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
24	M24	N49	N45			RIGID	None	None	RIGID	Typical
25	M25	N47	N46			RIGID	None	None	RIGID	Typical
26	M26	N50	N48			RIGID	None	None	RIGID	Typical
27	HR3	N63	N64		270	Handrail	Beam	Pipe	A53 Gr.B	Typical
28	M28	N39	N42			RIGID	None	None	RIGID	Typical
29	M29	N37	N40			RIGID	None	None	RIGID	Typical
30	M30	N51	N52			RIGID	None	None	RIGID	Typical
31	MP7	N44	N38			Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
32	MP9	N61	N62			Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
33	MP5	N69	N71			Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
34	M38	N77	N73			RIGID	None	None	RIGID	Typical
35	M39	N75	N74			RIGID	None	None	RIGID	Typical
36	M40	N78	N76			RIGID	None	None	RIGID	Typical
37	HR2	N83	N84		270	Handrail	Beam	Pipe	A53 Gr.B	Typical
38	M42	N67	N70			RIGID	None	None	RIGID	Typical
39	M43	N65	N68			RIGID	None	None	RIGID	Typical
40	M44	N79	N80			RIGID	None	None	RIGID	Typical
41	MP4	N72	N66			Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
42	MP6	N81	N82			Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
43	M47	N86	N85		90	Handrail Angle	Beam	Single Angle	A36 Gr.36	Typical
44	M48	N87	N88		90	Handrail Angle	Beam	Single Angle	A36 Gr.36	Typical
45	M49	N89	N90		90	Handrail Angle	Beam	Single Angle	A36 Gr.36	Typical
46	RH1	N84A	N85A			Proposed Horizontal	Beam	Pipe	A53 Gr.B	Typical
47	M47A	N86A	N87A			RIGID	None	None	RIGID	Typical
48	M48A	N88A	N89A			RIGID	None	None	RIGID	Typical
49	M49A	N91	N90A			RIGID	None	None	RIGID	Typical
50	M50	N94	N95			RIGID	None	None	RIGID	Typical
51	M51	N92	N96			RIGID	None	None	RIGID	Typical
52	M52	N93	N97			RIGID	None	None	RIGID	Typical
53	K2	N96	N95		90	Angle Kickers	VBrace	Single Angle	A36 Gr.36	Typical
54	K1	N97	N95		180	Angle Kickers	VBrace	Single Angle	A36 Gr.36	Typical
55	RH3	N99	N100			Proposed Horizontal	Beam	Pipe	A53 Gr.B	Typical
56	M56	N101	N102			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Ru...
57	M57	N103	N104			RIGID	None	None	RIGID	Typical
58	M58	N106	N105			RIGID	None	None	RIGID	Typical
59	M59	N108	N109			RIGID	None	None	RIGID	Typical
60	M60	N107	N110			RIGID	None	None	RIGID	Typical
61	K6	N110	N109		90	Angle Kickers	VBrace	Single Angle	A36 Gr.36	Typical
62	K5	N111	N109		180	Angle Kickers	VBrace	Single Angle	A36 Gr.36	Typical
63	RH2	N113	N114			Proposed Horizontal	Beam	Pipe	A53 Gr.B	Typical
64	M64	N115A	N116			RIGID	None	None	RIGID	Typical
65	M65	N117	N118			RIGID	None	None	RIGID	Typical
66	M66	N120	N119			RIGID	None	None	RIGID	Typical
67	M67	N122	N123			RIGID	None	None	RIGID	Typical
68	M68	N121	N124			RIGID	None	None	RIGID	Typical
69	K4	N124	N123		90	Angle Kickers	VBrace	Single Angle	A36 Gr.36	Typical
70	K3	N125	N123		180	Angle Kickers	VBrace	Single Angle	A36 Gr.36	Typical
71	M71	N125A	N111			RIGID	None	None	RIGID	Typical
72	M72	N128	N125			RIGID	None	None	RIGID	Typical
73	M73	N125A	N111			RIGID	None	None	RIGID	Typical
74	M74	N128	N125			RIGID	None	None	RIGID	Typical
75	M75	N93	N97			RIGID	None	None	RIGID	Typical
76	M76	N128	N125			RIGID	None	None	RIGID	Typical
77	M77	N93	N97			RIGID	None	None	RIGID	Typical
78	M78	N125A	N111			RIGID	None	None	RIGID	Typical
79	M79	N125A	N111			RIGID	None	None	RIGID	Typical
80	M80	N128	N125			RIGID	None	None	RIGID	Typical
81	M81	N93	N97			RIGID	None	None	RIGID	Typical
82	M82	N128	N125			RIGID	None	None	RIGID	Typical
83	M83	N93	N97			RIGID	None	None	RIGID	Typical
84	M84	N125A	N111			RIGID	None	None	RIGID	Typical
85	M85	N93	N97			RIGID	None	None	RIGID	Typical
86	M86	N125A	N111			RIGID	None	None	RIGID	Typical
87	M87	N128	N125			RIGID	None	None	RIGID	Typical
88	M88	N128	N125			RIGID	None	None	RIGID	Typical
89	M89	N93	N97			RIGID	None	None	RIGID	Typical
90	M90	N125A	N111			RIGID	None	None	RIGID	Typical
91	M91	N93	N97			RIGID	None	None	RIGID	Typical
92	M92	N125A	N111			RIGID	None	None	RIGID	Typical
93	M93	N128	N125			RIGID	None	None	RIGID	Typical
94	M94	N125A	N111			RIGID	None	None	RIGID	Typical
95	M95	N128	N125			RIGID	None	None	RIGID	Typical
96	M96	N93	N97			RIGID	None	None	RIGID	Typical

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General				
2	RIGID		60	180	0
3	Total General		60	180	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	C4x5x4x0.375	3	102	132.867
7	A36 Gr.36	L2.5x2.5x3	9	362.2	92.545
8	A36 Gr.36	L3X3X4	6	763.8	311.877
9	A36 Gr.36	LL3x3x4x0	3	141	115.15
10	A53 Gr.B	PIPE_2.0	15	1656	478.975
11	Total HR Steel		36	3025	1131.415

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...	Surface(Plate/Wall)
1	Self Weight	DL		-1			30		3	
2	Wind Load AZI 0	WLZ					60			
3	Wind Load AZI 30	None					60			
4	Wind Load AZI 60	None					60			
5	Wind Load AZI 90	WLX					60			
6	Wind Load AZI 120	None					60			
7	Wind Load AZI 150	None					60			
8	Wind Load AZI 180	None					60			
9	Wind Load AZI 210	None					60			
10	Wind Load AZI 240	None					60			
11	Wind Load AZI 270	None					60			
12	Wind Load AZI 300	None					60			
13	Wind Load AZI 330	None					60			
14	Distr. Wind Load Z	WLZ						96		
15	Distr. Wind Load X	WLX						96		
16	Ice Weight	OL1					30	96	3	
17	Ice Wind Load AZI ...	OL2					60			
18	Ice Wind Load AZI ...	None					60			
19	Ice Wind Load AZI ...	None					60			
20	Ice Wind Load AZI ...	OL3					60			
21	Ice Wind Load AZI ...	None					60			
22	Ice Wind Load AZI ...	None					60			
23	Ice Wind Load AZI ...	None					60			
24	Ice Wind Load AZI ...	None					60			
25	Ice Wind Load AZI ...	None					60			
26	Ice Wind Load AZI ...	None					60			
27	Ice Wind Load AZI ...	None					60			
28	Ice Wind Load AZI ...	None					60			
29	Distr. Ice Wind Loa...	OL2						96		
30	Distr. Ice Wind Loa...	OL3						96		
31	Seismic Load Z	ELZ			-.296		30			
32	Seismic Load X	ELX	-.296				30			
33	Service Live Loads	LL				1				
34	Maintenance Load 1	LL				1				
35	Maintenance Load 2	LL				1				
36	Maintenance Load 3	LL				1				
37	Maintenance Load 4	LL				1				
38	Maintenance Load 5	LL				1				
39	Maintenance Load 6	LL				1				
40	Maintenance Load 7	LL				1				
41	Maintenance Load 8	LL				1				
42	Maintenance Load 9	LL				1				
43	BLC 1 Transient Ar...	None						30		
44	BLC 16 Transient ...	None						30		

Load Combinations

	Description	Solve	PDelta	SRSS	BLC	Factor	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4DL	Yes	Y		1	1.4																				
2	1.2DL + 1WL AZI 0	Yes	Y		1	1.2	2	1	14	1	15															
3	1.2DL + 1WL AZI 30	Yes	Y		1	1.2	3	1	14	.866	15	.5														
4	1.2DL + 1WL AZI 60	Yes	Y		1	1.2	4	1	14	.5	15	.866														
5	1.2DL + 1WL AZI 90	Yes	Y		1	1.2	5	1	14		15	1														
6	1.2DL + 1WL AZI 120	Yes	Y		1	1.2	6	1	14	-.5	15	.866														
7	1.2DL + 1WL AZI 150	Yes	Y		1	1.2	7	1	14	-.8...	15	.5														

Load Combinations (Continued)

	Description	Solve	PDelta	SRSS	BLC	Factor	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
8	1.2DL + 1WL AZI 180	Yes	Y		1	1.2	8	1	14	-1	15													
9	1.2DL + 1WL AZI 210	Yes	Y		1	1.2	9	1	14	-.8...	15	-.5												
10	1.2DL + 1WL AZI 240	Yes	Y		1	1.2	10	1	14	-.5	15	-.8...												
11	1.2DL + 1WL AZI 270	Yes	Y		1	1.2	11	1	14		15	-1												
12	1.2DL + 1WL AZI 300	Yes	Y		1	1.2	12	1	14	.5	15	-.8...												
13	1.2DL + 1WL AZI 330	Yes	Y		1	1.2	13	1	14	.866	15	-.5												
14	0.9DL + 1WL AZI 0	Yes	Y		1	.9	2	1	14	1	15													
15	0.9DL + 1WL AZI 30	Yes	Y		1	.9	3	1	14	.866	15	.5												
16	0.9DL + 1WL AZI 60	Yes	Y		1	.9	4	1	14	.5	15	.866												
17	0.9DL + 1WL AZI 90	Yes	Y		1	.9	5	1	14		15	1												
18	0.9DL + 1WL AZI 120	Yes	Y		1	.9	6	1	14	-.5	15	.866												
19	0.9DL + 1WL AZI 150	Yes	Y		1	.9	7	1	14	-.8...	15	.5												
20	0.9DL + 1WL AZI 180	Yes	Y		1	.9	8	1	14	-1	15													
21	0.9DL + 1WL AZI 210	Yes	Y		1	.9	9	1	14	-.8...	15	-.5												
22	0.9DL + 1WL AZI 240	Yes	Y		1	.9	10	1	14	-.5	15	-.8...												
23	0.9DL + 1WL AZI 270	Yes	Y		1	.9	11	1	14		15	-1												
24	0.9DL + 1WL AZI 300	Yes	Y		1	.9	12	1	14	.5	15	-.8...												
25	0.9DL + 1WL AZI 330	Yes	Y		1	.9	13	1	14	.866	15	-.5												
26	1.2D + 1.0Di	Yes	Y		1	1.2	16	1																
27	1.2D + 1.0Di +1.0Wi A...	Yes	Y		1	1.2	16	1	17	1	29	1	30											
28	1.2D + 1.0Di +1.0Wi A...	Yes	Y		1	1.2	16	1	18	1	29	.866	30	.5										
29	1.2D + 1.0Di +1.0Wi A...	Yes	Y		1	1.2	16	1	19	1	29	.5	30	.866										
30	1.2D + 1.0Di +1.0Wi A...	Yes	Y		1	1.2	16	1	20	1	29		30	1										
31	1.2D + 1.0Di +1.0Wi A...	Yes	Y		1	1.2	16	1	21	1	29	-.5	30	.866										
32	1.2D + 1.0Di +1.0Wi A...	Yes	Y		1	1.2	16	1	22	1	29	-.8...	30	.5										
33	1.2D + 1.0Di +1.0Wi A...	Yes	Y		1	1.2	16	1	23	1	29	-1	30											
34	1.2D + 1.0Di +1.0Wi A...	Yes	Y		1	1.2	16	1	24	1	29	-.8...	30	-.5										
35	1.2D + 1.0Di +1.0Wi A...	Yes	Y		1	1.2	16	1	25	1	29	-.5	30	-.8...										
36	1.2D + 1.0Di +1.0Wi A...	Yes	Y		1	1.2	16	1	26	1	29		30	-1										
37	1.2D + 1.0Di +1.0Wi A...	Yes	Y		1	1.2	16	1	27	1	29	.5	30	-.8...										
38	1.2D + 1.0Di +1.0Wi A...	Yes	Y		1	1.2	16	1	28	1	29	.866	30	-.5										
39	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.239	31	1	32															
40	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.239	31	.866	32	.5														
41	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.239	31	.5	32	.866														
42	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.239	31		32	1														
43	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.239	31	-.5	32	.866														
44	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.239	31	-.8...	32	.5														
45	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.239	31	-1	32															
46	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.239	31	-.8...	32	-.5														
47	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.239	31	-.5	32	-.8...														
48	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.239	31		32	-1														
49	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.239	31	.5	32	-.8...														
50	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.239	31	.866	32	-.5														
51	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.861	31	1	32															
52	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.861	31	.866	32	.5														
53	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.861	31	.5	32	.866														
54	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.861	31		32	1														
55	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.861	31	-.5	32	.866														
56	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.861	31	-.8...	32	.5														
57	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.861	31	-1	32															
58	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.861	31	-.8...	32	-.5														
59	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.861	31	-.5	32	-.8...														
60	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.861	31		32	-1														
61	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.861	31	.5	32	-.8...														
62	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.861	31	.866	32	-.5														
63	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	2	.23	14	.23	15		33	1.5										
64	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	3	.23	14	.2	15	.115	33	1.5										

Load Combinations (Continued)

	Description	Solve	PDelta	SRSS	BLC	Factor	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
65	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	4	.23	14	.115	15	.2	33	1.5												
66	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	5	.23	14		15	.23	33	1.5												
67	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	6	.23	14	-.1...	15	.2	33	1.5												
68	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	7	.23	14	-.2	15	.115	33	1.5												
69	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	8	.23	14	-.23	15		33	1.5												
70	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	9	.23	14	-.2	15	-.1...	33	1.5												
71	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	10	.23	14	-.1...	15	-.2	33	1.5												
72	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	11	.23	14		15	-.23	33	1.5												
73	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	12	.23	14	.115	15	-.2	33	1.5												
74	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	13	.23	14	.2	15	-.1...	33	1.5												
75	1.2DL + 1.5LL	Yes	Y		1	1.2	33	1.5																		
76	1.2DL + 1.5LM-MP1 + ...	Yes	Y		1	1.2	34	1.5	2	.058	14	.058	15													
77	1.2DL + 1.5LM-MP1 + ...	Yes	Y		1	1.2	34	1.5	3	.058	14	.05	15	.029												
78	1.2DL + 1.5LM-MP1 + ...	Yes	Y		1	1.2	34	1.5	4	.058	14	.029	15	.05												
79	1.2DL + 1.5LM-MP1 + ...	Yes	Y		1	1.2	34	1.5	5	.058	14		15	.058												
80	1.2DL + 1.5LM-MP1 + ...	Yes	Y		1	1.2	34	1.5	6	.058	14	-.0...	15	.05												
81	1.2DL + 1.5LM-MP1 + ...	Yes	Y		1	1.2	34	1.5	7	.058	14	-.05	15	.029												
82	1.2DL + 1.5LM-MP1 + ...	Yes	Y		1	1.2	34	1.5	8	.058	14	-.0...	15													
83	1.2DL + 1.5LM-MP1 + ...	Yes	Y		1	1.2	34	1.5	9	.058	14	-.05	15	-.0...												
84	1.2DL + 1.5LM-MP1 + ...	Yes	Y		1	1.2	34	1.5	10	.058	14	-.0...	15	-.05												
85	1.2DL + 1.5LM-MP1 + ...	Yes	Y		1	1.2	34	1.5	11	.058	14		15	-.0...												
86	1.2DL + 1.5LM-MP1 + ...	Yes	Y		1	1.2	34	1.5	12	.058	14	.029	15	-.05												
87	1.2DL + 1.5LM-MP1 + ...	Yes	Y		1	1.2	34	1.5	13	.058	14	.05	15	-.0...												
88	1.2DL + 1.5LM-MP2 + ...	Yes	Y		1	1.2	35	1.5	2	.058	14	.058	15													
89	1.2DL + 1.5LM-MP2 + ...	Yes	Y		1	1.2	35	1.5	3	.058	14	.05	15	.029												
90	1.2DL + 1.5LM-MP2 + ...	Yes	Y		1	1.2	35	1.5	4	.058	14	.029	15	.05												
91	1.2DL + 1.5LM-MP2 + ...	Yes	Y		1	1.2	35	1.5	5	.058	14		15	.058												
92	1.2DL + 1.5LM-MP2 + ...	Yes	Y		1	1.2	35	1.5	6	.058	14	-.0...	15	.05												
93	1.2DL + 1.5LM-MP2 + ...	Yes	Y		1	1.2	35	1.5	7	.058	14	-.05	15	.029												
94	1.2DL + 1.5LM-MP2 + ...	Yes	Y		1	1.2	35	1.5	8	.058	14	-.0...	15													
95	1.2DL + 1.5LM-MP2 + ...	Yes	Y		1	1.2	35	1.5	9	.058	14	-.05	15	-.0...												
96	1.2DL + 1.5LM-MP2 + ...	Yes	Y		1	1.2	35	1.5	10	.058	14	-.0...	15	-.05												
97	1.2DL + 1.5LM-MP2 + ...	Yes	Y		1	1.2	35	1.5	11	.058	14		15	-.0...												
98	1.2DL + 1.5LM-MP2 + ...	Yes	Y		1	1.2	35	1.5	12	.058	14	.029	15	-.05												
99	1.2DL + 1.5LM-MP2 + ...	Yes	Y		1	1.2	35	1.5	13	.058	14	.05	15	-.0...												
100	1.2DL + 1.5LM-MP3 + ...	Yes	Y		1	1.2	36	1.5	2	.058	14	.058	15													
101	1.2DL + 1.5LM-MP3 + ...	Yes	Y		1	1.2	36	1.5	3	.058	14	.05	15	.029												
102	1.2DL + 1.5LM-MP3 + ...	Yes	Y		1	1.2	36	1.5	4	.058	14	.029	15	.05												
103	1.2DL + 1.5LM-MP3 + ...	Yes	Y		1	1.2	36	1.5	5	.058	14		15	.058												
104	1.2DL + 1.5LM-MP3 + ...	Yes	Y		1	1.2	36	1.5	6	.058	14	-.0...	15	.05												
105	1.2DL + 1.5LM-MP3 + ...	Yes	Y		1	1.2	36	1.5	7	.058	14	-.05	15	.029												
106	1.2DL + 1.5LM-MP3 + ...	Yes	Y		1	1.2	36	1.5	8	.058	14	-.0...	15													
107	1.2DL + 1.5LM-MP3 + ...	Yes	Y		1	1.2	36	1.5	9	.058	14	-.05	15	-.0...												
108	1.2DL + 1.5LM-MP3 + ...	Yes	Y		1	1.2	36	1.5	10	.058	14	-.0...	15	-.05												
109	1.2DL + 1.5LM-MP3 + ...	Yes	Y		1	1.2	36	1.5	11	.058	14		15	-.0...												
110	1.2DL + 1.5LM-MP3 + ...	Yes	Y		1	1.2	36	1.5	12	.058	14	.029	15	-.05												
111	1.2DL + 1.5LM-MP3 + ...	Yes	Y		1	1.2	36	1.5	13	.058	14	.05	15	-.0...												
112	1.2DL + 1.5LM-MP4 + ...	Yes	Y		1	1.2	37	1.5	2	.058	14	.058	15													
113	1.2DL + 1.5LM-MP4 + ...	Yes	Y		1	1.2	37	1.5	3	.058	14	.05	15	.029												
114	1.2DL + 1.5LM-MP4 + ...	Yes	Y		1	1.2	37	1.5	4	.058	14	.029	15	.05												
115	1.2DL + 1.5LM-MP4 + ...	Yes	Y		1	1.2	37	1.5	5	.058	14		15	.058												
116	1.2DL + 1.5LM-MP4 + ...	Yes	Y		1	1.2	37	1.5	6	.058	14	-.0...	15	.05												
117	1.2DL + 1.5LM-MP4 + ...	Yes	Y		1	1.2	37	1.5	7	.058	14	-.05	15	.029												
118	1.2DL + 1.5LM-MP4 + ...	Yes	Y		1	1.2	37	1.5	8	.058	14	-.0...	15													
119	1.2DL + 1.5LM-MP4 + ...	Yes	Y		1	1.2	37	1.5	9	.058	14	-.05	15	-.0...												
120	1.2DL + 1.5LM-MP4 + ...	Yes	Y		1	1.2	37	1.5	10	.058	14	-.0...	15	-.05												
121	1.2DL + 1.5LM-MP4 + ...	Yes	Y		1	1.2	37	1.5	11	.058	14		15	-.0...												

Load Combinations (Continued)

	Description	Solve	PDelta	SRSS	BLC	Factor	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
122	1.2DL + 1.5LM-MP4 + ...	Yes	Y		1	1.2	37	1.5	12	.058	14	.029	15	-.05										
123	1.2DL + 1.5LM-MP4 + ...	Yes	Y		1	1.2	37	1.5	13	.058	14	.05	15	-.0...										
124	1.2DL + 1.5LM-MP5 + ...	Yes	Y		1	1.2	38	1.5	2	.058	14	.058	15											
125	1.2DL + 1.5LM-MP5 + ...	Yes	Y		1	1.2	38	1.5	3	.058	14	.05	15	.029										
126	1.2DL + 1.5LM-MP5 + ...	Yes	Y		1	1.2	38	1.5	4	.058	14	.029	15	.05										
127	1.2DL + 1.5LM-MP5 + ...	Yes	Y		1	1.2	38	1.5	5	.058	14		15	.058										
128	1.2DL + 1.5LM-MP5 + ...	Yes	Y		1	1.2	38	1.5	6	.058	14	-.0...	15	.05										
129	1.2DL + 1.5LM-MP5 + ...	Yes	Y		1	1.2	38	1.5	7	.058	14	-.05	15	.029										
130	1.2DL + 1.5LM-MP5 + ...	Yes	Y		1	1.2	38	1.5	8	.058	14	-.0...	15											
131	1.2DL + 1.5LM-MP5 + ...	Yes	Y		1	1.2	38	1.5	9	.058	14	-.05	15	-.0...										
132	1.2DL + 1.5LM-MP5 + ...	Yes	Y		1	1.2	38	1.5	10	.058	14	-.0...	15	-.05										
133	1.2DL + 1.5LM-MP5 + ...	Yes	Y		1	1.2	38	1.5	11	.058	14		15	-.0...										
134	1.2DL + 1.5LM-MP5 + ...	Yes	Y		1	1.2	38	1.5	12	.058	14	.029	15	-.05										
135	1.2DL + 1.5LM-MP5 + ...	Yes	Y		1	1.2	38	1.5	13	.058	14	.05	15	-.0...										
136	1.2DL + 1.5LM-MP6 + ...	Yes	Y		1	1.2	39	1.5	2	.058	14	.058	15											
137	1.2DL + 1.5LM-MP6 + ...	Yes	Y		1	1.2	39	1.5	3	.058	14	.05	15	.029										
138	1.2DL + 1.5LM-MP6 + ...	Yes	Y		1	1.2	39	1.5	4	.058	14	.029	15	.05										
139	1.2DL + 1.5LM-MP6 + ...	Yes	Y		1	1.2	39	1.5	5	.058	14		15	.058										
140	1.2DL + 1.5LM-MP6 + ...	Yes	Y		1	1.2	39	1.5	6	.058	14	-.0...	15	.05										
141	1.2DL + 1.5LM-MP6 + ...	Yes	Y		1	1.2	39	1.5	7	.058	14	-.05	15	.029										
142	1.2DL + 1.5LM-MP6 + ...	Yes	Y		1	1.2	39	1.5	8	.058	14	-.0...	15											
143	1.2DL + 1.5LM-MP6 + ...	Yes	Y		1	1.2	39	1.5	9	.058	14	-.05	15	-.0...										
144	1.2DL + 1.5LM-MP6 + ...	Yes	Y		1	1.2	39	1.5	10	.058	14	-.0...	15	-.05										
145	1.2DL + 1.5LM-MP6 + ...	Yes	Y		1	1.2	39	1.5	11	.058	14		15	-.0...										
146	1.2DL + 1.5LM-MP6 + ...	Yes	Y		1	1.2	39	1.5	12	.058	14	.029	15	-.05										
147	1.2DL + 1.5LM-MP6 + ...	Yes	Y		1	1.2	39	1.5	13	.058	14	.05	15	-.0...										
148	1.2DL + 1.5LM-MP7 + ...	Yes	Y		1	1.2	40	1.5	2	.058	14	.058	15											
149	1.2DL + 1.5LM-MP7 + ...	Yes	Y		1	1.2	40	1.5	3	.058	14	.05	15	.029										
150	1.2DL + 1.5LM-MP7 + ...	Yes	Y		1	1.2	40	1.5	4	.058	14	.029	15	.05										
151	1.2DL + 1.5LM-MP7 + ...	Yes	Y		1	1.2	40	1.5	5	.058	14		15	.058										
152	1.2DL + 1.5LM-MP7 + ...	Yes	Y		1	1.2	40	1.5	6	.058	14	-.0...	15	.05										
153	1.2DL + 1.5LM-MP7 + ...	Yes	Y		1	1.2	40	1.5	7	.058	14	-.05	15	.029										
154	1.2DL + 1.5LM-MP7 + ...	Yes	Y		1	1.2	40	1.5	8	.058	14	-.0...	15											
155	1.2DL + 1.5LM-MP7 + ...	Yes	Y		1	1.2	40	1.5	9	.058	14	-.05	15	-.0...										
156	1.2DL + 1.5LM-MP7 + ...	Yes	Y		1	1.2	40	1.5	10	.058	14	-.0...	15	-.05										
157	1.2DL + 1.5LM-MP7 + ...	Yes	Y		1	1.2	40	1.5	11	.058	14		15	-.0...										
158	1.2DL + 1.5LM-MP7 + ...	Yes	Y		1	1.2	40	1.5	12	.058	14	.029	15	-.05										
159	1.2DL + 1.5LM-MP7 + ...	Yes	Y		1	1.2	40	1.5	13	.058	14	.05	15	-.0...										
160	1.2DL + 1.5LM-MP8 + ...	Yes	Y		1	1.2	41	1.5	2	.058	14	.058	15											
161	1.2DL + 1.5LM-MP8 + ...	Yes	Y		1	1.2	41	1.5	3	.058	14	.05	15	.029										
162	1.2DL + 1.5LM-MP8 + ...	Yes	Y		1	1.2	41	1.5	4	.058	14	.029	15	.05										
163	1.2DL + 1.5LM-MP8 + ...	Yes	Y		1	1.2	41	1.5	5	.058	14		15	.058										
164	1.2DL + 1.5LM-MP8 + ...	Yes	Y		1	1.2	41	1.5	6	.058	14	-.0...	15	.05										
165	1.2DL + 1.5LM-MP8 + ...	Yes	Y		1	1.2	41	1.5	7	.058	14	-.05	15	.029										
166	1.2DL + 1.5LM-MP8 + ...	Yes	Y		1	1.2	41	1.5	8	.058	14	-.0...	15											
167	1.2DL + 1.5LM-MP8 + ...	Yes	Y		1	1.2	41	1.5	9	.058	14	-.05	15	-.0...										
168	1.2DL + 1.5LM-MP8 + ...	Yes	Y		1	1.2	41	1.5	10	.058	14	-.0...	15	-.05										
169	1.2DL + 1.5LM-MP8 + ...	Yes	Y		1	1.2	41	1.5	11	.058	14		15	-.0...										
170	1.2DL + 1.5LM-MP8 + ...	Yes	Y		1	1.2	41	1.5	12	.058	14	.029	15	-.05										
171	1.2DL + 1.5LM-MP8 + ...	Yes	Y		1	1.2	41	1.5	13	.058	14	.05	15	-.0...										
172	1.2DL + 1.5LM-MP9 + ...	Yes	Y		1	1.2	42	1.5	2	.058	14	.058	15											
173	1.2DL + 1.5LM-MP9 + ...	Yes	Y		1	1.2	42	1.5	3	.058	14	.05	15	.029										
174	1.2DL + 1.5LM-MP9 + ...	Yes	Y		1	1.2	42	1.5	4	.058	14	.029	15	.05										
175	1.2DL + 1.5LM-MP9 + ...	Yes	Y		1	1.2	42	1.5	5	.058	14		15	.058										
176	1.2DL + 1.5LM-MP9 + ...	Yes	Y		1	1.2	42	1.5	6	.058	14	-.0...	15	.05										
177	1.2DL + 1.5LM-MP9 + ...	Yes	Y		1	1.2	42	1.5	7	.058	14	-.05	15	.029										
178	1.2DL + 1.5LM-MP9 + ...	Yes	Y		1	1.2	42	1.5	8	.058	14	-.0...	15											

Load Combinations (Continued)

	Description	Solve	PDelta	SRSS	BLC	Factor	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
179	1.2DL + 1.5LM-MP9 + ...	Yes	Y		1	1.2	42	1.5	9	.058	14	-.05	15	-.0...										
180	1.2DL + 1.5LM-MP9 + ...	Yes	Y		1	1.2	42	1.5	10	.058	14	-.0...	15	-.05										
181	1.2DL + 1.5LM-MP9 + ...	Yes	Y		1	1.2	42	1.5	11	.058	14		15	-.0...										
182	1.2DL + 1.5LM-MP9 + ...	Yes	Y		1	1.2	42	1.5	12	.058	14	.029	15	-.05										

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N21	max	2032.588	5	2490.844	33	806.69	14	-804.655	14	1533.058	16	197.032	17
2		min	-2028.858	23	314.544	14	-1325.666	8	-5954.556	33	-1589.302	10	-196.793	23
3	N23	max	1456.926	17	2486.025	37	2350.192	2	2997.977	36	2196.523	22	5141.89	37
4		min	-1909.109	11	331.814	18	-2096.555	20	305.885	17	-2255.87	4	760.653	18
5	N25	max	1897.572	6	2485.606	29	2329.34	2	2983.171	30	2366.9	24	-736.99	22
6		min	-1451.128	24	333.249	22	-2066.511	20	408.389	23	-2423.271	6	-5150.499	28
7	N94	max	462.784	85	835.279	32	1154.031	31	-35.169	24	116.089	85	.713	21
8		min	-457.321	103	142.138	24	230.612	20	-205.663	32	-114.76	103	-.721	3
9	N108	max	974.863	35	835.791	38	43.818	179	103.017	38	116.139	149	178.204	38
10		min	115.035	16	145.68	16	-751.813	149	18.09	16	-114.804	179	31.182	16
11	N122	max	-153.091	16	838.286	28	56.865	20	103.179	28	116.099	117	-27.993	20
12		min	-1038.375	31	130.618	20	-749.601	136	16.054	20	-114.763	147	-178.785	28
13	Totals:	max	5006.43	5	9788.424	33	5153.59	14						
14		min	-5006.402	23	2376.782	51	-5153.612	8						

Envelope AISC 15th(360-16): LRFD Steel Code Checks

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*...	phi*...	phi*...	phi*...	...	Eqn
1	MH1	L3X3X4	.673	84	32	.097	84	z	31	4607...	46656	1688...	3755...		H2-1
2	MH3	L3X3X4	.671	84	28	.097	84	z	27	2979...	46656	1688...	3755...		H2-1
3	MH4	L3X3X4	.669	84	36	.097	84	z	34	2979...	46656	1688...	3755...		H2-1
4	MP4	PIPE_2.0	.526	52	4	.241	52		35	1491...	32130	1871...	1871...		H1-...
5	MS2	C4x5x4x0...	.519	0	31	.113	0	y	13	1324...	1488...	1222...	2330...		H1-...
6	MP7	PIPE_2.0	.515	52	12	.239	52		31	1491...	32130	1871...	1871...		H1-...
7	MS1	C4x5x4x0...	.514	0	27	.112	0	y	9	1324...	1488...	1222...	2330...		H1-...
8	MS3	C4x5x4x0...	.510	0	34	.096	0	y	5	1324...	1488...	1222...	2330...		H1-...
9	MP1	PIPE_2.0	.478	52	8	.240	52		27	1491...	32130	1871...	1871...		H1-...
10	RH3	PIPE_2.0	.451	128.125	38	.164	112.5		31	6295...	32130	1871...	1871...		H1-...
11	RH1	PIPE_2.0	.450	128.125	34	.164	112.5		27	6295...	32130	1871...	1871...		H1-...
12	RH2	PIPE_2.0	.450	128.125	30	.164	112.5		35	6295...	32130	1871...	1871...		H1-...
13	MP2	PIPE_2.0	.432	40.563	33	.136	40.563		9	2235...	32130	1871...	1871...		H1-...
14	MP8	PIPE_2.0	.429	40.563	36	.132	40.563		13	2235...	32130	1871...	1871...		H1-...
15	MP5	PIPE_2.0	.428	40.563	29	.132	40.563		5	2235...	32130	1871...	1871...		H1-...
16	MH6	L3X3X4	.382	43.297	35	.017	43.297	z	37	1484...	46656	1688...	3158...		H2-1
17	MH5	L3X3X4	.381	43.297	27	.017	43.297	z	27	1484...	46656	1688...	3158...		H2-1
18	MH2	L3X3X4	.378	43.297	31	.017	43.297	z	33	1484...	46656	1688...	3159...		H2-1
19	HR3	PIPE_2.0	.317	85.187	35	.111	159.5		5	1785...	32130	1871...	1871...		H1-...
20	HR2	PIPE_2.0	.317	85.188	27	.110	159.5		9	1785...	32130	1871...	1871...		H1-...
21	HR1	PIPE_2.0	.315	85.188	31	.109	159.5		13	1785...	32130	1871...	1871...		H1-...
22	MP6	PIPE_2.0	.286	51.563	28	.143	40.563		28	2235...	32130	1871...	1871...		H1-...
23	MP3	PIPE_2.0	.286	51.563	32	.144	40.563		32	2235...	32130	1871...	1871...		H1-...
24	MP9	PIPE_2.0	.285	51.563	36	.144	40.563		36	2235...	32130	1871...	1871...		H1-...
25	M49	L2.5x2.5x3	.244	16.856	10	.067	16.856	y	10	2719...	2919...	872....	1971...		H2-1
26	M48	L2.5x2.5x3	.240	16.856	2	.065	16.856	y	2	2719...	2919...	872....	1971...		H2-1
27	M47	L2.5x2.5x3	.226	16.856	6	.065	16.856	y	6	2719...	2919...	872....	1971...		H2-1
28	M11	LL3x3x4x0	.151	47	11	.018	0	z	11	7637...	93312	6480	4360...		H1-...
29	M5	LL3x3x4x0	.145	47	3	.017	0	z	3	7637...	93312	6480	4360...		H1-...
30	M4	LL3x3x4x0	.145	47	7	.017	0	z	7	7637...	93312	6480	4360...		H1-...

Envelope AISC 15th(360-16): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*...	phi*...	phi*...	phi*...	...	Eqn
31	K1	L2.5x2.5x3	.109	25.971	34	.023	0	y	33	1584..	2919..	872....	1680....	....	H2-1
32	K5	L2.5x2.5x3	.109	25.971	37	.023	0	y	37	1584..	2919..	872....	1680....	....	H2-1
33	K3	L2.5x2.5x3	.106	25.971	30	.023	0	y	29	1584..	2919..	872....	1680....	....	H2-1
34	K2	L2.5x2.5x3	.104	25.971	32	.022	0	z	30	1584..	2919..	872....	1680....	....	H2-1
35	K4	L2.5x2.5x3	.104	25.971	29	.022	0	z	38	1584..	2919..	872....	1680....	....	H2-1
36	K6	L2.5x2.5x3	.101	25.971	37	.022	0	z	34	1584..	2919..	872....	1680....	....	H2-1

APPENDIX D

ADDITIONAL CALCUATIONS

INFINIGY

FROM ZERO TO INFINIGY

the solutions are endless

Bolt Calculation Tool, V1.4

PROJECT DATA	
Site Name:	EST JOHNSON AVE. BURNT HOU
Site Number:	876313
Job Code:	1039-Z0001-B
Connection Description:	Standoff to Tower

APPLIED LOADS		
Bolt Tension:	16995.73	lbs
Bolt Shear:	760.04	lbs

BOLT PROPERTIES		
Bolt Type:	Bolt	-
Bolt Diameter:	1	in
Bolt Grade:	A325	-
# of Bolts:	2	-
Threads Excluded?	No	-

BOLT CHECK		
Tensile Strength	54516.96	
Shear Strength	35342.92	
Tensile Usage	31.2%	
Shear Usage	2.2%	
Interaction Check	0.10	***≤1.05***
Result	Pass	

INFINIGY

FROM ZERO TO INFINIGY

the solutions are endless

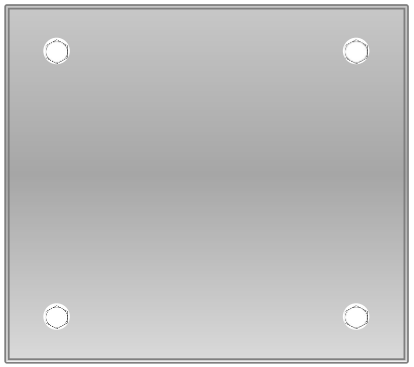
Bolt Calculation Tool, V1.4

PROJECT DATA	
Site Name:	EST JOHNSON AVE. BURNT HOU
Site Number:	876313
Job Code:	1039-Z0001-B
Connection Description:	Kicker to Tower

APPLIED LOADS		
Bolt Tension:	0.00	lbs
Bolt Shear:	209.93	lbs

BOLT PROPERTIES		
Bolt Type:	Bolt	-
Bolt Diameter:	0.625	in
Bolt Grade:	A325	-
# of Bolts:	4	-
Threads Excluded?	No	-

BOLT CHECK		
Tensile Strength	20340.15	
Shear Strength	13805.83	
Tensile Usage	0.0%	
Shear Usage	1.5%	
Interaction Check	0.00	***≤1.05***
Result	Pass	



APPENDIX E

MOUNT MODIFICATION DESIGN DRAWINGS (MDD) / SUPPLEMENTAL DRAWINGS

GENERAL NOTES:

1. THESE DOCUMENTS WERE DESIGNED IN ACCORDANCE WITH THE LATEST VERSION OF APPLICABLE LOCAL/STATE/COUNTY/CITY BUILDING CODES, AS WELL AS ANSI/TIA-222 STANDARD, AWWA-D100 STANDARD, NDS, NEC, MSJC, AND/OR THE LATEST VERSION OF THE INTERNATIONAL BUILDING CODE, UNLESS NOTED OTHERWISE IN THE CORRESPONDING STRUCTURAL REPORT.
2. ALL CONSTRUCTION METHODS SHOULD FOLLOW STANDARDS OF GOOD CONSTRUCTION PRACTICE.
3. ALL WORK INDICATED ON THESE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN SIMILAR CONSTRUCTION.
4. ALL NEW WORK SHALL ACCOMMODATE EXISTING CONDITIONS. IF OBSTRUCTIONS ARE FOUND, CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD PRIOR TO CONTINUING WORK.
5. ANY CHANGES OR ADDITIONS MUST CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS, AND SHOULD BE SIMILAR TO THOSE SHOWN. ALL CHANGES OR ADDITIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO FABRICATION AND/OR CONSTRUCTION.
6. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND EXECUTION OF ALL MISCELLANEOUS SHORING, BRACING, TEMPORARY SUPPORTS, ETC. NECESSARY TO PROVIDE A COMPLETE AND STABLE STRUCTURE DURING CONSTRUCTION. TIA-1019-A-2011 IS AN APPROPRIATE REFERENCE FOR THOSE DESIGNS MEETING TIA STANDARDS. THE ENGINEER OF RECORD MAY PROVIDE FORMAL RIGGING PLANS AT THE REQUEST AND EXPENSE OF THE CONTRACTOR.
7. INSTALLATION SHALL NOT INTERFERE NOR DENY ADEQUATE ACCESS TO OR FROM ANY EXISTING OR PROPOSED OPERATIONAL AND SAFETY EQUIPMENT.
8. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO ANY FABRICATION. CONTACT INFINIGY ENGINEERING IF ANY DISCREPANCIES EXIST.

STEEL CONSTRUCTION NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO THE AISC MANUAL OF STEEL CONSTRUCTION 14TH EDITION, FOR THE DESIGN AND FABRICATION OF STEEL COMPONENTS.
2. ALL FIELD CUT SURFACES, FIELD DRILLED HOLES, AND GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS' RECOMMENDATIONS.
3. ALL FIELD DRILLED HOLES TO BE USED FOR FIELD BOLTING INSTALLATION SHALL BE STANDARD HOLES, AS DEFINED BY AISC, UNLESS NOTED OTHERWISE.
4. ALL EXTERIOR STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123.
5. ALL STEEL MEMBERS AND CONNECTIONS SHALL MEET THE FOLLOWING GRADES:
   - ANGLES, CHANNELS, PLATES AND BARS TO BE A36. Fy=36 KSI, U.N.O.
   - W SHAPES TO BE A992. Fy=50 KSI, U.N.O.
   - RECTANGULAR HSS TO BE A500, GRADE B. FY=46 KSI, U.N.O.
   - ROUND HSS TO BE A500, GRADE B. FY=42 KSI, U.N.O.
   - STEEL PIPE TO BE A53, GRADE B. Fy=35 KSI, U.N.O.
   - BOLTS TO BE A325-X. Fu=120 KSI, U.N.O.
   - U-BOLTS AND LAG SCREWS TO BE A307 GR A. Fu=60 KSI, U.N.O.
6. ALL WELDING SHALL BE DONE USING E70XX ELECTRODES, U.N.O.
7. ALL WELDING SHALL CONFORM TO AISC AND AWS D1.1 LATEST EDITION.
8. ALL HILTI ANCHORS TO BE CARBON STEEL, U.N.O.
   - MECHANICAL ANCHORS: KWIK BOLT-TZ, U.N.O.
   - CMU BLOCK ANCHORS: ADHESIVE - HY120, U.N.O.
   - CONCRETE ANCHORS: ADHESIVE - HY150, U.N.O.
   - CONCRETE REBAR: ADHESIVE - RE500, U.N.O.
9. ALL STUDS TO BE NELSON CAPACITOR DISCHARGE 1/4"-20 LOW CARBON STEEL COPPER-FLASH AT 55 KSI ULT/50 KSI YIELD, U.N.O.
10. BOLTS SHALL BE TIGHTENED TO A "SNUG TIGHT" CONDITION AS DEFINED BY AISC.
11. MINIMUM EDGE DISTANCES SHALL CONFORM TO AISC TABLE J3.4.
12. REMOVAL/REPLACEMENT OF STRUCTURAL MEMBERS SHALL BE DONE ONE MEMBER AT A TIME. CONTRACTOR IS RESPONSIBLE FOR ENSURING THE STRUCTURAL INTEGRITY OF THE STRUCTURE DURING ALL PHASES OF CONSTRUCTION.

CONCRETE CONSTRUCTION NOTES:

1. CONCRETE TO BE 4000 PSI @ 28 DAYS. REINFORCING BAR TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. CONCRETE INSTALLATION TO CONFORM TO ACI-318 BUILDING REQUIREMENTS FOR REINFORCED CONCRETE. ALL CONCRETE TO BE PLACED AGAINST UNDISTURBED EARTH FREE OF WATER AND ALL FOREIGN OBJECTS AND MATERIALS. A MINIMUM OF THREE INCHES OF CONCRETE SHALL COVER ALL REINFORCEMENT. WELDING OF REBAR IS NOT PERMITTED.
2. EXISTING CONCRETE SURFACES THAT ARE TO BE IN CONTACT WITH NEW PROPOSED CONCRETE SHOULD BE WIRE BRUSHED CLEAN AND TREATED WITH APPROPRIATE MECHANICAL SCRATCH COAT AND REPAIR MATERIALS OR APPROPRIATE CHEMICAL METHODS SUCH AS THE APPLICATION OF A BONDING AGENT, EX. SAKRETE OR EQUIVALENT, TO ENSURE A QUALITY BOND BETWEEN EXISTING AND PROPOSED CONCRETE SURFACES.

FIBER REINFORCED POLYMER (FRP) NOTES:

1. FRP PLATES, SHAPES, BOLTS AND NUTS (STUD/NUT ASSEMBLIES) SHALL CONFORM TO ASTM D638, 695, 790. PLATES AND SHAPES TO BE FY = 5.35 KSI LW (SAFETY FACTOR OF 8), .945 KSI CW (SAFETY FACTOR OF 8) MIN.
2. IF FIELD FABRICATION IS REQUIRED, ALL CUT EDGES AND DRILLED HOLES TO BE SEALED USING VINYL ESTER SEALING KIT SUPPLIED BY THE MANUFACTURER.
3. ALL FASTENERS TO BE 1/2" DIA FRP THREADED ROD WITH FIBER REINFORCED THERMOPLASTIC NUT, SPACED AT 12 INCHES ON CENTER MAXIMUM, U.N.O., FOR PANELS AND AS DESIGNED FOR STRUCTURAL MEMBERS.
4. THE COLOR AND SURFACE PATTERN OF EXPOSED FRP PANELS SHALL MATCH THE EXTERIOR OF THE EXISTING BUILDING, U.N.O.
5. STUD/NUT ASSEMBLIES SHOULD BE LUBRICATED FOR INSTALLATION
6. ENSURE BEARING SURFACES OF THE NUTS ARE PARALLEL TO THE SURFACES BEING FASTENED.
7. TORQUE BOLTS ACCORDING TO THE FOLLOWING TABLE:

INSTALLATION TORQUE TABLE		
SIZE	**ULTIMATE TORQUE STRENGTH**	**RECOMMENDED MAXIMUM INSTALLATION TORQUE**
3/8-16 UNC	8 FT-LBS	4 FT-LBS
1/2-13 UNC	18 FT-LBS	8 FT-LBS
5/8-11 UNC	35 FT-LBS	16 FT-LBS
3/4-10 UNC	50 FT-LBS	24 FT-LBS
1-8 UNC	110 FT-LBS	50 FT-LBS

8. WHEN TIGHTENING FRP STUD/NUT ASSEMBLIES, WRENCHES MUST MAKE FULL CONTACT WITH ALL NUT EDGES. A STANDARD SIX POINT SOCKET IS RECOMMENDED.
9. STUD/NUT ASSEMBLIES SHOULD BE BONDED BY APPLYING BONDING AGENT TO ENTIRE NUT AND EXPOSED STUD.
10. ALL FRP MATERIALS TO BE PROVIDED BY FIBERGRATE COMPOSITE STRUCTURES, DALLAS TX, OR APPROVED EQUAL.
11. ALL FRP SHAPES TO BE DYNAFORM PULTRUDED STRUCTURAL SHAPES.
12. ALL FRP PLATES TO BE FIBERPLATE MOLDED FRP PLATE.
13. ALL FRP PANELS TO BE FIBERPLATE CLADDING PANEL.
14. EACH FRP PANEL TO BE IDENTIFIED WITH LARR#25536 AND FIBERGRATE COMPOSITE STRUCTURAL LABEL.
15. FRP MATERIAL TO BE CLASSIFIED AS CC1 OR BETTER, AND HAVE MAXIMUM FLAME SPREAD OF 50.
16. ALL DESIGN AND CONSTRUCTION TO BE COMPLETED IN ACCORDANCE WITH LOS ANGELES RESEARCH REPORT RR25536, DATED FEBRUARY 1, 2016.
17. SPECIAL INSPECTIONS MUST BE PROVIDED FOR ALL FRP INSTALLMENTS. SEE SPECIAL INSPECTION SECTION, THIS SHEET.

RATIO OF EDGE DISTANCE TO FRP FASTENER DIAMETER		
	RANGE	**RECOMMENDED**
EDGE DISTANCE - CL* BOLT TO END	2.0-4.0	3.0
EDGE DISTANCE - CL* BOLT TO SIDE	1.5-3.5	2.5
BOLT PITCH - CL* TO CL*	4.0-5.0	5.0

WOOD CONSTRUCTION NOTES:

1. ALL EXISTING WOOD SHAPES ARE ASSUMED TO BE DOUGLAS FIR-LARCH WITH A REFERENCE DESIGN BENDING VALUE OF 1000 PSI MIN.
2. ALL PROPOSED WOOD SHAPES ARE TO BE DOUGLAS FIR-LARCH WITH A REFERENCE DESIGN BENDING VALUE OF 1000 PSI MIN. U.N.O.
3. ALL EXISTING AND PROPOSED GLUED LAMINATED TIMBERS ARE TO BE 24F-1.8C DOUGLAS FIR BALANCED WITH A REFERENCE DESIGN BENDING VALUE OF 2400 PSI MIN. U.N.O.

MASONRY CONSTRUCTION NOTES:

1. ALL BRICK TO BE 1500 PSI MIN. REINFORCING BAR (IF APPLICABLE) TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. ALL MORTAR TO BE 2000 PSI MIN.
   - FOR INTERIOR/ABOVE GRADE APPLICATIONS TYPE N MORTAR HAVING MINIMUM MODULUS OF RUPTURE OF 100 PSI SHALL BE USED. FOR EXTERIOR/BELOW GRADE APPLICATIONS TYPE M OR S MORTAR HAVING A MINIMUM MODULUS OF RUPTURE OF 133 PSI.
   - BRICK AND MORTAR INSTALLATION TO CONFORM TO MSJC BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES.
2. ALL CMU TO BE 1500 PSI MIN. REINFORCING BAR (IF APPLICABLE) TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. ALL MORTAR TO BE 2000 PSI MIN.
   - FOR INTERIOR/ABOVE GRADE APPLICATIONS, TYPE N MORTAR HAVING MINIMUM MODULUS OF RUPTURE OF 64 PSI SHALL BE USED FOR UNGROUTED BLOCKS, AND 158 PSI FOR FULLY GROUTED BLOCKS.
   - FOR EXTERIOR/BELOW GRADE APPLICATIONS TYPE M OR S MORTAR HAVING A MINIMUM MODULUS OF RUPTURE OF 84 PSI SHALL BE USED FOR UNGROUTED BLOCKS, AND 163 PSI FOR FULLY GROUTED BLOCKS.
   - BRICK AND MORTAR INSTALLATION TO CONFORM TO MSJC BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES.

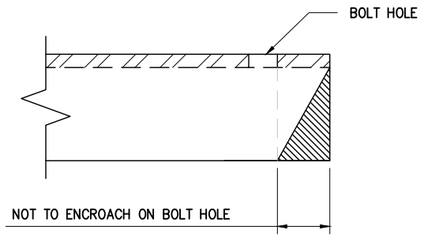
TOWER PLUMB & TENSION NOTES:

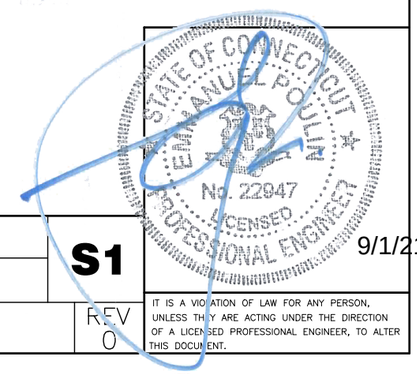
1. PLUMB AND TENSION TOWER UPON COMPLETION OF STRUCTURAL MODIFICATIONS DETAILED IN THESE DRAWINGS.
2. RETENSIONING OF EXISTING GUY WIRES SHALL BE PERFORMED AT A TIME WHEN THE WIND VELOCITY IS LESS THAN 10 MPH AT GROUND LEVEL AND WITH NO ICE ON THE STRUCTURE AND GUY WIRES.
3. PLUMB THE TOWER WHILE RETENSIONING THE EXISTING GUY WIRES. THE HORIZONTAL DISTANCE BETWEEN THE VERTICAL CENTERLINES AT ANY TWO ELEVATIONS SHALL NOT EXCEED 0.25% OF THE VERTICAL DISTANCE BETWEEN TWO ELEVATIONS FOR LATTICED STRUCTURES.
4. THE TWIST BETWEEN ANY TWO ELEVATIONS THROUGHOUT THE HEIGHT OF A LATTICE STRUCTURE SHALL NOT EXCEED 0.5 DEGREES IN 10 FEET. THE MAXIMUM TWIST OVER THE LATTICE STRUCTURE HEIGHT SHALL NOT EXCEED 5 DEGREES.

SPECIAL INSPECTIONS NOTES:

1. A QUALIFIED INDEPENDENT TESTING LABORATORY, EMPLOYED BY THE OWNER AND APPROVED BY THE JURISDICTION, SHALL PERFORM INSPECTION AND TESTING IN ACCORDANCE WITH THE THE GOVERNING BUILDING CODE, APPLICABLE SECTION(S) AS REQUIRED BY PROJECT SPECIFICATIONS FOR THE FOLLOWING CONSTRUCTION WORK:
   a. STRUCTURAL WELDING (CONTINUOUS INSPECTION OF FIELD WELDS ONLY).
   b. HIGH STRENGTH BOLTS (PERIODIC INSPECTION OF A325 AND/OR A490 BOLTS) TO BE TIGHTENED PER "TURN-OF-THE-NUT" METHOD.
   c. MECHANICAL AND EPOXIED ANCHORAGES.
   d. FIBER REINFORCED POLYMER.
      - THE SPECIAL INSPECTOR MUST VERIFY THAT THE FRP MATERIAL SPECIFIED ON THE APPROVED DESIGN DOCUMENTS IS BEING INSTALLED.
      - THE SPECIAL INSPECTOR MUST VERIFY THAT ALL CUT EDGES AND DRILLED HOLES ARE PROPERLY SEALED USING A VINYL ESTER SEALING KIT SUPPLIED BY THE MANUFACTURER.
      - THE SPECIAL INSPECTOR MUST VERIFY THAT THE STRUCTURE IS BUILT IN ACCORDANCE WITH THE APPROVED DESIGN DOCUMENTS.
2. THE INSPECTION AGENCY SHALL SUBMIT INSPECTION AND TEST REPORTS TO THE BUILDING DEPARTMENT, THE ENGINEER OF RECORD, AND THE OWNER UNLESS THE FABRICATOR IS APPROVED BY THE BUILDING OFFICIAL TO PERFORM WORK WITHOUT THE SPECIAL INSPECTIONS.

MAXIMUM ALLOWABLE ANGLE CLIP





9/1/21

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	08/24/21	ISSUED FOR REVIEW	DMB	AM	LM

INFINIGY Design. Build. Deliver.
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MARIETTA, GA 30062
OFFICE: (678) 444-4463
FAX: (678) 444-4472

1039-Z0001-B

CROWN CASTLE

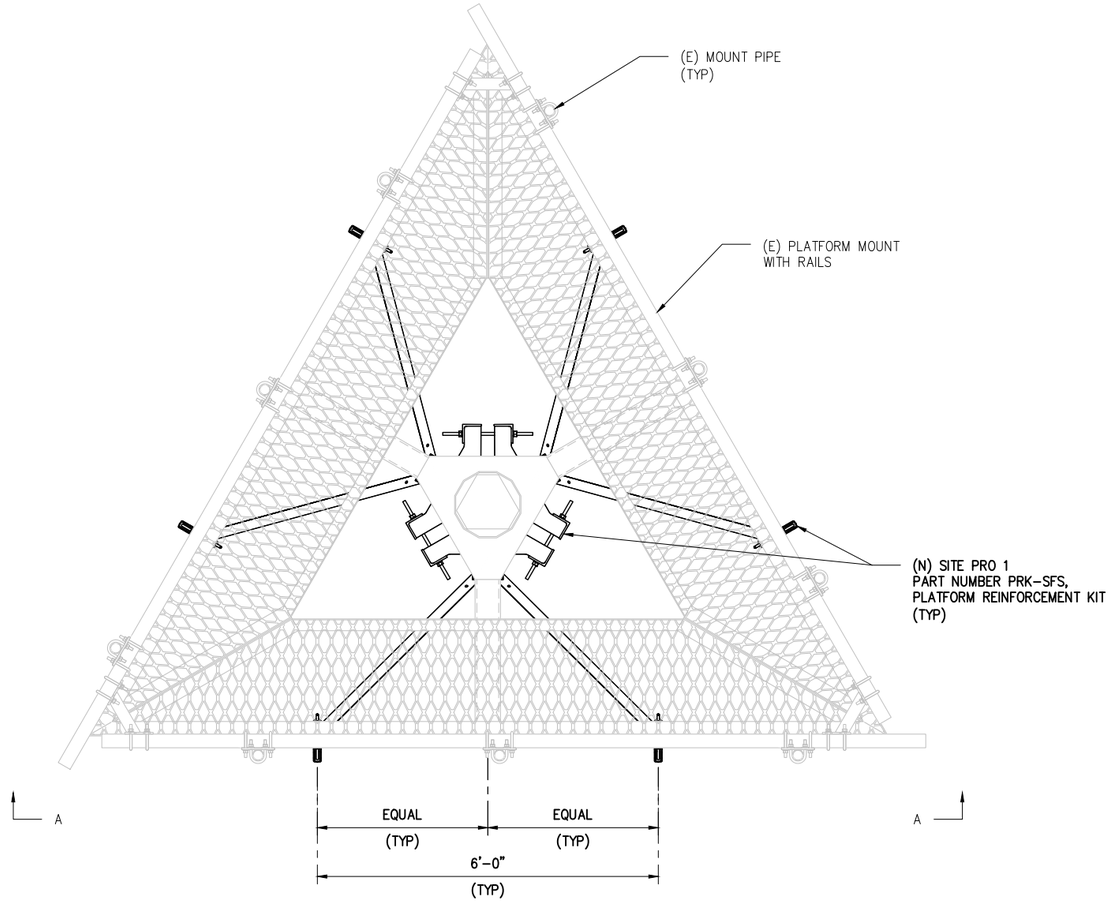
T-Mobile

876313
WEST JOHNSON AVE. BURNT HOUSE
1394 MERIDEN WATERBURY TPK
SOUTHINGTON, CT 06489

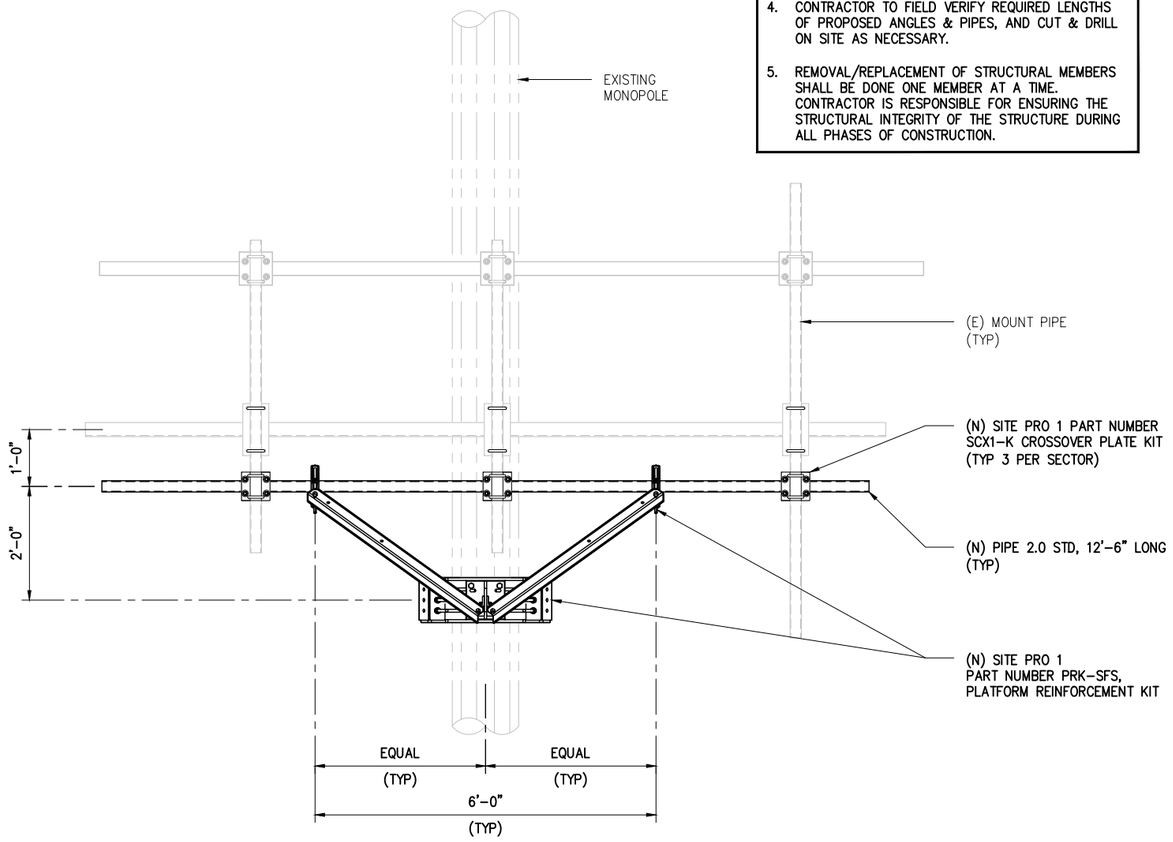
GENERAL NOTES

S1

REV 0



1 SITE PLAN
SCALE: NOT TO SCALE



2 SECTION A-A
SCALE: NOT TO SCALE

NOTES:

1. MODIFICATIONS SHOWN ARE TYPICAL FOR ALL SECTORS. SEE THIS SHEET AND SHEET S-2 FOR LAYOUT DETAILS.
2. VARIOUS EXISTING CONDITIONS AND PROPOSED MODIFICATIONS NOT SHOWN FOR CLARITY.
3. ALL DESIGNATED PARTS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS, UNLESS OTHERWISE NOTED.
4. CONTRACTOR TO FIELD VERIFY REQUIRED LENGTHS OF PROPOSED ANGLES & PIPES, AND CUT & DRILL ON SITE AS NECESSARY.
5. REMOVAL/REPLACEMENT OF STRUCTURAL MEMBERS SHALL BE DONE ONE MEMBER AT A TIME. CONTRACTOR IS RESPONSIBLE FOR ENSURING THE STRUCTURAL INTEGRITY OF THE STRUCTURE DURING ALL PHASES OF CONSTRUCTION.

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	08/24/21	ISSUED FOR REVIEW	DMB	AM	LM

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CROWN CASTLE

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SOUTHINGTON, CT 06489

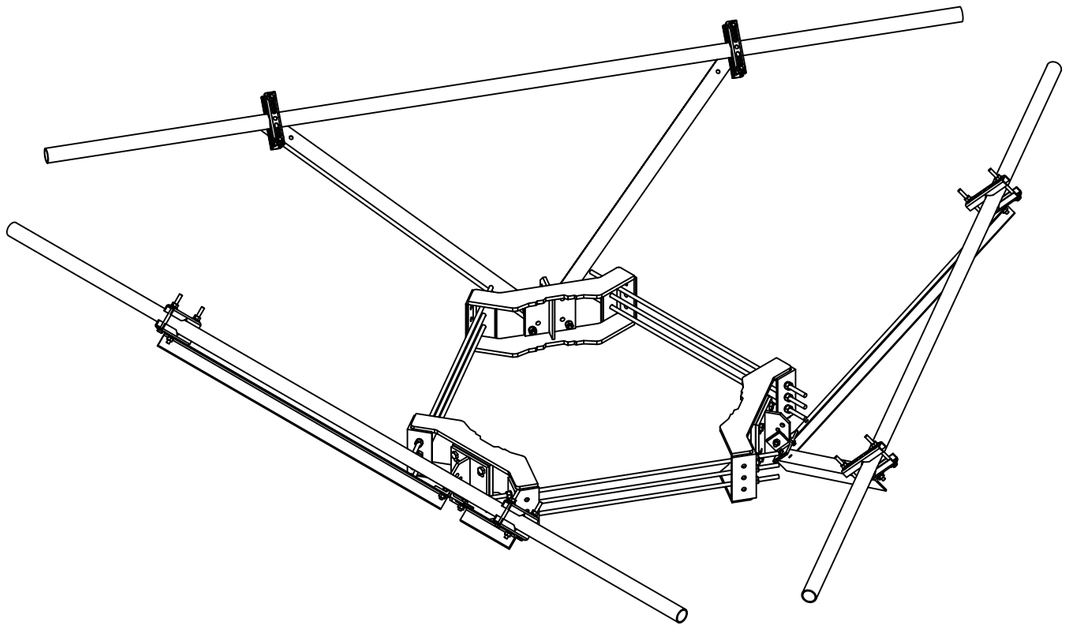
ANTENNA MOUNT DETAILS

S2

REV 0

STATE OF CONNECTICUT
EMANUEL POULIA
No. 22947
LICENSED PROFESSIONAL ENGINEER

9/1/21



1 SITE PRO 1 P/N PRK-SFS
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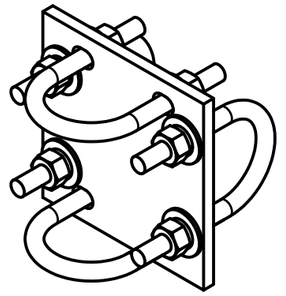

2 SITE PRO 1 P/N SCX1-K
SCALE: NOT TO SCALE

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	08/24/21	ISSUED FOR REVIEW	DMB	AM	LM

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CROWN CASTLE

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REQUIRED PARTS

S3

REV 0

STATE OF CONNECTICUT
EMANUEL POULIN
No. 22947
LICENSED
PROFESSIONAL ENGINEER

9/1/21

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: CTHA453A

876313
1394 Meriden-Waterbury Turnpike
Southington, Connecticut 06057

November 11, 2021

EBI Project Number: 6221006621

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**25.83%**

November 11, 2021

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

Emissions Analysis for Site: CTHA453A - 876313

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **1394 Meriden-Waterbury Turnpike** in **Southington, 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.

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 1394 Meriden-Waterbury Turnpike in Southington, 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 power density calculations, the broadcast footprint of the AIR6449 antenna has been considered. Due to the beamforming nature of this antenna, the actual beam locations vary depending on demand and are narrow in nature. Using the broadcast footprint accounts for the potential location of beams at any given time.

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 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

7) 1 LTE Traffic channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 60 Watts.

8) 1 LTE Broadcast channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 20 Watts.

9) 1 NR Traffic channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.

10) 1 NR Broadcast channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 40 Watts.

11) 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.

12) 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.

13) A conservative roof attenuation factor of 10 dB, in which a radiofrequency signal is reduced by a factor of 10 due to intervening roof building materials, was also included. For purposes of this analysis, it is assumed that the roof building material is comprised of a poured concrete and steel underlayment with a rubber fabric roof membrane.

14) The antennas used in this modeling are the for the APXVAALL24_43-U-NA20 for the / 600 MHz / 600 MHz / 700 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the for the 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector A, the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz

channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APX16DWV-16DWV-S-E-A20 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector B, the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APX16DWV-16DWV-S-E-A20 for the 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.

15) The antenna mounting height centerline of the proposed antennas is 148 feet above ground level (AGL).

16) 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.

17) Emissions from additional carriers were not included because emissions data for the site location are not available.

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20
Frequency Bands:	/ 600 MHz / 600 MHz / 700 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz
Gain:	/ 12.95 dBd / 12.95 dBd / 13.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd
Height (AGL):	148 feet	Height (AGL):	148 feet	Height (AGL):	148 feet
Channel Count:	5	Channel Count:	5	Channel Count:	5
Total TX Power (W):	200 Watts	Total TX Power (W):	200 Watts	Total TX Power (W):	200 Watts
ERP (W):	4,151.83	ERP (W):	4,151.83	ERP (W):	4,151.83
Antenna A1 MPE %:	**1.76%**	Antenna B1 MPE %:	**1.76%**	Antenna C1 MPE %:	**1.76%**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz
Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd
Height (AGL):	148 feet	Height (AGL):	148 feet	Height (AGL):	148 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	36,356.09	ERP (W):	36,356.09	ERP (W):	36,356.09
Antenna A2 MPE %:	**6.48%**	Antenna B2 MPE %:	**6.48%**	Antenna C2 MPE %:	**6.48%**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	RFS APX16DWV-16DWV-S-E-A20	Make / Model:	RFS APX16DWV-16DWV-S-E-A20	Make / Model:	RFS APX16DWV-16DWV-S-E-A20
Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz
Gain:	15.9 dBd / 15.9 dBd / 15.9 dBd	Gain:	15.9 dBd / 15.9 dBd / 15.9 dBd	Gain:	15.9 dBd / 15.9 dBd / 15.9 dBd
Height (AGL):	feet	Height (AGL):	148 feet	Height (AGL):	148 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	360 Watts	Total TX Power (W):	360 Watts	Total TX Power (W):	360 Watts
ERP (W):	14,005.63	ERP (W):	14,005.63	ERP (W):	14,005.63
Antenna A3 MPE %:	**2.50%**	Antenna B3 MPE %:	**2.50%**	Antenna C3 MPE %:	**2.50%**

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	10.74%
T-Mobile (Existing)	2.66%
Metro PCS	0.95%
Verizon	4.87%
AT&T	6.61%
Site Total MPE % :	25.83%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	10.74%
T-Mobile Sector B Total:	10.74%
T-Mobile Sector C Total:	10.74%
Site Total MPE % :	25.83%

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 1900 MHz GSM	4	1167.14	148.0	8.32	1900 MHz GSM	1000	0.83%
T-Mobile 1900 MHz LTE	2	2334.27	148.0	8.32	1900 MHz LTE	1000	0.83%
T-Mobile 2100 MHz LTE	2	2334.27	148.0	8.32	2100 MHz LTE	1000	0.83%
T-Mobile 600 MHz LTE	2	591.73	148.0	2.11	600 MHz LTE	400	0.53%
T-Mobile 600 MHz NR	1	1577.94	148.0	2.81	600 MHz NR	400	0.70%
T-Mobile 700 MHz LTE	2	695.22	148.0	2.48	700 MHz LTE	467	0.53%
T-Mobile 2500 MHz LTE 1C & 2C Traffic	1	11044.63	148.0	19.69	2500 MHz LTE 1C & 2C Traffic	1000	1.97%
T-Mobile 2500 MHz LTE 1C & 2C Broadcast	1	1074.06	148.0	1.92	2500 MHz LTE 1C & 2C Broadcast	1000	0.19%
T-Mobile 2500 MHz NR Traffic	1	22089.26	148.0	39.38	2500 MHz NR Traffic	1000	3.94%
T-Mobile 2500 MHz NR Broadcast	1	2148.13	148.0	3.83	2500 MHz NR Broadcast	1000	0.38%
						Total:	**10.74%**

• 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:	10.74%
Sector B:	10.74%
Sector C:	10.74%
T-Mobile Maximum MPE % (Sector A):	10.74%
Site Total:	25.83%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **25.83%** 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.