CROWN CASTLE

1 Cityplace Dr, Suite 490
Creve Coeur, MO 63141

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

November 12, 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# 876330; T-Mobile Site ID# CTHA278A
299 Paxton Way Glastonbury, CT 06798
Latitude: 41° 41′ 33.85/ Longitude: -72° 33′ 17.87

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 147-foot mount on the existing 150-foot Monopole Tower located at 299 Paxton Way in Glastonbury. The property is owned by Crown Castle Towers 09 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 – APXVSPP18C-A20 Antennas **(REMOVE) -** (3) RFS Ericsson Air 6449 B41 Antennas **(REPLACE)**
(3) Sprint RRUs Radios **(REMOVE)** – (3) Ericsson 4480 B71 + B65 Radios **(REPLACE)**
(3) Sprint RRUs Radios **(REMOVE)** – (3) Ericsson 4460 B25 + B66 Radios **(REPLACE)**
(3) Hybrid Cables **(REMOVE)** – (3) Hybrid Cables **(REPLACE)**

Install New:
(1) GPS and (1) GPS Line
(1) Pipe to Pipe mount kit
Remove:
(1) RRH Mount
(3) Remote Radio Units

Ground:

Remove and Replace:
(1) MMBS Cabinet **(REMOVE)** – (1) 6160 Equipment Cabinet **(REPLACE)**
(1) BBU Cabinet **(REMOVE)** – (1) B160 Battery Cabinet **(REPLACE)**

Install New:
(3) BB6648 in 6160 Cabinet
(1) PSU 4813 Booster in 6160 Cabinet
(1) CSR IXRE V2 (Gen 2) in 6160 Cabinet
Upgrade Service to 200AMP

The original facility approval has not been made available as of the time of this filing.

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 Thomas P. Gullotta, Chairman of the Town of Glastonbury and Peter R Carey, Building Official, for the Town of Glastonbury.

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,

Ersilia Davis

Project Manager
1777 Sentry Parkway W | VEVA 17, Suite 400
Blue Bell, PA 19422
M 551-804-0667
edavis@nbcllc.com

CROWN CASTLE

1 Cityplace Dr, Suite 490
Creve Coeur, MO 63141

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

cc:

Thomas P. Gullotta, Chairman
Glastonbury, CT
2155 Main Street
Glastonbury, CT 06033
(860) 652-7710

Peter R Carey, Building Official
Glastonbury, CT
2155 Main Street
Glastonbury, CT 06033
(860) 652-7524

TRACK ANOTHER SHIPMENT

775194546948

ADD NICKNAME

Delivered
Monday, 11/15/2021 at 9:03 am

DELIVERED

Signed for by: G.GALANIK

GET STATUS UPDATES

OBTAIN PROOF OF DELIVERY

FROM

Ersilia Davis

1777 Sentry Parkway
VEVA 17, Suite 210
Blue Bell, PA US 19422
551-804-0667

TO

Peter R. Carey, Building Official
Town of Glastonbury

2155 Main Street
GLASTONBURY, CT US 06033
860-652-7524

MANAGE DELIVERY

Travel History

TIME ZONE
Local Scan Time

Monday, November 15, 2021

9:03 AM	GLASTONBURY, CT	Delivered
7:57 AM	WINDSOR LOCKS, CT	On FedEx vehicle for delivery
7:57 AM	WINDSOR LOCKS, CT	At local FedEx facility
5:44 AM	WINDSOR LOCKS, CT	At local FedEx facility

Sunday, November 14, 2021

8:58 PM	EAST GRANBY, CT	At destination sort facility
5:40 PM	MEMPHIS, TN	Departed FedEx hub
Saturday, November 13, 2021		
11:02 AM	MEMPHIS, TN	Arrived at FedEx hub
8:14 AM	NEWARK, NJ	Departed FedEx hub
12:13 AM	NEWARK, NJ	Arrived at FedEx hub
Friday, November 12, 2021		
9:13 PM	NEWBURGH, NY	Left FedEx origin facility
6:18 PM	NEWBURGH, NY	Picked up
8:56 AM		Shipment information sent to FedEx

Expand History

Shipment Facts

TRACKING NUMBER
775194546948

SERVICE
FedEx Priority Overnight

WEIGHT
1 lbs / 0.45 kgs

DELIVERY ATTEMPTS
1

DELIVERED TO
Receptionist/Front Desk

TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
1 lbs / 0.45 kgs

TERMS
Shipper

SHIPPER REFERENCE
100788/NBC 876330

PACKAGING
FedEx Envelope

SPECIAL HANDLING SECTION
Deliver Weekday

SHIP DATE
11/12/21

STANDARD TRANSIT
11/15/21 before 11:30 am

ACTUAL DELIVERY
11/15/21 at 9:03 am

TRACK ANOTHER SHIPMENT

775194605929

ADD NICKNAME

Delivered
Monday, 11/15/2021 at 9:03 am

DELIVERED

Signed for by: G.GALANIK

GET STATUS UPDATES

OBTAIN PROOF OF DELIVERY

FROM

Ersilia Davis

1777 Sentry Parkway
VEVA 17, Suite 210
Blue Bell, PA US 19422
551-804-0667

TO

Thomas P. Gullotta, Chairman
Town of Glastonbury

2155 Main Street
GLASTONBURY, CT US 06033
860-652-7710

MANAGE DELIVERY

Travel History

TIME ZONE
Local Scan Time

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5:48 AM	WINDSOR LOCKS, CT	At local FedEx facility

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Friday, November 12, 2021		
9:13 PM	NEWBURGH, NY	Left FedEx origin facility
6:18 PM	NEWBURGH, NY	Picked up
9:01 AM		Shipment information sent to FedEx

Expand History

Shipment Facts

TRACKING NUMBER
775194605929

SERVICE
FedEx Priority Overnight

WEIGHT
1 lbs / 0.45 kgs

DELIVERY ATTEMPTS
1

DELIVERED TO
Receptionist/Front Desk

TOTAL PIECES
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FedEx Envelope

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STANDARD TRANSIT
11/15/21 before 11:30 am

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11/15/21 at 9:03 am

Exhibit A

Original Facility Approval

The original facility approval has not been made available as of the time of this filing

Exhibit B

Property Card

299 PAXTON WAY

Location	299 PAXTON WAY	**Mblu**	H8/ 4760/ N0055/ TWR/
Acct#	H84760N0055T	**Owner**	CROWN CASTLE TOWERS 09 LLC
Assessment	$378,000	**Appraisal**	$540,000
PID	106230	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$0	$540,000	$540,000
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$0	$378,000	$378,000

Owner of Record

Owner	CROWN CASTLE TOWERS 09 LLC	**Sale Price**	$750,000
Co-Owner	C/O CROWN CASTLE LEGAL-RE DEPT	**Certificate**	
		Book & Page	3119/0340

Address	PMB 353-4017 WASHINGTON RD MCMURRAY, PA 15317	**Sale Date**	07/16/2013
		Instrument	08

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
SPRINT SPECTRUM LP	$0		0000/0000		10/01/2012

Building Information

Building 1 : Section 1

Year Built: 2012
Living Area: 0
Replacement Cost: $0
Replacement Cost Less Depreciation: $0

Building Attributes	
Field	**Description**
Style:	Support Shed
Model	Ind/Comm
Grade	D-
Stories:	1
Occupancy	1.00
Exterior Wall 1	Minimum
Exterior Wall 2	
Roof Structure	Flat

Building Photo

Roof Cover	Asphalt Shingl
Interior Wall 1	Minimum
Interior Wall 2	
Interior Floor 1	None
Interior Floor 2	
Heating Fuel	None
Heating Type	None
AC Type	None
Struct Class	
Bldg Use	Cell Tower
Total Rooms	
Total Bedrms	
Total Baths	
Inspection	
Int Condition	
1st Floor Use:	
Heat/AC	03
Frame Type	NONE
Baths/Plumbing	NONE
Ceiling/Wall	NONE
Rooms/Prtns	AVERAGE
Wall Height	0.00
% Comn Wall	

Building Layout

PLACE HOLDER FOR LAND LINE FIX

(ParcelSketch.ashx?pid=106230&bid=104347)

Building Sub-Areas (sq ft)			
Code	**Description**	**Gross Area**	**Living Area**
SLB	Slab	4	0
		4	0

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	350
Description	Cell Tower
Zone	
Category	

Land Line Valuation

Size (Acres)	0.00
Assessed Value	$378,000
Appraised Value	$540,000

Outbuildings

Outbuildings	Legend
No Data for Outbuildings	

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$0	$540,000	$540,000

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$0	$378,000	$378,000

Exhibit C

Construction Drawings

T-Mobile

T-MOBILE SITE NUMBER: CTHA278A
T-MOBILE SITE NAME: CTHA278A
SITE TYPE: MONOPOLE
TOWER HEIGHT: 150'-0"

BUSINESS UNIT #: 876330
SITE ADDRESS: 299 PAXTON WAY, GLASTONBURY, CT 06798
COUNTY: HARTFORD
JURISDICTION: HARTFORD COUNTY

T-MOBILE SPRINT RETAIN SITE CONFIGURATION: 67E5998_1XA1R+1OP

SITE INFORMATION

CROWN CASTLE USA INC. SITE NAME:	DARRYL H.'S QUARRY SITE (ABOVE
SITE ADDRESS:	299 PAXTON WAY GLASTONBURY, CT 06798
COUNTY:	HARTFORD
MAP/PARCEL #:	VERIFY
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41.69273611° (41° 41' 33.85")
LONGITUDE:	-72.55496388° (-72° 33' 17.87")
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	501.9 FT
CURRENT ZONING:	RR
JURISDICTION:	HARTFORD COUNTY
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	METROPOLITAN DISTRICT 555 MAIN STREET HARTFORD, CT 06103-2926
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	T-MOBILE 35 GRIFFIN ROAD BLOOMFIELD, CT 06002
ELECTRIC PROVIDER:	TBD
TELCO PROVIDER:	TBD

PROJECT TEAM

A&E FIRM:	INFINIGY ENGINEERING, PLLC 1033 WATERVLIET SHAKER RD. ALBANY, NY 12205
CROWN CASTLE USA INC. DISTRICT CONTACTS:	1500 CORPORATE DRIVE CANONSBURG, PA 15317
	TRICIA PELON - PROJECT MANAGER TRICAIS.PELON@CROWNCASTLE.COM
	JASON D'AMICO - CONSTRUCTION MANAGER JASON.DAMICO@CROWNCASTLE.COM

DRAWING INDEX

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1	SITE PLAN & ENLARGED SITE PLAN
C-2	FINAL ELEVATION & ANTENNA PLANS
C-3	ANTENNA & CABLE SCHEDULE
C-4	PLUMBING DIAGRAM
C-5	EQUIPMENT SPECS
C-6	EQUIPMENT SPECS
E-1	AC PANEL SCHEDULE & ONE LINE DIAGRAM
G-1	ANTENNA GROUNDING DIAGRAM
G-2	GROUNDING DETAILS

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR ----. 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.

PROJECT DESCRIPTION

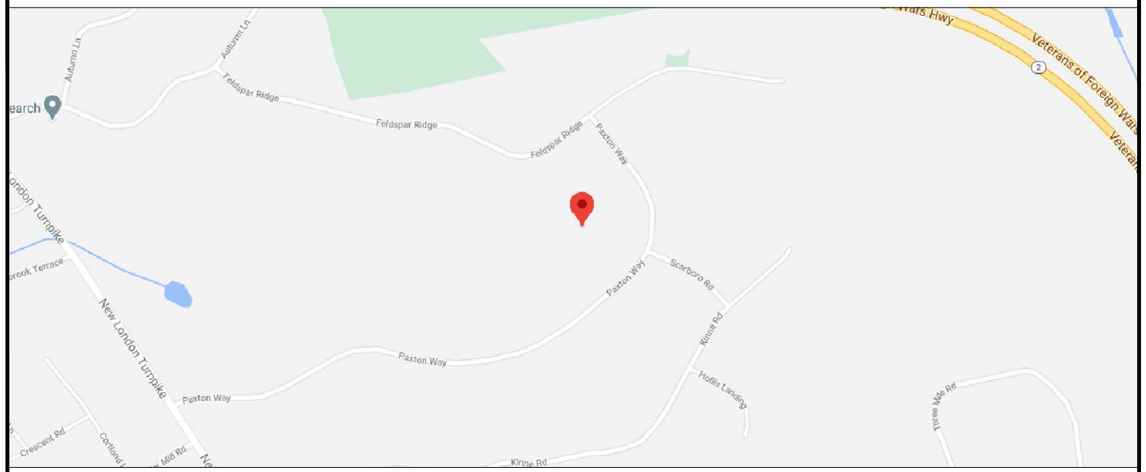
THE PURPOSE OF THIS PROJECT IS TO ENHANCE BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY.

TOWER SCOPE OF WORK:
- REMOVE (6) ANTENNAS
- REMOVE (9) RRHs
- REMOVE (1) RRH MOUNT
- REMOVE (3) HYBRID CABLES
- INSTALL (6) ANTENNAS
- INSTALL (6) RRHs
- INSTALL (3) HYBRID CABLES
- INSTALL (1) GPS AND (1) GPS LINE

GROUND SCOPE OF WORK:
- REMOVE (1) MMBS EQUIPMENT CABINET
- REMOVE (1) BBU EQUIPMENT CABINET
- INSTALL (1) 6160 & (1) B160 BATTERY CABINETS
- INSTALL (3) BB 6648
- INSTALL (1) PSU 4813
- INSTALL (1) CSR IXRe V2 (GEN2)
- UPGRADE SERVICE TO 200AMP

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

LOCATION MAP



NO SCALE

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	2018 CT STATE BUILDING CODE
MECHANICAL	2015 IMC
ELECTRICAL	2017 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS:	BLACK & VEATCH
DATED:	08/31/2021
MOUNT ANALYSIS:	B+T GROUP
DATED:	08/26/2021
RFDS REVISION:	1
DATED:	07/09/2021
ORDER ID:	584562
REVISION:	0

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

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
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
1500 CORPORATE DRIVE
CANONSBURG, PA 15317

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
1033 Watervliet Shaker Rd | Albany, NY 12205
Phone: 518-690-0790 | Fax: 518-690-0793
www.infinigy.com

T-MOBILE SITE NUMBER:
CTHA278A

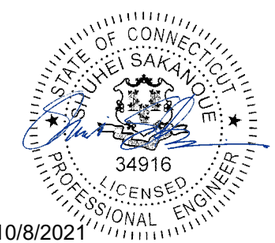
BU #: **876330**
DARRYL H.'S QUARRY SITE (ABOVE

299 PAXTON WAY
GLASTONBURY, CT 06798

EXISTING 150'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	03/31/20	RCD	PRELIMINARY	SS
B	04/06/21	PEG	REVISED COMMENTS	SS
0	04/27/21	PEG	FINAL CDS	SS
1	10/08/21	CB	FINAL CDS	SS



10/8/2021

SHEET NUMBER: T-1
REVISION: 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

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T-MOBILE SITE NUMBER:
CTHA278A

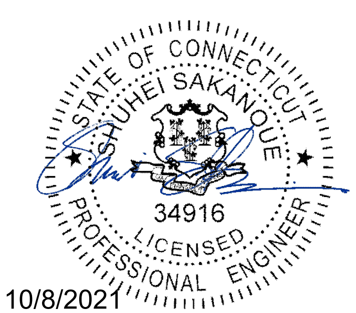
BU #: **876330**
DARRYL H.'S QUARRY SITE (ABOVE

299 PAXTON WAY
GLASTONBURY, CT 06798

EXISTING 150'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	03/31/20	RCD	PRELIMINARY	SS
B	04/06/21	PEG	REVISED COMMENTS	SS
0	04/27/21	PEG	FINAL CDS	SS
1	10/08/21	CB	FINAL CDS	SS

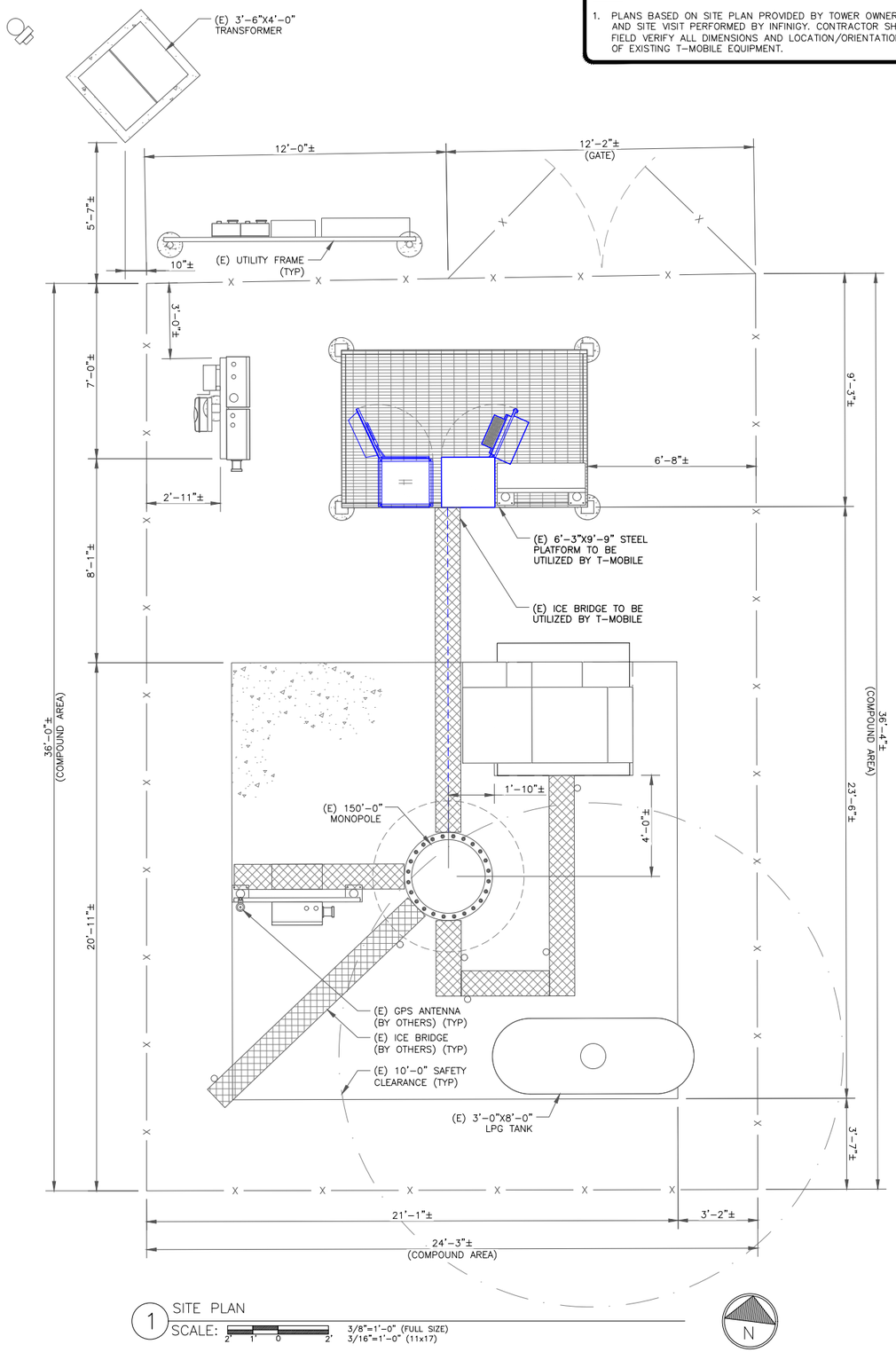


10/8/2021

SHEET NUMBER: T-2
REVISION: 1

NOTE:

1. PLANS BASED ON SITE PLAN PROVIDED BY TOWER OWNER AND SITE VISIT PERFORMED BY INFINIGY. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LOCATION/ORIENTATION OF EXISTING T-MOBILE EQUIPMENT.

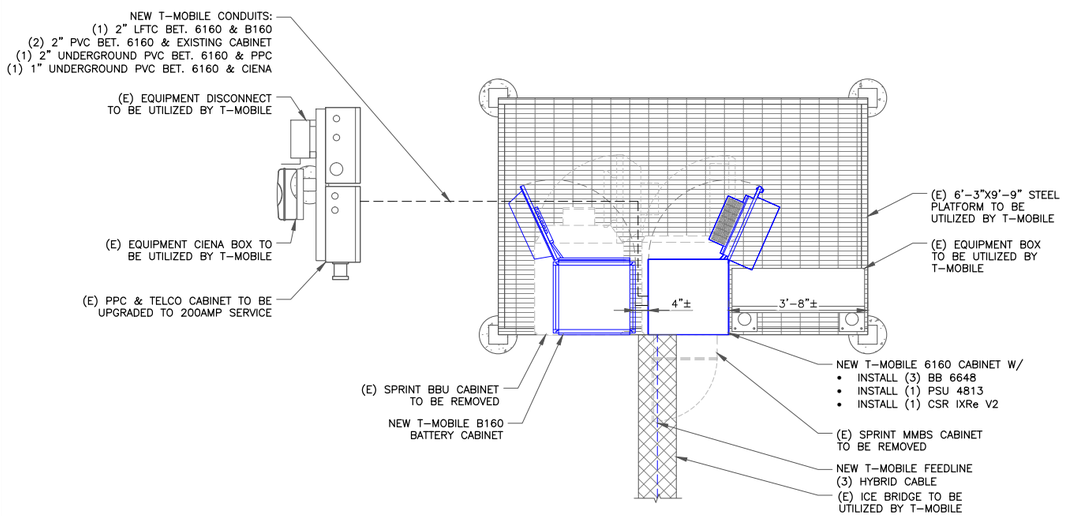


1 SITE PLAN
SCALE: 2' 1' 0 2' 3/8"=1'-0" (FULL SIZE) 3/16"=1'-0" (11x17)

N

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: 2' 1' 0 2' 1/2"=1'-0" (FULL SIZE) 1/4"=1'-0" (11x17)

N

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T-MOBILE SITE NUMBER:
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DARRYL H.'S QUARRY SITE (ABOVE

299 PAXTON WAY
GLASTONBURY, CT 06798

EXISTING 150'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
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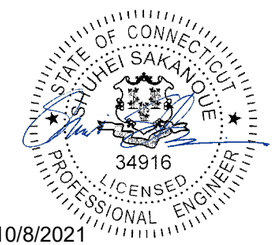


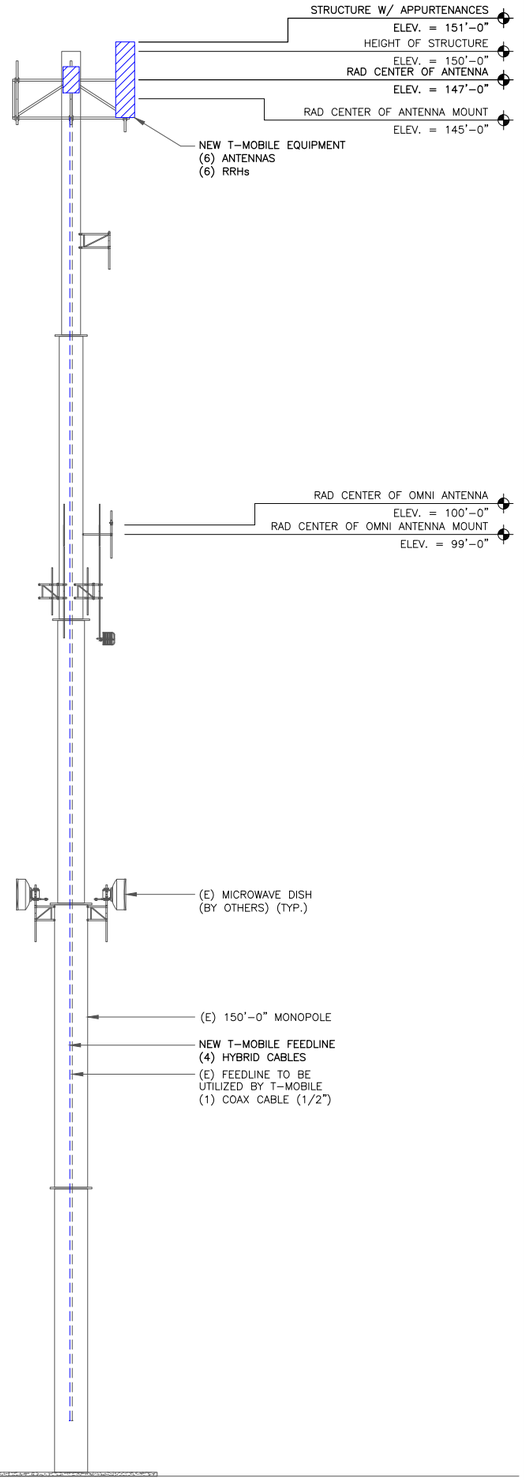
10/8/2021

SHEET NUMBER: C-1

REVISION: 1

NOTES:

1. ELEVATION BASED ON DRAWING PROVIDED BY TOWER OWNER. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LOCATION/ORIENTATION OF EXISTING EQUIPMENT.
2. INFINIGY HAS NOT EVALUATED THE TOWER OR MOUNT STRUCTURE AND ASSUMES NO RESPONSIBILITY FOR THEIR STRUCTURAL INTEGRITY REGARDING PROPOSED LOADINGS. FINAL INSTALLATION SHALL COMPLY WITH RESULTS OF PASSING STRUCTURAL ANALYSES PERFORMED BY OTHERS.

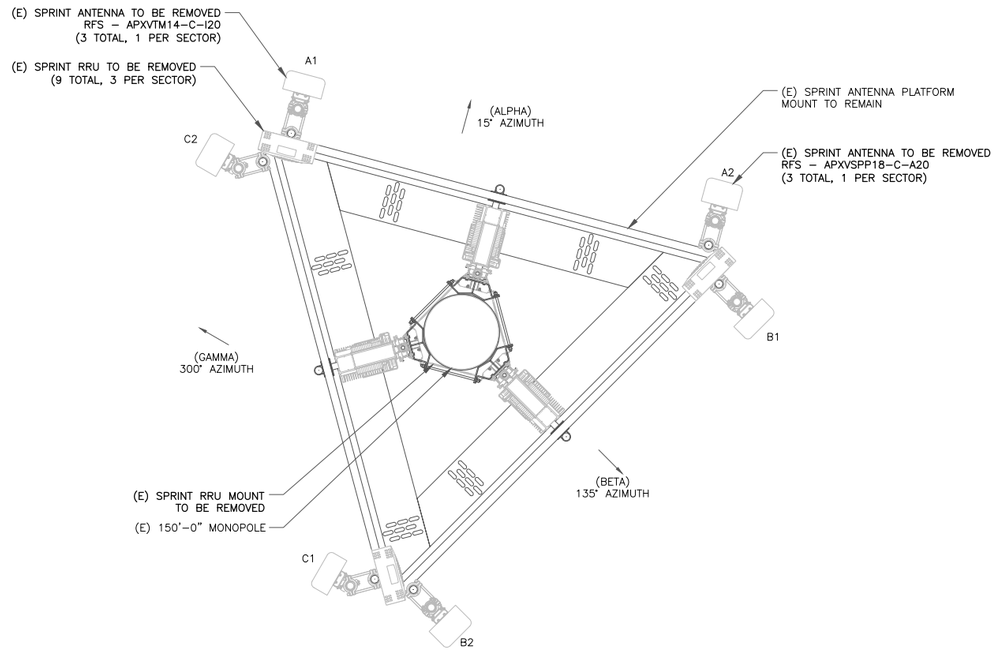


T-MOBILE EQUIPMENT

ANTENNA CL: 147'-0"
MOUNT CL: 145-0"

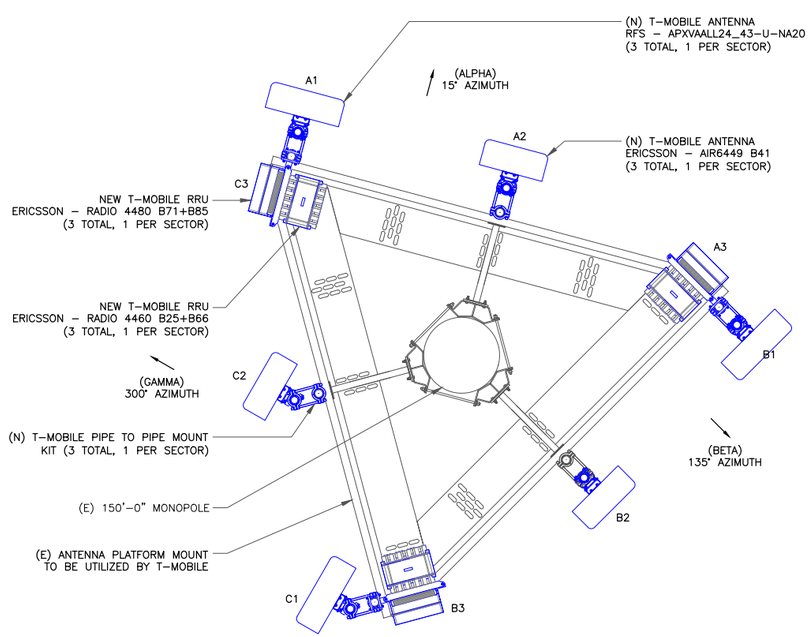
ANY AND ALL TOWER MOUNTED EQUIPMENT MUST NOT TRAP OR INTERFERE W/ EXISTING SAFETY CLIMB

1 FINAL ELEVATION
SCALE: NOT TO SCALE



2 EXISTING ANTENNA LAYOUT
SCALE: NOT TO SCALE

N



3 FINAL ANTENNA LAYOUT
SCALE: NOT TO SCALE

N

NOTE:
A STRUCTURAL EVALUATION OF THE T-MOBILE ANTENNA MOUNTS HAS BEEN PERFORMED BY B+T GROUP. REFER TO ANTENNA MOUNT STRUCTURAL ANALYSIS DATED 08-26-2021 PRIOR TO CONSTRUCTION.

INFINIGY HAS NOT EVALUATED THE TOWER FOR THIS SITE AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY. CONTRACTOR TO COORDINATE LOADING WITH RF ENGINEER. REFER TO STRUCTURAL ANALYSIS PERFORMED BY OTHERS PRIOR TO CONSTRUCTION.

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T-MOBILE SITE NUMBER:
CTHA278A

BU #: **876330**
DARRYL H.'S QUARRY SITE (ABOVE

299 PAXTON WAY
GLASTONBURY, CT 06798

EXISTING 150'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	03/31/20	RCD	PRELIMINARY	SS
B	04/06/21	PEG	REVISED COMMENTS	SS
0	04/27/21	PEG	FINAL CDS	SS
1	10/08/21	CB	FINAL CDS	SS

STATE OF CONNECTICUT
SHUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
10/8/2021

SHEET NUMBER: C-2

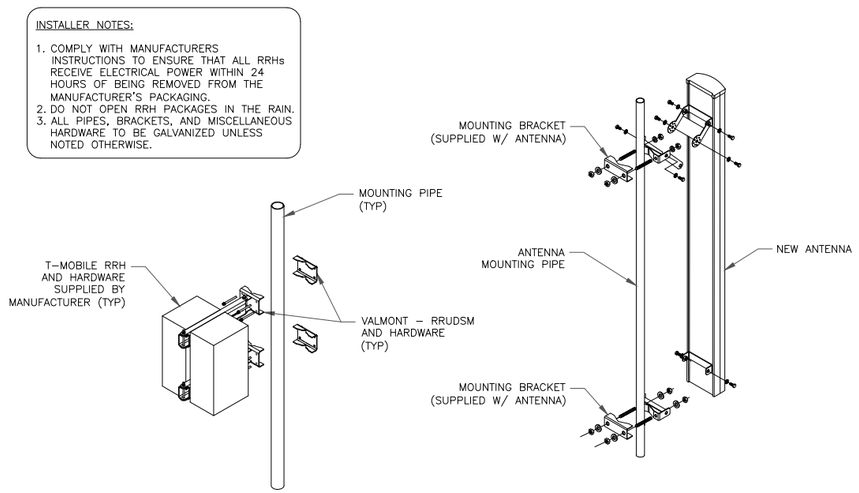
REVISION: 1

ANTENNA SCHEDULE									
SECTOR	POS.	TECHNOLOGY	RAD CENTER	AZIMUTH	ANTENNA MANUFACTURER	ANTENNA MODEL	MECH. TILT	ELECT. TILT	TOWER MOUNTED EQUIPMENT	FEEDLINE TYPE
ALPHA	A1	L700, L600, N600, L1900, G1900, L2100	147'-0"	15°	RFS	APXVAALL24_43-U-NA20	0°	--	(1) ERICSSON - RRUS 4480 B71+B85 (1) ERICSSON - RRUS 4460 B25+B66	(2) 6X12 HCS HYBRID (SHARED)
ALPHA	A2	L2500, N2500	147'-0"	15°	ERICSSON	AIR6449 B41	0°	--	--	
ALPHA	A3	--	--	--	--	--	--	--	--	
BETA	B1	L700, L600, N600, L1900, G1900, L2100	147'-0"	135°	RFS	APXVAALL24_43-U-NA20	0°	--	(1) ERICSSON - RRUS 4480 B71+B85 (1) ERICSSON - RRUS 4460 B25+B66	(2) 6X12 HCS HYBRID (SHARED)
BETA	B2	L2500, N2500	147'-0"	135°	ERICSSON	AIR6449 B41	0°	--	--	
BETA	B3	--	--	--	--	--	--	--	--	
GAMMA	C1	L700, L600, N600, L1900, G1900, L2100	147'-0"	300°	RFS	APXVAALL24_43-U-NA20	0°	--	(1) ERICSSON - RRUS 4480 B71+B85 (1) ERICSSON - RRUS 4460 B25+B66	(2) 6X12 HCS HYBRID (SHARED)
GAMMA	C2	L2500, N2500	147'-0"	300°	ERICSSON	AIR6449 B41	0°	--	--	
GAMMA	C3	--	--	--	--	--	--	--	--	

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 RRHs MOUNTING DETAIL
SCALE: NOT TO SCALE

NOTE:

1. CONTRACTOR SHALL INSTALL 3RD DUAL RRH MOUNT TO ACCOMMODATE ALL RRH BRACKETS HOLES IF NECESSARY.

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STATE OF CONNECTICUT
SHUHEI SAKAMOTO
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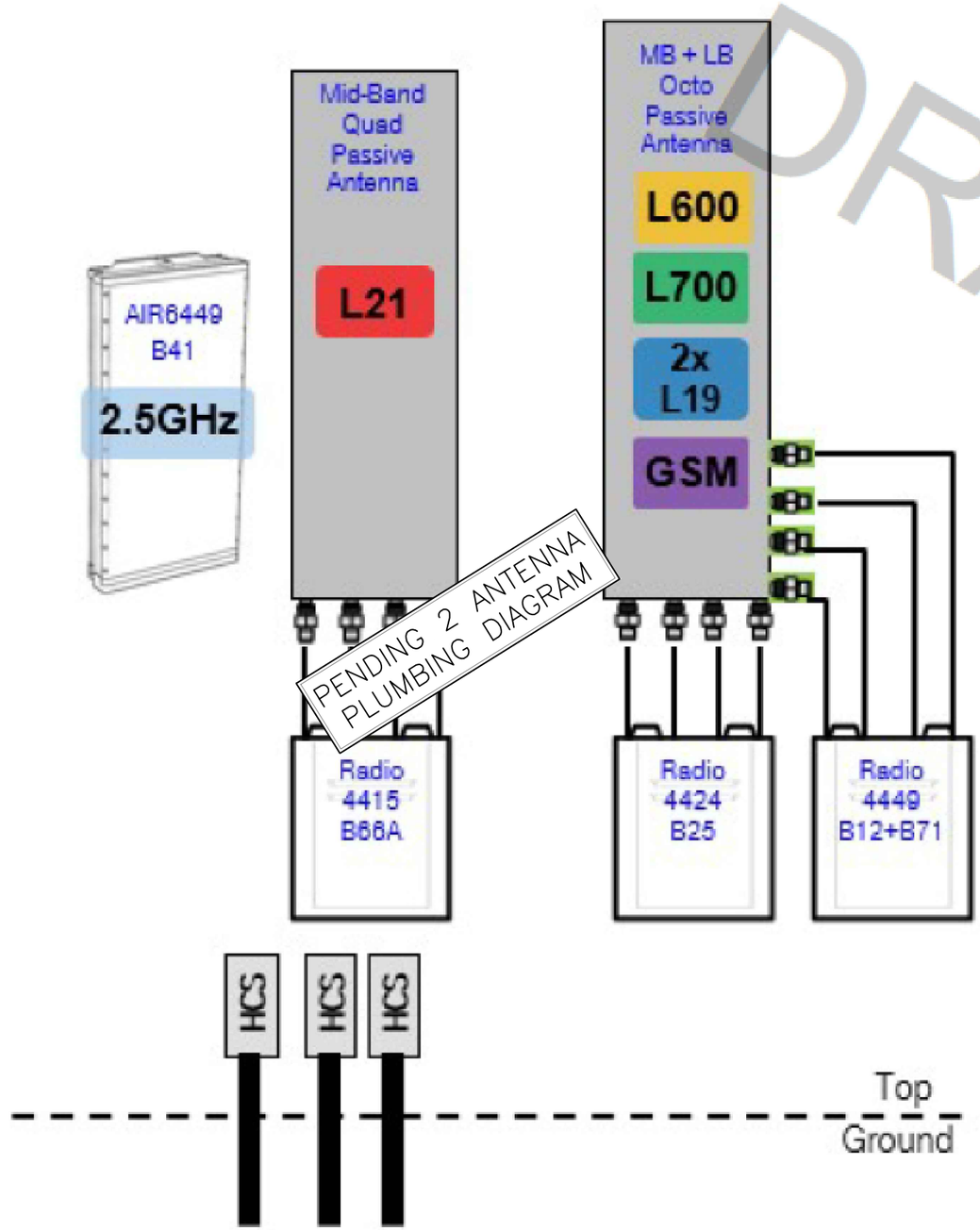
LICENSED
PROFESSIONAL ENGINEER
10/8/2021

SHEET NUMBER: C-3

REVISION: 1

67D5A998C_1xAIR+1xQP+1xOP.jpg



1 PENDING INFO
SCALE: NOT TO SCALE

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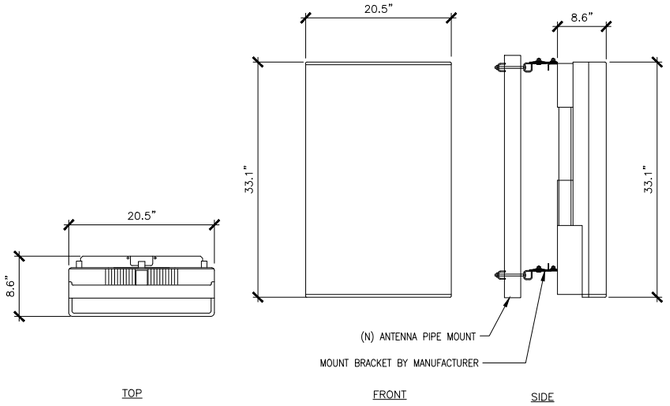
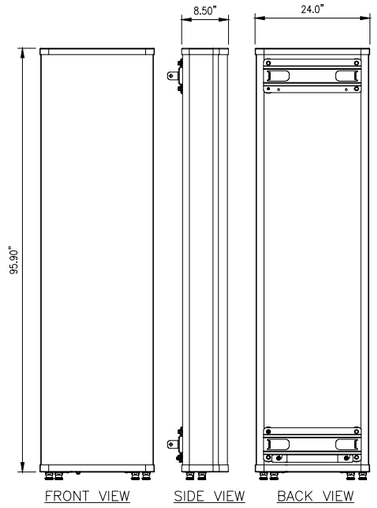
STATE OF CONNECTICUT
SHUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER
10/8/2021

SHEET NUMBER: C-4
REVISION: 1

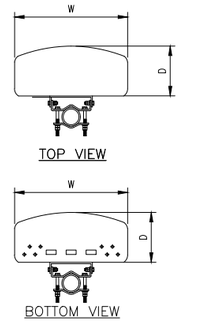
MANUFACTURER: ERICSSON
MODEL: AIR6449 B41
WEIGHT: 104 LBS (W/ MOUNT BRACKET 113)
DIMENSIONS: 33.1"H. X 20.5"W. X 8.6"D.
FREQUENCY: REFER TO RF DATA SHEET



1 (N) AIR6449 B41 ANTENNA SPEC
SCALE: NOT TO SCALE



700MHz RFS ANTENNAS	
MODEL	WEIGHT (lb)
(8') APXVAALL24_43-UNA20	149.90
WEIGHT W/ MOUNTING BRACKET (lb):	154

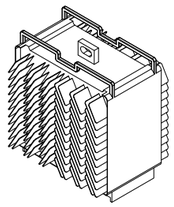


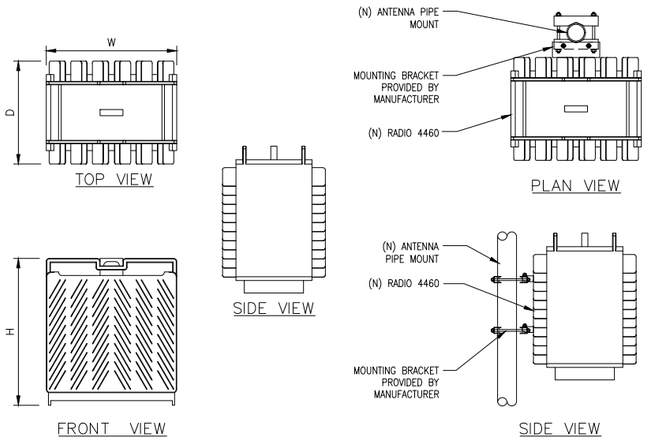
2 (N) APXVAALL24_43-UNA20 ANTENNA SPEC
SCALE: NOT TO SCALE

3 NOT USED
SCALE: NOT TO SCALE

ERICSSON RADIO-4460 B25 B66

DIMENSIONS, WxDxH:	17.0"x15.1"x11.9"
MAX OUTPUT POWER:	4x80W (2x(2x80W))
TOTAL WEIGHT:	109 lbs
TEMPERATURE:	-40° TO 55° C

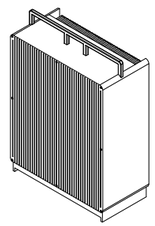


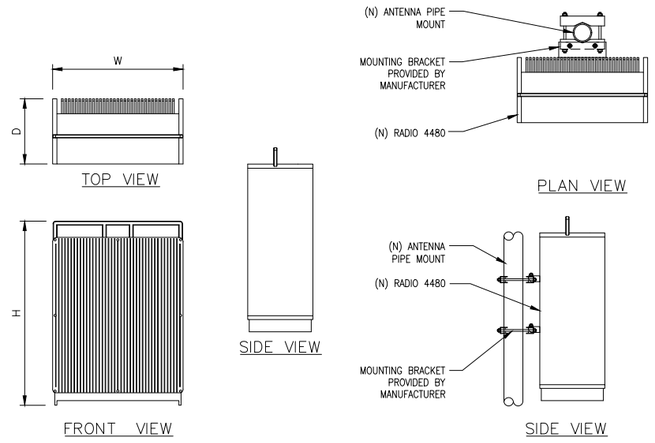


4 (N) RADIO 4460 SPEC
SCALE: NOT TO SCALE

ERICSSON RADIO-4480 B71 B85

DIMENSIONS, WxDxH:	21.8"x15.7"x7.5"
MAX OUTPUT POWER:	4x80W (2x(2x80W))
TOTAL WEIGHT:	93 lbs
TEMPERATURE:	-40° TO 55° C





5 (N) RADIO 4480 SPEC
SCALE: NOT TO SCALE

6 NOT USED
SCALE: NOT TO SCALE

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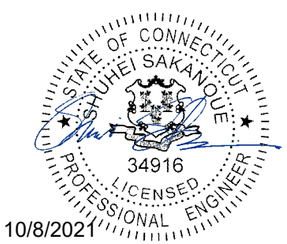
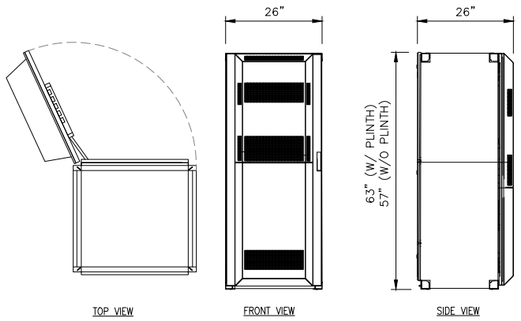


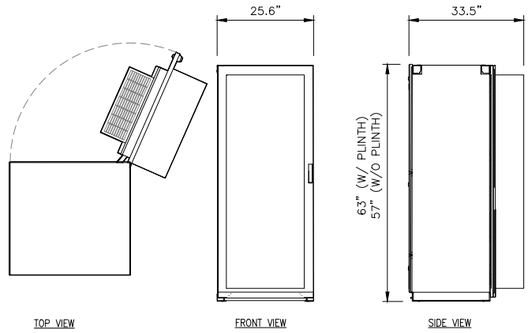
SHEET NUMBER: C-5

REVISION: 1



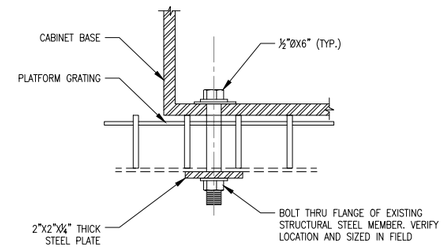
ERICSSON MODEL NO.:	B160
RACK SPACE:	19U
DIMENSIONS, HxWxD:	63"x26"x26" (W/ 6" PLINTH)
CABINET WEIGHT, EMPTY:	485 LBS
MAXIMUM WEIGHT:	2100± LBS

1 (N) B160 CABINET DETAIL
SCALE: NOT TO SCALE

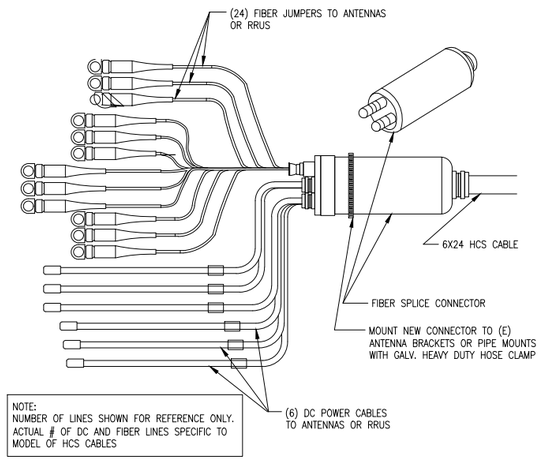


ERICSSON MODEL NO.:	6160
RACK SPACE:	19U
DIMENSIONS, HxWxD:	63"x25.6"x25.6" (W/ 6" PLINTH)
CABINET WEIGHT, EMPTY:	410 LBS
MAXIMUM WEIGHT:	770± LBS

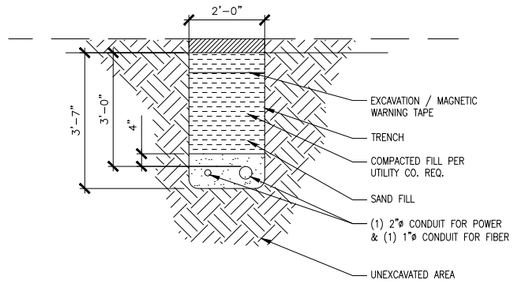
2 (N) 6160 CABINET DETAIL
SCALE: NOT TO SCALE



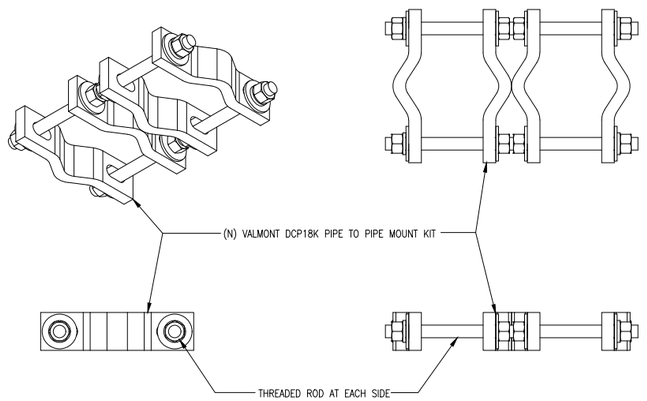
3 (N) EQUIPMENT CABINET MOUNTING DETAIL
SCALE: NOT TO SCALE



4 (N) 6X12 HCS CABLE DETAIL
SCALE: NOT TO SCALE



5 (N) CONDUIT TRENCH DETAIL
SCALE: NOT TO SCALE



6 PIPE TO PIPE MOUNT KIT DETAIL
SCALE: NOT TO SCALE

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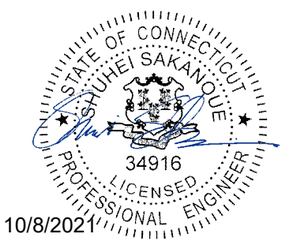


SHEET NUMBER: C-6

REVISION: 1

T-MOBILE PANEL SCHEDULE

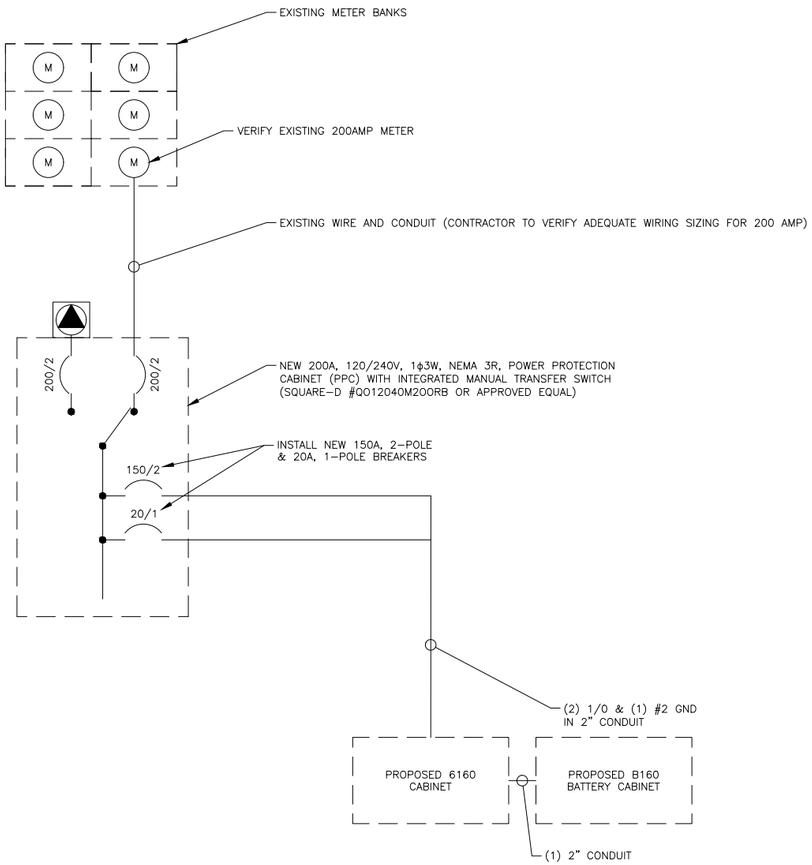
MAIN: 200A MAIN BREAKER			**VOTAGE/PHASE:** 120/240V, 1-PHASE, 3-WIRE						**SHORT CIRCUIT CURRENT RATING:** --		
MOUNTING: INSIDE PPC ENCLOSURE			**ENCLOSURE:** NEMA 3R						**SURGE PROTECTION DEVICE:** YES		
					PHASE LOADS (VA)						
DESCRIPTION	LOAD (VA)	C or NC	C/B	CIR No.	A	B	CIR No.	C/B	C or NC	LOAD (VA)	DESCRIPTION
AC SURGE	0	NC	60	1	180		2	20	NC	180	TELCO GFCI
	0	NC		3		0	4	30	NC	0	GENERATOR
6160*	**3500**	**C**	**150**	**5**	3500		6		NC	0	
	3500	**C**		**7**		3500	8				
6160 GFI*	**180**	**NC**	**20**	**9**	180		10				BLANK
BLANK				11		0	12				
				13	0		14				
				15		0	16				
				17	0		18				
				19		0	20				
				21	0		22				
				23		0	24				
BASE LOAD (VA) =					3860	3500					
25% OF CONTINUOUS LOAD (VA) =					1750	1750					
TOTAL LOAD (VA) =					5610	5250					
TOTAL LOAD (A) =					46.8	43.8					

C = CONTINUOUS LOAD; NC = NON-CONTINUOUS LOAD
*INDICATES NEW LOAD. ALL OTHER LOADS ARE EXISTING.
NEW BREAKER TO BE SAME TYPE AND HAVE SAME AIC RATING AS EXISTING. CUSTOMER HAS NOT PROVIDED LOADS FOR EQUIPMENT CABINETS THEREFORE THE CABINET LOADS SHOWN ARE ESTIMATED

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, OR XHHW-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

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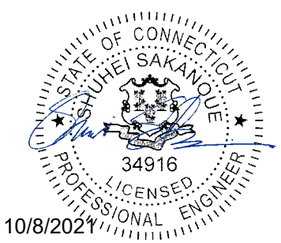
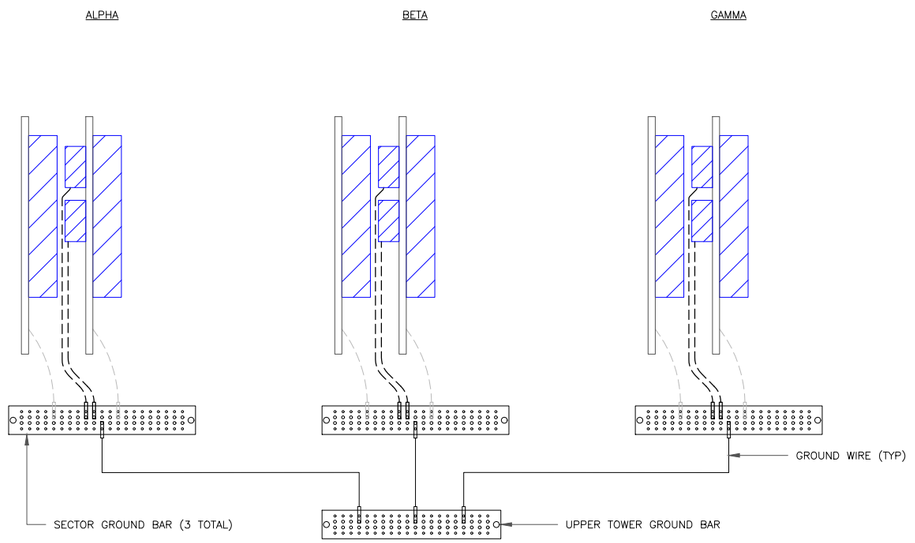


SHEET NUMBER: E-1

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

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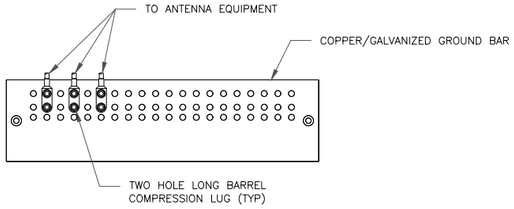
STATE OF CONNECTICUT
SHUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER
10/8/2021

SHEET NUMBER: G-1

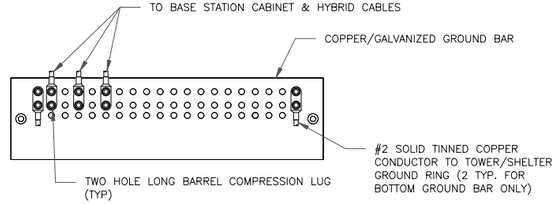
REVISION: 1



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.

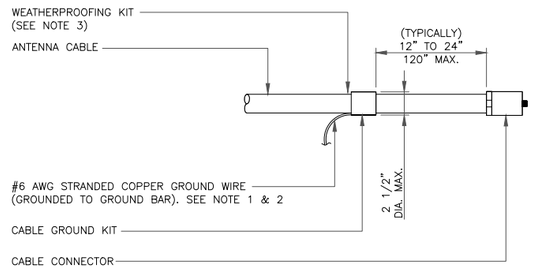
1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE



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.

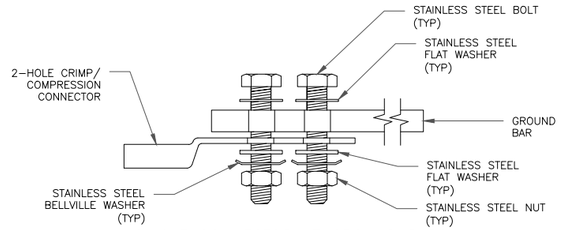
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



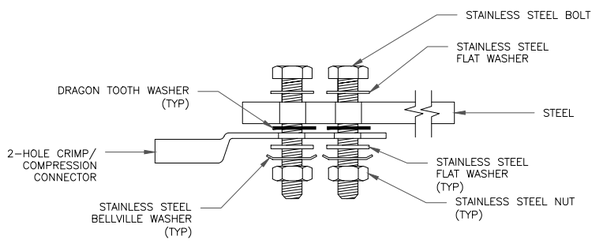
NOTES:

1. 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.

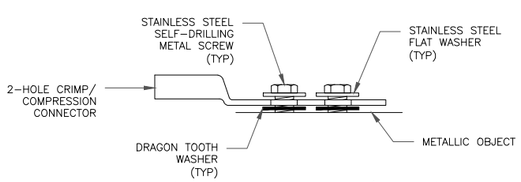
3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



SINGLE CONNECTOR AT GROUND BARS

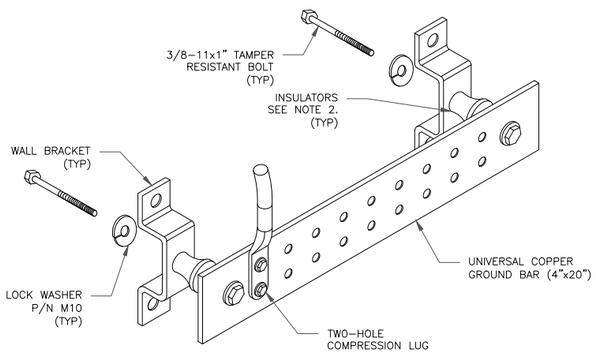


SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

4 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
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.

5 GROUND BAR DETAIL
SCALE: NOT TO SCALE

6 NOT USED
SCALE: NOT TO SCALE

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35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

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CANONSBURG, PA 15317

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T-MOBILE SITE NUMBER:
CTHA278A

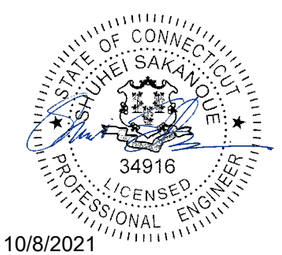
BU #: **876330**
DARRYL H.'S QUARRY SITE (ABOVE

299 PAXTON WAY
GLASTONBURY, CT 06798

EXISTING 150'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	03/31/20	RCD	PRELIMINARY	SS
B	04/06/21	PEG	REVISED COMMENTS	SS
0	04/27/21	PEG	FINAL CDS	SS
1	10/08/21	CB	FINAL CDS	SS



10/8/2021

SHEET NUMBER: G-2

REVISION: 1

Exhibit D

Structural Analysis Report

Date: **August 31, 2021**

Black & Veatch Corp.
6800 W. 115th St., Suite 2292
Overland Park, KS 66211
(913) 458-6909

Subject:	**Structural Analysis Report**	
Carrier Designation:	**Site Number:**	CTHA278A
	Site Name:	CT03XC081
Crown Castle Designation:	**BU Number:**	876330
	Site Name:	DARRYL H.'S QUARRY SITE (ABOVE
	JDE Job Number:	684574
	Work Order Number:	2014535
	Order Number:	584562 Rev. 0
Engineering Firm Designation:	**Black & Veatch Corp. Project Number:**	406642
Site Data:	**299 Paxton Way, Glastonbury, Hartford County, CT** **Latitude *41° 41' 33.85"*, Longitude *-72° 33' 17.87"*** **150 Foot - Monopole Tower**	

Black & Veatch Corp. is pleased to submit this **"Structural Analysis 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. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration **Sufficient Capacity - 66.9%**

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

Structural analysis prepared by: Adichon Akkarapunyathorn / Phutthiphong Suwantha

Respectfully submitted by:

Ping Jiang, P.E.
Professional Engineer

Digitally signed by Jiang, Ping
DN: CN="Jiang, Ping", O=Black Veatch, C=US
Date: 2021.08.31 17:28:08-05'00'

STATE OF CONNECTICUT
PING JIANG
30767
LICENSED
PROFESSIONAL ENGINEER

Aug 31, 2021

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 150 ft Monopole tower designed by Rohn Industries, Inc.

The tower has been modified per reinforcement drawings prepared by Tower Engineering Professionals, Inc. in August of 2018. Reinforcement consists of Installing base plate stiffeners at exiting base plate. Refer to Post Modification Inspection Report by Tower Engineering Professionals, Inc. in July of 2010. This modification has been considered effective in this analysis.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 mph
Exposure Category:	B
Topographic Factor:	1
Ice Thickness:	2.000 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)
145.0	147.0	3	ericsson	AIR6449 B41_T-MOBILE w/ Mount Pipe	3	1-5/8
		3	ericsson	RADIO 4460 B2/B25 B66_TMO		
		3	ericsson	Radio 4480_TMOV2		
		3	rfs celwave	APXVAALL24_43-U-NA20_TMO w/ Mount Pipe		
	145.0	1	cci tower mounts (v2.1)	Platform Mount [LP 502-1]		

Table 2 - 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)
140	140	-	-	-	6	1-5/8
137.0	137.0	3	fujitsu	TA08025-B604	1	1-1/2
		3	fujitsu	TA08025-B605		
		3	jma wireless	MX08FRO665-21 w/ Mount Pipe		
		1	raycap	RDIDC-9181-PF-48		
		1	tower mounts	Commscope MC-PK8-DSH		
130.0	130.0	1	cci tower mounts (v2.1)	Side Arm Mount [SO 701-3]	-	-
99.0	100.0	1	lucent	KS24019-L112A	1	1/2
	99.0	1	cci tower mounts (v2.1)	Side Arm Mount [SO 701-1]		
93.0	100.0	1	rfs celwave	BA6312-1	2	7/8
	99.0	1	tx rx systems	101D-90-06-0-03		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
	93.0	1	cci tower mounts (v2.1)	Pipe Mount [PM 502-3]		
59.0	66.0	1	sinclair	SC381-L	2 1	3/8 7/8
	61.0	2	commscope	VHLP3-11W		
	59.0	2	cci tower mounts (v2.1)	Side Arm Mount [SO 304-1]		
		1	cci tower mounts (v2.1)	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	2192533	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	1614584	CCISITES
4-TOWER MANUFACTURER DRAWINGS	1614573	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	2296225	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.

3.2) Assumptions

1) 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.
3) Flange plate design methodology of the manufacturer has been reviewed and found to be an acceptable means of designing to resist the full capacity of the bolts and shaft.

This analysis may be affected if any assumptions are not valid or have been made in error. Black & Veatch Corp. should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary) (Monopole Tower)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	150 - 120	Pole	P24x1/4	1	-8.80	695.38	40.4	Pass
L2	120 - 90	Pole	P30x3/8	2	-14.11	1376.61	45.0	Pass
L3	90 - 60	Pole	P36x3/8	3	-19.99	1564.60	56.9	Pass
L4	60 - 30	Pole	P42x3/8	4	-26.91	1752.31	65.5	Pass
L5	30 - 0	Pole	P42x1/2	5	-35.68	2530.92	66.1	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
							Summary	
						Pole (L5)	66.1	Pass
						Rating =	66.1	Pass

Table 5 - Tower Component Stresses vs. Capacity (Monopole Tower) - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Flange Bolts	120	13.4	Pass
1, 2	Flange Plate		40.4	Pass
1	Flange Bolts	90	23.3	Pass
1, 2	Flange Plate		45.0	Pass
1	Flange Bolts	60	32.4	Pass
1, 2	Flange Plate		56.9	Pass
1	Flange Bolts	30	50.2	Pass
1, 2	Flange Plate		65.5	Pass
1	Anchor Rods	0	66.9	Pass
	Base Plate		59.3	Pass
1	Base Foundation (Structure)	0	16.2	Pass
	Base Foundation (Soil Interaction)		65.5	Pass

Structure Rating (max from all components) =	66.9%

Notes:
1) See additional documentation in “Appendix C – Additional Calculations” for calculations supporting the % capacity. Rating per TIA-222-H Section 15.5.
2) Flange plates are assumed to have the same capacity as their respective splice bolts or shaft.

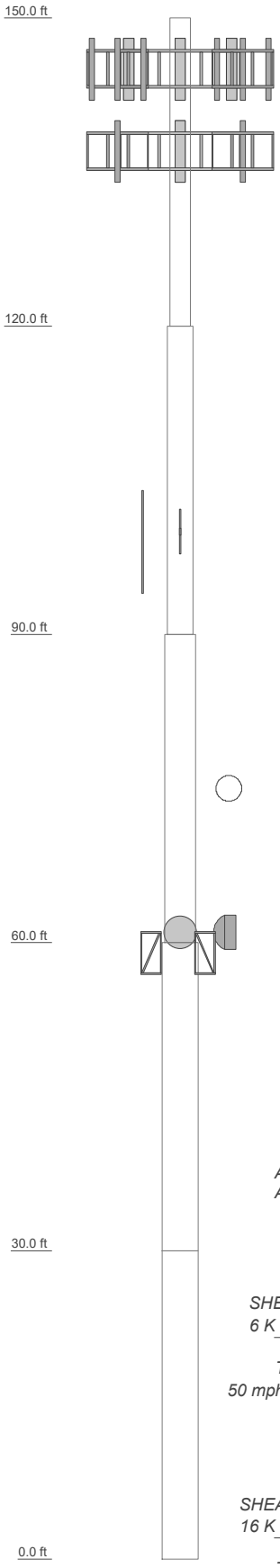
4.1) Recommendations

The tower and its foundation have sufficient capacity to carry the proposed load configuration. No modifications are required at this time.

APPENDIX A

TNXTOWER OUTPUT

Section	Size	Length (ft)	Grade	Weight (K)
1	P24x1/4	30.00	A53-B-42	1.9
2	P30x3/8	30.00		3.6
3	P36x3/8	30.00		4.3
4	P42x3/8	30.00		5.0
5	P42x1/2	30.00		6.7
				21.4



MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B-42	42 ksi	63 ksi			

TOWER DESIGN NOTES

1. Tower designed for Exposure B to the TIA-222-H Standard.
2. Tower designed for a 125 mph basic wind in accordance with the TIA-222-H Standard.
3. Tower is also designed for a 50 mph basic wind with 2.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Risk Category II.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. TOWER RATING: 66.1%

ALL REACTIONS ARE FACTORED

AXIAL 61 K

SHEAR 6 K *MOMENT 621 kip-ft*

TORQUE 0 kip-ft
50 mph WIND - 2.0000 in ICE

AXIAL 36 K

SHEAR 16 K *MOMENT 1673 kip-ft*

TORQUE 1 kip-ft
REACTIONS - 125 mph WIND

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6800 W. 115th St., Suite 2292
Overland Park, KS 66211
Phone: (913) 458-6909
FAX: (913) 458-6909

Job: ***DARRYL H.'S QUARRY SITE (ABOVE (BU# 876330***			
Project: ***406642 (876330.2014535)***			
Client: Crown Castle	Drawn by: Phutthiphong Suwantha	App'd:	
Code: TIA-222-H	Date: 08/31/21	Scale: NTS	
Path:		Dwg No. E-1	

Tower Input Data

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

- Tower base elevation above sea level: 494.00 ft.
- Basic wind speed of 125 mph.
- Risk Category II.
- Exposure Category B.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.00 ft.
- Nominal ice thickness of 2.0000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50 °F.
- Deflections calculated using a wind speed of 60 mph.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.
- Tower analysis based on target reliabilities in accordance with Annex S.
- Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- Maximum demand-capacity ratio is: 1.05.
- 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

Pole Section Geometry

Section	*Elevation*	*Section Length*	*Pole Size*	*Pole Grade*	*Socket Length*
	ft	*ft*			*ft*

Section	Elevation ft	Section Length ft	Pole Size	Pole Grade	Socket Length ft
L1	150.00-120.00	30.00	P24x1/4	A53-B-42 (42 ksi)	
L2	120.00-90.00	30.00	P30x3/8	A53-B-42 (42 ksi)	
L3	90.00-60.00	30.00	P36x3/8	A53-B-42 (42 ksi)	
L4	60.00-30.00	30.00	P42x3/8	A53-B-42 (42 ksi)	
L5	30.00-0.00	30.00	P42x1/2	A53-B-42 (42 ksi)	

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 150.00-120.00				1	1	1			
L2 120.00-90.00				1	1	1			
L3 90.00-60.00				1	1	1			
L4 60.00-30.00				1	1	1			
L5 30.00-0.00				1	1	1			

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 plf
Safety Line 3/8	B	No	Surface Ar (CaAa)	150.00 - 0.00	1	1	0.250 0.260	0.3750		0.22
***										
LDF4-50A(1/2)	C	No	Surface Ar (CaAa)	99.00 - 0.00	1	1	0.000 0.017	0.6250		0.15
***										

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 plf
***									
HB158-21U6S24-xxM_TMO(1-5/8)	C	No	No	Inside Pole	145.00 - 0.00	3	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	2.50 2.50 2.50 2.50
***									
AVA7-50(1-5/8)	C	No	No	Inside Pole	140.00 - 0.00	6	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.70 0.70 0.70 0.70
***									
LDF5-50A(7/8)	C	No	No	Inside Pole	93.00 - 0.00	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.33 0.33 0.33 0.33

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
***									
CNT-400(3/8)	C	No	No	Inside Pole	59.00 - 0.00	2	No Ice	0.00	0.07
							1/2" Ice	0.00	0.07
							1" Ice	0.00	0.07
							2" Ice	0.00	0.07
LDF5-50A(7/8)	C	No	No	Inside Pole	59.00 - 0.00	1	No Ice	0.00	0.33
							1/2" Ice	0.00	0.33
							1" Ice	0.00	0.33
							2" Ice	0.00	0.33
***									
CU12PSM9P6XXX (1-1/2)	C	No	No	Inside Pole	137.00 - 0.00	1	No Ice	0.00	2.35
							1/2" Ice	0.00	2.35
							1" Ice	0.00	2.35
							2" Ice	0.00	2.35
***									

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	150.00-120.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	1.125	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.31
L2	120.00-90.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	1.125	0.000	0.01
		C	0.000	0.000	0.563	0.000	0.42
L3	90.00-60.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	1.125	0.000	0.01
		C	0.000	0.000	1.875	0.000	0.45
L4	60.00-30.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	1.125	0.000	0.01
		C	0.000	0.000	1.875	0.000	0.46
L5	30.00-0.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	1.125	0.000	0.01
		C	0.000	0.000	1.875	0.000	0.46

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	150.00-120.00	A	1.957	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	12.868	0.000	0.17
		C		0.000	0.000	0.000	0.000	0.31
L2	120.00-90.00	A	1.909	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	12.577	0.000	0.17
		C		0.000	0.000	3.998	0.000	0.48
L3	90.00-60.00	A	1.845	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	12.198	0.000	0.16
		C		0.000	0.000	12.948	0.000	0.61
L4	60.00-30.00	A	1.754	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	11.646	0.000	0.14
		C		0.000	0.000	12.396	0.000	0.61
L5	30.00-0.00	A	1.571	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	10.552	0.000	0.12
		C		0.000	0.000	11.302	0.000	0.59

Feed Line Center of Pressure

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L1	150.00-120.00	0.3693	0.0039	1.6232	0.0170
L2	120.00-90.00	0.3627	0.1883	1.6093	0.5356
L3	90.00-60.00	0.3485	0.6061	1.5097	1.6599
L4	60.00-30.00	0.3506	0.6092	1.5082	1.6613
L5	30.00-0.00	0.3506	0.6092	1.3948	1.5461

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	1	Safety Line 3/8	120.00 - 150.00	1.0000	1.0000
L2	1	Safety Line 3/8	90.00 - 120.00	1.0000	1.0000
L2	10	LDF4-50A(1/2)	90.00 - 99.00	1.0000	1.0000
L3	1	Safety Line 3/8	60.00 - 90.00	1.0000	1.0000
L3	10	LDF4-50A(1/2)	60.00 - 90.00	1.0000	1.0000
L4	1	Safety Line 3/8	30.00 - 60.00	1.0000	1.0000
L4	10	LDF4-50A(1/2)	30.00 - 60.00	1.0000	1.0000
L5	1	Safety Line 3/8	0.00 - 30.00	1.0000	1.0000
L5	10	LDF4-50A(1/2)	0.00 - 30.00	1.0000	1.0000

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
147									
145									
Platform Mount [LP 502-1]	C	None		0.0000	145.00	No Ice	18.28	18.28	0.93
						1/2" Ice	23.54	23.54	1.43
						1" Ice	28.53	28.53	2.07
						2" Ice	38.85	38.85	3.71
6'x2" Mount Pipe	A	From Face	4.00 0.00 0.00	0.0000	145.00	No Ice	1.43	1.43	0.02
						1/2" Ice	1.92	1.92	0.03
						1" Ice	2.29	2.29	0.05
						2" Ice	3.06	3.06	0.09

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
6'x2" Mount Pipe	B	From Face	4.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.43 1.92 2.29 3.06	1.43 1.92 2.29 3.06	0.02 0.03 0.05 0.09
6'x2" Mount Pipe	C	From Face	4.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.43 1.92 2.29 3.06	1.43 1.92 2.29 3.06	0.02 0.03 0.05 0.09
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	A	From Face	4.00 0.00 2.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.18 0.31 0.45 0.78
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	B	From Face	4.00 0.00 2.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.18 0.31 0.45 0.78
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	C	From Face	4.00 0.00 2.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.18 0.31 0.45 0.78
AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Face	4.00 0.00 2.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.19 5.59 6.02 6.90	2.71 3.04 3.38 4.12	0.13 0.17 0.23 0.35
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Face	4.00 0.00 2.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.19 5.59 6.02 6.90	2.71 3.04 3.38 4.12	0.13 0.17 0.23 0.35
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Face	4.00 0.00 2.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.19 5.59 6.02 6.90	2.71 3.04 3.38 4.12	0.13 0.17 0.23 0.35
RADIO 4460 B2/B25 B66_TMO	A	From Face	4.00 0.00 2.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.14 2.32 2.51 2.91	1.69 1.85 2.02 2.39	0.11 0.13 0.16 0.22
RADIO 4460 B2/B25 B66_TMO	B	From Face	4.00 0.00 2.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.14 2.32 2.51 2.91	1.69 1.85 2.02 2.39	0.11 0.13 0.16 0.22
RADIO 4460 B2/B25 B66_TMO	C	From Face	4.00 0.00 2.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.14 2.32 2.51 2.91	1.69 1.85 2.02 2.39	0.11 0.13 0.16 0.22
Radio 4480_TMOV2	A	From Face	4.00 0.00 2.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.88 3.09 3.31 3.78	1.40 1.56 1.73 2.09	0.08 0.10 0.13 0.19
Radio 4480_TMOV2	B	From Face	4.00 0.00 2.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.88 3.09 3.31 3.78	1.40 1.56 1.73 2.09	0.08 0.10 0.13 0.19

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
Radio 4480_TMOV2	C	From Face	4.00 0.00 2.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.88 3.09 3.31 3.78	1.40 1.56 1.73 2.09	0.08 0.10 0.13 0.19
137									
Commscope MC-PK8-DSH	C	None		0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	34.24 62.95 91.66 149.08	34.24 62.95 91.66 149.08	1.75 2.10 2.45 3.15
(2) 8'x2" Mount Pipe	A	From Leg	3.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.90 2.73 3.40 4.40	1.90 2.73 3.40 4.40	0.03 0.04 0.06 0.12
(2) 8'x2" Mount Pipe	B	From Leg	3.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.90 2.73 3.40 4.40	1.90 2.73 3.40 4.40	0.03 0.04 0.06 0.12
(2) 8'x2" Mount Pipe	C	From Leg	3.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.90 2.73 3.40 4.40	1.90 2.73 3.40 4.40	0.03 0.04 0.06 0.12
MX08FRO665-21 w/ Mount Pipe	A	From Leg	3.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	8.01 8.52 9.04 10.11	4.23 4.69 5.16 6.12	0.11 0.19 0.29 0.52
MX08FRO665-21 w/ Mount Pipe	B	From Leg	3.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	8.01 8.52 9.04 10.11	4.23 4.69 5.16 6.12	0.11 0.19 0.29 0.52
MX08FRO665-21 w/ Mount Pipe	C	From Leg	3.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	8.01 8.52 9.04 10.11	4.23 4.69 5.16 6.12	0.11 0.19 0.29 0.52
TA08025-B604	A	From Leg	3.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.96 2.14 2.32 2.71	0.98 1.11 1.25 1.55	0.06 0.08 0.10 0.15
TA08025-B604	B	From Leg	3.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.96 2.14 2.32 2.71	0.98 1.11 1.25 1.55	0.06 0.08 0.10 0.15
TA08025-B604	C	From Leg	3.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.96 2.14 2.32 2.71	0.98 1.11 1.25 1.55	0.06 0.08 0.10 0.15
TA08025-B605	A	From Leg	3.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.96 2.14 2.32 2.71	1.13 1.27 1.41 1.72	0.08 0.09 0.11 0.16
TA08025-B605	B	From Leg	3.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice	1.96 2.14 2.32 2.71	1.13 1.27 1.41 1.72	0.08 0.09 0.11 0.16

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
						2" Ice			
TA08025-B605	C	From Leg	3.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.96 2.14 2.32 2.71	1.13 1.27 1.41 1.72	0.08 0.09 0.11 0.16
RDIDC-9181-PF-48	B	From Leg	3.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.01 2.19 2.37 2.76	1.17 1.31 1.46 1.78	0.02 0.04 0.06 0.11
130									
Side Arm Mount [SO 701-3]	C	None		0.0000	130.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.02 4.18 5.33 7.63	3.02 4.18 5.33 7.63	0.20 0.24 0.28 0.36
6'x2.5" Mount Pipe	A	From Face	3.00 0.00 -3.00	0.0000	130.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.73 2.09 2.46 3.23	1.73 2.09 2.46 3.23	0.03 0.05 0.06 0.11
6'x2.5" Mount Pipe	B	From Face	3.00 0.00 -3.00	0.0000	130.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.73 2.09 2.46 3.23	1.73 2.09 2.46 3.23	0.03 0.05 0.06 0.11
6'x2.5" Mount Pipe	C	From Face	3.00 0.00 -3.00	0.0000	130.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.73 2.09 2.46 3.23	1.73 2.09 2.46 3.23	0.03 0.05 0.06 0.11
99									
Side Arm Mount [SO 701-1]	C	From Face	1.50 0.00 0.00	0.0000	99.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.85 1.14 1.43 2.01	1.67 2.34 3.01 4.35	0.07 0.08 0.09 0.12
KS24019-L112A	C	From Face	3.00 0.00 1.00	0.0000	99.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.14 0.20 0.26 0.41	0.14 0.20 0.26 0.41	0.01 0.01 0.01 0.02
93									
Pipe Mount [PM 502-3]	C	None		0.0000	93.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.30 8.95 11.22 15.79	6.30 8.95 11.22 15.79	0.30 0.39 0.52 0.89
6'x2.5" Mount Pipe	A	From Leg	3.00 0.00 0.00	0.0000	93.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.73 2.09 2.46 3.23	1.73 2.09 2.46 3.23	0.03 0.05 0.06 0.11
BA6312-1	A	From Leg	3.00 0.00 7.00	0.0000	93.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.44 0.90 1.20 1.77	0.44 0.90 1.20 1.77	0.00 0.01 0.01 0.04
101D-90-06-0-03	C	From Leg	3.00 0.00 6.00	0.0000	93.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.50 4.54 5.30 6.53	3.50 4.54 5.30 6.53	0.04 0.07 0.10 0.18
59									

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
Side Arm Mount [SO 304-1]	A	From Leg	1.00 0.00 0.00	0.0000	59.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.31 0.50 0.73 1.29	0.88 1.26 1.67 2.58	0.02 0.03 0.05 0.09
Side Arm Mount [SO 304-1]	B	From Leg	1.00 0.00 0.00	0.0000	59.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.31 0.50 0.73 1.29	0.88 1.26 1.67 2.58	0.02 0.03 0.05 0.09
Side Arm Mount [SO 701-1]	C	From Leg	1.50 0.00 0.00	0.0000	59.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.85 1.14 1.43 2.01	1.67 2.34 3.01 4.35	0.07 0.08 0.09 0.12
2.5'x2" Mount Pipe	C	From Leg	3.00 0.00 0.00	0.0000	59.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.46 0.62 0.78 1.15	0.46 0.62 0.78 1.15	0.01 0.01 0.02 0.04
SC381-L ***	C	From Leg	3.00 0.00 7.00	0.0000	59.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.46 7.38 8.76 10.39	5.46 7.38 8.76 10.39	0.06 0.10 0.15 0.28

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
VHLP3-11W	A	Paraboloid w/Shroud (HP)	From Leg	2.00 0.00 2.00	0.0000		59.00	3.28	No Ice 1/2" Ice 1" Ice 2" Ice	8.47 8.90 9.34 10.21	0.05 0.10 0.14 0.24
VHLP3-11W ***	B	Paraboloid w/Shroud (HP)	From Leg	2.00 0.00 2.00	0.0000		59.00	3.28	No Ice 1/2" Ice 1" Ice 2" Ice	8.47 8.90 9.34 10.21	0.05 0.10 0.14 0.24

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

Comb. No.	Description
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
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	150 - 120	Pole	Max Tension	20	0.00	-0.00	0.00
			Max. Compression	26	-21.38	-0.54	-0.13
			Max. Mx	8	-8.80	-162.23	-0.28
			Max. My	14	-8.80	-0.32	-161.94
			Max. Vy	20	-8.12	162.06	0.20
			Max. Vx	14	8.11	-0.32	-161.94
			Max. Torque	17			0.16
L2	120 - 90	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-30.00	-0.05	-0.30
			Max. Mx	20	-14.11	436.96	0.45
			Max. My	14	-14.12	-0.58	-436.10
			Max. Vy	20	-10.49	436.96	0.45
			Max. Vx	14	10.44	-0.58	-436.10
			Max. Torque	24			0.35
L3	90 - 60	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39.02	-0.96	-0.04
			Max. Mx	8	-19.99	-780.87	-1.26
			Max. My	14	-19.99	-1.29	-778.67
			Max. Vy	20	-12.89	780.79	1.13

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	14	12.90	-1.29	-778.67
			Max. Torque	17			0.41
L4	60 - 30	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-49.29	0.22	-1.00
			Max. Mx	20	-26.91	1202.58	5.74
			Max. My	14	-26.91	-4.73	-1200.72
			Max. Vy	20	-14.88	1202.58	5.74
			Max. Vx	14	14.89	-4.73	-1200.72
			Max. Torque	24			0.78
L5	30 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.59	0.04	-1.13
			Max. Mx	20	-35.68	1669.22	10.59
			Max. My	14	-35.68	-8.60	-1667.83
			Max. Vy	20	-16.19	1669.22	10.59
			Max. Vx	14	16.21	-8.60	-1667.83
			Max. Torque	24			0.78

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	32	60.59	-2.85	-4.93
	Max. H_x	20	35.68	16.17	0.16
	Max. H_z	2	35.68	0.20	16.14
	Max. M_x	2	1663.62	0.20	16.14
	Max. M_z	8	1664.06	-16.10	-0.08
	Max. Torsion	24	0.78	8.16	14.04
	Min. Vert	5	26.76	-7.99	13.93
	Min. H_x	8	35.68	-16.10	-0.08
	Min. H_z	14	35.68	-0.13	-16.19
	Min. M_x	14	-1667.83	-0.13	-16.19
	Min. M_z	20	-1669.22	16.17	0.16
	Min. Torsion	12	-0.78	-8.12	-14.06

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	29.74	0.00	0.00	0.34	0.30	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	35.68	-0.20	-16.14	-1663.62	13.57	-0.64
0.9 Dead+1.0 Wind 0 deg - No Ice	26.76	-0.20	-16.14	-1645.83	13.38	-0.64
1.2 Dead+1.0 Wind 30 deg - No Ice	35.68	7.99	-13.93	-1437.58	-826.84	-0.06
0.9 Dead+1.0 Wind 30 deg - No Ice	26.76	7.99	-13.93	-1422.21	-818.01	-0.06
1.2 Dead+1.0 Wind 60 deg - No Ice	35.68	13.92	-8.01	-826.93	-1438.99	0.07
0.9 Dead+1.0 Wind 60 deg - No Ice	26.76	13.92	-8.01	-818.12	-1423.57	0.07
1.2 Dead+1.0 Wind 90 deg - No Ice	35.68	16.10	0.08	6.21	-1664.06	0.18
0.9 Dead+1.0 Wind 90 deg - No Ice	26.76	16.10	0.08	6.05	-1646.23	0.18
1.2 Dead+1.0 Wind 120 deg - No Ice	35.68	13.93	8.24	843.88	-1440.48	0.71
0.9 Dead+1.0 Wind 120 deg - No Ice	26.76	13.93	8.24	834.73	-1425.04	0.71

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 150 deg - No Ice	35.68	8.12	14.06	1447.42	-837.16	0.78
0.9 Dead+1.0 Wind 150 deg - No Ice	26.76	8.12	14.06	1431.76	-828.24	0.78
1.2 Dead+1.0 Wind 180 deg - No Ice	35.68	0.13	16.19	1667.83	-8.60	0.47
0.9 Dead+1.0 Wind 180 deg - No Ice	26.76	0.13	16.19	1649.80	-8.63	0.47
1.2 Dead+1.0 Wind 210 deg - No Ice	35.68	-7.95	14.04	1444.87	825.27	0.01
0.9 Dead+1.0 Wind 210 deg - No Ice	26.76	-7.95	14.04	1429.23	816.26	0.01
1.2 Dead+1.0 Wind 240 deg - No Ice	35.68	-13.95	8.02	828.78	1441.46	-0.07
0.9 Dead+1.0 Wind 240 deg - No Ice	26.76	-13.95	8.02	819.74	1425.84	-0.07
1.2 Dead+1.0 Wind 270 deg - No Ice	35.68	-16.17	-0.16	-10.59	1669.22	-0.13
0.9 Dead+1.0 Wind 270 deg - No Ice	26.76	-16.17	-0.16	-10.62	1651.17	-0.13
1.2 Dead+1.0 Wind 300 deg - No Ice	35.68	-14.01	-8.21	-841.05	1446.25	-0.54
0.9 Dead+1.0 Wind 300 deg - No Ice	26.76	-14.01	-8.21	-832.14	1430.58	-0.54
1.2 Dead+1.0 Wind 330 deg - No Ice	35.68	-8.16	-14.04	-1445.22	840.23	-0.78
0.9 Dead+1.0 Wind 330 deg - No Ice	26.76	-8.16	-14.04	-1429.79	831.11	-0.78
1.2 Dead+1.0 Ice+1.0 Temp	60.59	0.00	0.00	1.13	0.04	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	60.59	-0.04	-5.67	-617.34	2.67	-0.25
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	60.59	2.82	-4.90	-533.82	-308.65	-0.09
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	60.59	4.90	-2.82	-307.07	-535.98	0.01
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	60.59	5.67	0.02	2.46	-619.42	0.11
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	60.59	4.91	2.87	312.84	-536.35	0.26
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	60.59	2.85	4.93	538.15	-310.80	0.30
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	60.59	0.03	5.68	620.50	-1.80	0.22
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	60.59	-2.81	4.92	537.58	308.25	0.08
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	60.59	-4.91	2.82	309.76	536.36	-0.01
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	60.59	-5.68	-0.03	-0.97	620.32	-0.10
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	60.59	-4.92	-2.86	-309.95	537.37	-0.23
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	60.59	-2.86	-4.92	-535.39	311.30	-0.30
Dead+Wind 0 deg - Service	29.74	-0.04	-3.50	-358.55	3.16	-0.15
Dead+Wind 30 deg - Service	29.74	1.73	-3.03	-309.79	-178.10	-0.02
Dead+Wind 60 deg - Service	29.74	3.02	-1.74	-178.09	-310.13	0.01
Dead+Wind 90 deg - Service	29.74	3.50	0.02	1.60	-358.67	0.05
Dead+Wind 120 deg - Service	29.74	3.03	1.79	182.27	-310.45	0.17
Dead+Wind 150 deg - Service	29.74	1.76	3.05	312.44	-180.33	0.18
Dead+Wind 180 deg - Service	29.74	0.03	3.52	359.98	-1.63	0.11
Dead+Wind 210 deg - Service	29.74	-1.73	3.05	311.89	178.22	0.01
Dead+Wind 240 deg - Service	29.74	-3.03	1.74	179.01	311.12	-0.01
Dead+Wind 270 deg - Service	29.74	-3.51	-0.03	-2.03	360.24	-0.04

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+Wind 300 deg - Service	29.74	-3.04	-1.78	-181.14	312.15	-0.13
Dead+Wind 330 deg - Service	29.74	-1.77	-3.05	-311.44	181.45	-0.18

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	0.00	-29.74	0.00	0.00	29.74	0.00	0.000%
2	-0.20	-35.68	-16.14	0.20	35.68	16.14	0.000%
3	-0.20	-26.76	-16.14	0.20	26.76	16.14	0.000%
4	7.99	-35.68	-13.93	-7.99	35.68	13.93	0.000%
5	7.99	-26.76	-13.93	-7.99	26.76	13.93	0.000%
6	13.92	-35.68	-8.01	-13.92	35.68	8.01	0.000%
7	13.92	-26.76	-8.01	-13.92	26.76	8.01	0.000%
8	16.10	-35.68	0.08	-16.10	35.68	-0.08	0.000%
9	16.10	-26.76	0.08	-16.10	26.76	-0.08	0.000%
10	13.93	-35.68	8.24	-13.93	35.68	-8.24	0.000%
11	13.93	-26.76	8.24	-13.93	26.76	-8.24	0.000%
12	8.12	-35.68	14.06	-8.12	35.68	-14.06	0.000%
13	8.12	-26.76	14.06	-8.12	26.76	-14.06	0.000%
14	0.13	-35.68	16.19	-0.13	35.68	-16.19	0.000%
15	0.13	-26.76	16.19	-0.13	26.76	-16.19	0.000%
16	-7.95	-35.68	14.04	7.95	35.68	-14.04	0.000%
17	-7.95	-26.76	14.04	7.95	26.76	-14.04	0.000%
18	-13.95	-35.68	8.02	13.95	35.68	-8.02	0.000%
19	-13.95	-26.76	8.02	13.95	26.76	-8.02	0.000%
20	-16.17	-35.68	-0.16	16.17	35.68	0.16	0.000%
21	-16.17	-26.76	-0.16	16.17	26.76	0.16	0.000%
22	-14.01	-35.68	-8.21	14.01	35.68	8.21	0.000%
23	-14.01	-26.76	-8.21	14.01	26.76	8.21	0.000%
24	-8.16	-35.68	-14.04	8.16	35.68	14.04	0.000%
25	-8.16	-26.76	-14.04	8.16	26.76	14.04	0.000%
26	0.00	-60.59	0.00	0.00	60.59	0.00	0.000%
27	-0.04	-60.59	-5.67	0.04	60.59	5.67	0.000%
28	2.82	-60.59	-4.90	-2.82	60.59	4.90	0.000%
29	4.90	-60.59	-2.82	-4.90	60.59	2.82	0.000%
30	5.67	-60.59	0.02	-5.67	60.59	-0.02	0.000%
31	4.91	-60.59	2.87	-4.91	60.59	-2.87	0.000%
32	2.85	-60.59	4.93	-2.85	60.59	-4.93	0.000%
33	0.03	-60.59	5.68	-0.03	60.59	-5.68	0.000%
34	-2.81	-60.59	4.92	2.81	60.59	-4.92	0.000%
35	-4.91	-60.59	2.82	4.91	60.59	-2.82	0.000%
36	-5.68	-60.59	-0.03	5.68	60.59	0.03	0.000%
37	-4.92	-60.59	-2.86	4.92	60.59	2.86	0.000%
38	-2.86	-60.59	-4.92	2.86	60.59	4.92	0.000%
39	-0.04	-29.74	-3.50	0.04	29.74	3.50	0.000%
40	1.73	-29.74	-3.03	-1.73	29.74	3.03	0.000%
41	3.02	-29.74	-1.74	-3.02	29.74	1.74	0.000%
42	3.50	-29.74	0.02	-3.50	29.74	-0.02	0.000%
43	3.03	-29.74	1.79	-3.03	29.74	-1.79	0.000%
44	1.76	-29.74	3.05	-1.76	29.74	-3.05	0.000%
45	0.03	-29.74	3.52	-0.03	29.74	-3.52	0.000%
46	-1.73	-29.74	3.05	1.73	29.74	-3.05	0.000%
47	-3.03	-29.74	1.74	3.03	29.74	-1.74	0.000%
48	-3.51	-29.74	-0.03	3.51	29.74	0.03	0.000%
49	-3.04	-29.74	-1.78	3.04	29.74	1.78	0.000%
50	-1.77	-29.74	-3.05	1.77	29.74	3.05	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00070609
3	Yes	4	0.00000001	0.00045166
4	Yes	5	0.00000001	0.00074661
5	Yes	5	0.00000001	0.00036675
6	Yes	5	0.00000001	0.00074452
7	Yes	5	0.00000001	0.00036559
8	Yes	4	0.00000001	0.00046107
9	Yes	4	0.00000001	0.00026539
10	Yes	5	0.00000001	0.00077505
11	Yes	5	0.00000001	0.00038050
12	Yes	5	0.00000001	0.00074465
13	Yes	5	0.00000001	0.00036480
14	Yes	4	0.00000001	0.00038963
15	Yes	4	0.00000001	0.00020868
16	Yes	5	0.00000001	0.00074822
17	Yes	5	0.00000001	0.00036711
18	Yes	5	0.00000001	0.00075411
19	Yes	5	0.00000001	0.00037018
20	Yes	4	0.00000001	0.00032578
21	Yes	4	0.00000001	0.00014765
22	Yes	5	0.00000001	0.00074918
23	Yes	5	0.00000001	0.00036713
24	Yes	5	0.00000001	0.00077311
25	Yes	5	0.00000001	0.00037953
26	Yes	4	0.00000001	0.00000001
27	Yes	5	0.00000001	0.00076933
28	Yes	5	0.00000001	0.00095324
29	Yes	5	0.00000001	0.00095426
30	Yes	5	0.00000001	0.00077286
31	Yes	5	0.00000001	0.00096597
32	Yes	5	0.00000001	0.00095992
33	Yes	5	0.00000001	0.00077314
34	Yes	5	0.00000001	0.00095835
35	Yes	5	0.00000001	0.00095885
36	Yes	5	0.00000001	0.00077232
37	Yes	5	0.00000001	0.00095554
38	Yes	5	0.00000001	0.00095990
39	Yes	4	0.00000001	0.00004985
40	Yes	4	0.00000001	0.00017489
41	Yes	4	0.00000001	0.00017309
42	Yes	4	0.00000001	0.00004556
43	Yes	4	0.00000001	0.00019175
44	Yes	4	0.00000001	0.00016981
45	Yes	4	0.00000001	0.00004671
46	Yes	4	0.00000001	0.00017688
47	Yes	4	0.00000001	0.00017991
48	Yes	4	0.00000001	0.00004478
49	Yes	4	0.00000001	0.00017114
50	Yes	4	0.00000001	0.00019137

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 120	13.596	49	0.7499	0.0005
L2	120 - 90	9.023	49	0.6663	0.0005
L3	90 - 60	5.211	49	0.5256	0.0005
L4	60 - 30	2.381	49	0.3592	0.0003
L5	30 - 0	0.623	49	0.1882	0.0001

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
145.00	Platform Mount [LP 502-1]	49	12.810	0.7382	0.0005	72467
137.00	Commscope MC-PK8-DSH	49	11.562	0.7185	0.0005	27872
130.00	Side Arm Mount [SO 701-3]	49	10.493	0.6992	0.0005	18117
99.00	Side Arm Mount [SO 701-1]	49	6.254	0.5727	0.0005	11105
93.00	Pipe Mount [PM 502-3]	49	5.549	0.5416	0.0005	10858
61.00	VHLP3-11W	49	2.460	0.3648	0.0003	10801
59.00	Side Arm Mount [SO 304-1]	49	2.304	0.3536	0.0003	10642

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 120	63.132	22	3.4845	0.0023
L2	120 - 90	41.892	22	3.0969	0.0022
L3	90 - 60	24.185	22	2.4420	0.0020
L4	60 - 30	11.049	22	1.6676	0.0014
L5	30 - 0	2.891	22	0.8729	0.0006

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
145.00	Platform Mount [LP 502-1]	22	59.481	3.4301	0.0023	15739
137.00	Commscope MC-PK8-DSH	22	53.686	3.3388	0.0023	6052
130.00	Side Arm Mount [SO 701-3]	22	48.717	3.2495	0.0023	3933
99.00	Side Arm Mount [SO 701-1]	22	29.031	2.6611	0.0021	2401
93.00	Pipe Mount [PM 502-3]	22	25.754	2.5163	0.0020	2346
61.00	VHLP3-11W	22	11.412	1.6937	0.0014	2327
59.00	Side Arm Mount [SO 304-1]	22	10.691	1.6415	0.0014	2293

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	150 - 120 (1)	P24x1/4	30.00	0.00	0.0	18.6532	-8.80	662.26	0.013
L2	120 - 90 (2)	P30x3/8	30.00	0.00	0.0	34.9011	-14.11	1311.06	0.011
L3	90 - 60 (3)	P36x3/8	30.00	0.00	0.0	41.9697	-19.99	1490.10	0.013
L4	60 - 30 (4)	P42x3/8	30.00	0.00	0.0	49.0383	-26.91	1668.87	0.016
L5	30 - 0 (5)	P42x1/2	30.00	0.00	0.0	65.1880	-35.68	2410.40	0.015

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	150 - 120 (1)	P24x1/4	162.38	396.68	0.409	0.00	396.68	0.000
L2	120 - 90 (2)	P30x3/8	437.19	947.86	0.461	0.00	947.86	0.000
L3	90 - 60 (3)	P36x3/8	781.32	1338.81	0.584	0.00	1338.81	0.000
L4	60 - 30 (4)	P42x3/8	1204.54	1796.56	0.670	0.00	1796.56	0.000
L5	30 - 0 (5)	P42x1/2	1673.02	2463.61	0.679	0.00	2463.61	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	150 - 120 (1)	P24x1/4	8.13	201.86	0.040	0.00	324.23	0.000
L2	120 - 90 (2)	P30x3/8	10.49	395.78	0.026	0.34	994.73	0.000
L3	90 - 60 (3)	P36x3/8	12.90	454.19	0.028	0.34	1094.28	0.000
L4	60 - 30 (4)	P42x3/8	14.94	429.27	0.035	0.54	1207.68	0.000
L5	30 - 0 (5)	P42x1/2	16.25	739.23	0.022	0.54	2419.02	0.000

Pole Interaction Design Data

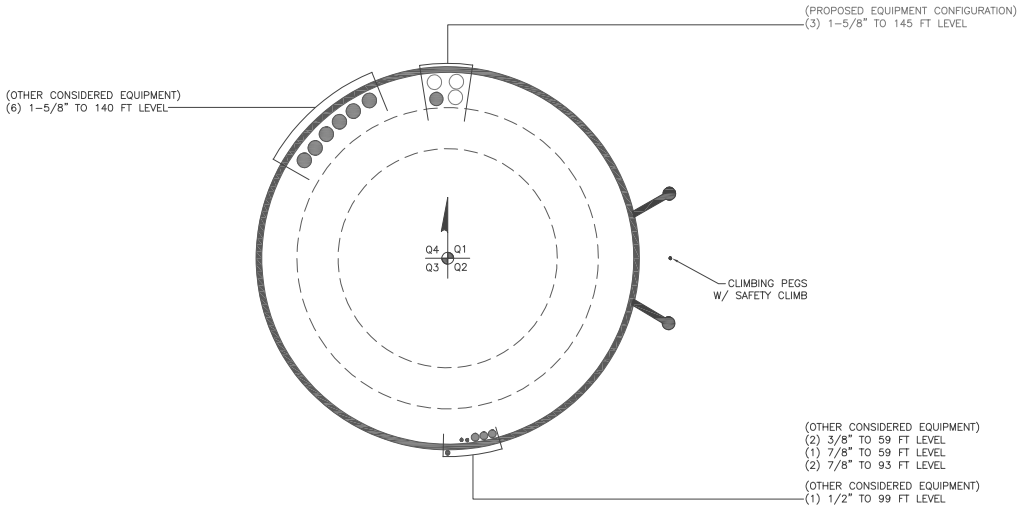
Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	150 - 120 (1)	0.013	0.409	0.000	0.040	0.000	0.424	1.050	4.8.2
L2	120 - 90 (2)	0.011	0.461	0.000	0.026	0.000	0.473	1.050	4.8.2
L3	90 - 60 (3)	0.013	0.584	0.000	0.028	0.000	0.598	1.050	4.8.2
L4	60 - 30 (4)	0.016	0.670	0.000	0.035	0.000	0.688	1.050	4.8.2
L5	30 - 0 (5)	0.015	0.679	0.000	0.022	0.000	0.694	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	150 - 120	Pole	P24x1/4	1	-8.80	695.38	40.4	Pass
L2	120 - 90	Pole	P30x3/8	2	-14.11	1376.61	45.0	Pass
L3	90 - 60	Pole	P36x3/8	3	-19.99	1564.60	56.9	Pass
L4	60 - 30	Pole	P42x3/8	4	-26.91	1752.31	65.5	Pass
L5	30 - 0	Pole	P42x1/2	5	-35.68	2530.92	66.1	Pass
							Summary	
						Pole (L5)	66.1	Pass
						RATING =	**66.1**	**Pass**

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 876330 TOWER ID: C_BASELEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

Monopole Flange Plate Connection

Elevation = 120 ft.

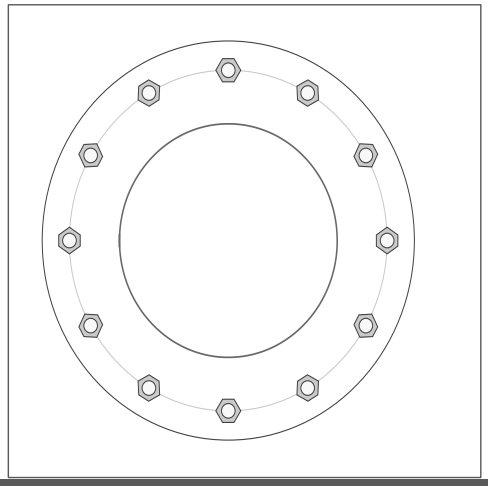
BU #	876330
Site Name	YL H.'S QUARRY SITE (A
Order #	584562 Rev.0

TIA-222 Revision	H

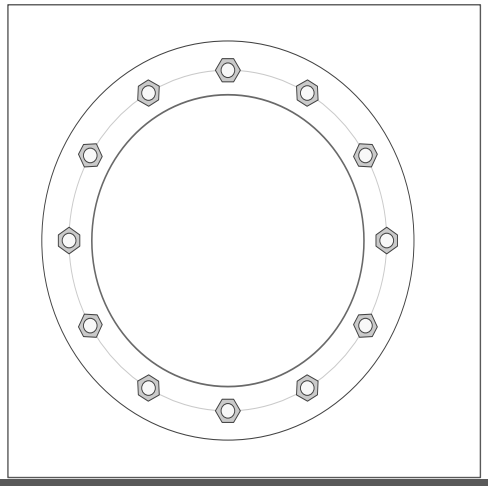
Applied Loads	
Moment (kip-ft)	162.38
Axial Force (kips)	8.80
Shear Force (kips)	8.13

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(12) 1-1/2" ø bolts (A325 N; Fy=81 ksi, Fu=120 ksi) on 35" BC

Top Plate Data

41" OD x 2" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Plate Data

41" OD x 2" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

24" x 0.25" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Bottom Pole Data

30" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	17.81	
Allowable (kips)	126.90	
Stress Rating:	**13.4%**	Pass

Top Plate Capacity

Max Stress (ksi):	-
Allowable Stress (ksi):	-
Stress Rating:	**Rohn OK**
Tension Side Stress Rating:	**Rohn OK**

Bottom Plate Capacity

Max Stress (ksi):	-
Allowable Stress (ksi):	-
Stress Rating:	**Rohn OK**
Tension Side Stress Rating:	**Rohn OK**

Monopole Flange Plate Connection

Elevation = 90 ft.

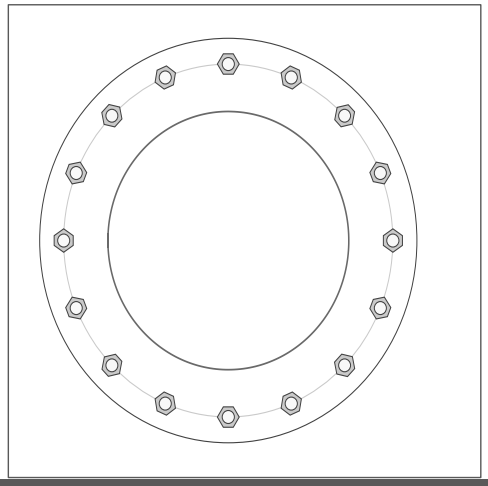
BU #	876330
Site Name	YL H.'S QUARRY SITE (A
Order #	584562 Rev.0

TIA-222 Revision	H

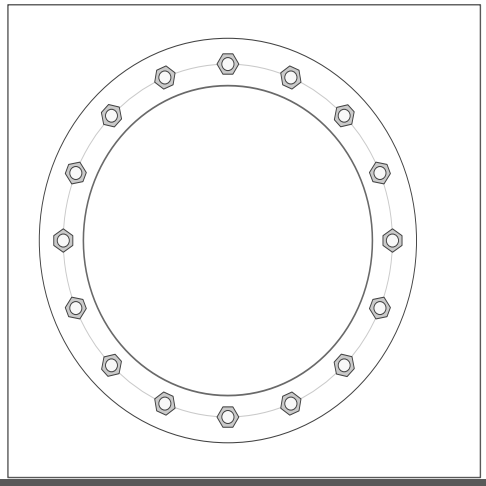
Applied Loads	
Moment (kip-ft)	437.19
Axial Force (kips)	14.11
Shear Force (kips)	10.49

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(16) 1-1/2" ø bolts (A325 N; Fy=81 ksi, Fu=120 ksi) on 41" BC

Top Plate Data

47" OD x 2" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Plate Data

47" OD x 2" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

30" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Bottom Pole Data

36" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	31.09	
Allowable (kips)	126.90	
Stress Rating:	**23.3%**	Pass

Top Plate Capacity

Max Stress (ksi):	-
Allowable Stress (ksi):	-
Stress Rating:	**Rohn OK**
Tension Side Stress Rating:	**Rohn OK**

Bottom Plate Capacity

Max Stress (ksi):	-
Allowable Stress (ksi):	-
Stress Rating:	**Rohn OK**
Tension Side Stress Rating:	**Rohn OK**

Monopole Flange Plate Connection

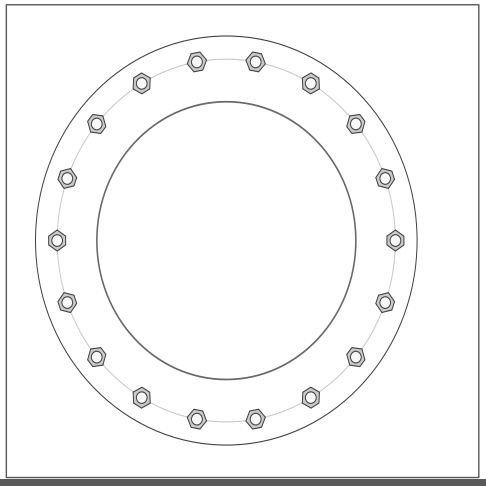
Elevation = 60 ft.

BU #	876330
Site Name	YL H.'S QUARRY SITE (A
Order #	584562 Rev.0
TIA-222 Revision	H

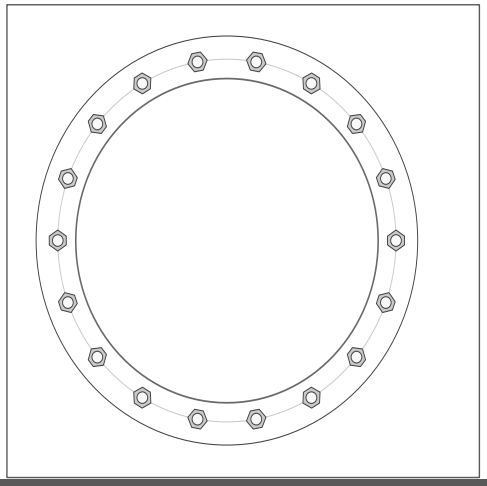
Applied Loads	
Moment (kip-ft)	781.32
Axial Force (kips)	19.99
Shear Force (kips)	12.90

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(18) 1-1/2" ø bolts (A325 N; Fy=81 ksi, Fu=120 ksi) on 47" BC

Top Plate Data

53" OD x 2" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Plate Data

53" OD x 2" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

36" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Bottom Pole Data

42" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	43.20	
Allowable (kips)	126.89	
Stress Rating:	**32.4%**	Pass

Top Plate Capacity

Max Stress (ksi):	-
Allowable Stress (ksi):	-
Stress Rating:	**Rohn OK**
Tension Side Stress Rating:	**Rohn OK**

Bottom Plate Capacity

Max Stress (ksi):	-
Allowable Stress (ksi):	-
Stress Rating:	**Rohn OK**
Tension Side Stress Rating:	**Rohn OK**

Monopole Flange Plate Connection

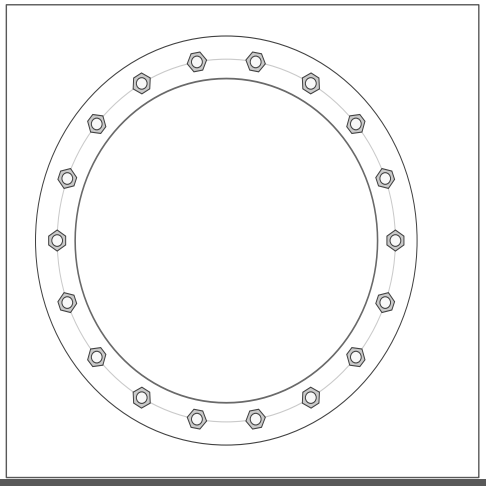
Elevation = 30 ft.

BU #	876330
Site Name	YL H.'S QUARRY SITE (A
Order #	584562 Rev.0
TIA-222 Revision	H

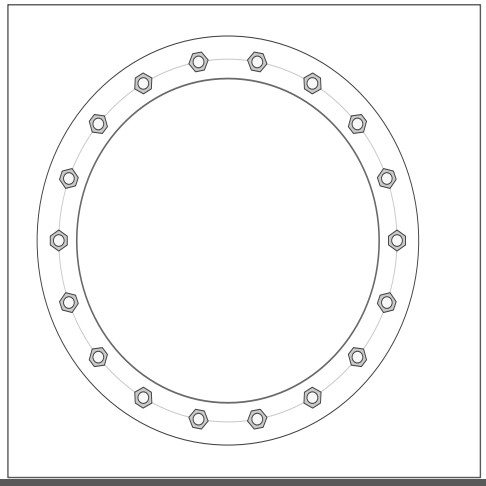
Applied Loads	
Moment (kip-ft)	1204.54
Axial Force (kips)	26.91
Shear Force (kips)	14.94

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(18) 1-1/2" ø bolts (A325 N; Fy=81 ksi, Fu=120 ksi) on 47" BC

Top Plate Data

53" OD x 2" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Plate Data

53" OD x 2" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

42" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Bottom Pole Data

42" x 0.5" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	66.82	
Allowable (kips)	126.89	
Stress Rating:	**50.2%**	Pass

Top Plate Capacity

Max Stress (ksi):	-
Allowable Stress (ksi):	-
Stress Rating:	**Rohn OK**
Tension Side Stress Rating:	**Rohn OK**

Bottom Plate Capacity

Max Stress (ksi):	-
Allowable Stress (ksi):	-
Stress Rating:	**Rohn OK**
Tension Side Stress Rating:	**Rohn OK**

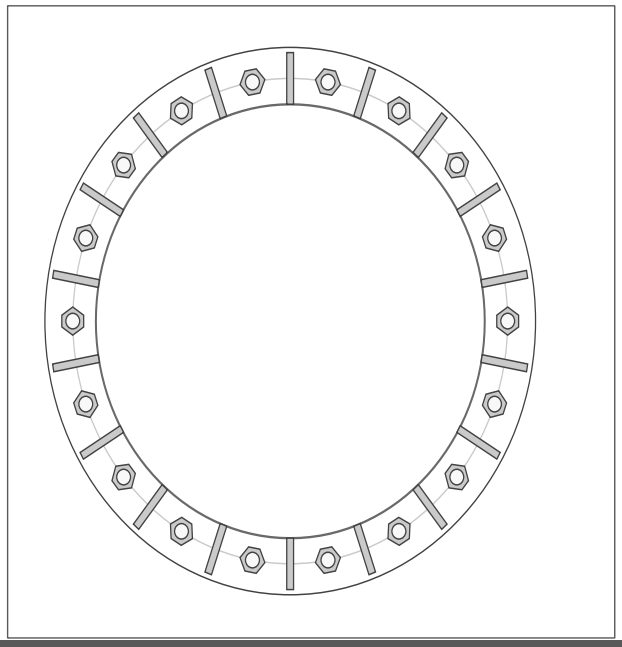
Monopole Base Plate Connection

Site Info	
BU #	876330
Site Name	/L H.'S QUARRY SITE (A
Order #	584562 Rev.0

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	1.25

Applied Loads	
Moment (kip-ft)	1673.02
Axial Force (kips)	35.68
Shear Force (kips)	16.25

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

(18) 1-1/2" ø bolts (A354-BC N; Fy=109 ksi, Fu=125 ksi) on 47" BC

Base Plate Data

53" OD x 2" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Stiffener Data

(18) 16"H x 5"W x 0.75"T, Notch: 0.75"
plate: Fy= 50 ksi ; weld: Fy= 70 ksi
horiz. weld: 0.375" groove, 45° dbl bevelFALSE
vert. weld: 0.375" fillet

Pole Data

42" x 0.5" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Analysis Results

Anchor Rod Summary		*(units of kips, kip-in)*
Pu_t = 92.9	ϕPn_t = 132.19	**Stress Rating**
Vu = 0.9	ϕVn = 82.83	**66.9%**
Mu = n/a	ϕMn = n/a	Pass

Base Plate Summary		
Max Stress (ksi):	20.17	(Roark's Flexural)
Allowable Stress (ksi):	32.4	
Stress Rating:	**59.3%**	Pass

Stiffener Summary		
Horizontal Weld:	**35.7%**	Pass
Vertical Weld:	**21.5%**	Pass
Plate Flexure+Shear:	**7.0%**	Pass
Plate Tension+Shear:	**35.9%**	Pass
Plate Compression:	**35.2%**	Pass
Pole Summary		
Punching Shear:	**6.5%**	Pass

Pier and Pad Foundation

BU # :	876330
Site Name:	DARRYL H.'S QUA
App. Number:	584562 Rev.0

TIA-222 Revision:	H
Tower Type:	Monopole

Top & Bot. Pad Rein. Different?:	☐
Block Foundation?:	☑
Rectangular Pad?:	☐

Superstructure Analysis Reactions		
Compression, P_{comp}:	35.68	kips
Base Shear, Vu_comp:	16.24	kips
Moment, M_u:	1673.02	ft-kips
Tower Height, **H**:	150	ft
BP Dist. Above Fdn, bp_{dist}:	4.75	in
Bolt Circle / Bearing Plate Width, **BC**:	47	in

Foundation Analysis Checks				
	Capacity	**Demand**	**Rating***	**Check**
Lateral (Sliding) (kips)	120.25	16.24	**12.9%**	**Pass**
Bearing Pressure (ksf)	22.50	2.87	**12.8%**	**Pass**
*Overturning (kip*ft)*	2712.97	1776.89	**65.5%**	**Pass**
*Pad Flexure (kip*ft)*	4739.72	807.46	**16.2%**	**Pass**
Pad Shear - 1-way (kips)	1231.14	66.14	**5.1%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.164	0.001	**0.7%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	9049.52	0.00	**0.0%**	**Pass**

**Rating per TIA-222-H Section 15.5*

Structural Rating*:	**16.2%**
Soil Rating*:	**65.5%**

Pad Properties		
Depth, **D**:	5.5	ft
Pad Width, W_1:	18.5	ft
Pad Thickness, **T**:	6	ft
Pad Rebar Size (Bottom dir. 2), Sp_2:	8	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	20	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties		
Rebar Grade, **Fy**:	60	ksi
Concrete Compressive Strength, **F'c**:	3	ksi
Dry Concrete Density, δ**c**:	150	pcf

Soil Properties		
Total Soil Unit Weight, γ:	115	pcf
Ultimate Gross Bearing, Qult:	30.000	ksf
Cohesion, **Cu**:	0.000	ksf
Friction Angle, φ:	33	degrees
SPT Blow Count, N_{blows}:	11	
Base Friction, μ:	0.3	
Neglected Depth, **N**:	3.33	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	N/A	ft

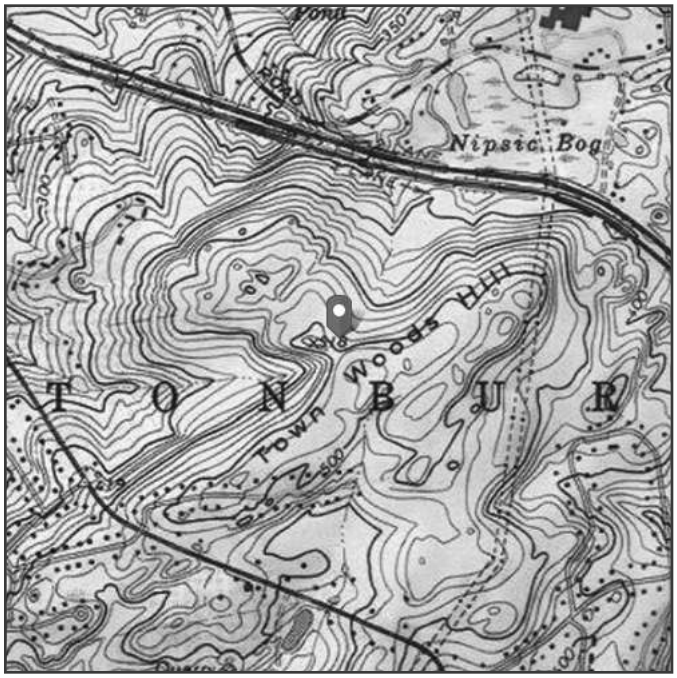
<--Toggle between Gross and Net

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 493.69 ft (NAVD 88)
Latitude: 41.692736
Longitude: -72.554964



Wind

Results:

Wind Speed:	125 Vmph
10-year MRI	77 Vmph
25-year MRI	87 Vmph
50-year MRI	94 Vmph
100-year MRI	101 Vmph

Data Accessed: Mon Aug 30 2021

Date 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

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.

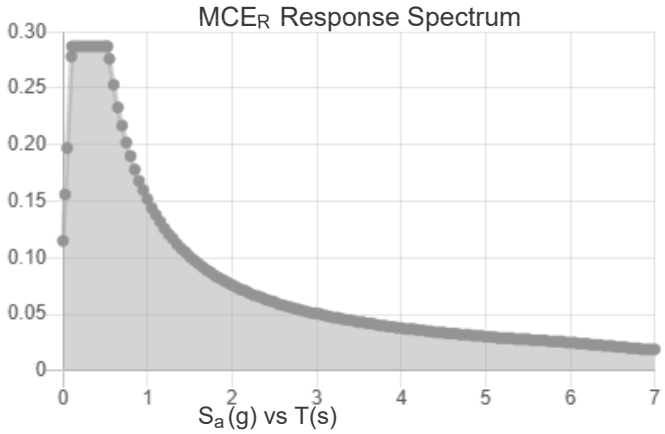
Seismic

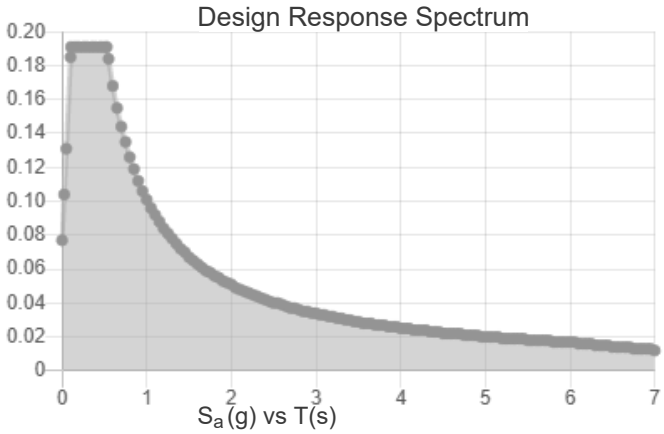
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.18	S_{DS} :	0.191
S_1 :	0.063	S_{D1} :	0.101
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.091
S_{MS} :	0.287	PGA_M :	0.145
S_{M1} :	0.152	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Mon Aug 30 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:	1.00 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Mon Aug 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 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.

Exhibit E

Mount Analysis

Date: August 26, 2021

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

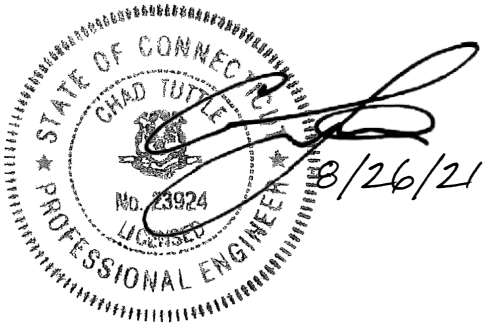
Subject:	**Mount Analysis Report**	
Carrier Designation:	**T-Mobile Equipment Change-Out**	
	Carrier Site Number:	CTHA278A
	Carrier Site Name:	CT03XC081
Crown Castle Designation:	**BU Number:**	876330
	Site Name:	Darryl H.'S Quarry Site (Above
	JDE Job Number:	684574
	Order Number:	584562, Rev.0
Engineering Firm Designation:	**B+T Group Report Designation:**	147960.004.01
Site Data:	**299 Paxton Way, Glastonbury, CT, Hartford County, 06033** **Latitude 41° 41' 33.85" Longitude -72° 33' 17.87"**	
Structure Information:	**Tower Height & Type:**	**150 ft. Monopole**
	Mount Elevation:	**145 ft.**
	Mount Type:	**12.5 ft. Platform Mount**

B+T Group is pleased to submit this **"Mount Analysis 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's stress level. Based on our analysis we have determined the stress level to be:

Platform Mount	**Sufficient**

This analysis utilizes an ultimate 3-second gust wind speed of 125 mph as required by the 2018 Connecticut State Building Code (2015 IBC). Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.



Mount structural analysis prepared by: Michael Harris

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

Chad E. Tuttle, P.E.

TABLE OF CONTENTS

1) INTRODUCTION

This is an existing 3-Sector 12.5' Platform Mount, mapped by B+T Group.

2) ANALYSIS CRITERIA

Building Code:	2015 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	125 mph
Exposure Category:	B
Topographic Factor at Base:	1
Topographic Factor at Mount:	1
Ice Thickness:	2 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.18
Seismic S_1:	0.063
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)	Qty.	Manufacturer	Model / Type	Mount / Modification Details
145	147	3	Ericsson	AIR6449 B41_T-MOBILE	12.5 ft. Platform Mount
		3	RFS/Celwave	APXVAALL24_43-U-NA20_TMO	
		3	Ericsson	RADIO 4460 B2/B25 B66_TMO	
		3	Ericsson	Radio 4480_TMOV2	

Table 2 - Documents Provided

Document	Remarks	Reference	Source
CCI Order	Existing and Proposed Equipment's	Date: 08/23/2021	Crown Castle
RFDS		Date: 08/02/2021	
Mount Mapping	B+T Group	Date: 03/15/2021	On File
Previous MA		Date: 03/25/2021	

3) ANALYSIS PROCEDURE

3.1) Analysis Method

RISA-3D (Version 19.0.4), 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.

A tool internally developed by B+T Group, 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 D).

3.2) Assumptions

1. The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design, TIA Standards, and/or manufacturer's specifications.
2. The configuration of antennas, mounts, and other appurtenances are as specified in Table-1.
3. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected members unless otherwise specified in this report.
4. Mount areas and weights are determined from field measurements, standard material properties, and/or manufacturer product data.
   The following assumptions have been included in the analysis of the mount:

Component	Section	Length	Note
Mount Pipe	2” Std. Pipe	9’-0”	Position 2, All Sectors

5. Serviceability with respect to antenna twist, tilt, roll, or lateral translation is not checked and is left to the carrier or tower owner to ensure conformance.
6. All prior structural modifications, if any, are assumed to be correctly installed and fully effective.
7. 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.
8. The following material grades were assumed (Unless Noted Otherwise):
   (a) Connection Bolts : ASTM A325
   (b) Steel Pipe : ASTM A53 (GR. 35)
   (c) HSS (Round) : ASTM 500 (GR. B-42)
   (d) HSS (Rectangular) : ASTM 500 (GR. B-46)
   (e) Channel : ASTM A36 (GR. 36)
   (f) Steel Solid Rod : ASTM A36 (GR. 36)
   (g) Steel Plate : ASTM A36 (GR. 36)
   (h) Steel Angle : ASTM A36 (GR. 36)
   (i) UNISTRUT : ASTM A570 (GR. 33)

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

4) ANALYSIS RESULTS

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

Notes	Component	Centerline (ft)	Critical Member	% Capacity	Pass / Fail
1,2	Main Horizontals	145	32	45.9	Pass
	Mount Pipes	145	100	41.5	Pass
	Support Pipes	145	36	47.5	Pass
	Verticals	145	24	33.8	Pass
	Diagonals	145	52	64.3	Pass
	Support Angles	145	99	4.6	Pass
	Connection Plates	145	92	51.0	Pass
3	Connection Bolts	145	-	56.3	Pass

Structure Rating (max from all components) =	64.3%

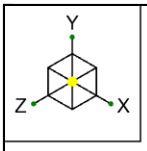
Notes:
1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
2) All sectors are typical
3) See additional documentation in "Appendix D - Additional Calculations" for calculations supporting the % capacity reported.

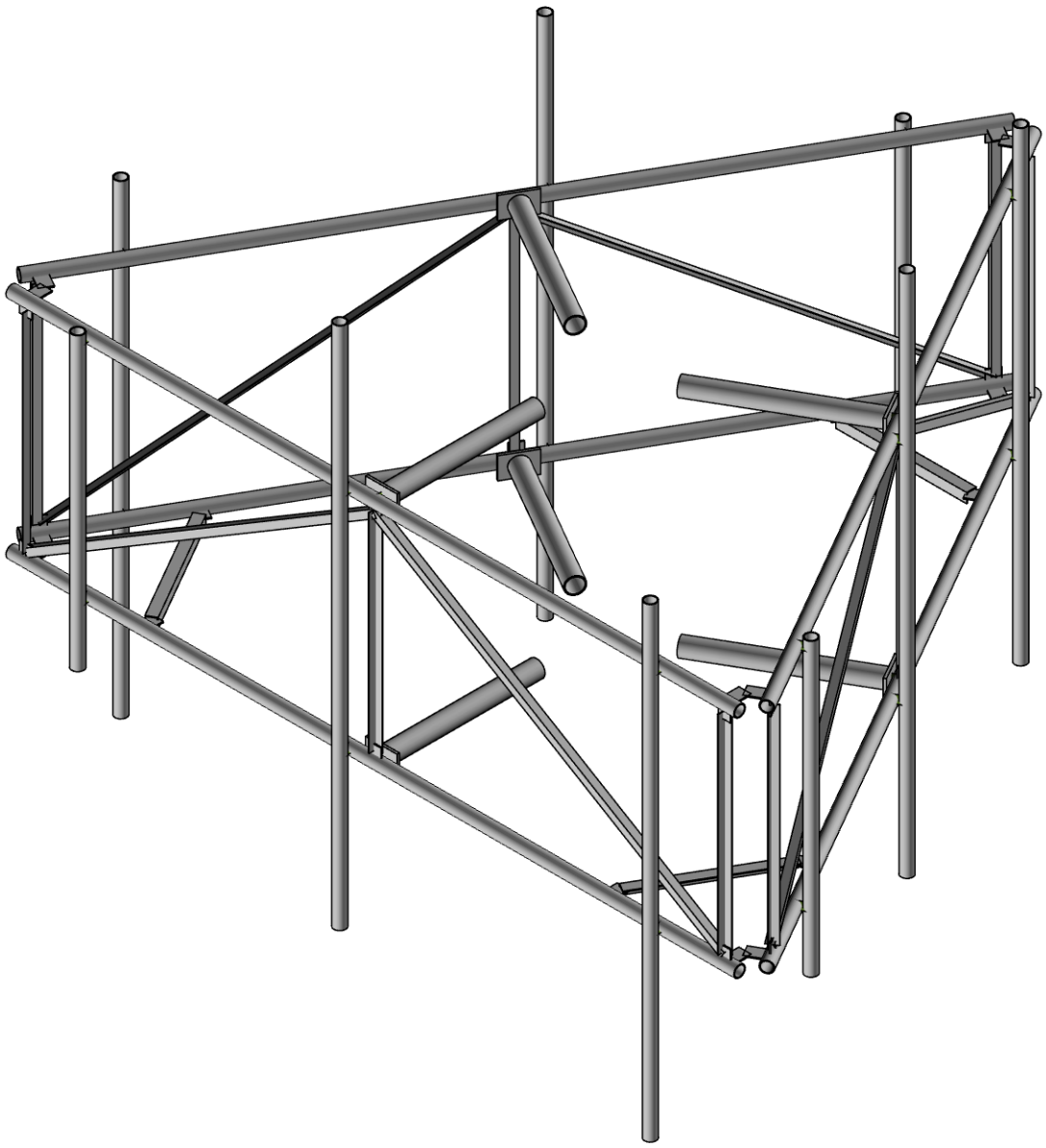
4.1) Recommendations

The mount has sufficient capacity to carry the proposed loading configuration. No modifications are required at this time.

APPENDIX A

WIRE FRAME AND RENDERED MODELS





Envelope Only Solution

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AS		Aug 26, 2021
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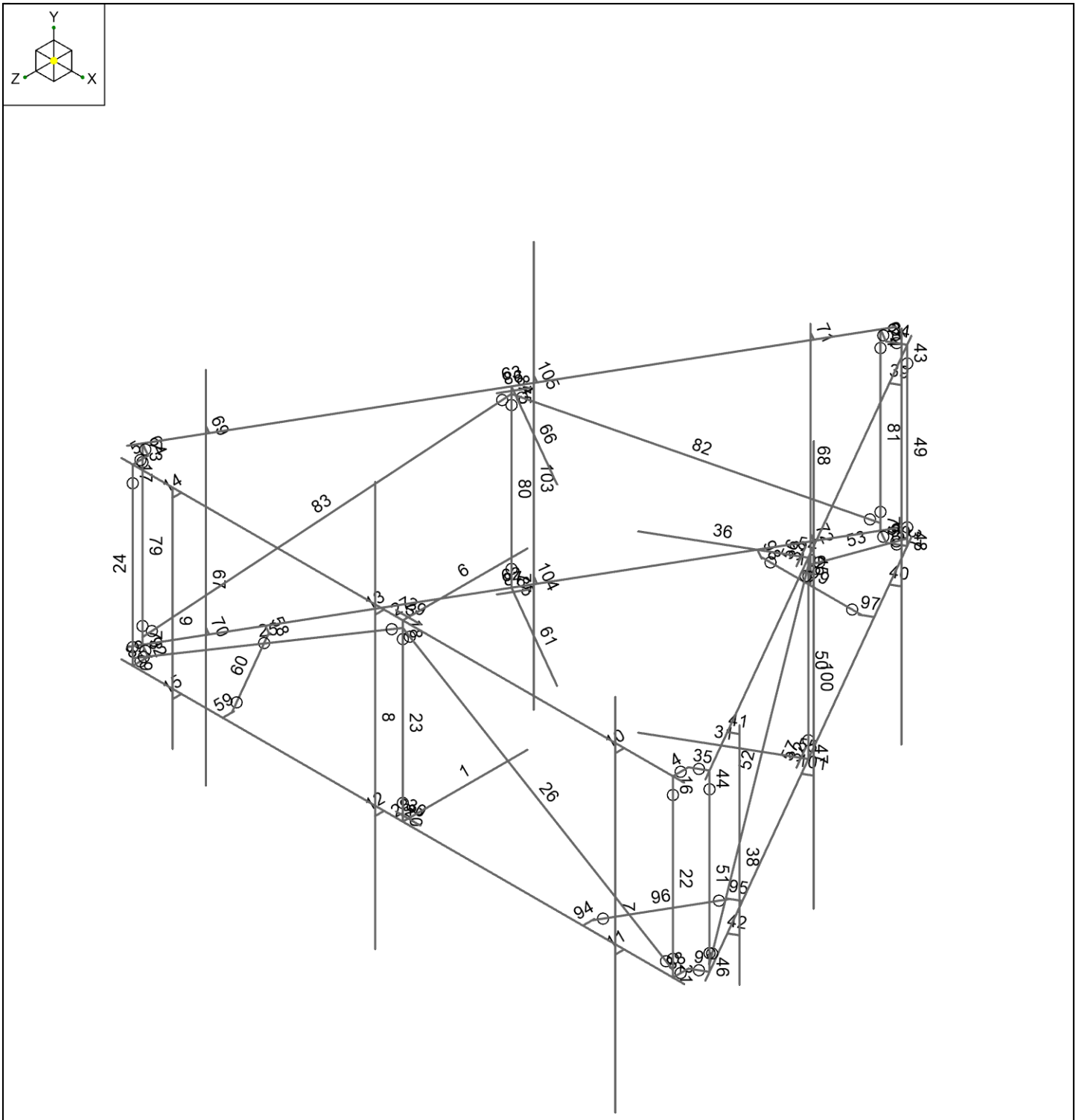

Envelope Only Solution

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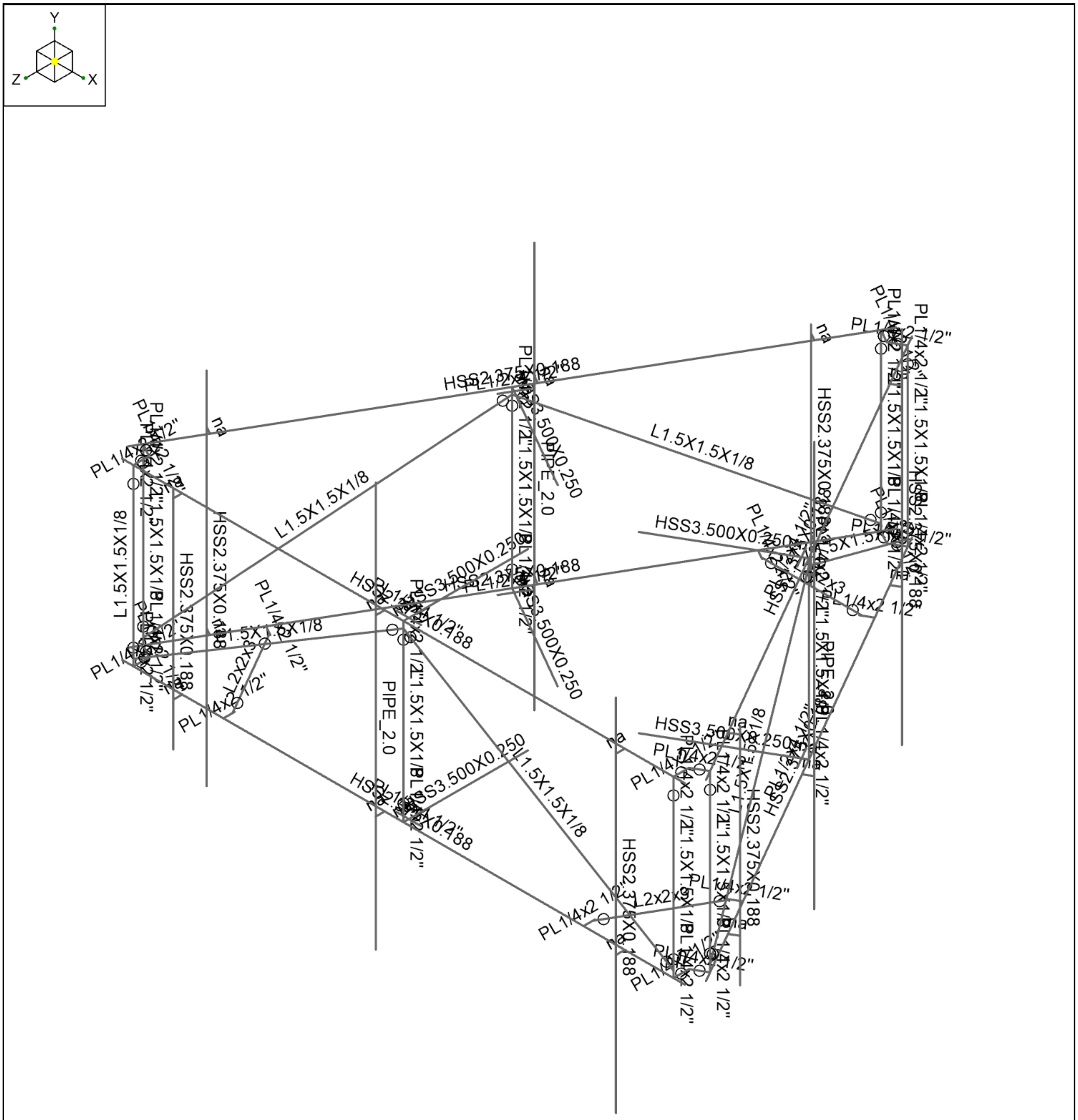

Envelope Only Solution

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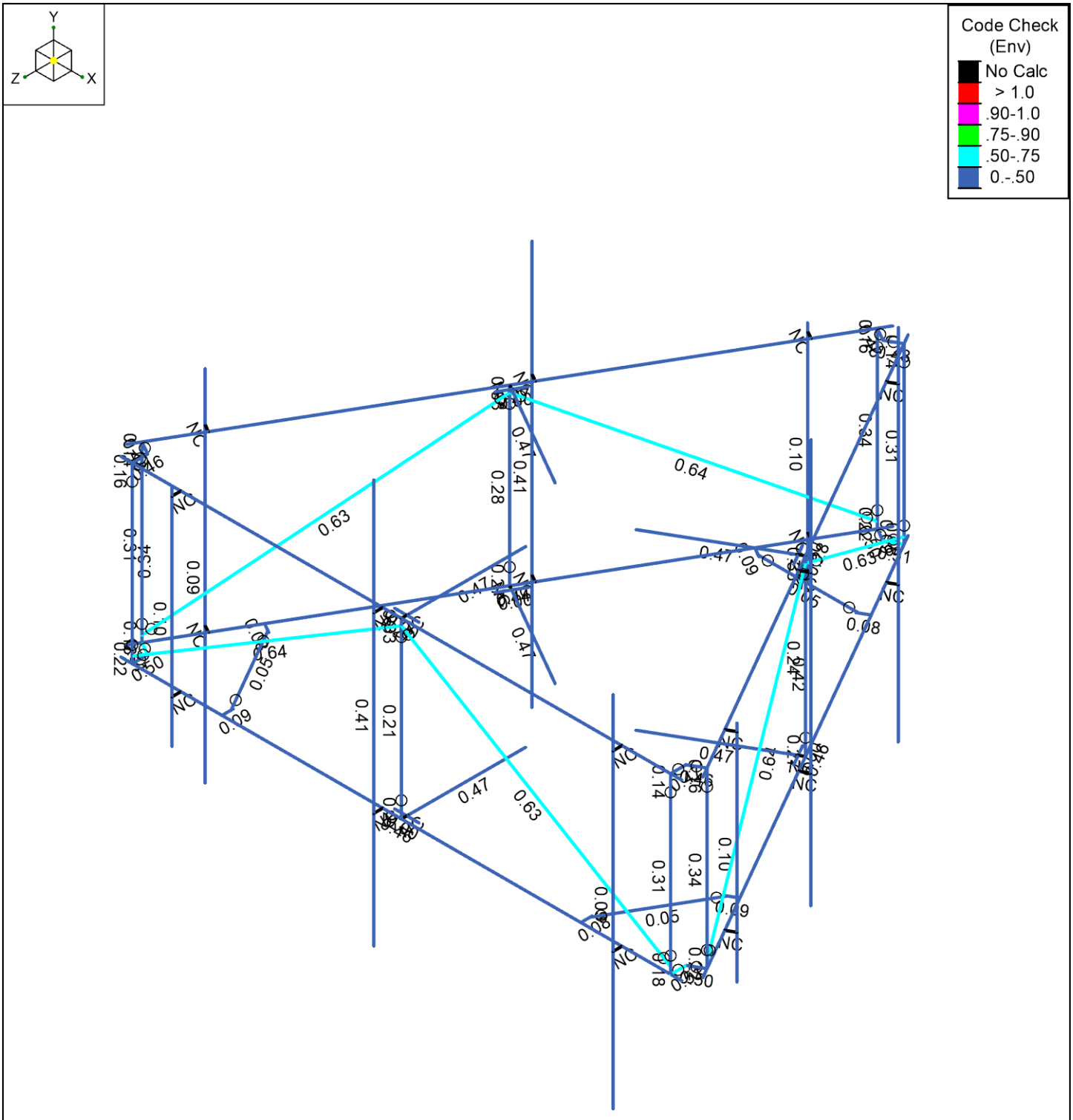

Member Code Checks Displayed (Enveloped)
Envelope Only Solution

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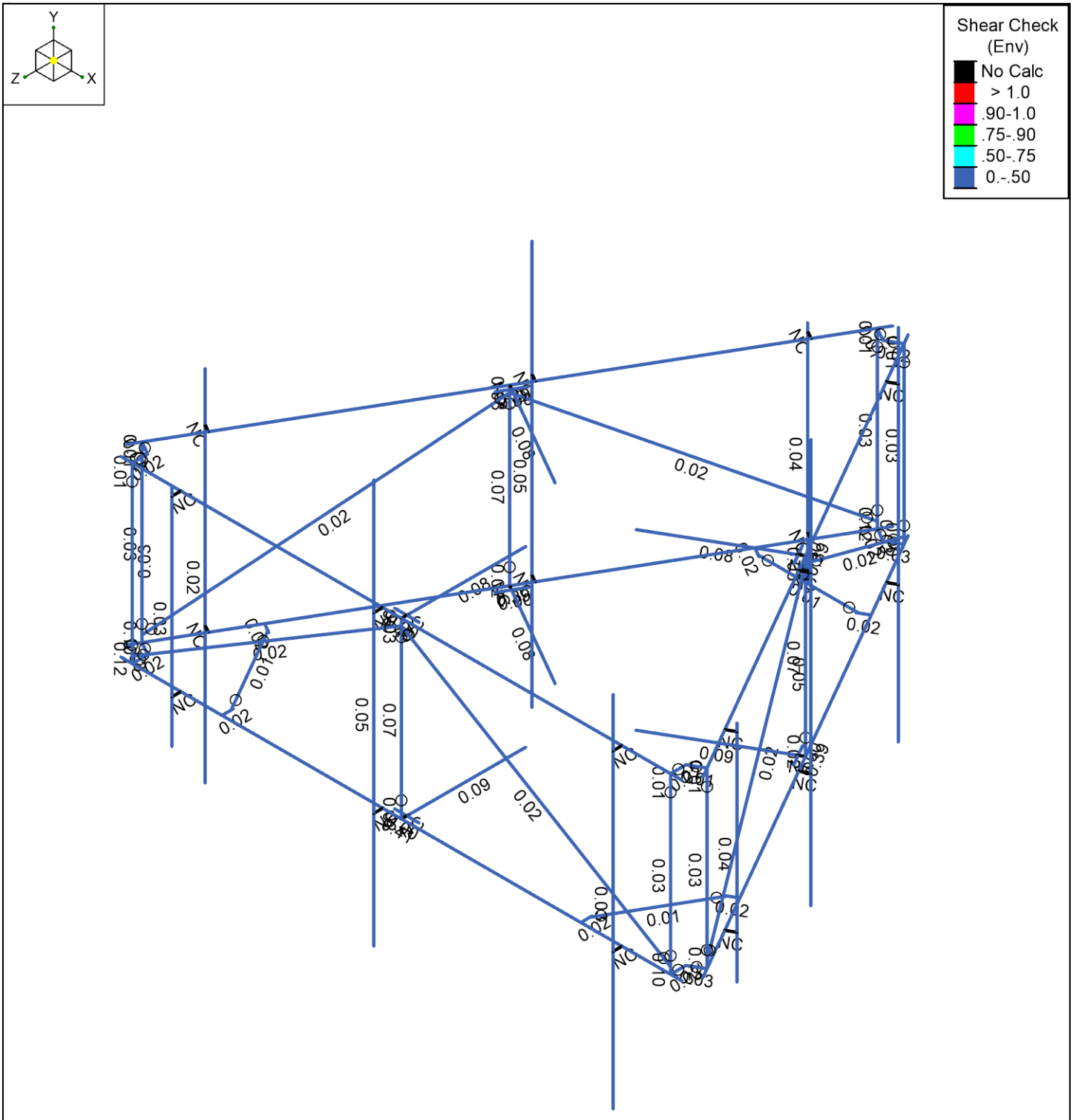


Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	876330 - Darryl H.'S Quarry Site (Above	SK-5
AS		Aug 26, 2021
147960.004.01		147960_004_01_Darryl H.'s Quarr…

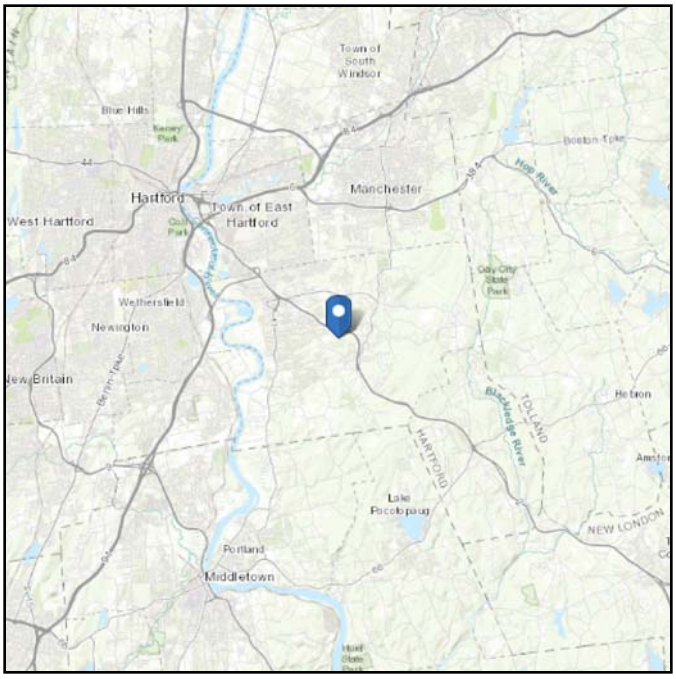
APPENDIX B

SOFTWARE INPUT CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-10	**Elevation:**	493.69 ft (NAVD 88)
Risk Category:	II	**Latitude:**	41.692736
Soil Class:	D - Stiff Soil	**Longitude:**	-72.554964



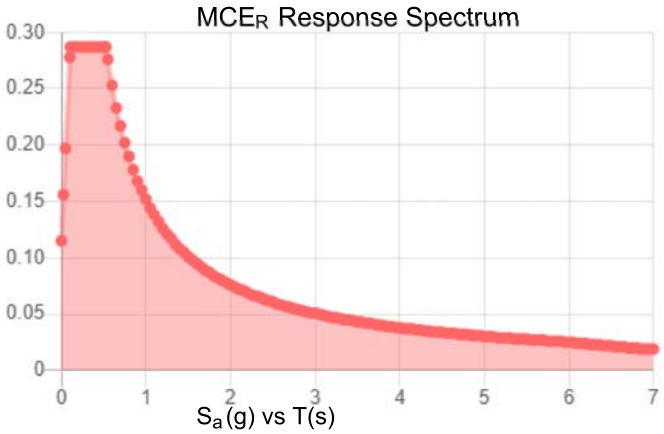
Seismic

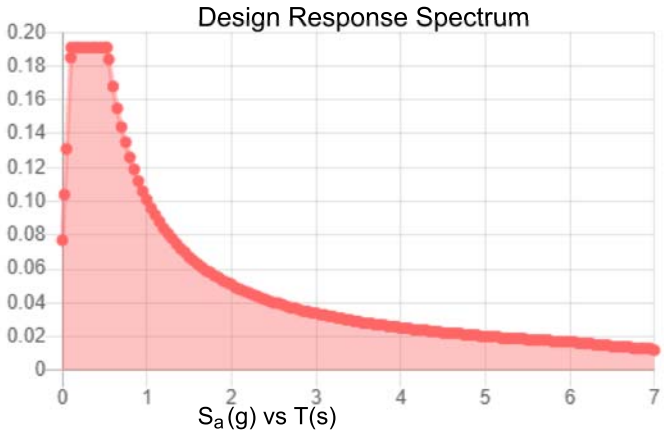
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.18	S_{DS} :	0.191
S_1 :	0.063	S_{D1} :	0.101
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.091
S_{MS} :	0.287	PGA_M :	0.145
S_{M1} :	0.152	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Thu Aug 26 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:	1.00 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Thu Aug 26 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.

PROJECT	**147960.004.01 - DARRYL H.'S**	**KSC**
SUBJECT	**Platform Mount Analysis**	
DATE	**08/26/21**	PAGE OF

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

Tower Type		:	Monopole		
Ground Elevation	z_s	:	494	ft	[ASCE7 Hazard Tool]
Tower Height		:	150.00	ft	
Mount Elevation		:	145.00	ft	
Antenna Elevation		:	147.00	ft	
Crest Height		:	0	ft	
Risk Category		:	II		[Table 2-1]
Exposure Category		:	B		[Sec. 2.6.5.1.2]
Topography Category		:	1.00		[Sec. 2.6.6.2]
Wind Velocity	V	:	125	mph	[ASCE7 Hazard Tool]
Ice wind Velocity	V_i	:	50	mph	[ASCE7 Hazard Tool]
Service Velocity	V_s	:	30	mph	[ASCE7 Hazard Tool]
Base Ice thickness	t_i	:	2.00	in	[ASCE7 Hazard Tool]
Seismic Design Cat.		:	B		[ASCE7 Hazard Tool]
	S_S	:	0.18		
	S_1	:	0.06		
	S_{DS}	:	0.19		
	S_{D1}	:	0.10		

Gust Factor	G_h	:	1.00		[Sec. 16.6]
Pressure Coefficient	K_z	:	1.10		[Sec. 2.6.5.2]
Topography Factor	K_{zt}	:	1.00		[Sec. 2.6.6]
Elevation Factor	K_e	:	0.98		[Sec. 2.6.8]
Directionality Factor	K_d	:	0.95		[Sec. 16.6]
Shielding Factor	K_a	:	0.90		[Sec. 16.6]
Design Ice Thickness	t_{iz}	:	2.32	in	[Sec. 2.6.10]

Importance Factor	I_e	:	1		[Table 2-3]
Response Coefficient	C_s	:	0.096		[Sec. 2.7.7.1]
Amplification	A_s	:	2.866667		[Sec. 16.7]

	q_z	:	41.02	psf

PROJECT	**147960.004.01 - DARRYL H.'S**		**KSC**
SUBJECT	**Platform Mount Analysis**		
DATE	**08/26/21**	PAGE	OF

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

Manufacturer	Model	Qty	Aspect Ratio	C_a flat/round	EPA_N (ft^2)	EPA_T (ft^2)	$EPA_{N\text{-}Ice}$ (ft^2)	$EPA_{T\text{-}Ice}$ (ft^2)	$F_{A\ No\ Ice\ (N)}$	$F_{A\ No\ Ice\ (T)}$	$F_{A\ Ice\ (N)}$	$F_{A\ Ice\ (T)}$
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMC	0.5	4.00	1.27	7.34	2.66	8.91	4.04	0.30	0.11	0.06	0.03
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMC	0.5	4.00	1.27	7.34	2.66	8.91	4.04	0.30	0.11	0.06	0.03
ERICSSON	Radio 4480_TMOV2	1	1.40	1.20	2.40	1.15	3.76	2.25	0.11	0.05	0.02	0.01
ERICSSON	RADIO 4460 B2/B25 B66_TMC	1	1.13	1.20	1.78	1.40	2.97	2.49	0.08	0.06	0.01	0.01
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.64	1.02	3.53	1.72	0.11	0.04	0.02	0.01
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.64	1.02	3.53	1.72	0.11	0.04	0.02	0.01
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMC	0.5	4.00	1.27	7.34	2.66	8.91	4.04	0.30	0.11	0.06	0.03
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMC	0.5	4.00	1.27	7.34	2.66	8.91	4.04	0.30	0.11	0.06	0.03
ERICSSON	Radio 4480_TMOV2	1	1.40	1.20	2.40	1.15	3.76	2.25	0.11	0.05	0.02	0.01
ERICSSON	RADIO 4460 B2/B25 B66_TMC	1	1.13	1.20	1.78	1.40	2.97	2.49	0.08	0.06	0.01	0.01
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.64	1.02	3.53	1.72	0.11	0.04	0.02	0.01
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.64	1.02	3.53	1.72	0.11	0.04	0.02	0.01
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMC	0.5	4.00	1.27	7.34	2.66	8.91	4.04	0.30	0.11	0.06	0.03
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMC	0.5	4.00	1.27	7.34	2.66	8.91	4.04	0.30	0.11	0.06	0.03
ERICSSON	Radio 4480_TMOV2	1	1.40	1.20	2.40	1.15	3.76	2.25	0.11	0.05	0.02	0.01
ERICSSON	RADIO 4460 B2/B25 B66_TMC	1	1.13	1.20	1.78	1.40	2.97	2.49	0.08	0.06	0.01	0.01
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.64	1.02	3.53	1.72	0.11	0.04	0.02	0.01
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.64	1.02	3.53	1.72	0.11	0.04	0.02	0.01

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	1	0	0	0	
2	2	0.	0	1.041667	
3	3	-6.25	0	3.807292	
4	4	6.25	0	3.807292	
5	5	-6.25	3.875	3.807292	
6	6	6.25	3.875	3.807292	
7	7	0.	3.875	1.041667	
8	8	4.916667	4.958333	4.005625	
9	9	4.916667	-3.041667	4.005625	
10	10	-0.416667	6.4375	4.005625	
11	11	-0.416667	-2.5625	4.005625	
12	12	-4.916667	4.041667	4.005625	
13	13	-4.916667	-0.958333	4.005625	
14	14	4.916667	3.875	3.807292	
15	15	4.916667	3.875	4.005625	
16	16	4.916667	0	3.807292	
17	17	4.916667	0	4.005625	
18	18	-0.416667	0	3.807292	
19	19	-0.416667	0	4.005625	
20	20	-0.416667	3.875	3.807292	
21	21	-0.416667	3.875	4.005625	
22	22	-4.916667	3.875	3.807292	
23	23	-4.916667	3.875	4.005625	
24	24	-4.916667	0	3.807292	
25	25	-4.916667	0	4.005625	
26	26	6	3.875	3.807292	
27	27	6	3.625	3.807292	
28	28	-6	3.875	3.807292	
29	29	-6	3.625	3.807292	
30	30	0.	3.875	3.807292	
31	31	0.	3.625	3.807292	
32	32	-6	0.25	3.807292	
33	33	-6	0	3.807292	
34	34	0.	0.25	3.807292	
35	35	0.	0	3.807292	
36	36	6	0.25	3.807292	
37	37	6	0	3.807292	
38	38	6	3.729167	3.807292	
39	39	0.	0.145833	3.807292	
40	40	-6	3.729167	3.807292	
41	41	-6	0.145833	3.807292	
42	42	6	0.145833	3.807292	
43	43	0.	3.729167	3.807292	
44	44	0.	3.875	3.666667	
45	45	0.	0	3.666667	
46	46	0.	3.875	3.6875	
47	47	0.	0	3.6875	
48	48	-0.27083	3.875	3.6875	
49	49	-0.27083	0	3.6875	
50	50	0.27077	3.875	3.6875	
51	51	0.27077	0	3.6875	
52	52	0.90211	0	-0.520833	
53	53	6.422211	0	3.509013	
54	54	0.172211	0	-7.316305	
55	55	6.422211	3.875	3.509013	
56	56	0.172211	3.875	-7.316305	
57	57	0.90211	3.875	-0.520833	
58	58	1.01064	4.958333	-6.260771	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
59	59	1.01064	-3.041667	-6.260771	
60	60	5.927306	4.041667	2.255146	
61	61	5.927306	-0.958333	2.255146	
62	62	0.838878	3.875	-6.161604	
63	63	1.01064	3.875	-6.260771	
64	64	0.838878	0	-6.161604	
65	65	1.01064	0	-6.260771	
66	66	5.755545	3.875	2.354312	
67	67	5.927306	3.875	2.255146	
68	68	5.755545	0	2.354312	
69	69	5.927306	0	2.255146	
70	70	0.297211	3.875	-7.099798	
71	71	0.297211	3.625	-7.099798	
72	72	6.297211	3.875	3.292507	
73	73	6.297211	3.625	3.292507	
74	74	3.297211	3.875	-1.903646	
75	75	3.297211	3.625	-1.903646	
76	76	6.297211	0.25	3.292507	
77	77	6.297211	0	3.292507	
78	78	3.297211	0.25	-1.903646	
79	79	3.297211	0	-1.903646	
80	80	0.297211	0.25	-7.099798	
81	81	0.297211	0	-7.099798	
82	82	0.297211	3.729167	-7.099798	
83	83	3.297211	0.145833	-1.903646	
84	84	6.297211	3.729167	3.292507	
85	85	6.297211	0.145833	3.292507	
86	86	0.297211	0.145833	-7.099798	
87	87	3.297211	3.729167	-1.903646	
88	88	3.175426	3.875	-1.833333	
89	89	3.175426	0	-1.833333	
90	90	3.193469	3.875	-1.84375	
91	91	3.193469	0	-1.84375	
92	92	3.328884	3.875	-1.609204	
93	93	3.328884	0	-1.609204	
94	94	3.058084	3.875	-2.078244	
95	95	3.058084	0	-2.078244	
96	96	-5.297211	0	1.560456	
97	97	-5.080705	0	1.685456	
98	98	-4	0	3.807292	
99	99	-5.121785	0	1.661738	
100	100	-0.90211	0	-0.520833	
101	101	-0.172211	0	-7.316305	
102	102	-6.422211	0	3.509013	
103	103	-0.172211	3.875	-7.316305	
104	104	-6.422211	3.875	3.509013	
105	105	-0.90211	3.875	-0.520833	
106	106	-5.927306	4.958333	2.255146	
107	107	-5.927306	-3.041667	2.255146	
108	108	-1.01064	4.041667	-6.260771	
109	109	-1.01064	-0.958333	-6.260771	
110	110	-5.755545	3.875	2.354312	
111	111	-5.927306	3.875	2.255146	
112	112	-5.755545	0	2.354312	
113	113	-5.927306	0	2.255146	
114	114	-0.838878	3.875	-6.161604	
115	115	-1.01064	3.875	-6.260771	
116	116	-0.838878	0	-6.161604	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
117	117	-1.01064	0	-6.260771	
118	118	-6.297211	3.875	3.292507	
119	119	-6.297211	3.625	3.292507	
120	120	-0.297211	3.875	-7.099798	
121	121	-0.297211	3.625	-7.099798	
122	122	-3.297211	3.875	-1.903646	
123	123	-3.297211	3.625	-1.903646	
124	124	-0.297211	0.25	-7.099798	
125	125	-0.297211	0	-7.099798	
126	126	-3.297211	0.25	-1.903646	
127	127	-3.297211	0	-1.903646	
128	128	-6.297211	0.25	3.292507	
129	129	-6.297211	0	3.292507	
130	130	-6.297211	3.729167	3.292507	
131	131	-3.297211	0.145833	-1.903646	
132	132	-0.297211	3.729167	-7.099798	
133	133	-0.297211	0.145833	-7.099798	
134	134	-6.297211	0.145833	3.292507	
135	135	-3.297211	3.729167	-1.903646	
136	136	-3.175426	3.875	-1.833333	
137	137	-3.175426	0	-1.833333	
138	138	-3.193469	3.875	-1.84375	
139	139	-3.193469	0	-1.84375	
140	140	-3.058054	3.875	-2.078296	
141	141	-3.058054	0	-2.078296	
142	142	-3.328854	3.875	-1.609256	
143	143	-3.328854	0	-1.609256	
144	144	-0.	3.875	-6.928203	
145	145	6	3.875	3.464102	
146	146	-6	3.875	3.464102	
147	147	-0.	0	-6.928203	
148	148	6	0	3.464102	
149	149	-6	0	3.464102	
150	150	-4	0	3.557292	
151	151	-4	0	3.604727	
152	152	4	0	3.807292	
153	153	4	0	3.557292	
154	154	5.297211	0	1.560456	
155	155	4	0	3.604727	
156	156	5.080705	0	1.685456	
157	157	5.121785	0	1.661738	
158	158	1.297211	0	-5.367747	
159	159	1.080705	0	-5.242747	
160	160	-1.297211	0	-5.367747	
161	161	1.121785	0	-5.266465	
162	162	-1.080705	0	-5.242748	
163	163	-1.121785	0	-5.266465	
164	164	3.677306	6.4375	-1.641969	
165	165	3.677306	-2.5625	-1.641969	
166	166	3.505545	0	-1.542802	
167	167	3.677306	0	-1.641969	
168	168	3.505545	3.875	-1.542802	
169	169	3.677306	3.875	-1.641969	
170	170	-3.26064	6.4375	-2.363656	
171	171	-3.26064	-2.5625	-2.363656	
172	172	-3.088878	0	-2.26449	
173	173	-3.26064	0	-2.363656	
174	174	-3.088878	3.875	-2.26449	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
175	175	-3.26064	3.875	-2.363656	
176	176	0.871785	0	-5.266465	
177	177	-0.871785	0	-5.266465	
178	178	0.	0	-5.266465	
179	179	-4.996785	0	1.878245	
180	180	-4.125	0	3.388221	
181	181	-4.560893	0	2.633233	
182	182	4.125	0	3.388221	
183	183	4.996785	0	1.878245	
184	184	4.560893	0	2.633233	

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	105	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	57	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	7	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	2	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	52	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6	100	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
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

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	F1-H1	HSS2.375X0.188	Beam	HSS Pipe	A500 Gr.B RND	Typical	1.2	0.733	0.733	1.47
2	F1-MP1	HSS2.375X0.188	Column	HSS Pipe	A500 Gr.B RND	Typical	1.2	0.733	0.733	1.47
3	S1-P1	HSS3.500X0.250	Beam	HSS Pipe	A500 Gr.B RND	Typical	2.39	3.21	3.21	6.41
4	Verticals	L1.5X1.5X1/8	Column	Single Angle	A36 Gr.36	Typical	0.359	0.078	0.078	0.002
5	Diagonals	L1.5X1.5X1/8	VBrace	Single Angle	A36 Gr.36	Typical	0.359	0.078	0.078	0.002
6	SF-H1	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical	0.722	0.271	0.271	0.009
7	C1-PL1	PL1/2x4 1/2"	Beam	RECT	A36 Gr.36	Typical	2.25	0.047	3.797	0.174
8	C1-PL2	PL1/4x2 1/2"	Beam	RECT	A36 Gr.36	Typical	0.625	0.003	0.326	0.012
9	F1-MP2	PIPE_2.0	Column	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
10	C1-PL3	PL1/4x2 1/2"	Column	RECT	A36 Gr.36	Typical	0.625	0.003	0.326	0.012

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	1	2	45		S1-P1	Beam	HSS Pipe	A500 Gr.B RND	Typical
2	2	3	4		F1-H1	Beam	HSS Pipe	A500 Gr.B RND	Typical
3	3	5	6		F1-H1	Beam	HSS Pipe	A500 Gr.B RND	Typical
4	4	26	145	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
5	5	28	146	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
6	6	7	44		S1-P1	Beam	HSS Pipe	A500 Gr.B RND	Typical
7	7	8	9		F1-MP1	Column	HSS Pipe	A500 Gr.B RND	Typical
8	8	10	11		F1-MP2	Column	Pipe	A53 Gr.B	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
9	9	12	13		F1-MP1	Column	HSS Pipe	A500 Gr.B RND	Typical
10	10	14	15		RIGID	None	None	RIGID	Typical
11	11	16	17		RIGID	None	None	RIGID	Typical
12	12	18	19		RIGID	None	None	RIGID	Typical
13	13	20	21		RIGID	None	None	RIGID	Typical
14	14	22	23		RIGID	None	None	RIGID	Typical
15	15	24	25		RIGID	None	None	RIGID	Typical
16	16	26	27		C1-PL3	Column	RECT	A36 Gr.36	Typical
17	17	28	29		C1-PL3	Column	RECT	A36 Gr.36	Typical
18	18	30	31		C1-PL3	Column	RECT	A36 Gr.36	Typical
19	19	32	33		C1-PL3	Column	RECT	A36 Gr.36	Typical
20	20	34	35		C1-PL3	Column	RECT	A36 Gr.36	Typical
21	21	36	37		C1-PL3	Column	RECT	A36 Gr.36	Typical
22	22	38	42	180	Verticals	Column	Single Angle	A36 Gr.36	Typical
23	23	43	39	180	Verticals	Column	Single Angle	A36 Gr.36	Typical
24	24	41	40		Verticals	Column	Single Angle	A36 Gr.36	Typical
25	25	41	43	180	Diagonals	VBrace	Single Angle	A36 Gr.36	Typical
26	26	42	43	90	Diagonals	VBrace	Single Angle	A36 Gr.36	Typical
27	27	30	44		RIGID	None	None	RIGID	Typical
28	28	35	45		RIGID	None	None	RIGID	Typical
29	29	48	50		C1-PL1	Beam	RECT	A36 Gr.36	Typical
30	30	49	51		C1-PL1	Beam	RECT	A36 Gr.36	Typical
31	31	52	89		S1-P1	Beam	HSS Pipe	A500 Gr.B RND	Typical
32	32	53	54		F1-H1	Beam	HSS Pipe	A500 Gr.B RND	Typical
33	33	55	56		F1-H1	Beam	HSS Pipe	A500 Gr.B RND	Typical
34	34	70	144	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
35	35	72	145	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
36	36	57	88		S1-P1	Beam	HSS Pipe	A500 Gr.B RND	Typical
37	37	58	59		F1-MP1	Column	HSS Pipe	A500 Gr.B RND	Typical
38	38	60	61		F1-MP1	Column	HSS Pipe	A500 Gr.B RND	Typical
39	39	62	63		RIGID	None	None	RIGID	Typical
40	40	64	65		RIGID	None	None	RIGID	Typical
41	41	66	67		RIGID	None	None	RIGID	Typical
42	42	68	69		RIGID	None	None	RIGID	Typical
43	43	70	71	240	C1-PL3	Column	RECT	A36 Gr.36	Typical
44	44	72	73	240	C1-PL3	Column	RECT	A36 Gr.36	Typical
45	45	74	75	240	C1-PL3	Column	RECT	A36 Gr.36	Typical
46	46	76	77	240	C1-PL3	Column	RECT	A36 Gr.36	Typical
47	47	78	79	240	C1-PL3	Column	RECT	A36 Gr.36	Typical
48	48	80	81	240	C1-PL3	Column	RECT	A36 Gr.36	Typical
49	49	82	86	60	Verticals	Column	Single Angle	A36 Gr.36	Typical
50	50	87	83	60	Verticals	Column	Single Angle	A36 Gr.36	Typical
51	51	84	85	150	Verticals	Column	Single Angle	A36 Gr.36	Typical
52	52	85	87	180	Diagonals	VBrace	Single Angle	A36 Gr.36	Typical
53	53	86	87	90	Diagonals	VBrace	Single Angle	A36 Gr.36	Typical
54	54	74	88		RIGID	None	None	RIGID	Typical
55	55	79	89		RIGID	None	None	RIGID	Typical
56	56	92	94		C1-PL1	Beam	RECT	A36 Gr.36	Typical
57	57	93	95		C1-PL1	Beam	RECT	A36 Gr.36	Typical
58	58	96	97	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
59	59	98	150	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
60	60	99	151	90	SF-H1	Beam	Single Angle	A36 Gr.36	Typical
61	61	100	137		S1-P1	Beam	HSS Pipe	A500 Gr.B RND	Typical
62	62	101	102		F1-H1	Beam	HSS Pipe	A500 Gr.B RND	Typical
63	63	103	104		F1-H1	Beam	HSS Pipe	A500 Gr.B RND	Typical
64	64	118	146	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
65	65	120	144	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
66	66	105	136		S1-P1	Beam	HSS Pipe	A500 Gr.B RND	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
67	67	106	107		F1-MP1	Column	HSS Pipe	A500 Gr.B RND	Typical
68	68	108	109		F1-MP1	Column	HSS Pipe	A500 Gr.B RND	Typical
69	69	110	111		RIGID	None	None	RIGID	Typical
70	70	112	113		RIGID	None	None	RIGID	Typical
71	71	114	115		RIGID	None	None	RIGID	Typical
72	72	116	117		RIGID	None	None	RIGID	Typical
73	73	118	119	120	C1-PL3	Column	RECT	A36 Gr.36	Typical
74	74	120	121	120	C1-PL3	Column	RECT	A36 Gr.36	Typical
75	75	122	123	120	C1-PL3	Column	RECT	A36 Gr.36	Typical
76	76	124	125	120	C1-PL3	Column	RECT	A36 Gr.36	Typical
77	77	126	127	120	C1-PL3	Column	RECT	A36 Gr.36	Typical
78	78	128	129	120	C1-PL3	Column	RECT	A36 Gr.36	Typical
79	79	130	134	300	Verticals	Column	Single Angle	A36 Gr.36	Typical
80	80	135	131	300	Verticals	Column	Single Angle	A36 Gr.36	Typical
81	81	132	133	30	Verticals	Column	Single Angle	A36 Gr.36	Typical
82	82	133	135	180	Diagonals	VBrace	Single Angle	A36 Gr.36	Typical
83	83	134	135	90	Diagonals	VBrace	Single Angle	A36 Gr.36	Typical
84	84	122	136		RIGID	None	None	RIGID	Typical
85	85	127	137		RIGID	None	None	RIGID	Typical
86	86	140	142		C1-PL1	Beam	RECT	A36 Gr.36	Typical
87	87	141	143		C1-PL1	Beam	RECT	A36 Gr.36	Typical
88	88	37	148	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
89	89	33	149	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
90	90	81	147	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
91	91	77	148	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
92	92	129	149	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
93	93	125	147	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
94	94	152	153	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
95	95	154	156	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
96	96	155	157	90	SF-H1	Beam	Single Angle	A36 Gr.36	Typical
97	97	158	159	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
98	98	160	162	90	C1-PL2	Beam	RECT	A36 Gr.36	Typical
99	99	161	163	90	SF-H1	Beam	Single Angle	A36 Gr.36	Typical
100	100	164	165		F1-MP2	Column	Pipe	A53 Gr.B	Typical
101	101	166	167		RIGID	None	None	RIGID	Typical
102	102	168	169		RIGID	None	None	RIGID	Typical
103	103	170	171		F1-MP2	Column	Pipe	A53 Gr.B	Typical
104	104	172	173		RIGID	None	None	RIGID	Typical
105	105	174	175		RIGID	None	None	RIGID	Typical

Member Advanced Data

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
1	1			Yes		None
2	2			Yes		None
3	3			Yes		None
4	4		BenPIN	Yes	Default	None
5	5		BenPIN	Yes	Default	None
6	6			Yes	Default	None
7	7			Yes	** NA **	None
8	8			Yes	** NA **	None
9	9			Yes	** NA **	None
10	10			Yes	** NA **	None
11	11			Yes	** NA **	None
12	12			Yes	** NA **	None
13	13			Yes	** NA **	None
14	14			Yes	** NA **	None
15	15			Yes	** NA **	None
16	16			Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
17	17			Yes	** NA **	None
18	18			Yes	** NA **	None
19	19			Yes	** NA **	None
20	20			Yes	** NA **	None
21	21			Yes	** NA **	None
22	22	BenPIN	BenPIN	Yes	** NA **	None
23	23	BenPIN	BenPIN	Yes	** NA **	None
24	24	BenPIN	BenPIN	Yes	** NA **	None
25	25	BenPIN	BenPIN	Yes	** NA **	None
26	26	BenPIN	BenPIN	Yes	** NA **	None
27	27			Yes	** NA **	None
28	28			Yes	** NA **	None
29	29			Yes		None
30	30			Yes		None
31	31			Yes		None
32	32			Yes		None
33	33			Yes		None
34	34		BenPIN	Yes	Default	None
35	35		BenPIN	Yes	Default	None
36	36			Yes		None
37	37			Yes	** NA **	None
38	38			Yes	** NA **	None
39	39			Yes	** NA **	None
40	40			Yes	** NA **	None
41	41			Yes	** NA **	None
42	42			Yes	** NA **	None
43	43			Yes	** NA **	None
44	44			Yes	** NA **	None
45	45			Yes	** NA **	None
46	46			Yes	** NA **	None
47	47			Yes	** NA **	None
48	48			Yes	** NA **	None
49	49	BenPIN	BenPIN	Yes	** NA **	None
50	50	BenPIN	BenPIN	Yes	** NA **	None
51	51	BenPIN	BenPIN	Yes	** NA **	None
52	52	BenPIN	BenPIN	Yes	** NA **	None
53	53	BenPIN	BenPIN	Yes	** NA **	None
54	54			Yes	** NA **	None
55	55			Yes	** NA **	None
56	56			Yes		None
57	57			Yes		None
58	58			Yes		None
59	59			Yes		None
60	60	BenPIN	BenPIN	Yes	Default	None
61	61			Yes		None
62	62			Yes		None
63	63			Yes		None
64	64		BenPIN	Yes	Default	None
65	65		BenPIN	Yes	Default	None
66	66			Yes		None
67	67			Yes	** NA **	None
68	68			Yes	** NA **	None
69	69			Yes	** NA **	None
70	70			Yes	** NA **	None
71	71			Yes	** NA **	None
72	72			Yes	** NA **	None
73	73			Yes	** NA **	None
74	74			Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
75	75			Yes	** NA **	None
76	76			Yes	** NA **	None
77	77			Yes	** NA **	None
78	78			Yes	** NA **	None
79	79	BenPIN	BenPIN	Yes	** NA **	None
80	80	BenPIN	BenPIN	Yes	** NA **	None
81	81	BenPIN	BenPIN	Yes	** NA **	None
82	82	BenPIN	BenPIN	Yes	** NA **	None
83	83	BenPIN	BenPIN	Yes	** NA **	None
84	84			Yes	** NA **	None
85	85			Yes	** NA **	None
86	86			Yes		None
87	87			Yes		None
88	88		BenPIN	Yes	Default	None
89	89		BenPIN	Yes	Default	None
90	90		BenPIN	Yes	Default	None
91	91		BenPIN	Yes	Default	None
92	92		BenPIN	Yes	Default	None
93	93		BenPIN	Yes	Default	None
94	94			Yes		None
95	95			Yes		None
96	96	BenPIN	BenPIN	Yes	Default	None
97	97			Yes		None
98	98			Yes		None
99	99	BenPIN	BenPIN	Yes	Default	None
100	100			Yes	** NA **	None
101	101			Yes	** NA **	None
102	102			Yes	** NA **	None
103	103			Yes	** NA **	None
104	104			Yes	** NA **	None
105	105			Yes	** NA **	None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
1	1	S1-P1	2.625	Lbyy	Lateral
2	2	F1-H1	12.5	Lbyy	Lateral
3	3	F1-H1	12.5	Lbyy	Lateral
4	4	C1-PL2	0.343	Lbyy	Lateral
5	5	C1-PL2	0.343	Lbyy	Lateral
6	6	S1-P1	2.625	Lbyy	Lateral
7	7	F1-MP1	8	Lbyy	Lateral
8	8	F1-MP2	9	Lbyy	Lateral
9	9	F1-MP1	5	Lbyy	Lateral
10	16	C1-PL3	0.25	Lbyy	Lateral
11	17	C1-PL3	0.25	Lbyy	Lateral
12	18	C1-PL3	0.25	Lbyy	Lateral
13	19	C1-PL3	0.25	Lbyy	Lateral
14	20	C1-PL3	0.25	Lbyy	Lateral
15	21	C1-PL3	0.25	Lbyy	Lateral
16	22	Verticals	3.583	Lbyy	Lateral
17	23	Verticals	3.583	Lbyy	Lateral
18	24	Verticals	3.583	Lbyy	Lateral
19	25	Diagonals	6.989	Lbyy	Lateral
20	26	Diagonals	6.989	Lbyy	Lateral
21	29	C1-PL1	0.542	Lbyy	Lateral
22	30	C1-PL1	0.542	Lbyy	Lateral
23	31	S1-P1	2.625	Lbyy	Lateral
24	32	F1-H1	12.5	Lbyy	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
25	33	F1-H1	12.5	Lbyy	Lateral
26	34	C1-PL2	0.343	Lbyy	Lateral
27	35	C1-PL2	0.343	Lbyy	Lateral
28	36	S1-P1	2.625	Lbyy	Lateral
29	37	F1-MP1	8	Lbyy	Lateral
30	38	F1-MP1	5	Lbyy	Lateral
31	43	C1-PL3	0.25	Lbyy	Lateral
32	44	C1-PL3	0.25	Lbyy	Lateral
33	45	C1-PL3	0.25	Lbyy	Lateral
34	46	C1-PL3	0.25	Lbyy	Lateral
35	47	C1-PL3	0.25	Lbyy	Lateral
36	48	C1-PL3	0.25	Lbyy	Lateral
37	49	Verticals	3.583	Lbyy	Lateral
38	50	Verticals	3.583	Lbyy	Lateral
39	51	Verticals	3.583	Lbyy	Lateral
40	52	Diagonals	6.989	Lbyy	Lateral
41	53	Diagonals	6.989	Lbyy	Lateral
42	56	C1-PL1	0.542	Lbyy	Lateral
43	57	C1-PL1	0.542	Lbyy	Lateral
44	58	C1-PL2	0.25	Lbyy	Lateral
45	59	C1-PL2	0.25	Lbyy	Lateral
46	60	SF-H1	2.244	Lbyy	Lateral
47	61	S1-P1	2.625	Lbyy	Lateral
48	62	F1-H1	12.5	Lbyy	Lateral
49	63	F1-H1	12.5	Lbyy	Lateral
50	64	C1-PL2	0.343	Lbyy	Lateral
51	65	C1-PL2	0.343	Lbyy	Lateral
52	66	S1-P1	2.625	Lbyy	Lateral
53	67	F1-MP1	8	Lbyy	Lateral
54	68	F1-MP1	5	Lbyy	Lateral
55	73	C1-PL3	0.25	Lbyy	Lateral
56	74	C1-PL3	0.25	Lbyy	Lateral
57	75	C1-PL3	0.25	Lbyy	Lateral
58	76	C1-PL3	0.25	Lbyy	Lateral
59	77	C1-PL3	0.25	Lbyy	Lateral
60	78	C1-PL3	0.25	Lbyy	Lateral
61	79	Verticals	3.583	Lbyy	Lateral
62	80	Verticals	3.583	Lbyy	Lateral
63	81	Verticals	3.583	Lbyy	Lateral
64	82	Diagonals	6.989	Lbyy	Lateral
65	83	Diagonals	6.989	Lbyy	Lateral
66	86	C1-PL1	0.542	Lbyy	Lateral
67	87	C1-PL1	0.542	Lbyy	Lateral
68	88	C1-PL2	0.343	Lbyy	Lateral
69	89	C1-PL2	0.343	Lbyy	Lateral
70	90	C1-PL2	0.343	Lbyy	Lateral
71	91	C1-PL2	0.343	Lbyy	Lateral
72	92	C1-PL2	0.343	Lbyy	Lateral
73	93	C1-PL2	0.343	Lbyy	Lateral
74	94	C1-PL2	0.25	Lbyy	Lateral
75	95	C1-PL2	0.25	Lbyy	Lateral
76	96	SF-H1	2.244	Lbyy	Lateral
77	97	C1-PL2	0.25	Lbyy	Lateral
78	98	C1-PL2	0.25	Lbyy	Lateral
79	99	SF-H1	2.244	Lbyy	Lateral
80	100	F1-MP2	9	Lbyy	Lateral
81	103	F1-MP2	9	Lbyy	Lateral

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	8	Y	-0.075	%5
2	8	Y	-0.075	%95
3	8	Y	-0.081	%20
4	8	Y	-0.109	%60
5	8	Y	0	0
6	9	Y	-0.057	%5
7	9	Y	-0.057	%65
8	9	Y	0	0
9	9	Y	0	0
10	9	Y	0	0
11	103	Y	-0.075	%5
12	103	Y	-0.075	%95
13	103	Y	-0.081	%20
14	103	Y	-0.109	%60
15	103	Y	0	0
16	68	Y	-0.057	%5
17	68	Y	-0.057	%65
18	68	Y	0	0
19	68	Y	0	0
20	68	Y	0	0
21	100	Y	-0.075	%5
22	100	Y	-0.075	%95
23	100	Y	-0.081	%20
24	100	Y	-0.109	%60
25	100	Y	0	0
26	38	Y	-0.057	%5
27	38	Y	-0.057	%65
28	38	Y	0	0
29	38	Y	0	0
30	38	Y	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	8	Z	-0.302	%5
2	8	Z	-0.302	%95
3	8	Z	-0.107	%20
4	8	Z	-0.079	%60
5	8	Z	0	0
6	9	Z	-0.109	%5
7	9	Z	-0.109	%65
8	9	Z	0	0
9	9	Z	0	0
10	9	Z	0	0
11	103	Z	-0.302	%5
12	103	Z	-0.302	%95
13	103	Z	-0.107	%20
14	103	Z	-0.079	%60
15	103	Z	0	0
16	68	Z	-0.109	%5
17	68	Z	-0.109	%65
18	68	Z	0	0
19	68	Z	0	0
20	68	Z	0	0
21	100	Z	-0.302	%5
22	100	Z	-0.302	%95
23	100	Z	-0.107	%20
24	100	Z	-0.079	%60

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
25	100	Z	0	0
26	38	Z	-0.109	%5
27	38	Z	-0.109	%65
28	38	Z	0	0
29	38	Z	0	0
30	38	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	8	X	-0.11	%5
2	8	X	-0.11	%95
3	8	X	-0.051	%20
4	8	X	-0.063	%60
5	8	X	0	0
6	9	X	-0.042	%5
7	9	X	-0.042	%65
8	9	X	0	0
9	9	X	0	0
10	9	X	0	0
11	103	X	-0.11	%5
12	103	X	-0.11	%95
13	103	X	-0.051	%20
14	103	X	-0.063	%60
15	103	X	0	0
16	68	X	-0.042	%5
17	68	X	-0.042	%65
18	68	X	0	0
19	68	X	0	0
20	68	X	0	0
21	100	X	-0.11	%5
22	100	X	-0.11	%95
23	100	X	-0.051	%20
24	100	X	-0.063	%60
25	100	X	0	0
26	38	X	-0.042	%5
27	38	X	-0.042	%65
28	38	X	0	0
29	38	X	0	0
30	38	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	8	Z	-0.059	%5
2	8	Z	-0.059	%95
3	8	Z	-0.017	%20
4	8	Z	-0.013	%60
5	8	Z	0	0
6	9	Z	-0.023	%5
7	9	Z	-0.023	%65
8	9	Z	0	0
9	9	Z	0	0
10	9	Z	0	0
11	103	Z	-0.059	%5
12	103	Z	-0.059	%95
13	103	Z	-0.017	%20
14	103	Z	-0.013	%60

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
15	103	Z	0	0
16	68	Z	-0.023	%5
17	68	Z	-0.023	%65
18	68	Z	0	0
19	68	Z	0	0
20	68	Z	0	0
21	100	Z	-0.059	%5
22	100	Z	-0.059	%95
23	100	Z	-0.017	%20
24	100	Z	-0.013	%60
25	100	Z	0	0
26	38	Z	-0.023	%5
27	38	Z	-0.023	%65
28	38	Z	0	0
29	38	Z	0	0
30	38	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	8	X	-0.027	%5
2	8	X	-0.027	%95
3	8	X	-0.008	%20
4	8	X	-0.01	%60
5	8	X	0	0
6	9	X	-0.011	%5
7	9	X	-0.011	%65
8	9	X	0	0
9	9	X	0	0
10	9	X	0	0
11	103	X	-0.027	%5
12	103	X	-0.027	%95
13	103	X	-0.008	%20
14	103	X	-0.01	%60
15	103	X	0	0
16	68	X	-0.011	%5
17	68	X	-0.011	%65
18	68	X	0	0
19	68	X	0	0
20	68	X	0	0
21	100	X	-0.027	%5
22	100	X	-0.027	%95
23	100	X	-0.008	%20
24	100	X	-0.01	%60
25	100	X	0	0
26	38	X	-0.011	%5
27	38	X	-0.011	%65
28	38	X	0	0
29	38	X	0	0
30	38	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	8	Z	-0.017	%5
2	8	Z	-0.017	%95
3	8	Z	-0.006	%20
4	8	Z	-0.005	%60

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
5	8	Z	0	0
6	9	Z	-0.006	%5
7	9	Z	-0.006	%65
8	9	Z	0	0
9	9	Z	0	0
10	9	Z	0	0
11	103	Z	-0.017	%5
12	103	Z	-0.017	%95
13	103	Z	-0.006	%20
14	103	Z	-0.005	%60
15	103	Z	0	0
16	68	Z	-0.006	%5
17	68	Z	-0.006	%65
18	68	Z	0	0
19	68	Z	0	0
20	68	Z	0	0
21	100	Z	-0.017	%5
22	100	Z	-0.017	%95
23	100	Z	-0.006	%20
24	100	Z	-0.005	%60
25	100	Z	0	0
26	38	Z	-0.006	%5
27	38	Z	-0.006	%65
28	38	Z	0	0
29	38	Z	0	0
30	38	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	8	X	-0.006	%5
2	8	X	-0.006	%95
3	8	X	-0.003	%20
4	8	X	-0.004	%60
5	8	X	0	0
6	9	X	-0.002	%5
7	9	X	-0.002	%65
8	9	X	0	0
9	9	X	0	0
10	9	X	0	0
11	103	X	-0.006	%5
12	103	X	-0.006	%95
13	103	X	-0.003	%20
14	103	X	-0.004	%60
15	103	X	0	0
16	68	X	-0.002	%5
17	68	X	-0.002	%65
18	68	X	0	0
19	68	X	0	0
20	68	X	0	0
21	100	X	-0.006	%5
22	100	X	-0.006	%95
23	100	X	-0.003	%20
24	100	X	-0.004	%60
25	100	X	0	0
26	38	X	-0.002	%5
27	38	X	-0.002	%65
28	38	X	0	0
29	38	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
30	38	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	8	Y	-0.325	%5
2	8	Y	-0.325	%95
3	8	Y	-0.103	%20
4	8	Y	-0.087	%60
5	8	Y	0	0
6	9	Y	-0.148	%5
7	9	Y	-0.148	%65
8	9	Y	0	0
9	9	Y	0	0
10	9	Y	0	0
11	103	Y	-0.325	%5
12	103	Y	-0.325	%95
13	103	Y	-0.103	%20
14	103	Y	-0.087	%60
15	103	Y	0	0
16	68	Y	-0.148	%5
17	68	Y	-0.148	%65
18	68	Y	0	0
19	68	Y	0	0
20	68	Y	0	0
21	100	Y	-0.325	%5
22	100	Y	-0.325	%95
23	100	Y	-0.103	%20
24	100	Y	-0.087	%60
25	100	Y	0	0
26	38	Y	-0.148	%5
27	38	Y	-0.148	%65
28	38	Y	0	0
29	38	Y	0	0
30	38	Y	0	0

Member Point Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	8	Z	-0.041	%5
2	8	Z	-0.041	%95
3	8	Z	-0.022	%20
4	8	Z	-0.03	%60
5	8	Z	0	0
6	9	Z	-0.031	%5
7	9	Z	-0.031	%65
8	9	Z	0	0
9	9	Z	0	0
10	9	Z	0	0
11	103	Z	-0.041	%5
12	103	Z	-0.041	%95
13	103	Z	-0.022	%20
14	103	Z	-0.03	%60
15	103	Z	0	0
16	68	Z	-0.031	%5
17	68	Z	-0.031	%65
18	68	Z	0	0
19	68	Z	0	0

Member Point Loads (BLC 9 : 0 Seismic) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
20	68	Z	0	0
21	100	Z	-0.041	%5
22	100	Z	-0.041	%95
23	100	Z	-0.022	%20
24	100	Z	-0.03	%60
25	100	Z	0	0
26	38	Z	-0.031	%5
27	38	Z	-0.031	%65
28	38	Z	0	0
29	38	Z	0	0
30	38	Z	0	0

Member Point Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	8	X	-0.041	%5
2	8	X	-0.041	%95
3	8	X	-0.022	%20
4	8	X	-0.03	%60
5	8	X	0	0
6	9	X	-0.031	%5
7	9	X	-0.031	%65
8	9	X	0	0
9	9	X	0	0
10	9	X	0	0
11	103	X	-0.041	%5
12	103	X	-0.041	%95
13	103	X	-0.022	%20
14	103	X	-0.03	%60
15	103	X	0	0
16	68	X	-0.031	%5
17	68	X	-0.031	%65
18	68	X	0	0
19	68	X	0	0
20	68	X	0	0
21	100	X	-0.041	%5
22	100	X	-0.041	%95
23	100	X	-0.022	%20
24	100	X	-0.03	%60
25	100	X	0	0
26	38	X	-0.031	%5
27	38	X	-0.031	%65
28	38	X	0	0
29	38	X	0	0
30	38	X	0	0

Member Point Loads (BLC 15 : Maint LL 1)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	3	Y	-0.25	%5

Member Point Loads (BLC 16 : Maint LL 2)

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

Member Point Loads (BLC 17 : Maint LL 3)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	33	Y	-0.25	%5

Member Point Loads (BLC 18 : Maint LL 4)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	32	Y	-0.25	%5

Member Point Loads (BLC 19 : Maint LL 5)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	63	Y	-0.25	%5

Member Point Loads (BLC 20 : Maint LL 6)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	62	Y	-0.25	%5

Member Point Loads (BLC 21 : Maint LL 7)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	3	Y	-0.25	%95

Member Point Loads (BLC 22 : Maint LL 8)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	2	Y	-0.25	%95

Member Point Loads (BLC 23 : Maint LL 9)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	33	Y	-0.25	%95

Member Point Loads (BLC 24 : Maint LL 10)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	32	Y	-0.25	%95

Member Point Loads (BLC 25 : Maint LL 11)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	63	Y	-0.25	%95

Member Point Loads (BLC 26 : Maint LL 12)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	62	Y	-0.25	%95

Member Point Loads (BLC 27 : Maint LL 13)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	6	Y	-0.25	%95

Member Point Loads (BLC 28 : Maint LL 14)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	36	Y	-0.25	%95

Member Point Loads (BLC 29 : Maint LL 15)

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

Member Point Loads (BLC 30 : Maint LL 16)

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

Member Point Loads (BLC 31 : Maint LL 17)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	31	Y	-0.25	%95

Member Point Loads (BLC 32 : Maint LL 18)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	61	Y	-0.25	%95

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.009	-0.009	0	%100
2	2	Z	-0.009	-0.009	0	%100
3	3	Z	-0.009	-0.009	0	%100
4	4	Z	-0.001	-0.001	0	%100
5	5	Z	-0.001	-0.001	0	%100
6	6	Z	-0.009	-0.009	0	%100
7	7	Z	-0.009	-0.009	0	%100
8	8	Z	-0.009	-0.009	0	%100
9	9	Z	-0.009	-0.009	0	%100
10	16	Z	-0.009	-0.009	0	%100
11	17	Z	-0.009	-0.009	0	%100
12	18	Z	-0.009	-0.009	0	%100
13	19	Z	-0.009	-0.009	0	%100
14	20	Z	-0.009	-0.009	0	%100
15	21	Z	-0.009	-0.009	0	%100
16	22	Z	-0.009	-0.009	0	%100
17	23	Z	-0.009	-0.009	0	%100
18	24	Z	-0.009	-0.009	0	%100
19	25	Z	-0.009	-0.009	0	%100
20	26	Z	-0.009	-0.009	0	%100
21	29	Z	-0.017	-0.017	0	%100
22	30	Z	-0.017	-0.017	0	%100
23	31	Z	-0.009	-0.009	0	%100
24	32	Z	-0.009	-0.009	0	%100
25	33	Z	-0.009	-0.009	0	%100
26	34	Z	-0.001	-0.001	0	%100
27	35	Z	-0.001	-0.001	0	%100
28	36	Z	-0.009	-0.009	0	%100
29	37	Z	-0.009	-0.009	0	%100
30	38	Z	-0.009	-0.009	0	%100
31	43	Z	-0.009	-0.009	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
32	44	Z	-0.009	-0.009	0	%100
33	45	Z	-0.009	-0.009	0	%100
34	46	Z	-0.009	-0.009	0	%100
35	47	Z	-0.009	-0.009	0	%100
36	48	Z	-0.009	-0.009	0	%100
37	49	Z	-0.009	-0.009	0	%100
38	50	Z	-0.009	-0.009	0	%100
39	51	Z	-0.009	-0.009	0	%100
40	52	Z	-0.009	-0.009	0	%100
41	53	Z	-0.009	-0.009	0	%100
42	56	Z	-0.017	-0.017	0	%100
43	57	Z	-0.017	-0.017	0	%100
44	58	Z	-0.001	-0.001	0	%100
45	59	Z	-0.001	-0.001	0	%100
46	60	Z	-0.01	-0.01	0	%100
47	61	Z	-0.009	-0.009	0	%100
48	62	Z	-0.009	-0.009	0	%100
49	63	Z	-0.009	-0.009	0	%100
50	64	Z	-0.001	-0.001	0	%100
51	65	Z	-0.001	-0.001	0	%100
52	66	Z	-0.009	-0.009	0	%100
53	67	Z	-0.009	-0.009	0	%100
54	68	Z	-0.009	-0.009	0	%100
55	73	Z	-0.009	-0.009	0	%100
56	74	Z	-0.009	-0.009	0	%100
57	75	Z	-0.009	-0.009	0	%100
58	76	Z	-0.009	-0.009	0	%100
59	77	Z	-0.009	-0.009	0	%100
60	78	Z	-0.009	-0.009	0	%100
61	79	Z	-0.009	-0.009	0	%100
62	80	Z	-0.009	-0.009	0	%100
63	81	Z	-0.009	-0.009	0	%100
64	82	Z	-0.009	-0.009	0	%100
65	83	Z	-0.009	-0.009	0	%100
66	86	Z	-0.017	-0.017	0	%100
67	87	Z	-0.017	-0.017	0	%100
68	88	Z	-0.001	-0.001	0	%100
69	89	Z	-0.001	-0.001	0	%100
70	90	Z	-0.001	-0.001	0	%100
71	91	Z	-0.001	-0.001	0	%100
72	92	Z	-0.001	-0.001	0	%100
73	93	Z	-0.001	-0.001	0	%100
74	94	Z	-0.001	-0.001	0	%100
75	95	Z	-0.001	-0.001	0	%100
76	96	Z	-0.01	-0.01	0	%100
77	97	Z	-0.001	-0.001	0	%100
78	98	Z	-0.001	-0.001	0	%100
79	99	Z	-0.01	-0.01	0	%100
80	100	Z	-0.009	-0.009	0	%100
81	103	Z	-0.009	-0.009	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.009	-0.009	0	%100
2	2	X	-0.009	-0.009	0	%100
3	3	X	-0.009	-0.009	0	%100
4	4	X	-0.001	-0.001	0	%100
5	5	X	-0.001	-0.001	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
6	6	X	-0.009	-0.009	0	%100
7	7	X	-0.009	-0.009	0	%100
8	8	X	-0.009	-0.009	0	%100
9	9	X	-0.009	-0.009	0	%100
10	16	X	-0.009	-0.009	0	%100
11	17	X	-0.009	-0.009	0	%100
12	18	X	-0.009	-0.009	0	%100
13	19	X	-0.009	-0.009	0	%100
14	20	X	-0.009	-0.009	0	%100
15	21	X	-0.009	-0.009	0	%100
16	22	X	-0.009	-0.009	0	%100
17	23	X	-0.009	-0.009	0	%100
18	24	X	-0.009	-0.009	0	%100
19	25	X	-0.009	-0.009	0	%100
20	26	X	-0.009	-0.009	0	%100
21	29	X	-0.017	-0.017	0	%100
22	30	X	-0.017	-0.017	0	%100
23	31	X	-0.009	-0.009	0	%100
24	32	X	-0.009	-0.009	0	%100
25	33	X	-0.009	-0.009	0	%100
26	34	X	-0.001	-0.001	0	%100
27	35	X	-0.001	-0.001	0	%100
28	36	X	-0.009	-0.009	0	%100
29	37	X	-0.009	-0.009	0	%100
30	38	X	-0.009	-0.009	0	%100
31	43	X	-0.009	-0.009	0	%100
32	44	X	-0.009	-0.009	0	%100
33	45	X	-0.009	-0.009	0	%100
34	46	X	-0.009	-0.009	0	%100
35	47	X	-0.009	-0.009	0	%100
36	48	X	-0.009	-0.009	0	%100
37	49	X	-0.009	-0.009	0	%100
38	50	X	-0.009	-0.009	0	%100
39	51	X	-0.009	-0.009	0	%100
40	52	X	-0.009	-0.009	0	%100
41	53	X	-0.009	-0.009	0	%100
42	56	X	-0.017	-0.017	0	%100
43	57	X	-0.017	-0.017	0	%100
44	58	X	-0.001	-0.001	0	%100
45	59	X	-0.001	-0.001	0	%100
46	60	X	-0.01	-0.01	0	%100
47	61	X	-0.009	-0.009	0	%100
48	62	X	-0.009	-0.009	0	%100
49	63	X	-0.009	-0.009	0	%100
50	64	X	-0.001	-0.001	0	%100
51	65	X	-0.001	-0.001	0	%100
52	66	X	-0.009	-0.009	0	%100
53	67	X	-0.009	-0.009	0	%100
54	68	X	-0.009	-0.009	0	%100
55	73	X	-0.009	-0.009	0	%100
56	74	X	-0.009	-0.009	0	%100
57	75	X	-0.009	-0.009	0	%100
58	76	X	-0.009	-0.009	0	%100
59	77	X	-0.009	-0.009	0	%100
60	78	X	-0.009	-0.009	0	%100
61	79	X	-0.009	-0.009	0	%100
62	80	X	-0.009	-0.009	0	%100
63	81	X	-0.009	-0.009	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
64	82	X	-0.009	-0.009	0	%100
65	83	X	-0.009	-0.009	0	%100
66	86	X	-0.017	-0.017	0	%100
67	87	X	-0.017	-0.017	0	%100
68	88	X	-0.001	-0.001	0	%100
69	89	X	-0.001	-0.001	0	%100
70	90	X	-0.001	-0.001	0	%100
71	91	X	-0.001	-0.001	0	%100
72	92	X	-0.001	-0.001	0	%100
73	93	X	-0.001	-0.001	0	%100
74	94	X	-0.001	-0.001	0	%100
75	95	X	-0.001	-0.001	0	%100
76	96	X	-0.01	-0.01	0	%100
77	97	X	-0.001	-0.001	0	%100
78	98	X	-0.001	-0.001	0	%100
79	99	X	-0.01	-0.01	0	%100
80	100	X	-0.009	-0.009	0	%100
81	103	X	-0.009	-0.009	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.003	-0.003	0	%100
2	2	Z	-0.002	-0.002	0	%100
3	3	Z	-0.002	-0.002	0	%100
4	4	Z	-0.009	-0.009	0	%100
5	5	Z	-0.009	-0.009	0	%100
6	6	Z	-0.003	-0.003	0	%100
7	7	Z	-0.002	-0.002	0	%100
8	8	Z	-0.002	-0.002	0	%100
9	9	Z	-0.002	-0.002	0	%100
10	16	Z	-0.011	-0.011	0	%100
11	17	Z	-0.011	-0.011	0	%100
12	18	Z	-0.011	-0.011	0	%100
13	19	Z	-0.011	-0.011	0	%100
14	20	Z	-0.011	-0.011	0	%100
15	21	Z	-0.011	-0.011	0	%100
16	22	Z	-0.007	-0.007	0	%100
17	23	Z	-0.007	-0.007	0	%100
18	24	Z	-0.007	-0.007	0	%100
19	25	Z	-0.006	-0.006	0	%100
20	26	Z	-0.006	-0.006	0	%100
21	29	Z	-0.009	-0.009	0	%100
22	30	Z	-0.009	-0.009	0	%100
23	31	Z	-0.003	-0.003	0	%100
24	32	Z	-0.002	-0.002	0	%100
25	33	Z	-0.002	-0.002	0	%100
26	34	Z	-0.009	-0.009	0	%100
27	35	Z	-0.009	-0.009	0	%100
28	36	Z	-0.003	-0.003	0	%100
29	37	Z	-0.002	-0.002	0	%100
30	38	Z	-0.002	-0.002	0	%100
31	43	Z	-0.011	-0.011	0	%100
32	44	Z	-0.011	-0.011	0	%100
33	45	Z	-0.011	-0.011	0	%100
34	46	Z	-0.011	-0.011	0	%100
35	47	Z	-0.011	-0.011	0	%100
36	48	Z	-0.011	-0.011	0	%100
37	49	Z	-0.007	-0.007	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
38	50	Z	-0.007	-0.007	0	%100
39	51	Z	-0.007	-0.007	0	%100
40	52	Z	-0.006	-0.006	0	%100
41	53	Z	-0.006	-0.006	0	%100
42	56	Z	-0.009	-0.009	0	%100
43	57	Z	-0.009	-0.009	0	%100
44	58	Z	-0.01	-0.01	0	%100
45	59	Z	-0.01	-0.01	0	%100
46	60	Z	-0.006	-0.006	0	%100
47	61	Z	-0.003	-0.003	0	%100
48	62	Z	-0.002	-0.002	0	%100
49	63	Z	-0.002	-0.002	0	%100
50	64	Z	-0.009	-0.009	0	%100
51	65	Z	-0.009	-0.009	0	%100
52	66	Z	-0.003	-0.003	0	%100
53	67	Z	-0.002	-0.002	0	%100
54	68	Z	-0.002	-0.002	0	%100
55	73	Z	-0.011	-0.011	0	%100
56	74	Z	-0.011	-0.011	0	%100
57	75	Z	-0.011	-0.011	0	%100
58	76	Z	-0.011	-0.011	0	%100
59	77	Z	-0.011	-0.011	0	%100
60	78	Z	-0.011	-0.011	0	%100
61	79	Z	-0.007	-0.007	0	%100
62	80	Z	-0.007	-0.007	0	%100
63	81	Z	-0.007	-0.007	0	%100
64	82	Z	-0.006	-0.006	0	%100
65	83	Z	-0.006	-0.006	0	%100
66	86	Z	-0.009	-0.009	0	%100
67	87	Z	-0.009	-0.009	0	%100
68	88	Z	-0.009	-0.009	0	%100
69	89	Z	-0.009	-0.009	0	%100
70	90	Z	-0.009	-0.009	0	%100
71	91	Z	-0.009	-0.009	0	%100
72	92	Z	-0.009	-0.009	0	%100
73	93	Z	-0.009	-0.009	0	%100
74	94	Z	-0.01	-0.01	0	%100
75	95	Z	-0.01	-0.01	0	%100
76	96	Z	-0.006	-0.006	0	%100
77	97	Z	-0.01	-0.01	0	%100
78	98	Z	-0.01	-0.01	0	%100
79	99	Z	-0.006	-0.006	0	%100
80	100	Z	-0.002	-0.002	0	%100
81	103	Z	-0.002	-0.002	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.003	-0.003	0	%100
2	2	X	-0.002	-0.002	0	%100
3	3	X	-0.002	-0.002	0	%100
4	4	X	-0.009	-0.009	0	%100
5	5	X	-0.009	-0.009	0	%100
6	6	X	-0.003	-0.003	0	%100
7	7	X	-0.002	-0.002	0	%100
8	8	X	-0.002	-0.002	0	%100
9	9	X	-0.002	-0.002	0	%100
10	16	X	-0.011	-0.011	0	%100
11	17	X	-0.011	-0.011	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
12	18	X	-0.011	-0.011	0	%100
13	19	X	-0.011	-0.011	0	%100
14	20	X	-0.011	-0.011	0	%100
15	21	X	-0.011	-0.011	0	%100
16	22	X	-0.007	-0.007	0	%100
17	23	X	-0.007	-0.007	0	%100
18	24	X	-0.007	-0.007	0	%100
19	25	X	-0.006	-0.006	0	%100
20	26	X	-0.006	-0.006	0	%100
21	29	X	-0.009	-0.009	0	%100
22	30	X	-0.009	-0.009	0	%100
23	31	X	-0.003	-0.003	0	%100
24	32	X	-0.002	-0.002	0	%100
25	33	X	-0.002	-0.002	0	%100
26	34	X	-0.009	-0.009	0	%100
27	35	X	-0.009	-0.009	0	%100
28	36	X	-0.003	-0.003	0	%100
29	37	X	-0.002	-0.002	0	%100
30	38	X	-0.002	-0.002	0	%100
31	43	X	-0.011	-0.011	0	%100
32	44	X	-0.011	-0.011	0	%100
33	45	X	-0.011	-0.011	0	%100
34	46	X	-0.011	-0.011	0	%100
35	47	X	-0.011	-0.011	0	%100
36	48	X	-0.011	-0.011	0	%100
37	49	X	-0.007	-0.007	0	%100
38	50	X	-0.007	-0.007	0	%100
39	51	X	-0.007	-0.007	0	%100
40	52	X	-0.006	-0.006	0	%100
41	53	X	-0.006	-0.006	0	%100
42	56	X	-0.009	-0.009	0	%100
43	57	X	-0.009	-0.009	0	%100
44	58	X	-0.01	-0.01	0	%100
45	59	X	-0.01	-0.01	0	%100
46	60	X	-0.006	-0.006	0	%100
47	61	X	-0.003	-0.003	0	%100
48	62	X	-0.002	-0.002	0	%100
49	63	X	-0.002	-0.002	0	%100
50	64	X	-0.009	-0.009	0	%100
51	65	X	-0.009	-0.009	0	%100
52	66	X	-0.003	-0.003	0	%100
53	67	X	-0.002	-0.002	0	%100
54	68	X	-0.002	-0.002	0	%100
55	73	X	-0.011	-0.011	0	%100
56	74	X	-0.011	-0.011	0	%100
57	75	X	-0.011	-0.011	0	%100
58	76	X	-0.011	-0.011	0	%100
59	77	X	-0.011	-0.011	0	%100
60	78	X	-0.011	-0.011	0	%100
61	79	X	-0.007	-0.007	0	%100
62	80	X	-0.007	-0.007	0	%100
63	81	X	-0.007	-0.007	0	%100
64	82	X	-0.006	-0.006	0	%100
65	83	X	-0.006	-0.006	0	%100
66	86	X	-0.009	-0.009	0	%100
67	87	X	-0.009	-0.009	0	%100
68	88	X	-0.009	-0.009	0	%100
69	89	X	-0.009	-0.009	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
70	90	X	-0.009	-0.009	0	%100
71	91	X	-0.009	-0.009	0	%100
72	92	X	-0.009	-0.009	0	%100
73	93	X	-0.009	-0.009	0	%100
74	94	X	-0.01	-0.01	0	%100
75	95	X	-0.01	-0.01	0	%100
76	96	X	-0.006	-0.006	0	%100
77	97	X	-0.01	-0.01	0	%100
78	98	X	-0.01	-0.01	0	%100
79	99	X	-0.006	-0.006	0	%100
80	100	X	-0.002	-0.002	0	%100
81	103	X	-0.002	-0.002	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.0004	-0.0004	0	%100
2	2	Z	-0.0003	-0.0003	0	%100
3	3	Z	-0.0003	-0.0003	0	%100
4	4	Z	-1e-04	-1e-04	0	%100
5	5	Z	-1e-04	-1e-04	0	%100
6	6	Z	-0.0004	-0.0004	0	%100
7	7	Z	-0.0003	-0.0003	0	%100
8	8	Z	-0.0003	-0.0003	0	%100
9	9	Z	-0.0003	-0.0003	0	%100
10	16	Z	-0.0005	-0.0005	0	%100
11	17	Z	-0.0005	-0.0005	0	%100
12	18	Z	-0.0005	-0.0005	0	%100
13	19	Z	-0.0005	-0.0005	0	%100
14	20	Z	-0.0005	-0.0005	0	%100
15	21	Z	-0.0005	-0.0005	0	%100
16	22	Z	-0.0005	-0.0005	0	%100
17	23	Z	-0.0005	-0.0005	0	%100
18	24	Z	-0.0005	-0.0005	0	%100
19	25	Z	-0.0005	-0.0005	0	%100
20	26	Z	-0.0005	-0.0005	0	%100
21	29	Z	-0.001	-0.001	0	%100
22	30	Z	-0.001	-0.001	0	%100
23	31	Z	-0.0004	-0.0004	0	%100
24	32	Z	-0.0003	-0.0003	0	%100
25	33	Z	-0.0003	-0.0003	0	%100
26	34	Z	-1e-04	-1e-04	0	%100
27	35	Z	-1e-04	-1e-04	0	%100
28	36	Z	-0.0004	-0.0004	0	%100
29	37	Z	-0.0003	-0.0003	0	%100
30	38	Z	-0.0003	-0.0003	0	%100
31	43	Z	-0.0005	-0.0005	0	%100
32	44	Z	-0.0005	-0.0005	0	%100
33	45	Z	-0.0005	-0.0005	0	%100
34	46	Z	-0.0005	-0.0005	0	%100
35	47	Z	-0.0005	-0.0005	0	%100
36	48	Z	-0.0005	-0.0005	0	%100
37	49	Z	-0.0005	-0.0005	0	%100
38	50	Z	-0.0005	-0.0005	0	%100
39	51	Z	-0.0005	-0.0005	0	%100
40	52	Z	-0.0005	-0.0005	0	%100
41	53	Z	-0.0005	-0.0005	0	%100
42	56	Z	-0.001	-0.001	0	%100
43	57	Z	-0.001	-0.001	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
44	58	Z	-1e-04	-1e-04	0	%100
45	59	Z	-1e-04	-1e-04	0	%100
46	60	Z	-0.0006	-0.0006	0	%100
47	61	Z	-0.0004	-0.0004	0	%100
48	62	Z	-0.0003	-0.0003	0	%100
49	63	Z	-0.0003	-0.0003	0	%100
50	64	Z	-1e-04	-1e-04	0	%100
51	65	Z	-1e-04	-1e-04	0	%100
52	66	Z	-0.0004	-0.0004	0	%100
53	67	Z	-0.0003	-0.0003	0	%100
54	68	Z	-0.0003	-0.0003	0	%100
55	73	Z	-0.0005	-0.0005	0	%100
56	74	Z	-0.0005	-0.0005	0	%100
57	75	Z	-0.0005	-0.0005	0	%100
58	76	Z	-0.0005	-0.0005	0	%100
59	77	Z	-0.0005	-0.0005	0	%100
60	78	Z	-0.0005	-0.0005	0	%100
61	79	Z	-0.0005	-0.0005	0	%100
62	80	Z	-0.0005	-0.0005	0	%100
63	81	Z	-0.0005	-0.0005	0	%100
64	82	Z	-0.0005	-0.0005	0	%100
65	83	Z	-0.0005	-0.0005	0	%100
66	86	Z	-0.001	-0.001	0	%100
67	87	Z	-0.001	-0.001	0	%100
68	88	Z	-1e-04	-1e-04	0	%100
69	89	Z	-1e-04	-1e-04	0	%100
70	90	Z	-1e-04	-1e-04	0	%100
71	91	Z	-1e-04	-1e-04	0	%100
72	92	Z	-1e-04	-1e-04	0	%100
73	93	Z	-1e-04	-1e-04	0	%100
74	94	Z	-1e-04	-1e-04	0	%100
75	95	Z	-1e-04	-1e-04	0	%100
76	96	Z	-0.0006	-0.0006	0	%100
77	97	Z	-1e-04	-1e-04	0	%100
78	98	Z	-1e-04	-1e-04	0	%100
79	99	Z	-0.0006	-0.0006	0	%100
80	100	Z	-0.0003	-0.0003	0	%100
81	103	Z	-0.0003	-0.0003	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.0004	-0.0004	0	%100
2	2	X	-0.0003	-0.0003	0	%100
3	3	X	-0.0003	-0.0003	0	%100
4	4	X	-1e-04	-1e-04	0	%100
5	5	X	-1e-04	-1e-04	0	%100
6	6	X	-0.0004	-0.0004	0	%100
7	7	X	-0.0003	-0.0003	0	%100
8	8	X	-0.0003	-0.0003	0	%100
9	9	X	-0.0003	-0.0003	0	%100
10	16	X	-0.0005	-0.0005	0	%100
11	17	X	-0.0005	-0.0005	0	%100
12	18	X	-0.0005	-0.0005	0	%100
13	19	X	-0.0005	-0.0005	0	%100
14	20	X	-0.0005	-0.0005	0	%100
15	21	X	-0.0005	-0.0005	0	%100
16	22	X	-0.0005	-0.0005	0	%100
17	23	X	-0.0005	-0.0005	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
18	24	X	-0.0005	-0.0005	0	%100
19	25	X	-0.0005	-0.0005	0	%100
20	26	X	-0.0005	-0.0005	0	%100
21	29	X	-0.001	-0.001	0	%100
22	30	X	-0.001	-0.001	0	%100
23	31	X	-0.0004	-0.0004	0	%100
24	32	X	-0.0003	-0.0003	0	%100
25	33	X	-0.0003	-0.0003	0	%100
26	34	X	-1e-04	-1e-04	0	%100
27	35	X	-1e-04	-1e-04	0	%100
28	36	X	-0.0004	-0.0004	0	%100
29	37	X	-0.0003	-0.0003	0	%100
30	38	X	-0.0003	-0.0003	0	%100
31	43	X	-0.0005	-0.0005	0	%100
32	44	X	-0.0005	-0.0005	0	%100
33	45	X	-0.0005	-0.0005	0	%100
34	46	X	-0.0005	-0.0005	0	%100
35	47	X	-0.0005	-0.0005	0	%100
36	48	X	-0.0005	-0.0005	0	%100
37	49	X	-0.0005	-0.0005	0	%100
38	50	X	-0.0005	-0.0005	0	%100
39	51	X	-0.0005	-0.0005	0	%100
40	52	X	-0.0005	-0.0005	0	%100
41	53	X	-0.0005	-0.0005	0	%100
42	56	X	-0.001	-0.001	0	%100
43	57	X	-0.001	-0.001	0	%100
44	58	X	-1e-04	-1e-04	0	%100
45	59	X	-1e-04	-1e-04	0	%100
46	60	X	-0.0006	-0.0006	0	%100
47	61	X	-0.0004	-0.0004	0	%100
48	62	X	-0.0003	-0.0003	0	%100
49	63	X	-0.0003	-0.0003	0	%100
50	64	X	-1e-04	-1e-04	0	%100
51	65	X	-1e-04	-1e-04	0	%100
52	66	X	-0.0004	-0.0004	0	%100
53	67	X	-0.0003	-0.0003	0	%100
54	68	X	-0.0003	-0.0003	0	%100
55	73	X	-0.0005	-0.0005	0	%100
56	74	X	-0.0005	-0.0005	0	%100
57	75	X	-0.0005	-0.0005	0	%100
58	76	X	-0.0005	-0.0005	0	%100
59	77	X	-0.0005	-0.0005	0	%100
60	78	X	-0.0005	-0.0005	0	%100
61	79	X	-0.0005	-0.0005	0	%100
62	80	X	-0.0005	-0.0005	0	%100
63	81	X	-0.0005	-0.0005	0	%100
64	82	X	-0.0005	-0.0005	0	%100
65	83	X	-0.0005	-0.0005	0	%100
66	86	X	-0.001	-0.001	0	%100
67	87	X	-0.001	-0.001	0	%100
68	88	X	-1e-04	-1e-04	0	%100
69	89	X	-1e-04	-1e-04	0	%100
70	90	X	-1e-04	-1e-04	0	%100
71	91	X	-1e-04	-1e-04	0	%100
72	92	X	-1e-04	-1e-04	0	%100
73	93	X	-1e-04	-1e-04	0	%100
74	94	X	-1e-04	-1e-04	0	%100
75	95	X	-1e-04	-1e-04	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
76	96	X	-0.0006	-0.0006	0	%100
77	97	X	-1e-04	-1e-04	0	%100
78	98	X	-1e-04	-1e-04	0	%100
79	99	X	-0.0006	-0.0006	0	%100
80	100	X	-0.0003	-0.0003	0	%100
81	103	X	-0.0003	-0.0003	0	%100

Member Distributed Loads (BLC 8 : Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Y	-0.017	-0.017	0	%100
2	2	Y	-0.013	-0.013	0	%100
3	3	Y	-0.013	-0.013	0	%100
4	4	Y	-0.014	-0.014	0	%100
5	5	Y	-0.014	-0.014	0	%100
6	6	Y	-0.017	-0.017	0	%100
7	7	Y	-0.013	-0.013	0	%100
8	8	Y	-0.013	-0.013	0	%100
9	9	Y	-0.013	-0.013	0	%100
10	16	Y	-0.014	-0.014	0	%100
11	17	Y	-0.014	-0.014	0	%100
12	18	Y	-0.014	-0.014	0	%100
13	19	Y	-0.014	-0.014	0	%100
14	20	Y	-0.014	-0.014	0	%100
15	21	Y	-0.014	-0.014	0	%100
16	22	Y	-0.013	-0.013	0	%100
17	23	Y	-0.013	-0.013	0	%100
18	24	Y	-0.013	-0.013	0	%100
19	25	Y	-0.013	-0.013	0	%100
20	26	Y	-0.013	-0.013	0	%100
21	29	Y	-0.019	-0.019	0	%100
22	30	Y	-0.019	-0.019	0	%100
23	31	Y	-0.017	-0.017	0	%100
24	32	Y	-0.013	-0.013	0	%100
25	33	Y	-0.013	-0.013	0	%100
26	34	Y	-0.014	-0.014	0	%100
27	35	Y	-0.014	-0.014	0	%100
28	36	Y	-0.017	-0.017	0	%100
29	37	Y	-0.013	-0.013	0	%100
30	38	Y	-0.013	-0.013	0	%100
31	43	Y	-0.014	-0.014	0	%100
32	44	Y	-0.014	-0.014	0	%100
33	45	Y	-0.014	-0.014	0	%100
34	46	Y	-0.014	-0.014	0	%100
35	47	Y	-0.014	-0.014	0	%100
36	48	Y	-0.014	-0.014	0	%100
37	49	Y	-0.013	-0.013	0	%100
38	50	Y	-0.013	-0.013	0	%100
39	51	Y	-0.013	-0.013	0	%100
40	52	Y	-0.013	-0.013	0	%100
41	53	Y	-0.013	-0.013	0	%100
42	56	Y	-0.019	-0.019	0	%100
43	57	Y	-0.019	-0.019	0	%100
44	58	Y	-0.014	-0.014	0	%100
45	59	Y	-0.014	-0.014	0	%100
46	60	Y	-0.015	-0.015	0	%100
47	61	Y	-0.017	-0.017	0	%100
48	62	Y	-0.013	-0.013	0	%100
49	63	Y	-0.013	-0.013	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
50	64	Y	-0.014	-0.014	0	%100
51	65	Y	-0.014	-0.014	0	%100
52	66	Y	-0.017	-0.017	0	%100
53	67	Y	-0.013	-0.013	0	%100
54	68	Y	-0.013	-0.013	0	%100
55	73	Y	-0.014	-0.014	0	%100
56	74	Y	-0.014	-0.014	0	%100
57	75	Y	-0.014	-0.014	0	%100
58	76	Y	-0.014	-0.014	0	%100
59	77	Y	-0.014	-0.014	0	%100
60	78	Y	-0.014	-0.014	0	%100
61	79	Y	-0.013	-0.013	0	%100
62	80	Y	-0.013	-0.013	0	%100
63	81	Y	-0.013	-0.013	0	%100
64	82	Y	-0.013	-0.013	0	%100
65	83	Y	-0.013	-0.013	0	%100
66	86	Y	-0.019	-0.019	0	%100
67	87	Y	-0.019	-0.019	0	%100
68	88	Y	-0.014	-0.014	0	%100
69	89	Y	-0.014	-0.014	0	%100
70	90	Y	-0.014	-0.014	0	%100
71	91	Y	-0.014	-0.014	0	%100
72	92	Y	-0.014	-0.014	0	%100
73	93	Y	-0.014	-0.014	0	%100
74	94	Y	-0.014	-0.014	0	%100
75	95	Y	-0.014	-0.014	0	%100
76	96	Y	-0.015	-0.015	0	%100
77	97	Y	-0.014	-0.014	0	%100
78	98	Y	-0.014	-0.014	0	%100
79	99	Y	-0.015	-0.015	0	%100
80	100	Y	-0.013	-0.013	0	%100
81	103	Y	-0.013	-0.013	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.002	-0.002	0	%100
2	2	Z	-0.001	-0.001	0	%100
3	3	Z	-0.001	-0.001	0	%100
4	4	Z	-0.0005	-0.0005	0	%100
5	5	Z	-0.0005	-0.0005	0	%100
6	6	Z	-0.002	-0.002	0	%100
7	7	Z	-0.001	-0.001	0	%100
8	8	Z	-0.001	-0.001	0	%100
9	9	Z	-0.001	-0.001	0	%100
10	16	Z	-0.0005	-0.0005	0	%100
11	17	Z	-0.0005	-0.0005	0	%100
12	18	Z	-0.0005	-0.0005	0	%100
13	19	Z	-0.0005	-0.0005	0	%100
14	20	Z	-0.0005	-0.0005	0	%100
15	21	Z	-0.0005	-0.0005	0	%100
16	22	Z	-0.0004	-0.0004	0	%100
17	23	Z	-0.0004	-0.0004	0	%100
18	24	Z	-0.0004	-0.0004	0	%100
19	25	Z	-0.0004	-0.0004	0	%100
20	26	Z	-0.0004	-0.0004	0	%100
21	29	Z	-0.002	-0.002	0	%100
22	30	Z	-0.002	-0.002	0	%100
23	31	Z	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
24	32	Z	-0.001	-0.001	0	%100
25	33	Z	-0.001	-0.001	0	%100
26	34	Z	-0.0005	-0.0005	0	%100
27	35	Z	-0.0005	-0.0005	0	%100
28	36	Z	-0.002	-0.002	0	%100
29	37	Z	-0.001	-0.001	0	%100
30	38	Z	-0.001	-0.001	0	%100
31	43	Z	-0.0005	-0.0005	0	%100
32	44	Z	-0.0005	-0.0005	0	%100
33	45	Z	-0.0005	-0.0005	0	%100
34	46	Z	-0.0005	-0.0005	0	%100
35	47	Z	-0.0005	-0.0005	0	%100
36	48	Z	-0.0005	-0.0005	0	%100
37	49	Z	-0.0004	-0.0004	0	%100
38	50	Z	-0.0004	-0.0004	0	%100
39	51	Z	-0.0004	-0.0004	0	%100
40	52	Z	-0.0004	-0.0004	0	%100
41	53	Z	-0.0004	-0.0004	0	%100
42	56	Z	-0.002	-0.002	0	%100
43	57	Z	-0.002	-0.002	0	%100
44	58	Z	-0.0005	-0.0005	0	%100
45	59	Z	-0.0005	-0.0005	0	%100
46	60	Z	-0.0007	-0.0007	0	%100
47	61	Z	-0.002	-0.002	0	%100
48	62	Z	-0.001	-0.001	0	%100
49	63	Z	-0.001	-0.001	0	%100
50	64	Z	-0.0005	-0.0005	0	%100
51	65	Z	-0.0005	-0.0005	0	%100
52	66	Z	-0.002	-0.002	0	%100
53	67	Z	-0.001	-0.001	0	%100
54	68	Z	-0.001	-0.001	0	%100
55	73	Z	-0.0005	-0.0005	0	%100
56	74	Z	-0.0005	-0.0005	0	%100
57	75	Z	-0.0005	-0.0005	0	%100
58	76	Z	-0.0005	-0.0005	0	%100
59	77	Z	-0.0005	-0.0005	0	%100
60	78	Z	-0.0005	-0.0005	0	%100
61	79	Z	-0.0004	-0.0004	0	%100
62	80	Z	-0.0004	-0.0004	0	%100
63	81	Z	-0.0004	-0.0004	0	%100
64	82	Z	-0.0004	-0.0004	0	%100
65	83	Z	-0.0004	-0.0004	0	%100
66	86	Z	-0.002	-0.002	0	%100
67	87	Z	-0.002	-0.002	0	%100
68	88	Z	-0.0005	-0.0005	0	%100
69	89	Z	-0.0005	-0.0005	0	%100
70	90	Z	-0.0005	-0.0005	0	%100
71	91	Z	-0.0005	-0.0005	0	%100
72	92	Z	-0.0005	-0.0005	0	%100
73	93	Z	-0.0005	-0.0005	0	%100
74	94	Z	-0.0005	-0.0005	0	%100
75	95	Z	-0.0005	-0.0005	0	%100
76	96	Z	-0.0007	-0.0007	0	%100
77	97	Z	-0.0005	-0.0005	0	%100
78	98	Z	-0.0005	-0.0005	0	%100
79	99	Z	-0.0007	-0.0007	0	%100
80	100	Z	-0.001	-0.001	0	%100
81	103	Z	-0.001	-0.001	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic) (Continued)

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]

Member Distributed Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.002	-0.002	0	%100
2	2	X	-0.001	-0.001	0	%100
3	3	X	-0.001	-0.001	0	%100
4	4	X	-0.0005	-0.0005	0	%100
5	5	X	-0.0005	-0.0005	0	%100
6	6	X	-0.002	-0.002	0	%100
7	7	X	-0.001	-0.001	0	%100
8	8	X	-0.001	-0.001	0	%100
9	9	X	-0.001	-0.001	0	%100
10	16	X	-0.0005	-0.0005	0	%100
11	17	X	-0.0005	-0.0005	0	%100
12	18	X	-0.0005	-0.0005	0	%100
13	19	X	-0.0005	-0.0005	0	%100
14	20	X	-0.0005	-0.0005	0	%100
15	21	X	-0.0005	-0.0005	0	%100
16	22	X	-0.0004	-0.0004	0	%100
17	23	X	-0.0004	-0.0004	0	%100
18	24	X	-0.0004	-0.0004	0	%100
19	25	X	-0.0004	-0.0004	0	%100
20	26	X	-0.0004	-0.0004	0	%100
21	29	X	-0.002	-0.002	0	%100
22	30	X	-0.002	-0.002	0	%100
23	31	X	-0.002	-0.002	0	%100
24	32	X	-0.001	-0.001	0	%100
25	33	X	-0.001	-0.001	0	%100
26	34	X	-0.0005	-0.0005	0	%100
27	35	X	-0.0005	-0.0005	0	%100
28	36	X	-0.002	-0.002	0	%100
29	37	X	-0.001	-0.001	0	%100
30	38	X	-0.001	-0.001	0	%100
31	43	X	-0.0005	-0.0005	0	%100
32	44	X	-0.0005	-0.0005	0	%100
33	45	X	-0.0005	-0.0005	0	%100
34	46	X	-0.0005	-0.0005	0	%100
35	47	X	-0.0005	-0.0005	0	%100
36	48	X	-0.0005	-0.0005	0	%100
37	49	X	-0.0004	-0.0004	0	%100
38	50	X	-0.0004	-0.0004	0	%100
39	51	X	-0.0004	-0.0004	0	%100
40	52	X	-0.0004	-0.0004	0	%100
41	53	X	-0.0004	-0.0004	0	%100
42	56	X	-0.002	-0.002	0	%100
43	57	X	-0.002	-0.002	0	%100
44	58	X	-0.0005	-0.0005	0	%100
45	59	X	-0.0005	-0.0005	0	%100
46	60	X	-0.0007	-0.0007	0	%100
47	61	X	-0.002	-0.002	0	%100
48	62	X	-0.001	-0.001	0	%100
49	63	X	-0.001	-0.001	0	%100
50	64	X	-0.0005	-0.0005	0	%100
51	65	X	-0.0005	-0.0005	0	%100
52	66	X	-0.002	-0.002	0	%100
53	67	X	-0.001	-0.001	0	%100
54	68	X	-0.001	-0.001	0	%100
55	73	X	-0.0005	-0.0005	0	%100
56	74	X	-0.0005	-0.0005	0	%100
57	75	X	-0.0005	-0.0005	0	%100
58	76	X	-0.0005	-0.0005	0	%100

Member Distributed Loads (BLC 10 : 90 Seismic) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
59	77	X	-0.0005	-0.0005	0	%100
60	78	X	-0.0005	-0.0005	0	%100
61	79	X	-0.0004	-0.0004	0	%100
62	80	X	-0.0004	-0.0004	0	%100
63	81	X	-0.0004	-0.0004	0	%100
64	82	X	-0.0004	-0.0004	0	%100
65	83	X	-0.0004	-0.0004	0	%100
66	86	X	-0.002	-0.002	0	%100
67	87	X	-0.002	-0.002	0	%100
68	88	X	-0.0005	-0.0005	0	%100
69	89	X	-0.0005	-0.0005	0	%100
70	90	X	-0.0005	-0.0005	0	%100
71	91	X	-0.0005	-0.0005	0	%100
72	92	X	-0.0005	-0.0005	0	%100
73	93	X	-0.0005	-0.0005	0	%100
74	94	X	-0.0005	-0.0005	0	%100
75	95	X	-0.0005	-0.0005	0	%100
76	96	X	-0.0007	-0.0007	0	%100
77	97	X	-0.0005	-0.0005	0	%100
78	98	X	-0.0005	-0.0005	0	%100
79	99	X	-0.0007	-0.0007	0	%100
80	100	X	-0.001	-0.001	0	%100
81	103	X	-0.001	-0.001	0	%100

Member Distributed Loads (BLC 33 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	58	Y	-0.007	-0.007	0	0.25
2	60	Y	-0.00034	-0.007	0	1.346
3	61	Y	-0.014	-0.014	1.592	2.347
4	62	Y	-0.0004187	-0.005	1.25	3.25
5	62	Y	-0.005	-0.005	3.25	5.25
6	62	Y	-0.005	-0.005	5.25	7.25
7	62	Y	-0.005	-0.005	7.25	9.25
8	62	Y	-0.005	-0.0004187	9.25	11.25
9	98	Y	-0.007	-0.007	0	0.25
10	99	Y	-0.0003308	-0.007	0.897	2.244
11	31	Y	-0.014	-0.014	1.592	2.347
12	32	Y	-0.0004186	-0.005	1.25	3.25
13	32	Y	-0.005	-0.005	3.25	5.25
14	32	Y	-0.005	-0.005	5.25	7.25
15	32	Y	-0.005	-0.005	7.25	9.25
16	32	Y	-0.005	-0.0004186	9.25	11.25
17	95	Y	-0.007	-0.007	0	0.25
18	96	Y	-0.0003308	-0.007	0.897	2.244
19	97	Y	-0.007	-0.007	0	0.25
20	99	Y	-0.0002532	-0.007	0	1.346
21	1	Y	-0.014	-0.014	1.592	2.347
22	2	Y	-0.0004187	-0.005	1.25	3.25
23	2	Y	-0.005	-0.005	3.25	5.25
24	2	Y	-0.005	-0.005	5.25	7.25
25	2	Y	-0.005	-0.005	7.25	9.25
26	2	Y	-0.005	-0.0004187	9.25	11.25
27	59	Y	-0.007	-0.007	0	0.25
28	60	Y	-0.0003308	-0.007	0.897	2.244
29	94	Y	-0.007	-0.007	0	0.25
30	96	Y	-0.00034	-0.007	0	1.346

Member Distributed Loads (BLC 34 : BLC 8 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	58	Y	-0.008	-0.008	0	0.25
2	60	Y	-0.0003761	-0.008	0	1.346
3	61	Y	-0.016	-0.016	1.592	2.347
4	62	Y	-0.000463	-0.006	1.25	3.25
5	62	Y	-0.006	-0.006	3.25	5.25
6	62	Y	-0.006	-0.006	5.25	7.25
7	62	Y	-0.006	-0.006	7.25	9.25
8	62	Y	-0.006	-0.000463	9.25	11.25
9	98	Y	-0.008	-0.008	0	0.25
10	99	Y	-0.0003658	-0.008	0.897	2.244
11	31	Y	-0.016	-0.016	1.592	2.347
12	32	Y	-0.0004604	-0.006	1.25	3.25
13	32	Y	-0.006	-0.005	3.25	5.25
14	32	Y	-0.005	-0.005	5.25	7.25
15	32	Y	-0.005	-0.006	7.25	9.25
16	32	Y	-0.006	-0.0004604	9.25	11.25
17	95	Y	-0.008	-0.008	0	0.25
18	96	Y	-0.0003638	-0.008	0.897	2.244
19	97	Y	-0.008	-0.008	0	0.25
20	99	Y	-0.0002785	-0.008	0	1.346
21	1	Y	-0.016	-0.016	1.592	2.347
22	2	Y	-0.0004605	-0.006	1.25	3.25
23	2	Y	-0.006	-0.005	3.25	5.25
24	2	Y	-0.005	-0.005	5.25	7.25
25	2	Y	-0.005	-0.006	7.25	9.25
26	2	Y	-0.006	-0.0004605	9.25	11.25
27	59	Y	-0.008	-0.008	0	0.25
28	60	Y	-0.0003638	-0.008	0.897	2.244
29	94	Y	-0.008	-0.008	0	0.25
30	96	Y	-0.0003741	-0.008	0	1.346

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
1	Dead	DL	-1		30		3
2	0 Wind - No Ice	WLZ			30	81	
3	90 Wind - No Ice	WLX			30	81	
4	0 Wind - Ice	WLZ			30	81	
5	90 Wind - Ice	WLX			30	81	
6	0 Wind - Service	WLZ			30	81	
7	90 Wind - Service	WLX			30	81	
8	Ice	OL1			30	81	3
9	0 Seismic	ELZ			30	81	
10	90 Seismic	ELX			30	81	
11	Live Load a	LL		3			
12	Live Load b	LL		3			
13	Live Load c	LL		3			
14	Live Load d	LL					
15	Maint LL 1	LL			1		
16	Maint LL 2	LL			1		
17	Maint LL 3	LL			1		
18	Maint LL 4	LL			1		
19	Maint LL 5	LL			1		
20	Maint LL 6	LL			1		
21	Maint LL 7	LL			1		
22	Maint LL 8	LL			1		
23	Maint LL 9	LL			1		
24	Maint LL 10	LL			1		

Basic Load Cases (Continued)

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
25	Maint LL 11	LL			1		
26	Maint LL 12	LL			1		
27	Maint LL 13	LL			1		
28	Maint LL 14	LL			1		
29	Maint LL 15	LL			1		
30	Maint LL 16	LL			1		
31	Maint LL 17	LL			1		
32	Maint LL 18	LL			1		
33	BLC 1 Transient Area Loads	None				30	
34	BLC 8 Transient Area Loads	None				30	

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 Dead	Yes	Y	1	1.4						
2	1.2 D + 1.0 - 0 W	Yes	Y	1	1.2	2	1				
3	1.2 D + 1.0 - 30 W	Yes	Y	1	1.2	2	0.866	3	0.5		
4	1.2 D + 1.0 - 60 W	Yes	Y	1	1.2	3	0.866	2	0.5		
5	1.2 D + 1.0 - 90 W	Yes	Y	1	1.2	3	1				
6	1.2 D + 1.0 - 120 W	Yes	Y	1	1.2	3	0.866	2	-0.5		
7	1.2 D + 1.0 - 150 W	Yes	Y	1	1.2	2	-0.866	3	0.5		
8	1.2 D + 1.0 - 180 W	Yes	Y	1	1.2	2	-1				
9	1.2 D + 1.0 - 210 W	Yes	Y	1	1.2	2	-0.866	3	-0.5		
10	1.2 D + 1.0 - 240 W	Yes	Y	1	1.2	3	-0.866	2	-0.5		
11	1.2 D + 1.0 - 270 W	Yes	Y	1	1.2	3	-1				
12	1.2 D + 1.0 - 300 W	Yes	Y	1	1.2	3	-0.866	2	0.5		
13	1.2 D + 1.0 - 330 W	Yes	Y	1	1.2	2	0.866	3	-0.5		
14	1.2 D + 1.0 - 0 W/Ice	Yes	Y	1	1.2	4	1			8	1
15	1.2 D + 1.0 - 30 W/Ice	Yes	Y	1	1.2	4	0.866	5	0.5	8	1
16	1.2 D + 1.0 - 60 W/Ice	Yes	Y	1	1.2	5	0.866	4	0.5	8	1
17	1.2 D + 1.0 - 90 W/Ice	Yes	Y	1	1.2	5	1			8	1
18	1.2 D + 1.0 - 120 W/Ice	Yes	Y	1	1.2	5	0.866	4	-0.5	8	1
19	1.2 D + 1.0 - 150 W/Ice	Yes	Y	1	1.2	4	-0.866	5	0.5	8	1
20	1.2 D + 1.0 - 180 W/Ice	Yes	Y	1	1.2	4	-1			8	1
21	1.2 D + 1.0 - 210 W/Ice	Yes	Y	1	1.2	4	-0.866	5	-0.5	8	1
22	1.2 D + 1.0 - 240 W/Ice	Yes	Y	1	1.2	5	-0.866	4	-0.5	8	1
23	1.2 D + 1.0 - 270 W/Ice	Yes	Y	1	1.2	5	-1			8	1
24	1.2 D + 1.0 - 300 W/Ice	Yes	Y	1	1.2	5	-0.866	4	0.5	8	1
25	1.2 D + 1.0 - 330 W/Ice	Yes	Y	1	1.2	4	0.866	5	-0.5	8	1
26	1.2 D + 1.0 E - 0	Yes	Y	1	1.2	9	1				
27	1.2 D + 1.0 E - 30	Yes	Y	1	1.2	9	0.866	10	0.5		
28	1.2 D + 1.0 E - 60	Yes	Y	1	1.2	10	0.866	9	0.5		
29	1.2 D + 1.0 E - 90	Yes	Y	1	1.2	10	1				
30	1.2 D + 1.0 E - 120	Yes	Y	1	1.2	10	0.866	9	-0.5		
31	1.2 D + 1.0 E - 150	Yes	Y	1	1.2	9	-0.866	10	0.5		
32	1.2 D + 1.0 E - 180	Yes	Y	1	1.2	9	-1				
33	1.2 D + 1.0 E - 210	Yes	Y	1	1.2	9	-0.866	10	-0.5		
34	1.2 D + 1.0 E - 240	Yes	Y	1	1.2	10	-0.866	9	-0.5		
35	1.2 D + 1.0 E - 270	Yes	Y	1	1.2	10	-1				
36	1.2 D + 1.0 E - 300	Yes	Y	1	1.2	10	-0.866	9	0.5		
37	1.2 D + 1.0 E - 330	Yes	Y	1	1.2	9	0.866	10	-0.5		
38	1.2 D + 1.5 LL a + Service - 0 W	Yes	Y	1	1.2	6	1			11	1.5
39	1.2 D + 1.5 LL a + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	11	1.5
40	1.2 D + 1.5 LL a + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	11	1.5
41	1.2 D + 1.5 LL a + Service - 90 W	Yes	Y	1	1.2	7	1			11	1.5
42	1.2 D + 1.5 LL a + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	11	1.5
43	1.2 D + 1.5 LL a + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	11	1.5
44	1.2 D + 1.5 LL a + Service - 180 W	Yes	Y	1	1.2	6	-1			11	1.5
45	1.2 D + 1.5 LL a + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	11	1.5

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
46	1.2 D + 1.5 LL a + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	11	1.5
47	1.2 D + 1.5 LL a + Service - 270 W	Yes	Y	1	1.2	7	-1			11	1.5
48	1.2 D + 1.5 LL a + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	11	1.5
49	1.2 D + 1.5 LL a + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	11	1.5
50	1.2 D + 1.5 LL b + Service - 0 W	Yes	Y	1	1.2	6	1			12	1.5
51	1.2 D + 1.5 LL b + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	12	1.5
52	1.2 D + 1.5 LL b + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	12	1.5
53	1.2 D + 1.5 LL b + Service - 90 W	Yes	Y	1	1.2	7	1			12	1.5
54	1.2 D + 1.5 LL b + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	12	1.5
55	1.2 D + 1.5 LL b + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	12	1.5
56	1.2 D + 1.5 LL b + Service - 180 W	Yes	Y	1	1.2	6	-1			12	1.5
57	1.2 D + 1.5 LL b + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	12	1.5
58	1.2 D + 1.5 LL b + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	12	1.5
59	1.2 D + 1.5 LL b + Service - 270 W	Yes	Y	1	1.2	7	-1			12	1.5
60	1.2 D + 1.5 LL b + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	12	1.5
61	1.2 D + 1.5 LL b + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	12	1.5
62	1.2 D + 1.5 LL c + Service - 0 W	Yes	Y	1	1.2	6	1			13	1.5
63	1.2 D + 1.5 LL c + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	13	1.5
64	1.2 D + 1.5 LL c + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	13	1.5
65	1.2 D + 1.5 LL c + Service - 90 W	Yes	Y	1	1.2	7	1			13	1.5
66	1.2 D + 1.5 LL c + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	13	1.5
67	1.2 D + 1.5 LL c + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	13	1.5
68	1.2 D + 1.5 LL c + Service - 180 W	Yes	Y	1	1.2	6	-1			13	1.5
69	1.2 D + 1.5 LL c + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	13	1.5
70	1.2 D + 1.5 LL c + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	13	1.5
71	1.2 D + 1.5 LL c + Service - 270 W	Yes	Y	1	1.2	7	-1			13	1.5
72	1.2 D + 1.5 LL c + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	13	1.5
73	1.2 D + 1.5 LL c + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	13	1.5
74	1.2 D + 1.5 LL d + Service - 0 W	Yes	Y	1	1.2	6	1			14	1.5
75	1.2 D + 1.5 LL d + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	14	1.5
76	1.2 D + 1.5 LL d + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	14	1.5
77	1.2 D + 1.5 LL d + Service - 90 W	Yes	Y	1	1.2	7	1			14	1.5
78	1.2 D + 1.5 LL d + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	14	1.5
79	1.2 D + 1.5 LL d + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	14	1.5
80	1.2 D + 1.5 LL d + Service - 180 W	Yes	Y	1	1.2	6	-1			14	1.5
81	1.2 D + 1.5 LL d + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	14	1.5
82	1.2 D + 1.5 LL d + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	14	1.5
83	1.2 D + 1.5 LL d + Service - 270 W	Yes	Y	1	1.2	7	-1			14	1.5
84	1.2 D + 1.5 LL d + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	14	1.5
85	1.2 D + 1.5 LL d + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	14	1.5
86	1.2 D + 1.5 LL Maint (1)	Yes	Y	1	1.2					15	1.5
87	1.2 D + 1.5 LL Maint (2)	Yes	Y	1	1.2					16	1.5
88	1.2 D + 1.5 LL Maint (3)	Yes	Y	1	1.2					17	1.5
89	1.2 D + 1.5 LL Maint (4)	Yes	Y	1	1.2					18	1.5
90	1.2 D + 1.5 LL Maint (5)	Yes	Y	1	1.2					19	1.5
91	1.2 D + 1.5 LL Maint (6)	Yes	Y	1	1.2					20	1.5
92	1.2 D + 1.5 LL Maint (7)	Yes	Y	1	1.2					21	1.5
93	1.2 D + 1.5 LL Maint (8)	Yes	Y	1	1.2					22	1.5
94	1.2 D + 1.5 LL Maint (9)	Yes	Y	1	1.2					23	1.5
95	1.2 D + 1.5 LL Maint (10)	Yes	Y	1	1.2					24	1.5
96	1.2 D + 1.5 LL Maint (11)	Yes	Y	1	1.2					25	1.5
97	1.2 D + 1.5 LL Maint (12)	Yes	Y	1	1.2					26	1.5
98	1.2 D + 1.5 LL Maint (13)	Yes	Y	1	1.2					27	1.5
99	1.2 D + 1.5 LL Maint (14)	Yes	Y	1	1.2					28	1.5
100	1.2 D + 1.5 LL Maint (15)	Yes	Y	1	1.2					29	1.5
101	1.2 D + 1.5 LL Maint (16)	Yes	Y	1	1.2					30	1.5
102	1.2 D + 1.5 LL Maint (17)	Yes	Y	1	1.2					31	1.5
103	1.2 D + 1.5 LL Maint (18)	Yes	Y	1	1.2					32	1.5

Load Combinations (Continued)

Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor

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	7	max	0.693	5	1.697	14	0.657	2	-0.926	8	1.487	5	0.074	69
2		min	-0.627	11	0.3	8	-0.901	8	-3.639	14	-1.384	11	-0.136	3
3	2	max	0.681	5	1.69	20	0.854	2	-0.782	2	1.383	5	0.06	62
4		min	-0.746	11	0.249	2	-0.63	8	-3.616	20	-1.486	11	-0.155	20

APPENDIX D

ADDITIONAL CALCULATIONS

PROJECT	**147960.004.01 - DARRYL H.'S QUARRY KSC**				
SUBJECT	**Platform Mount Analysis**				
DATE	**08/26/21**	PAGE	1	OF	1

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

[REF: AISC 360-05]

Reactions at Bolted Connection

Tension	:	0.657	k
Vertical Shear	:	1.697	k
Horizontal Shear	:	0.693	k
Torsion	:	0.074	k.ft
Moment from Horizontal Forces	:	1.487	k.ft
Moment from Vertical Forces	:	-0.926	k.ft

Bolt Parameters

Bolt Grade	:	A307	
Bolt Diameter	:	0.625	in
Nominal Bolt Area	:	0.307	in^2
Bolt spacing, Horizontal	:	6	in
Bolt spacing, Vertical	:	6	in
Bolt edge distance, plate height	:	1.5	in
Bolt edge distance, plate width	:	1.5	in
Total Number of Bolts	:	2	bolts

Summary of Forces

Shear Resultant Force	:	1.83	k
Force from Horz. Moment	:	2.69	k
Force from Vert. Moment	:	-1.68	k
Shear Load / Bolt	:	0.92	k
Tension Load / Bolt	:	0.33	k
Resultant from Moments / Bolt	:	3.17	k

Bolt Checks

Nominal Tensile Stress, F_{nt}	:	45.00	ksi	[AISC Table J3.2]
Available Tensile Stress, ΦR_{nt}	:	10.36	k/bolt	[Eq. J3-1]
Unity Check, Bolt Tension	:	**33.79%**		**OKAY**
Nominal Shear Stress, F_{nv}	:	24.00	ksi	[AISC Table J3.2]
Available Shear Stress, ΦR_{nv}	:	5.53	k/bolt	[Eq. J3-1]
Unity Check, Bolt Shear	:	**22.53%**		**OKAY**
Unity Check, Combined	:	**56.32%**		**OKAY**
Available Bearing Strength, ΦR_n	:	34.66	k/bolt	
Unity Check, Bolt Bearing	:	**2.64%**		**OKAY**

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: CTHA278A

876330
299 Paxton Way
Glastonbury, Connecticut 06798

November 10, 2021

EBI Project Number: 6221006615

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**10.84%**

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

November 10, 2021

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

Emissions Analysis for Site: CTHA278A - 876330

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **299 Paxton Way** in **Glastonbury, 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 299 Paxton Way in Glastonbury, 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) The antennas used in this modeling are the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s) in Sector A, the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s) in Sector B, the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 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.

14) The antenna mounting height centerline of the proposed antennas is 147 feet above ground level (AGL).

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

16) 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 / 1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd
Height (AGL):	147 feet	Height (AGL):	147 feet	Height (AGL):	147 feet
Channel Count:	13	Channel Count:	13	Channel Count:	13
Total TX Power (W):	560 Watts	Total TX Power (W):	560 Watts	Total TX Power (W):	560 Watts
ERP (W):	17,868.72	ERP (W):	17,868.72	ERP (W):	17,868.72
Antenna A1 MPE %:	**4.27%**	Antenna B1 MPE %:	**4.27%**	Antenna C1 MPE %:	**4.27%**
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):	147 feet	Height (AGL):	147 feet	Height (AGL):	147 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 %:	**6.57%**	Antenna B2 MPE %:	**6.57%**	Antenna C2 MPE %:	**6.57%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	10.84%
no additional carriers	N/A
Site Total MPE % :	10.84%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	10.84%
T-Mobile Sector B Total:	10.84%
T-Mobile Sector C Total:	10.84%
Site Total MPE % :	10.84%

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 600 MHz LTE	2	591.73	147.0	2.14	600 MHz LTE	400	0.54%
T-Mobile 600 MHz NR	1	1577.94	147.0	2.85	600 MHz NR	400	0.71%
T-Mobile 700 MHz LTE	2	695.22	147.0	2.51	700 MHz LTE	467	0.54%
T-Mobile 1900 MHz GSM	4	1052.26	147.0	7.61	1900 MHz GSM	1000	0.76%
T-Mobile 1900 MHz LTE	2	2104.51	147.0	7.61	1900 MHz LTE	1000	0.76%
T-Mobile 2100 MHz LTE	2	2649.42	147.0	9.58	2100 MHz LTE	1000	0.96%
T-Mobile 2500 MHz LTE 1C & 2C Traffic	1	11044.63	147.0	19.97	2500 MHz LTE 1C & 2C Traffic	1000	2.00%
T-Mobile 2500 MHz LTE 1C & 2C Broadcast	1	1074.06	147.0	1.94	2500 MHz LTE 1C & 2C Broadcast	1000	0.19%
T-Mobile 2500 MHz NR Traffic	1	22089.26	147.0	39.94	2500 MHz NR Traffic	1000	3.99%
T-Mobile 2500 MHz NR Broadcast	1	2148.13	147.0	3.88	2500 MHz NR Broadcast	1000	0.39%
						Total:	**10.84%**

• 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:	10.84%
Sector B:	10.84%
Sector C:	10.84%
T-Mobile Maximum MPE % (Sector A):	10.84%
Site Total:	10.84%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **10.84%** 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.

14862

Network Building & Consulting LLC SA
1177 Sentry Parkway West, VEVA 17, Suite 400
Blue Bell, PA 19422
(410)712-7092

TRUIST
BB&T is now Truist
65-330/550

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PAY Six Hundred Twenty Five and 0/100 Dollars

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Network Building & Consulting LLC SA 14862

Network Building & Consulting, LLC

Check Date: 11/12/2021

Check Request#: CR011421

Project /Site ID: 100788/ 1164

Site Name: 876330 - Crown

Purpose: Admin Zoning Fee

Memo 1: CSC Application fee for Crown Castle_ 876330_584562_299 Paxton Way, Glastonbury, Connecticut 06033. Please contact Ersilia Davis 551-804-0667, edavis@nbcllc.com with any questions

Memo 2:

Memo 3: 14862

Memo 4:

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