

10 INDUSTRIAL AVE,
SUITE 3
MAHWAH NJ 07430

PHONE: 201.684.0055
FAX: 201.684.0066



October 22, 2021

Members of the Siting Council
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: Notice of Exempt Modification
330 Middletown Road, Columbia, CT 06237
Latitude: 41.689686
Longitude: -72.32518
T-Mobile Site#: CTHA803A - Sprint Keep Project - ****Refiling with different antenna loadout****

Dear Ms. Bachman:

T-Mobile/Sprint currently maintains six (6) antennas at the 108-foot level of the existing 148-foot Monopole at 330 Middletown Road, Columbia, Connecticut. The 148-foot Monopole and property is owned and operated by American Tower. T-Mobile now intends to remove all Sprint equipment including antennas, cables, and ground equipment. T-Mobile will be adding six (6) antennas. The new antennas will be installed at the same 108-foot level. The new antennas support 5G services.

Planned Modifications:

Tower:

Remove

(6) Sprint Antennas
(12) Sprint RRHs
All Sprint Cables

Install New:

(3) APXVAALL24 43-U-NA20 Antennas
(3) AIR6449 Antennas
(3) Ericsson Radio 4480 B71+B85
(3) Ericsson 4460 B25+B66
(3) 6/24 Hybrid Cables

Ground:

Install New:

- (1) B160
- (1) Enclosure 6160
- (1) RBS 6601
- (1) BB6648S
- (1) DUG20

To Be Removed:

All Sprint Ground Equipment

The Siting Council approved additional height to the monopole in Petition No. 586 on February 11, 2003. The proposed modifications do not conflict with the conditions given.

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 First Selectman - Steven Everett, Elected Official, and Paula Stahl, Town Planner, as well as the tower and property owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed 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 referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Eric Breun

Transcend Wireless

Cell: 201-658-7728

Email: ebreun@transcendwireless.com

Attachments

cc: Steven Everett - as First Selectman of Columbia

Paula Stahl - Town Planner

American Tower - Tower Owner

John and Myra Pekarski - Land Owner

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

1 LBS

1 OF 1

SHIP TO:
TOWN PLANNER PAULA STAHL
323 CONNECTICUT 87
COLUMBIA CT 06237



CT 063 0-01



UPS GROUND

TRACKING #: 1Z V25 742 03 9483 3088



BILLING: P/P

Reference #1: CTHA803A

XOL 21.10.03 NV45-43.0A 10/2021*



TM

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

1 LBS

1 OF 1

SHIP TO:
AMERICAN TOWER CORPORATION
10 PRESIDENTIAL WAY
WOBURN MA 01801



MA 018 9-04



UPS GROUND

TRACKING #: 1Z V25 742 03 9019 9076



BILLING: P/P

Reference #1: CTHA803A

XOL 21.10.03 NV45-43.0A 10/2021*



TM

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

1 LBS

1 OF 1

SHIP TO:
JOHN AND MYRA PEKARSKI
330 CONNECTICUT 66
COLUMBIA CT 06237



CT 063 0-01



UPS GROUND

TRACKING #: 1Z V25 742 03 9307 1091



BILLING: P/P

Reference #1: CTHA803A

XOL 21.10.03 NV45-43.0A 10/2021*



TM

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

1 LBS

1 OF 1

SHIP TO:
FIRST SELECTMAN
STEVEN EVERETT
323 CONNECTICUT 87
COLUMBIA CT 06237



CT 063 0-01



UPS GROUND

TRACKING #: 1Z V25 742 03 9549 6110



BILLING: P/P

Reference #1: CTHA803A

XOL 21.10.03 NV45-43.0A 10/2021*



TM

Hello, your package has been delivered.

Delivery Date: Wednesday, 10/20/2021

Delivery Time: 3:55 PM

Left At: MET CUST MAN

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[Set Delivery Instructions](#)

[Manage Preferences](#)

TRANSCEND WIRELESS

Tracking Number: [1ZV257420393071091](#)

Ship To: JOHN AND MYRA PEKARSKI
330 CONNECTICUT 66
COLUMBIA, CT 06237
US

Number of Packages: 1

UPS Service: UPS Ground

Package Weight: 1.0 LBS

Reference Number: [CTHA803A](#)

Hello, your package has been delivered.

Delivery Date: Wednesday, 10/20/2021

Delivery Time: 12:42 PM

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TRANSCEND WIRELESS

Tracking Number: [1ZV257420394833088](#)

Ship To: TOWN PLANNER PAULA STAHL
323 CONNECTICUT 87
COLUMBIA, CT 06237
US

Number of Packages: 1

UPS Service: UPS Ground

Package Weight: 1.0 LBS

Reference Number: [CTHA803A](#)

Hello, your package has been delivered.

Delivery Date: Wednesday, 10/20/2021

Delivery Time: 12:42 PM

Left At: FRONT DOOR

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[Set Delivery Instructions](#)

[Manage Preferences](#)

TRANSCEND WIRELESS

Tracking Number: [1ZV257420395496110](#)

Ship To: STEVEN EVERETT
323 CONNECTICUT 87
COLUMBIA, CT 06237
US

Number of Packages: 1

UPS Service: UPS Ground

Package Weight: 1.0 LBS

Reference Number: [CTHA803A](#)

Hello, your package has been delivered.

Delivery Date: Wednesday, 10/20/2021

Delivery Time: 11:30 AM

Left At: FRONT DESK

Signed by: ANRCRI

TRANSCEND WIRELESS

Tracking Number: [1ZV257420390199076](#)

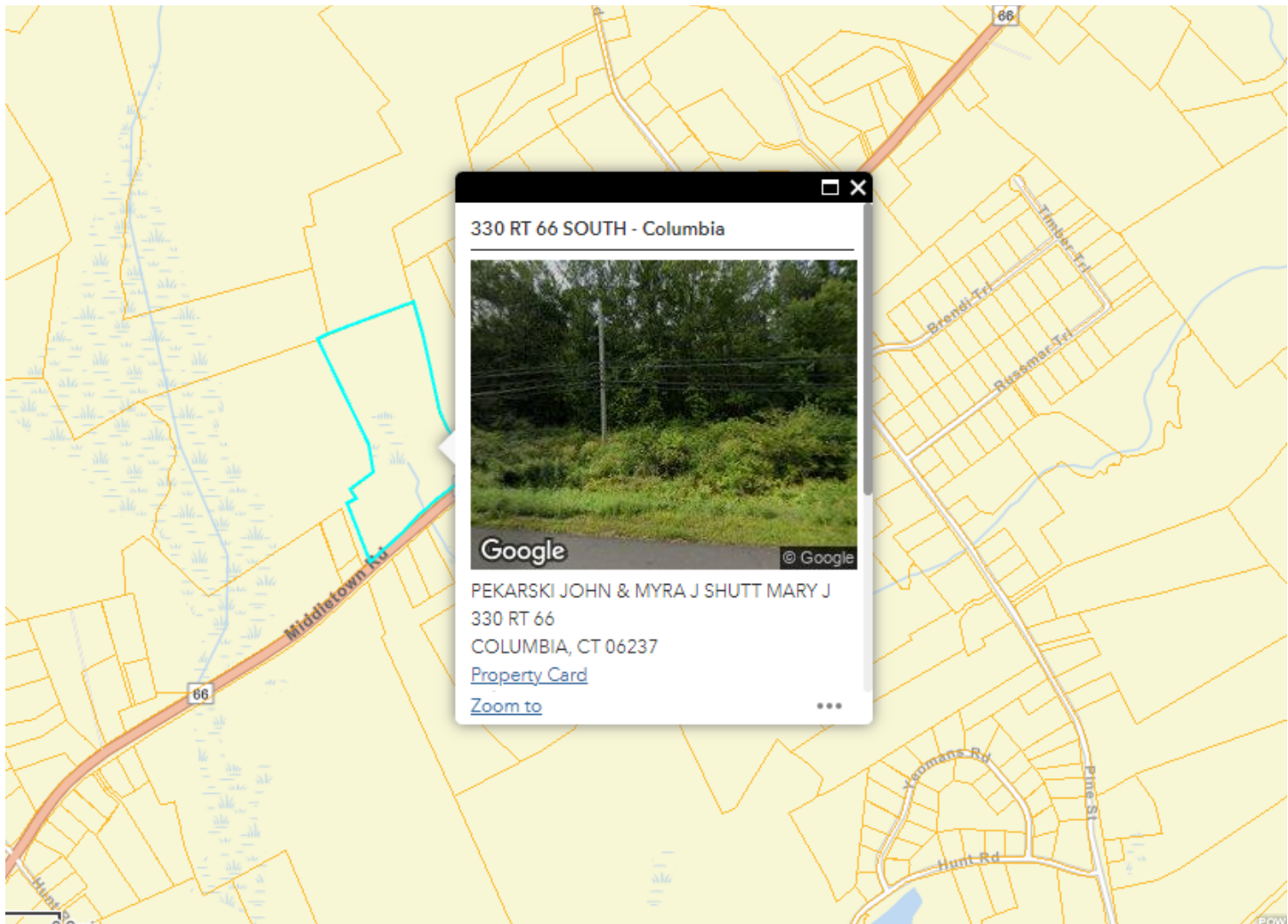
Ship To: AMERICAN TOWER CORPORATION
10 PRESIDENTIAL WAY
WOBURN, MA 01801
US

Number of Packages: 1

UPS Service: UPS Ground

Package Weight: 1.0 LBS

Reference Number: [CTHA803A](#)



330 RT 66 SOUTH - Columbia



Google

© Google

PEKARSKI JOHN & MYRA J SHUTT MARY J
330 RT 66
COLUMBIA, CT 06237

[Property Card](#)

[Zoom to](#)



Parcel Information

Location:	330 RT 66 SOUTH	Property Use:	Residential	Primary Use:	Residential
Unique ID:	00165000	Map Block Lot:	028 019	Acres:	26.27
490 Acres:	24.12	Zone:	LCR	Volume / Page:	0227/0002
Developers Map / Lot:		Census:	8601		

Value Information

	Appraised Value	Assessed Value
Land	177,900	39,820
Buildings	178,800	125,200
Detached Outbuildings	16,100	11,400
Total	372,800	176,420

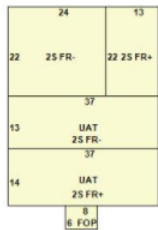
Owner's Information

Owner's Data
PEKARSKI JOHN & MYRA J SHUTT MARY J 330 RT 66 COLUMBIA, CT 06237

Building 1



Building Use:	Res 30	Style:	Colonial	Living Area:	3,626
Stories:	2.00	Construction:	Wood Frame	Year Built:	1760
Total Rooms:	12	Bedrooms:	6	Full Baths:	3
Half Baths:	1	Fireplaces:	0	Heating:	Hot Water
Fuel:	Oil	Cooling Percent:	0	Basement Area:	804
Basement Finished Area:	0	Basement Garages:	0	Roof Material:	Asphalt
Siding:	Asbestos Shingles/Pre-Fab Wood	Units:	Family Suite		



Special Features

Extra Kitchen	1
Unfinished Basement	804

Attached Components

Type:	Year Built:	Area:
Open Porch	1760	48
Unfinished Attic	1760	481
Unfinished Attic	1760	518

Detached Outbuildings

Type:	Year Built:	Length:	Width:	Area:
Milking Parlor	1950	0.00	0.00	192
Garage Poor	1950	0.00	0.00	256
Frame Shed	1750	0.00	0.00	180
Frame Shed	1950	0.00	0.00	64
Frame Shed	1750	0.00	0.00	348
Frame Shed	1950	0.00	0.00	280
Implement Shed	1750	0.00	0.00	544
Implement Shed	2010	0.00	0.00	384

Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Sale Price
PEKARSKI JOHN & MYRA J	0227	0002	05/08/2018		\$0
PEKARSKI JOHN & M JEANETTE	0143	0397	03/11/2003		\$0
PEKARSKI JOHN	0143	0388	03/11/2003		\$65,000
PEKARSKI JOHN & ALEXANDER	0058	0422	10/08/1981		\$0

Building Permits

Permit Number	Permit Type	Date Opened	Reason
5991	Commercial	08/02/2008	REM 3 ANTENNAS & INSTALL 6 NEW
5684	Plumbing	09/15/2007	INSTALL BATHROOM IN ADDN
4439E	Electrical	12/20/2005	VERIZON
4556	Commercial	05/04/2005	TOWER ELEC
4481	Commercial	03/17/2005	ANT CO 2645
4320H	Remodel	10/18/2004	METAL CHIMNEY
4140	Outbuilding/Yard Item	07/09/2004	4' BARN EXT CO 1820
3814	Commercial	11/13/2003	Commercial
3683e	Commercial	09/12/2003	TOWER ELEC
3392	Commercial	08/12/2003	ANTENNAS CO
3401	Commercial	08/12/2003	TOWER EXT CO 1566
2995	Commercial	03/15/2002	EQUIP. BLDG
2739	Addition	09/01/2001	ADDN CO 1641
2471	Residential	11/03/2000	REROOF

Petition No. 586
SpectraSite Communications, Inc.
Columbia, Connecticut
Staff Report
November 12, 2002

On October 16, 2002 Connecticut Siting Council (Council) member Colin C. Tait with Robert Mercier of Council staff met SpectraSite Communications, Inc. (SpectraSite) representatives Julie Donaldson Kohler, Jason Catalini, David Trace, and Ray Vergati, and Town of Columbia Zoning Enforcement Official Carl Fontneau at 330 Middletown Road in Columbia for a field review of this petition. SpectraSite is petitioning the Council for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need (Certificate) would be required for the extension of an existing 120-foot monopole owned by SpectraSite.

SpectraSite proposes to install a 30-foot extension on an existing 120-foot monopole to accommodate the needs of AT&T Wireless PCS, LLC (AT&T). AT&T seeks to install six panel antennas on the extension at a centerline height of 150 feet above ground level (agl). The total height of the structure would be approximately 153 feet agl. AT&T would install equipment cabinets on a concrete pad within the existing compound.

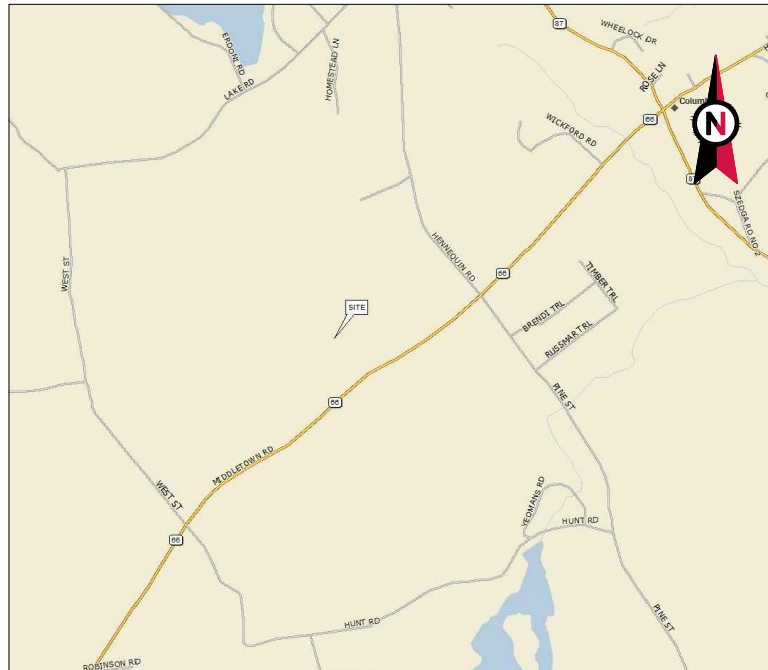
Propagation models indicate adequate coverage on Route 66 between the proposed site and AT&T site CT-861 in Columbia with antennas located at 150 feet agl. According to the models, a coverage gap of approximately 0.25 miles would result if antennas were placed at the proposed site at 130 feet agl.

The cumulative worst-case power density for the telecommunications operations at the site has been calculated to be 18.7% of the applicable standard for uncontrolled environments.

The tower is located in the northeastern portion of a 26-acre wooded parcel. Adjacent properties include five residential properties, privately owned and town owned vacant land and the town recreation area.

The town issued a special permit for the construction of the facility on January 11, 2000. The permit limited the height of the structure to 120 feet. The Town contends that Council jurisdiction regarding modifications to municipally approved towers is unclear and requests that SpectraSite file a special permit application for the proposed extension. In addition, the Town is requesting a public hearing in Columbia to allow for a discussion on Council jurisdiction and the merits of the application.

SpectraSite contends that the proposed modification of the structure would not cause a substantial adverse environmental impact and would prevent the construction of a new tower in the area



VICINITY MAP

FEMA NOTE:
 THE TOWER IS LOCATED IN FLOOD ZONE "X." AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN ACCORDING TO FEMA COMMUNITY PANEL #0901600003B, DATED SEPTEMBER 16, 1982.



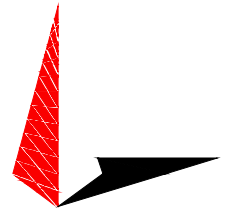
AMERICAN TOWER®

ATC SITE NAME: COLUMBIA CENTRAL
 ATC SITE NUMBER: 30528
 T-MOBILE SITE NAME: CTHA803A
 T-MOBILE SITE NUMBER: CTHA803A
 SITE ADDRESS: 330 MIDDLETOWN ROAD
 COLUMBIA, CT 06237-1528



LOCATION MAP

**T-MOBILE SPRINT RETAIN ANTENNA AMENDMENT PLAN
 67D5998C CONFIGURATION**



TOWER ENGINEERING PROFESSIONALS
 326 TRYON ROAD
 RALEIGH, NC 27603-3530
 OFFICE: (919) 661-6351
 www.tepgroup.net

REV.	DESCRIPTION	BY	DATE
A	PRELIMINARY	SSP	05/13/21
0	100% CONSTRUCTION	GV	06/04/21
1	100% CONSTRUCTION	SRZ	09/20/21

ATC SITE NUMBER:
30528
 ATC SITE NAME:
COLUMBIA CENTRAL
 T-MOBILE SITE NAME:
CTHA803A
 SITE ADDRESS:
 330 MIDDLETOWN ROAD
 COLUMBIA, CT 06237-1528



DATE DRAWN:	09/20/21
ATC JOB NO:	13653962
CUSTOMER NAME:	CTHA803A
CUSTOMER ID:	CTHA803A

TITLE SHEET

SHEET NUMBER:
G-001
 REVISION:
1

COMPLIANCE CODE	PROJECT SUMMARY	PROJECT DESCRIPTION	SHEET INDEX				
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNMENT AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES. 1. 2015 INTERNATIONAL BUILDING CODE (IBC) 2. 2017 NATIONAL ELECTRIC CODE (NEC) 3. LOCAL BUILDING CODE 4. CITY/COUNTY ORDINANCES	<u>SITE ADDRESS:</u> 330 MIDDLETOWN ROAD COLUMBIA, CT 06237-1528 COUNTY: TOLLAND <u>GEOGRAPHIC COORDINATES:</u> LATITUDE: 41.68986 LONGITUDE: -72.32518 GROUND ELEVATION: 638' AMSL	THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW: <u>TOWER WORK:</u> REMOVE (6) ANTENNA(S), (12) RRH(S), (4) 1-1/4" HYBRIFLEX CABLE(S), AND (6) 1-1/4" COAX CABLE(S). INSTALL (6) ANTENNA(S), (6) RRH(S), (3) RRU DUAL SWIVEL MOUNT(S), AND (3) 6/24 4AWG HYBRID TRUNK(S). <u>GROUND WORK:</u> REMOVE (2) EQUIPMENT CABINET(S) AND (1) FIBER JUNCTION BOX(ES). INSTALL (1) ENCLOSURE 6160(S), (1) ENCLOSURE B160(S), (1) RBS 6601(S), (3) BB6648(S), (1) DUG20(S), AND (1) CSR IXRE V2 (GEN2)(S). EXISTING (1) PPC CABINET(S) AND (1) TELCO BOX(ES) TO REMAIN. NOTE: THIS CONSTRUCTION DRAWING SET IS NOT INTENDED TO ADDRESS ANY ELECTRICAL UPGRADES NEEDED. ANY ELECTRICAL UPGRADES WILL BE SHOWN IN A SEPARATE CONSTRUCTION DRAWING SET.	SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
	<u>PROJECT TEAM</u> <u>TOWER OWNER:</u> AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801 <u>ENGINEER:</u> TOWER ENGINEERING PROFESSIONALS 326 TYRON ROAD RALEIGH, NC 27603-3530 <u>APPLICANT:</u> T-MOBILE <u>PROPERTY OWNER:</u> AMERICAN TOWER CORPORATION SPECTRASITE COMMUNICATIONS INC. P.O. BOX 723597 ATLANTA, GA 31139		G-001	TITLE SHEET	1	09/20/21	SRZ
	<u>UTILITY COMPANIES</u> POWER COMPANY: ITRON PHONE: (866) 374-8766 TELEPHONE COMPANY: SOUTHERN NEW ENGLAND TELEPHONE CO. PHONE: (860) 947-7383		C-101 DETAILED SITE PLAN C-102 DETAILED EQUIPMENT LAYOUT C-201 TOWER ELEVATION C-401 ANTENNA INFORMATION & SCHEDULE C-501 CONSTRUCTION DETAILS C-502 CONSTRUCTION DETAILS E-501 GROUNDING DETAILS R-601 SUPPLEMENTAL R-602 SUPPLEMENTAL R-603 SUPPLEMENTAL R-604 SUPPLEMENTAL R-605 SUPPLEMENTAL R-606 SUPPLEMENTAL R-607 SUPPLEMENTAL				
	<u>PROJECT LOCATION DIRECTIONS</u> TAKE RT 2 TO EXIT 12 (RT 66 EAST). FOLLOW INTO COLUMBIA PAST JCT W/RT 85. JUST BEFORE THE JCT W / RT 87, ACCESS ROAD WILL BE ON LEFT SIDE OF ROAD.	<u>PROJECT NOTES</u> 1. THE FACILITY IS UNMANNED. 2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE. 3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE. 4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED. 5. HANDICAP ACCESS IS NOT REQUIRED.					

GENERAL CONSTRUCTION NOTES:

1. OWNER FURNISHED MATERIALS, T-MOBILE "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL
 - A. BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE SHELTER (GROUND BUILD/CO-LOCATE ONLY)
 - B. AC/TELCO INTERFACE BOX (PPC)
 - C. ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)
 - D. TOWERS, MONOPOLES
 - E. TOWER LIGHTING
 - F. GENERATORS & LIQUID PROPANE TANK
 - G. ANTENNA STANDARD BRACKETS, FRAMES AND PIPES FOR MOUNTING
 - H. ANTENNAS (INSTALLED BY OTHERS)
 - I. TRANSMISSION LINE
 - J. TRANSMISSION LINE JUMPERS
 - K. TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS
 - L. TRANSMISSION LINE GROUND KITS
 - M. HANGERS
 - N. HOISTING GRIPS
 - O. BTS EQUIPMENT
2. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL OTHER MATERIALS FOR THE COMPLETE INSTALLATION OF THE SITE INCLUDING, BUT NOT LIMITED TO, SUCH MATERIALS AS FENCING, STRUCTURAL STEEL SUPPORTING SUB-FRAME FOR PLATFORM, ROOFING LABOR AND MATERIALS, GROUNDING RINGS, GROUNDING WIRES, COPPER-CLAD OR XIT CHEMICAL GROUND ROD(S), BUSS BARS, TRANSFORMERS AND DISCONNECT SWITCHES WHERE APPLICABLE, TEMPORARY ELECTRICAL POWER, CONDUIT, LANDSCAPING COMPOUND STONE, CRANES, CORE DRILLING, SLEEPERS AND RUBBER MATTING, REBAR, CONCRETE CAISSONS, PADS AND/OR AUGER MOUNTS, MISCELLANEOUS FASTENERS, CABLE TRAYS, NON-STANDARD ANTENNA FRAMES AND ALL OTHER MATERIAL AND LABOR REQUIRED TO COMPLETE THE JOB ACCORDING TO THE DRAWINGS AND SPECIFICATIONS. IT IS THE POSITION OF T-MOBILE TO APPLY FOR PERMITTING AND CONTRACTOR RESPONSIBLE FOR PICKUP AND PAYMENT OF REQUIRED PERMITS.
3. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSIEIA/ITIA-222, AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS.
4. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
6. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
7. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
8. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
9. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
11. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
12. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE T-MOBILE REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE T-MOBILE REP PRIOR TO PROCEEDING.
13. EACH CONTRACTOR SHALL COOPERATE WITH THE T-MOBILE REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
14. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE T-MOBILE CONSTRUCTION MANAGER.
15. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
16. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE T-MOBILE REP AND ENGINEER OF RECORD IMMEDIATELY.
17. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
18. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
19. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH AMERICAN TOWER CORPORATION (ATC) AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
20. CONTRACTOR SHALL FURNISH T-MOBILE AND AMERICAN TOWER CORPORATION (ATC) WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
21. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.

22. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY T-MOBILE MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.

23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH T-MOBILE SPECIFICATIONS AND REQUIREMENTS.

24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO T-MOBILE FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.

25. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO T-MOBILE SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.

26. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.

27. CONTRACTOR SHALL NOTIFY T-MOBILE REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.

28. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.

29. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.

30. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE T-MOBILE REP. ANY WORK FOUND BY THE T-MOBILE REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.

31. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.

32. T-MOBILE FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE T-MOBILE WAREHOUSE, NO LATER THAN 48HR AFTER BEING NOTIFIED INSURED, STORED, UNCRATE, PROTECTED AND INSTALLED BY THE CONTRACTOR WITH ALL APPURTENANCES REQUIRED TO PLACE THE EQUIPMENT IN OPERATION, READY FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT AFTER PICKING IT UP.

33. T-MOBILE OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH, IN HIS OWN OPINION ARE NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EITHER BEFORE OR AFTER INSTALLATION AND THE EQUIPMENT SHALL BE REPLACED WITH EQUIPMENT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE CONTRACTOR AT NO COST TO T-MOBILE OR THEIR ARCHITECT/ENGINEER.

**SPECIAL CONSTRUCTION
ANTENNA INSTALLATION NOTES:**

1. WORK INCLUDED:

A. ANTENNA AND COAXIAL CABLES ARE FURNISHED BY T-MOBILE UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION CONTRACTOR IN TERMS OF COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL AND

B. INSTALL ANTENNA AS INDICATE ON DRAWINGS AND T-MOBILE SPECIFICATIONS.

C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS

D. INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE.

E. CONTRACTOR SHALL PROVIDE FOUR (4) SETS OF SWEEP TESTS USING ANRITZU-PACKARD 8713B RF SCALAR NETWORK ANALYZER. SUBMIT FREQUENCY DOMAIN REFLECTOMETER(FDR) TESTS RESULTS TO THE PROJECT MANAGER. SWEEP TESTS SHALL BE AS PER ATTACHED RFS "MINIMUM FIELD TESTING RECOMMENDED FOR ANTENNA AND HELIAX COAXIAL CABLE SYSTEMS" DATED 10/5/93. TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING SERVICE AND BE BOUND AND SUBMITTED WITHIN ONE WEEK OF WORK COMPLETION.

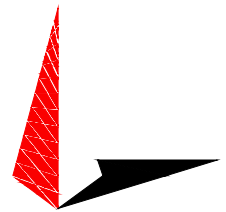
F. INSTALL COAXIAL CABLES AND TERMINATING BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTIONS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.

G. ANTENNA AND COAXIAL CABLE GROUNDING:

2. ALL EXTERIOR #6 GREED GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONNECTORS/SPLICE WEATHERPROOFING KIT #221213 OR EQUAL.

3. ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS)

ALL DISCREPANCIES FROM WHAT IS SHOWN ON THESE CONSTRUCTION DRAWINGS SHALL BE COMMUNICATED TO ATC ENGINEERING IMMEDIATELY FOR CORRECTION OR RE-DESIGN. FAILURE TO COMMUNICATE DIRECTLY WITH ATC ENGINEERING OR ANY CHANGES FROM THE DESIGN CONDUCTED WITHOUT PRIOR APPROVAL FROM ATC ENGINEERING SHALL BE THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

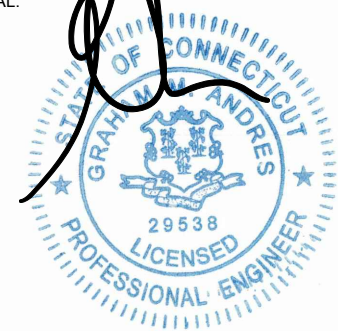


TOWER ENGINEERING PROFESSIONALS
326 TRYON ROAD
RALEIGH, NC 27603-3530
OFFICE: (919) 661-6351
www.tepgroup.net

REV.	DESCRIPTION	BY	DATE
A	PRELIMINARY	SSP	05/13/21
0	100% CONSTRUCTION	GV	06/04/21

ATC SITE NUMBER:
302528
ATC SITE NAME:
COLUMBIA CENTRAL
T-MOBILE SITE NAME:
CTHA803A
SITE ADDRESS:
330 MIDDLETOWN ROAD
COLUMBIA, CT 06237-1528

SEAL:



06/04/21



DATE DRAWN:	06/04/21
ATC JOB NO:	13653962
CUSTOMER NAME:	CTHA803A
CUSTOMER ID:	CTHA803A

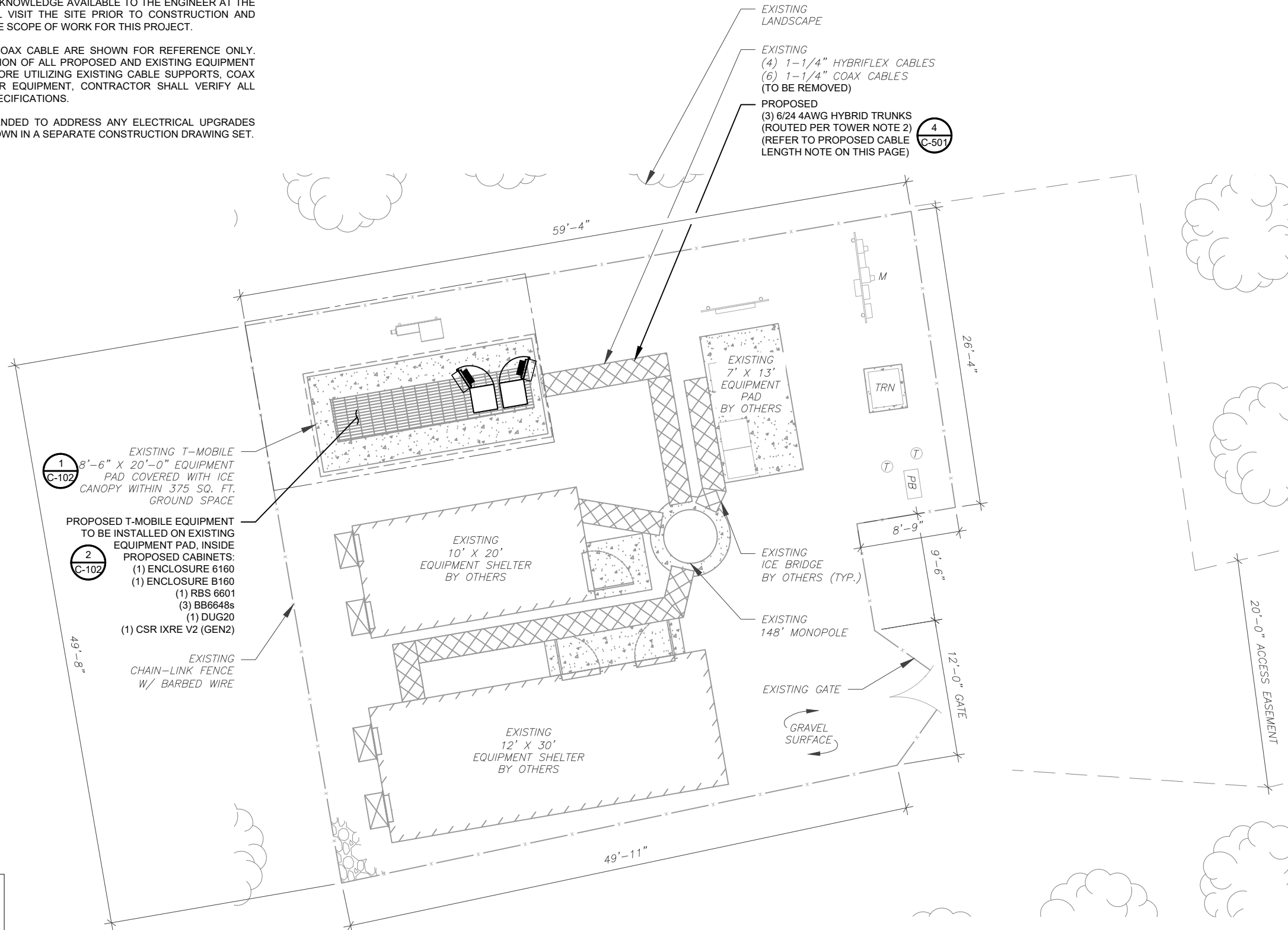
GENERAL NOTES

SHEET NUMBER: G-002	REVISION: 0
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SITE PLAN NOTES:

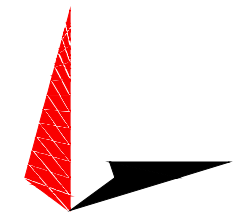
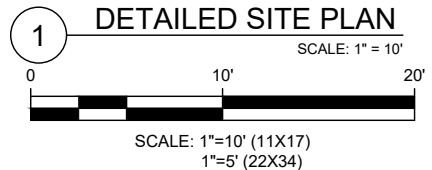
1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.
3. THIS CONSTRUCTION DRAWING SET IS NOT INTENDED TO ADDRESS ANY ELECTRICAL UPGRADES NEEDED. ANY ELECTRICAL UPGRADES WILL BE SHOWN IN A SEPARATE CONSTRUCTION DRAWING SET.

LEGEND	
⊗	GROUNDING TEST WELL
ATS	AUTOMATIC TRANSFER SWITCH
B	BOLLARD
CSC	CELL SITE CABINET
D	DISCONNECT
E	ELECTRICAL
F	FIBER
GEN	GENERATOR
G	GENERATOR RECEPTACAL
HH, V	HAND HOLE, VAULT
IB	ICE BRIDGE
K	KENTROX BOX
LC	LIGHTING CONTROL
M	METER
PB	PULL BOX
PP	POWER POLE
T	TELCO
TRN	TRANSFORMER
x	CHAINLINK FENCE



PROPOSED CABLE LENGTH:

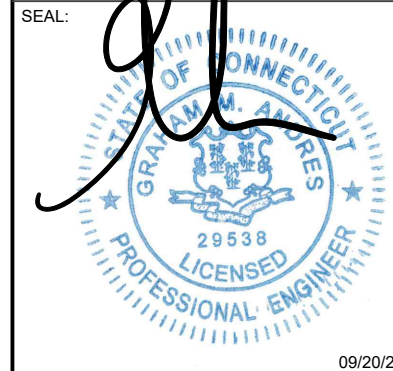
1. ESTIMATED LENGTH OF PROPOSED CABLE IS **170'**. ESTIMATED LENGTH OF CABLE WAS PROVIDED BY CUSTOMER OR CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES). CDS DEFER TO GREATEST CABLE LENGTH.
2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.



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REV.	DESCRIPTION	BY	DATE
A	PRELIMINARY	SSP	05/13/21
0	100% CONSTRUCTION	GV	06/04/21
1	100% CONSTRUCTION	SRZ	09/20/21

ATC SITE NUMBER:
302528
ATC SITE NAME:
COLUMBIA CENTRAL
T-MOBILE SITE NAME:
CTHA803A
SITE ADDRESS:
330 MIDDLETOWN ROAD
COLUMBIA, CT 06237-1528



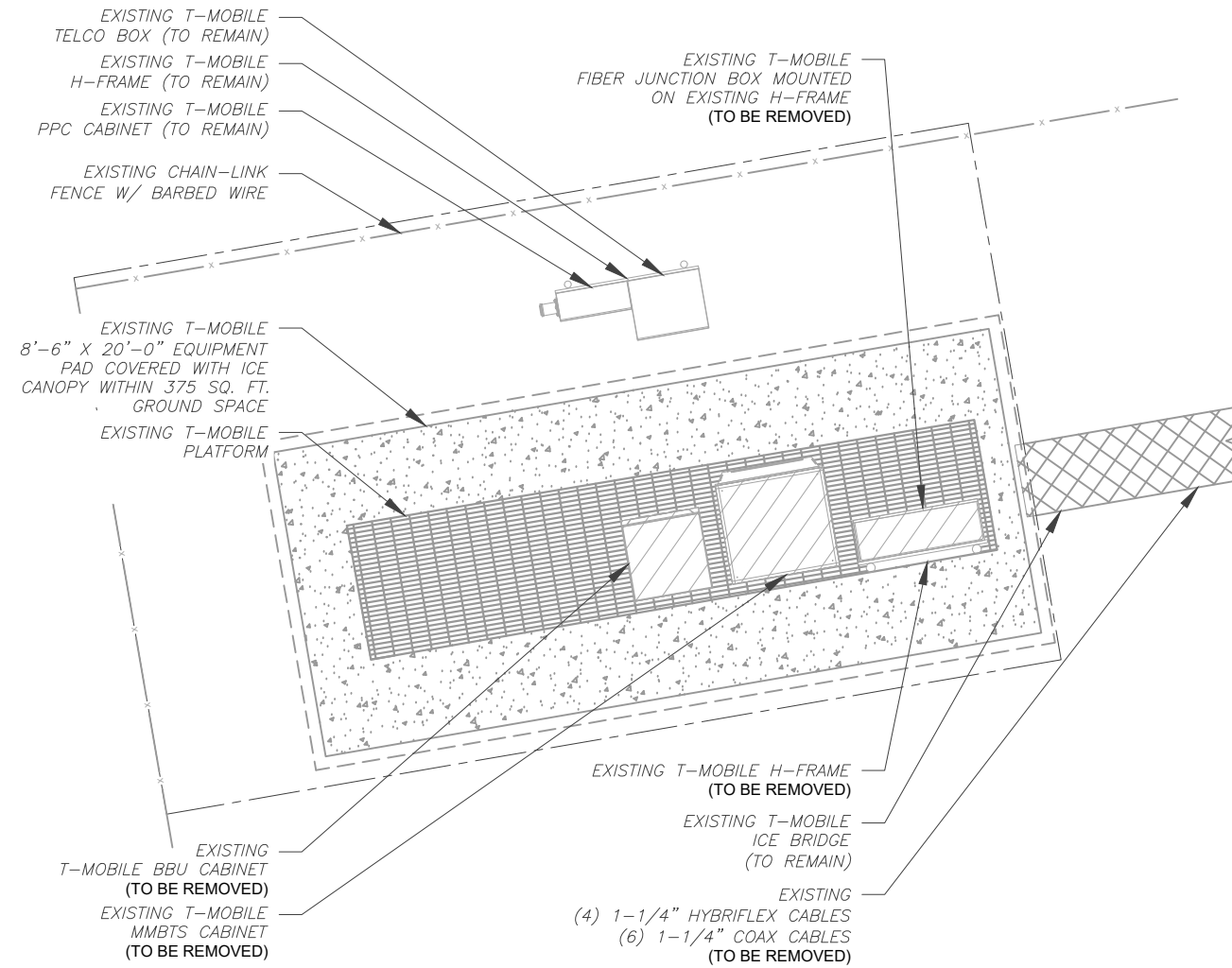
DATE DRAWN:	09/20/21
ATC JOB NO:	13653962
CUSTOMER NAME:	CTHA803A
CUSTOMER ID:	CTHA803A

DETAILED SITE PLAN

SHEET NUMBER:	REVISION:
C-101	1

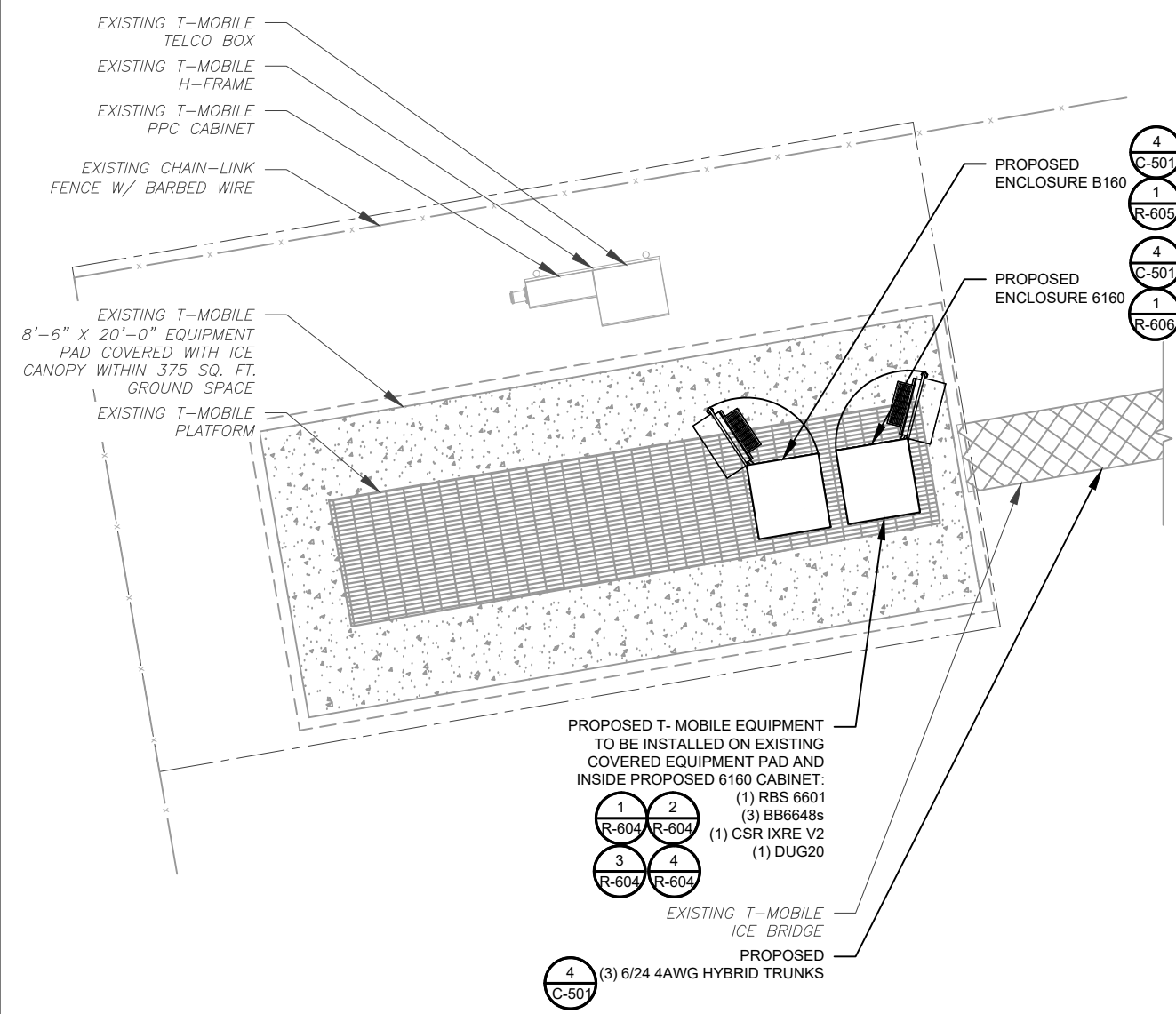
SITE PLAN NOTES:

1. CONTRACTOR TO VERIFY THERE IS NO LIVE AAV FIBER RUNNING THROUGH EXISTING DEAD EQUIPMENT. IF SO, THIS WILL NEED TO BE RERUN THROUGH CONDUIT PRIOR TO REMOVING DEAD 2G (6201 CABS) EQUIPMENT.
2. REMOVE EXISTING 2G CABINETS, AND POWER / TELCO WHIPS ASSOCIATED WITH THE DEAD EQUIPMENT IF APPLICABLE.
3. ALL OPEN PORTS NEED TO BE SEALED / WEATHERPROOFED PROPERLY
4. ALL UNNEEDED / EXCESS EQUIPMENT AND GARBAGE TO BE REMOVED FROM EQUIPMENT AREA. DISPOSE OF MATERIALS PROPERLY OFF SITE.

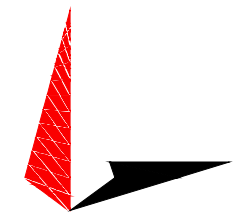


1 EXISTING GROUND EQUIPMENT LAYOUT
SCALE: 1"=5' (11X17)
1"=2.5' (22X34)

T-MOBILE CM APPROVAL REQUIRED BEFORE INSTALLING CABINETS



2 PROPOSED GROUND EQUIPMENT LAYOUT
SCALE: 1"=5' (11X17)
1"=2.5' (22X34)



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A	PRELIMINARY	SSP	05/13/21
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1	100% CONSTRUCTION	SRZ	09/20/21

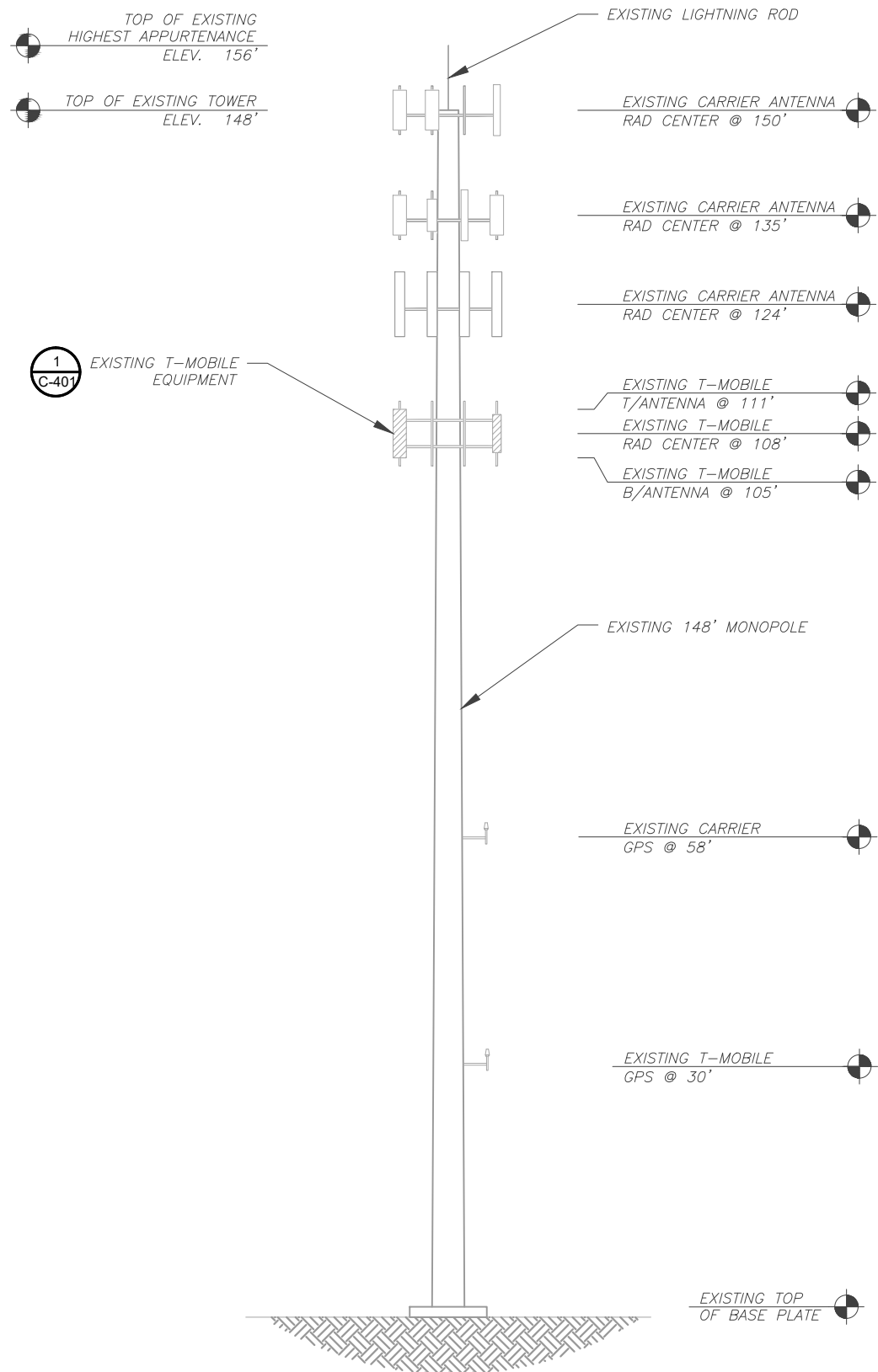
ATC SITE NUMBER:
302528
ATC SITE NAME:
COLUMBIA CENTRAL
T-MOBILE SITE NAME:
CTHA803A
SITE ADDRESS:
330 MIDDLE TOWN ROAD
COLUMBIA, CT 06237-1528



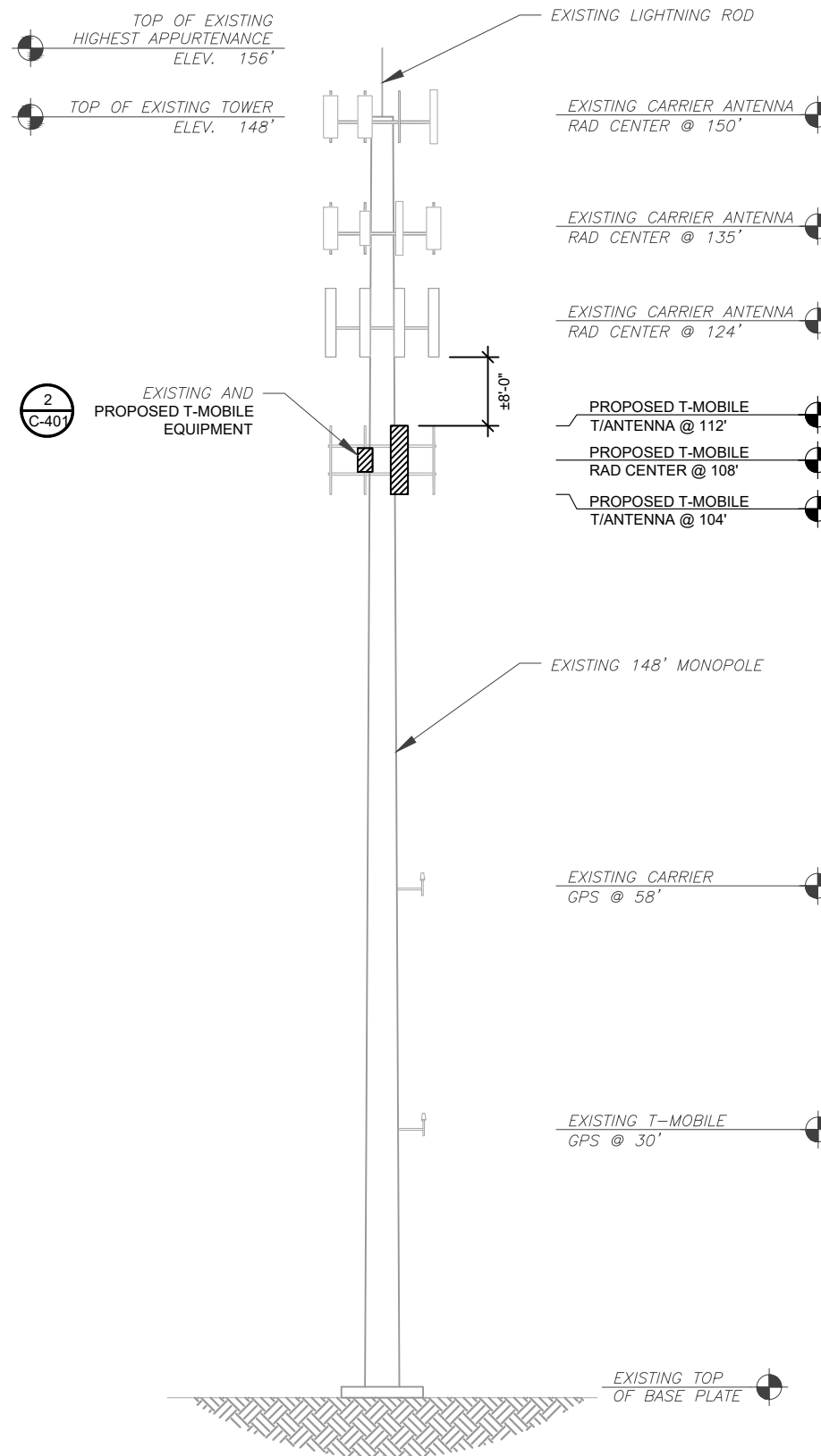
DATE DRAWN:	09/20/21
ATC JOB NO:	13653962
CUSTOMER NAME:	CTHA803A
CUSTOMER ID:	CTHA803A

DETAILED EQUIPMENT LAYOUT

SHEET NUMBER:	REVISION:
C-102	1



1 EXISTING TOWER ELEVATION
SCALE: N.T.S.

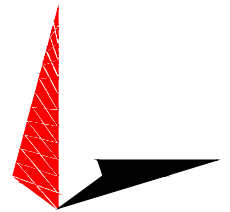


2 PROPOSED TOWER ELEVATION
SCALE: N.T.S.

PER MOUNT ANALYSIS COMPLETED BY TOWER ENGINEERING PROFESSIONALS, DATED SEPTEMBER 8, 2021, THE EXISTING MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING

TOWER NOTE:

- IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE PROJECT MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
- WHERE APPLICABLE, ALL NEW ANTENNAS, EQUIPMENT, MOUNTS, CABLING, ETC. SHALL BE PAINTED/SOCKED TO MATCH EXISTING EQUIPMENT IN ACCORDANCE WITH FAA, JURISDICTION, AND/OR OTHER LOCAL REQUIREMENTS.
- ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.
- TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)



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A	PRELIMINARY	SSP	05/13/21
0	100% CONSTRUCTION	GV	06/04/21
1	100% CONSTRUCTION	SRZ	09/20/21

ATC SITE NUMBER:
302528
ATC SITE NAME:
COLUMBIA CENTRAL
T-MOBILE SITE NAME:
CTHA803A
SITE ADDRESS:
330 MIDDLETOWN ROAD
COLUMBIA, SC 29237-1528

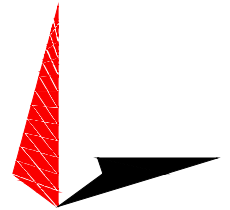
SEAL:



DATE DRAWN:	09/20/21
ATC JOB NO:	13653962
CUSTOMER NAME:	CTHA803A
CUSTOMER ID:	CTHA803A

TOWER ELEVATION

SHEET NUMBER:	REVISION:
C-201	1



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REV.	DESCRIPTION	BY	DATE
A	PRELIMINARY	SSP	05/13/21
0	100% CONSTRUCTION	GV	06/04/21
1	100% CONSTRUCTION	SRZ	09/20/21

ATC SITE NUMBER:
302528
 ATC SITE NAME:
COLUMBIA CENTRAL
 T-MOBILE SITE NAME:
CTHA803A
 SITE ADDRESS:
 330 MIDDLE TOWN ROAD
 COLUMBIA, SC 29207-1528

SEAL:



09/20/21

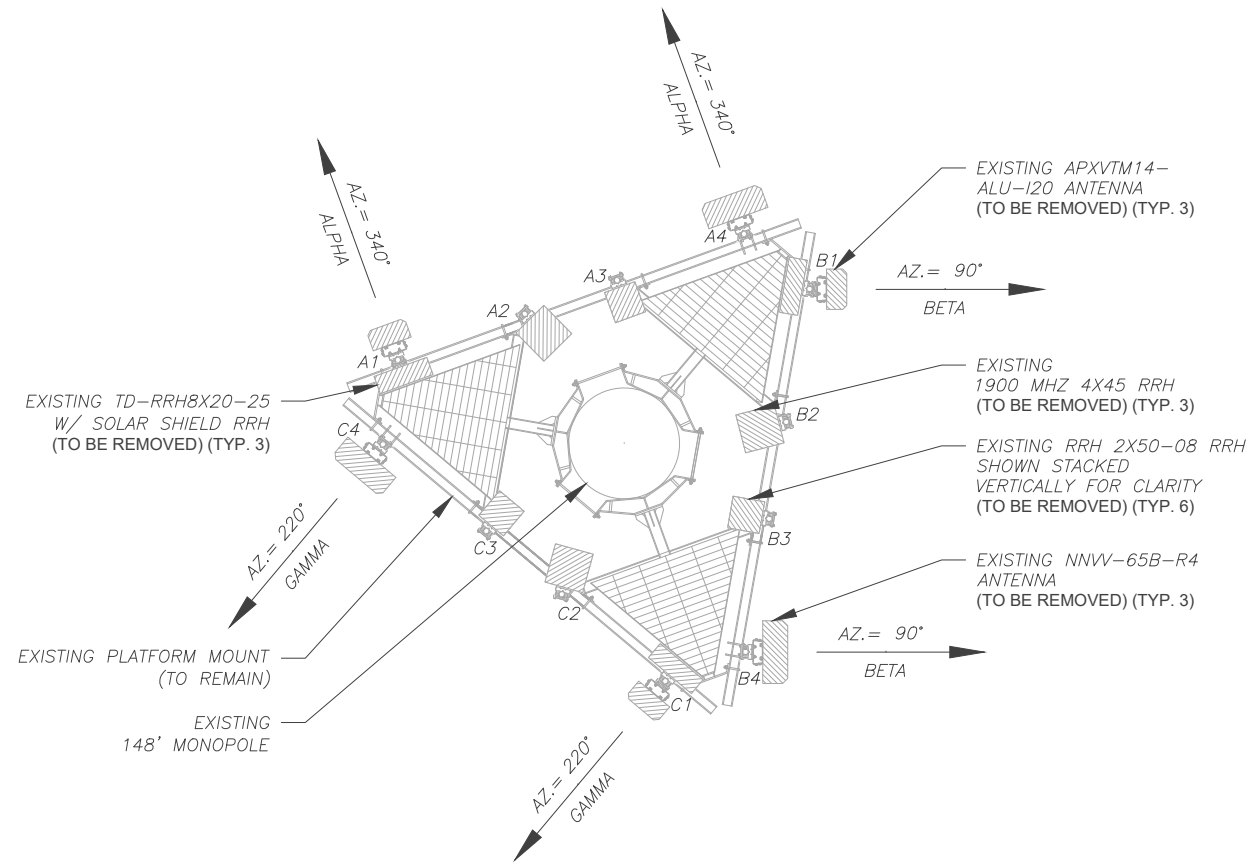


DATE DRAWN:	09/20/21
ATC JOB NO:	13653962
CUSTOMER NAME:	CTHA803A
CUSTOMER ID:	CTHA803A

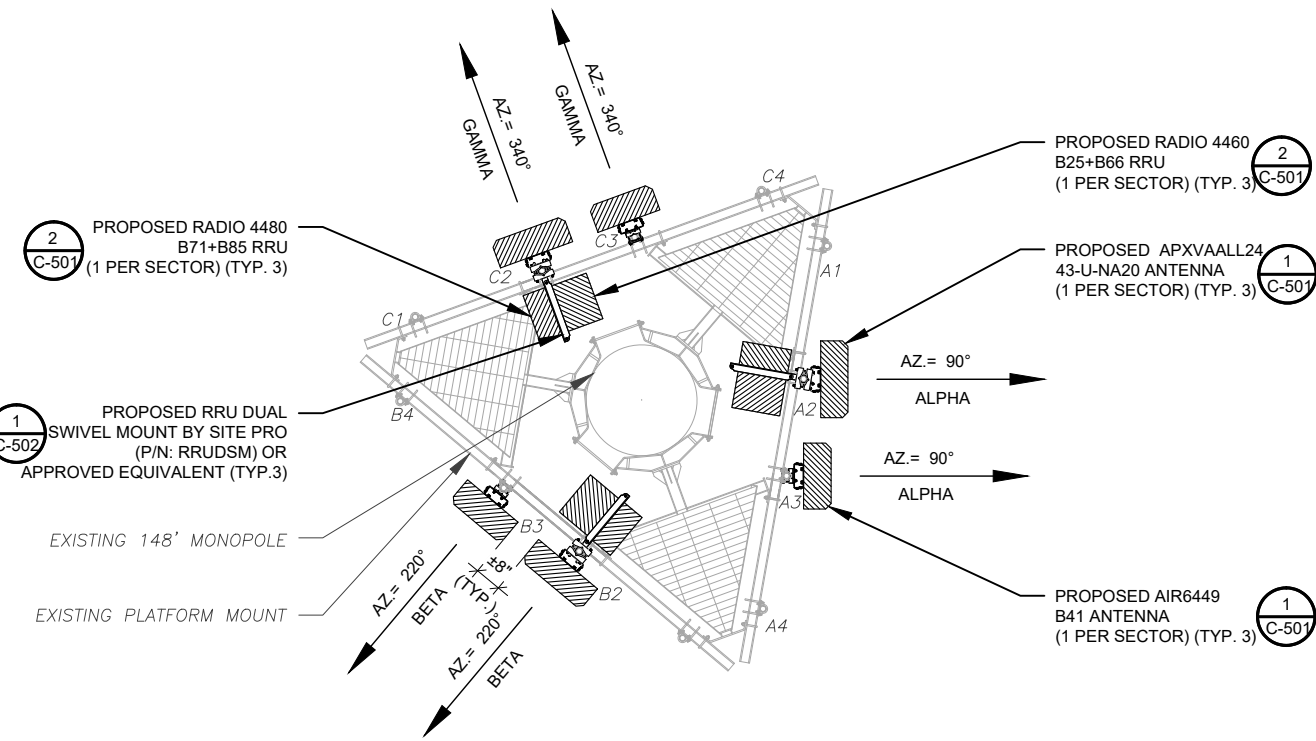
ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER:	REVISION:
C-401	1

PER MOUNT ANALYSIS COMPLETED BY TOWER ENGINEERING PROFESSIONALS, DATED SEPTEMBER 8, 2021, THE EXISTING MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING



1 EXISTING ANTENNA PLAN
 SCALE: N.T.S.



2 FINAL ANTENNA PLAN
 SCALE: N.T.S.

EXISTING ANTENNA SCHEDULE									
LOCATION		ANTENNA SUMMARY					NON ANTENNA SUMMARY		
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	108'	340°	A1	APXVTM14-ALU-I20	-	-	RMV	(1) TD-RRH 8X20-25 W/ SOLAR SHIELD	RMV
			A2	-	-	-	(1) 1900 MHZ 4X45 RRH	RMV	
			A3	-	-	-	(2) RRH2X50-08	RMV	
			A4	NNVV-65B-R4	-	-	RMV	-	
BETA	108'	90°	B1	APXVTM14-ALU-I20	-	-	RMV	(1) TD-RRH 8X20-25 W/ SOLAR SHIELD	RMV
			B2	-	-	-	(1) 1900 MHZ 4X45 RRH	RMV	
			B3	-	-	-	(2) RRH2X50-08	RMV	
			B4	NNVV-65B-R4	-	-	RMV	-	
GAMMA	108'	220°	C1	APXVTM14-ALU-I20	-	-	RMV	(1) TD-RRH 8X20-25 W/ SOLAR SHIELD	RMV
			C2	-	-	-	(1) 1900 MHZ 4X45 RRH	RMV	
			C3	-	-	-	(2) RRH2X50-08	RMV	
			C4	NNVV-65B-R4	-	-	RMV	-	

NOTES
1. CONFIRM WITH T-MOBILE REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.
2. CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.
3. TEP DID NOT VERIFY THE EXISTING LOADING. LOADING DATA PROVIDED BY ATC AND T-MOBILE.
STATUS ABBREVIATIONS
RMV: TO BE REMOVED
RMN: TO REMAIN
REL: TO BE RELOCATED
ADD: TO BE ADDED

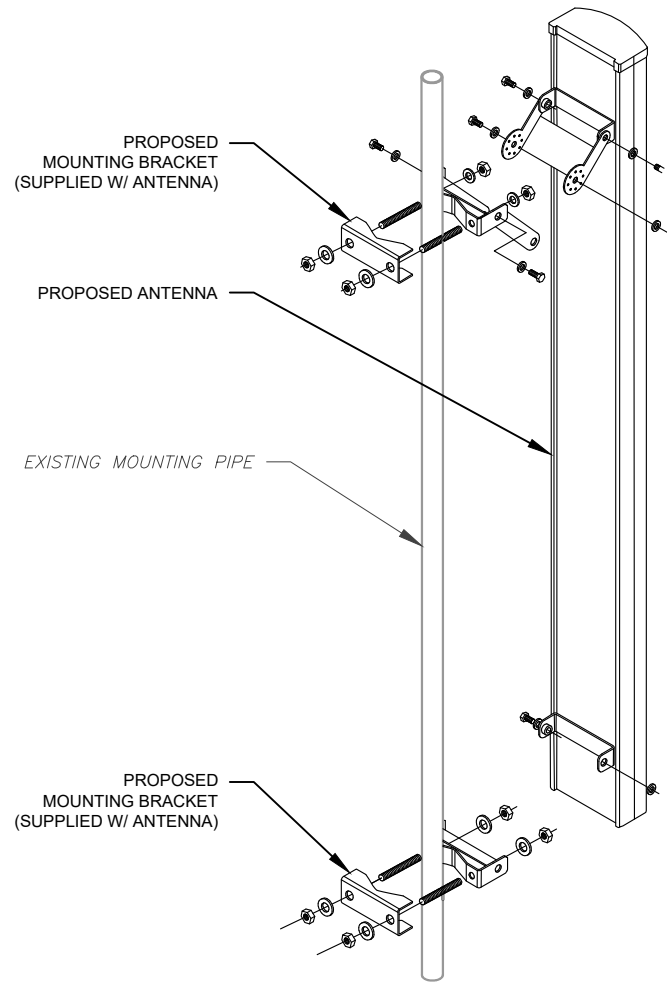
CABLE LENGTHS FOR JUMPERS
 JUNCTION BOX TO RRU: 15'
 RRU TO ANTENNA: 10'

FINAL ANTENNA SCHEDULE									
LOCATION		ANTENNA SUMMARY					NON ANTENNA SUMMARY		
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	108'	90°	A1	-	-	-	-	-	-
			A2	APXVAALL24_43-U-NA20	L600/L700/N600/L2100/L1900/G1900	0°/2°	ADD	(1) RADIO 4480 B71+B85A	ADD
			A3	AIR 6449 B41	L2500/N2500	0°/2°	ADD	(1) RADIO 4460 B25+B66	ADD
			A4	-	-	-	-	-	-
BETA	108'	220°	B1	-	-	-	-	-	-
			B2	APXVAALL24_43-U-NA20	L600/L700/N600/L2100/L1900/G1900	0°/2°	ADD	(1) RADIO 4480 B71+B85A	ADD
			B3	AIR 6449 B41	L2500/N2500	0°/2°	ADD	(1) RADIO 4460 B25+B66	ADD
			B4	-	-	-	-	-	-
GAMMA	108'	340°	C1	-	-	-	-	-	-
			C2	APXVAALL24_43-U-NA20	L600/L700/N600/L2100/L1900/G1900	0°/2°	ADD	(1) RADIO 4480 B71+B85A	ADD
			C3	AIR 6449 B41	L2500/N2500	0°/2°	ADD	(1) RADIO 4460 B25+B66	ADD
			C4	-	-	-	-	-	-

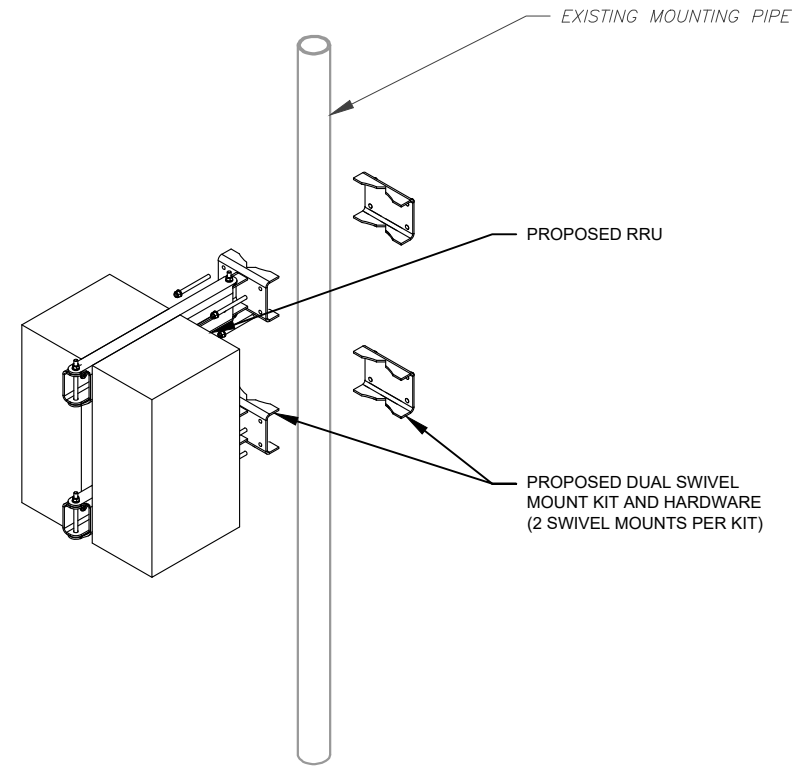
EXISTING FIBER DISTRIBUTION/OVP BOX		EXISTING CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRIFLEX	STATUS
-	-	(6) 1-1/4"	(4) 1-1/4"	RMV

3 EQUIPMENT SCHEDULES

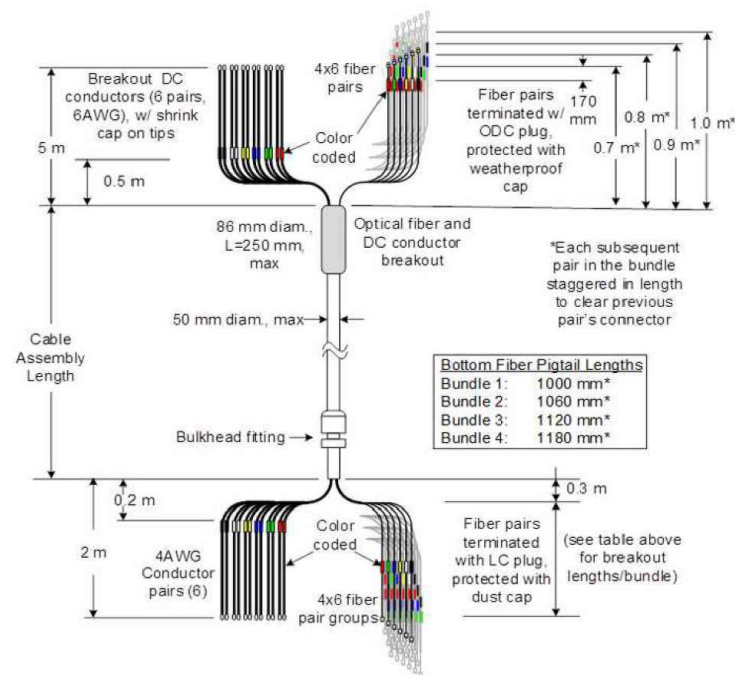
FINAL FIBER DISTRIBUTION / OVP BOX		FINAL CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	-	(3) 6/24 HCS 4AWG	ADD



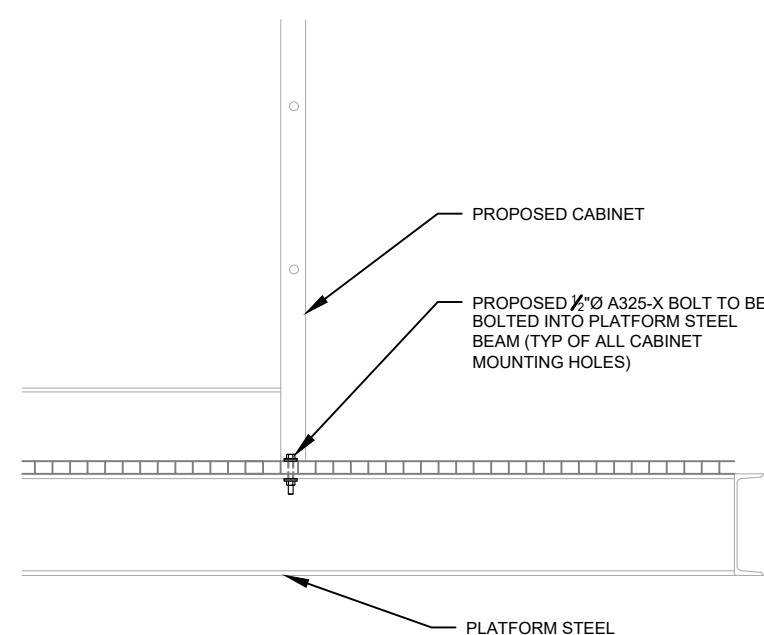
1 PROPOSED ANTENNA MOUNTING DETAIL - TYPICAL
SCALE: N.T.S.



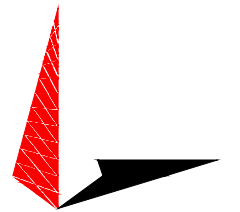
2 PROPOSED RRU MOUNTING DETAIL - TYPICAL
SCALE: N.T.S.



3 PROPOSED HCS DETAIL - TYPICAL
SCALE: N.T.S.



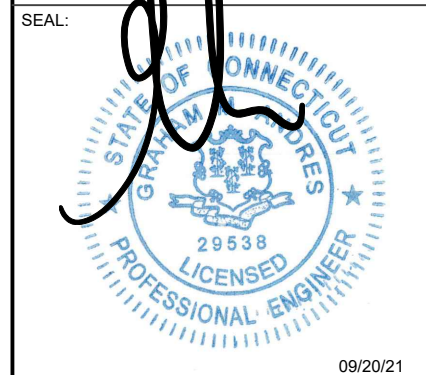
4 CABINET ATTACHMENT DETAIL
SCALE: NOT TO SCALE



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A	PRELIMINARY	SSP	05/13/21
0	100% CONSTRUCTION	GV	06/04/21
1	100% CONSTRUCTION	SRZ	09/20/21

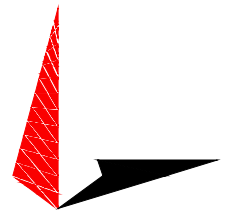
ATC SITE NUMBER:
302528
ATC SITE NAME:
COLUMBIA CENTRAL
T-MOBILE SITE NAME:
CTHA803A
SITE ADDRESS:
33 MIDDLETOWN ROAD
COLUMBIA, CT 06237-1528



DATE DRAWN:	09/20/21
ATC JOB NO:	13653962
CUSTOMER NAME:	CTHA803A
CUSTOMER ID:	CTHA803A

**CONSTRUCTION
DETAILS**

SHEET NUMBER: C-501	REVISION: 1
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B	100% CONSTRUCTION	GV	06/04/21

ATC SITE NUMBER:
302528
 ATC SITE NAME:
COLUMBIA CENTRAL
 T-MOBILE SITE NAME:
CTHA803A
 SITE ADDRESS:
 330 MIDDLETOWN ROAD
 COLUMBIA, CT 06237-1528

SEAL:



06/04/21

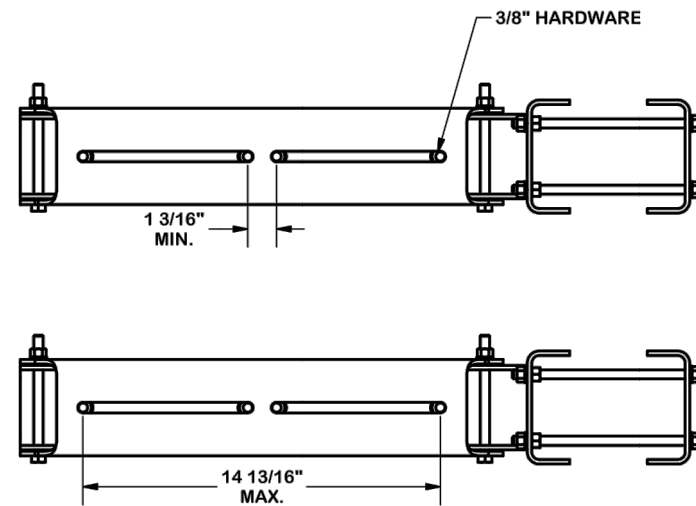
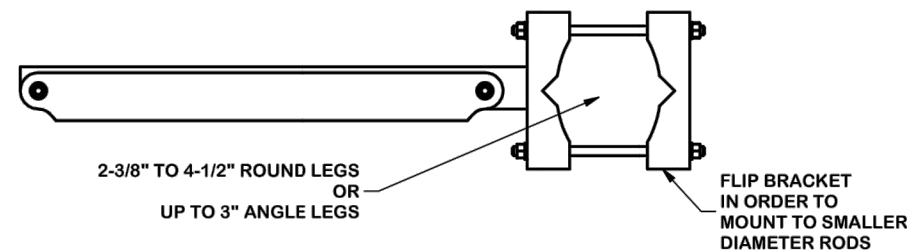
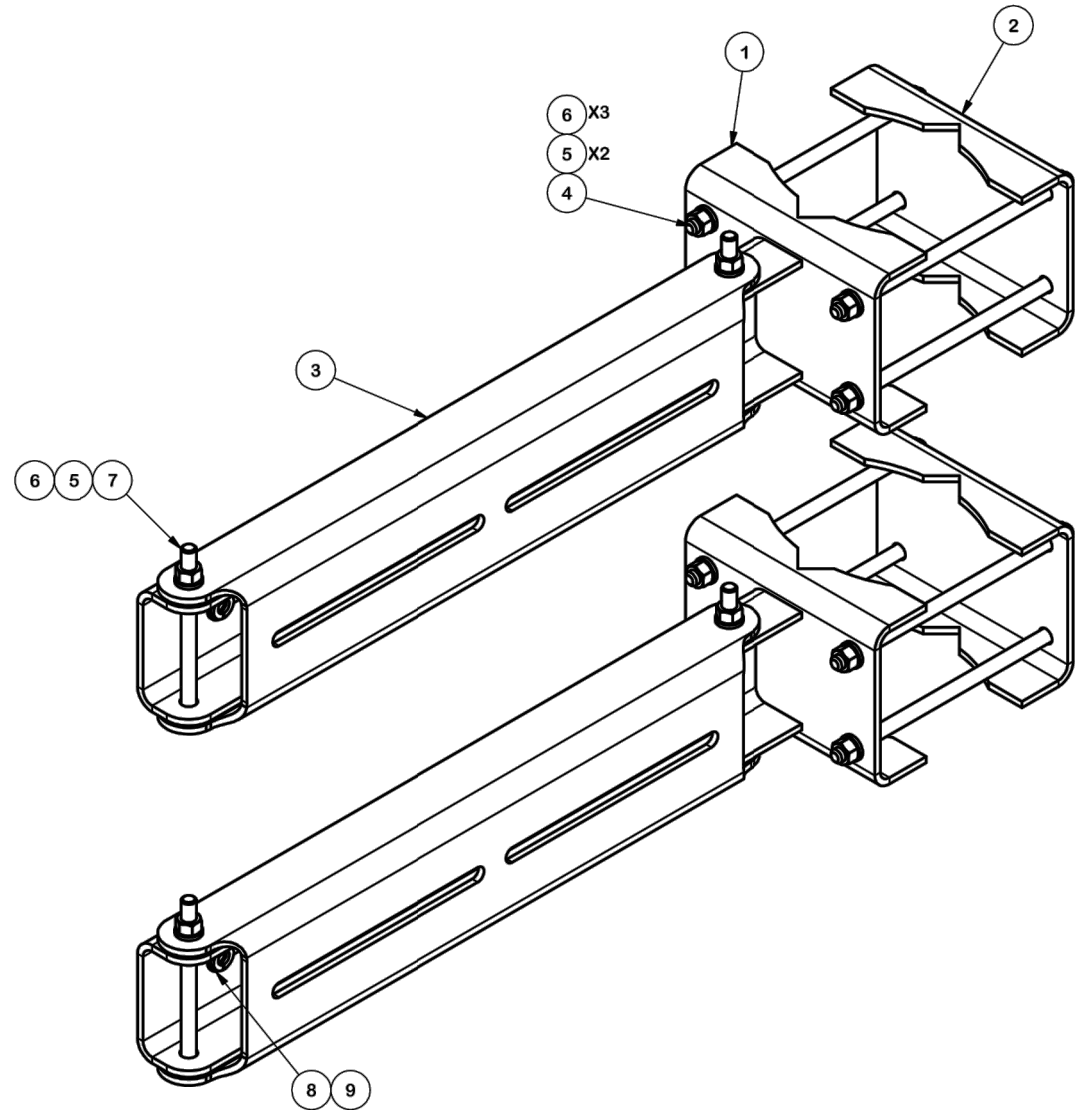


DATE DRAWN:	06/04/21
ATC JOB NO:	13653962
CUSTOMER NAME:	CTHA803A
CUSTOMER ID:	CTHA803A

**CONSTRUCTION
 DETAILS**

SHEET NUMBER:	REVISION:
C-502	0

PARTS LIST					
ITEM	QTY	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	2	MOUNTING ARM		8.99	17.97
2	2	CLAMP PLATE		2.35	4.69
3	2	SWIVEL MOUNT		6.65	13.30
4	8	3/8"-16 UNC X 8" GALV. THREADED ROD		0.25	2.00
5	20	3/8" GALV LOCK WASHER		0.01	0.13
6	28	3/8"-16 UNC GALV HEX NUT		0.02	0.52
7	4	3/8" X 5" GALV BOLT		0.18	0.71
8	8	3/8" SS FLAT WASHER		0.01	0.06
9	8	3/8" SS LOCK WASHER		0.01	0.05
TOTAL WT. #					39.43



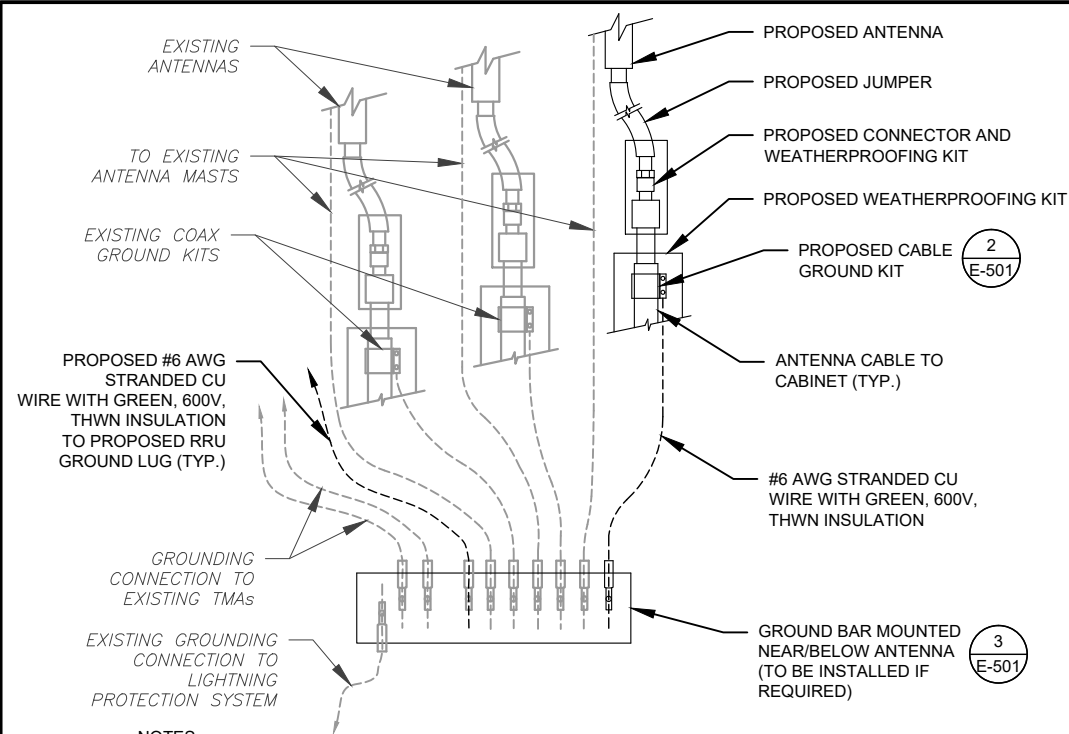
TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
 SAWED, SHEARED AND GAS CUT EDGES ($\pm 0.030"$)
 DRILLED AND GAS CUT HOLES ($\pm 0.030"$) - NO CONING OF HOLES
 LASER CUT EDGES AND HOLES ($\pm 0.010"$) - NO CONING OF HOLES
 BENDS ARE $\pm 1/2$ DEGREE
 ALL OTHER MACHINING ($\pm 0.030"$)
 ALL OTHER ASSEMBLY ($\pm 0.060"$)

PROPRIETARY NOTE:
 THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

DESCRIPTION				Locations: New York, NY Atlanta, GA Los Angeles, CA Plymouth, IN Salem, OR Dallas, TX	
RRU DUAL SWIVEL MOUNT		Engineering Support Team: 1-888-753-7446		PART NO. RRUDSM	
CPD NO.	DRAWN BY	ENG. APPROVAL	PAGE 1 OF 1		
	CEK 1/12/2015				
CLASS	DRAWING USAGE	CHECKED BY	DWG. NO. RRUDSM		
81	01 SHOP	BMC 2/3/2015			

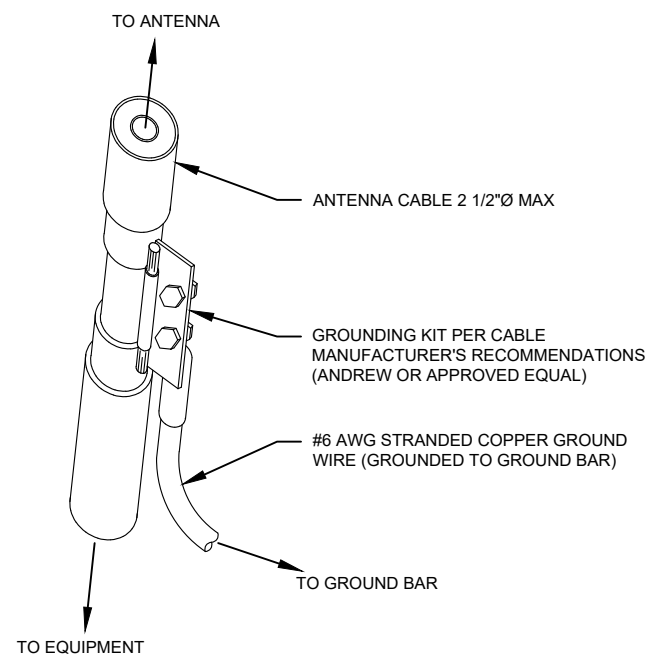
1 PROPOSED RRU DUAL SWIVEL MOUNT DETAIL
 SCALE: N.T.S.



NOTES:

1. THIS DETAIL IS INTENDED TO SHOW THE GENERAL GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE CONSTRUCTION MANAGER OF ANY CONFLICTS.
2. SITE GROUNDING SHALL COMPLY WITH T-MOBILE GROUNDING STANDARDS, LATEST EDITION, AND COMPLY WITH T-MOBILE GROUNDING CHECKLIST, LATEST VERSION. WHEN NATIONAL AND LOCAL GROUNDING CODES ARE MORE STRINGENT THEY SHALL GOVERN.

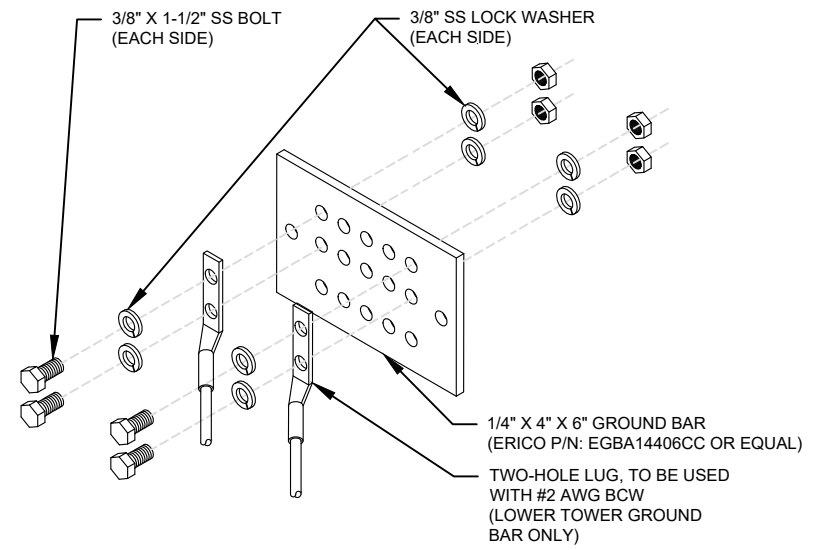
1 TYPICAL ANTENNA GROUNDING DIAGRAM
SCALE: N.T.S.



GROUND KIT NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. CONTRACTOR SHALL PROVIDE WEATHERPROOFING KIT (ANDREW PART NUMBER 221213) AND INSTALL/TAPE PER MANUFACTURER'S SPECIFICATIONS.

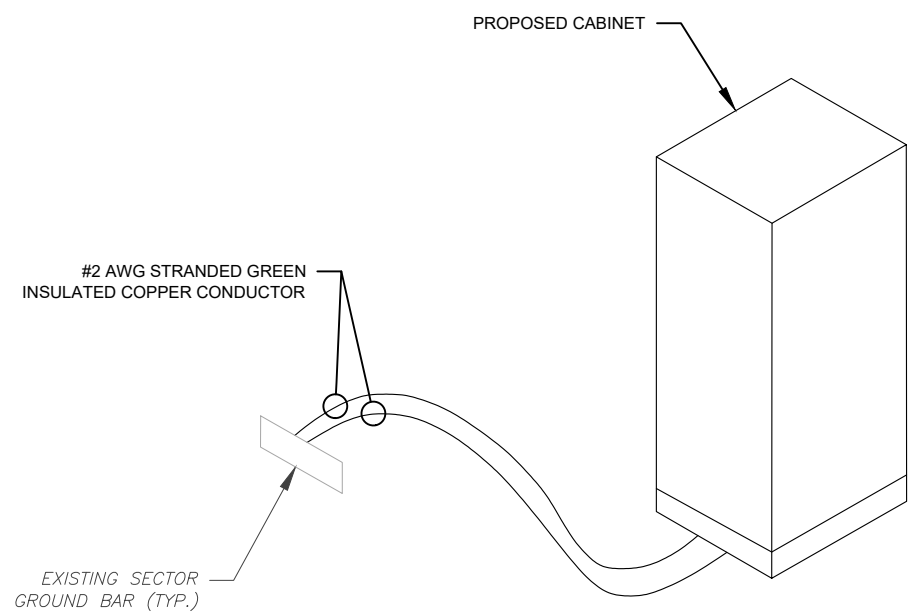
2 CABLE GROUND KIT CONNECTION DETAIL
SCALE: N.T.S.



GROUND BAR NOTES:

1. GROUND BAR KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
2. GROUND BAR TO BE BONDED DIRECTLY TO TOWER.

3 TOWER GROUND BAR DETAIL
SCALE: N.T.S.

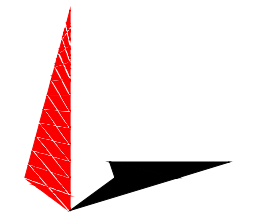


4 CABINET GROUNDING DETAIL
SCALE: N.T.S.

ELECTRICAL NOTES:

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE T-MOBILE REPRESENTATIVE AND LOCAL UTILITY COMPANY FOR THE INSTALLATION OF CONDUITS, CONDUCTORS, BREAKERS, DISCONNECTS, OR ANY OTHER EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE STATE AND NATIONAL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS PROJECT.
2. ATC HAS NOT VERIFIED ANY EXISTING T-MOBILE GROUND EQUIPMENT OR ELECTRICAL LOADING. PROPOSED WORK BASED ON INSTALLATION CONFIGURATION PROVIDED BY T-MOBILE. CONTRACTOR TO VERIFY EXISTING T-MOBILE PANEL HAS SUFFICIENT SPACE FOR PROPOSED BREAKER. PROPOSED CABLE AND CONDUIT SHALL BE MINIMUM SIZE PER BELOW IN CHART.
3. FOR SPECIFIC CABINET / ANCILLARY EQUIPMENT WIRING REQUIREMENTS, THE T-MOBILE CONTRACTOR SHOULD REFERENCE DESIGN DOCUMENTS PROVIDED BY T-MOBILE FOR THIS CURRENT PROJECT CONFIGURATION, IN ACCORDANCE WITH LOCAL JURISDICTION REQUIREMENTS & NEC STANDARDS & PRACTICES.

OCPD SIZE	WIRE SIZE	GROUND SIZE	CONDUIT SIZE
80A/2P	2#3 AWG	#8 AWG	1-1/4"
100/2P	2#2 AWG	#8 AWG	1-1/4"
125A/2P	2#1 AWG	#8 AWG	1-1/2"
150A/2P	2#1/0 AWG	#8 AWG	1-1/2"



TOWER ENGINEERING PROFESSIONALS
326 TRYON ROAD
RALEIGH, NC 27603-3530
OFFICE: (919) 661-6351
www.tepgroup.net

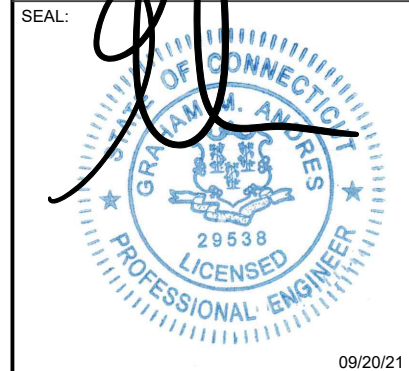
REV.	DESCRIPTION	BY	DATE
A	PRELIMINARY	SSP	05/13/21
0	100% CONSTRUCTION	GV	06/04/21
1	100% CONSTRUCTION	SRZ	09/20/21

ATC SITE NUMBER:
302528

ATC SITE NAME:
COLUMBIA CENTRAL

T-MOBILE SITE NAME:
CTHA803A

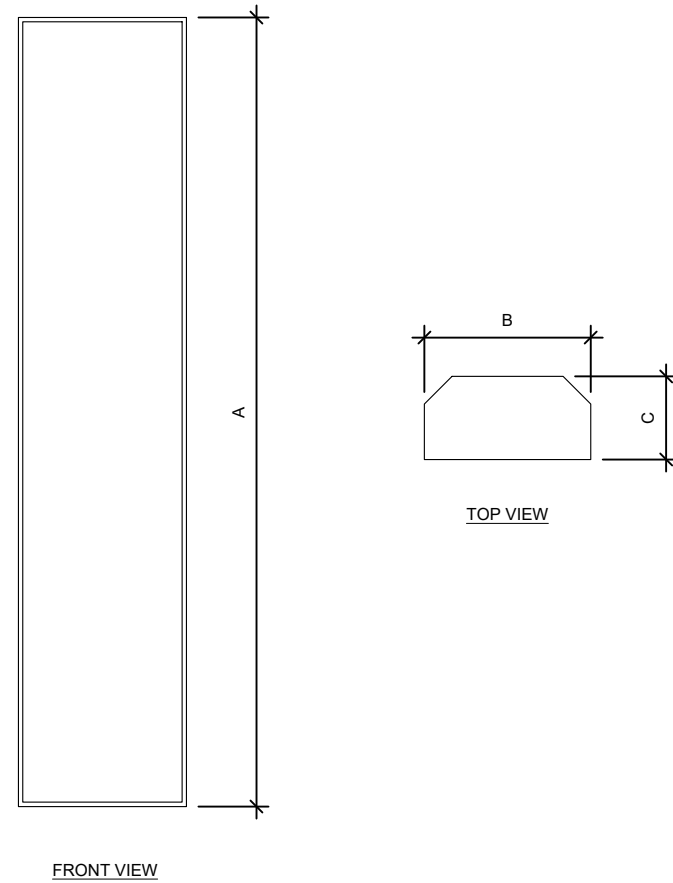
SITE ADDRESS:
330 MIDDLETOWN ROAD
COLUMBIA, CT 06237-1528



DATE DRAWN:	09/20/21
ATC JOB NO:	13653962
CUSTOMER NAME:	CTHA803A
CUSTOMER ID:	CTHA803A

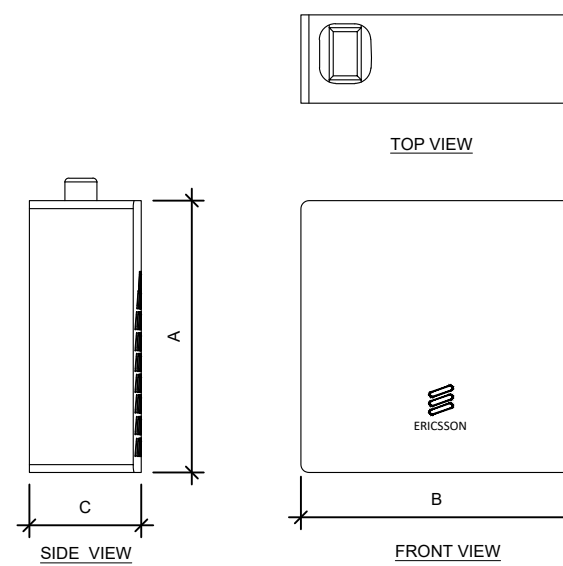
GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-501	1



1 ANTENNA SPECIFICATIONS
FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

ANTENNA SPECIFICATIONS				
ANTENNA MODEL	A	B	C	WEIGHT (LBS)
APXVAALL24 43-U-NA20	95.9"	24"	8.5"	122.8
AIR 6449 B41	33.1"	20.6"	8.6"	104



2 RRU SPECIFICATIONS
FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

RRU SPECIFICATIONS				
RRU MODEL	A	B	C	WEIGHT (LBS)
RADIO 4480 B71+B85	21.8"	15.4"	7.5"	93
RADIO 4460 B25+B66	17.0"	15.1"	11.9"	109

SUPPLEMENTAL

SHEET NUMBER:
R-601

REVISION:
-

Proposed RAN Equipment			
Template: 67E5A998E 6160			
Enclosure	1	2	3
Enclosure Type	Enclosure 6160	RBS 6601	B160
Baseband	BB 6648 L700 L600 N600 BB 6648 L2500 N2500 BB 6648 L2100 L1900	DUG20 G1900	
Transport System	CSR IXRe V2 (Gen2)		
Functionality Groups	Ericsson Hybrid Trunk 6/24 4AWG *Select Length* (x 3)		
RAN Scope of Work: CT33XC014 Existing & planned azimuth: 90/220/340 Existing power 200A			

1 CABINET CONFIGURATION
SCALE: NOT TO SCALE

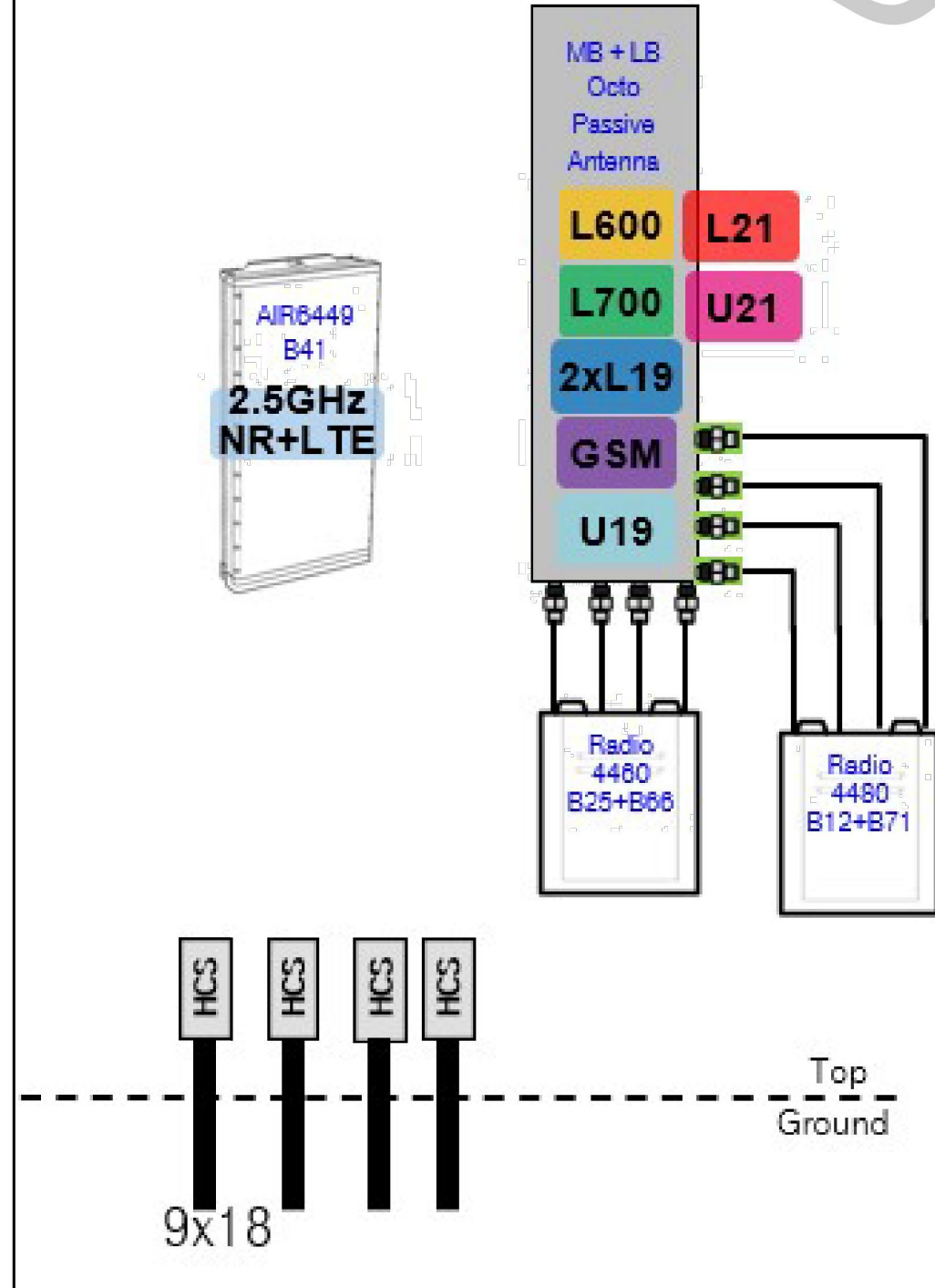
NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

SHEET NUMBER: R-602	REVISION: -
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67E5A998E.jpg

Final Config: 67E5A998E



Notes:

1 PROPOSED ANTENNA CONFIGURATION
SCALE: NOT TO SCALE

NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

SHEET NUMBER: R-603
REVISION: -

Hardware Architecture

This section contains an overview of the hardware units of the 19-inch baseband unit.

Figure 5 Baseband 6648 Hardware Architecture

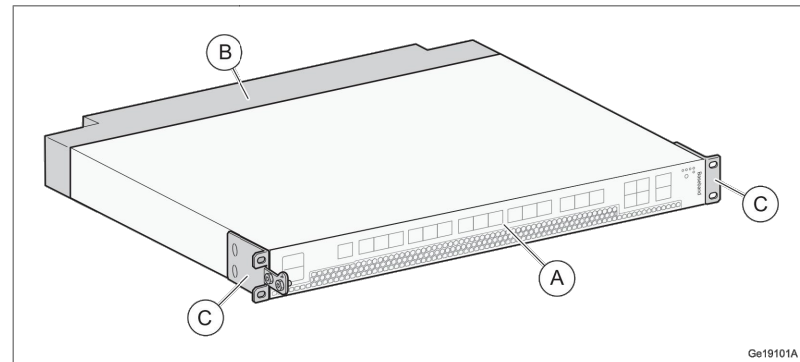


Table 6 19-Inch Baseband Hardware Units

Position	Name of Units	Number of Units
A	19-inch baseband unit	1
B	Fan module	1
C	Movable Brackets	2

1 PROPOSED BB 6648 DETAIL
SCALE: N.T.S.

RBS 6601 Hardware Architecture

The Main-Remote solution has the similar architecture as the other products in the RBS 6000 family.

The main Remote Solution is divided into a Main Unit (MU) and multiple Remote Radio Unit (RRU) that are connected to the MU through optical fiber cables.

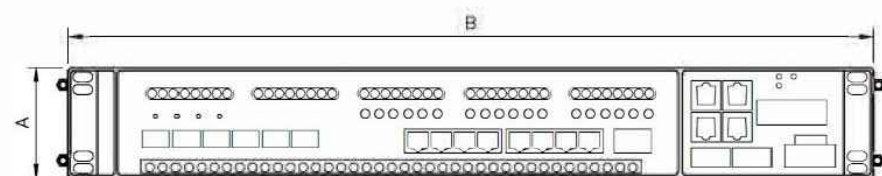


Figure 2 RBS 6601, Main Unit (MU) and Remote Radio Unit (RRU)

2 PROPOSED RBS 6601 DETAIL
SCALE: N.T.S.

MANUFACTURER:	ERICSSON	
MODEL NO.:	DUG 20	
DIMENSIONS:	TOTAL WEIGHT :	
A	2.8"	23 LBS
B	19"	
DEPTH	13.78"	

*INSTALLATION INTO EXISTING CABINET OR RACK REQUIRES NO SPECIAL INSPECTIONS.



3 PROPOSED DUG20 DETAIL
SCALE: N.T.S.

MANUFACTURER: NOKIA
MODEL: IXR-e
DIMENSIONS: 17.25"x10.0"x1.75"
WEIGHT: TBD



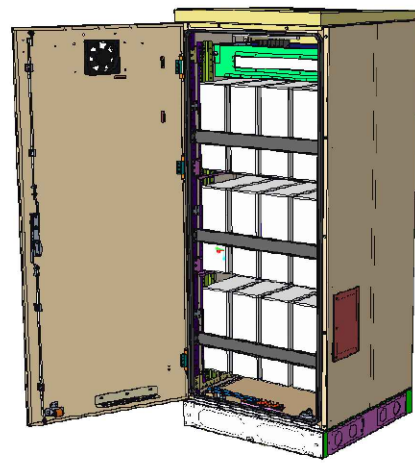
4 PROPOSED CSR IXRE V2
SCALE: N.T.S.

NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

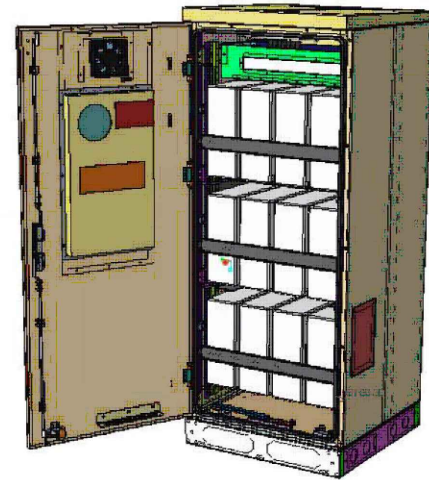
SUPPLEMENTAL

SHEET NUMBER: R-604
REVISION: -

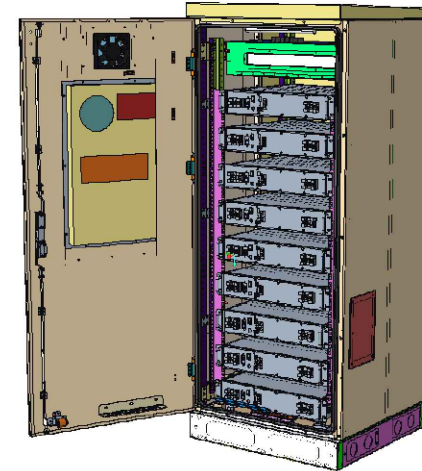
Enclosure B160



Enclosure B160
AirCon + VRLA



Enclosure B160
AirCon + Li-Ion



Enclosure B160
Convection Cooling
+ VRLA

PA1 | 2019-02-03 | Ericsson Confidential | Page 1

Enclosure B160

Capacity

- VRLA 12V: 100Ah / 150Ah / 170Ah / 190Ah / 210Ah
- Li-Ion: 24U 19" / 23"
- Sodium-Nickel: 3x FIAMM

Electrical specification

- DC Output: -48VDC/200A
- Battery breakers: 2x 125/2p
- Alarms: Door open, Climate failure, MCB Connection

Mechanical specification

- Weight: 134kg
- Dimensions: 63 x 26 x 26 in. (incl. Base frame)
- Base frame height: 6 in.
- Material: Galvanized steel (180g/m²)
- Color: Powder paint NCS 2002-B
- Door: Front access
- Locking type: Pad lock / cylinder

Environmental specification

- Ingress protection: VRLA/Sodium IP44
Li-Ion IP55
- Relative humidity: 15-100%

Climate system

- Air Conditioner
 - Fan type: DC
 - Cooling capacity: 500W @L35/L35
- Convection cooling
 - Emergency fan

PA1 | 2019-02-03 | Ericsson Confidential | Page 2

1 PROPOSED ENCLOSURE B160 BATTERY CABINET
SCALE: N.T.S.

NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

SHEET NUMBER: R-605	REVISION: -
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Enclosure 6160 AC

The Enclosure 6160 is a multi-purpose site cabinet designed to support a multitude of equipment such as ERS Baseband, Transport, Li-Ion battery and 3PP vendor equipment. It also provides a highly capable power system and battery back-up - all in a streamlined design and minimized footprint to support cost efficient expansion of mobile broadband.

Being an all-in-one enclosure, the Enclosure 6160 is a very fitting choice for all types of sites where the capacity need is large or room for future expansion is needed. It is ideally used for modernizing existing sites or in greenfield scenarios to match both current and future needs.

With a robust design, IP65 compliance and a sealed Heat Exchanger (HEX) climate system the Enclosure 6160 ensures optimal environmental protection of the active equipment - enabling them for a long-lasting service. The complete system is also integrated and verified for the entire Ericsson Radio System and ensures best-in-class service.

The power system offers 31,5kW of power in total and provides 24kW of -48V DC power for both internal and external consumers.

The equipment space allows 19U of rack space ensuring well enough capacity for existing need and future expansion.

One of the main advantages of the Enclosure 6160 is its default integration with ENM - allowing for advanced remote monitoring and control such a fault management (alarms), inventory management and performance measurements. The cabinet also provides an open O&M interface for integration to 3PP O&M systems.



Preliminary technical specification for Enclosure 6160 AC

CAPACITY

Rack space user equipment	19U (19" rack)
Hardware capabilities	Power and CPRI support for multi-standard remote radios (RRU or AIR) ERS Baseband and Transport units Li-Ion batteries 3PP equipment Additional power feed available as option

MECHANICAL SPECIFICATION

Weight	145 kg (excluding active equipment) 320 lbs (excluding active equipment)
Dimension (H x W x D)	1600 x 650 x 650 mm (incl. Base frame) 63 x 26 x 26 in. (incl. Base frame)
Base frame height	150 mm 6 in.
Mounting position	Ground
Enclosure material	Aluminum
Color	Power paint NCS 2002-B
Door	Front access
Rack type	19" (IEC 60297-3-100)
Locking type	Pad lock or Cylinder

POWER SYSTEM

Input voltage	3P+N+PE: 346/200-415/240 VAC 2P+N+PE: 208/120-220/127 VAC 1P+N+PE: 200-250 VAC
Input power	<33kW
Output load (-48VDC)	24kW
Total capacity (-48VDC)	31.5kW
AC SPD	Class 2/Type 2
DC SPD	Class 2/Type 2
PSU Slots	9x
Service outlet	Optional
Priority load	8x Circuit Breaker
LLVD 1	6x Circuit Breaker
LLVD 2	6x Circuit Breaker
CB ratings	3A / 5A / 10A / 15A / 20A / 25A / 30A / 40A / 50A / 60A / 80A / 100A
Battery Interface	2x Circuit Breaker
Battery Circuit Breaker rating	125A 2pol (200A)
PSU capacity	3500W

1 PROPOSED ENCLOSURE 6160 AC
SCALE: N.T.S.

NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

SHEET NUMBER: R-606	REVISION: -
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AMERICAN TOWER®
CORPORATION

This report was prepared for American Tower Corporation by



**TOWER
ENGINEERING
PROFESSIONALS**

Antenna Mount Analysis Report

ATC Site Name : Columbia Central, CT
ATC Site Number : 302528
Engineering Number : 13653962_C8_04
Mount Elevation : 108 ft
Carrier : SPRINT NEXTEL
Carrier Site Name : CTHA803A
Carrier Site Number : CTHA803A
Site Location : 330 Middletown Road
Columbia, CT 06237-1528
41.689900, -72.325200
County : Tolland
Date : September 8, 2021
Max Usage : 54%
Result : Pass

Prepared By:
Nicholas P. Danyluk
TEP No. 94015.587315

Reviewed By:



9/8/21



Table of Contents

Introduction 1

Supporting Documents..... 1

Analysis 1

Conclusion 1

Antenna Loading..... 2

Structure Usages..... 2

Mount Layout 3

Equipment Layout 4

Standard Conditions.....5

Calculations Attached



Introduction

The purpose of this report is to summarize results of the antenna mount analysis performed for SPRINT NEXTEL at 108 ft.

Supporting Documents

Spec. Sheet	Spec Sheet for SitePro RMQP
RFDS	RFDS dated March 1, 2021
Photos	Site photos from 2021
Previous Mount Analysis	TEP, Project # 94015.534062 dated April 29, 2021

Analysis

This antenna mount was analyzed using RISA-3D v17 analysis software.

Basic Wind Speed:	120 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1.00 in. radial ice
Codes:	ANSI/TIA-222-H
Risk Category:	II
Exposure Category:	B
Topographic Factor Procedure:	Method 2
Kzt:	1.000
Spectral Response:	$S_s = 0.196, S_1 = 0.055$
Site Class:	D - Stiff Soil
Live Loads:	$L_m = 500 \text{ lbs}, L_v = 250 \text{ lbs}$

Conclusion

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed above. The mount can support the equipment as described in this report. If the load differs from that described in this report or the provisions of this analysis are found to be invalid, another structural analysis should be performed.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.



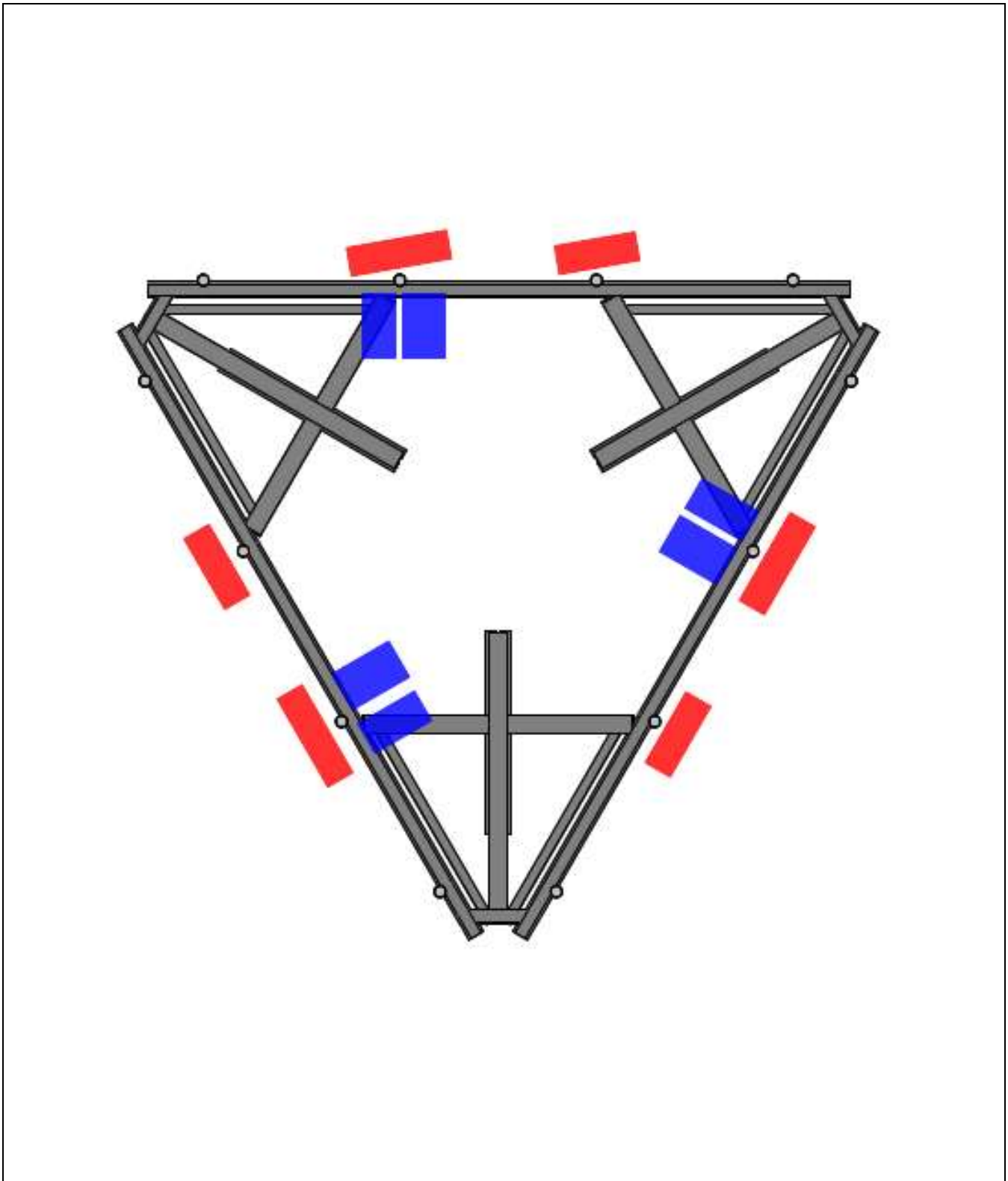
Antenna Loading

Mount Centerline (ft)	Antenna Centerline (ft)	Qty	Antenna Model
108	108	3	RFS APXVAALL24_43-U-NA20
		3	Ericsson AIR6449 B41
		3	Ericsson Radio 4480 B71+B85A
		3	Ericsson Radio 4460 B25+B66

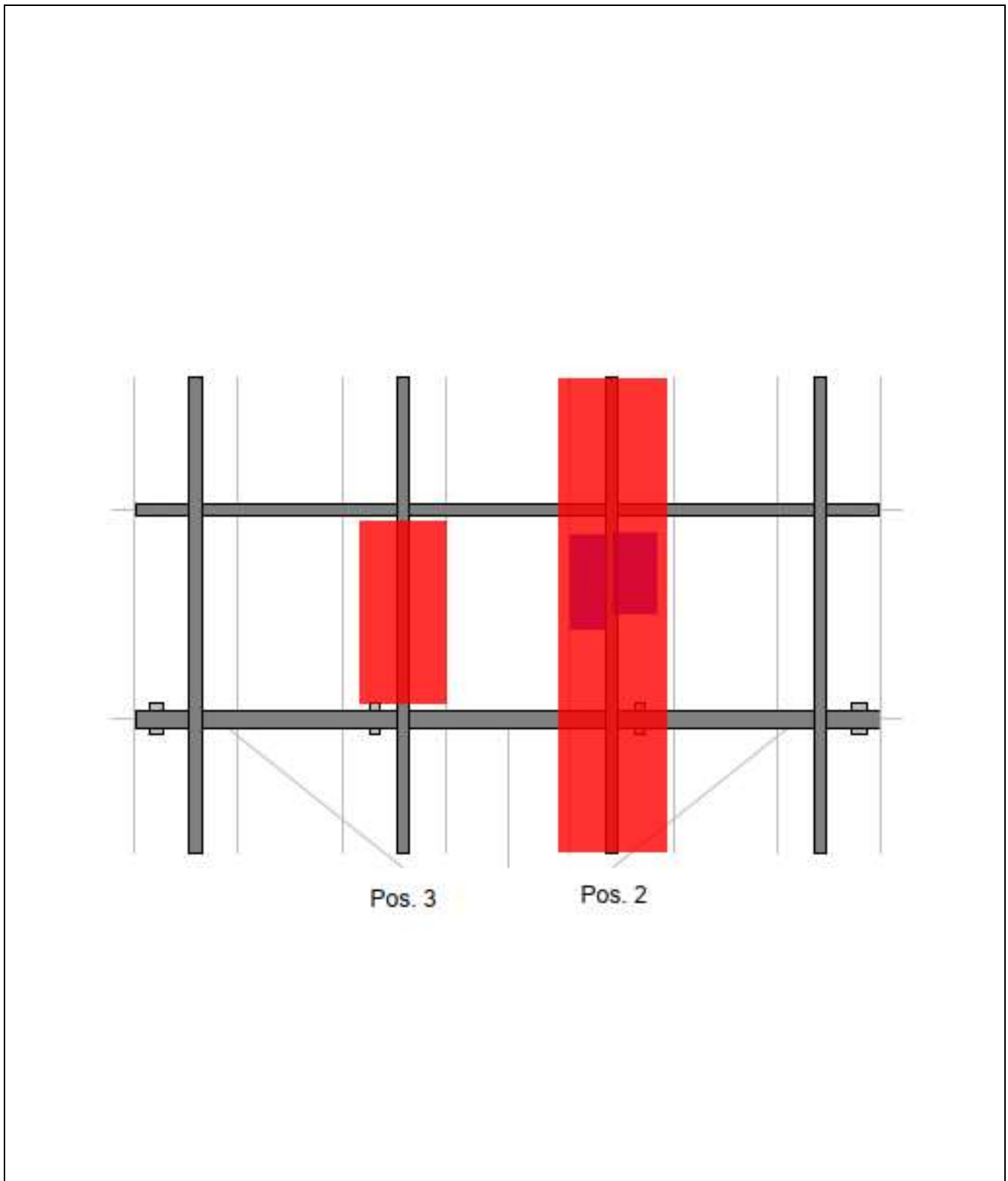
Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Face Horizontals	10%	Pass
Support Arms	15%	Pass
Internals	16%	Pass
Corner Plates	54%	Pass
Support Rail	34%	Pass
Mod Kits	6%	Pass
Mount Pipes	41%	Pass
Connection Bolts	10%	Pass
Connection Plate	9%	Pass

Mount Layout



Equipment Layout





Standard Conditions

All engineering services performed by TEP are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of TEP

It is the responsibility of the client to ensure that the information provided to TEP and used in the performance of our engineering services is correct and complete.

TEP assumes that all structures were constructed in accordance with the drawings and specifications.

TEP assumes that the mount has been maintained in accordance with the manufacturer's specification.

TEP assumes that all mount components are in sufficient condition to carry their full design capacity for this analysis.

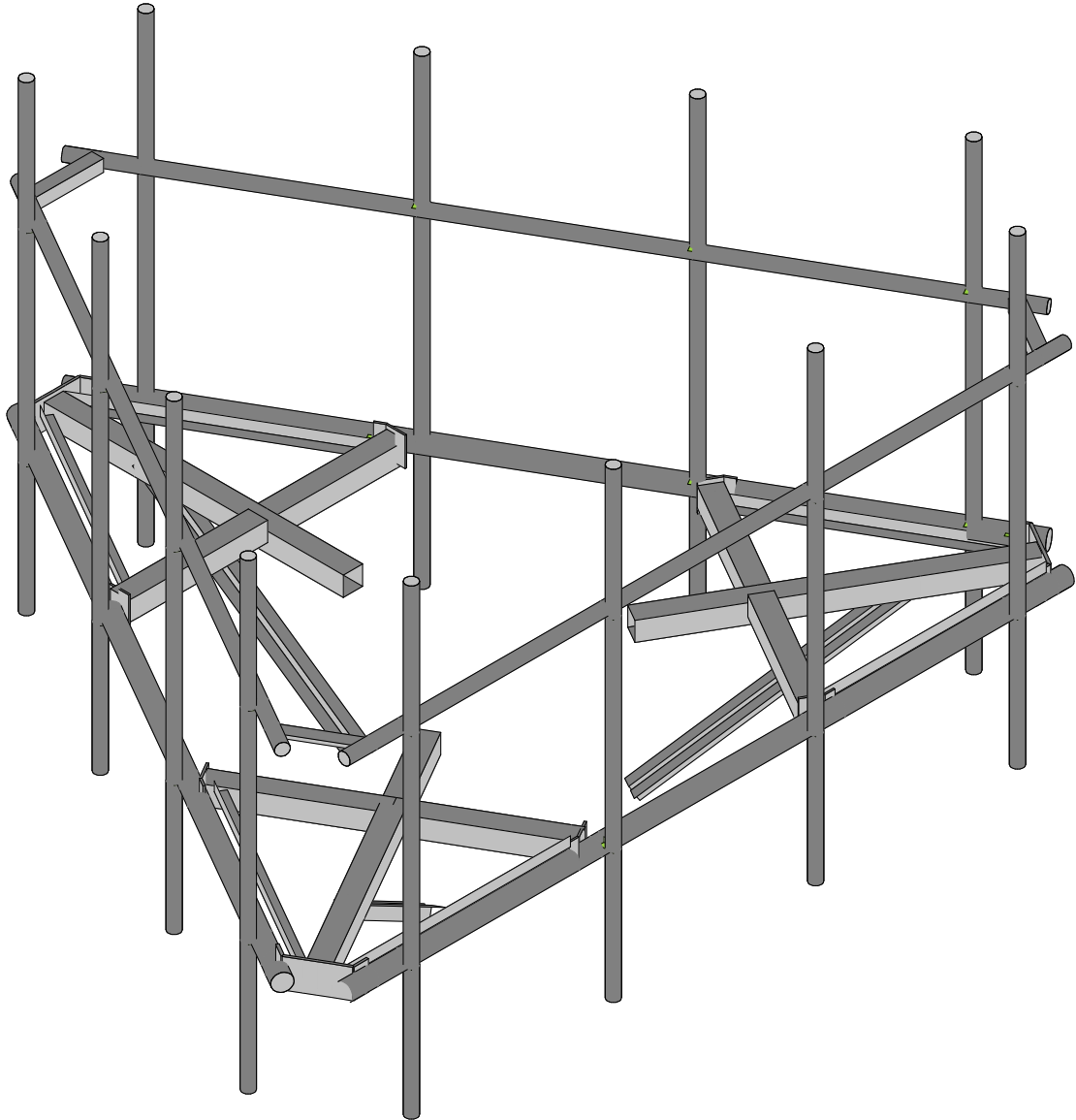
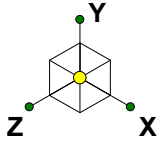
Serviceability with respect to antenna twist, tilt, roll, or lateral translation, is not checked and is left to the carrier or tower owner to ensure conformance.

All material grades used for this analysis, unless verified by mount manufacturer design, were assumed per AISC Table 2-4, 15th Edition. See RISA 3-D output for confirmation on grades used in this analysis.

All connections are to be verified for condition and tightness by the installation contractor preceding any changes to the appurtenance mounting system and/or equipment attached to it.

Unless explicitly agreed by both the client and TEP, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. TEP is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.



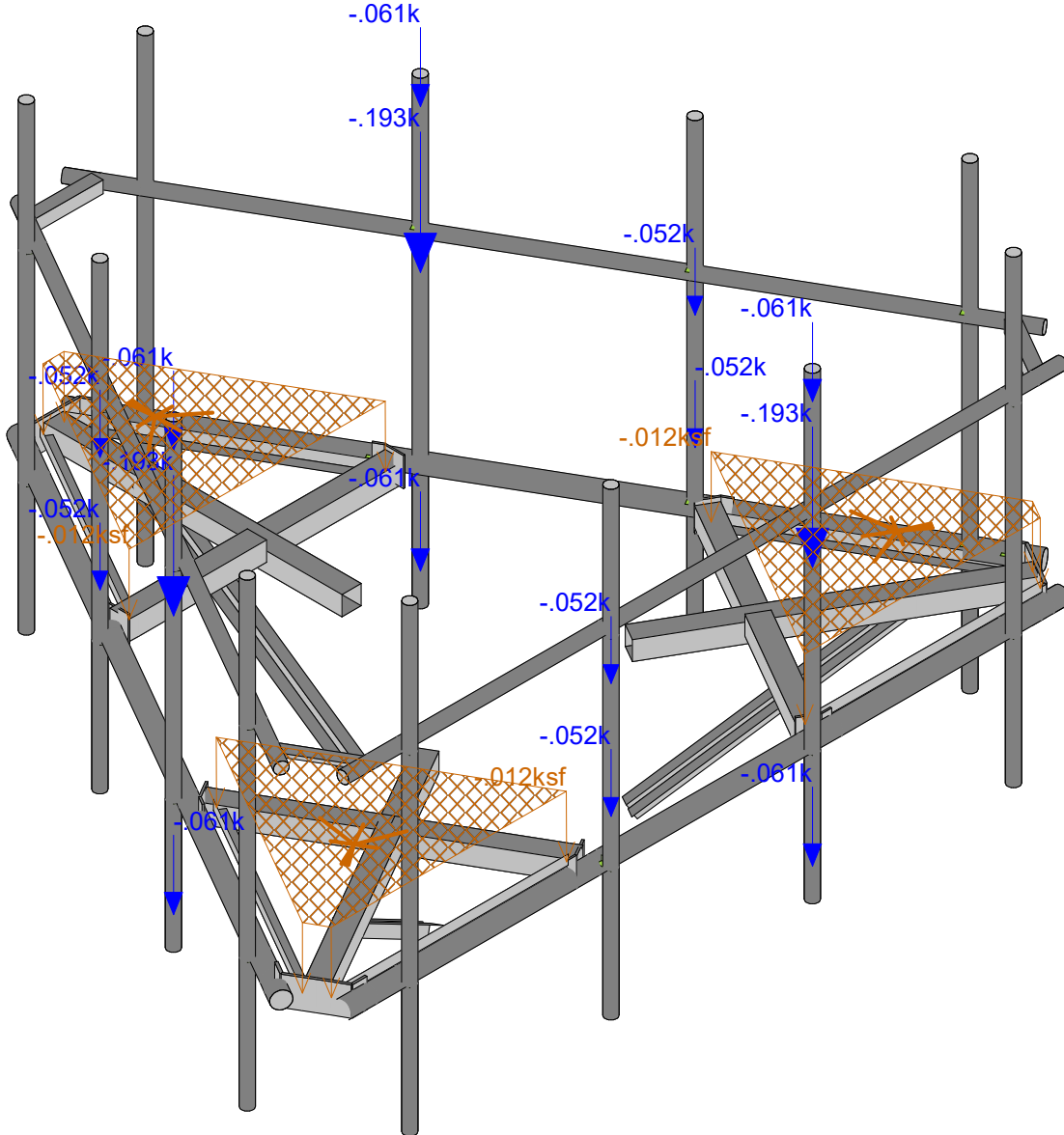
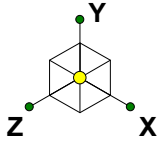
Tower Engineering Profes...
NPD
TEP No. 94015.587315

302528 - Columbia Central

SK - 1

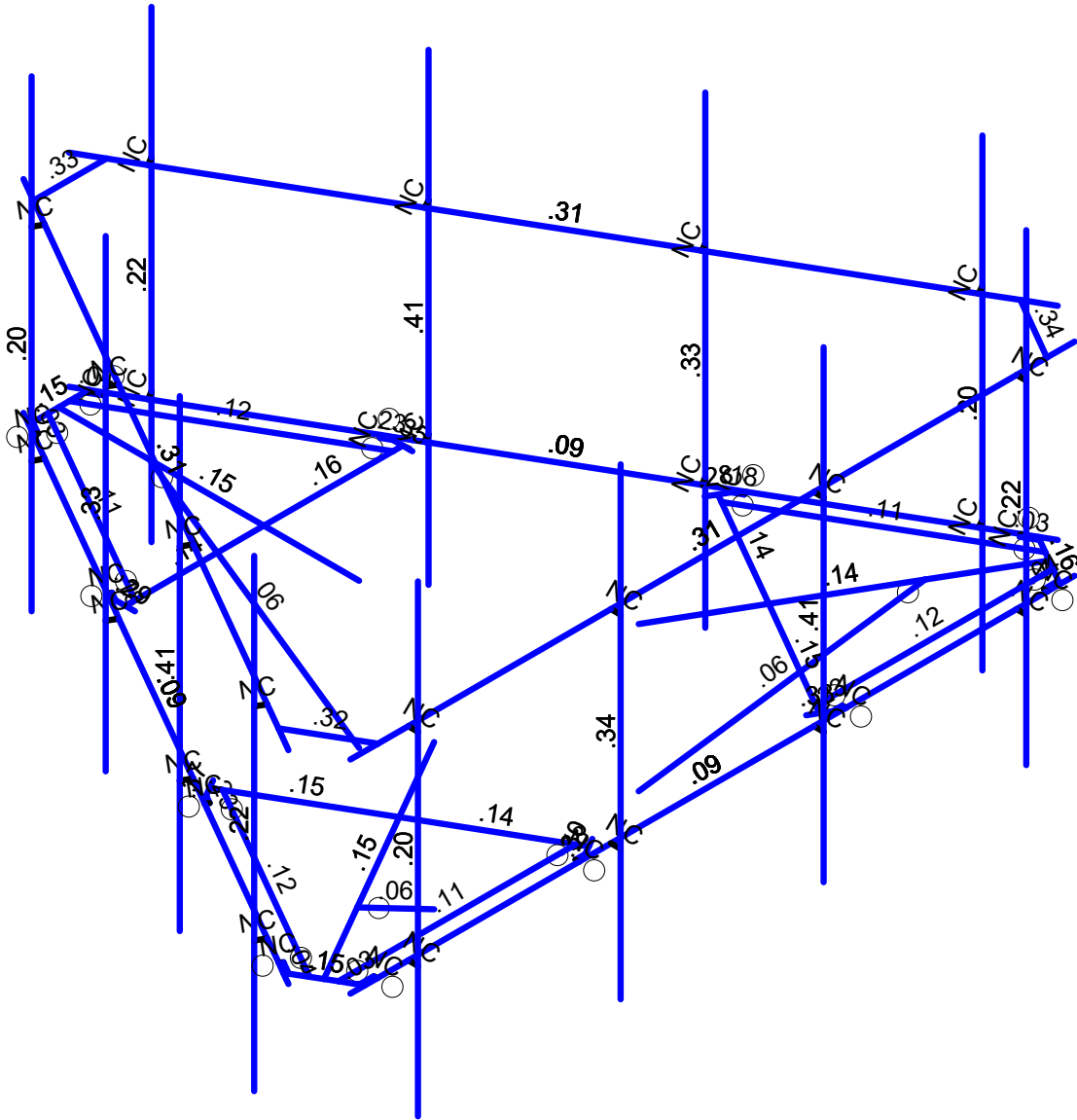
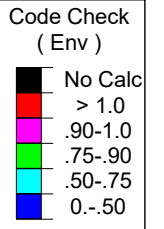
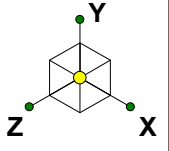
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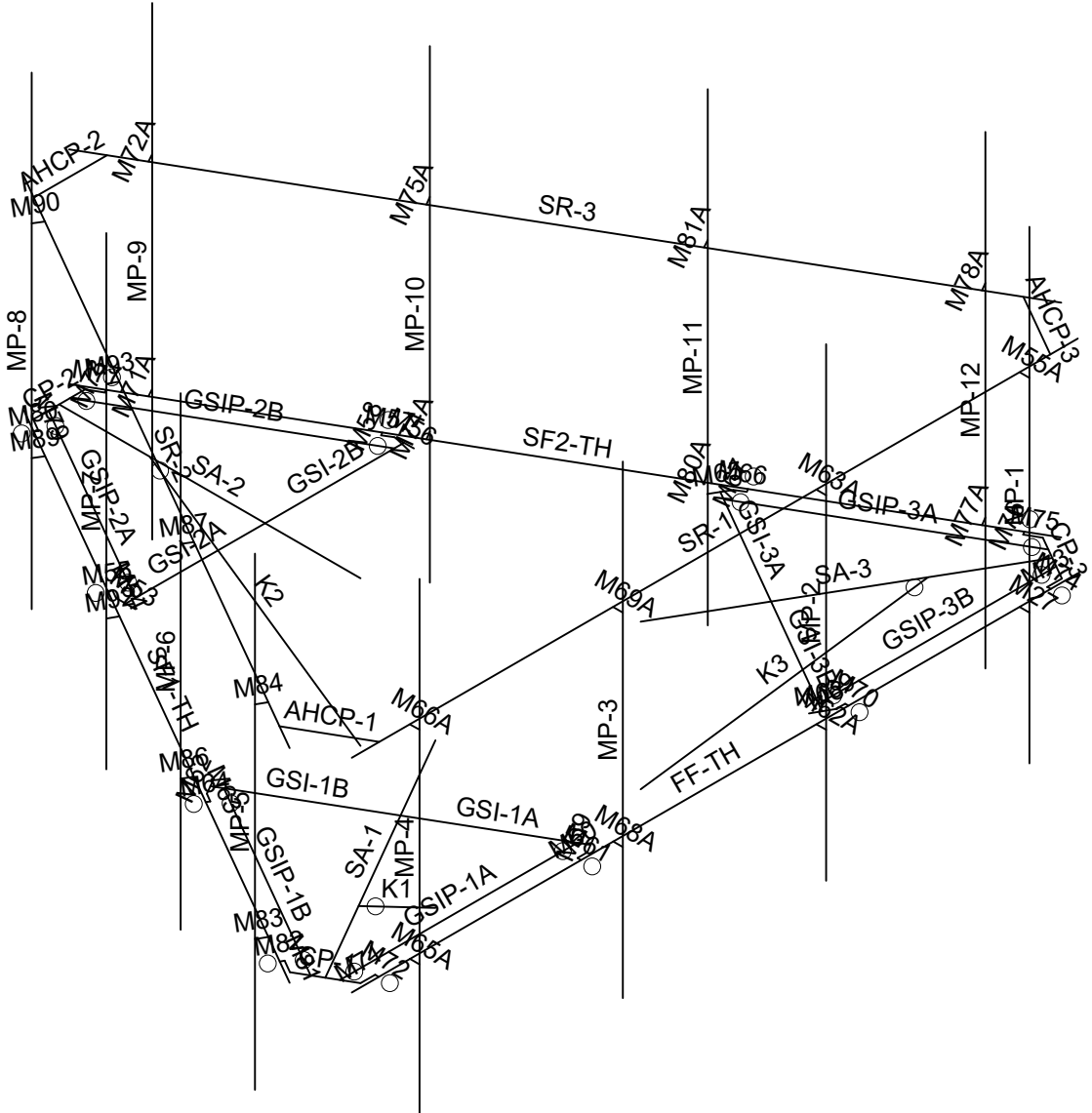
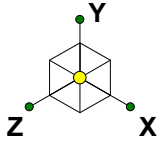
Loads: BLC 1, Dead

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TEP No. 94015.587315		302528_Columbia Central_SPRIN...



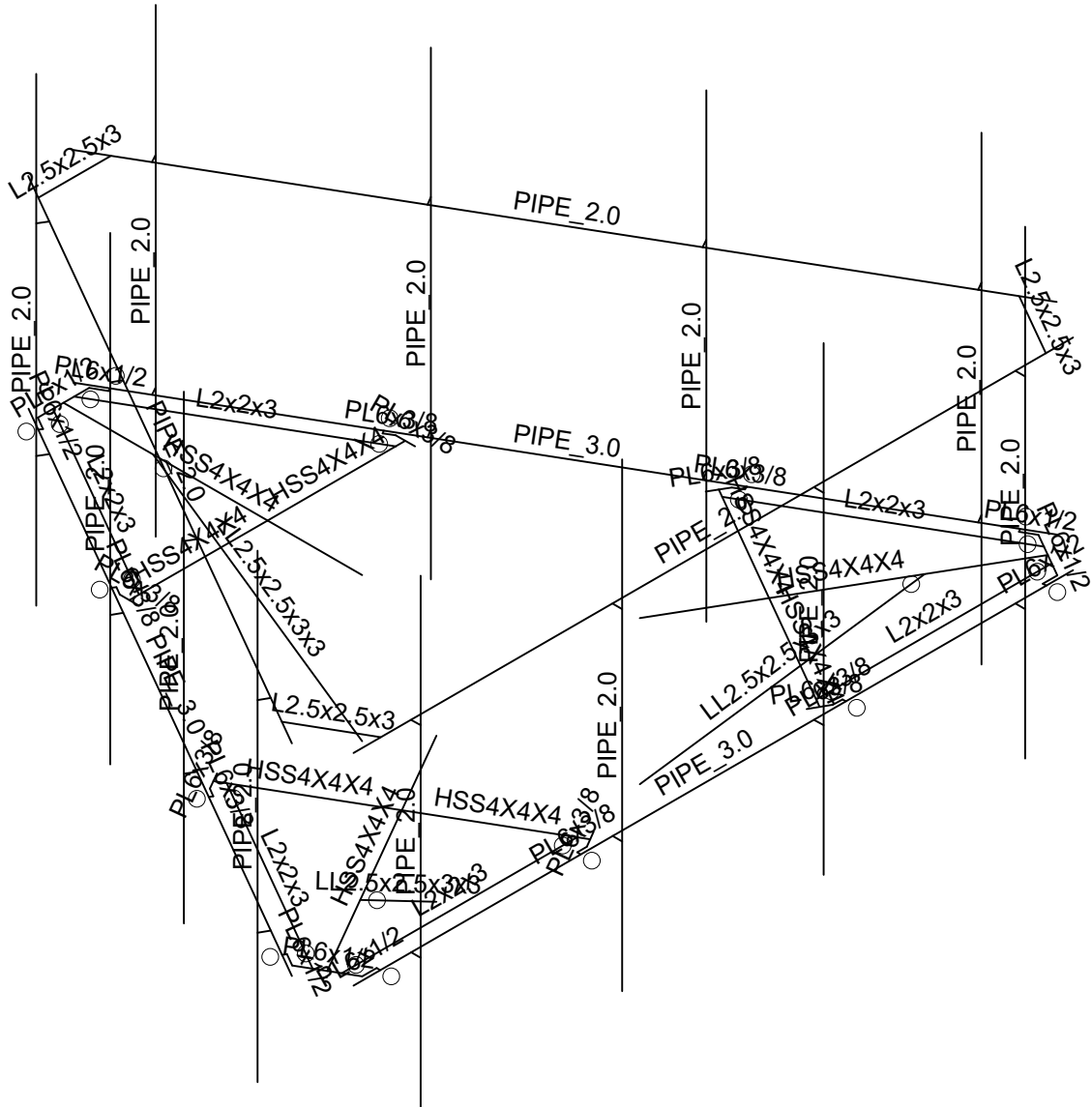
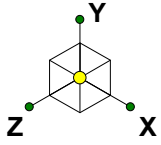
Member Code Checks Displayed (Enveloped)
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Tower Engineering Profes...	302528 - Columbia Central	SK - 3
NPD		Sept 8, 2021 at 1:39 PM
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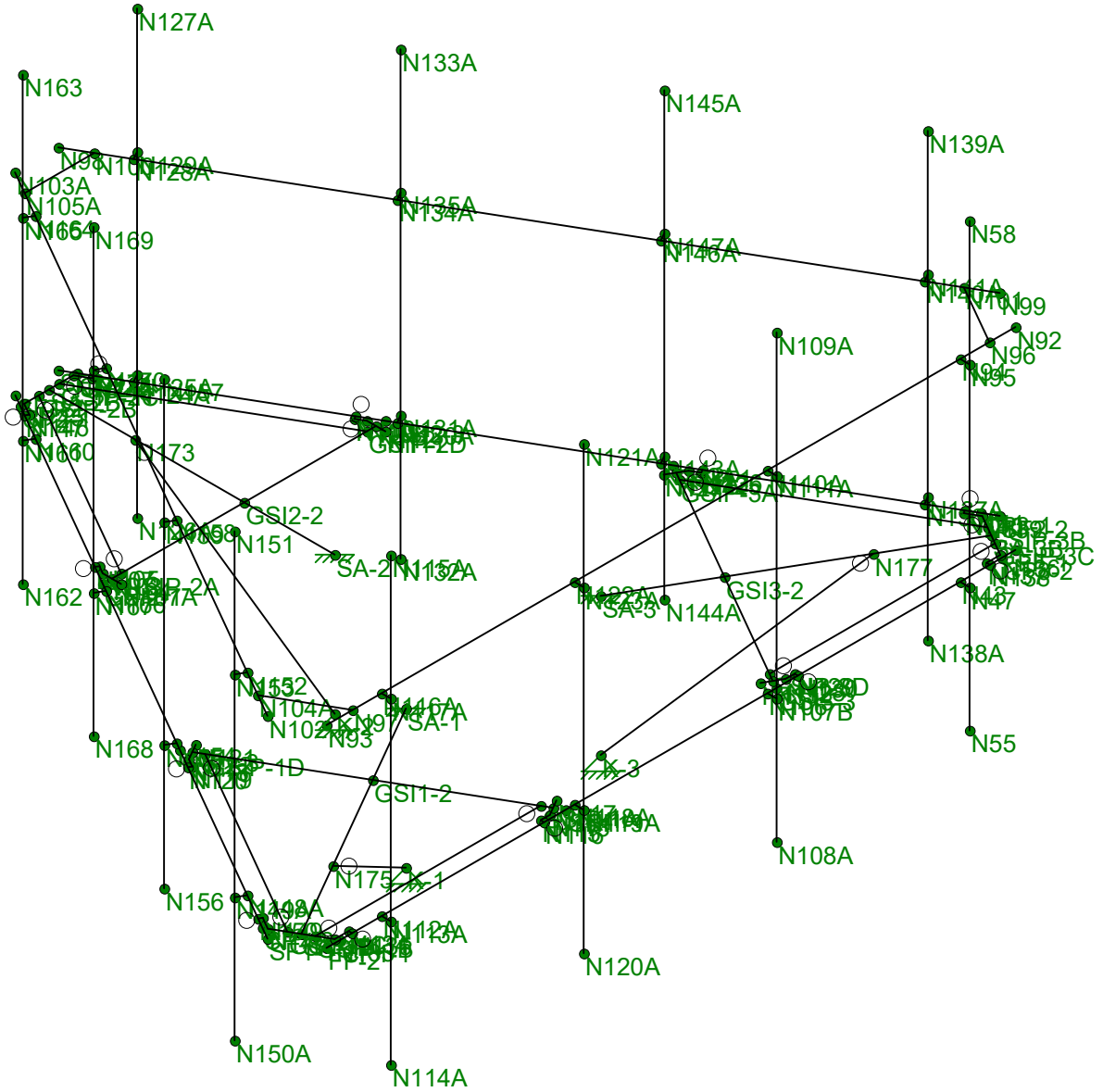
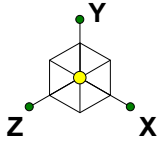
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Tower Engineering Profes...	302528 - Columbia Central	SK - 5
NPD		Sept 8, 2021 at 1:39 PM
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Tower Engineering Profes...		SK - 6
NPD	302528 - Columbia Central	Sept 8, 2021 at 1:39 PM
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Tower Engineering Profes...	302528 - Columbia Central	SK - 7
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Company : Tower Engineering Professionals, Inc.
 Designer : NPD
 Job Number : TEP No. 94015.587315
 Model Name : 302528 - Columbia Central

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(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (ft/sec^2)	32.2
Wall Mesh Size (in)	24
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 15th(360-16): LRFD
Adjust Stiffness?	No
RISACONNECTION CODE	None
Cold Formed Steel Code	None
Wood Code	None
Wood Temperature	< 100F
Concrete Code	None
Masonry Code	None
Aluminum Code	None - Building
Stainless Steel Code	None

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



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(Global) Model Settings, Continued

Seismic Code	ASCE 7-10
Seismic Base Elevation (ft)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	1
Cd X	1
Rho Z	1
Rho X	1

Hot Rolled Steel Properties

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

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design Li...	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Face Horiz	PIPE 3.0	None	None	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
2	Support Arm	HSS4X4X4	None	None	A53 Gr.B	Typical	3.37	7.8	7.8	12.8
3	Internal	HSS4X4X4	None	None	A53 Gr.B	Typical	3.37	7.8	7.8	12.8
4	Grating Support	L2x2x3	None	None	A53 Gr.B	Typical	.722	.271	.271	.009
5	Corner Plate	PL6x1/2	None	None	A53 Gr.B	Typical	3	.063	9	.237
6	Mount Pipe	PIPE 2.0	None	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
7	Internal Plate	PL6x3/8	None	None	A53 Gr.B	Typical	2.25	.026	6.75	.101
8	Support Rail	PIPE 2.0	None	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
9	AHCP	L2.5x2.5x3	None	None	A36 Gr.36	Typical	.901	.535	.535	.011
10	PRK-1245	LL2.5x2.5x3x3	None	None	A36 Gr.36	Typical	1.8	2.46	1.07	.023

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Ru...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	CF1A	8CU1.25X...	Beam	None	A653 SS ...	Typical	.581	.057	4.41	.00063



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Material Takeoff

	Material	Size	Pieces	Length[ft]	Weight[K]
1	General				
2	RIGID		36	4.7	0
3	Total General		36	4.7	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	L2.5x2.5x3	3	3.8	.012
7	A36 Gr.36	LL2.5x2.5x3x3	3	13.2	.081
8	A53 Gr.B	HSS4X4X4	9	29.9	.343
9	A53 Gr.B	L2x2x3	6	24.5	.06
10	A53 Gr.B	PIPE 2.0	15	133.5	.463
11	A53 Gr.B	PIPE 3.0	3	37.5	.264
12	A53 Gr.B	PL6x1/2	9	4.2	.043
13	A53 Gr.B	PL6x3/8	12	3	.023
14	Total HR Steel		60	249.6	1.289

Joint Boundary Conditions

Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1 K-1	Reaction	Reaction	Reaction			
2 K-2	Reaction	Reaction	Reaction			
3 K-3	Reaction	Reaction	Reaction			
4 SA-1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5 SA-2	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6 SA-3	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Member Primary Data

Label	I Joint	J Joint	K Joint	Rotate...	Section/Shape	Type	Design List	Material	Design B...
1 AHCP-1	N97	N104A		180	AHCP	None	None	A36 Gr.36	Typical
2 AHCP-2	N105A	N100		180	AHCP	None	None	A36 Gr.36	Typical
3 AHCP-3	N101	N96		180	AHCP	None	None	A36 Gr.36	Typical
4 CP-1	N133	N148			Corner Plate	None	None	A53 Gr.B	Typical
5 CP-2	N145	N142			Corner Plate	None	None	A53 Gr.B	Typical
6 CP-3	N139	N136			Corner Plate	None	None	A53 Gr.B	Typical
7 M71	N133	N134			Corner Plate	None	None	A53 Gr.B	Typical
8 M73	N136	N137			Corner Plate	None	None	A53 Gr.B	Typical
9 M75	N139	N140			Corner Plate	None	None	A53 Gr.B	Typical
10 M77	N142	N143			Corner Plate	None	None	A53 Gr.B	Typical
11 M79	N145	N146			Corner Plate	None	None	A53 Gr.B	Typical
12 M81	N148	N149			Corner Plate	None	None	A53 Gr.B	Typical
13 FF-TH	FF-1	FF-2			Face Horiz	None	None	A53 Gr.B	Typical
14 SF1-TH	SF1-1	SF1-2			Face Horiz	None	None	A53 Gr.B	Typical
15 SF2-TH	SF2-1	SF2-2			Face Horiz	None	None	A53 Gr.B	Typical
16 GSIP-1A	GSIP-1A	GSIP-1B			Grating Support	None	None	A53 Gr.B	Typical
17 GSIP-1B	GSIP-1C	GSIP-1D			Grating Support	None	None	A53 Gr.B	Typical
18 GSIP-2A	GSIP-2A	GSIP-2B			Grating Support	None	None	A53 Gr.B	Typical
19 GSIP-2B	GSIP-2C	GSIP-2D			Grating Support	None	None	A53 Gr.B	Typical
20 GSIP-3A	GSIP-3A	GSIP-3B			Grating Support	None	None	A53 Gr.B	Typical
21 GSIP-3B	GSIP-3C	GSIP-3D			Grating Support	None	None	A53 Gr.B	Typical
22 GSI-1A	N114	GSI1-2			Internal	None	None	A53 Gr.B	Typical
23 GSI-1B	GSI1-2	N122			Internal	None	None	A53 Gr.B	Typical
24 GSI-2A	N104	GSI2-2			Internal	None	None	A53 Gr.B	Typical
25 GSI-2B	GSI2-2	N112			Internal	None	None	A53 Gr.B	Typical
26 GSI-3A	N124	GSI3-2			Internal	None	None	A53 Gr.B	Typical
27 GSI-3B	GSI3-2	N132			Internal	None	None	A53 Gr.B	Typical



Company : Tower Engineering Professionals, Inc.
 Designer : NPD
 Job Number : TEP No. 94015.587315
 Model Name : 302528 - Columbia Central

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Member Primary Data (Continued)

Label	I Joint	J Joint	K Joint	Rotate...	Section/Shape	Type	Design List	Material	Design B...
28 M53	N107A	N103			Internal Plate	None	None	A53 Gr.B	Typical
29 M54	N103	N105			Internal Plate	None	None	A53 Gr.B	Typical
30 M56	N111	N108			Internal Plate	None	None	A53 Gr.B	Typical
31 M57	N108	N109			Internal Plate	None	None	A53 Gr.B	Typical
32 M59	N117	N113			Internal Plate	None	None	A53 Gr.B	Typical
33 M60	N113	N115			Internal Plate	None	None	A53 Gr.B	Typical
34 M62	N121	N118			Internal Plate	None	None	A53 Gr.B	Typical
35 M63	N118	N119			Internal Plate	None	None	A53 Gr.B	Typical
36 M65	N127	N123			Internal Plate	None	None	A53 Gr.B	Typical
37 M66	N123	N125			Internal Plate	None	None	A53 Gr.B	Typical
38 M68	N131	N128			Internal Plate	None	None	A53 Gr.B	Typical
39 M69	N128	N129			Internal Plate	None	None	A53 Gr.B	Typical
40 MP-1	N58	N55			Mount Pipe	None	None	A53 Gr.B	Typical
41 MP-2	N109A	N108A			Mount Pipe	None	None	A53 Gr.B	Typical
42 MP-3	N121A	N120A			Mount Pipe	None	None	A53 Gr.B	Typical
43 MP-4	N115A	N114A			Mount Pipe	None	None	A53 Gr.B	Typical
44 MP-5	N151	N150A			Mount Pipe	None	None	A53 Gr.B	Typical
45 MP-6	N157	N156			Mount Pipe	None	None	A53 Gr.B	Typical
46 MP-7	N169	N168			Mount Pipe	None	None	A53 Gr.B	Typical
47 MP-8	N163	N162			Mount Pipe	None	None	A53 Gr.B	Typical
48 MP-9	N127A	N126A			Mount Pipe	None	None	A53 Gr.B	Typical
49 MP-10	N133A	N132A			Mount Pipe	None	None	A53 Gr.B	Typical
50 MP-11	N145A	N144A			Mount Pipe	None	None	A53 Gr.B	Typical
51 MP-12	N139A	N138A			Mount Pipe	None	None	A53 Gr.B	Typical
52 K1	K-1	N175			PRK-1245	None	None	A36 Gr.36	Typical
53 K2	K-2	N173			PRK-1245	None	None	A36 Gr.36	Typical
54 K3	K-3	N177			PRK-1245	None	None	A36 Gr.36	Typical
55 M27	N43	N47			RIGID	None	None	RIGID	Typical
56 M55	N107	N105			RIGID	None	None	RIGID	Typical
57 M55A	N94	N95			RIGID	None	None	RIGID	Typical
58 M58	N110	N109			RIGID	None	None	RIGID	Typical
59 M61	N116	N115			RIGID	None	None	RIGID	Typical
60 M62A	N106	N107B			RIGID	None	None	RIGID	Typical
61 M63A	N110A	N111A			RIGID	None	None	RIGID	Typical
62 M64	N120	N119			RIGID	None	None	RIGID	Typical
63 M65A	N112A	N113A			RIGID	None	None	RIGID	Typical
64 M66A	N116A	N117A			RIGID	None	None	RIGID	Typical
65 M67	N126	N125			RIGID	None	None	RIGID	Typical
66 M68A	N118A	N119A			RIGID	None	None	RIGID	Typical
67 M69A	N122A	N123A			RIGID	None	None	RIGID	Typical
68 M70	N130	N129			RIGID	None	None	RIGID	Typical
69 M71A	N124A	N125A			RIGID	None	None	RIGID	Typical
70 M72	N134	N135			RIGID	None	None	RIGID	Typical
71 M72A	N128A	N129A			RIGID	None	None	RIGID	Typical
72 M74	N137	N138			RIGID	None	None	RIGID	Typical
73 M74A	N130A	N131A			RIGID	None	None	RIGID	Typical
74 M75A	N134A	N135A			RIGID	None	None	RIGID	Typical
75 M76	N140	N141			RIGID	None	None	RIGID	Typical
76 M77A	N136A	N137A			RIGID	None	None	RIGID	Typical
77 M78	N143	N144			RIGID	None	None	RIGID	Typical
78 M78A	N140A	N141A			RIGID	None	None	RIGID	Typical
79 M80	N146	N147			RIGID	None	None	RIGID	Typical
80 M80A	N142A	N143A			RIGID	None	None	RIGID	Typical
81 M81A	N146A	N147A			RIGID	None	None	RIGID	Typical
82 M82	N149	N150			RIGID	None	None	RIGID	Typical
83 M83	N148A	N149A			RIGID	None	None	RIGID	Typical
84 M84	N152	N153			RIGID	None	None	RIGID	Typical



Company : Tower Engineering Professionals, Inc.
 Designer : NPD
 Job Number : TEP No. 94015.587315
 Model Name : 302528 - Columbia Central

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Member Primary Data (Continued)

Label	I Joint	J Joint	K Joint	Rotate	Section/Shape	Type	Design List	Material	Design B...
85	M86	N154	N155		RIGID	None	None	RIGID	Typical
86	M87	N158	N159		RIGID	None	None	RIGID	Typical
87	M89	N160	N161		RIGID	None	None	RIGID	Typical
88	M90	N164	N165		RIGID	None	None	RIGID	Typical
89	M92	N166	N167		RIGID	None	None	RIGID	Typical
90	M93	N170	N171		RIGID	None	None	RIGID	Typical
91	SA-1	SA-1	SA-1B		Support Arm	None	None	A53 Gr.B	Typical
92	SA-2	SA-2	SA-2B		Support Arm	None	None	A53 Gr.B	Typical
93	SA-3	SA-3	SA-3B		Support Arm	None	None	A53 Gr.B	Typical
94	SR-1	N92	N93		Support Rail	None	None	A53 Gr.B	Typical
95	SR-2	N102	N103A		Support Rail	None	None	A53 Gr.B	Typical
96	SR-3	N98	N99		Support Rail	None	None	A53 Gr.B	Typical

Member Advanced Data

Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Ra...	Analysis...	Inactive	Seismi...
1	AHCP-1					Yes	** NA **			None
2	AHCP-2					Yes	** NA **			None
3	AHCP-3					Yes	** NA **			None
4	CP-1					Yes	** NA **			None
5	CP-2					Yes	** NA **			None
6	CP-3					Yes	** NA **			None
7	M71					Yes	** NA **			None
8	M73					Yes	** NA **			None
9	M75					Yes	** NA **			None
10	M77					Yes	** NA **			None
11	M79					Yes	** NA **			None
12	M81					Yes	** NA **			None
13	FF-TH					Yes	** NA **			None
14	SF1-TH					Yes	** NA **			None
15	SF2-TH					Yes	** NA **			None
16	GSIP-1A	BenPIN	BenPIN			Yes	** NA **			None
17	GSIP-1B	BenPIN	BenPIN			Yes	** NA **			None
18	GSIP-2A	BenPIN	BenPIN			Yes	** NA **			None
19	GSIP-2B	BenPIN	BenPIN			Yes	** NA **			None
20	GSIP-3A	BenPIN	BenPIN			Yes	** NA **			None
21	GSIP-3B	BenPIN	BenPIN			Yes	** NA **			None
22	GSI-1A					Yes	** NA **			None
23	GSI-1B					Yes	** NA **			None
24	GSI-2A					Yes	** NA **			None
25	GSI-2B					Yes	** NA **			None
26	GSI-3A					Yes	** NA **			None
27	GSI-3B					Yes	** NA **			None
28	M53					Yes	** NA **			None
29	M54					Yes	** NA **			None
30	M56					Yes	** NA **			None
31	M57					Yes	** NA **			None
32	M59					Yes	** NA **			None
33	M60					Yes	** NA **			None
34	M62					Yes	** NA **			None
35	M63					Yes	** NA **			None
36	M65					Yes	** NA **			None
37	M66					Yes	** NA **			None
38	M68					Yes	** NA **			None
39	M69					Yes	** NA **			None
40	MP-1					Yes	** NA **			None



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Member Advanced Data (Continued)

Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Ra...	Analysis...	Inactive	Seismi...
41	MP-2					Yes	** NA **			None
42	MP-3					Yes	** NA **			None
43	MP-4					Yes	** NA **			None
44	MP-5					Yes	** NA **			None
45	MP-6					Yes	** NA **			None
46	MP-7					Yes	** NA **			None
47	MP-8					Yes	** NA **			None
48	MP-9					Yes	** NA **			None
49	MP-10					Yes	** NA **			None
50	MP-11					Yes	** NA **			None
51	MP-12					Yes	** NA **			None
52	K1		BenPIN			Yes	** NA **			None
53	K2		BenPIN			Yes	** NA **			None
54	K3		BenPIN			Yes	** NA **			None
55	M27					Yes	** NA **			None
56	M55		000000			Yes	** NA **			None
57	M55A					Yes	** NA **			None
58	M58		000000			Yes	** NA **			None
59	M61		000000			Yes	** NA **			None
60	M62A					Yes	** NA **			None
61	M63A					Yes	** NA **			None
62	M64		000000			Yes	** NA **			None
63	M65A					Yes	** NA **			None
64	M66A					Yes	** NA **			None
65	M67		000000			Yes	** NA **			None
66	M68A					Yes	** NA **			None
67	M69A					Yes	** NA **			None
68	M70		000000			Yes	** NA **			None
69	M71A					Yes	** NA **			None
70	M72		0000X0			Yes	** NA **			None
71	M72A					Yes	** NA **			None
72	M74		0000X0			Yes	** NA **			None
73	M74A					Yes	** NA **			None
74	M75A					Yes	** NA **			None
75	M76		0000X0			Yes	** NA **			None
76	M77A					Yes	** NA **			None
77	M78		0000X0			Yes	** NA **			None
78	M78A					Yes	** NA **			None
79	M80		0000X0			Yes	** NA **			None
80	M80A					Yes	** NA **			None
81	M81A					Yes	** NA **			None
82	M82		0000X0			Yes	** NA **			None
83	M83					Yes	** NA **			None
84	M84					Yes	** NA **			None
85	M86					Yes	** NA **			None
86	M87					Yes	** NA **			None
87	M89					Yes	** NA **			None
88	M90					Yes	** NA **			None
89	M92					Yes	** NA **			None
90	M93					Yes	** NA **			None
91	SA-1					Yes	** NA **			None
92	SA-2					Yes	** NA **			None
93	SA-3					Yes	** NA **			None
94	SR-1					Yes	** NA **			None
95	SR-2					Yes	** NA **			None
96	SR-3					Yes	** NA **			None



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Hot Rolled Steel Design Parameters

Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[...]	Lcomp bot[...]	L-torq...	Kyy	Kzz	Cb	Functi...
1	AHCP-1 AHCP	1,259						1	1		Lateral
2	AHCP-2 AHCP	1,259						1	1		Lateral
3	AHCP-3 AHCP	1,259						1	1		Lateral
4	CP-1 Corner Plate	.893	.5	.5				1	1		Lateral
5	CP-2 Corner Plate	.893	.5	.5				1	1		Lateral
6	CP-3 Corner Plate	.893	.5	.5				1	1		Lateral
7	M71 Corner Plate	.25						1	1		Lateral
8	M73 Corner Plate	.25						1	1		Lateral
9	M75 Corner Plate	.25						1	1		Lateral
10	M77 Corner Plate	.25						1	1		Lateral
11	M79 Corner Plate	.25						1	1		Lateral
12	M81 Corner Plate	.25						1	1		Lateral
13	FF-TH Face Horiz	12.5	4.9					2.1	2.1		Lateral
14	SF1-TH Face Horiz	12.5	4.9					2.1	2.1		Lateral
15	SF2-TH Face Horiz	12.5	4.9					2.1	2.1		Lateral
16	GSIP-1A Grating Su...	4.091						1	1		Lateral
17	GSIP-1B Grating Su...	4.091						1	1		Lateral
18	GSIP-2A Grating Su...	4.091						1	1		Lateral
19	GSIP-2B Grating Su...	4.091						1	1		Lateral
20	GSIP-3A Grating Su...	4.091						1	1		Lateral
21	GSIP-3B Grating Su...	4.091						1	1		Lateral
22	GSI-1A Internal	2,395						.8	.8		Lateral
23	GSI-1B Internal	2,395						.8	.8		Lateral
24	GSI-2A Internal	2,395						.8	.8		Lateral
25	GSI-2B Internal	2,395						.8	.8		Lateral
26	GSI-3A Internal	2,395						.8	.8		Lateral
27	GSI-3B Internal	2,395						.8	.8		Lateral
28	M53 Internal Pl...	.334	.167	.167				1	1		Lateral
29	M54 Internal Pl...	.167						1	1		Lateral
30	M56 Internal Pl...	.334	.167	.167				1	1		Lateral
31	M57 Internal Pl...	.167						1	1		Lateral
32	M59 Internal Pl...	.334	.167	.167				1	1		Lateral
33	M60 Internal Pl...	.167						1	1		Lateral
34	M62 Internal Pl...	.334	.167	.167				1	1		Lateral
35	M63 Internal Pl...	.167						1	1		Lateral
36	M65 Internal Pl...	.334	.167	.167				1	1		Lateral
37	M66 Internal Pl...	.167						1	1		Lateral
38	M68 Internal Pl...	.334	.167	.167				1	1		Lateral
39	M69 Internal Pl...	.167						1	1		Lateral
40	MP-1 Mount Pipe	8	Segment	Segment				2.1	2.1		Lateral
41	MP-2 Mount Pipe	8	Segment	Segment				2.1	2.1		Lateral
42	MP-3 Mount Pipe	8	Segment	Segment				2.1	2.1		Lateral
43	MP-4 Mount Pipe	8	Segment	Segment				2.1	2.1		Lateral
44	MP-5 Mount Pipe	8	Segment	Segment				2.1	2.1		Lateral
45	MP-6 Mount Pipe	8	Segment	Segment				2.1	2.1		Lateral
46	MP-7 Mount Pipe	8	Segment	Segment				2.1	2.1		Lateral
47	MP-8 Mount Pipe	8	Segment	Segment				2.1	2.1		Lateral
48	MP-9 Mount Pipe	8	Segment	Segment				2.1	2.1		Lateral
49	MP-10 Mount Pipe	8	Segment	Segment				2.1	2.1		Lateral
50	MP-11 Mount Pipe	8	Segment	Segment				2.1	2.1		Lateral
51	MP-12 Mount Pipe	8	Segment	Segment				2.1	2.1		Lateral
52	K1 PRK-1245	4,398						1	1		Lateral
53	K2 PRK-1245	4,398						1	1		Lateral
54	K3 PRK-1245	4,398						1	1		Lateral
55	SA-1 Support Arm	5,187	3.54					1	1		Lateral
56	SA-2 Support Arm	5,187	3.54					1	1		Lateral



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Hot Rolled Steel Design Parameters (Continued)

Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[...]	Lcomp bot[...]	L-torq...	Kyy	Kzz	Cb	Functi...
57	SA-3 Support Arm	5,187	3.54					1	1		Lateral
58	SR-1 Support Rail	12.5						2.1	2.1		Lateral
59	SR-2 Support Rail	12.5						2.1	2.1		Lateral
60	SR-3 Support Rail	12.5						2.1	2.1		Lateral

Cold Formed Steel Design Parameters

Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp to...	Lcomp b...	Kyy	Kzz	Cm-yy	Cm-zz	Cb	R	y	swayz	sway
No Data to Print ...															

Basic Load Cases

BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...	Surface...
1 Dead	None		-1			18		3
2 0 Wind - No Ice	None					18	60	
3 30 Wind - No Ice	None					36	120	
4 45 Wind - No Ice	None					36	120	
5 60 Wind - No Ice	None					36	120	
6 90 Wind - No Ice	None					18	60	
7 120 Wind - No Ice	None					36	120	
8 135 Wind - No Ice	None					36	120	
9 150 Wind - No Ice	None					36	120	
10 180 Wind - No Ice	None					18	60	
11 210 Wind - No Ice	None					36	120	
12 225 Wind - No Ice	None					36	120	
13 240 Wind - No Ice	None					36	120	
14 270 Wind - No Ice	None					18	60	
15 300 Wind - No Ice	None					36	120	
16 315 Wind - No Ice	None					36	120	
17 330 Wind - No Ice	None					36	120	
18 Ice Weight	None					18	60	3
19 0 Wind - Ice	None					18	60	
20 30 Wind - Ice	None					36	120	
21 45 Wind - Ice	None					36	120	
22 60 Wind - Ice	None					36	120	
23 90 Wind - Ice	None					18	60	
24 120 Wind - Ice	None					36	120	
25 135 Wind - Ice	None					36	120	
26 150 Wind - Ice	None					36	120	
27 180 Wind - Ice	None					18	60	
28 210 Wind - Ice	None					36	120	
29 225 Wind - Ice	None					36	120	
30 240 Wind - Ice	None					36	120	
31 270 Wind - Ice	None					18	60	
32 300 Wind - Ice	None					36	120	
33 315 Wind - Ice	None					36	120	
34 330 Wind - Ice	None					36	120	
35 Lm	None				1			
36 Lv	None				1			
37 Seismic Load X	ELX	-1				18		
38 Seismic Load Z	ELZ			-1		18		
39 BLC 1 Transient Area Loads	None						54	
40 BLC 18 Transient Area Loads	None						54	



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Member Point Loads (BLC 1 : Dead) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
11	MP-10	Y	-1.09	3
12	MP-11	Y	-0.52	3
13	MP-2	Y	-0.61	7.5
14	MP-3	Y	-0.52	5
15	MP-6	Y	-0.61	7.5
16	MP-7	Y	-0.52	5
17	MP-10	Y	-0.61	7.5
18	MP-11	Y	-0.52	5

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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	X	-.31	.5
2	MP-2	X	-.044	3
3	MP-2	X	-.062	3
4	MP-3	X	-.087	3
5	MP-6	X	-.181	.5
6	MP-6	X	-.077	3
7	MP-6	X	-.075	3
8	MP-7	X	-.051	3
9	MP-10	X	-.181	.5
10	MP-10	X	-.077	3
11	MP-10	X	-.075	3
12	MP-11	X	-.051	3
13	MP-2	X	-.31	7.5
14	MP-3	X	-.087	5
15	MP-6	X	-.181	7.5
16	MP-7	X	-.051	5
17	MP-10	X	-.181	7.5
18	MP-11	X	-.051	5

Member Point Loads (BLC 3 : 30 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	X	-.209	.5
2	MP-2	X	-.054	3
3	MP-2	X	-.06	3
4	MP-3	X	-.059	3
5	MP-6	X	-.118	.5
6	MP-6	X	-.077	3
7	MP-6	X	-.069	3
8	MP-7	X	-.034	3
9	MP-10	X	-.234	.5
10	MP-10	X	-.047	3
11	MP-10	X	-.057	3
12	MP-11	X	-.066	3
13	MP-2	X	-.209	7.5
14	MP-3	X	-.059	5
15	MP-6	X	-.118	7.5
16	MP-7	X	-.034	5
17	MP-10	X	-.234	7.5
18	MP-11	X	-.066	5
19	MP-2	Z	-.12	.5
20	MP-2	Z	-.031	3
21	MP-2	Z	-.035	3
22	MP-3	Z	-.034	3
23	MP-6	Z	-.068	.5
24	MP-6	Z	-.044	3



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Member Point Loads (BLC 3 : 30 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
25	MP-6	Z	-.04	3
26	MP-7	Z	-.019	3
27	MP-10	Z	-.135	.5
28	MP-10	Z	-.027	3
29	MP-10	Z	-.033	3
30	MP-11	Z	-.038	3
31	MP-2	Z	-.12	7.5
32	MP-3	Z	-.034	5
33	MP-6	Z	-.068	7.5
34	MP-7	Z	-.019	5
35	MP-10	Z	-.135	7.5
36	MP-11	Z	-.038	5

Member Point Loads (BLC 4 : 45 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	X	-.138	.5
2	MP-2	X	-.052	3
3	MP-2	X	-.052	3
4	MP-3	X	-.039	3
5	MP-6	X	-.105	.5
6	MP-6	X	-.061	3
7	MP-6	X	-.056	3
8	MP-7	X	-.03	3
9	MP-10	X	-.214	.5
10	MP-10	X	-.033	3
11	MP-10	X	-.044	3
12	MP-11	X	-.06	3
13	MP-2	X	-.138	7.5
14	MP-3	X	-.039	5
15	MP-6	X	-.105	7.5
16	MP-7	X	-.03	5
17	MP-10	X	-.214	7.5
18	MP-11	X	-.06	5
19	MP-2	Z	-.138	.5
20	MP-2	Z	-.052	3
21	MP-2	Z	-.052	3
22	MP-3	Z	-.039	3
23	MP-6	Z	-.105	.5
24	MP-6	Z	-.061	3
25	MP-6	Z	-.056	3
26	MP-7	Z	-.03	3
27	MP-10	Z	-.214	.5
28	MP-10	Z	-.033	3
29	MP-10	Z	-.044	3
30	MP-11	Z	-.06	3
31	MP-2	Z	-.138	7.5
32	MP-3	Z	-.039	5
33	MP-6	Z	-.105	7.5
34	MP-7	Z	-.03	5
35	MP-10	Z	-.214	7.5
36	MP-11	Z	-.06	5

Member Point Loads (BLC 5 : 60 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	X	-.078	.5
2	MP-2	X	-.042	3



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Member Point Loads (BLC 5 : 60 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
3	MP-2	X	-0.39	3
4	MP-3	X	-0.22	3
5	MP-6	X	-0.09	.5
6	MP-6	X	-0.39	3
7	MP-6	X	-0.38	3
8	MP-7	X	-0.26	3
9	MP-10	X	-0.157	.5
10	MP-10	X	-0.22	3
11	MP-10	X	-0.31	3
12	MP-11	X	-0.44	3
13	MP-2	X	-0.78	7.5
14	MP-3	X	-0.22	5
15	MP-6	X	-0.09	7.5
16	MP-7	X	-0.26	5
17	MP-10	X	-0.157	7.5
18	MP-11	X	-0.44	5
19	MP-2	Z	-0.136	.5
20	MP-2	Z	-0.72	3
21	MP-2	Z	-0.67	3
22	MP-3	Z	-0.39	3
23	MP-6	Z	-0.156	.5
24	MP-6	Z	-0.67	3
25	MP-6	Z	-0.65	3
26	MP-7	Z	-0.44	3
27	MP-10	Z	-0.273	.5
28	MP-10	Z	-0.37	3
29	MP-10	Z	-0.53	3
30	MP-11	Z	-0.77	3
31	MP-2	Z	-0.136	7.5
32	MP-3	Z	-0.39	5
33	MP-6	Z	-0.156	7.5
34	MP-7	Z	-0.44	5
35	MP-10	Z	-0.273	7.5
36	MP-11	Z	-0.77	5

Member Point Loads (BLC 6 : 90 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	Z	-0.141	.5
2	MP-2	Z	-0.87	3
3	MP-2	Z	-0.79	3
4	MP-3	Z	-0.04	3
5	MP-6	Z	-0.27	.5
6	MP-6	Z	-0.54	3
7	MP-6	Z	-0.66	3
8	MP-7	Z	-0.76	3
9	MP-10	Z	-0.27	.5
10	MP-10	Z	-0.54	3
11	MP-10	Z	-0.66	3
12	MP-11	Z	-0.76	3
13	MP-2	Z	-0.141	7.5
14	MP-3	Z	-0.04	5
15	MP-6	Z	-0.27	7.5
16	MP-7	Z	-0.76	5
17	MP-10	Z	-0.27	7.5
18	MP-11	Z	-0.76	5



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Member Point Loads (BLC 7 : 120 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	X	.105	.5
2	MP-2	X	.035	3
3	MP-2	X	.036	3
4	MP-3	X	.03	3
5	MP-6	X	.157	.5
6	MP-6	X	.022	3
7	MP-6	X	.031	3
8	MP-7	X	.044	3
9	MP-10	X	.09	.5
10	MP-10	X	.039	3
11	MP-10	X	.038	3
12	MP-11	X	.026	3
13	MP-2	X	.105	7.5
14	MP-3	X	.03	5
15	MP-6	X	.157	7.5
16	MP-7	X	.044	5
17	MP-10	X	.09	7.5
18	MP-11	X	.026	5
19	MP-2	Z	-.182	.5
20	MP-2	Z	-.061	3
21	MP-2	Z	-.063	3
22	MP-3	Z	-.051	3
23	MP-6	Z	-.273	.5
24	MP-6	Z	-.037	3
25	MP-6	Z	-.053	3
26	MP-7	Z	-.077	3
27	MP-10	Z	-.156	.5
28	MP-10	Z	-.067	3
29	MP-10	Z	-.065	3
30	MP-11	Z	-.044	3
31	MP-2	Z	-.182	7.5
32	MP-3	Z	-.051	5
33	MP-6	Z	-.273	7.5
34	MP-7	Z	-.077	5
35	MP-10	Z	-.156	7.5
36	MP-11	Z	-.044	5

Member Point Loads (BLC 8 : 135 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	X	.181	.5
2	MP-2	X	.041	3
3	MP-2	X	.048	3
4	MP-3	X	.051	3
5	MP-6	X	.214	.5
6	MP-6	X	.033	3
7	MP-6	X	.044	3
8	MP-7	X	.06	3
9	MP-10	X	.105	.5
10	MP-10	X	.061	3
11	MP-10	X	.056	3
12	MP-11	X	.03	3
13	MP-2	X	.181	7.5
14	MP-3	X	.051	5
15	MP-6	X	.214	7.5
16	MP-7	X	.06	5
17	MP-10	X	.105	7.5



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Member Point Loads (BLC 8 : 135 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
18	MP-11	X	.03	5
19	MP-2	Z	-.181	.5
20	MP-2	Z	-.041	3
21	MP-2	Z	-.048	3
22	MP-3	Z	-.051	3
23	MP-6	Z	-.214	.5
24	MP-6	Z	-.033	3
25	MP-6	Z	-.044	3
26	MP-7	Z	-.06	3
27	MP-10	Z	-.105	.5
28	MP-10	Z	-.061	3
29	MP-10	Z	-.056	3
30	MP-11	Z	-.03	3
31	MP-2	Z	-.181	7.5
32	MP-3	Z	-.051	5
33	MP-6	Z	-.214	7.5
34	MP-7	Z	-.06	5
35	MP-10	Z	-.105	7.5
36	MP-11	Z	-.03	5

Member Point Loads (BLC 9 : 150 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	X	.255	.5
2	MP-2	X	.042	3
3	MP-2	X	.055	3
4	MP-3	X	.072	3
5	MP-6	X	.234	.5
6	MP-6	X	.047	3
7	MP-6	X	.057	3
8	MP-7	X	.066	3
9	MP-10	X	.118	.5
10	MP-10	X	.077	3
11	MP-10	X	.069	3
12	MP-11	X	.034	3
13	MP-2	X	.255	7.5
14	MP-3	X	.072	5
15	MP-6	X	.234	7.5
16	MP-7	X	.066	5
17	MP-10	X	.118	7.5
18	MP-11	X	.034	5
19	MP-2	Z	-.147	.5
20	MP-2	Z	-.024	3
21	MP-2	Z	-.032	3
22	MP-3	Z	-.041	3
23	MP-6	Z	-.135	.5
24	MP-6	Z	-.027	3
25	MP-6	Z	-.033	3
26	MP-7	Z	-.038	3
27	MP-10	Z	-.068	.5
28	MP-10	Z	-.044	3
29	MP-10	Z	-.04	3
30	MP-11	Z	-.019	3
31	MP-2	Z	-.147	7.5
32	MP-3	Z	-.041	5
33	MP-6	Z	-.135	7.5
34	MP-7	Z	-.038	5



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Member Point Loads (BLC 9 : 150 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
35	MP-10	Z	-.068	7.5
36	MP-11	Z	-.019	5

Member Point Loads (BLC 10 : 180 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	X	.31	.5
2	MP-2	X	.044	3
3	MP-2	X	.062	3
4	MP-3	X	.087	3
5	MP-6	X	.181	.5
6	MP-6	X	.077	3
7	MP-6	X	.075	3
8	MP-7	X	.051	3
9	MP-10	X	.181	.5
10	MP-10	X	.077	3
11	MP-10	X	.075	3
12	MP-11	X	.051	3
13	MP-2	X	.31	7.5
14	MP-3	X	.087	5
15	MP-6	X	.181	7.5
16	MP-7	X	.051	5
17	MP-10	X	.181	7.5
18	MP-11	X	.051	5

Member Point Loads (BLC 11 : 210 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	X	.209	.5
2	MP-2	X	.054	3
3	MP-2	X	.06	3
4	MP-3	X	.059	3
5	MP-6	X	.118	.5
6	MP-6	X	.077	3
7	MP-6	X	.069	3
8	MP-7	X	.034	3
9	MP-10	X	.234	.5
10	MP-10	X	.047	3
11	MP-10	X	.057	3
12	MP-11	X	.066	3
13	MP-2	X	.209	7.5
14	MP-3	X	.059	5
15	MP-6	X	.118	7.5
16	MP-7	X	.034	5
17	MP-10	X	.234	7.5
18	MP-11	X	.066	5
19	MP-2	Z	-.12	.5
20	MP-2	Z	.031	3
21	MP-2	Z	.035	3
22	MP-3	Z	.034	3
23	MP-6	Z	.068	.5
24	MP-6	Z	.044	3
25	MP-6	Z	.04	3
26	MP-7	Z	.019	3
27	MP-10	Z	.135	.5
28	MP-10	Z	.027	3
29	MP-10	Z	.033	3
30	MP-11	Z	.038	3



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Member Point Loads (BLC 11 : 210 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
31	MP-2	Z	.12	7.5
32	MP-3	Z	.034	5
33	MP-6	Z	.068	7.5
34	MP-7	Z	.019	5
35	MP-10	Z	.135	7.5
36	MP-11	Z	.038	5

Member Point Loads (BLC 12 : 225 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	X	.138	.5
2	MP-2	X	.052	3
3	MP-2	X	.052	3
4	MP-3	X	.039	3
5	MP-6	X	.105	.5
6	MP-6	X	.061	3
7	MP-6	X	.056	3
8	MP-7	X	.03	3
9	MP-10	X	.214	.5
10	MP-10	X	.033	3
11	MP-10	X	.044	3
12	MP-11	X	.06	3
13	MP-2	X	.138	7.5
14	MP-3	X	.039	5
15	MP-6	X	.105	7.5
16	MP-7	X	.03	5
17	MP-10	X	.214	7.5
18	MP-11	X	.06	5
19	MP-2	Z	.138	.5
20	MP-2	Z	.052	3
21	MP-2	Z	.052	3
22	MP-3	Z	.039	3
23	MP-6	Z	.105	.5
24	MP-6	Z	.061	3
25	MP-6	Z	.056	3
26	MP-7	Z	.03	3
27	MP-10	Z	.214	.5
28	MP-10	Z	.033	3
29	MP-10	Z	.044	3
30	MP-11	Z	.06	3
31	MP-2	Z	.138	7.5
32	MP-3	Z	.039	5
33	MP-6	Z	.105	7.5
34	MP-7	Z	.03	5
35	MP-10	Z	.214	7.5
36	MP-11	Z	.06	5

Member Point Loads (BLC 13 : 240 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	X	.078	.5
2	MP-2	X	.042	3
3	MP-2	X	.039	3
4	MP-3	X	.022	3
5	MP-6	X	.09	.5
6	MP-6	X	.039	3
7	MP-6	X	.038	3
8	MP-7	X	.026	3



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Member Point Loads (BLC 13 : 240 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
9	MP-10	X	.157	.5
10	MP-10	X	.022	3
11	MP-10	X	.031	3
12	MP-11	X	.044	3
13	MP-2	X	.078	7.5
14	MP-3	X	.022	5
15	MP-6	X	.09	7.5
16	MP-7	X	.026	5
17	MP-10	X	.157	7.5
18	MP-11	X	.044	5
19	MP-2	Z	.136	.5
20	MP-2	Z	.072	3
21	MP-2	Z	.067	3
22	MP-3	Z	.039	3
23	MP-6	Z	.156	.5
24	MP-6	Z	.067	3
25	MP-6	Z	.065	3
26	MP-7	Z	.044	3
27	MP-10	Z	.273	.5
28	MP-10	Z	.037	3
29	MP-10	Z	.053	3
30	MP-11	Z	.077	3
31	MP-2	Z	.136	7.5
32	MP-3	Z	.039	5
33	MP-6	Z	.156	7.5
34	MP-7	Z	.044	5
35	MP-10	Z	.273	7.5
36	MP-11	Z	.077	5

Member Point Loads (BLC 14 : 270 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	Z	.141	.5
2	MP-2	Z	.087	3
3	MP-2	Z	.079	3
4	MP-3	Z	.04	3
5	MP-6	Z	.27	.5
6	MP-6	Z	.054	3
7	MP-6	Z	.066	3
8	MP-7	Z	.076	3
9	MP-10	Z	.27	.5
10	MP-10	Z	.054	3
11	MP-10	Z	.066	3
12	MP-11	Z	.076	3
13	MP-2	Z	.141	7.5
14	MP-3	Z	.04	5
15	MP-6	Z	.27	7.5
16	MP-7	Z	.076	5
17	MP-10	Z	.27	7.5
18	MP-11	Z	.076	5

Member Point Loads (BLC 15 : 300 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	X	-.105	.5
2	MP-2	X	-.035	3
3	MP-2	X	-.036	3
4	MP-3	X	-.03	3



Member Point Loads (BLC 15 : 300 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
5	MP-6	X	-.157	.5
6	MP-6	X	-.022	3
7	MP-6	X	-.031	3
8	MP-7	X	-.044	3
9	MP-10	X	-.09	.5
10	MP-10	X	-.039	3
11	MP-10	X	-.038	3
12	MP-11	X	-.026	3
13	MP-2	X	-.105	7.5
14	MP-3	X	-.03	5
15	MP-6	X	-.157	7.5
16	MP-7	X	-.044	5
17	MP-10	X	-.09	7.5
18	MP-11	X	-.026	5
19	MP-2	Z	.182	.5
20	MP-2	Z	.061	3
21	MP-2	Z	.063	3
22	MP-3	Z	.051	3
23	MP-6	Z	.273	.5
24	MP-6	Z	.037	3
25	MP-6	Z	.053	3
26	MP-7	Z	.077	3
27	MP-10	Z	.156	.5
28	MP-10	Z	.067	3
29	MP-10	Z	.065	3
30	MP-11	Z	.044	3
31	MP-2	Z	.182	7.5
32	MP-3	Z	.051	5
33	MP-6	Z	.273	7.5
34	MP-7	Z	.077	5
35	MP-10	Z	.156	7.5
36	MP-11	Z	.044	5

Member Point Loads (BLC 16 : 315 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	X	-.181	.5
2	MP-2	X	-.041	3
3	MP-2	X	-.048	3
4	MP-3	X	-.051	3
5	MP-6	X	-.214	.5
6	MP-6	X	-.033	3
7	MP-6	X	-.044	3
8	MP-7	X	-.06	3
9	MP-10	X	-.105	.5
10	MP-10	X	-.061	3
11	MP-10	X	-.056	3
12	MP-11	X	-.03	3
13	MP-2	X	-.181	7.5
14	MP-3	X	-.051	5
15	MP-6	X	-.214	7.5
16	MP-7	X	-.06	5
17	MP-10	X	-.105	7.5
18	MP-11	X	-.03	5
19	MP-2	Z	.181	.5
20	MP-2	Z	.041	3
21	MP-2	Z	.048	3



Member Point Loads (BLC 16 : 315 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
22	MP-3	Z	.051	3
23	MP-6	Z	.214	.5
24	MP-6	Z	.033	3
25	MP-6	Z	.044	3
26	MP-7	Z	.06	3
27	MP-10	Z	.105	.5
28	MP-10	Z	.061	3
29	MP-10	Z	.056	3
30	MP-11	Z	.03	3
31	MP-2	Z	.181	7.5
32	MP-3	Z	.051	5
33	MP-6	Z	.214	7.5
34	MP-7	Z	.06	5
35	MP-10	Z	.105	7.5
36	MP-11	Z	.03	5

Member Point Loads (BLC 17 : 330 Wind - No Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	X	-.255	.5
2	MP-2	X	-.042	3
3	MP-2	X	-.055	3
4	MP-3	X	-.072	3
5	MP-6	X	-.234	.5
6	MP-6	X	-.047	3
7	MP-6	X	-.057	3
8	MP-7	X	-.066	3
9	MP-10	X	-.118	.5
10	MP-10	X	-.077	3
11	MP-10	X	-.069	3
12	MP-11	X	-.034	3
13	MP-2	X	-.255	7.5
14	MP-3	X	-.072	5
15	MP-6	X	-.234	7.5
16	MP-7	X	-.066	5
17	MP-10	X	-.118	7.5
18	MP-11	X	-.034	5
19	MP-2	Z	.147	.5
20	MP-2	Z	.024	3
21	MP-2	Z	.032	3
22	MP-3	Z	.041	3
23	MP-6	Z	.135	.5
24	MP-6	Z	.027	3
25	MP-6	Z	.033	3
26	MP-7	Z	.038	3
27	MP-10	Z	.068	.5
28	MP-10	Z	.044	3
29	MP-10	Z	.04	3
30	MP-11	Z	.019	3
31	MP-2	Z	.147	7.5
32	MP-3	Z	.041	5
33	MP-6	Z	.135	7.5
34	MP-7	Z	.038	5
35	MP-10	Z	.068	7.5
36	MP-11	Z	.019	5



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Member Point Loads (BLC 18 : Ice Weight)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	Y	-132	.5
2	MP-2	Y	-053	3
3	MP-2	Y	-062	3
4	MP-3	Y	-047	3
5	MP-6	Y	-132	.5
6	MP-6	Y	-053	3
7	MP-6	Y	-062	3
8	MP-7	Y	-047	3
9	MP-10	Y	-132	.5
10	MP-10	Y	-053	3
11	MP-10	Y	-062	3
12	MP-11	Y	-047	3
13	MP-2	Y	-132	7.5
14	MP-3	Y	-047	5
15	MP-6	Y	-132	7.5
16	MP-7	Y	-047	5
17	MP-10	Y	-132	7.5
18	MP-11	Y	-047	5

Member Point Loads (BLC 19 : 0 Wind - Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	X	-061	.5
2	MP-2	X	-019	3
3	MP-2	X	-018	3
4	MP-3	X	-018	3
5	MP-6	X	-061	.5
6	MP-6	X	-019	3
7	MP-6	X	-018	3
8	MP-7	X	-018	3
9	MP-10	X	-061	.5
10	MP-10	X	-019	3
11	MP-10	X	-018	3
12	MP-11	X	-018	3
13	MP-2	X	-061	7.5
14	MP-3	X	-018	5
15	MP-6	X	-061	7.5
16	MP-7	X	-018	5
17	MP-10	X	-061	7.5
18	MP-11	X	-018	5

Member Point Loads (BLC 20 : 30 Wind - Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	X	-041	.5
2	MP-2	X	-012	3
3	MP-2	X	-013	3
4	MP-3	X	-012	3
5	MP-6	X	-025	.5
6	MP-6	X	-017	3
7	MP-6	X	-015	3
8	MP-7	X	-008	3
9	MP-10	X	-046	.5
10	MP-10	X	-011	3
11	MP-10	X	-013	3
12	MP-11	X	-014	3
13	MP-2	X	-041	7.5
14	MP-3	X	-012	5



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Member Point Loads (BLC 20 : 30 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
15	MP-6	X	-025	7.5
16	MP-7	X	-008	5
17	MP-10	X	-046	7.5
18	MP-11	X	-014	5
19	MP-2	Z	-024	.5
20	MP-2	Z	-007	3
21	MP-2	Z	-008	3
22	MP-3	Z	-007	3
23	MP-6	Z	-015	.5
24	MP-6	Z	-01	3
25	MP-6	Z	-009	3
26	MP-7	Z	-004	3
27	MP-10	Z	-026	.5
28	MP-10	Z	-006	3
29	MP-10	Z	-008	3
30	MP-11	Z	-008	3
31	MP-2	Z	-024	7.5
32	MP-3	Z	-007	5
33	MP-6	Z	-015	7.5
34	MP-7	Z	-004	5
35	MP-10	Z	-026	7.5
36	MP-11	Z	-008	5

Member Point Loads (BLC 21 : 45 Wind - Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	X	-028	.5
2	MP-2	X	-012	3
3	MP-2	X	-012	3
4	MP-3	X	-008	3
5	MP-6	X	-022	.5
6	MP-6	X	-013	3
7	MP-6	X	-012	3
8	MP-7	X	-007	3
9	MP-10	X	-041	.5
10	MP-10	X	-008	3
11	MP-10	X	-01	3
12	MP-11	X	-012	3
13	MP-2	X	-028	7.5
14	MP-3	X	-008	5
15	MP-6	X	-022	7.5
16	MP-7	X	-007	5
17	MP-10	X	-041	7.5
18	MP-11	X	-012	5
19	MP-2	Z	-028	.5
20	MP-2	Z	-012	3
21	MP-2	Z	-012	3
22	MP-3	Z	-008	3
23	MP-6	Z	-022	.5
24	MP-6	Z	-013	3
25	MP-6	Z	-012	3
26	MP-7	Z	-007	3
27	MP-10	Z	-041	.5
28	MP-10	Z	-008	3
29	MP-10	Z	-01	3
30	MP-11	Z	-012	3
31	MP-2	Z	-028	7.5



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Member Point Loads (BLC 21 : 45 Wind - Ice) (Continued)

Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]	
32	MP-3	Z	-0.08	5
33	MP-6	Z	-0.22	7.5
34	MP-7	Z	-0.07	5
35	MP-10	Z	-0.41	7.5
36	MP-11	Z	-0.12	5

Member Point Loads (BLC 22 : 60 Wind - Ice)

Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]	
1	MP-2	X	-0.16	.5
2	MP-2	X	-0.09	3
3	MP-2	X	-0.09	3
4	MP-3	X	-0.05	3
5	MP-6	X	-0.19	.5
6	MP-6	X	-0.09	3
7	MP-6	X	-0.08	3
8	MP-7	X	-0.06	3
9	MP-10	X	-0.03	.5
10	MP-10	X	-0.05	3
11	MP-10	X	-0.07	3
12	MP-11	X	-0.09	3
13	MP-2	X	-0.16	7.5
14	MP-3	X	-0.05	5
15	MP-6	X	-0.19	7.5
16	MP-7	X	-0.06	5
17	MP-10	X	-0.03	7.5
18	MP-11	X	-0.09	5
19	MP-2	Z	-0.28	.5
20	MP-2	Z	-0.16	3
21	MP-2	Z	-0.15	3
22	MP-3	Z	-0.09	3
23	MP-6	Z	-0.32	.5
24	MP-6	Z	-0.15	3
25	MP-6	Z	-0.15	3
26	MP-7	Z	-0.01	3
27	MP-10	Z	-0.53	.5
28	MP-10	Z	-0.09	3
29	MP-10	Z	-0.12	3
30	MP-11	Z	-0.16	3
31	MP-2	Z	-0.28	7.5
32	MP-3	Z	-0.09	5
33	MP-6	Z	-0.32	7.5
34	MP-7	Z	-0.01	5
35	MP-10	Z	-0.53	7.5
36	MP-11	Z	-0.16	5

Member Point Loads (BLC 23 : 90 Wind - Ice)

Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]	
1	MP-2	Z	-0.29	.5
2	MP-2	Z	-0.11	3
3	MP-2	Z	-0.14	3
4	MP-3	Z	-0.09	3
5	MP-6	Z	-0.29	.5
6	MP-6	Z	-0.11	3
7	MP-6	Z	-0.14	3
8	MP-7	Z	-0.09	3
9	MP-10	Z	-0.29	.5



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Member Point Loads (BLC 23 : 90 Wind - Ice) (Continued)

Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]	
10	MP-10	Z	-0.11	3
11	MP-10	Z	-0.14	3
12	MP-11	Z	-0.09	3
13	MP-2	Z	-0.29	7.5
14	MP-3	Z	-0.09	5
15	MP-6	Z	-0.29	7.5
16	MP-7	Z	-0.09	5
17	MP-10	Z	-0.29	7.5
18	MP-11	Z	-0.09	5

Member Point Loads (BLC 24 : 120 Wind - Ice)

Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]	
1	MP-2	X	.021	.5
2	MP-2	X	.008	3
3	MP-2	X	.008	3
4	MP-3	X	.006	3
5	MP-6	X	.03	.5
6	MP-6	X	.005	3
7	MP-6	X	.007	3
8	MP-7	X	.009	3
9	MP-10	X	.019	.5
10	MP-10	X	.009	3
11	MP-10	X	.008	3
12	MP-11	X	.006	3
13	MP-2	X	.021	7.5
14	MP-3	X	.006	5
15	MP-6	X	.03	7.5
16	MP-7	X	.009	5
17	MP-10	X	.019	7.5
18	MP-11	X	.006	5
19	MP-2	Z	-0.37	.5
20	MP-2	Z	-0.14	3
21	MP-2	Z	-0.14	3
22	MP-3	Z	-0.11	3
23	MP-6	Z	-0.53	.5
24	MP-6	Z	-0.09	3
25	MP-6	Z	-0.12	3
26	MP-7	Z	-0.16	3
27	MP-10	Z	-0.32	.5
28	MP-10	Z	-0.15	3
29	MP-10	Z	-0.15	3
30	MP-11	Z	-0.01	3
31	MP-2	Z	-0.37	7.5
32	MP-3	Z	-0.11	5
33	MP-6	Z	-0.53	7.5
34	MP-7	Z	-0.16	5
35	MP-10	Z	-0.32	7.5
36	MP-11	Z	-0.01	5

Member Point Loads (BLC 25 : 135 Wind - Ice)

Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]	
1	MP-2	X	.036	.5
2	MP-2	X	.01	3
3	MP-2	X	.011	3
4	MP-3	X	.011	3
5	MP-6	X	.041	.5



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Member Point Loads (BLC 25 : 135 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
6	MP-6	X	.008	3
7	MP-6	X	.01	3
8	MP-7	X	.012	3
9	MP-10	X	.022	.5
10	MP-10	X	.013	3
11	MP-10	X	.012	3
12	MP-11	X	.007	3
13	MP-2	X	.036	7.5
14	MP-3	X	.011	5
15	MP-6	X	.041	7.5
16	MP-7	X	.012	5
17	MP-10	X	.022	7.5
18	MP-11	X	.007	5
19	MP-2	Z	-.036	.5
20	MP-2	Z	-.01	3
21	MP-2	Z	-.011	3
22	MP-3	Z	-.011	3
23	MP-6	Z	-.041	.5
24	MP-6	Z	-.008	3
25	MP-6	Z	-.01	3
26	MP-7	Z	-.012	3
27	MP-10	Z	-.022	.5
28	MP-10	Z	-.013	3
29	MP-10	Z	-.012	3
30	MP-11	Z	-.007	3
31	MP-2	Z	-.036	7.5
32	MP-3	Z	-.011	5
33	MP-6	Z	-.041	7.5
34	MP-7	Z	-.012	5
35	MP-10	Z	-.022	7.5
36	MP-11	Z	-.007	5

Member Point Loads (BLC 26 : 150 Wind - Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	X	.049	.5
2	MP-2	X	.01	3
3	MP-2	X	.013	3
4	MP-3	X	.015	3
5	MP-6	X	.046	.5
6	MP-6	X	.011	3
7	MP-6	X	.013	3
8	MP-7	X	.014	3
9	MP-10	X	.025	.5
10	MP-10	X	.017	3
11	MP-10	X	.015	3
12	MP-11	X	.008	3
13	MP-2	X	.049	7.5
14	MP-3	X	.015	5
15	MP-6	X	.046	7.5
16	MP-7	X	.014	5
17	MP-10	X	.025	7.5
18	MP-11	X	.008	5
19	MP-2	Z	-.028	.5
20	MP-2	Z	-.006	3
21	MP-2	Z	-.007	3
22	MP-3	Z	-.009	3



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Member Point Loads (BLC 26 : 150 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
23	MP-6	Z	-.026	.5
24	MP-6	Z	-.006	3
25	MP-6	Z	-.008	3
26	MP-7	Z	-.008	3
27	MP-10	Z	-.015	.5
28	MP-10	Z	-.01	3
29	MP-10	Z	-.009	3
30	MP-11	Z	-.004	3
31	MP-2	Z	-.028	7.5
32	MP-3	Z	-.009	5
33	MP-6	Z	-.026	7.5
34	MP-7	Z	-.008	5
35	MP-10	Z	-.015	7.5
36	MP-11	Z	-.004	5

Member Point Loads (BLC 27 : 180 Wind - Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	X	.061	.5
2	MP-2	X	.019	3
3	MP-2	X	.018	3
4	MP-3	X	.018	3
5	MP-6	X	.061	.5
6	MP-6	X	.019	3
7	MP-6	X	.018	3
8	MP-7	X	.018	3
9	MP-10	X	.061	.5
10	MP-10	X	.019	3
11	MP-10	X	.018	3
12	MP-11	X	.018	3
13	MP-2	X	.061	7.5
14	MP-3	X	.018	5
15	MP-6	X	.061	7.5
16	MP-7	X	.018	5
17	MP-10	X	.061	7.5
18	MP-11	X	.018	5

Member Point Loads (BLC 28 : 210 Wind - Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	X	.041	.5
2	MP-2	X	.012	3
3	MP-2	X	.013	3
4	MP-3	X	.012	3
5	MP-6	X	.025	.5
6	MP-6	X	.017	3
7	MP-6	X	.015	3
8	MP-7	X	.008	3
9	MP-10	X	.046	.5
10	MP-10	X	.011	3
11	MP-10	X	.013	3
12	MP-11	X	.014	3
13	MP-2	X	.041	7.5
14	MP-3	X	.012	5
15	MP-6	X	.025	7.5
16	MP-7	X	.008	5
17	MP-10	X	.046	7.5
18	MP-11	X	.014	5



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Member Point Loads (BLC 28 : 210 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
19	MP-2	Z	.024	.5
20	MP-2	Z	.007	3
21	MP-2	Z	.008	3
22	MP-3	Z	.007	3
23	MP-6	Z	.015	.5
24	MP-6	Z	.01	3
25	MP-6	Z	.009	3
26	MP-7	Z	.004	3
27	MP-10	Z	.026	.5
28	MP-10	Z	.006	3
29	MP-10	Z	.008	3
30	MP-11	Z	.008	3
31	MP-2	Z	.024	7.5
32	MP-3	Z	.007	5
33	MP-6	Z	.015	7.5
34	MP-7	Z	.004	5
35	MP-10	Z	.026	7.5
36	MP-11	Z	.008	5

Member Point Loads (BLC 29 : 225 Wind - Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	X	.028	.5
2	MP-2	X	.012	3
3	MP-2	X	.012	3
4	MP-3	X	.008	3
5	MP-6	X	.022	.5
6	MP-6	X	.013	3
7	MP-6	X	.012	3
8	MP-7	X	.007	3
9	MP-10	X	.041	.5
10	MP-10	X	.008	3
11	MP-10	X	.01	3
12	MP-11	X	.012	3
13	MP-2	X	.028	7.5
14	MP-3	X	.008	5
15	MP-6	X	.022	7.5
16	MP-7	X	.007	5
17	MP-10	X	.041	7.5
18	MP-11	X	.012	5
19	MP-2	Z	.028	.5
20	MP-2	Z	.012	3
21	MP-2	Z	.012	3
22	MP-3	Z	.008	3
23	MP-6	Z	.022	.5
24	MP-6	Z	.013	3
25	MP-6	Z	.012	3
26	MP-7	Z	.007	3
27	MP-10	Z	.041	.5
28	MP-10	Z	.008	3
29	MP-10	Z	.01	3
30	MP-11	Z	.012	3
31	MP-2	Z	.028	7.5
32	MP-3	Z	.008	5
33	MP-6	Z	.022	7.5
34	MP-7	Z	.007	5
35	MP-10	Z	.041	7.5



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Member Point Loads (BLC 29 : 225 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
36	MP-11	Z	.012	5

Member Point Loads (BLC 30 : 240 Wind - Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	X	.016	.5
2	MP-2	X	.009	3
3	MP-2	X	.009	3
4	MP-3	X	.005	3
5	MP-6	X	.019	.5
6	MP-6	X	.009	3
7	MP-6	X	.008	3
8	MP-7	X	.006	3
9	MP-10	X	.03	.5
10	MP-10	X	.005	3
11	MP-10	X	.007	3
12	MP-11	X	.009	3
13	MP-2	X	.016	7.5
14	MP-3	X	.005	5
15	MP-6	X	.019	7.5
16	MP-7	X	.006	5
17	MP-10	X	.03	7.5
18	MP-11	X	.009	5
19	MP-2	Z	.028	.5
20	MP-2	Z	.016	3
21	MP-2	Z	.015	3
22	MP-3	Z	.009	3
23	MP-6	Z	.032	.5
24	MP-6	Z	.015	3
25	MP-6	Z	.015	3
26	MP-7	Z	.01	3
27	MP-10	Z	.053	.5
28	MP-10	Z	.009	3
29	MP-10	Z	.012	3
30	MP-11	Z	.016	3
31	MP-2	Z	.028	7.5
32	MP-3	Z	.009	5
33	MP-6	Z	.032	7.5
34	MP-7	Z	.01	5
35	MP-10	Z	.053	7.5
36	MP-11	Z	.016	5

Member Point Loads (BLC 31 : 270 Wind - Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	Z	.029	.5
2	MP-2	Z	.011	3
3	MP-2	Z	.014	3
4	MP-3	Z	.009	3
5	MP-6	Z	.029	.5
6	MP-6	Z	.011	3
7	MP-6	Z	.014	3
8	MP-7	Z	.009	3
9	MP-10	Z	.029	.5
10	MP-10	Z	.011	3
11	MP-10	Z	.014	3
12	MP-11	Z	.009	3
13	MP-2	Z	.029	7.5



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Member Point Loads (BLC 31 : 270 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
14	MP-3	Z	.009	5
15	MP-6	Z	.029	7.5
16	MP-7	Z	.009	5
17	MP-10	Z	.029	7.5
18	MP-11	Z	.009	5

Member Point Loads (BLC 32 : 300 Wind - Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	X	-.021	.5
2	MP-2	X	-.008	3
3	MP-2	X	-.008	3
4	MP-3	X	-.006	3
5	MP-6	X	-.03	.5
6	MP-6	X	-.005	3
7	MP-6	X	-.007	3
8	MP-7	X	-.009	3
9	MP-10	X	-.019	.5
10	MP-10	X	-.009	3
11	MP-10	X	-.008	3
12	MP-11	X	-.006	3
13	MP-2	X	-.021	7.5
14	MP-3	X	-.006	5
15	MP-6	X	-.03	7.5
16	MP-7	X	-.009	5
17	MP-10	X	-.019	7.5
18	MP-11	X	-.006	5
19	MP-2	Z	.037	.5
20	MP-2	Z	.014	3
21	MP-2	Z	.014	3
22	MP-3	Z	.011	3
23	MP-6	Z	.053	.5
24	MP-6	Z	.009	3
25	MP-6	Z	.012	3
26	MP-7	Z	.016	3
27	MP-10	Z	.032	.5
28	MP-10	Z	.015	3
29	MP-10	Z	.015	3
30	MP-11	Z	.01	3
31	MP-2	Z	.037	7.5
32	MP-3	Z	.011	5
33	MP-6	Z	.053	7.5
34	MP-7	Z	.016	5
35	MP-10	Z	.032	7.5
36	MP-11	Z	.01	5

Member Point Loads (BLC 33 : 315 Wind - Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	X	-.036	.5
2	MP-2	X	-.01	3
3	MP-2	X	-.011	3
4	MP-3	X	-.011	3
5	MP-6	X	-.041	.5
6	MP-6	X	-.008	3
7	MP-6	X	-.01	3
8	MP-7	X	-.012	3
9	MP-10	X	-.022	.5



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Member Point Loads (BLC 33 : 315 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
10	MP-10	X	-.013	3
11	MP-10	X	-.012	3
12	MP-11	X	-.007	3
13	MP-2	X	-.036	7.5
14	MP-3	X	-.011	5
15	MP-6	X	-.041	7.5
16	MP-7	X	-.012	5
17	MP-10	X	-.022	7.5
18	MP-11	X	-.007	5
19	MP-2	Z	.036	.5
20	MP-2	Z	.01	3
21	MP-2	Z	.011	3
22	MP-3	Z	.011	3
23	MP-6	Z	.041	.5
24	MP-6	Z	.008	3
25	MP-6	Z	.01	3
26	MP-7	Z	.012	3
27	MP-10	Z	.022	.5
28	MP-10	Z	.013	3
29	MP-10	Z	.012	3
30	MP-11	Z	.007	3
31	MP-2	Z	.036	7.5
32	MP-3	Z	.011	5
33	MP-6	Z	.041	7.5
34	MP-7	Z	.012	5
35	MP-10	Z	.022	7.5
36	MP-11	Z	.007	5

Member Point Loads (BLC 34 : 330 Wind - Ice)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	X	-.049	.5
2	MP-2	X	-.01	3
3	MP-2	X	-.013	3
4	MP-3	X	-.015	3
5	MP-6	X	-.046	.5
6	MP-6	X	-.011	3
7	MP-6	X	-.013	3
8	MP-7	X	-.014	3
9	MP-10	X	-.025	.5
10	MP-10	X	-.017	3
11	MP-10	X	-.015	3
12	MP-11	X	-.008	3
13	MP-2	X	-.049	7.5
14	MP-3	X	-.015	5
15	MP-6	X	-.046	7.5
16	MP-7	X	-.014	5
17	MP-10	X	-.025	7.5
18	MP-11	X	-.008	5
19	MP-2	Z	.028	.5
20	MP-2	Z	.006	3
21	MP-2	Z	.007	3
22	MP-3	Z	.009	3
23	MP-6	Z	.026	.5
24	MP-6	Z	.006	3
25	MP-6	Z	.008	3
26	MP-7	Z	.008	3



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Member Point Loads (BLC 34 : 330 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
27	MP-10	Z	.015	.5
28	MP-10	Z	.01	3
29	MP-10	Z	.009	3
30	MP-11	Z	.004	3
31	MP-2	Z	.028	7.5
32	MP-3	Z	.009	5
33	MP-6	Z	.026	7.5
34	MP-7	Z	.008	5
35	MP-10	Z	.015	7.5
36	MP-11	Z	.004	5

Member Point Loads (BLC 37 : Seismic Load X)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	X	-.061	.5
2	MP-2	X	-.084	3
3	MP-2	X	-.109	3
4	MP-3	X	-.052	3
5	MP-6	X	-.061	.5
6	MP-6	X	-.084	3
7	MP-6	X	-.109	3
8	MP-7	X	-.052	3
9	MP-10	X	-.061	.5
10	MP-10	X	-.084	3
11	MP-10	X	-.109	3
12	MP-11	X	-.052	3
13	MP-2	X	-.061	7.5
14	MP-3	X	-.052	5
15	MP-6	X	-.061	7.5
16	MP-7	X	-.052	5
17	MP-10	X	-.061	7.5
18	MP-11	X	-.052	5

Member Point Loads (BLC 38 : Seismic Load Z)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-2	Z	-.061	.5
2	MP-2	Z	-.084	3
3	MP-2	Z	-.109	3
4	MP-3	Z	-.052	3
5	MP-6	Z	-.061	.5
6	MP-6	Z	-.084	3
7	MP-6	Z	-.109	3
8	MP-7	Z	-.052	3
9	MP-10	Z	-.061	.5
10	MP-10	Z	-.084	3
11	MP-10	Z	-.109	3
12	MP-11	Z	-.052	3
13	MP-2	Z	-.061	7.5
14	MP-3	Z	-.052	5
15	MP-6	Z	-.061	7.5
16	MP-7	Z	-.052	5
17	MP-10	Z	-.061	7.5
18	MP-11	Z	-.052	5



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

	Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F..]	Start Loca...	End Location[ft.%]
1	AHCP-1	X	-.004	-.004	0	%100
2	AHCP-2	X	-.009	-.009	0	%100
3	AHCP-3	X	-.004	-.004	0	%100
4	CP-1	X	-.009	-.009	0	%100
5	CP-2	X	-.019	-.019	0	%100
6	CP-3	X	-.009	-.009	0	%100
7	M71	X	-.019	-.019	0	%100
8	M73	X	-.019	-.019	0	%100
9	M75	X	-.009	-.009	0	%100
10	M77	X	-.009	-.009	0	%100
11	M79	X	-.009	-.009	0	%100
12	M81	X	-.009	-.009	0	%100
13	FF-TH	X	-.01	-.01	0	%100
14	SF1-TH	X	-.005	-.005	0	%100
15	SF2-TH	X	-.005	-.005	0	%100
16	GSIP-1A	X	-.01	-.01	0	%100
17	GSIP-1B	X	-.004	-.004	0	%100
18	GSIP-2A	X	-.004	-.004	0	%100
19	GSIP-2B	X	-.004	-.004	0	%100
20	GSIP-3A	X	-.004	-.004	0	%100
21	GSIP-3B	X	-.01	-.01	0	%100
22	GSI-1A	X	-.006	-.006	0	%100
23	GSI-1B	X	-.006	-.006	0	%100
24	GSI-2A	X	-.015	-.015	0	%100
25	GSI-2B	X	-.015	-.015	0	%100
26	GSI-3A	X	-.006	-.006	0	%100
27	GSI-3B	X	-.006	-.006	0	%100
28	M53	X	0	0	0	%100
29	M54	X	-.009	-.009	0	%100
30	M56	X	0	0	0	%100
31	M57	X	-.009	-.009	0	%100
32	M59	X	-.016	-.016	0	%100
33	M60	X	-.019	-.019	0	%100
34	M62	X	-.016	-.016	0	%100
35	M63	X	-.009	-.009	0	%100
36	M65	X	-.016	-.016	0	%100
37	M66	X	-.009	-.009	0	%100
38	M68	X	-.016	-.016	0	%100
39	M69	X	-.019	-.019	0	%100
40	MP-1	X	-.007	-.007	0	%100
41	MP-2	X	-.007	-.007	0	%100
42	MP-3	X	-.007	-.007	0	%100
43	MP-4	X	-.007	-.007	0	%100
44	MP-5	X	-.007	-.007	0	%100
45	MP-6	X	-.007	-.007	0	%100
46	MP-7	X	-.007	-.007	0	%100
47	MP-8	X	-.007	-.007	0	%100
48	MP-9	X	-.007	-.007	0	%100
49	MP-10	X	-.007	-.007	0	%100
50	MP-11	X	-.007	-.007	0	%100
51	MP-12	X	-.007	-.007	0	%100
52	K1	X	-.02	-.02	0	%100
53	K2	X	-.02	-.02	0	%100
54	K3	X	-.02	-.02	0	%100
55	SA-1	X	-.015	-.015	0	%100
56	SA-2	X	0	0	0	%100



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

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
57	SA-3	X	-0.15	-0.15	0 %100
58	SR-1	X	-0.007	-0.007	0 %100
59	SR-2	X	-0.004	-0.004	0 %100
60	SR-3	X	-0.004	-0.004	0 %100

Member Distributed Loads (BLC 3 : 30 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
1	AHCP-1	X	-0.006	-0.006	0 %100
2	AHCP-2	X	-0.007	-0.007	0 %100
3	AHCP-3	X	0	0	0 %100
4	CP-1	X	-0.14	-0.14	0 %100
5	CP-2	X	-0.14	-0.14	0 %100
6	CP-3	X	0	0	0 %100
7	M71	X	-0.14	-0.14	0 %100
8	M73	X	-0.14	-0.14	0 %100
9	M75	X	-0.14	-0.14	0 %100
10	M77	X	-0.14	-0.14	0 %100
11	M79	X	0	0	0 %100
12	M81	X	0	0	0 %100
13	FF-TH	X	-0.007	-0.007	0 %100
14	SF1-TH	X	0	0	0 %100
15	SF2-TH	X	-0.007	-0.007	0 %100
16	GSIP-1A	X	-0.008	-0.008	0 %100
17	GSIP-1B	X	0	0	0 %100
18	GSIP-2A	X	0	0	0 %100
19	GSIP-2B	X	-0.006	-0.006	0 %100
20	GSIP-3A	X	-0.006	-0.006	0 %100
21	GSIP-3B	X	-0.008	-0.008	0 %100
22	GSI-1A	X	-0.01	-0.01	0 %100
23	GSI-1B	X	-0.01	-0.01	0 %100
24	GSI-2A	X	-0.11	-0.11	0 %100
25	GSI-2B	X	-0.11	-0.11	0 %100
26	GSI-3A	X	0	0	0 %100
27	GSI-3B	X	0	0	0 %100
28	M53	X	-0.008	-0.008	0 %100
29	M54	X	-2.8e-5	-2.8e-5	0 %100
30	M56	X	-0.008	-0.008	0 %100
31	M57	X	-0.14	-0.14	0 %100
32	M59	X	-0.008	-0.008	0 %100
33	M60	X	-0.14	-0.14	0 %100
34	M62	X	-0.008	-0.008	0 %100
35	M63	X	-2.8e-5	-2.8e-5	0 %100
36	M65	X	-0.16	-0.16	0 %100
37	M66	X	-0.14	-0.14	0 %100
38	M68	X	-0.16	-0.16	0 %100
39	M69	X	-0.14	-0.14	0 %100
40	MP-1	X	-0.006	-0.006	0 %100
41	MP-2	X	-0.006	-0.006	0 %100
42	MP-3	X	-0.006	-0.006	0 %100
43	MP-4	X	-0.006	-0.006	0 %100
44	MP-5	X	-0.006	-0.006	0 %100
45	MP-6	X	-0.006	-0.006	0 %100
46	MP-7	X	-0.006	-0.006	0 %100
47	MP-8	X	-0.006	-0.006	0 %100
48	MP-9	X	-0.006	-0.006	0 %100
49	MP-10	X	-0.006	-0.006	0 %100



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Member Distributed Loads (BLC 3 : 30 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
50	MP-11	X	-0.006	-0.006	0 %100
51	MP-12	X	-0.006	-0.006	0 %100
52	K1	X	-0.17	-0.17	0 %100
53	K2	X	-0.17	-0.17	0 %100
54	K3	X	-0.17	-0.17	0 %100
55	SA-1	X	-0.007	-0.007	0 %100
56	SA-2	X	-0.005	-0.005	0 %100
57	SA-3	X	-0.15	-0.15	0 %100
58	SR-1	X	-0.006	-0.006	0 %100
59	SR-2	X	0	0	0 %100
60	SR-3	X	-0.006	-0.006	0 %100
61	AHCP-1	Z	-0.004	-0.004	0 %100
62	AHCP-2	Z	-0.004	-0.004	0 %100
63	AHCP-3	Z	0	0	0 %100
64	CP-1	Z	-0.008	-0.008	0 %100
65	CP-2	Z	-0.008	-0.008	0 %100
66	CP-3	Z	0	0	0 %100
67	M71	Z	-0.008	-0.008	0 %100
68	M73	Z	-0.008	-0.008	0 %100
69	M75	Z	-0.008	-0.008	0 %100
70	M77	Z	-0.008	-0.008	0 %100
71	M79	Z	0	0	0 %100
72	M81	Z	0	0	0 %100
73	FF-TH	Z	-0.004	-0.004	0 %100
74	SF1-TH	Z	0	0	0 %100
75	SF2-TH	Z	-0.004	-0.004	0 %100
76	GSIP-1A	Z	-0.004	-0.004	0 %100
77	GSIP-1B	Z	0	0	0 %100
78	GSIP-2A	Z	0	0	0 %100
79	GSIP-2B	Z	-0.004	-0.004	0 %100
80	GSIP-3A	Z	-0.004	-0.004	0 %100
81	GSIP-3B	Z	-0.004	-0.004	0 %100
82	GSI-1A	Z	-0.006	-0.006	0 %100
83	GSI-1B	Z	-0.006	-0.006	0 %100
84	GSI-2A	Z	-0.006	-0.006	0 %100
85	GSI-2B	Z	-0.006	-0.006	0 %100
86	GSI-3A	Z	0	0	0 %100
87	GSI-3B	Z	0	0	0 %100
88	M53	Z	-0.005	-0.005	0 %100
89	M54	Z	-1.6e-5	-1.6e-5	0 %100
90	M56	Z	-0.005	-0.005	0 %100
91	M57	Z	-0.008	-0.008	0 %100
92	M59	Z	-0.005	-0.005	0 %100
93	M60	Z	-0.008	-0.008	0 %100
94	M62	Z	-0.005	-0.005	0 %100
95	M63	Z	-1.6e-5	-1.6e-5	0 %100
96	M65	Z	-0.009	-0.009	0 %100
97	M66	Z	-0.008	-0.008	0 %100
98	M68	Z	-0.009	-0.009	0 %100
99	M69	Z	-0.008	-0.008	0 %100
100	MP-1	Z	-0.004	-0.004	0 %100
101	MP-2	Z	-0.004	-0.004	0 %100
102	MP-3	Z	-0.004	-0.004	0 %100
103	MP-4	Z	-0.004	-0.004	0 %100
104	MP-5	Z	-0.004	-0.004	0 %100
105	MP-6	Z	-0.004	-0.004	0 %100
106	MP-7	Z	-0.004	-0.004	0 %100



Company : Tower Engineering Professionals, Inc.
 Designer : NPD
 Job Number : TEP No. 94015.587315
 Model Name : 302528 - Columbia Central

Sept 8, 2021
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Member Distributed Loads (BLC 3 : 30 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca....	End Location[ft.%]
107	MP-8	Z	-0.04	-0.04	0 %100
108	MP-9	Z	-0.04	-0.04	0 %100
109	MP-10	Z	-0.04	-0.04	0 %100
110	MP-11	Z	-0.04	-0.04	0 %100
111	MP-12	Z	-0.04	-0.04	0 %100
112	K1	Z	-0.01	-0.01	0 %100
113	K2	Z	-0.01	-0.01	0 %100
114	K3	Z	-0.01	-0.01	0 %100
115	SA-1	Z	-0.04	-0.04	0 %100
116	SA-2	Z	-0.04	-0.04	0 %100
117	SA-3	Z	-0.07	-0.07	0 %100
118	SR-1	Z	-0.03	-0.03	0 %100
119	SR-2	Z	0	0	0 %100
120	SR-3	Z	-0.03	-0.03	0 %100

Member Distributed Loads (BLC 4 : 45 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca....	End Location[ft.%]
1	AHCP-1	X	-0.05	-0.05	0 %100
2	AHCP-2	X	-0.04	-0.04	0 %100
3	AHCP-3	X	-0.01	-0.01	0 %100
4	CP-1	X	-0.13	-0.13	0 %100
5	CP-2	X	-0.09	-0.09	0 %100
6	CP-3	X	-0.03	-0.03	0 %100
7	M71	X	-0.09	-0.09	0 %100
8	M73	X	-0.09	-0.09	0 %100
9	M75	X	-0.13	-0.13	0 %100
10	M77	X	-0.13	-0.13	0 %100
11	M79	X	-0.03	-0.03	0 %100
12	M81	X	-0.03	-0.03	0 %100
13	FF-TH	X	-0.05	-0.05	0 %100
14	SF1-TH	X	-0.02	-0.02	0 %100
15	SF2-TH	X	-0.06	-0.06	0 %100
16	GSIP-1A	X	-0.05	-0.05	0 %100
17	GSIP-1B	X	-0.01	-0.01	0 %100
18	GSIP-2A	X	-0.01	-0.01	0 %100
19	GSIP-2B	X	-0.06	-0.06	0 %100
20	GSIP-3A	X	-0.06	-0.06	0 %100
21	GSIP-3B	X	-0.05	-0.05	0 %100
22	GSI-1A	X	-0.09	-0.09	0 %100
23	GSI-1B	X	-0.09	-0.09	0 %100
24	GSI-2A	X	-0.07	-0.07	0 %100
25	GSI-2B	X	-0.07	-0.07	0 %100
26	GSI-3A	X	-0.02	-0.02	0 %100
27	GSI-3B	X	-0.02	-0.02	0 %100
28	M53	X	-0.09	-0.09	0 %100
29	M54	X	-0.03	-0.03	0 %100
30	M56	X	-0.09	-0.09	0 %100
31	M57	X	-0.13	-0.13	0 %100
32	M59	X	-0.03	-0.03	0 %100
33	M60	X	-0.09	-0.09	0 %100
34	M62	X	-0.03	-0.03	0 %100
35	M63	X	-0.03	-0.03	0 %100
36	M65	X	-0.13	-0.13	0 %100
37	M66	X	-0.13	-0.13	0 %100
38	M68	X	-0.13	-0.13	0 %100
39	M69	X	-0.09	-0.09	0 %100



Company : Tower Engineering Professionals, Inc.
 Designer : NPD
 Job Number : TEP No. 94015.587315
 Model Name : 302528 - Columbia Central

Sept 8, 2021
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Member Distributed Loads (BLC 4 : 45 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca....	End Location[ft.%]
40	MP-1	X	-0.05	-0.05	0 %100
41	MP-2	X	-0.05	-0.05	0 %100
42	MP-3	X	-0.05	-0.05	0 %100
43	MP-4	X	-0.05	-0.05	0 %100
44	MP-5	X	-0.05	-0.05	0 %100
45	MP-6	X	-0.05	-0.05	0 %100
46	MP-7	X	-0.05	-0.05	0 %100
47	MP-8	X	-0.05	-0.05	0 %100
48	MP-9	X	-0.05	-0.05	0 %100
49	MP-10	X	-0.05	-0.05	0 %100
50	MP-11	X	-0.05	-0.05	0 %100
51	MP-12	X	-0.05	-0.05	0 %100
52	K1	X	-0.14	-0.14	0 %100
53	K2	X	-0.14	-0.14	0 %100
54	K3	X	-0.14	-0.14	0 %100
55	SA-1	X	-0.03	-0.03	0 %100
56	SA-2	X	-0.06	-0.06	0 %100
57	SA-3	X	-0.11	-0.11	0 %100
58	SR-1	X	-0.04	-0.04	0 %100
59	SR-2	X	-0.01	-0.01	0 %100
60	SR-3	X	-0.05	-0.05	0 %100
61	AHCP-1	Z	-0.06	-0.06	0 %100
62	AHCP-2	Z	-0.04	-0.04	0 %100
63	AHCP-3	Z	-0.02	-0.02	0 %100
64	CP-1	Z	-0.13	-0.13	0 %100
65	CP-2	Z	-0.09	-0.09	0 %100
66	CP-3	Z	-0.03	-0.03	0 %100
67	M71	Z	-0.09	-0.09	0 %100
68	M73	Z	-0.09	-0.09	0 %100
69	M75	Z	-0.13	-0.13	0 %100
70	M77	Z	-0.13	-0.13	0 %100
71	M79	Z	-0.03	-0.03	0 %100
72	M81	Z	-0.03	-0.03	0 %100
73	FF-TH	Z	-0.05	-0.05	0 %100
74	SF1-TH	Z	-0.02	-0.02	0 %100
75	SF2-TH	Z	-0.07	-0.07	0 %100
76	GSIP-1A	Z	-0.05	-0.05	0 %100
77	GSIP-1B	Z	-0.02	-0.02	0 %100
78	GSIP-2A	Z	-0.02	-0.02	0 %100
79	GSIP-2B	Z	-0.07	-0.07	0 %100
80	GSIP-3A	Z	-0.07	-0.07	0 %100
81	GSIP-3B	Z	-0.05	-0.05	0 %100
82	GSI-1A	Z	-0.1	-0.1	0 %100
83	GSI-1B	Z	-0.1	-0.1	0 %100
84	GSI-2A	Z	-0.07	-0.07	0 %100
85	GSI-2B	Z	-0.07	-0.07	0 %100
86	GSI-3A	Z	-0.03	-0.03	0 %100
87	GSI-3B	Z	-0.03	-0.03	0 %100
88	M53	Z	-0.09	-0.09	0 %100
89	M54	Z	-0.03	-0.03	0 %100
90	M56	Z	-0.09	-0.09	0 %100
91	M57	Z	-0.13	-0.13	0 %100
92	M59	Z	-0.03	-0.03	0 %100
93	M60	Z	-0.09	-0.09	0 %100
94	M62	Z	-0.03	-0.03	0 %100
95	M63	Z	-0.03	-0.03	0 %100
96	M65	Z	-0.13	-0.13	0 %100



Company : Tower Engineering Professionals, Inc.
 Designer : NPD
 Job Number : TEP No. 94015.587315
 Model Name : 302528 - Columbia Central

Sept 8, 2021
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Member Distributed Loads (BLC 4 : 45 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
97	M66	Z	-0.13	-0.13	0 %100
98	M68	Z	-0.13	-0.13	0 %100
99	M69	Z	-0.09	-0.09	0 %100
100	MP-1	Z	-0.05	-0.05	0 %100
101	MP-2	Z	-0.05	-0.05	0 %100
102	MP-3	Z	-0.05	-0.05	0 %100
103	MP-4	Z	-0.05	-0.05	0 %100
104	MP-5	Z	-0.05	-0.05	0 %100
105	MP-6	Z	-0.05	-0.05	0 %100
106	MP-7	Z	-0.05	-0.05	0 %100
107	MP-8	Z	-0.05	-0.05	0 %100
108	MP-9	Z	-0.05	-0.05	0 %100
109	MP-10	Z	-0.05	-0.05	0 %100
110	MP-11	Z	-0.05	-0.05	0 %100
111	MP-12	Z	-0.05	-0.05	0 %100
112	K1	Z	-0.14	-0.14	0 %100
113	K2	Z	-0.14	-0.14	0 %100
114	K3	Z	-0.14	-0.14	0 %100
115	SA-1	Z	-0.03	-0.03	0 %100
116	SA-2	Z	-0.09	-0.09	0 %100
117	SA-3	Z	-0.01	-0.01	0 %100
118	SR-1	Z	-0.04	-0.04	0 %100
119	SR-2	Z	-0.01	-0.01	0 %100
120	SR-3	Z	-0.05	-0.05	0 %100

Member Distributed Loads (BLC 5 : 60 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
1	AHCP-1	X	-0.04	-0.04	0 %100
2	AHCP-2	X	-0.02	-0.02	0 %100
3	AHCP-3	X	-0.02	-0.02	0 %100
4	CP-1	X	-0.09	-0.09	0 %100
5	CP-2	X	-0.05	-0.05	0 %100
6	CP-3	X	-0.05	-0.05	0 %100
7	M71	X	-0.05	-0.05	0 %100
8	M73	X	-0.05	-0.05	0 %100
9	M75	X	-0.09	-0.09	0 %100
10	M77	X	-0.09	-0.09	0 %100
11	M79	X	-0.05	-0.05	0 %100
12	M81	X	-0.05	-0.05	0 %100
13	FF-TH	X	-0.02	-0.02	0 %100
14	SF1-TH	X	-0.02	-0.02	0 %100
15	SF2-TH	X	-0.05	-0.05	0 %100
16	GSI-1A	X	-0.03	-0.03	0 %100
17	GSI-1B	X	-0.02	-0.02	0 %100
18	GSI-2A	X	-0.02	-0.02	0 %100
19	GSI-2B	X	-0.04	-0.04	0 %100
20	GSI-3A	X	-0.04	-0.04	0 %100
21	GSI-3B	X	-0.03	-0.03	0 %100
22	GSI-1A	X	-0.06	-0.06	0 %100
23	GSI-1B	X	-0.06	-0.06	0 %100
24	GSI-2A	X	-0.04	-0.04	0 %100
25	GSI-2B	X	-0.04	-0.04	0 %100
26	GSI-3A	X	-0.03	-0.03	0 %100
27	GSI-3B	X	-0.03	-0.03	0 %100
28	M53	X	-0.08	-0.08	0 %100
29	M54	X	-0.05	-0.05	0 %100



Company : Tower Engineering Professionals, Inc.
 Designer : NPD
 Job Number : TEP No. 94015.587315
 Model Name : 302528 - Columbia Central

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Member Distributed Loads (BLC 5 : 60 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
30	M56	X	-0.08	-0.08	0 %100
31	M57	X	-0.09	-0.09	0 %100
32	M59	X	0	0	0 %100
33	M60	X	-0.05	-0.05	0 %100
34	M62	X	0	0	0 %100
35	M63	X	-0.05	-0.05	0 %100
36	M65	X	-0.08	-0.08	0 %100
37	M66	X	-0.09	-0.09	0 %100
38	M68	X	-0.08	-0.08	0 %100
39	M69	X	-0.05	-0.05	0 %100
40	MP-1	X	-0.04	-0.04	0 %100
41	MP-2	X	-0.04	-0.04	0 %100
42	MP-3	X	-0.04	-0.04	0 %100
43	MP-4	X	-0.04	-0.04	0 %100
44	MP-5	X	-0.04	-0.04	0 %100
45	MP-6	X	-0.04	-0.04	0 %100
46	MP-7	X	-0.04	-0.04	0 %100
47	MP-8	X	-0.04	-0.04	0 %100
48	MP-9	X	-0.04	-0.04	0 %100
49	MP-10	X	-0.04	-0.04	0 %100
50	MP-11	X	-0.04	-0.04	0 %100
51	MP-12	X	-0.04	-0.04	0 %100
52	K1	X	-0.01	-0.01	0 %100
53	K2	X	-0.01	-0.01	0 %100
54	K3	X	-0.01	-0.01	0 %100
55	SA-1	X	0	0	0 %100
56	SA-2	X	-0.05	-0.05	0 %100
57	SA-3	X	-0.07	-0.07	0 %100
58	SR-1	X	-0.02	-0.02	0 %100
59	SR-2	X	-0.02	-0.02	0 %100
60	SR-3	X	-0.04	-0.04	0 %100
61	AHCP-1	Z	-0.07	-0.07	0 %100
62	AHCP-2	Z	-0.04	-0.04	0 %100
63	AHCP-3	Z	-0.04	-0.04	0 %100
64	CP-1	Z	-0.16	-0.16	0 %100
65	CP-2	Z	-0.08	-0.08	0 %100
66	CP-3	Z	-0.08	-0.08	0 %100
67	M71	Z	-0.08	-0.08	0 %100
68	M73	Z	-0.08	-0.08	0 %100
69	M75	Z	-0.16	-0.16	0 %100
70	M77	Z	-0.16	-0.16	0 %100
71	M79	Z	-0.08	-0.08	0 %100
72	M81	Z	-0.08	-0.08	0 %100
73	FF-TH	Z	-0.04	-0.04	0 %100
74	SF1-TH	Z	-0.04	-0.04	0 %100
75	SF2-TH	Z	-0.09	-0.09	0 %100
76	GSI-1A	Z	-0.04	-0.04	0 %100
77	GSI-1B	Z	-0.04	-0.04	0 %100
78	GSI-2A	Z	-0.04	-0.04	0 %100
79	GSI-2B	Z	-0.08	-0.08	0 %100
80	GSI-3A	Z	-0.08	-0.08	0 %100
81	GSI-3B	Z	-0.04	-0.04	0 %100
82	GSI-1A	Z	-0.12	-0.12	0 %100
83	GSI-1B	Z	-0.12	-0.12	0 %100
84	GSI-2A	Z	-0.06	-0.06	0 %100
85	GSI-2B	Z	-0.06	-0.06	0 %100
86	GSI-3A	Z	-0.06	-0.06	0 %100



Company : Tower Engineering Professionals, Inc.
 Designer : NPD
 Job Number : TEP No. 94015.587315
 Model Name : 302528 - Columbia Central

Sept 8, 2021
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Member Distributed Loads (BLC 5 : 60 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....	End Magnitude[k/ft.F...	Start Loca...	End Location[ft.%]
87	GSI-3B	Z	-0.06	-0.06	0 %100
88	M53	Z	-0.14	-0.14	0 %100
89	M54	Z	-0.08	-0.08	0 %100
90	M56	Z	-0.14	-0.14	0 %100
91	M57	Z	-0.16	-0.16	0 %100
92	M59	Z	0	0	0 %100
93	M60	Z	-0.08	-0.08	0 %100
94	M62	Z	0	0	0 %100
95	M63	Z	-0.08	-0.08	0 %100
96	M65	Z	-0.14	-0.14	0 %100
97	M66	Z	-0.16	-0.16	0 %100
98	M68	Z	-0.14	-0.14	0 %100
99	M69	Z	-0.08	-0.08	0 %100
100	MP-1	Z	-0.06	-0.06	0 %100
101	MP-2	Z	-0.06	-0.06	0 %100
102	MP-3	Z	-0.06	-0.06	0 %100
103	MP-4	Z	-0.06	-0.06	0 %100
104	MP-5	Z	-0.06	-0.06	0 %100
105	MP-6	Z	-0.06	-0.06	0 %100
106	MP-7	Z	-0.06	-0.06	0 %100
107	MP-8	Z	-0.06	-0.06	0 %100
108	MP-9	Z	-0.06	-0.06	0 %100
109	MP-10	Z	-0.06	-0.06	0 %100
110	MP-11	Z	-0.06	-0.06	0 %100
111	MP-12	Z	-0.06	-0.06	0 %100
112	K1	Z	-0.17	-0.17	0 %100
113	K2	Z	-0.17	-0.17	0 %100
114	K3	Z	-0.17	-0.17	0 %100
115	SA-1	Z	0	0	0 %100
116	SA-2	Z	-0.13	-0.13	0 %100
117	SA-3	Z	-0.11	-0.11	0 %100
118	SR-1	Z	-0.03	-0.03	0 %100
119	SR-2	Z	-0.03	-0.03	0 %100
120	SR-3	Z	-0.06	-0.06	0 %100

Member Distributed Loads (BLC 6 : 90 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....	End Magnitude[k/ft.F...	Start Loca...	End Location[ft.%]
1	AHCP-1	Z	-0.07	-0.07	0 %100
2	AHCP-2	Z	0	0	0 %100
3	AHCP-3	Z	-0.07	-0.07	0 %100
4	CP-1	Z	-0.16	-0.16	0 %100
5	CP-2	Z	0	0	0 %100
6	CP-3	Z	-0.16	-0.16	0 %100
7	M71	Z	0	0	0 %100
8	M73	Z	0	0	0 %100
9	M75	Z	-0.16	-0.16	0 %100
10	M77	Z	-0.16	-0.16	0 %100
11	M79	Z	-0.16	-0.16	0 %100
12	M81	Z	-0.16	-0.16	0 %100
13	FF-TH	Z	0	0	0 %100
14	SF1-TH	Z	-0.09	-0.09	0 %100
15	SF2-TH	Z	-0.09	-0.09	0 %100
16	GSIP-1A	Z	0	0	0 %100
17	GSIP-1B	Z	-0.08	-0.08	0 %100
18	GSIP-2A	Z	-0.08	-0.08	0 %100
19	GSIP-2B	Z	-0.08	-0.08	0 %100



Company : Tower Engineering Professionals, Inc.
 Designer : NPD
 Job Number : TEP No. 94015.587315
 Model Name : 302528 - Columbia Central

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Member Distributed Loads (BLC 6 : 90 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....	End Magnitude[k/ft.F...	Start Loca...	End Location[ft.%]
20	GSIP-3A	Z	-0.08	-0.08	0 %100
21	GSIP-3B	Z	0	0	0 %100
22	GSI-1A	Z	-0.12	-0.12	0 %100
23	GSI-1B	Z	-0.12	-0.12	0 %100
24	GSI-2A	Z	0	0	0 %100
25	GSI-2B	Z	0	0	0 %100
26	GSI-3A	Z	-0.12	-0.12	0 %100
27	GSI-3B	Z	-0.12	-0.12	0 %100
28	M53	Z	-0.19	-0.19	0 %100
29	M54	Z	-0.16	-0.16	0 %100
30	M56	Z	-0.19	-0.19	0 %100
31	M57	Z	-0.16	-0.16	0 %100
32	M59	Z	-0.09	-0.09	0 %100
33	M60	Z	-3.2e-5	-3.2e-5	0 %100
34	M62	Z	-0.09	-0.09	0 %100
35	M63	Z	-0.16	-0.16	0 %100
36	M65	Z	-0.09	-0.09	0 %100
37	M66	Z	-0.16	-0.16	0 %100
38	M68	Z	-0.09	-0.09	0 %100
39	M69	Z	-3.2e-5	-3.2e-5	0 %100
40	MP-1	Z	-0.07	-0.07	0 %100
41	MP-2	Z	-0.07	-0.07	0 %100
42	MP-3	Z	-0.07	-0.07	0 %100
43	MP-4	Z	-0.07	-0.07	0 %100
44	MP-5	Z	-0.07	-0.07	0 %100
45	MP-6	Z	-0.07	-0.07	0 %100
46	MP-7	Z	-0.07	-0.07	0 %100
47	MP-8	Z	-0.07	-0.07	0 %100
48	MP-9	Z	-0.07	-0.07	0 %100
49	MP-10	Z	-0.07	-0.07	0 %100
50	MP-11	Z	-0.07	-0.07	0 %100
51	MP-12	Z	-0.07	-0.07	0 %100
52	K1	Z	-0.02	-0.02	0 %100
53	K2	Z	-0.02	-0.02	0 %100
54	K3	Z	-0.02	-0.02	0 %100
55	SA-1	Z	-0.07	-0.07	0 %100
56	SA-2	Z	-0.17	-0.17	0 %100
57	SA-3	Z	-0.07	-0.07	0 %100
58	SR-1	Z	0	0	0 %100
59	SR-2	Z	-0.06	-0.06	0 %100
60	SR-3	Z	-0.06	-0.06	0 %100

Member Distributed Loads (BLC 7 : 120 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....	End Magnitude[k/ft.F...	Start Loca...	End Location[ft.%]
1	AHCP-1	X	.002	.002	0 %100
2	AHCP-2	X	.002	.002	0 %100
3	AHCP-3	X	.004	.004	0 %100
4	CP-1	X	.005	.005	0 %100
5	CP-2	X	.005	.005	0 %100
6	CP-3	X	.009	.009	0 %100
7	M71	X	.005	.005	0 %100
8	M73	X	.005	.005	0 %100
9	M75	X	.005	.005	0 %100
10	M77	X	.005	.005	0 %100
11	M79	X	.009	.009	0 %100
12	M81	X	.009	.009	0 %100



Company : Tower Engineering Professionals, Inc.
 Designer : NPD
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Member Distributed Loads (BLC 7 : 120 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
13	FF-TH	X	.002	.002	0 %100
14	SF1-TH	X	.005	.005	0 %100
15	SF2-TH	X	.002	.002	0 %100
16	GSIP-1A	X	.003	.003	0 %100
17	GSIP-1B	X	.004	.004	0 %100
18	GSIP-2A	X	.004	.004	0 %100
19	GSIP-2B	X	.002	.002	0 %100
20	GSIP-3A	X	.002	.002	0 %100
21	GSIP-3B	X	.003	.003	0 %100
22	GSI-1A	X	.003	.003	0 %100
23	GSI-1B	X	.003	.003	0 %100
24	GSI-2A	X	.004	.004	0 %100
25	GSI-2B	X	.004	.004	0 %100
26	GSI-3A	X	.006	.006	0 %100
27	GSI-3B	X	.006	.006	0 %100
28	M53	X	.008	.008	0 %100
29	M54	X	.009	.009	0 %100
30	M56	X	.008	.008	0 %100
31	M57	X	.005	.005	0 %100
32	M59	X	.008	.008	0 %100
33	M60	X	.005	.005	0 %100
34	M62	X	.008	.008	0 %100
35	M63	X	.009	.009	0 %100
36	M65	X	0	0	0 %100
37	M66	X	.005	.005	0 %100
38	M68	X	0	0	0 %100
39	M69	X	.005	.005	0 %100
40	MP-1	X	.004	.004	0 %100
41	MP-2	X	.004	.004	0 %100
42	MP-3	X	.004	.004	0 %100
43	MP-4	X	.004	.004	0 %100
44	MP-5	X	.004	.004	0 %100
45	MP-6	X	.004	.004	0 %100
46	MP-7	X	.004	.004	0 %100
47	MP-8	X	.004	.004	0 %100
48	MP-9	X	.004	.004	0 %100
49	MP-10	X	.004	.004	0 %100
50	MP-11	X	.004	.004	0 %100
51	MP-12	X	.004	.004	0 %100
52	K1	X	.01	.01	0 %100
53	K2	X	.01	.01	0 %100
54	K3	X	.01	.01	0 %100
55	SA-1	X	.007	.007	0 %100
56	SA-2	X	.005	.005	0 %100
57	SA-3	X	0	0	0 %100
58	SR-1	X	.002	.002	0 %100
59	SR-2	X	.004	.004	0 %100
60	SR-3	X	.002	.002	0 %100
61	AHCP-1	Z	-.004	-.004	0 %100
62	AHCP-2	Z	-.004	-.004	0 %100
63	AHCP-3	Z	-.007	-.007	0 %100
64	CP-1	Z	-.008	-.008	0 %100
65	CP-2	Z	-.008	-.008	0 %100
66	CP-3	Z	-.016	-.016	0 %100
67	M71	Z	-.008	-.008	0 %100
68	M73	Z	-.008	-.008	0 %100
69	M75	Z	-.008	-.008	0 %100



Company : Tower Engineering Professionals, Inc.
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Member Distributed Loads (BLC 7 : 120 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
70	M77	Z	-.008	-.008	0 %100
71	M79	Z	-.016	-.016	0 %100
72	M81	Z	-.016	-.016	0 %100
73	FF-TH	Z	-.004	-.004	0 %100
74	SF1-TH	Z	-.009	-.009	0 %100
75	SF2-TH	Z	-.004	-.004	0 %100
76	GSIP-1A	Z	-.004	-.004	0 %100
77	GSIP-1B	Z	-.008	-.008	0 %100
78	GSIP-2A	Z	-.008	-.008	0 %100
79	GSIP-2B	Z	-.004	-.004	0 %100
80	GSIP-3A	Z	-.004	-.004	0 %100
81	GSIP-3B	Z	-.004	-.004	0 %100
82	GSI-1A	Z	-.006	-.006	0 %100
83	GSI-1B	Z	-.006	-.006	0 %100
84	GSI-2A	Z	-.006	-.006	0 %100
85	GSI-2B	Z	-.006	-.006	0 %100
86	GSI-3A	Z	-.012	-.012	0 %100
87	GSI-3B	Z	-.012	-.012	0 %100
88	M53	Z	-.014	-.014	0 %100
89	M54	Z	-.016	-.016	0 %100
90	M56	Z	-.014	-.014	0 %100
91	M57	Z	-.008	-.008	0 %100
92	M59	Z	-.014	-.014	0 %100
93	M60	Z	-.008	-.008	0 %100
94	M62	Z	-.014	-.014	0 %100
95	M63	Z	-.016	-.016	0 %100
96	M65	Z	0	0	0 %100
97	M66	Z	-.008	-.008	0 %100
98	M68	Z	0	0	0 %100
99	M69	Z	-.008	-.008	0 %100
100	MP-1	Z	-.006	-.006	0 %100
101	MP-2	Z	-.006	-.006	0 %100
102	MP-3	Z	-.006	-.006	0 %100
103	MP-4	Z	-.006	-.006	0 %100
104	MP-5	Z	-.006	-.006	0 %100
105	MP-6	Z	-.006	-.006	0 %100
106	MP-7	Z	-.006	-.006	0 %100
107	MP-8	Z	-.006	-.006	0 %100
108	MP-9	Z	-.006	-.006	0 %100
109	MP-10	Z	-.006	-.006	0 %100
110	MP-11	Z	-.006	-.006	0 %100
111	MP-12	Z	-.006	-.006	0 %100
112	K1	Z	-.017	-.017	0 %100
113	K2	Z	-.017	-.017	0 %100
114	K3	Z	-.017	-.017	0 %100
115	SA-1	Z	-.011	-.011	0 %100
116	SA-2	Z	-.013	-.013	0 %100
117	SA-3	Z	0	0	0 %100
118	SR-1	Z	-.003	-.003	0 %100
119	SR-2	Z	-.006	-.006	0 %100
120	SR-3	Z	-.003	-.003	0 %100

Member Distributed Loads (BLC 8 : 135 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
1	AHCP-1	X	.001	.001	0 %100
2	AHCP-2	X	.004	.004	0 %100



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Member Distributed Loads (BLC 8 : 135 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
3	AHCP-3	X	.005	.005	0 %100
4	CP-1	X	.003	.003	0 %100
5	CP-2	X	.009	.009	0 %100
6	CP-3	X	.013	.013	0 %100
7	M71	X	.009	.009	0 %100
8	M73	X	.009	.009	0 %100
9	M75	X	.003	.003	0 %100
10	M77	X	.003	.003	0 %100
11	M79	X	.013	.013	0 %100
12	M81	X	.013	.013	0 %100
13	FF-TH	X	.005	.005	0 %100
14	SF1-TH	X	.006	.006	0 %100
15	SF2-TH	X	.002	.002	0 %100
16	GSIP-1A	X	.005	.005	0 %100
17	GSIP-1B	X	.006	.006	0 %100
18	GSIP-2A	X	.006	.006	0 %100
19	GSIP-2B	X	.001	.001	0 %100
20	GSIP-3A	X	.001	.001	0 %100
21	GSIP-3B	X	.005	.005	0 %100
22	GSI-1A	X	.002	.002	0 %100
23	GSI-1B	X	.002	.002	0 %100
24	GSI-2A	X	.007	.007	0 %100
25	GSI-2B	X	.007	.007	0 %100
26	GSI-3A	X	.009	.009	0 %100
27	GSI-3B	X	.009	.009	0 %100
28	M53	X	.009	.009	0 %100
29	M54	X	.013	.013	0 %100
30	M56	X	.009	.009	0 %100
31	M57	X	.003	.003	0 %100
32	M59	X	.013	.013	0 %100
33	M60	X	.009	.009	0 %100
34	M62	X	.013	.013	0 %100
35	M63	X	.013	.013	0 %100
36	M65	X	.003	.003	0 %100
37	M66	X	.003	.003	0 %100
38	M68	X	.003	.003	0 %100
39	M69	X	.009	.009	0 %100
40	MP-1	X	.005	.005	0 %100
41	MP-2	X	.005	.005	0 %100
42	MP-3	X	.005	.005	0 %100
43	MP-4	X	.005	.005	0 %100
44	MP-5	X	.005	.005	0 %100
45	MP-6	X	.005	.005	0 %100
46	MP-7	X	.005	.005	0 %100
47	MP-8	X	.005	.005	0 %100
48	MP-9	X	.005	.005	0 %100
49	MP-10	X	.005	.005	0 %100
50	MP-11	X	.005	.005	0 %100
51	MP-12	X	.005	.005	0 %100
52	K1	X	.014	.014	0 %100
53	K2	X	.014	.014	0 %100
54	K3	X	.014	.014	0 %100
55	SA-1	X	.011	.011	0 %100
56	SA-2	X	.006	.006	0 %100
57	SA-3	X	.003	.003	0 %100
58	SR-1	X	.004	.004	0 %100
59	SR-2	X	.005	.005	0 %100



Company : Tower Engineering Professionals, Inc.
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Member Distributed Loads (BLC 8 : 135 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
60	SR-3	X	.001	.001	0 %100
61	AHCP-1	Z	-.002	-.002	0 %100
62	AHCP-2	Z	-.004	-.004	0 %100
63	AHCP-3	Z	-.006	-.006	0 %100
64	CP-1	Z	-.003	-.003	0 %100
65	CP-2	Z	-.009	-.009	0 %100
66	CP-3	Z	-.013	-.013	0 %100
67	M71	Z	-.009	-.009	0 %100
68	M73	Z	-.009	-.009	0 %100
69	M75	Z	-.003	-.003	0 %100
70	M77	Z	-.003	-.003	0 %100
71	M79	Z	-.013	-.013	0 %100
72	M81	Z	-.013	-.013	0 %100
73	FF-TH	Z	-.005	-.005	0 %100
74	SF1-TH	Z	-.007	-.007	0 %100
75	SF2-TH	Z	-.002	-.002	0 %100
76	GSIP-1A	Z	-.005	-.005	0 %100
77	GSIP-1B	Z	-.007	-.007	0 %100
78	GSIP-2A	Z	-.007	-.007	0 %100
79	GSIP-2B	Z	-.002	-.002	0 %100
80	GSIP-3A	Z	-.002	-.002	0 %100
81	GSIP-3B	Z	-.005	-.005	0 %100
82	GSI-1A	Z	-.003	-.003	0 %100
83	GSI-1B	Z	-.003	-.003	0 %100
84	GSI-2A	Z	-.007	-.007	0 %100
85	GSI-2B	Z	-.007	-.007	0 %100
86	GSI-3A	Z	-.01	-.01	0 %100
87	GSI-3B	Z	-.01	-.01	0 %100
88	M53	Z	-.009	-.009	0 %100
89	M54	Z	-.013	-.013	0 %100
90	M56	Z	-.009	-.009	0 %100
91	M57	Z	-.003	-.003	0 %100
92	M59	Z	-.013	-.013	0 %100
93	M60	Z	-.009	-.009	0 %100
94	M62	Z	-.013	-.013	0 %100
95	M63	Z	-.013	-.013	0 %100
96	M65	Z	-.003	-.003	0 %100
97	M66	Z	-.003	-.003	0 %100
98	M68	Z	-.003	-.003	0 %100
99	M69	Z	-.009	-.009	0 %100
100	MP-1	Z	-.005	-.005	0 %100
101	MP-2	Z	-.005	-.005	0 %100
102	MP-3	Z	-.005	-.005	0 %100
103	MP-4	Z	-.005	-.005	0 %100
104	MP-5	Z	-.005	-.005	0 %100
105	MP-6	Z	-.005	-.005	0 %100
106	MP-7	Z	-.005	-.005	0 %100
107	MP-8	Z	-.005	-.005	0 %100
108	MP-9	Z	-.005	-.005	0 %100
109	MP-10	Z	-.005	-.005	0 %100
110	MP-11	Z	-.005	-.005	0 %100
111	MP-12	Z	-.005	-.005	0 %100
112	K1	Z	-.014	-.014	0 %100
113	K2	Z	-.014	-.014	0 %100
114	K3	Z	-.014	-.014	0 %100
115	SA-1	Z	-.01	-.01	0 %100
116	SA-2	Z	-.009	-.009	0 %100



Company : Tower Engineering Professionals, Inc.
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Member Distributed Loads (BLC 8 : 135 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
117	SA-3	Z	-0.03	-0.03	0 %100
118	SR-1	Z	-0.04	-0.04	0 %100
119	SR-2	Z	-0.05	-0.05	0 %100
120	SR-3	Z	-0.01	-0.01	0 %100

Member Distributed Loads (BLC 9 : 150 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
1	AHCP-1	X	0	0	0 %100
2	AHCP-2	X	.007	.007	0 %100
3	AHCP-3	X	.006	.006	0 %100
4	CP-1	X	0	0	0 %100
5	CP-2	X	.014	.014	0 %100
6	CP-3	X	.014	.014	0 %100
7	M71	X	.014	.014	0 %100
8	M73	X	.014	.014	0 %100
9	M75	X	0	0	0 %100
10	M77	X	0	0	0 %100
11	M79	X	.014	.014	0 %100
12	M81	X	.014	.014	0 %100
13	FF-TH	X	.007	.007	0 %100
14	SF1-TH	X	.007	.007	0 %100
15	SF2-TH	X	0	0	0 %100
16	GSI-1A	X	.008	.008	0 %100
17	GSI-1B	X	.006	.006	0 %100
18	GSI-2A	X	.006	.006	0 %100
19	GSI-2B	X	0	0	0 %100
20	GSI-3A	X	0	0	0 %100
21	GSI-3B	X	.008	.008	0 %100
22	GSI-1A	X	0	0	0 %100
23	GSI-1B	X	0	0	0 %100
24	GSI-2A	X	.011	.011	0 %100
25	GSI-2B	X	.011	.011	0 %100
26	GSI-3A	X	.01	.01	0 %100
27	GSI-3B	X	.01	.01	0 %100
28	M53	X	.008	.008	0 %100
29	M54	X	.014	.014	0 %100
30	M56	X	.008	.008	0 %100
31	M57	X	2.8e-5	2.8e-5	0 %100
32	M59	X	.016	.016	0 %100
33	M60	X	.014	.014	0 %100
34	M62	X	.016	.016	0 %100
35	M63	X	.014	.014	0 %100
36	M65	X	.008	.008	0 %100
37	M66	X	2.8e-5	2.8e-5	0 %100
38	M68	X	.008	.008	0 %100
39	M69	X	.014	.014	0 %100
40	MP-1	X	.006	.006	0 %100
41	MP-2	X	.006	.006	0 %100
42	MP-3	X	.006	.006	0 %100
43	MP-4	X	.006	.006	0 %100
44	MP-5	X	.006	.006	0 %100
45	MP-6	X	.006	.006	0 %100
46	MP-7	X	.006	.006	0 %100
47	MP-8	X	.006	.006	0 %100
48	MP-9	X	.006	.006	0 %100
49	MP-10	X	.006	.006	0 %100



Company : Tower Engineering Professionals, Inc.
 Designer : NPD
 Job Number : TEP No. 94015.587315
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Member Distributed Loads (BLC 9 : 150 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
50	MP-11	X	.006	.006	0 %100
51	MP-12	X	.006	.006	0 %100
52	K1	X	.017	.017	0 %100
53	K2	X	.017	.017	0 %100
54	K3	X	.017	.017	0 %100
55	SA-1	X	.015	.015	0 %100
56	SA-2	X	.005	.005	0 %100
57	SA-3	X	.007	.007	0 %100
58	SR-1	X	.006	.006	0 %100
59	SR-2	X	.006	.006	0 %100
60	SR-3	X	0	0	0 %100
61	AHCP-1	Z	0	0	0 %100
62	AHCP-2	Z	-.004	-.004	0 %100
63	AHCP-3	Z	-.004	-.004	0 %100
64	CP-1	Z	0	0	0 %100
65	CP-2	Z	-.008	-.008	0 %100
66	CP-3	Z	-.008	-.008	0 %100
67	M71	Z	-.008	-.008	0 %100
68	M73	Z	-.008	-.008	0 %100
69	M75	Z	0	0	0 %100
70	M77	Z	0	0	0 %100
71	M79	Z	-.008	-.008	0 %100
72	M81	Z	-.008	-.008	0 %100
73	FF-TH	Z	-.004	-.004	0 %100
74	SF1-TH	Z	-.004	-.004	0 %100
75	SF2-TH	Z	0	0	0 %100
76	GSI-1A	Z	-.004	-.004	0 %100
77	GSI-1B	Z	-.004	-.004	0 %100
78	GSI-2A	Z	-.004	-.004	0 %100
79	GSI-2B	Z	0	0	0 %100
80	GSI-3A	Z	0	0	0 %100
81	GSI-3B	Z	-.004	-.004	0 %100
82	GSI-1A	Z	0	0	0 %100
83	GSI-1B	Z	0	0	0 %100
84	GSI-2A	Z	-.006	-.006	0 %100
85	GSI-2B	Z	-.006	-.006	0 %100
86	GSI-3A	Z	-.006	-.006	0 %100
87	GSI-3B	Z	-.006	-.006	0 %100
88	M53	Z	-.005	-.005	0 %100
89	M54	Z	-.008	-.008	0 %100
90	M56	Z	-.005	-.005	0 %100
91	M57	Z	-1.6e-5	-1.6e-5	0 %100
92	M59	Z	-.009	-.009	0 %100
93	M60	Z	-.008	-.008	0 %100
94	M62	Z	-.009	-.009	0 %100
95	M63	Z	-.008	-.008	0 %100
96	M65	Z	-.005	-.005	0 %100
97	M66	Z	-1.6e-5	-1.6e-5	0 %100
98	M68	Z	-.005	-.005	0 %100
99	M69	Z	-.008	-.008	0 %100
100	MP-1	Z	-.004	-.004	0 %100
101	MP-2	Z	-.004	-.004	0 %100
102	MP-3	Z	-.004	-.004	0 %100
103	MP-4	Z	-.004	-.004	0 %100
104	MP-5	Z	-.004	-.004	0 %100
105	MP-6	Z	-.004	-.004	0 %100
106	MP-7	Z	-.004	-.004	0 %100



Company : Tower Engineering Professionals, Inc.
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Member Distributed Loads (BLC 9 : 150 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
107	MP-8	Z	-0.04	-0.04	0 %100
108	MP-9	Z	-0.04	-0.04	0 %100
109	MP-10	Z	-0.04	-0.04	0 %100
110	MP-11	Z	-0.04	-0.04	0 %100
111	MP-12	Z	-0.04	-0.04	0 %100
112	K1	Z	-0.01	-0.01	0 %100
113	K2	Z	-0.01	-0.01	0 %100
114	K3	Z	-0.01	-0.01	0 %100
115	SA-1	Z	-0.07	-0.07	0 %100
116	SA-2	Z	-0.04	-0.04	0 %100
117	SA-3	Z	-0.04	-0.04	0 %100
118	SR-1	Z	-0.03	-0.03	0 %100
119	SR-2	Z	-0.03	-0.03	0 %100
120	SR-3	Z	0	0	0 %100

Member Distributed Loads (BLC 10 : 180 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
1	AHCP-1	X	.004	.004	0 %100
2	AHCP-2	X	.009	.009	0 %100
3	AHCP-3	X	.004	.004	0 %100
4	CP-1	X	.009	.009	0 %100
5	CP-2	X	.019	.019	0 %100
6	CP-3	X	.009	.009	0 %100
7	M71	X	.019	.019	0 %100
8	M73	X	.019	.019	0 %100
9	M75	X	.009	.009	0 %100
10	M77	X	.009	.009	0 %100
11	M79	X	.009	.009	0 %100
12	M81	X	.009	.009	0 %100
13	FF-TH	X	.01	.01	0 %100
14	SF1-TH	X	.005	.005	0 %100
15	SF2-TH	X	.005	.005	0 %100
16	GSIP-1A	X	.01	.01	0 %100
17	GSIP-1B	X	.004	.004	0 %100
18	GSIP-2A	X	.004	.004	0 %100
19	GSIP-2B	X	.004	.004	0 %100
20	GSIP-3A	X	.004	.004	0 %100
21	GSIP-3B	X	.01	.01	0 %100
22	GSI-1A	X	.006	.006	0 %100
23	GSI-1B	X	.006	.006	0 %100
24	GSI-2A	X	.015	.015	0 %100
25	GSI-2B	X	.015	.015	0 %100
26	GSI-3A	X	.006	.006	0 %100
27	GSI-3B	X	.006	.006	0 %100
28	M53	X	0	0	0 %100
29	M54	X	.009	.009	0 %100
30	M56	X	0	0	0 %100
31	M57	X	.009	.009	0 %100
32	M59	X	.016	.016	0 %100
33	M60	X	.019	.019	0 %100
34	M62	X	.016	.016	0 %100
35	M63	X	.009	.009	0 %100
36	M65	X	.016	.016	0 %100
37	M66	X	.009	.009	0 %100
38	M68	X	.016	.016	0 %100
39	M69	X	.019	.019	0 %100



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Member Distributed Loads (BLC 10 : 180 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
40	MP-1	X	.007	.007	0 %100
41	MP-2	X	.007	.007	0 %100
42	MP-3	X	.007	.007	0 %100
43	MP-4	X	.007	.007	0 %100
44	MP-5	X	.007	.007	0 %100
45	MP-6	X	.007	.007	0 %100
46	MP-7	X	.007	.007	0 %100
47	MP-8	X	.007	.007	0 %100
48	MP-9	X	.007	.007	0 %100
49	MP-10	X	.007	.007	0 %100
50	MP-11	X	.007	.007	0 %100
51	MP-12	X	.007	.007	0 %100
52	K1	X	.02	.02	0 %100
53	K2	X	.02	.02	0 %100
54	K3	X	.02	.02	0 %100
55	SA-1	X	.015	.015	0 %100
56	SA-2	X	0	0	0 %100
57	SA-3	X	.015	.015	0 %100
58	SR-1	X	.007	.007	0 %100
59	SR-2	X	.004	.004	0 %100
60	SR-3	X	.004	.004	0 %100

Member Distributed Loads (BLC 11 : 210 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
1	AHCP-1	X	.006	.006	0 %100
2	AHCP-2	X	.007	.007	0 %100
3	AHCP-3	X	0	0	0 %100
4	CP-1	X	.014	.014	0 %100
5	CP-2	X	.014	.014	0 %100
6	CP-3	X	0	0	0 %100
7	M71	X	.014	.014	0 %100
8	M73	X	.014	.014	0 %100
9	M75	X	.014	.014	0 %100
10	M77	X	.014	.014	0 %100
11	M79	X	0	0	0 %100
12	M81	X	0	0	0 %100
13	FF-TH	X	.007	.007	0 %100
14	SF1-TH	X	0	0	0 %100
15	SF2-TH	X	.007	.007	0 %100
16	GSIP-1A	X	.008	.008	0 %100
17	GSIP-1B	X	0	0	0 %100
18	GSIP-2A	X	0	0	0 %100
19	GSIP-2B	X	.006	.006	0 %100
20	GSIP-3A	X	.006	.006	0 %100
21	GSIP-3B	X	.008	.008	0 %100
22	GSI-1A	X	.01	.01	0 %100
23	GSI-1B	X	.01	.01	0 %100
24	GSI-2A	X	.011	.011	0 %100
25	GSI-2B	X	.011	.011	0 %100
26	GSI-3A	X	0	0	0 %100
27	GSI-3B	X	0	0	0 %100
28	M53	X	.008	.008	0 %100
29	M54	X	2.8e-5	2.8e-5	0 %100
30	M56	X	.008	.008	0 %100
31	M57	X	.014	.014	0 %100
32	M59	X	.008	.008	0 %100



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Member Distributed Loads (BLC 11 : 210 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
33	M60	X	.014	.014	0 %100
34	M62	X	.008	.008	0 %100
35	M63	X	2.8e-5	2.8e-5	0 %100
36	M65	X	.016	.016	0 %100
37	M66	X	.014	.014	0 %100
38	M68	X	.016	.016	0 %100
39	M69	X	.014	.014	0 %100
40	MP-1	X	.006	.006	0 %100
41	MP-2	X	.006	.006	0 %100
42	MP-3	X	.006	.006	0 %100
43	MP-4	X	.006	.006	0 %100
44	MP-5	X	.006	.006	0 %100
45	MP-6	X	.006	.006	0 %100
46	MP-7	X	.006	.006	0 %100
47	MP-8	X	.006	.006	0 %100
48	MP-9	X	.006	.006	0 %100
49	MP-10	X	.006	.006	0 %100
50	MP-11	X	.006	.006	0 %100
51	MP-12	X	.006	.006	0 %100
52	K1	X	.017	.017	0 %100
53	K2	X	.017	.017	0 %100
54	K3	X	.017	.017	0 %100
55	SA-1	X	.007	.007	0 %100
56	SA-2	X	.005	.005	0 %100
57	SA-3	X	.015	.015	0 %100
58	SR-1	X	.006	.006	0 %100
59	SR-2	X	0	0	0 %100
60	SR-3	X	.006	.006	0 %100
61	AHCP-1	Z	.004	.004	0 %100
62	AHCP-2	Z	.004	.004	0 %100
63	AHCP-3	Z	0	0	0 %100
64	CP-1	Z	.008	.008	0 %100
65	CP-2	Z	.008	.008	0 %100
66	CP-3	Z	0	0	0 %100
67	M71	Z	.008	.008	0 %100
68	M73	Z	.008	.008	0 %100
69	M75	Z	.008	.008	0 %100
70	M77	Z	.008	.008	0 %100
71	M79	Z	0	0	0 %100
72	M81	Z	0	0	0 %100
73	FF-TH	Z	.004	.004	0 %100
74	SF1-TH	Z	0	0	0 %100
75	SF2-TH	Z	.004	.004	0 %100
76	GSIP-1A	Z	.004	.004	0 %100
77	GSIP-1B	Z	0	0	0 %100
78	GSIP-2A	Z	0	0	0 %100
79	GSIP-2B	Z	.004	.004	0 %100
80	GSIP-3A	Z	.004	.004	0 %100
81	GSIP-3B	Z	.004	.004	0 %100
82	GSI-1A	Z	.006	.006	0 %100
83	GSI-1B	Z	.006	.006	0 %100
84	GSI-2A	Z	.006	.006	0 %100
85	GSI-2B	Z	.006	.006	0 %100
86	GSI-3A	Z	0	0	0 %100
87	GSI-3B	Z	0	0	0 %100
88	M53	Z	.005	.005	0 %100
89	M54	Z	1.6e-5	1.6e-5	0 %100



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Member Distributed Loads (BLC 11 : 210 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
90	M56	Z	.005	.005	0 %100
91	M57	Z	.008	.008	0 %100
92	M59	Z	.005	.005	0 %100
93	M60	Z	.008	.008	0 %100
94	M62	Z	.005	.005	0 %100
95	M63	Z	1.6e-5	1.6e-5	0 %100
96	M65	Z	.009	.009	0 %100
97	M66	Z	.008	.008	0 %100
98	M68	Z	.009	.009	0 %100
99	M69	Z	.008	.008	0 %100
100	MP-1	Z	.004	.004	0 %100
101	MP-2	Z	.004	.004	0 %100
102	MP-3	Z	.004	.004	0 %100
103	MP-4	Z	.004	.004	0 %100
104	MP-5	Z	.004	.004	0 %100
105	MP-6	Z	.004	.004	0 %100
106	MP-7	Z	.004	.004	0 %100
107	MP-8	Z	.004	.004	0 %100
108	MP-9	Z	.004	.004	0 %100
109	MP-10	Z	.004	.004	0 %100
110	MP-11	Z	.004	.004	0 %100
111	MP-12	Z	.004	.004	0 %100
112	K1	Z	.01	.01	0 %100
113	K2	Z	.01	.01	0 %100
114	K3	Z	.01	.01	0 %100
115	SA-1	Z	.004	.004	0 %100
116	SA-2	Z	.004	.004	0 %100
117	SA-3	Z	.007	.007	0 %100
118	SR-1	Z	.003	.003	0 %100
119	SR-2	Z	0	0	0 %100
120	SR-3	Z	.003	.003	0 %100

Member Distributed Loads (BLC 12 : 225 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
1	AHCP-1	X	.005	.005	0 %100
2	AHCP-2	X	.004	.004	0 %100
3	AHCP-3	X	.001	.001	0 %100
4	CP-1	X	.013	.013	0 %100
5	CP-2	X	.009	.009	0 %100
6	CP-3	X	.003	.003	0 %100
7	M71	X	.009	.009	0 %100
8	M73	X	.009	.009	0 %100
9	M75	X	.013	.013	0 %100
10	M77	X	.013	.013	0 %100
11	M79	X	.003	.003	0 %100
12	M81	X	.003	.003	0 %100
13	FF-TH	X	.005	.005	0 %100
14	SF1-TH	X	.002	.002	0 %100
15	SF2-TH	X	.006	.006	0 %100
16	GSIP-1A	X	.005	.005	0 %100
17	GSIP-1B	X	.001	.001	0 %100
18	GSIP-2A	X	.001	.001	0 %100
19	GSIP-2B	X	.006	.006	0 %100
20	GSIP-3A	X	.006	.006	0 %100
21	GSIP-3B	X	.005	.005	0 %100
22	GSI-1A	X	.009	.009	0 %100



Company : Tower Engineering Professionals, Inc.
 Designer : NPD
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Member Distributed Loads (BLC 12 : 225 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
23	GSI-1B	X	.009	.009	0 %100
24	GSI-2A	X	.007	.007	0 %100
25	GSI-2B	X	.007	.007	0 %100
26	GSI-3A	X	.002	.002	0 %100
27	GSI-3B	X	.002	.002	0 %100
28	M53	X	.009	.009	0 %100
29	M54	X	.003	.003	0 %100
30	M56	X	.009	.009	0 %100
31	M57	X	.013	.013	0 %100
32	M59	X	.003	.003	0 %100
33	M60	X	.009	.009	0 %100
34	M62	X	.003	.003	0 %100
35	M63	X	.003	.003	0 %100
36	M65	X	.013	.013	0 %100
37	M66	X	.013	.013	0 %100
38	M68	X	.013	.013	0 %100
39	M69	X	.009	.009	0 %100
40	MP-1	X	.005	.005	0 %100
41	MP-2	X	.005	.005	0 %100
42	MP-3	X	.005	.005	0 %100
43	MP-4	X	.005	.005	0 %100
44	MP-5	X	.005	.005	0 %100
45	MP-6	X	.005	.005	0 %100
46	MP-7	X	.005	.005	0 %100
47	MP-8	X	.005	.005	0 %100
48	MP-9	X	.005	.005	0 %100
49	MP-10	X	.005	.005	0 %100
50	MP-11	X	.005	.005	0 %100
51	MP-12	X	.005	.005	0 %100
52	K1	X	.014	.014	0 %100
53	K2	X	.014	.014	0 %100
54	K3	X	.014	.014	0 %100
55	SA-1	X	.003	.003	0 %100
56	SA-2	X	.006	.006	0 %100
57	SA-3	X	.011	.011	0 %100
58	SR-1	X	.004	.004	0 %100
59	SR-2	X	.001	.001	0 %100
60	SR-3	X	.005	.005	0 %100
61	AHCP-1	Z	.006	.006	0 %100
62	AHCP-2	Z	.004	.004	0 %100
63	AHCP-3	Z	.002	.002	0 %100
64	CP-1	Z	.013	.013	0 %100
65	CP-2	Z	.009	.009	0 %100
66	CP-3	Z	.003	.003	0 %100
67	M71	Z	.009	.009	0 %100
68	M73	Z	.009	.009	0 %100
69	M75	Z	.013	.013	0 %100
70	M77	Z	.013	.013	0 %100
71	M79	Z	.003	.003	0 %100
72	M81	Z	.003	.003	0 %100
73	FF-TH	Z	.005	.005	0 %100
74	SF1-TH	Z	.002	.002	0 %100
75	SF2-TH	Z	.007	.007	0 %100
76	GSIP-1A	Z	.005	.005	0 %100
77	GSIP-1B	Z	.002	.002	0 %100
78	GSIP-2A	Z	.002	.002	0 %100
79	GSIP-2B	Z	.007	.007	0 %100



Company : Tower Engineering Professionals, Inc.
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Member Distributed Loads (BLC 12 : 225 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
80	GSIP-3A	Z	.007	.007	0 %100
81	GSIP-3B	Z	.005	.005	0 %100
82	GSI-1A	Z	.01	.01	0 %100
83	GSI-1B	Z	.01	.01	0 %100
84	GSI-2A	Z	.007	.007	0 %100
85	GSI-2B	Z	.007	.007	0 %100
86	GSI-3A	Z	.003	.003	0 %100
87	GSI-3B	Z	.003	.003	0 %100
88	M53	Z	.009	.009	0 %100
89	M54	Z	.003	.003	0 %100
90	M56	Z	.009	.009	0 %100
91	M57	Z	.013	.013	0 %100
92	M59	Z	.003	.003	0 %100
93	M60	Z	.009	.009	0 %100
94	M62	Z	.003	.003	0 %100
95	M63	Z	.003	.003	0 %100
96	M65	Z	.013	.013	0 %100
97	M66	Z	.013	.013	0 %100
98	M68	Z	.013	.013	0 %100
99	M69	Z	.009	.009	0 %100
100	MP-1	Z	.005	.005	0 %100
101	MP-2	Z	.005	.005	0 %100
102	MP-3	Z	.005	.005	0 %100
103	MP-4	Z	.005	.005	0 %100
104	MP-5	Z	.005	.005	0 %100
105	MP-6	Z	.005	.005	0 %100
106	MP-7	Z	.005	.005	0 %100
107	MP-8	Z	.005	.005	0 %100
108	MP-9	Z	.005	.005	0 %100
109	MP-10	Z	.005	.005	0 %100
110	MP-11	Z	.005	.005	0 %100
111	MP-12	Z	.005	.005	0 %100
112	K1	Z	.014	.014	0 %100
113	K2	Z	.014	.014	0 %100
114	K3	Z	.014	.014	0 %100
115	SA-1	Z	.003	.003	0 %100
116	SA-2	Z	.009	.009	0 %100
117	SA-3	Z	.01	.01	0 %100
118	SR-1	Z	.004	.004	0 %100
119	SR-2	Z	.001	.001	0 %100
120	SR-3	Z	.005	.005	0 %100

Member Distributed Loads (BLC 13 : 240 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
1	AHCP-1	X	.004	.004	0 %100
2	AHCP-2	X	.002	.002	0 %100
3	AHCP-3	X	.002	.002	0 %100
4	CP-1	X	.009	.009	0 %100
5	CP-2	X	.005	.005	0 %100
6	CP-3	X	.005	.005	0 %100
7	M71	X	.005	.005	0 %100
8	M73	X	.005	.005	0 %100
9	M75	X	.009	.009	0 %100
10	M77	X	.009	.009	0 %100
11	M79	X	.005	.005	0 %100
12	M81	X	.005	.005	0 %100



Company : Tower Engineering Professionals, Inc.
 Designer : NPD
 Job Number : TEP No. 94015.587315
 Model Name : 302528 - Columbia Central

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Member Distributed Loads (BLC 13 : 240 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
13	FF-TH	X	.002	.002	0 %100
14	SF1-TH	X	.002	.002	0 %100
15	SF2-TH	X	.005	.005	0 %100
16	GSIP-1A	X	.003	.003	0 %100
17	GSIP-1B	X	.002	.002	0 %100
18	GSIP-2A	X	.002	.002	0 %100
19	GSIP-2B	X	.004	.004	0 %100
20	GSIP-3A	X	.004	.004	0 %100
21	GSIP-3B	X	.003	.003	0 %100
22	GSI-1A	X	.006	.006	0 %100
23	GSI-1B	X	.006	.006	0 %100
24	GSI-2A	X	.004	.004	0 %100
25	GSI-2B	X	.004	.004	0 %100
26	GSI-3A	X	.003	.003	0 %100
27	GSI-3B	X	.003	.003	0 %100
28	M53	X	.008	.008	0 %100
29	M54	X	.005	.005	0 %100
30	M56	X	.008	.008	0 %100
31	M57	X	.009	.009	0 %100
32	M59	X	0	0	0 %100
33	M60	X	.005	.005	0 %100
34	M62	X	0	0	0 %100
35	M63	X	.005	.005	0 %100
36	M65	X	.008	.008	0 %100
37	M66	X	.009	.009	0 %100
38	M68	X	.008	.008	0 %100
39	M69	X	.005	.005	0 %100
40	MP-1	X	.004	.004	0 %100
41	MP-2	X	.004	.004	0 %100
42	MP-3	X	.004	.004	0 %100
43	MP-4	X	.004	.004	0 %100
44	MP-5	X	.004	.004	0 %100
45	MP-6	X	.004	.004	0 %100
46	MP-7	X	.004	.004	0 %100
47	MP-8	X	.004	.004	0 %100
48	MP-9	X	.004	.004	0 %100
49	MP-10	X	.004	.004	0 %100
50	MP-11	X	.004	.004	0 %100
51	MP-12	X	.004	.004	0 %100
52	K1	X	.01	.01	0 %100
53	K2	X	.01	.01	0 %100
54	K3	X	.01	.01	0 %100
55	SA-1	X	0	0	0 %100
56	SA-2	X	.005	.005	0 %100
57	SA-3	X	.007	.007	0 %100
58	SR-1	X	.002	.002	0 %100
59	SR-2	X	.002	.002	0 %100
60	SR-3	X	.004	.004	0 %100
61	AHCP-1	Z	.007	.007	0 %100
62	AHCP-2	Z	.004	.004	0 %100
63	AHCP-3	Z	.004	.004	0 %100
64	CP-1	Z	.016	.016	0 %100
65	CP-2	Z	.008	.008	0 %100
66	CP-3	Z	.008	.008	0 %100
67	M71	Z	.008	.008	0 %100
68	M73	Z	.008	.008	0 %100
69	M75	Z	.016	.016	0 %100



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Member Distributed Loads (BLC 13 : 240 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
70	M77	Z	.016	.016	0 %100
71	M79	Z	.008	.008	0 %100
72	M81	Z	.008	.008	0 %100
73	FF-TH	Z	.004	.004	0 %100
74	SF1-TH	Z	.004	.004	0 %100
75	SF2-TH	Z	.009	.009	0 %100
76	GSIP-1A	Z	.004	.004	0 %100
77	GSIP-1B	Z	.004	.004	0 %100
78	GSIP-2A	Z	.004	.004	0 %100
79	GSIP-2B	Z	.008	.008	0 %100
80	GSIP-3A	Z	.008	.008	0 %100
81	GSIP-3B	Z	.004	.004	0 %100
82	GSI-1A	Z	.012	.012	0 %100
83	GSI-1B	Z	.012	.012	0 %100
84	GSI-2A	Z	.006	.006	0 %100
85	GSI-2B	Z	.006	.006	0 %100
86	GSI-3A	Z	.006	.006	0 %100
87	GSI-3B	Z	.006	.006	0 %100
88	M53	Z	.014	.014	0 %100
89	M54	Z	.008	.008	0 %100
90	M56	Z	.014	.014	0 %100
91	M57	Z	.016	.016	0 %100
92	M59	Z	0	0	0 %100
93	M60	Z	.008	.008	0 %100
94	M62	Z	0	0	0 %100
95	M63	Z	.008	.008	0 %100
96	M65	Z	.014	.014	0 %100
97	M66	Z	.016	.016	0 %100
98	M68	Z	.014	.014	0 %100
99	M69	Z	.008	.008	0 %100
100	MP-1	Z	.006	.006	0 %100
101	MP-2	Z	.006	.006	0 %100
102	MP-3	Z	.006	.006	0 %100
103	MP-4	Z	.006	.006	0 %100
104	MP-5	Z	.006	.006	0 %100
105	MP-6	Z	.006	.006	0 %100
106	MP-7	Z	.006	.006	0 %100
107	MP-8	Z	.006	.006	0 %100
108	MP-9	Z	.006	.006	0 %100
109	MP-10	Z	.006	.006	0 %100
110	MP-11	Z	.006	.006	0 %100
111	MP-12	Z	.006	.006	0 %100
112	K1	Z	.017	.017	0 %100
113	K2	Z	.017	.017	0 %100
114	K3	Z	.017	.017	0 %100
115	SA-1	Z	0	0	0 %100
116	SA-2	Z	.013	.013	0 %100
117	SA-3	Z	.011	.011	0 %100
118	SR-1	Z	.003	.003	0 %100
119	SR-2	Z	.003	.003	0 %100
120	SR-3	Z	.006	.006	0 %100

Member Distributed Loads (BLC 14 : 270 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
1	AHCP-1	Z	.007	.007	0 %100
2	AHCP-2	Z	0	0	0 %100



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Member Distributed Loads (BLC 14 : 270 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
3	AHCP-3	Z	.007	.007	0 %100
4	CP-1	Z	.016	.016	0 %100
5	CP-2	Z	0	0	0 %100
6	CP-3	Z	.016	.016	0 %100
7	M71	Z	0	0	0 %100
8	M73	Z	0	0	0 %100
9	M75	Z	.016	.016	0 %100
10	M77	Z	.016	.016	0 %100
11	M79	Z	.016	.016	0 %100
12	M81	Z	.016	.016	0 %100
13	FF-TH	Z	0	0	0 %100
14	SF1-TH	Z	.009	.009	0 %100
15	SF2-TH	Z	.009	.009	0 %100
16	GSIP-1A	Z	0	0	0 %100
17	GSIP-1B	Z	.008	.008	0 %100
18	GSIP-2A	Z	.008	.008	0 %100
19	GSIP-2B	Z	.008	.008	0 %100
20	GSIP-3A	Z	.008	.008	0 %100
21	GSIP-3B	Z	0	0	0 %100
22	GSI-1A	Z	.012	.012	0 %100
23	GSI-1B	Z	.012	.012	0 %100
24	GSI-2A	Z	0	0	0 %100
25	GSI-2B	Z	0	0	0 %100
26	GSI-3A	Z	.012	.012	0 %100
27	GSI-3B	Z	.012	.012	0 %100
28	M53	Z	.019	.019	0 %100
29	M54	Z	.016	.016	0 %100
30	M56	Z	.019	.019	0 %100
31	M57	Z	.016	.016	0 %100
32	M59	Z	.009	.009	0 %100
33	M60	Z	3.2e-5	3.2e-5	0 %100
34	M62	Z	.009	.009	0 %100
35	M63	Z	.016	.016	0 %100
36	M65	Z	.009	.009	0 %100
37	M66	Z	.016	.016	0 %100
38	M68	Z	.009	.009	0 %100
39	M69	Z	3.2e-5	3.2e-5	0 %100
40	MP-1	Z	.007	.007	0 %100
41	MP-2	Z	.007	.007	0 %100
42	MP-3	Z	.007	.007	0 %100
43	MP-4	Z	.007	.007	0 %100
44	MP-5	Z	.007	.007	0 %100
45	MP-6	Z	.007	.007	0 %100
46	MP-7	Z	.007	.007	0 %100
47	MP-8	Z	.007	.007	0 %100
48	MP-9	Z	.007	.007	0 %100
49	MP-10	Z	.007	.007	0 %100
50	MP-11	Z	.007	.007	0 %100
51	MP-12	Z	.007	.007	0 %100
52	K1	Z	.02	.02	0 %100
53	K2	Z	.02	.02	0 %100
54	K3	Z	.02	.02	0 %100
55	SA-1	Z	.007	.007	0 %100
56	SA-2	Z	.017	.017	0 %100
57	SA-3	Z	.007	.007	0 %100
58	SR-1	Z	0	0	0 %100
59	SR-2	Z	.006	.006	0 %100



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Member Distributed Loads (BLC 14 : 270 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
60	SR-3	Z	.006	.006	0 %100

Member Distributed Loads (BLC 15 : 300 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
1	AHCP-1	X	-.002	-.002	0 %100
2	AHCP-2	X	-.002	-.002	0 %100
3	AHCP-3	X	-.004	-.004	0 %100
4	CP-1	X	-.005	-.005	0 %100
5	CP-2	X	-.005	-.005	0 %100
6	CP-3	X	-.009	-.009	0 %100
7	M71	X	-.005	-.005	0 %100
8	M73	X	-.005	-.005	0 %100
9	M75	X	-.005	-.005	0 %100
10	M77	X	-.005	-.005	0 %100
11	M79	X	-.009	-.009	0 %100
12	M81	X	-.009	-.009	0 %100
13	FF-TH	X	-.002	-.002	0 %100
14	SF1-TH	X	-.005	-.005	0 %100
15	SF2-TH	X	-.002	-.002	0 %100
16	GSIP-1A	X	-.003	-.003	0 %100
17	GSIP-1B	X	-.004	-.004	0 %100
18	GSIP-2A	X	-.004	-.004	0 %100
19	GSIP-2B	X	-.002	-.002	0 %100
20	GSIP-3A	X	-.002	-.002	0 %100
21	GSIP-3B	X	-.003	-.003	0 %100
22	GSI-1A	X	-.003	-.003	0 %100
23	GSI-1B	X	-.003	-.003	0 %100
24	GSI-2A	X	-.004	-.004	0 %100
25	GSI-2B	X	-.004	-.004	0 %100
26	GSI-3A	X	-.006	-.006	0 %100
27	GSI-3B	X	-.006	-.006	0 %100
28	M53	X	-.008	-.008	0 %100
29	M54	X	-.009	-.009	0 %100
30	M56	X	-.008	-.008	0 %100
31	M57	X	-.005	-.005	0 %100
32	M59	X	-.008	-.008	0 %100
33	M60	X	-.005	-.005	0 %100
34	M62	X	-.008	-.008	0 %100
35	M63	X	-.009	-.009	0 %100
36	M65	X	0	0	0 %100
37	M66	X	-.005	-.005	0 %100
38	M68	X	0	0	0 %100
39	M69	X	-.005	-.005	0 %100
40	MP-1	X	-.004	-.004	0 %100
41	MP-2	X	-.004	-.004	0 %100
42	MP-3	X	-.004	-.004	0 %100
43	MP-4	X	-.004	-.004	0 %100
44	MP-5	X	-.004	-.004	0 %100
45	MP-6	X	-.004	-.004	0 %100
46	MP-7	X	-.004	-.004	0 %100
47	MP-8	X	-.004	-.004	0 %100
48	MP-9	X	-.004	-.004	0 %100
49	MP-10	X	-.004	-.004	0 %100
50	MP-11	X	-.004	-.004	0 %100
51	MP-12	X	-.004	-.004	0 %100
52	K1	X	-.01	-.01	0 %100



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Member Distributed Loads (BLC 15 : 300 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
53	K2	X	-.01	-.01	0 %100
54	K3	X	-.01	-.01	0 %100
55	SA-1	X	-.007	-.007	0 %100
56	SA-2	X	-.005	-.005	0 %100
57	SA-3	X	0	0	0 %100
58	SR-1	X	-.002	-.002	0 %100
59	SR-2	X	-.004	-.004	0 %100
60	SR-3	X	-.002	-.002	0 %100
61	AHCP-1	Z	.004	.004	0 %100
62	AHCP-2	Z	.004	.004	0 %100
63	AHCP-3	Z	.007	.007	0 %100
64	CP-1	Z	.008	.008	0 %100
65	CP-2	Z	.008	.008	0 %100
66	CP-3	Z	.016	.016	0 %100
67	M71	Z	.008	.008	0 %100
68	M73	Z	.008	.008	0 %100
69	M75	Z	.008	.008	0 %100
70	M77	Z	.008	.008	0 %100
71	M79	Z	.016	.016	0 %100
72	M81	Z	.016	.016	0 %100
73	FF-TH	Z	.004	.004	0 %100
74	SF1-TH	Z	.009	.009	0 %100
75	SF2-TH	Z	.004	.004	0 %100
76	GSI-1A	Z	.004	.004	0 %100
77	GSI-1B	Z	.008	.008	0 %100
78	GSI-2A	Z	.008	.008	0 %100
79	GSI-2B	Z	.004	.004	0 %100
80	GSI-3A	Z	.004	.004	0 %100
81	GSI-3B	Z	.004	.004	0 %100
82	GSI-1A	Z	.006	.006	0 %100
83	GSI-1B	Z	.006	.006	0 %100
84	GSI-2A	Z	.006	.006	0 %100
85	GSI-2B	Z	.006	.006	0 %100
86	GSI-3A	Z	.012	.012	0 %100
87	GSI-3B	Z	.012	.012	0 %100
88	M53	Z	.014	.014	0 %100
89	M54	Z	.016	.016	0 %100
90	M56	Z	.014	.014	0 %100
91	M57	Z	.008	.008	0 %100
92	M59	Z	.014	.014	0 %100
93	M60	Z	.008	.008	0 %100
94	M62	Z	.014	.014	0 %100
95	M63	Z	.016	.016	0 %100
96	M65	Z	0	0	0 %100
97	M66	Z	.008	.008	0 %100
98	M68	Z	0	0	0 %100
99	M69	Z	.008	.008	0 %100
100	MP-1	Z	.006	.006	0 %100
101	MP-2	Z	.006	.006	0 %100
102	MP-3	Z	.006	.006	0 %100
103	MP-4	Z	.006	.006	0 %100
104	MP-5	Z	.006	.006	0 %100
105	MP-6	Z	.006	.006	0 %100
106	MP-7	Z	.006	.006	0 %100
107	MP-8	Z	.006	.006	0 %100
108	MP-9	Z	.006	.006	0 %100
109	MP-10	Z	.006	.006	0 %100



Company : Tower Engineering Professionals, Inc.
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Member Distributed Loads (BLC 15 : 300 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
110	MP-11	Z	.006	.006	0 %100
111	MP-12	Z	.006	.006	0 %100
112	K1	Z	.017	.017	0 %100
113	K2	Z	.017	.017	0 %100
114	K3	Z	.017	.017	0 %100
115	SA-1	Z	.011	.011	0 %100
116	SA-2	Z	.013	.013	0 %100
117	SA-3	Z	0	0	0 %100
118	SR-1	Z	.003	.003	0 %100
119	SR-2	Z	.006	.006	0 %100
120	SR-3	Z	.003	.003	0 %100

Member Distributed Loads (BLC 16 : 315 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
1	AHCP-1	X	-.001	-.001	0 %100
2	AHCP-2	X	-.004	-.004	0 %100
3	AHCP-3	X	-.005	-.005	0 %100
4	CP-1	X	-.003	-.003	0 %100
5	CP-2	X	-.009	-.009	0 %100
6	CP-3	X	-.013	-.013	0 %100
7	M71	X	-.009	-.009	0 %100
8	M73	X	-.009	-.009	0 %100
9	M75	X	-.003	-.003	0 %100
10	M77	X	-.003	-.003	0 %100
11	M79	X	-.013	-.013	0 %100
12	M81	X	-.013	-.013	0 %100
13	FF-TH	X	-.005	-.005	0 %100
14	SF1-TH	X	-.006	-.006	0 %100
15	SF2-TH	X	-.002	-.002	0 %100
16	GSI-1A	X	-.005	-.005	0 %100
17	GSI-1B	X	-.006	-.006	0 %100
18	GSI-2A	X	-.006	-.006	0 %100
19	GSI-2B	X	-.001	-.001	0 %100
20	GSI-3A	X	-.001	-.001	0 %100
21	GSI-3B	X	-.005	-.005	0 %100
22	GSI-1A	X	-.002	-.002	0 %100
23	GSI-1B	X	-.002	-.002	0 %100
24	GSI-2A	X	-.007	-.007	0 %100
25	GSI-2B	X	-.007	-.007	0 %100
26	GSI-3A	X	-.009	-.009	0 %100
27	GSI-3B	X	-.009	-.009	0 %100
28	M53	X	-.009	-.009	0 %100
29	M54	X	-.013	-.013	0 %100
30	M56	X	-.009	-.009	0 %100
31	M57	X	-.003	-.003	0 %100
32	M59	X	-.013	-.013	0 %100
33	M60	X	-.009	-.009	0 %100
34	M62	X	-.013	-.013	0 %100
35	M63	X	-.013	-.013	0 %100
36	M65	X	-.003	-.003	0 %100
37	M66	X	-.003	-.003	0 %100
38	M68	X	-.003	-.003	0 %100
39	M69	X	-.009	-.009	0 %100
40	MP-1	X	-.005	-.005	0 %100
41	MP-2	X	-.005	-.005	0 %100
42	MP-3	X	-.005	-.005	0 %100



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Member Distributed Loads (BLC 16 : 315 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
43	MP-4	X	-0.05	-0.05	0 %100
44	MP-5	X	-0.05	-0.05	0 %100
45	MP-6	X	-0.05	-0.05	0 %100
46	MP-7	X	-0.05	-0.05	0 %100
47	MP-8	X	-0.05	-0.05	0 %100
48	MP-9	X	-0.05	-0.05	0 %100
49	MP-10	X	-0.05	-0.05	0 %100
50	MP-11	X	-0.05	-0.05	0 %100
51	MP-12	X	-0.05	-0.05	0 %100
52	K1	X	-0.14	-0.14	0 %100
53	K2	X	-0.14	-0.14	0 %100
54	K3	X	-0.14	-0.14	0 %100
55	SA-1	X	-0.11	-0.11	0 %100
56	SA-2	X	-0.06	-0.06	0 %100
57	SA-3	X	-0.03	-0.03	0 %100
58	SR-1	X	-0.04	-0.04	0 %100
59	SR-2	X	-0.05	-0.05	0 %100
60	SR-3	X	-0.01	-0.01	0 %100
61	AHCP-1	Z	.002	.002	0 %100
62	AHCP-2	Z	.004	.004	0 %100
63	AHCP-3	Z	.006	.006	0 %100
64	CP-1	Z	.003	.003	0 %100
65	CP-2	Z	.009	.009	0 %100
66	CP-3	Z	.013	.013	0 %100
67	M71	Z	.009	.009	0 %100
68	M73	Z	.009	.009	0 %100
69	M75	Z	.003	.003	0 %100
70	M77	Z	.003	.003	0 %100
71	M79	Z	.013	.013	0 %100
72	M81	Z	.013	.013	0 %100
73	FF-TH	Z	.005	.005	0 %100
74	SF1-TH	Z	.007	.007	0 %100
75	SF2-TH	Z	.002	.002	0 %100
76	GSIP-1A	Z	.005	.005	0 %100
77	GSIP-1B	Z	.007	.007	0 %100
78	GSIP-2A	Z	.007	.007	0 %100
79	GSIP-2B	Z	.002	.002	0 %100
80	GSIP-3A	Z	.002	.002	0 %100
81	GSIP-3B	Z	.005	.005	0 %100
82	GSI-1A	Z	.003	.003	0 %100
83	GSI-1B	Z	.003	.003	0 %100
84	GSI-2A	Z	.007	.007	0 %100
85	GSI-2B	Z	.007	.007	0 %100
86	GSI-3A	Z	.01	.01	0 %100
87	GSI-3B	Z	.01	.01	0 %100
88	M53	Z	.009	.009	0 %100
89	M54	Z	.013	.013	0 %100
90	M56	Z	.009	.009	0 %100
91	M57	Z	.003	.003	0 %100
92	M59	Z	.013	.013	0 %100
93	M60	Z	.009	.009	0 %100
94	M62	Z	.013	.013	0 %100
95	M63	Z	.013	.013	0 %100
96	M65	Z	.003	.003	0 %100
97	M66	Z	.003	.003	0 %100
98	M68	Z	.003	.003	0 %100
99	M69	Z	.009	.009	0 %100



Company : Tower Engineering Professionals, Inc.
 Designer : NPD
 Job Number : TEP No. 94015.587315
 Model Name : 302528 - Columbia Central

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Member Distributed Loads (BLC 16 : 315 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
100	MP-1	Z	.005	.005	0 %100
101	MP-2	Z	.005	.005	0 %100
102	MP-3	Z	.005	.005	0 %100
103	MP-4	Z	.005	.005	0 %100
104	MP-5	Z	.005	.005	0 %100
105	MP-6	Z	.005	.005	0 %100
106	MP-7	Z	.005	.005	0 %100
107	MP-8	Z	.005	.005	0 %100
108	MP-9	Z	.005	.005	0 %100
109	MP-10	Z	.005	.005	0 %100
110	MP-11	Z	.005	.005	0 %100
111	MP-12	Z	.005	.005	0 %100
112	K1	Z	.014	.014	0 %100
113	K2	Z	.014	.014	0 %100
114	K3	Z	.014	.014	0 %100
115	SA-1	Z	.01	.01	0 %100
116	SA-2	Z	.009	.009	0 %100
117	SA-3	Z	.003	.003	0 %100
118	SR-1	Z	.004	.004	0 %100
119	SR-2	Z	.005	.005	0 %100
120	SR-3	Z	.001	.001	0 %100

Member Distributed Loads (BLC 17 : 330 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
1	AHCP-1	X	0	0	0 %100
2	AHCP-2	X	-0.07	-0.07	0 %100
3	AHCP-3	X	-0.06	-0.06	0 %100
4	CP-1	X	0	0	0 %100
5	CP-2	X	-0.14	-0.14	0 %100
6	CP-3	X	-0.14	-0.14	0 %100
7	M71	X	-0.14	-0.14	0 %100
8	M73	X	-0.14	-0.14	0 %100
9	M75	X	0	0	0 %100
10	M77	X	0	0	0 %100
11	M79	X	-0.14	-0.14	0 %100
12	M81	X	-0.14	-0.14	0 %100
13	FF-TH	X	-0.07	-0.07	0 %100
14	SF1-TH	X	-0.07	-0.07	0 %100
15	SF2-TH	X	0	0	0 %100
16	GSIP-1A	X	-0.08	-0.08	0 %100
17	GSIP-1B	X	-0.06	-0.06	0 %100
18	GSIP-2A	X	-0.06	-0.06	0 %100
19	GSIP-2B	X	0	0	0 %100
20	GSIP-3A	X	0	0	0 %100
21	GSIP-3B	X	-0.08	-0.08	0 %100
22	GSI-1A	X	0	0	0 %100
23	GSI-1B	X	0	0	0 %100
24	GSI-2A	X	-0.11	-0.11	0 %100
25	GSI-2B	X	-0.11	-0.11	0 %100
26	GSI-3A	X	-0.01	-0.01	0 %100
27	GSI-3B	X	-0.01	-0.01	0 %100
28	M53	X	-0.08	-0.08	0 %100
29	M54	X	-0.14	-0.14	0 %100
30	M56	X	-0.08	-0.08	0 %100
31	M57	X	-2.8e-5	-2.8e-5	0 %100
32	M59	X	-0.16	-0.16	0 %100



Company : Tower Engineering Professionals, Inc.
 Designer : NPD
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Member Distributed Loads (BLC 17 : 330 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
33	M60	X	-0.14	-0.14	0 %100
34	M62	X	-0.16	-0.16	0 %100
35	M63	X	-0.14	-0.14	0 %100
36	M65	X	-0.08	-0.08	0 %100
37	M66	X	-2.8e-5	-2.8e-5	0 %100
38	M68	X	-0.08	-0.08	0 %100
39	M69	X	-0.14	-0.14	0 %100
40	MP-1	X	-0.06	-0.06	0 %100
41	MP-2	X	-0.06	-0.06	0 %100
42	MP-3	X	-0.06	-0.06	0 %100
43	MP-4	X	-0.06	-0.06	0 %100
44	MP-5	X	-0.06	-0.06	0 %100
45	MP-6	X	-0.06	-0.06	0 %100
46	MP-7	X	-0.06	-0.06	0 %100
47	MP-8	X	-0.06	-0.06	0 %100
48	MP-9	X	-0.06	-0.06	0 %100
49	MP-10	X	-0.06	-0.06	0 %100
50	MP-11	X	-0.06	-0.06	0 %100
51	MP-12	X	-0.06	-0.06	0 %100
52	K1	X	-0.17	-0.17	0 %100
53	K2	X	-0.17	-0.17	0 %100
54	K3	X	-0.17	-0.17	0 %100
55	SA-1	X	-0.15	-0.15	0 %100
56	SA-2	X	-0.05	-0.05	0 %100
57	SA-3	X	-0.07	-0.07	0 %100
58	SR-1	X	-0.06	-0.06	0 %100
59	SR-2	X	-0.06	-0.06	0 %100
60	SR-3	X	0	0	0 %100
61	AHCP-1	Z	0	0	0 %100
62	AHCP-2	Z	.004	.004	0 %100
63	AHCP-3	Z	.004	.004	0 %100
64	CP-1	Z	0	0	0 %100
65	CP-2	Z	.008	.008	0 %100
66	CP-3	Z	.008	.008	0 %100
67	M71	Z	.008	.008	0 %100
68	M73	Z	.008	.008	0 %100
69	M75	Z	0	0	0 %100
70	M77	Z	0	0	0 %100
71	M79	Z	.008	.008	0 %100
72	M81	Z	.008	.008	0 %100
73	FF-TH	Z	.004	.004	0 %100
74	SF1-TH	Z	.004	.004	0 %100
75	SF2-TH	Z	0	0	0 %100
76	GSIP-1A	Z	.004	.004	0 %100
77	GSIP-1B	Z	.004	.004	0 %100
78	GSIP-2A	Z	.004	.004	0 %100
79	GSIP-2B	Z	0	0	0 %100
80	GSIP-3A	Z	0	0	0 %100
81	GSIP-3B	Z	.004	.004	0 %100
82	GSI-1A	Z	0	0	0 %100
83	GSI-1B	Z	0	0	0 %100
84	GSI-2A	Z	.006	.006	0 %100
85	GSI-2B	Z	.006	.006	0 %100
86	GSI-3A	Z	.006	.006	0 %100
87	GSI-3B	Z	.006	.006	0 %100
88	M53	Z	.005	.005	0 %100
89	M54	Z	.008	.008	0 %100



Company : Tower Engineering Professionals, Inc.
 Designer : NPD
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Member Distributed Loads (BLC 17 : 330 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
90	M56	Z	.005	.005	0 %100
91	M57	Z	1.6e-5	1.6e-5	0 %100
92	M59	Z	.009	.009	0 %100
93	M60	Z	.008	.008	0 %100
94	M62	Z	.009	.009	0 %100
95	M63	Z	.008	.008	0 %100
96	M65	Z	.005	.005	0 %100
97	M66	Z	1.6e-5	1.6e-5	0 %100
98	M68	Z	.005	.005	0 %100
99	M69	Z	.008	.008	0 %100
100	MP-1	Z	.004	.004	0 %100
101	MP-2	Z	.004	.004	0 %100
102	MP-3	Z	.004	.004	0 %100
103	MP-4	Z	.004	.004	0 %100
104	MP-5	Z	.004	.004	0 %100
105	MP-6	Z	.004	.004	0 %100
106	MP-7	Z	.004	.004	0 %100
107	MP-8	Z	.004	.004	0 %100
108	MP-9	Z	.004	.004	0 %100
109	MP-10	Z	.004	.004	0 %100
110	MP-11	Z	.004	.004	0 %100
111	MP-12	Z	.004	.004	0 %100
112	K1	Z	.01	.01	0 %100
113	K2	Z	.01	.01	0 %100
114	K3	Z	.01	.01	0 %100
115	SA-1	Z	.007	.007	0 %100
116	SA-2	Z	.004	.004	0 %100
117	SA-3	Z	.004	.004	0 %100
118	SR-1	Z	.003	.003	0 %100
119	SR-2	Z	.003	.003	0 %100
120	SR-3	Z	0	0	0 %100

Member Distributed Loads (BLC 18 : Ice Weight)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
1	AHCP-1	Y	-.005	-.005	0 %100
2	AHCP-2	Y	-.005	-.005	0 %100
3	AHCP-3	Y	-.005	-.005	0 %100
4	CP-1	Y	-.007	-.007	0 %100
5	CP-2	Y	-.007	-.007	0 %100
6	CP-3	Y	-.007	-.007	0 %100
7	M71	Y	-.01	-.01	0 %100
8	M73	Y	-.01	-.01	0 %100
9	M75	Y	-.01	-.01	0 %100
10	M77	Y	-.01	-.01	0 %100
11	M79	Y	-.01	-.01	0 %100
12	M81	Y	-.01	-.01	0 %100
13	FF-TH	Y	-.006	-.006	0 %100
14	SF1-TH	Y	-.006	-.006	0 %100
15	SF2-TH	Y	-.006	-.006	0 %100
16	GSIP-1A	Y	-.004	-.004	0 %100
17	GSIP-1B	Y	-.004	-.004	0 %100
18	GSIP-2A	Y	-.004	-.004	0 %100
19	GSIP-2B	Y	-.004	-.004	0 %100
20	GSIP-3A	Y	-.004	-.004	0 %100
21	GSIP-3B	Y	-.004	-.004	0 %100
22	GSI-1A	Y	-.008	-.008	0 %100



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 Designer : NPD
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Member Distributed Loads (BLC 18 : Ice Weight) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
23	GSI-1B	Y	-0.08	-0.08	0 %100
24	GSI-2A	Y	-0.08	-0.08	0 %100
25	GSI-2B	Y	-0.08	-0.08	0 %100
26	GSI-3A	Y	-0.08	-0.08	0 %100
27	GSI-3B	Y	-0.08	-0.08	0 %100
28	M53	Y	-0.09	-0.09	0 %100
29	M54	Y	-0.12	-0.12	0 %100
30	M56	Y	-0.09	-0.09	0 %100
31	M57	Y	-0.12	-0.12	0 %100
32	M59	Y	-0.09	-0.09	0 %100
33	M60	Y	-0.12	-0.12	0 %100
34	M62	Y	-0.09	-0.09	0 %100
35	M63	Y	-0.12	-0.12	0 %100
36	M65	Y	-0.09	-0.09	0 %100
37	M66	Y	-0.12	-0.12	0 %100
38	M68	Y	-0.09	-0.09	0 %100
39	M69	Y	-0.12	-0.12	0 %100
40	MP-1	Y	-0.05	-0.05	0 %100
41	MP-2	Y	-0.05	-0.05	0 %100
42	MP-3	Y	-0.05	-0.05	0 %100
43	MP-4	Y	-0.05	-0.05	0 %100
44	MP-5	Y	-0.05	-0.05	0 %100
45	MP-6	Y	-0.05	-0.05	0 %100
46	MP-7	Y	-0.05	-0.05	0 %100
47	MP-8	Y	-0.05	-0.05	0 %100
48	MP-9	Y	-0.05	-0.05	0 %100
49	MP-10	Y	-0.05	-0.05	0 %100
50	MP-11	Y	-0.05	-0.05	0 %100
51	MP-12	Y	-0.05	-0.05	0 %100
52	K1	Y	-0.07	-0.07	0 %100
53	K2	Y	-0.07	-0.07	0 %100
54	K3	Y	-0.07	-0.07	0 %100
55	SA-1	Y	-0.07	-0.07	0 %100
56	SA-2	Y	-0.07	-0.07	0 %100
57	SA-3	Y	-0.07	-0.07	0 %100
58	SR-1	Y	-0.05	-0.05	0 %100
59	SR-2	Y	-0.05	-0.05	0 %100
60	SR-3	Y	-0.05	-0.05	0 %100

Member Distributed Loads (BLC 19 : 0 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
1	AHCP-1	X	-0.03	-0.03	0 %100
2	AHCP-2	X	-0.03	-0.03	0 %100
3	AHCP-3	X	-0.03	-0.03	0 %100
4	CP-1	X	-0.05	-0.05	0 %100
5	CP-2	X	-0.05	-0.05	0 %100
6	CP-3	X	-0.05	-0.05	0 %100
7	M71	X	-0.08	-0.08	0 %100
8	M73	X	-0.08	-0.08	0 %100
9	M75	X	-0.08	-0.08	0 %100
10	M77	X	-0.08	-0.08	0 %100
11	M79	X	-0.08	-0.08	0 %100
12	M81	X	-0.08	-0.08	0 %100
13	FF-TH	X	-0.03	-0.03	0 %100
14	SF1-TH	X	-0.02	-0.02	0 %100
15	SF2-TH	X	-0.02	-0.02	0 %100



Company : Tower Engineering Professionals, Inc.
 Designer : NPD
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Member Distributed Loads (BLC 19 : 0 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
16	GSIP-1A	X	-0.03	-0.03	0 %100
17	GSIP-1B	X	-0.03	-0.03	0 %100
18	GSIP-2A	X	-0.03	-0.03	0 %100
19	GSIP-2B	X	-0.03	-0.03	0 %100
20	GSIP-3A	X	-0.03	-0.03	0 %100
21	GSIP-3B	X	-0.03	-0.03	0 %100
22	GSI-1A	X	-0.04	-0.04	0 %100
23	GSI-1B	X	-0.04	-0.04	0 %100
24	GSI-2A	X	-0.04	-0.04	0 %100
25	GSI-2B	X	-0.04	-0.04	0 %100
26	GSI-3A	X	-0.04	-0.04	0 %100
27	GSI-3B	X	-0.04	-0.04	0 %100
28	M53	X	-0.07	-0.07	0 %100
29	M54	X	-0.09	-0.09	0 %100
30	M56	X	-0.07	-0.07	0 %100
31	M57	X	-0.09	-0.09	0 %100
32	M59	X	-0.07	-0.07	0 %100
33	M60	X	-0.09	-0.09	0 %100
34	M62	X	-0.07	-0.07	0 %100
35	M63	X	-0.09	-0.09	0 %100
36	M65	X	-0.07	-0.07	0 %100
37	M66	X	-0.09	-0.09	0 %100
38	M68	X	-0.07	-0.07	0 %100
39	M69	X	-0.09	-0.09	0 %100
40	MP-1	X	-0.02	-0.02	0 %100
41	MP-2	X	-0.02	-0.02	0 %100
42	MP-3	X	-0.02	-0.02	0 %100
43	MP-4	X	-0.02	-0.02	0 %100
44	MP-5	X	-0.02	-0.02	0 %100
45	MP-6	X	-0.02	-0.02	0 %100
46	MP-7	X	-0.02	-0.02	0 %100
47	MP-8	X	-0.02	-0.02	0 %100
48	MP-9	X	-0.02	-0.02	0 %100
49	MP-10	X	-0.02	-0.02	0 %100
50	MP-11	X	-0.02	-0.02	0 %100
51	MP-12	X	-0.02	-0.02	0 %100
52	K1	X	-0.04	-0.04	0 %100
53	K2	X	-0.04	-0.04	0 %100
54	K3	X	-0.04	-0.04	0 %100
55	SA-1	X	-0.04	-0.04	0 %100
56	SA-2	X	-0.04	-0.04	0 %100
57	SA-3	X	-0.04	-0.04	0 %100
58	SR-1	X	-0.03	-0.03	0 %100
59	SR-2	X	-0.02	-0.02	0 %100
60	SR-3	X	-0.02	-0.02	0 %100

Member Distributed Loads (BLC 20 : 30 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
1	AHCP-1	X	-0.02	-0.02	0 %100
2	AHCP-2	X	-0.02	-0.02	0 %100
3	AHCP-3	X	0	0	0 %100
4	CP-1	X	-0.04	-0.04	0 %100
5	CP-2	X	-0.04	-0.04	0 %100
6	CP-3	X	0	0	0 %100
7	M71	X	-0.06	-0.06	0 %100
8	M73	X	-0.06	-0.06	0 %100



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Member Distributed Loads (BLC 20 : 30 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
9	M75	X	-0.06	-0.06	0 %100
10	M77	X	-0.06	-0.06	0 %100
11	M79	X	0	0	0 %100
12	M81	X	0	0	0 %100
13	FF-TH	X	-0.02	-0.02	0 %100
14	SF1-TH	X	0	0	0 %100
15	SF2-TH	X	-0.02	-0.02	0 %100
16	GSIP-1A	X	-0.02	-0.02	0 %100
17	GSIP-1B	X	0	0	0 %100
18	GSIP-2A	X	0	0	0 %100
19	GSIP-2B	X	-0.02	-0.02	0 %100
20	GSIP-3A	X	-0.02	-0.02	0 %100
21	GSIP-3B	X	-0.02	-0.02	0 %100
22	GSI-1A	X	-0.03	-0.03	0 %100
23	GSI-1B	X	-0.03	-0.03	0 %100
24	GSI-2A	X	-0.03	-0.03	0 %100
25	GSI-2B	X	-0.03	-0.03	0 %100
26	GSI-3A	X	0	0	0 %100
27	GSI-3B	X	0	0	0 %100
28	M53	X	-0.03	-0.03	0 %100
29	M54	X	-1.4e-5	-1.4e-5	0 %100
30	M56	X	-0.03	-0.03	0 %100
31	M57	X	-0.07	-0.07	0 %100
32	M59	X	-0.03	-0.03	0 %100
33	M60	X	-0.07	-0.07	0 %100
34	M62	X	-0.03	-0.03	0 %100
35	M63	X	-1.4e-5	-1.4e-5	0 %100
36	M65	X	-0.06	-0.06	0 %100
37	M66	X	-0.07	-0.07	0 %100
38	M68	X	-0.06	-0.06	0 %100
39	M69	X	-0.07	-0.07	0 %100
40	MP-1	X	-0.02	-0.02	0 %100
41	MP-2	X	-0.02	-0.02	0 %100
42	MP-3	X	-0.02	-0.02	0 %100
43	MP-4	X	-0.02	-0.02	0 %100
44	MP-5	X	-0.02	-0.02	0 %100
45	MP-6	X	-0.02	-0.02	0 %100
46	MP-7	X	-0.02	-0.02	0 %100
47	MP-8	X	-0.02	-0.02	0 %100
48	MP-9	X	-0.02	-0.02	0 %100
49	MP-10	X	-0.02	-0.02	0 %100
50	MP-11	X	-0.02	-0.02	0 %100
51	MP-12	X	-0.02	-0.02	0 %100
52	K1	X	-0.04	-0.04	0 %100
53	K2	X	-0.04	-0.04	0 %100
54	K3	X	-0.04	-0.04	0 %100
55	SA-1	X	-0.02	-0.02	0 %100
56	SA-2	X	-0.02	-0.02	0 %100
57	SA-3	X	-0.04	-0.04	0 %100
58	SR-1	X	-0.02	-0.02	0 %100
59	SR-2	X	0	0	0 %100
60	SR-3	X	-0.02	-0.02	0 %100
61	AHCP-1	Z	-0.01	-0.01	0 %100
62	AHCP-2	Z	-0.01	-0.01	0 %100
63	AHCP-3	Z	0	0	0 %100
64	CP-1	Z	-0.02	-0.02	0 %100
65	CP-2	Z	-0.02	-0.02	0 %100



Company : Tower Engineering Professionals, Inc.
 Designer : NPD
 Job Number : TEP No. 94015.587315
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Member Distributed Loads (BLC 20 : 30 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
66	CP-3	Z	0	0	0 %100
67	M71	Z	-0.03	-0.03	0 %100
68	M73	Z	-0.03	-0.03	0 %100
69	M75	Z	-0.03	-0.03	0 %100
70	M77	Z	-0.03	-0.03	0 %100
71	M79	Z	0	0	0 %100
72	M81	Z	0	0	0 %100
73	FF-TH	Z	-0.01	-0.01	0 %100
74	SF1-TH	Z	0	0	0 %100
75	SF2-TH	Z	-0.01	-0.01	0 %100
76	GSIP-1A	Z	-0.01	-0.01	0 %100
77	GSIP-1B	Z	0	0	0 %100
78	GSIP-2A	Z	0	0	0 %100
79	GSIP-2B	Z	-0.01	-0.01	0 %100
80	GSIP-3A	Z	-0.01	-0.01	0 %100
81	GSIP-3B	Z	-0.01	-0.01	0 %100
82	GSI-1A	Z	-0.02	-0.02	0 %100
83	GSI-1B	Z	-0.02	-0.02	0 %100
84	GSI-2A	Z	-0.02	-0.02	0 %100
85	GSI-2B	Z	-0.02	-0.02	0 %100
86	GSI-3A	Z	0	0	0 %100
87	GSI-3B	Z	0	0	0 %100
88	M53	Z	-0.02	-0.02	0 %100
89	M54	Z	-8e-6	-8e-6	0 %100
90	M56	Z	-0.02	-0.02	0 %100
91	M57	Z	-0.04	-0.04	0 %100
92	M59	Z	-0.02	-0.02	0 %100
93	M60	Z	-0.04	-0.04	0 %100
94	M62	Z	-0.02	-0.02	0 %100
95	M63	Z	-8e-6	-8e-6	0 %100
96	M65	Z	-0.03	-0.03	0 %100
97	M66	Z	-0.04	-0.04	0 %100
98	M68	Z	-0.03	-0.03	0 %100
99	M69	Z	-0.04	-0.04	0 %100
100	MP-1	Z	-0.01	-0.01	0 %100
101	MP-2	Z	-0.01	-0.01	0 %100
102	MP-3	Z	-0.01	-0.01	0 %100
103	MP-4	Z	-0.01	-0.01	0 %100
104	MP-5	Z	-0.01	-0.01	0 %100
105	MP-6	Z	-0.01	-0.01	0 %100
106	MP-7	Z	-0.01	-0.01	0 %100
107	MP-8	Z	-0.01	-0.01	0 %100
108	MP-9	Z	-0.01	-0.01	0 %100
109	MP-10	Z	-0.01	-0.01	0 %100
110	MP-11	Z	-0.01	-0.01	0 %100
111	MP-12	Z	-0.01	-0.01	0 %100
112	K1	Z	-0.02	-0.02	0 %100
113	K2	Z	-0.02	-0.02	0 %100
114	K3	Z	-0.02	-0.02	0 %100
115	SA-1	Z	-0.00967	-0.00967	0 %100
116	SA-2	Z	-0.01	-0.01	0 %100
117	SA-3	Z	-0.02	-0.02	0 %100
118	SR-1	Z	-0.00989	-0.00989	0 %100
119	SR-2	Z	0	0	0 %100
120	SR-3	Z	-0.01	-0.01	0 %100



Company : Tower Engineering Professionals, Inc.
 Designer : NPD
 Job Number : TEP No. 94015.587315
 Model Name : 302528 - Columbia Central

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Member Distributed Loads (BLC 21 : 45 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
1	AHCP-1	X	-0.02	-0.02	0 %100
2	AHCP-2	X	-0.02	-0.02	0 %100
3	AHCP-3	X	-0.00054	-0.00054	0 %100
4	CP-1	X	-0.04	-0.04	0 %100
5	CP-2	X	-0.03	-0.03	0 %100
6	CP-3	X	-0.00987	-0.00987	0 %100
7	M71	X	-0.04	-0.04	0 %100
8	M73	X	-0.04	-0.04	0 %100
9	M75	X	-0.05	-0.05	0 %100
10	M77	X	-0.05	-0.05	0 %100
11	M79	X	-0.01	-0.01	0 %100
12	M81	X	-0.01	-0.01	0 %100
13	FF-TH	X	-0.02	-0.02	0 %100
14	SF1-TH	X	-0.00454	-0.00454	0 %100
15	SF2-TH	X	-0.02	-0.02	0 %100
16	GSI-1A	X	-0.02	-0.02	0 %100
17	GSI-1B	X	-0.00502	-0.00502	0 %100
18	GSI-2A	X	-0.00502	-0.00502	0 %100
19	GSI-2B	X	-0.02	-0.02	0 %100
20	GSI-3A	X	-0.02	-0.02	0 %100
21	GSI-3B	X	-0.02	-0.02	0 %100
22	GSI-1A	X	-0.03	-0.03	0 %100
23	GSI-1B	X	-0.03	-0.03	0 %100
24	GSI-2A	X	-0.02	-0.02	0 %100
25	GSI-2B	X	-0.02	-0.02	0 %100
26	GSI-3A	X	-0.00671	-0.00671	0 %100
27	GSI-3B	X	-0.00671	-0.00671	0 %100
28	M53	X	-0.03	-0.03	0 %100
29	M54	X	-0.02	-0.02	0 %100
30	M56	X	-0.03	-0.03	0 %100
31	M57	X	-0.06	-0.06	0 %100
32	M59	X	-0.01	-0.01	0 %100
33	M60	X	-0.05	-0.05	0 %100
34	M62	X	-0.01	-0.01	0 %100
35	M63	X	-0.02	-0.02	0 %100
36	M65	X	-0.05	-0.05	0 %100
37	M66	X	-0.06	-0.06	0 %100
38	M68	X	-0.05	-0.05	0 %100
39	M69	X	-0.05	-0.05	0 %100
40	MP-1	X	-0.02	-0.02	0 %100
41	MP-2	X	-0.02	-0.02	0 %100
42	MP-3	X	-0.02	-0.02	0 %100
43	MP-4	X	-0.02	-0.02	0 %100
44	MP-5	X	-0.02	-0.02	0 %100
45	MP-6	X	-0.02	-0.02	0 %100
46	MP-7	X	-0.02	-0.02	0 %100
47	MP-8	X	-0.02	-0.02	0 %100
48	MP-9	X	-0.02	-0.02	0 %100
49	MP-10	X	-0.02	-0.02	0 %100
50	MP-11	X	-0.02	-0.02	0 %100
51	MP-12	X	-0.02	-0.02	0 %100
52	K1	X	-0.03	-0.03	0 %100
53	K2	X	-0.03	-0.03	0 %100
54	K3	X	-0.03	-0.03	0 %100
55	SA-1	X	-0.000783	-0.000783	0 %100
56	SA-2	X	-0.02	-0.02	0 %100
57	SA-3	X	-0.03	-0.03	0 %100



Company : Tower Engineering Professionals, Inc.
 Designer : NPD
 Job Number : TEP No. 94015.587315
 Model Name : 302528 - Columbia Central

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Member Distributed Loads (BLC 21 : 45 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
58	SR-1	X	-0.01	-0.01	0 %100
59	SR-2	X	-0.000393	-0.000393	0 %100
60	SR-3	X	-0.01	-0.01	0 %100
61	AHCP-1	Z	-0.02	-0.02	0 %100
62	AHCP-2	Z	-0.01	-0.01	0 %100
63	AHCP-3	Z	-0.00554	-0.00554	0 %100
64	CP-1	Z	-0.04	-0.04	0 %100
65	CP-2	Z	-0.02	-0.02	0 %100
66	CP-3	Z	-0.00987	-0.00987	0 %100
67	M71	Z	-0.04	-0.04	0 %100
68	M73	Z	-0.04	-0.04	0 %100
69	M75	Z	-0.05	-0.05	0 %100
70	M77	Z	-0.05	-0.05	0 %100
71	M79	Z	-0.01	-0.01	0 %100
72	M81	Z	-0.01	-0.01	0 %100
73	FF-TH	Z	-0.01	-0.01	0 %100
74	SF1-TH	Z	-0.00556	-0.00556	0 %100
75	SF2-TH	Z	-0.02	-0.02	0 %100
76	GSI-1A	Z	-0.01	-0.01	0 %100
77	GSI-1B	Z	-0.00556	-0.00556	0 %100
78	GSI-2A	Z	-0.00556	-0.00556	0 %100
79	GSI-2B	Z	-0.02	-0.02	0 %100
80	GSI-3A	Z	-0.02	-0.02	0 %100
81	GSI-3B	Z	-0.01	-0.01	0 %100
82	GSI-1A	Z	-0.03	-0.03	0 %100
83	GSI-1B	Z	-0.03	-0.03	0 %100
84	GSI-2A	Z	-0.02	-0.02	0 %100
85	GSI-2B	Z	-0.02	-0.02	0 %100
86	GSI-3A	Z	-0.00712	-0.00712	0 %100
87	GSI-3B	Z	-0.00712	-0.00712	0 %100
88	M53	Z	-0.03	-0.03	0 %100
89	M54	Z	-0.02	-0.02	0 %100
90	M56	Z	-0.03	-0.03	0 %100
91	M57	Z	-0.06	-0.06	0 %100
92	M59	Z	-0.01	-0.01	0 %100
93	M60	Z	-0.05	-0.05	0 %100
94	M62	Z	-0.01	-0.01	0 %100
95	M63	Z	-0.02	-0.02	0 %100
96	M65	Z	-0.05	-0.05	0 %100
97	M66	Z	-0.06	-0.06	0 %100
98	M68	Z	-0.05	-0.05	0 %100
99	M69	Z	-0.05	-0.05	0 %100
100	MP-1	Z	-0.02	-0.02	0 %100
101	MP-2	Z	-0.02	-0.02	0 %100
102	MP-3	Z	-0.02	-0.02	0 %100
103	MP-4	Z	-0.02	-0.02	0 %100
104	MP-5	Z	-0.02	-0.02	0 %100
105	MP-6	Z	-0.02	-0.02	0 %100
106	MP-7	Z	-0.02	-0.02	0 %100
107	MP-8	Z	-0.02	-0.02	0 %100
108	MP-9	Z	-0.02	-0.02	0 %100
109	MP-10	Z	-0.02	-0.02	0 %100
110	MP-11	Z	-0.02	-0.02	0 %100
111	MP-12	Z	-0.02	-0.02	0 %100
112	K1	Z	-0.03	-0.03	0 %100
113	K2	Z	-0.03	-0.03	0 %100
114	K3	Z	-0.03	-0.03	0 %100



Company : Tower Engineering Professionals, Inc.
 Designer : NPD
 Job Number : TEP No. 94015.587315
 Model Name : 302528 - Columbia Central

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Member Distributed Loads (BLC 21 : 45 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
115	SA-1	Z	-0.00708	-0.00708	0 %100
116	SA-2	Z	-0.002	-0.002	0 %100
117	SA-3	Z	-0.003	-0.003	0 %100
118	SR-1	Z	-0.001	-0.001	0 %100
119	SR-2	Z	-0.00464	-0.00464	0 %100
120	SR-3	Z	-0.002	-0.002	0 %100

Member Distributed Loads (BLC 22 : 60 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
1	AHCP-1	X	-0.001	-0.001	0 %100
2	AHCP-2	X	-0.000769	-0.000769	0 %100
3	AHCP-3	X	-0.000737	-0.000737	0 %100
4	CP-1	X	-0.003	-0.003	0 %100
5	CP-2	X	-0.001	-0.001	0 %100
6	CP-3	X	-0.001	-0.001	0 %100
7	M71	X	-0.002	-0.002	0 %100
8	M73	X	-0.002	-0.002	0 %100
9	M75	X	-0.004	-0.004	0 %100
10	M77	X	-0.004	-0.004	0 %100
11	M79	X	-0.002	-0.002	0 %100
12	M81	X	-0.002	-0.002	0 %100
13	FF-TH	X	-0.000789	-0.000789	0 %100
14	SF1-TH	X	-0.00062	-0.00062	0 %100
15	SF2-TH	X	-0.001	-0.001	0 %100
16	GSI-1A	X	-0.000785	-0.000785	0 %100
17	GSI-1B	X	-0.000685	-0.000685	0 %100
18	GSI-2A	X	-0.000685	-0.000685	0 %100
19	GSI-2B	X	-0.001	-0.001	0 %100
20	GSI-3A	X	-0.001	-0.001	0 %100
21	GSI-3B	X	-0.000785	-0.000785	0 %100
22	GSI-1A	X	-0.002	-0.002	0 %100
23	GSI-1B	X	-0.002	-0.002	0 %100
24	GSI-2A	X	-0.000993	-0.000993	0 %100
25	GSI-2B	X	-0.000993	-0.000993	0 %100
26	GSI-3A	X	-0.000916	-0.000916	0 %100
27	GSI-3B	X	-0.000916	-0.000916	0 %100
28	M53	X	-0.003	-0.003	0 %100
29	M54	X	-0.002	-0.002	0 %100
30	M56	X	-0.003	-0.003	0 %100
31	M57	X	-0.005	-0.005	0 %100
32	M59	X	0	0	0 %100
33	M60	X	-0.002	-0.002	0 %100
34	M62	X	0	0	0 %100
35	M63	X	-0.002	-0.002	0 %100
36	M65	X	-0.003	-0.003	0 %100
37	M66	X	-0.005	-0.005	0 %100
38	M68	X	-0.003	-0.003	0 %100
39	M69	X	-0.002	-0.002	0 %100
40	MP-1	X	-0.001	-0.001	0 %100
41	MP-2	X	-0.001	-0.001	0 %100
42	MP-3	X	-0.001	-0.001	0 %100
43	MP-4	X	-0.001	-0.001	0 %100
44	MP-5	X	-0.001	-0.001	0 %100
45	MP-6	X	-0.001	-0.001	0 %100
46	MP-7	X	-0.001	-0.001	0 %100
47	MP-8	X	-0.001	-0.001	0 %100



Company : Tower Engineering Professionals, Inc.
 Designer : NPD
 Job Number : TEP No. 94015.587315
 Model Name : 302528 - Columbia Central

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Member Distributed Loads (BLC 22 : 60 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
48	MP-9	X	-0.001	-0.001	0 %100
49	MP-10	X	-0.001	-0.001	0 %100
50	MP-11	X	-0.001	-0.001	0 %100
51	MP-12	X	-0.001	-0.001	0 %100
52	K1	X	-0.002	-0.002	0 %100
53	K2	X	-0.002	-0.002	0 %100
54	K3	X	-0.002	-0.002	0 %100
55	SA-1	X	0	0	0 %100
56	SA-2	X	-0.002	-0.002	0 %100
57	SA-3	X	-0.002	-0.002	0 %100
58	SR-1	X	-0.000634	-0.000634	0 %100
59	SR-2	X	-0.000537	-0.000537	0 %100
60	SR-3	X	-0.001	-0.001	0 %100
61	AHCP-1	Z	-0.003	-0.003	0 %100
62	AHCP-2	Z	-0.001	-0.001	0 %100
63	AHCP-3	Z	-0.001	-0.001	0 %100
64	CP-1	Z	-0.005	-0.005	0 %100
65	CP-2	Z	-0.002	-0.002	0 %100
66	CP-3	Z	-0.002	-0.002	0 %100
67	M71	Z	-0.003	-0.003	0 %100
68	M73	Z	-0.003	-0.003	0 %100
69	M75	Z	-0.007	-0.007	0 %100
70	M77	Z	-0.007	-0.007	0 %100
71	M79	Z	-0.003	-0.003	0 %100
72	M81	Z	-0.003	-0.003	0 %100
73	FF-TH	Z	-0.001	-0.001	0 %100
74	SF1-TH	Z	-0.001	-0.001	0 %100
75	SF2-TH	Z	-0.003	-0.003	0 %100
76	GSI-1A	Z	-0.001	-0.001	0 %100
77	GSI-1B	Z	-0.001	-0.001	0 %100
78	GSI-2A	Z	-0.001	-0.001	0 %100
79	GSI-2B	Z	-0.003	-0.003	0 %100
80	GSI-3A	Z	-0.003	-0.003	0 %100
81	GSI-3B	Z	-0.001	-0.001	0 %100
82	GSI-1A	Z	-0.003	-0.003	0 %100
83	GSI-1B	Z	-0.003	-0.003	0 %100
84	GSI-2A	Z	-0.002	-0.002	0 %100
85	GSI-2B	Z	-0.002	-0.002	0 %100
86	GSI-3A	Z	-0.002	-0.002	0 %100
87	GSI-3B	Z	-0.002	-0.002	0 %100
88	M53	Z	-0.005	-0.005	0 %100
89	M54	Z	-0.004	-0.004	0 %100
90	M56	Z	-0.005	-0.005	0 %100
91	M57	Z	-0.008	-0.008	0 %100
92	M59	Z	0	0	0 %100
93	M60	Z	-0.004	-0.004	0 %100
94	M62	Z	0	0	0 %100
95	M63	Z	-0.004	-0.004	0 %100
96	M65	Z	-0.005	-0.005	0 %100
97	M66	Z	-0.008	-0.008	0 %100
98	M68	Z	-0.005	-0.005	0 %100
99	M69	Z	-0.004	-0.004	0 %100
100	MP-1	Z	-0.002	-0.002	0 %100
101	MP-2	Z	-0.002	-0.002	0 %100
102	MP-3	Z	-0.002	-0.002	0 %100
103	MP-4	Z	-0.002	-0.002	0 %100
104	MP-5	Z	-0.002	-0.002	0 %100



Company : Tower Engineering Professionals, Inc.
 Designer : NPD
 Job Number : TEP No. 94015.587315
 Model Name : 302528 - Columbia Central

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Member Distributed Loads (BLC 22 : 60 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
105	MP-6	Z	-0.02	-0.02	0 %100
106	MP-7	Z	-0.02	-0.02	0 %100
107	MP-8	Z	-0.02	-0.02	0 %100
108	MP-9	Z	-0.02	-0.02	0 %100
109	MP-10	Z	-0.02	-0.02	0 %100
110	MP-11	Z	-0.02	-0.02	0 %100
111	MP-12	Z	-0.02	-0.02	0 %100
112	K1	Z	-0.04	-0.04	0 %100
113	K2	Z	-0.04	-0.04	0 %100
114	K3	Z	-0.04	-0.04	0 %100
115	SA-1	Z	0	0	0 %100
116	SA-2	Z	-0.03	-0.03	0 %100
117	SA-3	Z	-0.03	-0.03	0 %100
118	SR-1	Z	-0.00989	-0.00989	0 %100
119	SR-2	Z	-0.01	-0.01	0 %100
120	SR-3	Z	-0.02	-0.02	0 %100

Member Distributed Loads (BLC 23 : 90 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
1	AHCP-1	Z	-0.03	-0.03	0 %100
2	AHCP-2	Z	0	0	0 %100
3	AHCP-3	Z	-0.03	-0.03	0 %100
4	CP-1	Z	-0.05	-0.05	0 %100
5	CP-2	Z	0	0	0 %100
6	CP-3	Z	-0.05	-0.05	0 %100
7	M71	Z	0	0	0 %100
8	M73	Z	0	0	0 %100
9	M75	Z	-0.07	-0.07	0 %100
10	M77	Z	-0.07	-0.07	0 %100
11	M79	Z	-0.07	-0.07	0 %100
12	M81	Z	-0.07	-0.07	0 %100
13	FF-TH	Z	0	0	0 %100
14	SF1-TH	Z	-0.03	-0.03	0 %100
15	SF2-TH	Z	-0.03	-0.03	0 %100
16	GSI-1A	Z	0	0	0 %100
17	GSI-1B	Z	-0.03	-0.03	0 %100
18	GSI-2A	Z	-0.03	-0.03	0 %100
19	GSI-2B	Z	-0.03	-0.03	0 %100
20	GSI-3A	Z	-0.03	-0.03	0 %100
21	GSI-3B	Z	0	0	0 %100
22	GSI-1A	Z	-0.03	-0.03	0 %100
23	GSI-1B	Z	-0.03	-0.03	0 %100
24	GSI-2A	Z	0	0	0 %100
25	GSI-2B	Z	0	0	0 %100
26	GSI-3A	Z	-0.03	-0.03	0 %100
27	GSI-3B	Z	-0.03	-0.03	0 %100
28	M53	Z	-0.07	-0.07	0 %100
29	M54	Z	-0.08	-0.08	0 %100
30	M56	Z	-0.07	-0.07	0 %100
31	M57	Z	-0.08	-0.08	0 %100
32	M59	Z	-0.03	-0.03	0 %100
33	M60	Z	-1.6e-5	-1.6e-5	0 %100
34	M62	Z	-0.03	-0.03	0 %100
35	M63	Z	-0.08	-0.08	0 %100
36	M65	Z	-0.03	-0.03	0 %100
37	M66	Z	-0.08	-0.08	0 %100



Company : Tower Engineering Professionals, Inc.
 Designer : NPD
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Member Distributed Loads (BLC 23 : 90 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
38	M68	Z	-0.03	-0.03	0 %100
39	M69	Z	-1.6e-5	-1.6e-5	0 %100
40	MP-1	Z	-0.02	-0.02	0 %100
41	MP-2	Z	-0.02	-0.02	0 %100
42	MP-3	Z	-0.02	-0.02	0 %100
43	MP-4	Z	-0.02	-0.02	0 %100
44	MP-5	Z	-0.02	-0.02	0 %100
45	MP-6	Z	-0.02	-0.02	0 %100
46	MP-7	Z	-0.02	-0.02	0 %100
47	MP-8	Z	-0.02	-0.02	0 %100
48	MP-9	Z	-0.02	-0.02	0 %100
49	MP-10	Z	-0.02	-0.02	0 %100
50	MP-11	Z	-0.02	-0.02	0 %100
51	MP-12	Z	-0.02	-0.02	0 %100
52	K1	Z	-0.05	-0.05	0 %100
53	K2	Z	-0.05	-0.05	0 %100
54	K3	Z	-0.05	-0.05	0 %100
55	SA-1	Z	-0.02	-0.02	0 %100
56	SA-2	Z	-0.04	-0.04	0 %100
57	SA-3	Z	-0.02	-0.02	0 %100
58	SR-1	Z	0	0	0 %100
59	SR-2	Z	-0.02	-0.02	0 %100
60	SR-3	Z	-0.02	-0.02	0 %100

Member Distributed Loads (BLC 24 : 120 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
1	AHCP-1	X	.000737	.000737	0 %100
2	AHCP-2	X	.000769	.000769	0 %100
3	AHCP-3	X	.001	.001	0 %100
4	CP-1	X	.001	.001	0 %100
5	CP-2	X	.001	.001	0 %100
6	CP-3	X	.003	.003	0 %100
7	M71	X	.002	.002	0 %100
8	M73	X	.002	.002	0 %100
9	M75	X	.002	.002	0 %100
10	M77	X	.002	.002	0 %100
11	M79	X	.004	.004	0 %100
12	M81	X	.004	.004	0 %100
13	FF-TH	X	.000789	.000789	0 %100
14	SF1-TH	X	.001	.001	0 %100
15	SF2-TH	X	.00062	.00062	0 %100
16	GSI-1A	X	.000785	.000785	0 %100
17	GSI-1B	X	.001	.001	0 %100
18	GSI-2A	X	.001	.001	0 %100
19	GSI-2B	X	.000685	.000685	0 %100
20	GSI-3A	X	.000685	.000685	0 %100
21	GSI-3B	X	.000785	.000785	0 %100
22	GSI-1A	X	.000916	.000916	0 %100
23	GSI-1B	X	.000916	.000916	0 %100
24	GSI-2A	X	.000993	.000993	0 %100
25	GSI-2B	X	.000993	.000993	0 %100
26	GSI-3A	X	.002	.002	0 %100
27	GSI-3B	X	.002	.002	0 %100
28	M53	X	.003	.003	0 %100
29	M54	X	.005	.005	0 %100
30	M56	X	.003	.003	0 %100



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Member Distributed Loads (BLC 24 : 120 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
31	M57	X	.002	.002	0 %100
32	M59	X	.003	.003	0 %100
33	M60	X	.002	.002	0 %100
34	M62	X	.003	.003	0 %100
35	M63	X	.005	.005	0 %100
36	M65	X	0	0	0 %100
37	M66	X	.002	.002	0 %100
38	M68	X	0	0	0 %100
39	M69	X	.002	.002	0 %100
40	MP-1	X	.001	.001	0 %100
41	MP-2	X	.001	.001	0 %100
42	MP-3	X	.001	.001	0 %100
43	MP-4	X	.001	.001	0 %100
44	MP-5	X	.001	.001	0 %100
45	MP-6	X	.001	.001	0 %100
46	MP-7	X	.001	.001	0 %100
47	MP-8	X	.001	.001	0 %100
48	MP-9	X	.001	.001	0 %100
49	MP-10	X	.001	.001	0 %100
50	MP-11	X	.001	.001	0 %100
51	MP-12	X	.001	.001	0 %100
52	K1	X	.002	.002	0 %100
53	K2	X	.002	.002	0 %100
54	K3	X	.002	.002	0 %100
55	SA-1	X	.002	.002	0 %100
56	SA-2	X	.002	.002	0 %100
57	SA-3	X	0	0	0 %100
58	SR-1	X	.000634	.000634	0 %100
59	SR-2	X	.001	.001	0 %100
60	SR-3	X	.000537	.000537	0 %100
61	AHCP-1	Z	-.001	-.001	0 %100
62	AHCP-2	Z	-.001	-.001	0 %100
63	AHCP-3	Z	-.003	-.003	0 %100
64	CP-1	Z	-.002	-.002	0 %100
65	CP-2	Z	-.002	-.002	0 %100
66	CP-3	Z	-.005	-.005	0 %100
67	M71	Z	-.003	-.003	0 %100
68	M73	Z	-.003	-.003	0 %100
69	M75	Z	-.003	-.003	0 %100
70	M77	Z	-.003	-.003	0 %100
71	M79	Z	-.007	-.007	0 %100
72	M81	Z	-.007	-.007	0 %100
73	FF-TH	Z	-.001	-.001	0 %100
74	SF1-TH	Z	-.003	-.003	0 %100
75	SF2-TH	Z	-.001	-.001	0 %100
76	GSIP-1A	Z	-.001	-.001	0 %100
77	GSIP-1B	Z	-.003	-.003	0 %100
78	GSIP-2A	Z	-.003	-.003	0 %100
79	GSIP-2B	Z	-.001	-.001	0 %100
80	GSIP-3A	Z	-.001	-.001	0 %100
81	GSIP-3B	Z	-.001	-.001	0 %100
82	GSI-1A	Z	-.002	-.002	0 %100
83	GSI-1B	Z	-.002	-.002	0 %100
84	GSI-2A	Z	-.002	-.002	0 %100
85	GSI-2B	Z	-.002	-.002	0 %100
86	GSI-3A	Z	-.003	-.003	0 %100
87	GSI-3B	Z	-.003	-.003	0 %100



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Member Distributed Loads (BLC 24 : 120 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
88	M53	Z	-.005	-.005	0 %100
89	M54	Z	-.008	-.008	0 %100
90	M56	Z	-.005	-.005	0 %100
91	M57	Z	-.004	-.004	0 %100
92	M59	Z	-.005	-.005	0 %100
93	M60	Z	-.004	-.004	0 %100
94	M62	Z	-.005	-.005	0 %100
95	M63	Z	-.008	-.008	0 %100
96	M65	Z	0	0	0 %100
97	M66	Z	-.004	-.004	0 %100
98	M68	Z	0	0	0 %100
99	M69	Z	-.004	-.004	0 %100
100	MP-1	Z	-.002	-.002	0 %100
101	MP-2	Z	-.002	-.002	0 %100
102	MP-3	Z	-.002	-.002	0 %100
103	MP-4	Z	-.002	-.002	0 %100
104	MP-5	Z	-.002	-.002	0 %100
105	MP-6	Z	-.002	-.002	0 %100
106	MP-7	Z	-.002	-.002	0 %100
107	MP-8	Z	-.002	-.002	0 %100
108	MP-9	Z	-.002	-.002	0 %100
109	MP-10	Z	-.002	-.002	0 %100
110	MP-11	Z	-.002	-.002	0 %100
111	MP-12	Z	-.002	-.002	0 %100
112	K1	Z	-.004	-.004	0 %100
113	K2	Z	-.004	-.004	0 %100
114	K3	Z	-.004	-.004	0 %100
115	SA-1	Z	-.003	-.003	0 %100
116	SA-2	Z	-.003	-.003	0 %100
117	SA-3	Z	0	0	0 %100
118	SR-1	Z	-.000989	-.000989	0 %100
119	SR-2	Z	-.002	-.002	0 %100
120	SR-3	Z	-.001	-.001	0 %100

Member Distributed Loads (BLC 25 : 135 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
1	AHCP-1	X	.00054	.00054	0 %100
2	AHCP-2	X	.002	.002	0 %100
3	AHCP-3	X	.002	.002	0 %100
4	CP-1	X	.000987	.000987	0 %100
5	CP-2	X	.003	.003	0 %100
6	CP-3	X	.004	.004	0 %100
7	M71	X	.004	.004	0 %100
8	M73	X	.004	.004	0 %100
9	M75	X	.001	.001	0 %100
10	M77	X	.001	.001	0 %100
11	M79	X	.005	.005	0 %100
12	M81	X	.005	.005	0 %100
13	FF-TH	X	.002	.002	0 %100
14	SF1-TH	X	.002	.002	0 %100
15	SF2-TH	X	.000454	.000454	0 %100
16	GSIP-1A	X	.002	.002	0 %100
17	GSIP-1B	X	.002	.002	0 %100
18	GSIP-2A	X	.002	.002	0 %100
19	GSIP-2B	X	.000502	.000502	0 %100
20	GSIP-3A	X	.000502	.000502	0 %100



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Member Distributed Loads (BLC 25 : 135 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
21	GSIP-3B	X	.002	.002	0 %100
22	GSI-1A	X	.000671	.000671	0 %100
23	GSI-1B	X	.000671	.000671	0 %100
24	GSI-2A	X	.002	.002	0 %100
25	GSI-2B	X	.002	.002	0 %100
26	GSI-3A	X	.003	.003	0 %100
27	GSI-3B	X	.003	.003	0 %100
28	M53	X	.003	.003	0 %100
29	M54	X	.006	.006	0 %100
30	M56	X	.003	.003	0 %100
31	M57	X	.002	.002	0 %100
32	M59	X	.005	.005	0 %100
33	M60	X	.005	.005	0 %100
34	M62	X	.005	.005	0 %100
35	M63	X	.006	.006	0 %100
36	M65	X	.001	.001	0 %100
37	M66	X	.002	.002	0 %100
38	M68	X	.001	.001	0 %100
39	M69	X	.005	.005	0 %100
40	MP-1	X	.002	.002	0 %100
41	MP-2	X	.002	.002	0 %100
42	MP-3	X	.002	.002	0 %100
43	MP-4	X	.002	.002	0 %100
44	MP-5	X	.002	.002	0 %100
45	MP-6	X	.002	.002	0 %100
46	MP-7	X	.002	.002	0 %100
47	MP-8	X	.002	.002	0 %100
48	MP-9	X	.002	.002	0 %100
49	MP-10	X	.002	.002	0 %100
50	MP-11	X	.002	.002	0 %100
51	MP-12	X	.002	.002	0 %100
52	K1	X	.003	.003	0 %100
53	K2	X	.003	.003	0 %100
54	K3	X	.003	.003	0 %100
55	SA-1	X	.003	.003	0 %100
56	SA-2	X	.002	.002	0 %100
57	SA-3	X	.000783	.000783	0 %100
58	SR-1	X	.001	.001	0 %100
59	SR-2	X	.001	.001	0 %100
60	SR-3	X	.000393	.000393	0 %100
61	AHCP-1	Z	-.000554	-.000554	0 %100
62	AHCP-2	Z	-.001	-.001	0 %100
63	AHCP-3	Z	-.002	-.002	0 %100
64	CP-1	Z	-.000987	-.000987	0 %100
65	CP-2	Z	-.002	-.002	0 %100
66	CP-3	Z	-.004	-.004	0 %100
67	M71	Z	-.004	-.004	0 %100
68	M73	Z	-.004	-.004	0 %100
69	M75	Z	-.001	-.001	0 %100
70	M77	Z	-.001	-.001	0 %100
71	M79	Z	-.005	-.005	0 %100
72	M81	Z	-.005	-.005	0 %100
73	FF-TH	Z	-.001	-.001	0 %100
74	SF1-TH	Z	-.002	-.002	0 %100
75	SF2-TH	Z	-.000556	-.000556	0 %100
76	GSIP-1A	Z	-.001	-.001	0 %100
77	GSIP-1B	Z	-.002	-.002	0 %100



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Member Distributed Loads (BLC 25 : 135 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
78	GSIP-2A	Z	-.002	-.002	0 %100
79	GSIP-2B	Z	-.000556	-.000556	0 %100
80	GSIP-3A	Z	-.000556	-.000556	0 %100
81	GSIP-3B	Z	-.001	-.001	0 %100
82	GSI-1A	Z	-.000712	-.000712	0 %100
83	GSI-1B	Z	-.000712	-.000712	0 %100
84	GSI-2A	Z	-.002	-.002	0 %100
85	GSI-2B	Z	-.002	-.002	0 %100
86	GSI-3A	Z	-.003	-.003	0 %100
87	GSI-3B	Z	-.003	-.003	0 %100
88	M53	Z	-.003	-.003	0 %100
89	M54	Z	-.006	-.006	0 %100
90	M56	Z	-.003	-.003	0 %100
91	M57	Z	-.002	-.002	0 %100
92	M59	Z	-.005	-.005	0 %100
93	M60	Z	-.005	-.005	0 %100
94	M62	Z	-.005	-.005	0 %100
95	M63	Z	-.006	-.006	0 %100
96	M65	Z	-.001	-.001	0 %100
97	M66	Z	-.002	-.002	0 %100
98	M68	Z	-.001	-.001	0 %100
99	M69	Z	-.005	-.005	0 %100
100	MP-1	Z	-.002	-.002	0 %100
101	MP-2	Z	-.002	-.002	0 %100
102	MP-3	Z	-.002	-.002	0 %100
103	MP-4	Z	-.002	-.002	0 %100
104	MP-5	Z	-.002	-.002	0 %100
105	MP-6	Z	-.002	-.002	0 %100
106	MP-7	Z	-.002	-.002	0 %100
107	MP-8	Z	-.002	-.002	0 %100
108	MP-9	Z	-.002	-.002	0 %100
109	MP-10	Z	-.002	-.002	0 %100
110	MP-11	Z	-.002	-.002	0 %100
111	MP-12	Z	-.002	-.002	0 %100
112	K1	Z	-.003	-.003	0 %100
113	K2	Z	-.003	-.003	0 %100
114	K3	Z	-.003	-.003	0 %100
115	SA-1	Z	-.003	-.003	0 %100
116	SA-2	Z	-.002	-.002	0 %100
117	SA-3	Z	-.000708	-.000708	0 %100
118	SR-1	Z	-.001	-.001	0 %100
119	SR-2	Z	-.002	-.002	0 %100
120	SR-3	Z	-.000464	-.000464	0 %100

Member Distributed Loads (BLC 26 : 150 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
1	AHCP-1	X	0	0	0 %100
2	AHCP-2	X	.002	.002	0 %100
3	AHCP-3	X	.002	.002	0 %100
4	CP-1	X	0	0	0 %100
5	CP-2	X	.004	.004	0 %100
6	CP-3	X	.004	.004	0 %100
7	M71	X	.006	.006	0 %100
8	M73	X	.006	.006	0 %100
9	M75	X	0	0	0 %100
10	M77	X	0	0	0 %100



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 Designer : NPD
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Member Distributed Loads (BLC 26 : 150 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....	End Magnitude[k/ft.F...	Start Loca...	End Location[ft.%]
11	M79	X	.006	.006	0 %100
12	M81	X	.006	.006	0 %100
13	FF-TH	X	.002	.002	0 %100
14	SF1-TH	X	.002	.002	0 %100
15	SF2-TH	X	0	0	0 %100
16	GSIP-1A	X	.002	.002	0 %100
17	GSIP-1B	X	.002	.002	0 %100
18	GSIP-2A	X	.002	.002	0 %100
19	GSIP-2B	X	0	0	0 %100
20	GSIP-3A	X	0	0	0 %100
21	GSIP-3B	X	.002	.002	0 %100
22	GSI-1A	X	0	0	0 %100
23	GSI-1B	X	0	0	0 %100
24	GSI-2A	X	.003	.003	0 %100
25	GSI-2B	X	.003	.003	0 %100
26	GSI-3A	X	.003	.003	0 %100
27	GSI-3B	X	.003	.003	0 %100
28	M53	X	.003	.003	0 %100
29	M54	X	.007	.007	0 %100
30	M56	X	.003	.003	0 %100
31	M57	X	1.4e-5	1.4e-5	0 %100
32	M59	X	.006	.006	0 %100
33	M60	X	.007	.007	0 %100
34	M62	X	.006	.006	0 %100
35	M63	X	.007	.007	0 %100
36	M65	X	.003	.003	0 %100
37	M66	X	1.4e-5	1.4e-5	0 %100
38	M68	X	.003	.003	0 %100
39	M69	X	.007	.007	0 %100
40	MP-1	X	.002	.002	0 %100
41	MP-2	X	.002	.002	0 %100
42	MP-3	X	.002	.002	0 %100
43	MP-4	X	.002	.002	0 %100
44	MP-5	X	.002	.002	0 %100
45	MP-6	X	.002	.002	0 %100
46	MP-7	X	.002	.002	0 %100
47	MP-8	X	.002	.002	0 %100
48	MP-9	X	.002	.002	0 %100
49	MP-10	X	.002	.002	0 %100
50	MP-11	X	.002	.002	0 %100
51	MP-12	X	.002	.002	0 %100
52	K1	X	.004	.004	0 %100
53	K2	X	.004	.004	0 %100
54	K3	X	.004	.004	0 %100
55	SA-1	X	.004	.004	0 %100
56	SA-2	X	.002	.002	0 %100
57	SA-3	X	.002	.002	0 %100
58	SR-1	X	.002	.002	0 %100
59	SR-2	X	.002	.002	0 %100
60	SR-3	X	0	0	0 %100
61	AHCP-1	Z	0	0	0 %100
62	AHCP-2	Z	-.001	-.001	0 %100
63	AHCP-3	Z	-.001	-.001	0 %100
64	CP-1	Z	0	0	0 %100
65	CP-2	Z	-.002	-.002	0 %100
66	CP-3	Z	-.002	-.002	0 %100
67	M71	Z	-.003	-.003	0 %100



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Member Distributed Loads (BLC 26 : 150 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....	End Magnitude[k/ft.F...	Start Loca...	End Location[ft.%]
68	M73	Z	-.003	-.003	0 %100
69	M75	Z	0	0	0 %100
70	M77	Z	0	0	0 %100
71	M79	Z	-.003	-.003	0 %100
72	M81	Z	-.003	-.003	0 %100
73	FF-TH	Z	-.001	-.001	0 %100
74	SF1-TH	Z	-.001	-.001	0 %100
75	SF2-TH	Z	0	0	0 %100
76	GSIP-1A	Z	-.001	-.001	0 %100
77	GSIP-1B	Z	-.001	-.001	0 %100
78	GSIP-2A	Z	-.001	-.001	0 %100
79	GSIP-2B	Z	0	0	0 %100
80	GSIP-3A	Z	0	0	0 %100
81	GSIP-3B	Z	-.001	-.001	0 %100
82	GSI-1A	Z	0	0	0 %100
83	GSI-1B	Z	0	0	0 %100
84	GSI-2A	Z	-.002	-.002	0 %100
85	GSI-2B	Z	-.002	-.002	0 %100
86	GSI-3A	Z	-.002	-.002	0 %100
87	GSI-3B	Z	-.002	-.002	0 %100
88	M53	Z	-.002	-.002	0 %100
89	M54	Z	-.004	-.004	0 %100
90	M56	Z	-.002	-.002	0 %100
91	M57	Z	-8e-6	-8e-6	0 %100
92	M59	Z	-.003	-.003	0 %100
93	M60	Z	-.004	-.004	0 %100
94	M62	Z	-.003	-.003	0 %100
95	M63	Z	-.004	-.004	0 %100
96	M65	Z	-.002	-.002	0 %100
97	M66	Z	-8e-6	-8e-6	0 %100
98	M68	Z	-.002	-.002	0 %100
99	M69	Z	-.004	-.004	0 %100
100	MP-1	Z	-.001	-.001	0 %100
101	MP-2	Z	-.001	-.001	0 %100
102	MP-3	Z	-.001	-.001	0 %100
103	MP-4	Z	-.001	-.001	0 %100
104	MP-5	Z	-.001	-.001	0 %100
105	MP-6	Z	-.001	-.001	0 %100
106	MP-7	Z	-.001	-.001	0 %100
107	MP-8	Z	-.001	-.001	0 %100
108	MP-9	Z	-.001	-.001	0 %100
109	MP-10	Z	-.001	-.001	0 %100
110	MP-11	Z	-.001	-.001	0 %100
111	MP-12	Z	-.001	-.001	0 %100
112	K1	Z	-.002	-.002	0 %100
113	K2	Z	-.002	-.002	0 %100
114	K3	Z	-.002	-.002	0 %100
115	SA-1	Z	-.002	-.002	0 %100
116	SA-2	Z	-.001	-.001	0 %100
117	SA-3	Z	-.000967	-.000967	0 %100
118	SR-1	Z	-.000989	-.000989	0 %100
119	SR-2	Z	-.001	-.001	0 %100
120	SR-3	Z	0	0	0 %100

Member Distributed Loads (BLC 27 : 180 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....	End Magnitude[k/ft.F...	Start Loca...	End Location[ft.%]
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Member Distributed Loads (BLC 27 : 180 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
1	AHCP-1	X	.003	.003	0 %100
2	AHCP-2	X	.003	.003	0 %100
3	AHCP-3	X	.003	.003	0 %100
4	CP-1	X	.005	.005	0 %100
5	CP-2	X	.005	.005	0 %100
6	CP-3	X	.005	.005	0 %100
7	M71	X	.008	.008	0 %100
8	M73	X	.008	.008	0 %100
9	M75	X	.008	.008	0 %100
10	M77	X	.008	.008	0 %100
11	M79	X	.008	.008	0 %100
12	M81	X	.008	.008	0 %100
13	FF-TH	X	.003	.003	0 %100
14	SF1-TH	X	.002	.002	0 %100
15	SF2-TH	X	.002	.002	0 %100
16	GSIP-1A	X	.003	.003	0 %100
17	GSIP-1B	X	.003	.003	0 %100
18	GSIP-2A	X	.003	.003	0 %100
19	GSIP-2B	X	.003	.003	0 %100
20	GSIP-3A	X	.003	.003	0 %100
21	GSIP-3B	X	.003	.003	0 %100
22	GSI-1A	X	.004	.004	0 %100
23	GSI-1B	X	.004	.004	0 %100
24	GSI-2A	X	.004	.004	0 %100
25	GSI-2B	X	.004	.004	0 %100
26	GSI-3A	X	.004	.004	0 %100
27	GSI-3B	X	.004	.004	0 %100
28	M53	X	.007	.007	0 %100
29	M54	X	.009	.009	0 %100
30	M56	X	.007	.007	0 %100
31	M57	X	.009	.009	0 %100
32	M59	X	.007	.007	0 %100
33	M60	X	.009	.009	0 %100
34	M62	X	.007	.007	0 %100
35	M63	X	.009	.009	0 %100
36	M65	X	.007	.007	0 %100
37	M66	X	.009	.009	0 %100
38	M68	X	.007	.007	0 %100
39	M69	X	.009	.009	0 %100
40	MP-1	X	.002	.002	0 %100
41	MP-2	X	.002	.002	0 %100
42	MP-3	X	.002	.002	0 %100
43	MP-4	X	.002	.002	0 %100
44	MP-5	X	.002	.002	0 %100
45	MP-6	X	.002	.002	0 %100
46	MP-7	X	.002	.002	0 %100
47	MP-8	X	.002	.002	0 %100
48	MP-9	X	.002	.002	0 %100
49	MP-10	X	.002	.002	0 %100
50	MP-11	X	.002	.002	0 %100
51	MP-12	X	.002	.002	0 %100
52	K1	X	.004	.004	0 %100
53	K2	X	.004	.004	0 %100
54	K3	X	.004	.004	0 %100
55	SA-1	X	.004	.004	0 %100
56	SA-2	X	.004	.004	0 %100
57	SA-3	X	.004	.004	0 %100



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Member Distributed Loads (BLC 27 : 180 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
58	SR-1	X	.003	.003	0 %100
59	SR-2	X	.002	.002	0 %100
60	SR-3	X	.002	.002	0 %100

Member Distributed Loads (BLC 28 : 210 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
1	AHCP-1	X	.002	.002	0 %100
2	AHCP-2	X	.002	.002	0 %100
3	AHCP-3	X	0	0	0 %100
4	CP-1	X	.004	.004	0 %100
5	CP-2	X	.004	.004	0 %100
6	CP-3	X	0	0	0 %100
7	M71	X	.006	.006	0 %100
8	M73	X	.006	.006	0 %100
9	M75	X	.006	.006	0 %100
10	M77	X	.006	.006	0 %100
11	M79	X	0	0	0 %100
12	M81	X	0	0	0 %100
13	FF-TH	X	.002	.002	0 %100
14	SF1-TH	X	0	0	0 %100
15	SF2-TH	X	.002	.002	0 %100
16	GSIP-1A	X	.002	.002	0 %100
17	GSIP-1B	X	0	0	0 %100
18	GSIP-2A	X	0	0	0 %100
19	GSIP-2B	X	.002	.002	0 %100
20	GSIP-3A	X	.002	.002	0 %100
21	GSIP-3B	X	.002	.002	0 %100
22	GSI-1A	X	.003	.003	0 %100
23	GSI-1B	X	.003	.003	0 %100
24	GSI-2A	X	.003	.003	0 %100
25	GSI-2B	X	.003	.003	0 %100
26	GSI-3A	X	0	0	0 %100
27	GSI-3B	X	0	0	0 %100
28	M53	X	.003	.003	0 %100
29	M54	X	1.4e-5	1.4e-5	0 %100
30	M56	X	.003	.003	0 %100
31	M57	X	.007	.007	0 %100
32	M59	X	.003	.003	0 %100
33	M60	X	.007	.007	0 %100
34	M62	X	.003	.003	0 %100
35	M63	X	1.4e-5	1.4e-5	0 %100
36	M65	X	.006	.006	0 %100
37	M66	X	.007	.007	0 %100
38	M68	X	.006	.006	0 %100
39	M69	X	.007	.007	0 %100
40	MP-1	X	.002	.002	0 %100
41	MP-2	X	.002	.002	0 %100
42	MP-3	X	.002	.002	0 %100
43	MP-4	X	.002	.002	0 %100
44	MP-5	X	.002	.002	0 %100
45	MP-6	X	.002	.002	0 %100
46	MP-7	X	.002	.002	0 %100
47	MP-8	X	.002	.002	0 %100
48	MP-9	X	.002	.002	0 %100
49	MP-10	X	.002	.002	0 %100
50	MP-11	X	.002	.002	0 %100



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Member Distributed Loads (BLC 28 : 210 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
51	MP-12	X	.002	.002	0 %100
52	K1	X	.004	.004	0 %100
53	K2	X	.004	.004	0 %100
54	K3	X	.004	.004	0 %100
55	SA-1	X	.002	.002	0 %100
56	SA-2	X	.002	.002	0 %100
57	SA-3	X	.004	.004	0 %100
58	SR-1	X	.002	.002	0 %100
59	SR-2	X	0	0	0 %100
60	SR-3	X	.002	.002	0 %100
61	AHCP-1	Z	.001	.001	0 %100
62	AHCP-2	Z	.001	.001	0 %100
63	AHCP-3	Z	0	0	0 %100
64	CP-1	Z	.002	.002	0 %100
65	CP-2	Z	.002	.002	0 %100
66	CP-3	Z	0	0	0 %100
67	M71	Z	.003	.003	0 %100
68	M73	Z	.003	.003	0 %100
69	M75	Z	.003	.003	0 %100
70	M77	Z	.003	.003	0 %100
71	M79	Z	0	0	0 %100
72	M81	Z	0	0	0 %100
73	FF-TH	Z	.001	.001	0 %100
74	SF1-TH	Z	0	0	0 %100
75	SF2-TH	Z	.001	.001	0 %100
76	GSIP-1A	Z	.001	.001	0 %100
77	GSIP-1B	Z	0	0	0 %100
78	GSIP-2A	Z	0	0	0 %100
79	GSIP-2B	Z	.001	.001	0 %100
80	GSIP-3A	Z	.001	.001	0 %100
81	GSIP-3B	Z	.001	.001	0 %100
82	GSI-1A	Z	.002	.002	0 %100
83	GSI-1B	Z	.002	.002	0 %100
84	GSI-2A	Z	.002	.002	0 %100
85	GSI-2B	Z	.002	.002	0 %100
86	GSI-3A	Z	0	0	0 %100
87	GSI-3B	Z	0	0	0 %100
88	M53	Z	.002	.002	0 %100
89	M54	Z	8e-6	8e-6	0 %100
90	M56	Z	.002	.002	0 %100
91	M57	Z	.004	.004	0 %100
92	M59	Z	.002	.002	0 %100
93	M60	Z	.004	.004	0 %100
94	M62	Z	.002	.002	0 %100
95	M63	Z	8e-6	8e-6	0 %100
96	M65	Z	.003	.003	0 %100
97	M66	Z	.004	.004	0 %100
98	M68	Z	.003	.003	0 %100
99	M69	Z	.004	.004	0 %100
100	MP-1	Z	.001	.001	0 %100
101	MP-2	Z	.001	.001	0 %100
102	MP-3	Z	.001	.001	0 %100
103	MP-4	Z	.001	.001	0 %100
104	MP-5	Z	.001	.001	0 %100
105	MP-6	Z	.001	.001	0 %100
106	MP-7	Z	.001	.001	0 %100
107	MP-8	Z	.001	.001	0 %100



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Member Distributed Loads (BLC 28 : 210 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
108	MP-9	Z	.001	.001	0 %100
109	MP-10	Z	.001	.001	0 %100
110	MP-11	Z	.001	.001	0 %100
111	MP-12	Z	.001	.001	0 %100
112	K1	Z	.002	.002	0 %100
113	K2	Z	.002	.002	0 %100
114	K3	Z	.002	.002	0 %100
115	SA-1	Z	.000967	.000967	0 %100
116	SA-2	Z	.001	.001	0 %100
117	SA-3	Z	.002	.002	0 %100
118	SR-1	Z	.000989	.000989	0 %100
119	SR-2	Z	0	0	0 %100
120	SR-3	Z	.001	.001	0 %100

Member Distributed Loads (BLC 29 : 225 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
1	AHCP-1	X	.002	.002	0 %100
2	AHCP-2	X	.002	.002	0 %100
3	AHCP-3	X	.00054	.00054	0 %100
4	CP-1	X	.004	.004	0 %100
5	CP-2	X	.003	.003	0 %100
6	CP-3	X	.000987	.000987	0 %100
7	M71	X	.004	.004	0 %100
8	M73	X	.004	.004	0 %100
9	M75	X	.005	.005	0 %100
10	M77	X	.005	.005	0 %100
11	M79	X	.001	.001	0 %100
12	M81	X	.001	.001	0 %100
13	FF-TH	X	.002	.002	0 %100
14	SF1-TH	X	.000454	.000454	0 %100
15	SF2-TH	X	.002	.002	0 %100
16	GSIP-1A	X	.002	.002	0 %100
17	GSIP-1B	X	.000502	.000502	0 %100
18	GSIP-2A	X	.000502	.000502	0 %100
19	GSIP-2B	X	.002	.002	0 %100
20	GSIP-3A	X	.002	.002	0 %100
21	GSIP-3B	X	.002	.002	0 %100
22	GSI-1A	X	.003	.003	0 %100
23	GSI-1B	X	.003	.003	0 %100
24	GSI-2A	X	.002	.002	0 %100
25	GSI-2B	X	.002	.002	0 %100
26	GSI-3A	X	.000671	.000671	0 %100
27	GSI-3B	X	.000671	.000671	0 %100
28	M53	X	.003	.003	0 %100
29	M54	X	.002	.002	0 %100
30	M56	X	.003	.003	0 %100
31	M57	X	.006	.006	0 %100
32	M59	X	.001	.001	0 %100
33	M60	X	.005	.005	0 %100
34	M62	X	.001	.001	0 %100
35	M63	X	.002	.002	0 %100
36	M65	X	.005	.005	0 %100
37	M66	X	.006	.006	0 %100
38	M68	X	.005	.005	0 %100
39	M69	X	.005	.005	0 %100
40	MP-1	X	.002	.002	0 %100



Company : Tower Engineering Professionals, Inc.
 Designer : NPD
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Member Distributed Loads (BLC 29 : 225 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
41	MP-2	X	.002	.002	0 %100
42	MP-3	X	.002	.002	0 %100
43	MP-4	X	.002	.002	0 %100
44	MP-5	X	.002	.002	0 %100
45	MP-6	X	.002	.002	0 %100
46	MP-7	X	.002	.002	0 %100
47	MP-8	X	.002	.002	0 %100
48	MP-9	X	.002	.002	0 %100
49	MP-10	X	.002	.002	0 %100
50	MP-11	X	.002	.002	0 %100
51	MP-12	X	.002	.002	0 %100
52	K1	X	.003	.003	0 %100
53	K2	X	.003	.003	0 %100
54	K3	X	.003	.003	0 %100
55	SA-1	X	.000783	.000783	0 %100
56	SA-2	X	.002	.002	0 %100
57	SA-3	X	.003	.003	0 %100
58	SR-1	X	.001	.001	0 %100
59	SR-2	X	.000393	.000393	0 %100
60	SR-3	X	.001	.001	0 %100
61	AHCP-1	Z	.002	.002	0 %100
62	AHCP-2	Z	.001	.001	0 %100
63	AHCP-3	Z	.000554	.000554	0 %100
64	CP-1	Z	.004	.004	0 %100
65	CP-2	Z	.002	.002	0 %100
66	CP-3	Z	.000987	.000987	0 %100
67	M71	Z	.004	.004	0 %100
68	M73	Z	.004	.004	0 %100
69	M75	Z	.005	.005	0 %100
70	M77	Z	.005	.005	0 %100
71	M79	Z	.001	.001	0 %100
72	M81	Z	.001	.001	0 %100
73	FF-TH	Z	.001	.001	0 %100
74	SF1-TH	Z	.000556	.000556	0 %100
75	SF2-TH	Z	.002	.002	0 %100
76	GSIP-1A	Z	.001	.001	0 %100
77	GSIP-1B	Z	.000556	.000556	0 %100
78	GSIP-2A	Z	.000556	.000556	0 %100
79	GSIP-2B	Z	.002	.002	0 %100
80	GSIP-3A	Z	.002	.002	0 %100
81	GSIP-3B	Z	.001	.001	0 %100
82	GSI-1A	Z	.003	.003	0 %100
83	GSI-1B	Z	.003	.003	0 %100
84	GSI-2A	Z	.002	.002	0 %100
85	GSI-2B	Z	.002	.002	0 %100
86	GSI-3A	Z	.000712	.000712	0 %100
87	GSI-3B	Z	.000712	.000712	0 %100
88	M53	Z	.003	.003	0 %100
89	M54	Z	.002	.002	0 %100
90	M56	Z	.003	.003	0 %100
91	M57	Z	.006	.006	0 %100
92	M59	Z	.001	.001	0 %100
93	M60	Z	.005	.005	0 %100
94	M62	Z	.001	.001	0 %100
95	M63	Z	.002	.002	0 %100
96	M65	Z	.005	.005	0 %100
97	M66	Z	.006	.006	0 %100



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Member Distributed Loads (BLC 29 : 225 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
98	M68	Z	.005	.005	0 %100
99	M69	Z	.005	.005	0 %100
100	MP-1	Z	.002	.002	0 %100
101	MP-2	Z	.002	.002	0 %100
102	MP-3	Z	.002	.002	0 %100
103	MP-4	Z	.002	.002	0 %100
104	MP-5	Z	.002	.002	0 %100
105	MP-6	Z	.002	.002	0 %100
106	MP-7	Z	.002	.002	0 %100
107	MP-8	Z	.002	.002	0 %100
108	MP-9	Z	.002	.002	0 %100
109	MP-10	Z	.002	.002	0 %100
110	MP-11	Z	.002	.002	0 %100
111	MP-12	Z	.002	.002	0 %100
112	K1	Z	.003	.003	0 %100
113	K2	Z	.003	.003	0 %100
114	K3	Z	.003	.003	0 %100
115	SA-1	Z	.000708	.000708	0 %100
116	SA-2	Z	.002	.002	0 %100
117	SA-3	Z	.003	.003	0 %100
118	SR-1	Z	.001	.001	0 %100
119	SR-2	Z	.000464	.000464	0 %100
120	SR-3	Z	.002	.002	0 %100

Member Distributed Loads (BLC 30 : 240 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
1	AHCP-1	X	.001	.001	0 %100
2	AHCP-2	X	.000769	.000769	0 %100
3	AHCP-3	X	.000737	.000737	0 %100
4	CP-1	X	.003	.003	0 %100
5	CP-2	X	.001	.001	0 %100
6	CP-3	X	.001	.001	0 %100
7	M71	X	.002	.002	0 %100
8	M73	X	.002	.002	0 %100
9	M75	X	.004	.004	0 %100
10	M77	X	.004	.004	0 %100
11	M79	X	.002	.002	0 %100
12	M81	X	.002	.002	0 %100
13	FF-TH	X	.000789	.000789	0 %100
14	SF1-TH	X	.00062	.00062	0 %100
15	SF2-TH	X	.001	.001	0 %100
16	GSIP-1A	X	.000785	.000785	0 %100
17	GSIP-1B	X	.000685	.000685	0 %100
18	GSIP-2A	X	.000685	.000685	0 %100
19	GSIP-2B	X	.001	.001	0 %100
20	GSIP-3A	X	.001	.001	0 %100
21	GSIP-3B	X	.000785	.000785	0 %100
22	GSI-1A	X	.002	.002	0 %100
23	GSI-1B	X	.002	.002	0 %100
24	GSI-2A	X	.000993	.000993	0 %100
25	GSI-2B	X	.000993	.000993	0 %100
26	GSI-3A	X	.000916	.000916	0 %100
27	GSI-3B	X	.000916	.000916	0 %100
28	M53	X	.003	.003	0 %100
29	M54	X	.002	.002	0 %100
30	M56	X	.003	.003	0 %100



Company : Tower Engineering Professionals, Inc.
 Designer : NPD
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Member Distributed Loads (BLC 30 : 240 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
31	M57	X	.005	.005	0 %100
32	M59	X	0	0	0 %100
33	M60	X	.002	.002	0 %100
34	M62	X	0	0	0 %100
35	M63	X	.002	.002	0 %100
36	M65	X	.003	.003	0 %100
37	M66	X	.005	.005	0 %100
38	M68	X	.003	.003	0 %100
39	M69	X	.002	.002	0 %100
40	MP-1	X	.001	.001	0 %100
41	MP-2	X	.001	.001	0 %100
42	MP-3	X	.001	.001	0 %100
43	MP-4	X	.001	.001	0 %100
44	MP-5	X	.001	.001	0 %100
45	MP-6	X	.001	.001	0 %100
46	MP-7	X	.001	.001	0 %100
47	MP-8	X	.001	.001	0 %100
48	MP-9	X	.001	.001	0 %100
49	MP-10	X	.001	.001	0 %100
50	MP-11	X	.001	.001	0 %100
51	MP-12	X	.001	.001	0 %100
52	K1	X	.002	.002	0 %100
53	K2	X	.002	.002	0 %100
54	K3	X	.002	.002	0 %100
55	SA-1	X	0	0	0 %100
56	SA-2	X	.002	.002	0 %100
57	SA-3	X	.002	.002	0 %100
58	SR-1	X	.000634	.000634	0 %100
59	SR-2	X	.000537	.000537	0 %100
60	SR-3	X	.001	.001	0 %100
61	AHCP-1	Z	.003	.003	0 %100
62	AHCP-2	Z	.001	.001	0 %100
63	AHCP-3	Z	.001	.001	0 %100
64	CP-1	Z	.005	.005	0 %100
65	CP-2	Z	.002	.002	0 %100
66	CP-3	Z	.002	.002	0 %100
67	M71	Z	.003	.003	0 %100
68	M73	Z	.003	.003	0 %100
69	M75	Z	.007	.007	0 %100
70	M77	Z	.007	.007	0 %100
71	M79	Z	.003	.003	0 %100
72	M81	Z	.003	.003	0 %100
73	FF-TH	Z	.001	.001	0 %100
74	SF1-TH	Z	.001	.001	0 %100
75	SF2-TH	Z	.003	.003	0 %100
76	GSIP-1A	Z	.001	.001	0 %100
77	GSIP-1B	Z	.001	.001	0 %100
78	GSIP-2A	Z	.001	.001	0 %100
79	GSIP-2B	Z	.003	.003	0 %100
80	GSIP-3A	Z	.003	.003	0 %100
81	GSIP-3B	Z	.001	.001	0 %100
82	GSI-1A	Z	.003	.003	0 %100
83	GSI-1B	Z	.003	.003	0 %100
84	GSI-2A	Z	.002	.002	0 %100
85	GSI-2B	Z	.002	.002	0 %100
86	GSI-3A	Z	.002	.002	0 %100
87	GSI-3B	Z	.002	.002	0 %100



Company : Tower Engineering Professionals, Inc.
 Designer : NPD
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Member Distributed Loads (BLC 30 : 240 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
88	M53	Z	.005	.005	0 %100
89	M54	Z	.004	.004	0 %100
90	M56	Z	.005	.005	0 %100
91	M57	Z	.008	.008	0 %100
92	M59	Z	0	0	0 %100
93	M60	Z	.004	.004	0 %100
94	M62	Z	0	0	0 %100
95	M63	Z	.004	.004	0 %100
96	M65	Z	.005	.005	0 %100
97	M66	Z	.008	.008	0 %100
98	M68	Z	.005	.005	0 %100
99	M69	Z	.004	.004	0 %100
100	MP-1	Z	.002	.002	0 %100
101	MP-2	Z	.002	.002	0 %100
102	MP-3	Z	.002	.002	0 %100
103	MP-4	Z	.002	.002	0 %100
104	MP-5	Z	.002	.002	0 %100
105	MP-6	Z	.002	.002	0 %100
106	MP-7	Z	.002	.002	0 %100
107	MP-8	Z	.002	.002	0 %100
108	MP-9	Z	.002	.002	0 %100
109	MP-10	Z	.002	.002	0 %100
110	MP-11	Z	.002	.002	0 %100
111	MP-12	Z	.002	.002	0 %100
112	K1	Z	.004	.004	0 %100
113	K2	Z	.004	.004	0 %100
114	K3	Z	.004	.004	0 %100
115	SA-1	Z	0	0	0 %100
116	SA-2	Z	.003	.003	0 %100
117	SA-3	Z	.003	.003	0 %100
118	SR-1	Z	.000989	.000989	0 %100
119	SR-2	Z	.001	.001	0 %100
120	SR-3	Z	.002	.002	0 %100

Member Distributed Loads (BLC 31 : 270 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
1	AHCP-1	Z	.003	.003	0 %100
2	AHCP-2	Z	0	0	0 %100
3	AHCP-3	Z	.003	.003	0 %100
4	CP-1	Z	.005	.005	0 %100
5	CP-2	Z	0	0	0 %100
6	CP-3	Z	.005	.005	0 %100
7	M71	Z	0	0	0 %100
8	M73	Z	0	0	0 %100
9	M75	Z	.007	.007	0 %100
10	M77	Z	.007	.007	0 %100
11	M79	Z	.007	.007	0 %100
12	M81	Z	.007	.007	0 %100
13	FF-TH	Z	0	0	0 %100
14	SF1-TH	Z	.003	.003	0 %100
15	SF2-TH	Z	.003	.003	0 %100
16	GSIP-1A	Z	0	0	0 %100
17	GSIP-1B	Z	.003	.003	0 %100
18	GSIP-2A	Z	.003	.003	0 %100
19	GSIP-2B	Z	.003	.003	0 %100
20	GSIP-3A	Z	.003	.003	0 %100



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Member Distributed Loads (BLC 31 : 270 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]	
21	GSIP-3B	Z	0	0	%100	
22	GSI-1A	Z	.003	.003	0	%100
23	GSI-1B	Z	.003	.003	0	%100
24	GSI-2A	Z	0	0	0	%100
25	GSI-2B	Z	0	0	0	%100
26	GSI-3A	Z	.003	.003	0	%100
27	GSI-3B	Z	.003	.003	0	%100
28	M53	Z	.007	.007	0	%100
29	M54	Z	.008	.008	0	%100
30	M56	Z	.007	.007	0	%100
31	M57	Z	.008	.008	0	%100
32	M59	Z	.003	.003	0	%100
33	M60	Z	1.6e-5	1.6e-5	0	%100
34	M62	Z	.003	.003	0	%100
35	M63	Z	.008	.008	0	%100
36	M65	Z	.003	.003	0	%100
37	M66	Z	.008	.008	0	%100
38	M68	Z	.003	.003	0	%100
39	M69	Z	1.6e-5	1.6e-5	0	%100
40	MP-1	Z	.002	.002	0	%100
41	MP-2	Z	.002	.002	0	%100
42	MP-3	Z	.002	.002	0	%100
43	MP-4	Z	.002	.002	0	%100
44	MP-5	Z	.002	.002	0	%100
45	MP-6	Z	.002	.002	0	%100
46	MP-7	Z	.002	.002	0	%100
47	MP-8	Z	.002	.002	0	%100
48	MP-9	Z	.002	.002	0	%100
49	MP-10	Z	.002	.002	0	%100
50	MP-11	Z	.002	.002	0	%100
51	MP-12	Z	.002	.002	0	%100
52	K1	Z	.005	.005	0	%100
53	K2	Z	.005	.005	0	%100
54	K3	Z	.005	.005	0	%100
55	SA-1	Z	.002	.002	0	%100
56	SA-2	Z	.004	.004	0	%100
57	SA-3	Z	.002	.002	0	%100
58	SR-1	Z	0	0	0	%100
59	SR-2	Z	.002	.002	0	%100
60	SR-3	Z	.002	.002	0	%100

Member Distributed Loads (BLC 32 : 300 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]	
1	AHCP-1	X	-.000737	-.000737	0	%100
2	AHCP-2	X	-.000769	-.000769	0	%100
3	AHCP-3	X	-.001	-.001	0	%100
4	CP-1	X	-.001	-.001	0	%100
5	CP-2	X	-.001	-.001	0	%100
6	CP-3	X	-.003	-.003	0	%100
7	M71	X	-.002	-.002	0	%100
8	M73	X	-.002	-.002	0	%100
9	M75	X	-.002	-.002	0	%100
10	M77	X	-.002	-.002	0	%100
11	M79	X	-.004	-.004	0	%100
12	M81	X	-.004	-.004	0	%100
13	FF-TH	X	-.000789	-.000789	0	%100



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Member Distributed Loads (BLC 32 : 300 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]	
14	SF1-TH	X	-.001	-.001	0	%100
15	SF2-TH	X	-.00062	-.00062	0	%100
16	GSIP-1A	X	-.000785	-.000785	0	%100
17	GSIP-1B	X	-.001	-.001	0	%100
18	GSIP-2A	X	-.001	-.001	0	%100
19	GSIP-2B	X	-.000685	-.000685	0	%100
20	GSIP-3A	X	-.000685	-.000685	0	%100
21	GSIP-3B	X	-.000785	-.000785	0	%100
22	GSI-1A	X	-.000916	-.000916	0	%100
23	GSI-1B	X	-.000916	-.000916	0	%100
24	GSI-2A	X	-.000993	-.000993	0	%100
25	GSI-2B	X	-.000993	-.000993	0	%100
26	GSI-3A	X	-.002	-.002	0	%100
27	GSI-3B	X	-.002	-.002	0	%100
28	M53	X	-.003	-.003	0	%100
29	M54	X	-.005	-.005	0	%100
30	M56	X	-.003	-.003	0	%100
31	M57	X	-.002	-.002	0	%100
32	M59	X	-.003	-.003	0	%100
33	M60	X	-.002	-.002	0	%100
34	M62	X	-.003	-.003	0	%100
35	M63	X	-.005	-.005	0	%100
36	M65	X	0	0	0	%100
37	M66	X	-.002	-.002	0	%100
38	M68	X	0	0	0	%100
39	M69	X	-.002	-.002	0	%100
40	MP-1	X	-.001	-.001	0	%100
41	MP-2	X	-.001	-.001	0	%100
42	MP-3	X	-.001	-.001	0	%100
43	MP-4	X	-.001	-.001	0	%100
44	MP-5	X	-.001	-.001	0	%100
45	MP-6	X	-.001	-.001	0	%100
46	MP-7	X	-.001	-.001	0	%100
47	MP-8	X	-.001	-.001	0	%100
48	MP-9	X	-.001	-.001	0	%100
49	MP-10	X	-.001	-.001	0	%100
50	MP-11	X	-.001	-.001	0	%100
51	MP-12	X	-.001	-.001	0	%100
52	K1	X	-.002	-.002	0	%100
53	K2	X	-.002	-.002	0	%100
54	K3	X	-.002	-.002	0	%100
55	SA-1	X	-.002	-.002	0	%100
56	SA-2	X	-.002	-.002	0	%100
57	SA-3	X	0	0	0	%100
58	SR-1	X	-.000634	-.000634	0	%100
59	SR-2	X	-.001	-.001	0	%100
60	SR-3	X	-.000537	-.000537	0	%100
61	AHCP-1	Z	.001	.001	0	%100
62	AHCP-2	Z	.001	.001	0	%100
63	AHCP-3	Z	.003	.003	0	%100
64	CP-1	Z	.002	.002	0	%100
65	CP-2	Z	.002	.002	0	%100
66	CP-3	Z	.005	.005	0	%100
67	M71	Z	.003	.003	0	%100
68	M73	Z	.003	.003	0	%100
69	M75	Z	.003	.003	0	%100
70	M77	Z	.003	.003	0	%100



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Member Distributed Loads (BLC 32 : 300 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
71	M79	Z	.007	.007	0 %100
72	M81	Z	.007	.007	0 %100
73	FF-TH	Z	.001	.001	0 %100
74	SF1-TH	Z	.003	.003	0 %100
75	SF2-TH	Z	.001	.001	0 %100
76	GSIP-1A	Z	.001	.001	0 %100
77	GSIP-1B	Z	.003	.003	0 %100
78	GSIP-2A	Z	.003	.003	0 %100
79	GSIP-2B	Z	.001	.001	0 %100
80	GSIP-3A	Z	.001	.001	0 %100
81	GSIP-3B	Z	.001	.001	0 %100
82	GSI-1A	Z	.002	.002	0 %100
83	GSI-1B	Z	.002	.002	0 %100
84	GSI-2A	Z	.002	.002	0 %100
85	GSI-2B	Z	.002	.002	0 %100
86	GSI-3A	Z	.003	.003	0 %100
87	GSI-3B	Z	.003	.003	0 %100
88	M53	Z	.005	.005	0 %100
89	M54	Z	.008	.008	0 %100
90	M56	Z	.005	.005	0 %100
91	M57	Z	.004	.004	0 %100
92	M59	Z	.005	.005	0 %100
93	M60	Z	.004	.004	0 %100
94	M62	Z	.005	.005	0 %100
95	M63	Z	.008	.008	0 %100
96	M65	Z	0	0	0 %100
97	M66	Z	.004	.004	0 %100
98	M68	Z	0	0	0 %100
99	M69	Z	.004	.004	0 %100
100	MP-1	Z	.002	.002	0 %100
101	MP-2	Z	.002	.002	0 %100
102	MP-3	Z	.002	.002	0 %100
103	MP-4	Z	.002	.002	0 %100
104	MP-5	Z	.002	.002	0 %100
105	MP-6	Z	.002	.002	0 %100
106	MP-7	Z	.002	.002	0 %100
107	MP-8	Z	.002	.002	0 %100
108	MP-9	Z	.002	.002	0 %100
109	MP-10	Z	.002	.002	0 %100
110	MP-11	Z	.002	.002	0 %100
111	MP-12	Z	.002	.002	0 %100
112	K1	Z	.004	.004	0 %100
113	K2	Z	.004	.004	0 %100
114	K3	Z	.004	.004	0 %100
115	SA-1	Z	.003	.003	0 %100
116	SA-2	Z	.003	.003	0 %100
117	SA-3	Z	0	0	0 %100
118	SR-1	Z	.000989	.000989	0 %100
119	SR-2	Z	.002	.002	0 %100
120	SR-3	Z	.001	.001	0 %100

Member Distributed Loads (BLC 33 : 315 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
1	AHCP-1	X	-.00054	-.00054	0 %100
2	AHCP-2	X	-.002	-.002	0 %100
3	AHCP-3	X	-.002	-.002	0 %100



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Member Distributed Loads (BLC 33 : 315 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
4	CP-1	X	-.000987	-.000987	0 %100
5	CP-2	X	-.003	-.003	0 %100
6	CP-3	X	-.004	-.004	0 %100
7	M71	X	-.004	-.004	0 %100
8	M73	X	-.004	-.004	0 %100
9	M75	X	-.001	-.001	0 %100
10	M77	X	-.001	-.001	0 %100
11	M79	X	-.005	-.005	0 %100
12	M81	X	-.005	-.005	0 %100
13	FF-TH	X	-.002	-.002	0 %100
14	SF1-TH	X	-.002	-.002	0 %100
15	SF2-TH	X	-.000454	-.000454	0 %100
16	GSIP-1A	X	-.002	-.002	0 %100
17	GSIP-1B	X	-.002	-.002	0 %100
18	GSIP-2A	X	-.002	-.002	0 %100
19	GSIP-2B	X	-.000502	-.000502	0 %100
20	GSIP-3A	X	-.000502	-.000502	0 %100
21	GSIP-3B	X	-.002	-.002	0 %100
22	GSI-1A	X	-.000671	-.000671	0 %100
23	GSI-1B	X	-.000671	-.000671	0 %100
24	GSI-2A	X	-.002	-.002	0 %100
25	GSI-2B	X	-.002	-.002	0 %100
26	GSI-3A	X	-.003	-.003	0 %100
27	GSI-3B	X	-.003	-.003	0 %100
28	M53	X	-.003	-.003	0 %100
29	M54	X	-.006	-.006	0 %100
30	M56	X	-.003	-.003	0 %100
31	M57	X	-.002	-.002	0 %100
32	M59	X	-.005	-.005	0 %100
33	M60	X	-.005	-.005	0 %100
34	M62	X	-.005	-.005	0 %100
35	M63	X	-.006	-.006	0 %100
36	M65	X	-.001	-.001	0 %100
37	M66	X	-.002	-.002	0 %100
38	M68	X	-.001	-.001	0 %100
39	M69	X	-.005	-.005	0 %100
40	MP-1	X	-.002	-.002	0 %100
41	MP-2	X	-.002	-.002	0 %100
42	MP-3	X	-.002	-.002	0 %100
43	MP-4	X	-.002	-.002	0 %100
44	MP-5	X	-.002	-.002	0 %100
45	MP-6	X	-.002	-.002	0 %100
46	MP-7	X	-.002	-.002	0 %100
47	MP-8	X	-.002	-.002	0 %100
48	MP-9	X	-.002	-.002	0 %100
49	MP-10	X	-.002	-.002	0 %100
50	MP-11	X	-.002	-.002	0 %100
51	MP-12	X	-.002	-.002	0 %100
52	K1	X	-.003	-.003	0 %100
53	K2	X	-.003	-.003	0 %100
54	K3	X	-.003	-.003	0 %100
55	SA-1	X	-.003	-.003	0 %100
56	SA-2	X	-.002	-.002	0 %100
57	SA-3	X	-.000783	-.000783	0 %100
58	SR-1	X	-.001	-.001	0 %100
59	SR-2	X	-.001	-.001	0 %100
60	SR-3	X	-.000393	-.000393	0 %100



Company : Tower Engineering Professionals, Inc.
 Designer : NPD
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Member Distributed Loads (BLC 33 : 315 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
61	AHCP-1	Z	.000554	.000554	0 %100
62	AHCP-2	Z	.001	.001	0 %100
63	AHCP-3	Z	.002	.002	0 %100
64	CP-1	Z	.000987	.000987	0 %100
65	CP-2	Z	.002	.002	0 %100
66	CP-3	Z	.004	.004	0 %100
67	M71	Z	.004	.004	0 %100
68	M73	Z	.004	.004	0 %100
69	M75	Z	.001	.001	0 %100
70	M77	Z	.001	.001	0 %100
71	M79	Z	.005	.005	0 %100
72	M81	Z	.005	.005	0 %100
73	FF-TH	Z	.001	.001	0 %100
74	SF1-TH	Z	.002	.002	0 %100
75	SF2-TH	Z	.000556	.000556	0 %100
76	GSI-1A	Z	.001	.001	0 %100
77	GSI-1B	Z	.002	.002	0 %100
78	GSI-2A	Z	.002	.002	0 %100
79	GSI-2B	Z	.000556	.000556	0 %100
80	GSI-3A	Z	.000556	.000556	0 %100
81	GSI-3B	Z	.001	.001	0 %100
82	GSI-1A	Z	.000712	.000712	0 %100
83	GSI-1B	Z	.000712	.000712	0 %100
84	GSI-2A	Z	.002	.002	0 %100
85	GSI-2B	Z	.002	.002	0 %100
86	GSI-3A	Z	.003	.003	0 %100
87	GSI-3B	Z	.003	.003	0 %100
88	M53	Z	.003	.003	0 %100
89	M54	Z	.006	.006	0 %100
90	M56	Z	.003	.003	0 %100
91	M57	Z	.002	.002	0 %100
92	M59	Z	.005	.005	0 %100
93	M60	Z	.005	.005	0 %100
94	M62	Z	.005	.005	0 %100
95	M63	Z	.006	.006	0 %100
96	M65	Z	.001	.001	0 %100
97	M66	Z	.002	.002	0 %100
98	M68	Z	.001	.001	0 %100
99	M69	Z	.005	.005	0 %100
100	MP-1	Z	.002	.002	0 %100
101	MP-2	Z	.002	.002	0 %100
102	MP-3	Z	.002	.002	0 %100
103	MP-4	Z	.002	.002	0 %100
104	MP-5	Z	.002	.002	0 %100
105	MP-6	Z	.002	.002	0 %100
106	MP-7	Z	.002	.002	0 %100
107	MP-8	Z	.002	.002	0 %100
108	MP-9	Z	.002	.002	0 %100
109	MP-10	Z	.002	.002	0 %100
110	MP-11	Z	.002	.002	0 %100
111	MP-12	Z	.002	.002	0 %100
112	K1	Z	.003	.003	0 %100
113	K2	Z	.003	.003	0 %100
114	K3	Z	.003	.003	0 %100
115	SA-1	Z	.003	.003	0 %100
116	SA-2	Z	.002	.002	0 %100
117	SA-3	Z	.000708	.000708	0 %100



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Member Distributed Loads (BLC 33 : 315 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
118	SR-1	Z	.001	.001	0 %100
119	SR-2	Z	.002	.002	0 %100
120	SR-3	Z	.000464	.000464	0 %100

Member Distributed Loads (BLC 34 : 330 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
1	AHCP-1	X	0	0	0 %100
2	AHCP-2	X	-.002	-.002	0 %100
3	AHCP-3	X	-.002	-.002	0 %100
4	CP-1	X	0	0	0 %100
5	CP-2	X	-.004	-.004	0 %100
6	CP-3	X	-.004	-.004	0 %100
7	M71	X	-.006	-.006	0 %100
8	M73	X	-.006	-.006	0 %100
9	M75	X	0	0	0 %100
10	M77	X	0	0	0 %100
11	M79	X	-.006	-.006	0 %100
12	M81	X	-.006	-.006	0 %100
13	FF-TH	X	-.002	-.002	0 %100
14	SF1-TH	X	-.002	-.002	0 %100
15	SF2-TH	X	0	0	0 %100
16	GSI-1A	X	-.002	-.002	0 %100
17	GSI-1B	X	-.002	-.002	0 %100
18	GSI-2A	X	-.002	-.002	0 %100
19	GSI-2B	X	0	0	0 %100
20	GSI-3A	X	0	0	0 %100
21	GSI-3B	X	-.002	-.002	0 %100
22	GSI-1A	X	0	0	0 %100
23	GSI-1B	X	0	0	0 %100
24	GSI-2A	X	-.003	-.003	0 %100
25	GSI-2B	X	-.003	-.003	0 %100
26	GSI-3A	X	-.003	-.003	0 %100
27	GSI-3B	X	-.003	-.003	0 %100
28	M53	X	-.003	-.003	0 %100
29	M54	X	-.007	-.007	0 %100
30	M56	X	-.003	-.003	0 %100
31	M57	X	-1.4e-5	-1.4e-5	0 %100
32	M59	X	-.006	-.006	0 %100
33	M60	X	-.007	-.007	0 %100
34	M62	X	-.006	-.006	0 %100
35	M63	X	-.007	-.007	0 %100
36	M65	X	-.003	-.003	0 %100
37	M66	X	-1.4e-5	-1.4e-5	0 %100
38	M68	X	-.003	-.003	0 %100
39	M69	X	-.007	-.007	0 %100
40	MP-1	X	-.002	-.002	0 %100
41	MP-2	X	-.002	-.002	0 %100
42	MP-3	X	-.002	-.002	0 %100
43	MP-4	X	-.002	-.002	0 %100
44	MP-5	X	-.002	-.002	0 %100
45	MP-6	X	-.002	-.002	0 %100
46	MP-7	X	-.002	-.002	0 %100
47	MP-8	X	-.002	-.002	0 %100
48	MP-9	X	-.002	-.002	0 %100
49	MP-10	X	-.002	-.002	0 %100
50	MP-11	X	-.002	-.002	0 %100



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Member Distributed Loads (BLC 34 : 330 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
51	MP-12	X	-0.02	-0.02	0 %100
52	K1	X	-0.04	-0.04	0 %100
53	K2	X	-0.04	-0.04	0 %100
54	K3	X	-0.04	-0.04	0 %100
55	SA-1	X	-0.04	-0.04	0 %100
56	SA-2	X	-0.02	-0.02	0 %100
57	SA-3	X	-0.02	-0.02	0 %100
58	SR-1	X	-0.02	-0.02	0 %100
59	SR-2	X	-0.02	-0.02	0 %100
60	SR-3	X	0	0	0 %100
61	AHCP-1	Z	0	0	0 %100
62	AHCP-2	Z	.001	.001	0 %100
63	AHCP-3	Z	.001	.001	0 %100
64	CP-1	Z	0	0	0 %100
65	CP-2	Z	.002	.002	0 %100
66	CP-3	Z	.002	.002	0 %100
67	M71	Z	.003	.003	0 %100
68	M73	Z	.003	.003	0 %100
69	M75	Z	0	0	0 %100
70	M77	Z	0	0	0 %100
71	M79	Z	.003	.003	0 %100
72	M81	Z	.003	.003	0 %100
73	FF-TH	Z	.001	.001	0 %100
74	SF1-TH	Z	.001	.001	0 %100
75	SF2-TH	Z	0	0	0 %100
76	GSIP-1A	Z	.001	.001	0 %100
77	GSIP-1B	Z	.001	.001	0 %100
78	GSIP-2A	Z	.001	.001	0 %100
79	GSIP-2B	Z	0	0	0 %100
80	GSIP-3A	Z	0	0	0 %100
81	GSIP-3B	Z	.001	.001	0 %100
82	GSI-1A	Z	0	0	0 %100
83	GSI-1B	Z	0	0	0 %100
84	GSI-2A	Z	.002	.002	0 %100
85	GSI-2B	Z	.002	.002	0 %100
86	GSI-3A	Z	.002	.002	0 %100
87	GSI-3B	Z	.002	.002	0 %100
88	M53	Z	.002	.002	0 %100
89	M54	Z	.004	.004	0 %100
90	M56	Z	.002	.002	0 %100
91	M57	Z	8e-6	8e-6	0 %100
92	M59	Z	.003	.003	0 %100
93	M60	Z	.004	.004	0 %100
94	M62	Z	.003	.003	0 %100
95	M63	Z	.004	.004	0 %100
96	M65	Z	.002	.002	0 %100
97	M66	Z	8e-6	8e-6	0 %100
98	M68	Z	.002	.002	0 %100
99	M69	Z	.004	.004	0 %100
100	MP-1	Z	.001	.001	0 %100
101	MP-2	Z	.001	.001	0 %100
102	MP-3	Z	.001	.001	0 %100
103	MP-4	Z	.001	.001	0 %100
104	MP-5	Z	.001	.001	0 %100
105	MP-6	Z	.001	.001	0 %100
106	MP-7	Z	.001	.001	0 %100
107	MP-8	Z	.001	.001	0 %100



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Member Distributed Loads (BLC 34 : 330 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
108	MP-9	Z	.001	.001	0 %100
109	MP-10	Z	.001	.001	0 %100
110	MP-11	Z	.001	.001	0 %100
111	MP-12	Z	.001	.001	0 %100
112	K1	Z	.002	.002	0 %100
113	K2	Z	.002	.002	0 %100
114	K3	Z	.002	.002	0 %100
115	SA-1	Z	.002	.002	0 %100
116	SA-2	Z	.001	.001	0 %100
117	SA-3	Z	.000967	.000967	0 %100
118	SR-1	Z	.000989	.000989	0 %100
119	SR-2	Z	.001	.001	0 %100
120	SR-3	Z	0	0	0 %100

Member Distributed Loads (BLC 39 : BLC 1 Transient Area Loads)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Loca...	End Location[ft.%]
1	CP-1	Y	-0.01	-0.01	.34 .553
2	GSIP-1A	Y	-0.0017	-0.007	.409 1.146
3	GSIP-1A	Y	-0.007	-0.009	1.146 1.882
4	GSIP-1A	Y	-0.009	-0.005	1.882 2.618
5	GSIP-1A	Y	-0.005	-0.004	2.618 3.355
6	GSIP-1A	Y	-0.004	-0.007068	3.355 4.091
7	GSIP-1B	Y	-0.007093	-0.004	0 .736
8	GSIP-1B	Y	-0.004	-0.005	.736 1.473
9	GSIP-1B	Y	-0.005	-0.009	1.473 2.209
10	GSIP-1B	Y	-0.009	-0.007	2.209 2.946
11	GSIP-1B	Y	-0.007	-0.0017	2.946 3.682
12	GSI-1A	Y	-0.008	-0.008	.369 2.395
13	GSI-1B	Y	-0.008	-0.008	0 2.027
14	SA-1	Y	-0.003559	-0.008	1.556 2.282
15	SA-1	Y	-0.008	-0.017	2.282 3.009
16	SA-1	Y	-0.017	-0.015	3.009 3.735
17	SA-1	Y	-0.015	-0.008	3.735 4.461
18	SA-1	Y	-0.008	-0.001	4.461 5.187
19	CP-2	Y	-0.001	-0.001	.34 .553
20	GSIP-2A	Y	-0.0017	-0.007	.409 1.146
21	GSIP-2A	Y	-0.007	-0.009	1.146 1.882
22	GSIP-2A	Y	-0.009	-0.005	1.882 2.618
23	GSIP-2A	Y	-0.005	-0.004	2.618 3.355
24	GSIP-2A	Y	-0.004	-0.007068	3.355 4.091
25	GSIP-2B	Y	-0.007093	-0.004	0 .736
26	GSIP-2B	Y	-0.004	-0.005	.736 1.473
27	GSIP-2B	Y	-0.005	-0.009	1.473 2.209
28	GSIP-2B	Y	-0.009	-0.007	2.209 2.946
29	GSIP-2B	Y	-0.007	-0.0017	2.946 3.682
30	GSI-2A	Y	-0.008	-0.008	.369 2.395
31	GSI-2B	Y	-0.008	-0.008	0 2.027
32	SA-2	Y	-0.003559	-0.008	1.556 2.282
33	SA-2	Y	-0.008	-0.017	2.282 3.009
34	SA-2	Y	-0.017	-0.015	3.009 3.735
35	SA-2	Y	-0.015	-0.008	3.735 4.461
36	SA-2	Y	-0.008	-0.001	4.461 5.187
37	CP-3	Y	-0.001	-0.001	.34 .553
38	GSIP-3A	Y	-0.0017	-0.007	.409 1.146
39	GSIP-3A	Y	-0.007	-0.009	1.146 1.882
40	GSIP-3A	Y	-0.009	-0.005	1.882 2.618



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Member Distributed Loads (BLC 39 : BLC 1 Transient Area Loads) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F.]	Start Loca...	End Location[ft.%]
41	GSIP-3A	Y	-0.005	-0.004	2.618 3.355
42	GSIP-3A	Y	-0.004	-0.0007068	3.355 4.091
43	GSIP-3B	Y	-0.0007068	-0.004	0 .736
44	GSIP-3B	Y	-0.004	-0.005	.736 1.473
45	GSIP-3B	Y	-0.005	-0.009	1.473 2.209
46	GSIP-3B	Y	-0.009	-0.007	2.209 2.946
47	GSIP-3B	Y	-0.007	-0.0017	2.946 3.682
48	GSI-3A	Y	-0.008	-0.008	.369 2.395
49	GSI-3B	Y	-0.008	-0.008	0 2.027
50	SA-3	Y	-0.0003559	-0.008	1.556 2.282
51	SA-3	Y	-0.008	-0.017	2.282 3.009
52	SA-3	Y	-0.017	-0.015	3.009 3.735
53	SA-3	Y	-0.015	-0.008	3.735 4.461
54	SA-3	Y	-0.008	-0.001	4.461 5.187

Member Distributed Loads (BLC 40 : BLC 18 Transient Area Loads)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F.]	Start Loca...	End Location[ft.%]
1	CP-1	Y	-0.0005361	-0.0005361	.34 .553
2	GSIP-1A	Y	-7.439e-5	-0.003	.409 1.146
3	GSIP-1A	Y	-0.003	-0.004	1.146 1.882
4	GSIP-1A	Y	-0.004	-0.002	1.882 2.618
5	GSIP-1A	Y	-0.002	-0.002	2.618 3.355
6	GSIP-1A	Y	-0.002	-0.0003092	3.355 4.091
7	GSIP-1B	Y	-0.0003103	-0.002	0 .736
8	GSIP-1B	Y	-0.002	-0.002	.736 1.473
9	GSIP-1B	Y	-0.002	-0.004	1.473 2.209
10	GSIP-1B	Y	-0.004	-0.003	2.209 2.946
11	GSIP-1B	Y	-0.003	-7.439e-5	2.946 3.682
12	GSI-1A	Y	-0.003	-0.003	.369 2.395
13	GSI-1B	Y	-0.003	-0.003	0 2.027
14	SA-1	Y	-0.0001557	-0.003	1.556 2.282
15	SA-1	Y	-0.003	-0.007	2.282 3.009
16	SA-1	Y	-0.007	-0.007	3.009 3.735
17	SA-1	Y	-0.007	-0.004	3.735 4.461
18	SA-1	Y	-0.004	-0.0004458	4.461 5.187
19	CP-2	Y	-0.0005106	-0.0005106	.34 .553
20	GSIP-2A	Y	-7.085e-5	-0.003	.409 1.146
21	GSIP-2A	Y	-0.003	-0.004	1.146 1.882
22	GSIP-2A	Y	-0.004	-0.002	1.882 2.618
23	GSIP-2A	Y	-0.002	-0.002	2.618 3.355
24	GSIP-2A	Y	-0.002	-0.0002945	3.355 4.091
25	GSIP-2B	Y	-0.0002955	-0.002	0 .736
26	GSIP-2B	Y	-0.002	-0.002	.736 1.473
27	GSIP-2B	Y	-0.002	-0.004	1.473 2.209
28	GSIP-2B	Y	-0.004	-0.003	2.209 2.946
29	GSIP-2B	Y	-0.003	-7.085e-5	2.946 3.682
30	GSI-2A	Y	-0.003	-0.003	.369 2.395
31	GSI-2B	Y	-0.003	-0.003	0 2.027
32	SA-2	Y	-0.0001483	-0.003	1.556 2.282
33	SA-2	Y	-0.003	-0.007	2.282 3.009
34	SA-2	Y	-0.007	-0.006	3.009 3.735
35	SA-2	Y	-0.006	-0.003	3.735 4.461
36	SA-2	Y	-0.003	-0.0004245	4.461 5.187
37	CP-3	Y	-0.0005105	-0.0005105	.34 .553
38	GSIP-3A	Y	-7.085e-5	-0.003	.409 1.146
39	GSIP-3A	Y	-0.003	-0.004	1.146 1.882



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Member Distributed Loads (BLC 40 : BLC 18 Transient Area Loads) (Continued)

Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F.]	Start Loca...	End Location[ft.%]
40	GSIP-3A	Y	-0.004	-0.002	1.882 2.618
41	GSIP-3A	Y	-0.002	-0.002	2.618 3.355
42	GSIP-3A	Y	-0.002	-0.0002945	3.355 4.091
43	GSIP-3B	Y	-0.0002945	-0.002	0 .736
44	GSIP-3B	Y	-0.002	-0.002	.736 1.473
45	GSIP-3B	Y	-0.002	-0.004	1.473 2.209
46	GSIP-3B	Y	-0.004	-0.003	2.209 2.946
47	GSIP-3B	Y	-0.003	-7.085e-5	2.946 3.682
48	GSI-3A	Y	-0.003	-0.003	.369 2.395
49	GSI-3B	Y	-0.003	-0.003	0 2.027
50	SA-3	Y	-0.0001483	-0.003	1.556 2.282
51	SA-3	Y	-0.003	-0.007	2.282 3.009
52	SA-3	Y	-0.007	-0.006	3.009 3.735
53	SA-3	Y	-0.006	-0.003	3.735 4.461
54	SA-3	Y	-0.003	-0.0004239	4.461 5.187

Joint Loads and Enforced Displacements (BLC 35 : Lm)

Joint Label	L,D,M	Direction	Magnitude[(k.k-ft)_(in.rad), (k's°2/ft....)]	
1	N43	L	Y	-5

Joint Loads and Enforced Displacements (BLC 36 : Lv)

Joint Label	L,D,M	Direction	Magnitude[(k.k-ft)_(in.rad), (k's°2/ft....)]	
1	FF-1	L	Y	-.25

Member Area Loads (BLC 1 : Dead)

Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]	
1	GSIP-1A	GSIP-1B	GSIP-1C	GSIP-1D	Y	Two Way	-.012
2	GSIP-2A	GSIP-2B	GSIP-2C	GSIP-2D	Y	Two Way	-.012
3	GSIP-3A	GSIP-3B	GSIP-3C	GSIP-3D	Y	Two Way	-.012

Member Area Loads (BLC 18 : Ice Weight)

Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]	
1	GSIP-1A	GSIP-1B	GSIP-1C	GSIP-1D	Y	Two Way	-.005
2	GSIP-2A	GSIP-2B	GSIP-2C	GSIP-2D	Y	Two Way	-.005
3	GSIP-3A	GSIP-3B	GSIP-3C	GSIP-3D	Y	Two Way	-.005

Envelope Joint Reactions

Joint	X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC		
1	K-1	max	1.002	45	1.422	45	1.735	45	0	98	0	98	0	98
2		min	-.11	5	-.17	5	-.191	5	0	1	0	1	0	1
3	K-2	max	2.33	10	1.463	34	.043	6	0	98	0	98	0	98
4		min	-2.064	34	-.179	10	-.043	14	0	1	0	1	0	1
5	K-3	max	1.163	56	1.625	56	.219	15	0	98	0	98	0	98
6		min	-.127	15	-.193	15	-.2015	56	0	1	0	1	0	1
7	SA-1	max	.997	2	.894	37	1.67	5	-.088	9	1.289	33	.579	24
8		min	-1.757	26	.241	13	-2.983	29	-.9	34	-1.285	9	-.296	16
9	SA-2	max	3.447	18	.903	42	1.089	6	.557	22	1.273	22	-.329	2
10		min	-1.93	10	.237	2	-1.09	30	-.409	14	-1.268	14	-.878	42
11	SA-3	max	1.218	17	.894	47	3.016	23	.726	34	1.207	27	.708	27
12		min	-1.974	25	.235	7	-1.702	15	.05	11	-1.203	3	-.169	3
13	Totals:	max	4.063	18	6.359	39	4.022	22						



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Envelope Joint Reactions (Continued)

Joint	X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
14	min	-4.063	10	2.532	96	-4.022	30					

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

Member	Shape	Code Check	Loc[ft]	LC	Shear	Loc	Dir	Cphi	Pn	phi	Pnt	phi	Mn	phi	Mn	Cb	Eqn
1	MP-6	PIPE 2.0	.410	5.75	23	.079	2.25	30	16.812	32.13	1.872	1.872	1..	H1-1b			
2	MP-10	PIPE 2.0	.409	5.75	29	.080	2.25	20	16.812	32.13	1.872	1.872	1..	H1-1b			
3	MP-2	PIPE 2.0	.405	5.75	18	.083	2.25	25	16.812	32.13	1.872	1.872	1..	H1-1b			
4	M62	PL6x3/8	.367	.167	32	.136	1.67	v	22	69.643	70.875	.554	8.859	1..	H1-1b		
5	M56	PL6x3/8	.347	.167	22	.134	1.67	v	27	69.643	70.875	.554	8.859	1..	H1-1b		
6	MP-3	PIPE 2.0	.343	5.75	33	.099	5.75	26	16.812	32.13	1.872	1.872	3..	H1-1b			
7	AHCP-3	L2.5x2.5x3	.336	0	25	.075	0	v	19	27.396	29.192	.873	1.972	1..	H2-1		
8	M68	PL6x3/8	.334	.167	26	.137	1.67	v	33	69.643	70.875	.554	8.859	1..	H1-1b		
9	MP-7	PIPE 2.0	.331	5.75	22	.105	5.75	32	16.812	32.13	1.872	1.872	2..	H1-1b			
10	MP-11	PIPE 2.0	.329	5.75	28	.100	5.75	21	16.812	32.13	1.872	1.872	3..	H1-1b			
11	AHCP-2	L2.5x2.5x3	.327	0	20	.078	0	v	30	27.396	29.192	.873	1.972	1..	H2-1		
12	AHCP-1	L2.5x2.5x3	.323	0	30	.080	0	v	24	27.396	29.192	.873	1.972	1..	H2-1		
13	SR-3	PIPE 2.0	.311	4.427	20	.191	1.042	21	1.428	32.13	1.872	1.872	4..	H1-1b			
14	SR-2	PIPE 2.0	.310	4.427	31	.192	1.042	31	1.428	32.13	1.872	1.872	4..	H1-1b			
15	SR-1	PIPE 2.0	.308	4.427	26	.189	1.042	26	1.428	32.13	1.872	1.872	4..	H1-1b			
16	M59	PL6x3/8	.299	.167	25	.179	1.67	v	26	69.643	70.875	.554	8.859	1..	H1-1b		
17	M53	PL6x3/8	.286	.167	30	.181	1.67	v	31	69.643	70.875	.554	8.859	1..	H1-1b		
18	M65	PL6x3/8	.280	.167	19	.179	1.67	v	21	69.643	70.875	.554	8.859	1..	H1-1b		
19	M63	PL6x3/8	.230	0	23	.472	0	v	24	69.65	70.875	.554	8.859	1..	H1-1b		
20	M57	PL6x3/8	.229	0	29	.464	0	v	29	69.65	70.875	.554	8.859	1..	H1-1b		
21	M69	PL6x3/8	.226	0	18	.465	0	v	18	69.65	70.875	.554	8.859	1..	H1-1b		
22	MP-9	PIPE 2.0	.224	5.75	33	.137	2.25	21	16.812	32.13	1.872	1.872	4..	H1-1b			
23	MP-1	PIPE 2.0	.223	5.75	22	.136	2.25	26	16.812	32.13	1.872	1.872	4..	H1-1b			
24	MP-5	PIPE 2.0	.223	5.75	28	.137	2.25	31	16.812	32.13	1.872	1.872	4..	H1-1b			
25	MP-8	PIPE 2.0	.199	5.75	20	.108	5.75	30	16.812	32.13	1.872	1.872	4..	H1-1b			
26	MP-4	PIPE 2.0	.198	5.75	31	.112	5.75	25	16.812	32.13	1.872	1.872	4..	H1-1b			
27	MP-12	PIPE 2.0	.196	5.75	25	.110	5.75	20	16.812	32.13	1.872	1.872	4..	H1-1b			
28	M66	PL6x3/8	.179	0	28	.530	0	v	29	69.65	70.875	.554	8.859	1..	H1-1b		
29	M60	PL6x3/8	.176	0	18	.532	0	v	18	69.65	70.875	.554	8.859	1..	H1-1b		
30	M54	PL6x3/8	.176	0	23	.537	0	v	23	69.65	70.875	.554	8.859	1..	H1-1b		
31	CP-3	PL6x1/2	.156	.446	31	.090	.446	v	53	86.501	94.5	.984	11.813	1..	H1-1b		
32	GSI-2B	HSS4x4x4	.155	0	34	.057	2.246	z	20	104.921	106.155	12.311	12.311	1..	H1-1b		
33	GSI-3B	HSS4x4x4	.155	0	41	.057	2.246	z	26	104.921	106.155	12.311	12.311	1..	H1-1b		
34	GSI-1B	HSS4x4x4	.152	0	45	.058	2.246	z	31	104.921	106.155	12.311	12.311	1..	H1-1b		
35	CP-2	PL6x1/2	.151	.446	26	.085	.446	v	22	86.501	94.5	.984	11.813	1..	H1-1b		
36	CP-1	PL6x1/2	.148	.446	21	.088	.446	v	32	86.501	94.5	.984	11.813	1..	H1-1b		
37	SA-1	HSS4x4x4	.148	0	33	.092	0	z	33	97.439	106.155	12.311	12.311	2..	H1-1b		
38	SA-2	HSS4x4x4	.147	0	22	.091	0	z	22	97.439	106.155	12.311	12.311	2..	H1-1b		
39	SA-3	HSS4x4x4	.141	0	27	.088	0	z	27	97.439	106.155	12.311	12.311	2..	H1-1b		
40	GSI-2A	HSS4x4x4	.141	2.395	34	.053	.15	z	32	104.921	106.155	12.311	12.311	1..	H1-1b		
41	GSI-1A	HSS4x4x4	.140	2.395	43	.052	.15	z	26	104.921	106.155	12.311	12.311	1..	H1-1b		
42	GSI-3A	HSS4x4x4	.139	2.395	38	.051	.15	z	21	104.921	106.155	12.311	12.311	1..	H1-1b		
43	GSI-3B	L2x2x3	.121	2.088	25	.007	0	v	34	10.065	22.743	.542	1.079	1..	H2-1		
44	GSI-1B	L2x2x3	.120	2.088	30	.007	0	v	41	10.065	22.743	.542	1.075	1..	H2-1		
45	GSI-2B	L2x2x3	.118	2.088	19	.007	0	v	45	10.065	22.743	.542	1.072	1..	H2-1		
46	GSI-3A	L2x2x3	.113	2.003	22	.007	4.091	v	42	10.065	22.743	.542	1.075	1..	H2-1		
47	GSI-1A	L2x2x3	.111	2.003	27	.007	4.091	v	49	10.065	22.743	.542	1.079	1..	H2-1		
48	GSI-2A	L2x2x3	.111	2.003	33	.007	4.091	v	37	10.065	22.743	.542	1.072	1..	H2-1		
49	SF2-TH	PIPE 3.0	.090	8.464	6	.101	8.464	21	6.489	65.205	5.749	5.749	2..	H1-1b			
50	SF1-TH	PIPE 3.0	.090	8.464	17	.102	8.464	32	6.489	65.205	5.749	5.749	2..	H1-1b			
51	FF-TH	PIPE 3.0	.088	4.036	8	.100	8.464	26	6.489	65.205	5.749	5.749	1..	H1-1b			



Company : Tower Engineering Professionals, Inc.
 Designer : NPD
 Job Number : TEP No. 94015.587315
 Model Name : 302528 - Columbia Central

Sept 8, 2021
 1:40 PM
 Checked By: SDJ

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

Member	Shape	Code Check	Loc[ft]	LC	Shear	Loc	Dir	Cphi	Pn	phi	Pnt	phi	Mn	phi	Mn	Cb	Eqn
52	K3	LL2.5x2.5...	.064	0	56	.002	0	z	27	44.475	58.32	3.954	2.55	1	H1-1b		
53	K2	LL2.5x2.5...	.057	0	34	.002	4.398	z	30	44.475	58.32	3.954	2.55	1	H1-1b		
54	K1	LL2.5x2.5...	.055	0	45	.002	0	z	33	44.475	58.32	3.954	2.55	1	H1-1b		
55	M73	PL6x1/2	.036	0	23	.293	0	v	26	92.433	94.5	.984	11.813	1..	H1-1b		
56	M77	PL6x1/2	.035	0	18	.292	0	v	21	92.433	94.5	.984	11.813	1..	H1-1b		
57	M81	PL6x1/2	.035	0	28	.298	0	v	31	92.433	94.5	.984	11.813	1..	H1-1b		
58	M75	PL6x1/2	.033	0	24	.330	0	v	21	92.433	94.5	.984	11.813	1..	H1-1b		
59	M79	PL6x1/2	.033	0	18	.335	0	v	31	92.433	94.5	.984	11.813	1..	H1-1b		
60	M71	PL6x1/2	.032	0	29	.332	0	v	26	92.433	94.5	.984	11.813	1..	H1-1b		

Envelope None Cold Formed Steel Code Checks

Member	Shape	Code	Loc[ft]	LC	Shear	Loc	Dir	LC	Pn[k]	Tn[k]	Mnyy[k-ft]	Mnzz[k-ft]	Cb	Cmy	Crzz	Eqn
No Data to Print ...																



Code Revisions:	TIA-222-H	IBC 2018
Tower Type:	Monopole	

Wind Inputs:		
Ult. Wind Velocity:	120.0	mph
Live Load Velocity:	30.0	mph
Ice Wind Velocity:	50.0	mph
Base Ice Thickness:	1.00	inches
Mount Centerline:	108.0	ft
Antenna Centerline:	108.0	ft
Exposure Category:	B	
Topo Category:	1	
Risk Category:	II	
Ground Elevation:	632	ft

Wind Calculations:		
K_{zt} :	1.000	Section 2.6.6
K_d :	0.950	
$K_{z-Mount}$:	1.010	Section 2.6.5.2
$K_{z-Antenna}$:	1.010	Section 2.6.5.2
K_{iz} :	1.126	Section 2.6.10
Ice Thickness:	1.126	inches - Section 2.6.10

Without Ice - (psf)		With Ice - (psf)	
$(q_z G_h)_{Mount}$:	34.58	$(q_z G_h)_{Mount}$:	6.00
$(q_z G_h)_{Antenna}$:	34.58	$(q_z G_h)_{Antenna}$:	6.00

Seismic Code Revisions:	TIA-222-H
Seismic Risk Category:	II

Seismic Input		
S_{DS} :	0.067	Design Short Period Spectral Accel.
I_p :	1.0	Importance Factor
R_p :	2.0	Response Modification Factor
ρ :	1.0	
A_5 :	1.0	Application Factor - TIA-222-H Section 2.7.8.1
S_1 :	0.034	Spectral Acceleration at a Period of 1 Second

Seismic Design Force			
C_s :	0.034	kips/kip	TIA-H Sec 2.7.7.1.1
C_{s-min} :	0.030	kips/kip	TIA-H Sec 2.7.7.1.1



302528 - Columbia Central
 TEP No. 94015.587315
 Analysis By: NPD 9/8/2021
 Checked By: SDJ 9/8/2021

Antenna Loads are Calculated in Accordance with TIA-222-H

Azimuth is the absolute angle measured clockwise from RISA-3D global X-axis.

MFR	Model	Height (in)	Width (in)	Depth (in)	Wt. (lbs)	Azimuth°	Qty	Shape	Member Label	Distance from start node of the member		
										Location #1 (ft,%)	Location #2 (ft,%)	Location #3 (ft,%)
	ALPHA											
RFS/CELWAVE	APXVAALL24_43-U-NA20	95.90	24.00	8.50	122.80	350.00	1	Flat	MP-2	0.50	7.50	
ERICSSON	Radio 4480 B71+B85A	21.80	15.70	7.50	84.00	80.00	1	Flat	MP-2	3.00		
ERICSSON	Radio 4460 B25+B66	19.60	15.70	12.10	109.00	80.00	1	Flat	MP-2	3.00		
ERICSSON	AIR6449 B41	33.10	20.60	8.60	104.00	350.00	1	Flat	MP-3	3.00	5.00	
	BETA											
RFS/CELWAVE	APXVAALL24_43-U-NA20	95.90	24.00	8.50	122.80	120.00	1	Flat	MP-6	0.50	7.50	
ERICSSON	Radio 4480 B71+B85A	21.80	15.70	7.50	84.00	210.00	1	Flat	MP-6	3.00		
ERICSSON	Radio 4460 B25+B66	19.60	15.70	12.10	109.00	210.00	1	Flat	MP-6	3.00		
ERICSSON	AIR6449 B41	33.10	20.60	8.60	104.00	120.00	1	Flat	MP-7	3.00	5.00	
	GAMMA											
RFS/CELWAVE	APXVAALL24_43-U-NA20	95.90	24.00	8.50	122.80	240.00	1	Flat	MP-10	0.50	7.50	
ERICSSON	Radio 4480 B71+B85A	21.80	15.70	7.50	84.00	330.00	1	Flat	MP-10	3.00		
ERICSSON	Radio 4460 B25+B66	19.60	15.70	12.10	109.00	330.00	1	Flat	MP-10	3.00		
ERICSSON	AIR6449 B41	33.10	20.60	8.60	104.00	240.00	1	Flat	MP-11	3.00	5.00	



**TOWER
ENGINEERING
PROFESSIONALS**

302528 - Columbia Central

TEP No. 94015.587315
Analysis By: NPD 9/8/2021
Checked By: SDJ 9/8/2021

Member Forces are Calculated in Accordance with TIA-222-H

Member Name	Wind Proj. (in)	Length (in)	Shape	θ (°)	Perimeter (in)
AHCP-1	2.500	15.11	Flat	30.00	10.00
AHCP-2	2.500	15.11	Flat	90.00	10.00
AHCP-3	2.500	15.11	Flat	-30.00	10.00
CP-1	6.000	10.71	Flat	30.00	13.00
CP-2	6.000	10.71	Flat	90.00	13.00
CP-3	6.000	10.71	Flat	-30.00	13.00
M71	6.000	3.00	Flat	90.00	13.00
M73	6.000	3.00	Flat	90.00	13.00
M75	6.000	3.00	Flat	30.00	13.00
M77	6.000	3.00	Flat	30.00	13.00
M79	6.000	3.00	Flat	-30.00	13.00
M81	6.000	3.00	Flat	-30.00	13.00
FF-TH	3.500	150.00	Round	90.00	11.00
SF1-TH	3.500	150.00	Round	-30.00	11.00
SF2-TH	3.500	150.00	Round	30.00	11.00
GSIP-1A	2.000	49.09	Flat	90.00	8.00
GSIP-1B	2.000	49.09	Flat	-30.00	8.00
GSIP-2A	2.000	49.09	Flat	-30.00	8.00
GSIP-2B	2.000	49.09	Flat	30.00	8.00
GSIP-3A	2.000	49.09	Flat	30.00	8.00
GSIP-3B	2.000	49.09	Flat	90.00	8.00
GSI-1A	4.000	28.75	Flat	30.00	16.00
GSI-1B	4.000	28.75	Flat	30.00	16.00
GSI-2A	4.000	28.75	Flat	90.00	16.00
GSI-2B	4.000	28.75	Flat	90.00	16.00
GSI-3A	4.000	28.75	Flat	-30.00	16.00
GSI-3B	4.000	28.75	Flat	-30.00	16.00
M53	6.000	4.01	Flat	0.00	12.75
M54	6.000	2.00	Flat	-29.90	12.75
M56	6.000	4.01	Flat	0.00	12.75
M57	6.000	2.00	Flat	29.90	12.75
M59	6.000	4.01	Flat	-60.00	12.75
M60	6.000	2.00	Flat	-89.90	12.75
M62	6.000	4.01	Flat	-60.00	12.75
M63	6.000	2.00	Flat	-30.10	12.75
M65	6.000	4.01	Flat	60.00	12.75
M66	6.000	2.00	Flat	30.10	12.75
M68	6.000	4.01	Flat	60.00	12.75

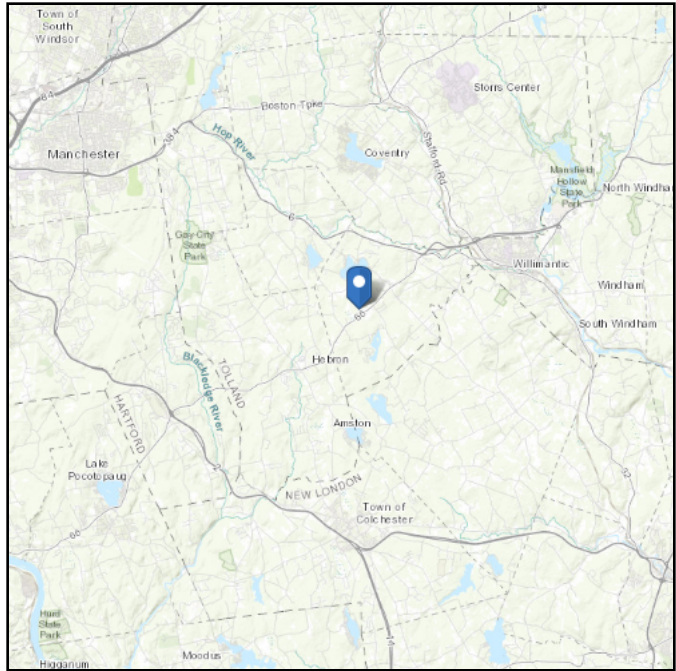
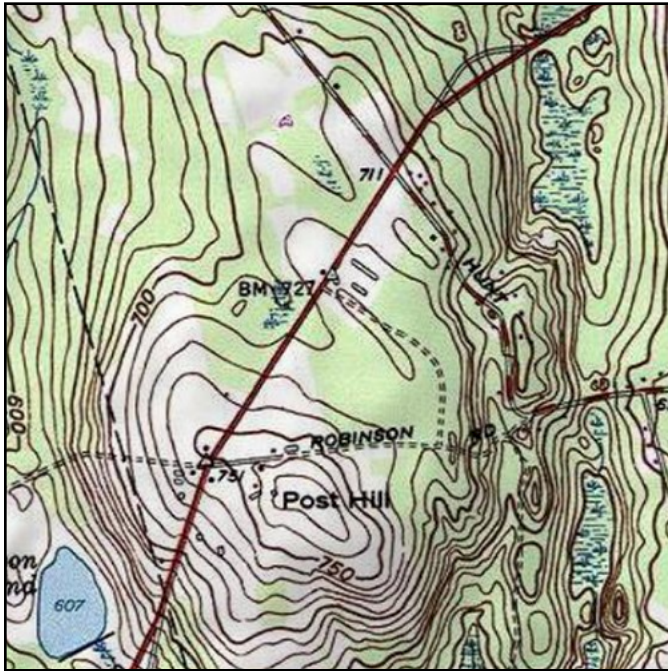
M69	6.000	2.00	Flat	89.90	12.75
MP-1	2.375	96.00	Round		7.46
MP-2	2.375	96.00	Round		7.46
MP-3	2.375	96.00	Round		7.46
MP-4	2.375	96.00	Round		7.46
MP-5	2.375	96.00	Round		7.46
MP-6	2.375	96.00	Round		7.46
MP-7	2.375	96.00	Round		7.46
MP-8	2.375	96.00	Round		7.46
MP-9	2.375	96.00	Round		7.46
MP-10	2.375	96.00	Round		7.46
MP-11	2.375	96.00	Round		7.46
MP-12	2.375	96.00	Round		7.46
K1	5.000	52.78	Flat		15.00
K2	5.000	52.78	Flat		15.00
K3	5.000	52.78	Flat		15.00
SA-1	4.000	62.25	Flat	-60.00	16.00
SA-2	4.000	62.25	Flat	0.00	16.00
SA-3	4.000	62.25	Flat	60.00	16.00
SR-1	2.375	150.00	Round	90.00	7.46
SR-2	2.375	150.00	Round	-30.00	7.46
SR-3	2.375	150.00	Round	30.00	7.46

ASCE 7 Hazards Report

Address:
No Address at This
Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 631.9 ft (NAVD 88)
Latitude: 41.6899
Longitude: -72.3252



Wind

Results:

Wind Speed:	120 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	92 Vmph
100-year MRI	99 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Thu Apr 29 2021

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

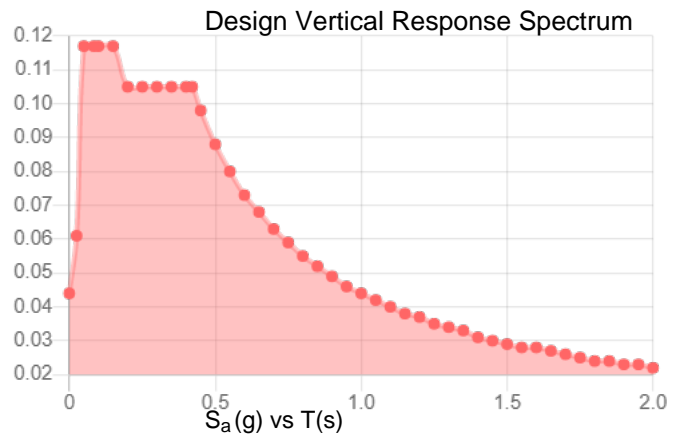
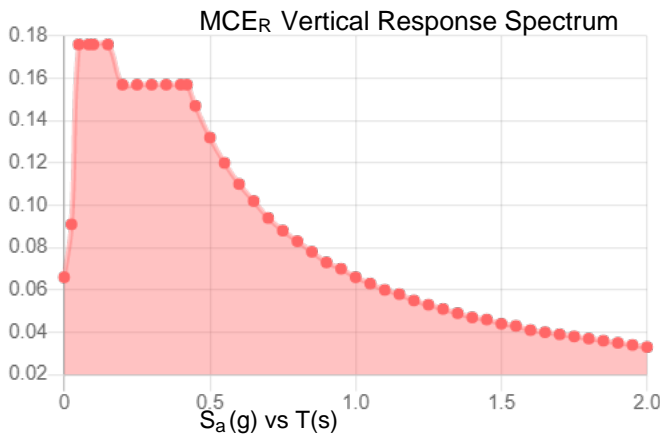
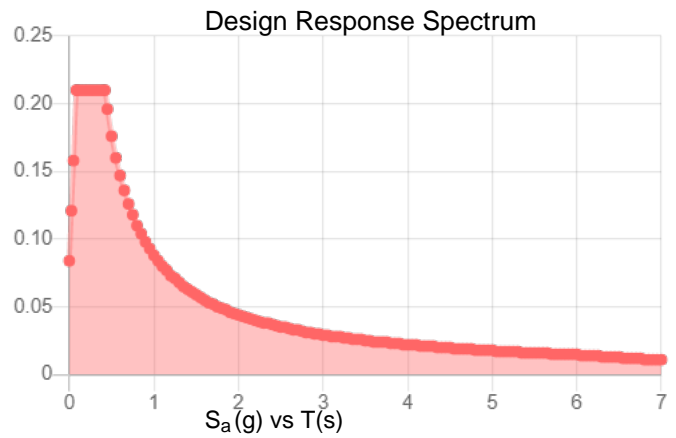
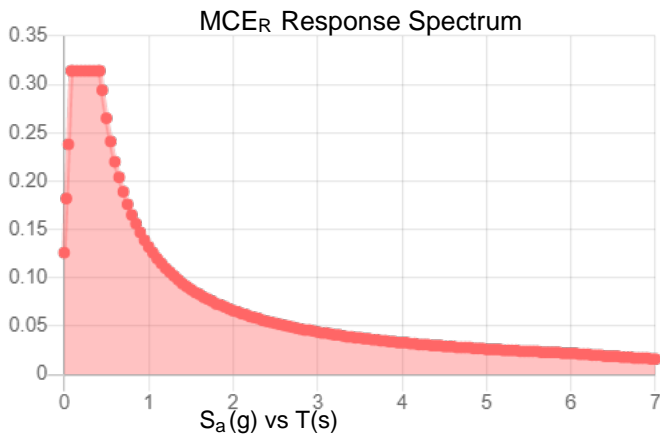
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Site Soil Class: D - Stiff Soil

Results:

S_s :	0.196	S_{D1} :	0.088
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.107
F_v :	2.4	PGA _M :	0.17
S_{MS} :	0.314	F_{PGA} :	1.585
S_{M1} :	0.132	I_e :	1
S_{DS} :	0.21	C_v :	0.7

Seismic Design Category B



Data Accessed:

Thu Apr 29 2021

Date Source:

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

Ice

Results:

Ice Thickness: 1.00 in.

Concurrent Temperature: 15 F

Gust Speed: 50 mph

Data Source: Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

Date Accessed: Thu Apr 29 2021

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

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

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

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302528 - Columbia Central

TEP No. 94015.587315

Analysis By: NPD 9/8/2021

Checked By: SDJ 9/8/2021

Moment Bolt Group - Support Arm Connection

Code Revisions:	ANSI/TIA-222-H
Bolt Type:	Headed Bolts

Connection Inputs:

Bolt Size:	0.625	in
# Bolts:	4	
Plate Width:	8.00	in
Plate Height:	8.00	in
Bolt H Gap:	6.00	in
Bolt V Gap:	6.00	in
Plate T:	0.750	in
Slip Member Ø:	-	in
Bolt Grade:	A325N	

Capacities:

Bolt Capacity=	10.3%	PASS
Plate Capacity=	9.2%	PASS

Bolt Properties:

$F_{y_{bolt}}$:	92.0	ksi
$F_{u_{bolt}}$:	120.0	ksi
r:	4.2	in
J:	72.0	in ⁴ /in ²
A_{bolt} :	0.3	in ²
$A_{bolt, Net Tensile}$:	0.2	in ²
Pretension:	19.0	kips

Member Properties:

Member Shape:	Flat	
Plate F_y :	35.0	ksi
Plate F_u :	60.0	ksi
Member Height:	4.0	in
Member Width:	4.0	in



AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 148 ft Monopole
ATC Site Name : Columbia Central,CT
ATC Site Number : 302528
Engineering Number : 13713210_C3_01
Proposed Carrier : SPRINT NEXTEL
Carrier Site Name : CTHA803A
Carrier Site Number : CTHA803A
Site Location : 330 Middletown Road
Columbia, CT 06237-1528
41.6899, -72.3252
County : Tolland
Date : September 9, 2021
Max Usage : 60%
Result : Pass

Prepared By:

Rebecca Malz
Structural Engineer I

Reviewed By:



Authorized by "EOR"
09 Sep 2021 10:14:03

COA : PEC.0001553



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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 148 ft Monopole to reflect the change in loading by SPRINT NEXTEL.

Supporting Documents

Tower Drawings	Summit Manufacturing Design #13998, dated May 2, 2001
Foundation Drawing	Summit Manufacturing Design #13998, dated April 30, 2001
Geotechnical Report	Tectonic Engineering Consultants Report #1170-C878B, dated January 26, 2001
Mount Analysis	ATC Engineering #13653962_C8_02, dated April 29, 2011

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	120 mph (3-second gust)
Basic Wind Speed w/ Ice:	50 mph (3-second gust) w/ 1.00" radial ice concurrent
Code:	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	$S_s = 0.20$, $S_i = 0.06$
Site Class:	D - Stiff Soil - Default

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
150.0	6	Powerwave Allgon LGP21401	Triangular Platform with Handrails and Kickers	(2) 0.39" (10mm) Fiber Trunk (4) 0.78" (19.7mm) 8 AWG 6 (6) 1 5/8" Coax (2) 2" conduit	AT&T MOBILITY
	2	Raycap DC6-48-60-18-8F ("Squid")			
	3	Ericsson RRUS 8843 B2, B66A			
	3	Ericsson RRUS 4478 B14			
	3	Ericsson RRUS 4449 B5, B12			
	3	Powerwave Allgon 7770.00			
	3	CCI DMP65R-BU6DA			
	3	CCI OPA65R-BU6D			
135.0	3	Samsung B5/B13 RRH-BR04C	Triangular Low Profile Platform	(12) 1 5/8" Coax (2) 1 5/8" Hybriflex	VERIZON WIRELESS
	3	Samsung B2/B66A RRH-BR049			
	6	Commscope NHH-65B-R2B			
	6	Antel LPA-80063/4CF			
	3	Samsung MT6407-77A			
	2	Raycap RRFDC-3315-PF-48			
124.0	12	Decibel DB844H90E-XY	Triangular Low Profile Platform	(12) 1 1/4" Coax	SPRINT NEXTEL
108.0	3	RFS APXVAALL24 43-U-NA20	Triangular Platform with Handrails and Kickers	-	
	3	Ericsson Air6449 B41	Flush		
58.0	1	Generic GPS	Stand-Off	(1) 1/2" Coax	
30.0	1	Generic GPS	Stand-Off	(1) 1/2" Coax	VERIZON WIRELESS

Equipment to be Removed

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
108.0	3	Ericsson RRUS 4415 B66	-	(3) 1 5/8" Hybriflex	SPRINT NEXTEL
	3	RFS APX16DWV-16DWVS-E-A20			
	3	Ericsson 4424 B25			
	3	Ericsson Radio 4449 B71 B85A			

Proposed Equipment

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
108.0	3	Ericsson Radio 4460 B25+B66	Triangular Platform with Handrails and Kickers	(3) 1.99" (50.7mm) Hybrid	SPRINT NEXTEL
	3	Ericsson Radio 4480 B71+B85A			

¹ Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.

Install proposed lines inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	55%	Pass
Shaft	60%	Pass
Base Plate	41%	Pass
Flange	58%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	3316.0	4476.6	2558.8	57%
Shear (Kips)	35.0	47.2	23.7	50%

* The design reactions are factored by 1.35 per ANSI/TIA-222-H, Sec. 15.6.2

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

Deflection, Twist and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
108.0	Ericsson Radio 4480 B71+B85A	SPRINT NEXTEL	0.814	0.860
	Ericsson Radio 4460 B25+B66			

*Deflection, Twist and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-H

Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively “American Tower”) are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

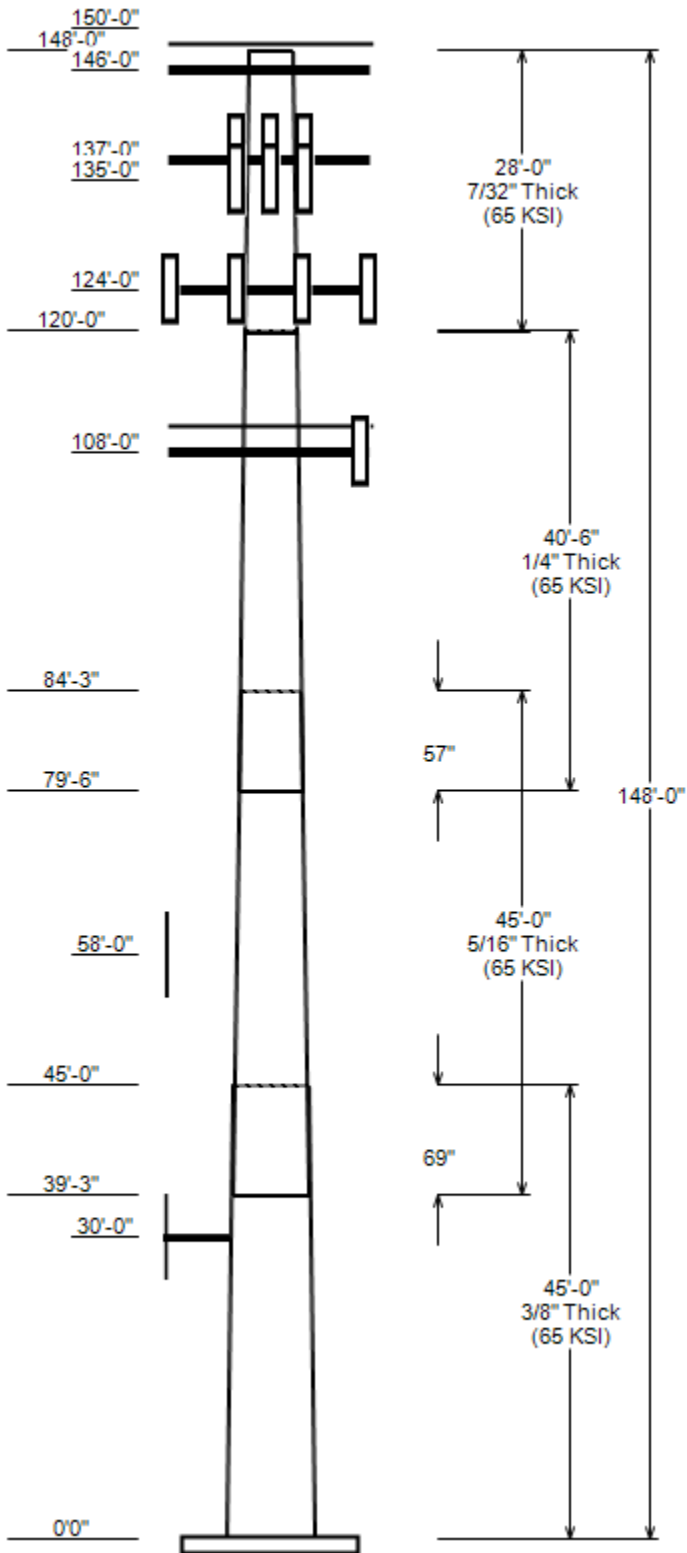
Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

JOB INFORMATION

Asset : 302528, Columbia Central
 Client : SPRINT NEXTEL
 Code : ANSI/TIA-222-H

Height : 148 ft
 Base Width : 51.726
 Shape : 18 Sides



SITE PARAMETERS

Base Elev (ft): 0.00 Structure Class: II
 Taper : 0.18100 (In/ft) Exposure : B
 Topographic Category : 1 Topographic Feature:
 Topo Method : Method 1

SECTION PROPERTIES

Shaft Section	Length (ft)	Diameter (in)		Thick (in)	Overlap Length (in)	Steel Grade (ksi)
		Across Flats Top	Across Flats Bottom			
1	45.000	43.56	51.73	0.375	0.000	65
2	45.000	37.07	45.23	0.312	69.000	65
3	40.500	31.08	38.43	0.250	57.000	65
4	28.000	26.00	31.08	0.219	0.000	65

DISCRETE APPURTENANCE

Attach Elev (ft)	Force Elev (ft)	Qty	Description
150.0	146.0	6	Powerwave Allgon LGP21401
150.0	146.0	2	Raycap DC6-48-60-18-8F ("Squid
150.0	150.0	3	Ericsson RRUS 8843 B2, B66A
150.0	150.0	3	Ericsson RRUS 4478 B14
150.0	150.0	3	Ericsson RRUS 4449 B5, B12
150.0	146.0	3	Powerwave Allgon 7770.00
150.0	150.0	3	CCI DMP65R-BU6DA
150.0	150.0	3	CCI OPA65R-BU6D
146.0	146.0	1	Generic Mount Reinforcement
146.0	146.0	1	Generic Round Platform with Ha
137.0	137.0	1	Generic Round Low Profile Plat
135.0	135.0	3	Samsung B5/B13 RRH-BR04C
135.0	135.0	3	Samsung B2/B66A RRH-BR049
135.0	135.0	2	Raycap RRFDC-3315-PF-48
135.0	135.0	3	Samsung MT6407-77A
135.0	137.0	6	Antel LPA-80063/4CF
135.0	135.0	6	Commscope NHH-65B-R2B
124.0	124.0	12	Decibel DB844H90E-XY
124.0	124.0	1	Generic Round Low Profile Plat
108.0	108.0	3	Ericsson Radio 4460 B25+B66
108.0	108.0	3	Ericsson Radio 4480 B71+B85A
108.0	108.0	3	Ericsson Air6449 B41
108.0	108.0	1	Generic Mount Reinforcement
108.0	108.0	3	RFS APXVAALL24 43-U-NA20
108.0	108.0	1	Generic Round Platform with Ha
58.0	58.0	1	Generic GPS
30.0	30.0	1	Generic GPS
30.0	30.0	1	Stand-Off

LINEAR APPURTENANCE

Elev From (ft)	Elev To (ft)	Description	Exp To Wind
0.0	150.0	2" conduit	No
0.0	150.0	1 5/8" Coax	No
0.0	150.0	0.78" (19.7mm) 8 AWG 6	No
0.0	150.0	0.39" (10mm) Fiber Trunk	No
0.0	135.0	1 5/8" Hybriflex	No
0.0	135.0	1 5/8" Coax	No
0.0	124.0	1 1/4" Coax	No
0.0	108.0	1.99" (50.7mm) Hybrid	No
0.0	58.0	1/2" Coax	No
0.0	30.0	1/2" Coax	No

JOB INFORMATION

Asset : 302528, Columbia Central
 Client : SPRINT NEXTEL
 Code : ANSI/TIA-222-H

Height : 148 ft
 Base Width : 51.726
 Shape : 18 Sides

LOAD CASES

1.2D + 1.0W Normal	120 mph wind with no ice
0.9D + 1.0W Normal	120 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Nor	50 mph wind with 1" radial ice
1.2D + 1.0Ev + 1.0Eh Nor	Seismic
0.9D - 1.0Ev + 1.0Eh Nor	Seismic (Reduced DL)
1.0D + 1.0W Service Norm	60 mph Wind with No Ice

REACTIONS

Load Case	Moment (kip-ft)	Shear (Kip)	Axial (Kip)
1.2D + 1.0W Normal	2558.81	23.68	46.78
0.9D + 1.0W Normal	2523.57	23.66	35.08
1.2D + 1.0Di + 1.0Wi Normal	668.32	6.26	62.27
1.2D + 1.0Ev + 1.0Eh Normal	148.27	1.17	46.92
0.9D - 1.0Ev + 1.0Eh Normal	145.65	1.17	32.42
1.0D + 1.0W Service Normal	567.54	5.29	39.01

DISH DEFLECTIONS

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
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ASSET: 302528, Columbia Central
CUSTOMER: SPRINT NEXTEL

CODE: ANSI/TIA-222-H
ENG NO: 13713210_C3_01

ANALYSIS PARAMETERS

Location:	Tolland County,CT	Height:	148 ft
Type and Shape:	Taper, 18 Sides	Base Diameter:	51.73 in
Manufacturer:	Summit	Top Diameter:	26.00 in
K _d (non-service):	0.95	Taper:	0.1810 in/ft
K _e :	0.98	Rotation:	0.000°

ICE & WIND PARAMETERS

Exposure Category:	B	Design Wind Speed w/o Ice:	120 mph
Risk Category:	II	Design Wind Speed w/Ice:	50 mph
Topo Factor Procedure:	Method 1	Operational Wind Speed:	60 mph
Topographic Category:	1	Design Ice Thickness:	1.00 in
Crest Height:	0 ft	HMSL:	638.00 ft

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil	Period Based on Rayleigh Method (sec):	2.57		
T _L (sec):	6	P:	1	C _s :	0.030
S _s :	0.196	S ₁ :	0.055	C _s Max:	0.030
F _a :	1.600	F _v :	2.400	C _s Min:	0.030
S _{ds} :	0.209	S _{d1} :	0.088		

LOAD CASES

1.2D + 1.0W Normal	120 mph wind with no ice
0.9D + 1.0W Normal	120 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Normal	50 mph wind with 1" radial ice
1.2D + 1.0Ev + 1.0Eh Normal	Seismic
0.9D - 1.0Ev + 1.0Eh Normal	Seismic (Reduced DL)
1.0D + 1.0W Service Normal	60 mph Wind with No Ice

ASSET: 302528, Columbia Central
 CUSTOMER: SPRINT NEXTEL

CODE: ANSI/TIA-222-H
 ENG NO: 13713210_C3_01

SHAFT SECTION PROPERTIES

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint len (in)	Bottom							Top						
						Weight (lb)	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	45.00	0.3750	65		0.00	8,615	51.73	0.000	61.12	20,362.1	22.56	137.94	43.56	45.00	51.40	12,112.2	18.72	116.17	0.1814
2-18	45.00	0.3125	65	Slip	69.00	6,202	45.23	39.250	44.55	11,356.3	23.76	144.74	37.07	84.25	36.45	6,221.2	19.15	118.61	0.1814
3-18	40.50	0.2500	65	Slip	57.00	3,773	38.43	79.500	30.29	5,578.3	25.34	153.71	31.08	120.00	24.46	2,937.5	20.16	124.32	0.1814
4-18	28.00	0.2187	65	Butt	0.00	1,873	31.08	120.000	21.42	2,577.6	23.29	142.11	26.00	148.00	17.90	1,502.7	19.20	118.88	0.1814

Shaft Weight 20,463

DISCRETE APPURTENANCE PROPERTIES

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice			Ice		
					Weight (lb)	EPAA (sf)	Orientation Factor	Weight (lb)	EPAA (sf)	Orientation Factor
150.00	CCI DMP65R-BU6DA	3	0.75	0.000	79.40	12.709	0.63	251.14	14.568	0.63
150.00	Raycap DC6-48-60-18-8F ("Squid	2	0.75	-4.000	31.80	1.470	1.00	72.93	1.936	1.00
150.00	Ericsson RRUS 4449 B5, B12	3	0.75	0.000	71.00	1.969	0.50	113.97	2.591	0.50
150.00	Ericsson RRUS 4478 B14	3	0.75	0.000	59.90	1.842	0.50	96.76	2.440	0.50
150.00	Ericsson RRUS 8843 B2, B66A	3	0.75	0.000	72.00	1.639	0.50	112.86	2.202	0.50
150.00	CCI OPA65R-BU6D	3	0.75	0.000	63.20	12.871	0.63	237.44	14.736	0.63
150.00	Powerwave Allgon 7770.00	3	0.75	-4.000	35.00	5.508	0.65	118.18	6.194	0.65
150.00	Powerwave Allgon LGP21401	6	0.75	-4.000	14.10	1.104	0.50	30.73	1.580	0.50
146.00	Generic Mount Reinforcement	1	1.00	0.000	200.00	7.500	1.00	328.89	12.487	1.00
146.00	Generic Round Platform with Ha	1	1.00	0.000	2500.00	27.200	1.00	3578.74	43.480	1.00
137.00	Generic Round Low Profile Plat	1	1.00	0.000	1875.00	21.700	1.00	2410.74	34.401	1.00
135.00	Samsung MT6407-77A	3	0.80	0.000	81.60	4.709	0.61	148.85	5.711	0.61
135.00	Antel LPA-80063/4CF	6	0.80	2.000	20.00	6.142	0.76	148.58	6.813	0.76
135.00	Raycap RRFDC-3315-PF-48	2	0.80	0.000	26.90	2.512	0.67	79.46	3.199	0.67
135.00	Samsung B2/B66A RRH-BR049	3	0.80	0.000	84.40	1.875	0.50	126.49	2.471	0.50
135.00	Samsung B5/B13 RRH-BR04C	3	0.80	0.000	70.30	1.875	0.50	108.04	2.471	0.50
135.00	Commscope NHH-65B-R2B	6	0.80	0.000	43.70	8.079	0.69	158.74	9.917	0.69
124.00	Generic Round Low Profile Plat	1	1.00	0.000	1875.00	21.700	1.00	2404.95	34.263	1.00
124.00	Decibel DB844H90E-XY	12	0.80	0.000	14.00	3.615	0.73	80.16	3.604	0.73
108.00	Generic Round Platform with Ha	1	1.00	0.000	2500.00	27.200	1.00	3545.60	42.980	1.00
108.00	RFS APXVAALL24 43-U-NA20	3	0.75	0.000	122.80	20.243	0.63	374.24	22.637	0.63
108.00	Generic Mount Reinforcement	1	1.00	0.000	200.00	7.500	1.00	324.93	12.333	1.00
108.00	Ericsson Air6449 B41	3	0.75	0.000	104.00	5.682	0.63	191.98	6.707	0.63
108.00	Ericsson Radio 4460 B25+B66	3	0.75	0.000	109.00	2.564	0.67	166.06	3.244	0.67
108.00	Ericsson Radio 4480 B71+B85A	3	0.75	0.000	84.00	2.852	0.67	132.77	3.573	0.67
58.00	Generic GPS	1	1.00	0.000	10.00	0.900	1.00	27.73	1.287	1.00
30.00	Generic GPS	1	1.00	0.000	10.00	0.900	1.00	26.50	1.261	1.00
30.00	Stand-Off	1	1.00	0.000	100.00	3.000	1.00	127.49	3.884	1.00

Totals Num Loadings: 28 82 13,132.00 22,606.91

LINEAR APPURTENANCE PROPERTIES

Load Case Azimuth (deg) : _

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax/ Row	Dist Between Rows(in)	Dist Between Cols(in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	150.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	150.00	4	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	150.00	2	2" conduit	2.38	3.65	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	150.00	2	0.39" (10mm) Fiber Tr	0.39	0.06	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	135.00	12	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	VERIZON WIREL
0.00	135.00	2	1 5/8" Hybriflex	1.98	1.3	N	0	0	0	0	0	N	VERIZON WIREL
0.00	124.00	12	1 1/4" Coax	1.55	0.63	N	0	0	0	0	0	N	SPRINT NEXTEL
0.00	108.00	3	1.99" (50.7mm) Hybrid	1.99	1.9	N	0	0	0	0	0	N	SPRINT NEXTEL
0.00	58.00	1	1/2" Coax	0.63	0.15	N	0	0	0	0	0	N	SPRINT NEXTEL
0.00	30.00	1	1/2" Coax	0.63	0.15	N	0	0	0	0	0	N	VERIZON WIREL

SEGMENT PROPERTIES

(Max Len: 5.ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in ³)	Z (in ³)	Weight (lb)
0.00		0.3750	51.726	61.118	20,362.10	22.56	137.94	74.9	775.3	0.0	0.0
5.00		0.3750	50.819	60.039	19,301.90	22.13	135.52	75.4	748.1	0.0	1,030.7
10.00		0.3750	49.912	58.959	18,279.20	21.71	133.10	75.9	721.3	0.0	1,012.3
15.00		0.3750	49.005	57.879	17,293.20	21.28	130.68	76.4	695.1	0.0	993.9
20.00		0.3750	48.097	56.800	16,343.40	20.85	128.26	76.9	669.3	0.0	975.6
25.00		0.3750	47.190	55.720	15,429.00	20.43	125.84	77.4	644.0	0.0	957.2
30.00		0.3750	46.283	54.640	14,549.40	20.00	123.42	77.9	619.2	0.0	938.8
35.00		0.3750	45.376	53.560	13,703.80	19.57	121.00	78.4	594.8	0.0	920.5
39.25	Bot - Section 2	0.3750	44.605	52.643	13,011.40	19.21	118.95	78.8	574.5	0.0	767.9
40.00		0.3750	44.469	52.481	12,891.60	19.15	118.58	78.9	571.0	0.0	247.7
45.00	Top - Section 1	0.3125	44.187	43.516	10,583.30	23.17	141.40	74.1	471.7	0.0	1,631.7
50.00		0.3125	43.280	42.616	9,940.30	22.66	138.49	74.8	452.4	0.0	732.7
55.00		0.3125	42.372	41.717	9,323.90	22.15	135.59	75.4	433.4	0.0	717.4
58.00		0.3125	41.828	41.177	8,966.60	21.84	133.85	75.7	422.2	0.0	423.1
60.00		0.3125	41.465	40.817	8,733.50	21.63	132.69	76	414.8	0.0	279.0
65.00		0.3125	40.558	39.917	8,168.60	21.12	129.79	76.6	396.7	0.0	686.8
70.00		0.3125	39.651	39.017	7,628.60	20.61	126.88	77.2	378.9	0.0	671.5
75.00		0.3125	38.744	38.118	7,112.90	20.10	123.98	77.8	361.6	0.0	656.2
79.50	Bot - Section 3	0.3125	37.927	37.308	6,669.20	19.64	121.37	78.3	346.3	0.0	577.5
80.00		0.3125	37.837	37.218	6,621.00	19.59	121.08	78.4	344.7	0.0	114.9
84.25	Top - Section 2	0.2500	37.566	29.609	5,209.00	24.73	150.26	72.3	273.1	0.0	965.3
85.00		0.2500	37.429	29.501	5,152.20	24.64	149.72	72.4	271.1	0.0	75.4
90.00		0.2500	36.522	28.781	4,784.20	24.00	146.09	73.2	258.0	0.0	495.8
95.00		0.2500	35.615	28.061	4,434.20	23.36	142.46	73.9	245.2	0.0	483.6
100.00		0.2500	34.708	27.341	4,101.60	22.72	138.83	74.7	232.8	0.0	471.3
105.00		0.2500	33.801	26.622	3,786.10	22.08	135.20	75.4	220.6	0.0	459.1
108.00		0.2500	33.257	26.190	3,604.80	21.69	133.03	75.9	213.5	0.0	269.6
110.00		0.2500	32.894	25.902	3,487.20	21.44	131.57	76.2	208.8	0.0	177.3
115.00		0.2500	31.987	25.182	3,204.50	20.80	127.95	76.9	197.3	0.0	434.6
120.00	Top - Section 3	0.2500	31.079	24.462	2,937.50	20.16	124.32	77.7	186.2	0.0	422.3
120.00	Bot - Section 4	0.2187	31.079	21.421	2,577.60	23.29	142.11	74	163.4	0.0	
124.00		0.2187	30.354	20.918	2,400.00	22.71	138.79	74.7	155.7	0.0	288.1
125.00		0.2187	30.172	20.792	2,356.90	22.56	137.96	74.9	153.9	0.0	71.0
130.00		0.2187	29.265	20.162	2,149.20	21.83	133.81	75.7	144.6	0.0	348.4
135.00		0.2187	28.358	19.532	1,954.00	21.10	129.67	76.6	135.7	0.0	337.7
137.00		0.2187	27.995	19.280	1,879.40	20.81	128.01	76.9	132.2	0.0	132.1
140.00		0.2187	27.451	18.903	1,771.10	20.37	125.52	77.4	127.1	0.0	194.9
145.00		0.2187	26.544	18.273	1,599.90	19.64	121.37	78.3	118.7	0.0	316.2
146.00		0.2187	26.362	18.147	1,567.10	19.49	120.54	78.5	117.1	0.0	62.0
148.00		0.2187	25.999	17.895	1,502.70	19.20	118.88	78.8	113.8	0.0	122.6

Totals: 20,462.7

Load Case: 1.2D + 1.0W Normal	120 mph wind with no ice	24 Iterations
Gust Response Factor:	1.10	
Dead load Factor:	1.20	
Wind Load Factor:	1.00	

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-46.78	-23.68	0.00	-2,558.8	0.00	2,558.81	4,118.22	1,072.63	4,974.93	4,353.63	0	0	0.600
5.00	-45.23	-23.41	0.00	-2,440.4	0.00	2,440.40	4,072.57	1,053.68	4,800.73	4,228.77	0.09	-0.17	0.589
10.00	-43.70	-23.13	0.00	-2,323.4	0.00	2,323.38	4,025.95	1,034.73	4,629.63	4,104.63	0.37	-0.35	0.577
15.00	-42.20	-22.85	0.00	-2,207.8	0.00	2,207.75	3,978.36	1,015.78	4,461.64	3,981.27	0.83	-0.53	0.566
20.00	-40.72	-22.57	0.00	-2,093.5	0.00	2,093.52	3,929.79	996.83	4,296.76	3,858.74	1.48	-0.7	0.553
25.00	-39.26	-22.28	0.00	-1,980.7	0.00	1,980.69	3,880.25	977.88	4,134.97	3,737.11	2.31	-0.88	0.541
30.00	-37.70	-21.89	0.00	-1,869.3	0.00	1,869.27	3,829.73	958.93	3,976.30	3,616.41	3.33	-1.06	0.527
35.00	-36.30	-21.61	0.00	-1,759.8	0.00	1,759.82	3,778.24	939.99	3,820.72	3,496.72	4.53	-1.24	0.513
39.25	-35.14	-21.45	0.00	-1,668.0	0.00	1,667.96	3,733.71	923.88	3,690.93	3,395.80	5.7	-1.39	0.501
40.00	-34.78	-21.27	0.00	-1,651.9	0.00	1,651.88	3,725.77	921.04	3,668.26	3,378.08	5.92	-1.41	0.499
45.00	-32.52	-20.91	0.00	-1,545.5	0.00	1,545.54	2,904.05	763.71	3,026.37	2,623.51	7.5	-1.59	0.601
50.00	-31.34	-20.57	0.00	-1,441.0	0.00	1,441.00	2,867.09	747.92	2,902.53	2,536.20	9.26	-1.77	0.580
55.00	-30.19	-20.29	0.00	-1,338.2	0.00	1,338.15	2,829.16	732.13	2,781.28	2,449.42	11.21	-1.96	0.558
58.00	-29.50	-20.08	0.00	-1,277.3	0.00	1,277.28	2,805.94	722.65	2,709.77	2,397.65	12.49	-2.08	0.544
60.00	-29.03	-19.85	0.00	-1,237.1	0.00	1,237.12	2,790.26	716.34	2,662.61	2,363.26	13.38	-2.16	0.535
65.00	-27.92	-19.49	0.00	-1,137.9	0.00	1,137.88	2,750.38	700.55	2,546.53	2,277.74	15.75	-2.36	0.510
70.00	-26.83	-19.12	0.00	-1,040.4	0.00	1,040.43	2,709.52	684.75	2,433.04	2,192.94	18.32	-2.55	0.485
75.00	-25.76	-18.76	0.00	-944.8	0.00	944.83	2,667.70	668.96	2,322.14	2,108.90	21.08	-2.73	0.458
79.50	-24.83	-18.55	0.00	-860.4	0.00	860.40	2,629.22	654.75	2,224.53	2,033.97	23.74	-2.89	0.433
80.00	-24.65	-18.38	0.00	-851.1	0.00	851.12	2,624.89	653.17	2,213.82	2,025.69	24.04	-2.91	0.430
84.25	-23.27	-18.14	0.00	-773.0	0.00	772.99	1,926.95	519.63	1,751.33	1,481.20	26.7	-3.06	0.535
85.00	-23.12	-17.95	0.00	-759.4	0.00	759.39	1,922.92	517.74	1,738.58	1,472.68	27.19	-3.09	0.529
90.00	-22.25	-17.57	0.00	-669.6	0.00	669.65	1,895.50	505.11	1,654.79	1,416.02	30.53	-3.28	0.486
95.00	-21.40	-17.18	0.00	-581.8	0.00	581.81	1,867.10	492.47	1,573.06	1,359.68	34.07	-3.47	0.441
100.00	-20.57	-16.80	0.00	-495.9	0.00	495.89	1,837.72	479.84	1,493.40	1,303.72	37.79	-3.64	0.393
105.00	-19.76	-16.47	0.00	-411.9	0.00	411.91	1,807.37	467.21	1,415.82	1,248.19	41.69	-3.8	0.342
108.00	-14.76	-12.92	0.00	-362.5	0.00	362.50	1,788.69	459.63	1,370.26	1,215.10	44.11	-3.89	0.307
110.00	-14.46	-12.66	0.00	-336.7	0.00	336.66	1,776.05	454.58	1,340.30	1,193.15	45.75	-3.94	0.291
115.00	-13.73	-12.25	0.00	-273.4	0.00	273.38	1,743.75	441.94	1,266.85	1,138.65	49.95	-4.07	0.249
120.00	-13.03	-11.88	0.00	-212.1	0.00	212.12	1,710.47	429.31	1,195.47	1,084.74	54.26	-4.18	0.204
120.00	-13.03	-11.88	0.00	-212.1	0.00	212.12	1,426.70	375.94	1,047.89	906.62	54.26	-4.18	0.244
124.00	-10.21	-9.63	0.00	-164.6	0.00	164.59	1,406.11	367.10	999.19	872.37	57.79	-4.25	0.197
125.00	-10.10	-9.41	0.00	-155.0	0.00	154.96	1,400.86	364.89	987.19	863.85	58.68	-4.27	0.187
130.00	-9.54	-9.02	0.00	-107.9	0.00	107.91	1,374.04	353.84	928.31	821.46	63.19	-4.35	0.139
135.00	-7.82	-6.07	0.00	-61.0	0.00	60.99	1,346.25	342.79	871.24	779.53	67.78	-4.4	0.084
137.00	-5.46	-4.82	0.00	-48.9	0.00	48.86	1,334.86	338.37	848.92	762.89	69.62	-4.42	0.068
140.00	-5.19	-4.53	0.00	-34.4	0.00	34.39	1,317.49	331.74	815.98	738.09	72.4	-4.44	0.051
145.00	-4.74	-4.29	0.00	-11.8	0.00	11.76	1,287.75	320.69	762.53	697.20	77.06	-4.46	0.021
146.00	-1.54	-2.49	0.00	-7.5	0.00	7.47	1,281.68	318.48	752.05	689.10	77.99	-4.46	0.012
148.00	0.00	-2.37	0.00	-2.5	0.00	2.48	1,269.43	314.06	731.32	672.96	79.86	-4.46	0.004

Load Case: 0.9D + 1.0W Normal	120 mph wind with no ice	24 Iterations
Gust Response Factor: 1.10		
Dead load Factor: 0.90		
Wind Load Factor: 1.00		

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-35.08	-23.66	0.00	-2,523.6	0.00	2,523.57	4,118.22	1,072.63	4,974.93	4,353.63	0	0	0.589
5.00	-33.90	-23.35	0.00	-2,405.3	0.00	2,405.26	4,072.57	1,053.68	4,800.73	4,228.77	0.09	-0.17	0.578
10.00	-32.74	-23.04	0.00	-2,288.5	0.00	2,288.51	4,025.95	1,034.73	4,629.63	4,104.63	0.37	-0.35	0.566
15.00	-31.59	-22.73	0.00	-2,173.3	0.00	2,173.32	3,978.36	1,015.78	4,461.64	3,981.27	0.82	-0.52	0.554
20.00	-30.47	-22.42	0.00	-2,059.7	0.00	2,059.68	3,929.79	996.83	4,296.76	3,858.74	1.46	-0.69	0.542
25.00	-29.36	-22.11	0.00	-1,947.6	0.00	1,947.59	3,880.25	977.88	4,134.97	3,737.11	2.28	-0.87	0.529
30.00	-28.18	-21.69	0.00	-1,837.0	0.00	1,837.05	3,829.73	958.93	3,976.30	3,616.41	3.28	-1.04	0.516
35.00	-27.11	-21.39	0.00	-1,728.6	0.00	1,728.59	3,778.24	939.99	3,820.72	3,496.72	4.46	-1.22	0.502
39.25	-26.24	-21.22	0.00	-1,637.7	0.00	1,637.68	3,733.71	923.88	3,690.93	3,395.80	5.61	-1.36	0.490
40.00	-25.96	-21.03	0.00	-1,621.8	0.00	1,621.77	3,725.77	921.04	3,668.26	3,378.08	5.83	-1.39	0.488
45.00	-24.25	-20.65	0.00	-1,516.6	0.00	1,516.64	2,904.05	763.71	3,026.37	2,623.51	7.38	-1.56	0.587
50.00	-23.36	-20.30	0.00	-1,413.4	0.00	1,413.37	2,867.09	747.92	2,902.53	2,536.20	9.11	-1.74	0.566
55.00	-22.49	-20.00	0.00	-1,311.9	0.00	1,311.89	2,829.16	732.13	2,781.28	2,449.42	11.03	-1.93	0.544
58.00	-21.96	-19.79	0.00	-1,251.9	0.00	1,251.88	2,805.94	722.65	2,709.77	2,397.65	12.29	-2.05	0.531
60.00	-21.60	-19.54	0.00	-1,212.3	0.00	1,212.30	2,790.26	716.34	2,662.61	2,363.26	13.16	-2.13	0.521
65.00	-20.76	-19.17	0.00	-1,114.6	0.00	1,114.60	2,750.38	700.55	2,546.53	2,277.74	15.49	-2.32	0.498
70.00	-19.93	-18.79	0.00	-1,018.8	0.00	1,018.78	2,709.52	684.75	2,433.04	2,192.94	18.02	-2.5	0.473
75.00	-19.12	-18.42	0.00	-924.8	0.00	924.85	2,667.70	668.96	2,322.14	2,108.90	20.73	-2.68	0.446
79.50	-18.42	-18.21	0.00	-842.0	0.00	841.97	2,629.22	654.75	2,224.53	2,033.97	23.34	-2.84	0.422
80.00	-18.28	-18.03	0.00	-832.9	0.00	832.87	2,624.89	653.17	2,213.82	2,025.69	23.64	-2.86	0.419
84.25	-17.25	-17.80	0.00	-756.2	0.00	756.22	1,926.95	519.63	1,751.33	1,481.20	26.25	-3.01	0.521
85.00	-17.13	-17.59	0.00	-742.9	0.00	742.87	1,922.92	517.74	1,738.58	1,472.68	26.73	-3.03	0.515
90.00	-16.47	-17.21	0.00	-654.9	0.00	654.90	1,895.50	505.11	1,654.79	1,416.02	30	-3.22	0.472
95.00	-15.82	-16.82	0.00	-568.9	0.00	568.87	1,867.10	492.47	1,573.06	1,359.68	33.48	-3.41	0.428
100.00	-15.20	-16.43	0.00	-484.8	0.00	484.78	1,837.72	479.84	1,493.40	1,303.72	37.14	-3.58	0.381
105.00	-14.59	-16.10	0.00	-402.6	0.00	402.65	1,807.37	467.21	1,415.82	1,248.19	40.96	-3.73	0.332
108.00	-10.88	-12.64	0.00	-354.3	0.00	354.34	1,788.69	459.63	1,370.26	1,215.10	43.33	-3.81	0.298
110.00	-10.66	-12.37	0.00	-329.1	0.00	329.06	1,776.05	454.58	1,340.30	1,193.15	44.94	-3.87	0.283
115.00	-10.12	-11.98	0.00	-267.2	0.00	267.19	1,743.75	441.94	1,266.85	1,138.65	49.06	-3.99	0.241
120.00	-9.59	-11.61	0.00	-207.3	0.00	207.31	1,710.47	429.31	1,195.47	1,084.74	53.29	-4.1	0.197
120.00	-9.59	-11.61	0.00	-207.3	0.00	207.31	1,426.70	375.94	1,047.89	906.62	53.29	-4.1	0.236
124.00	-7.51	-9.42	0.00	-160.9	0.00	160.86	1,406.11	367.10	999.19	872.37	56.75	-4.17	0.190
125.00	-7.43	-9.20	0.00	-151.4	0.00	151.44	1,400.86	364.89	987.19	863.85	57.62	-4.18	0.181
130.00	-7.01	-8.81	0.00	-105.4	0.00	105.45	1,374.04	353.84	928.31	821.46	62.05	-4.26	0.134
135.00	-5.77	-5.90	0.00	-59.6	0.00	59.56	1,346.25	342.79	871.24	779.53	66.54	-4.32	0.081
137.00	-4.02	-4.70	0.00	-47.8	0.00	47.77	1,334.86	338.37	848.92	762.89	68.35	-4.33	0.066
140.00	-3.82	-4.41	0.00	-33.6	0.00	33.65	1,317.49	331.74	815.98	738.09	71.08	-4.35	0.049
145.00	-3.49	-4.18	0.00	-11.6	0.00	11.58	1,287.75	320.69	762.53	697.20	75.64	-4.37	0.019
146.00	-1.11	-2.46	0.00	-7.4	0.00	7.40	1,281.68	318.48	752.05	689.10	76.56	-4.37	0.012
148.00	0.00	-2.37	0.00	-2.5	0.00	2.48	1,269.43	314.06	731.32	672.96	78.39	-4.37	0.004

ASSET: 302528, Columbia Central
 CUSTOMER: SPRINT NEXTEL

CODE: ANSI/TIA-222-H
 ENG NO: 13713210_C3_01

Load Case: 1.2D + 1.0Di + 1.0Wi Normal		50 mph wind with 1" radial ice		23 Iterations
Gust Response Factor:	1.10	Ice Dead Load Factor	1.00	
Dead load Factor:	1.20			Ice Importance Factor 1.00
Wind Load Factor:	1.00			

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-62.27	-6.26	0.00	-668.3	0.00	668.32	4,118.22	1,072.63	4,974.93	4,353.63	0	0	0.169
5.00	-60.54	-6.18	0.00	-637.0	0.00	637.03	4,072.57	1,053.68	4,800.73	4,228.77	0.02	-0.05	0.166
10.00	-58.80	-6.11	0.00	-606.1	0.00	606.11	4,025.95	1,034.73	4,629.63	4,104.63	0.1	-0.09	0.162
15.00	-57.07	-6.03	0.00	-575.6	0.00	575.57	3,978.36	1,015.78	4,461.64	3,981.27	0.22	-0.14	0.159
20.00	-55.36	-5.96	0.00	-545.4	0.00	545.41	3,929.79	996.83	4,296.76	3,858.74	0.39	-0.18	0.155
25.00	-53.68	-5.88	0.00	-515.6	0.00	515.63	3,880.25	977.88	4,134.97	3,737.11	0.6	-0.23	0.152
30.00	-51.85	-5.78	0.00	-486.2	0.00	486.23	3,829.73	958.93	3,976.30	3,616.41	0.87	-0.28	0.148
35.00	-50.21	-5.70	0.00	-457.4	0.00	457.35	3,778.24	939.99	3,820.72	3,496.72	1.18	-0.32	0.144
39.25	-48.83	-5.65	0.00	-433.1	0.00	433.13	3,733.71	923.88	3,690.93	3,395.80	1.49	-0.36	0.141
40.00	-48.45	-5.60	0.00	-428.9	0.00	428.89	3,725.77	921.04	3,668.26	3,378.08	1.54	-0.37	0.140
45.00	-45.95	-5.50	0.00	-400.9	0.00	400.87	2,904.05	763.71	3,026.37	2,623.51	1.95	-0.41	0.169
50.00	-44.54	-5.41	0.00	-373.4	0.00	373.36	2,867.09	747.92	2,902.53	2,536.20	2.41	-0.46	0.163
55.00	-43.15	-5.33	0.00	-346.3	0.00	346.32	2,829.16	732.13	2,781.28	2,449.42	2.92	-0.51	0.157
58.00	-42.30	-5.27	0.00	-330.3	0.00	330.34	2,805.94	722.65	2,709.77	2,397.65	3.25	-0.54	0.153
60.00	-41.75	-5.21	0.00	-319.8	0.00	319.79	2,790.26	716.34	2,662.61	2,363.26	3.48	-0.56	0.150
65.00	-40.40	-5.10	0.00	-293.8	0.00	293.77	2,750.38	700.55	2,546.53	2,277.74	4.1	-0.61	0.144
70.00	-39.08	-5.00	0.00	-268.2	0.00	268.25	2,709.52	684.75	2,433.04	2,192.94	4.77	-0.66	0.137
75.00	-37.78	-4.89	0.00	-243.3	0.00	243.27	2,667.70	668.96	2,322.14	2,108.90	5.49	-0.71	0.130
79.50	-36.62	-4.83	0.00	-221.2	0.00	221.24	2,629.22	654.75	2,224.53	2,033.97	6.18	-0.75	0.123
80.00	-36.43	-4.78	0.00	-218.8	0.00	218.83	2,624.89	653.17	2,213.82	2,025.69	6.26	-0.76	0.122
84.25	-34.84	-4.71	0.00	-198.5	0.00	198.49	1,926.95	519.63	1,751.33	1,481.20	6.95	-0.79	0.152
85.00	-34.67	-4.66	0.00	-195.0	0.00	194.96	1,922.92	517.74	1,738.58	1,472.68	7.07	-0.8	0.150
90.00	-33.58	-4.55	0.00	-171.7	0.00	171.66	1,895.50	505.11	1,654.79	1,416.02	7.94	-0.85	0.139
95.00	-32.50	-4.44	0.00	-148.9	0.00	148.92	1,867.10	492.47	1,573.06	1,359.68	8.85	-0.9	0.127
100.00	-31.44	-4.32	0.00	-126.7	0.00	126.74	1,837.72	479.84	1,493.40	1,303.72	9.82	-0.94	0.114
105.00	-30.40	-4.22	0.00	-105.1	0.00	105.13	1,807.37	467.21	1,415.82	1,248.19	10.83	-0.98	0.101
108.00	-23.10	-3.34	0.00	-92.5	0.00	92.46	1,788.69	459.63	1,370.26	1,215.10	11.46	-1.01	0.089
110.00	-22.71	-3.26	0.00	-85.8	0.00	85.79	1,776.05	454.58	1,340.30	1,193.15	11.88	-1.02	0.085
115.00	-21.74	-3.13	0.00	-69.5	0.00	69.50	1,743.75	441.94	1,266.85	1,138.65	12.97	-1.05	0.074
120.00	-20.80	-3.02	0.00	-53.8	0.00	53.83	1,710.47	429.31	1,195.47	1,084.74	14.08	-1.08	0.062
120.00	-20.80	-3.02	0.00	-53.8	0.00	53.83	1,426.70	375.94	1,047.89	906.62	14.08	-1.08	0.074
124.00	-16.46	-2.48	0.00	-41.7	0.00	41.74	1,406.11	367.10	999.19	872.37	14.99	-1.1	0.060
125.00	-16.29	-2.41	0.00	-39.3	0.00	39.26	1,400.86	364.89	987.19	863.85	15.22	-1.1	0.057
130.00	-15.50	-2.29	0.00	-27.2	0.00	27.22	1,374.04	353.84	928.31	821.46	16.39	-1.12	0.044
135.00	-11.62	-1.60	0.00	-15.4	0.00	15.43	1,346.25	342.79	871.24	779.53	17.57	-1.14	0.028
137.00	-8.68	-1.25	0.00	-12.2	0.00	12.22	1,334.86	338.37	848.92	762.89	18.05	-1.14	0.023
140.00	-8.27	-1.16	0.00	-8.5	0.00	8.47	1,317.49	331.74	815.98	738.09	18.77	-1.15	0.018
145.00	-7.60	-1.08	0.00	-2.7	0.00	2.69	1,287.75	320.69	762.53	697.20	19.97	-1.15	0.010
146.00	-3.29	-0.56	0.00	-1.6	0.00	1.61	1,281.68	318.48	752.05	689.10	20.21	-1.15	0.005
148.00	0.00	-0.49	0.00	-0.5	0.00	0.50	1,269.43	314.06	731.32	672.96	20.69	-1.15	0.001

ASSET: 302528, Columbia Central
 CUSTOMER: SPRINT NEXTEL

CODE: ANSI/TIA-222-H
 ENG NO: 13713210_C3_01

Load Case: 1.0D + 1.0W Service Normal	60 mph Wind with No Ice	23 Iterations
Gust Response Factor: 1.10		
Dead load Factor: 1.00		
Wind Load Factor: 1.00		

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-39.01	-5.29	0.00	-567.5	0.00	567.54	4,118.22	1,072.63	4,974.93	4,353.63	0	0	0.140
5.00	-37.78	-5.23	0.00	-541.1	0.00	541.07	4,072.57	1,053.68	4,800.73	4,228.77	0.02	-0.04	0.137
10.00	-36.56	-5.16	0.00	-514.9	0.00	514.94	4,025.95	1,034.73	4,629.63	4,104.63	0.08	-0.08	0.135
15.00	-35.36	-5.09	0.00	-489.1	0.00	489.14	3,978.36	1,015.78	4,461.64	3,981.27	0.18	-0.12	0.132
20.00	-34.17	-5.03	0.00	-463.7	0.00	463.68	3,929.79	996.83	4,296.76	3,858.74	0.33	-0.16	0.129
25.00	-33.01	-4.96	0.00	-438.6	0.00	438.56	3,880.25	977.88	4,134.97	3,737.11	0.51	-0.2	0.126
30.00	-31.75	-4.87	0.00	-413.8	0.00	413.76	3,829.73	958.93	3,976.30	3,616.41	0.74	-0.23	0.123
35.00	-30.63	-4.80	0.00	-389.4	0.00	389.43	3,778.24	939.99	3,820.72	3,496.72	1	-0.27	0.120
39.25	-29.69	-4.76	0.00	-369.0	0.00	369.02	3,733.71	923.88	3,690.93	3,395.80	1.26	-0.31	0.117
40.00	-29.41	-4.72	0.00	-365.4	0.00	365.45	3,725.77	921.04	3,668.26	3,378.08	1.31	-0.31	0.116
45.00	-27.57	-4.64	0.00	-341.8	0.00	341.83	2,904.05	763.71	3,026.37	2,623.51	1.66	-0.35	0.140
50.00	-26.63	-4.56	0.00	-318.6	0.00	318.63	2,867.09	747.92	2,902.53	2,536.20	2.05	-0.39	0.135
55.00	-25.71	-4.50	0.00	-295.8	0.00	295.82	2,829.16	732.13	2,781.28	2,449.42	2.48	-0.43	0.130
58.00	-25.15	-4.45	0.00	-282.3	0.00	282.33	2,805.94	722.65	2,709.77	2,397.65	2.77	-0.46	0.127
60.00	-24.79	-4.40	0.00	-273.4	0.00	273.43	2,790.26	716.34	2,662.61	2,363.26	2.96	-0.48	0.125
65.00	-23.90	-4.31	0.00	-251.4	0.00	251.45	2,750.38	700.55	2,546.53	2,277.74	3.49	-0.52	0.119
70.00	-23.03	-4.23	0.00	-229.9	0.00	229.88	2,709.52	684.75	2,433.04	2,192.94	4.06	-0.56	0.113
75.00	-22.17	-4.15	0.00	-208.7	0.00	208.72	2,667.70	668.96	2,322.14	2,108.90	4.67	-0.6	0.107
79.50	-21.41	-4.10	0.00	-190.0	0.00	190.05	2,629.22	654.75	2,224.53	2,033.97	5.26	-0.64	0.102
80.00	-21.27	-4.06	0.00	-188.0	0.00	188.00	2,624.89	653.17	2,213.82	2,025.69	5.32	-0.64	0.101
84.25	-20.13	-4.01	0.00	-170.7	0.00	170.73	1,926.95	519.63	1,751.33	1,481.20	5.91	-0.68	0.126
85.00	-20.03	-3.97	0.00	-167.7	0.00	167.72	1,922.92	517.74	1,738.58	1,472.68	6.02	-0.68	0.124
90.00	-19.33	-3.88	0.00	-147.9	0.00	147.88	1,895.50	505.11	1,654.79	1,416.02	6.76	-0.73	0.115
95.00	-18.64	-3.80	0.00	-128.5	0.00	128.48	1,867.10	492.47	1,573.06	1,359.68	7.54	-0.77	0.105
100.00	-17.96	-3.71	0.00	-109.5	0.00	109.50	1,837.72	479.84	1,493.40	1,303.72	8.37	-0.81	0.094
105.00	-17.30	-3.64	0.00	-91.0	0.00	90.96	1,807.37	467.21	1,415.82	1,248.19	9.23	-0.84	0.083
108.00	-12.96	-2.85	0.00	-80.0	0.00	80.05	1,788.69	459.63	1,370.26	1,215.10	9.77	-0.86	0.073
110.00	-12.72	-2.79	0.00	-74.3	0.00	74.34	1,776.05	454.58	1,340.30	1,193.15	10.13	-0.87	0.070
115.00	-12.11	-2.71	0.00	-60.4	0.00	60.37	1,743.75	441.94	1,266.85	1,138.65	11.06	-0.9	0.060
120.00	-11.51	-2.62	0.00	-46.8	0.00	46.84	1,710.47	429.31	1,195.47	1,084.74	12.01	-0.92	0.050
120.00	-11.51	-2.62	0.00	-46.8	0.00	46.84	1,426.70	375.94	1,047.89	906.62	12.01	-0.92	0.060
124.00	-9.05	-2.13	0.00	-36.4	0.00	36.35	1,406.11	367.10	999.19	872.37	12.79	-0.94	0.048
125.00	-8.95	-2.08	0.00	-34.2	0.00	34.22	1,400.86	364.89	987.19	863.85	12.99	-0.94	0.046
130.00	-8.47	-1.99	0.00	-23.8	0.00	23.83	1,374.04	353.84	928.31	821.46	13.99	-0.96	0.035
135.00	-6.86	-1.34	0.00	-13.5	0.00	13.46	1,346.25	342.79	871.24	779.53	15	-0.97	0.022
137.00	-4.83	-1.06	0.00	-10.8	0.00	10.79	1,334.86	338.37	848.92	762.89	15.41	-0.98	0.018
140.00	-4.59	-1.00	0.00	-7.6	0.00	7.60	1,317.49	331.74	815.98	738.09	16.03	-0.98	0.014
145.00	-4.20	-0.95	0.00	-2.6	0.00	2.61	1,287.75	320.69	762.53	697.20	17.06	-0.99	0.007
146.00	-1.43	-0.55	0.00	-1.7	0.00	1.66	1,281.68	318.48	752.05	689.10	17.26	-0.99	0.004
148.00	0.00	-0.53	0.00	-0.6	0.00	0.56	1,269.43	314.06	731.32	672.96	17.68	-0.99	0.001

EQUIVALENT LATERAL FORCES METHOD ANALYSIS
(Based on ASCE7-16 Chapters 11, 12 and 15)

Spectral Response Acceleration for Short Period (S_S):	0.196
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.055
Long-Period Transition Period (T_L – Seconds):	6
Importance Factor (I_a):	1.000
Site Coefficient F_a :	1.600
Site Coefficient F_v :	2.400
Response Modification Coefficient (R):	1.500
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.209
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.088
Seismic Response Coefficient (C_s):	0.030
Upper Limit C_s :	0.030
Lower Limit C_s :	0.030
Period based on Rayleigh Method (sec):	2.570
Redundancy Factor (ρ):	1.000
Seismic Force Distribution Exponent (k):	2.000
Total Unfactored Dead Load:	39.020 k
Seismic Base Shear (E):	1.170 k

1.2D + 1.0Ev + 1.0Eh Normal Seismic

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
38	147	152	3,286	0.009	11	189
37	145.5	77	1,623	0.005	5	95
36	142.5	390	7,914	0.022	26	484
35	138.5	239	4,584	0.013	15	297
34	136	161	2,987	0.008	10	201
33	132.5	473	8,311	0.024	28	588
32	127.5	484	7,869	0.022	26	601
31	124.5	98	1,521	0.004	5	122
30	122	427	6,355	0.018	21	530
29	117.5	596	8,226	0.023	27	740
28	112.5	608	7,696	0.022	25	755
27	109	247	2,931	0.008	10	306
26	106.5	391	4,432	0.012	15	485
25	102.5	661	6,945	0.020	23	821
24	97.5	673	6,401	0.018	21	836
23	92.5	686	5,866	0.017	19	851
22	87.5	698	5,343	0.015	18	867
21	84.625	106	757	0.002	3	131
20	82.125	1,137	7,669	0.022	25	1,412
19	79.75	135	859	0.002	3	168
18	77.25	759	4,531	0.013	15	943
17	72.5	858	4,511	0.013	15	1,066
16	67.5	873	3,980	0.011	13	1,085
15	62.5	889	3,472	0.010	11	1,104
14	59	360	1,252	0.004	4	447
13	56.5	545	1,739	0.005	6	676
12	52.5	920	2,536	0.007	8	1,143
11	47.5	935	2,111	0.006	7	1,162
10	42.5	1,834	3,314	0.009	11	2,278
9	39.625	278	437	0.001	1	345
8	37.125	940	1,296	0.004	4	1,168
7	32.5	1,123	1,186	0.003	4	1,395
6	27.5	1,142	864	0.002	3	1,419
5	22.5	1,161	588	0.002	2	1,441

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
4	17.5	1,179	361	0.001	1	1,464
3	12.5	1,197	187	0.000	1	1,487
2	7.5	1,216	68	0.000	0	1,510
1	2.5	1,234	8	0.000	0	1,533
Powerwave Allgon LGP21401	148	85	1,853	0.005	6	105
Raycap DC6-48-60-18-8F ("Squid")	148	64	1,393	0.004	5	79
Ericsson RRUS 8843 B2, B66A	148	216	4,731	0.013	16	268
Ericsson RRUS 4478 B14	148	180	3,936	0.011	13	223
Ericsson RRUS 4449 B5, B12	148	213	4,666	0.013	15	265
Powerwave Allgon 7770.00	148	105	2,300	0.006	8	130
CCI DMP65R-BU6DA	148	238	5,218	0.015	17	296
CCI OPA65R-BU6D	148	190	4,153	0.012	14	235
Generic Mount Reinforcement	146	200	4,263	0.012	14	248
Generic Mount Reinforcement	108	200	2,333	0.007	8	248
Generic Round Platform with Handrails	146	2,500	53,290	0.151	176	3,105
Generic Round Platform with Handrails	108	2,500	29,160	0.082	97	3,105
Generic Round Low Profile Platform	137	1,875	35,192	0.100	116	2,328
Generic Round Low Profile Platform	124	1,875	28,830	0.082	95	2,328
Samsung B5/B13 RRH-BR04C	135	211	3,844	0.011	13	262
Samsung B2/B66A RRH-BR049	135	253	4,615	0.013	15	314
Raycap RRFDC-3315-PF-48	135	54	981	0.003	3	67
Samsung MT6407-77A	135	245	4,461	0.013	15	304
Antel LPA-80063/4CF	135	120	2,187	0.006	7	149
Commscope NHH-65B-R2B	135	262	4,779	0.014	16	326
Decibel DB844H90E-XY	124	168	2,583	0.007	9	209
Ericsson Radio 4460 B25+B66	108	327	3,814	0.011	13	406
Ericsson Radio 4480 B71+B85A	108	252	2,939	0.008	10	313
Ericsson Air6449 B41	108	312	3,639	0.010	12	387
RFS APXVAALL24 43-U-NA20	108	368	4,297	0.012	14	457
Generic GPS	58	10	34	0.000	0	12
Generic GPS	30	10	9	0.000	0	12
Stand-Off	30	100	90	0.000	0	124
		39,016	353,602	1.000	1,170	48,450

0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
38	147	152	3,286	0.009	11	130
37	145.5	77	1,623	0.005	5	66
36	142.5	390	7,914	0.022	26	334
35	138.5	239	4,584	0.013	15	205
34	136	161	2,987	0.008	10	139
33	132.5	473	8,311	0.024	28	406
32	127.5	484	7,869	0.022	26	415
31	124.5	98	1,521	0.004	5	84
30	122	427	6,355	0.018	21	366
29	117.5	596	8,226	0.023	27	511
28	112.5	608	7,696	0.022	25	522
27	109	247	2,931	0.008	10	212
26	106.5	391	4,432	0.012	15	335
25	102.5	661	6,945	0.020	23	567
24	97.5	673	6,401	0.018	21	578
23	92.5	686	5,866	0.017	19	588
22	87.5	698	5,343	0.015	18	599
21	84.625	106	757	0.002	3	91
20	82.125	1,137	7,669	0.022	25	976
19	79.75	135	859	0.002	3	116
18	77.25	759	4,531	0.013	15	652
17	72.5	858	4,511	0.013	15	736
16	67.5	873	3,980	0.011	13	750
15	62.5	889	3,472	0.010	11	763
14	59	360	1,252	0.004	4	309

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
13	56.5	545	1,739	0.005	6	467
12	52.5	920	2,536	0.007	8	790
11	47.5	935	2,111	0.006	7	803
10	42.5	1,834	3,314	0.009	11	1,574
9	39.625	278	437	0.001	1	239
8	37.125	940	1,296	0.004	4	807
7	32.5	1,123	1,186	0.003	4	964
6	27.5	1,142	864	0.002	3	980
5	22.5	1,161	588	0.002	2	996
4	17.5	1,179	361	0.001	1	1,012
3	12.5	1,197	187	0.000	1	1,028
2	7.5	1,216	68	0.000	0	1,043
1	2.5	1,234	8	0.000	0	1,059
Powerwave Allgon LGP21401	148	85	1,853	0.005	6	73
Raycap DC6-48-60-18-8F ("Squid")	148	64	1,393	0.004	5	55
Ericsson RRUS 8843 B2, B66A	148	216	4,731	0.013	16	185
Ericsson RRUS 4478 B14	148	180	3,936	0.011	13	154
Ericsson RRUS 4449 B5, B12	148	213	4,666	0.013	15	183
Powerwave Allgon 7770.00	148	105	2,300	0.006	8	90
CCI DMP65R-BU6DA	148	238	5,218	0.015	17	204
CCI OPA65R-BU6D	148	190	4,153	0.012	14	163
Generic Mount Reinforcement	146	200	4,263	0.012	14	172
Generic Mount Reinforcement	108	200	2,333	0.007	8	172
Generic Round Platform with Handrails	146	2,500	53,290	0.151	176	2,145
Generic Round Platform with Handrails	108	2,500	29,160	0.082	97	2,145
Generic Round Low Profile Platform	137	1,875	35,192	0.100	116	1,609
Generic Round Low Profile Platform	124	1,875	28,830	0.082	95	1,609
Samsung B5/B13 RRH-BR04C	135	211	3,844	0.011	13	181
Samsung B2/B66A RRH-BR049	135	253	4,615	0.013	15	217
Raycap RRFDC-3315-PF-48	135	54	981	0.003	3	46
Samsung MT6407-77A	135	245	4,461	0.013	15	210
Antel LPA-80063/4CF	135	120	2,187	0.006	7	103
Commscope NHH-65B-R2B	135	262	4,779	0.014	16	225
Decibel DB844H90E-XY	124	168	2,583	0.007	9	144
Ericsson Radio 4460 B25+B66	108	327	3,814	0.011	13	281
Ericsson Radio 4480 B71+B85A	108	252	2,939	0.008	10	216
Ericsson Air6449 B41	108	312	3,639	0.010	12	268
RFS APXVAALL24 43-U-NA20	108	368	4,297	0.012	14	316
Generic GPS	58	10	34	0.000	0	9
Generic GPS	30	10	9	0.000	0	9
Stand-Off	30	100	90	0.000	0	86
		39,016	353,602	1.000	1,170	33,483

1.2D + 1.0Ev + 1.0Eh Normal Seismic

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-46.92	-1.17	0.00	-148.27	0.00	148.27	4,118.22	1,072.63	4,975	4,353.63	0.00	0.00	0.05
5.00	-45.41	-1.18	0.00	-142.40	0.00	142.40	4,072.57	1,053.68	4,801	4,228.77	0.01	-0.01	0.05
10.00	-43.92	-1.19	0.00	-136.49	0.00	136.49	4,025.95	1,034.73	4,630	4,104.63	0.02	-0.02	0.04
15.00	-42.46	-1.19	0.00	-130.54	0.00	130.54	3,978.36	1,015.78	4,462	3,981.27	0.05	-0.03	0.04
20.00	-41.01	-1.20	0.00	-124.57	0.00	124.57	3,929.79	996.83	4,297	3,858.74	0.09	-0.04	0.04
25.00	-39.60	-1.20	0.00	-118.58	0.00	118.58	3,880.25	977.88	4,135	3,737.11	0.14	-0.05	0.04
30.00	-38.06	-1.20	0.00	-112.56	0.00	112.56	3,829.73	958.93	3,976	3,616.41	0.20	-0.06	0.04
35.00	-36.90	-1.20	0.00	-106.55	0.00	106.55	3,778.24	939.99	3,821	3,496.72	0.27	-0.07	0.04
39.25	-36.55	-1.21	0.00	-101.43	0.00	101.43	3,733.71	923.88	3,691	3,395.80	0.34	-0.08	0.04
40.00	-34.27	-1.20	0.00	-100.52	0.00	100.52	3,725.77	921.04	3,668	3,378.08	0.35	-0.08	0.04
45.00	-33.11	-1.19	0.00	-94.54	0.00	94.54	2,904.05	763.71	3,026	2,623.51	0.44	-0.09	0.05
50.00	-31.97	-1.19	0.00	-88.58	0.00	88.58	2,867.09	747.92	2,903	2,536.20	0.55	-0.11	0.05
55.00	-31.29	-1.19	0.00	-82.63	0.00	82.63	2,829.16	732.13	2,781	2,449.42	0.67	-0.12	0.05
58.00	-30.83	-1.19	0.00	-79.07	0.00	79.07	2,805.94	722.65	2,710	2,397.65	0.74	-0.13	0.04
60.00	-29.73	-1.18	0.00	-76.70	0.00	76.70	2,790.26	716.34	2,663	2,363.26	0.80	-0.13	0.04
65.00	-28.64	-1.17	0.00	-70.82	0.00	70.82	2,750.38	700.55	2,547	2,277.74	0.94	-0.14	0.04
70.00	-27.58	-1.15	0.00	-64.99	0.00	64.99	2,709.52	684.75	2,433	2,192.94	1.09	-0.15	0.04

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
75.00	-26.63	-1.14	0.00	-59.22	0.00	59.22	2,667.70	668.96	2,322	2,108.90	1.26	-0.17	0.04
79.50	-26.47	-1.14	0.00	-54.09	0.00	54.09	2,629.22	654.75	2,225	2,033.97	1.42	-0.18	0.04
80.00	-25.05	-1.11	0.00	-53.52	0.00	53.52	2,624.89	653.17	2,214	2,025.69	1.44	-0.18	0.04
84.25	-24.92	-1.11	0.00	-48.78	0.00	48.78	1,926.95	519.63	1,751	1,481.20	1.60	-0.19	0.05
85.00	-24.06	-1.10	0.00	-47.95	0.00	47.95	1,922.92	517.74	1,739	1,472.68	1.63	-0.19	0.05
90.00	-23.20	-1.08	0.00	-42.47	0.00	42.47	1,895.50	505.11	1,655	1,416.02	1.84	-0.20	0.04
95.00	-22.37	-1.06	0.00	-37.08	0.00	37.08	1,867.10	492.47	1,573	1,359.68	2.05	-0.21	0.04
100.00	-21.55	-1.04	0.00	-31.79	0.00	31.79	1,837.72	479.84	1,493	1,303.72	2.28	-0.22	0.04
105.00	-21.06	-1.02	0.00	-26.61	0.00	26.61	1,807.37	467.21	1,416	1,248.19	2.52	-0.23	0.03
108.00	-15.84	-0.84	0.00	-23.54	0.00	23.54	1,788.69	459.63	1,370	1,215.10	2.67	-0.24	0.03
110.00	-15.08	-0.81	0.00	-21.87	0.00	21.87	1,776.05	454.58	1,340	1,193.15	2.77	-0.24	0.03
115.00	-14.34	-0.78	0.00	-17.80	0.00	17.80	1,743.75	441.94	1,267	1,138.65	3.03	-0.25	0.02
120.00	-13.81	-0.76	0.00	-13.88	0.00	13.88	1,710.47	429.31	1,195	1,084.74	3.29	-0.26	0.02
120.00	-13.81	-0.76	0.00	-13.88	0.00	13.88	1,426.70	375.94	1,048	906.62	3.29	-0.26	0.03
124.00	-11.16	-0.64	0.00	-10.83	0.00	10.83	1,406.11	367.10	999	872.37	3.51	-0.26	0.02
125.00	-10.56	-0.61	0.00	-10.19	0.00	10.19	1,400.86	364.89	987	863.85	3.57	-0.26	0.02
130.00	-9.97	-0.58	0.00	-7.13	0.00	7.13	1,374.04	353.84	928	821.46	3.85	-0.27	0.02
135.00	-8.35	-0.50	0.00	-4.21	0.00	4.21	1,346.25	342.79	871	779.53	4.13	-0.27	0.01
137.00	-5.72	-0.35	0.00	-3.21	0.00	3.21	1,334.86	338.37	849	762.89	4.25	-0.27	0.01
140.00	-5.24	-0.33	0.00	-2.15	0.00	2.15	1,317.49	331.74	816	738.09	4.42	-0.28	0.01
145.00	-5.14	-0.32	0.00	-0.52	0.00	0.52	1,287.75	320.69	763	697.20	4.71	-0.28	0.01
146.00	-1.60	-0.10	0.00	-0.20	0.00	0.20	1,281.68	318.48	752	689.10	4.77	-0.28	0.00
148.00	0.00	-0.09	0.00	0.00	0.00	0.00	1,269.43	314.06	731	672.96	4.88	-0.28	0.00

0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-32.42	-1.17	0.00	-145.65	0.00	145.65	4,118.22	1,072.63	4,975	4,353.63	0.00	0.00	0.04
5.00	-31.38	-1.18	0.00	-139.79	0.00	139.79	4,072.57	1,053.68	4,801	4,228.77	0.01	-0.01	0.04
10.00	-30.35	-1.18	0.00	-133.90	0.00	133.90	4,025.95	1,034.73	4,630	4,104.63	0.02	-0.02	0.04
15.00	-29.34	-1.19	0.00	-127.98	0.00	127.98	3,978.36	1,015.78	4,462	3,981.27	0.05	-0.03	0.04
20.00	-28.34	-1.19	0.00	-122.05	0.00	122.05	3,929.79	996.83	4,297	3,858.74	0.08	-0.04	0.04
25.00	-27.36	-1.19	0.00	-116.11	0.00	116.11	3,880.25	977.88	4,135	3,737.11	0.13	-0.05	0.04
30.00	-26.30	-1.19	0.00	-110.16	0.00	110.16	3,829.73	958.93	3,976	3,616.41	0.19	-0.06	0.04
35.00	-25.50	-1.19	0.00	-104.22	0.00	104.22	3,778.24	939.99	3,821	3,496.72	0.26	-0.07	0.04
39.25	-25.26	-1.19	0.00	-99.17	0.00	99.17	3,733.71	923.88	3,691	3,395.80	0.33	-0.08	0.04
40.00	-23.68	-1.18	0.00	-98.27	0.00	98.27	3,725.77	921.04	3,668	3,378.08	0.34	-0.08	0.04
45.00	-22.88	-1.17	0.00	-92.38	0.00	92.38	2,904.05	763.71	3,026	2,623.51	0.43	-0.09	0.04
50.00	-22.09	-1.17	0.00	-86.51	0.00	86.51	2,867.09	747.92	2,903	2,536.20	0.54	-0.10	0.04
55.00	-21.62	-1.17	0.00	-80.67	0.00	80.67	2,829.16	732.13	2,781	2,449.42	0.65	-0.12	0.04
58.00	-21.31	-1.16	0.00	-77.17	0.00	77.17	2,805.94	722.65	2,710	2,397.65	0.73	-0.12	0.04
60.00	-20.54	-1.15	0.00	-74.84	0.00	74.84	2,790.26	716.34	2,663	2,363.26	0.78	-0.13	0.04
65.00	-19.79	-1.14	0.00	-69.08	0.00	69.08	2,750.38	700.55	2,547	2,277.74	0.92	-0.14	0.04
70.00	-19.06	-1.13	0.00	-63.37	0.00	63.37	2,709.52	684.75	2,433	2,192.94	1.07	-0.15	0.04
75.00	-18.41	-1.12	0.00	-57.72	0.00	57.72	2,667.70	668.96	2,322	2,108.90	1.23	-0.16	0.03
79.50	-18.29	-1.11	0.00	-52.70	0.00	52.70	2,629.22	654.75	2,225	2,033.97	1.39	-0.17	0.03
80.00	-17.31	-1.09	0.00	-52.14	0.00	52.14	2,624.89	653.17	2,214	2,025.69	1.41	-0.17	0.03
84.25	-17.22	-1.09	0.00	-47.52	0.00	47.52	1,926.95	519.63	1,751	1,481.20	1.57	-0.18	0.04
85.00	-16.62	-1.07	0.00	-46.71	0.00	46.71	1,922.92	517.74	1,739	1,472.68	1.60	-0.18	0.04
90.00	-16.04	-1.05	0.00	-41.36	0.00	41.36	1,895.50	505.11	1,655	1,416.02	1.80	-0.20	0.04
95.00	-15.46	-1.03	0.00	-36.11	0.00	36.11	1,867.10	492.47	1,573	1,359.68	2.01	-0.21	0.04
100.00	-14.89	-1.01	0.00	-30.95	0.00	30.95	1,837.72	479.84	1,493	1,303.72	2.23	-0.22	0.03
105.00	-14.55	-0.99	0.00	-25.91	0.00	25.91	1,807.37	467.21	1,416	1,248.19	2.47	-0.23	0.03
108.00	-10.95	-0.82	0.00	-22.93	0.00	22.93	1,788.69	459.63	1,370	1,215.10	2.61	-0.23	0.03
110.00	-10.42	-0.79	0.00	-21.30	0.00	21.30	1,776.05	454.58	1,340	1,193.15	2.71	-0.24	0.02
115.00	-9.91	-0.76	0.00	-17.34	0.00	17.34	1,743.75	441.94	1,267	1,138.65	2.96	-0.24	0.02
120.00	-9.55	-0.74	0.00	-13.52	0.00	13.52	1,710.47	429.31	1,195	1,084.74	3.22	-0.25	0.02
120.00	-9.55	-0.74	0.00	-13.52	0.00	13.52	1,426.70	375.94	1,048	906.62	3.22	-0.25	0.02
124.00	-7.71	-0.62	0.00	-10.55	0.00	10.55	1,406.11	367.10	999	872.37	3.43	-0.26	0.02
125.00	-7.29	-0.60	0.00	-9.93	0.00	9.93	1,400.86	364.89	987	863.85	3.49	-0.26	0.02
130.00	-6.89	-0.57	0.00	-6.94	0.00	6.94	1,374.04	353.84	928	821.46	3.76	-0.26	0.01
135.00	-5.77	-0.48	0.00	-4.10	0.00	4.10	1,346.25	342.79	871	779.53	4.04	-0.27	0.01
137.00	-3.95	-0.34	0.00	-3.13	0.00	3.13	1,334.86	338.37	849	762.89	4.15	-0.27	0.01
140.00	-3.62	-0.32	0.00	-2.09	0.00	2.09	1,317.49	331.74	816	738.09	4.32	-0.27	0.01
145.00	-3.55	-0.31	0.00	-0.51	0.00	0.51	1,287.75	320.69	763	697.20	4.60	-0.27	0.00
146.00	-1.11	-0.10	0.00	-0.20	0.00	0.20	1,281.68	318.48	752	689.10	4.66	-0.27	0.00

ASSET: 302528, Columbia Central
CUSTOMER: SPRINT NEXTEL

CODE: ANSI/TIA-222-H
ENG NO: 13713210_C3_01

Seg	Pu	Vu	Tu	Mu	Mu	Resultant	Phi	Phi	Phi	Phi	Total	Rotation	Ratio
Elev	FY (-)	FX (-)	MY	MZ	Mx	Moment	Pn	Vn	Tn	Mn	Deflect	(deg)	
(ft)	(kips)	(kips)	(ft-kips)	(fr-kips)	(ft-kips)	(ft-kips)	(kips)	(kips)	(kips)	(kips)	(in)		
148.00	0.00	-0.09	0.00	0.00	0.00	0.00	1,269.43	314.06	731	672.96	4.77	-0.27	0.00

ANALYSIS SUMMARY

Load Case	Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.0W Normal	23.68	0.00	46.78	0.00	0.00	2558.81	45.00	0.6
0.9D + 1.0W Normal	23.66	0.00	35.08	0.00	0.00	2523.57	0.00	0.59
1.2D + 1.0Di + 1.0Wi Normal	6.26	0.00	62.27	0.00	0.00	668.32	45.00	0.17
1.2D + 1.0Ev + 1.0Eh Normal	1.21	0.00	46.92	0.00	0.00	148.27	45.00	0.05
0.9D - 1.0Ev + 1.0Eh Normal	1.19	0.00	32.42	0.00	0.00	145.65	45.00	0.04
1.0D + 1.0W Service Normal	5.29	0.00	39.01	0.00	0.00	567.54	0.00	0.14



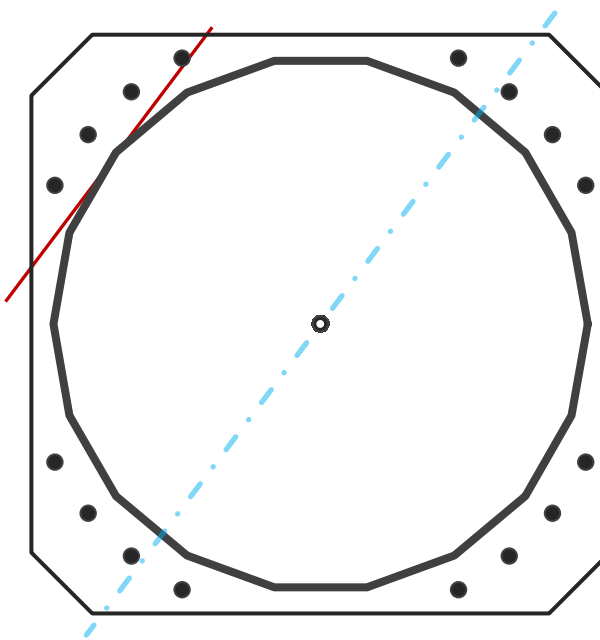
Base Plate & Anchor Rod Analysis

Pole Dimensions		
Number of Sides	18	-
Diameter	51.73	in
Thickness	3/8	in
Orientation Offset	0	°

Base Reactions		
Moment, Mu	2,558.8	k-ft
Axial, Pu	46.8	k
Shear, Vu	23.7	k
Neutral Axis	53	°

Report Capacities		
Component	Capacity	Result
Base Plate	41%	Pass
Anchor Rods	55%	Pass
Dwyidag	-	-

Base Plate		
Shape	Square	-
Width	57	in
Thickness	3	in
Grade	Other	
Yield Strength, Fy	55	ksi
Tensile Strength, Fu	70	ksi
Clip	6	in
Orientation Offset	0	°
Anchor Rod Detail	d	η=0.5
Clear Distance	3	in
Applied Moment, Mu	1323.3	k
Bending Stress, φMn	3202.6	k



Original Anchor Rods		
Arrangement	Cluster	-
Quantity	16	-
Diameter, φ	2 1/4	in
Bolt Circle	59	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	6.0	in
Orientation Offset	0	°
Applied Force, Pu	132.9	k
Anchor Rods, φPn	243.6	k

Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	23.7	2558.8	1.00
Anchor Rod Forces	23.7	2558.8	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in ²	in ²	in ⁴	#	in ⁴
Pole	60.1945	3.3441	0.1573		19846.97
Bolt	3.9761	3.2477	0.8393	4.5	22623.84
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate

Shape	Square	-
Width, W	57	in
Thickness, t	3	in
Yield Strength, Fy	55	ksi
Tensile Strength, Fu	70	ksi
Base Plate Chord	23.938	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

Anchor Rods

Anchor Rod Quantity, N	16	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	59	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	132.9	k
Applied Shear, Vu	0.1	k
Compressive Capacity, ϕP_n	243.6	k
Tensile Capacity, ϕR_n	0.545	OK
Interaction Capacity	0.546	OK

External Base Plate

Chord Length AA	28.755	in
Additional AA	0.000	in
Section Modulus, Z	64.699	in ³
Applied Moment, Mu	1323.3	k-ft
Bending Capacity, ϕM_n	3202.6	k-ft
Capacity, Mu/ ϕM_n	0.413	OK

Chord Length AB	27.955	in
Additional AB	0.000	in
Section Modulus, Z	62.899	in ³
Applied Moment, Mu	1117.9	k-ft
Bending Capacity, ϕM_n	3113.5	k-ft
Capacity, Mu/ ϕM_n	0.359	OK

Bend Line Length	0.000	in
Additional Bend Line	0.000	in
Section Modulus, Z	0.000	in ³
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕM_n	0.0	k-ft
Capacity, Mu/ ϕM_n		

Internal Base Plate

Arc Length	0.000	in
Section Modulus, Z	0.000	in ³
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕM_n	0.0	k-ft
Capacity, Mu/ ϕM_n		

Flange Plate Analysis

Flange Plate	Plate Type	Flange	@ 120 ft
	Pole Diameter	31.08	in
	Pole Thickness	0.2187	in
	Plate Diameter	39	in
	Plate Thickness	1	in
	Plate Fy	50	ksi
	Weld Length	3/16	in
	f _s Resistance	68.65	k-in
	Applied	23.18	k-in

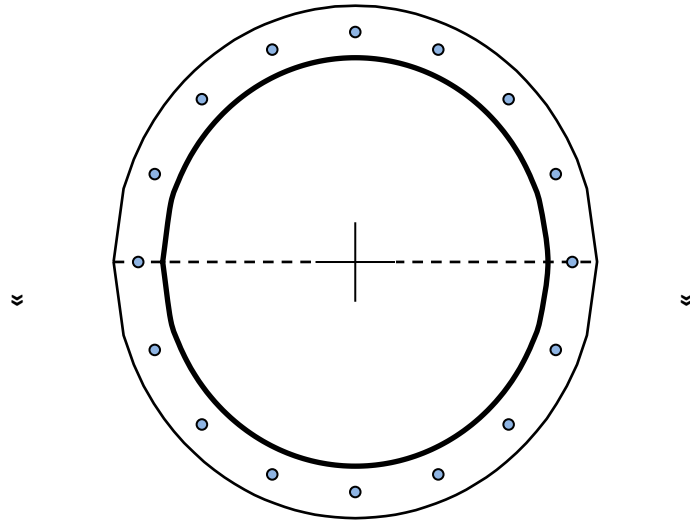
Code Rev.	H
Moment	212.1 k-ft
Axial	13.0 k

Date	9/9/2021
Engineer	RM
Site #	302528
Carrier	SPRINT NEXTEL

Required Flange Thickness:
0.58 in OK

Stiffeners	#	
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Bolts	#	16	
	Bolt Circle	35	in
	(R)adial / (S)quare	R	
	Diameter	3/4	in
	Hole Diameter	7/8	in
	Type	A325	
	Fy	92	ksi
	Fu	120	ksi
	f _s Resistance	30.10	k
	Applied	17.36	k



Reinforcement	#	
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Plate Stress Ratio:
34% Pass

Bolt Stress Ratio:
58% Pass

Extra Bolts	O	#	
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RAN Template: 67E5A998E 6160	A&L Template: 67E5998E_1xAIR+1OP
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Section 1 - Site Information

Site ID: CTHA803A
Status: Draft
Version: 1
Project Type: Sprint Retain
Approved: Not Approved
Approved By: Not Approved
Last Modified: 7/9/2021 3:42:59 PM
Last Modified By: Michael.Low1@T-Mobile.com

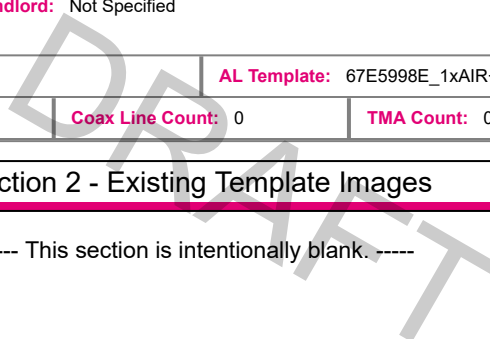
Site Name: CTHA803A
Site Class: Monopole
Site Type: Structure Non Building
Plan Year: 2021
Market: CONNECTICUT CT
Vendor: Ericsson
Landlord: Not Specified

Latitude: 41.68987900
Longitude: -72.32518300
Address: 330 Route 66
City, State: Columbia, CT
Region: NORTHEAST

RAN Template: 67E5A998E 6160		AL Template: 67E5998E_1xAIR+1OP		
Sector Count: 3	Antenna Count: 6	Coax Line Count: 0	TMA Count: 0	RRU Count: 6

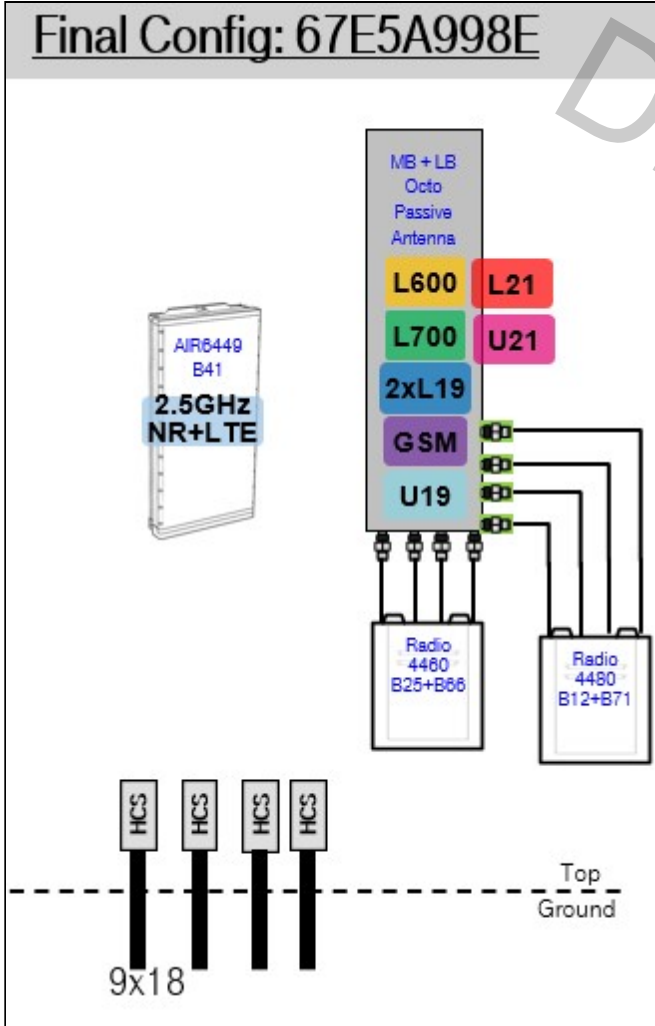
Section 2 - Existing Template Images

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Section 3 - Proposed Template Images

67E5A998E.jpg



Notes:

Section 4 - Siteplan Images

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DRAFT

RAN Template: 67E5A998E 6160	A&L Template: 67E5998E_1xAIR+1OP
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Section 5 - RAN Equipment

Existing RAN Equipment

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Proposed RAN Equipment

Template: 67E5A998E 6160

Enclosure	1	2	3									
Enclosure Type	Enclosure 6160	RBS 6601	B160									
Baseband	<table border="0"> <tr> <td>BB 6648 L700</td> <td>BB 6648 L2500</td> <td>BB 6648 L2100</td> </tr> <tr> <td>L600</td> <td>N2500</td> <td>L1900</td> </tr> <tr> <td>N600</td> <td></td> <td></td> </tr> </table>	BB 6648 L700	BB 6648 L2500	BB 6648 L2100	L600	N2500	L1900	N600			DUG20 G1900	
BB 6648 L700	BB 6648 L2500	BB 6648 L2100										
L600	N2500	L1900										
N600												
Transport System	CSR IXRe V2 (Gen2)											
Functionality Groups	Ericsson Hybrid Trunk 6/24 4AWG *Select Length* (x 3)											

RAN Scope of Work:

CT33XC014
Existing & planned azimuth: 90/220/340
Existing power 200A

RAN Template: 67E5A998E 6160	A&L Template: 67E5998E_1xAIR+1OP
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Print Name: Standard (2)
PORs: New Build_Sprint Keep

Section 6 - A&L Equipment

Existing Template: Custom
Proposed Template: 67E5998E_1xAIR+1OP

Sector 1 (Proposed) view from behind

Coverage Type	A - Outdoor Macro					
Antenna	1			2		
Antenna Model	RFS - APXVAALL24_43-U-NA20 (Octo)			Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)		
Azimuth	90			90		
M. Tilt	0			0		
Height	108			108		
Ports	P1	P2	P3	P4	P5	P6
Active Tech.	L700 L600 N600	L700 L600 N600	L2100 L1900 G1900	L2100 L1900 G1900	L2500 N2500	L2500 N2500
Dark Tech.						
Restricted Tech.						
Decomm. Tech.						
E. Tilt	2		2		2	
Cables	Coax Jumper (x2)	Coax Jumper (x2)	Coax Jumper (x2)	Coax Jumper (x2)		
TMA's						
Diplexers / Combiners						
Radio	Radio 4480 B71+B85 (At Antenna)	SHARED Radio 4480 B71+B85 (At Antenna)	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)		
Sector Equipment						

Unconnected Equipment:

Scope of Work:

*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

RAN Template: 67E5A998E 6160	A&L Template: 67E5998E_1xAIR+1OP
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Print Name: Standard (2)
PORs: New Build_Sprint Keep

Sector 2 (Proposed) view from behind						
Coverage Type	A - Outdoor Macro					
Antenna	1			2		
Antenna Model	RFS - APXVAALL24_43-U-NA20 (Octo)			Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)		
Azimuth	220			220		
M. Tilt	0			0		
Height	108			108		
Ports	P1	P2	P3	P4	P5	P6
Active Tech.	L700 L600 N600	L700 L600 N600	L2100 L1900 G1900	L2100 L1900 G1900	L2500 N2500	L2500 N2500
Dark Tech.						
Restricted Tech.						
Decomm. Tech.						
E. Tilt	2	2	2	2	2	2
Cables	Coax Jumper (x2)	Coax Jumper (x2)	Coax Jumper (x2)	Coax Jumper (x2)		
TMA's						
Diplexers / Combiners						
Radio	Radio 4480 B71+B85 (At Antenna)	SHARED Radio 4480 B71+B85 (At Antenna)	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)		
Sector Equipment						
Unconnected Equipment:						
Scope of Work:						

*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

RAN Template: 67E5A998E 6160	A&L Template: 67E5998E_1xAIR+1OP
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Print Name: Standard (2)
PORs: New Build_Sprint Keep

Sector 3 (Proposed) view from behind						
Coverage Type	A - Outdoor Macro					
Antenna	1			2		
Antenna Model	RFS - APXVAALL24_43-U-NA20 (Octo)			Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)		
Azimuth	340			340		
M. Tilt	0			0		
Height	108			108		
Ports	P1	P2	P3	P4	P5	P6
Active Tech.	L700 L600 N600	L700 L600 N600	L2100 L1900 G1900	L2100 L1900 G1900	L2500 N2500	L2500 N2500
Dark Tech.						
Restricted Tech.						
Decomm. Tech.						
E. Tilt	2	2	2	2	2	2
Cables	Coax Jumper (x2)	Coax Jumper (x2)	Coax Jumper (x2)	Coax Jumper (x2)		
TMA's						
Diplexers / Combiners						
Radio	Radio 4480 B71+B85 (At Antenna)	SHARED Radio 4480 B71+B85 (At Antenna)	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)		
Sector Equipment						
Unconnected Equipment:						
Scope of Work:						
*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.						

RAN Template: 67E5A998E 6160	A&L Template: 67E5998E_1xAIR+1OP
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Print Name: Standard (2)
PORs: New Build_Sprint Keep

Section 7 - Power Systems Equipment

Existing Power Systems Equipment

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Proposed Power Systems Equipment

Enclosure	1
Enclosure Type	Enclosure 6160

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

T-Mobile Existing Facility

Site ID: CTHA803A

330 Middletown Road
Columbia, Connecticut 06237

October 18, 2021

EBI Project Number: 6221006193

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	28.40%

October 18, 2021

T-Mobile

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

Emissions Analysis for Site: CTHA803A

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **330 Middletown Road** in **Columbia, 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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits; therefore, it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately $400 \mu\text{W}/\text{cm}^2$ and $467 \mu\text{W}/\text{cm}^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is $1000 \mu\text{W}/\text{cm}^2$. 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 330 Middletown Road in Columbia, 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 IC 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 IC 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 108 feet above ground level (AGL).
- 15) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.
- 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):	108 feet	Height (AGL):	108 feet	Height (AGL):	108 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 %:	8.15%	Antenna B1 MPE %:	8.15%	Antenna C1 MPE %:	8.15%
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):	108 feet	Height (AGL):	108 feet	Height (AGL):	108 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 %:	12.56%	Antenna B2 MPE %:	12.56%	Antenna C2 MPE %:	12.56%

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	20.72%
Verizon	2.33%
Nextel	0.45%
AT&T	4.9%
Site Total MPE % :	28.40%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	20.72%
T-Mobile Sector B Total:	20.72%
T-Mobile Sector C Total:	20.72%
Site Total MPE % :	28.40%

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 ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
T-Mobile 600 MHz LTE	2	591.73	108.0	4.09	600 MHz LTE	400	1.02%
T-Mobile 600 MHz NR	1	1577.94	108.0	5.45	600 MHz NR	400	1.36%
T-Mobile 700 MHz LTE	2	695.22	108.0	4.80	700 MHz LTE	467	1.03%
T-Mobile 1900 MHz GSM	4	1052.26	108.0	14.54	1900 MHz GSM	1000	1.45%
T-Mobile 1900 MHz LTE	2	2104.51	108.0	14.54	1900 MHz LTE	1000	1.45%
T-Mobile 2100 MHz LTE	2	2649.42	108.0	18.31	2100 MHz LTE	1000	1.83%
T-Mobile 2500 MHz LTE IC & 2C Traffic	1	11044.63	108.0	38.17	2500 MHz LTE IC & 2C Traffic	1000	3.82%
T-Mobile 2500 MHz LTE IC & 2C Broadcast	1	1074.06	108.0	3.71	2500 MHz LTE IC & 2C Broadcast	1000	0.37%
T-Mobile 2500 MHz NR Traffic	1	22089.26	108.0	76.33	2500 MHz NR Traffic	1000	7.63%
T-Mobile 2500 MHz NR Broadcast	1	2148.13	108.0	7.42	2500 MHz NR Broadcast	1000	0.74%
						Total:	20.72%

• 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:	20.72%
Sector B:	20.72%
Sector C:	20.72%
T-Mobile Maximum MPE % (Sector A):	20.72%
Site Total:	28.40%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **28.40%** 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.