



1 Cityplace Dr, Suite 490
Creve Coeur, MO 63141

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

July 22, 2022

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

RE: **Notice of Exempt Modification for AT&T
Crown Site ID#842873; AT&T Site ID#CTL05431
30 Oliver Terrace, Shelton, CT 06484
Latitude: 41°17'38.21" / Longitude: -73°6'25.83"**

Dear Ms. Bachman:

AT&T currently maintains (9) antennas at the 129-foot mounts on the existing 140-foot Monopole Tower located at **30 Oliver Terrace, Shelton**. The property is owned by Brennan Realty LLC and the Tower by Crown Castle. AT&T now intends to replace six (6) antennas and add (3) antennas. This modification/proposal includes hardware that is both 4G(LTE) and 5G capable through remote software configuration and either or both services may be turned on or off at various times.

Planned Modifications:

Tower:

REMOVE AND REPLACE

(3) CCI-OPA65R-BU6DA (alpha, beta & gamma sectors) (**REMOVE**), (3) Ericsson – AIR6449 N77D (**REPLACE**), (3) Ericsson – AIR6419 N77G (antennas stacked) (**REPLACE**)

(3) CCI-HPA-65R-BUU-H6 (alpha, beta & gamma sectors) (**REMOVE**)
(3) Quintel – QD6616-7 antennas (alpha, beta & gamma sectors) (**REPLACE**)

REMOVE

(1) DC-48-60-0-8F SQUID (**REMOVE**)
(3) Antenna Pipes (**REMOVE**)



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RELOCATE

- (3) RRH's - Ericsson – 4449 B5/B12
- (3) Mounts - Ericsson – SXX 107 2839
- (3) RRH's - Ericsson - RRUS-32 B2
- (3) RRH's - Ericsson - 4478 B14
- (3) RRH's - Ericsson - RRUS-32 B66A
- (3) RRH's – Ericsson – 4415 B 30
- (6) Mounts - Dual RRH Mounts

INSTALL

- (1) AT&T SQUID DC9-48-60-24-8C-EV
- (3) AT&T Dual RRH Mount
- (3) SCH. 40 Galvanized Pipe w / crossover hardware
- (1) 7/8" 6AWG DC
- (1) 3/8" 24-PAIR FIBER

Ground:

REMOVE & REPLACE:

- (1) SFP-3 (**REMOVE**) SFP-7 in RRUS 32 (**REPLACE**)

INSTALL:

- (1) DC12-48-60-0-25E
- (1) 6648 (+XCEDE)
- (3) RRUS – 2012 B29
- (3) Rectifiers in Existing Power Plant

The facility was approved by the Connecticut Siting Council, Petition No. 608 on March 25, 2003. A copy of the Staff Report is included in this filing as Exhibit A.

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 Mark Laretti, Mayor of the City of Shelton, Alexander Rosetti, Planning & Zoning Administrator for the City of Shelton, and Brennan Realty LLC as the property owner.



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1. The proposed modifications will not result in an increase in the height of the existing tower.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modification will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communication Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

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

Sincerely,

Ersilia Davis

Ersilia Davis
Crown Castle, Agent for AT&T
edavis@nbcllc.com
(551)804-0667

cc:
Mayor Mark Lauretti
Shelton City Hall
54 Hill Street
Shelton, CT 06484

Alexander Rosetti, Planning & Zoning Administrator
Shelton City Hall
54 Hill Street – Third Floor
Shelton, CT 06484

Brennan Realty LLC, Property Owner
PO Box 788
Shelton, CT 06484

Exhibit A

Original Facility Approval

Petition No. 608
AT&T Wireless PCS, LLC
Shelton, Connecticut
Staff Report
March 25, 2003

On February 4, 2003, Connecticut Siting Council (Council) member Gerald Heffernan and Robert Mercier of Council staff met with AT&T Wireless PCS, Inc. (AT&T) representative Christopher Fisher at 70 Platt Road in Shelton to review this petition. AT&T proposes to replace an existing 75-foot monopole with a 100-foot monopole 275 feet west of its existing location. AT&T is petitioning the Council for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need (Certificate) is required for the tower replacement and relocation.

The existing monopole is owned by the John J. Brennan Construction Company and is located adjacent to an office/garage building. The existing monopole, with a base diameter of 8 inches tapering to 4 inches at the top, has limited structural capability and supports one whip antenna extending to a height of 81 feet above ground level. The proposed 100-foot replacement tower would be located approximately 275 feet west of the existing tower, adjacent to a warehouse building in an area used for equipment storage.

The new tower would have a base diameter of 3.5 feet tapering to 1.5 feet at the top and would be designed to support three antenna platforms and the whip antenna. AT&T would place 6 panel antennas at the 95-foot level of the tower. The whip antenna would be placed at the top of the tower and would extend to a height of 107 feet above ground level. Nextel and Sprint intend on locating on the tower at the 85-foot and 75-foot levels at a future date. The existing monopole would be removed once the new tower is operational.

AT&T would install equipment cabinets on a concrete pad within a fenced compound at the base of the tower. Compound expansion would be necessary to accommodate future carriers. Utilities would be installed underground from a utility pole on Oliver Terrace, an abutting street.

The proposed site is located in an industrial and commercial area adjacent to Route 8. A residence is located approximately 200 feet north of the proposed tower site. A band of mature trees along the north property boundary would provide some screening of views from Platt Road and the adjacent residence.

The worst-case power density for the telecommunications operations at the site has been calculated to be 4.3% of the applicable standard for uncontrolled environments.

Exhibit B

Property Card



Town of Shelton, CT

Property Listing Report

Map Block Lot **77 23 1**

Building # **1** Unique Identifier **77 23 1**

Property Information

Property Location	30 OLIVER TER
Mailing Address	PO BOX 788 SHELTON CT 06484
Land Use	Cell Site
Zoning Code	IA-2
Neighborhood	27000

Owner	BRENNAN REALTY LLC
Co-Owner	
Book / Page	2400/0316
Land Class	Commercial
Census Tract	
Acreage	0

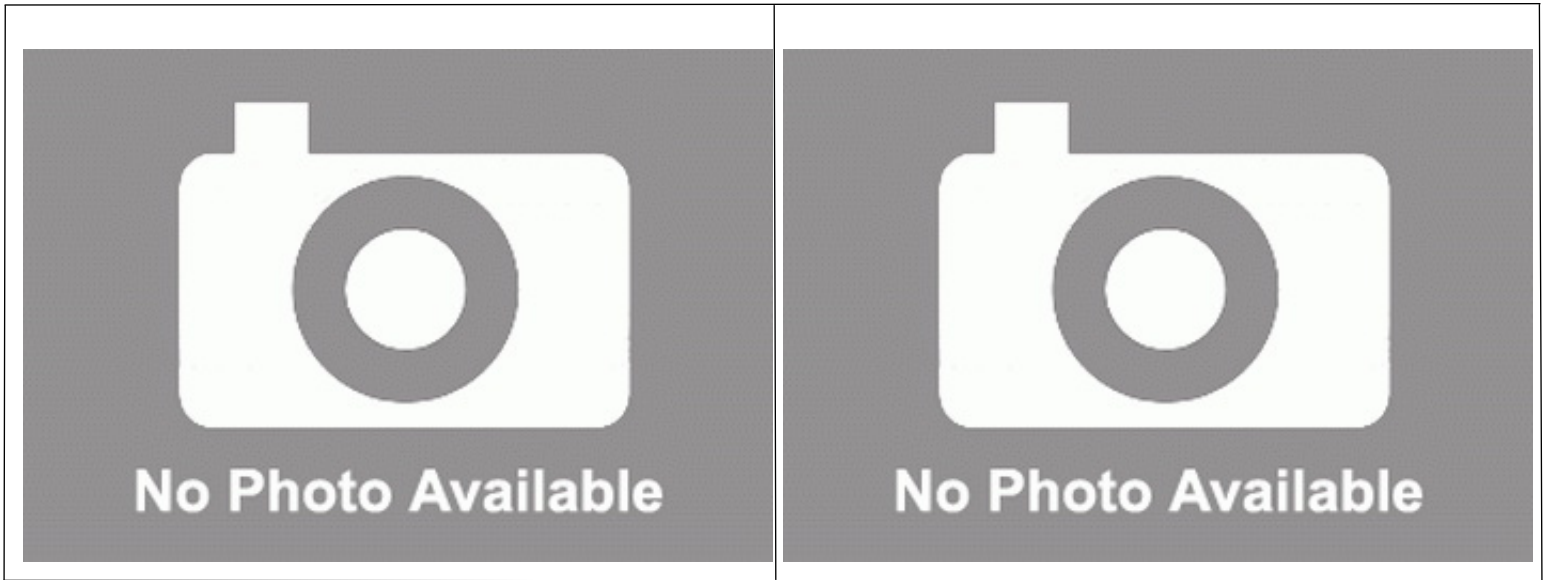
Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	196000	137200
Outbuildings	0	0
Land	0	0
Total	196000	137200

Utility Information

Electric	NA
Gas	NA
Sewer	NA
Public Water	NA
Well	NA



Primary Construction Details

Year Built	2017
Building Desc.	Commercial
Building Style	
Stories	1
Exterior Walls	
Exterior Walls 2	
Interior Walls	
Interior Walls 2	
Interior Floors 1	
Interior Floors 2	

Heating Fuel	
Heating Type	
AC Type	
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	0
Total Rooms	0
Bath Style	NA
Kitchen Style	
Occupancy	0

Building Use	Cell Antenna
Building Condition	Average
Frame Type	3
Fireplaces	0
Bsmt Gar	0
Fin Bsmt Area	0
Fin Bsmt Quality	
Building Grade	0
Roof Style	
Roof Cover	

Report Created On

7/18/2022

Town of Shelton, CT

Property Listing Report

Map Block Lot **77 23 1**

Building # **1** Unique Identifier **77 23 1**

Detached Outbuildings

Type	Description	Area (sq ft)	Condition	Year Built

Attached Extra Features

Type	Description	Area (sq ft)	Condition	Year Built

Sales History

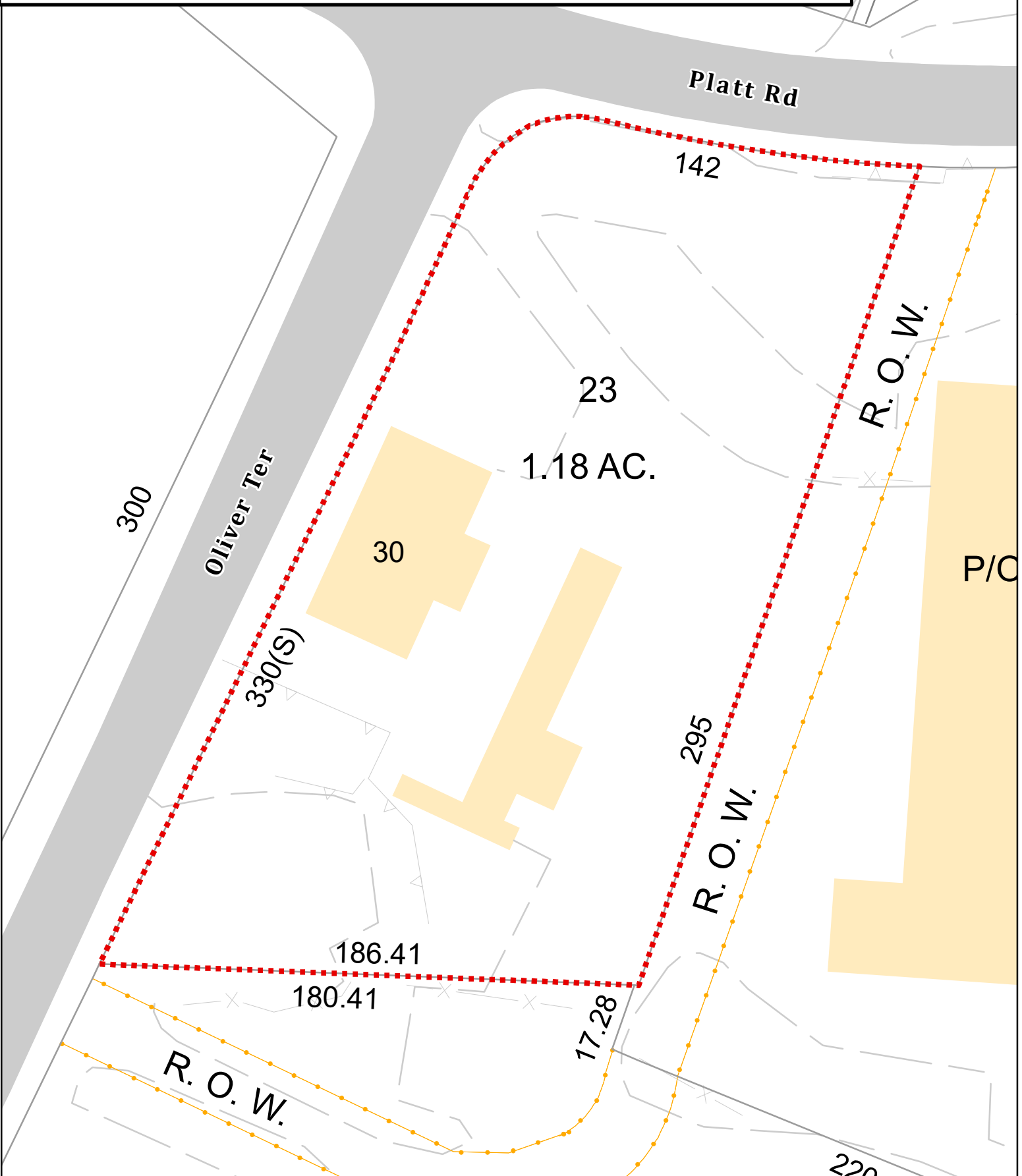
Owner of Record	Book/ Page	Sale Date	Sale Price
BRENNAN REALTY LLC	2400_0316	7/2/2004	0



City of Shelton, Connecticut - Parcel Map

Parcels: 77 23

Address: 30 OLIVER TERR



Approximate Scale: 1:530



Map Produced
October 2021

Disclaimer: This map is for informational purposes only. All information is subject to verification by any user. The City of Shelton and its mapping contractors assume no legal responsibility for the information contained herein.

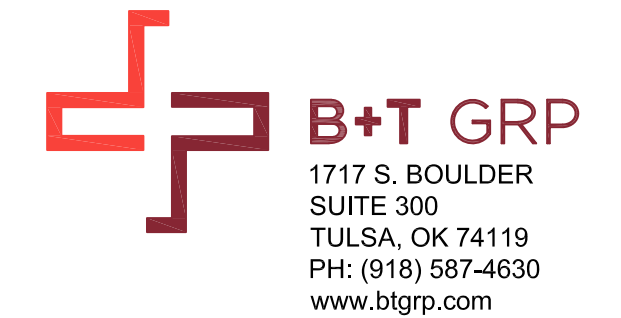
Exhibit C

Construction Drawings



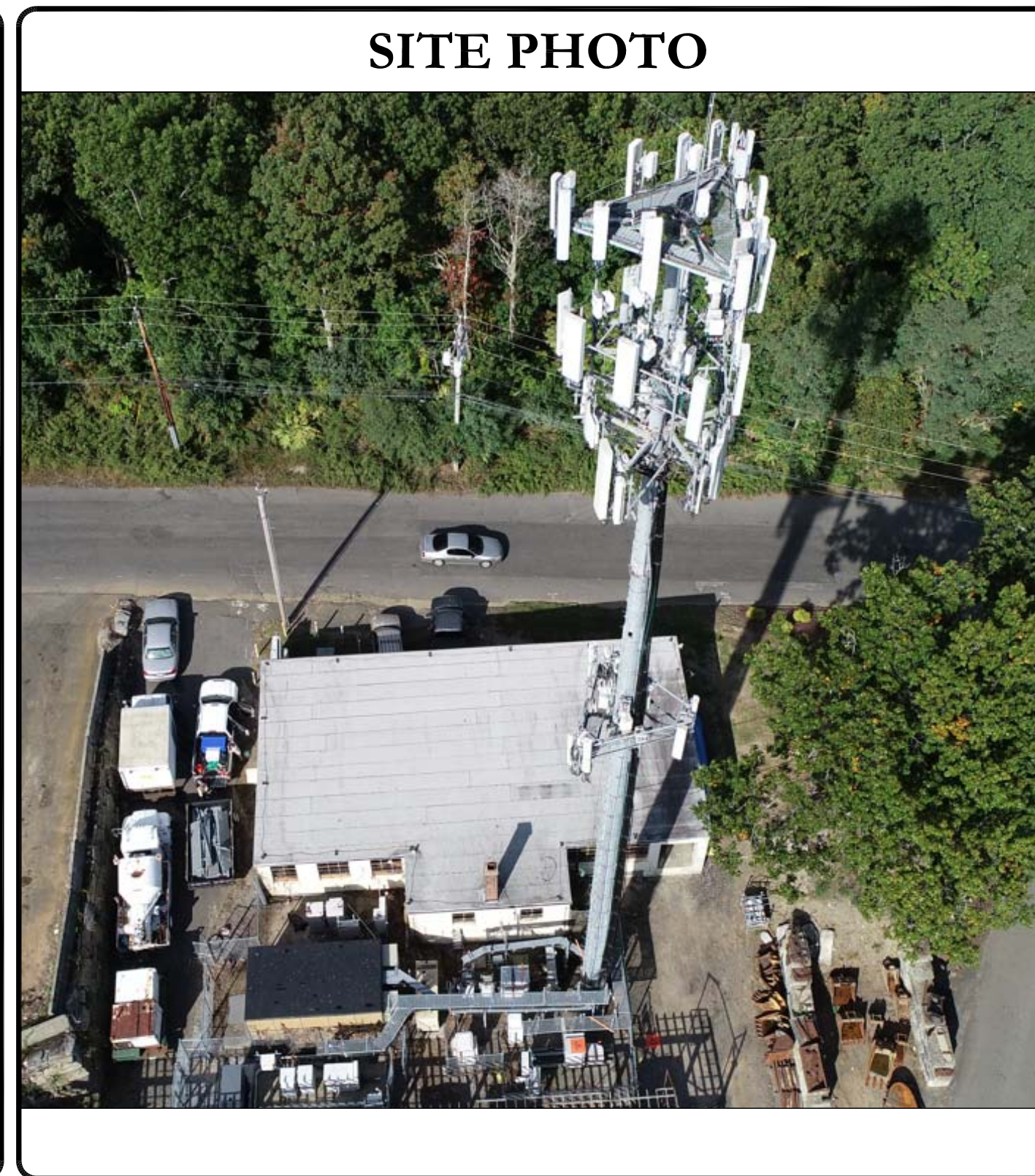
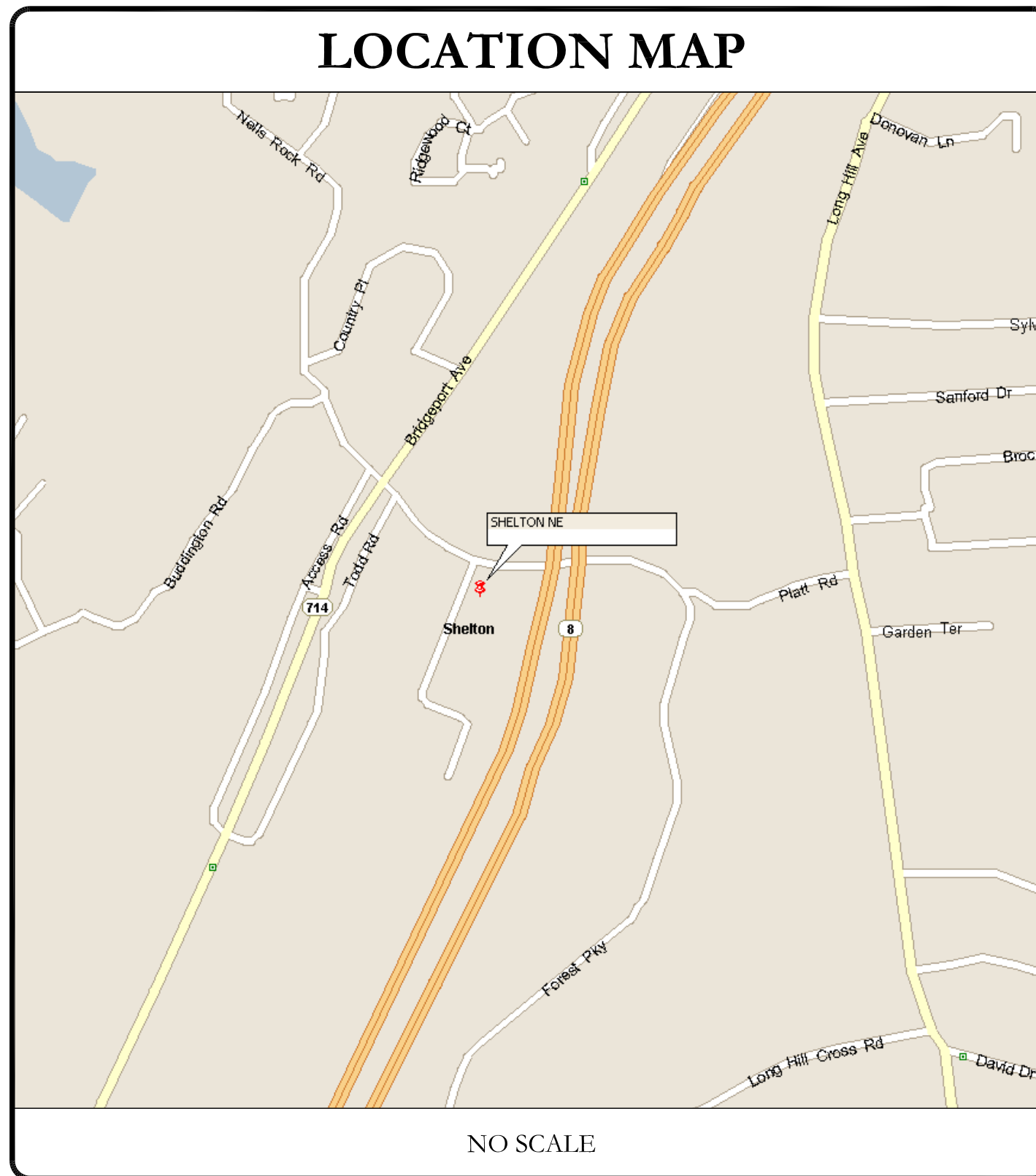
AT&T SITE NUMBER: CTL05431
AT&T SITE NAME: SHELTON NE
AT&T FA CODE: 10071231
AT&T PACE NUMBER: MRCTB053309, MRCTB054908, MRCTB054915, MRCTB053477, MRCTB062242
AT&T PROJECT: 5G NR ACTIVATION, 5G NR 1SR CBAND, LTE 7C

BUSINESS UNIT #: 842873
SITE ADDRESS: 30 OLIVER TERRACE, SHELTON, CT 06484
COUNTY: FAIRFIELD
SITE TYPE: MONOPOLE
TOWER HEIGHT: 140'-0"



SITE INFORMATION	
CROWN CASTLE USA INC. SITE NAME:	SHELTON NE
SITE ADDRESS:	30 OLIVER TERRACE, SHELTON, CT 06484
COUNTY:	FAIRFIELD
MAP/PARCEL #:	77.-23
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41° 17' 38.21"
LONGITUDE:	-73° 6' 25.83"
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	311'
CURRENT ZONING:	IA-2 INDUSTRIAL DISTRICT
JURISDICTION:	CONNECTICUT SITING COUNCIL
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	BRENNAN REALTY LLC, PO BOX 788, 70 PLATT 06484
TOWER OWNER:	CROWN CASTLE USA INC, 2000 CORPORATE DRIVE, CANONSBURG, PA 15317
CARRIER/APPLICANT:	AT&T TOWER ASSET GROUP, 575 MOROSGO DRIVE, ATLANTA, GA 30324-3300
ELECTRIC PROVIDER:	UNITED ILLUMINATING CO., 203-499-2000
TELCO PROVIDER:	AT&T, 866.439.0717

DRAWING INDEX	
SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1.1	SITE PLAN
C-1.2	EXISTING & FINAL EQUIPMENT PLANS
C-2	FINAL ELEVATION & ANTENNA PLANS
C-3	FINAL EQUIPMENT SCHEDULE
C-4	EQUIPMENT MOUNTING DETAILS
C-5	EQUIPMENT SPECS
G-1	GROUNDING SCHEMATIC
G-2	GROUNDING DETAILS
ATTACHED	PLUMBING DIAGRAM
ATTACHED	CROSSOVER HARDWARE SPECIFICATIONS
ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR FULL SIZE. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.	



AT&T SITE NUMBER: CTL05431
BU #: 842873
SHELTON NE
 30 OLIVER TERRACE, SHELTON, CT 06484
 EXISTING 140'-0" MONOPOLE

ISSUED FOR:				
REV	DATE	DRWN	DESCRIPTION	DES./QA
A	3/2/22	YX	PRELIMINARY REVIEW	KT
B	4/1/22	YX	PRELIMINARY REVIEW	KT
0	6/20/22	YX	CONSTRUCTION	KT

PROJECT TEAM	
A&E FIRM:	B+T GROUP, 1717 S. BOULDER AVE., TULSA, OK 74119, MARVIN PHILLIPS, marvin.phillips@btgrp.com
CROWN CASTLE USA INC. DISTRICT CONTACTS:	3530 TORINGDON WAY, SUITE 300, CHARLOTTE, NC 28277 PAUL PEDICONE - PROJECT MANAGER, PAUL.PEDICONE@CROWNCastle.COM JASON D'AMICO - CONSTRUCTION MANAGER, JASON.D'AMICO@CROWNCastle.COM HEATHER SIMONE - AES, HEATHER.SIMONE@CROWNCastle.COM

PROJECT DESCRIPTION

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

TOWER SCOPE OF WORK:

- REMOVE (3) CCI - HPA-65R-BUU-H6 ANTENNAS
- REMOVE (3) CCI - OPA65R-BU6DA ANTENNAS
- RELOCATE (3) BACK TO BACK MOUNTS
- RELOCATE (3) ERICSSON - RRUS-32 B2 RRHs
- RELOCATE (3) ERICSSON - 4449 B5/B12 RRHs
- RELOCATE (3) ERICSSON - 4415 B30 RRHs
- INSTALL (6) MOUNT PIPES
- INSTALL (3) DUAL RRH MOUNT
- INSTALL (3) QUINTEL - QD6616-7 ANTENNAS
- INSTALL (6) ERICSSON - AIR6449 B77D +AIR6419

B77G STACKED ANTENNAS

- INSTALL (1) DC9-48-60-24-8C-EV SQUID
- INSTALL (1) PWRT-606-S DC TRUNK
- INSTALL (1) FB-L98B-235-XXX FIBER TRUNK
- INSTALL (3) Y-CABLES

GROUND SCOPE OF WORK:

- INSTALL (1) DC12-48-60-0-25E
- INSTALL (3) RECTIFIERS
- INSTALL 6648(+XCEDE) IN PLACE OF EXISTING FUSE PANEL IN LTE PURCELL - IF FUSE PANEL CANNOT BE REMOVED/RELOCATED THEN REMOVE XMU & 6601 CHASSIS TO INSTALL 6648.
- INSTALL SWAP SFP-3 FOR SFP-7 IN RRUS 32.
- INSTALL 2012 B29 RRH

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

APPLICABLE CODES/REFERENCE DOCUMENTS

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

CODE TYPE	CODE
BUILDING	2021 IBC
MECHANICAL	2021 IMC
ELECTRICAL	2020 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS: CROWN CASTLE, DATED: 5/2/22

MOUNT ANALYSIS: TOWER ENGINEERING PROFESSIONALS, DATED: 4/26/22

AC ELECTRICAL POWER DESIGN: BY OTHERS, DATED:

RFDS REVISION: FINAL, DATED: 3/8/22

ORDER ID: 586271, REVISION: 0

B&T ENGINEERING, INC.
 PEC.0001564
 Expires 2/10/23

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

SHEET NUMBER: T-1	REVISION: 0
------------------------------------	------------------------------

1:39808.011.01_842873_SHELTON_NE.dwg - Sheet T-1 - User: kevin.turkall - Jun 20, 2022 - 4:03pm

CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

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

GREENFIELD GROUNDING NOTES:

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

GENERAL NOTES:

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

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

ELECTRICAL INSTALLATION NOTES:

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

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

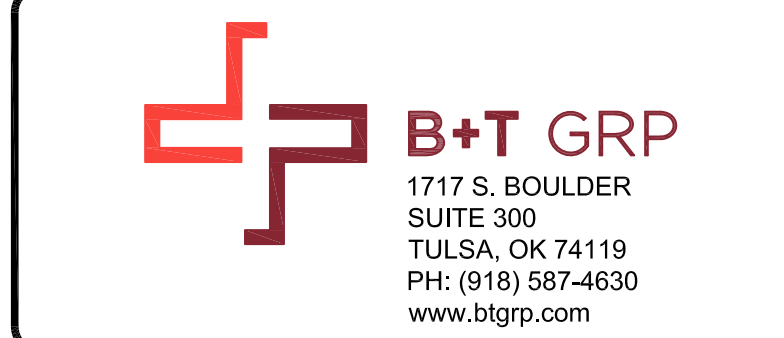
* SEE NEC 210.5(C)(1) AND (2)
** POLARITY MARKED AT TERMINATION

ABBREVIATIONS:

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

APWA UNIFORM COLOR CODE:

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



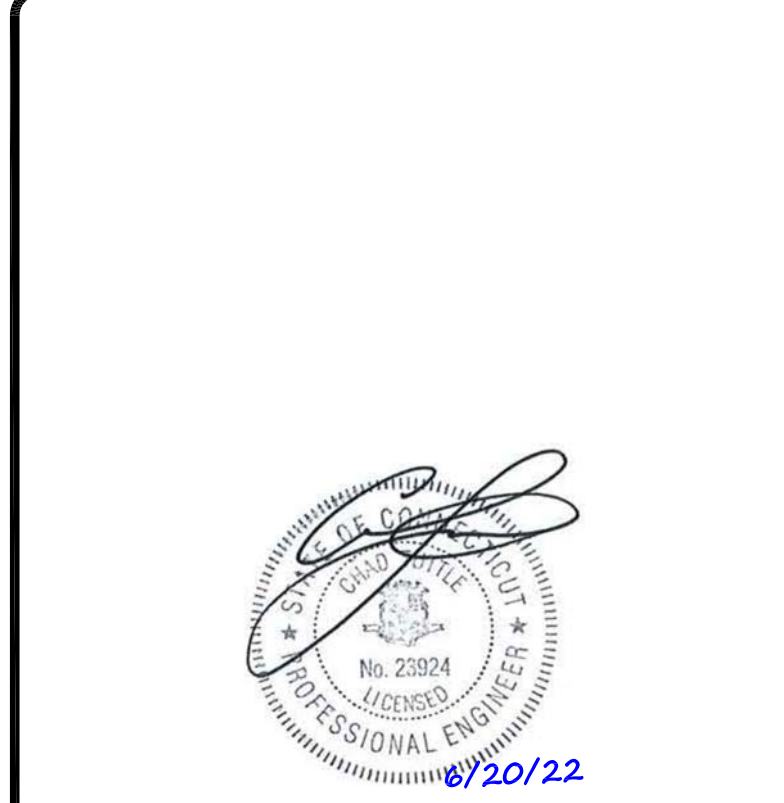
AT&T SITE NUMBER: CTL05431
BU #: 842873 SHELTON NE

30 OLIVER TERRACE SHELTON, CT 06484

EXISTING 140'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	3/2/22	YX	PRELIMINARY REVIEW	KT
B	4/1/22	YX	PRELIMINARY REVIEW	KT
0	6/20/22	YX	CONSTRUCTION	KT



B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

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

SHEET NUMBER: T-2 **REVISION: 0**

AT&T SITE
NUMBER: **CTL05431**

BU #: **842873**
SHELTON NE

30 OLIVER TERRACE
SHELTON, CT 06484

EXISTING
140'-0" MONOPOLE

ISSUED FOR:

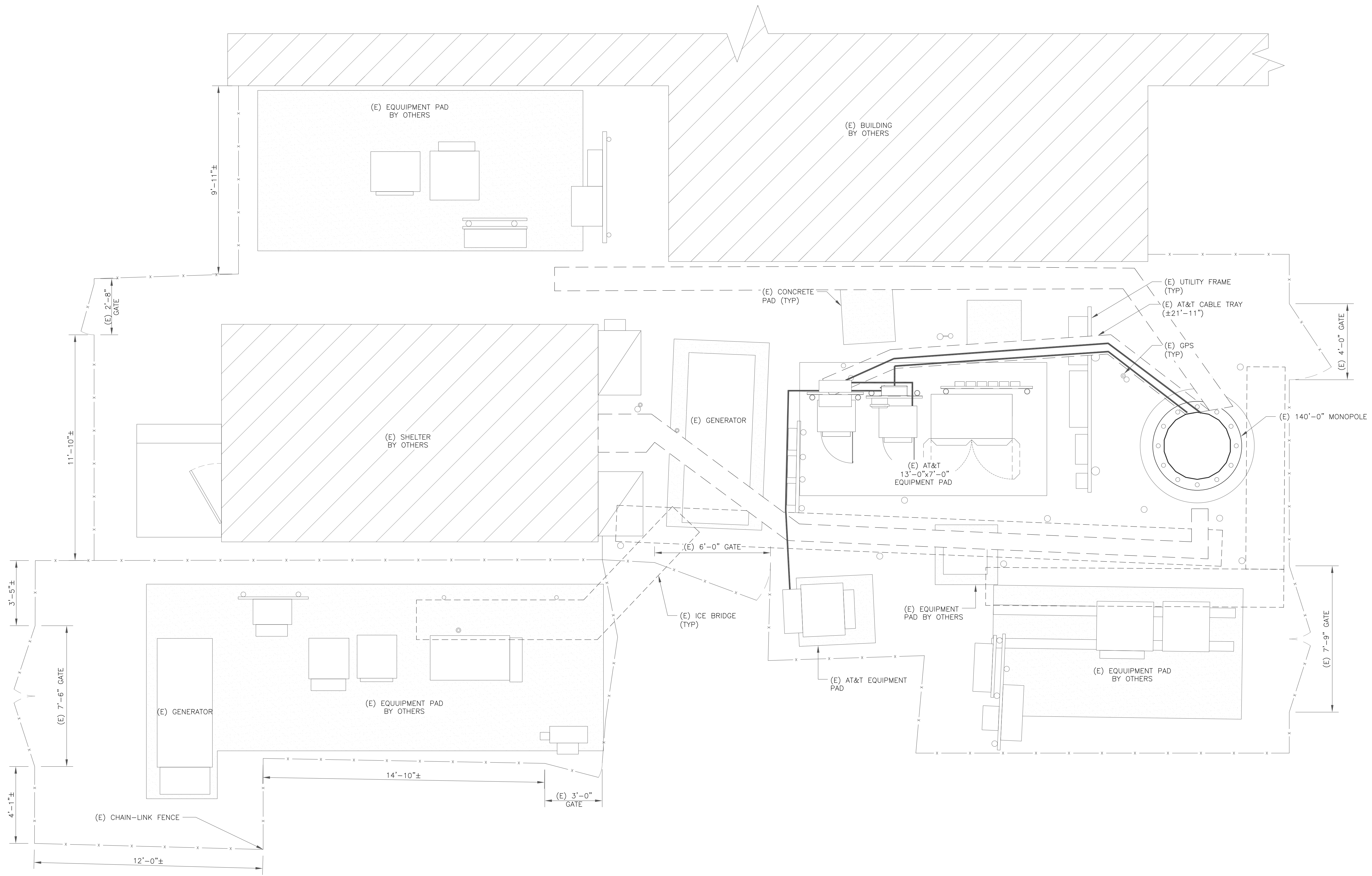
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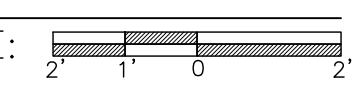


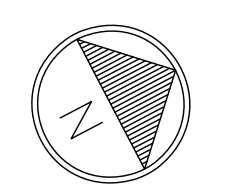
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SHEET NUMBER: **C-1.1** REVISION: **0**



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



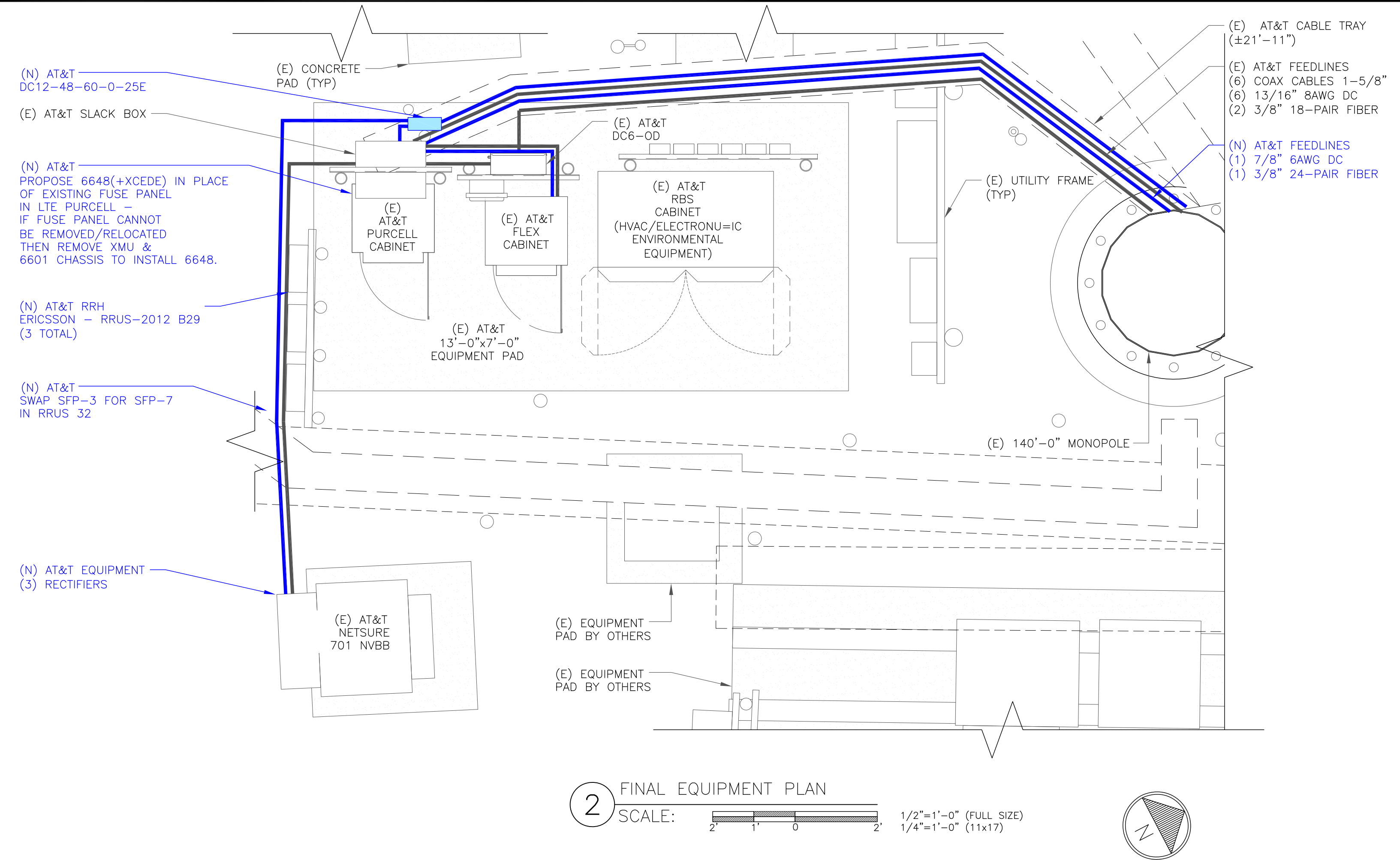
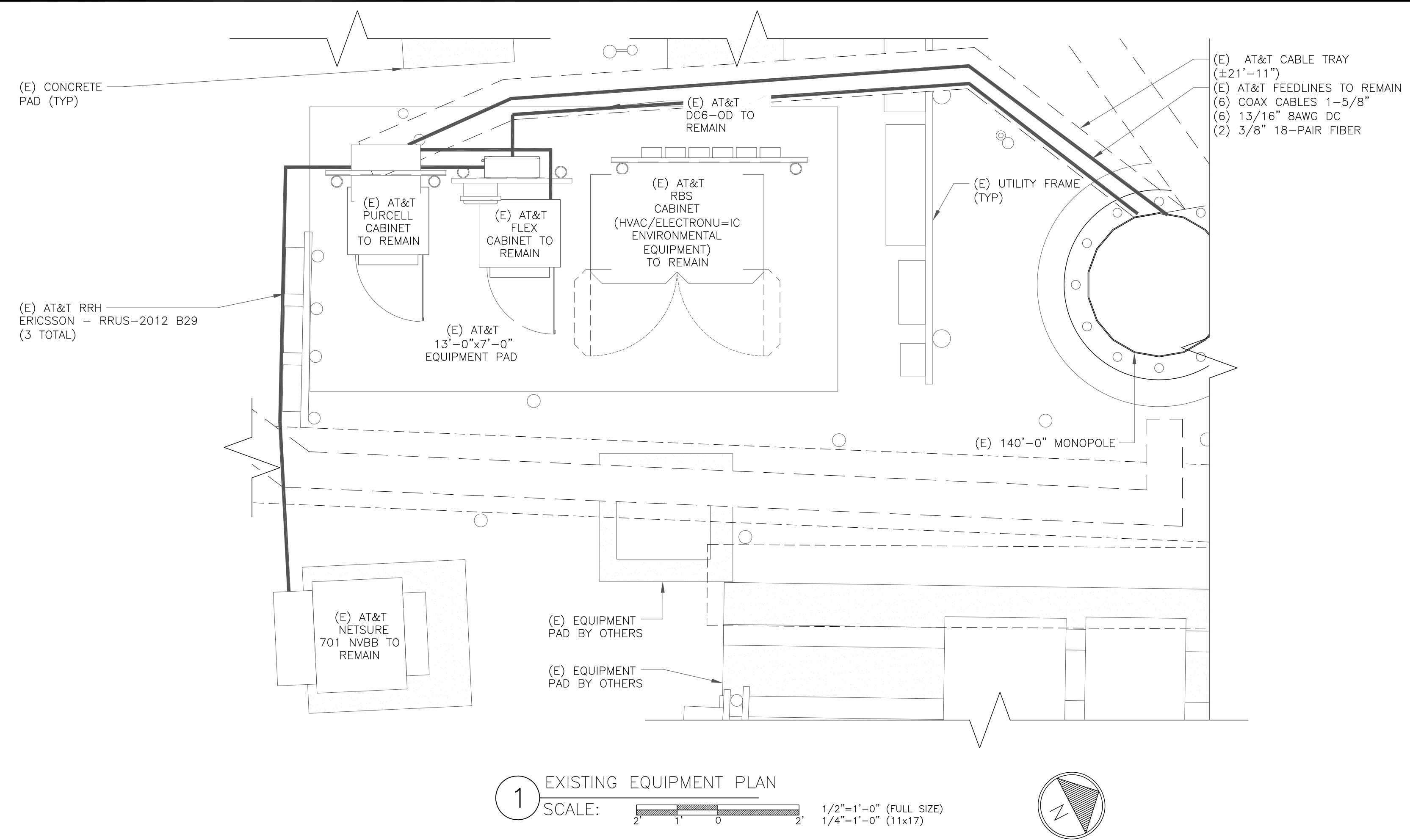
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AT&T SITE
NUMBER: **CTL05431**

BU #: **842873**
SHELTON NE

30 OLIVER TERRACE
SHELTON, CT 06484

EXISTING
140'-0" MONOPOLE



- GROUND SCOPE OF WORK:
- INSTALL (1) DC12-48-60-0-25E
 - INSTALL (3) RECTIFIERS
 - INSTALL 6648(+XCEDE) IN PLACE OF EXISTING FUSE PANEL IN LTE PURCELL - IF FUSE PANEL CANNOT BE REMOVED/RELOCATED THEN REMOVE XMU & 6601 CHASSIS TO INSTALL 6648.
 - INSTALL SWAP SFP-3 FOR SFP-7 IN RRUS 32.

NOTE:

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

ISSUED FOR:

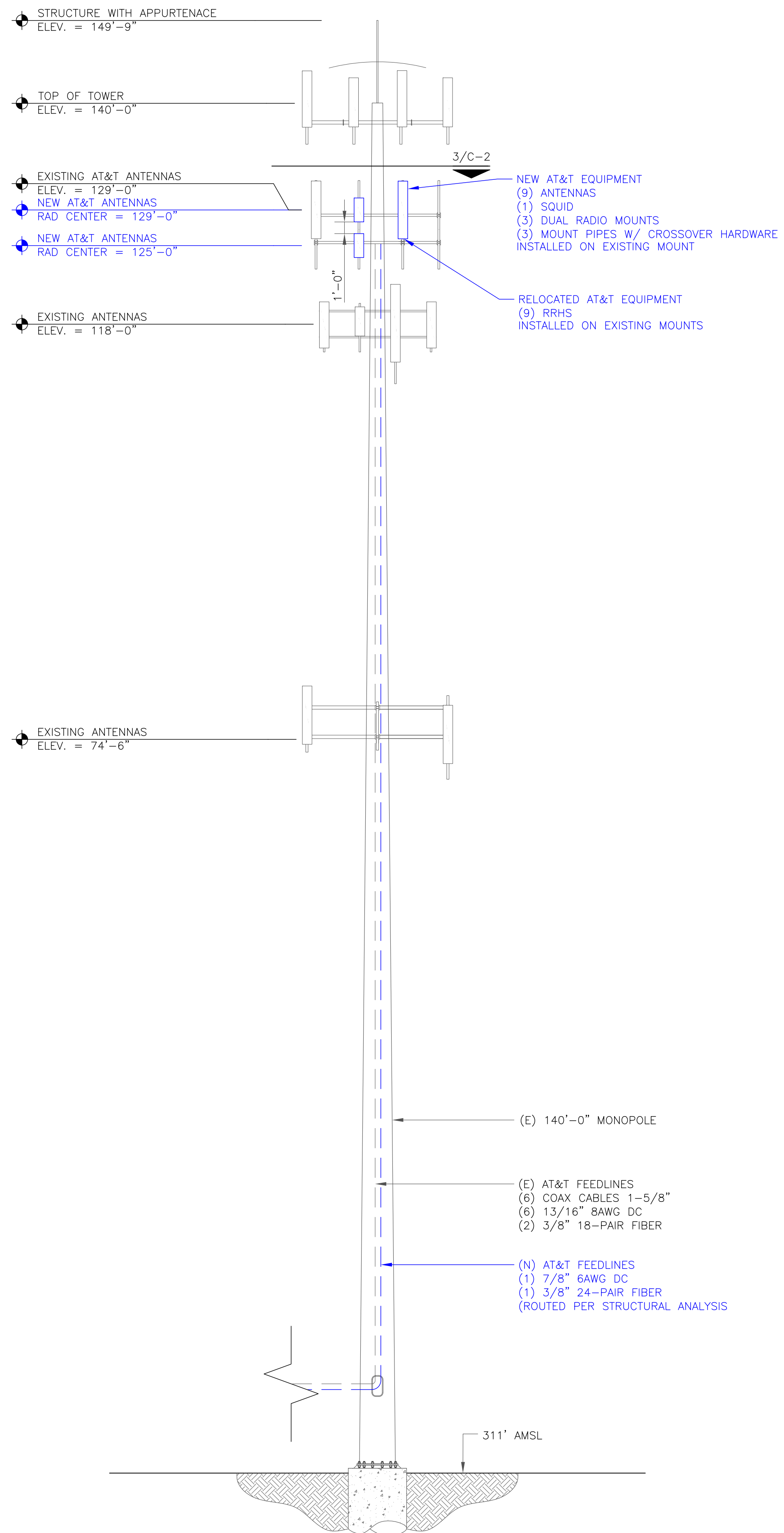
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B	4/1/22	YX	PRELIMINARY REVIEW	KT
0	6/20/22	YX	CONSTRUCTION	KT



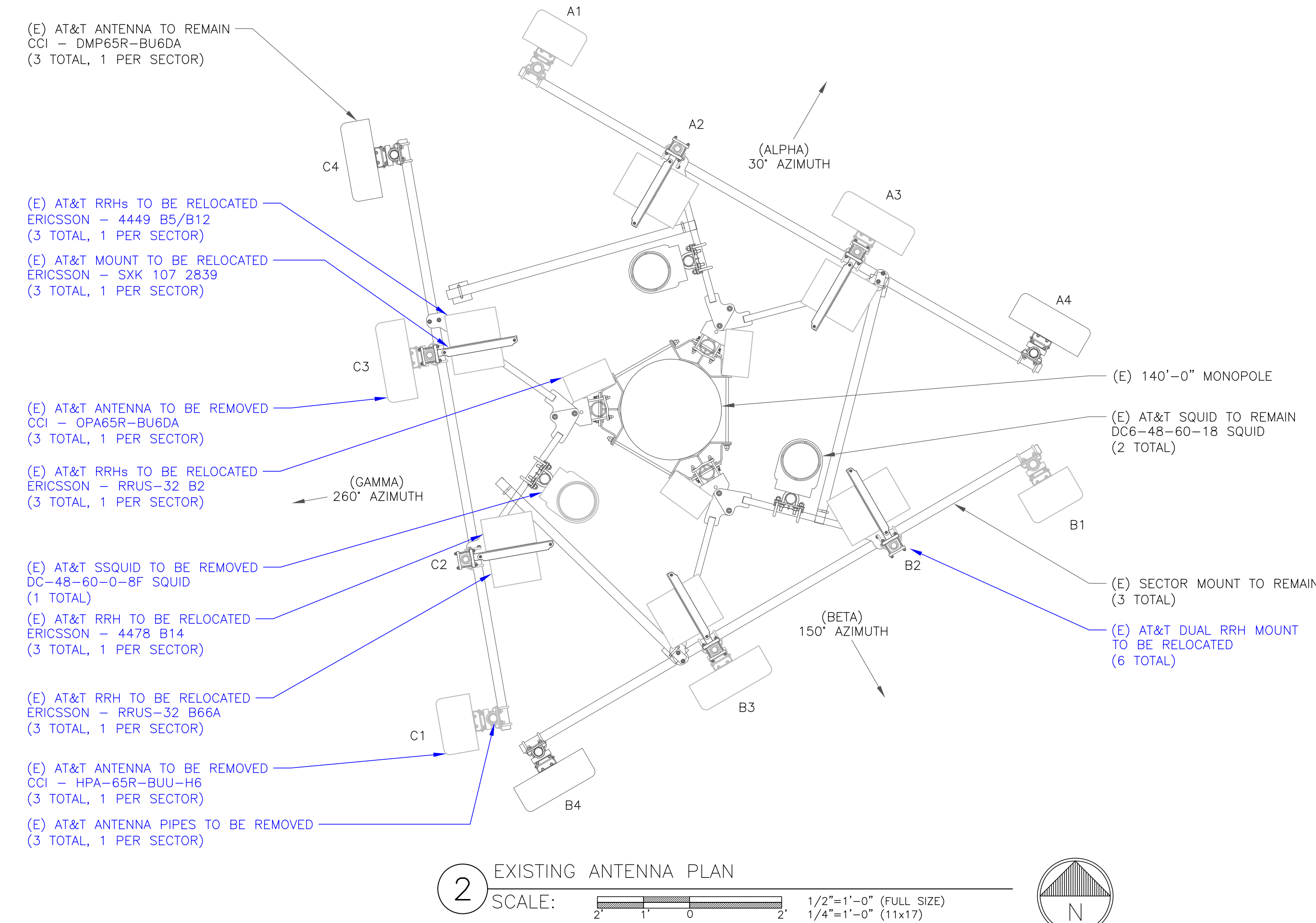
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

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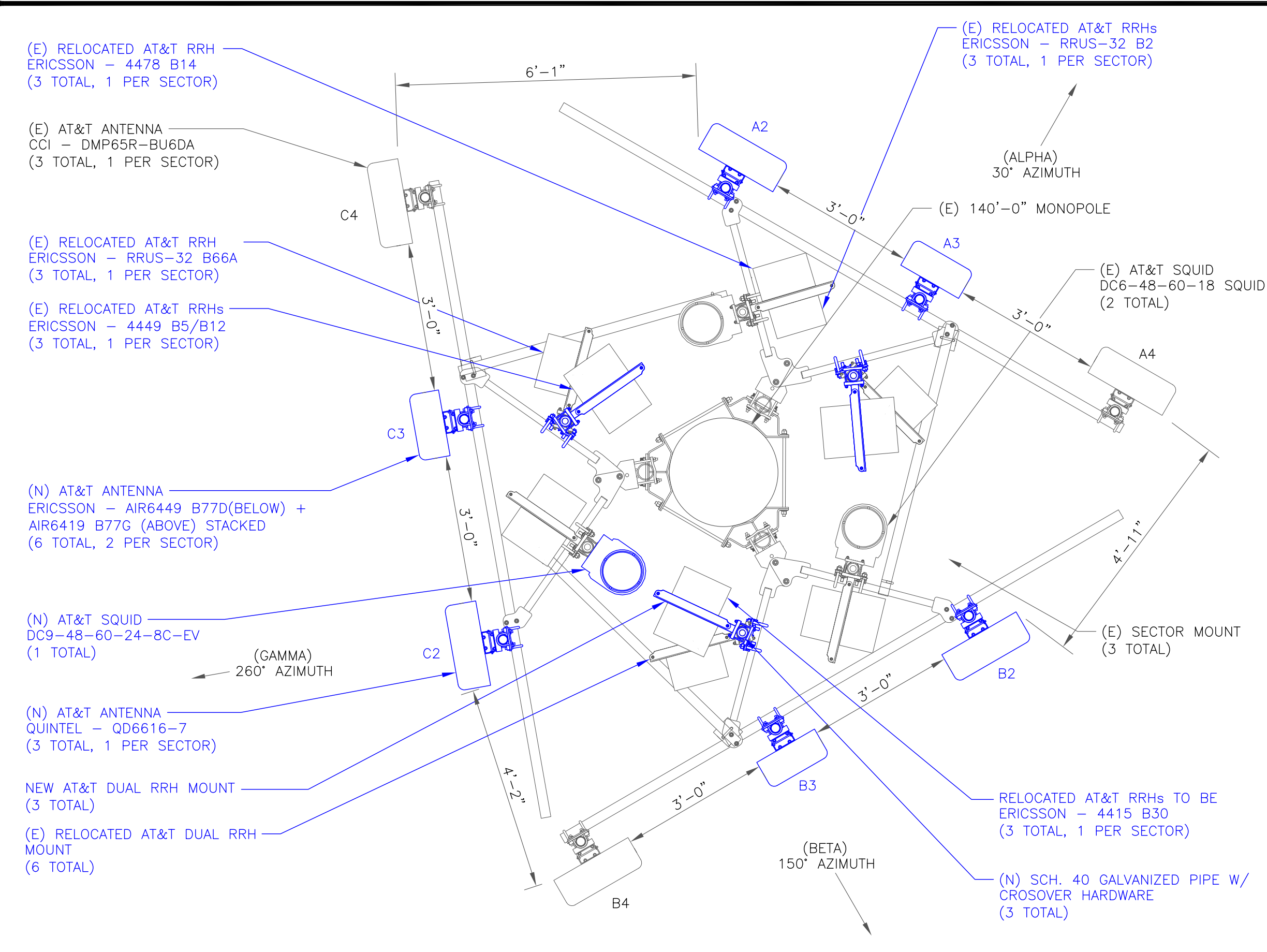
SHEET NUMBER: **C-1.2** REVISION: **0**



1 FINAL ELEVATION
SCALE: NOT TO SCALE



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



3 FINAL ANTENNA PLAN
SCALE: 1/2"=1'-0" (FULL SIZE)
1/4"=1'-0" (11x17)

"LOOK UP" - CROWN CASTLE USA INC. SAFETY CLIMB REQUIREMENT:

THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE; BENDING OF THE WIRE ROPE FROM ITS SUPPORTS; DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR CROWN CASTLE USA INC. POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.

INSTALLER NOTES:

1. REFERENCE C-3 FOR FINAL EQUIPMENT SCHEDULE.
2. REFERENCE C-4 FOR NEW EQUIPMENT SPECIFICATIONS.
3. CONTRACTOR TO VERIFY ALL ANTENNA TIP HEIGHTS DO NOT EXCEED BEACON BASE HEIGHT.
4. 3'-0" MINIMUM DISTANCE REQUIRED BETWEEN LTE ANTENNAS ON SAME SECTOR.
5. 6'-0" MINIMUM DISTANCE REQUIRED BETWEEN 700BC & 700DE ANTENNAS ON SAME SECTOR.
6. 4'-0" MINIMUM DISTANCE REQUIRED BETWEEN LTE 700 ANTENNAS ON OPPOSING SECTORS.
7. ALL ANTENNA MEASUREMENT DISTANCES MUST BE EDGE TO EDGE (RELOCATE ANTENNAS AS NEEDED).
8. 8" MINIMUM DISTANCE REQUIRED BETWEEN ANTENNA & RADIO. SEE GENERIC EXAMPLE DETAIL ON SHEET C-4.

575 MOROSGO DRIVE
ATLANTA, GA 30324-3300

3530 TORINGDON WAY, SUITE 300
CHARLOTTE, NC 28277

1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.blgrp.com

AT&T SITE
NUMBER: CTL05431

BU #: 842873
SHELTON NE

30 OLIVER TERRACE
SHELTON, CT 06484

EXISTING
140'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	3/2/22	YX	PRELIMINARY REVIEW	KT
B	4/1/22	YX	PRELIMINARY REVIEW	KT
0	6/20/22	YX	CONSTRUCTION	KT

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Expires 2/10/23

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SHEET NUMBER: **C-2** REVISION: **0**

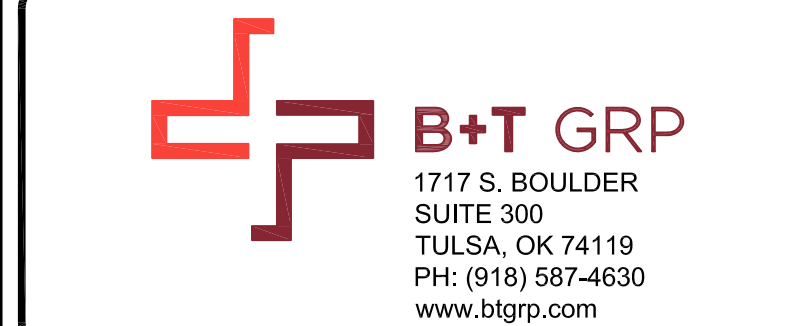
1:39:08.011.01_842873_SHELTON_NE.dwg - Sheet: C-2 - User: kevin.turkall - Jun 20, 2022 - 4:05pm

NOTE: RFDS BEING USED
DATED 3/8/22 V FINAL

FINAL ANTENNA AND FEEDLINE SCHEDULE

POS.	TECH	STATUS	AZIMUTH	ANTENNA TYPE	ANTENNA RAD CENTER	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	MAIN COAX SIZE	MAIN COAX LENGTH	COAX QTY	TMA QTY AND MODEL	SURGE PROTECTION	DC/FIBER CABLES	RRHs QTY & MODEL ON TOWER	LOCATION	DIPLEXER ON TOWER	DIPLEXER ON GROUND	RET CABLE	
ALPHA SECTOR																			
A2	LTE/ 5G	NEW	30°	(N) QUINTEL – QD6616-7	129'-0"	0°	2'/4"/4'/3'/3'/4'	-	-	-	-			(P) (1) (G) 2012 B29 (E) (1) ERICSSON – RRUS-32 B2 (E) (1) ERICSSON – 4478 B14 (E) (1) ERICSSON – RRUS-32 B66A	TOWER	N	N	N	
A3	5G CBAND	NEW	30°	(N) ERICSSON – AIR 6419 N77G (N) ERICSSON – AIR 6449 N77D	129'-0" 125'-0"	0°	0'/0'	-	-	-	-	(E) (1) DC6-48-60-18	(E) (1) 3/8" 18-PAIR FIBER (E) (2) 13/16" 8AWG DC	INTEGRATED WITHIN	TOWER	N	N	N	
A4	LTE/ 5G	EXISTING	30°	(E) CCI – DMP65R-BU6DA	129'-0"	0°	2'/2'/3'	-	-	-	-			(E) (1) ERICSSON – 4449 B5/B12 (N) (1) Y-CABLE (E) (1) ERICSSON – 4415 B30	TOWER	N	N	N	
BETA SECTOR																			
B2	LTE/ 5G	NEW	150°	QUINTEL – QD6616-7	129'-0"	0°	2'/4"/4'/3'/3'/4'	-	-	-	-			(P) (1) (G) 2012 B29 (E) (1) ERICSSON – RRUS-32 B2 (E) (1) ERICSSON – 4478 B14 (E) (1) ERICSSON – RRUS-32 B66A	TOWER	N	N	N	
B3	5G CBAND	NEW	150°	(N) ERICSSON – AIR 6419 N77G (N) ERICSSON – AIR 6449 N77D	129'-0" 125'-0"	0°	0'/0'	-	-	-	-	(E) (1) DC6-48-60-18	(E) (1) 3/8" 18-PAIR FIBER (E) (2) 13/16" 8AWG DC	INTEGRATED WITHIN	TOWER	N	N	N	
B4	LTE/ 5G	EXISTING	150°	(E) CCI – DMP65R-BU6DA	129'-0"	0°	2'/2'/3'	-	-	-	-			(E) (1) ERICSSON – 4449 B5/B12 (N) (1) Y-CABLE (E) (1) ERICSSON – 4415 B30	TOWER	N	N	N	
GAMMA SECTOR																			
C2	LTE/ 5G	NEW	260°	QUINTEL – QD6616-7	129'-0"	0°	2'/4"/4'/3'/3'/4'	-	-	-	-			(P) (1) (G) 2012 B29 (E) (1) ERICSSON – RRUS-32 B2 (E) (1) ERICSSON – 4478 B14 (E) (1) ERICSSON – RRUS-32 B66A	TOWER	N	N	N	
C3	5G CBAND	NEW	260°	(N) ERICSSON – AIR 6419 N77G (N) ERICSSON – AIR 6449 N77D	129'-0" 125'-0"	0°	0'/0'	-	-	-	-	(N) (1) DC9-48-60-24-8C -EV	(N) (1) 3/8" 24-PAIR FIBER (E) (2) 13/16" 8AWG DC CABLE (N) (1) 7/8" 6AWG DC	INTEGRATED WITHIN	TOWER	N	N	N	
C4	LTE/ 5G	EXISTING	260°	(E) CCI – DMP65R-BU6DA	129'-0"	0°	2'/2'/3'	-	-	-	-			(E) (1) ERICSSON – 4449 B5/B12 (N) (1) Y-CABLE (E) (1) ERICSSON – 4415 B30	TOWER	N	N	N	
								UNUSED FEEDLINES	1-5/8"	179'-0"	6								

NOTE: BOLD DENOTES NEW EQUIPMENT



AT&T SITE
NUMBER: **CTL05431**

BU #: **842873**
SHELTON NE

30 OLIVER TERRACE
SHELTON, CT 06484

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ISSUED FOR:

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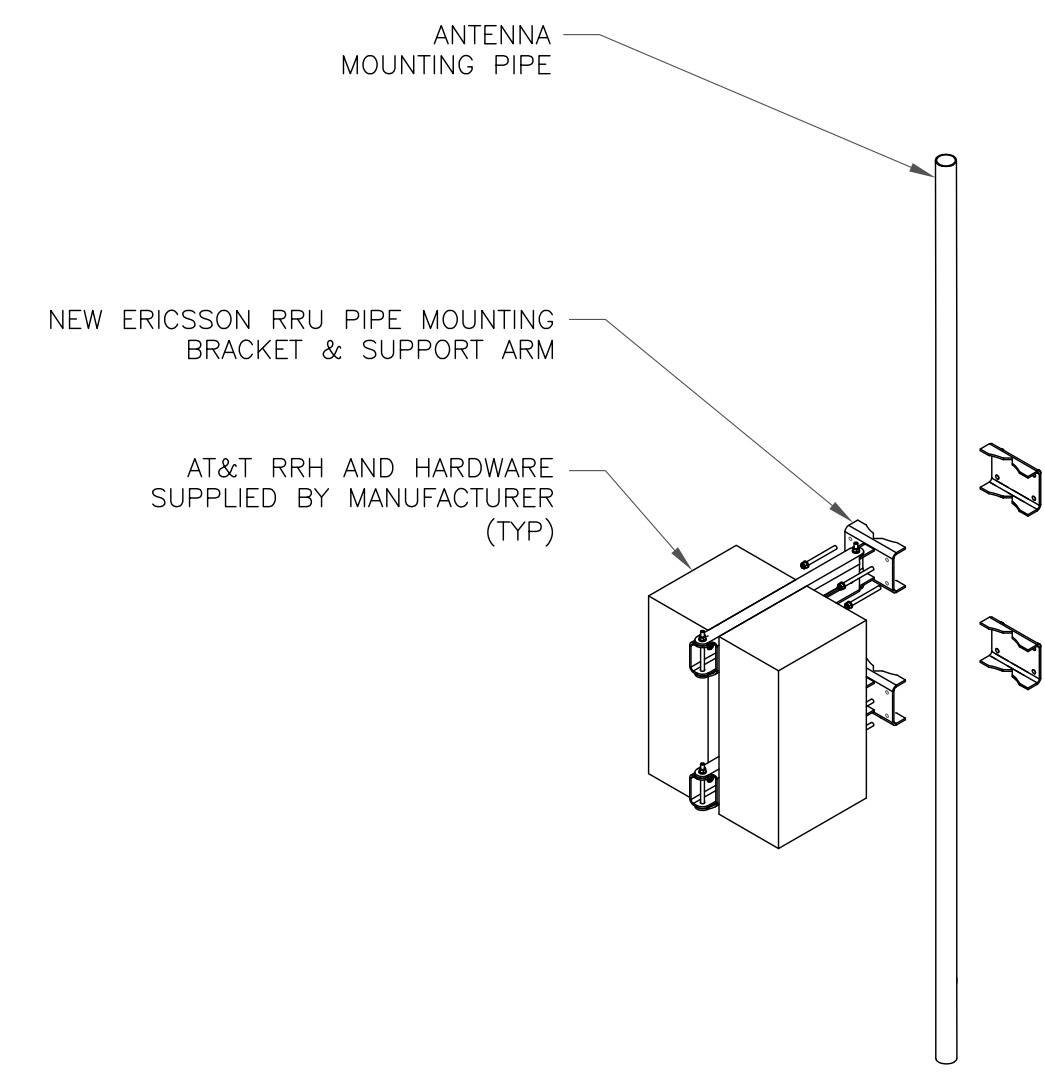
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SHEET NUMBER: **C-3** REVISION: **0**

1:39:08.011.01_842873_SHELTON_NE.dwg - User: kevin.turkall - Jun 20, 2022 - 4:05pm

INSTALLER NOTES:

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

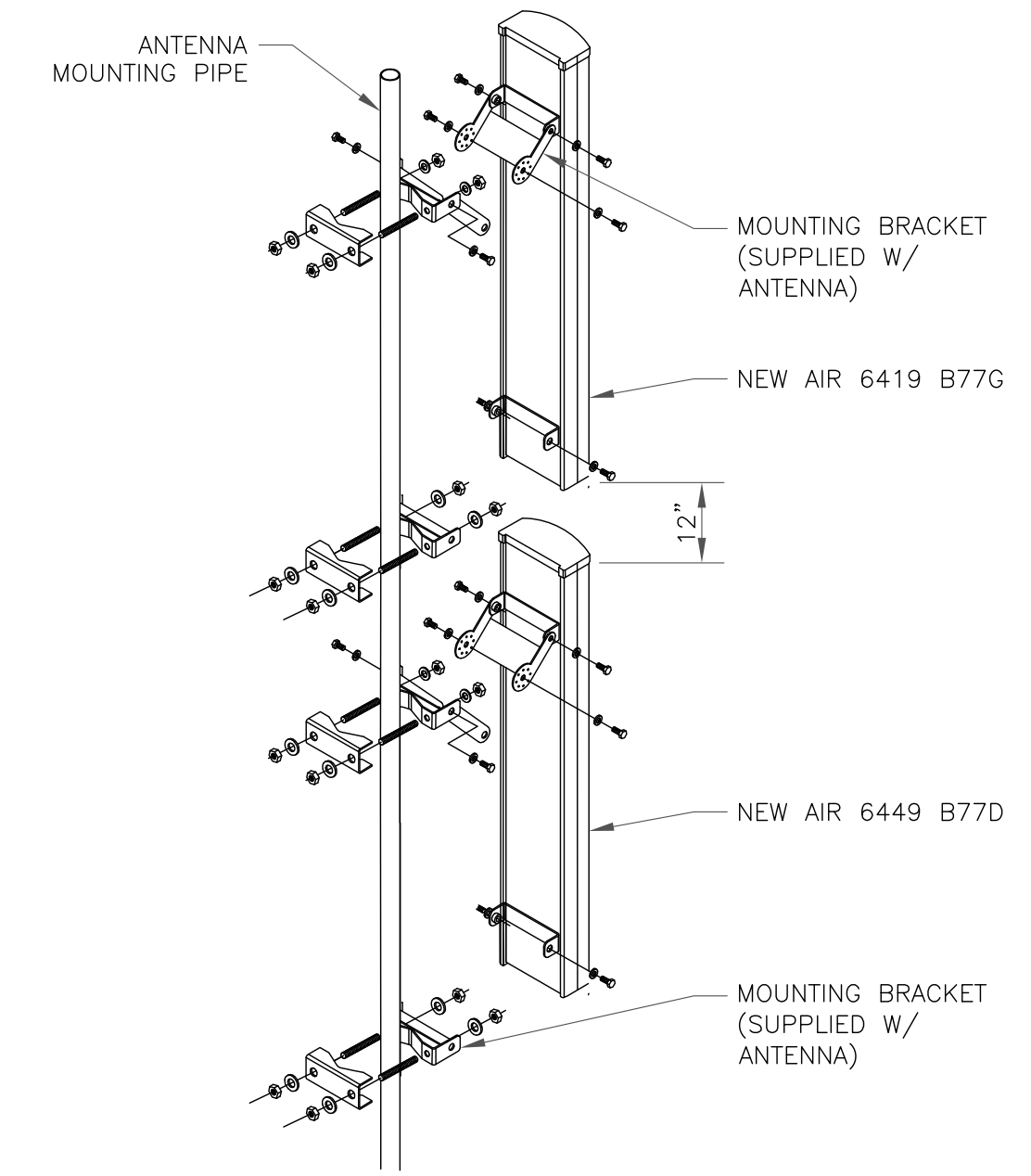


1 DUAL RRH MOUNTING DETAIL
SCALE: NOT TO SCALE

2 NOT USED
SCALE: NOT TO SCALE

INSTALLER NOTES:

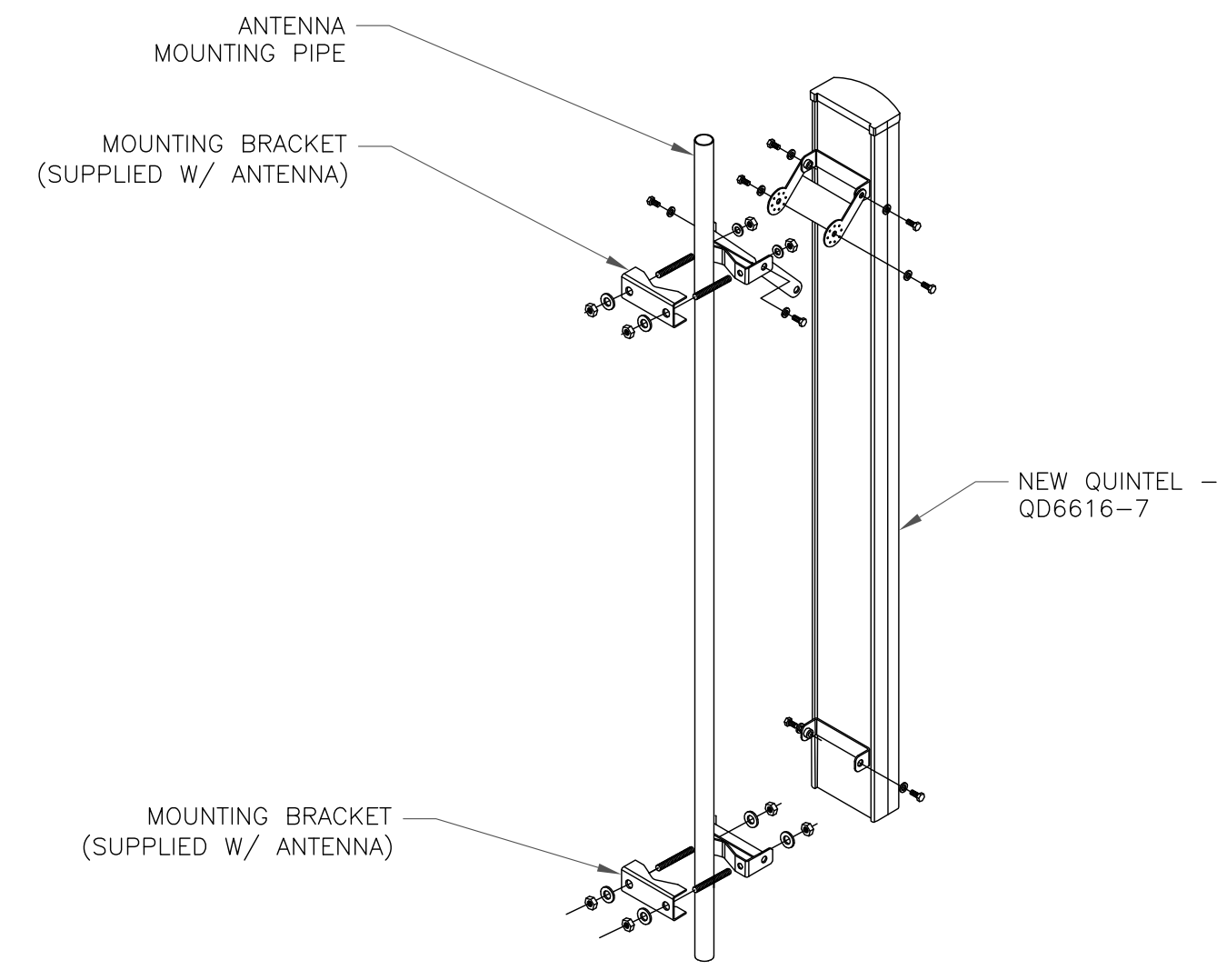
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2. DO NOT OPEN RRH PACKAGES IN THE RAIN.
3. ALL PIPES, BRACKETS, AND MISCELLANEOUS HARDWARE TO BE GALVANIZED UNLESS NOTED OTHERWISE.
4. RRHs SHALL NOT BE INSTALLED CLOSER THAN 8" TO ANTENNAS.



4 STACKED ANTENNA DETAILS
SCALE: NOT TO SCALE

INSTALLER NOTES:

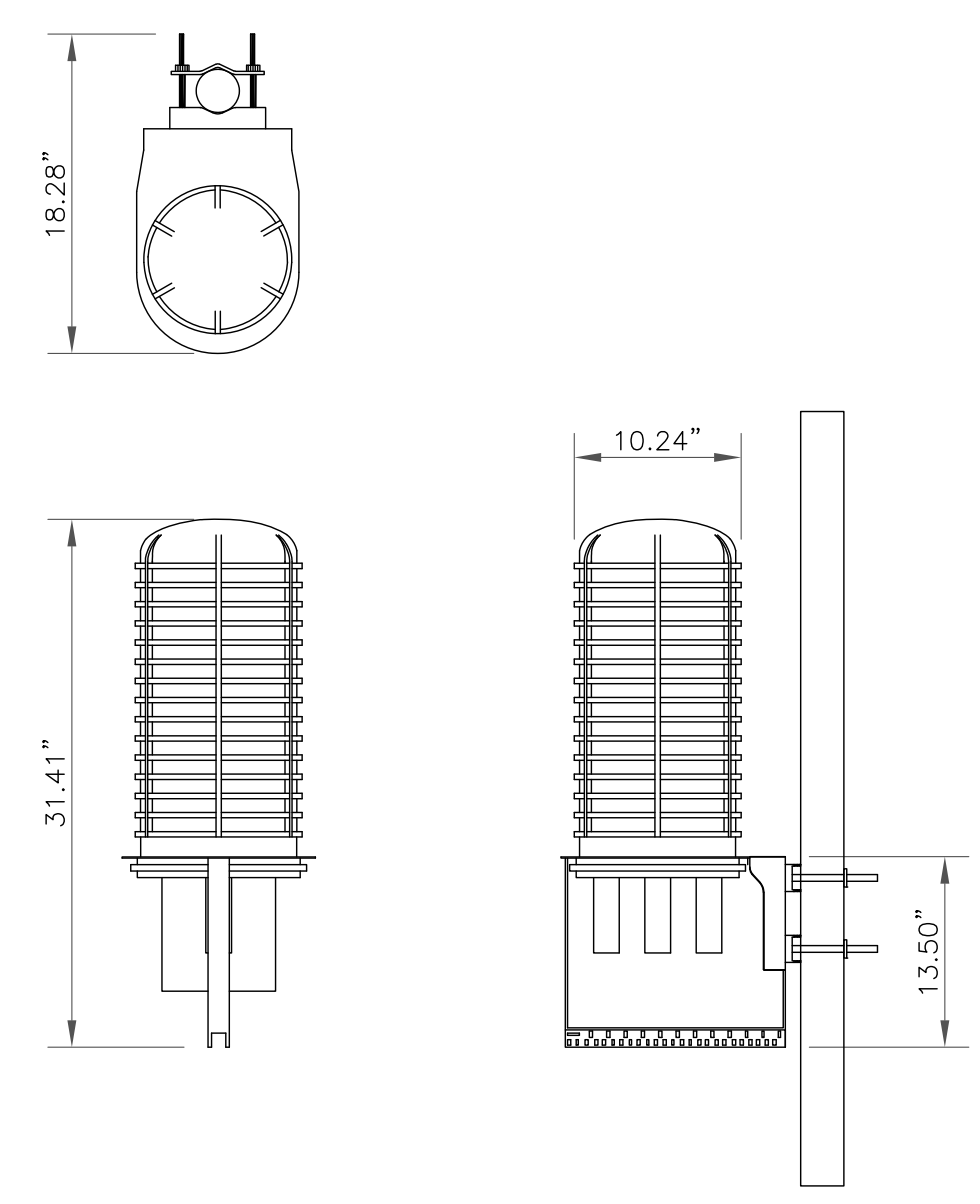
1. COMPLY WITH MANUFACTURERS INSTRUCTIONS TO ENSURE THAT ALL RRHs RECEIVE ELECTRICAL POWER WITHIN 24 HOURS OF BEING REMOVED FROM THE MANUFACTURER'S PACKAGING.
2. DO NOT OPEN RRH PACKAGES IN THE RAIN.
3. ALL PIPES, BRACKETS, AND MISCELLANEOUS HARDWARE TO BE GALVANIZED UNLESS NOTED OTHERWISE.
4. RRHs SHALL NOT BE INSTALLED CLOSER THAN 8" TO ANTENNAS.



5 ANTENNA MOUNTING DETAIL
SCALE: NOT TO SCALE

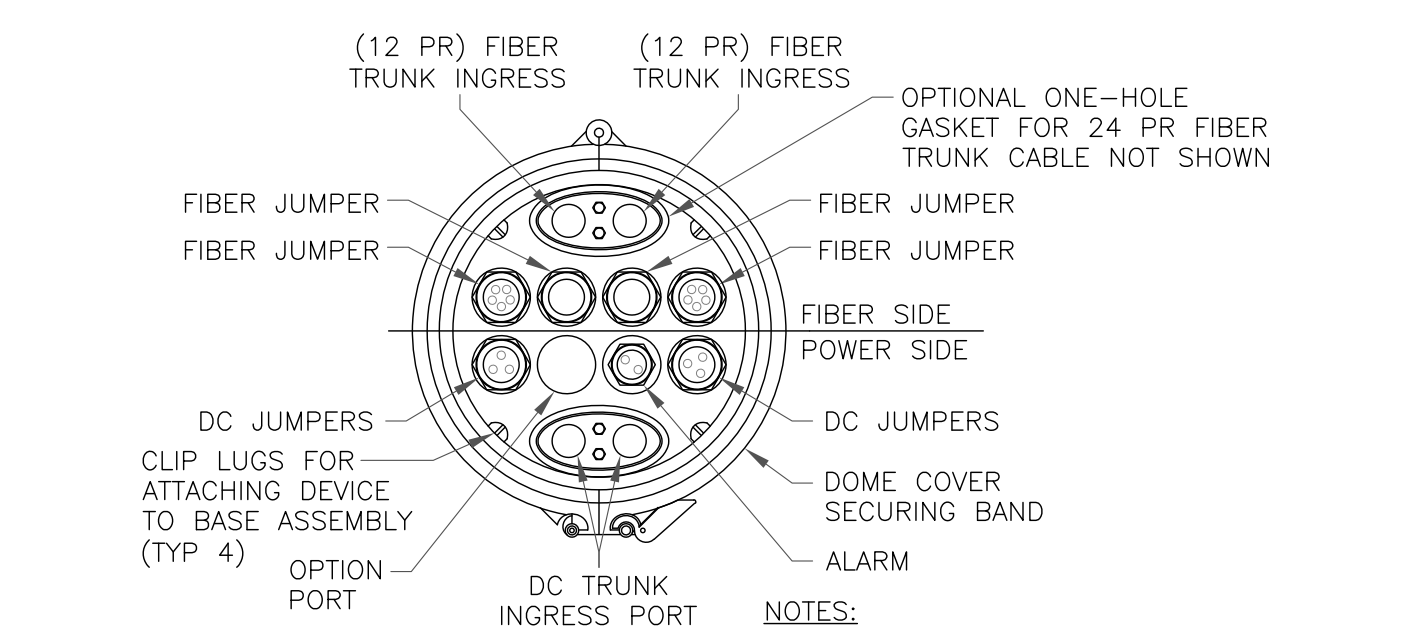
RAYCAP
DC9-48-60-24-8C-EV

RAYCAP - DC9-48-60-24-8C-EV
SIZE: 10.24x31.40 IN.
WEIGHT: 26.2 LBS
NOMINAL OPERATING VOLTAGE: 48 VDC
VOLTAGE PROTECTION RATING: 330 V
WIND LOADING: 150 MPH SUSTAINED (105.7 LBS)
WIND LOADING: 195 MPH GUST (213.6 LBS)



3 NOT USED
SCALE: NOT TO SCALE

CONTRACTOR TO USE "THREAD LUBRICANT" ON MOUNTING BOLTS DURING INSTALLATION



NOTES:

1. REMOVE CABLE SEALING GLAND AND INSTALL M3x1.5 METRIC-T0-1" NPT ADAPTER (COOPER CROUSE-HINES P/N CAP 740 994 OR EQUIVALENT MFR) WHEN CONNECTING CONDUIT TO OVP.

6 SQUID MOUNTING DETAIL
SCALE: NOT TO SCALE

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AT&T SITE
NUMBER: **CTL05431**

BU #: **842873**
SHELTON NE

30 OLIVER TERRACE
SHELTON, CT 06484

EXISTING
140'-0" MONOPOLE

ISSUED FOR:

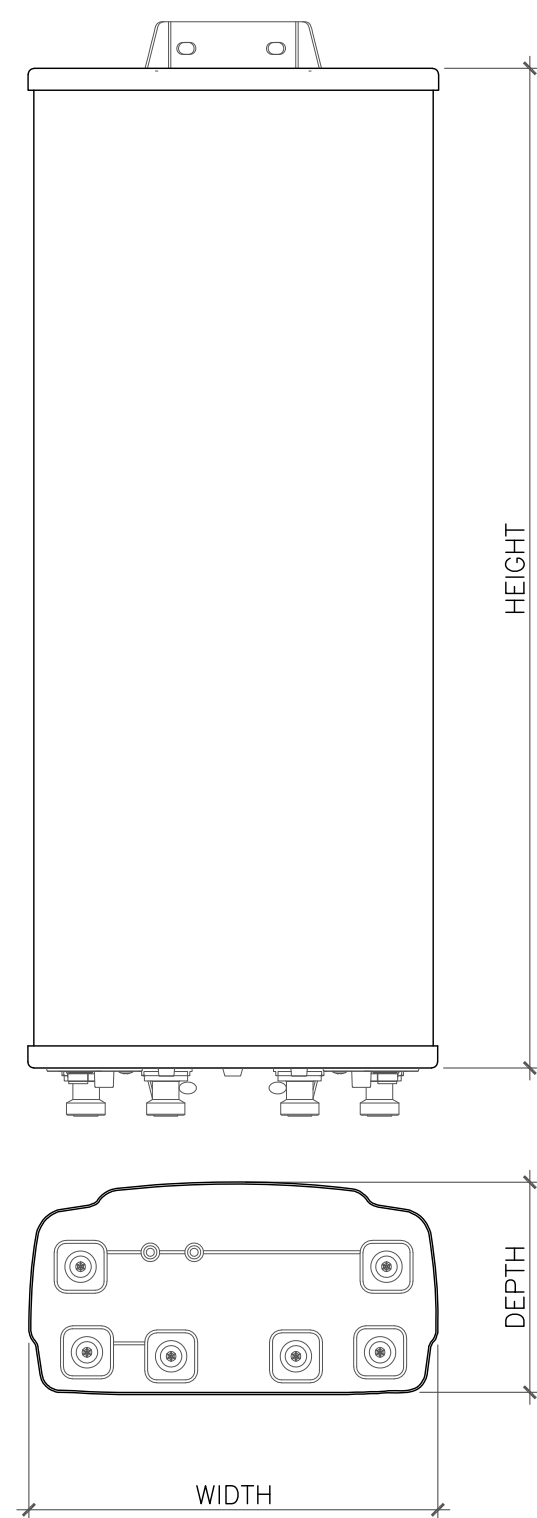
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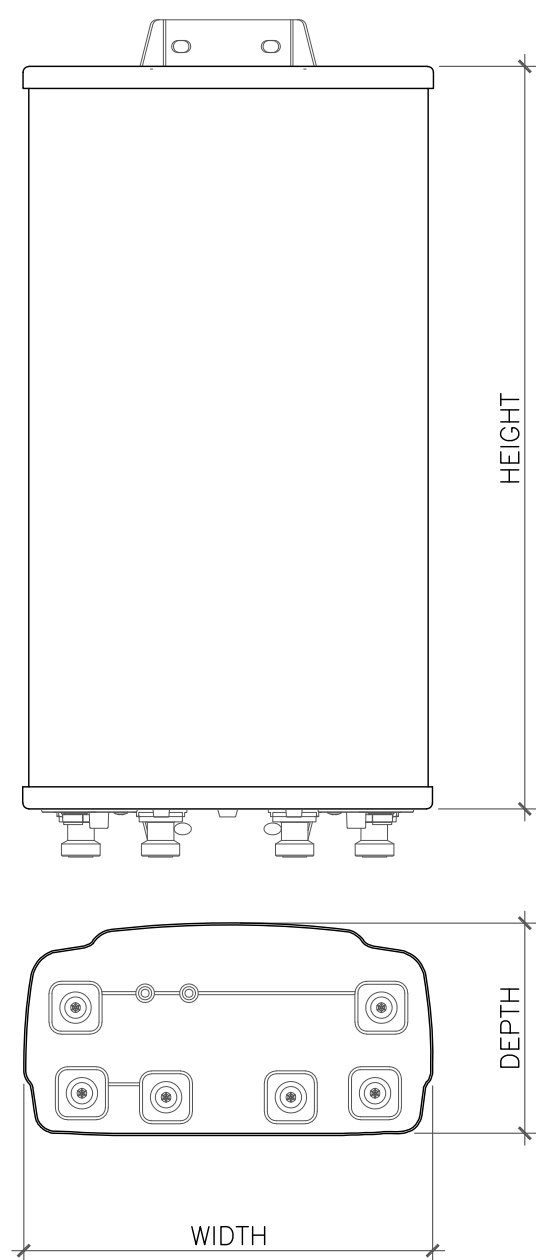
SHEET NUMBER: C-4 **REVISION:** 0

1:39808.011.01_842873_SHELTON_NE.dwg - Sheet-C-4 - User: kevin.turkall - Jun 20, 2022 - 4:05pm



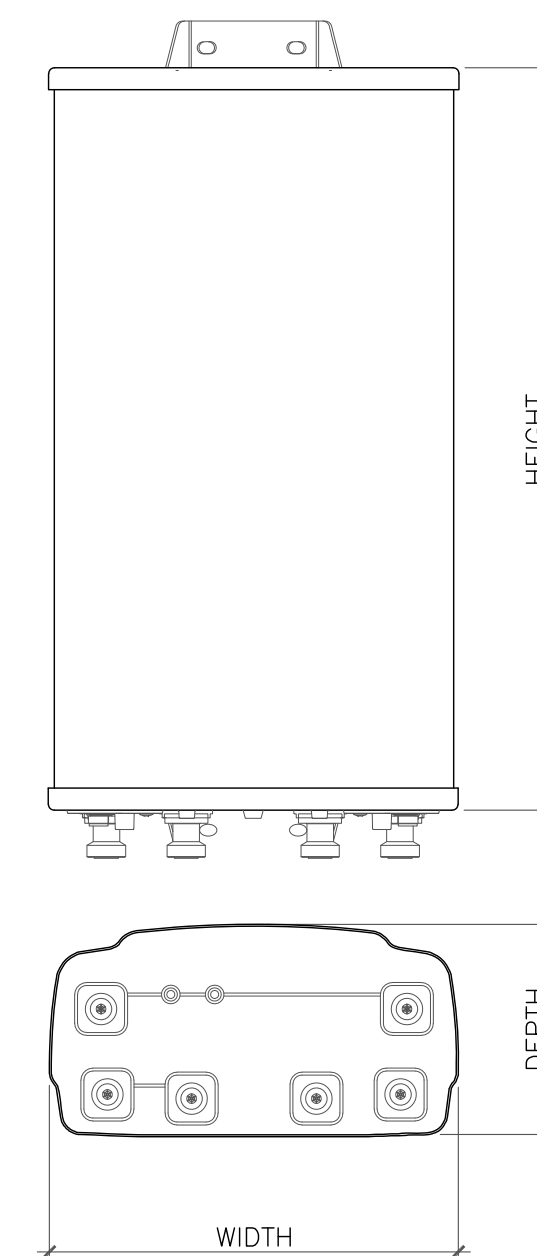
ANTENNA DIMENSIONS (INCHES)					
MANUFACTURER	MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
QUINTEL	QD6616-7	72.00"	22"	9.6"	130 LBS

1 ANTENNA DETAIL
SCALE: NOT TO SCALE



ANTENNA DIMENSIONS (INCHES)					
MANUFACTURER	MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
ERICSSON	AIR6419 N77G	27.95"	15.75"	6.68"	66.2 LBS

2 ANTENNA DETAIL
SCALE: NOT TO SCALE



ANTENNA DIMENSIONS (INCHES)					
MANUFACTURER	MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
ERICSSON	AIR 6449 B77D	30.63"	15.87"	10.55"	103.62 LBS

3 ANTENNA DETAIL
SCALE: NOT TO SCALE

 **AT&T**
575 MOROSGO DRIVE
ATLANTA, GA 30324-3300

 **CROWN CASTLE**
3530 TORINGDON WAY, SUITE 300
CHARLOTTE, NC 28277

 **B+T GRP**
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
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AT&T SITE
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BU #: **842873**
SHELTON NE

30 OLIVER TERRACE
SHELTON, CT 06484

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140'-0" MONOPOLE

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SHEET NUMBER:

C-5

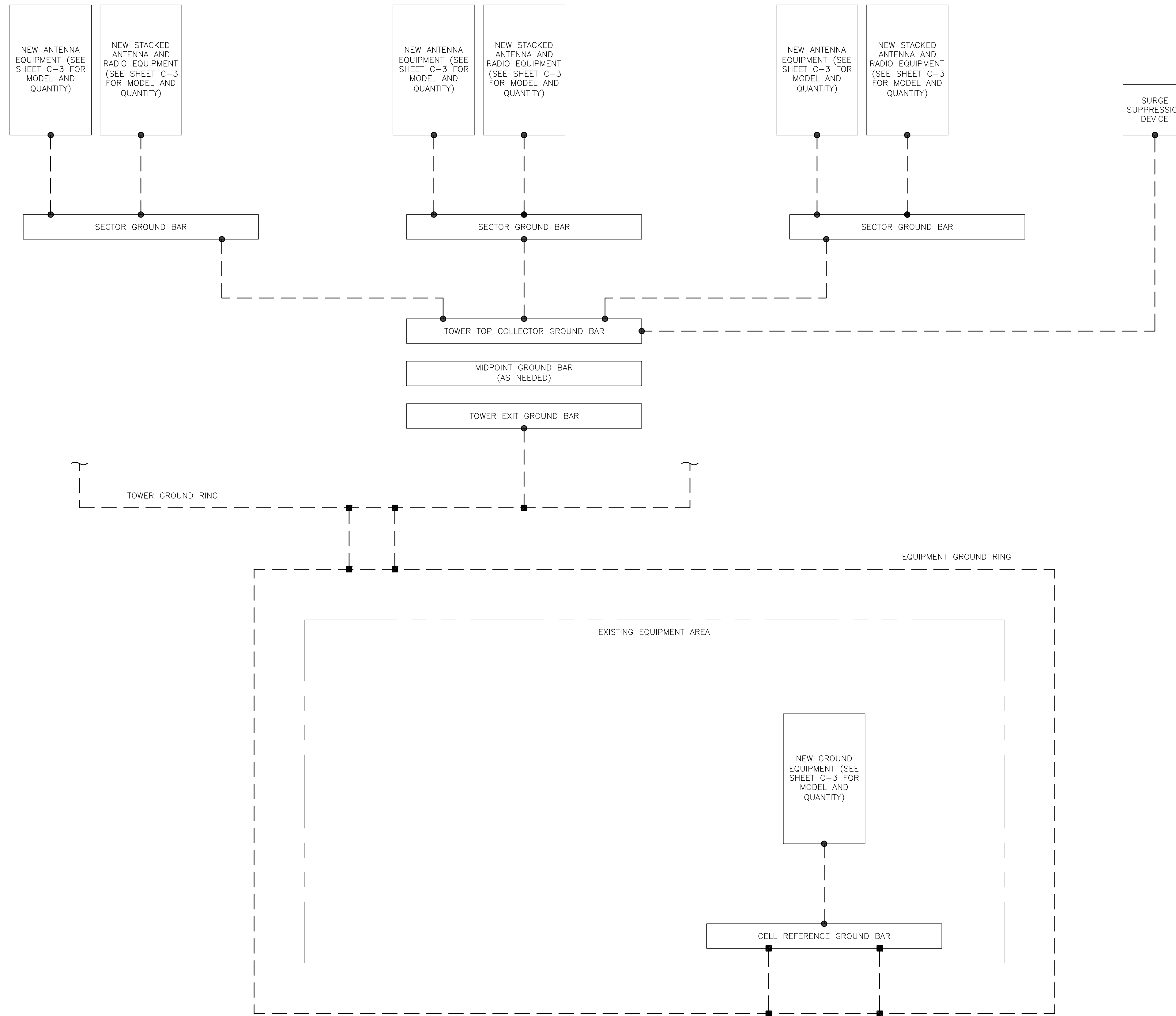
REVISION:

0

4 NOT USED
SCALE: NOT TO SCALE

5 NOT USED
SCALE: NOT TO SCALE

6 NOT USED
SCALE: NOT TO SCALE



GROUNDING PLAN LEGEND:

---	GROUND WIRE		COPPER GROUND ROD
■	EXOTHERMIC WELD		GROUND ROD W/ TEST WELL
●	MECHANICAL CONNECTION		

CELL REFERENCE GROUND BAR: POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUITS (ATT-TP-76416 7.6.7).

HATCH PLATE GROUND BAR: BOND TO THE INTERIOR GROUND RING WITH (2) #2 STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CELL SITE REFERENCE GROUND BAR MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) #2 STRANDED GREEN INSULATED COPPER CONDUCTORS.

EXTERIOR CABLE ENTRY PORT GROUND BARS: LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE (ATT-TP-76416 7.6.7.2).

DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICES CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR PER TP76300 SECTION H 6 AND TP76416 FIGURE 7-11 REQUIREMENTS.

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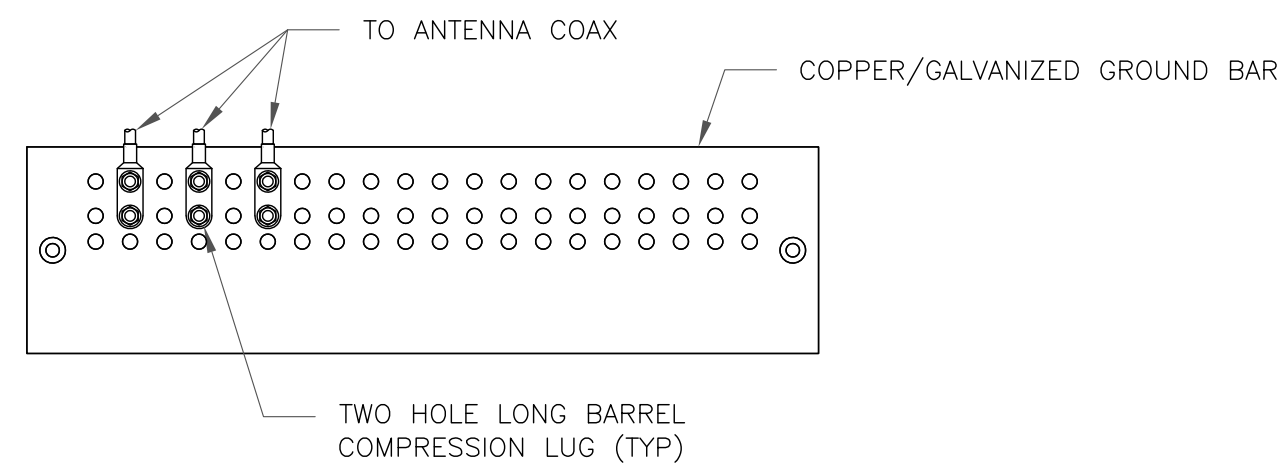
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SHEET NUMBER: G-1 **REVISION: 0**

1 GROUNDING SCHEMATIC
SCALE: NOT TO SCALE

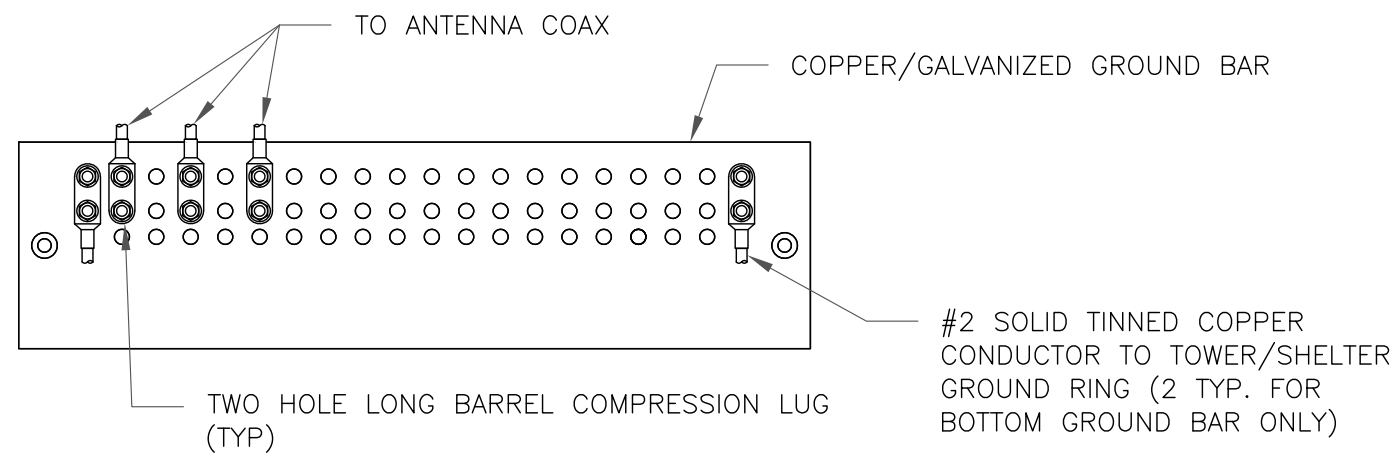
1:39808.011.01_842873_SHELTON_NE.dwg - Sheet:G-1 - User: kevin.turkall - Jun 20, 2022 - 4:05pm



NOTES:

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

1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE

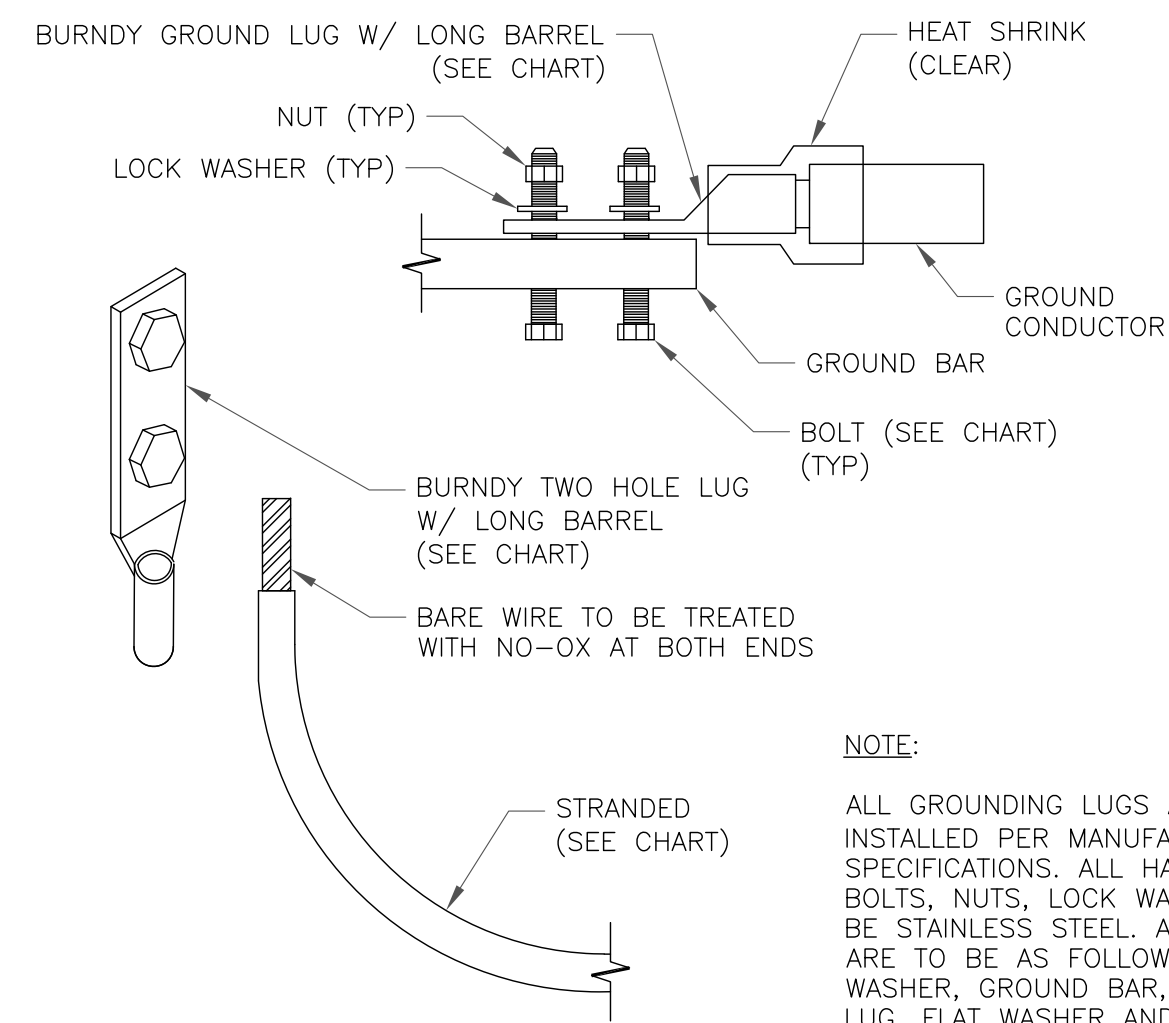


NOTES:

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

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

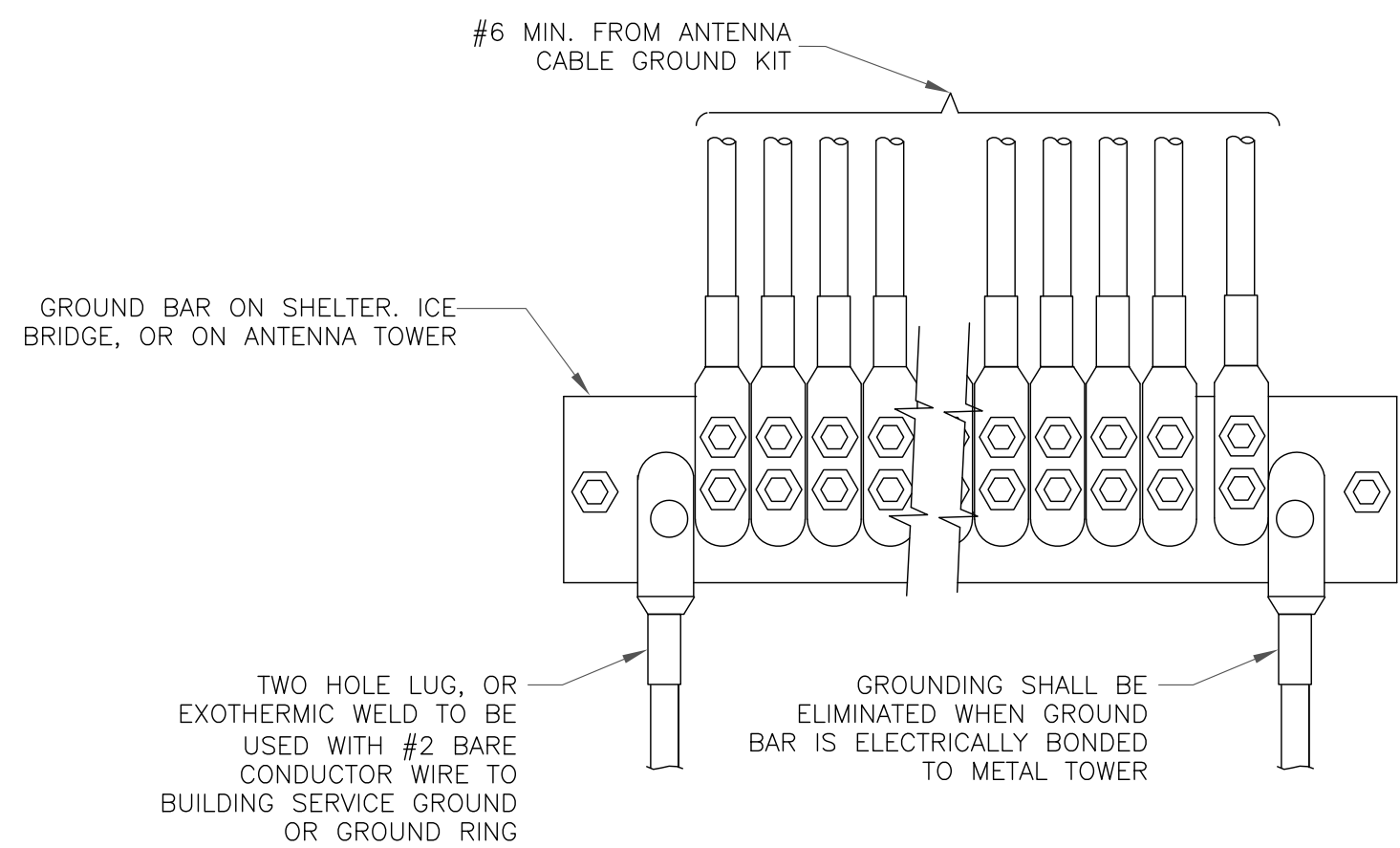
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 GREEN INSULATED	YA6C-2TC3B	3/8" - 16 NC SS 2 BOLT
#2 SOLID TINNED	YA3C-2TC3B	3/8" - 16 NC SS 2 BOLT
#2 STRANDED	YA2C-2TC3B	3/8" - 16 NC SS 2 BOLT
#2/0 STRANDED	YA26-2TC3B	3/8" - 16 NC SS 2 BOLT
#4/0 STRANDED	YA28-2N	1/2" - 16 NC SS 2 BOLT



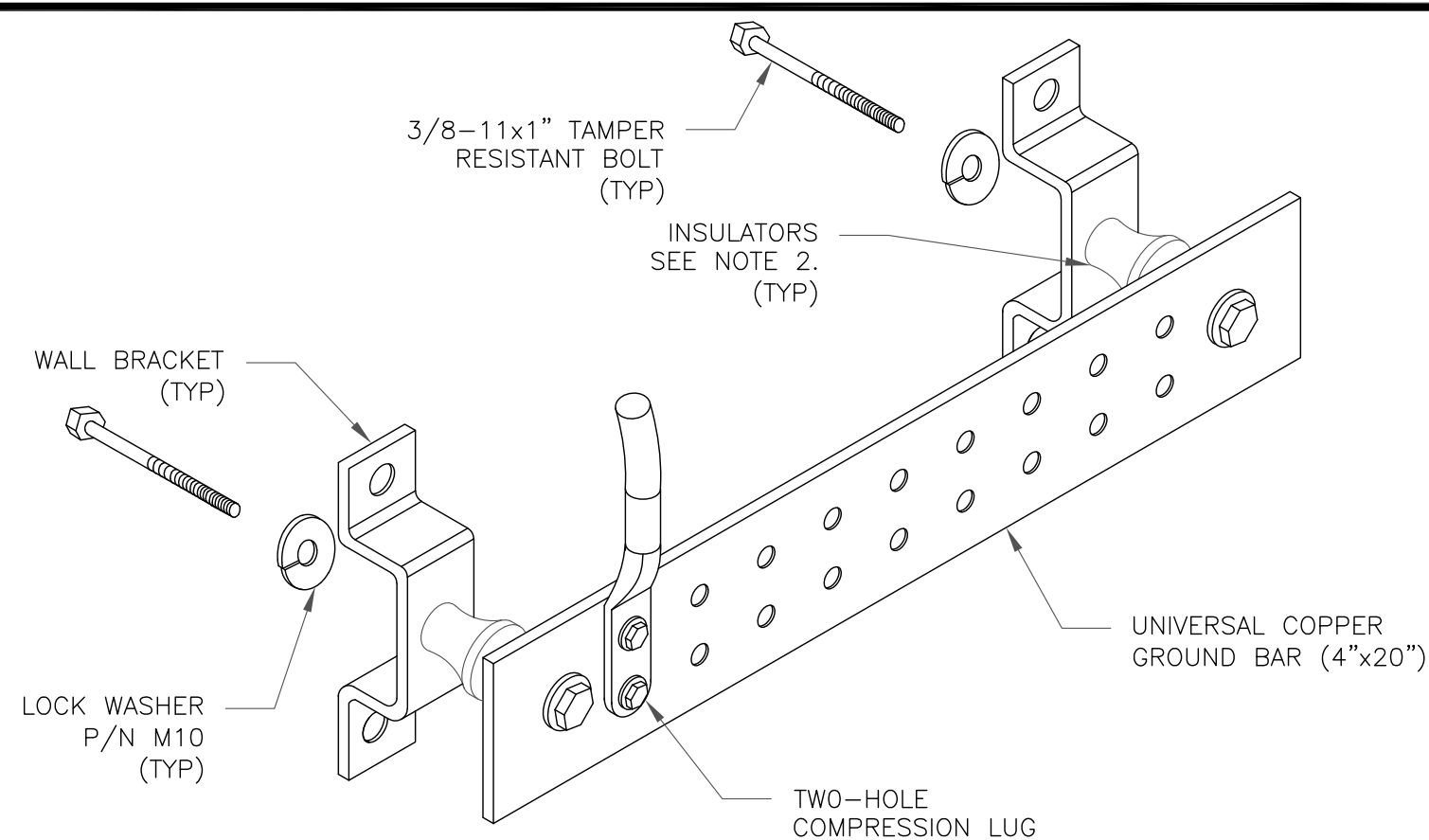
NOTE:

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

3 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



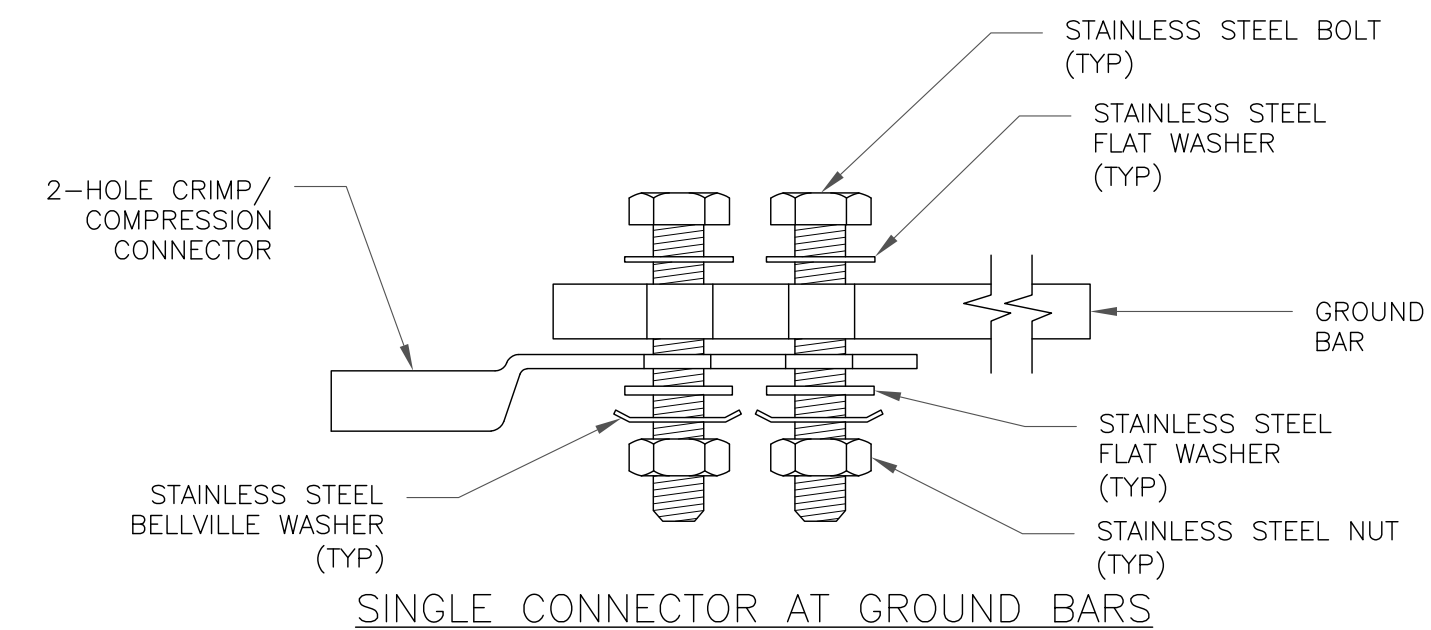
4 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



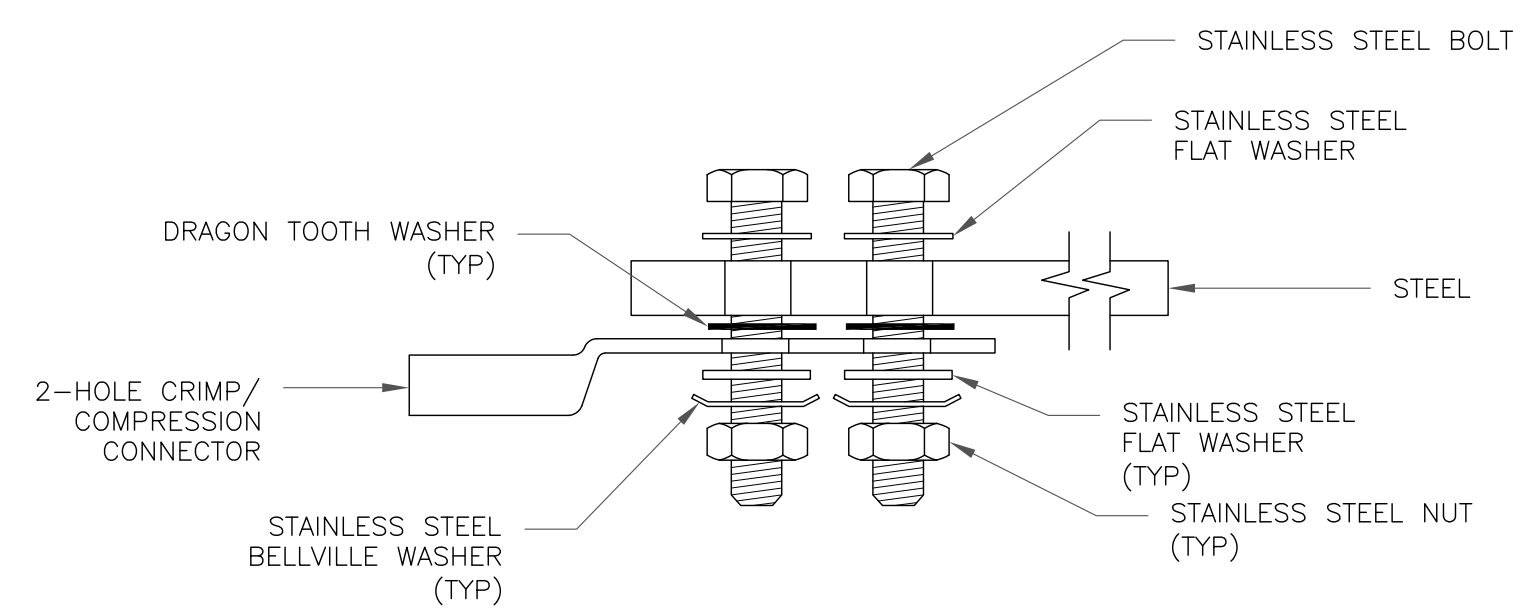
NOTES:

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

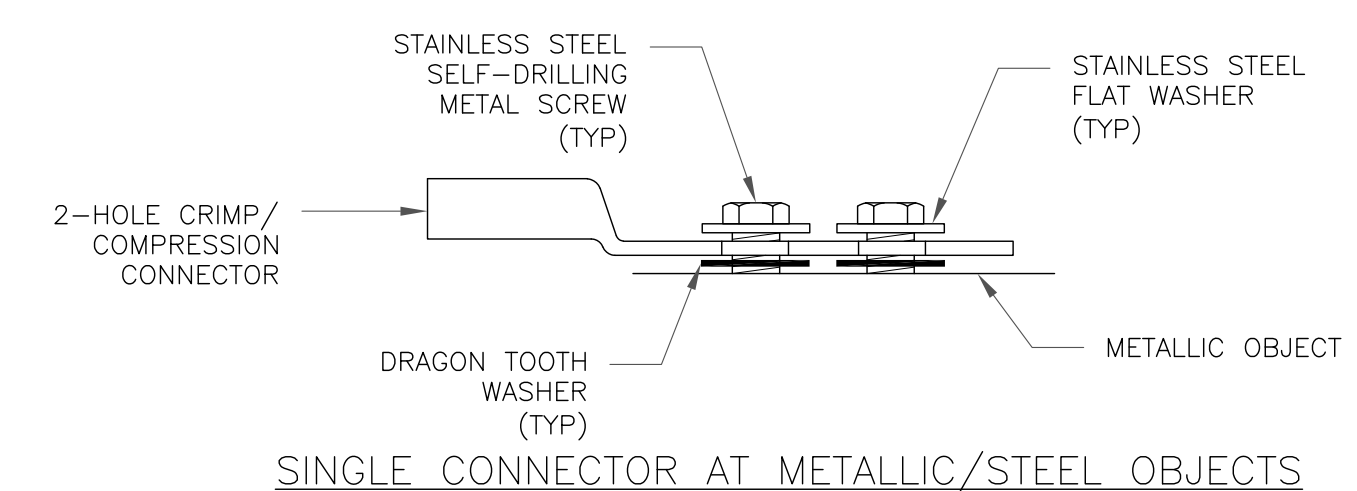
5 GROUND BAR DETAIL
SCALE: NOT TO SCALE



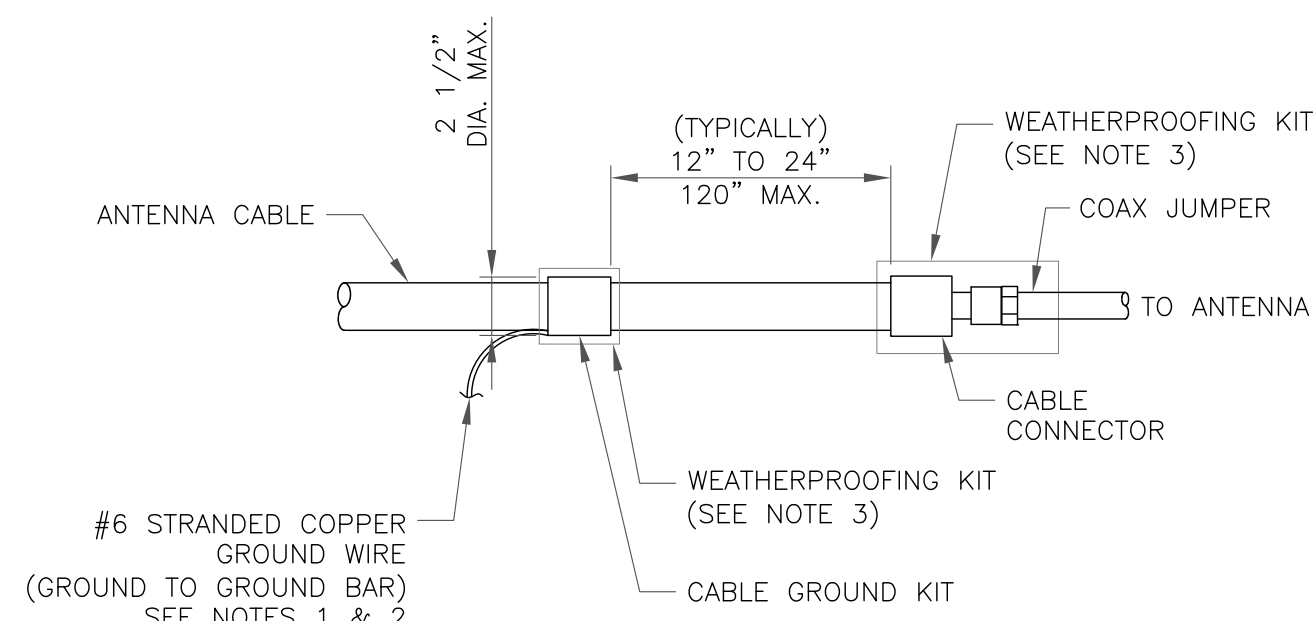
SINGLE CONNECTOR AT GROUND BARS



SINGLE CONNECTOR AT STEEL OBJECTS



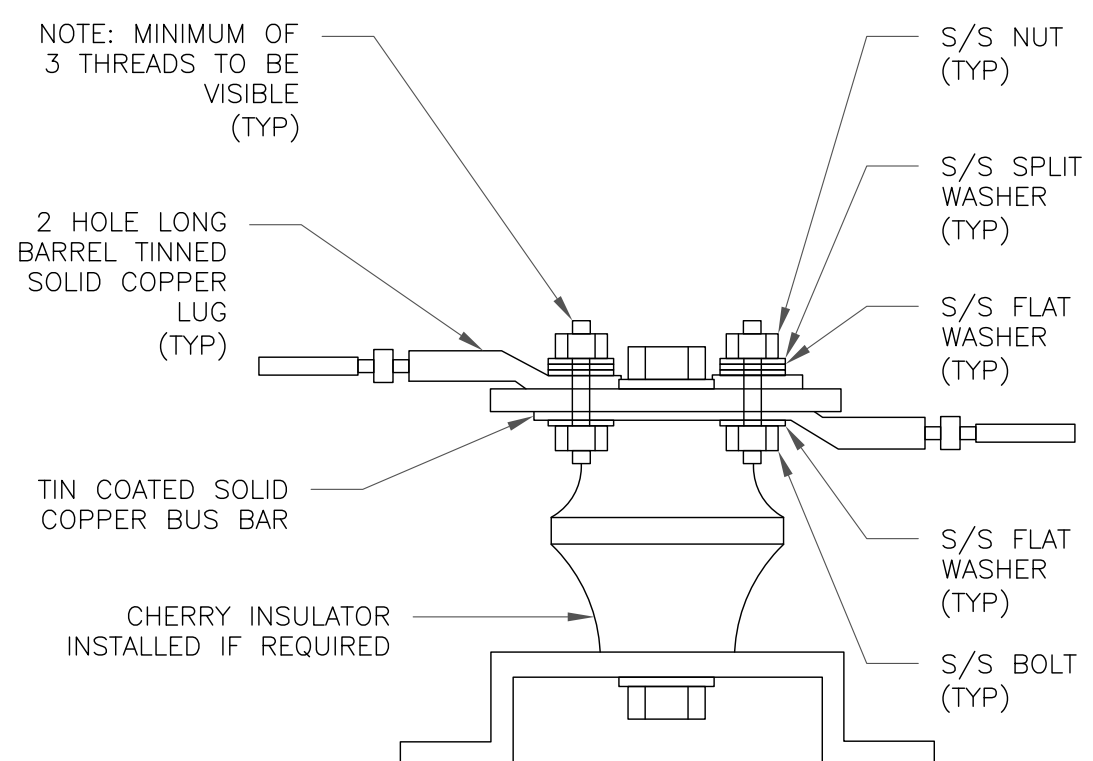
SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS



NOTES:

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

6 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE

8 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE

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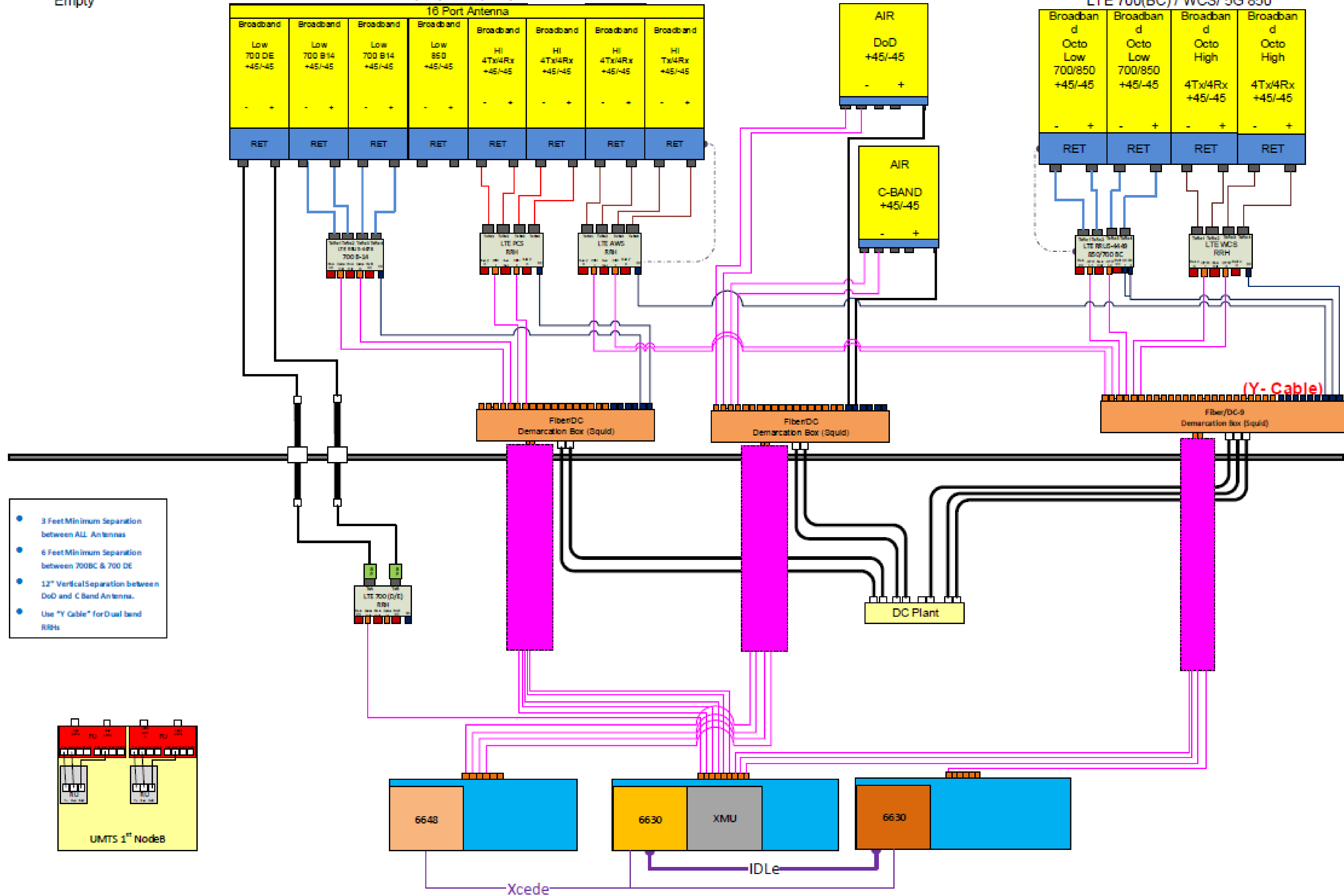
SHEET NUMBER: **G-2** REVISION: **0**

Antenna 1
Empty

Antenna 2
LTE 700(DE) / 700(B14) / PCS / AWS

Antenna 3
DoD + C band

Antenna 4
LTE 700(BC) / WCS/ 5G 850

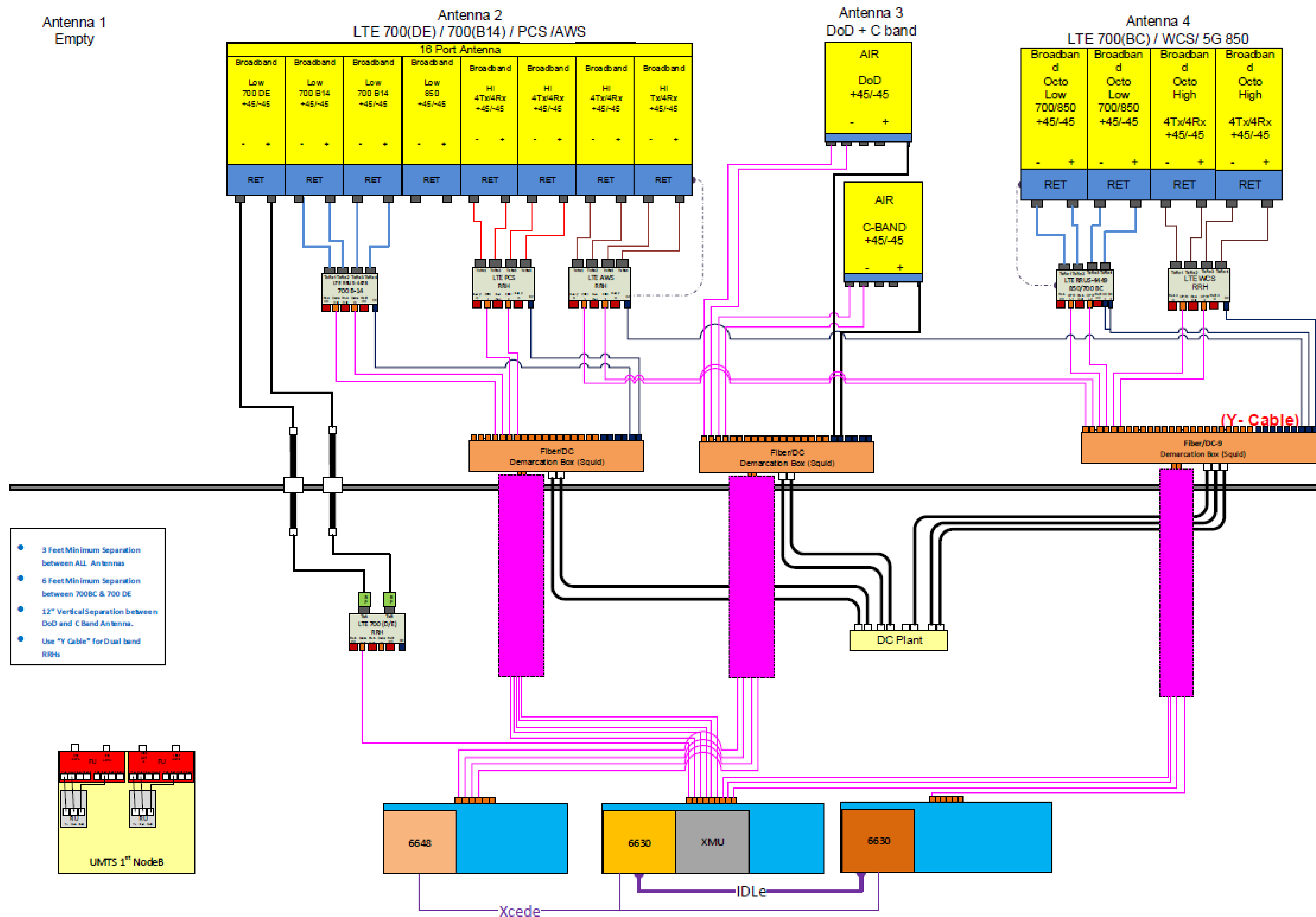


Antenna 1
Empty

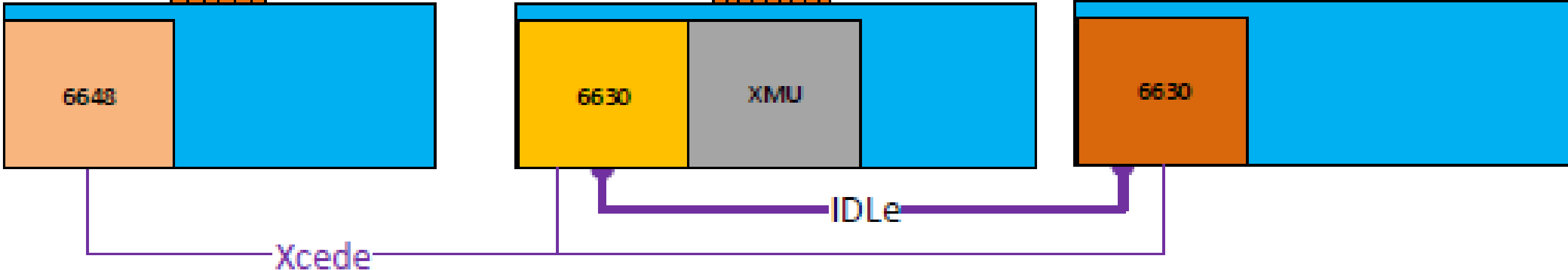
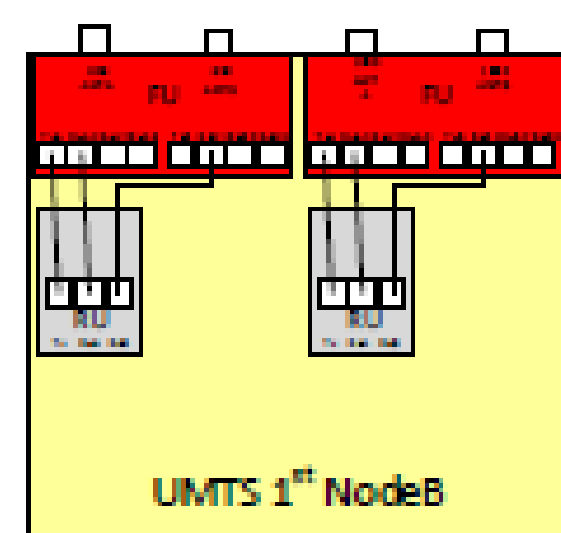
Antenna 2
LTE 700(DE) / 700(B14) / PCS / AWS

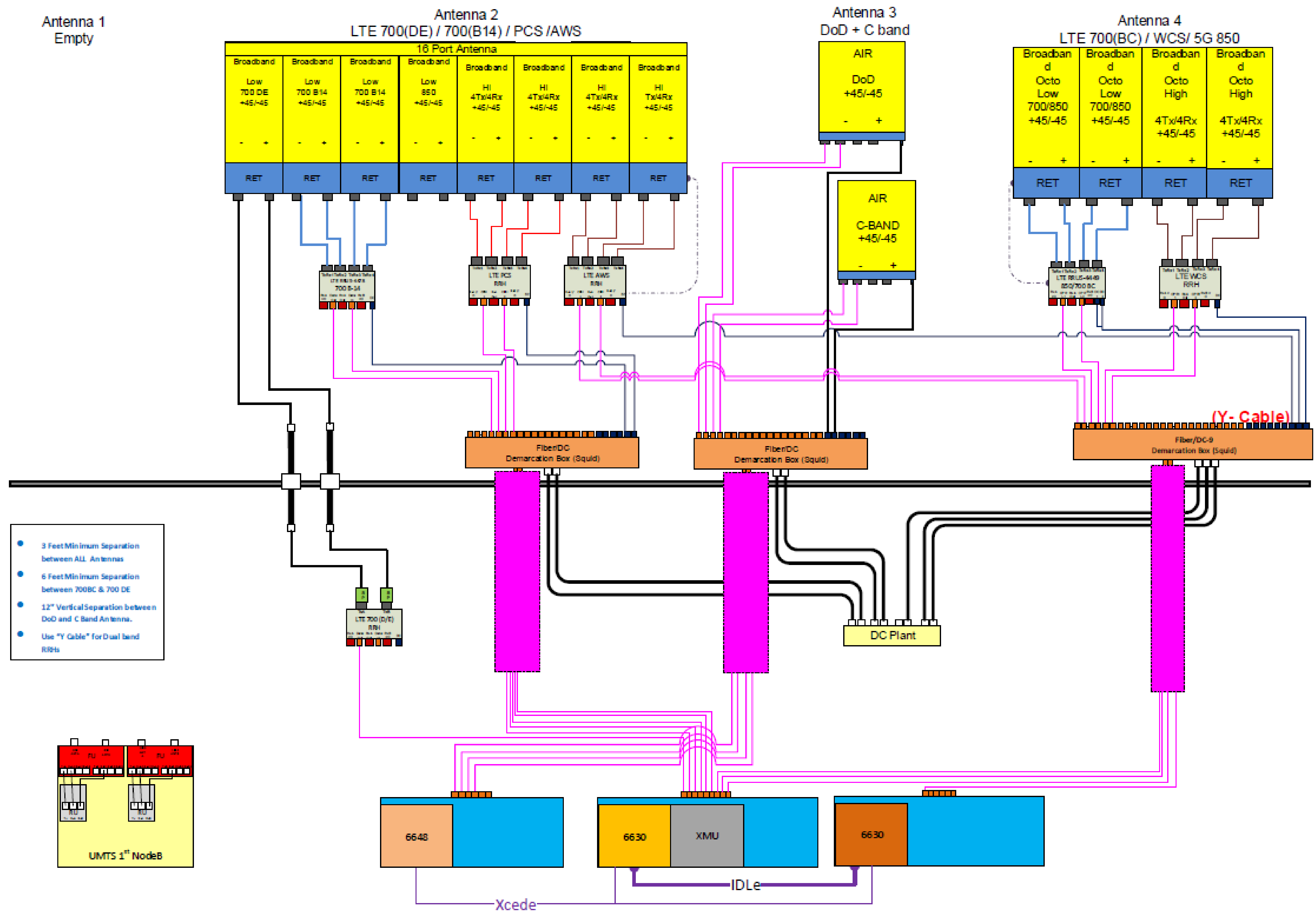
Antenna 3
DoD + C band

Antenna 4
LTE 700(BC) / WCS/ 5G 850



- 3 Feet Minimum Separation between ALL Antennas
- 6 Feet Minimum Separation between 700BC & 700 DE
- 12" Vertical Separation between DoD and C Band Antenna.
- Use "Y Cable" for Dual band RRHs

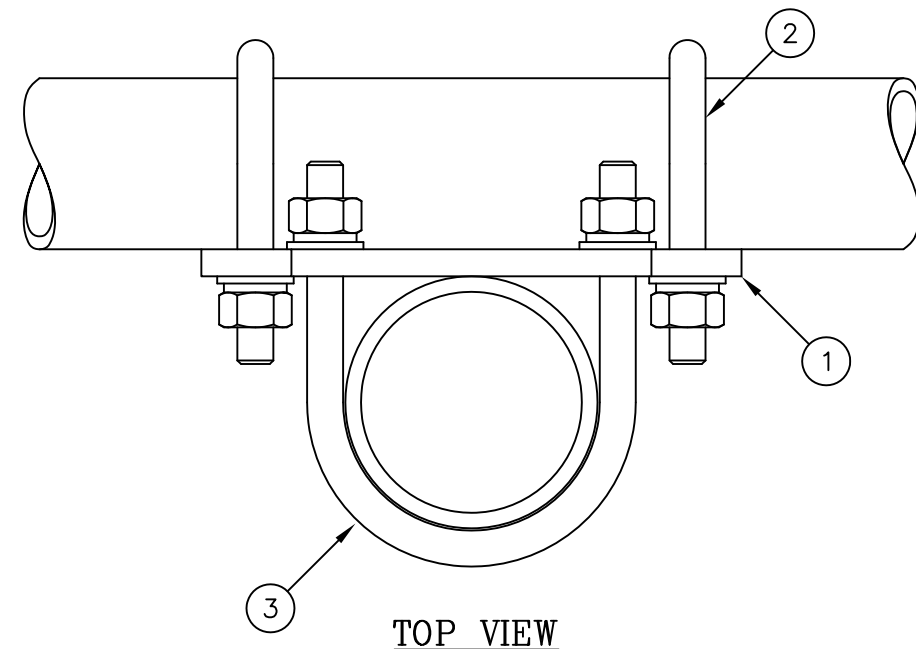






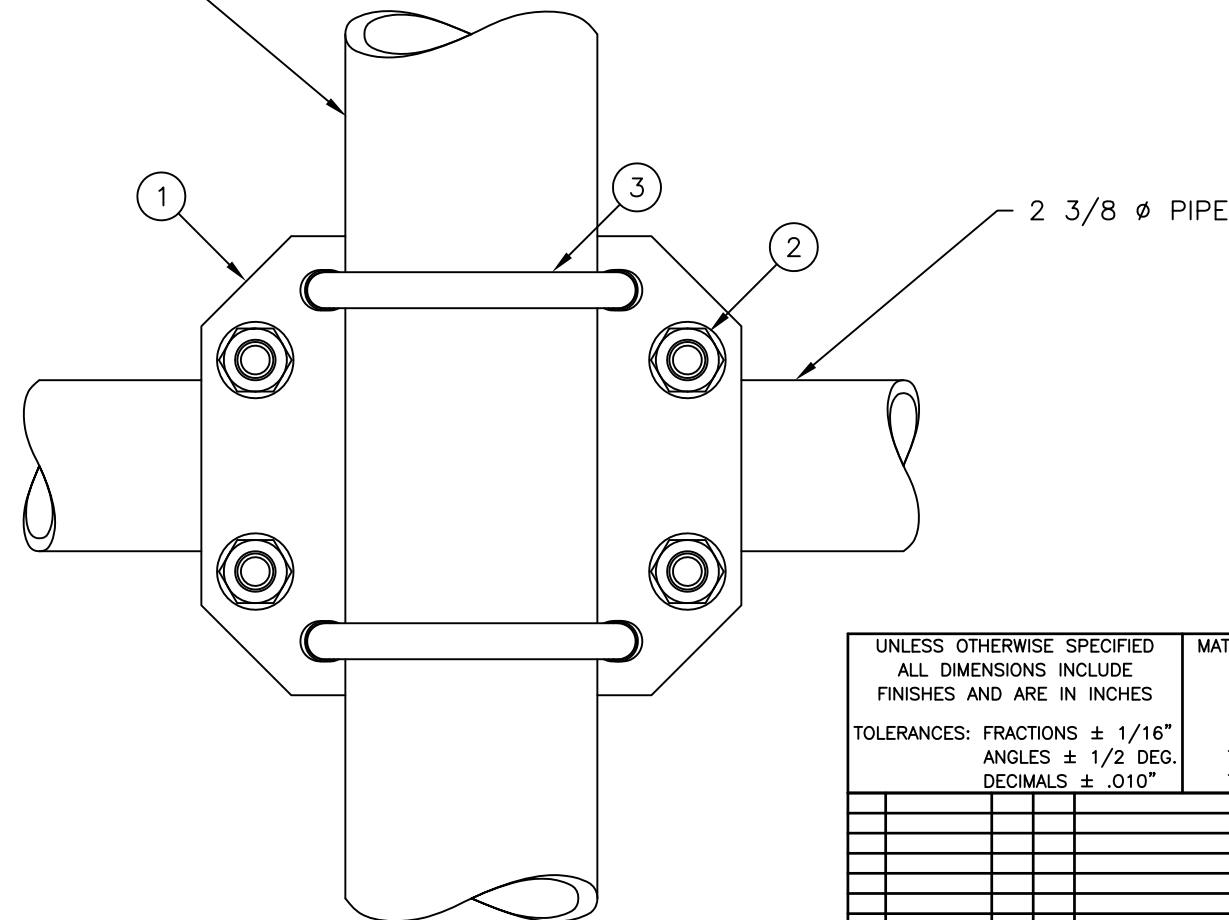
C10902013 CROSSOVER PLATE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1.	1	CS03123	CROSSOVER PLATE	5
2.	2	C40034139	U-BOLT ASSEMBLY, 1/2" ϕ X 2 15/16" C-C	2
3.	2	C40034143	U-BOLT ASSEMBLY, 1/2" ϕ X 4 1/16" C-C	2
TOTAL WEIGHT				9

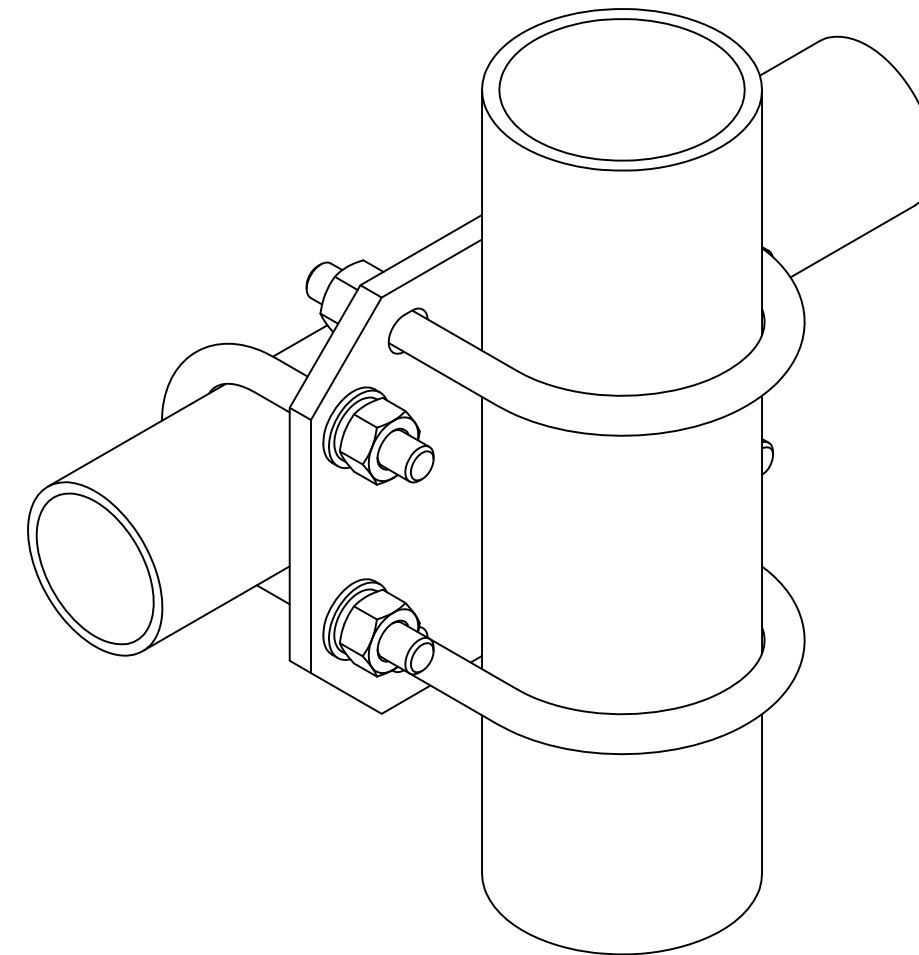


TOP VIEW

3 1/2" ϕ PIPE



FRONT VIEW



ISOMETRIC VIEW

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS $\pm 1/16"$
ANGLES $\pm 1/2$ DEG.
DECIMALS $\pm .010"$

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL



CROSSOVER PLATE KIT
2 3/8" ϕ TO 3 1/2" ϕ PIPES
(1/2" ϕ U-BOLTS)

REV	DATE	DRW/CHK	DESCRIPTION

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DATE	07/23/14	SIZE	DRAWING NO.	REV
DRAWN BY	WRF	B	C10902013	0
CHECKED BY	KLE		SCALE	PAGE
			None	1 OF 1

Exhibit D

Structural Analysis Report

Date: **May 02, 2022**



Crown Castle
2000 Corporate Drive
Canonsburg, PA 15317
(724) 416-2000

Subject: **Structural Analysis Report**

Carrier Designation: **AT&T Mobility Co-Locate**
Site Number: CTL05431
Site Name: SHELTON NE
FA Number: 10071231

Crown Castle Designation: **BU Number:** 842873
Site Name: SHELTON NE
JDE Job Number: 686240
Work Order Number: 2106483
Order Number: 586271 Rev. 1

Engineering Firm Designation: **Crown Castle Project Number:** 2106483

Site Data: **30 Oliver Terrace, SHELTON, FAIRFIELD County, CT**
Latitude 41° 17' 38.21", Longitude -73° 6' 25.83"
140 Foot - Monopole Tower

Crown Castle is pleased to submit this “**Structural Analysis Report**” to determine the structural integrity of the above-mentioned tower.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration

Sufficient Capacity -97.1%

This analysis utilizes an ultimate 3-second gust wind speed of 119 mph as required by the 2018 Connecticut Building Code. Applicable Standard references and design criteria are listed in Section 2 - "Analysis Criteria".

Structural analysis prepared by: Matthew Schmitt

Respectfully submitted by:

Maribel Dentinger, P.E.
Senior Project Engineer

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1) INTRODUCTION

This tower is a 140 ft Monopole tower designed by FWT Inc. The tower has been modified multiple times to accommodate additional loading.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	119 mph
Exposure Category:	B
Topographic Factor:	1
Ice Thickness:	1 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
127.0	129.0	3	cci antennas	DMP65R-BU6D w/ Mount Pipe	6 1 6 3	1-5/8 7/8 13/16 3/8
		3	ericsson	AIR 6419 B77G_CCIV3 w/ Mount Pipe		
		3	ericsson	RADIO 4415 B30		
		3	ericsson	RRUS 32 B2		
		3	ericsson	RRUS 32 B66A		
		3	ericsson	RRUS 4449 B5/B12		
		3	ericsson	RRUS 4478 B14_CCIV2		
		3	quintel technology	QD6616-7 w/ Mount Pipe		
		2	raycap	DC6-48-60-18-8F		
	1	raycap	DC9-48-60-24-8C-EV_CCIV2			
	127.0	127.0	1	tower mounts	Sector Mount [SM 503-3]	
6			site pro 1	PM2 Standoff Mounts		
	125.0	3	ericsson	AIR 6449 B77D w/ Mount Pipe		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
138.0	145.0	1	andrew	DB636-C	8 2	1-5/8 1-1/4
	140.0	3	amphenol	BXA-80063-6BF-EDIN-4 w/ Mount Pipe		
		6	quintel technology	QS6656-5D w/ Mount Pipe		
		2	raycap	RRFDC-3315-PF-48		
		3	samsung telecommunications	MT6407-77A w/ Mount Pipe		
		3	samsung telecommunications	RFV01U-D1A		
		3	samsung telecommunications	RFV01U-D2A		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
	138.0	1		Mount Reinforcement Spec		
		1	tower mounts	Platform Mount [LP 403-1]		
		2	tower mounts	Side Arm Mount [SO 102-3]		
118.0	118.0	3	ericsson	AIR 32 B2A B66AA w/ Mount Pipe	18 1	1-5/8 1-3/8
		3	ericsson	AIR6449 B41 w/ Mount Pipe		
		3	ericsson	KRY 112 144/1		
		3	ericsson	KRY 112 489/2		
		3	ericsson	RADIO 4449 B71 B85A_T-MOBILE		
		3	ericsson	RRUS 4415 B25		
		3	rfs celwave	APX16DWV-16DWVS-E-A20 w/ Mount Pipe		
		3	rfs celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe		
		1	tower mounts	Miscellaneous [NA 507-1]		
		2	tower mounts	Side Arm Mount [SO 102-3]		
		1	tower mounts	T-Arm Mount [TA 602-1_KCKR]		
		108.0	108.0	3		
3	fujitsu			TA08025-B604		
3	fujitsu			TA08025-B605		
1	raycap			RDIDC-9181-PF-48		
1	tower mounts			Commscope MC-PK8-DSH		
73.0	75.0	3	alcatel lucent	1900MHZ 4X40W RRH	1	1-5/8
		3	alcatel lucent	RRH2X50-800		
		3	commscope	DT465B-2XR w/ Mount Pipe		
		3	nokia	FZHN		
		3	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe		
	73.0	1	tower mounts	Platform Mount [LP 1201-1_HR-1]		
50.0	50.0	1	pctel	GPS-TMG-HR-26NCM	1	1/2
		1	tower mounts	Pipe Mount [PM 601-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	4529442	CCISITES
4-POST-MODIFICATION INSPECTION	6231105	CCISITES
4-POST-MODIFICATION INSPECTION	6086125	CCISITES
4-POST-MODIFICATION INSPECTION	5994609	CCISITES
4-POST-MODIFICATION INSPECTION	5095590	CCISITES

Document	Reference	Source
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	4598376	CCISITES
4-TOWER MANUFACTURER DRAWINGS	4598387	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	6087139	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	5963243	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	5785413	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	5461043	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	5461041	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	4858944	CCISITES

3.1) Analysis Method

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

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

3.2) Assumptions

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

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
L1	140 - 135	Pole	TP14.296x13.161x0.1875	Pole	13.4%	Pass
L2	135 - 130	Pole	TP15.431x14.296x0.1875	Pole	24.8%	Pass
L3	130 - 125	Pole	TP16.566x15.431x0.1875	Pole	41.4%	Pass
L4	125 - 120	Pole	TP17.701x16.566x0.1875	Pole	57.4%	Pass
L5	120 - 115	Pole	TP18.836x17.701x0.1875	Pole	74.7%	Pass
L6	115 - 114.75	Pole + Reinf.	TP18.893x18.836x0.4625	Reinf. 9 Tension Rupture	54.9%	Pass
L7	114.75 - 109.75	Pole + Reinf.	TP20.027x18.893x0.45	Reinf. 9 Tension Rupture	68.0%	Pass
L8	109.75 - 104.75	Pole + Reinf.	TP21.162x20.027x0.425	Reinf. 9 Tension Rupture	81.5%	Pass
L9	104.75 - 101.58	Pole + Reinf.	TP21.882x21.162x0.4188	Reinf. 9 Tension Rupture	89.6%	Pass
L10	101.58 - 101.33	Pole	TP21.939x21.882x0.3125	Pole	68.0%	Pass
L11	101.33 - 96.33	Pole	TP23.074x21.939x0.3125	Pole	74.3%	Pass
L12	96.33 - 91.33	Pole	TP24.209x23.074x0.3125	Pole	79.4%	Pass
L13	91.33 - 91	Pole	TP24.284x24.209x0.3125	Pole	79.7%	Pass
L14	91 - 90.75	Pole + Reinf.	TP24.34x24.284x0.6	Reinf. 8 Tension Rupture	68.9%	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
L15	90.75 - 85.75	Pole + Reinf.	TP25.475x24.34x0.5875	Reinf. 8 Tension Rupture	74.0%	Pass
L16	85.75 - 80.75	Pole + Reinf.	TP26.61x25.475x0.5625	Reinf. 8 Tension Rupture	78.6%	Pass
L17	80.75 - 75.75	Pole + Reinf.	TP27.745x26.61x0.55	Reinf. 8 Tension Rupture	82.7%	Pass
L18	75.75 - 70.75	Pole + Reinf.	TP28.88x27.745x0.5438	Reinf. 8 Tension Rupture	87.0%	Pass
L19	70.75 - 69.98	Pole + Reinf.	TP29.055x28.88x0.5313	Reinf. 3 Tension Rupture	91.5%	Pass
L20	69.98 - 69.73	Pole + Reinf.	TP29.112x29.055x0.5313	Reinf. 3 Tension Rupture	91.7%	Pass
L21	69.73 - 64.73	Pole + Reinf.	TP30.247x29.112x0.525	Reinf. 3 Tension Rupture	95.8%	Pass
L22	64.73 - 63	Pole + Reinf.	TP30.64x30.247x0.5188	Reinf. 3 Tension Rupture	97.1%	Pass
L23	63 - 62.75	Pole + Reinf.	TP30.696x30.64x0.7	Reinf. 3 Tension Rupture	74.9%	Pass
L24	62.75 - 59.08	Pole + Reinf.	TP31.53x30.696x0.6875	Reinf. 3 Tension Rupture	77.2%	Pass
L25	59.08 - 58.82	Pole + Reinf.	TP31.589x31.53x0.625	Reinf. 4 Tension Rupture	79.0%	Pass
L26	58.82 - 58.67	Pole + Reinf.	TP31.623x31.589x0.625	Reinf. 4 Tension Rupture	79.1%	Pass
L27	58.67 - 53.67	Pole + Reinf.	TP32.758x31.623x0.6125	Reinf. 4 Tension Rupture	81.9%	Pass
L28	53.67 - 53	Pole + Reinf.	TP33.913x32.758x0.6125	Reinf. 4 Tension Rupture	82.3%	Pass
L29	53 - 47.58	Pole + Reinf.	TP33.515x32.285x0.6375	Reinf. 2 Tension Rupture	87.3%	Pass
L30	47.58 - 42.58	Pole + Reinf.	TP34.65x33.515x0.625	Reinf. 2 Tension Rupture	89.8%	Pass
L31	42.58 - 39.67	Pole + Reinf.	TP35.311x34.65x0.6125	Reinf. 2 Tension Rupture	91.1%	Pass
L32	39.67 - 39.42	Pole + Reinf.	TP35.368x35.311x0.8125	Reinf. 2 Tension Rupture	70.7%	Pass
L33	39.42 - 34.42	Pole + Reinf.	TP36.503x35.368x0.7875	Reinf. 2 Tension Rupture	72.6%	Pass
L34	34.42 - 32.5	Pole + Reinf.	TP36.939x36.503x0.7875	Reinf. 2 Tension Rupture	73.3%	Pass
L35	32.5 - 32.25	Pole + Reinf.	TP36.995x36.939x0.6125	Reinf. 5 Tension Rupture	90.7%	Pass
L36	32.25 - 31.42	Pole + Reinf.	TP37.184x36.995x0.6	Reinf. 5 Tension Rupture	91.0%	Pass
L37	31.42 - 31.17	Pole + Reinf.	TP37.241x37.184x0.775	Reinf. 1 Tension Rupture	73.8%	Pass
L38	31.17 - 29	Pole + Reinf.	TP37.733x37.241x0.7625	Reinf. 1 Tension Rupture	74.6%	Pass
L39	29 - 28.65	Pole + Reinf.	TP37.813x37.733x0.675	Reinf. 1 Tension Rupture	88.7%	Pass
L40	28.65 - 28.42	Pole + Reinf.	TP37.865x37.813x0.675	Reinf. 1 Tension Rupture	88.8%	Pass
L41	28.42 - 23.5	Pole + Reinf.	TP38.982x37.865x0.6625	Reinf. 1 Tension Rupture	90.5%	Pass
L42	23.5 - 23.25	Pole + Reinf.	TP39.039x38.982x0.7875	Reinf. 1 Tension Rupture	74.0%	Pass
L43	23.25 - 23	Pole + Reinf.	TP39.095x39.039x0.7875	Reinf. 1 Tension Rupture	74.1%	Pass
L44	23 - 22.75	Pole + Reinf.	TP39.152x39.095x0.65	Reinf. 1 Tension Rupture	90.0%	Pass
L45	22.75 - 17.75	Pole + Reinf.	TP40.287x39.152x0.6375	Reinf. 1 Tension Rupture	91.6%	Pass
L46	17.75 - 12.75	Pole + Reinf.	TP41.422x40.287x0.625	Reinf. 1 Tension Rupture	93.0%	Pass
L47	12.75 - 7.75	Pole + Reinf.	TP42.558x41.422x0.6125	Reinf. 1 Tension Rupture	94.4%	Pass
L48	7.75 - 2.75	Pole + Reinf.	TP43.693x42.558x0.6	Reinf. 1 Tension Rupture	95.6%	Pass
L49	2.75 - 0	Pole + Reinf.	TP44.317x43.693x0.6	Reinf. 1 Tension Rupture	96.3%	Pass
					Summary	
				Pole	79.7%	Pass
				Reinforcement	97.1%	Pass
				Overall	97.1%	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Flange Bolts	101.58	96	Pass
1	Flange Plate	101.58	61.8	Pass
1	Anchor Rods	0	77.1	Pass
1	Base Plate	0	65.9	Pass
1	Base Foundation (Structure)	0	68.2	Pass
1	Base Foundation (Soil Interaction)	0	80.1	Pass

Structure Rating (max from all components) =	97.1%
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Notes:

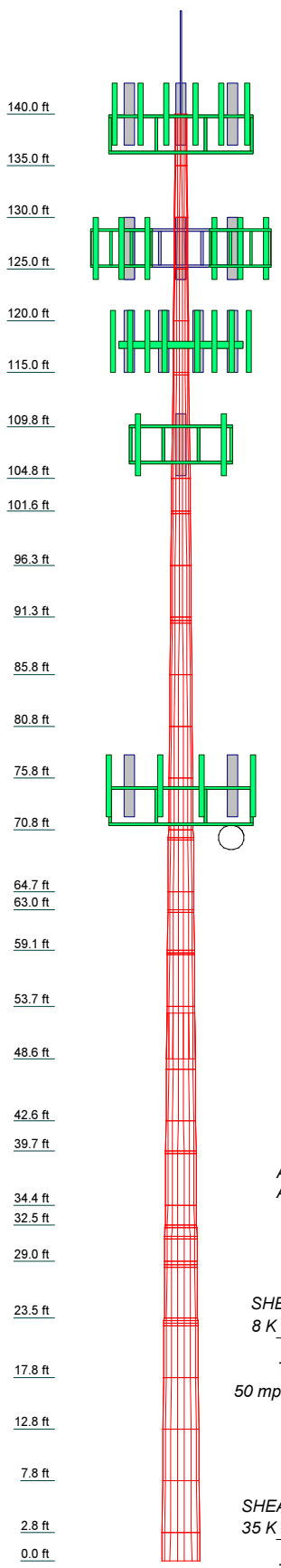
- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

4.1) Recommendations

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

APPENDIX A
TNXTOWER OUTPUT

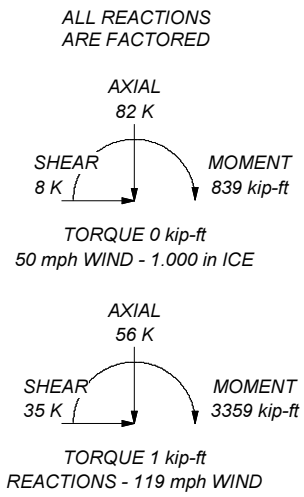
Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	5.000	18	0.188		13.161	14.296	0.1	0.1
2	5.000	18	0.188		15.431	16.566	0.1	0.1
3	5.000	18	0.188		16.566	17.701	0.2	0.2
4	5.000	18	0.188		16.566	17.701	0.2	0.2
5	5.000	18	0.188		16.566	17.701	0.2	0.2
6	5.000	18	0.188		16.566	17.701	0.2	0.2
7	5.000	18	0.188		16.566	17.701	0.2	0.2
8	5.000	18	0.188		16.566	17.701	0.2	0.2
9	5.000	18	0.188		16.566	17.701	0.2	0.2
10	5.000	18	0.188		16.566	17.701	0.2	0.2
11	5.000	18	0.188		16.566	17.701	0.2	0.2
12	5.000	18	0.188		16.566	17.701	0.2	0.2
13	5.000	18	0.188		16.566	17.701	0.2	0.2
14	5.000	18	0.188		16.566	17.701	0.2	0.2
15	5.000	18	0.188		16.566	17.701	0.2	0.2
16	5.000	18	0.188		16.566	17.701	0.2	0.2
17	5.000	18	0.188		16.566	17.701	0.2	0.2
18	5.000	18	0.188		16.566	17.701	0.2	0.2
19	5.000	18	0.188		16.566	17.701	0.2	0.2
20	5.000	18	0.188		16.566	17.701	0.2	0.2
21	5.000	18	0.188		16.566	17.701	0.2	0.2
22	5.000	18	0.188		16.566	17.701	0.2	0.2
23	5.000	18	0.188		16.566	17.701	0.2	0.2
24	5.000	18	0.188		16.566	17.701	0.2	0.2
25	5.000	18	0.188		16.566	17.701	0.2	0.2
26	5.000	18	0.188		16.566	17.701	0.2	0.2
27	5.000	18	0.188		16.566	17.701	0.2	0.2
28	5.000	18	0.188		16.566	17.701	0.2	0.2
29	5.000	18	0.188		16.566	17.701	0.2	0.2
30	5.000	18	0.188		16.566	17.701	0.2	0.2
31	5.000	18	0.188		16.566	17.701	0.2	0.2
32	5.000	18	0.188		16.566	17.701	0.2	0.2
33	5.000	18	0.188		16.566	17.701	0.2	0.2
34	5.000	18	0.188		16.566	17.701	0.2	0.2
35	5.000	18	0.188		16.566	17.701	0.2	0.2
36	5.000	18	0.188		16.566	17.701	0.2	0.2
37	5.000	18	0.188		16.566	17.701	0.2	0.2
38	5.000	18	0.188		16.566	17.701	0.2	0.2
39	5.000	18	0.188		16.566	17.701	0.2	0.2
40	5.000	18	0.188		16.566	17.701	0.2	0.2
41	5.000	18	0.188		16.566	17.701	0.2	0.2
42	5.000	18	0.188		16.566	17.701	0.2	0.2
43	5.000	18	0.188		16.566	17.701	0.2	0.2
44	5.000	18	0.188		16.566	17.701	0.2	0.2
45	5.000	18	0.188		16.566	17.701	0.2	0.2
46	5.000	18	0.188		16.566	17.701	0.2	0.2
47	5.000	18	0.188		16.566	17.701	0.2	0.2
48	5.000	18	0.188		16.566	17.701	0.2	0.2
49	5.000	18	0.188		16.566	17.701	0.2	0.2



MATERIAL STRENGTH					
GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 119 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TOWER RATING: 97.1%



Crown Castle
 2000 Corporate Drive
 Canonsburg, PA 15317
 Phone: (724) 416-2000
 FAX:

Job: BU# 842873			
Project:			
Client: Crown Castle	Drawn by: Matthew Schmitt	App'd:	
Code: TIA-222-H	Date: 05/02/22	Scale: NTS	
Path: C:\Work Area\842873\WO 2106483 - SAIProd\842873_R.en		Dwg No. E-1	

Tower Input Data

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

- Tower is located in Fairfield County, Connecticut.
- Tower base elevation above sea level: 311.000 ft.
- Basic wind speed of 119 mph.
- Risk Category II.
- Exposure Category B.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.000 ft.
- Nominal ice thickness of 1.000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56.000 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50.000 °F.
- Deflections calculated using a wind speed of 60 mph.
- TOWER RATING: 97.1%.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.
- Tower analysis based on target reliabilities in accordance with Annex S.
- Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- Maximum demand-capacity ratio is: 1.05.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification ✓ Use Code Stress Ratios ✓ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric	Distribute Leg Loads As Uniform Assume Legs Pinned ✓ Assume Rigid Index Plate ✓ Use Clear Spans For Wind Area Use Clear Spans For KL/r Retension Guys To Initial Tension ✓ Bypass Mast Stability Checks ✓ Use Azimuth Dish Coefficients ✓ Project Wind Area of Appurt. Autocalc Torque Arm Areas Add IBC .6D+W Combination Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs	Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation ✓ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-H Bracing Resist. Exemption Use TIA-222-H Tension Splice Exemption <div style="text-align: center; background-color: #e0e0e0; padding: 2px;">Poles</div> ✓ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known
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Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	140.000-135.000	5.000	0.000	18	13.161	14.296	0.188	0.750	A572-65 (65 ksi)
L2	135.000-130.000	5.000	0.000	18	14.296	15.431	0.188	0.750	A572-65 (65 ksi)
L3	130.000-125.000	5.000	0.000	18	15.431	16.566	0.188	0.750	A572-65 (65 ksi)
L4	125.000-120.000	5.000	0.000	18	16.566	17.701	0.188	0.750	A572-65 (65 ksi)
L5	120.000-115.000	5.000	0.000	18	17.701	18.836	0.188	0.750	A572-65 (65 ksi)
L6	115.000-114.750	0.250	0.000	18	18.836	18.893	0.463	1.850	A572-65 (65 ksi)
L7	114.750-109.750	5.000	0.000	18	18.893	20.027	0.450	1.800	A572-65 (65 ksi)
L8	109.750-104.750	5.000	0.000	18	20.027	21.162	0.425	1.700	A572-65 (65 ksi)
L9	104.750-101.580	3.170	0.000	18	21.162	21.882	0.419	1.675	A572-65 (65 ksi)
L10	101.580-101.330	0.250	0.000	18	21.882	21.939	0.313	1.250	A572-65 (65 ksi)
L11	101.330-96.330	5.000	0.000	18	21.939	23.074	0.313	1.250	A572-65 (65 ksi)
L12	96.330-91.330	5.000	0.000	18	23.074	24.209	0.313	1.250	A572-65 (65 ksi)
L13	91.330-91.000	0.330	0.000	18	24.209	24.284	0.313	1.250	A572-65 (65 ksi)
L14	91.000-90.750	0.250	0.000	18	24.284	24.340	0.600	2.400	A572-65 (65 ksi)
L15	90.750-85.750	5.000	0.000	18	24.340	25.475	0.588	2.350	A572-65 (65 ksi)
L16	85.750-80.750	5.000	0.000	18	25.475	26.610	0.563	2.250	A572-65 (65 ksi)
L17	80.750-75.750	5.000	0.000	18	26.610	27.745	0.550	2.200	A572-65 (65 ksi)
L18	75.750-70.750	5.000	0.000	18	27.745	28.880	0.544	2.175	A572-65 (65 ksi)
L19	70.750-69.980	0.770	0.000	18	28.880	29.055	0.531	2.125	A572-65 (65 ksi)
L20	69.980-69.730	0.250	0.000	18	29.055	29.112	0.531	2.125	A572-65 (65 ksi)
L21	69.730-64.730	5.000	0.000	18	29.112	30.247	0.525	2.100	A572-65 (65 ksi)
L22	64.730-63.000	1.730	0.000	18	30.247	30.640	0.519	2.075	A572-65 (65 ksi)
L23	63.000-62.750	0.250	0.000	18	30.640	30.696	0.700	2.800	A572-65 (65 ksi)
L24	62.750-59.080	3.670	0.000	18	30.696	31.529	0.688	2.750	A572-65 (65 ksi)
L25	59.080-58.820	0.260	0.000	18	31.529	31.589	0.625	2.500	A572-65 (65 ksi)
L26	58.820-58.670	0.150	0.000	18	31.589	31.623	0.625	2.500	A572-65 (65 ksi)
L27	58.670-53.670	5.000	0.000	18	31.623	32.758	0.613	2.450	A572-65 (65 ksi)
L28	53.670-48.580	5.090	4.420	18	32.758	33.913	0.613	2.450	A572-65 (65 ksi)
L29	48.580-47.580	5.420	0.000	18	32.285	33.515	0.637	2.550	A572-65 (65 ksi)
L30	47.580-42.580	5.000	0.000	18	33.515	34.650	0.625	2.500	A572-65 (65 ksi)
L31	42.580-39.670	2.910	0.000	18	34.650	35.311	0.613	2.450	A572-65 (65 ksi)
L32	39.670-39.420	0.250	0.000	18	35.311	35.368	0.813	3.250	A572-65 (65 ksi)
L33	39.420-34.420	5.000	0.000	18	35.368	36.503	0.787	3.150	A572-65 (65 ksi)
L34	34.420-32.500	1.920	0.000	18	36.503	36.939	0.787	3.150	A572-65 (65 ksi)
L35	32.500-32.250	0.250	0.000	18	36.939	36.995	0.613	2.450	A572-65

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L36	32.250-31.420	0.830	0.000	18	36.995	37.184	0.600	2.400	(65 ksi) A572-65
L37	31.420-31.170	0.250	0.000	18	37.184	37.241	0.775	3.100	(65 ksi) A572-65
L38	31.170-29.000	2.170	0.000	18	37.241	37.733	0.762	3.050	(65 ksi) A572-65
L39	29.000-28.650	0.350	0.000	18	37.733	37.813	0.675	2.700	(65 ksi) A572-65
L40	28.650-28.420	0.230	0.000	18	37.813	37.865	0.675	2.700	(65 ksi) A572-65
L41	28.420-23.500	4.920	0.000	18	37.865	38.982	0.662	2.650	(65 ksi) A572-65
L42	23.500-23.250	0.250	0.000	18	38.982	39.039	0.787	3.150	(65 ksi) A572-65
L43	23.250-23.000	0.250	0.000	18	39.039	39.095	0.787	3.150	(65 ksi) A572-65
L44	23.000-22.750	0.250	0.000	18	39.095	39.152	0.650	2.600	(65 ksi) A572-65
L45	22.750-17.750	5.000	0.000	18	39.152	40.287	0.637	2.550	(65 ksi) A572-65
L46	17.750-12.750	5.000	0.000	18	40.287	41.422	0.625	2.500	(65 ksi) A572-65
L47	12.750-7.750	5.000	0.000	18	41.422	42.558	0.613	2.450	(65 ksi) A572-65
L48	7.750-2.750	5.000	0.000	18	42.558	43.693	0.600	2.400	(65 ksi) A572-65
L49	2.750-0.000	2.750		18	43.693	44.317	0.600	2.400	(65 ksi) A572-65

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L1	13.335	7.721	164.179	4.606	6.686	24.556	328.574	3.861	1.986	10.594
	14.488	8.396	211.147	5.009	7.262	29.074	422.571	4.199	2.186	11.659
L2	14.488	8.396	211.147	5.009	7.262	29.074	422.571	4.199	2.186	11.659
	15.640	9.072	266.313	5.411	7.839	33.973	532.976	4.537	2.386	12.724
L3	15.640	9.072	266.313	5.411	7.839	33.973	532.976	4.537	2.386	12.724
	16.792	9.747	330.337	5.814	8.415	39.254	661.109	4.875	2.586	13.79
L4	16.792	9.747	330.337	5.814	8.415	39.254	661.109	4.875	2.586	13.79
	17.945	10.423	403.879	6.217	8.992	44.915	808.290	5.212	2.785	14.855
L5	17.945	10.423	403.879	6.217	8.992	44.915	808.290	5.212	2.785	14.855
	19.097	11.098	487.598	6.620	9.569	50.958	975.838	5.550	2.985	15.921
L6	19.055	26.972	1150.313	6.523	9.569	120.218	2302.140	13.488	2.501	5.408
	19.113	27.055	1161.005	6.543	9.597	120.971	2323.537	13.530	2.511	5.429
L7	19.115	26.341	1131.926	6.547	9.597	117.941	2265.342	13.173	2.533	5.629
	20.267	27.963	1354.027	6.950	10.174	133.088	2709.836	13.984	2.733	6.073
L8	20.271	26.443	1283.709	6.959	10.174	126.176	2569.107	13.224	2.777	6.534
	21.423	27.974	1519.843	7.362	10.751	141.374	3041.685	13.990	2.977	7.004
L9	21.424	27.571	1498.846	7.364	10.751	139.421	2999.665	13.788	2.988	7.135
	22.155	28.527	1660.296	7.619	11.116	149.360	3322.778	14.266	3.114	7.437
L10	22.171	21.394	1257.519	7.657	11.116	113.126	2516.693	10.699	3.301	10.564
	22.229	21.451	1267.471	7.677	11.145	113.727	2536.610	10.727	3.311	10.596
L11	22.229	21.451	1267.471	7.677	11.145	113.727	2536.610	10.727	3.311	10.596
	23.381	22.576	1477.688	8.080	11.721	126.067	2957.320	11.290	3.511	11.235
L12	23.381	22.576	1477.688	8.080	11.721	126.067	2957.320	11.290	3.511	11.235
	24.534	23.702	1709.951	8.483	12.298	139.043	3422.152	11.853	3.711	11.874
L13	24.534	23.702	1709.951	8.483	12.298	139.043	3422.152	11.853	3.711	11.874
	24.610	23.776	1726.082	8.510	12.336	139.921	3454.436	11.890	3.724	11.917
L14	24.566	45.103	3196.260	8.408	12.336	259.098	6396.725	22.556	3.218	5.363
	24.623	45.211	3219.291	8.428	12.365	260.357	6442.819	22.610	3.228	5.38
L15	24.625	44.293	3157.205	8.432	12.365	255.335	6318.563	22.151	3.250	5.532
	25.778	46.409	3631.763	8.835	12.942	280.629	7268.305	23.209	3.450	5.872
L16	25.782	44.479	3487.709	8.844	12.942	269.498	6980.008	22.244	3.494	6.211

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L17	26.934	46.505	3986.443	9.247	13.518	294.897	7978.131	23.257	3.693	6.566
	26.936	45.494	3903.470	9.251	13.518	288.759	7812.075	22.751	3.715	6.755
	28.089	47.475	4436.024	9.654	14.095	314.731	8877.885	23.742	3.915	7.119
L18	28.090	46.946	4388.639	9.657	14.095	311.369	8783.053	23.478	3.926	7.221
	29.242	48.905	4961.233	10.060	14.671	338.160	9928.994	24.457	4.126	7.588
L19	29.244	47.802	4853.599	10.064	14.671	330.824	9713.585	23.906	4.148	7.808
	29.421	48.097	4943.930	10.126	14.760	334.954	9894.365	24.053	4.179	7.866
L20	29.421	48.097	4943.930	10.126	14.760	334.954	9894.365	24.053	4.179	7.866
	29.479	48.192	4973.497	10.146	14.789	336.300	9953.539	24.101	4.189	7.885
L21	29.480	47.636	4918.211	10.148	14.789	332.562	9842.893	23.822	4.200	7.999
	30.633	49.527	5527.587	10.551	15.365	359.741	11062.447	24.768	4.399	8.38
L22	30.634	48.948	5465.229	10.554	15.365	355.683	10937.648	24.479	4.410	8.502
	31.032	49.594	5684.689	10.693	15.565	365.224	11376.859	24.802	4.480	8.635
L23	31.004	66.520	7533.261	10.629	15.565	483.989	15076.434	33.266	4.161	5.944
	31.062	66.646	7576.180	10.649	15.594	485.846	15162.328	33.329	4.171	5.958
L24	31.064	65.483	7450.197	10.653	15.594	477.767	14910.197	32.748	4.193	6.098
	31.910	67.301	8088.066	10.949	16.017	504.968	16186.774	33.657	4.339	6.312
L25	31.919	61.307	7397.578	10.971	16.017	461.858	14804.890	30.659	4.449	7.119
	31.979	61.424	7440.042	10.992	16.047	463.642	14889.873	30.718	4.460	7.135
L26	31.979	61.424	7440.042	10.992	16.047	463.642	14889.873	30.718	4.460	7.135
	32.014	61.491	7464.614	11.004	16.064	464.672	14939.050	30.752	4.466	7.145
L27	32.016	60.286	7324.175	11.009	16.064	455.930	14657.987	30.149	4.488	7.327
	33.168	62.492	8158.186	11.411	16.641	490.251	16327.106	31.252	4.687	7.653
L28	33.168	62.492	8158.186	11.411	16.641	490.251	16327.106	31.252	4.687	7.653
	34.342	64.739	9069.905	11.822	17.228	526.469	18151.744	32.375	4.891	7.985
L29	33.703	64.036	8102.682	11.235	16.401	494.048	16216.026	32.024	4.560	7.153
	33.934	66.525	9085.030	11.672	17.026	533.607	18182.014	33.269	4.777	7.493
L30	33.936	65.246	8917.055	11.676	17.026	523.741	17845.843	32.629	4.799	7.678
	35.088	67.498	9872.539	12.079	17.602	560.865	19758.069	33.755	4.998	7.998
L31	35.090	66.172	9685.755	12.083	17.602	550.254	19384.255	33.092	5.020	8.197
	35.761	67.456	10260.749	12.318	17.938	572.014	20535.000	33.735	5.137	8.386
L32	35.730	88.967	13377.189	12.247	17.938	745.748	26771.980	44.492	4.785	5.889
	35.788	89.113	13443.321	12.267	17.967	748.232	26904.332	44.565	4.795	5.901
L33	35.792	86.434	13057.981	12.276	17.967	726.785	26133.145	43.225	4.839	6.144
	36.944	89.271	14386.577	12.679	18.543	775.832	28792.084	44.644	5.038	6.398
L34	36.944	89.271	14386.577	12.679	18.543	775.832	28792.084	44.644	5.038	6.398
	37.387	90.361	14919.776	12.834	18.765	795.092	29859.183	45.189	5.115	6.496
L35	37.414	70.621	11773.608	12.896	18.765	627.429	23562.709	35.317	5.423	8.854
	37.472	70.731	11828.881	12.916	18.794	629.407	23673.326	35.372	5.433	8.871
L36	37.474	69.311	11599.422	12.920	18.794	617.198	23214.108	34.662	5.455	9.092
	37.665	69.670	11780.519	12.987	18.889	623.658	23576.539	34.842	5.488	9.147
L37	37.638	89.560	14999.181	12.925	18.889	794.053	30018.097	44.789	5.180	6.684
	37.696	89.700	15069.434	12.945	18.918	796.556	30158.698	44.859	5.190	6.697
L38	37.697	88.283	14841.631	12.950	18.918	784.515	29702.791	44.150	5.212	6.836
	38.198	89.476	15451.107	13.125	19.168	806.068	30922.545	44.746	5.299	6.95
L39	38.211	79.395	13775.376	13.156	19.168	718.647	27568.878	39.705	5.453	8.079
	38.292	79.566	13864.176	13.184	19.209	721.759	27746.595	39.790	5.467	8.099
L40	38.292	79.566	13864.176	13.184	19.209	721.759	27746.595	39.790	5.467	8.099
	38.345	79.678	13922.738	13.202	19.235	723.808	27863.796	39.846	5.476	8.113
L41	38.347	78.228	13678.693	13.207	19.235	711.121	27375.385	39.122	5.498	8.299
	39.481	80.577	14948.119	13.603	19.803	754.848	29915.908	40.296	5.695	8.596
L42	39.462	95.468	17595.200	13.559	19.803	888.520	35213.553	47.743	5.475	6.952
	39.519	95.610	17673.755	13.579	19.832	891.190	35370.766	47.814	5.485	6.965
L43	39.519	95.610	17673.755	13.579	19.832	891.190	35370.766	47.814	5.485	6.965
	39.577	95.752	17752.545	13.599	19.860	893.863	35528.449	47.885	5.495	6.978
L44	39.598	79.317	14811.244	13.648	19.860	745.765	29641.976	39.666	5.737	8.826
	39.656	79.434	14876.937	13.668	19.889	747.987	29773.449	39.724	5.747	8.841
L45	39.658	77.932	14605.058	13.673	19.889	734.317	29229.333	38.973	5.769	9.049
	40.810	80.228	15934.836	14.076	20.466	778.602	31890.639	40.122	5.969	9.362
L46	40.812	78.680	15637.168	14.080	20.466	764.058	31294.912	39.348	5.991	9.585
	41.965	80.932	17018.557	14.483	21.043	808.767	34059.508	40.474	6.190	9.905
L47	41.967	79.338	16693.521	14.488	21.043	793.321	33409.008	39.676	6.212	10.143
	43.120	81.544	18125.615	14.890	21.619	838.402	36275.079	40.780	6.412	10.469
L48	43.122	79.904	17771.583	14.895	21.619	822.026	35566.550	39.960	6.434	10.724
	44.274	82.066	19253.344	15.298	22.196	867.429	38532.022	41.041	6.634	11.057
L49	44.274	82.066	19253.344	15.298	22.196	867.429	38532.022	41.041	6.634	11.057
	44.908	83.255	20102.343	15.520	22.513	892.920	40231.137	41.635	6.744	11.24

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_r	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
ft	ft ²	in							
L1 140.000-135.000				1	1	1			
L2 135.000-130.000				1	1	1			
L3 130.000-125.000				1	1	1			
L4 125.000-120.000				1	1	1			
L5 120.000-115.000				1	1	1			
L6 115.000-114.750				1	1	0.910459			
L7 114.750-109.750				1	1	0.90506			
L8 109.750-104.750				1	1	0.928842			
L9 104.750-101.580				1	1	0.925837			
L10 101.580-101.330				1	1	1			
L11 101.330-96.330				1	1	1			
L12 96.330-91.330				1	1	1			
L13 91.330-91.000				1	1	1			
L14 91.000-90.750				1	1	0.925286			
L15 90.750-85.750				1	1	0.925661			
L16 85.750-80.750				1	1	0.947954			
L17 80.750-75.750				1	1	0.952304			
L18 75.750-70.750				1	1	0.947475			
L19 70.750-69.980				1	1	0.951412			
L20 69.980-69.730				1	1	0.950691			
L21 69.730-64.730				1	1	0.9478			
L22 64.730-63.000				1	1	0.954368			
L23 63.000-62.750				1	1	0.981128			
L24 62.750-59.080				1	1	0.983857			
L25 59.080-58.820				1	1	0.999823			
L26 58.820-58.670				1	1	0.999274			
L27 58.670-53.670				1	1	1.00128			
L28 53.670-48.580				1	1	0.99897			
L29 48.580-47.580				1	1	0.940602			
L30 47.580-42.580				1	1	0.943735			
L31 42.580-39.670				1	1	0.954027			
L32 39.670-39.420				1	1	0.924799			
L33 39.420-34.420				1	1	0.935777			
L34 34.420-				1	1	0.929278			

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_r	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
ft	ft ²	in							
32.500									
L35 32.500-32.250				1	1	0.944082			
L36 32.250-31.420				1	1	0.961139			
L37 31.420-31.170				1	1	0.939463			
L38 31.170-29.000				1	1	0.947279			
L39 29.000-28.650				1	1	0.990842			
L40 28.650-28.420				1	1	0.990101			
L41 28.420-23.500				1	1	0.992797			
L42 23.500-23.250				1	1	1.02556			
L43 23.250-23.000				1	1	1.02463			
L44 23.000-22.750				1	1	1.08475			
L45 22.750-17.750				1	1	1.08804			
L46 17.750-12.750				1	1	1.09249			
L47 12.750-7.750				1	1	1.0981			
L48 7.750-2.750				1	1	1.10484			
L49 2.750-0.000				1	1	1.0965			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight kif
5.75" x 1" Flat Plate	A	No	Surface Af (CaAa)	33.330 - 0.500	1	1	0.500 0.500	5.750	13.500	0.000
5.75" x 1" Flat Plate	B	No	Surface Af (CaAa)	33.330 - 0.500	1	1	0.500 0.500	5.750	13.500	0.000
5.75" x 1" Flat Plate	C	No	Surface Af (CaAa)	33.330 - 0.500	1	1	0.500 0.500	5.750	13.500	0.000
5.75" x 1" Flat Plate	A	No	Surface Af (CaAa)	50.580 - 30.580	1	1	-0.300 -0.300	5.750	13.500	0.000
5.75" x 1" Flat Plate	B	No	Surface Af (CaAa)	50.580 - 30.580	1	1	-0.300 -0.300	5.750	13.500	0.000
5.75" x 1" Flat Plate	C	No	Surface Af (CaAa)	50.580 - 30.580	1	1	-0.300 -0.300	5.750	13.500	0.000
5.75" x 1" Flat Plate	A	No	Surface Af (CaAa)	72.000 - 57.000	1	1	-0.300 -0.300	5.750	13.500	0.000
5.75" x 1" Flat Plate	B	No	Surface Af (CaAa)	72.000 - 57.000	1	1	-0.300 -0.300	5.750	13.500	0.000
5.75" x 1" Flat Plate	C	No	Surface Af (CaAa)	72.000 - 57.000	1	1	-0.300 -0.300	5.750	13.500	0.000
*										
MP3-04	A	No	Surface Af (CaAa)	60.500 - 0.500	1	1	0.000 0.000	4.780	12.780	0.000
MP3-04	B	No	Surface Af (CaAa)	60.500 - 0.500	1	1	0.000 0.000	4.780	12.780	0.000
MP3-04	C	No	Surface Af (CaAa)	60.500 - 0.500	1	1	0.000 0.000	4.780	12.780	0.000

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
*										
CCI-65FP-060100	A	No	Surface Af (CaAa)	41.670 - 26.670	1	1	0.000 0.000	6.000	14.000	0.000
CCI-65FP-060100	B	No	Surface Af (CaAa)	41.670 - 26.670	1	1	0.000 0.000	6.000	14.000	0.000
CCI-65FP-060100	C	No	Surface Af (CaAa)	41.670 - 26.670	1	1	0.000 0.000	6.000	14.000	0.000
*										
CCI-65FP-060100	A	No	Surface Af (CaAa)	25.500 - 0.500	1	1	0.000 0.000	6.000	14.000	0.000
CCI-65FP-060100	B	No	Surface Af (CaAa)	25.500 - 0.500	1	1	0.000 0.000	6.000	14.000	0.000
CCI-65FP-060100	C	No	Surface Af (CaAa)	25.500 - 0.500	1	1	0.000 0.000	6.000	14.000	0.000
CCI-65FP-060100	A	No	Surface Af (CaAa)	65.000 - 50.000	1	1	0.000 0.000	6.000	14.000	0.000
CCI-65FP-060100	B	No	Surface Af (CaAa)	65.000 - 50.000	1	1	0.000 0.000	6.000	14.000	0.000
CCI-65FP-060100	C	No	Surface Af (CaAa)	65.000 - 50.000	1	1	0.000 0.000	6.000	14.000	0.000
CCI-65FP-060100	A	No	Surface Af (CaAa)	93.000 - 68.000	1	1	0.000 0.000	6.000	14.000	0.000
CCI-65FP-060100	B	No	Surface Af (CaAa)	93.000 - 68.000	1	1	0.000 0.000	6.000	14.000	0.000
CCI-65FP-060100	C	No	Surface Af (CaAa)	93.000 - 68.000	1	1	0.000 0.000	6.000	14.000	0.000
CCI-65FP-045100	A	No	Surface Af (CaAa)	117.000 - 102.000	1	1	0.300 0.300	4.500	11.000	0.000
CCI-65FP-045100	B	No	Surface Af (CaAa)	117.000 - 102.000	1	1	0.300 0.300	4.500	11.000	0.000
CCI-65FP-045100	C	No	Surface Af (CaAa)	117.000 - 102.000	1	1	0.300 0.300	4.500	11.000	0.000
*										
CCI-65FP-060100	A	No	Surface Af (CaAa)	31.000 - 21.000	1	1	-0.200 -0.200	6.000	14.000	0.000
CCI-65FP-060100	C	No	Surface Af (CaAa)	31.000 - 21.000	1	1	-0.200 -0.200	6.000	14.000	0.000
HB158-21U6S12-XXXM-01(1-5/8)	C	No	Surface Ar (CaAa)	138.000 - 0.000	1	1	0.000 0.040	1.990		0.002
*										
LDF7-50A(1-5/8)	C	No	Surface Ar (CaAa)	118.000 - 0.000	19	6	-0.490 -0.150	1.980		0.001

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _A A _A ft ² /ft	Weight klf

LDF7-50A(1-5/8)	C	No	No	Inside Pole	138.000 - 0.000	6	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.001 0.001 0.001
HB158-21U6S12-XXXM-01(1-5/8)	C	No	No	Inside Pole	138.000 - 0.000	1	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.002 0.002 0.002
AVA6-50(1-1/4)	C	No	No	Inside Pole	138.000 - 0.000	2	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.000 0.000 0.000
*									
PWRT-606-S(7/8)	A	No	No	Inside Pole	127.000 - 0.000	1	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.001 0.001 0.001
PWRT-608-	A	No	No	Inside Pole	127.000 -	6	No Ice	0.000	0.001

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _{AA} ft ² /ft	Weight klf
S(13/16)					0.000		1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
FB-L98B-235-XXX(3/8)	A	No	No	Inside Pole	127.000 - 0.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
AL7-50(1-5/8)	A	No	No	Inside Pole	127.000 - 0.000	6	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
FB-L98B-034-XXX(3/8)	A	No	No	Inside Pole	127.000 - 0.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
FB-L98B-034-XXXXXX(3/8)	A	No	No	Inside Pole	127.000 - 0.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
*									
CU12PSM9P6XXX (1-1/2)	B	No	No	Inside Pole	108.000 - 0.000	1	No Ice	0.000	0.002
							1/2" Ice	0.000	0.002
							1" Ice	0.000	0.002
*									
HB158-21U6M48-30F(1-5/8)	A	No	No	Inside Pole	73.000 - 0.000	4	No Ice	0.000	0.002
							1/2" Ice	0.000	0.002
							1" Ice	0.000	0.002
*									
LDF4-50A(1/2)	A	No	No	Inside Pole	50.000 - 0.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L1	140.000-135.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.597	0.000	0.029
L2	135.000-130.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.995	0.000	0.048
L3	130.000-125.000	A	0.000	0.000	0.000	0.000	0.016
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.995	0.000	0.048
L4	125.000-120.000	A	0.000	0.000	0.000	0.000	0.039
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.995	0.000	0.048
L5	120.000-115.000	A	0.000	0.000	1.500	0.000	0.039
		B	0.000	0.000	1.500	0.000	0.000
		C	0.000	0.000	6.059	0.000	0.095
L6	115.000-114.750	A	0.000	0.000	0.188	0.000	0.002
		B	0.000	0.000	0.188	0.000	0.000
		C	0.000	0.000	0.534	0.000	0.006
L7	114.750-109.750	A	0.000	0.000	3.750	0.000	0.039
		B	0.000	0.000	3.750	0.000	0.000
		C	0.000	0.000	10.685	0.000	0.126
L8	109.750-104.750	A	0.000	0.000	3.750	0.000	0.039
		B	0.000	0.000	3.750	0.000	0.008
		C	0.000	0.000	10.685	0.000	0.126
L9	104.750-101.580	A	0.000	0.000	2.063	0.000	0.025
		B	0.000	0.000	2.063	0.000	0.007
		C	0.000	0.000	6.459	0.000	0.080
L10	101.580-101.330	A	0.000	0.000	0.000	0.000	0.002
		B	0.000	0.000	0.000	0.000	0.001

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L11	101.330-96.330	C	0.000	0.000	0.347	0.000	0.006
		A	0.000	0.000	0.000	0.000	0.039
		B	0.000	0.000	0.000	0.000	0.012
L12	96.330-91.330	C	0.000	0.000	6.935	0.000	0.126
		A	0.000	0.000	1.670	0.000	0.039
		B	0.000	0.000	1.670	0.000	0.012
L13	91.330-91.000	C	0.000	0.000	8.605	0.000	0.126
		A	0.000	0.000	0.330	0.000	0.003
		B	0.000	0.000	0.330	0.000	0.001
L14	91.000-90.750	C	0.000	0.000	0.788	0.000	0.008
		A	0.000	0.000	0.250	0.000	0.002
		B	0.000	0.000	0.250	0.000	0.001
L15	90.750-85.750	C	0.000	0.000	0.597	0.000	0.006
		A	0.000	0.000	5.000	0.000	0.039
		B	0.000	0.000	5.000	0.000	0.012
L16	85.750-80.750	C	0.000	0.000	11.935	0.000	0.126
		A	0.000	0.000	5.000	0.000	0.039
		B	0.000	0.000	5.000	0.000	0.012
L17	80.750-75.750	C	0.000	0.000	11.935	0.000	0.126
		A	0.000	0.000	5.000	0.000	0.039
		B	0.000	0.000	5.000	0.000	0.012
L18	75.750-70.750	C	0.000	0.000	11.935	0.000	0.126
		A	0.000	0.000	6.198	0.000	0.061
		B	0.000	0.000	6.198	0.000	0.012
L19	70.750-69.980	C	0.000	0.000	13.133	0.000	0.126
		A	0.000	0.000	1.508	0.000	0.013
		B	0.000	0.000	1.508	0.000	0.002
L20	69.980-69.730	C	0.000	0.000	2.576	0.000	0.019
		A	0.000	0.000	0.490	0.000	0.004
		B	0.000	0.000	0.490	0.000	0.001
L21	69.730-64.730	C	0.000	0.000	0.836	0.000	0.006
		A	0.000	0.000	6.792	0.000	0.087
		B	0.000	0.000	6.792	0.000	0.012
L22	64.730-63.000	C	0.000	0.000	13.727	0.000	0.126
		A	0.000	0.000	3.388	0.000	0.030
		B	0.000	0.000	3.388	0.000	0.004
L23	63.000-62.750	C	0.000	0.000	5.787	0.000	0.044
		A	0.000	0.000	0.490	0.000	0.004
		B	0.000	0.000	0.490	0.000	0.001
L24	62.750-59.080	C	0.000	0.000	0.836	0.000	0.006
		A	0.000	0.000	8.318	0.000	0.064
		B	0.000	0.000	8.318	0.000	0.009
L25	59.080-58.820	C	0.000	0.000	13.409	0.000	0.093
		A	0.000	0.000	0.716	0.000	0.005
		B	0.000	0.000	0.716	0.000	0.001
L26	58.820-58.670	C	0.000	0.000	1.077	0.000	0.007
		A	0.000	0.000	0.413	0.000	0.003
		B	0.000	0.000	0.413	0.000	0.000
L27	58.670-53.670	C	0.000	0.000	0.621	0.000	0.004
		A	0.000	0.000	10.584	0.000	0.087
		B	0.000	0.000	10.584	0.000	0.012
L28	53.670-48.580	C	0.000	0.000	17.519	0.000	0.126
		A	0.000	0.000	9.642	0.000	0.089
		B	0.000	0.000	9.642	0.000	0.012
L29	48.580-47.580	C	0.000	0.000	16.702	0.000	0.128
		A	0.000	0.000	1.755	0.000	0.018
		B	0.000	0.000	1.755	0.000	0.002
L30	47.580-42.580	C	0.000	0.000	3.142	0.000	0.025
		A	0.000	0.000	8.775	0.000	0.088
		B	0.000	0.000	8.775	0.000	0.012
L31	42.580-39.670	C	0.000	0.000	15.710	0.000	0.126
		A	0.000	0.000	7.107	0.000	0.051
		B	0.000	0.000	7.107	0.000	0.007
L32	39.670-39.420	C	0.000	0.000	11.143	0.000	0.073
		A	0.000	0.000	0.689	0.000	0.004
		B	0.000	0.000	0.689	0.000	0.001
L33	39.420-34.420	C	0.000	0.000	1.036	0.000	0.006
		A	0.000	0.000	13.775	0.000	0.088
		B	0.000	0.000	13.775	0.000	0.012

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
L34	34.420-32.500	C	0.000	0.000	20.710	0.000	0.126
		A	0.000	0.000	6.085	0.000	0.034
		B	0.000	0.000	6.085	0.000	0.005
L35	32.500-32.250	C	0.000	0.000	8.748	0.000	0.048
		A	0.000	0.000	0.928	0.000	0.004
		B	0.000	0.000	0.928	0.000	0.001
L36	32.250-31.420	C	0.000	0.000	1.275	0.000	0.006
		A	0.000	0.000	3.082	0.000	0.015
		B	0.000	0.000	3.082	0.000	0.002
L37	31.420-31.170	C	0.000	0.000	4.233	0.000	0.021
		A	0.000	0.000	0.928	0.000	0.004
		B	0.000	0.000	0.928	0.000	0.001
L38	31.170-29.000	C	0.000	0.000	1.275	0.000	0.006
		A	0.000	0.000	8.368	0.000	0.038
		B	0.000	0.000	6.544	0.000	0.005
L39	29.000-28.650	C	0.000	0.000	11.378	0.000	0.055
		A	0.000	0.000	1.283	0.000	0.006
		B	0.000	0.000	0.964	0.000	0.001
L40	28.650-28.420	C	0.000	0.000	1.769	0.000	0.009
		A	0.000	0.000	0.843	0.000	0.004
		B	0.000	0.000	0.634	0.000	0.001
L41	28.420-23.500	C	0.000	0.000	1.162	0.000	0.006
		A	0.000	0.000	16.872	0.000	0.087
		B	0.000	0.000	12.385	0.000	0.012
L42	23.500-23.250	C	0.000	0.000	23.696	0.000	0.124
		A	0.000	0.000	0.917	0.000	0.004
		B	0.000	0.000	0.689	0.000	0.001
L43	23.250-23.000	C	0.000	0.000	1.264	0.000	0.006
		A	0.000	0.000	0.917	0.000	0.004
		B	0.000	0.000	0.689	0.000	0.001
L44	23.000-22.750	C	0.000	0.000	1.264	0.000	0.006
		A	0.000	0.000	0.917	0.000	0.004
		B	0.000	0.000	0.689	0.000	0.001
L45	22.750-17.750	C	0.000	0.000	1.264	0.000	0.006
		A	0.000	0.000	15.371	0.000	0.088
		B	0.000	0.000	13.775	0.000	0.012
L46	17.750-12.750	C	0.000	0.000	22.306	0.000	0.126
		A	0.000	0.000	13.775	0.000	0.088
		B	0.000	0.000	13.775	0.000	0.012
L47	12.750-7.750	C	0.000	0.000	20.710	0.000	0.126
		A	0.000	0.000	13.775	0.000	0.088
		B	0.000	0.000	13.775	0.000	0.012
L48	7.750-2.750	C	0.000	0.000	20.710	0.000	0.126
		A	0.000	0.000	13.775	0.000	0.088
		B	0.000	0.000	13.775	0.000	0.012
L49	2.750-0.000	C	0.000	0.000	20.710	0.000	0.126
		A	0.000	0.000	6.199	0.000	0.048
		B	0.000	0.000	6.199	0.000	0.006
		C	0.000	0.000	10.013	0.000	0.069

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
L1	140.000-135.000	A	0.980	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	1.185	0.000	0.040
L2	135.000-130.000	A	0.977	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	1.972	0.000	0.066
L3	130.000-125.000	A	0.973	0.000	0.000	0.000	0.000	0.016
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	1.968	0.000	0.066
L4	125.000-120.000	A	0.969	0.000	0.000	0.000	0.000	0.039
		B		0.000	0.000	0.000	0.000	0.000

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
L5	120.000-115.000	C	0.965	0.000	0.000	1.964	0.000	0.066
		A		0.000	0.000	1.886	0.000	0.050
		B		0.000	0.000	1.886	0.000	0.011
L6	115.000-114.750	C	0.963	0.000	0.000	9.025	0.000	0.186
		A		0.000	0.000	0.236	0.000	0.003
		B		0.000	0.000	0.236	0.000	0.001
L7	114.750-109.750	C	0.961	0.000	0.000	0.765	0.000	0.014
		A		0.000	0.000	4.711	0.000	0.067
		B		0.000	0.000	4.711	0.000	0.027
L8	109.750-104.750	C	0.956	0.000	0.000	15.292	0.000	0.275
		A		0.000	0.000	4.706	0.000	0.067
		B		0.000	0.000	4.706	0.000	0.035
L9	104.750-101.580	C	0.953	0.000	0.000	15.278	0.000	0.274
		A		0.000	0.000	2.586	0.000	0.040
		B		0.000	0.000	2.586	0.000	0.022
L10	101.580-101.330	C	0.951	0.000	0.000	9.284	0.000	0.171
		A		0.000	0.000	0.000	0.000	0.002
		B		0.000	0.000	0.000	0.000	0.001
L11	101.330-96.330	C	0.949	0.000	0.000	0.528	0.000	0.012
		A		0.000	0.000	0.000	0.000	0.039
		B		0.000	0.000	0.000	0.000	0.012
L12	96.330-91.330	C	0.944	0.000	0.000	10.554	0.000	0.246
		A		0.000	0.000	1.985	0.000	0.050
		B		0.000	0.000	1.985	0.000	0.023
L13	91.330-91.000	C	0.941	0.000	0.000	12.528	0.000	0.257
		A		0.000	0.000	0.392	0.000	0.005
		B		0.000	0.000	0.392	0.000	0.003
L14	91.000-90.750	C	0.941	0.000	0.000	1.088	0.000	0.018
		A		0.000	0.000	0.297	0.000	0.004
		B		0.000	0.000	0.297	0.000	0.002
L15	90.750-85.750	C	0.938	0.000	0.000	0.824	0.000	0.014
		A		0.000	0.000	5.938	0.000	0.071
		B		0.000	0.000	5.938	0.000	0.044
L16	85.750-80.750	C	0.932	0.000	0.000	16.468	0.000	0.277
		A		0.000	0.000	5.932	0.000	0.071
		B		0.000	0.000	5.932	0.000	0.044
L17	80.750-75.750	C	0.927	0.000	0.000	16.450	0.000	0.276
		A		0.000	0.000	5.927	0.000	0.071
		B		0.000	0.000	5.927	0.000	0.043
L18	75.750-70.750	C	0.921	0.000	0.000	16.432	0.000	0.276
		A		0.000	0.000	7.343	0.000	0.100
		B		0.000	0.000	7.343	0.000	0.051
L19	70.750-69.980	C	0.917	0.000	0.000	17.834	0.000	0.282
		A		0.000	0.000	1.787	0.000	0.023
		B		0.000	0.000	1.787	0.000	0.011
L20	69.980-69.730	C	0.916	0.000	0.000	3.401	0.000	0.047
		A		0.000	0.000	0.580	0.000	0.007
		B		0.000	0.000	0.580	0.000	0.004
L21	69.730-64.730	C	0.913	0.000	0.000	1.104	0.000	0.015
		A		0.000	0.000	8.045	0.000	0.130
		B		0.000	0.000	8.045	0.000	0.054
L22	64.730-63.000	C	0.908	0.000	0.000	18.519	0.000	0.285
		A		0.000	0.000	3.993	0.000	0.051
		B		0.000	0.000	3.993	0.000	0.025
L23	63.000-62.750	C	0.907	0.000	0.000	7.613	0.000	0.105
		A		0.000	0.000	0.577	0.000	0.007
		B		0.000	0.000	0.577	0.000	0.004
L24	62.750-59.080	C	0.904	0.000	0.000	1.100	0.000	0.015
		A		0.000	0.000	9.854	0.000	0.116
		B		0.000	0.000	9.854	0.000	0.061
L25	59.080-58.820	C	0.901	0.000	0.000	17.527	0.000	0.230
		A		0.000	0.000	0.854	0.000	0.009
		B		0.000	0.000	0.854	0.000	0.005
L26	58.820-58.670	C	0.900	0.000	0.000	1.397	0.000	0.017
		A		0.000	0.000	0.492	0.000	0.005
		B		0.000	0.000	0.492	0.000	0.003
L27	58.670-53.670	C	0.896	0.000	0.000	0.806	0.000	0.010
		A		0.000	0.000	12.629	0.000	0.156
		B		0.000	0.000	12.629	0.000	0.080

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
L28	53.670-48.580	C	0.888	0.000	0.000	23.066	0.000	0.309
		A		0.000	0.000	11.526	0.000	0.151
		B		0.000	0.000	11.526	0.000	0.074
L29	48.580-47.580	C	0.883	0.000	0.000	22.132	0.000	0.306
		A		0.000	0.000	2.110	0.000	0.029
		B		0.000	0.000	2.110	0.000	0.014
L30	47.580-42.580	C	0.877	0.000	0.000	4.194	0.000	0.059
		A		0.000	0.000	10.529	0.000	0.144
		B		0.000	0.000	10.529	0.000	0.068
L31	42.580-39.670	C	0.869	0.000	0.000	20.922	0.000	0.295
		A		0.000	0.000	8.455	0.000	0.095
		B		0.000	0.000	8.455	0.000	0.051
L32	39.670-39.420	C	0.866	0.000	0.000	14.493	0.000	0.182
		A		0.000	0.000	0.817	0.000	0.009
		B		0.000	0.000	0.817	0.000	0.005
L33	39.420-34.420	C	0.860	0.000	0.000	1.336	0.000	0.016
		A		0.000	0.000	16.326	0.000	0.172
		B		0.000	0.000	16.326	0.000	0.095
L34	34.420-32.500	C	0.851	0.000	0.000	26.681	0.000	0.321
		A		0.000	0.000	7.197	0.000	0.070
		B		0.000	0.000	7.197	0.000	0.041
L35	32.500-32.250	C	0.848	0.000	0.000	11.166	0.000	0.127
		A		0.000	0.000	1.097	0.000	0.010
		B		0.000	0.000	1.097	0.000	0.006
L36	32.250-31.420	C	0.847	0.000	0.000	1.613	0.000	0.017
		A		0.000	0.000	3.640	0.000	0.033
		B		0.000	0.000	3.640	0.000	0.020
L37	31.420-31.170	C	0.846	0.000	0.000	5.354	0.000	0.057
		A		0.000	0.000	1.096	0.000	0.010
		B		0.000	0.000	1.096	0.000	0.006
L38	31.170-29.000	C	0.842	0.000	0.000	1.612	0.000	0.017
		A		0.000	0.000	9.734	0.000	0.088
		B		0.000	0.000	7.729	0.000	0.044
L39	29.000-28.650	C	0.839	0.000	0.000	14.211	0.000	0.152
		A		0.000	0.000	1.489	0.000	0.014
		B		0.000	0.000	1.139	0.000	0.007
L40	28.650-28.420	C	0.838	0.000	0.000	2.211	0.000	0.024
		A		0.000	0.000	0.979	0.000	0.009
		B		0.000	0.000	0.748	0.000	0.004
L41	28.420-23.500	C	0.830	0.000	0.000	1.453	0.000	0.016
		A		0.000	0.000	19.559	0.000	0.186
		B		0.000	0.000	14.632	0.000	0.084
L42	23.500-23.250	C	0.821	0.000	0.000	29.682	0.000	0.330
		A		0.000	0.000	1.062	0.000	0.010
		B		0.000	0.000	0.812	0.000	0.005
L43	23.250-23.000	C	0.820	0.000	0.000	1.575	0.000	0.017
		A		0.000	0.000	1.062	0.000	0.010
		B		0.000	0.000	0.812	0.000	0.005
L44	23.000-22.750	C	0.819	0.000	0.000	1.575	0.000	0.017
		A		0.000	0.000	1.062	0.000	0.010
		B		0.000	0.000	0.812	0.000	0.005
L45	22.750-17.750	C	0.809	0.000	0.000	1.575	0.000	0.017
		A		0.000	0.000	17.952	0.000	0.175
		B		0.000	0.000	16.203	0.000	0.090
L46	17.750-12.750	C	0.787	0.000	0.000	28.193	0.000	0.319
		A		0.000	0.000	16.135	0.000	0.163
		B		0.000	0.000	16.135	0.000	0.087
L47	12.750-7.750	C	0.756	0.000	0.000	26.326	0.000	0.305
		A		0.000	0.000	16.043	0.000	0.160
		B		0.000	0.000	16.043	0.000	0.084
L48	7.750-2.750	C	0.707	0.000	0.000	26.165	0.000	0.298
		A		0.000	0.000	15.896	0.000	0.154
		B		0.000	0.000	15.896	0.000	0.078
L49	2.750-0.000	C	0.618	0.000	0.000	25.907	0.000	0.288
		A		0.000	0.000	7.034	0.000	0.074
		B		0.000	0.000	7.034	0.000	0.032
		C		0.000	0.000	12.430	0.000	0.142

Feed Line Center of Pressure

Section	Elevation	CP_x	CP_z	CP_x	CP_z
	ft	in	in	Ice in	Ice in
L1	140.000-135.000	-0.041	0.985	-0.043	1.035
L2	135.000-130.000	-0.063	1.502	-0.066	1.584
L3	130.000-125.000	-0.063	1.508	-0.067	1.601
L4	125.000-120.000	-0.063	1.514	-0.068	1.615
L5	120.000-115.000	1.823	2.971	1.701	2.999
L6	115.000-114.750	1.766	2.622	1.883	2.945
L7	114.750-109.750	1.786	2.654	1.909	2.990
L8	109.750-104.750	1.822	2.712	1.959	3.073
L9	104.750-101.580	1.951	2.908	2.099	3.298
L10	101.580-101.330	3.024	4.509	3.148	4.949
L11	101.330-96.330	3.500	5.223	3.173	4.992
L12	96.330-91.330	2.728	4.077	2.616	4.122
L13	91.330-91.000	1.880	2.812	1.929	3.041
L14	91.000-90.750	1.884	2.817	1.932	3.046
L15	90.750-85.750	1.911	2.859	1.954	3.083
L16	85.750-80.750	1.961	2.938	1.996	3.152
L17	80.750-75.750	2.011	3.016	2.037	3.219
L18	75.750-70.750	1.842	2.766	1.900	3.005
L19	70.750-69.980	1.419	2.132	1.533	2.426
L20	69.980-69.730	1.423	2.138	1.536	2.431
L21	69.730-64.730	1.778	2.672	1.866	2.955
L22	64.730-63.000	1.466	2.205	1.579	2.501
L23	63.000-62.750	1.474	2.216	1.585	2.512
L24	62.750-59.080	1.357	2.041	1.468	2.326
L25	59.080-58.820	1.202	1.810	1.311	2.078
L26	58.820-58.670	1.204	1.811	1.313	2.080
L27	58.670-53.670	1.466	2.207	1.548	2.455
L28	53.670-48.580	1.605	2.419	1.674	2.654
L29	48.580-47.580	1.664	2.507	1.738	2.757
L30	47.580-42.580	1.685	2.541	1.757	2.786
L31	42.580-39.670	1.399	2.110	1.496	2.371
L32	39.670-39.420	1.300	1.961	1.402	2.223
L33	39.420-34.420	1.315	1.985	1.416	2.246
L34	34.420-32.500	1.212	1.830	1.316	2.086
L35	32.500-32.250	1.086	1.640	1.192	1.889
L36	32.250-31.420	1.088	1.644	1.194	1.893
L37	31.420-31.170	1.091	1.648	1.197	1.897
L38	31.170-29.000	0.826	2.839	0.986	2.939
L39	29.000-28.650	0.843	3.094	1.009	3.163
L40	28.650-28.420	0.844	3.098	1.010	3.166
L41	28.420-23.500	0.898	3.302	1.067	3.349
L42	23.500-23.250	0.861	3.173	1.028	3.230
L43	23.250-23.000	0.862	3.177	1.029	3.233
L44	23.000-22.750	0.863	3.180	1.029	3.235
L45	22.750-17.750	1.215	2.563	1.329	2.709
L46	17.750-12.750	1.456	2.204	1.528	2.416
L47	12.750-7.750	1.484	2.247	1.554	2.452
L48	7.750-2.750	1.512	2.290	1.580	2.483
L49	2.750-0.000	1.745	2.645	1.787	2.789

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

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L1	40	HB158-21U6S12-XXXM-01(1-5/8)	135.00 - 138.00	1.0000	1.0000
L2	40	HB158-21U6S12-XXXM-01(1-5/8)	130.00 - 135.00	1.0000	1.0000
L3	40	HB158-21U6S12-XXXM-01(1-5/8)	125.00 - 130.00	1.0000	1.0000
L4	40	HB158-21U6S12-XXXM-01(1-5/8)	120.00 - 125.00	1.0000	1.0000
L5	28	CCI-65FP-045100	115.00 - 117.00	1.0000	1.0000
L5	29	CCI-65FP-045100	115.00 - 117.00	1.0000	1.0000
L5	30	CCI-65FP-045100	115.00 - 117.00	1.0000	1.0000
L5	40	HB158-21U6S12-XXXM-01(1-5/8)	115.00 - 120.00	1.0000	1.0000
L5	54	LDF7-50A(1-5/8)	115.00 - 118.00	1.0000	1.0000
L6	28	CCI-65FP-045100	114.75 - 115.00	1.0000	1.0000
L6	29	CCI-65FP-045100	114.75 - 115.00	1.0000	1.0000
L6	30	CCI-65FP-045100	114.75 - 115.00	1.0000	1.0000
L6	40	HB158-21U6S12-XXXM-01(1-5/8)	114.75 - 115.00	1.0000	1.0000
L6	54	LDF7-50A(1-5/8)	114.75 - 115.00	1.0000	1.0000
L7	28	CCI-65FP-045100	109.75 - 114.75	1.0000	1.0000
L7	29	CCI-65FP-045100	109.75 - 114.75	1.0000	1.0000
L7	30	CCI-65FP-045100	109.75 - 114.75	1.0000	1.0000
L7	40	HB158-21U6S12-XXXM-01(1-5/8)	109.75 - 114.75	1.0000	1.0000
L7	54	LDF7-50A(1-5/8)	109.75 - 114.75	1.0000	1.0000
L8	28	CCI-65FP-045100	104.75 - 109.75	1.0000	1.0000
L8	29	CCI-65FP-045100	104.75 - 109.75	1.0000	1.0000
L8	30	CCI-65FP-045100	104.75 - 109.75	1.0000	1.0000
L8	40	HB158-21U6S12-XXXM-01(1-5/8)	104.75 - 109.75	1.0000	1.0000
L8	54	LDF7-50A(1-5/8)	104.75 - 109.75	1.0000	1.0000
L9	28	CCI-65FP-045100	102.00 - 104.75	1.0000	1.0000
L9	29	CCI-65FP-045100	102.00 - 104.75	1.0000	1.0000
L9	30	CCI-65FP-045100	102.00 - 104.75	1.0000	1.0000
L9	40	HB158-21U6S12-XXXM-01(1-5/8)	101.58 - 104.75	1.0000	1.0000
L9	54	LDF7-50A(1-5/8)	101.58 - 104.75	1.0000	1.0000
L10	40	HB158-21U6S12-XXXM-01(1-5/8)	101.33 - 101.58	1.0000	1.0000
L10	54	LDF7-50A(1-5/8)	101.33 - 101.58	1.0000	1.0000
L11	40	HB158-21U6S12-XXXM-01(1-5/8)	96.33 - 101.33	1.0000	1.0000
L11	54	LDF7-50A(1-5/8)	96.33 - 101.33	1.0000	1.0000
L12	25	CCI-65FP-060100	91.33 - 93.00	1.0000	1.0000
L12	26	CCI-65FP-060100	91.33 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
			93.00		
L12	27	CCI-65FP-060100	91.33 -	1.0000	1.0000
			93.00		
L12	40	HB158-21U6S12-XXXM-01(1-5/8)	91.33 -	1.0000	1.0000
			96.33		
L12	54	LDF7-50A(1-5/8)	91.33 -	1.0000	1.0000
			96.33		
L13	25	CCI-65FP-060100	91.00 -	1.0000	1.0000
			91.33		
L13	26	CCI-65FP-060100	91.00 -	1.0000	1.0000
			91.33		
L13	27	CCI-65FP-060100	91.00 -	1.0000	1.0000
			91.33		
L13	40	HB158-21U6S12-XXXM-01(1-5/8)	91.00 -	1.0000	1.0000
			91.33		
L13	54	LDF7-50A(1-5/8)	91.00 -	1.0000	1.0000
			91.33		
L14	25	CCI-65FP-060100	90.75 -	1.0000	1.0000
			91.00		
L14	26	CCI-65FP-060100	90.75 -	1.0000	1.0000
			91.00		
L14	27	CCI-65FP-060100	90.75 -	1.0000	1.0000
			91.00		
L14	40	HB158-21U6S12-XXXM-01(1-5/8)	90.75 -	1.0000	1.0000
			91.00		
L14	54	LDF7-50A(1-5/8)	90.75 -	1.0000	1.0000
			91.00		
L15	25	CCI-65FP-060100	85.75 -	1.0000	1.0000
			90.75		
L15	26	CCI-65FP-060100	85.75 -	1.0000	1.0000
			90.75		
L15	27	CCI-65FP-060100	85.75 -	1.0000	1.0000
			90.75		
L15	40	HB158-21U6S12-XXXM-01(1-5/8)	85.75 -	1.0000	1.0000
			90.75		
L15	54	LDF7-50A(1-5/8)	85.75 -	1.0000	1.0000
			90.75		
L16	25	CCI-65FP-060100	80.75 -	1.0000	1.0000
			85.75		
L16	26	CCI-65FP-060100	80.75 -	1.0000	1.0000
			85.75		
L16	27	CCI-65FP-060100	80.75 -	1.0000	1.0000
			85.75		
L16	40	HB158-21U6S12-XXXM-01(1-5/8)	80.75 -	1.0000	1.0000
			85.75		
L16	54	LDF7-50A(1-5/8)	80.75 -	1.0000	1.0000
			85.75		
L17	25	CCI-65FP-060100	75.75 -	1.0000	1.0000
			80.75		
L17	26	CCI-65FP-060100	75.75 -	1.0000	1.0000
			80.75		
L17	27	CCI-65FP-060100	75.75 -	1.0000	1.0000
			80.75		
L17	40	HB158-21U6S12-XXXM-01(1-5/8)	75.75 -	1.0000	1.0000
			80.75		
L17	54	LDF7-50A(1-5/8)	75.75 -	1.0000	1.0000
			80.75		
L18	7	5.75" x 1" Flat Plate	70.75 -	1.0000	1.0000
			72.00		
L18	8	5.75" x 1" Flat Plate	70.75 -	1.0000	1.0000
			72.00		
L18	9	5.75" x 1" Flat Plate	70.75 -	1.0000	1.0000
			72.00		
L18	25	CCI-65FP-060100	70.75 -	1.0000	1.0000
			75.75		
L18	26	CCI-65FP-060100	70.75 -	1.0000	1.0000
			75.75		
L18	27	CCI-65FP-060100	70.75 -	1.0000	1.0000
			75.75		

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L18	40	HB158-21U6S12-XXXM-01(1-5/8)	70.75 - 75.75	1.0000	1.0000
L18	54	LDF7-50A(1-5/8)	70.75 - 75.75	1.0000	1.0000
L19	7	5.75" x 1" Flat Plate	69.98 - 70.75	1.0000	1.0000
L19	8	5.75" x 1" Flat Plate	69.98 - 70.75	1.0000	1.0000
L19	9	5.75" x 1" Flat Plate	69.98 - 70.75	1.0000	1.0000
L19	25	CCI-65FP-060100	69.98 - 70.75	1.0000	1.0000
L19	26	CCI-65FP-060100	69.98 - 70.75	1.0000	1.0000
L19	27	CCI-65FP-060100	69.98 - 70.75	1.0000	1.0000
L19	40	HB158-21U6S12-XXXM-01(1-5/8)	69.98 - 70.75	1.0000	1.0000
L19	54	LDF7-50A(1-5/8)	69.98 - 70.75	1.0000	1.0000
L20	7	5.75" x 1" Flat Plate	69.73 - 69.98	1.0000	1.0000
L20	8	5.75" x 1" Flat Plate	69.73 - 69.98	1.0000	1.0000
L20	9	5.75" x 1" Flat Plate	69.73 - 69.98	1.0000	1.0000
L20	25	CCI-65FP-060100	69.73 - 69.98	1.0000	1.0000
L20	26	CCI-65FP-060100	69.73 - 69.98	1.0000	1.0000
L20	27	CCI-65FP-060100	69.73 - 69.98	1.0000	1.0000
L20	40	HB158-21U6S12-XXXM-01(1-5/8)	69.73 - 69.98	1.0000	1.0000
L20	54	LDF7-50A(1-5/8)	69.73 - 69.98	1.0000	1.0000
L21	7	5.75" x 1" Flat Plate	64.73 - 69.73	1.0000	1.0000
L21	8	5.75" x 1" Flat Plate	64.73 - 69.73	1.0000	1.0000
L21	9	5.75" x 1" Flat Plate	64.73 - 69.73	1.0000	1.0000
L21	22	CCI-65FP-060100	64.73 - 65.00	1.0000	1.0000
L21	23	CCI-65FP-060100	64.73 - 65.00	1.0000	1.0000
L21	24	CCI-65FP-060100	64.73 - 65.00	1.0000	1.0000
L21	25	CCI-65FP-060100	68.00 - 69.73	1.0000	1.0000
L21	26	CCI-65FP-060100	68.00 - 69.73	1.0000	1.0000
L21	27	CCI-65FP-060100	68.00 - 69.73	1.0000	1.0000
L21	40	HB158-21U6S12-XXXM-01(1-5/8)	64.73 - 69.73	1.0000	1.0000
L21	54	LDF7-50A(1-5/8)	64.73 - 69.73	1.0000	1.0000
L22	7	5.75" x 1" Flat Plate	63.00 - 64.73	1.0000	1.0000
L22	8	5.75" x 1" Flat Plate	63.00 - 64.73	1.0000	1.0000
L22	9	5.75" x 1" Flat Plate	63.00 - 64.73	1.0000	1.0000
L22	22	CCI-65FP-060100	63.00 - 64.73	1.0000	1.0000
L22	23	CCI-65FP-060100	63.00 - 64.73	1.0000	1.0000
L22	24	CCI-65FP-060100	63.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L22	40	HB158-21U6S12-XXXM-01(1-5/8)	64.73 63.00 - 64.73	1.0000	1.0000
L22	54	LDF7-50A(1-5/8)	63.00 - 64.73	1.0000	1.0000
L23	7	5.75" x 1" Flat Plate	62.75 - 63.00	1.0000	1.0000
L23	8	5.75" x 1" Flat Plate	62.75 - 63.00	1.0000	1.0000
L23	9	5.75" x 1" Flat Plate	62.75 - 63.00	1.0000	1.0000
L23	22	CCI-65FP-060100	62.75 - 63.00	1.0000	1.0000
L23	23	CCI-65FP-060100	62.75 - 63.00	1.0000	1.0000
L23	24	CCI-65FP-060100	62.75 - 63.00	1.0000	1.0000
L23	40	HB158-21U6S12-XXXM-01(1-5/8)	62.75 - 63.00	1.0000	1.0000
L23	54	LDF7-50A(1-5/8)	62.75 - 63.00	1.0000	1.0000
L24	7	5.75" x 1" Flat Plate	59.08 - 62.75	1.0000	1.0000
L24	8	5.75" x 1" Flat Plate	59.08 - 62.75	1.0000	1.0000
L24	9	5.75" x 1" Flat Plate	59.08 - 62.75	1.0000	1.0000
L24	11	MP3-04	59.08 - 60.50	1.0000	1.0000
L24	12	MP3-04	59.08 - 60.50	1.0000	1.0000
L24	13	MP3-04	59.08 - 60.50	1.0000	1.0000
L24	22	CCI-65FP-060100	59.08 - 62.75	1.0000	1.0000
L24	23	CCI-65FP-060100	59.08 - 62.75	1.0000	1.0000
L24	24	CCI-65FP-060100	59.08 - 62.75	1.0000	1.0000
L24	40	HB158-21U6S12-XXXM-01(1-5/8)	59.08 - 62.75	1.0000	1.0000
L24	54	LDF7-50A(1-5/8)	59.08 - 62.75	1.0000	1.0000
L25	7	5.75" x 1" Flat Plate	58.82 - 59.08	1.0000	1.0000
L25	8	5.75" x 1" Flat Plate	58.82 - 59.08	1.0000	1.0000
L25	9	5.75" x 1" Flat Plate	58.82 - 59.08	1.0000	1.0000
L25	11	MP3-04	58.82 - 59.08	1.0000	1.0000
L25	12	MP3-04	58.82 - 59.08	1.0000	1.0000
L25	13	MP3-04	58.82 - 59.08	1.0000	1.0000
L25	22	CCI-65FP-060100	58.82 - 59.08	1.0000	1.0000
L25	23	CCI-65FP-060100	58.82 - 59.08	1.0000	1.0000
L25	24	CCI-65FP-060100	58.82 - 59.08	1.0000	1.0000
L25	40	HB158-21U6S12-XXXM-01(1-5/8)	58.82 - 59.08	1.0000	1.0000
L25	54	LDF7-50A(1-5/8)	58.82 - 59.08	1.0000	1.0000
L26	7	5.75" x 1" Flat Plate	58.67 - 58.82	1.0000	1.0000
L26	8	5.75" x 1" Flat Plate	58.67 - 58.82	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L26	9	5.75" x 1" Flat Plate	58.67 - 58.82	1.0000	1.0000
L26	11	MP3-04	58.67 - 58.82	1.0000	1.0000
L26	12	MP3-04	58.67 - 58.82	1.0000	1.0000
L26	13	MP3-04	58.67 - 58.82	1.0000	1.0000
L26	22	CCI-65FP-060100	58.67 - 58.82	1.0000	1.0000
L26	23	CCI-65FP-060100	58.67 - 58.82	1.0000	1.0000
L26	24	CCI-65FP-060100	58.67 - 58.82	1.0000	1.0000
L26	40	HB158-21U6S12-XXXM-01(1-5/8)	58.67 - 58.82	1.0000	1.0000
L26	54	LDF7-50A(1-5/8)	58.67 - 58.82	1.0000	1.0000
L27	7	5.75" x 1" Flat Plate	57.00 - 58.67	1.0000	1.0000
L27	8	5.75" x 1" Flat Plate	57.00 - 58.67	1.0000	1.0000
L27	9	5.75" x 1" Flat Plate	57.00 - 58.67	1.0000	1.0000
L27	11	MP3-04	53.67 - 58.67	1.0000	1.0000
L27	12	MP3-04	53.67 - 58.67	1.0000	1.0000
L27	13	MP3-04	53.67 - 58.67	1.0000	1.0000
L27	22	CCI-65FP-060100	53.67 - 58.67	1.0000	1.0000
L27	23	CCI-65FP-060100	53.67 - 58.67	1.0000	1.0000
L27	24	CCI-65FP-060100	53.67 - 58.67	1.0000	1.0000
L27	40	HB158-21U6S12-XXXM-01(1-5/8)	53.67 - 58.67	1.0000	1.0000
L27	54	LDF7-50A(1-5/8)	53.67 - 58.67	1.0000	1.0000
L28	4	5.75" x 1" Flat Plate	48.58 - 50.58	1.0000	1.0000
L28	5	5.75" x 1" Flat Plate	48.58 - 50.58	1.0000	1.0000
L28	6	5.75" x 1" Flat Plate	48.58 - 50.58	1.0000	1.0000
L28	11	MP3-04	48.58 - 53.67	1.0000	1.0000
L28	12	MP3-04	48.58 - 53.67	1.0000	1.0000
L28	13	MP3-04	48.58 - 53.67	1.0000	1.0000
L28	22	CCI-65FP-060100	50.00 - 53.67	1.0000	1.0000
L28	23	CCI-65FP-060100	50.00 - 53.67	1.0000	1.0000
L28	24	CCI-65FP-060100	50.00 - 53.67	1.0000	1.0000
L28	40	HB158-21U6S12-XXXM-01(1-5/8)	48.58 - 53.67	1.0000	1.0000
L28	54	LDF7-50A(1-5/8)	48.58 - 53.67	1.0000	1.0000
L29	4	5.75" x 1" Flat Plate	47.58 - 48.58	1.0000	1.0000
L29	5	5.75" x 1" Flat Plate	47.58 - 48.58	1.0000	1.0000
L29	6	5.75" x 1" Flat Plate	47.58 - 48.58	1.0000	1.0000
L29	11	MP3-04	47.58 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L29	12	MP3-04	48.58 47.58 -	1.0000	1.0000
L29	13	MP3-04	48.58 47.58 -	1.0000	1.0000
L29	40	HB158-21U6S12-XXXM-01(1-5/8)	48.58 47.58 -	1.0000	1.0000
L29	54	LDF7-50A(1-5/8)	48.58 47.58 -	1.0000	1.0000
L30	4	5.75" x 1" Flat Plate	48.58 42.58 -	1.0000	1.0000
L30	5	5.75" x 1" Flat Plate	47.58 42.58 -	1.0000	1.0000
L30	6	5.75" x 1" Flat Plate	47.58 42.58 -	1.0000	1.0000
L30	11	MP3-04	47.58 42.58 -	1.0000	1.0000
L30	12	MP3-04	47.58 42.58 -	1.0000	1.0000
L30	13	MP3-04	47.58 42.58 -	1.0000	1.0000
L30	40	HB158-21U6S12-XXXM-01(1-5/8)	47.58 42.58 -	1.0000	1.0000
L30	54	LDF7-50A(1-5/8)	47.58 42.58 -	1.0000	1.0000
L31	4	5.75" x 1" Flat Plate	47.58 39.67 -	1.0000	1.0000
L31	5	5.75" x 1" Flat Plate	42.58 39.67 -	1.0000	1.0000
L31	6	5.75" x 1" Flat Plate	42.58 39.67 -	1.0000	1.0000
L31	11	MP3-04	42.58 39.67 -	1.0000	1.0000
L31	12	MP3-04	42.58 39.67 -	1.0000	1.0000
L31	13	MP3-04	42.58 39.67 -	1.0000	1.0000
L31	15	CCI-65FP-060100	42.58 39.67 -	1.0000	1.0000
L31	16	CCI-65FP-060100	41.67 39.67 -	1.0000	1.0000
L31	17	CCI-65FP-060100	41.67 39.67 -	1.0000	1.0000
L31	40	HB158-21U6S12-XXXM-01(1-5/8)	41.67 39.67 -	1.0000	1.0000
L31	54	LDF7-50A(1-5/8)	42.58 39.67 -	1.0000	1.0000
L32	4	5.75" x 1" Flat Plate	42.58 39.42 -	1.0000	1.0000
L32	5	5.75" x 1" Flat Plate	39.67 39.42 -	1.0000	1.0000
L32	6	5.75" x 1" Flat Plate	39.67 39.42 -	1.0000	1.0000
L32	11	MP3-04	39.67 39.42 -	1.0000	1.0000
L32	12	MP3-04	39.67 39.42 -	1.0000	1.0000
L32	13	MP3-04	39.67 39.42 -	1.0000	1.0000
L32	15	CCI-65FP-060100	39.67 39.42 -	1.0000	1.0000
L32	16	CCI-65FP-060100	39.67 39.42 -	1.0000	1.0000
L32	17	CCI-65FP-060100	39.67 39.42 -	1.0000	1.0000
L32	40	HB158-21U6S12-XXXM-01(1-5/8)	39.67 39.42 -	1.0000	1.0000
L32	54	LDF7-50A(1-5/8)	39.67 39.42 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L33	4	5.75" x 1" Flat Plate	34.42 - 39.42	1.0000	1.0000
L33	5	5.75" x 1" Flat Plate	34.42 - 39.42	1.0000	1.0000
L33	6	5.75" x 1" Flat Plate	34.42 - 39.42	1.0000	1.0000
L33	11	MP3-04	34.42 - 39.42	1.0000	1.0000
L33	12	MP3-04	34.42 - 39.42	1.0000	1.0000
L33	13	MP3-04	34.42 - 39.42	1.0000	1.0000
L33	15	CCI-65FP-060100	34.42 - 39.42	1.0000	1.0000
L33	16	CCI-65FP-060100	34.42 - 39.42	1.0000	1.0000
L33	17	CCI-65FP-060100	34.42 - 39.42	1.0000	1.0000
L33	40	HB158-21U6S12-XXXM- 01(1-5/8)	34.42 - 39.42	1.0000	1.0000
L33	54	LDF7-50A(1-5/8)	34.42 - 39.42	1.0000	1.0000
L34	1	5.75" x 1" Flat Plate	32.50 - 33.33	1.0000	1.0000
L34	2	5.75" x 1" Flat Plate	32.50 - 33.33	1.0000	1.0000
L34	3	5.75" x 1" Flat Plate	32.50 - 33.33	1.0000	1.0000
L34	4	5.75" x 1" Flat Plate	32.50 - 34.42	1.0000	1.0000
L34	5	5.75" x 1" Flat Plate	32.50 - 34.42	1.0000	1.0000
L34	6	5.75" x 1" Flat Plate	32.50 - 34.42	1.0000	1.0000
L34	11	MP3-04	32.50 - 34.42	1.0000	1.0000
L34	12	MP3-04	32.50 - 34.42	1.0000	1.0000
L34	13	MP3-04	32.50 - 34.42	1.0000	1.0000
L34	15	CCI-65FP-060100	32.50 - 34.42	1.0000	1.0000
L34	16	CCI-65FP-060100	32.50 - 34.42	1.0000	1.0000
L34	17	CCI-65FP-060100	32.50 - 34.42	1.0000	1.0000
L34	40	HB158-21U6S12-XXXM- 01(1-5/8)	32.50 - 34.42	1.0000	1.0000
L34	54	LDF7-50A(1-5/8)	32.50 - 34.42	1.0000	1.0000
L35	1	5.75" x 1" Flat Plate	32.25 - 32.50	1.0000	1.0000
L35	2	5.75" x 1" Flat Plate	32.25 - 32.50	1.0000	1.0000
L35	3	5.75" x 1" Flat Plate	32.25 - 32.50	1.0000	1.0000
L35	4	5.75" x 1" Flat Plate	32.25 - 32.50	1.0000	1.0000
L35	5	5.75" x 1" Flat Plate	32.25 - 32.50	1.0000	1.0000
L35	6	5.75" x 1" Flat Plate	32.25 - 32.50	1.0000	1.0000
L35	11	MP3-04	32.25 - 32.50	1.0000	1.0000
L35	12	MP3-04	32.25 - 32.50	1.0000	1.0000
L35	13	MP3-04	32.25 - 32.50	1.0000	1.0000
L35	15	CCI-65FP-060100	32.25 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L35	16	CCI-65FP-060100	32.50 32.25 -	1.0000	1.0000
L35	17	CCI-65FP-060100	32.50 32.25 -	1.0000	1.0000
L35	40	HB158-21U6S12-XXXM-01(1-5/8)	32.50 32.25 -	1.0000	1.0000
L35	54	LDF7-50A(1-5/8)	32.50 32.25 -	1.0000	1.0000
L36	1	5.75" x 1" Flat Plate	31.42 - 32.25	1.0000	1.0000
L36	2	5.75" x 1" Flat Plate	31.42 - 32.25	1.0000	1.0000
L36	3	5.75" x 1" Flat Plate	31.42 - 32.25	1.0000	1.0000
L36	4	5.75" x 1" Flat Plate	31.42 - 32.25	1.0000	1.0000
L36	5	5.75" x 1" Flat Plate	31.42 - 32.25	1.0000	1.0000
L36	6	5.75" x 1" Flat Plate	31.42 - 32.25	1.0000	1.0000
L36	11	MP3-04	31.42 - 32.25	1.0000	1.0000
L36	12	MP3-04	31.42 - 32.25	1.0000	1.0000
L36	13	MP3-04	31.42 - 32.25	1.0000	1.0000
L36	15	CCI-65FP-060100	31.42 - 32.25	1.0000	1.0000
L36	16	CCI-65FP-060100	31.42 - 32.25	1.0000	1.0000
L36	17	CCI-65FP-060100	31.42 - 32.25	1.0000	1.0000
L36	40	HB158-21U6S12-XXXM-01(1-5/8)	31.42 - 32.25	1.0000	1.0000
L36	54	LDF7-50A(1-5/8)	31.42 - 32.25	1.0000	1.0000
L37	1	5.75" x 1" Flat Plate	31.17 - 31.42	1.0000	1.0000
L37	2	5.75" x 1" Flat Plate	31.17 - 31.42	1.0000	1.0000
L37	3	5.75" x 1" Flat Plate	31.17 - 31.42	1.0000	1.0000
L37	4	5.75" x 1" Flat Plate	31.17 - 31.42	1.0000	1.0000
L37	5	5.75" x 1" Flat Plate	31.17 - 31.42	1.0000	1.0000
L37	6	5.75" x 1" Flat Plate	31.17 - 31.42	1.0000	1.0000
L37	11	MP3-04	31.17 - 31.42	1.0000	1.0000
L37	12	MP3-04	31.17 - 31.42	1.0000	1.0000
L37	13	MP3-04	31.17 - 31.42	1.0000	1.0000
L37	15	CCI-65FP-060100	31.17 - 31.42	1.0000	1.0000
L37	16	CCI-65FP-060100	31.17 - 31.42	1.0000	1.0000
L37	17	CCI-65FP-060100	31.17 - 31.42	1.0000	1.0000
L37	40	HB158-21U6S12-XXXM-01(1-5/8)	31.17 - 31.42	1.0000	1.0000
L37	54	LDF7-50A(1-5/8)	31.17 - 31.42	1.0000	1.0000
L38	1	5.75" x 1" Flat Plate	29.00 - 31.17	1.0000	1.0000
L38	2	5.75" x 1" Flat Plate	29.00 - 31.17	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L38	3	5.75" x 1" Flat Plate	29.00 - 31.17	1.0000	1.0000
L38	4	5.75" x 1" Flat Plate	30.58 - 31.17	1.0000	1.0000
L38	5	5.75" x 1" Flat Plate	30.58 - 31.17	1.0000	1.0000
L38	6	5.75" x 1" Flat Plate	30.58 - 31.17	1.0000	1.0000
L38	11	MP3-04	29.00 - 31.17	1.0000	1.0000
L38	12	MP3-04	29.00 - 31.17	1.0000	1.0000
L38	13	MP3-04	29.00 - 31.17	1.0000	1.0000
L38	15	CCI-65FP-060100	29.00 - 31.17	1.0000	1.0000
L38	16	CCI-65FP-060100	29.00 - 31.17	1.0000	1.0000
L38	17	CCI-65FP-060100	29.00 - 31.17	1.0000	1.0000
L38	32	CCI-65FP-060100	29.00 - 31.00	1.0000	1.0000
L38	33	CCI-65FP-060100	29.00 - 31.00	1.0000	1.0000
L38	40	HB158-21U6S12-XXXM-01(1-5/8)	29.00 - 31.17	1.0000	1.0000
L38	54	LDF7-50A(1-5/8)	29.00 - 31.17	1.0000	1.0000
L39	1	5.75" x 1" Flat Plate	28.65 - 29.00	1.0000	1.0000
L39	2	5.75" x 1" Flat Plate	28.65 - 29.00	1.0000	1.0000
L39	3	5.75" x 1" Flat Plate	28.65 - 29.00	1.0000	1.0000
L39	11	MP3-04	28.65 - 29.00	1.0000	1.0000
L39	12	MP3-04	28.65 - 29.00	1.0000	1.0000
L39	13	MP3-04	28.65 - 29.00	1.0000	1.0000
L39	15	CCI-65FP-060100	28.65 - 29.00	1.0000	1.0000
L39	16	CCI-65FP-060100	28.65 - 29.00	1.0000	1.0000
L39	17	CCI-65FP-060100	28.65 - 29.00	1.0000	1.0000
L39	32	CCI-65FP-060100	28.65 - 29.00	1.0000	1.0000
L39	33	CCI-65FP-060100	28.65 - 29.00	1.0000	1.0000
L39	40	HB158-21U6S12-XXXM-01(1-5/8)	28.65 - 29.00	1.0000	1.0000
L39	54	LDF7-50A(1-5/8)	28.65 - 29.00	1.0000	1.0000
L40	1	5.75" x 1" Flat Plate	28.42 - 28.65	1.0000	1.0000
L40	2	5.75" x 1" Flat Plate	28.42 - 28.65	1.0000	1.0000
L40	3	5.75" x 1" Flat Plate	28.42 - 28.65	1.0000	1.0000
L40	11	MP3-04	28.42 - 28.65	1.0000	1.0000
L40	12	MP3-04	28.42 - 28.65	1.0000	1.0000
L40	13	MP3-04	28.42 - 28.65	1.0000	1.0000
L40	15	CCI-65FP-060100	28.42 - 28.65	1.0000	1.0000
L40	16	CCI-65FP-060100	28.42 - 28.65	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
			28.65		
L40	17	CCI-65FP-060100	28.42 -	1.0000	1.0000
			28.65		
L40	32	CCI-65FP-060100	28.42 -	1.0000	1.0000
			28.65		
L40	33	CCI-65FP-060100	28.42 -	1.0000	1.0000
			28.65		
L40	40	HB158-21U6S12-XXXM-01(1-5/8)	28.42 -	1.0000	1.0000
			28.65		
L40	54	LDF7-50A(1-5/8)	28.42 -	1.0000	1.0000
			28.65		
L41	1	5.75" x 1" Flat Plate	23.50 -	1.0000	1.0000
			28.42		
L41	2	5.75" x 1" Flat Plate	23.50 -	1.0000	1.0000
			28.42		
L41	3	5.75" x 1" Flat Plate	23.50 -	1.0000	1.0000
			28.42		
L41	11	MP3-04	23.50 -	1.0000	1.0000
			28.42		
L41	12	MP3-04	23.50 -	1.0000	1.0000
			28.42		
L41	13	MP3-04	23.50 -	1.0000	1.0000
			28.42		
L41	15	CCI-65FP-060100	26.67 -	1.0000	1.0000
			28.42		
L41	16	CCI-65FP-060100	26.67 -	1.0000	1.0000
			28.42		
L41	17	CCI-65FP-060100	26.67 -	1.0000	1.0000
			28.42		
L41	19	CCI-65FP-060100	23.50 -	1.0000	1.0000
			25.50		
L41	20	CCI-65FP-060100	23.50 -	1.0000	1.0000
			25.50		
L41	21	CCI-65FP-060100	23.50 -	1.0000	1.0000
			25.50		
L41	32	CCI-65FP-060100	23.50 -	1.0000	1.0000
			28.42		
L41	33	CCI-65FP-060100	23.50 -	1.0000	1.0000
			28.42		
L41	40	HB158-21U6S12-XXXM-01(1-5/8)	23.50 -	1.0000	1.0000
			28.42		
L41	54	LDF7-50A(1-5/8)	23.50 -	1.0000	1.0000
			28.42		
L42	1	5.75" x 1" Flat Plate	23.25 -	1.0000	1.0000
			23.50		
L42	2	5.75" x 1" Flat Plate	23.25 -	1.0000	1.0000
			23.50		
L42	3	5.75" x 1" Flat Plate	23.25 -	1.0000	1.0000
			23.50		
L42	11	MP3-04	23.25 -	1.0000	1.0000
			23.50		
L42	12	MP3-04	23.25 -	1.0000	1.0000
			23.50		
L42	13	MP3-04	23.25 -	1.0000	1.0000
			23.50		
L42	19	CCI-65FP-060100	23.25 -	1.0000	1.0000
			23.50		
L42	20	CCI-65FP-060100	23.25 -	1.0000	1.0000
			23.50		
L42	21	CCI-65FP-060100	23.25 -	1.0000	1.0000
			23.50		
L42	32	CCI-65FP-060100	23.25 -	1.0000	1.0000
			23.50		
L42	33	CCI-65FP-060100	23.25 -	1.0000	1.0000
			23.50		
L42	40	HB158-21U6S12-XXXM-01(1-5/8)	23.25 -	1.0000	1.0000
			23.50		
L42	54	LDF7-50A(1-5/8)	23.25 -	1.0000	1.0000
			23.50		

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L43	1	5.75" x 1" Flat Plate	23.00 - 23.25	1.0000	1.0000
L43	2	5.75" x 1" Flat Plate	23.00 - 23.25	1.0000	1.0000
L43	3	5.75" x 1" Flat Plate	23.00 - 23.25	1.0000	1.0000
L43	11	MP3-04	23.00 - 23.25	1.0000	1.0000
L43	12	MP3-04	23.00 - 23.25	1.0000	1.0000
L43	13	MP3-04	23.00 - 23.25	1.0000	1.0000
L43	19	CCI-65FP-060100	23.00 - 23.25	1.0000	1.0000
L43	20	CCI-65FP-060100	23.00 - 23.25	1.0000	1.0000
L43	21	CCI-65FP-060100	23.00 - 23.25	1.0000	1.0000
L43	32	CCI-65FP-060100	23.00 - 23.25	1.0000	1.0000
L43	33	CCI-65FP-060100	23.00 - 23.25	1.0000	1.0000
L43	40	HB158-21U6S12-XXXM-01(1-5/8)	23.00 - 23.25	1.0000	1.0000
L43	54	LDF7-50A(1-5/8)	23.00 - 23.25	1.0000	1.0000
L44	1	5.75" x 1" Flat Plate	22.75 - 23.00	1.0000	1.0000
L44	2	5.75" x 1" Flat Plate	22.75 - 23.00	1.0000	1.0000
L44	3	5.75" x 1" Flat Plate	22.75 - 23.00	1.0000	1.0000
L44	11	MP3-04	22.75 - 23.00	1.0000	1.0000
L44	12	MP3-04	22.75 - 23.00	1.0000	1.0000
L44	13	MP3-04	22.75 - 23.00	1.0000	1.0000
L44	19	CCI-65FP-060100	22.75 - 23.00	1.0000	1.0000
L44	20	CCI-65FP-060100	22.75 - 23.00	1.0000	1.0000
L44	21	CCI-65FP-060100	22.75 - 23.00	1.0000	1.0000
L44	32	CCI-65FP-060100	22.75 - 23.00	1.0000	1.0000
L44	33	CCI-65FP-060100	22.75 - 23.00	1.0000	1.0000
L44	40	HB158-21U6S12-XXXM-01(1-5/8)	22.75 - 23.00	1.0000	1.0000
L44	54	LDF7-50A(1-5/8)	22.75 - 23.00	1.0000	1.0000
L45	1	5.75" x 1" Flat Plate	17.75 - 22.75	1.0000	1.0000
L45	2	5.75" x 1" Flat Plate	17.75 - 22.75	1.0000	1.0000
L45	3	5.75" x 1" Flat Plate	17.75 - 22.75	1.0000	1.0000
L45	11	MP3-04	17.75 - 22.75	1.0000	1.0000
L45	12	MP3-04	17.75 - 22.75	1.0000	1.0000
L45	13	MP3-04	17.75 - 22.75	1.0000	1.0000
L45	19	CCI-65FP-060100	17.75 - 22.75	1.0000	1.0000
L45	20	CCI-65FP-060100	17.75 - 22.75	1.0000	1.0000
L45	21	CCI-65FP-060100	17.75 - 22.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L45	32	CCI-65FP-060100	22.75 21.00 -	1.0000	1.0000
L45	33	CCI-65FP-060100	22.75 21.00 -	1.0000	1.0000
L45	40	HB158-21U6S12-XXXM-01(1-5/8)	22.75 17.75 -	1.0000	1.0000
L45	54	LDF7-50A(1-5/8)	22.75 17.75 -	1.0000	1.0000
L46	1	5.75" x 1" Flat Plate	22.75 12.75 -	1.0000	1.0000
L46	2	5.75" x 1" Flat Plate	17.75 12.75 -	1.0000	1.0000
L46	3	5.75" x 1" Flat Plate	17.75 12.75 -	1.0000	1.0000
L46	11	MP3-04	17.75 12.75 -	1.0000	1.0000
L46	12	MP3-04	17.75 12.75 -	1.0000	1.0000
L46	13	MP3-04	17.75 12.75 -	1.0000	1.0000
L46	19	CCI-65FP-060100	17.75 12.75 -	1.0000	1.0000
L46	20	CCI-65FP-060100	17.75 12.75 -	1.0000	1.0000
L46	21	CCI-65FP-060100	17.75 12.75 -	1.0000	1.0000
L46	40	HB158-21U6S12-XXXM-01(1-5/8)	17.75 12.75 -	1.0000	1.0000
L46	54	LDF7-50A(1-5/8)	17.75 12.75 -	1.0000	1.0000
L47	1	5.75" x 1" Flat Plate	17.75 7.75 - 12.75	1.0000	1.0000
L47	2	5.75" x 1" Flat Plate	17.75 7.75 - 12.75	1.0000	1.0000
L47	3	5.75" x 1" Flat Plate	17.75 7.75 - 12.75	1.0000	1.0000
L47	11	MP3-04	17.75 7.75 - 12.75	1.0000	1.0000
L47	12	MP3-04	17.75 7.75 - 12.75	1.0000	1.0000
L47	13	MP3-04	17.75 7.75 - 12.75	1.0000	1.0000
L47	19	CCI-65FP-060100	17.75 7.75 - 12.75	1.0000	1.0000
L47	20	CCI-65FP-060100	17.75 7.75 - 12.75	1.0000	1.0000
L47	21	CCI-65FP-060100	17.75 7.75 - 12.75	1.0000	1.0000
L47	40	HB158-21U6S12-XXXM-01(1-5/8)	17.75 7.75 - 12.75	1.0000	1.0000
L47	54	LDF7-50A(1-5/8)	17.75 7.75 - 12.75	1.0000	1.0000
L48	1	5.75" x 1" Flat Plate	12.75 2.75 - 7.75	1.0000	1.0000
L48	2	5.75" x 1" Flat Plate	12.75 2.75 - 7.75	1.0000	1.0000
L48	3	5.75" x 1" Flat Plate	12.75 2.75 - 7.75	1.0000	1.0000
L48	11	MP3-04	12.75 2.75 - 7.75	1.0000	1.0000
L48	12	MP3-04	12.75 2.75 - 7.75	1.0000	1.0000
L48	13	MP3-04	12.75 2.75 - 7.75	1.0000	1.0000
L48	19	CCI-65FP-060100	12.75 2.75 - 7.75	1.0000	1.0000
L48	20	CCI-65FP-060100	12.75 2.75 - 7.75	1.0000	1.0000
L48	21	CCI-65FP-060100	12.75 2.75 - 7.75	1.0000	1.0000
L48	40	HB158-21U6S12-XXXM-01(1-5/8)	12.75 2.75 - 7.75	1.0000	1.0000
L48	54	LDF7-50A(1-5/8)	12.75 2.75 - 7.75	1.0000	1.0000
L49	1	5.75" x 1" Flat Plate	7.75 0.50 - 2.75	1.0000	1.0000
L49	2	5.75" x 1" Flat Plate	7.75 0.50 - 2.75	1.0000	1.0000
L49	3	5.75" x 1" Flat Plate	7.75 0.50 - 2.75	1.0000	1.0000
L49	11	MP3-04	7.75 0.50 - 2.75	1.0000	1.0000
L49	12	MP3-04	7.75 0.50 - 2.75	1.0000	1.0000
L49	13	MP3-04	7.75 0.50 - 2.75	1.0000	1.0000
L49	19	CCI-65FP-060100	7.75 0.50 - 2.75	1.0000	1.0000
L49	20	CCI-65FP-060100	7.75 0.50 - 2.75	1.0000	1.0000
L49	21	CCI-65FP-060100	7.75 0.50 - 2.75	1.0000	1.0000
L49	40	HB158-21U6S12-XXXM-01(1-5/8)	7.75 0.00 - 2.75	1.0000	1.0000
L49	54	LDF7-50A(1-5/8)	7.75 0.00 - 2.75	1.0000	1.0000

Effective Width of Flat Linear Attachments / Feed Lines

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L5	28	CCI-65FP-045100	115.00 - 117.00	Auto	0.3455
L5	29	CCI-65FP-045100	115.00 - 117.00	Auto	0.3455
L5	30	CCI-65FP-045100	115.00 - 117.00	Auto	0.3455
L6	28	CCI-65FP-045100	114.75 - 115.00	Auto	0.4431
L6	29	CCI-65FP-045100	114.75 - 115.00	Auto	0.4431
L6	30	CCI-65FP-045100	114.75 - 115.00	Auto	0.4431
L7	28	CCI-65FP-045100	109.75 - 114.75	Auto	0.4149
L7	29	CCI-65FP-045100	109.75 - 114.75	Auto	0.4149
L7	30	CCI-65FP-045100	109.75 - 114.75	Auto	0.4149
L8	28	CCI-65FP-045100	104.75 - 109.75	Auto	0.3607
L8	29	CCI-65FP-045100	104.75 - 109.75	Auto	0.3607
L8	30	CCI-65FP-045100	104.75 - 109.75	Auto	0.3607
L9	28	CCI-65FP-045100	102.00 - 104.75	Auto	0.3239
L9	29	CCI-65FP-045100	102.00 - 104.75	Auto	0.3239
L9	30	CCI-65FP-045100	102.00 - 104.75	Auto	0.3239
L12	25	CCI-65FP-060100	91.33 - 93.00	Auto	0.3871
L12	26	CCI-65FP-060100	91.33 - 93.00	Auto	0.3871
L12	27	CCI-65FP-060100	91.33 - 93.00	Auto	0.3871
L13	25	CCI-65FP-060100	91.00 - 91.33	Auto	0.3804
L13	26	CCI-65FP-060100	91.00 - 91.33	Auto	0.3804
L13	27	CCI-65FP-060100	91.00 - 91.33	Auto	0.3804
L14	25	CCI-65FP-060100	90.75 - 91.00	Auto	0.4628
L14	26	CCI-65FP-060100	90.75 - 91.00	Auto	0.4628
L14	27	CCI-65FP-060100	90.75 - 91.00	Auto	0.4628
L15	25	CCI-65FP-060100	85.75 - 90.75	Auto	0.4417
L15	26	CCI-65FP-060100	85.75 - 90.75	Auto	0.4417
L15	27	CCI-65FP-060100	85.75 - 90.75	Auto	0.4417
L16	25	CCI-65FP-060100	80.75 - 85.75	Auto	0.4011
L16	26	CCI-65FP-060100	80.75 - 85.75	Auto	0.4011
L16	27	CCI-65FP-060100	80.75 - 85.75	Auto	0.4011

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L17	25	CCI-65FP-060100	85.75 75.75 - 80.75	Auto	0.3641
L17	26	CCI-65FP-060100	75.75 - 80.75	Auto	0.3641
L17	27	CCI-65FP-060100	75.75 - 80.75	Auto	0.3641
L18	7	5.75" x 1" Flat Plate	70.75 - 72.00	Auto	0.2868
L18	8	5.75" x 1" Flat Plate	70.75 - 72.00	Auto	0.2868
L18	9	5.75" x 1" Flat Plate	70.75 - 72.00	Auto	0.2868
L18	25	CCI-65FP-060100	70.75 - 75.75	Auto	0.3290
L18	26	CCI-65FP-060100	70.75 - 75.75	Auto	0.3290
L18	27	CCI-65FP-060100	70.75 - 75.75	Auto	0.3290
L19	7	5.75" x 1" Flat Plate	69.98 - 70.75	Auto	0.2759
L19	8	5.75" x 1" Flat Plate	69.98 - 70.75	Auto	0.2759
L19	9	5.75" x 1" Flat Plate	69.98 - 70.75	Auto	0.2759
L19	25	CCI-65FP-060100	69.98 - 70.75	Auto	0.3061
L19	26	CCI-65FP-060100	69.98 - 70.75	Auto	0.3061
L19	27	CCI-65FP-060100	69.98 - 70.75	Auto	0.3061
L20	7	5.75" x 1" Flat Plate	69.73 - 69.98	Auto	0.2724
L20	8	5.75" x 1" Flat Plate	69.73 - 69.98	Auto	0.2724
L20	9	5.75" x 1" Flat Plate	69.73 - 69.98	Auto	0.2724
L20	25	CCI-65FP-060100	69.73 - 69.98	Auto	0.3027
L20	26	CCI-65FP-060100	69.73 - 69.98	Auto	0.3027
L20	27	CCI-65FP-060100	69.73 - 69.98	Auto	0.3027
L21	7	5.75" x 1" Flat Plate	64.73 - 69.73	Auto	0.2522
L21	8	5.75" x 1" Flat Plate	64.73 - 69.73	Auto	0.2522
L21	9	5.75" x 1" Flat Plate	64.73 - 69.73	Auto	0.2522
L21	22	CCI-65FP-060100	64.73 - 65.00	Auto	0.2677
L21	23	CCI-65FP-060100	64.73 - 65.00	Auto	0.2677
L21	24	CCI-65FP-060100	64.73 - 65.00	Auto	0.2677
L21	25	CCI-65FP-060100	68.00 - 69.73	Auto	0.2943
L21	26	CCI-65FP-060100	68.00 - 69.73	Auto	0.2943
L21	27	CCI-65FP-060100	68.00 - 69.73	Auto	0.2943
L22	7	5.75" x 1" Flat Plate	63.00 - 64.73	Auto	0.2270
L22	8	5.75" x 1" Flat Plate	63.00 - 64.73	Auto	0.2270
L22	9	5.75" x 1" Flat Plate	63.00 - 64.73	Auto	0.2270
L22	22	CCI-65FP-060100	63.00 -	Auto	0.2592

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L22	23	CCI-65FP-060100	64.73 63.00 - 64.73	Auto	0.2592
L22	24	CCI-65FP-060100	63.00 - 64.73	Auto	0.2592
L23	7	5.75" x 1" Flat Plate	62.75 - 63.00	Auto	0.2756
L23	8	5.75" x 1" Flat Plate	62.75 - 63.00	Auto	0.2756
L23	9	5.75" x 1" Flat Plate	62.75 - 63.00	Auto	0.2756
L23	22	CCI-65FP-060100	62.75 - 63.00	Auto	0.3057
L23	23	CCI-65FP-060100	62.75 - 63.00	Auto	0.3057
L23	24	CCI-65FP-060100	62.75 - 63.00	Auto	0.3057
L24	7	5.75" x 1" Flat Plate	59.08 - 62.75	Auto	0.2581
L24	8	5.75" x 1" Flat Plate	59.08 - 62.75	Auto	0.2581
L24	9	5.75" x 1" Flat Plate	59.08 - 62.75	Auto	0.2581
L24	11	MP3-04	59.08 - 60.50	Auto	0.0982
L24	12	MP3-04	59.08 - 60.50	Auto	0.0982
L24	13	MP3-04	59.08 - 60.50	Auto	0.0982
L24	22	CCI-65FP-060100	59.08 - 62.75	Auto	0.2890
L24	23	CCI-65FP-060100	59.08 - 62.75	Auto	0.2890
L24	24	CCI-65FP-060100	59.08 - 62.75	Auto	0.2890
L25	7	5.75" x 1" Flat Plate	58.82 - 59.08	Auto	0.2253
L25	8	5.75" x 1" Flat Plate	58.82 - 59.08	Auto	0.2253
L25	9	5.75" x 1" Flat Plate	58.82 - 59.08	Auto	0.2253
L25	11	MP3-04	58.82 - 59.08	Auto	0.0681
L25	12	MP3-04	58.82 - 59.08	Auto	0.0681
L25	13	MP3-04	58.82 - 59.08	Auto	0.0681
L25	22	CCI-65FP-060100	58.82 - 59.08	Auto	0.2576
L25	23	CCI-65FP-060100	58.82 - 59.08	Auto	0.2576
L25	24	CCI-65FP-060100	58.82 - 59.08	Auto	0.2576
L26	7	5.75" x 1" Flat Plate	58.67 - 58.82	Auto	0.2239
L26	8	5.75" x 1" Flat Plate	58.67 - 58.82	Auto	0.2239
L26	9	5.75" x 1" Flat Plate	58.67 - 58.82	Auto	0.2239
L26	11	MP3-04	58.67 - 58.82	Auto	0.0664
L26	12	MP3-04	58.67 - 58.82	Auto	0.0664
L26	13	MP3-04	58.67 - 58.82	Auto	0.0664
L26	22	CCI-65FP-060100	58.67 - 58.82	Auto	0.2562
L26	23	CCI-65FP-060100	58.67 -	Auto	0.2562

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L26	24	CCI-65FP-060100	58.82 58.67 - 58.82	Auto	0.2562
L27	7	5.75" x 1" Flat Plate	57.00 - 58.67	Auto	0.2138
L27	8	5.75" x 1" Flat Plate	57.00 - 58.67	Auto	0.2138
L27	9	5.75" x 1" Flat Plate	57.00 - 58.67	Auto	0.2138
L27	11	MP3-04	53.67 - 58.67	Auto	0.0403
L27	12	MP3-04	53.67 - 58.67	Auto	0.0403
L27	13	MP3-04	53.67 - 58.67	Auto	0.0403
L27	22	CCI-65FP-060100	53.67 - 58.67	Auto	0.2354
L27	23	CCI-65FP-060100	53.67 - 58.67	Auto	0.2354
L27	24	CCI-65FP-060100	53.67 - 58.67	Auto	0.2354
L28	4	5.75" x 1" Flat Plate	48.58 - 50.58	Auto	0.1564
L28	5	5.75" x 1" Flat Plate	48.58 - 50.58	Auto	0.1564
L28	6	5.75" x 1" Flat Plate	48.58 - 50.58	Auto	0.1564
L28	11	MP3-04	48.58 - 53.67	Auto	0.0044
L28	12	MP3-04	48.58 - 53.67	Auto	0.0044
L28	13	MP3-04	48.58 - 53.67	Auto	0.0044
L28	22	CCI-65FP-060100	50.00 - 53.67	Auto	0.2066
L28	23	CCI-65FP-060100	50.00 - 53.67	Auto	0.2066
L28	24	CCI-65FP-060100	50.00 - 53.67	Auto	0.2066
L29	4	5.75" x 1" Flat Plate	47.58 - 48.58	Auto	0.1728
L29	5	5.75" x 1" Flat Plate	47.58 - 48.58	Auto	0.1728
L29	6	5.75" x 1" Flat Plate	47.58 - 48.58	Auto	0.1728
L29	11	MP3-04	47.58 - 48.58	Auto	0.0049
L29	12	MP3-04	47.58 - 48.58	Auto	0.0049
L29	13	MP3-04	47.58 - 48.58	Auto	0.0049
L30	4	5.75" x 1" Flat Plate	42.58 - 47.58	Auto	0.1481
L30	5	5.75" x 1" Flat Plate	42.58 - 47.58	Auto	0.1481
L30	6	5.75" x 1" Flat Plate	42.58 - 47.58	Auto	0.1481
L30	11	MP3-04	42.58 - 47.58	Auto	0.0000
L30	12	MP3-04	42.58 - 47.58	Auto	0.0000
L30	13	MP3-04	42.58 - 47.58	Auto	0.0000
L31	4	5.75" x 1" Flat Plate	39.67 - 42.58	Auto	0.1168
L31	5	5.75" x 1" Flat Plate	39.67 - 42.58	Auto	0.1168
L31	6	5.75" x 1" Flat Plate	39.67 -	Auto	0.1168

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L31	11	MP3-04	42.58 39.67 - 42.58	Auto	0.0000
L31	12	MP3-04	39.67 - 42.58	Auto	0.0000
L31	13	MP3-04	39.67 - 42.58	Auto	0.0000
L31	15	CCI-65FP-060100	39.67 - 41.67	Auto	0.1505
L31	16	CCI-65FP-060100	39.67 - 41.67	Auto	0.1505
L31	17	CCI-65FP-060100	39.67 - 41.67	Auto	0.1505
L32	4	5.75" x 1" Flat Plate	39.42 - 39.67	Auto	0.1670
L32	5	5.75" x 1" Flat Plate	39.42 - 39.67	Auto	0.1670
L32	6	5.75" x 1" Flat Plate	39.42 - 39.67	Auto	0.1670
L32	11	MP3-04	39.42 - 39.67	Auto	0.0000
L32	12	MP3-04	39.42 - 39.67	Auto	0.0000
L32	13	MP3-04	39.42 - 39.67	Auto	0.0000
L32	15	CCI-65FP-060100	39.42 - 39.67	Auto	0.2017
L32	16	CCI-65FP-060100	39.42 - 39.67	Auto	0.2017
L32	17	CCI-65FP-060100	39.42 - 39.67	Auto	0.2017
L33	4	5.75" x 1" Flat Plate	34.42 - 39.42	Auto	0.1411
L33	5	5.75" x 1" Flat Plate	34.42 - 39.42	Auto	0.1411
L33	6	5.75" x 1" Flat Plate	34.42 - 39.42	Auto	0.1411
L33	11	MP3-04	34.42 - 39.42	Auto	0.0000
L33	12	MP3-04	34.42 - 39.42	Auto	0.0000
L33	13	MP3-04	34.42 - 39.42	Auto	0.0000
L33	15	CCI-65FP-060100	34.42 - 39.42	Auto	0.1769
L33	16	CCI-65FP-060100	34.42 - 39.42	Auto	0.1769
L33	17	CCI-65FP-060100	34.42 - 39.42	Auto	0.1769
L34	1	5.75" x 1" Flat Plate	32.50 - 33.33	Auto	0.1133
L34	2	5.75" x 1" Flat Plate	32.50 - 33.33	Auto	0.1133
L34	3	5.75" x 1" Flat Plate	32.50 - 33.33	Auto	0.1133
L34	4	5.75" x 1" Flat Plate	32.50 - 34.42	Auto	0.1171
L34	5	5.75" x 1" Flat Plate	32.50 - 34.42	Auto	0.1171
L34	6	5.75" x 1" Flat Plate	32.50 - 34.42	Auto	0.1171
L34	11	MP3-04	32.50 - 34.42	Auto	0.0000
L34	12	MP3-04	32.50 - 34.42	Auto	0.0000
L34	13	MP3-04	32.50 - 34.42	Auto	0.0000
L34	15	CCI-65FP-060100	32.50 -	Auto	0.1539

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L34	16	CCI-65FP-060100	34.42 32.50 - 34.42	Auto	0.1539
L34	17	CCI-65FP-060100	32.50 - 34.42	Auto	0.1539
L35	1	5.75" x 1" Flat Plate	32.25 - 32.50	Auto	0.0560
L35	2	5.75" x 1" Flat Plate	32.25 - 32.50	Auto	0.0560
L35	3	5.75" x 1" Flat Plate	32.25 - 32.50	Auto	0.0560
L35	4	5.75" x 1" Flat Plate	32.25 - 32.50	Auto	0.0560
L35	5	5.75" x 1" Flat Plate	32.25 - 32.50	Auto	0.0560
L35	6	5.75" x 1" Flat Plate	32.25 - 32.50	Auto	0.0560
L35	11	MP3-04	32.25 - 32.50	Auto	0.0000
L35	12	MP3-04	32.25 - 32.50	Auto	0.0000
L35	13	MP3-04	32.25 - 32.50	Auto	0.0000
L35	15	CCI-65FP-060100	32.25 - 32.50	Auto	0.0953
L35	16	CCI-65FP-060100	32.25 - 32.50	Auto	0.0953
L35	17	CCI-65FP-060100	32.25 - 32.50	Auto	0.0953
L36	1	5.75" x 1" Flat Plate	31.42 - 32.25	Auto	0.0484
L36	2	5.75" x 1" Flat Plate	31.42 - 32.25	Auto	0.0484
L36	3	5.75" x 1" Flat Plate	31.42 - 32.25	Auto	0.0484
L36	4	5.75" x 1" Flat Plate	31.42 - 32.25	Auto	0.0484
L36	5	5.75" x 1" Flat Plate	31.42 - 32.25	Auto	0.0484
L36	6	5.75" x 1" Flat Plate	31.42 - 32.25	Auto	0.0484
L36	11	MP3-04	31.42 - 32.25	Auto	0.0000
L36	12	MP3-04	31.42 - 32.25	Auto	0.0000
L36	13	MP3-04	31.42 - 32.25	Auto	0.0000
L36	15	CCI-65FP-060100	31.42 - 32.25	Auto	0.0880
L36	16	CCI-65FP-060100	31.42 - 32.25	Auto	0.0880
L36	17	CCI-65FP-060100	31.42 - 32.25	Auto	0.0880
L37	1	5.75" x 1" Flat Plate	31.17 - 31.42	Auto	0.0982
L37	2	5.75" x 1" Flat Plate	31.17 - 31.42	Auto	0.0982
L37	3	5.75" x 1" Flat Plate	31.17 - 31.42	Auto	0.0982
L37	4	5.75" x 1" Flat Plate	31.17 - 31.42	Auto	0.0982
L37	5	5.75" x 1" Flat Plate	31.17 - 31.42	Auto	0.0982
L37	6	5.75" x 1" Flat Plate	31.17 - 31.42	Auto	0.0982
L37	11	MP3-04	31.17 - 31.42	Auto	0.0000
L37	12	MP3-04	31.17 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L37	13	MP3-04	31.42 31.17 - 31.42	Auto	0.0000
L37	15	CCI-65FP-060100	31.17 - 31.42	Auto	0.1358
L37	16	CCI-65FP-060100	31.17 - 31.42	Auto	0.1358
L37	17	CCI-65FP-060100	31.17 - 31.42	Auto	0.1358
L38	1	5.75" x 1" Flat Plate	29.00 - 31.17	Auto	0.0860
L38	2	5.75" x 1" Flat Plate	29.00 - 31.17	Auto	0.0860
L38	3	5.75" x 1" Flat Plate	29.00 - 31.17	Auto	0.0860
L38	4	5.75" x 1" Flat Plate	30.58 - 31.17	Auto	0.0915
L38	5	5.75" x 1" Flat Plate	30.58 - 31.17	Auto	0.0915
L38	6	5.75" x 1" Flat Plate	30.58 - 31.17	Auto	0.0915
L38	11	MP3-04	29.00 - 31.17	Auto	0.0000
L38	12	MP3-04	29.00 - 31.17	Auto	0.0000
L38	13	MP3-04	29.00 - 31.17	Auto	0.0000
L38	15	CCI-65FP-060100	29.00 - 31.17	Auto	0.1240
L38	16	CCI-65FP-060100	29.00 - 31.17	Auto	0.1240
L38	17	CCI-65FP-060100	29.00 - 31.17	Auto	0.1240
L38	32	CCI-65FP-060100	29.00 - 31.00	Auto	0.1235
L38	33	CCI-65FP-060100	29.00 - 31.00	Auto	0.1235
L39	1	5.75" x 1" Flat Plate	28.65 - 29.00	Auto	0.0504
L39	2	5.75" x 1" Flat Plate	28.65 - 29.00	Auto	0.0504
L39	3	5.75" x 1" Flat Plate	28.65 - 29.00	Auto	0.0504
L39	11	MP3-04	28.65 - 29.00	Auto	0.0000
L39	12	MP3-04	28.65 - 29.00	Auto	0.0000
L39	13	MP3-04	28.65 - 29.00	Auto	0.0000
L39	15	CCI-65FP-060100	28.65 - 29.00	Auto	0.0900
L39	16	CCI-65FP-060100	28.65 - 29.00	Auto	0.0900
L39	17	CCI-65FP-060100	28.65 - 29.00	Auto	0.0900
L39	32	CCI-65FP-060100	28.65 - 29.00	Auto	0.0900
L39	33	CCI-65FP-060100	28.65 - 29.00	Auto	0.0900
L40	1	5.75" x 1" Flat Plate	28.42 - 28.65	Auto	0.0484
L40	2	5.75" x 1" Flat Plate	28.42 - 28.65	Auto	0.0484
L40	3	5.75" x 1" Flat Plate	28.42 - 28.65	Auto	0.0484
L40	11	MP3-04	28.42 - 28.65	Auto	0.0000
L40	12	MP3-04	28.42 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L40	13	MP3-04	28.65 28.42 - 28.65	Auto	0.0000
L40	15	CCI-65FP-060100	28.42 - 28.65	Auto	0.0881
L40	16	CCI-65FP-060100	28.42 - 28.65	Auto	0.0881
L40	17	CCI-65FP-060100	28.42 - 28.65	Auto	0.0881
L40	32	CCI-65FP-060100	28.42 - 28.65	Auto	0.0881
L40	33	CCI-65FP-060100	28.42 - 28.65	Auto	0.0881
L41	1	5.75" x 1" Flat Plate	23.50 - 28.42	Auto	0.0267
L41	2	5.75" x 1" Flat Plate	23.50 - 28.42	Auto	0.0267
L41	3	5.75" x 1" Flat Plate	23.50 - 28.42	Auto	0.0267
L41	11	MP3-04	23.50 - 28.42	Auto	0.0000
L41	12	MP3-04	23.50 - 28.42	Auto	0.0000
L41	13	MP3-04	23.50 - 28.42	Auto	0.0000
L41	15	CCI-65FP-060100	26.67 - 28.42	Auto	0.0778
L41	16	CCI-65FP-060100	26.67 - 28.42	Auto	0.0778
L41	17	CCI-65FP-060100	26.67 - 28.42	Auto	0.0778
L41	19	CCI-65FP-060100	23.50 - 25.50	Auto	0.0575
L41	20	CCI-65FP-060100	23.50 - 25.50	Auto	0.0575
L41	21	CCI-65FP-060100	23.50 - 25.50	Auto	0.0575
L41	32	CCI-65FP-060100	23.50 - 28.42	Auto	0.0672
L41	33	CCI-65FP-060100	23.50 - 28.42	Auto	0.0672
L42	1	5.75" x 1" Flat Plate	23.25 - 23.50	Auto	0.0470
L42	2	5.75" x 1" Flat Plate	23.25 - 23.50	Auto	0.0470
L42	3	5.75" x 1" Flat Plate	23.25 - 23.50	Auto	0.0470
L42	11	MP3-04	23.25 - 23.50	Auto	0.0000
L42	12	MP3-04	23.25 - 23.50	Auto	0.0000
L42	13	MP3-04	23.25 - 23.50	Auto	0.0000
L42	19	CCI-65FP-060100	23.25 - 23.50	Auto	0.0867
L42	20	CCI-65FP-060100	23.25 - 23.50	Auto	0.0867
L42	21	CCI-65FP-060100	23.25 - 23.50	Auto	0.0867
L42	32	CCI-65FP-060100	23.25 - 23.50	Auto	0.0867
L42	33	CCI-65FP-060100	23.25 - 23.50	Auto	0.0867
L43	1	5.75" x 1" Flat Plate	23.00 - 23.25	Auto	0.0453
L43	2	5.75" x 1" Flat Plate	23.00 - 23.25	Auto	0.0453
L43	3	5.75" x 1" Flat Plate	23.00 -	Auto	0.0453

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L43	11	MP3-04	23.25 23.00 - 23.25	Auto	0.0000
L43	12	MP3-04	23.00 - 23.25	Auto	0.0000
L43	13	MP3-04	23.00 - 23.25	Auto	0.0000
L43	19	CCI-65FP-060100	23.00 - 23.25	Auto	0.0850
L43	20	CCI-65FP-060100	23.00 - 23.25	Auto	0.0850
L43	21	CCI-65FP-060100	23.00 - 23.25	Auto	0.0850
L43	32	CCI-65FP-060100	23.00 - 23.25	Auto	0.0850
L43	33	CCI-65FP-060100	23.00 - 23.25	Auto	0.0850
L44	1	5.75" x 1" Flat Plate	22.75 - 23.00	Auto	0.0014
L44	2	5.75" x 1" Flat Plate	22.75 - 23.00	Auto	0.0014
L44	3	5.75" x 1" Flat Plate	22.75 - 23.00	Auto	0.0014
L44	11	MP3-04	22.75 - 23.00	Auto	0.0000
L44	12	MP3-04	22.75 - 23.00	Auto	0.0000
L44	13	MP3-04	22.75 - 23.00	Auto	0.0000
L44	19	CCI-65FP-060100	22.75 - 23.00	Auto	0.0430
L44	20	CCI-65FP-060100	22.75 - 23.00	Auto	0.0430
L44	21	CCI-65FP-060100	22.75 - 23.00	Auto	0.0430
L44	32	CCI-65FP-060100	22.75 - 23.00	Auto	0.0430
L44	33	CCI-65FP-060100	22.75 - 23.00	Auto	0.0430
L45	1	5.75" x 1" Flat Plate	17.75 - 22.75	Auto	0.0000
L45	2	5.75" x 1" Flat Plate	17.75 - 22.75	Auto	0.0000
L45	3	5.75" x 1" Flat Plate	17.75 - 22.75	Auto	0.0000
L45	11	MP3-04	17.75 - 22.75	Auto	0.0000
L45	12	MP3-04	17.75 - 22.75	Auto	0.0000
L45	13	MP3-04	17.75 - 22.75	Auto	0.0000
L45	19	CCI-65FP-060100	17.75 - 22.75	Auto	0.0219
L45	20	CCI-65FP-060100	17.75 - 22.75	Auto	0.0219
L45	21	CCI-65FP-060100	17.75 - 22.75	Auto	0.0219
L45	32	CCI-65FP-060100	21.00 - 22.75	Auto	0.0327
L45	33	CCI-65FP-060100	21.00 - 22.75	Auto	0.0327
L46	1	5.75" x 1" Flat Plate	12.75 - 17.75	Auto	0.0000
L46	2	5.75" x 1" Flat Plate	12.75 - 17.75	Auto	0.0000
L46	3	5.75" x 1" Flat Plate	12.75 - 17.75	Auto	0.0000
L46	11	MP3-04	12.75 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L46	12	MP3-04	17.75 12.75 - 17.75	Auto	0.0000
L46	13	MP3-04	12.75 - 17.75	Auto	0.0000
L46	19	CCI-65FP-060100	12.75 - 17.75	Auto	0.0000
L46	20	CCI-65FP-060100	12.75 - 17.75	Auto	0.0000
L46	21	CCI-65FP-060100	12.75 - 17.75	Auto	0.0000
L47	1	5.75" x 1" Flat Plate	7.75 - 12.75	Auto	0.0000
L47	2	5.75" x 1" Flat Plate	7.75 - 12.75	Auto	0.0000
L47	3	5.75" x 1" Flat Plate	7.75 - 12.75	Auto	0.0000
L47	11	MP3-04	7.75 - 12.75	Auto	0.0000
L47	12	MP3-04	7.75 - 12.75	Auto	0.0000
L47	13	MP3-04	7.75 - 12.75	Auto	0.0000
L47	19	CCI-65FP-060100	7.75 - 12.75	Auto	0.0000
L47	20	CCI-65FP-060100	7.75 - 12.75	Auto	0.0000
L47	21	CCI-65FP-060100	7.75 - 12.75	Auto	0.0000
L48	1	5.75" x 1" Flat Plate	2.75 - 7.75	Auto	0.0000
L48	2	5.75" x 1" Flat Plate	2.75 - 7.75	Auto	0.0000
L48	3	5.75" x 1" Flat Plate	2.75 - 7.75	Auto	0.0000
L48	11	MP3-04	2.75 - 7.75	Auto	0.0000
L48	12	MP3-04	2.75 - 7.75	Auto	0.0000
L48	13	MP3-04	2.75 - 7.75	Auto	0.0000
L48	19	CCI-65FP-060100	2.75 - 7.75	Auto	0.0000
L48	20	CCI-65FP-060100	2.75 - 7.75	Auto	0.0000
L48	21	CCI-65FP-060100	2.75 - 7.75	Auto	0.0000
L49	1	5.75" x 1" Flat Plate	0.50 - 2.75	Auto	0.0000
L49	2	5.75" x 1" Flat Plate	0.50 - 2.75	Auto	0.0000
L49	3	5.75" x 1" Flat Plate	0.50 - 2.75	Auto	0.0000
L49	11	MP3-04	0.50 - 2.75	Auto	0.0000
L49	12	MP3-04	0.50 - 2.75	Auto	0.0000
L49	13	MP3-04	0.50 - 2.75	Auto	0.0000
L49	19	CCI-65FP-060100	0.50 - 2.75	Auto	0.0000
L49	20	CCI-65FP-060100	0.50 - 2.75	Auto	0.0000
L49	21	CCI-65FP-060100	0.50 - 2.75	Auto	0.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
DB636-C	A	From Leg	4.000 0.000 7.000	0.000	138.000
BXA-80063-6BF-EDIN-4 w/ Mount Pipe	A	From Leg	4.000 0.000 2.000	0.000	138.000
BXA-80063-6BF-EDIN-4 w/ Mount Pipe	B	From Leg	4.000 0.000 2.000	0.000	138.000
BXA-80063-6BF-EDIN-4 w/ Mount Pipe	C	From Leg	4.000 0.000 2.000	0.000	138.000
(2) RRFDC-3315-PF-48	C	From Leg	4.000	0.000	138.000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
			0.000		
(2) QS6656-5D w/ Mount Pipe	A	From Leg	2.000 4.000	0.000	138.000
			0.000		
(2) QS6656-5D w/ Mount Pipe	B	From Leg	2.000 4.000	0.000	138.000
			0.000		
(2) QS6656-5D w/ Mount Pipe	C	From Leg	2.000 4.000	0.000	138.000
			0.000		
MT6407-77A w/ Mount Pipe	A	From Leg	2.000 4.000	0.000	138.000
			0.000		
MT6407-77A w/ Mount Pipe	B	From Leg	2.000 4.000	0.000	138.000
			0.000		
MT6407-77A w/ Mount Pipe	C	From Leg	2.000 4.000	0.000	138.000
			0.000		
RFV01U-D1A	A	From Leg	2.000 4.000	0.000	138.000
			0.000		
RFV01U-D1A	B	From Leg	2.000 4.000	0.000	138.000
			0.000		
RFV01U-D1A	C	From Leg	2.000 4.000	0.000	138.000
			0.000		
RFV01U-D2A	A	From Leg	2.000 4.000	0.000	138.000
			0.000		
RFV01U-D2A	B	From Leg	2.000 4.000	0.000	138.000
			0.000		
RFV01U-D2A	C	From Leg	2.000 4.000	0.000	138.000
			0.000		
Platform Mount [LP 403-1]	C	None	2.000	0.000	138.000
(2) Side Arm Mount [SO 102-3]	C	None		0.000	138.000
Mount Reinforcement Spec *	C	None		0.000	138.000
AIR 6419 B77G_CCIV3 w/ Mount Pipe	A	From Leg	4.000	0.000	127.000
			0.000		
			2.000		
AIR 6419 B77G_CCIV3 w/ Mount Pipe	B	From Leg	4.000	0.000	127.000
			0.000		
			2.000		
AIR 6419 B77G_CCIV3 w/ Mount Pipe	C	From Leg	4.000	0.000	127.000
			0.000		
			2.000		
AIR 6449 B77D w/ Mount Pipe	A	From Leg	4.000	0.000	127.000
			0.000		
			-2.000		
AIR 6449 B77D w/ Mount Pipe	B	From Leg	4.000	0.000	127.000
			0.000		
			-2.000		
AIR 6449 B77D w/ Mount Pipe	C	From Leg	4.000	0.000	127.000
			0.000		
			-2.000		
QD6616-7 w/ Mount Pipe	A	From Leg	4.000	0.000	127.000
			0.000		
			2.000		
QD6616-7 w/ Mount Pipe	B	From Leg	4.000	0.000	127.000
			0.000		

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
QD6616-7 w/ Mount Pipe	C	From Leg	2.000 4.000 0.000	0.000	127.000
DC6-48-60-18-8F	A	From Leg	2.000 4.000 0.000	0.000	127.000
DC6-48-60-18-8F	B	From Leg	2.000 4.000 0.000	0.000	127.000
DC9-48-60-24-8C-EV_CCIV2	C	From Leg	2.000 4.000 0.000	0.000	127.000
DMP65R-BU6D w/ Mount Pipe	A	From Leg	2.000 4.000 0.000	0.000	127.000
DMP65R-BU6D w/ Mount Pipe	B	From Leg	2.000 4.000 0.000	0.000	127.000
DMP65R-BU6D w/ Mount Pipe	C	From Leg	2.000 4.000 0.000	0.000	127.000
RADIO 4415 B30	A	From Leg	2.000 4.000 0.000	0.000	127.000
RADIO 4415 B30	B	From Leg	2.000 4.000 0.000	0.000	127.000
RADIO 4415 B30	C	From Leg	2.000 4.000 0.000	0.000	127.000
RRUS 32 B2	A	From Leg	2.000 4.000 0.000	0.000	127.000
RRUS 32 B2	B	From Leg	2.000 4.000 0.000	0.000	127.000
RRUS 32 B2	C	From Leg	2.000 4.000 0.000	0.000	127.000
RRUS 32 B66A	A	From Leg	2.000 4.000 0.000	0.000	127.000
RRUS 32 B66A	B	From Leg	2.000 4.000 0.000	0.000	127.000
RRUS 32 B66A	C	From Leg	2.000 4.000 0.000	0.000	127.000
RRUS 4449 B5/B12	A	From Leg	2.000 4.000 0.000	0.000	127.000
RRUS 4449 B5/B12	B	From Leg	2.000 4.000 0.000	0.000	127.000
RRUS 4449 B5/B12	C	From Leg	2.000 4.000 0.000	0.000	127.000
RRUS 4478 B14_CCIV2	A	From Leg	2.000 4.000 0.000	0.000	127.000
RRUS 4478 B14_CCIV2	B	From Leg	2.000 4.000 0.000	0.000	127.000
RRUS 4478 B14_CCIV2	C	From Leg	2.000 4.000	0.000	127.000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
			0.000		
			2.000		
Sector Mount [SM 503-3]	C	None		0.000	127.000
Pipe Mount [PM 601-3]	C	None		0.000	127.000
(2) Side Arm Mount [SO 102-3]	C	None		0.000	127.000
(2) Side Arm Mount [SO 304-3]	C	None		0.000	127.000
(2) 10' x 2" Mount Pipe	A	From Leg	4.000	0.000	127.000
			0.000		
			0.000		
(2) 10' x 2" Mount Pipe	B	From Leg	4.000	0.000	127.000
			0.000		
			0.000		
(2) 10' x 2" Mount Pipe	C	From Leg	4.000	0.000	127.000
			0.000		
			0.000		
*					
AIR 32 B2A B66AA w/ Mount Pipe	A	From Leg	4.000	0.000	118.000
			0.000		
			0.000		
AIR 32 B2A B66AA w/ Mount Pipe	B	From Leg	4.000	0.000	118.000
			0.000		
			0.000		
AIR 32 B2A B66AA w/ Mount Pipe	C	From Leg	4.000	0.000	118.000
			0.000		
			0.000		
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.000	0.000	118.000
			0.000		
			0.000		
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.000	0.000	118.000
			0.000		
			0.000		
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.000	0.000	118.000
			0.000		
			0.000		
AIR6449 B41 w/ Mount Pipe	A	From Leg	4.000	0.000	118.000
			0.000		
			0.000		
AIR6449 B41 w/ Mount Pipe	B	From Leg	4.000	0.000	118.000
			0.000		
			0.000		
AIR6449 B41 w/ Mount Pipe	C	From Leg	4.000	0.000	118.000
			0.000		
			0.000		
APX16DWV-16DWVS-E-A20 w/ Mount Pipe	A	From Leg	4.000	0.000	118.000
			0.000		
			0.000		
APX16DWV-16DWVS-E-A20 w/ Mount Pipe	B	From Leg	4.000	0.000	118.000
			0.000		
			0.000		
APX16DWV-16DWVS-E-A20 w/ Mount Pipe	C	From Leg	4.000	0.000	118.000
			0.000		
			0.000		
RADIO 4449 B71 B85A_T-MOBILE	A	From Leg	4.000	0.000	118.000
			0.000		
			0.000		
RADIO 4449 B71 B85A_T-MOBILE	B	From Leg	4.000	0.000	118.000
			0.000		
			0.000		
RADIO 4449 B71 B85A_T-MOBILE	C	From Leg	4.000	0.000	118.000
			0.000		
			0.000		
RRUS 4415 B25	A	From Leg	4.000	0.000	118.000
			0.000		
			0.000		
RRUS 4415 B25	B	From Leg	4.000	0.000	118.000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
			0.000		
			0.000		
RRUS 4415 B25	C	From Leg	4.000	0.000	118.000
			0.000		
			0.000		
KRY 112 489/2	A	From Leg	4.000	0.000	118.000
			0.000		
			0.000		
KRY 112 489/2	B	From Leg	4.000	0.000	118.000
			0.000		
			0.000		
KRY 112 489/2	C	From Leg	4.000	0.000	118.000
			0.000		
			0.000		
KRY 112 144/1	A	From Leg	4.000	0.000	118.000
			0.000		
			0.000		
KRY 112 144/1	B	From Leg	4.000	0.000	118.000
			0.000		
			0.000		
KRY 112 144/1	C	From Leg	4.000	0.000	118.000
			0.000		
			0.000		
T-Arm Mount [TA 602-1_KCKR]	C	None		0.000	118.000
(2) Side Arm Mount [SO 102-3]	C	None		0.000	118.000
Miscellaneous [NA 507-1]	C	None		0.000	118.000
10' horizontal x 2" Pipe Mount	A	From Leg	2.000	0.000	118.000
			0.000		
			0.000		
10' horizontal x 2" Pipe Mount	B	From Leg	2.000	0.000	118.000
			0.000		
			0.000		
10' horizontal x 2" Pipe Mount	C	From Leg	2.000	0.000	118.000
			0.000		
			0.000		
*					
FFVV-65B-R2 w/ Mount Pipe	A	From Leg	4.000	0.000	108.000
			0.000		
			0.000		
FFVV-65B-R2 w/ Mount Pipe	B	From Leg	4.000	0.000	108.000
			0.000		
			0.000		
FFVV-65B-R2 w/ Mount Pipe	C	From Leg	4.000	0.000	108.000
			0.000		
			0.000		
TA08025-B604	A	From Leg	4.000	0.000	108.000
			0.000		
			0.000		
TA08025-B604	B	From Leg	4.000	0.000	108.000
			0.000		
			0.000		
TA08025-B604	C	From Leg	4.000	0.000	108.000
			0.000		
			0.000		
TA08025-B605	A	From Leg	4.000	0.000	108.000
			0.000		
			0.000		
TA08025-B605	B	From Leg	4.000	0.000	108.000
			0.000		
			0.000		
TA08025-B605	C	From Leg	4.000	0.000	108.000
			0.000		
			0.000		
RDIDC-9181-PF-48	A	From Leg	4.000	0.000	108.000
			0.000		

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
			0.000		
Commscope MC-PK8-DSH	C	None		0.000	108.000
(2) 8' x 2" Mount Pipe	A	From Leg	4.000	0.000	108.000
			0.000		
(2) 8' x 2" Mount Pipe	B	From Leg	4.000	0.000	108.000
			0.000		
(2) 8' x 2" Mount Pipe	C	From Leg	4.000	0.000	108.000
			0.000		
			0.000		
* DT465B-2XR w/ Mount Pipe	A	From Leg	4.000	0.000	73.000
			0.000		
			2.000		
DT465B-2XR w/ Mount Pipe	B	From Leg	4.000	0.000	73.000
			0.000		
			2.000		
DT465B-2XR w/ Mount Pipe	C	From Leg	4.000	0.000	73.000
			0.000		
			2.000		
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.000	0.000	73.000
			0.000		
			2.000		
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.000	0.000	73.000
			0.000		
			2.000		
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.000	0.000	73.000
			0.000		
			2.000		
1900MHZ 4X40W RRH	A	From Leg	4.000	0.000	73.000
			0.000		
			2.000		
1900MHZ 4X40W RRH	B	From Leg	4.000	0.000	73.000
			0.000		
			2.000		
1900MHZ 4X40W RRH	C	From Leg	4.000	0.000	73.000
			0.000		
			2.000		
RRH2X50-800	A	From Leg	1.000	0.000	73.000
			0.000		
			2.000		
RRH2X50-800	B	From Leg	1.000	0.000	73.000
			0.000		
			2.000		
RRH2X50-800	C	From Leg	1.000	0.000	73.000
			0.000		
			2.000		
FZHN	A	From Leg	4.000	0.000	73.000
			0.000		
			2.000		
FZHN	B	From Leg	4.000	0.000	73.000
			0.000		
			2.000		
FZHN	C	From Leg	4.000	0.000	73.000
			0.000		
			2.000		
Platform Mount [LP 1201-1_HR-1]	C	None		0.000	73.000
6' x 2" Mount Pipe	A	From Leg	4.000	0.000	73.000
			0.000		
			0.000		
6' x 2" Mount Pipe	B	From Leg	4.000	0.000	73.000
			0.000		
			0.000		
6' x 2" Mount Pipe	C	From Leg	4.000	0.000	73.000

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

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	140 - 135	Pole	Max Tension	9	0.000	0.000	0.000
			Max. Compression	26	-8.112	0.784	-0.116
			Max. Mx	20	-3.658	23.592	-0.226
			Max. My	14	-3.707	0.415	-22.998
			Max. Vy	20	-5.749	23.592	-0.226
			Max. Vx	14	5.677	0.415	-22.998
			Max. Torque	14			-0.717
L2	135 - 130	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-8.461	0.799	-0.152
			Max. Mx	20	-3.883	52.855	-0.446
			Max. My	14	-3.936	0.633	-51.864
			Max. Vy	20	-5.960	52.855	-0.446
			Max. Vx	14	5.870	0.633	-51.864
			Max. Torque	14			-0.717
L3	130 - 125	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-18.582	0.830	-0.204
			Max. Mx	20	-8.796	100.712	-0.647
			Max. My	14	-8.894	0.814	-99.186
			Max. Vy	20	-12.219	100.712	-0.647
			Max. Vx	14	12.081	0.814	-99.186
			Max. Torque	14			-0.896
L4	125 - 120	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-19.019	0.850	-0.258
			Max. Mx	20	-9.181	162.197	-0.884
			Max. My	14	-9.279	1.044	-159.966
			Max. Vy	20	-12.389	162.197	-0.884
			Max. Vx	14	12.241	1.044	-159.966
			Max. Torque	14			-0.896
L5	120 - 115	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-25.759	0.867	-0.449
			Max. Mx	20	-12.700	236.418	-1.178
			Max. My	14	-12.852	1.274	-232.880
			Max. Vy	20	-16.563	236.418	-1.178
			Max. Vx	14	16.161	1.274	-232.880
			Max. Torque	14			-0.895
L6	115 - 114.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-25.810	0.868	-0.464
			Max. Mx	20	-12.753	240.559	-1.195
			Max. My	14	-12.905	1.286	-236.925
			Max. Vy	20	-16.578	240.559	-1.195
			Max. Vx	14	16.172	1.286	-236.925
			Max. Torque	14			-0.893
L7	114.75 - 109.75	Pole	Max Tension	1	0.000	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L8	109.75 - 104.75	Pole	Max. Compression	26	-26.836	0.885	-0.754
			Max. Mx	20	-13.467	324.843	-1.537
			Max. My	14	-13.629	1.519	-319.100
			Max. Vy	20	-17.149	324.843	-1.537
			Max. Vx	14	16.663	1.519	-319.100
			Max. Torque	14			-0.892
			Max Tension	1	0.000	0.000	0.000
L9	104.75 - 101.58	Pole	Max. Compression	26	-32.756	0.901	-0.740
			Max. Mx	20	-17.174	420.785	-1.781
			Max. My	14	-17.358	1.753	-412.444
			Max. Vy	20	-20.427	420.785	-1.781
			Max. Vx	14	19.872	1.753	-412.444
			Max. Torque	14			-0.863
			Max Tension	1	0.000	0.000	0.000
L10	101.58 - 101.33	Pole	Max. Compression	26	-33.432	0.911	-0.940
			Max. Mx	20	-17.692	486.038	-2.006
			Max. My	14	-17.880	1.902	-475.938
			Max. Vy	20	-20.769	486.038	-2.006
			Max. Vx	14	20.163	1.902	-475.938
			Max. Torque	14			-0.833
			Max Tension	1	0.000	0.000	0.000
L11	101.33 - 96.33	Pole	Max. Compression	26	-33.477	0.911	-0.956
			Max. Mx	20	-17.743	491.230	-2.024
			Max. My	14	-17.929	1.914	-480.984
			Max. Vy	20	-20.784	491.230	-2.024
			Max. Vx	14	20.173	1.914	-480.984
			Max. Torque	14			-0.813
			Max Tension	1	0.000	0.000	0.000
L12	96.33 - 91.33	Pole	Max. Compression	26	-34.397	0.925	-1.279
			Max. Mx	20	-18.531	596.316	-2.371
			Max. My	14	-18.738	2.142	-582.459
			Max. Vy	20	-21.275	596.316	-2.371
			Max. Vx	14	20.387	2.142	-582.459
			Max. Torque	14			-0.810
			Max Tension	1	0.000	0.000	0.000
L13	91.33 - 91	Pole	Max. Compression	26	-35.378	0.936	-1.609
			Max. Mx	20	-19.373	703.791	-2.728
			Max. My	14	-19.595	2.366	-684.903
			Max. Vy	20	-21.755	703.791	-2.728
			Max. Vx	14	20.575	2.366	-684.903
			Max. Torque	14			-0.809
			Max Tension	1	0.000	0.000	0.000
L14	91 - 90.75	Pole	Max. Compression	26	-35.448	0.937	-1.631
			Max. Mx	20	-19.445	710.969	-2.752
			Max. My	14	-19.666	2.381	-691.697
			Max. Vy	20	-21.775	710.969	-2.752
			Max. Vx	14	20.574	2.381	-691.697
			Max. Torque	14			-0.808
			Max Tension	1	0.000	0.000	0.000
L15	90.75 - 85.75	Pole	Max. Compression	26	-35.519	0.938	-1.648
			Max. Mx	20	-19.506	716.415	-2.771
			Max. My	14	-19.727	2.392	-696.848
			Max. Vy	20	-21.801	716.415	-2.771
			Max. Vx	14	20.585	2.392	-696.848
			Max. Torque	14			-0.808
			Max Tension	1	0.000	0.000	0.000
L16	85.75 -	Pole	Max. Compression	26	-36.954	0.947	-1.987
			Max. Mx	20	-20.633	826.921	-3.136
			Max. My	14	-20.874	2.614	-800.627
			Max. Vy	20	-22.419	826.921	-3.136
			Max. Vx	14	20.886	2.614	-800.627
			Max. Torque	14			-0.807
			Max Tension	1	0.000	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
	80.75		Max. Compression	26	-38.416	0.956	-2.335
			Max. Mx	20	-21.805	940.456	-3.506
			Max. My	14	-22.059	2.834	-905.846
			Max. Vy	20	-23.022	940.456	-3.506
			Max. Vx	14	21.168	2.834	-905.846
			Max. Torque	14			-0.807
L17	80.75 - 75.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-39.906	0.964	-2.691
			Max. Mx	20	-23.010	1056.988	-3.880
			Max. My	14	-23.273	3.053	-1012.449
			Max. Vy	20	-23.620	1056.988	-3.880
			Max. Vx	14	21.440	3.053	-1012.449
			Max. Torque	14			-0.806
L18	75.75 - 70.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-48.437	0.971	-3.058
			Max. Mx	20	-28.383	1184.317	-4.260
			Max. My	14	-28.663	3.272	-1128.184
			Max. Vy	20	-26.699	1184.317	-4.260
			Max. Vx	14	24.174	3.272	-1128.184
			Max. Torque	14			-0.806
L19	70.75 - 69.98	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-48.695	0.973	-3.116
			Max. Mx	20	-28.590	1204.895	-4.319
			Max. My	14	-28.869	3.306	-1146.825
			Max. Vy	20	-26.782	1204.895	-4.319
			Max. Vx	14	24.211	3.306	-1146.825
			Max. Torque	14			-0.805
L20	69.98 - 69.73	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-48.779	0.973	-3.135
			Max. Mx	20	-28.664	1211.591	-4.339
			Max. My	14	-28.942	3.317	-1152.884
			Max. Vy	20	-26.802	1211.591	-4.339
			Max. Vx	14	24.215	3.317	-1152.884
			Max. Torque	14			-0.805
L21	69.73 - 64.73	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-50.405	0.980	-3.514
			Max. Mx	20	-29.986	1346.929	-4.725
			Max. My	14	-30.261	3.535	-1274.723
			Max. Vy	20	-27.359	1346.929	-4.725
			Max. Vx	14	24.478	3.535	-1274.723
			Max. Torque	21			0.811
L22	64.73 - 63	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-50.995	0.982	-3.646
			Max. Mx	20	-30.443	1394.393	-4.860
			Max. My	14	-30.718	3.610	-1317.171
			Max. Vy	20	-27.563	1394.393	-4.860
			Max. Vx	14	24.576	3.610	-1317.171
			Max. Torque	21			0.826
L23	63 - 62.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-51.099	0.983	-3.666
			Max. Mx	20	-30.553	1401.280	-4.880
			Max. My	14	-30.824	3.621	-1323.317
			Max. Vy	20	-27.566	1401.280	-4.880
			Max. Vx	14	24.564	3.621	-1323.317
			Max. Torque	21			0.829
L24	62.75 - 59.08	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-52.649	0.987	-3.950
			Max. Mx	20	-31.784	1503.260	-5.167
			Max. My	14	-32.056	3.780	-1413.973
			Max. Vy	20	-28.033	1503.260	-5.167
			Max. Vx	14	24.793	3.780	-1413.973
			Max. Torque	21			0.860

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L25	59.08 - 58.82	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-52.757	0.988	-3.971
			Max. Mx	20	-31.881	1510.548	-5.188
			Max. My	14	-32.151	3.791	-1420.425
			Max. Vy	20	-28.051	1510.548	-5.188
			Max. Vx	14	24.795	3.791	-1420.425
L26	58.82 - 58.67	Pole	Max. Torque	21		0.862	
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-52.820	0.988	-3.983
			Max. Mx	20	-31.931	1514.757	-5.199
			Max. My	14	-32.201	3.797	-1424.150
			Max. Vy	20	-28.069	1514.757	-5.199
L27	58.67 - 53.67	Pole	Max. Vx	14	24.802	3.797	-1424.150
			Max. Torque	21		0.863	
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-54.848	0.994	-4.376
			Max. Mx	20	-33.553	1656.584	-5.594
			Max. My	14	-33.819	4.012	-1548.929
L28	53.67 - 48.58	Pole	Max. Vy	20	-28.685	1656.584	-5.594
			Max. Vx	14	25.061	4.012	-1548.929
			Max. Torque	21		0.913	
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-55.120	0.994	-4.430
			Max. Mx	20	-33.781	1675.817	-5.647
L29	48.58 - 47.58	Pole	Max. My	14	-34.044	4.041	-1565.743
			Max. Vy	20	-28.757	1675.817	-5.647
			Max. Vx	14	25.087	4.041	-1565.743
			Max. Torque	21		0.920	
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-58.609	1.000	-4.866
L30	47.58 - 42.58	Pole	Max. Mx	20	-36.637	1833.735	-6.079
			Max. My	14	-36.901	4.273	-1702.911
			Max. Vy	20	-29.516	1833.735	-6.079
			Max. Vx	14	25.463	4.273	-1702.911
			Max. Torque	21		0.978	
			Max Tension	1	0.000	0.000	0.000
L31	42.58 - 39.67	Pole	Max. Compression	26	-60.629	1.004	-5.265
			Max. Mx	20	-38.310	1982.555	-6.479
			Max. My	14	-38.558	4.485	-1830.874
			Max. Vy	20	-30.052	1982.555	-6.479
			Max. Vx	16	25.750	987.093	-1704.894
			Max. Torque	21		1.030	
L32	39.67 - 39.42	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-61.853	1.004	-5.486
			Max. Mx	20	-39.292	2070.398	-6.713
			Max. My	14	-39.530	4.608	-1905.849
			Max. Vy	20	-30.370	2070.398	-6.713
			Max. Vx	16	26.018	1030.640	-1780.263
L33	39.42 - 34.42	Pole	Max. Torque	21		1.055	
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-61.979	1.004	-5.506
			Max. Mx	20	-39.414	2077.987	-6.733
			Max. My	14	-39.647	4.618	-1912.307
			Max. Vy	20	-30.375	2077.987	-6.733
L33	39.42 - 34.42	Pole	Max. Vx	16	26.022	1034.402	-1786.774
			Max. Torque	21		1.056	
			Max Tension	1	0.000	0.000	0.000
L33	39.42 - 34.42	Pole	Max. Compression	26	-64.485	1.004	-5.893
			Max. Mx	20	-41.452	2231.263	-7.139
			Max. My	14	-41.672	4.828	-2042.108

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L34	34.42 - 32.5	Pole	Max. Vy	20	-30.958	2231.263	-7.139
			Max. Vx	16	26.516	1110.367	-1918.259
			Max. Torque	21			1.095
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-65.471	1.004	-6.044
			Max. Mx	20	-42.237	2290.880	-7.295
			Max. My	14	-42.454	4.909	-2092.276
			Max. Vy	20	-31.190	2290.880	-7.295
			Max. Vx	16	26.712	1139.909	-1969.394
L35	32.5 - 32.25	Pole	Max. Torque	21			1.109
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-65.584	1.004	-6.064
			Max. Mx	20	-42.344	2298.673	-7.315
			Max. My	14	-42.555	4.919	-2098.820
			Max. Vy	20	-31.191	2298.673	-7.315
			Max. Vx	16	26.712	1143.770	-1976.077
			Max. Torque	21			1.111
			Max Tension	1	0.000	0.000	0.000
L36	32.25 - 31.42	Pole	Max. Compression	26	-65.962	1.004	-6.129
			Max. Mx	20	-42.629	2324.592	-7.383
			Max. My	14	-42.837	4.953	-2120.564
			Max. Vy	20	-31.287	2324.592	-7.383
			Max. Vx	16	26.794	1156.612	-1998.307
			Max. Torque	21			1.116
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-66.093	1.004	-6.150
			Max. Mx	20	-42.743	2332.413	-7.404
L37	31.42 - 31.17	Pole	Max. My	14	-42.948	4.964	-2127.119
			Max. Vy	20	-31.302	2332.413	-7.404
			Max. Vx	16	26.807	1160.487	-2005.014
			Max. Torque	21			1.117
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-67.229	1.016	-6.337
			Max. Mx	20	-43.642	2400.587	-7.581
			Max. My	14	-43.841	5.054	-2184.130
			Max. Vy	20	-31.554	2400.587	-7.581
L38	31.17 - 29	Pole	Max. Vx	16	27.021	1194.263	-2063.480
			Max. Torque	21			1.141
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-67.403	1.018	-6.368
			Max. Mx	20	-43.790	2411.631	-7.610
			Max. My	14	-43.986	5.069	-2193.344
			Max. Vy	20	-31.580	2411.631	-7.610
			Max. Vx	16	27.042	1199.735	-2072.951
			Max. Torque	21			1.146
L39	29 - 28.65	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-67.517	1.019	-6.388
			Max. Mx	20	-43.884	2418.896	-7.628
			Max. My	14	-44.078	5.078	-2199.402
			Max. Vy	20	-31.602	2418.896	-7.628
			Max. Vx	16	27.061	1203.333	-2079.181
			Max. Torque	21			1.148
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-69.943	1.049	-6.823
L40	28.65 - 28.42	Pole	Max. Mx	20	-45.841	2575.611	-8.032
			Max. My	14	-46.013	5.281	-2329.468
			Max. Vy	20	-32.134	2575.611	-8.032
			Max. Vx	16	27.511	1280.960	-2213.559
			Max. Torque	21			1.212
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-70.087	1.051	-6.846
			Max. Mx	20	-45.974	2583.642	-8.053
			Max. My	14	-46.141	5.291	-2336.102
L41	28.42 - 23.5	Pole	Max. Vy	20	-32.142	2583.642	-8.053
			Max. Vx	16	27.518	1284.938	-2220.445
			Max. Torque	21			1.215
			Max. Compression	26	-69.943	1.049	-6.823
			Max. Mx	20	-45.841	2575.611	-8.032
			Max. My	14	-46.013	5.281	-2329.468
			Max. Vy	20	-32.134	2575.611	-8.032
			Max. Vx	16	27.511	1280.960	-2213.559
			Max. Torque	21			1.212
L42	23.5 - 23.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-70.087	1.051	-6.846
			Max. Mx	20	-45.974	2583.642	-8.053
			Max. My	14	-46.141	5.291	-2336.102
			Max. Vy	20	-32.142	2583.642	-8.053
			Max. Vx	16	27.518	1284.938	-2220.445
			Max. Torque	21			1.215

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L43	23.25 - 23	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-70.231	1.052	-6.868
			Max. Mx	20	-46.092	2591.680	-8.074
			Max. My	14	-46.259	5.302	-2342.739
			Max. Vy	20	-32.170	2591.680	-8.074
			Max. Vx	16	27.542	1288.919	-2227.337
L44	23 - 22.75	Pole	Max. Torque	21			1.218
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-70.362	1.054	-6.890
			Max. Mx	20	-46.199	2599.725	-8.094
			Max. My	14	-46.365	5.312	-2349.378
			Max. Vy	20	-32.198	2599.725	-8.094
L45	22.75 - 17.75	Pole	Max. Vx	16	27.565	1292.903	-2234.234
			Max. Torque	21			1.221
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-72.950	1.064	-7.315
			Max. Mx	20	-48.346	2761.988	-8.508
			Max. My	14	-48.484	5.516	-2482.607
L46	17.75 - 12.75	Pole	Max. Vy	20	-32.736	2761.988	-8.508
			Max. Vx	16	28.020	1373.258	-2373.343
			Max. Torque	21			1.272
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-75.533	1.064	-7.732
			Max. Mx	20	-50.530	2926.860	-8.923
L47	12.75 - 7.75	Pole	Max. My	14	-50.635	5.718	-2616.643
			Max. Vy	20	-33.257	2926.860	-8.923
			Max. Vx	16	28.462	1454.886	-2514.664
			Max. Torque	21			1.317
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-78.122	1.064	-8.152
L48	7.75 - 2.75	Pole	Max. Mx	20	-52.742	3094.330	-9.340
			Max. My	14	-52.811	5.919	-2751.430
			Max. Vy	20	-33.776	3094.330	-9.340
			Max. Vx	16	28.902	1537.784	-2658.191
			Max. Torque	21			1.363
			Max Tension	1	0.000	0.000	0.000
L49	2.75 - 0	Pole	Max. Compression	26	-80.706	1.064	-8.571
			Max. Mx	20	-54.982	3264.386	-9.759
			Max. My	14	-55.010	6.117	-2886.932
			Max. Vy	20	-34.293	3264.386	-9.759
			Max. Vx	16	29.340	1621.945	-2803.914
			Max. Torque	21			1.410
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-82.091	1.064	-8.796
			Max. Mx	20	-56.222	3359.012	-9.990
			Max. My	14	-56.228	6.224	-2961.753
			Max. Vy	20	-34.581	3359.012	-9.990
			Max. Vx	16	29.584	1668.769	-2884.992
			Max. Torque	21			1.439

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	36	82.091	7.918	-0.007
	Max. H _x	21	42.181	34.549	-0.039
	Max. H _z	4	56.241	-17.095	29.556
	Max. M _x	2	2953.597	-0.039	27.200
	Max. M _z	8	3358.362	-34.549	0.039
	Max. Torsion	21	1.439	34.549	-0.039
	Min. Vert	25	42.181	12.759	22.124
	Min. H _x	9	42.181	-34.549	0.039

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Min. H _z	16	56.241	17.095	-29.556
	Min. M _x	14	-2961.753	0.039	-27.200
	Min. M _z	20	-3359.012	34.549	-0.039
	Min. Torsion	9	-1.426	-34.549	0.039

Tower Mast Reaction Summary

Load Combination	Vertical	Shear _x	Shear _z	Overturing Moment, M _x	Overturing Moment, M _z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead Only	46.868	0.000	0.000	3.260	0.250	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	56.241	0.039	-27.200	-2953.597	-5.607	-0.790
0.9 Dead+1.0 Wind 0 deg - No Ice	42.181	0.039	-27.200	-2907.666	-5.578	-0.780
1.2 Dead+1.0 Wind 30 deg - No Ice	56.241	17.095	-29.556	-2876.832	-1668.136	0.664
0.9 Dead+1.0 Wind 30 deg - No Ice	42.181	17.095	-29.556	-2834.170	-1642.872	0.673
1.2 Dead+1.0 Wind 60 deg - No Ice	56.241	28.366	-16.392	-1652.334	-2865.780	0.849
0.9 Dead+1.0 Wind 60 deg - No Ice	42.181	28.366	-16.392	-1628.113	-2822.119	0.854
1.2 Dead+1.0 Wind 90 deg - No Ice	56.241	34.549	-0.039	-1.837	-3358.362	1.425
0.9 Dead+1.0 Wind 90 deg - No Ice	42.181	34.549	-0.039	-2.784	-3307.556	1.426
1.2 Dead+1.0 Wind 120 deg - No Ice	56.241	22.138	12.751	1405.178	-2435.378	0.338
0.9 Dead+1.0 Wind 120 deg - No Ice	42.181	22.138	12.751	1381.628	-2396.332	0.334
1.2 Dead+1.0 Wind 150 deg - No Ice	56.241	12.759	22.124	2436.772	-1402.527	0.705
0.9 Dead+1.0 Wind 150 deg - No Ice	42.181	12.759	22.124	2396.646	-1380.086	0.697
1.2 Dead+1.0 Wind 180 deg - No Ice	56.241	-0.039	27.200	2961.753	6.224	0.803
0.9 Dead+1.0 Wind 180 deg - No Ice	42.181	-0.039	27.200	2913.700	6.024	0.793
1.2 Dead+1.0 Wind 210 deg - No Ice	56.241	-17.095	29.556	2884.992	1668.769	-0.649
0.9 Dead+1.0 Wind 210 deg - No Ice	42.181	-17.095	29.556	2840.207	1643.330	-0.659
1.2 Dead+1.0 Wind 240 deg - No Ice	56.241	-28.366	16.392	1660.497	2866.423	-0.848
0.9 Dead+1.0 Wind 240 deg - No Ice	42.181	-28.366	16.392	1634.151	2822.583	-0.853
1.2 Dead+1.0 Wind 270 deg - No Ice	56.241	-34.549	0.039	9.990	3359.012	-1.439
0.9 Dead+1.0 Wind 270 deg - No Ice	42.181	-34.549	0.039	8.814	3308.026	-1.439
1.2 Dead+1.0 Wind 300 deg - No Ice	56.241	-22.138	-12.751	-1397.012	2436.034	-0.351
0.9 Dead+1.0 Wind 300 deg - No Ice	42.181	-22.138	-12.751	-1375.588	2396.806	-0.346
1.2 Dead+1.0 Wind 330 deg - No Ice	56.241	-12.759	-22.124	-2428.621	1403.165	-0.706
0.9 Dead+1.0 Wind 330 deg - No Ice	42.181	-12.759	-22.124	-2390.617	1380.547	-0.698
1.2 Dead+1.0 Ice+1.0 Temp	82.091	-0.000	0.000	8.796	1.064	0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	82.091	0.007	-6.937	-770.164	-0.079	-0.175
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	82.091	3.897	-6.740	-708.255	-414.006	0.123
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	82.091	6.567	-3.794	-404.464	-714.394	0.147

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 90	82.091	7.918	-0.007	7.782	-836.898	0.296
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 120	82.091	5.940	3.424	392.894	-665.692	0.031
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 150	82.091	3.425	5.937	675.126	-383.208	0.130
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 180	82.091	-0.007	6.937	788.050	2.246	0.177
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 210	82.091	-3.897	6.740	726.141	416.172	-0.122
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 240	82.091	-6.567	3.794	422.353	716.561	-0.146
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 270	82.091	-7.918	0.007	10.107	839.067	-0.296
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 300	82.091	-5.940	-3.424	-375.004	667.863	-0.031
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 330	82.091	-3.425	-5.937	-657.240	385.378	-0.130
deg+1.0 Ice+1.0 Temp						
Dead+Wind 0 deg - Service	46.868	0.009	-6.518	-699.427	-1.135	-0.187
Dead+Wind 30 deg - Service	46.868	4.096	-7.081	-681.499	-396.371	0.161
Dead+Wind 60 deg - Service	46.868	6.797	-3.928	-390.384	-681.070	0.205
Dead+Wind 90 deg - Service	46.868	8.278	-0.009	1.981	-798.221	0.342
Dead+Wind 120 deg - Service	46.868	5.305	3.056	336.265	-578.416	0.078
Dead+Wind 150 deg - Service	46.868	3.058	5.302	581.353	-333.026	0.164
Dead+Wind 180 deg - Service	46.868	-0.009	6.518	706.193	1.670	0.188
Dead+Wind 210 deg - Service	46.868	-4.096	7.081	688.265	396.907	-0.160
Dead+Wind 240 deg - Service	46.868	-6.797	3.928	397.151	681.606	-0.205
Dead+Wind 270 deg - Service	46.868	-8.278	0.009	4.785	798.758	-0.343
Dead+Wind 300 deg - Service	46.868	-5.305	-3.056	-329.498	578.952	-0.078
Dead+Wind 330 deg - Service	46.868	-3.058	-5.302	-574.587	333.562	-0.164

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.000	-46.868	0.000	0.000	46.868	-0.000	0.000%
2	0.039	-56.241	-27.200	-0.039	56.241	27.200	0.000%
3	0.039	-42.181	-27.200	-0.039	42.181	27.200	0.000%
4	17.095	-56.241	-29.556	-17.095	56.241	29.556	0.000%
5	17.095	-42.181	-29.556	-17.095	42.181	29.556	0.000%
6	28.366	-56.241	-16.392	-28.366	56.241	16.392	0.000%
7	28.366	-42.181	-16.392	-28.366	42.181	16.392	0.000%
8	34.549	-56.241	-0.039	-34.549	56.241	0.039	0.000%
9	34.549	-42.181	-0.039	-34.549	42.181	0.039	0.000%
10	22.138	-56.241	12.751	-22.138	56.241	-12.751	0.000%
11	22.138	-42.181	12.751	-22.138	42.181	-12.751	0.000%
12	12.759	-56.241	22.124	-12.759	56.241	-22.124	0.000%
13	12.759	-42.181	22.124	-12.759	42.181	-22.124	0.000%
14	-0.039	-56.241	27.200	0.039	56.241	-27.200	0.000%
15	-0.039	-42.181	27.200	0.039	42.181	-27.200	0.000%
16	-17.095	-56.241	29.556	17.095	56.241	-29.556	0.000%
17	-17.095	-42.181	29.556	17.095	42.181	-29.556	0.000%
18	-28.366	-56.241	16.392	28.366	56.241	-16.392	0.000%
19	-28.366	-42.181	16.392	28.366	42.181	-16.392	0.000%
20	-34.549	-56.241	0.039	34.549	56.241	-0.039	0.000%
21	-34.549	-42.181	0.039	34.549	42.181	-0.039	0.000%

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
22	-22.138	-56.241	-12.751	22.138	56.241	12.751	0.000%
23	-22.138	-42.181	-12.751	22.138	42.181	12.751	0.000%
24	-12.759	-56.241	-22.124	12.759	56.241	22.124	0.000%
25	-12.759	-42.181	-22.124	12.759	42.181	22.124	0.000%
26	0.000	-82.091	0.000	0.000	82.091	-0.000	0.000%
27	0.007	-82.091	-6.937	-0.007	82.091	6.937	0.000%
28	3.897	-82.091	-6.740	-3.897	82.091	6.740	0.000%
29	6.567	-82.091	-3.794	-6.567	82.091	3.794	0.000%
30	7.918	-82.091	-0.007	-7.918	82.091	0.007	0.000%
31	5.940	-82.091	3.424	-5.940	82.091	-3.424	0.000%
32	3.425	-82.091	5.937	-3.425	82.091	-5.937	0.000%
33	-0.007	-82.091	6.937	0.007	82.091	-6.937	0.000%
34	-3.897	-82.091	6.740	3.897	82.091	-6.740	0.000%
35	-6.567	-82.091	3.794	6.567	82.091	-3.794	0.000%
36	-7.918	-82.091	0.007	7.918	82.091	-0.007	0.000%
37	-5.940	-82.091	-3.424	5.940	82.091	3.424	0.000%
38	-3.425	-82.091	-5.937	3.425	82.091	5.937	0.000%
39	0.009	-46.868	-6.518	-0.009	46.868	6.518	0.000%
40	4.096	-46.868	-7.081	-4.096	46.868	7.081	0.000%
41	6.797	-46.868	-3.928	-6.797	46.868	3.928	0.000%
42	8.278	-46.868	-0.009	-8.278	46.868	0.009	0.000%
43	5.305	-46.868	3.056	-5.305	46.868	-3.056	0.000%
44	3.058	-46.868	5.302	-3.058	46.868	-5.302	0.000%
45	-0.009	-46.868	6.518	0.009	46.868	-6.518	0.000%
46	-4.096	-46.868	7.081	4.096	46.868	-7.081	0.000%
47	-6.797	-46.868	3.928	6.797	46.868	-3.928	0.000%
48	-8.278	-46.868	0.009	8.278	46.868	-0.009	0.000%
49	-5.305	-46.868	-3.056	5.305	46.868	3.056	0.000%
50	-3.058	-46.868	-5.302	3.058	46.868	5.302	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000600
2	Yes	6	0.00000001	0.00010271
3	Yes	5	0.00000001	0.00059502
4	Yes	7	0.00000001	0.00032533
5	Yes	7	0.00000001	0.00007331
6	Yes	7	0.00000001	0.00032308
7	Yes	7	0.00000001	0.00007278
8	Yes	6	0.00000001	0.00011474
9	Yes	5	0.00000001	0.00065970
10	Yes	7	0.00000001	0.00027832
11	Yes	7	0.00000001	0.00006607
12	Yes	7	0.00000001	0.00027160
13	Yes	7	0.00000001	0.00006423
14	Yes	6	0.00000001	0.00014508
15	Yes	5	0.00000001	0.00086451
16	Yes	7	0.00000001	0.00032614
17	Yes	7	0.00000001	0.00007340
18	Yes	7	0.00000001	0.00032913
19	Yes	7	0.00000001	0.00007422
20	Yes	6	0.00000001	0.00015752
21	Yes	5	0.00000001	0.00092361
22	Yes	7	0.00000001	0.00027299
23	Yes	7	0.00000001	0.00006470
24	Yes	7	0.00000001	0.00027961
25	Yes	7	0.00000001	0.00006654
26	Yes	5	0.00000001	0.00021635
27	Yes	7	0.00000001	0.00032635
28	Yes	7	0.00000001	0.00039615
29	Yes	7	0.00000001	0.00039665
30	Yes	7	0.00000001	0.00033405
31	Yes	7	0.00000001	0.00037991

32	Yes	7	0.00000001	0.00037923
33	Yes	7	0.00000001	0.00032582
34	Yes	7	0.00000001	0.00040673
35	Yes	7	0.00000001	0.00040768
36	Yes	7	0.00000001	0.00033666
37	Yes	7	0.00000001	0.00037509
38	Yes	7	0.00000001	0.00037530
39	Yes	5	0.00000001	0.00017176
40	Yes	6	0.00000001	0.00007388
41	Yes	6	0.00000001	0.00007231
42	Yes	5	0.00000001	0.00018809
43	Yes	5	0.00000001	0.00081342
44	Yes	5	0.00000001	0.00076963
45	Yes	5	0.00000001	0.00017693
46	Yes	6	0.00000001	0.00007487
47	Yes	6	0.00000001	0.00007648
48	Yes	5	0.00000001	0.00019298
49	Yes	5	0.00000001	0.00077291
50	Yes	5	0.00000001	0.00081809

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	140 - 135	28.359	48	2.131	0.007
L2	135 - 130	26.132	48	2.115	0.006
L3	130 - 125	23.944	48	2.060	0.005
L4	125 - 120	21.826	48	1.978	0.004
L5	120 - 115	19.816	48	1.856	0.003
L6	115 - 114.75	17.948	48	1.707	0.002
L7	114.75 - 109.75	17.859	48	1.704	0.002
L8	109.75 - 104.75	16.115	48	1.627	0.002
L9	104.75 - 101.58	14.458	48	1.537	0.001
L10	101.58 - 101.33	13.457	48	1.476	0.001
L11	101.33 - 96.33	13.380	48	1.469	0.001
L12	96.33 - 91.33	11.911	48	1.336	0.001
L13	91.33 - 91	10.584	48	1.198	0.001
L14	91 - 90.75	10.502	48	1.189	0.001
L15	90.75 - 85.75	10.440	48	1.185	0.001
L16	85.75 - 80.75	9.239	48	1.108	0.001
L17	80.75 - 75.75	8.120	48	1.029	0.001
L18	75.75 - 70.75	7.085	48	0.948	0.001
L19	70.75 - 69.98	6.135	48	0.867	0.001
L20	69.98 - 69.73	5.997	48	0.854	0.001
L21	69.73 - 64.73	5.952	48	0.850	0.001
L22	64.73 - 63	5.105	48	0.768	0.000
L23	63 - 62.75	4.832	48	0.740	0.000
L24	62.75 - 59.08	4.793	48	0.736	0.000
L25	59.08 - 58.82	4.245	48	0.690	0.000
L26	58.82 - 58.67	4.207	48	0.687	0.000
L27	58.67 - 53.67	4.186	48	0.685	0.000
L28	53.67 - 48.58	3.505	48	0.615	0.000
L29	53 - 47.58	3.420	48	0.606	0.000
L30	47.58 - 42.58	2.753	48	0.562	0.000
L31	42.58 - 39.67	2.200	48	0.494	0.000
L32	39.67 - 39.42	1.911	48	0.454	0.000
L33	39.42 - 34.42	1.888	48	0.451	0.000
L34	34.42 - 32.5	1.443	48	0.398	0.000
L35	32.5 - 32.25	1.287	48	0.379	0.000
L36	32.25 - 31.42	1.267	48	0.375	0.000
L37	31.42 - 31.17	1.203	48	0.364	0.000
L38	31.17 - 29	1.184	48	0.362	0.000
L39	29 - 28.65	1.025	48	0.339	0.000
L40	28.65 - 28.42	1.000	48	0.335	0.000
L41	28.42 - 23.5	0.984	48	0.332	0.000
L42	23.5 - 23.25	0.672	48	0.274	0.000
L43	23.25 - 23	0.657	48	0.272	0.000

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L44	23 - 22.75	0.643	48	0.269	0.000
L45	22.75 - 17.75	0.629	48	0.266	0.000
L46	17.75 - 12.75	0.382	48	0.207	0.000
L47	12.75 - 7.75	0.196	48	0.148	0.000
L48	7.75 - 2.75	0.072	48	0.089	0.000
L49	2.75 - 0	0.009	48	0.031	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
138.000	DB636-C	48	27.465	2.128	0.007	7760
127.000	AIR 6419 B77G_CCIV3 w/ Mount Pipe	48	22.663	2.014	0.004	3260
118.000	AIR 32 B2A B66AA w/ Mount Pipe	48	19.051	1.788	0.002	2062
108.000	FFVV-65B-R2 w/ Mount Pipe	48	15.524	1.596	0.002	3286
73.000	DT465B-2XR w/ Mount Pipe	48	6.552	0.903	0.001	3540

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	140 - 135	119.225	20	8.964	0.029
L2	135 - 130	109.893	20	8.900	0.026
L3	130 - 125	100.716	20	8.674	0.020
L4	125 - 120	91.832	20	8.330	0.016
L5	120 - 115	83.391	20	7.822	0.012
L6	115 - 114.75	75.540	20	7.194	0.008
L7	114.75 - 109.75	75.165	20	7.180	0.008
L8	109.75 - 104.75	67.831	20	6.856	0.007
L9	104.75 - 101.58	60.860	20	6.480	0.006
L10	101.58 - 101.33	56.652	20	6.221	0.005
L11	101.33 - 96.33	56.328	20	6.194	0.005
L12	96.33 - 91.33	50.146	20	5.630	0.004
L13	91.33 - 91	44.562	20	5.049	0.004
L14	91 - 90.75	44.214	20	5.011	0.004
L15	90.75 - 85.75	43.953	20	4.995	0.004
L16	85.75 - 80.75	38.897	20	4.671	0.003
L17	80.75 - 75.75	34.187	20	4.335	0.003
L18	75.75 - 70.75	29.830	20	3.994	0.003
L19	70.75 - 69.98	25.829	20	3.653	0.002
L20	69.98 - 69.73	25.245	20	3.600	0.002
L21	69.73 - 64.73	25.057	20	3.583	0.002
L22	64.73 - 63	21.490	20	3.234	0.002
L23	63 - 62.75	20.340	20	3.116	0.002
L24	62.75 - 59.08	20.177	20	3.102	0.002
L25	59.08 - 58.82	17.869	20	2.907	0.002
L26	58.82 - 58.67	17.711	20	2.892	0.002
L27	58.67 - 53.67	17.620	20	2.884	0.002
L28	53.67 - 48.58	14.755	20	2.592	0.002
L29	53 - 47.58	14.394	20	2.553	0.002
L30	47.58 - 42.58	11.588	20	2.368	0.001
L31	42.58 - 39.67	9.260	20	2.079	0.001
L32	39.67 - 39.42	8.044	20	1.911	0.001
L33	39.42 - 34.42	7.945	20	1.900	0.001
L34	34.42 - 32.5	6.073	20	1.677	0.001
L35	32.5 - 32.25	5.415	20	1.594	0.001
L36	32.25 - 31.42	5.332	20	1.580	0.001

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L37	31.42 - 31.17	5.061	20	1.534	0.001
L38	31.17 - 29	4.981	20	1.523	0.001
L39	29 - 28.65	4.311	20	1.426	0.001
L40	28.65 - 28.42	4.208	20	1.409	0.001
L41	28.42 - 23.5	4.140	20	1.398	0.001
L42	23.5 - 23.25	2.826	20	1.153	0.001
L43	23.25 - 23	2.766	20	1.143	0.001
L44	23 - 22.75	2.707	20	1.132	0.001
L45	22.75 - 17.75	2.648	20	1.120	0.001
L46	17.75 - 12.75	1.606	20	0.870	0.000
L47	12.75 - 7.75	0.825	20	0.622	0.000
L48	7.75 - 2.75	0.303	20	0.376	0.000
L49	2.75 - 0	0.038	20	0.132	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
138.000	DB636-C	20	115.483	8.951	0.030	1989
127.000	AIR 6419 B77G_CCIIV3 w/ Mount Pipe	20	95.342	8.480	0.019	814
118.000	AIR 32 B2A B66AA w/ Mount Pipe	20	80.174	7.534	0.011	507
108.000	FFVV-65B-R2 w/ Mount Pipe	20	65.347	6.725	0.007	801
73.000	DT465B-2XR w/ Mount Pipe	20	27.586	3.807	0.003	846

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	KI/r	A in ²	P _u K	φP _n K	Ratio P _u / φP _n
L1	140 - 135 (1)	TP14.296x13.161x0.188	5.000	0.000	0.0	8.396	-3.657	491.183	0.007
L2	135 - 130 (2)	TP15.431x14.296x0.188	5.000	0.000	0.0	9.072	-3.886	530.697	0.007
L3	130 - 125 (3)	TP16.566x15.431x0.188	5.000	0.000	0.0	9.747	-8.803	570.210	0.015
L4	125 - 120 (4)	TP17.701x16.566x0.188	5.000	0.000	0.0	10.423	-9.190	609.723	0.015
L5	120 - 115 (5)	TP18.836x17.701x0.188	5.000	0.000	0.0	11.098	-12.700	649.236	0.020
L6	115 - 114.75 (6)	TP18.893x18.836x0.463	0.250	0.000	0.0	27.055	-12.753	1582.710	0.008
L7	114.75 - 109.75 (7)	TP20.027x18.893x0.45	5.000	0.000	0.0	27.962	-13.467	1635.810	0.008
L8	109.75 - 104.75 (8)	TP21.162x20.027x0.425	5.000	0.000	0.0	27.974	-17.174	1636.470	0.010
L9	104.75 - 101.58 (9)	TP21.882x21.162x0.419	3.170	0.000	0.0	28.527	-17.692	1668.830	0.011
L10	101.58 - 101.33 (10)	TP21.939x21.882x0.313	0.250	0.000	0.0	21.451	-17.743	1254.860	0.014
L11	101.33 - 96.33 (11)	TP23.074x21.939x0.313	5.000	0.000	0.0	22.576	-18.531	1320.710	0.014
L12	96.33 - 91.33 (12)	TP24.209x23.074x0.313	5.000	0.000	0.0	23.702	-19.373	1386.570	0.014
L13	91.33 - 91 (13)	TP24.284x24.209x0.313	0.330	0.000	0.0	23.776	-19.445	1390.920	0.014
L14	91 - 90.75 (14)	TP24.34x24.284x0.6	0.250	0.000	0.0	45.211	-19.506	2644.860	0.007
L15	90.75 - 85.75	TP25.475x24.34x0.588	5.000	0.000	0.0	46.409	-20.633	2714.930	0.008

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio P _u / φP _n
L16	(15) 85.75 - 80.75	TP26.61x25.475x0.563	5.000	0.000	0.0	46.505	-21.805	2720.560	0.008
L17	(16) 80.75 - 75.75	TP27.745x26.61x0.55	5.000	0.000	0.0	47.475	-23.010	2777.290	0.008
L18	(17) 75.75 - 70.75	TP28.88x27.745x0.544	5.000	0.000	0.0	48.905	-28.383	2860.950	0.010
L19	(18) 70.75 - 69.98	TP29.055x28.88x0.531	0.770	0.000	0.0	48.097	-28.590	2813.660	0.010
L20	(19) 69.98 - 69.73	TP29.112x29.055x0.531	0.250	0.000	0.0	48.192	-28.664	2819.260	0.010
L21	(20) 69.73 - 64.73	TP30.247x29.112x0.525	5.000	0.000	0.0	49.527	-29.986	2897.340	0.010
L22	(21) 64.73 - 63	TP30.64x30.247x0.519	1.730	0.000	0.0	49.595	-30.443	2901.280	0.010
L23	(22) 63 - 62.75	TP30.696x30.64x0.7	0.250	0.000	0.0	66.646	-30.553	3898.790	0.008
L24	(23) 62.75 - 59.08	TP31.53x30.696x0.688	3.670	0.000	0.0	67.301	-31.784	3937.110	0.008
L25	(24) 59.08 - 58.82	TP31.589x31.53x0.625	0.260	0.000	0.0	61.424	-31.881	3593.300	0.009
L26	(25) 58.82 - 58.67	TP31.623x31.589x0.625	0.150	0.000	0.0	61.491	-31.931	3597.250	0.009
L27	(26) 58.67 - 53.67	TP32.758x31.623x0.613	5.000	0.000	0.0	62.492	-33.553	3655.810	0.009
L28	(27) 53.67 - 48.58	TP33.913x32.758x0.613	5.090	0.000	0.0	62.788	-33.781	3673.100	0.009
L29	(28) 48.58 - 47.58	TP33.515x32.285x0.638	5.420	0.000	0.0	66.525	-36.637	3891.740	0.009
L30	(29) 47.58 - 42.58	TP34.65x33.515x0.625	5.000	0.000	0.0	67.498	-38.310	3948.610	0.010
L31	(30) 42.58 - 39.67	TP35.311x34.65x0.613	2.910	0.000	0.0	67.456	-39.292	3946.190	0.010
L32	(31) 39.67 - 39.42	TP35.368x35.311x0.813	0.250	0.000	0.0	89.113	-39.414	5213.140	0.008
L33	(32) 39.42 - 34.42	TP36.503x35.368x0.788	5.000	0.000	0.0	89.271	-41.452	5222.370	0.008
L34	(33) 34.42 - 32.5	TP36.939x36.503x0.788	1.920	0.000	0.0	90.361	-42.237	5286.110	0.008
L35	(34) 32.5 - 32.25	TP36.995x36.939x0.613	0.250	0.000	0.0	70.731	-42.344	4137.770	0.010
L36	(35) 32.25 - 31.42	TP37.184x36.995x0.6	0.830	0.000	0.0	69.670	-42.629	4075.710	0.010
L37	(36) 31.42 - 31.17	TP37.241x37.184x0.775	0.250	0.000	0.0	89.700	-42.743	5247.450	0.008
L38	(37) 31.17 - 29	TP37.733x37.241x0.763	2.170	0.000	0.0	89.476	-43.642	5234.330	0.008
L39	(38) 29 - 28.65	TP37.813x37.733x0.675	0.350	0.000	0.0	79.566	-43.790	4654.590	0.009
L40	(39) 28.65 - 28.42	TP37.865x37.813x0.675	0.230	0.000	0.0	79.678	-43.883	4661.140	0.009
L41	(40) 28.42 - 23.5	TP38.982x37.865x0.663	4.920	0.000	0.0	80.577	-45.841	4713.760	0.010
L42	(41) 23.5 - 23.25	TP39.039x38.982x0.788	0.250	0.000	0.0	95.610	-45.974	5593.170	0.008
L43	(42) 23.25 - 23	TP39.095x39.039x0.788	0.250	0.000	0.0	95.752	-46.092	5601.470	0.008
L44	(43) 23 - 22.75	TP39.152x39.095x0.65	0.250	0.000	0.0	79.434	-46.199	4646.880	0.010
L45	(44) 22.75 - 17.75	TP40.287x39.152x0.638	5.000	0.000	0.0	80.228	-48.346	4693.360	0.010
L46	(45) 17.75 - 12.75	TP41.422x40.287x0.625	5.000	0.000	0.0	80.932	-50.530	4734.520	0.011
L47	(46) 12.75 - 7.75	TP42.558x41.422x0.613	5.000	0.000	0.0	81.544	-52.742	4770.340	0.011
L48	(47) 7.75 - 2.75	TP43.693x42.558x0.6	5.000	0.000	0.0	80.769	-53.661	4724.970	0.011
L49	(48) 2.75 - 0 (49)	TP44.317x43.693x0.6	2.750	0.000	0.0	82.066	-55.016	4800.840	0.011

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	140 - 135 (1)	TP14.296x13.161x0.188	23.666	180.005	0.131	0.000	180.005	0.000
L2	135 - 130 (2)	TP15.431x14.296x0.188	52.994	210.337	0.252	0.000	210.337	0.000
L3	130 - 125 (3)	TP16.566x15.431x0.188	100.834	243.029	0.415	0.000	243.029	0.000
L4	125 - 120 (4)	TP17.701x16.566x0.188	162.245	278.082	0.583	0.000	278.082	0.000
L5	120 - 115 (5)	TP18.836x17.701x0.188	236.422	312.017	0.758	0.000	312.017	0.000
L6	115 - 114.75 (6)	TP18.893x18.836x0.463	240.562	748.960	0.321	0.000	748.960	0.000
L7	114.75 - 109.75 (7)	TP20.027x18.893x0.45	324.847	823.978	0.394	0.000	823.978	0.000
L8	109.75 - 104.75 (8)	TP21.162x20.027x0.425	420.788	875.283	0.481	0.000	875.283	0.000
L9	104.75 - 101.58 (9)	TP21.882x21.162x0.419	486.043	924.725	0.526	0.000	924.725	0.000
L10	101.58 - 101.33 (10)	TP21.939x21.882x0.313	491.234	704.111	0.698	0.000	704.111	0.000
L11	101.33 - 96.33 (11)	TP23.074x21.939x0.313	596.320	780.512	0.764	0.000	780.512	0.000
L12	96.33 - 91.33 (12)	TP24.209x23.074x0.313	703.797	860.850	0.818	0.000	860.850	0.000
L13	91.33 - 91 (13)	TP24.284x24.209x0.313	710.975	866.292	0.821	0.000	866.292	0.000
L14	91 - 90.75 (14)	TP24.34x24.284x0.6	716.421	1611.933	0.444	0.000	1611.933	0.000
L15	90.75 - 85.75 (15)	TP25.475x24.34x0.588	826.928	1737.442	0.476	0.000	1737.442	0.000
L16	85.75 - 80.75 (16)	TP26.61x25.475x0.563	940.458	1825.783	0.515	0.000	1825.783	0.000
L17	80.75 - 75.75 (17)	TP27.745x26.61x0.55	1056.992	1948.575	0.542	0.000	1948.575	0.000
L18	75.75 - 70.75 (18)	TP28.88x27.745x0.544	1184.325	2093.633	0.566	0.000	2093.633	0.000
L19	70.75 - 69.98 (19)	TP29.055x28.88x0.531	1204.900	2073.783	0.581	0.000	2073.783	0.000
L20	69.98 - 69.73 (20)	TP29.112x29.055x0.531	1211.600	2082.117	0.582	0.000	2082.117	0.000
L21	69.73 - 64.73 (21)	TP30.247x29.112x0.525	1346.933	2227.250	0.605	0.000	2227.250	0.000
L22	64.73 - 63 (22)	TP30.64x30.247x0.519	1394.400	2261.192	0.617	0.000	2261.192	0.000
L23	63 - 62.75 (23)	TP30.696x30.64x0.7	1401.292	3008.000	0.466	0.000	3008.000	0.000
L24	62.75 - 59.08 (24)	TP31.53x30.696x0.688	1503.267	3126.383	0.481	0.000	3126.383	0.000
L25	59.08 - 58.82 (25)	TP31.589x31.53x0.625	1510.558	2870.525	0.526	0.000	2870.525	0.000
L26	58.82 - 58.67 (26)	TP31.623x31.589x0.625	1514.767	2876.900	0.527	0.000	2876.900	0.000
L27	58.67 - 53.67 (27)	TP32.758x31.623x0.613	1656.592	3035.267	0.546	0.000	3035.267	0.000
L28	53.67 - 48.58 (28)	TP33.913x32.758x0.613	1675.825	3064.325	0.547	0.000	3064.325	0.000
L29	48.58 - 47.58 (29)	TP33.515x32.285x0.638	1833.742	3303.692	0.555	0.000	3303.692	0.000
L30	47.58 - 42.58 (30)	TP34.65x33.515x0.625	1982.567	3472.458	0.571	0.000	3472.458	0.000
L31	42.58 - 39.67 (31)	TP35.311x34.65x0.613	2070.408	3541.483	0.585	0.000	3541.483	0.000
L32	39.67 - 39.42 (32)	TP35.368x35.311x0.813	2078.000	4632.492	0.449	0.000	4632.492	0.000
L33	39.42 - 34.42 (33)	TP36.503x35.368x0.788	2231.275	4803.367	0.465	0.000	4803.367	0.000
L34	34.42 - 32.5 (34)	TP36.939x36.503x0.788	2290.892	4922.608	0.465	0.000	4922.608	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L35	32.5 - 32.25 (35)	TP36.995x36.939x0.613	2298.683	3896.817	0.590	0.000	3896.817	0.000
L36	32.25 - 31.42 (36)	TP37.184x36.995x0.6	2324.600	3861.217	0.602	0.000	3861.217	0.000
L37	31.42 - 31.17 (37)	TP37.241x37.184x0.775	2332.425	4931.675	0.473	0.000	4931.675	0.000
L38	31.17 - 29 (38)	TP37.733x37.241x0.763	2400.600	4990.567	0.481	0.000	4990.567	0.000
L39	29 - 28.65 (39)	TP37.813x37.733x0.675	2411.642	4468.592	0.540	0.000	4468.592	0.000
L40	28.65 - 28.42 (40)	TP37.865x37.813x0.675	2418.908	4481.275	0.540	0.000	4481.275	0.000
L41	28.42 - 23.5 (41)	TP38.982x37.865x0.663	2575.625	4673.458	0.551	0.000	4673.458	0.000
L42	23.5 - 23.25 (42)	TP39.039x38.982x0.788	2583.658	5517.575	0.468	0.000	5517.575	0.000
L43	23.25 - 23 (43)	TP39.095x39.039x0.788	2591.692	5534.133	0.468	0.000	5534.133	0.000
L44	23 - 22.75 (44)	TP39.152x39.095x0.65	2599.733	4630.975	0.561	0.000	4630.975	0.000
L45	22.75 - 17.75 (45)	TP40.287x39.152x0.638	2762.000	4820.525	0.573	0.000	4820.525	0.000
L46	17.75 - 12.75 (46)	TP41.422x40.287x0.625	2926.875	5007.283	0.585	0.000	5007.283	0.000
L47	12.75 - 7.75 (47)	TP42.558x41.422x0.613	3094.342	5190.758	0.596	0.000	5190.758	0.000
L48	7.75 - 2.75 (48)	TP43.693x42.558x0.6	3162.058	5200.900	0.608	0.000	5200.900	0.000
L49	2.75 - 0 (49)	TP44.317x43.693x0.6	3264.400	5370.467	0.608	0.000	5370.467	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	140 - 135 (1)	TP14.296x13.161x0.188	5.769	147.355	0.039	0.386	182.064	0.002
L2	135 - 130 (2)	TP15.431x14.296x0.188	5.964	159.209	0.037	0.386	212.535	0.002
L3	130 - 125 (3)	TP16.566x15.431x0.188	12.208	171.063	0.071	0.386	245.362	0.002
L4	125 - 120 (4)	TP17.701x16.566x0.188	12.369	182.917	0.068	0.386	280.545	0.001
L5	120 - 115 (5)	TP18.836x17.701x0.188	16.563	194.771	0.085	0.135	318.085	0.000
L6	115 - 114.75 (6)	TP18.893x18.836x0.463	16.578	474.812	0.035	0.138	766.351	0.000
L7	114.75 - 109.75 (7)	TP20.027x18.893x0.45	17.149	490.742	0.035	0.205	841.375	0.000
L8	109.75 - 104.75 (8)	TP21.162x20.027x0.425	20.427	490.940	0.042	0.097	891.583	0.000
L9	104.75 - 101.58 (9)	TP21.882x21.162x0.419	20.769	500.650	0.041	0.146	941.042	0.000
L10	101.58 - 101.33 (10)	TP21.939x21.882x0.313	20.784	376.457	0.055	0.156	712.978	0.000
L11	101.33 - 96.33 (11)	TP23.074x21.939x0.313	21.276	396.214	0.054	0.345	789.780	0.000
L12	96.33 - 91.33 (12)	TP24.209x23.074x0.313	21.755	415.972	0.052	0.462	870.508	0.001
L13	91.33 - 91 (13)	TP24.284x24.209x0.313	21.775	417.276	0.052	0.466	875.975	0.001
L14	91 - 90.75 (14)	TP24.34x24.284x0.6	21.802	793.457	0.027	0.470	1649.650	0.000
L15	90.75 - 85.75 (15)	TP25.475x24.34x0.588	22.419	814.480	0.028	0.539	1775.208	0.000
L16	85.75 - 80.75 (16)	TP26.61x25.475x0.563	23.022	816.168	0.028	0.611	1861.800	0.000
L17	80.75 - 75.75 (17)	TP27.745x26.61x0.55	23.620	833.187	0.028	0.683	1984.350	0.000
L18	75.75 - 70.75	TP28.88x27.745x0.544	26.699	858.286	0.031	0.746	2129.908	0.000

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L19	(18) 70.75 - 69.98	TP29.055x28.88x0.531	26.782	844.098	0.032	0.752	2108.542	0.000
L20	(19) 69.98 - 69.73	TP29.112x29.055x0.531	26.802	845.777	0.032	0.755	2116.942	0.000
L21	(20) 69.73 - 64.73	TP30.247x29.112x0.525	27.359	869.202	0.031	0.810	2262.442	0.000
L22	(21) 64.73 - 63	TP30.64x30.247x0.519	27.563	870.383	0.032	0.826	2295.925	0.000
L23	(22) 63 - 62.75	TP30.696x30.64x0.7	27.566	1169.640	0.024	0.828	3072.558	0.000
L24	(23) 62.75 - 59.08	TP31.53x30.696x0.688	28.033	1181.130	0.024	0.860	3190.225	0.000
L25	(24) 59.08 - 58.82	TP31.589x31.53x0.625	28.051	1077.990	0.026	0.862	2923.108	0.000
L26	(25) 58.82 - 58.67	TP31.623x31.589x0.625	28.069	1079.170	0.026	0.863	2929.542	0.000
L27	(26) 58.67 - 53.67	TP32.758x31.623x0.613	28.685	1096.740	0.026	0.913	3087.442	0.000
L28	(27) 53.67 - 48.58	TP33.913x32.758x0.613	28.757	1101.930	0.026	0.920	3116.725	0.000
L29	(28) 48.58 - 47.58	TP33.515x32.285x0.638	29.516	1167.520	0.025	0.978	3361.592	0.000
L30	(29) 47.58 - 42.58	TP34.65x33.515x0.625	30.052	1184.580	0.025	1.030	3529.775	0.000
L31	(30) 42.58 - 39.67	TP35.311x34.65x0.613	30.370	1183.860	0.026	1.054	3597.400	0.000
L32	(31) 39.67 - 39.42	TP35.368x35.311x0.813	30.375	1563.940	0.019	1.056	4732.750	0.000
L33	(32) 39.42 - 34.42	TP36.503x35.368x0.788	30.958	1566.710	0.020	1.095	4900.300	0.000
L34	(33) 34.42 - 32.5	TP36.939x36.503x0.788	31.190	1585.830	0.020	1.109	5020.642	0.000
L35	(34) 32.5 - 32.25	TP36.995x36.939x0.613	31.191	1241.330	0.025	1.110	3955.175	0.000
L36	(35) 32.25 - 31.42	TP37.184x36.995x0.6	31.287	1222.710	0.026	1.115	3917.367	0.000
L37	(36) 31.42 - 31.17	TP37.241x37.184x0.775	31.302	1574.230	0.020	1.117	5027.283	0.000
L38	(37) 31.17 - 29	TP37.733x37.241x0.763	31.555	1570.300	0.020	1.141	5084.175	0.000
L39	(38) 29 - 28.65	TP37.813x37.733x0.675	31.580	1396.380	0.023	1.145	4541.492	0.000
L40	(39) 28.65 - 28.42	TP37.865x37.813x0.675	31.602	1398.340	0.023	1.148	4554.267	0.000
L41	(40) 28.42 - 23.5	TP38.982x37.865x0.663	32.134	1414.130	0.023	1.211	4745.558	0.000
L42	(41) 23.5 - 23.25	TP39.039x38.982x0.788	32.142	1677.950	0.019	1.215	5620.875	0.000
L43	(42) 23.25 - 23	TP39.095x39.039x0.788	32.170	1680.440	0.019	1.218	5637.567	0.000
L44	(43) 23 - 22.75	TP39.152x39.095x0.65	32.198	1394.060	0.023	1.221	4700.542	0.000
L45	(44) 22.75 - 17.75	TP40.287x39.152x0.638	32.736	1408.010	0.023	1.272	4889.067	0.000
L46	(45) 17.75 - 12.75	TP41.422x40.287x0.625	33.257	1420.350	0.023	1.317	5074.692	0.000
L47	(46) 12.75 - 7.75	TP42.558x41.422x0.613	33.776	1431.100	0.024	1.362	5256.925	0.000
L48	(47) 7.75 - 2.75	TP43.693x42.558x0.6	34.086	1425.080	0.024	1.390	5264.833	0.000
L49	(48) 2.75 - 0 (49)	TP44.317x43.693x0.6	34.441	1450.690	0.024	1.424	5435.283	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio	Ratio	Ratio	Ratio	Ratio	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		P_u	M_{ux}	M_{uy}	V_u	T_u			
		ϕP_n	ϕM_{nx}	ϕM_{ny}	ϕV_n	ϕT_n			
L1	140 - 135 (1)	0.007	0.131	0.000	0.039	0.002	0.141	1.050	4.8.2
L2	135 - 130 (2)	0.007	0.252	0.000	0.037	0.002	0.261	1.050	4.8.2
L3	130 - 125 (3)	0.015	0.415	0.000	0.071	0.002	0.436	1.050	4.8.2
L4	125 - 120 (4)	0.015	0.583	0.000	0.068	0.001	0.603	1.050	4.8.2
L5	120 - 115 (5)	0.020	0.758	0.000	0.085	0.000	0.785	1.050	4.8.2
L6	115 - 114.75 (6)	0.008	0.321	0.000	0.035	0.000	0.330	1.050	4.8.2
L7	114.75 - 109.75 (7)	0.008	0.394	0.000	0.035	0.000	0.404	1.050	4.8.2
L8	109.75 - 104.75 (8)	0.010	0.481	0.000	0.042	0.000	0.493	1.050	4.8.2
L9	104.75 - 101.58 (9)	0.011	0.526	0.000	0.041	0.000	0.538	1.050	4.8.2
L10	101.58 - 101.33 (10)	0.014	0.698	0.000	0.055	0.000	0.715	1.050	4.8.2
L11	101.33 - 96.33 (11)	0.014	0.764	0.000	0.054	0.000	0.781	1.050	4.8.2
L12	96.33 - 91.33 (12)	0.014	0.818	0.000	0.052	0.001	0.834	1.050	4.8.2
L13	91.33 - 91 (13)	0.014	0.821	0.000	0.052	0.001	0.837	1.050	4.8.2
L14	91 - 90.75 (14)	0.007	0.444	0.000	0.027	0.000	0.453	1.050	4.8.2
L15	90.75 - 85.75 (15)	0.008	0.476	0.000	0.028	0.000	0.484	1.050	4.8.2
L16	85.75 - 80.75 (16)	0.008	0.515	0.000	0.028	0.000	0.524	1.050	4.8.2
L17	80.75 - 75.75 (17)	0.008	0.542	0.000	0.028	0.000	0.552	1.050	4.8.2
L18	75.75 - 70.75 (18)	0.010	0.566	0.000	0.031	0.000	0.577	1.050	4.8.2
L19	70.75 - 69.98 (19)	0.010	0.581	0.000	0.032	0.000	0.592	1.050	4.8.2
L20	69.98 - 69.73 (20)	0.010	0.582	0.000	0.032	0.000	0.593	1.050	4.8.2
L21	69.73 - 64.73 (21)	0.010	0.605	0.000	0.031	0.000	0.616	1.050	4.8.2
L22	64.73 - 63 (22)	0.010	0.617	0.000	0.032	0.000	0.628	1.050	4.8.2
L23	63 - 62.75 (23)	0.008	0.466	0.000	0.024	0.000	0.474	1.050	4.8.2
L24	62.75 - 59.08 (24)	0.008	0.481	0.000	0.024	0.000	0.489	1.050	4.8.2
L25	59.08 - 58.82 (25)	0.009	0.526	0.000	0.026	0.000	0.536	1.050	4.8.2
L26	58.82 - 58.67 (26)	0.009	0.527	0.000	0.026	0.000	0.536	1.050	4.8.2
L27	58.67 - 53.67 (27)	0.009	0.546	0.000	0.026	0.000	0.556	1.050	4.8.2
L28	53.67 - 48.58 (28)	0.009	0.547	0.000	0.026	0.000	0.557	1.050	4.8.2
L29	48.58 - 47.58 (29)	0.009	0.555	0.000	0.025	0.000	0.565	1.050	4.8.2
L30	47.58 - 42.58 (30)	0.010	0.571	0.000	0.025	0.000	0.581	1.050	4.8.2
L31	42.58 - 39.67 (31)	0.010	0.585	0.000	0.026	0.000	0.595	1.050	4.8.2
L32	39.67 - 39.42 (32)	0.008	0.449	0.000	0.019	0.000	0.457	1.050	4.8.2
L33	39.42 - 34.42 (33)	0.008	0.465	0.000	0.020	0.000	0.473	1.050	4.8.2
L34	34.42 - 32.5 (34)	0.008	0.465	0.000	0.020	0.000	0.474	1.050	4.8.2
L35	32.5 - 32.25 (35)	0.010	0.590	0.000	0.025	0.000	0.601	1.050	4.8.2
L36	32.25 - 31.42 (36)	0.010	0.602	0.000	0.026	0.000	0.613	1.050	4.8.2
L37	31.42 - 31.17	0.008	0.473	0.000	0.020	0.000	0.481	1.050	4.8.2

Section No.	Elevation ft	Ratio	Ratio	Ratio	Ratio	Ratio	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		P_u	M_{ux}	M_{uy}	V_u	T_u			
		ϕP_n	ϕM_{nx}	ϕM_{ny}	ϕV_n	ϕT_n			
L38	31.17 - 29	0.008	0.481	0.000	0.020	0.000	0.490	1.050	4.8.2
L39	29 - 28.65	0.009	0.540	0.000	0.023	0.000	0.550	1.050	4.8.2
L40	28.65 - 28.42	0.009	0.540	0.000	0.023	0.000	0.550	1.050	4.8.2
L41	28.42 - 23.5	0.010	0.551	0.000	0.023	0.000	0.561	1.050	4.8.2
L42	23.5 - 23.25	0.008	0.468	0.000	0.019	0.000	0.477	1.050	4.8.2
L43	23.25 - 23	0.008	0.468	0.000	0.019	0.000	0.477	1.050	4.8.2
L44	23 - 22.75	0.010	0.561	0.000	0.023	0.000	0.572	1.050	4.8.2
L45	22.75 - 17.75	0.010	0.573	0.000	0.023	0.000	0.584	1.050	4.8.2
L46	17.75 - 12.75	0.011	0.585	0.000	0.023	0.000	0.596	1.050	4.8.2
L47	12.75 - 7.75	0.011	0.596	0.000	0.024	0.000	0.608	1.050	4.8.2
L48	7.75 - 2.75	0.011	0.608	0.000	0.024	0.000	0.620	1.050	4.8.2
L49	2.75 - 0 (49)	0.011	0.608	0.000	0.024	0.000	0.620	1.050	4.8.2

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	140 - 135	Pole	TP14.296x13.161x0.188	1	-3.657	515.742	13.4	Pass
L2	135 - 130	Pole	TP15.431x14.296x0.188	2	-3.886	557.232	24.8	Pass
L3	130 - 125	Pole	TP16.566x15.431x0.188	3	-8.803	598.720	41.5	Pass
L4	125 - 120	Pole	TP17.701x16.566x0.188	4	-9.190	640.209	57.5	Pass
L5	120 - 115	Pole	TP18.836x17.701x0.188	5	-12.700	681.698	74.7	Pass
L6	115 - 114.75	Pole	TP18.893x18.836x0.463	6	-12.753	1661.845	31.5	Pass
L7	114.75 - 109.75	Pole	TP20.027x18.893x0.45	7	-13.467	1717.600	38.4	Pass
L8	109.75 - 104.75	Pole	TP21.162x20.027x0.425	8	-17.174	1718.293	47.0	Pass
L9	104.75 - 101.58	Pole	TP21.882x21.162x0.419	9	-17.692	1752.271	51.2	Pass
L10	101.58 - 101.33	Pole	TP21.939x21.882x0.313	10	-17.743	1317.603	68.1	Pass
L11	101.33 - 96.33	Pole	TP23.074x21.939x0.313	11	-18.531	1386.745	74.4	Pass
L12	96.33 - 91.33	Pole	TP24.209x23.074x0.313	12	-19.373	1455.898	79.5	Pass
L13	91.33 - 91	Pole	TP24.284x24.209x0.313	13	-19.445	1460.466	79.8	Pass
L14	91 - 90.75	Pole	TP24.34x24.284x0.6	14	-19.506	2777.103	43.1	Pass
L15	90.75 - 85.75	Pole	TP25.475x24.34x0.588	15	-20.633	2850.676	46.1	Pass
L16	85.75 - 80.75	Pole	TP26.61x25.475x0.563	16	-21.805	2856.588	49.9	Pass
L17	80.75 - 75.75	Pole	TP27.745x26.61x0.55	17	-23.010	2916.154	52.5	Pass
L18	75.75 - 70.75	Pole	TP28.88x27.745x0.544	18	-28.383	3003.997	54.9	Pass
L19	70.75 - 69.98	Pole	TP29.055x28.88x0.531	19	-28.590	2954.343	56.4	Pass
L20	69.98 - 69.73	Pole	TP29.112x29.055x0.531	20	-28.664	2960.223	56.5	Pass
L21	69.73 - 64.73	Pole	TP30.247x29.112x0.525	21	-29.986	3042.207	58.7	Pass
L22	64.73 - 63	Pole	TP30.64x30.247x0.519	22	-30.443	3046.344	59.8	Pass
L23	63 - 62.75	Pole	TP30.696x30.64x0.7	23	-30.553	4093.729	45.2	Pass
L24	62.75 - 59.08	Pole	TP31.53x30.696x0.688	24	-31.784	4133.965	46.6	Pass
L25	59.08 - 58.82	Pole	TP31.589x31.53x0.625	25	-31.881	3772.965	51.0	Pass
L26	58.82 - 58.67	Pole	TP31.623x31.589x0.625	26	-31.931	3777.112	51.1	Pass
L27	58.67 - 53.67	Pole	TP32.758x31.623x0.613	27	-33.553	3838.600	52.9	Pass
L28	53.67 - 48.58	Pole	TP33.913x32.758x0.613	28	-33.781	3856.755	53.0	Pass
L29	48.58 - 47.58	Pole	TP33.515x32.285x0.638	29	-36.637	4086.327	53.8	Pass
L30	47.58 - 42.58	Pole	TP34.65x33.515x0.625	30	-38.310	4146.040	55.4	Pass
L31	42.58 - 39.67	Pole	TP35.311x34.65x0.613	31	-39.292	4143.499	56.7	Pass
L32	39.67 - 39.42	Pole	TP35.368x35.311x0.813	32	-39.414	5473.797	43.5	Pass
L33	39.42 - 34.42	Pole	TP36.503x35.368x0.788	33	-41.452	5483.488	45.0	Pass

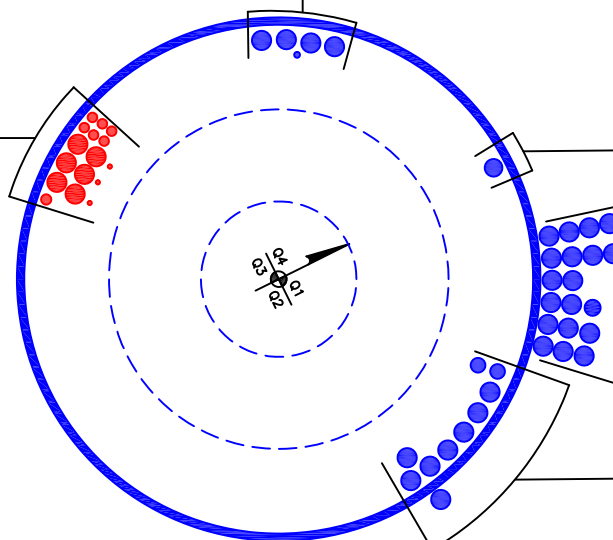
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail	
L34	34.42 - 32.5	Pole	TP36.939x36.503x0.788	34	-42.237	5550.415	45.1	Pass	
L35	32.5 - 32.25	Pole	TP36.995x36.939x0.613	35	-42.344	4344.658	57.2	Pass	
L36	32.25 - 31.42	Pole	TP37.184x36.995x0.6	36	-42.629	4279.495	58.4	Pass	
L37	31.42 - 31.17	Pole	TP37.241x37.184x0.775	37	-42.743	5509.822	45.9	Pass	
L38	31.17 - 29	Pole	TP37.733x37.241x0.763	38	-43.642	5496.046	46.6	Pass	
L39	29 - 28.65	Pole	TP37.813x37.733x0.675	39	-43.790	4887.319	52.3	Pass	
L40	28.65 - 28.42	Pole	TP37.865x37.813x0.675	40	-43.883	4894.197	52.4	Pass	
L41	28.42 - 23.5	Pole	TP38.982x37.865x0.663	41	-45.841	4949.448	53.5	Pass	
L42	23.5 - 23.25	Pole	TP39.039x38.982x0.788	42	-45.974	5872.828	45.4	Pass	
L43	23.25 - 23	Pole	TP39.095x39.039x0.788	43	-46.092	5881.543	45.4	Pass	
L44	23 - 22.75	Pole	TP39.152x39.095x0.65	44	-46.199	4879.224	54.5	Pass	
L45	22.75 - 17.75	Pole	TP40.287x39.152x0.638	45	-48.346	4928.028	55.6	Pass	
L46	17.75 - 12.75	Pole	TP41.422x40.287x0.625	46	-50.530	4971.246	56.7	Pass	
L47	12.75 - 7.75	Pole	TP42.558x41.422x0.613	47	-52.742	5008.857	57.9	Pass	
L48	7.75 - 2.75	Pole	TP43.693x42.558x0.6	48	-53.661	4961.218	59.0	Pass	
L49	2.75 - 0	Pole	TP44.317x43.693x0.6	49	-55.016	5040.882	59.0	Pass	
							Summary		
							Pole (L13)	79.8	Pass
							RATING =	79.8	Pass

***NOTE: Above stress ratios for reinforced sections are approximate. More exact calculations are presented in Appendix C.**

APPENDIX B
BASE LEVEL DRAWING



(PROPOSED EQUIPMENT CONFIGURATION)
(3) 3/8" TO 127 FT LEVEL
(6) 13/16" TO 127 FT LEVEL
(1) 7/8" TO 127 FT LEVEL
(6) 1-5/8" TO 127 FT LEVEL



(OTHER CONSIDERED EQUIPMENT)
(1) 1/2" TO 50 FT LEVEL
(4) 1-5/8" TO 73 FT LEVEL

(OTHER CONSIDERED EQUIPMENT)
(1) 1-1/2" TO 108 FT LEVEL

(OTHER CONSIDERED EQUIPMENT)
(1) 1-3/8" TO 118 FT LEVEL
(18) 1-5/8" TO 118 FT LEVEL

(OTHER CONSIDERED EQUIPMENT)
(8) 1-5/8" TO 138 FT LEVEL

(OTHER CONSIDERED EQUIPMENT)
(2) 1-1/4" TO 138 FT LEVEL

APPENDIX C
ADDITIONAL CALCULATIONS

TNX Geometry Input

Increment (ft): [Export to TNX](#)

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	140 - 135	5		18	13.161	14.296	0.1875	A572-65	1.000
2	135 - 130	5		18	14.296	15.431	0.1875	A572-65	1.000
3	130 - 125	5		18	15.431	16.566	0.1875	A572-65	1.000
4	125 - 120	5		18	16.566	17.701	0.1875	A572-65	1.000
5	120 - 115	5		18	17.701	18.836	0.1875	A572-65	1.000
6	115 - 114.75	0.25		18	18.836	18.893	0.4625	A572-65	0.910
7	114.75 - 109.75	5		18	18.893	20.027	0.45	A572-65	0.905
8	109.75 - 104.75	5		18	20.027	21.162	0.425	A572-65	0.929
9	104.75 - 101.58	3.17	0	18	21.162	21.882	0.41875	A572-65	0.926
10	101.58 - 101.33	0.25		18	21.882	21.939	0.3125	A572-65	1.000
11	101.33 - 96.33	5		18	21.939	23.074	0.3125	A572-65	1.000
12	96.33 - 91.33	5		18	23.074	24.209	0.3125	A572-65	1.000
13	91.33 - 91	0.33		18	24.209	24.284	0.3125	A572-65	1.000
14	91 - 90.75	0.25		18	24.284	24.340	0.6	A572-65	0.925
15	90.75 - 85.75	5		18	24.340	25.475	0.5875	A572-65	0.926
16	85.75 - 80.75	5		18	25.475	26.610	0.5625	A572-65	0.948
17	80.75 - 75.75	5		18	26.610	27.745	0.55	A572-65	0.952
18	75.75 - 70.75	5		18	27.745	28.880	0.54375	A572-65	0.947
19	70.75 - 69.98	0.77		18	28.880	29.055	0.53125	A572-65	0.951
20	69.98 - 69.73	0.25		18	29.055	29.112	0.53125	A572-65	0.951
21	69.73 - 64.73	5		18	29.112	30.247	0.525	A572-65	0.948
22	64.73 - 63	1.73		18	30.247	30.640	0.51875	A572-65	0.954
23	63 - 62.75	0.25		18	30.640	30.696	0.7	A572-65	0.981
24	62.75 - 59.08	3.67		18	30.696	31.530	0.6875	A572-65	0.984
25	59.08 - 58.82	0.26		18	31.530	31.589	0.625	A572-65	1.000
26	58.82 - 58.67	0.15		18	31.589	31.623	0.625	A572-65	0.999
27	58.67 - 53.67	5		18	31.623	32.758	0.6125	A572-65	1.001
28	53.67 - 53	5.09	4.42	18	32.758	33.913	0.6125	A572-65	0.999
29	53 - 47.58	5.42		18	32.285	33.515	0.6375	A572-65	0.941
30	47.58 - 42.58	5		18	33.515	34.650	0.625	A572-65	0.944
31	42.58 - 39.67	2.91		18	34.650	35.311	0.6125	A572-65	0.954
32	39.67 - 39.42	0.25		18	35.311	35.368	0.8125	A572-65	0.925
33	39.42 - 34.42	5		18	35.368	36.503	0.7875	A572-65	0.936
34	34.42 - 32.5	1.92		18	36.503	36.939	0.7875	A572-65	0.929
35	32.5 - 32.25	0.25		18	36.939	36.995	0.6125	A572-65	0.944
36	32.25 - 31.42	0.83		18	36.995	37.184	0.6	A572-65	0.961
37	31.42 - 31.17	0.25		18	37.184	37.241	0.775	A572-65	0.939
38	31.17 - 29	2.17		18	37.241	37.733	0.7625	A572-65	0.947
39	29 - 28.65	0.35		18	37.733	37.813	0.675	A572-65	0.991
40	28.65 - 28.42	0.23		18	37.813	37.865	0.675	A572-65	0.990
41	28.42 - 23.5	4.92		18	37.865	38.982	0.6625	A572-65	0.993
42	23.5 - 23.25	0.25		18	38.982	39.039	0.7875	A572-65	1.026
43	23.25 - 23	0.25		18	39.039	39.095	0.7875	A572-65	1.025
44	23 - 22.75	0.25		18	39.095	39.152	0.65	A572-65	1.085
45	22.75 - 17.75	5		18	39.152	40.287	0.6375	A572-65	1.088
46	17.75 - 12.75	5		18	40.287	41.422	0.625	A572-65	1.092
47	12.75 - 7.75	5		18	41.422	42.558	0.6125	A572-65	1.098
48	7.75 - 2.75	5		18	42.558	43.693	0.6	A572-65	1.105
49	2.75 - 0	2.75		18	43.693	44.317	0.6	A572-65	1.096

TNX Section Forces

Increment (ft):		TNX Output			
	5	Section Height (ft)	P _u (K)	M _{ux} (kip-ft)	V _u (K)
1	140 - 135		3.66	23.67	5.77
2	135 - 130		3.89	52.99	5.96
3	130 - 125		8.80	100.83	12.21
4	125 - 120		9.19	162.24	12.37
5	120 - 115		12.70	236.42	16.56
6	115 - 114.75		12.75	240.56	16.58
7	114.75 - 109.75		13.47	324.85	17.15
8	109.75 - 104.75		17.17	420.79	20.43
9	104.75 - 101.58		17.69	486.04	20.77
10	101.58 - 101.33		17.74	491.23	20.78
11	101.33 - 96.33		18.53	596.32	21.28
12	96.33 - 91.33		19.37	703.80	21.76
13	91.33 - 91		19.45	710.97	21.77
14	91 - 90.75		19.51	716.42	21.80
15	90.75 - 85.75		20.63	826.93	22.42
16	85.75 - 80.75		21.81	940.46	23.02
17	80.75 - 75.75		23.01	1057.00	23.62
18	75.75 - 70.75		28.38	1184.32	26.70
19	70.75 - 69.98		28.59	1204.90	26.78
20	69.98 - 69.73		28.66	1211.60	26.80
21	69.73 - 64.73		29.99	1346.94	27.36
22	64.73 - 63		30.44	1394.40	27.56
23	63 - 62.75		30.55	1401.29	27.57
24	62.75 - 59.08		31.78	1503.27	28.03
25	59.08 - 58.82		31.88	1510.56	28.05
26	58.82 - 58.67		31.93	1514.77	28.07
27	58.67 - 53.67		33.55	1656.59	28.69
28	53.67 - 53		33.78	1675.83	28.76
29	53 - 47.58		36.64	1833.75	29.52
30	47.58 - 42.58		38.31	1982.57	30.05
31	42.58 - 39.67		39.29	2070.41	30.37
32	39.67 - 39.42		39.41	2078.00	30.37
33	39.42 - 34.42		41.45	2231.27	30.96
34	34.42 - 32.5		42.24	2290.89	31.19
35	32.5 - 32.25		42.34	2298.68	31.19
36	32.25 - 31.42		42.63	2324.60	31.29
37	31.42 - 31.17		42.74	2332.42	31.30
38	31.17 - 29		43.64	2400.60	31.55
39	29 - 28.65		43.79	2411.64	31.58
40	28.65 - 28.42		43.88	2418.91	31.60
41	28.42 - 23.5		45.84	2575.62	32.13
42	23.5 - 23.25		45.97	2583.65	32.14
43	23.25 - 23		46.09	2591.69	32.17
44	23 - 22.75		46.20	2599.74	32.20
45	22.75 - 17.75		48.35	2762.00	32.74
46	17.75 - 12.75		50.53	2926.87	33.26
47	12.75 - 7.75		52.74	3094.34	33.78
48	7.75 - 2.75		54.98	3264.40	34.29
49	2.75 - 0		56.22	3359.03	34.58

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
140 - 135	Pole	TP14.296x13.161x0.1875	Pole	13.4%	Pass
135 - 130	Pole	TP15.431x14.296x0.1875	Pole	24.8%	Pass
130 - 125	Pole	TP16.566x15.431x0.1875	Pole	41.4%	Pass
125 - 120	Pole	TP17.701x16.566x0.1875	Pole	57.4%	Pass
120 - 115	Pole	TP18.836x17.701x0.1875	Pole	74.7%	Pass
115 - 114.75	Pole + Reinf.	TP18.893x18.836x0.4625	Reinf. 9 Tension Rupture	54.9%	Pass
114.75 - 109.75	Pole + Reinf.	TP20.027x18.893x0.45	Reinf. 9 Tension Rupture	68.0%	Pass
109.75 - 104.75	Pole + Reinf.	TP21.162x20.027x0.425	Reinf. 9 Tension Rupture	81.5%	Pass
104.75 - 101.58	Pole + Reinf.	TP21.882x21.162x0.4188	Reinf. 9 Tension Rupture	89.6%	Pass
101.58 - 101.33	Pole	TP21.939x21.882x0.3125	Pole	68.0%	Pass
101.33 - 96.33	Pole	TP23.074x21.939x0.3125	Pole	74.3%	Pass
96.33 - 91.33	Pole	TP24.209x23.074x0.3125	Pole	79.4%	Pass
91.33 - 91	Pole	TP24.284x24.209x0.3125	Pole	79.7%	Pass
91 - 90.75	Pole + Reinf.	TP24.34x24.284x0.6	Reinf. 8 Tension Rupture	68.9%	Pass
90.75 - 85.75	Pole + Reinf.	TP25.475x24.34x0.5875	Reinf. 8 Tension Rupture	74.0%	Pass
85.75 - 80.75	Pole + Reinf.	TP26.61x25.475x0.5625	Reinf. 8 Tension Rupture	78.6%	Pass
80.75 - 75.75	Pole + Reinf.	TP27.745x26.61x0.55	Reinf. 8 Tension Rupture	82.7%	Pass
75.75 - 70.75	Pole + Reinf.	TP28.88x27.745x0.5438	Reinf. 8 Tension Rupture	87.0%	Pass
70.75 - 69.98	Pole + Reinf.	TP29.055x28.88x0.5313	Reinf. 3 Tension Rupture	91.5%	Pass
69.98 - 69.73	Pole + Reinf.	TP29.112x29.055x0.5313	Reinf. 3 Tension Rupture	91.7%	Pass
69.73 - 64.73	Pole + Reinf.	TP30.247x29.112x0.525	Reinf. 3 Tension Rupture	95.8%	Pass
64.73 - 63	Pole + Reinf.	TP30.64x30.247x0.5188	Reinf. 3 Tension Rupture	97.1%	Pass
63 - 62.75	Pole + Reinf.	TP30.696x30.64x0.7	Reinf. 3 Tension Rupture	74.9%	Pass
62.75 - 59.08	Pole + Reinf.	TP31.53x30.696x0.6875	Reinf. 3 Tension Rupture	77.2%	Pass
59.08 - 58.82	Pole + Reinf.	TP31.589x31.53x0.625	Reinf. 4 Tension Rupture	79.0%	Pass
58.82 - 58.67	Pole + Reinf.	TP31.623x31.589x0.625	Reinf. 4 Tension Rupture	79.1%	Pass
58.67 - 53.67	Pole + Reinf.	TP32.758x31.623x0.6125	Reinf. 4 Tension Rupture	81.9%	Pass
53.67 - 53	Pole + Reinf.	TP33.913x32.758x0.6125	Reinf. 4 Tension Rupture	82.3%	Pass
53 - 47.58	Pole + Reinf.	TP33.515x32.285x0.6375	Reinf. 2 Tension Rupture	87.3%	Pass
47.58 - 42.58	Pole + Reinf.	TP34.65x33.515x0.625	Reinf. 2 Tension Rupture	89.8%	Pass
42.58 - 39.67	Pole + Reinf.	TP35.311x34.65x0.6125	Reinf. 2 Tension Rupture	91.1%	Pass
39.67 - 39.42	Pole + Reinf.	TP35.368x35.311x0.8125	Reinf. 2 Tension Rupture	70.7%	Pass
39.42 - 34.42	Pole + Reinf.	TP36.503x35.368x0.7875	Reinf. 2 Tension Rupture	72.6%	Pass
34.42 - 32.5	Pole + Reinf.	TP36.939x36.503x0.7875	Reinf. 2 Tension Rupture	73.3%	Pass
32.5 - 32.25	Pole + Reinf.	TP36.995x36.939x0.6125	Reinf. 5 Tension Rupture	90.7%	Pass
32.25 - 31.42	Pole + Reinf.	TP37.184x36.995x0.6	Reinf. 5 Tension Rupture	91.0%	Pass
31.42 - 31.17	Pole + Reinf.	TP37.241x37.184x0.775	Reinf. 1 Tension Rupture	73.8%	Pass
31.17 - 29	Pole + Reinf.	TP37.733x37.241x0.7625	Reinf. 1 Tension Rupture	74.6%	Pass
29 - 28.65	Pole + Reinf.	TP37.813x37.733x0.675	Reinf. 1 Tension Rupture	88.7%	Pass
28.65 - 28.42	Pole + Reinf.	TP37.865x37.813x0.675	Reinf. 1 Tension Rupture	88.8%	Pass
28.42 - 23.5	Pole + Reinf.	TP38.982x37.865x0.6625	Reinf. 1 Tension Rupture	90.5%	Pass
23.5 - 23.25	Pole + Reinf.	TP39.039x38.982x0.7875	Reinf. 1 Tension Rupture	74.0%	Pass
23.25 - 23	Pole + Reinf.	TP39.095x39.039x0.7875	Reinf. 1 Tension Rupture	74.1%	Pass
23 - 22.75	Pole + Reinf.	TP39.152x39.095x0.65	Reinf. 1 Tension Rupture	90.0%	Pass
22.75 - 17.75	Pole + Reinf.	TP40.287x39.152x0.6375	Reinf. 1 Tension Rupture	91.6%	Pass
17.75 - 12.75	Pole + Reinf.	TP41.422x40.287x0.625	Reinf. 1 Tension Rupture	93.0%	Pass
12.75 - 7.75	Pole + Reinf.	TP42.558x41.422x0.6125	Reinf. 1 Tension Rupture	94.4%	Pass
7.75 - 2.75	Pole + Reinf.	TP43.693x42.558x0.6	Reinf. 1 Tension Rupture	95.6%	Pass
2.75 - 0	Pole + Reinf.	TP44.317x43.693x0.6	Reinf. 1 Tension Rupture	96.3%	Pass
				Summary	
			Pole	79.7%	Pass
			Reinforcement	97.1%	Pass
			Overall	97.1%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in ⁴)			Area (in ²)			% Capacity* (100% Max. Allowable)										
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
140 - 135	211	n/a	211	8.40	n/a	8.40	13.4%										
135 - 130	266	n/a	266	9.07	n/a	9.07	24.8%										
130 - 125	330	n/a	330	9.75	n/a	9.75	41.4%										
125 - 120	404	n/a	404	10.42	n/a	10.42	57.4%										
120 - 115	487	n/a	487	11.10	n/a	11.10	74.7%										
115 - 114.75	492	680	1172	11.13	13.50	24.63	31.3%									54.9%	
114.75 - 109.75	587	758	1345	11.81	13.50	25.31	39.3%									68.0%	
109.75 - 104.75	694	841	1534	12.48	13.50	25.98	48.0%									81.5%	
104.75 - 101.58	767	896	1663	12.91	13.50	26.41	53.3%									89.6%	
101.58 - 101.33	1267	n/a	1267	21.45	n/a	21.45	68.0%										
101.33 - 96.33	1477	n/a	1477	22.58	n/a	22.58	74.3%										
96.33 - 91.33	1709	n/a	1709	23.70	n/a	23.70	79.4%										
91.33 - 91	1726	n/a	1726	23.78	n/a	23.78	79.7%										
91 - 90.75	1738	1473	3210	23.83	18.00	41.83	42.6%								68.9%		
90.75 - 85.75	1996	1605	3601	24.96	18.00	42.96	45.9%								74.0%		
85.75 - 80.75	2278	1743	4021	26.08	18.00	44.08	48.8%								78.6%		
80.75 - 75.75	2586	1887	4473	27.21	18.00	45.21	51.4%								82.7%		
75.75 - 70.75	2921	2037	4957	28.33	18.00	46.33	54.2%								87.0%		
70.75 - 69.98	2975	1972	4947	28.51	17.25	45.76	55.6%			91.5%							
69.98 - 69.73	2992	1980	4972	28.56	17.25	45.81	55.7%			91.7%							
69.73 - 64.73	3360	2130	5490	29.69	17.25	46.94	58.4%			95.8%							
64.73 - 63	3494	2183	5677	30.08	17.25	47.33	59.4%			97.1%							
63 - 62.75	3520	4069	7589	30.14	35.25	65.39	46.5%			74.9%				69.0%			
62.75 - 59.08	3817	4283	8100	30.96	35.25	66.21	48.3%			77.2%				71.2%			
59.08 - 58.82	3836	3575	7411	31.02	30.39	61.41	52.7%				79.0%			77.2%			
58.82 - 58.67	3848	3583	7431	31.05	30.39	61.44	52.8%				79.1%			77.3%			
58.67 - 53.67	4282	3833	8115	32.18	30.39	62.57	55.2%				81.9%			80.2%			
53.67 - 53	4342	3867	8209	32.33	30.39	62.72	55.5%				82.3%			80.5%			
53 - 47.58	4585	4469	9054	32.93	29.64	62.57	54.8%		87.3%		81.9%						
47.58 - 42.58	5072	4764	9836	34.06	29.64	63.70	56.9%		89.8%		84.2%						
42.58 - 39.67	5370	4941	10311	34.71	29.64	64.35	58.1%		91.1%		85.4%						
39.67 - 39.42	5396	7960	13356	34.77	47.64	82.41	45.1%		70.7%		66.3%	68.9%					
39.42 - 34.42	5938	8460	14398	35.89	47.64	83.53	46.8%		72.6%		68.1%	70.8%					
34.42 - 32.5	6155	8656	14811	36.33	47.64	83.97	47.5%		73.3%		68.8%	71.5%					
32.5 - 32.25	6183	5544	11728	36.38	30.39	66.77	60.3%				87.3%	90.7%					
32.25 - 31.42	6279	5599	11878	36.57	30.39	66.96	60.6%				87.6%	91.0%					
31.42 - 31.17	6308	8793	15102	36.63	47.64	84.27	47.9%	73.8%			69.2%	72.0%					
31.17 - 29	6564	9019	15584	37.12	47.64	84.76	48.6%	74.6%			69.9%	72.7%					
29 - 28.65	6667	7167	13834	37.19	41.64	78.83	59.6%	88.7%			87.4%						73.2%
28.65 - 28.42	6695	7186	13881	37.25	41.64	78.89	59.7%	88.8%			87.5%						73.3%
28.42 - 23.5	7308	7603	14911	38.35	41.64	79.99	61.4%	90.5%			89.1%						74.9%
23.5 - 23.25	7299	10570	17870	38.41	59.64	98.05	50.3%	74.0%			69.4%		67.6%				68.9%
23.25 - 23	7331	10600	17931	38.47	59.64	98.11	50.4%	74.1%			69.5%		67.6%				69.0%
23 - 22.75	7349	7433	14783	38.52	47.64	86.16	60.3%	90.0%			80.3%		70.8%				
22.75 - 17.75	8012	7855	15867	39.65	47.64	87.29	62.0%	91.6%			81.7%		72.3%				
17.75 - 12.75	8714	8288	17002	40.77	47.64	88.41	63.6%	93.0%			83.1%		73.6%				
12.75 - 7.75	9456	8733	18189	41.90	47.64	89.54	65.3%	94.4%			84.3%		74.8%				
7.75 - 2.75	10238	9190	19428	43.03	47.64	90.67	66.8%	95.6%			85.5%		76.0%				
2.75 - 0	10687	9446	20132	43.65	47.64	91.29	67.7%	96.3%			86.1%		76.6%				

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

Monopole Flange Plate Connection

Elevation = 101.58 ft.



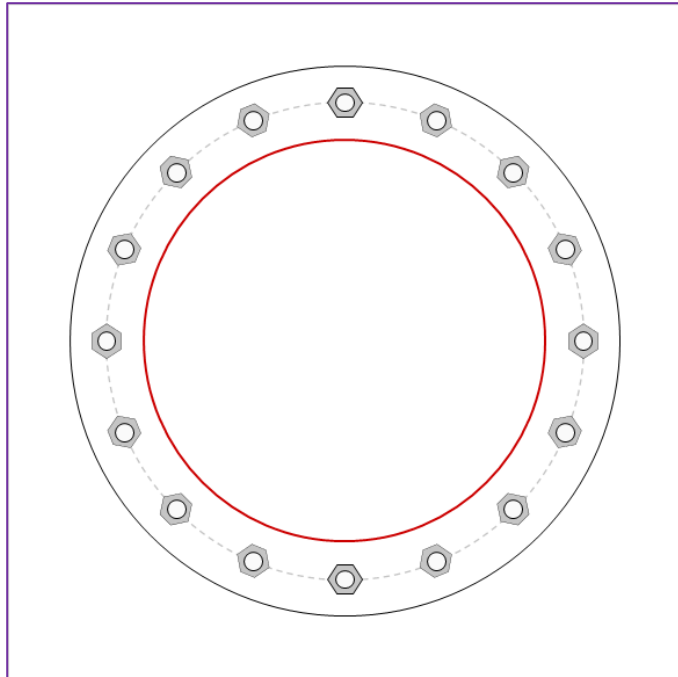
BU #	842873
Site Name	SHELTON NE
Order #	586271 Rev 1

Applied Loads	
Moment (kip-ft)	486.04
Axial Force (kips)	17.69
Shear Force (kips)	20.77

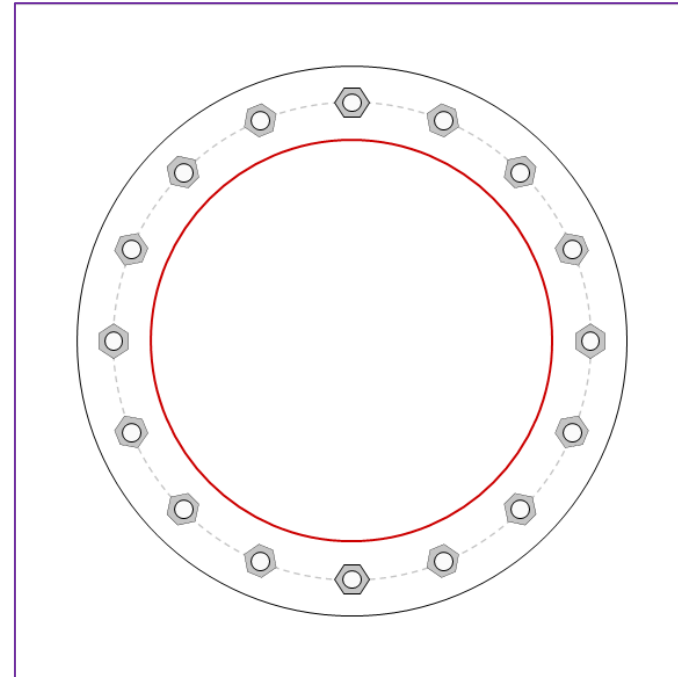
TIA-222 Revision	H
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*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(16) 1" ϕ bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 26" BC

Top Plate Data

30" OD x 1.5" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Top Stiffener Data

N/A

Top Pole Data

21.882" x 0.1875" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Bottom Plate Data

30" OD x 1.5" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Bottom Stiffener Data

N/A

Bottom Pole Data

21.882" x 0.3125" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	54.94
Allowable (kips)	54.50
Stress Rating:	96.0% Pass

Top Plate Capacity

Max Stress (ksi):	29.22	(Flexural)
Allowable Stress (ksi):	45.00	
Stress Rating:	61.8%	Pass
Tension Side Stress Rating:	57.6%	Pass

Bottom Plate Capacity

Max Stress (ksi):	29.22	(Flexural)
Allowable Stress (ksi):	45.00	
Stress Rating:	61.8%	Pass
Tension Side Stress Rating:	57.6%	Pass

Monopole Base Plate Connection

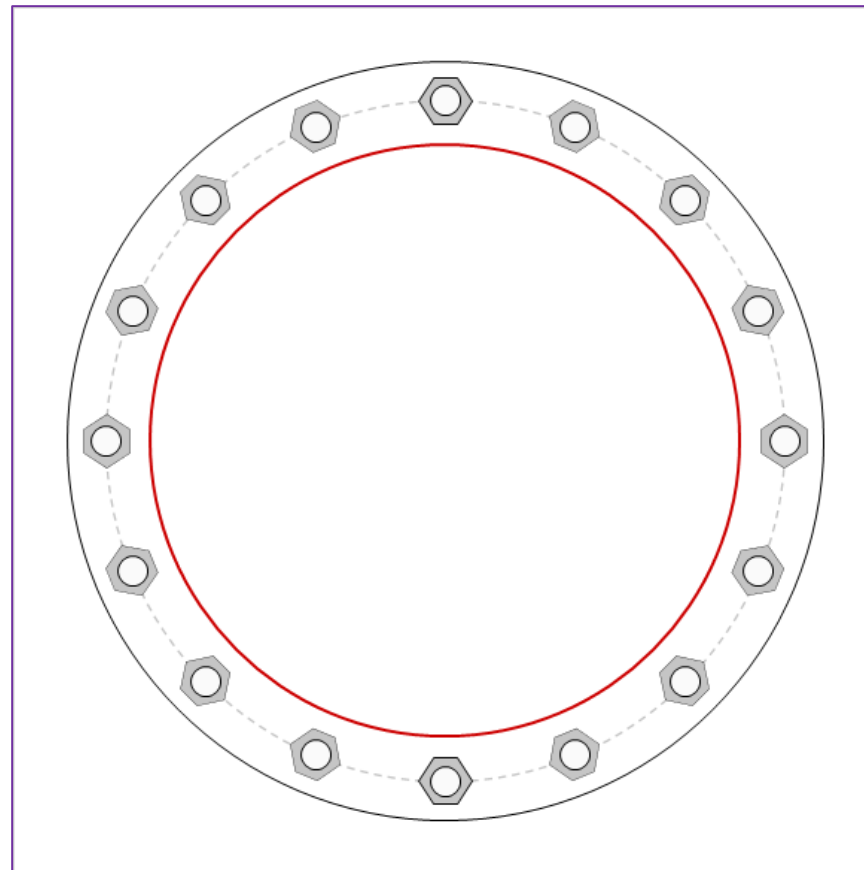


Site Info	
BU #	842873
Site Name	SHELTON NE
Order #	586271 Rev 1

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

Applied Loads	
Moment (kip-ft)	3359.03
Axial Force (kips)	56.22
Shear Force (kips)	34.58

*TIA-222-H Section 15.5 Applied



Connection Properties	Analysis Results
-----------------------	------------------

Anchor Rod Data
GROUP 1: (8) 2-1/4" ϕ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 51" BC
GROUP 2: (4) 2-1/4" ϕ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 51" BC
GROUP 3: (4) 2-1/4" ϕ bolts (F1554-105 N; $F_y=105$ ksi, $F_u=125$ ksi) on 51" BC
Base Plate Data
57" OD x 2.25" Plate (A633 Grade E; $F_y=60$ ksi, $F_u=70$ ksi)
Stiffener Data
N/A
Pole Data
44.317" x 0.3125" 18-sided pole (A572-65; $F_y=65$ ksi, $F_u=80$ ksi)

Anchor Rod Summary	(units of kips, kip-in)		
GROUP 1:	$P_{u,t} = 190.41$	$\phi P_{n,t} = 243.75$	Stress Rating
	$V_u = 4.32$	$\phi V_n = 149.1$	74.4%
	$M_u = n/a$	$\phi M_n = n/a$	Pass
GROUP 2:	$P_{u,t} = 197.24$	$\phi P_{n,t} = 243.75$	Stress Rating
	$V_u = 0$	$\phi V_n = 149.1$	77.1%
	$M_u = n/a$	$\phi M_n = n/a$	Pass
GROUP 3:	$P_{u,t} = 197.24$	$\phi P_{n,t} = 304.69$	Stress Rating
	$V_u = 0$	$\phi V_n = 186.38$	61.7%
	$M_u = n/a$	$\phi M_n = n/a$	Pass
Base Plate Summary			
Max Stress (ksi):	37.38	(Flexural)	
Allowable Stress (ksi):	54		
Stress Rating:	65.9%		Pass

CCIplate

Elevation (ft) 0 (Base)

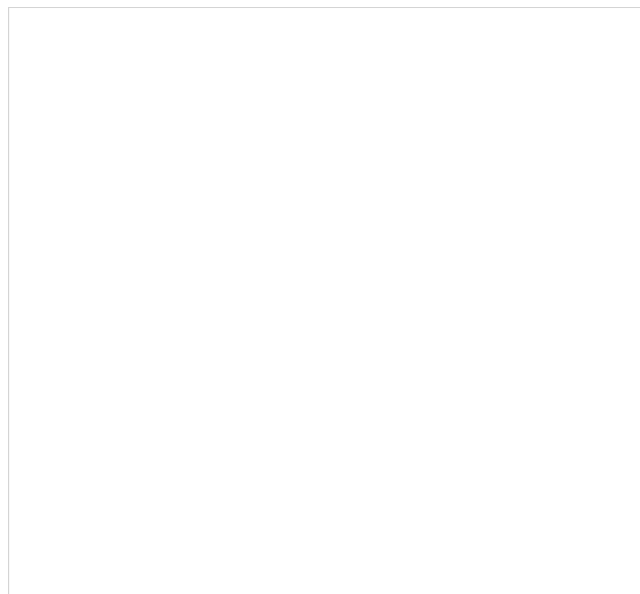
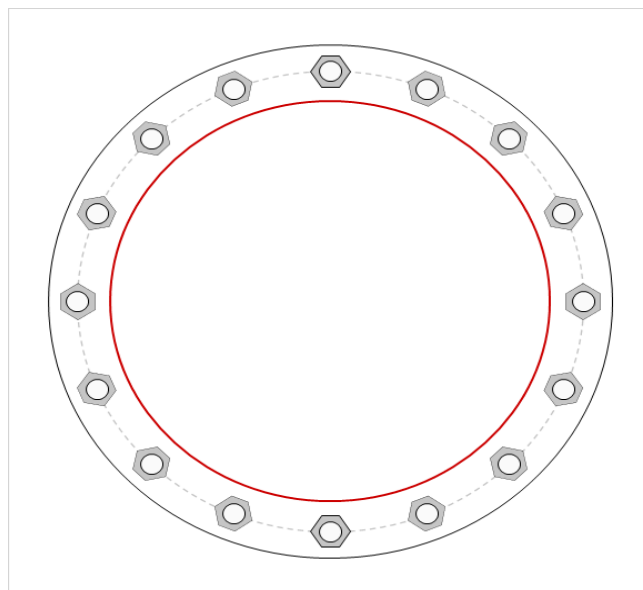
note: Bending interaction not considered when Grout Considered = "Yes"

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

Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η :	I_{ar} (in):	Thread Type	Area Override, in ²	Tension Only
1	1	0	2.25	A615-75	51	0.5	0	N-Included		No
2	1	45	2.25	A615-75	51	0.5	0	N-Included		No
3	1	90	2.25	A615-75	51	0.5	0	N-Included		No
4	1	135	2.25	A615-75	51	0.5	0	N-Included		No
5	1	180	2.25	A615-75	51	0.5	0	N-Included		No
6	1	225	2.25	A615-75	51	0.5	0	N-Included		No
7	1	270	2.25	A615-75	51	0.5	0	N-Included		No
8	1	315	2.25	A615-75	51	0.5	0	N-Included		No
9	2	67.5	2.25	A615-75	51	0.5	0	N-Included		No
10	2	157.5	2.25	A615-75	51	0.5	0	N-Included		No
11	2	247.5	2.25	A615-75	51	0.5	0	N-Included		No
12	2	337.5	2.25	A615-75	51	0.5	0	N-Included		No
13	3	112.5	2.25	F1554-105	51	0.5	0	N-Included		No
14	3	202.5	2.25	F1554-105	51	0.5	0	N-Included		No
15	3	292.5	2.25	F1554-105	51	0.5	0	N-Included		No
16	3	382.5	2.25	F1554-105	51	0.5	0	N-Included		No

Plot Graphic



Drilled Pier Foundation

BU # :	842873
Site Name:	SHELTON NE
Order Number:	586271 Rev 1
TIA-222 Revision:	H
Tower Type:	Monopole



Applied Loads		
	Comp.	Uplift
Moment (kip-ft)	3359.03	
Axial Force (kips)	56.24	
Shear Force (kips)	34.55	

Material Properties		
Concrete Strength, f'c:	4	ksi
Rebar Strength, Fy:	60	ksi
Tie Yield Strength, Fyt:	40	ksi

Pier Design Data		
Depth	14	ft
Ext. Above Grade	0.5	ft
Pier Section 1		
<i>From 0.5' above grade to 14' below grade</i>		
Pier Diameter	6	ft
Rebar Quantity	26	
Rebar Size	11	
Clear Cover to Ties	3	in
Tie Size	5	
Tie Spacing		in

Rebar 2, Fy Override (ksi)	
Rebar 3, Fy Override (ksi)	

Rebar & Pier Options
 Embedded Pole Inputs
 Belled Pier Inputs

Analysis Results

Soil Lateral Check	Compression	Uplift
D _{v=0} (ft from TOC)	3.78	-
Soil Safety Factor	1.58	-
Max Moment (kip-ft)	3487.25	-
Rating*	80.1%	-

Soil Vertical Check	Compression	Uplift
Skin Friction (kips)	318.06	-
End Bearing (kips)	254.47	-
Weight of Concrete (kips)	73.80	-
Total Capacity (kips)	572.53	-
Axial (kips)	130.04	-
Rating*	21.6%	-

Reinforced Concrete Flexure	Compression	Uplift
Critical Depth (ft from TOC)	3.81	-
Critical Moment (kip-ft)	3487.20	-
Critical Moment Capacity	5372.65	-
Rating*	61.8%	-

Reinforced Concrete Shear	Compression	Uplift
Critical Depth (ft from TOC)	10.91	-
Critical Shear (kip)	427.56	-
Critical Shear Capacity	597.19	-
Rating*	68.2%	-

Shear-Friction Methodology is Applied

Check Limitation	
Apply TIA-222-H Section 15.5:	<input checked="" type="checkbox"/>
N/A	<input type="checkbox"/>
Additional Longitudinal Rebar	
Input Effective Depths (else Actual):	<input checked="" type="checkbox"/>
Shear Design Options	
Check Shear along Depth of Pier:	<input checked="" type="checkbox"/>
Utilize Shear-Friction Methodology:	<input checked="" type="checkbox"/>
Override Critical Depth:	<input type="checkbox"/>

[Go to Soil Calculations](#)

Structural Foundation Rating*	68.2%
Soil Interaction Rating*	80.1%

*Rating per TIA-222-H Section 15.5

Soil Profile			
Groundwater Depth	n/a	# of Layers	2

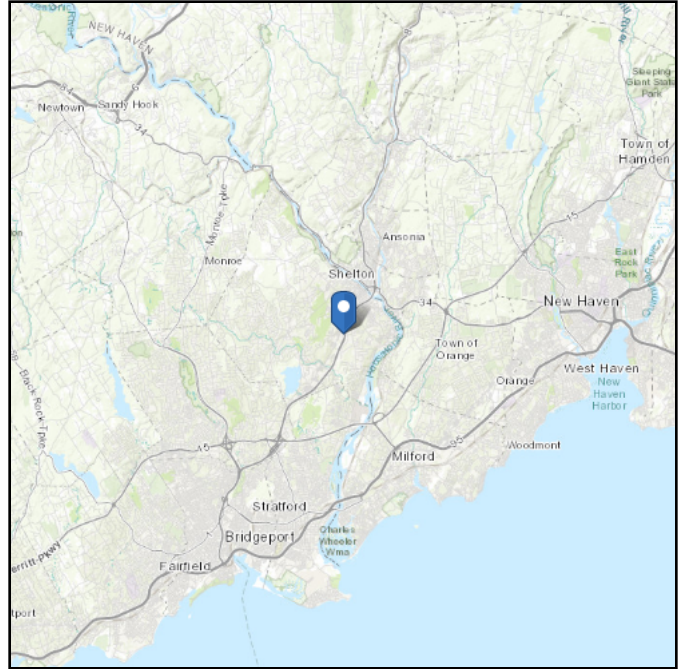
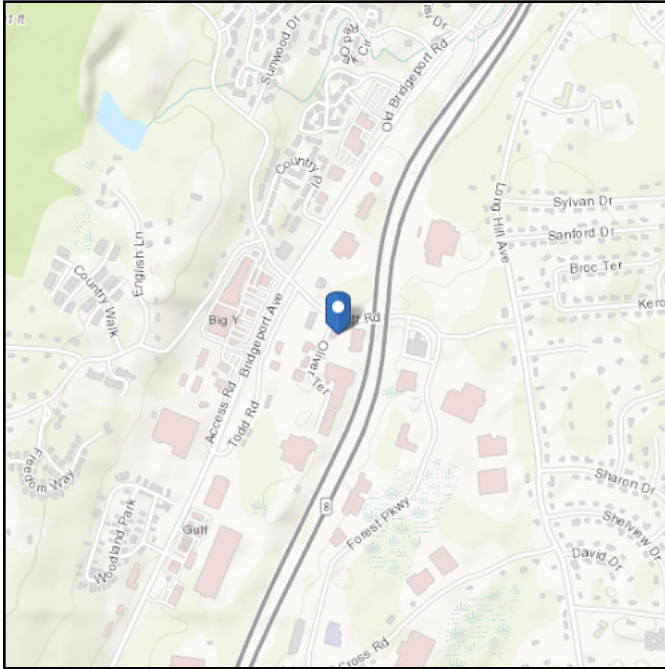
Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ _{soil} (pcf)	γ _{concrete} (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	3	3	165	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	3	14	11	165	150	4	0	2.045	2.045			12		Cohesive

ASCE 7 Hazards Report

Address:
No Address at This
Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see
Section 11.4.3)

Elevation: 311.07 ft (NAVD 88)
Latitude: 41.293947
Longitude: -73.107175



Wind

Results:

Wind Speed	119 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	90 Vmph
100-year MRI	98 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: Mon May 02 2022

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).

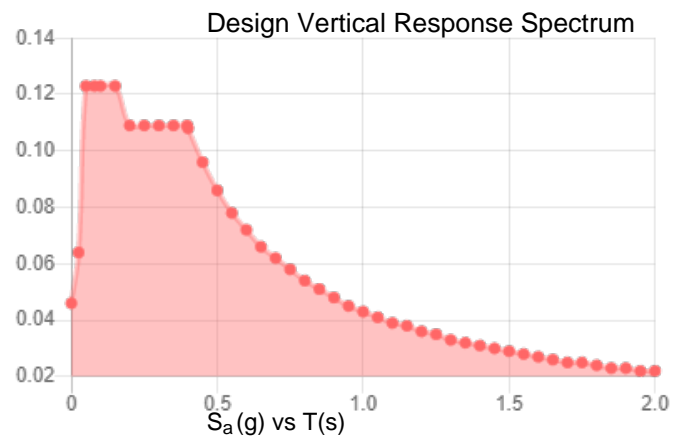
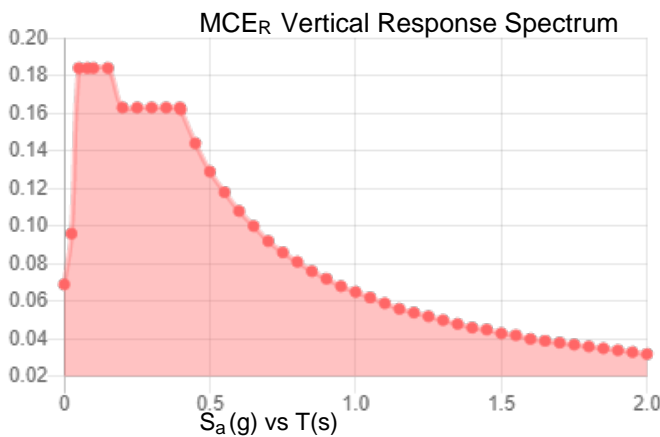
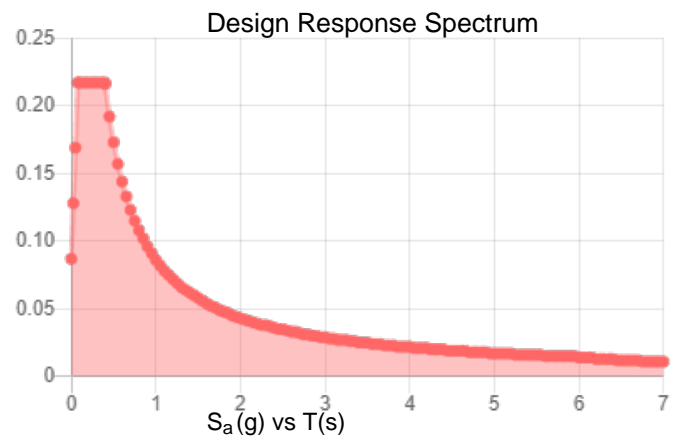
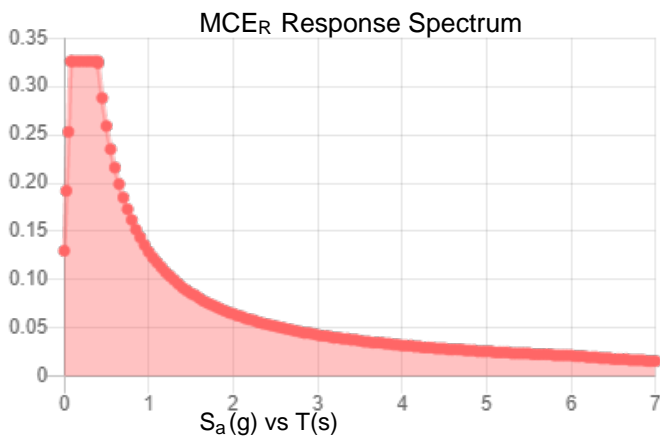
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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

Results:

S_s :	0.204	S_{D1} :	0.086
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.115
F_v :	2.4	PGA _M :	0.18
S_{MS} :	0.326	F_{PGA} :	1.571
S_{M1} :	0.129	I_e :	1
S_{DS} :	0.217	C_v :	0.707

Seismic Design Category B



Data Accessed: Mon May 02 2022

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: Mon May 02 2022

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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Exhibit E

Mount Analysis

April 26, 2022



Tower Engineering Professionals
326 Tryon Road
Raleigh, NC 27603
(919) 661-6351
CrownMA@tepgroup.net

Subject: **Mount Analysis - Conditional Passing**

Carrier Designation: **AT&T Mobility Reconfiguration**
Client Site Number: CTL05431
Client Site Name: Shelton NE
FA Location Code: 10071231

Crown Castle Designation: **Crown Castle BU Number:** 842873
Crown Castle Site Name: Shelton NE
Crown Castle JDE Job Number: 686240
Crown Castle Order Number: 586271 Rev. 1

Engineering Firm Designation: **TEP Project Number:** 63208.689014

Site Data: **30 Oliver Terrace, Shelton, Fairfield County, CT 06484**
Latitude 41° 17' 38.21", Longitude -73° 6' 25.83"

Structure Information: **Tower Height & Type:** 140.0± ft Monopole
Mount Elevation: 127.0 ft
Mount Width & Type: 13.0 ft Sector

Tower Engineering Professionals is pleased to submit this “**Mount Analysis - Conditional Passing**” to determine the structural integrity of AT&T Mobility’s antenna mounting system with proposed appurtenance and equipment addition on the above mentioned supporting tower structure. Analysis of the existing supporting tower structure is to be completed by others and therefore is not part of this analysis. Analysis of the antenna mounting system as a tie-off point for fall protection or rigging is not part of this document.

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

Sector Mount

Sufficient Capacity*

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

The analysis has been performed in accordance with the 2018 International Building Code based upon an ultimate 3-second gust wind speed of 119 mph. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Gautam Sopal, E.I. / GHM

Respectfully submitted by:

Aaron T. Rucker, P.E.
Structural Division Manager
919-661-6351
arucker@tepgroup.net



Electronic Copy

04/26/2022

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Supplemental Drawings

1) INTRODUCTION

The mount is an existing 13.0-ft, 3-sector Sector mount, designed by Sabre. The mount is installed at the 127.0 ft elevation on the 140.0± ft Monopole.

2) ANALYSIS CRITERIA

Building Code:	2018 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	119 mph
Exposure Category:	B
Topographic Category at Base:	1.0
Topographic Category at Mount:	1.0
Ice Thickness:	1.0 in
Wind Speed with Ice:	50 mph
Seismic Design Category:	B
Seismic S_s:	0.204
Seismic S₁:	0.054
Live Loading Wind Speed:	30 mph
Live Loading at Mid/End-Points:	250 lb
Man Live Loading at Mount Pipes:	500 lb

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
127.0	129.0	3	CCI ANTENNAS	DMP65R-BU6D	(3) Sector Mounts
		3	ERICSSON	AIR 6419 B77G_CCIV3	
		3	QUINTEL TECHNOLOGY	QD6616-7	
		3	ERICSSON	RADIO 4415 B30	
		3	ERICSSON	RRUS 32 B2	
		3	ERICSSON	RRUS 32 B66A	
		3	ERICSSON	RRUS 4449 B5/B12	
		3	ERICSSON	RRUS 4478 B14_CCIV2	
		2	RAYCAP	DC6-48-60-18-8F	
	1	RAYCAP	DC9-48-60-24-8C-EV_CCIV2		
125.0	125.0	3	ERICSSON	AIR 6449 B77D	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Previous Mount Analysis	Tower Engineering Professionals	10207383	CCIsites
RFDS	AT&T Mobility	RFDS ID: 4541482	CCIsites
Loading Application	AT&T Mobility	Order 586271 Rev. 1	CCIsites

3.1) Analysis Method

RISA-3D (Version 17.0.4), a commercially available analysis software package, was used to create a three-dimensional model of the mount and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A and Appendix C.

TEP Mount Analysis Tool, a tool internally developed by TEP using Microsoft Excel, was used to calculate member loading for various load cases. Selected output from the analysis is included in Appendix B.

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

In addition, this analysis is in accordance with AT&T's *Mount Technical Guidance – Revision 16*.

3.2) Assumptions

- 1) The mount was built in accordance with the manufacturer's specifications.
- 2) The mount has been maintained in accordance with the manufacturer's specification.
- 3) The configuration of antennas, mounts and other appurtenances are as specified in Table 1. All mount components have been assumed to be in sufficient condition to carry their full design capacity for this analysis. Refer to the issued mapping for any structural and/or maintenance issues found during our site visit if applicable.
- 4) All mount components are in sufficient condition to carry their full design capacity.
- 5) TEP did not analyze the collar mount connection to the pole and assumes it to have sufficient structural capacity to transfer the applied forces from the mount to the tower.
- 6) All material grades used for this analysis, unless verified by mount manufacturer design, were assumed per AISC Table 2-4, 15th Edition. See RISA-3D output for confirmation on grades used in this analysis.

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

4) ANALYSIS RESULTS

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

Notes	Component	Critical Member	Mount Centerline (ft)	% Capacity	Pass / Fail
1	Face Horizontals	FH-2T	127.0	30.9	Pass
1	Support Horizontals	SH-1	127.0	30.4	Pass
1	Mount Pipes	MP-10	127.0	41.6	Pass
1	Bracing Members	SV-8	127.0	11.7	Pass
1	Stabilizer Arms	SA-1	127.0	2.6	Pass
2	Connection Bolts	-	127.0	15.0	Pass

Structure Rating (max from all components) =	41.6%
---	--------------

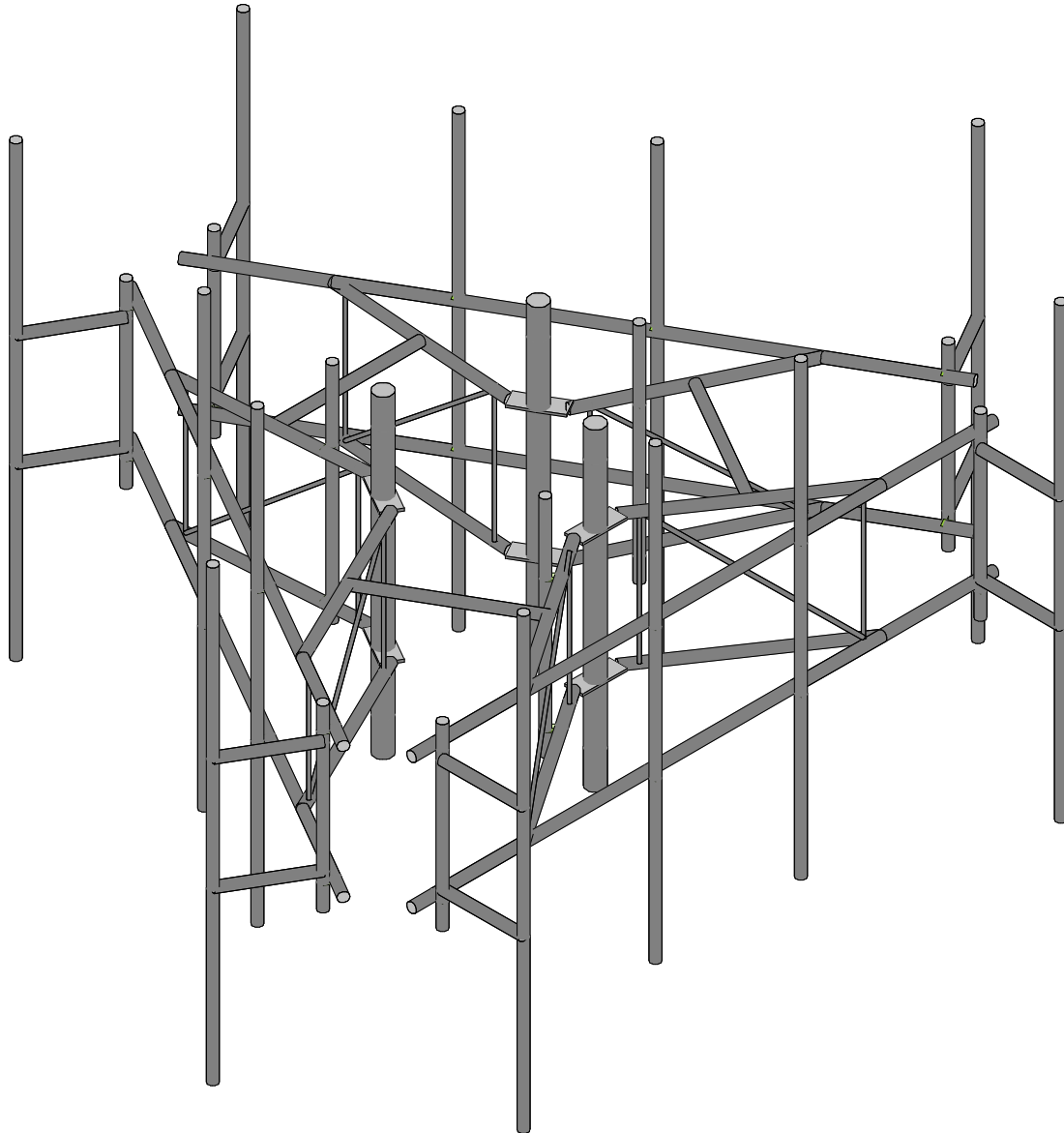
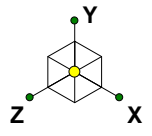
Notes:

- 1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity listed.
- 2) See additional documentation in "Appendix D - Additional Calculations" for calculations supporting the % capacity listed.

4.1) Recommendations

- 1) If the load differs from that described in Table 1 of this report or the provisions of this analysis are found to be invalid, another structural analysis should be performed.
- 2) The mount and its connection have sufficient capacity to carry the proposed loading configuration. In order for the results of this analysis to be valid, the mount modifications listed below must be completed:
 - a) Install (6) SitePro PM2 Standoff Mounts. See "Appendix A - Wire Frame and Rendered Models."
- 3) Engineering detail drawings have been provided in "Appendix E - Supplemental Drawings".

APPENDIX A
WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

Tower Engineering Profess...

GJS

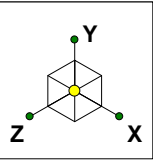
TEP No. 63208.689014

CCI BU No 842873

SK - 1

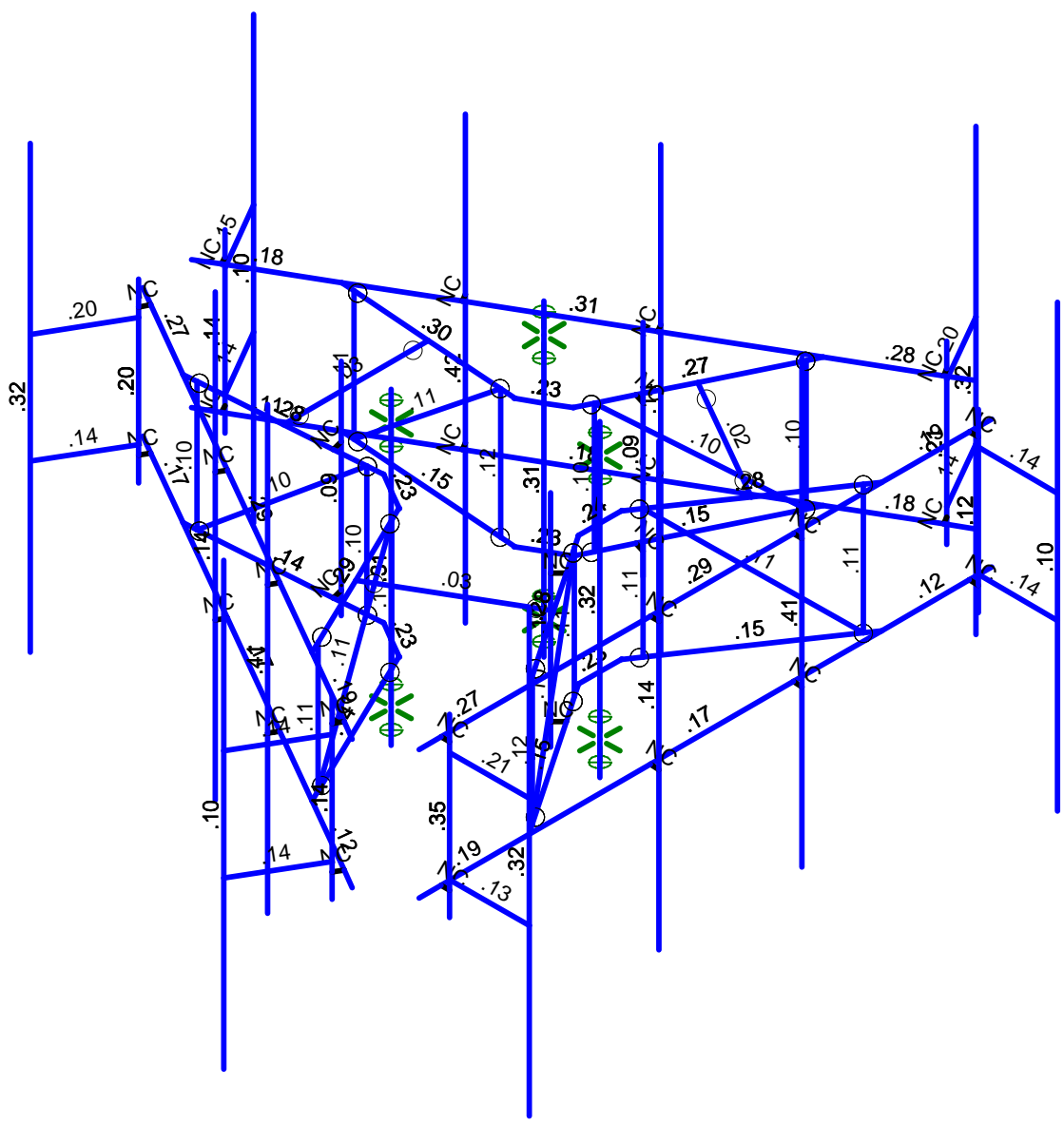
Apr 26, 2022 at 2:44 PM

Sabre C10857001 HD V-Boom.r3d



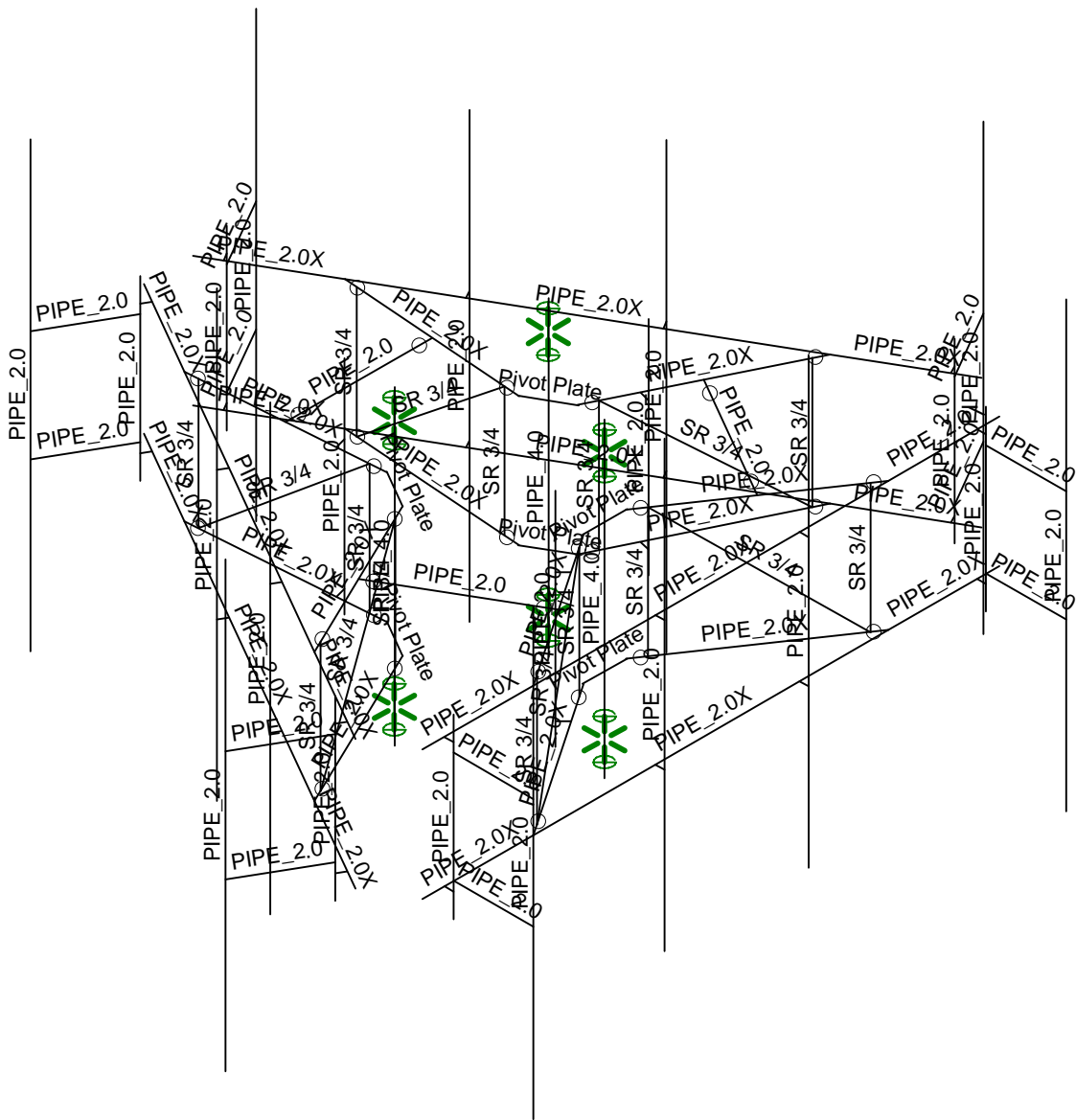
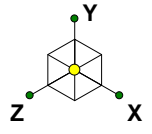
Code Check (Env)

No Calc
> 1.0
.90-1.0
.75-.90
.50-.75
0-.50



Member Code Checks Displayed (Enveloped)
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GJS		Apr 26, 2022 at 2:44 PM
TEP No. 63208.689014		Sabre C10857001 HD V-Boom.r3d



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Tower Engineering Profess...

GJS

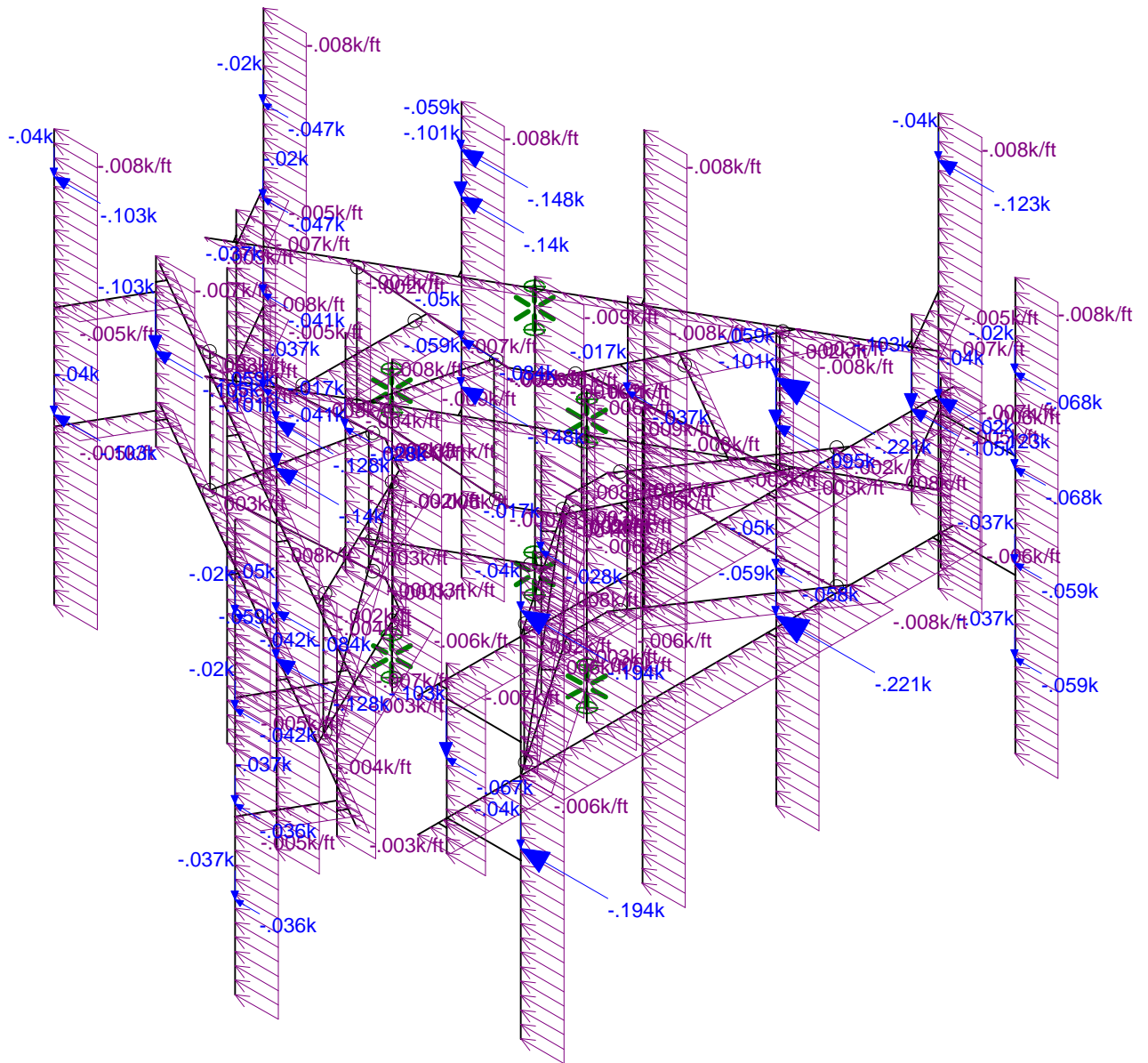
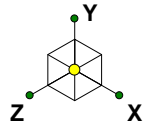
TEP No. 63208.689014

CCI BU No 842873

SK - 4

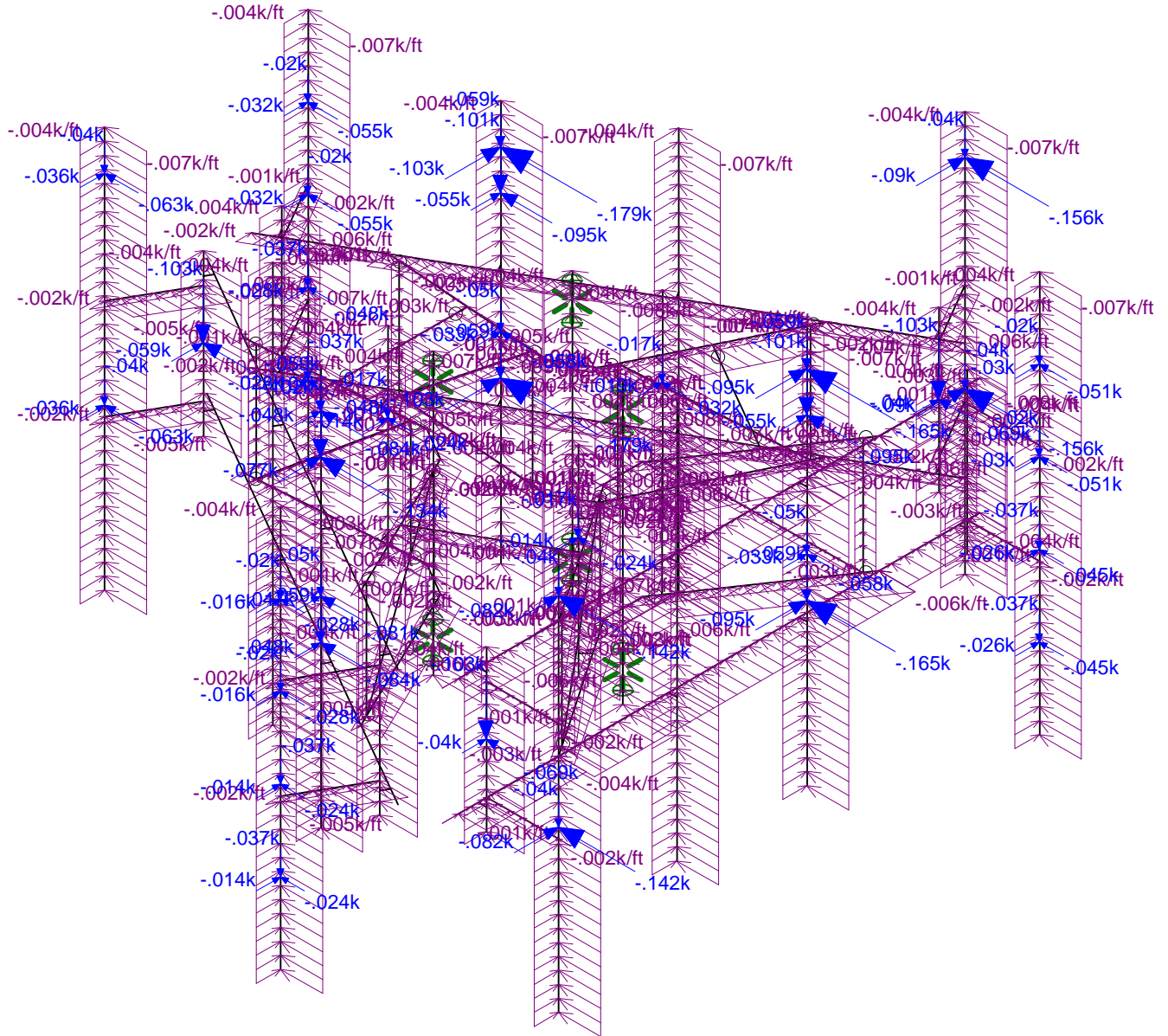
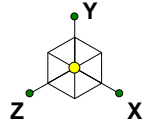
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Sabre C10857001 HD V-Boom.r3d



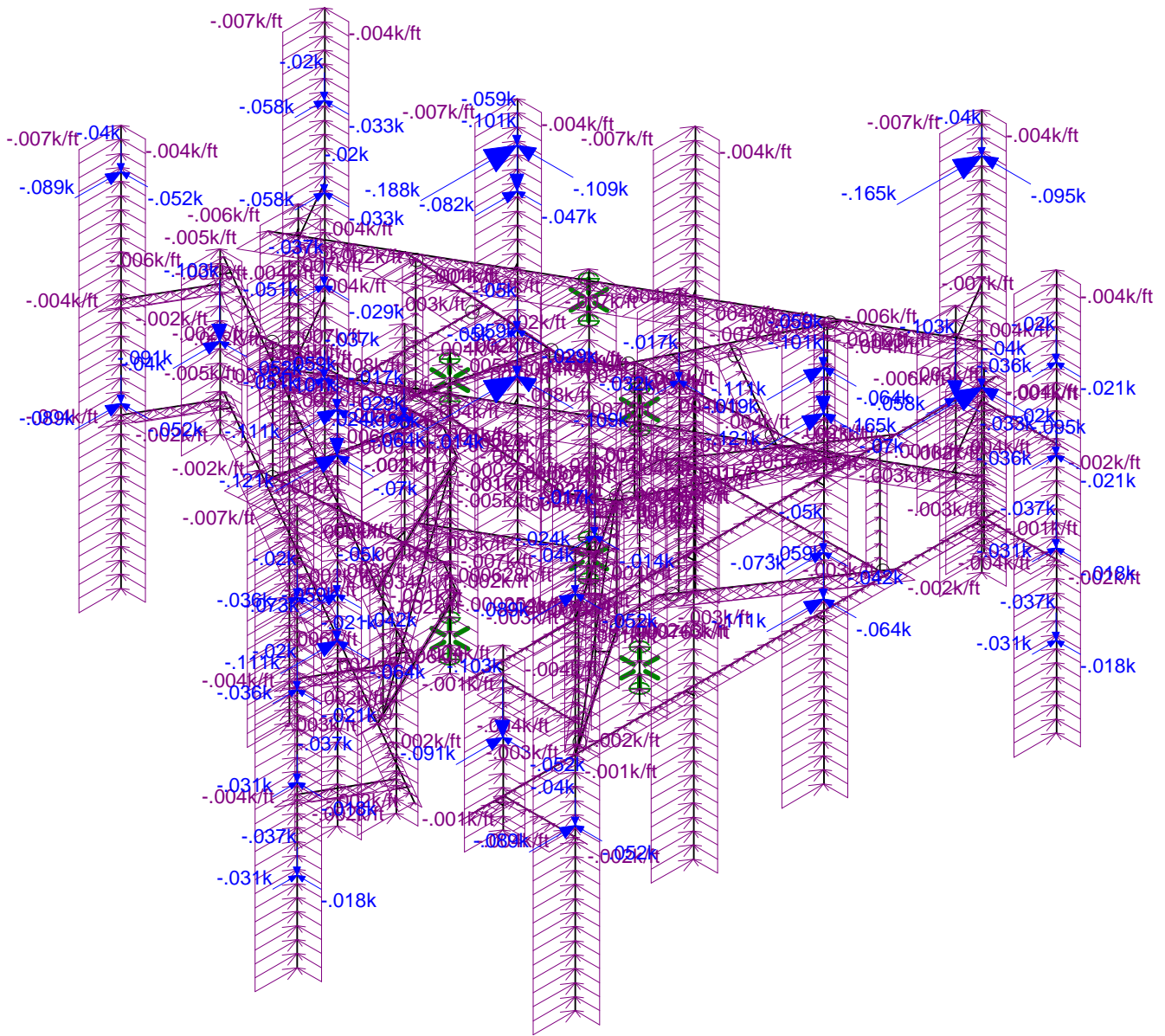
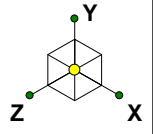
Loads: LC 2, 0.9D+1.0 0-Wind
Envelope Only Solution

Tower Engineering Profess...		SK - 5
GJS	CCI BU No 842873	Apr 26, 2022 at 2:45 PM
TEP No. 63208.689014		Sabre C10857001 HD V-Boom.r3d



Loads: LC 3, 0.9D+1.0 30-Wind
Envelope Only Solution

Tower Engineering Profess...		SK - 6
GJS	CCI BU No 842873	Apr 26, 2022 at 2:45 PM
TEP No. 63208.689014		Sabre C10857001 HD V-Boom.r3d



Loads: LC 5, 0.9D+1.0 60-Wind
Envelope Only Solution

Tower Engineering Profess...		SK - 7
GJS	CCI BU No 842873	Apr 26, 2022 at 2:45 PM
TEP No. 63208.689014		Sabre C10857001 HD V-Boom.r3d

APPENDIX B
SOFTWARE INPUT CALCULATIONS



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

Wind Inputs:		
Ult. Wind Velocity:	119.0	mph
Live Load Velocity:	30.0	mph
Ice Wind Velocity:	50.0	mph
Base Ice Thickness:	1.00	inches
Mount Centerline:	127.0	ft
Antenna Centerline:	129.0	ft
Exposure Category:	B	
Topo Category:	1	
Risk Category:	II	
Ground Elevation:	311	ft

Wind Calculations:		
K_{zt} :	1.000	Section 2.6.6
K_d :	0.950	
$K_{z-Mount}$:	1.058	Section 2.6.5.2
$K_{z-Antenna}$:	1.063	Section 2.6.5.2
K_{iz} :	1.145	Section 2.6.10
Ice Thickness:	1.145	inches - Section 2.6.10

Without Ice - (psf)		With Ice - (psf)	
$(q_z G_h)_{Mount}$:	36.03	$(q_z G_h)_{Mount}$:	6.36
$(q_z G_h)_{Antenna}$:	36.19	$(q_z G_h)_{Antenna}$:	6.39

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

Seismic Input		
S_{DS} :	0.217	Design Short Period Spectral Accel.
I_p :	1.0	Importance Factor
R_p :	2.0	Response Modification Factor
ρ :	1.0	
A_s :	1.0	Applification Factor - TIA-222-H Section 2.7.8.1
S_1 :	0.054	Spectral Acceleration at a Period of 1 Second

Seismic Design Force			
Cs:	0.109	kips/kip	TIA-H Sec 2.7.7.1.1
Cs-min:	0.030	kips/kip	TIA-H Sec 2.7.7.1.1



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,%)
ERICSSON	AIR 6419 B77G_CCIV3	31.10	16.10	7.30	44.00	0.00	1	Flat	MP-1	2.00	4.00	
ERICSSON	AIR 6449 B77D	30.39	15.87	8.07	81.60	0.00	1	Flat	MP-1	6.00	8.00	
QUINTEL TECHNOLOGY	QD6616-7	72.00	22.00	9.60	130.00	0.00	1	Flat	MP-2	1.00	6.00	
CCI ANTENNAS	DMP65R-BU6D	71.20	20.70	7.70	89.30	0.00	1	Flat	MP-4	1.00	6.00	
ERICSSON	RRUS 4478 B14_CCIV2	18.10	13.40	8.26	59.40	90.00	1	Flat	MP-2	2.00		
ERICSSON	RRUS 32 B2	27.20	12.05	7.00	52.90	90.00	1	Flat	MP-2	2.00		
ERICSSON	RRUS 32 B66A	27.60	12.45	7.41	55.12	90.00	1	Flat	MP-2	5.00		
ERICSSON	RRUS 4449 B5/B12	17.90	13.19	9.44	71.00	90.00	1	Flat	MP-4B	2.00		
ERICSSON	RADIO 4415 B30	14.96	13.18	5.04	42.90	90.00	1	Flat	MP-4B	2.00		
ERICSSON	AIR 6419 B77G_CCIV3	31.10	16.10	7.30	44.00	120.00	1	Flat	MP-5	2.00	4.00	
ERICSSON	AIR 6449 B77D	30.39	15.87	8.07	81.60	120.00	1	Flat	MP-5	6.00	8.00	
QUINTEL TECHNOLOGY	QD6616-7	72.00	22.00	9.60	130.00	120.00	1	Flat	MP-6	1.00	6.00	
CCI ANTENNAS	DMP65R-BU6D	71.20	20.70	7.70	89.30	120.00	1	Flat	MP-8	1.00	6.00	
ERICSSON	RRUS 4478 B14_CCIV2	18.10	13.40	8.26	59.40	210.00	1	Flat	MP-6	2.00		
ERICSSON	RRUS 32 B2	27.20	12.05	7.00	52.90	210.00	1	Flat	MP-6	2.00		
ERICSSON	RRUS 32 B66A	27.60	12.45	7.41	55.12	210.00	1	Flat	MP-6	5.00		
ERICSSON	RRUS 4449 B5/B12	17.90	13.19	9.44	71.00	210.00	1	Flat	MP-8B	2.00		
ERICSSON	RADIO 4415 B30	14.96	13.18	5.04	42.90	210.00	1	Flat	MP-8B	2.00		
ERICSSON	AIR 6419 B77G_CCIV3	31.10	16.10	7.30	44.00	230.00	1	Flat	MP-9	2.00	4.00	
ERICSSON	AIR 6449 B77D	30.39	15.87	8.07	81.60	230.00	1	Flat	MP-9	6.00	8.00	
QUINTEL TECHNOLOGY	QD6616-7	72.00	22.00	9.60	130.00	230.00	1	Flat	MP-10	1.00	6.00	
CCI ANTENNAS	DMP65R-BU6D	71.20	20.70	7.70	89.30	230.00	1	Flat	MP-12	1.00	6.00	
ERICSSON	RRUS 4478 B14_CCIV2	18.10	13.40	8.26	59.40	330.00	1	Flat	MP-10	2.00		
ERICSSON	RRUS 32 B2	27.20	12.05	7.00	52.90	330.00	1	Flat	MP-10	2.00		
ERICSSON	RRUS 32 B66A	27.60	12.45	7.41	55.12	330.00	1	Flat	MP-10	5.00		
ERICSSON	RRUS 4449 B5/B12	17.90	13.19	9.44	71.00	330.00	1	Flat	MP-12B	2.00		
ERICSSON	RADIO 4415 B30	14.96	13.18	5.04	42.90	330.00	1	Flat	MP-12B	2.00		
RAYCAP	DC6-48-60-18-8F	22.25	11.00	11.00	18.90	0.00	1	Round	MP-13	2.00		
RAYCAP	DC6-48-60-18-8F	22.25	11.00	11.00	18.90	0.00	1	Round	MP-14	2.00		
RAYCAP	DC9-48-60-24-8C-EV_CCIV2	31.40	10.24	10.24	18.50	0.00	1	Round	MP-15	2.00		



CCIBU No 842873
 TEP No. 63208.689014
 Analysis By: GJS 4/26/2022
 Checked By: GHM 4/26/2022

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

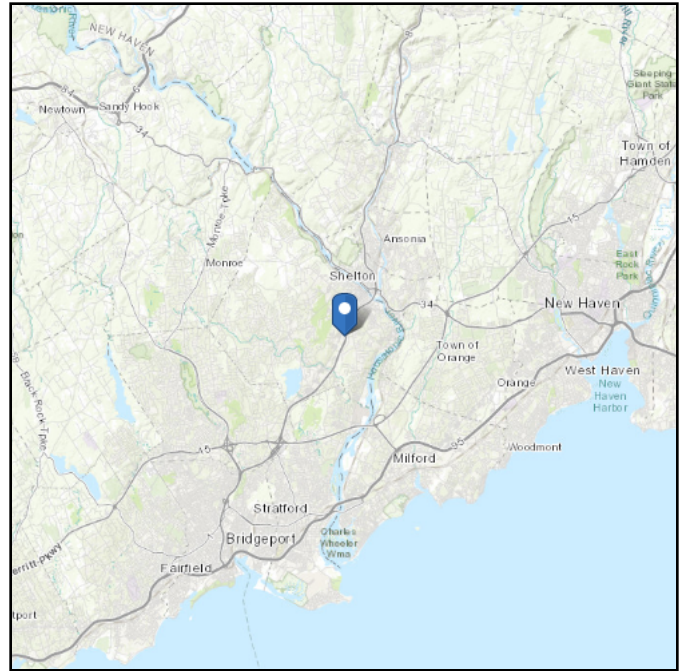
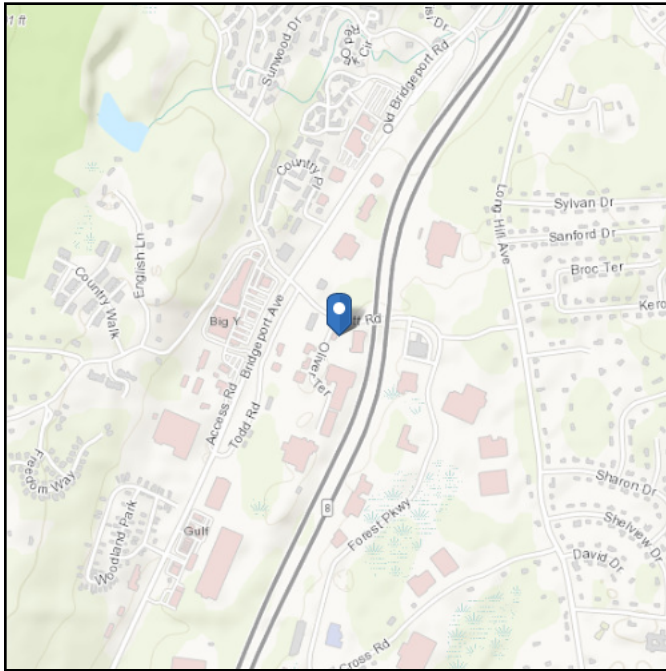
Member Name	Wind Proj. (in)	Length (in)	Shape	θ (°)	Perimeter (in)
FH-1B	2.375	30.00	Round	30.00	7.46
FH-1T	2.375	30.00	Round	30.00	7.46
FH-2B	2.375	96.00	Round	30.00	7.46
FH-2T	2.375	96.00	Round	30.00	7.46
FH-3B	2.375	30.00	Round	30.00	7.46
FH-3T	2.375	30.00	Round	30.00	7.46
FH-4B	2.375	30.00	Round	90.00	7.46
FH-4T	2.375	30.00	Round	90.00	7.46
FH-5B	2.375	96.00	Round	90.00	7.46
FH-5T	2.375	96.00	Round	90.00	7.46
FH-6B	2.375	30.00	Round	90.00	7.46
FH-6T	2.375	30.00	Round	90.00	7.46
FH-7B	2.375	30.00	Round	-30.00	7.46
FH-7T	2.375	30.00	Round	-30.00	7.46
FH-8B	2.375	96.00	Round	-30.00	7.46
FH-8T	2.375	96.00	Round	-30.00	7.46
FH-9B	2.375	30.00	Round	-30.00	7.46
FH-9T	2.375	30.00	Round	-30.00	7.46
M-1	4.500	84.00	Round		14.14
M-2	4.500	84.00	Round		14.14
M-3	4.500	84.00	Round		14.14
M84	2.375	21.62	Round	0.00	7.46
M85	2.375	21.62	Round	0.00	7.46
M86	2.375	21.62	Round	0.00	7.46
M87	2.375	21.62	Round	0.00	7.46
M98	2.375	21.62	Round	-60.00	7.46
M99	2.375	21.62	Round	-60.00	7.46
M100	2.375	21.62	Round	-60.00	7.46
M101	2.375	21.62	Round	-60.00	7.46
M112	2.375	21.62	Round	60.00	7.46
M113	2.375	21.62	Round	60.00	7.46
M114	2.375	21.62	Round	60.00	7.46
M115	2.375	21.62	Round	60.00	7.46
MP-1	2.375	120.00	Round		7.46
MP-1B	2.375	48.00	Round		7.46
MP-2	2.375	120.00	Round		7.46
MP-3	2.375	120.00	Round		7.46
MP-4	2.375	120.00	Round		7.46
MP-4B	2.375	48.00	Round		7.46
MP-5	2.375	120.00	Round		7.46
MP-5B	2.375	48.00	Round		7.46
MP-6	2.375	120.00	Round		7.46
MP-7	2.375	120.00	Round		7.46
MP-8	2.375	120.00	Round		7.46
MP-8B	2.375	48.00	Round		7.46
MP-9	2.375	120.00	Round		7.46
MP-9B	2.375	48.00	Round		7.46
MP-10	2.375	120.00	Round		7.46
MP-11	2.375	120.00	Round		7.46
MP-12	2.375	120.00	Round		7.46
MP-12B	2.375	48.00	Round		7.46
MP-13	2.375	60.00	Round		7.46
MP-14	2.375	60.00	Round		7.46
MP-15	2.375	60.00	Round		7.46
PP-1	0.625	12.00	Flat	30.00	10.88
PP-2	0.625	12.00	Flat	90.00	10.88
PP-3	0.625	12.00	Flat	30.00	10.88
PP-4	0.625	12.00	Flat	90.00	10.88
PP-5	0.625	12.00	Flat	-30.00	10.88
PP-6	0.625	12.00	Flat	-30.00	10.88
SA-1	2.375	39.55	Round	90.00	7.46
SA-2	2.375	39.55	Round	-30.00	7.46
SA-3	2.375	39.55	Round	30.00	7.46
SD-1	0.750	55.64	Round		2.36
SD-2	0.750	55.64	Round		2.36
SD-3	0.750	55.64	Round		2.36
SD-4	0.750	55.64	Round		2.36
SD-5	0.750	55.64	Round		2.36
SD-6	0.750	55.64	Round		2.36
SH-1	2.375	51.06	Round	-4.23	7.46
SH-2	2.375	51.06	Round	-4.23	7.46
SH-3	2.375	51.06	Round	64.23	7.46
SH-4	2.375	51.06	Round	55.77	7.46
SH-5	2.375	51.06	Round	64.23	7.46
SH-6	2.375	51.06	Round	-55.77	7.46
SH-7	2.375	51.06	Round	55.77	7.46
SH-8	2.375	51.06	Round	-55.77	7.46
SH-9	2.375	51.06	Round	-64.23	7.46
SH-10	2.375	51.06	Round	-64.23	7.46
SH-11	2.375	51.06	Round	4.23	7.46
SH-12	2.375	51.06	Round	4.23	7.46
SV-1	0.750	35.00	Round		2.36
SV-2	0.750	35.00	Round		2.36
SV-3	0.750	35.00	Round		2.36
SV-4	0.750	35.00	Round		2.36
SV-5	0.750	35.00	Round		2.36
SV-6	0.750	35.00	Round		2.36
SV-7	0.750	35.00	Round		2.36
SV-8	0.750	35.00	Round		2.36
SV-9	0.750	35.00	Round		2.36
SV-10	0.750	35.00	Round		2.36
SV-11	0.750	35.00	Round		2.36
SV-12	0.750	35.00	Round		2.36

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see Section 11.4.3)

Elevation: 311.07 ft (NAVD 88)
Latitude: 41.293947
Longitude: -73.107175



Wind

Results:

Wind Speed	119 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	90 Vmph
100-year MRI	98 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: Tue Apr 26 2022

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).

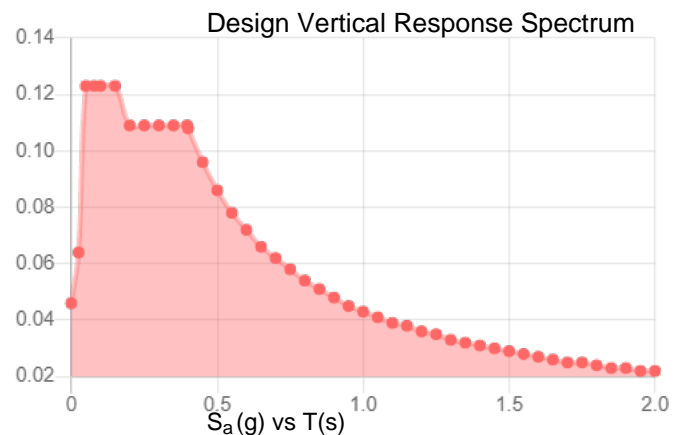
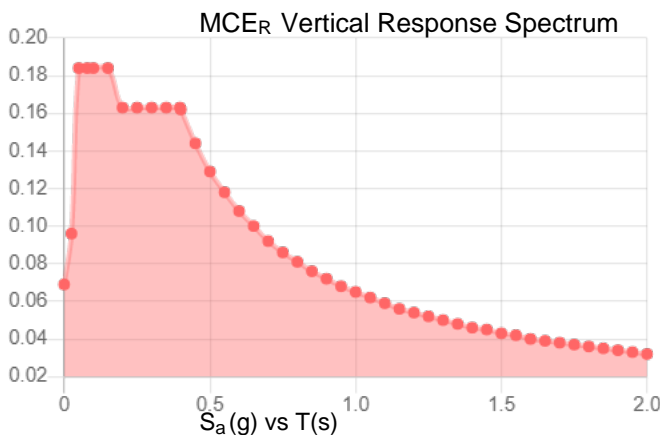
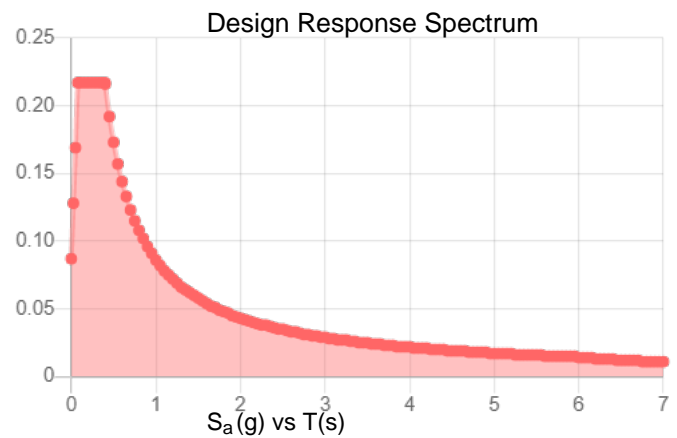
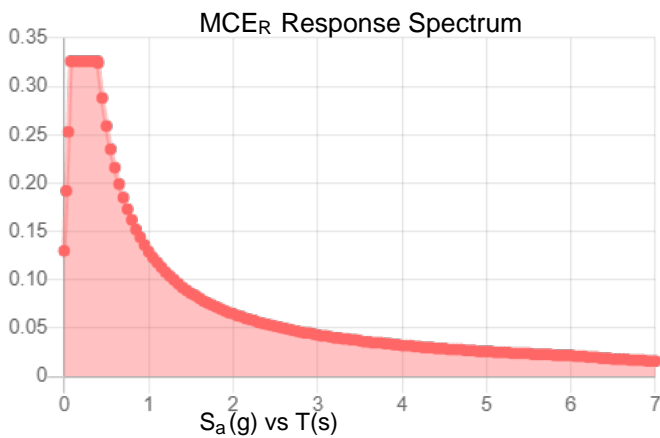
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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

Results:

S_s :	0.204	S_{D1} :	0.086
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.115
F_v :	2.4	PGA _M :	0.18
S_{MS} :	0.326	F_{PGA} :	1.571
S_{M1} :	0.129	I_e :	1
S_{DS} :	0.217	C_v :	0.707

Seismic Design Category B



Data Accessed: Tue Apr 26 2022

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: Tue Apr 26 2022

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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APPENDIX C
SOFTWARE ANALYSIS OUTPUT



Company : Tower Engineering Professionals, Inc.
 Designer : GJS
 Job Number : TEP No. 63208.689014
 Model Name : CCI BU No 842873

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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)	12
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 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?	No
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8



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(Global) Model Settings, Continued

Seismic Code	None
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

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1... Density[k/f...	Yield[ksi]	Ry	Fu[ksi]	Rt	
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
3	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.42	29000	11154	.3	.65	.49	42	1.4	58	1.3
5	A500 Gr.46	29000	11154	.3	.65	.49	46	1.4	58	1.3
6	A53-B-35	29000	11154	.3	.65	.49	35	1.5	60	1.2
7	A500-50	29000	11154	.3	.65	.49	50	1.5	62	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Ivy [in4]	Izz [in4]	J [in4]
1	Mast	PIPE 4.0	None	None	A53-B-35	Typical	2.96	6.82	6.82	13.6
2	Face Horizontal	PIPE 2.0X	None	None	A500-50	Typical	1.4	.827	.827	1.65
3	Mount Pipes	PIPE 2.0	None	None	A53-B-35	Typical	1.02	.627	.627	1.25
4	Support Diagonal	SR 3/4	None	None	A572 Gr.50	Typical	.442	.016	.016	.031
5	Support Vertical	SR 3/4	None	None	A572 Gr.50	Typical	.442	.016	.016	.031
6	Support Horizontal	PIPE 2.0X	None	None	A500-50	Typical	1.4	.827	.827	1.65
7	Stabilizer Arm	PIPE 2.0	None	None	A500-50	Typical	1.02	.627	.627	1.25
8	Pivot Plate	Pivot Plate	None	None	A572 Gr.50	Typical	3.008	.098	5.805	.36

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Ivy [in4]	Izz [in4]	J [in4]
1	CF1A	1.5CU1.25X035	Beam	None	A570 Gr.33	Typical	.131	.022	.052	5.4e-5

Material Takeoff

	Material	Size	Pieces	Length[ft]	Weight[K]
1	General				
2	RIGID		30	6.3	0
3	Total General		30	6.3	0
4					
5	Hot Rolled Steel				
6	A500-50	PIPE 2.0	3	9.9	.034
7	A500-50	PIPE 2.0X	30	129.1	.615
8	A53-B-35	PIPE 2.0	33	180.6	.627
9	A53-B-35	PIPE 4.0	3	21	.212
10	A572 Gr.50	Pivot Plate	6	6	.061



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Material Takeoff (Continued)

	Material	Size	Pieces	Length(ft)	Weight(K)
11	A572 Gr.50	SR 3/4	18	62.8	.094
12	Total HR Steel		93	409.4	1.643

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	N227	Reaction	Reaction	Reaction	Reaction	
2	N224	Reaction	Reaction	Reaction	Reaction	
3	N226	Reaction	Reaction	Reaction	Reaction	
4	N229	Reaction	Reaction	Reaction	Reaction	
5	N228	Reaction	Reaction	Reaction	Reaction	
6	N225	Reaction	Reaction	Reaction	Reaction	

Member Primary Data

Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	FH-1B	N47	N60		Face Horizontal	None	None	A500-50	Typical
2	FH-1T	N45	N59		Face Horizontal	None	None	A500-50	Typical
3	FH-2B	N60	N68		Face Horizontal	None	None	A500-50	Typical
4	FH-2T	N59	N67		Face Horizontal	None	None	A500-50	Typical
5	FH-3B	N68	N48		Face Horizontal	None	None	A500-50	Typical
6	FH-3T	N67	N46		Face Horizontal	None	None	A500-50	Typical
7	FH-4B	FF3	SF2-4		Face Horizontal	None	None	A500-50	Typical
8	FH-4T	FF1	SF2-3		Face Horizontal	None	None	A500-50	Typical
9	FH-5B	SF2-4	SF3-4		Face Horizontal	None	None	A500-50	Typical
10	FH-5T	SF2-3	SF3-3		Face Horizontal	None	None	A500-50	Typical
11	FH-6B	SF3-4	FF4		Face Horizontal	None	None	A500-50	Typical
12	FH-6T	SF3-3	FF2		Face Horizontal	None	None	A500-50	Typical
13	FH-7B	N91	N104		Face Horizontal	None	None	A500-50	Typical
14	FH-7T	N89	N103		Face Horizontal	None	None	A500-50	Typical
15	FH-8B	N104	N112		Face Horizontal	None	None	A500-50	Typical
16	FH-8T	N103	N111		Face Horizontal	None	None	A500-50	Typical
17	FH-9B	N112	N92		Face Horizontal	None	None	A500-50	Typical
18	FH-9T	N111	N90		Face Horizontal	None	None	A500-50	Typical
19	M-1	N135	N136		Mast	None	None	A53-B-35	Typical
20	M-2	SF2-01	SF2-02		Mast	None	None	A53-B-35	Typical
21	M-3	N137	N138		Mast	None	None	A53-B-35	Typical
22	M74	X1	N132A		RIGID	None	None	RIGID	Typical
23	M75	X5	N135A		RIGID	None	None	RIGID	Typical
24	M76	N111A	N138A		RIGID	None	None	RIGID	Typical
25	M77	N112A	N139		RIGID	None	None	RIGID	Typical
26	M78	X3	N133		RIGID	None	None	RIGID	Typical
27	M79	X7	N136A		RIGID	None	None	RIGID	Typical
28	M80	X4	N134		RIGID	None	None	RIGID	Typical
29	M81	X8	N137A		RIGID	None	None	RIGID	Typical
30	M84	N144A	N140		Mount Pipes	None	None	A53-B-35	Typical
31	M85	N146A	N142A		Mount Pipes	None	None	A53-B-35	Typical
32	M86	N145A	N141		Mount Pipes	None	None	A53-B-35	Typical
33	M87	N147A	N143A		Mount Pipes	None	None	A53-B-35	Typical
34	M92	N156	N168A		RIGID	None	None	RIGID	Typical
35	M93	N159A	N171		RIGID	None	None	RIGID	Typical



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Member Primary Data (Continued)

Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
36	M94	N158A	N170		RIGID	None	None	RIGID	Typical
37	M95	N161A	N173		RIGID	None	None	RIGID	Typical
38	M98	N180	N176		Mount Pipes	None	None	A53-B-35	Typical
39	M99	N182	N178		Mount Pipes	None	None	A53-B-35	Typical
40	M100	N181	N177		Mount Pipes	None	None	A53-B-35	Typical
41	M101	N183	N179		Mount Pipes	None	None	A53-B-35	Typical
42	M106	N192	N204		RIGID	None	None	RIGID	Typical
43	M107	N195	N207		RIGID	None	None	RIGID	Typical
44	M108	N194	N206		RIGID	None	None	RIGID	Typical
45	M109	N197	N209		RIGID	None	None	RIGID	Typical
46	M112	N216	N212		Mount Pipes	None	None	A53-B-35	Typical
47	M113	N218	N214		Mount Pipes	None	None	A53-B-35	Typical
48	M114	N217	N213		Mount Pipes	None	None	A53-B-35	Typical
49	M115	N219	N215		Mount Pipes	None	None	A53-B-35	Typical
50	M115A	N212A	N216A		RIGID	None	None	RIGID	Typical
51	M116	N213A	N217A		RIGID	None	None	RIGID	Typical
52	M118	N218A	N222A		RIGID	None	None	RIGID	Typical
53	M119	N219A	N223A		RIGID	None	None	RIGID	Typical
54	MP-1	N148A	N150A		Mount Pipes	None	None	A53-B-35	Typical
55	MP-1B	MP-1A	MP-1B		Mount Pipes	None	None	A53-B-35	Typical
56	MP-2	N163A	N165B		Mount Pipes	None	None	A53-B-35	Typical
57	MP-3	N162	N164B		Mount Pipes	None	None	A53-B-35	Typical
58	MP-4	N149A	N151A		Mount Pipes	None	None	A53-B-35	Typical
59	MP-4B	MP-4A	MP-4B		Mount Pipes	None	None	A53-B-35	Typical
60	MP-5	N220	N222		Mount Pipes	None	None	A53-B-35	Typical
61	MP-5B	N188	N190		Mount Pipes	None	None	A53-B-35	Typical
62	MP-6	N220A	N221A		Mount Pipes	None	None	A53-B-35	Typical
63	MP-7	N200	N202		Mount Pipes	None	None	A53-B-35	Typical
64	MP-8	N221	N223		Mount Pipes	None	None	A53-B-35	Typical
65	MP-8B	N189	N191		Mount Pipes	None	None	A53-B-35	Typical
66	MP-9	N184	N186		Mount Pipes	None	None	A53-B-35	Typical
67	MP-9B	N152A	N154A		Mount Pipes	None	None	A53-B-35	Typical
68	MP-10	N214A	N215A		Mount Pipes	None	None	A53-B-35	Typical
69	MP-11	N164A	N166A		Mount Pipes	None	None	A53-B-35	Typical
70	MP-12	N185	N187		Mount Pipes	None	None	A53-B-35	Typical
71	MP-12B	N153A	N155		Mount Pipes	None	None	A53-B-35	Typical
72	MP-13	N154	N153		Mount Pipes	None	None	A53-B-35	Typical
73	MP-14	N168	N167		Mount Pipes	None	None	A53-B-35	Typical
74	MP-15	N161	N160		Mount Pipes	None	None	A53-B-35	Typical
75	PP-1	N75	N76	90	Pivot Plate	None	None	A572 Gr.50	Typical
76	PP-2	PP1	PP2	90	Pivot Plate	None	None	A572 Gr.50	Typical
77	PP-3	N77	N78	90	Pivot Plate	None	None	A572 Gr.50	Typical
78	PP-4	PP3	PP4	90	Pivot Plate	None	None	A572 Gr.50	Typical
79	PP-5	N121	N122	90	Pivot Plate	None	None	A572 Gr.50	Typical
80	PP-6	N119	N120	90	Pivot Plate	None	None	A572 Gr.50	Typical
81	R-1	N141A	N158		RIGID	None	None	RIGID	Typical
82	R-2	N143	N159		RIGID	None	None	RIGID	Typical
83	R-3	N146	N151		RIGID	None	None	RIGID	Typical
84	R-4	N148	N152		RIGID	None	None	RIGID	Typical
85	R-5	N164	N166		RIGID	None	None	RIGID	Typical
86	R-6	N163	N165		RIGID	None	None	RIGID	Typical
87	SA-1	N87	N88		Stabilizer Arm	None	None	A500-50	Typical



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 Model Name : CCI BU No 842873

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Member Primary Data (Continued)

Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
88	SA-2	N43	N44		Stabilizer Arm	None	None	A500-50	Typical
89	SA-3	N131	N132		Stabilizer Arm	None	None	A500-50	Typical
90	SD-1	N69	N72		Support Diagonal	None	None	A572 Gr.50	Typical
91	SD-2	SF2-V1A	SF2-V2B		Support Diagonal	None	None	A572 Gr.50	Typical
92	SD-3	SF3-V1A	SF3-V2B		Support Diagonal	None	None	A572 Gr.50	Typical
93	SD-4	N105	N108		Support Diagonal	None	None	A572 Gr.50	Typical
94	SD-5	N113	N116		Support Diagonal	None	None	A572 Gr.50	Typical
95	SD-6	N61	N64		Support Diagonal	None	None	A572 Gr.50	Typical
96	SH-1	N57	N59		Support Horizontal	None	None	A500-50	Typical
97	SH-2	N58	N60		Support Horizontal	None	None	A500-50	Typical
98	SH-3	N65	N67		Support Horizontal	None	None	A500-50	Typical
99	SH-4	SF2-1	SF2-3		Support Horizontal	None	None	A500-50	Typical
100	SH-5	N66	N68		Support Horizontal	None	None	A500-50	Typical
101	SH-6	SF3-1	SF3-3		Support Horizontal	None	None	A500-50	Typical
102	SH-7	SF2-2	SF2-4		Support Horizontal	None	None	A500-50	Typical
103	SH-8	SF3-2	SF3-4		Support Horizontal	None	None	A500-50	Typical
104	SH-9	N102	N104		Support Horizontal	None	None	A500-50	Typical
105	SH-10	N101	N103		Support Horizontal	None	None	A500-50	Typical
106	SH-11	N110	N112		Support Horizontal	None	None	A500-50	Typical
107	SH-12	N109	N111		Support Horizontal	None	None	A500-50	Typical
108	SV-1	N62	N64		Support Vertical	None	None	A572 Gr.50	Typical
109	SV-2	N61	N63		Support Vertical	None	None	A572 Gr.50	Typical
110	SV-3	N69	N71		Support Vertical	None	None	A572 Gr.50	Typical
111	SV-4	N70	N72		Support Vertical	None	None	A572 Gr.50	Typical
112	SV-5	SF2-V2A	SF2-V2B		Support Vertical	None	None	A572 Gr.50	Typical
113	SV-6	SF2-V1A	SF2-V1B		Support Vertical	None	None	A572 Gr.50	Typical
114	SV-7	SF3-V1A	SF3-V1B		Support Vertical	None	None	A572 Gr.50	Typical
115	SV-8	SF3-V2A	SF3-V2B		Support Vertical	None	None	A572 Gr.50	Typical
116	SV-9	N106	N108		Support Vertical	None	None	A572 Gr.50	Typical
117	SV-10	N105	N107		Support Vertical	None	None	A572 Gr.50	Typical
118	SV-11	N113	N115		Support Vertical	None	None	A572 Gr.50	Typical
119	SV-12	N114	N116		Support Vertical	None	None	A572 Gr.50	Typical
120	M120	N157	N169		RIGID	None	None	RIGID	Typical
121	M121	N160A	N172		RIGID	None	None	RIGID	Typical
122	M122	N193	N205		RIGID	None	None	RIGID	Typical
123	M123	N196	N208		RIGID	None	None	RIGID	Typical

Member Advanced Data

Label	I Release	J Release	I Offset(in)	J Offset(in)	T/C Only	Physical	Defl Rati...	Analysis Offse...	Inactive	Seismic Design R...
1	FH-1B					Yes	** NA **			None
2	FH-1T					Yes	** NA **			None
3	FH-2B					Yes	** NA **			None
4	FH-2T					Yes	** NA **			None
5	FH-3B					Yes	** NA **			None
6	FH-3T					Yes	** NA **			None
7	FH-4B					Yes	** NA **			None
8	FH-4T					Yes	** NA **			None
9	FH-5B					Yes	** NA **			None
10	FH-5T					Yes	** NA **			None
11	FH-6B					Yes	** NA **			None

Member Advanced Data (Continued)

Label	I Release	J Release	I Offset(in)	J Offset(in)	T/C Only	Physical	Defl Rati...	Analysis Offse...	Inactive	Seismic Design R...
12	FH-6T					Yes	** NA **			None
13	FH-7B					Yes	** NA **			None
14	FH-7T					Yes	** NA **			None
15	FH-8B					Yes	** NA **			None
16	FH-8T					Yes	** NA **			None
17	FH-9B					Yes	** NA **			None
18	FH-9T					Yes	** NA **			None
19	M-1					Yes	** NA **			None
20	M-2					Yes	** NA **			None
21	M-3					Yes	** NA **			None
22	M74					Yes	** NA **			None
23	M75					Yes	** NA **			None
24	M76					Yes	** NA **			None
25	M77					Yes	** NA **			None
26	M78					Yes	** NA **			None
27	M79					Yes	** NA **			None
28	M80					Yes	** NA **			None
29	M81					Yes	** NA **			None
30	M84					Yes	** NA **			None
31	M85					Yes	** NA **			None
32	M86					Yes	** NA **			None
33	M87					Yes	** NA **			None
34	M92					Yes	** NA **			None
35	M93					Yes	** NA **			None
36	M94					Yes	** NA **			None
37	M95					Yes	** NA **			None
38	M98					Yes	** NA **			None
39	M99					Yes	** NA **			None
40	M100					Yes	** NA **			None
41	M101					Yes	** NA **			None
42	M106					Yes	** NA **			None
43	M107					Yes	** NA **			None
44	M108					Yes	** NA **			None
45	M109					Yes	** NA **			None
46	M112					Yes	** NA **			None
47	M113					Yes	** NA **			None
48	M114					Yes	** NA **			None
49	M115					Yes	** NA **			None
50	M115A					Yes	** NA **			None
51	M116					Yes	** NA **			None
52	M118					Yes	** NA **			None
53	M119					Yes	** NA **			None
54	MP-1					Yes	** NA **			None
55	MP-1B					Yes	** NA **			None
56	MP-2					Yes	** NA **			None
57	MP-3					Yes	** NA **			None
58	MP-4					Yes	** NA **			None
59	MP-4B					Yes	** NA **			None
60	MP-5					Yes	** NA **			None
61	MP-5B					Yes	** NA **			None
62	MP-6					Yes	** NA **			None
63	MP-7					Yes	** NA **			None



Company : Tower Engineering Professionals, Inc.
 Designer : GJS
 Job Number : TEP No. 63208.689014
 Model Name : CCI BU No 842673

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Member Advanced Data (Continued)

Label	I Release	J Release	I Offset(in)	J Offset(in)	T/C Only	Physical	Defl Rati...	Analysis Offse...	Inactive	Seismic Design R...
64	MP-8					Yes	** NA **			None
65	MP-8B					Yes	** NA **			None
66	MP-9					Yes	** NA **			None
67	MP-9B					Yes	** NA **			None
68	MP-10					Yes	** NA **			None
69	MP-11					Yes	** NA **			None
70	MP-12					Yes	** NA **			None
71	MP-12B					Yes	** NA **			None
72	MP-13					Yes	** NA **			None
73	MP-14					Yes	** NA **			None
74	MP-15					Yes	** NA **			None
75	PP-1					Yes	** NA **			None
76	PP-2					Yes	** NA **			None
77	PP-3					Yes	** NA **			None
78	PP-4					Yes	** NA **			None
79	PP-5					Yes	** NA **			None
80	PP-6					Yes	** NA **			None
81	R-1					Yes	** NA **			None
82	R-2					Yes	** NA **			None
83	R-3					Yes	** NA **			None
84	R-4					Yes	** NA **			None
85	R-5					Yes	** NA **			None
86	R-6					Yes	** NA **			None
87	SA-1	BenPIN	BenPIN			Yes	** NA **			None
88	SA-2	BenPIN	BenPIN			Yes	** NA **			None
89	SA-3	BenPIN	BenPIN			Yes	** NA **			None
90	SD-1					Yes	** NA **			None
91	SD-2					Yes	** NA **			None
92	SD-3					Yes	** NA **			None
93	SD-4					Yes	** NA **			None
94	SD-5					Yes	** NA **			None
95	SD-6					Yes	** NA **			None
96	SH-1	OOOOOX	BenPIN			Yes	** NA **			None
97	SH-2	OOOOOX	BenPIN			Yes	** NA **			None
98	SH-3	OOOOOX	BenPIN			Yes	** NA **			None
99	SH-4	OOOOOX	BenPIN			Yes	** NA **			None
100	SH-5	OOOOOX	BenPIN			Yes	** NA **			None
101	SH-6	OOOOOX	BenPIN			Yes	** NA **			None
102	SH-7	OOOOOX	BenPIN			Yes	** NA **			None
103	SH-8	OOOOOX	BenPIN			Yes	** NA **			None
104	SH-9	OOOOOX	BenPIN			Yes	** NA **			None
105	SH-10	OOOOOX	BenPIN			Yes	** NA **			None
106	SH-11	OOOOOX	BenPIN			Yes	** NA **			None
107	SH-12	OOOOOX	BenPIN			Yes	** NA **			None
108	SV-1					Yes	** NA **			None
109	SV-2					Yes	** NA **			None
110	SV-3					Yes	** NA **			None
111	SV-4					Yes	** NA **			None
112	SV-5					Yes	** NA **			None
113	SV-6					Yes	** NA **			None
114	SV-7					Yes	** NA **			None
115	SV-8					Yes	** NA **			None



Company : Tower Engineering Professionals, Inc.
 Designer : GJS
 Job Number : TEP No. 63208.689014
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Member Advanced Data (Continued)

Label	I Release	J Release	I Offset(in)	J Offset(in)	T/C Only	Physical	Defl Rati...	Analysis Offse...	Inactive	Seismic Design R...
116	SV-9					Yes	** NA **			None
117	SV-10					Yes	** NA **			None
118	SV-11					Yes	** NA **			None
119	SV-12					Yes	** NA **			None
120	M120					Yes	** NA **			None
121	M121					Yes	** NA **			None
122	M122					Yes	** NA **			None
123	M123					Yes	** NA **			None

Hot Rolled Steel Design Parameters

Label	Shape	Length(ft)	Lby(ft)	Lbzz(ft)	Lcomp top..	Lcomp bot..	L-torque...	Kyy	Kzz	Cb	Function
1	FH-1B	Face Horizontal	2.5					2.1	2.1		Lateral
2	FH-1T	Face Horizontal	2.5					2.1	2.1		Lateral
3	FH-2B	Face Horizontal	8					1	1		Lateral
4	FH-2T	Face Horizontal	8					1	1		Lateral
5	FH-3B	Face Horizontal	2.5					2.1	2.1		Lateral
6	FH-3T	Face Horizontal	2.5					2.1	2.1		Lateral
7	FH-4B	Face Horizontal	2.5					2.1	2.1		Lateral
8	FH-4T	Face Horizontal	2.5					2.1	2.1		Lateral
9	FH-5B	Face Horizontal	8					1	1		Lateral
10	FH-5T	Face Horizontal	8					1	1		Lateral
11	FH-6B	Face Horizontal	2.5					2.1	2.1		Lateral
12	FH-6T	Face Horizontal	2.5					2.1	2.1		Lateral
13	FH-7B	Face Horizontal	2.5					2.1	2.1		Lateral
14	FH-7T	Face Horizontal	2.5					2.1	2.1		Lateral
15	FH-8B	Face Horizontal	8					1	1		Lateral
16	FH-8T	Face Horizontal	8					1	1		Lateral
17	FH-9B	Face Horizontal	2.5					2.1	2.1		Lateral
18	FH-9T	Face Horizontal	2.5					2.1	2.1		Lateral
19	M-1	Mast	7	Segment	Segment			2.1	2.1		Lateral
20	M-2	Mast	7	Segment	Segment			2.1	2.1		Lateral
21	M-3	Mast	7	Segment	Segment			2.1	2.1		Lateral
22	M84	Mount Pipes	1.802					.65	.65		Lateral
23	M85	Mount Pipes	1.802					.65	.65		Lateral
24	M86	Mount Pipes	1.802					.65	.65		Lateral
25	M87	Mount Pipes	1.802					.65	.65		Lateral
26	M98	Mount Pipes	1.802					.65	.65		Lateral
27	M99	Mount Pipes	1.802					.65	.65		Lateral
28	M100	Mount Pipes	1.802					.65	.65		Lateral
29	M101	Mount Pipes	1.802					.65	.65		Lateral
30	M112	Mount Pipes	1.802					.65	.65		Lateral
31	M113	Mount Pipes	1.802					.65	.65		Lateral
32	M114	Mount Pipes	1.802					.65	.65		Lateral
33	M115	Mount Pipes	1.802					.65	.65		Lateral
34	MP-1	Mount Pipes	10	Segment	Segment			2.1	2.1		Lateral
35	MP-1B	Mount Pipes	4	Segment	Segment			2.1	2.1		Lateral
36	MP-2	Mount Pipes	10	Segment	Segment			2.1	2.1		Lateral
37	MP-3	Mount Pipes	10	Segment	Segment			2.1	2.1		Lateral
38	MP-4	Mount Pipes	10	Segment	Segment			2.1	2.1		Lateral
39	MP-4B	Mount Pipes	4	Segment	Segment			2.1	2.1		Lateral



Company : Tower Engineering Professionals, Inc.
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Hot Rolled Steel Design Parameters (Continued)

Label	Shape	Length(ft)	Lbvy(ft)	Lbzz(ft)	Lcomp top...	Lcomp bot...	L-torque...	Kyy	Kzz	Cb	Function
40	MP-5	Mount Pipes	10	Segment	Segment			2.1	2.1		Lateral
41	MP-5B	Mount Pipes	4	Segment	Segment			2.1	2.1		Lateral
42	MP-6	Mount Pipes	10	Segment	Segment			2.1	2.1		Lateral
43	MP-7	Mount Pipes	10	Segment	Segment			2.1	2.1		Lateral
44	MP-8	Mount Pipes	10	Segment	Segment			2.1	2.1		Lateral
45	MP-8B	Mount Pipes	4	Segment	Segment			2.1	2.1		Lateral
46	MP-9	Mount Pipes	10	Segment	Segment			2.1	2.1		Lateral
47	MP-9B	Mount Pipes	4	Segment	Segment			2.1	2.1		Lateral
48	MP-10	Mount Pipes	10	Segment	Segment			2.1	2.1		Lateral
49	MP-11	Mount Pipes	10	Segment	Segment			2.1	2.1		Lateral
50	MP-12	Mount Pipes	10	Segment	Segment			2.1	2.1		Lateral
51	MP-12B	Mount Pipes	4	Segment	Segment			2.1	2.1		Lateral
52	MP-13	Mount Pipes	5	Segment	Segment			2.1	2.1		Lateral
53	MP-14	Mount Pipes	5	Segment	Segment			2.1	2.1		Lateral
54	MP-15	Mount Pipes	5	Segment	Segment			2.1	2.1		Lateral
55	PP-1	Pivot Plate	1					1	1		Lateral
56	PP-2	Pivot Plate	1					1	1		Lateral
57	PP-3	Pivot Plate	1					1	1		Lateral
58	PP-4	Pivot Plate	1					1	1		Lateral
59	PP-5	Pivot Plate	1					1	1		Lateral
60	PP-6	Pivot Plate	1					1	1		Lateral
61	SA-1	Stabilzier Arm	3.296					1	1		Lateral
62	SA-2	Stabilzier Arm	3.296					1	1		Lateral
63	SA-3	Stabilzier Arm	3.296					1	1		Lateral
64	SD-1	Support Diagonal	4.636					.65	.65		Lateral
65	SD-2	Support Diagonal	4.636					.65	.65		Lateral
66	SD-3	Support Diagonal	4.636					.65	.65		Lateral
67	SD-4	Support Diagonal	4.636					.65	.65		Lateral
68	SD-5	Support Diagonal	4.636					.65	.65		Lateral
69	SD-6	Support Diagonal	4.636					.65	.65		Lateral
70	SH-1	Support Horizontal	4.255		3.604			1	1		Lateral
71	SH-2	Support Horizontal	4.255		3.604			1	1		Lateral
72	SH-3	Support Horizontal	4.255		3.604			1	1		Lateral
73	SH-4	Support Horizontal	4.255		3.604			1	1		Lateral
74	SH-5	Support Horizontal	4.255		3.604			1	1		Lateral
75	SH-6	Support Horizontal	4.255		3.604			1	1		Lateral
76	SH-7	Support Horizontal	4.255		3.604			1	1		Lateral
77	SH-8	Support Horizontal	4.255		3.604			1	1		Lateral
78	SH-9	Support Horizontal	4.255		3.604			1	1		Lateral
79	SH-10	Support Horizontal	4.255		3.604			1	1		Lateral
80	SH-11	Support Horizontal	4.255		3.604			1	1		Lateral
81	SH-12	Support Horizontal	4.255		3.604			1	1		Lateral
82	SV-1	Support Vertical	2.917					.65	.65		Lateral
83	SV-2	Support Vertical	2.917					.65	.65		Lateral
84	SV-3	Support Vertical	2.917					.65	.65		Lateral
85	SV-4	Support Vertical	2.917					.65	.65		Lateral
86	SV-5	Support Vertical	2.917					.65	.65		Lateral
87	SV-6	Support Vertical	2.917					.65	.65		Lateral
88	SV-7	Support Vertical	2.917					.65	.65		Lateral
89	SV-8	Support Vertical	2.917					.65	.65		Lateral
90	SV-9	Support Vertical	2.917					.65	.65		Lateral
91	SV-10	Support Vertical	2.917					.65	.65		Lateral



Company : Tower Engineering Professionals, Inc.
 Designer : GJS
 Job Number : TEP No. 63208.689014
 Model Name : CCI BU No 842673

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Hot Rolled Steel Design Parameters (Continued)

Label	Shape	Length(ft)	Lbvy(ft)	Lbzz(ft)	Lcomp top...	Lcomp bot...	L-torque...	Kyy	Kzz	Cb	Function
92	SV-11	Support Vertical	2.917					.65	.65		Lateral
93	SV-12	Support Vertical	2.917					.65	.65		Lateral

Cold Formed Steel Design Parameters

Label	Shape	Length...	Lbvy(ft)	Lbzz(ft)	Lcomp to...	Lcomp bo...	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		42		
2	0 Wind - No Ice	None				42	93	
3	30 Wind - No Ice	None				84	186	
4	45 Wind - No Ice	None				84	186	
5	60 Wind - No Ice	None				84	186	
6	90 Wind - No Ice	None				42	93	
7	120 Wind - No Ice	None				84	186	
8	135 Wind - No Ice	None				84	186	
9	150 Wind - No Ice	None				84	186	
10	180 Wind - No Ice	None				42	93	
11	210 Wind - No Ice	None				84	186	
12	225 Wind - No Ice	None				84	186	
13	240 Wind - No Ice	None				84	186	
14	270 Wind - No Ice	None				42	93	
15	300 Wind - No Ice	None				84	186	
16	315 Wind - No Ice	None				84	186	
17	330 Wind - No Ice	None				84	186	
18	Ice Weight	None				42	93	
19	0 Wind - Ice	None				42	93	
20	30 Wind - Ice	None				84	186	
21	45 Wind - Ice	None				84	186	
22	60 Wind - Ice	None				84	186	
23	90 Wind - Ice	None				42	93	
24	120 Wind - Ice	None				84	186	
25	135 Wind - Ice	None				84	186	
26	150 Wind - Ice	None				84	186	
27	180 Wind - Ice	None				42	93	
28	210 Wind - Ice	None				84	186	
29	225 Wind - Ice	None				84	186	
30	240 Wind - Ice	None				84	186	
31	270 Wind - Ice	None				42	93	
32	300 Wind - Ice	None				84	186	
33	315 Wind - Ice	None				84	186	
34	330 Wind - Ice	None				84	186	
35	Lm	None				1		
36	Lv	None				1		
37	Seismic Load X	ELX	-1			42		
38	Seismic Load Z	ELZ		-1		42		



Company : Tower Engineering Professionals, Inc.
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Load Combinations

Description	Solve	PD	e	S	BLCFac	BLCFac	BLCFac	BLCFac	BLCFac	BLCFac	BLCFac	BLCFac	BLCFac	BLCFac	BLCFac	BLCFac
1 1.4D	Yes	Y		1	1.4											
2 0.9D+1.0 0-Wind	Yes	Y		1	.9	2	1									
3 0.9D+1.0 30-Wind	Yes	Y		1	.9	3	1									
4 0.9D+1.0 45-Wind	Yes	Y		1	.9	4	1									
5 0.9D+1.0 60-Wind	Yes	Y		1	.9	5	1									
6 0.9D+1.0 90-Wind	Yes	Y		1	.9	6	1									
7 0.9D+1.0 120-Wind	Yes	Y		1	.9	7	1									
8 0.9D+1.0 135-Wind	Yes	Y		1	.9	8	1									
9 0.9D+1.0 150-Wind	Yes	Y		1	.9	9	1									
10 0.9D+1.0 180-Wind	Yes	Y		1	.9	10	1									
11 0.9D+1.0 210-Wind	Yes	Y		1	.9	11	1									
12 0.9D+1.0 225-Wind	Yes	Y		1	.9	12	1									
13 0.9D+1.0 240-Wind	Yes	Y		1	.9	13	1									
14 0.9D+1.0 270-Wind	Yes	Y		1	.9	14	1									
15 0.9D+1.0 300-Wind	Yes	Y		1	.9	15	1									
16 0.9D+1.0 315-Wind	Yes	Y		1	.9	16	1									
17 0.9D+1.0 330-Wind	Yes	Y		1	.9	17	1									
18 1.2D+1.0 0-Wind	Yes	Y		1	1.2	2	1									
19 1.2D+1.0 30-Wind	Yes	Y		1	1.2	3	1									
20 1.2D+1.0 45-Wind	Yes	Y		1	1.2	4	1									
21 1.2D+1.0 60-Wind	Yes	Y		1	1.2	5	1									
22 1.2D+1.0 90-Wind	Yes	Y		1	1.2	6	1									
23 1.2D+1.0 120-Wind	Yes	Y		1	1.2	7	1									
24 1.2D+1.0 135-Wind	Yes	Y		1	1.2	8	1									
25 1.2D+1.0 150-Wind	Yes	Y		1	1.2	9	1									
26 1.2D+1.0 180-Wind	Yes	Y		1	1.2	10	1									
27 1.2D+1.0 210-Wind	Yes	Y		1	1.2	11	1									
28 1.2D+1.0 225-Wind	Yes	Y		1	1.2	12	1									
29 1.2D+1.0 240-Wind	Yes	Y		1	1.2	13	1									
30 1.2D+1.0 270-Wind	Yes	Y		1	1.2	14	1									
31 1.2D+1.0 300-Wind	Yes	Y		1	1.2	15	1									
32 1.2D+1.0 315-Wind	Yes	Y		1	1.2	16	1									
33 1.2D+1.0 330-Wind	Yes	Y		1	1.2	17	1									
34 1.2D+1.0Di+1.0 0-W...	Yes	Y		1	1.2	18	1	19	1							
35 1.2D+1.0Di+1.0 30-...	Yes	Y		1	1.2	18	1	20	1							
36 1.2D+1.0Di+1.0 45-...	Yes	Y		1	1.2	18	1	21	1							
37 1.2D+1.0Di+1.0 60-...	Yes	Y		1	1.2	18	1	22	1							
38 1.2D+1.0Di+1.0 90-...	Yes	Y		1	1.2	18	1	23	1							
39 1.2D+1.0Di+1.0 120-...	Yes	Y		1	1.2	18	1	24	1							
40 1.2D+1.0Di+1.0 135-...	Yes	Y		1	1.2	18	1	25	1							
41 1.2D+1.0Di+1.0 150-...	Yes	Y		1	1.2	18	1	26	1							
42 1.2D+1.0Di+1.0 180-...	Yes	Y		1	1.2	18	1	27	1							
43 1.2D+1.0Di+1.0 210-...	Yes	Y		1	1.2	18	1	28	1							
44 1.2D+1.0Di+1.0 225-...	Yes	Y		1	1.2	18	1	29	1							
45 1.2D+1.0Di+1.0 240-...	Yes	Y		1	1.2	18	1	30	1							
46 1.2D+1.0Di+1.0 270-...	Yes	Y		1	1.2	18	1	31	1							
47 1.2D+1.0Di+1.0 300-...	Yes	Y		1	1.2	18	1	32	1							
48 1.2D+1.0Di+1.0 315-...	Yes	Y		1	1.2	18	1	33	1							
49 1.2D+1.0Di+1.0 330-...	Yes	Y		1	1.2	18	1	34	1							
50 1.2D+1.5Lv	Yes	Y		36	1.5	1	1.2									
51 1.2D+1.5Lm+1.0 0-...	Yes	Y		1	1.2	2	.064	35	1.5							



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 Designer : GJS
 Job Number : TEP No. 63208.689014
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Load Combinations (Continued)

Description	Solve	PD	e	S	BLCFac	BLCFac	BLCFac	BLCFac	BLCFac	BLCFac	BLCFac	BLCFac	BLCFac	BLCFac	BLCFac	BLCFac
52 1.2D+1.5Lm+1.0 30-...	Yes	Y		1	1.2	3	.064	35	1.5							
53 1.2D+1.5Lm+1.0 45-...	Yes	Y		1	1.2	4	.064	35	1.5							
54 1.2D+1.5Lm+1.0 60-...	Yes	Y		1	1.2	5	.064	35	1.5							
55 1.2D+1.5Lm+1.0 90-...	Yes	Y		1	1.2	6	.064	35	1.5							
56 1.2D+1.5Lm+1.0 12-...	Yes	Y		1	1.2	7	.064	35	1.5							
57 1.2D+1.5Lm+1.0 13-...	Yes	Y		1	1.2	8	.064	35	1.5							
58 1.2D+1.5Lm+1.0 15-...	Yes	Y		1	1.2	9	.064	35	1.5							
59 1.2D+1.5Lm+1.0 18-...	Yes	Y		1	1.2	10	.064	35	1.5							
60 1.2D+1.5Lm+1.0 21-...	Yes	Y		1	1.2	11	.064	35	1.5							
61 1.2D+1.5Lm+1.0 22-...	Yes	Y		1	1.2	12	.064	35	1.5							
62 1.2D+1.5Lm+1.0 24-...	Yes	Y		1	1.2	13	.064	35	1.5							
63 1.2D+1.5Lm+1.0 27-...	Yes	Y		1	1.2	14	.064	35	1.5							
64 1.2D+1.5Lm+1.0 30-...	Yes	Y		1	1.2	15	.064	35	1.5							
65 1.2D+1.5Lm+1.0 31-...	Yes	Y		1	1.2	16	.064	35	1.5							
66 1.2D+1.5Lm+1.0 33-...	Yes	Y		1	1.2	17	.064	35	1.5							
67 (1.2+0.2Sds)D+1.0 0...	Yes	Y		1	1.2...	ELX	.108	0								
68 (1.2+0.2Sds)D+1.0 3...	Yes	Y		1	1.2...	ELX	.094	ELZ	.054							
69 (1.2+0.2Sds)D+1.0 4...	Yes	Y		1	1.2...	ELX	.077	ELZ	.077							
70 (1.2+0.2Sds)D+1.0 6...	Yes	Y		1	1.2...	ELX	.054	ELZ	.094							
71 (1.2+0.2Sds)D+1.0 9...	Yes	Y		1	1.2...	0		ELZ	.108							
72 (1.2+0.2Sds)D+1.0 1...	Yes	Y		1	1.2...	ELX	.054	ELZ	.094							
73 (1.2+0.2Sds)D+1.0 1...	Yes	Y		1	1.2...	ELX	.077	ELZ	.077							
74 (1.2+0.2Sds)D+1.0 1...	Yes	Y		1	1.2...	ELX	.094	ELZ	.054							
75 (1.2+0.2Sds)D+1.0 1...	Yes	Y		1	1.2...	ELX	.108	0								
76 (1.2+0.2Sds)D+1.0 2...	Yes	Y		1	1.2...	ELX	.094	ELZ	.054							
77 (1.2+0.2Sds)D+1.0 2...	Yes	Y		1	1.2...	ELX	.077	ELZ	.077							
78 (1.2+0.2Sds)D+1.0 2...	Yes	Y		1	1.2...	ELX	.054	ELZ	.094							
79 (1.2+0.2Sds)D+1.0 2...	Yes	Y		1	1.2...	0		ELZ	.108							
80 (1.2+0.2Sds)D+1.0 3...	Yes	Y		1	1.2...	ELX	.054	ELZ	.094							
81 (1.2+0.2Sds)D+1.0 3...	Yes	Y		1	1.2...	ELX	.077	ELZ	.077							
82 (1.2+0.2Sds)D+1.0 3...	Yes	Y		1	1.2...	ELX	.094	ELZ	.054							
83 (0.9-0.2Sds)*DL+1.0...	Yes	Y		1	.857	ELX	.108	0								
84 (0.9-0.2Sds)*DL+1.0...	Yes	Y		1	.857	ELX	.094	ELZ	.054							
85 (0.9-0.2Sds)*DL+1.0...	Yes	Y		1	.857	ELX	.077	ELZ	.077							
86 (0.9-0.2Sds)*DL+1.0...	Yes	Y		1	.857	ELX	.054	ELZ	.094							
87 (0.9-0.2Sds)*DL+1.0...	Yes	Y		1	.857	0		ELZ	.108							
88 (0.9-0.2Sds)*DL+1.0...	Yes	Y		1	.857	ELX	.054	ELZ	.094							
89 (0.9-0.2Sds)*DL+1.0...	Yes	Y		1	.857	ELX	.077	ELZ	.077							
90 (0.9-0.2Sds)*DL+1.0...	Yes	Y		1	.857	ELX	.094	ELZ	.054							
91 (0.9-0.2Sds)*DL+1.0...	Yes	Y		1	.857	ELX	.108	0								
92 (0.9-0.2Sds)*DL+1.0...	Yes	Y		1	.857	ELX	.094	ELZ	.054							
93 (0.9-0.2Sds)*DL+1.0...	Yes	Y		1	.857	ELX	.077	ELZ	.077							
94 (0.9-0.2Sds)*DL+1.0...	Yes	Y		1	.857	ELX	.054	ELZ	.094							
95 (0.9-0.2Sds)*DL+1.0...	Yes	Y		1	.857	0		ELZ	.108							
96 (0.9-0.2Sds)*DL+1.0...	Yes	Y		1	.857	ELX	.054	ELZ	.094							
97 (0.9-0.2Sds)*DL+1.0...	Yes	Y		1	.857	ELX	.077	ELZ	.077							
98 (0.9-0.2Sds)*DL+1.0...	Yes	Y		1	.857	ELX	.094	ELZ	.054							



Company : Tower Engineering Professionals, Inc.
 Designer : GJS
 Job Number : TEP No. 63208.689014
 Model Name : CCI BU No 842873

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Joint Loads and Enforced Displacements (BLC 35 : Lm)

Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft, k*s^2*ft)]
1 X8	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, k*s^2*ft)]
1 FF4	L	Y	-.25

Member Point Loads (BLC 1 : Dead)

Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1 MP-1	Y	-.022	2
2 MP-1	Y	-.041	6
3 MP-2	Y	-.065	1
4 MP-4	Y	-.045	1
5 MP-2	Y	-.059	2
6 MP-2	Y	-.053	2
7 MP-2	Y	-.055	5
8 MP-4B	Y	-.071	2
9 MP-4B	Y	-.043	2
10 MP-5	Y	-.022	2
11 MP-5	Y	-.041	6
12 MP-6	Y	-.065	1
13 MP-8	Y	-.045	1
14 MP-6	Y	-.059	2
15 MP-6	Y	-.053	2
16 MP-6	Y	-.055	5
17 MP-8B	Y	-.071	2
18 MP-8B	Y	-.043	2
19 MP-9	Y	-.022	2
20 MP-9	Y	-.041	6
21 MP-10	Y	-.065	1
22 MP-12	Y	-.045	1
23 MP-10	Y	-.059	2
24 MP-10	Y	-.053	2
25 MP-10	Y	-.055	5
26 MP-12B	Y	-.071	2
27 MP-12B	Y	-.043	2
28 MP-13	Y	-.019	2
29 MP-14	Y	-.019	2
30 MP-15	Y	-.018	2
31 MP-1	Y	-.022	4
32 MP-1	Y	-.041	8
33 MP-2	Y	-.065	6
34 MP-4	Y	-.045	6
35 MP-5	Y	-.022	4
36 MP-5	Y	-.041	8
37 MP-6	Y	-.065	6
38 MP-8	Y	-.045	6
39 MP-9	Y	-.022	4
40 MP-9	Y	-.041	8
41 MP-10	Y	-.065	6



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

Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
42 MP-12	Y	-.045	6

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

Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1 MP-1	X	-.068	2
2 MP-1	X	-.059	6
3 MP-2	X	-.221	1
4 MP-4	X	-.194	1
5 MP-2	X	-.041	2
6 MP-2	X	-.054	2
7 MP-2	X	-.058	5
8 MP-4B	X	-.046	2
9 MP-4B	X	-.021	2
10 MP-5	X	-.042	2
11 MP-5	X	-.036	6
12 MP-6	X	-.128	1
13 MP-8	X	-.103	1
14 MP-6	X	-.06	2
15 MP-6	X	-.08	2
16 MP-6	X	-.084	5
17 MP-8B	X	-.06	2
18 MP-8B	X	-.045	2
19 MP-9	X	-.047	2
20 MP-9	X	-.041	6
21 MP-10	X	-.148	1
22 MP-12	X	-.123	1
23 MP-10	X	-.06	2
24 MP-10	X	-.08	2
25 MP-10	X	-.084	5
26 MP-12B	X	-.06	2
27 MP-12B	X	-.045	2
28 MP-13	X	-.028	2
29 MP-14	X	-.028	2
30 MP-15	X	-.037	2
31 MP-1	X	-.068	4
32 MP-1	X	-.059	8
33 MP-2	X	-.221	6
34 MP-4	X	-.194	6
35 MP-5	X	-.042	4
36 MP-5	X	-.036	8
37 MP-6	X	-.128	6
38 MP-8	X	-.103	6
39 MP-9	X	-.047	4
40 MP-9	X	-.041	8
41 MP-10	X	-.148	6
42 MP-12	X	-.123	6

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

Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1 MP-1	X	-.051	2
2 MP-1	X	-.045	6



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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft, %]
3	MP-2	X	-165	1
4	MP-4	X	-142	1
5	MP-2	X	-041	2
6	MP-2	X	-055	2
7	MP-2	X	-058	5
8	MP-4B	X	-044	2
9	MP-4B	X	-025	2
10	MP-5	X	-028	2
11	MP-5	X	-024	6
12	MP-6	X	-084	1
13	MP-8	X	-063	1
14	MP-6	X	-057	2
15	MP-6	X	-077	2
16	MP-6	X	-081	5
17	MP-8B	X	-056	2
18	MP-8B	X	-046	2
19	MP-9	X	-055	2
20	MP-9	X	-048	6
21	MP-10	X	-179	1
22	MP-12	X	-156	1
23	MP-10	X	-041	2
24	MP-10	X	-055	2
25	MP-10	X	-058	5
26	MP-12B	X	-044	2
27	MP-12B	X	-025	2
28	MP-13	X	-024	2
29	MP-14	X	-024	2
30	MP-15	X	-032	2
31	MP-1	X	-051	4
32	MP-1	X	-045	8
33	MP-2	X	-165	6
34	MP-4	X	-142	6
35	MP-5	X	-028	4
36	MP-5	X	-024	8
37	MP-6	X	-084	6
38	MP-8	X	-063	6
39	MP-9	X	-055	4
40	MP-9	X	-048	8
41	MP-10	X	-179	6
42	MP-12	X	-156	6
43	MP-1	Z	-03	2
44	MP-1	Z	-026	6
45	MP-2	Z	-095	1
46	MP-4	Z	-082	1
47	MP-2	Z	-023	2
48	MP-2	Z	-031	2
49	MP-2	Z	-033	5
50	MP-4B	Z	-025	2
51	MP-4B	Z	-014	2
52	MP-5	Z	-016	2
53	MP-5	Z	-014	6
54	MP-6	Z	-048	1



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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft, %]
55	MP-8	Z	-036	1
56	MP-6	Z	-033	2
57	MP-6	Z	-044	2
58	MP-6	Z	-047	5
59	MP-8B	Z	-032	2
60	MP-8B	Z	-027	2
61	MP-9	Z	-032	2
62	MP-9	Z	-028	6
63	MP-10	Z	-103	1
64	MP-12	Z	-09	1
65	MP-10	Z	-023	2
66	MP-10	Z	-031	2
67	MP-10	Z	-033	5
68	MP-12B	Z	-025	2
69	MP-12B	Z	-014	2
70	MP-13	Z	-014	2
71	MP-14	Z	-014	2
72	MP-15	Z	-019	2
73	MP-1	Z	-03	4
74	MP-1	Z	-026	8
75	MP-2	Z	-095	6
76	MP-4	Z	-082	6
77	MP-5	Z	-016	4
78	MP-5	Z	-014	8
79	MP-6	Z	-048	6
80	MP-8	Z	-036	6
81	MP-9	Z	-032	4
82	MP-9	Z	-028	8
83	MP-10	Z	-103	6
84	MP-12	Z	-09	6

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft, %]
1	MP-1	X	-036	2
2	MP-1	X	-031	6
3	MP-2	X	-112	1
4	MP-4	X	-094	1
5	MP-2	X	-038	2
6	MP-2	X	-051	2
7	MP-2	X	-053	5
8	MP-4B	X	-039	2
9	MP-4B	X	-026	2
10	MP-5	X	-025	2
11	MP-5	X	-021	6
12	MP-6	X	-074	1
13	MP-8	X	-057	1
14	MP-6	X	-045	2
15	MP-6	X	-061	2
16	MP-6	X	-064	5
17	MP-8B	X	-044	2
18	MP-8B	X	-036	2



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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
19	MP-9	X	-048	2
20	MP-9	X	-042	6
21	MP-10	X	-156	1
22	MP-12	X	-137	1
23	MP-10	X	-03	2
24	MP-10	X	-04	2
25	MP-10	X	-043	5
26	MP-12B	X	-033	2
27	MP-12B	X	-016	2
28	MP-13	X	-02	2
29	MP-14	X	-02	2
30	MP-15	X	-026	2
31	MP-1	X	-036	4
32	MP-1	X	-031	8
33	MP-2	X	-112	6
34	MP-4	X	-094	6
35	MP-5	X	-025	4
36	MP-5	X	-021	8
37	MP-6	X	-074	6
38	MP-8	X	-057	6
39	MP-9	X	-048	4
40	MP-9	X	-042	8
41	MP-10	X	-156	6
42	MP-12	X	-137	6
43	MP-1	Z	-036	2
44	MP-1	Z	-031	6
45	MP-2	Z	-112	1
46	MP-4	Z	-094	1
47	MP-2	Z	-038	2
48	MP-2	Z	-051	2
49	MP-2	Z	-053	5
50	MP-4B	Z	-039	2
51	MP-4B	Z	-026	2
52	MP-5	Z	-025	2
53	MP-5	Z	-021	6
54	MP-6	Z	-074	1
55	MP-8	Z	-057	1
56	MP-6	Z	-045	2
57	MP-6	Z	-061	2
58	MP-6	Z	-064	5
59	MP-8B	Z	-044	2
60	MP-8B	Z	-036	2
61	MP-9	Z	-048	2
62	MP-9	Z	-042	6
63	MP-10	Z	-156	1
64	MP-12	Z	-137	1
65	MP-10	Z	-03	2
66	MP-10	Z	-04	2
67	MP-10	Z	-043	5
68	MP-12B	Z	-033	2
69	MP-12B	Z	-016	2
70	MP-13	Z	-02	2



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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
71	MP-14	Z	-02	2
72	MP-15	Z	-026	2
73	MP-1	Z	-036	4
74	MP-1	Z	-031	8
75	MP-2	Z	-112	6
76	MP-4	Z	-094	6
77	MP-5	Z	-025	4
78	MP-5	Z	-021	8
79	MP-6	Z	-074	6
80	MP-8	Z	-057	6
81	MP-9	Z	-048	4
82	MP-9	Z	-042	8
83	MP-10	Z	-156	6
84	MP-12	Z	-137	6

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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
1	MP-1	X	-021	2
2	MP-1	X	-018	6
3	MP-2	X	-064	1
4	MP-4	X	-052	1
5	MP-2	X	-03	2
6	MP-2	X	-04	2
7	MP-2	X	-042	5
8	MP-4B	X	-03	2
9	MP-4B	X	-023	2
10	MP-5	X	-021	2
11	MP-5	X	-018	6
12	MP-6	X	-064	1
13	MP-8	X	-052	1
14	MP-6	X	-03	2
15	MP-6	X	-04	2
16	MP-6	X	-042	5
17	MP-8B	X	-03	2
18	MP-8B	X	-023	2
19	MP-9	X	-033	2
20	MP-9	X	-029	6
21	MP-10	X	-109	1
22	MP-12	X	-095	1
23	MP-10	X	-02	2
24	MP-10	X	-027	2
25	MP-10	X	-029	5
26	MP-12B	X	-023	2
27	MP-12B	X	-01	2
28	MP-13	X	-014	2
29	MP-14	X	-014	2
30	MP-15	X	-019	2
31	MP-1	X	-021	4
32	MP-1	X	-018	8
33	MP-2	X	-064	6
34	MP-4	X	-052	6



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

Member Label	Direction	Magnitude[k,k-ft]	Location[ft, %]	
35	MP-5	X	-0.21	4
36	MP-5	X	-0.18	8
37	MP-6	X	-0.64	6
38	MP-8	X	-0.52	6
39	MP-9	X	-0.33	4
40	MP-9	X	-0.29	8
41	MP-10	X	-1.09	6
42	MP-12	X	-0.95	6
43	MP-1	Z	-0.36	2
44	MP-1	Z	-0.31	6
45	MP-2	Z	-0.11	1
46	MP-4	Z	-0.89	1
47	MP-2	Z	-0.52	2
48	MP-2	Z	-0.07	2
49	MP-2	Z	-0.73	5
50	MP-4B	Z	-0.52	2
51	MP-4B	Z	-0.39	2
52	MP-5	Z	-0.36	2
53	MP-5	Z	-0.31	6
54	MP-6	Z	-0.11	1
55	MP-8	Z	-0.89	1
56	MP-6	Z	-0.52	2
57	MP-6	Z	-0.07	2
58	MP-6	Z	-0.73	5
59	MP-8B	Z	-0.52	2
60	MP-8B	Z	-0.39	2
61	MP-9	Z	-0.58	2
62	MP-9	Z	-0.51	6
63	MP-10	Z	-1.88	1
64	MP-12	Z	-1.65	1
65	MP-10	Z	-0.35	2
66	MP-10	Z	-0.47	2
67	MP-10	Z	-0.05	5
68	MP-12B	Z	-0.04	2
69	MP-12B	Z	-0.18	2
70	MP-13	Z	-0.24	2
71	MP-14	Z	-0.24	2
72	MP-15	Z	-0.32	2
73	MP-1	Z	-0.36	4
74	MP-1	Z	-0.31	8
75	MP-2	Z	-1.11	6
76	MP-4	Z	-0.89	6
77	MP-5	Z	-0.36	4
78	MP-5	Z	-0.31	8
79	MP-6	Z	-1.11	6
80	MP-8	Z	-0.89	6
81	MP-9	Z	-0.58	4
82	MP-9	Z	-0.51	8
83	MP-10	Z	-1.88	6
84	MP-12	Z	-1.65	6



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

Member Label	Direction	Magnitude[k,k-ft]	Location[ft, %]	
1	MP-1	Z	-0.33	2
2	MP-1	Z	-0.28	6
3	MP-2	Z	-0.96	1
4	MP-4	Z	-0.73	1
5	MP-2	Z	-0.66	2
6	MP-2	Z	-0.89	2
7	MP-2	Z	-0.93	5
8	MP-4B	Z	-0.64	2
9	MP-4B	Z	-0.54	2
10	MP-5	Z	-0.59	2
11	MP-5	Z	-0.51	6
12	MP-6	Z	-0.19	1
13	MP-8	Z	-1.64	1
14	MP-6	Z	-0.47	2
15	MP-6	Z	-0.63	2
16	MP-6	Z	-0.67	5
17	MP-8B	Z	-0.05	2
18	MP-8B	Z	-0.29	2
19	MP-9	Z	-0.53	2
20	MP-9	Z	-0.46	6
21	MP-10	Z	-0.17	1
22	MP-12	Z	-1.44	1
23	MP-10	Z	-0.47	2
24	MP-10	Z	-0.63	2
25	MP-10	Z	-0.67	5
26	MP-12B	Z	-0.05	2
27	MP-12B	Z	-0.29	2
28	MP-13	Z	-0.28	2
29	MP-14	Z	-0.28	2
30	MP-15	Z	-0.37	2
31	MP-1	Z	-0.33	4
32	MP-1	Z	-0.28	8
33	MP-2	Z	-0.96	6
34	MP-4	Z	-0.73	6
35	MP-5	Z	-0.59	4
36	MP-5	Z	-0.51	8
37	MP-6	Z	-0.19	6
38	MP-8	Z	-1.64	6
39	MP-9	Z	-0.53	4
40	MP-9	Z	-0.46	8
41	MP-10	Z	-0.17	6
42	MP-12	Z	-1.44	6

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

Member Label	Direction	Magnitude[k,k-ft]	Location[ft, %]	
1	MP-1	X	.021	2
2	MP-1	X	.018	6
3	MP-2	X	.064	1
4	MP-4	X	.052	1
5	MP-2	X	.03	2
6	MP-2	X	.04	2



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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
7	MP-2	X	.042	5
8	MP-4B	X	.03	2
9	MP-4B	X	.023	2
10	MP-5	X	.034	2
11	MP-5	X	.03	6
12	MP-6	X	.111	1
13	MP-8	X	.097	1
14	MP-6	X	.02	2
15	MP-6	X	.027	2
16	MP-6	X	.029	5
17	MP-8B	X	.023	2
18	MP-8B	X	.01	2
19	MP-9	X	.018	2
20	MP-9	X	.016	6
21	MP-10	X	.056	1
22	MP-12	X	.044	1
23	MP-10	X	.03	2
24	MP-10	X	.04	2
25	MP-10	X	.042	5
26	MP-12B	X	.03	2
27	MP-12B	X	.023	2
28	MP-13	X	.014	2
29	MP-14	X	.014	2
30	MP-15	X	.019	2
31	MP-1	X	.021	4
32	MP-1	X	.018	8
33	MP-2	X	.064	6
34	MP-4	X	.052	6
35	MP-5	X	.034	4
36	MP-5	X	.03	8
37	MP-6	X	.111	6
38	MP-8	X	.097	6
39	MP-9	X	.018	4
40	MP-9	X	.016	8
41	MP-10	X	.056	6
42	MP-12	X	.044	6
43	MP-1	Z	-.036	2
44	MP-1	Z	-.031	6
45	MP-2	Z	-.111	1
46	MP-4	Z	-.089	1
47	MP-2	Z	-.052	2
48	MP-2	Z	-.07	2
49	MP-2	Z	-.073	5
50	MP-4B	Z	-.052	2
51	MP-4B	Z	-.039	2
52	MP-5	Z	-.059	2
53	MP-5	Z	-.051	6
54	MP-6	Z	-.192	1
55	MP-8	Z	-.168	1
56	MP-6	Z	-.035	2
57	MP-6	Z	-.047	2
58	MP-6	Z	-.05	5



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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
59	MP-8B	Z	-.04	2
60	MP-8B	Z	-.018	2
61	MP-9	Z	-.032	2
62	MP-9	Z	-.027	6
63	MP-10	Z	-.096	1
64	MP-12	Z	-.075	1
65	MP-10	Z	-.052	2
66	MP-10	Z	-.07	2
67	MP-10	Z	-.073	5
68	MP-12B	Z	-.052	2
69	MP-12B	Z	-.039	2
70	MP-13	Z	-.024	2
71	MP-14	Z	-.024	2
72	MP-15	Z	-.032	2
73	MP-1	Z	-.036	4
74	MP-1	Z	-.031	8
75	MP-2	Z	-.111	6
76	MP-4	Z	-.089	6
77	MP-5	Z	-.059	4
78	MP-5	Z	-.051	8
79	MP-6	Z	-.192	6
80	MP-8	Z	-.168	6
81	MP-9	Z	-.032	4
82	MP-9	Z	-.027	8
83	MP-10	Z	-.096	6
84	MP-12	Z	-.075	6

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	.036	2
2	MP-1	X	.031	6
3	MP-2	X	.112	1
4	MP-4	X	.094	1
5	MP-2	X	.038	2
6	MP-2	X	.051	2
7	MP-2	X	.053	5
8	MP-4B	X	.039	2
9	MP-4B	X	.026	2
10	MP-5	X	.046	2
11	MP-5	X	.04	6
12	MP-6	X	.151	1
13	MP-8	X	.132	1
14	MP-6	X	.03	2
15	MP-6	X	.04	2
16	MP-6	X	.043	5
17	MP-8B	X	.033	2
18	MP-8B	X	.016	2
19	MP-9	X	.023	2
20	MP-9	X	.02	6
21	MP-10	X	.069	1
22	MP-12	X	.052	1



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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
23	MP-10	X	.045	2
24	MP-10	X	.061	2
25	MP-10	X	.064	5
26	MP-12B	X	.044	2
27	MP-12B	X	.036	2
28	MP-13	X	.02	2
29	MP-14	X	.02	2
30	MP-15	X	.026	2
31	MP-1	X	.036	4
32	MP-1	X	.031	8
33	MP-2	X	.112	6
34	MP-4	X	.094	6
35	MP-5	X	.046	4
36	MP-5	X	.04	8
37	MP-6	X	.151	6
38	MP-8	X	.132	6
39	MP-9	X	.023	4
40	MP-9	X	.02	8
41	MP-10	X	.069	6
42	MP-12	X	.052	6
43	MP-1	Z	-.036	2
44	MP-1	Z	-.031	6
45	MP-2	Z	-.112	1
46	MP-4	Z	-.094	1
47	MP-2	Z	-.038	2
48	MP-2	Z	-.051	2
49	MP-2	Z	-.053	5
50	MP-4B	Z	-.039	2
51	MP-4B	Z	-.026	2
52	MP-5	Z	-.046	2
53	MP-5	Z	-.04	6
54	MP-6	Z	-.151	1
55	MP-8	Z	-.132	1
56	MP-6	Z	-.03	2
57	MP-6	Z	-.04	2
58	MP-6	Z	-.043	5
59	MP-8B	Z	-.033	2
60	MP-8B	Z	-.016	2
61	MP-9	Z	-.023	2
62	MP-9	Z	-.02	6
63	MP-10	Z	-.069	1
64	MP-12	Z	-.052	1
65	MP-10	Z	-.045	2
66	MP-10	Z	-.061	2
67	MP-10	Z	-.064	5
68	MP-12B	Z	-.044	2
69	MP-12B	Z	-.036	2
70	MP-13	Z	-.02	2
71	MP-14	Z	-.02	2
72	MP-15	Z	-.026	2
73	MP-1	Z	-.036	4
74	MP-1	Z	-.031	8



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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
75	MP-2	Z	-.112	6
76	MP-4	Z	-.094	6
77	MP-5	Z	-.046	4
78	MP-5	Z	-.04	8
79	MP-6	Z	-.151	6
80	MP-8	Z	-.132	6
81	MP-9	Z	-.023	4
82	MP-9	Z	-.02	8
83	MP-10	Z	-.069	6
84	MP-12	Z	-.052	6

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	.051	2
2	MP-1	X	.045	6
3	MP-2	X	.165	1
4	MP-4	X	.142	1
5	MP-2	X	.041	2
6	MP-2	X	.055	2
7	MP-2	X	.058	5
8	MP-4B	X	.044	2
9	MP-4B	X	.025	2
10	MP-5	X	.051	2
11	MP-5	X	.045	6
12	MP-6	X	.165	1
13	MP-8	X	.142	1
14	MP-6	X	.041	2
15	MP-6	X	.055	2
16	MP-6	X	.058	5
17	MP-8B	X	.044	2
18	MP-8B	X	.025	2
19	MP-9	X	.029	2
20	MP-9	X	.025	6
21	MP-10	X	.087	1
22	MP-12	X	.066	1
23	MP-10	X	.057	2
24	MP-10	X	.077	2
25	MP-10	X	.081	5
26	MP-12B	X	.056	2
27	MP-12B	X	.046	2
28	MP-13	X	.024	2
29	MP-14	X	.024	2
30	MP-15	X	.032	2
31	MP-1	X	.051	4
32	MP-1	X	.045	8
33	MP-2	X	.165	6
34	MP-4	X	.142	6
35	MP-5	X	.051	4
36	MP-5	X	.045	8
37	MP-6	X	.165	6
38	MP-8	X	.142	6



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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
39	MP-9	X	.029	4
40	MP-9	X	.025	8
41	MP-10	X	.087	6
42	MP-12	X	.066	6
43	MP-1	Z	-.03	2
44	MP-1	Z	-.026	6
45	MP-2	Z	-.095	1
46	MP-4	Z	-.082	1
47	MP-2	Z	-.023	2
48	MP-2	Z	-.031	2
49	MP-2	Z	-.033	5
50	MP-4B	Z	-.025	2
51	MP-4B	Z	-.014	2
52	MP-5	Z	-.03	2
53	MP-5	Z	-.026	6
54	MP-6	Z	-.095	1
55	MP-8	Z	-.082	1
56	MP-6	Z	-.023	2
57	MP-6	Z	-.031	2
58	MP-6	Z	-.033	5
59	MP-8B	Z	-.025	2
60	MP-8B	Z	-.014	2
61	MP-9	Z	-.017	2
62	MP-9	Z	-.014	6
63	MP-10	Z	-.05	1
64	MP-12	Z	-.038	1
65	MP-10	Z	-.033	2
66	MP-10	Z	-.044	2
67	MP-10	Z	-.047	5
68	MP-12B	Z	-.032	2
69	MP-12B	Z	-.027	2
70	MP-13	Z	-.014	2
71	MP-14	Z	-.014	2
72	MP-15	Z	-.019	2
73	MP-1	Z	-.03	4
74	MP-1	Z	-.026	8
75	MP-2	Z	-.095	6
76	MP-4	Z	-.082	6
77	MP-5	Z	-.03	4
78	MP-5	Z	-.026	8
79	MP-6	Z	-.095	6
80	MP-8	Z	-.082	6
81	MP-9	Z	-.017	4
82	MP-9	Z	-.014	8
83	MP-10	Z	-.05	6
84	MP-12	Z	-.038	6

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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
1	MP-1	X	.068	2
2	MP-1	X	.059	6



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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
3	MP-2	X	.221	1
4	MP-4	X	.194	1
5	MP-2	X	.041	2
6	MP-2	X	.054	2
7	MP-2	X	.058	5
8	MP-4B	X	.046	2
9	MP-4B	X	.021	2
10	MP-5	X	.042	2
11	MP-5	X	.036	6
12	MP-6	X	.128	1
13	MP-8	X	.103	1
14	MP-6	X	.06	2
15	MP-6	X	.08	2
16	MP-6	X	.084	5
17	MP-8B	X	.06	2
18	MP-8B	X	.045	2
19	MP-9	X	.047	2
20	MP-9	X	.041	6
21	MP-10	X	.148	1
22	MP-12	X	.123	1
23	MP-10	X	.06	2
24	MP-10	X	.08	2
25	MP-10	X	.084	5
26	MP-12B	X	.06	2
27	MP-12B	X	.045	2
28	MP-13	X	.028	2
29	MP-14	X	.028	2
30	MP-15	X	.037	2
31	MP-1	X	.068	4
32	MP-1	X	.059	8
33	MP-2	X	.221	6
34	MP-4	X	.194	6
35	MP-5	X	.042	4
36	MP-5	X	.036	8
37	MP-6	X	.128	6
38	MP-8	X	.103	6
39	MP-9	X	.047	4
40	MP-9	X	.041	8
41	MP-10	X	.148	6
42	MP-12	X	.123	6

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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
1	MP-1	X	.051	2
2	MP-1	X	.045	6
3	MP-2	X	.165	1
4	MP-4	X	.142	1
5	MP-2	X	.041	2
6	MP-2	X	.055	2
7	MP-2	X	.058	5
8	MP-4B	X	.044	2



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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
9	MP-4B	X	.025	2
10	MP-5	X	.028	2
11	MP-5	X	.024	6
12	MP-6	X	.084	1
13	MP-8	X	.063	1
14	MP-6	X	.057	2
15	MP-6	X	.077	2
16	MP-6	X	.081	5
17	MP-8B	X	.056	2
18	MP-8B	X	.046	2
19	MP-9	X	.055	2
20	MP-9	X	.048	6
21	MP-10	X	.179	1
22	MP-12	X	.156	1
23	MP-10	X	.041	2
24	MP-10	X	.055	2
25	MP-10	X	.058	5
26	MP-12B	X	.044	2
27	MP-12B	X	.025	2
28	MP-13	X	.024	2
29	MP-14	X	.024	2
30	MP-15	X	.032	2
31	MP-1	X	.051	4
32	MP-1	X	.045	8
33	MP-2	X	.165	6
34	MP-4	X	.142	6
35	MP-5	X	.028	4
36	MP-5	X	.024	8
37	MP-6	X	.084	6
38	MP-8	X	.063	6
39	MP-9	X	.055	4
40	MP-9	X	.048	8
41	MP-10	X	.179	6
42	MP-12	X	.156	6
43	MP-1	Z	.03	2
44	MP-1	Z	.026	6
45	MP-2	Z	.095	1
46	MP-4	Z	.082	1
47	MP-2	Z	.023	2
48	MP-2	Z	.031	2
49	MP-2	Z	.033	5
50	MP-4B	Z	.025	2
51	MP-4B	Z	.014	2
52	MP-5	Z	.016	2
53	MP-5	Z	.014	6
54	MP-6	Z	.048	1
55	MP-8	Z	.036	1
56	MP-6	Z	.033	2
57	MP-6	Z	.044	2
58	MP-6	Z	.047	5
59	MP-8B	Z	.032	2
60	MP-8B	Z	.027	2



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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
61	MP-9	Z	.032	2
62	MP-9	Z	.028	6
63	MP-10	Z	.103	1
64	MP-12	Z	.09	1
65	MP-10	Z	.023	2
66	MP-10	Z	.031	2
67	MP-10	Z	.033	5
68	MP-12B	Z	.025	2
69	MP-12B	Z	.014	2
70	MP-13	Z	.014	2
71	MP-14	Z	.014	2
72	MP-15	Z	.019	2
73	MP-1	Z	.03	4
74	MP-1	Z	.026	8
75	MP-2	Z	.095	6
76	MP-4	Z	.082	6
77	MP-5	Z	.016	4
78	MP-5	Z	.014	8
79	MP-6	Z	.048	6
80	MP-8	Z	.036	6
81	MP-9	Z	.032	4
82	MP-9	Z	.028	8
83	MP-10	Z	.103	6
84	MP-12	Z	.09	6

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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
1	MP-1	X	.036	2
2	MP-1	X	.031	6
3	MP-2	X	.112	1
4	MP-4	X	.094	1
5	MP-2	X	.038	2
6	MP-2	X	.051	2
7	MP-2	X	.053	5
8	MP-4B	X	.039	2
9	MP-4B	X	.026	2
10	MP-5	X	.025	2
11	MP-5	X	.021	6
12	MP-6	X	.074	1
13	MP-8	X	.057	1
14	MP-6	X	.045	2
15	MP-6	X	.061	2
16	MP-6	X	.064	5
17	MP-8B	X	.044	2
18	MP-8B	X	.036	2
19	MP-9	X	.048	2
20	MP-9	X	.042	6
21	MP-10	X	.156	1
22	MP-12	X	.137	1
23	MP-10	X	.03	2
24	MP-10	X	.04	2



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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
25	MP-10	X	.043	5
26	MP-12B	X	.033	2
27	MP-12B	X	.016	2
28	MP-13	X	.02	2
29	MP-14	X	.02	2
30	MP-15	X	.026	2
31	MP-1	X	.036	4
32	MP-1	X	.031	8
33	MP-2	X	.112	6
34	MP-4	X	.094	6
35	MP-5	X	.025	4
36	MP-5	X	.021	8
37	MP-6	X	.074	6
38	MP-8	X	.057	6
39	MP-9	X	.048	4
40	MP-9	X	.042	8
41	MP-10	X	.156	6
42	MP-12	X	.137	6
43	MP-1	Z	.036	2
44	MP-1	Z	.031	6
45	MP-2	Z	.112	1
46	MP-4	Z	.094	1
47	MP-2	Z	.038	2
48	MP-2	Z	.051	2
49	MP-2	Z	.053	5
50	MP-4B	Z	.039	2
51	MP-4B	Z	.026	2
52	MP-5	Z	.025	2
53	MP-5	Z	.021	6
54	MP-6	Z	.074	1
55	MP-8	Z	.057	1
56	MP-6	Z	.045	2
57	MP-6	Z	.061	2
58	MP-6	Z	.064	5
59	MP-8B	Z	.044	2
60	MP-8B	Z	.036	2
61	MP-9	Z	.048	2
62	MP-9	Z	.042	6
63	MP-10	Z	.156	1
64	MP-12	Z	.137	1
65	MP-10	Z	.03	2
66	MP-10	Z	.04	2
67	MP-10	Z	.043	5
68	MP-12B	Z	.033	2
69	MP-12B	Z	.016	2
70	MP-13	Z	.02	2
71	MP-14	Z	.02	2
72	MP-15	Z	.026	2
73	MP-1	Z	.036	4
74	MP-1	Z	.031	8
75	MP-2	Z	.112	6
76	MP-4	Z	.094	6



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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
77	MP-5	Z	.025	4
78	MP-5	Z	.021	8
79	MP-6	Z	.074	6
80	MP-8	Z	.057	6
81	MP-9	Z	.048	4
82	MP-9	Z	.042	8
83	MP-10	Z	.156	6
84	MP-12	Z	.137	6

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	.021	2
2	MP-1	X	.018	6
3	MP-2	X	.064	1
4	MP-4	X	.052	1
5	MP-2	X	.03	2
6	MP-2	X	.04	2
7	MP-2	X	.042	5
8	MP-4B	X	.03	2
9	MP-4B	X	.023	2
10	MP-5	X	.021	2
11	MP-5	X	.018	6
12	MP-6	X	.064	1
13	MP-8	X	.052	1
14	MP-6	X	.03	2
15	MP-6	X	.04	2
16	MP-6	X	.042	5
17	MP-8B	X	.03	2
18	MP-8B	X	.023	2
19	MP-9	X	.033	2
20	MP-9	X	.029	6
21	MP-10	X	.109	1
22	MP-12	X	.095	1
23	MP-10	X	.02	2
24	MP-10	X	.027	2
25	MP-10	X	.029	5
26	MP-12B	X	.023	2
27	MP-12B	X	.01	2
28	MP-13	X	.014	2
29	MP-14	X	.014	2
30	MP-15	X	.019	2
31	MP-1	X	.021	4
32	MP-1	X	.018	8
33	MP-2	X	.064	6
34	MP-4	X	.052	6
35	MP-5	X	.021	4
36	MP-5	X	.018	8
37	MP-6	X	.064	6
38	MP-8	X	.052	6
39	MP-9	X	.033	4
40	MP-9	X	.029	8



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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
41	MP-10	X	.109	6
42	MP-12	X	.095	6
43	MP-1	Z	.036	2
44	MP-1	Z	.031	6
45	MP-2	Z	.111	1
46	MP-4	Z	.089	1
47	MP-2	Z	.052	2
48	MP-2	Z	.07	2
49	MP-2	Z	.073	5
50	MP-4B	Z	.052	2
51	MP-4B	Z	.039	2
52	MP-5	Z	.036	2
53	MP-5	Z	.031	6
54	MP-6	Z	.111	1
55	MP-8	Z	.089	1
56	MP-6	Z	.052	2
57	MP-6	Z	.07	2
58	MP-6	Z	.073	5
59	MP-8B	Z	.052	2
60	MP-8B	Z	.039	2
61	MP-9	Z	.058	2
62	MP-9	Z	.051	6
63	MP-10	Z	.188	1
64	MP-12	Z	.165	1
65	MP-10	Z	.035	2
66	MP-10	Z	.047	2
67	MP-10	Z	.05	5
68	MP-12B	Z	.04	2
69	MP-12B	Z	.018	2
70	MP-13	Z	.024	2
71	MP-14	Z	.024	2
72	MP-15	Z	.032	2
73	MP-1	Z	.036	4
74	MP-1	Z	.031	8
75	MP-2	Z	.111	6
76	MP-4	Z	.089	6
77	MP-5	Z	.036	4
78	MP-5	Z	.031	8
79	MP-6	Z	.111	6
80	MP-8	Z	.089	6
81	MP-9	Z	.058	4
82	MP-9	Z	.051	8
83	MP-10	Z	.188	6
84	MP-12	Z	.165	6

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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
1	MP-1	Z	.033	2
2	MP-1	Z	.028	6
3	MP-2	Z	.096	1
4	MP-4	Z	.073	1



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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
5	MP-2	Z	.066	2
6	MP-2	Z	.089	2
7	MP-2	Z	.093	5
8	MP-4B	Z	.064	2
9	MP-4B	Z	.054	2
10	MP-5	Z	.059	2
11	MP-5	Z	.051	6
12	MP-6	Z	.19	1
13	MP-8	Z	.164	1
14	MP-6	Z	.047	2
15	MP-6	Z	.063	2
16	MP-6	Z	.067	5
17	MP-8B	Z	.05	2
18	MP-8B	Z	.029	2
19	MP-9	Z	.053	2
20	MP-9	Z	.046	6
21	MP-10	Z	.17	1
22	MP-12	Z	.144	1
23	MP-10	Z	.047	2
24	MP-10	Z	.063	2
25	MP-10	Z	.067	5
26	MP-12B	Z	.05	2
27	MP-12B	Z	.029	2
28	MP-13	Z	.028	2
29	MP-14	Z	.028	2
30	MP-15	Z	.037	2
31	MP-1	Z	.033	4
32	MP-1	Z	.028	8
33	MP-2	Z	.096	6
34	MP-4	Z	.073	6
35	MP-5	Z	.059	4
36	MP-5	Z	.051	8
37	MP-6	Z	.19	6
38	MP-8	Z	.164	6
39	MP-9	Z	.053	4
40	MP-9	Z	.046	8
41	MP-10	Z	.17	6
42	MP-12	Z	.144	6

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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
1	MP-1	X	-.021	2
2	MP-1	X	-.018	6
3	MP-2	X	-.064	1
4	MP-4	X	-.052	1
5	MP-2	X	-.03	2
6	MP-2	X	-.04	2
7	MP-2	X	-.042	5
8	MP-4B	X	-.03	2
9	MP-4B	X	-.023	2
10	MP-5	X	-.034	2



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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft, %]
11	MP-5	X	-.03	6
12	MP-6	X	-.111	1
13	MP-8	X	-.097	1
14	MP-6	X	-.02	2
15	MP-6	X	-.027	2
16	MP-6	X	-.029	5
17	MP-8B	X	-.023	2
18	MP-8B	X	-.01	2
19	MP-9	X	-.018	2
20	MP-9	X	-.016	6
21	MP-10	X	-.056	1
22	MP-12	X	-.044	1
23	MP-10	X	-.03	2
24	MP-10	X	-.04	2
25	MP-10	X	-.042	5
26	MP-12B	X	-.03	2
27	MP-12B	X	-.023	2
28	MP-13	X	-.014	2
29	MP-14	X	-.014	2
30	MP-15	X	-.019	2
31	MP-1	X	-.021	4
32	MP-1	X	-.018	8
33	MP-2	X	-.064	6
34	MP-4	X	-.052	6
35	MP-5	X	-.034	4
36	MP-5	X	-.03	8
37	MP-6	X	-.111	6
38	MP-8	X	-.097	6
39	MP-9	X	-.018	4
40	MP-9	X	-.016	8
41	MP-10	X	-.056	6
42	MP-12	X	-.044	6
43	MP-1	Z	.036	2
44	MP-1	Z	.031	6
45	MP-2	Z	.111	1
46	MP-4	Z	.089	1
47	MP-2	Z	.052	2
48	MP-2	Z	.07	2
49	MP-2	Z	.073	5
50	MP-4B	Z	.052	2
51	MP-4B	Z	.039	2
52	MP-5	Z	.059	2
53	MP-5	Z	.051	6
54	MP-6	Z	.192	1
55	MP-8	Z	.168	1
56	MP-6	Z	.035	2
57	MP-6	Z	.047	2
58	MP-6	Z	.05	5
59	MP-8B	Z	.04	2
60	MP-8B	Z	.018	2
61	MP-9	Z	.032	2
62	MP-9	Z	.027	6



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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft, %]
63	MP-10	Z	.096	1
64	MP-12	Z	.075	1
65	MP-10	Z	.052	2
66	MP-10	Z	.07	2
67	MP-10	Z	.073	5
68	MP-12B	Z	.052	2
69	MP-12B	Z	.039	2
70	MP-13	Z	.024	2
71	MP-14	Z	.024	2
72	MP-15	Z	.032	2
73	MP-1	Z	.036	4
74	MP-1	Z	.031	8
75	MP-2	Z	.111	6
76	MP-4	Z	.089	6
77	MP-5	Z	.059	4
78	MP-5	Z	.051	8
79	MP-6	Z	.192	6
80	MP-8	Z	.168	6
81	MP-9	Z	.032	4
82	MP-9	Z	.027	8
83	MP-10	Z	.096	6
84	MP-12	Z	.075	6

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft, %]
1	MP-1	X	-.036	2
2	MP-1	X	-.031	6
3	MP-2	X	-.112	1
4	MP-4	X	-.094	1
5	MP-2	X	-.038	2
6	MP-2	X	-.051	2
7	MP-2	X	-.053	5
8	MP-4B	X	-.039	2
9	MP-4B	X	-.026	2
10	MP-5	X	-.046	2
11	MP-5	X	-.04	6
12	MP-6	X	-.151	1
13	MP-8	X	-.132	1
14	MP-6	X	-.03	2
15	MP-6	X	-.04	2
16	MP-6	X	-.043	5
17	MP-8B	X	-.033	2
18	MP-8B	X	-.016	2
19	MP-9	X	-.023	2
20	MP-9	X	-.02	6
21	MP-10	X	-.069	1
22	MP-12	X	-.052	1
23	MP-10	X	-.045	2
24	MP-10	X	-.061	2
25	MP-10	X	-.064	5
26	MP-12B	X	-.044	2



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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft, %]
27	MP-12B	X	-.036	2
28	MP-13	X	-.02	2
29	MP-14	X	-.02	2
30	MP-15	X	-.026	2
31	MP-1	X	-.036	4
32	MP-1	X	-.031	8
33	MP-2	X	-.112	6
34	MP-4	X	-.094	6
35	MP-5	X	-.046	4
36	MP-5	X	-.04	8
37	MP-6	X	-.151	6
38	MP-8	X	-.132	6
39	MP-9	X	-.023	4
40	MP-9	X	-.02	8
41	MP-10	X	-.069	6
42	MP-12	X	-.052	6
43	MP-1	Z	.036	2
44	MP-1	Z	.031	6
45	MP-2	Z	.112	1
46	MP-4	Z	.094	1
47	MP-2	Z	.038	2
48	MP-2	Z	.051	2
49	MP-2	Z	.053	5
50	MP-4B	Z	.039	2
51	MP-4B	Z	.026	2
52	MP-5	Z	.046	2
53	MP-5	Z	.04	6
54	MP-6	Z	.151	1
55	MP-8	Z	.132	1
56	MP-6	Z	.03	2
57	MP-6	Z	.04	2
58	MP-6	Z	.043	5
59	MP-8B	Z	.033	2
60	MP-8B	Z	.016	2
61	MP-9	Z	.023	2
62	MP-9	Z	.02	6
63	MP-10	Z	.069	1
64	MP-12	Z	.052	1
65	MP-10	Z	.045	2
66	MP-10	Z	.061	2
67	MP-10	Z	.064	5
68	MP-12B	Z	.044	2
69	MP-12B	Z	.036	2
70	MP-13	Z	.02	2
71	MP-14	Z	.02	2
72	MP-15	Z	.026	2
73	MP-1	Z	.036	4
74	MP-1	Z	.031	8
75	MP-2	Z	.112	6
76	MP-4	Z	.094	6
77	MP-5	Z	.046	4
78	MP-5	Z	.04	8



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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft, %]
79	MP-6	Z	.151	6
80	MP-8	Z	.132	6
81	MP-9	Z	.023	4
82	MP-9	Z	.02	8
83	MP-10	Z	.069	6
84	MP-12	Z	.052	6

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft, %]
1	MP-1	X	-.051	2
2	MP-1	X	-.045	6
3	MP-2	X	-.165	1
4	MP-4	X	-.142	1
5	MP-2	X	-.041	2
6	MP-2	X	-.055	2
7	MP-2	X	-.058	5
8	MP-4B	X	-.044	2
9	MP-4B	X	-.025	2
10	MP-5	X	-.051	2
11	MP-5	X	-.045	6
12	MP-6	X	-.165	1
13	MP-8	X	-.142	1
14	MP-6	X	-.041	2
15	MP-6	X	-.055	2
16	MP-6	X	-.058	5
17	MP-8B	X	-.044	2
18	MP-8B	X	-.025	2
19	MP-9	X	-.029	2
20	MP-9	X	-.025	6
21	MP-10	X	-.087	1
22	MP-12	X	-.066	1
23	MP-10	X	-.057	2
24	MP-10	X	-.077	2
25	MP-10	X	-.081	5
26	MP-12B	X	-.056	2
27	MP-12B	X	-.046	2
28	MP-13	X	-.024	2
29	MP-14	X	-.024	2
30	MP-15	X	-.032	2
31	MP-1	X	-.051	4
32	MP-1	X	-.045	8
33	MP-2	X	-.165	6
34	MP-4	X	-.142	6
35	MP-5	X	-.051	4
36	MP-5	X	-.045	8
37	MP-6	X	-.165	6
38	MP-8	X	-.142	6
39	MP-9	X	-.029	4
40	MP-9	X	-.025	8
41	MP-10	X	-.087	6
42	MP-12	X	-.066	6



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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
43	MP-1	Z	.03	2
44	MP-1	Z	.026	6
45	MP-2	Z	.095	1
46	MP-4	Z	.082	1
47	MP-2	Z	.023	2
48	MP-2	Z	.031	2
49	MP-2	Z	.033	5
50	MP-4B	Z	.025	2
51	MP-4B	Z	.014	2
52	MP-5	Z	.03	2
53	MP-5	Z	.026	6
54	MP-6	Z	.095	1
55	MP-8	Z	.082	1
56	MP-6	Z	.023	2
57	MP-6	Z	.031	2
58	MP-6	Z	.033	5
59	MP-8B	Z	.025	2
60	MP-8B	Z	.014	2
61	MP-9	Z	.017	2
62	MP-9	Z	.014	6
63	MP-10	Z	.05	1
64	MP-12	Z	.038	1
65	MP-10	Z	.033	2
66	MP-10	Z	.044	2
67	MP-10	Z	.047	5
68	MP-12B	Z	.032	2
69	MP-12B	Z	.027	2
70	MP-13	Z	.014	2
71	MP-14	Z	.014	2
72	MP-15	Z	.019	2
73	MP-1	Z	.03	4
74	MP-1	Z	.026	8
75	MP-2	Z	.095	6
76	MP-4	Z	.082	6
77	MP-5	Z	.03	4
78	MP-5	Z	.026	8
79	MP-6	Z	.095	6
80	MP-8	Z	.082	6
81	MP-9	Z	.017	4
82	MP-9	Z	.014	8
83	MP-10	Z	.05	6
84	MP-12	Z	.038	6

Member Point Loads (BLC 18 : Ice Weight)

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
1	MP-1	Y	-.036	2
2	MP-1	Y	-.037	6
3	MP-2	Y	-.101	1
4	MP-4	Y	-.09	1
5	MP-2	Y	-.044	2
6	MP-2	Y	-.053	2



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Member Point Loads (BLC 18 : Ice Weight) (Continued)

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
7	MP-2	Y	-.056	5
8	MP-4B	Y	-.047	2
9	MP-4B	Y	-.031	2
10	MP-5	Y	-.036	2
11	MP-5	Y	-.037	6
12	MP-6	Y	-.101	1
13	MP-8	Y	-.09	1
14	MP-6	Y	-.044	2
15	MP-6	Y	-.053	2
16	MP-6	Y	-.056	5
17	MP-8B	Y	-.047	2
18	MP-8B	Y	-.031	2
19	MP-9	Y	-.036	2
20	MP-9	Y	-.037	6
21	MP-10	Y	-.101	1
22	MP-12	Y	-.09	1
23	MP-10	Y	-.044	2
24	MP-10	Y	-.053	2
25	MP-10	Y	-.056	5
26	MP-12B	Y	-.047	2
27	MP-12B	Y	-.031	2
28	MP-13	Y	-.035	2
29	MP-14	Y	-.035	2
30	MP-15	Y	-.045	2
31	MP-1	Y	-.036	4
32	MP-1	Y	-.037	8
33	MP-2	Y	-.101	6
34	MP-4	Y	-.09	6
35	MP-5	Y	-.036	4
36	MP-5	Y	-.037	8
37	MP-6	Y	-.101	6
38	MP-8	Y	-.09	6
39	MP-9	Y	-.036	4
40	MP-9	Y	-.037	8
41	MP-10	Y	-.101	6
42	MP-12	Y	-.09	6

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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
1	MP-1	X	-.015	2
2	MP-1	X	-.013	6
3	MP-2	X	-.044	1
4	MP-4	X	-.039	1
5	MP-2	X	-.015	2
6	MP-2	X	-.02	2
7	MP-2	X	-.021	5
8	MP-4B	X	-.015	2
9	MP-4B	X	-.013	2
10	MP-5	X	-.015	2
11	MP-5	X	-.013	6
12	MP-6	X	-.044	1



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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
13	MP-8	X	-039	1
14	MP-6	X	-015	2
15	MP-6	X	-02	2
16	MP-6	X	-021	5
17	MP-8B	X	-015	2
18	MP-8B	X	-013	2
19	MP-9	X	-015	2
20	MP-9	X	-013	6
21	MP-10	X	-044	1
22	MP-12	X	-039	1
23	MP-10	X	-015	2
24	MP-10	X	-02	2
25	MP-10	X	-021	5
26	MP-12B	X	-015	2
27	MP-12B	X	-013	2
28	MP-13	X	-007	2
29	MP-14	X	-007	2
30	MP-15	X	-009	2
31	MP-1	X	-015	4
32	MP-1	X	-013	8
33	MP-2	X	-044	6
34	MP-4	X	-039	6
35	MP-5	X	-015	4
36	MP-5	X	-013	8
37	MP-6	X	-044	6
38	MP-8	X	-039	6
39	MP-9	X	-015	4
40	MP-9	X	-013	8
41	MP-10	X	-044	6
42	MP-12	X	-039	6

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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
1	MP-1	X	-011	2
2	MP-1	X	-01	6
3	MP-2	X	-033	1
4	MP-4	X	-029	1
5	MP-2	X	-01	2
6	MP-2	X	-013	2
7	MP-2	X	-014	5
8	MP-4B	X	-011	2
9	MP-4B	X	-007	2
10	MP-5	X	-007	2
11	MP-5	X	-006	6
12	MP-6	X	-018	1
13	MP-8	X	-014	1
14	MP-6	X	-013	2
15	MP-6	X	-018	2
16	MP-6	X	-018	5
17	MP-8B	X	-013	2
18	MP-8B	X	-011	2



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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
19	MP-9	X	-012	2
20	MP-9	X	-01	6
21	MP-10	X	-036	1
22	MP-12	X	-031	1
23	MP-10	X	-01	2
24	MP-10	X	-013	2
25	MP-10	X	-014	5
26	MP-12B	X	-011	2
27	MP-12B	X	-007	2
28	MP-13	X	-006	2
29	MP-14	X	-006	2
30	MP-15	X	-007	2
31	MP-1	X	-011	4
32	MP-1	X	-01	8
33	MP-2	X	-033	6
34	MP-4	X	-029	6
35	MP-5	X	-007	4
36	MP-5	X	-006	8
37	MP-6	X	-018	6
38	MP-8	X	-014	6
39	MP-9	X	-012	4
40	MP-9	X	-01	8
41	MP-10	X	-036	6
42	MP-12	X	-031	6
43	MP-1	Z	-007	2
44	MP-1	Z	-006	6
45	MP-2	Z	-019	1
46	MP-4	Z	-017	1
47	MP-2	Z	-006	2
48	MP-2	Z	-008	2
49	MP-2	Z	-008	5
50	MP-4B	Z	-006	2
51	MP-4B	Z	-004	2
52	MP-5	Z	-004	2
53	MP-5	Z	-003	6
54	MP-6	Z	-011	1
55	MP-8	Z	-008	1
56	MP-6	Z	-008	2
57	MP-6	Z	-01	2
58	MP-6	Z	-011	5
59	MP-8B	Z	-007	2
60	MP-8B	Z	-006	2
61	MP-9	Z	-007	2
62	MP-9	Z	-006	6
63	MP-10	Z	-021	1
64	MP-12	Z	-018	1
65	MP-10	Z	-006	2
66	MP-10	Z	-008	2
67	MP-10	Z	-008	5
68	MP-12B	Z	-006	2
69	MP-12B	Z	-004	2
70	MP-13	Z	-003	2



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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
71	MP-14	Z	-0.003	2
72	MP-15	Z	-0.004	2
73	MP-1	Z	-0.007	4
74	MP-1	Z	-0.006	8
75	MP-2	Z	-0.019	6
76	MP-4	Z	-0.017	6
77	MP-5	Z	-0.004	4
78	MP-5	Z	-0.003	8
79	MP-6	Z	-0.011	6
80	MP-8	Z	-0.008	6
81	MP-9	Z	-0.007	4
82	MP-9	Z	-0.006	8
83	MP-10	Z	-0.021	6
84	MP-12	Z	-0.018	6

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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
1	MP-1	X	-0.008	2
2	MP-1	X	-0.007	6
3	MP-2	X	-0.023	1
4	MP-4	X	-0.02	1
5	MP-2	X	-0.009	2
6	MP-2	X	-0.012	2
7	MP-2	X	-0.012	5
8	MP-4B	X	-0.009	2
9	MP-4B	X	-0.007	2
10	MP-5	X	-0.006	2
11	MP-5	X	-0.005	6
12	MP-6	X	-0.016	1
13	MP-8	X	-0.013	1
14	MP-6	X	-0.011	2
15	MP-6	X	-0.014	2
16	MP-6	X	-0.015	5
17	MP-8B	X	-0.01	2
18	MP-8B	X	-0.009	2
19	MP-9	X	-0.01	2
20	MP-9	X	-0.009	6
21	MP-10	X	-0.031	1
22	MP-12	X	-0.027	1
23	MP-10	X	-0.008	2
24	MP-10	X	-0.01	2
25	MP-10	X	-0.01	5
26	MP-12B	X	-0.008	2
27	MP-12B	X	-0.005	2
28	MP-13	X	-0.005	2
29	MP-14	X	-0.005	2
30	MP-15	X	-0.006	2
31	MP-1	X	-0.008	4
32	MP-1	X	-0.007	8
33	MP-2	X	-0.023	6
34	MP-4	X	-0.02	6



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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
35	MP-5	X	-0.006	4
36	MP-5	X	-0.005	8
37	MP-6	X	-0.016	6
38	MP-8	X	-0.013	6
39	MP-9	X	-0.01	4
40	MP-9	X	-0.009	8
41	MP-10	X	-0.031	6
42	MP-12	X	-0.027	6
43	MP-1	Z	-0.008	2
44	MP-1	Z	-0.007	6
45	MP-2	Z	-0.023	1
46	MP-4	Z	-0.02	1
47	MP-2	Z	-0.009	2
48	MP-2	Z	-0.012	2
49	MP-2	Z	-0.012	5
50	MP-4B	Z	-0.009	2
51	MP-4B	Z	-0.007	2
52	MP-5	Z	-0.006	2
53	MP-5	Z	-0.005	6
54	MP-6	Z	-0.016	1
55	MP-8	Z	-0.013	1
56	MP-6	Z	-0.011	2
57	MP-6	Z	-0.014	2
58	MP-6	Z	-0.015	5
59	MP-8B	Z	-0.01	2
60	MP-8B	Z	-0.009	2
61	MP-9	Z	-0.01	2
62	MP-9	Z	-0.009	6
63	MP-10	Z	-0.031	1
64	MP-12	Z	-0.027	1
65	MP-10	Z	-0.008	2
66	MP-10	Z	-0.01	2
67	MP-10	Z	-0.01	5
68	MP-12B	Z	-0.008	2
69	MP-12B	Z	-0.005	2
70	MP-13	Z	-0.005	2
71	MP-14	Z	-0.005	2
72	MP-15	Z	-0.006	2
73	MP-1	Z	-0.008	4
74	MP-1	Z	-0.007	8
75	MP-2	Z	-0.023	6
76	MP-4	Z	-0.02	6
77	MP-5	Z	-0.006	4
78	MP-5	Z	-0.005	8
79	MP-6	Z	-0.016	6
80	MP-8	Z	-0.013	6
81	MP-9	Z	-0.01	4
82	MP-9	Z	-0.009	8
83	MP-10	Z	-0.031	6
84	MP-12	Z	-0.027	6



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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	-0.005	2
2	MP-1	X	-0.004	6
3	MP-2	X	-0.013	1
4	MP-4	X	-0.011	1
5	MP-2	X	-0.007	2
6	MP-2	X	-0.009	2
7	MP-2	X	-0.01	5
8	MP-4B	X	-0.007	2
9	MP-4B	X	-0.006	2
10	MP-5	X	-0.005	2
11	MP-5	X	-0.004	6
12	MP-6	X	-0.013	1
13	MP-8	X	-0.011	1
14	MP-6	X	-0.007	2
15	MP-6	X	-0.009	2
16	MP-6	X	-0.01	5
17	MP-8B	X	-0.007	2
18	MP-8B	X	-0.006	2
19	MP-9	X	-0.007	2
20	MP-9	X	-0.006	6
21	MP-10	X	-0.022	1
22	MP-12	X	-0.019	1
23	MP-10	X	-0.005	2
24	MP-10	X	-0.007	2
25	MP-10	X	-0.007	5
26	MP-12B	X	-0.006	2
27	MP-12B	X	-0.003	2
28	MP-13	X	-0.003	2
29	MP-14	X	-0.003	2
30	MP-15	X	-0.004	2
31	MP-1	X	-0.005	4
32	MP-1	X	-0.004	8
33	MP-2	X	-0.013	6
34	MP-4	X	-0.011	6
35	MP-5	X	-0.005	4
36	MP-5	X	-0.004	8
37	MP-6	X	-0.013	6
38	MP-8	X	-0.011	6
39	MP-9	X	-0.007	4
40	MP-9	X	-0.006	8
41	MP-10	X	-0.022	6
42	MP-12	X	-0.019	6
43	MP-1	Z	-0.008	2
44	MP-1	Z	-0.007	6
45	MP-2	Z	-0.023	1
46	MP-4	Z	-0.019	1
47	MP-2	Z	-0.012	2
48	MP-2	Z	-0.016	2
49	MP-2	Z	-0.017	5
50	MP-4B	Z	-0.012	2
51	MP-4B	Z	-0.01	2
52	MP-5	Z	-0.008	2



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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
53	MP-5	Z	-0.007	6
54	MP-6	Z	-0.023	1
55	MP-8	Z	-0.019	1
56	MP-6	Z	-0.012	2
57	MP-6	Z	-0.016	2
58	MP-6	Z	-0.017	5
59	MP-8B	Z	-0.012	2
60	MP-8B	Z	-0.01	2
61	MP-9	Z	-0.013	2
62	MP-9	Z	-0.011	6
63	MP-10	Z	-0.037	1
64	MP-12	Z	-0.033	1
65	MP-10	Z	-0.009	2
66	MP-10	Z	-0.012	2
67	MP-10	Z	-0.012	5
68	MP-12B	Z	-0.01	2
69	MP-12B	Z	-0.005	2
70	MP-13	Z	-0.006	2
71	MP-14	Z	-0.006	2
72	MP-15	Z	-0.007	2
73	MP-1	Z	-0.008	4
74	MP-1	Z	-0.007	8
75	MP-2	Z	-0.023	6
76	MP-4	Z	-0.019	6
77	MP-5	Z	-0.008	4
78	MP-5	Z	-0.007	8
79	MP-6	Z	-0.023	6
80	MP-8	Z	-0.019	6
81	MP-9	Z	-0.013	4
82	MP-9	Z	-0.011	8
83	MP-10	Z	-0.037	6
84	MP-12	Z	-0.033	6

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	Z	-0.008	2
2	MP-1	Z	-0.007	6
3	MP-2	Z	-0.021	1
4	MP-4	Z	-0.017	1
5	MP-2	Z	-0.01	2
6	MP-2	Z	-0.013	2
7	MP-2	Z	-0.014	5
8	MP-4B	Z	-0.011	2
9	MP-4B	Z	-0.006	2
10	MP-5	Z	-0.008	2
11	MP-5	Z	-0.007	6
12	MP-6	Z	-0.021	1
13	MP-8	Z	-0.017	1
14	MP-6	Z	-0.01	2
15	MP-6	Z	-0.013	2
16	MP-6	Z	-0.014	5



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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
17	MP-8B	Z	-.011	2
18	MP-8B	Z	-.006	2
19	MP-9	Z	-.008	2
20	MP-9	Z	-.007	6
21	MP-10	Z	-.021	1
22	MP-12	Z	-.017	1
23	MP-10	Z	-.01	2
24	MP-10	Z	-.013	2
25	MP-10	Z	-.014	5
26	MP-12B	Z	-.011	2
27	MP-12B	Z	-.006	2
28	MP-13	Z	-.007	2
29	MP-14	Z	-.007	2
30	MP-15	Z	-.009	2
31	MP-1	Z	-.008	4
32	MP-1	Z	-.007	8
33	MP-2	Z	-.021	6
34	MP-4	Z	-.017	6
35	MP-5	Z	-.008	4
36	MP-5	Z	-.007	8
37	MP-6	Z	-.021	6
38	MP-8	Z	-.017	6
39	MP-9	Z	-.008	4
40	MP-9	Z	-.007	8
41	MP-10	Z	-.021	6
42	MP-12	Z	-.017	6

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	.005	2
2	MP-1	X	.004	6
3	MP-2	X	.013	1
4	MP-4	X	.011	1
5	MP-2	X	.007	2
6	MP-2	X	.009	2
7	MP-2	X	.01	5
8	MP-4B	X	.007	2
9	MP-4B	X	.006	2
10	MP-5	X	.007	2
11	MP-5	X	.006	6
12	MP-6	X	.022	1
13	MP-8	X	.019	1
14	MP-6	X	.005	2
15	MP-6	X	.007	2
16	MP-6	X	.007	5
17	MP-8B	X	.006	2
18	MP-8B	X	.003	2
19	MP-9	X	.004	2
20	MP-9	X	.004	6
21	MP-10	X	.012	1
22	MP-12	X	.01	1



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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
23	MP-10	X	.007	2
24	MP-10	X	.009	2
25	MP-10	X	.01	5
26	MP-12B	X	.007	2
27	MP-12B	X	.006	2
28	MP-13	X	.003	2
29	MP-14	X	.003	2
30	MP-15	X	.004	2
31	MP-1	X	.005	4
32	MP-1	X	.004	8
33	MP-2	X	.013	6
34	MP-4	X	.011	6
35	MP-5	X	.007	4
36	MP-5	X	.006	8
37	MP-6	X	.022	6
38	MP-8	X	.019	6
39	MP-9	X	.004	4
40	MP-9	X	.004	8
41	MP-10	X	.012	6
42	MP-12	X	.01	6
43	MP-1	Z	-.008	2
44	MP-1	Z	-.007	6
45	MP-2	Z	-.023	1
46	MP-4	Z	-.019	1
47	MP-2	Z	-.012	2
48	MP-2	Z	-.016	2
49	MP-2	Z	-.017	5
50	MP-4B	Z	-.012	2
51	MP-4B	Z	-.01	2
52	MP-5	Z	-.013	2
53	MP-5	Z	-.011	6
54	MP-6	Z	-.038	1
55	MP-8	Z	-.033	1
56	MP-6	Z	-.009	2
57	MP-6	Z	-.012	2
58	MP-6	Z	-.012	5
59	MP-8B	Z	-.01	2
60	MP-8B	Z	-.005	2
61	MP-9	Z	-.008	2
62	MP-9	Z	-.006	6
63	MP-10	Z	-.021	1
64	MP-12	Z	-.017	1
65	MP-10	Z	-.012	2
66	MP-10	Z	-.016	2
67	MP-10	Z	-.017	5
68	MP-12B	Z	-.012	2
69	MP-12B	Z	-.01	2
70	MP-13	Z	-.006	2
71	MP-14	Z	-.006	2
72	MP-15	Z	-.007	2
73	MP-1	Z	-.008	4
74	MP-1	Z	-.007	8



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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
75	MP-2	Z	-.023	6
76	MP-4	Z	-.019	6
77	MP-5	Z	-.013	4
78	MP-5	Z	-.011	8
79	MP-6	Z	-.038	6
80	MP-8	Z	-.033	6
81	MP-9	Z	-.008	4
82	MP-9	Z	-.006	8
83	MP-10	Z	-.021	6
84	MP-12	Z	-.017	6

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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
1	MP-1	X	.008	2
2	MP-1	X	.007	6
3	MP-2	X	.023	1
4	MP-4	X	.02	1
5	MP-2	X	.009	2
6	MP-2	X	.012	2
7	MP-2	X	.012	5
8	MP-4B	X	.009	2
9	MP-4B	X	.007	2
10	MP-5	X	.01	2
11	MP-5	X	.009	6
12	MP-6	X	.03	1
13	MP-8	X	.026	1
14	MP-6	X	.008	2
15	MP-6	X	.01	2
16	MP-6	X	.01	5
17	MP-8B	X	.008	2
18	MP-8B	X	.005	2
19	MP-9	X	.006	2
20	MP-9	X	.005	6
21	MP-10	X	.015	1
22	MP-12	X	.012	1
23	MP-10	X	.011	2
24	MP-10	X	.014	2
25	MP-10	X	.015	5
26	MP-12B	X	.01	2
27	MP-12B	X	.009	2
28	MP-13	X	.005	2
29	MP-14	X	.005	2
30	MP-15	X	.006	2
31	MP-1	X	.008	4
32	MP-1	X	.007	8
33	MP-2	X	.023	6
34	MP-4	X	.02	6
35	MP-5	X	.01	4
36	MP-5	X	.009	8
37	MP-6	X	.03	6
38	MP-8	X	.026	6



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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
39	MP-9	X	.006	4
40	MP-9	X	.005	8
41	MP-10	X	.015	6
42	MP-12	X	.012	6
43	MP-1	Z	-.008	2
44	MP-1	Z	-.007	6
45	MP-2	Z	-.023	1
46	MP-4	Z	-.02	1
47	MP-2	Z	-.009	2
48	MP-2	Z	-.012	2
49	MP-2	Z	-.012	5
50	MP-4B	Z	-.009	2
51	MP-4B	Z	-.007	2
52	MP-5	Z	-.01	2
53	MP-5	Z	-.009	6
54	MP-6	Z	-.03	1
55	MP-8	Z	-.026	1
56	MP-6	Z	-.008	2
57	MP-6	Z	-.01	2
58	MP-6	Z	-.01	5
59	MP-8B	Z	-.008	2
60	MP-8B	Z	-.005	2
61	MP-9	Z	-.006	2
62	MP-9	Z	-.005	6
63	MP-10	Z	-.015	1
64	MP-12	Z	-.012	1
65	MP-10	Z	-.011	2
66	MP-10	Z	-.014	2
67	MP-10	Z	-.015	5
68	MP-12B	Z	-.01	2
69	MP-12B	Z	-.009	2
70	MP-13	Z	-.005	2
71	MP-14	Z	-.005	2
72	MP-15	Z	-.006	2
73	MP-1	Z	-.008	4
74	MP-1	Z	-.007	8
75	MP-2	Z	-.023	6
76	MP-4	Z	-.02	6
77	MP-5	Z	-.01	4
78	MP-5	Z	-.009	8
79	MP-6	Z	-.03	6
80	MP-8	Z	-.026	6
81	MP-9	Z	-.006	4
82	MP-9	Z	-.005	8
83	MP-10	Z	-.015	6
84	MP-12	Z	-.012	6

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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
1	MP-1	X	.011	2
2	MP-1	X	.01	6



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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
3	MP-2	X	.033	1
4	MP-4	X	.029	1
5	MP-2	X	.01	2
6	MP-2	X	.013	2
7	MP-2	X	.014	5
8	MP-4B	X	.011	2
9	MP-4B	X	.007	2
10	MP-5	X	.011	2
11	MP-5	X	.01	6
12	MP-6	X	.033	1
13	MP-8	X	.029	1
14	MP-6	X	.01	2
15	MP-6	X	.013	2
16	MP-6	X	.014	5
17	MP-8B	X	.011	2
18	MP-8B	X	.007	2
19	MP-9	X	.007	2
20	MP-9	X	.006	6
21	MP-10	X	.019	1
22	MP-12	X	.015	1
23	MP-10	X	.013	2
24	MP-10	X	.018	2
25	MP-10	X	.018	5
26	MP-12B	X	.013	2
27	MP-12B	X	.011	2
28	MP-13	X	.006	2
29	MP-14	X	.006	2
30	MP-15	X	.007	2
31	MP-1	X	.011	4
32	MP-1	X	.01	8
33	MP-2	X	.033	6
34	MP-4	X	.029	6
35	MP-5	X	.011	4
36	MP-5	X	.01	8
37	MP-6	X	.033	6
38	MP-8	X	.029	6
39	MP-9	X	.007	4
40	MP-9	X	.006	8
41	MP-10	X	.019	6
42	MP-12	X	.015	6
43	MP-1	Z	-.007	2
44	MP-1	Z	-.006	6
45	MP-2	Z	-.019	1
46	MP-4	Z	-.017	1
47	MP-2	Z	-.006	2
48	MP-2	Z	-.008	2
49	MP-2	Z	-.008	5
50	MP-4B	Z	-.006	2
51	MP-4B	Z	-.004	2
52	MP-5	Z	-.007	2
53	MP-5	Z	-.006	6
54	MP-6	Z	-.019	1



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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
55	MP-8	Z	-.017	1
56	MP-6	Z	-.006	2
57	MP-6	Z	-.008	2
58	MP-6	Z	-.008	5
59	MP-8B	Z	-.006	2
60	MP-8B	Z	-.004	2
61	MP-9	Z	-.004	2
62	MP-9	Z	-.003	6
63	MP-10	Z	-.011	1
64	MP-12	Z	-.009	1
65	MP-10	Z	-.008	2
66	MP-10	Z	-.01	2
67	MP-10	Z	-.011	5
68	MP-12B	Z	-.007	2
69	MP-12B	Z	-.006	2
70	MP-13	Z	-.003	2
71	MP-14	Z	-.003	2
72	MP-15	Z	-.004	2
73	MP-1	Z	-.007	4
74	MP-1	Z	-.006	8
75	MP-2	Z	-.019	6
76	MP-4	Z	-.017	6
77	MP-5	Z	-.007	4
78	MP-5	Z	-.006	8
79	MP-6	Z	-.019	6
80	MP-8	Z	-.017	6
81	MP-9	Z	-.004	4
82	MP-9	Z	-.003	8
83	MP-10	Z	-.011	6
84	MP-12	Z	-.009	6

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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
1	MP-1	X	.015	2
2	MP-1	X	.013	6
3	MP-2	X	.044	1
4	MP-4	X	.039	1
5	MP-2	X	.015	2
6	MP-2	X	.02	2
7	MP-2	X	.021	5
8	MP-4B	X	.015	2
9	MP-4B	X	.013	2
10	MP-5	X	.015	2
11	MP-5	X	.013	6
12	MP-6	X	.044	1
13	MP-8	X	.039	1
14	MP-6	X	.015	2
15	MP-6	X	.02	2
16	MP-6	X	.021	5
17	MP-8B	X	.015	2
18	MP-8B	X	.013	2



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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
19	MP-9	X	.015	2
20	MP-9	X	.013	6
21	MP-10	X	.044	1
22	MP-12	X	.039	1
23	MP-10	X	.015	2
24	MP-10	X	.02	2
25	MP-10	X	.021	5
26	MP-12B	X	.015	2
27	MP-12B	X	.013	2
28	MP-13	X	.007	2
29	MP-14	X	.007	2
30	MP-15	X	.009	2
31	MP-1	X	.015	4
32	MP-1	X	.013	8
33	MP-2	X	.044	6
34	MP-4	X	.039	6
35	MP-5	X	.015	4
36	MP-5	X	.013	8
37	MP-6	X	.044	6
38	MP-8	X	.039	6
39	MP-9	X	.015	4
40	MP-9	X	.013	8
41	MP-10	X	.044	6
42	MP-12	X	.039	6

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	.011	2
2	MP-1	X	.01	6
3	MP-2	X	.033	1
4	MP-4	X	.029	1
5	MP-2	X	.01	2
6	MP-2	X	.013	2
7	MP-2	X	.014	5
8	MP-4B	X	.011	2
9	MP-4B	X	.007	2
10	MP-5	X	.007	2
11	MP-5	X	.006	6
12	MP-6	X	.018	1
13	MP-8	X	.014	1
14	MP-6	X	.013	2
15	MP-6	X	.018	2
16	MP-6	X	.018	5
17	MP-8B	X	.013	2
18	MP-8B	X	.011	2
19	MP-9	X	.012	2
20	MP-9	X	.01	6
21	MP-10	X	.036	1
22	MP-12	X	.031	1
23	MP-10	X	.01	2
24	MP-10	X	.013	2



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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
25	MP-10	X	.014	5
26	MP-12B	X	.011	2
27	MP-12B	X	.007	2
28	MP-13	X	.006	2
29	MP-14	X	.006	2
30	MP-15	X	.007	2
31	MP-1	X	.011	4
32	MP-1	X	.01	8
33	MP-2	X	.033	6
34	MP-4	X	.029	6
35	MP-5	X	.007	4
36	MP-5	X	.006	8
37	MP-6	X	.018	6
38	MP-8	X	.014	6
39	MP-9	X	.012	4
40	MP-9	X	.01	8
41	MP-10	X	.036	6
42	MP-12	X	.031	6
43	MP-1	Z	.007	2
44	MP-1	Z	.006	6
45	MP-2	Z	.019	1
46	MP-4	Z	.017	1
47	MP-2	Z	.006	2
48	MP-2	Z	.008	2
49	MP-2	Z	.008	5
50	MP-4B	Z	.006	2
51	MP-4B	Z	.004	2
52	MP-5	Z	.004	2
53	MP-5	Z	.003	6
54	MP-6	Z	.011	1
55	MP-8	Z	.008	1
56	MP-6	Z	.008	2
57	MP-6	Z	.01	2
58	MP-6	Z	.011	5
59	MP-8B	Z	.007	2
60	MP-8B	Z	.006	2
61	MP-9	Z	.007	2
62	MP-9	Z	.006	6
63	MP-10	Z	.021	1
64	MP-12	Z	.018	1
65	MP-10	Z	.006	2
66	MP-10	Z	.008	2
67	MP-10	Z	.008	5
68	MP-12B	Z	.006	2
69	MP-12B	Z	.004	2
70	MP-13	Z	.003	2
71	MP-14	Z	.003	2
72	MP-15	Z	.004	2
73	MP-1	Z	.007	4
74	MP-1	Z	.006	8
75	MP-2	Z	.019	6
76	MP-4	Z	.017	6



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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
77	MP-5	Z	.004	4
78	MP-5	Z	.003	8
79	MP-6	Z	.011	6
80	MP-8	Z	.008	6
81	MP-9	Z	.007	4
82	MP-9	Z	.006	8
83	MP-10	Z	.021	6
84	MP-12	Z	.018	6

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	.008	2
2	MP-1	X	.007	6
3	MP-2	X	.023	1
4	MP-4	X	.02	1
5	MP-2	X	.009	2
6	MP-2	X	.012	2
7	MP-2	X	.012	5
8	MP-4B	X	.009	2
9	MP-4B	X	.007	2
10	MP-5	X	.006	2
11	MP-5	X	.005	6
12	MP-6	X	.016	1
13	MP-8	X	.013	1
14	MP-6	X	.011	2
15	MP-6	X	.014	2
16	MP-6	X	.015	5
17	MP-8B	X	.01	2
18	MP-8B	X	.009	2
19	MP-9	X	.01	2
20	MP-9	X	.009	6
21	MP-10	X	.031	1
22	MP-12	X	.027	1
23	MP-10	X	.008	2
24	MP-10	X	.01	2
25	MP-10	X	.01	5
26	MP-12B	X	.008	2
27	MP-12B	X	.005	2
28	MP-13	X	.005	2
29	MP-14	X	.005	2
30	MP-15	X	.006	2
31	MP-1	X	.008	4
32	MP-1	X	.007	8
33	MP-2	X	.023	6
34	MP-4	X	.02	6
35	MP-5	X	.006	4
36	MP-5	X	.005	8
37	MP-6	X	.016	6
38	MP-8	X	.013	6
39	MP-9	X	.01	4
40	MP-9	X	.009	8



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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
41	MP-10	X	.031	6
42	MP-12	X	.027	6
43	MP-1	Z	.008	2
44	MP-1	Z	.007	6
45	MP-2	Z	.023	1
46	MP-4	Z	.02	1
47	MP-2	Z	.009	2
48	MP-2	Z	.012	2
49	MP-2	Z	.012	5
50	MP-4B	Z	.009	2
51	MP-4B	Z	.007	2
52	MP-5	Z	.006	2
53	MP-5	Z	.005	6
54	MP-6	Z	.016	1
55	MP-8	Z	.013	1
56	MP-6	Z	.011	2
57	MP-6	Z	.014	2
58	MP-6	Z	.015	5
59	MP-8B	Z	.01	2
60	MP-8B	Z	.009	2
61	MP-9	Z	.01	2
62	MP-9	Z	.009	6
63	MP-10	Z	.031	1
64	MP-12	Z	.027	1
65	MP-10	Z	.008	2
66	MP-10	Z	.01	2
67	MP-10	Z	.01	5
68	MP-12B	Z	.008	2
69	MP-12B	Z	.005	2
70	MP-13	Z	.005	2
71	MP-14	Z	.005	2
72	MP-15	Z	.006	2
73	MP-1	Z	.008	4
74	MP-1	Z	.007	8
75	MP-2	Z	.023	6
76	MP-4	Z	.02	6
77	MP-5	Z	.006	4
78	MP-5	Z	.005	8
79	MP-6	Z	.016	6
80	MP-8	Z	.013	6
81	MP-9	Z	.01	4
82	MP-9	Z	.009	8
83	MP-10	Z	.031	6
84	MP-12	Z	.027	6

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	.005	2
2	MP-1	X	.004	6
3	MP-2	X	.013	1
4	MP-4	X	.011	1



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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
5	MP-2	X	.007	2
6	MP-2	X	.009	2
7	MP-2	X	.01	5
8	MP-4B	X	.007	2
9	MP-4B	X	.006	2
10	MP-5	X	.005	2
11	MP-5	X	.004	6
12	MP-6	X	.013	1
13	MP-8	X	.011	1
14	MP-6	X	.007	2
15	MP-6	X	.009	2
16	MP-6	X	.01	5
17	MP-8B	X	.007	2
18	MP-8B	X	.006	2
19	MP-9	X	.007	2
20	MP-9	X	.006	6
21	MP-10	X	.022	1
22	MP-12	X	.019	1
23	MP-10	X	.005	2
24	MP-10	X	.007	2
25	MP-10	X	.007	5
26	MP-12B	X	.006	2
27	MP-12B	X	.003	2
28	MP-13	X	.003	2
29	MP-14	X	.003	2
30	MP-15	X	.004	2
31	MP-1	X	.005	4
32	MP-1	X	.004	8
33	MP-2	X	.013	6
34	MP-4	X	.011	6
35	MP-5	X	.005	4
36	MP-5	X	.004	8
37	MP-6	X	.013	6
38	MP-8	X	.011	6
39	MP-9	X	.007	4
40	MP-9	X	.006	8
41	MP-10	X	.022	6
42	MP-12	X	.019	6
43	MP-1	Z	.008	2
44	MP-1	Z	.007	6
45	MP-2	Z	.023	1
46	MP-4	Z	.019	1
47	MP-2	Z	.012	2
48	MP-2	Z	.016	2
49	MP-2	Z	.017	5
50	MP-4B	Z	.012	2
51	MP-4B	Z	.01	2
52	MP-5	Z	.008	2
53	MP-5	Z	.007	6
54	MP-6	Z	.023	1
55	MP-8	Z	.019	1
56	MP-6	Z	.012	2



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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
57	MP-6	Z	.016	2
58	MP-6	Z	.017	5
59	MP-8B	Z	.012	2
60	MP-8B	Z	.01	2
61	MP-9	Z	.013	2
62	MP-9	Z	.011	6
63	MP-10	Z	.037	1
64	MP-12	Z	.033	1
65	MP-10	Z	.009	2
66	MP-10	Z	.012	2
67	MP-10	Z	.012	5
68	MP-12B	Z	.01	2
69	MP-12B	Z	.005	2
70	MP-13	Z	.006	2
71	MP-14	Z	.006	2
72	MP-15	Z	.007	2
73	MP-1	Z	.008	4
74	MP-1	Z	.007	8
75	MP-2	Z	.023	6
76	MP-4	Z	.019	6
77	MP-5	Z	.008	4
78	MP-5	Z	.007	8
79	MP-6	Z	.023	6
80	MP-8	Z	.019	6
81	MP-9	Z	.013	4
82	MP-9	Z	.011	8
83	MP-10	Z	.037	6
84	MP-12	Z	.033	6

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	Z	.008	2
2	MP-1	Z	.007	6
3	MP-2	Z	.021	1
4	MP-4	Z	.017	1
5	MP-2	Z	.01	2
6	MP-2	Z	.013	2
7	MP-2	Z	.014	5
8	MP-4B	Z	.011	2
9	MP-4B	Z	.006	2
10	MP-5	Z	.008	2
11	MP-5	Z	.007	6
12	MP-6	Z	.021	1
13	MP-8	Z	.017	1
14	MP-6	Z	.01	2
15	MP-6	Z	.013	2
16	MP-6	Z	.014	5
17	MP-8B	Z	.011	2
18	MP-8B	Z	.006	2
19	MP-9	Z	.008	2
20	MP-9	Z	.007	6



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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
21	MP-10	Z	.021	1
22	MP-12	Z	.017	1
23	MP-10	Z	.01	2
24	MP-10	Z	.013	2
25	MP-10	Z	.014	5
26	MP-12B	Z	.011	2
27	MP-12B	Z	.006	2
28	MP-13	Z	.007	2
29	MP-14	Z	.007	2
30	MP-15	Z	.009	2
31	MP-1	Z	.008	4
32	MP-1	Z	.007	8
33	MP-2	Z	.021	6
34	MP-4	Z	.017	6
35	MP-5	Z	.008	4
36	MP-5	Z	.007	8
37	MP-6	Z	.021	6
38	MP-8	Z	.017	6
39	MP-9	Z	.008	4
40	MP-9	Z	.007	8
41	MP-10	Z	.021	6
42	MP-12	Z	.017	6

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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
1	MP-1	X	-.005	2
2	MP-1	X	-.004	6
3	MP-2	X	-.013	1
4	MP-4	X	-.011	1
5	MP-2	X	-.007	2
6	MP-2	X	-.009	2
7	MP-2	X	-.01	5
8	MP-4B	X	-.007	2
9	MP-4B	X	-.006	2
10	MP-5	X	-.007	2
11	MP-5	X	-.006	6
12	MP-6	X	-.022	1
13	MP-8	X	-.019	1
14	MP-6	X	-.005	2
15	MP-6	X	-.007	2
16	MP-6	X	-.007	5
17	MP-8B	X	-.006	2
18	MP-8B	X	-.003	2
19	MP-9	X	-.004	2
20	MP-9	X	-.004	6
21	MP-10	X	-.012	1
22	MP-12	X	-.01	1
23	MP-10	X	-.007	2
24	MP-10	X	-.009	2
25	MP-10	X	-.01	5
26	MP-12B	X	-.007	2



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

	Member Label	Direction	Magnitude[k, k-ft]	Location[ft, %]
27	MP-12B	X	-.006	2
28	MP-13	X	-.003	2
29	MP-14	X	-.003	2
30	MP-15	X	-.004	2
31	MP-1	X	-.005	4
32	MP-1	X	-.004	8
33	MP-2	X	-.013	6
34	MP-4	X	-.011	6
35	MP-5	X	-.007	4
36	MP-5	X	-.006	8
37	MP-6	X	-.022	6
38	MP-8	X	-.019	6
39	MP-9	X	-.004	4
40	MP-9	X	-.004	8
41	MP-10	X	-.012	6
42	MP-12	X	-.01	6
43	MP-1	Z	.008	2
44	MP-1	Z	.007	6
45	MP-2	Z	.023	1
46	MP-4	Z	.019	1
47	MP-2	Z	.012	2
48	MP-2	Z	.016	2
49	MP-2	Z	.017	5
50	MP-4B	Z	.012	2
51	MP-4B	Z	.01	2
52	MP-5	Z	.013	2
53	MP-5	Z	.011	6
54	MP-6	Z	.038	1
55	MP-8	Z	.033	1
56	MP-6	Z	.009	2
57	MP-6	Z	.012	2
58	MP-6	Z	.012	5
59	MP-8B	Z	.01	2
60	MP-8B	Z	.005	2
61	MP-9	Z	.008	2
62	MP-9	Z	.006	6
63	MP-10	Z	.021	1
64	MP-12	Z	.017	1
65	MP-10	Z	.012	2
66	MP-10	Z	.016	2
67	MP-10	Z	.017	5
68	MP-12B	Z	.012	2
69	MP-12B	Z	.01	2
70	MP-13	Z	.006	2
71	MP-14	Z	.006	2
72	MP-15	Z	.007	2
73	MP-1	Z	.008	4
74	MP-1	Z	.007	8
75	MP-2	Z	.023	6
76	MP-4	Z	.019	6
77	MP-5	Z	.013	4
78	MP-5	Z	.011	8



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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
79	MP-6	Z	.038	6
80	MP-8	Z	.033	6
81	MP-9	Z	.008	4
82	MP-9	Z	.006	8
83	MP-10	Z	.021	6
84	MP-12	Z	.017	6

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	-.008	2
2	MP-1	X	-.007	6
3	MP-2	X	-.023	1
4	MP-4	X	-.02	1
5	MP-2	X	-.009	2
6	MP-2	X	-.012	2
7	MP-2	X	-.012	5
8	MP-4B	X	-.009	2
9	MP-4B	X	-.007	2
10	MP-5	X	-.01	2
11	MP-5	X	-.009	6
12	MP-6	X	-.03	1
13	MP-8	X	-.026	1
14	MP-6	X	-.008	2
15	MP-6	X	-.01	2
16	MP-6	X	-.01	5
17	MP-8B	X	-.008	2
18	MP-8B	X	-.005	2
19	MP-9	X	-.006	2
20	MP-9	X	-.005	6
21	MP-10	X	-.015	1
22	MP-12	X	-.012	1
23	MP-10	X	-.011	2
24	MP-10	X	-.014	2
25	MP-10	X	-.015	5
26	MP-12B	X	-.01	2
27	MP-12B	X	-.009	2
28	MP-13	X	-.005	2
29	MP-14	X	-.005	2
30	MP-15	X	-.006	2
31	MP-1	X	-.008	4
32	MP-1	X	-.007	8
33	MP-2	X	-.023	6
34	MP-4	X	-.02	6
35	MP-5	X	-.01	4
36	MP-5	X	-.009	8
37	MP-6	X	-.03	6
38	MP-8	X	-.026	6
39	MP-9	X	-.006	4
40	MP-9	X	-.005	8
41	MP-10	X	-.015	6
42	MP-12	X	-.012	6



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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
43	MP-1	Z	.008	2
44	MP-1	Z	.007	6
45	MP-2	Z	.023	1
46	MP-4	Z	.02	1
47	MP-2	Z	.009	2
48	MP-2	Z	.012	2
49	MP-2	Z	.012	5
50	MP-4B	Z	.009	2
51	MP-4B	Z	.007	2
52	MP-5	Z	.01	2
53	MP-5	Z	.009	6
54	MP-6	Z	.03	1
55	MP-8	Z	.026	1
56	MP-6	Z	.008	2
57	MP-6	Z	.01	2
58	MP-6	Z	.01	5
59	MP-8B	Z	.008	2
60	MP-8B	Z	.005	2
61	MP-9	Z	.006	2
62	MP-9	Z	.005	6
63	MP-10	Z	.015	1
64	MP-12	Z	.012	1
65	MP-10	Z	.011	2
66	MP-10	Z	.014	2
67	MP-10	Z	.015	5
68	MP-12B	Z	.01	2
69	MP-12B	Z	.009	2
70	MP-13	Z	.005	2
71	MP-14	Z	.005	2
72	MP-15	Z	.006	2
73	MP-1	Z	.008	4
74	MP-1	Z	.007	8
75	MP-2	Z	.023	6
76	MP-4	Z	.02	6
77	MP-5	Z	.01	4
78	MP-5	Z	.009	8
79	MP-6	Z	.03	6
80	MP-8	Z	.026	6
81	MP-9	Z	.006	4
82	MP-9	Z	.005	8
83	MP-10	Z	.015	6
84	MP-12	Z	.012	6

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	-.011	2
2	MP-1	X	-.01	6
3	MP-2	X	-.033	1
4	MP-4	X	-.029	1
5	MP-2	X	-.01	2
6	MP-2	X	-.013	2



Company : Tower Engineering Professionals, Inc.
 Designer : GJS
 Job Number : TEP No. 63208.689014
 Model Name : CCI BU No 842673

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
7	MP-2	X	-0.14	5
8	MP-4B	X	-0.11	2
9	MP-4B	X	-0.07	2
10	MP-5	X	-0.11	2
11	MP-5	X	-0.1	6
12	MP-6	X	-0.33	1
13	MP-8	X	-0.29	1
14	MP-6	X	-0.1	2
15	MP-6	X	-0.13	2
16	MP-6	X	-0.14	5
17	MP-8B	X	-0.11	2
18	MP-8B	X	-0.07	2
19	MP-9	X	-0.07	2
20	MP-9	X	-0.06	6
21	MP-10	X	-0.19	1
22	MP-12	X	-0.15	1
23	MP-10	X	-0.13	2
24	MP-10	X	-0.18	2
25	MP-10	X	-0.18	5
26	MP-12B	X	-0.13	2
27	MP-12B	X	-0.11	2
28	MP-13	X	-0.06	2
29	MP-14	X	-0.06	2
30	MP-15	X	-0.07	2
31	MP-1	X	-0.11	4
32	MP-1	X	-0.1	8
33	MP-2	X	-0.33	6
34	MP-4	X	-0.29	6
35	MP-5	X	-0.11	4
36	MP-5	X	-0.1	8
37	MP-6	X	-0.33	6
38	MP-8	X	-0.29	6
39	MP-9	X	-0.07	4
40	MP-9	X	-0.06	8
41	MP-10	X	-0.19	6
42	MP-12	X	-0.15	6
43	MP-1	Z	.007	2
44	MP-1	Z	.006	6
45	MP-2	Z	.019	1
46	MP-4	Z	.017	1
47	MP-2	Z	.006	2
48	MP-2	Z	.008	2
49	MP-2	Z	.008	5
50	MP-4B	Z	.006	2
51	MP-4B	Z	.004	2
52	MP-5	Z	.007	2
53	MP-5	Z	.006	6
54	MP-6	Z	.019	1
55	MP-8	Z	.017	1
56	MP-6	Z	.006	2
57	MP-6	Z	.008	2
58	MP-6	Z	.008	5



Company : Tower Engineering Professionals, Inc.
 Designer : GJS
 Job Number : TEP No. 63208.689014
 Model Name : CCI BU No 842673

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
59	MP-8B	Z	.006	2
60	MP-8B	Z	.004	2
61	MP-9	Z	.004	2
62	MP-9	Z	.003	6
63	MP-10	Z	.011	1
64	MP-12	Z	.009	1
65	MP-10	Z	.008	2
66	MP-10	Z	.01	2
67	MP-10	Z	.011	5
68	MP-12B	Z	.007	2
69	MP-12B	Z	.006	2
70	MP-13	Z	.003	2
71	MP-14	Z	.003	2
72	MP-15	Z	.004	2
73	MP-1	Z	.007	4
74	MP-1	Z	.006	8
75	MP-2	Z	.019	6
76	MP-4	Z	.017	6
77	MP-5	Z	.007	4
78	MP-5	Z	.006	8
79	MP-6	Z	.019	6
80	MP-8	Z	.017	6
81	MP-9	Z	.004	4
82	MP-9	Z	.003	8
83	MP-10	Z	.011	6
84	MP-12	Z	.009	6

Member Point Loads (BLC 37 : Seismic Load X)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	-0.22	2
2	MP-1	X	-0.41	6
3	MP-2	X	-0.65	1
4	MP-4	X	-0.45	1
5	MP-2	X	-0.59	2
6	MP-2	X	-0.53	2
7	MP-2	X	-0.55	5
8	MP-4B	X	-0.71	2
9	MP-4B	X	-0.43	2
10	MP-5	X	-0.22	2
11	MP-5	X	-0.41	6
12	MP-6	X	-0.65	1
13	MP-8	X	-0.45	1
14	MP-6	X	-0.59	2
15	MP-6	X	-0.53	2
16	MP-6	X	-0.55	5
17	MP-8B	X	-0.71	2
18	MP-8B	X	-0.43	2
19	MP-9	X	-0.22	2
20	MP-9	X	-0.41	6
21	MP-10	X	-0.65	1
22	MP-12	X	-0.45	1



Company : Tower Engineering Professionals, Inc.
 Designer : GJS
 Job Number : TEP No. 63208.689014
 Model Name : CCI BU No 842673

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Member Point Loads (BLC 37 : Seismic Load X) (Continued)

Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]	
23	MP-10	X	-0.059	2
24	MP-10	X	-0.053	2
25	MP-10	X	-0.055	5
26	MP-12B	X	-0.071	2
27	MP-12B	X	-0.043	2
28	MP-13	X	-0.019	2
29	MP-14	X	-0.019	2
30	MP-15	X	-0.018	2
31	MP-1	X	-0.022	4
32	MP-1	X	-0.041	8
33	MP-2	X	-0.065	6
34	MP-4	X	-0.045	6
35	MP-5	X	-0.022	4
36	MP-5	X	-0.041	8
37	MP-6	X	-0.065	6
38	MP-8	X	-0.045	6
39	MP-9	X	-0.022	4
40	MP-9	X	-0.041	8
41	MP-10	X	-0.065	6
42	MP-12	X	-0.045	6

Member Point Loads (BLC 38 : Seismic Load Z)

Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]	
1	MP-1	Z	-0.022	2
2	MP-1	Z	-0.041	6
3	MP-2	Z	-0.065	1
4	MP-4	Z	-0.045	1
5	MP-2	Z	-0.059	2
6	MP-2	Z	-0.053	2
7	MP-2	Z	-0.055	5
8	MP-4B	Z	-0.071	2
9	MP-4B	Z	-0.043	2
10	MP-5	Z	-0.022	2
11	MP-5	Z	-0.041	6
12	MP-6	Z	-0.065	1
13	MP-8	Z	-0.045	1
14	MP-6	Z	-0.059	2
15	MP-6	Z	-0.053	2
16	MP-6	Z	-0.055	5
17	MP-8B	Z	-0.071	2
18	MP-8B	Z	-0.043	2
19	MP-9	Z	-0.022	2
20	MP-9	Z	-0.041	6
21	MP-10	Z	-0.065	1
22	MP-12	Z	-0.045	1
23	MP-10	Z	-0.059	2
24	MP-10	Z	-0.053	2
25	MP-10	Z	-0.055	5
26	MP-12B	Z	-0.071	2
27	MP-12B	Z	-0.043	2
28	MP-13	Z	-0.019	2



Company : Tower Engineering Professionals, Inc.
 Designer : GJS
 Job Number : TEP No. 63208.689014
 Model Name : CCI BU No 842673

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Member Point Loads (BLC 38 : Seismic Load Z) (Continued)

Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]	
29	MP-14	Z	-0.019	2
30	MP-15	Z	-0.018	2
31	MP-1	Z	-0.022	4
32	MP-1	Z	-0.041	8
33	MP-2	Z	-0.065	6
34	MP-4	Z	-0.045	6
35	MP-5	Z	-0.022	4
36	MP-5	Z	-0.041	8
37	MP-6	Z	-0.065	6
38	MP-8	Z	-0.045	6
39	MP-9	Z	-0.022	4
40	MP-9	Z	-0.041	8
41	MP-10	Z	-0.065	6
42	MP-12	Z	-0.045	6

Member Area Loads

Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
No Data to Print ...						

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	N227	max	1.573	2	1.507	42	.386	24	0	98	.477	22
2		min	-2.595	26	.479	2	-.798	61	0	1	-.43	14
3	N224	max	1.754	34	1.431	34	.806	56	0	98	.691	16
4		min	-.461	10	.453	10	-.383	31	0	1	-.73	24
5	N226	max	.381	17	1.428	39	1.501	39	0	98	.614	6
6		min	-.955	25	.455	15	-.371	15	0	1	-.651	30
7	N229	max	1.379	32	1.504	47	1.296	7	0	98	.524	27
8		min	-.896	8	.481	7	-2.199	31	0	1	-.477	3
9	N228	max	1.439	19	1.509	37	2.203	21	0	98	.484	33
10		min	-.887	11	.481	13	-1.338	13	0	1	-.437	9
11	N225	max	.368	3	1.433	45	.395	5	0	98	.667	11
12		min	-1.006	27	.454	5	-1.485	45	0	1	-.703	19
13	Totals:	max	5.605	2	8.701	42	5.385	6				
14		min	-5.605	26	3.065	83	-5.385	30				

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

Member	Shape	Code Check	Loc[ft]	LC	Shear Che...	Loc[ft]	Dir	LCphi*Pnc...	phi*Mn...	phi*Mn...	Cb	Eqn	
1	MP-10	PIPE 2.0	.416	3.542	20	.068	3.542	29	16.553	32.13	1.872	1.872	2...H1-1b
2	MP-2	PIPE 2.0	.415	3.542	26	.068	3.542	18	16.553	32.13	1.872	1.872	2...H1-1b
3	MP-6	PIPE 2.0	.414	3.542	31	.068	3.542	23	16.553	32.13	1.872	1.872	2...H1-1b
4	MP-4B	PIPE 2.0	.347	3.458	55	.285	.542	28	31.635	32.13	1.872	1.872	1...H1-1b
5	M-2	PIPE 4.0	.320	1.969	26	.126	6.198	19	90.931	93.24	10.631	10.631	1...H1-1b
6	MP-4	PIPE 2.0	.320	3.75	26	.056	3.75	25	15.275	32.13	1.872	1.872	2...H1-1b
7	MP-8	PIPE 2.0	.318	3.75	31	.056	3.75	30	15.275	32.13	1.872	1.872	2...H1-1b
8	MP-12	PIPE 2.0	.317	3.75	20	.061	3.75	19	15.275	32.13	1.872	1.872	2...H1-1b
9	M-1	PIPE 4.0	.315	1.969	21	.124	6.198	27	90.931	93.24	10.631	10.631	1...H1-1b



Company : Tower Engineering Professionals, Inc.
 Designer : GJS
 Job Number : TEP No. 63208.689014
 Model Name : CCI BU No 842873

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Company : Tower Engineering Professionals, Inc.
 Designer : GJS
 Job Number : TEP No. 63208.689014
 Model Name : CCI BU No 842873

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

Member	Shape	Code Check	Loc(ft)	LC	Shear	Che...	Loc(ft)	Dir	LC	Pnc...	phi*	Pnt...	phi*	Mn...	phi*	Mn...	Cb	Eqn
10	M-3	PIPE 4.0	.313	1.969	31	.122	6.198		25	90.931	93.24	10.631	10.631	1.	H1-1b			
11	FH-2T	PIPE 2.0X	.309	8	19	.094	0		29	20.272	63	3.615	3.615	2.	H1-1b			
12	SH-1	PIPE 2.0X	.304	2.128	26	.068	0		34	45.622	63	3.615	3.615	1.	H1-1b			
13	FH-5T	PIPE 2.0X	.293	8	25	.094	0		18	20.272	63	3.615	3.615	2.	H1-1b			
14	FH-8T	PIPE 2.0X	.292	8	30	.094	0		23	20.272	63	3.615	3.615	2.	H1-1b			
15	SH-10	PIPE 2.0X	.289	2.128	21	.067	0		47	45.622	63	3.615	3.615	1.	H1-1b			
16	SH-4	PIPE 2.0X	.284	2.128	31	.068	0		42	45.622	63	3.615	3.615	1.	H1-1b			
17	SH-12	PIPE 2.0X	.284	2.128	26	.076	0		34	45.622	63	3.615	3.615	1.	H1-1b			
18	FH-3T	PIPE 2.0X	.282	0	19	.058	0		36	38.546	63	3.615	3.615	1.	H1-1b			
19	SH-6	PIPE 2.0X	.279	2.128	21	.076	0		42	45.622	63	3.615	3.615	1.	H1-1b			
20	SH-3	PIPE 2.0X	.268	2.128	31	.075	0		37	45.622	63	3.615	3.615	1.	H1-1b			
21	FH-6T	PIPE 2.0X	.267	0	25	.057	0		42	38.546	63	3.615	3.615	1.	H1-1b			
22	FH-9T	PIPE 2.0X	.267	0	30	.058	0		47	38.546	63	3.615	3.615	1.	H1-1b			
23	PP-2	Pivot Plate	.241	.5	60	.116	.5	y	27	97.947	135.352	1.762	13.57	1.	H1-1b			
24	PP-1	Pivot Plate	.233	.5	34	.112	.5	y	22	97.947	135.352	1.762	13.57	1.	H1-1b			
25	PP-5	Pivot Plate	.232	.5	42	.086	.5	y	39	97.947	135.352	1.762	13.57	1.	H1-1b			
26	PP-6	Pivot Plate	.231	.5	48	.115	.5	y	33	97.947	135.352	1.762	13.57	1.	H1-1b			
27	PP-3	Pivot Plate	.230	.5	42	.088	.5	y	42	97.947	135.352	1.762	13.57	1.	H1-1b			
28	PP-4	Pivot Plate	.227	.5	36	.087	.5	y	34	97.947	135.352	1.762	13.57	1.	H1-1b			
29	MP-12B	PIPE 2.0	.211	3.25	37	.260	.542		22	23.088	32.13	1.872	1.872	2.	H1-1b			
30	M86	PIPE 2.0	.207	1.802	28	.111	1.802		24	31.606	32.13	1.872	1.872	1.	H1-1b			
31	MP-8B	PIPE 2.0	.199	3.458	47	.283	.542		33	31.635	32.13	1.872	1.872	1.	H1-1b			
32	M114	PIPE 2.0	.197	1.802	18	.107	1.802		29	31.606	32.13	1.872	1.872	1.	H1-1b			
33	M100	PIPE 2.0	.195	1.802	26	.122	1.802		18	31.606	32.13	1.872	1.872	2.	H1-1b			
34	FH-7T	PIPE 2.0X	.188	2.5	33	.075	2.5		23	38.546	63	3.615	3.615	2.	H1-1b			
35	FH-4T	PIPE 2.0X	.188	2.5	27	.075	2.5		18	38.546	63	3.615	3.615	2.	H1-1b			
36	FH-6B	PIPE 2.0X	.186	1.979	58	.058	0		42	38.546	63	3.615	3.615	1.	H1-1b			
37	FH-2B	PIPE 2.0X	.178	8	27	.041	0		38	20.272	63	3.615	3.615	2.	H1-1b			
38	FH-1T	PIPE 2.0X	.178	2.5	22	.074	2.5		29	38.546	63	3.615	3.615	2.	H1-1b			
39	FH-3B	PIPE 2.0X	.176	0	27	.059	0		36	38.546	63	3.615	3.615	2.	H1-1b			
40	FH-5B	PIPE 2.0X	.170	8	33	.041	0		34	20.272	63	3.615	3.615	2.	H1-1b			
41	FH-8B	PIPE 2.0X	.169	8	22	.041	0		42	20.272	63	3.615	3.615	2.	H1-1b			
42	FH-9B	PIPE 2.0X	.168	0	22	.059	0		47	38.546	63	3.615	3.615	2.	H1-1b			
43	SH-7	PIPE 2.0X	.154	0	20	.063	0		34	45.622	63	3.615	3.615	1.	H1-1b			
44	SH-2	PIPE 2.0X	.154	0	26	.063	0		43	45.622	63	3.615	3.615	1.	H1-1b			
45	SH-5	PIPE 2.0X	.152	0	18	.066	0		45	45.622	63	3.615	3.615	1.	H1-1b			
46	M98	PIPE 2.0	.146	1.802	18	.060	1.802		42	31.606	32.13	1.872	1.872	2.	H1-1b			
47	SH-8	PIPE 2.0X	.145	0	24	.066	0		34	45.622	63	3.615	3.615	1.	H1-1b			
48	MP-11	PIPE 2.0	.144	3.542	34	.047	3.542		19	16.553	32.13	1.872	1.872	4.	H1-1b			
49	M84	PIPE 2.0	.144	1.802	21	.059	1.802		47	31.606	32.13	1.872	1.872	2.	H1-1b			
50	M112	PIPE 2.0	.144	1.802	26	.059	1.802		37	31.606	32.13	1.872	1.872	2.	H1-1b			
51	SH-9	PIPE 2.0X	.143	0	26	.063	0		39	45.622	63	3.615	3.615	1.	H1-1b			
52	M99	PIPE 2.0	.143	1.802	26	.061	1.802		34	31.606	32.13	1.872	1.872	2.	H1-1b			
53	MP-3	PIPE 2.0	.143	3.542	39	.046	3.542		25	16.553	32.13	1.872	1.872	4.	H1-1b			
54	MP-7	PIPE 2.0	.143	3.542	45	.046	3.542		30	16.553	32.13	1.872	1.872	4.	H1-1b			
55	M101	PIPE 2.0	.141	1.802	34	.069	1.802		36	31.606	32.13	1.872	1.872	2.	H1-1b			
56	MP-5B	PIPE 2.0	.140	3.25	44	.191	.542		26	23.088	32.13	1.872	1.872	3.	H1-1b			
57	SH-11	PIPE 2.0X	.140	0	29	.065	0		39	45.622	63	3.615	3.615	1.	H1-1b			
58	M113	PIPE 2.0	.139	1.802	34	.060	1.802		45	31.606	32.13	1.872	1.872	2.	H1-1b			
59	M85	PIPE 2.0	.136	1.802	46	.060	1.802		39	31.606	32.13	1.872	1.872	2.	H1-1b			
60	MP-9B	PIPE 2.0	.136	3.25	48	.202	.542		18	23.088	32.13	1.872	1.872	1.	H1-1b			
61	M115	PIPE 2.0	.135	1.802	42	.069	1.802		47	31.606	32.13	1.872	1.872	2.	H1-1b			

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

Member	Shape	Code Check	Loc(ft)	LC	Shear	Che...	Loc(ft)	Dir	LC	Pnc...	phi*	Pnt...	phi*	Mn...	phi*	Mn...	Cb	Eqn
62	M87	PIPE 2.0	.135	1.802	40	.068	1.802		42	31.606	32.13	1.872	1.872	2.	H1-1b			
63	MP-1B	PIPE 2.0	.123	3.25	37	.192	.542		21	23.088	32.13	1.872	1.872	2.	H1-1b			
64	FH-4B	PIPE 2.0X	.120	2.5	19	.063	2.5		34	38.546	63	3.615	3.615	1.	H1-1b			
65	FH-7B	PIPE 2.0X	.120	2.5	25	.062	2.5		40	38.546	63	3.615	3.615	1.	H1-1b			
66	SV-8	SR 3/4	.117	2.917	63	.014	2.917		21	6.78	19.88	.249	.249	2.	H1-1b*			
67	SV-2	SR 3/4	.115	2.886	42	.013	0		18	6.78	19.88	.249	.249	2.	H1-1b*			
68	SV-6	SR 3/4	.115	2.917	47	.012	0		23	6.78	19.88	.249	.249	1.	H1-1b			
69	FH-1B	PIPE 2.0X	.114	2.5	30	.062	2.5		45	38.546	63	3.615	3.615	1.	H1-1b			
70	SV-9	SR 3/4	.114	2.917	42	.017	2.917		21	6.78	19.88	.249	.249	2.	H1-1b*			
71	SV-10	SR 3/4	.114	2.917	37	.013	0		28	6.78	19.88	.249	.249	2.	H1-1b			
72	SV-5	SR 3/4	.113	2.917	36	.017	2.917		32	6.78	19.88	.249	.249	2.	H1-1b*			
73	SV-1	SR 3/4	.113	2.917	47	.018	2.917		26	6.78	19.88	.249	.249	2.	H1-1b*			
74	SV-7	SR 3/4	.107	2.917	52	.012	2.917		21	6.78	19.88	.249	.249	1.	H1-1b*			
75	SD-4	SR 3/4	.107	4.636	37	.015	4.636		21	2.683	19.88	.249	.249	2.	H1-1b			
76	SD-2	SR 3/4	.106	4.636	47	.015	0		29	2.683	19.88	.249	.249	2.	H1-1b			
77	SD-6	SR 3/4	.106	4.636	42	.016	4.636		26	2.683	19.88	.249	.249	2.	H1-1b			
78	MP-9	PIPE 2.0	.104	3.75	36	.027	6.25		42	15.275	32.13	1.872	1.872	3.	H1-1b			
79	MP-1	PIPE 2.0	.104	3.75	41	.027	6.25		49	15.275	32.13	1.872	1.872	4.	H1-1b			
80	MP-5	PIPE 2.0	.103	3.75	47	.027	3.75		48	15.275	32.13	1.872	1.872	3.	H1-1b			
81	SD-1	SR 3/4	.098	4.636	47	.016	0		18	2.683	19.88	.249	.249	2.	H1-1b			
82	SD-3	SR 3/4	.098	4.636	37	.015	0		23	2.683	19.88	.249	.249	2.	H1-1b			
83	SV-11	SR 3/4	.098	2.917	42	.012	2.917		26	6.78	19.88	.249	.249	2.	H1-1b			
84	SD-5	SR 3/4	.098	4.636	42	.015	0		29	2.683	19.88	.249	.249	2.	H1-1b			
85	SV-3	SR 3/4	.098	2.917	47	.011	2.917		32	6.78	19.88	.249	.249	2.	H1-1b			
86	MP-13	PIPE 2.0	.097	4.479	51	.070	4.479		21	20.491	32.13	1.872	1.872	2.	H1-1b			
87	SV-4	SR 3/4	.097	2.917	44	.014	2.917		31	6.78	19.88	.249	.249	2.	H1-1b*			
88	SV-12	SR 3/4																

APPENDIX D
ADDITIONAL CALCULATIONS

Moment Bolt Group - Support Arm

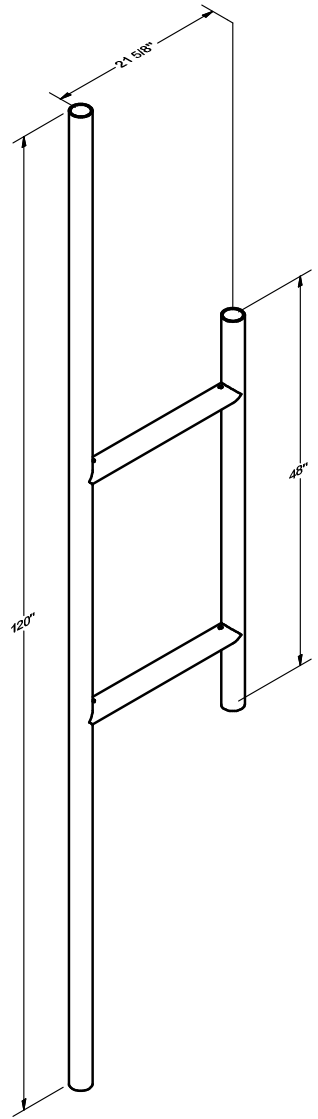
Bolt Size: 0.625 in
 # Bolts: 4
 Plate Width: 9.75 in
 Plate Height: 4 in
 Bolt H Gap: 6.5 in
 Bolt V Gap: 2 in
 Plate T: 0.625 in
 Tower Leg Ø: 4.5 in
 Bolt Grade: A307
 $F_{u,bolt}$: 60 ksi
 r : 3.4004 in
 J : 10.4526 in⁴
 $Bolt_{Area}$: 0.307 in²
 $Bolt_{Area, Net Tensile}$: 0.226 in²
 Pretension: 9 kips
 Slotted Holes: No

Code Checks Per ANSI/TIA-222-H-2017:		
Bolt Group Capacity =	15.0%	GOOD
Single Bolt Capacity =	10.9%	GOOD

Single Bolt Check

Bolt Size: 1 in
 Bolt F_u : 120 ksi
 $Bolt_{A, Net Tensile}$: 0.606 in²
 $V_{max} = \frac{3.861}{35.343}$ kips
 $\emptyset R_{NV} = \frac{3.861}{35.343}$ kips
 $T_{max} = \frac{1.537}{54.540}$ kips
 $\emptyset R_{NT} = \frac{1.537}{54.540}$ kips

APPENDIX E
SUPPLEMENTAL DRAWINGS



PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	1	X-PM2	PM2 STANDOFF MOUNT WELDMENT		67.21	67.21

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	120" LONG PIPE WAS 70" LONG		KC8	4-28-21
REVISION HISTORY				

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 AND ANGLES 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	
2' PANEL STAND-OFF MOUNT	
CPD NO.	DRAWN BY
	CEK 8/9/2019
CLASS	DRAWING USAGE
81	CUSTOMER
SUB	CHECKED BY
02	BMC 8/21/2019

	Engineering Support Team: 1-888-753-7446	Locations: New York, NY Atlanta, GA Los Angeles, CA Plymouth, IN Salem, OR Dallas, TX Tampa, FL
	A valmont COMPANY	
PART NO.	PM2	
DWG. NO.	PM2	

Exhibit F

Power Density/RF Emissions Report

Radio Frequency Safety Survey Report Predictive (RFSSRP) Prepared For AT&T



Site Name:	SHELTON NE
FA#	10071231
USID:	24519
Site ID:	CTL03451
Address:	30 OLIVER TERRACE SHELTON, CT 06484
County:	FAIRFIELD
Latitude:	41.2937919
Longitude:	-73.1072989
Structure Type:	MONOPOLE
Property Owner:	BRENNAN REALTY LLC
Pace Job:	MRCTB053309
RFDS Technology	5G NR 1SR CBAND

Report Information

Report Writer: Parul

Report Generated Date: 07-12-2022

Compliance Statement

AT&T Mobility Compliance Statement: Based on the information collected, AT&T Mobility will be Compliant when the remediation recommended in section 5 or appropriate remediation determined by AT&T is implemented



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1. Executive Summary

1.1 Site Summary

Max Predictive Spatial Average MPE% & Location on Site (General Public)	25420.10% on Antennas Centerline Level & at AT&T Sec-B antenna no. #B3-2
Max Predictive Spatial Average MPE% on Ground (General Public)	1.38%
AT&T Mobility Site Compliance	AT&T Mobility will be Compliant by implementing remediation recommended as per section 5 in this report.

TABLE 1: Site Summary

1.2 Signage Summary (Proposed)

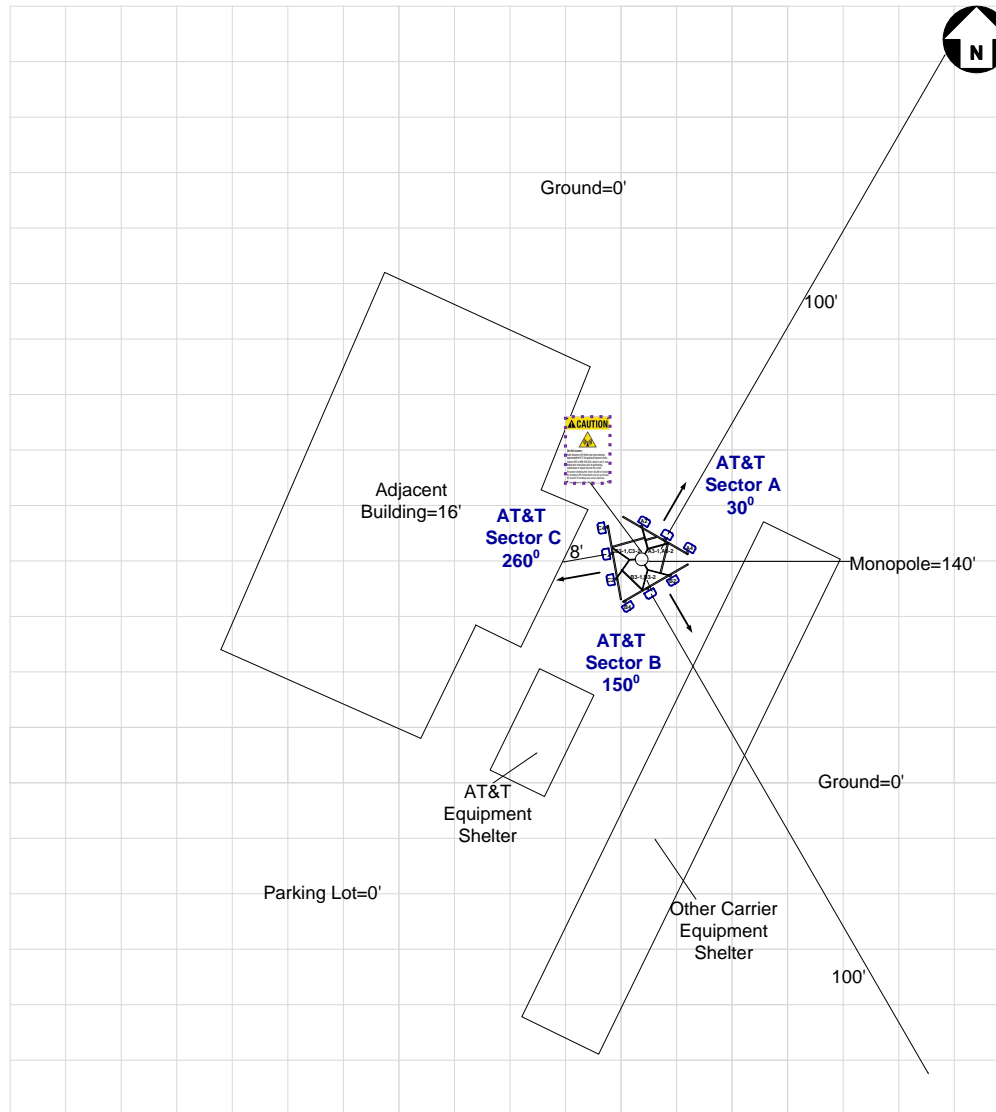
AT&T Signage Locations	Sign Type									
	Safety Instructions	Notice Sign 2	Caution Sign 2	Caution Sign 2B	Caution Sign 2C	Caution 7"x7"	Warning Sign 1B	RF Exposure Map	Lock	Barriers
Access Point(s)				1						
Alpha										
Beta										
Gamma										

TABLE 2: Signage Summary (Proposed)

1.3 List of Documents used to prepare this Report

- 842873 CD
- 842873_586271 RFDS

2. Site Scale Map



AT&T Antenna		Proposed Signage									Lock	Map Scale = 10 ft
	Panel		Barrier									
	OMNI		Posts									

3. Antenna Inventory

Ant ID	Operator	Antenna Mfg	Antenna Model	Antenna Type	FREQ. (MHz)	TECH.	AZ. (0)	H B W (0)	Antenna Gain (dBd)	Antenna Aperture (ft)	Transmitter Power (Watts)	Total Loss (dB)	Total ERP (Watts)	Total EIRP (Watts)
A2	AT&T	Quintel	QD6616-7	Panel	700	LTE(FN)	30	71	12.05	6	120.00	0.5	1714.67	2813.07
A2	AT&T	Quintel	QD6616-7	Panel	700	LTE(B29)	30	71	12.05	6	60.00	0.5	857.34	1406.54
A2	AT&T	Quintel	QD6616-7	Panel	1900	LTE/5G	30	67	15.05	6	120.00	0.5	3421.22	5612.82
A2	AT&T	Quintel	QD6616-7	Panel	2100	LTE/5G	30	62	15.55	6	120.00	0.5	3838.67	6297.69
A3-1	AT&T	Ericsson	AIR 6419 B77G^	Panel	3450	5G	30	11	23.5	2.55	108.44*	0	24277.05*	39828.68*
A3-2	AT&T	Ericsson	AIR 6449 B77D^	Panel	3840	5G	30	11	23.5	2.55	108.44*	0	24277.05*	39828.68*
A4	AT&T	CCI	DMP65R-BU6D	Panel	700	LTE(B12)	30	74	11.85	6	120.00	0.5	1637.50	2686.47
A4	AT&T	CCI	DMP65R-BU6D	Panel	850	5G	30	63	12.45	6	120.00	0.5	1880.10	3084.47
A4	AT&T	CCI	DMP65R-BU6D	Panel	2300	LTE	30	54	16.25	6	75.00	0.5	2818.78	4624.46
B2	AT&T	Quintel	QD6616-7	Panel	700	LTE(FN)	150	71	12.05	6	120.00	0.5	1714.67	2813.07
B2	AT&T	Quintel	QD6616-7	Panel	700	LTE(B29)	150	71	12.05	6	60.00	0.5	857.34	1406.54
B2	AT&T	Quintel	QD6616-7	Panel	1900	LTE/5G	150	67	15.05	6	120.00	0.5	3421.22	5612.82
B2	AT&T	Quintel	QD6616-7	Panel	2100	LTE/5G	150	62	15.55	6	120.00	0.5	3838.67	6297.69
B3-1	AT&T	Ericsson	AIR 6419 B77G^	Panel	3450	5G	150	11	23.5	2.55	108.44*	0	24277.05*	39828.68*
B3-2	AT&T	Ericsson	AIR 6449 B77D^	Panel	3840	5G	150	11	23.5	2.55	108.44*	0	24277.05*	39828.68*
B4	AT&T	CCI	DMP65R-BU6D	Panel	700	LTE(B12)	150	74	11.85	6	120.00	0.5	1637.50	2686.47
B4	AT&T	CCI	DMP65R-BU6D	Panel	850	5G	150	63	12.45	6	120.00	0.5	1880.10	3084.47
B4	AT&T	CCI	DMP65R-BU6D	Panel	2300	LTE	150	54	16.25	6	75.00	0.5	2818.78	4624.46

Table 3.1: Antenna Inventory Table

Note: ^ **Mechanical Tilt value of "0°" MUST be retained for C-BAND and/or DoD AAS antenna(s) at all times to ensure that "EME (Predictive) Study" shall remain valid.**

* 75% TDD duty Cycle, 1.5dB Power Tolerance & 0.32 Power Reduction factor¹ are used to calculate Transmitter Power & ERP/EIRP

Ant ID	Operator	Antenna Mfg	Antenna Model	Antenna Type	FREQ. (MHz)	TECH.	AZ. (0)	H B W (0)	Antenna Gain (dBd)	Antenna Aperture (ft)	Transmitter Power (Watts)	Total Loss (dB)	Total ERP (Watts)	Total EIRP (Watts)
C2	AT&T	Quintel	QD6616-7	Panel	700	LTE(FN)	260	71	12.05	6	120.00	0.5	1714.67	2813.07
C2	AT&T	Quintel	QD6616-7	Panel	700	LTE(B29)	260	71	12.05	6	60.00	0.5	857.34	1406.54
C2	AT&T	Quintel	QD6616-7	Panel	1900	LTE/5G	260	67	15.05	6	120.00	0.5	3421.22	5612.82
C2	AT&T	Quintel	QD6616-7	Panel	2100	LTE/5G	260	62	15.55	6	120.00	0.5	3838.67	6297.69
C3-1	AT&T	Ericsson	AIR 6419 B77G^	Panel	3450	5G	260	11	23.5	2.55	108.44*	0	24277.05*	39828.68*
C3-2	AT&T	Ericsson	AIR 6449 B77D^	Panel	3840	5G	260	11	23.5	2.55	108.44*	0	24277.05*	39828.68*
C4	AT&T	CCI	DMP65R-BU6D	Panel	700	LTE(B12)	260	74	11.85	6	120.00	0.5	1637.50	2686.47
C4	AT&T	CCI	DMP65R-BU6D	Panel	850	5G	260	63	12.45	6	120.00	0.5	1880.10	3084.47
C4	AT&T	CCI	DMP65R-BU6D	Panel	2300	LTE	260	54	16.25	6	75.00	0.5	2818.78	4624.46

Table 3.2: Antenna Inventory Table

Note: ^ **Mechanical Tilt value of "0°" MUST be retained for C-BAND and/or DoD AAS antenna(s) at all times to ensure that "EME (Predictive) Study" shall remain valid.**

* 75% TDD duty Cycle, 1.5dB Power Tolerance & 0.32 Power Reduction factor¹ are used to calculate Transmitter Power & ERP/EIRP

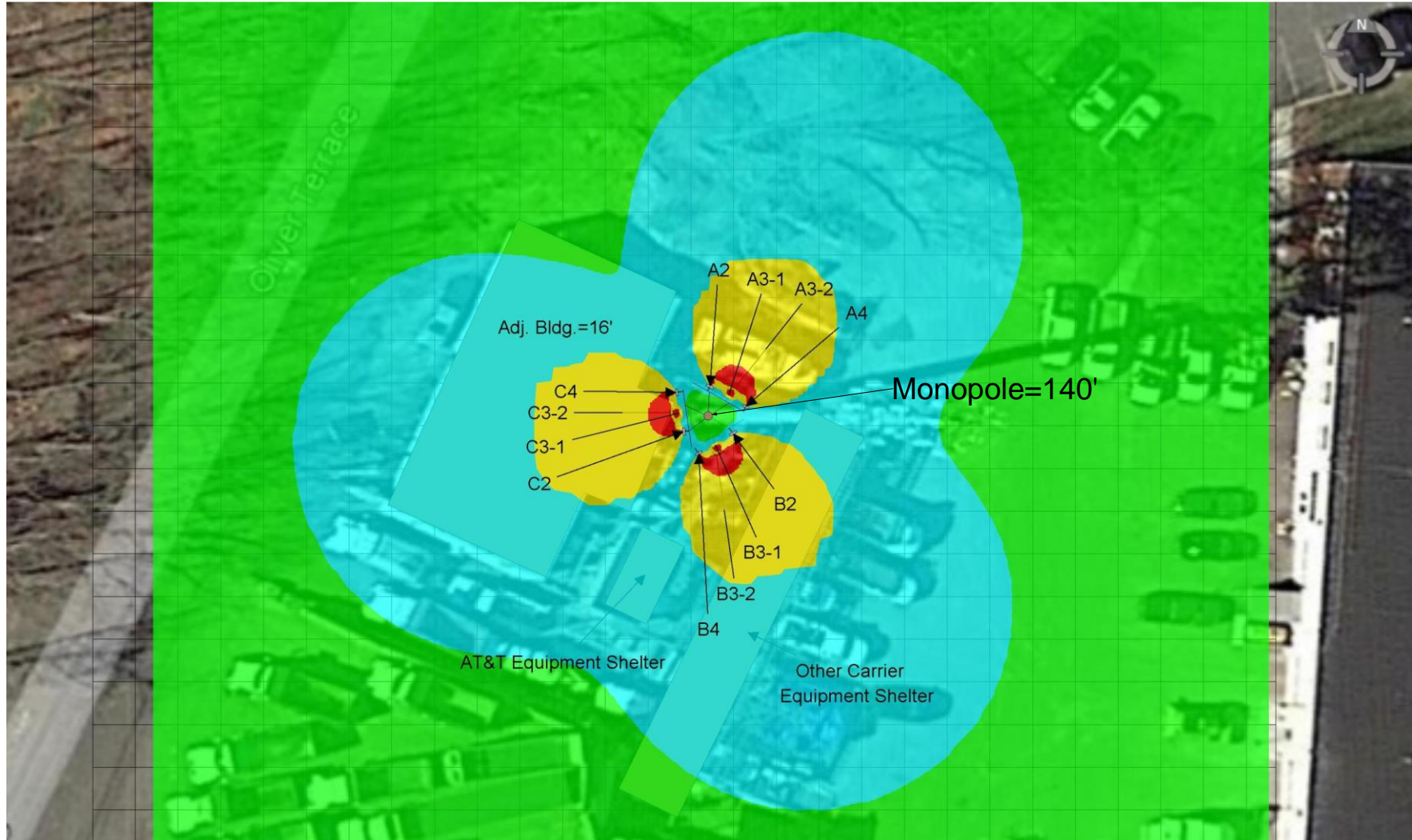
Antenna Heights (Z)

Ant ID	Operator	Antenna Radiation Centerline	Z-Height from Adjacent Building	Z-Height from Ground
A2	AT&T	129.00	110.00	126.00
A3-1	AT&T	129.00	111.73	127.73
A3-2	AT&T	125.00	107.73	123.73
A4	AT&T	129.00	110.00	126.00
B2	AT&T	129.00	110.00	126.00
B3-1	AT&T	129.00	111.73	127.73
B3-2	AT&T	125.00	107.73	123.73
B4	AT&T	129.00	110.00	126.00
C2	AT&T	129.00	110.00	126.00
C3-1	AT&T	129.00	111.73	127.73
C3-2	AT&T	125.00	107.73	123.73
C4	AT&T	129.00	110.00	126.00

Table 3.3: Antenna Height(s) Summary Table

4. Predicted Emission

4.1 Predictive Cumulative MPE Contribution from All Sources at Antennas Centerline Level (129 ft.)



Max. Predictive Spatial Average MPE% = 25420.10%

% of FCC General Public Exposure Limit (Predictive Spatial Average)

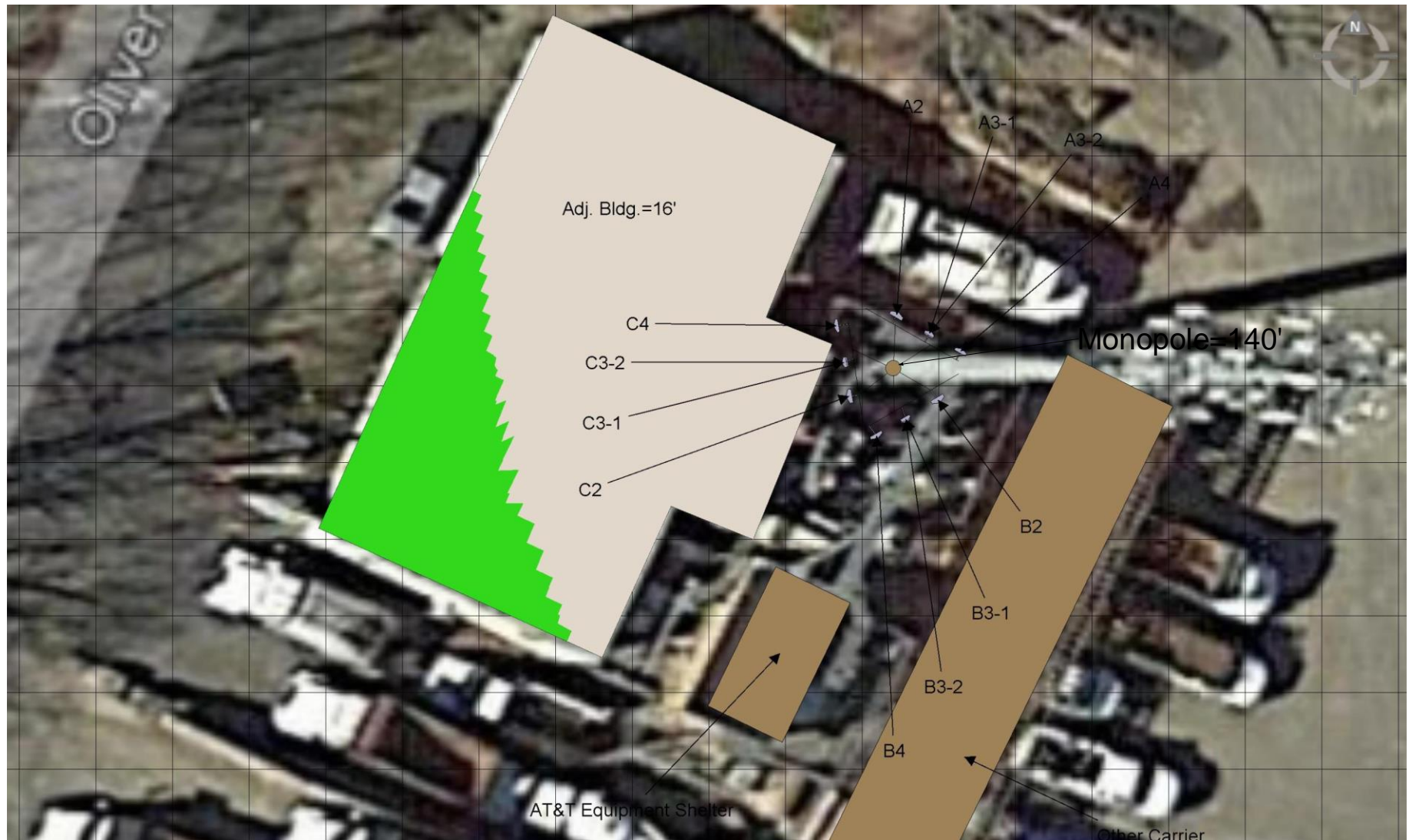
Proposed Barrier

Proposed Posts

Non-Simulated	0-1	1-100	100-500	500-5000	>5000

Map Scale = 10 ft

4.2 Predictive Cumulative MPE Contribution from All Sources at Adjacent Building Level (16 ft.)



Max. Predictive Spatial Average MPE% = 1.75%

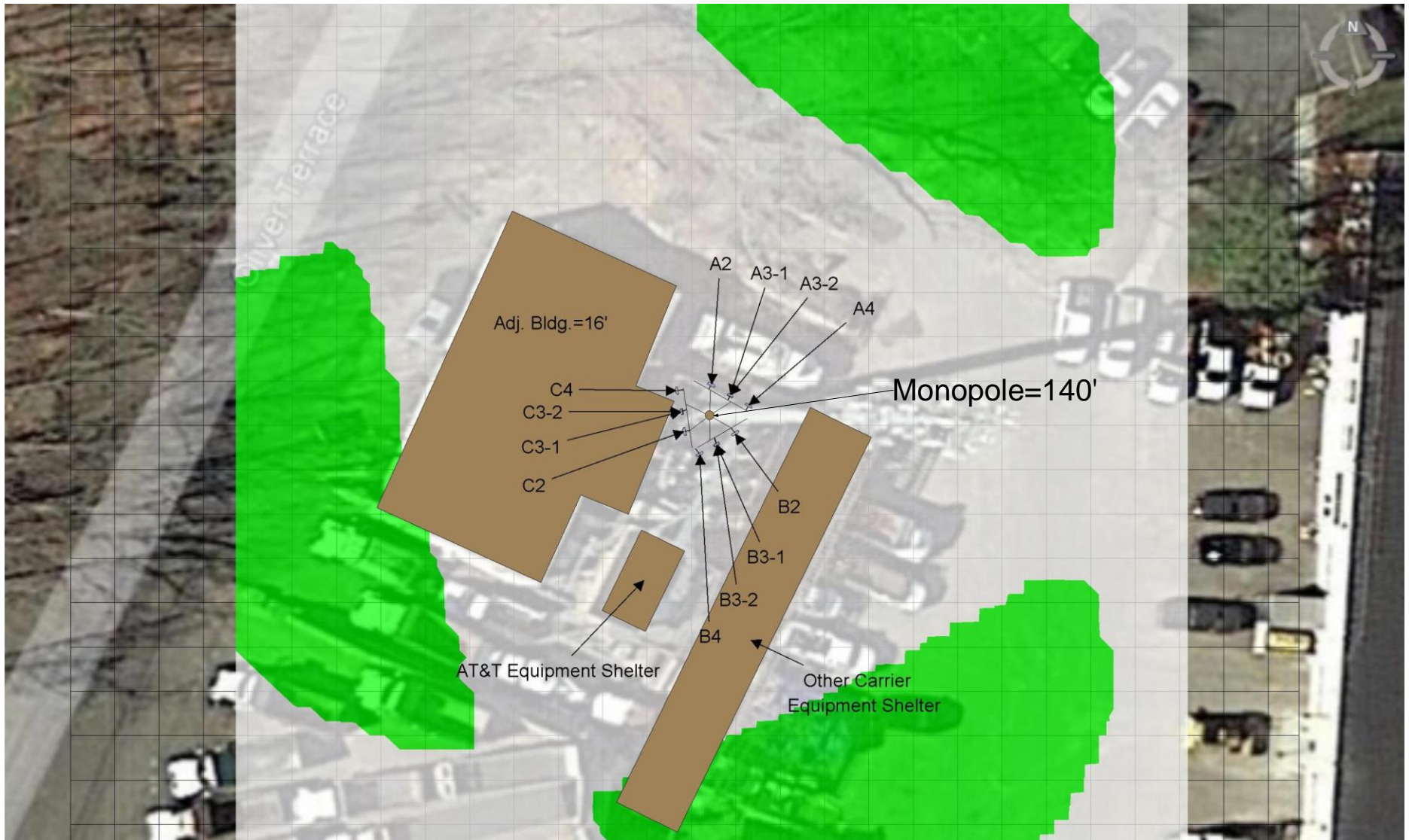
% of FCC General Public Exposure Limit (Predictive Spatial Average)

Proposed Barrier
 Proposed Posts

Non-Simulated	0-1	1-100	100-500	500-5000	>5000

Map Scale = 10 ft

4.3 Predictive Cumulative MPE Contribution from All Sources at Ground Level (0 ft.)



Max. Predictive Spatial Average MPE% = 1.38%

% of FCC General Public Exposure Limit (Predictive Spatial Average)

Proposed Barrier
 Proposed Posts

Non-Simulated	0-1	1-100	100-500	500-5000	>5000

Map Scale = 10 ft

5. Statement of Compliance

5.1 *Statement of AT&T Mobility Compliance*

At the time of our Analysis, AT&T Mobility is required to take action to fulfill their Obligations to comply with the FCC's mandate as defined in OET-65

Recommendations

AT&T Alpha Sector:

- No actions required.

AT&T Beta Sector:

- No actions required.

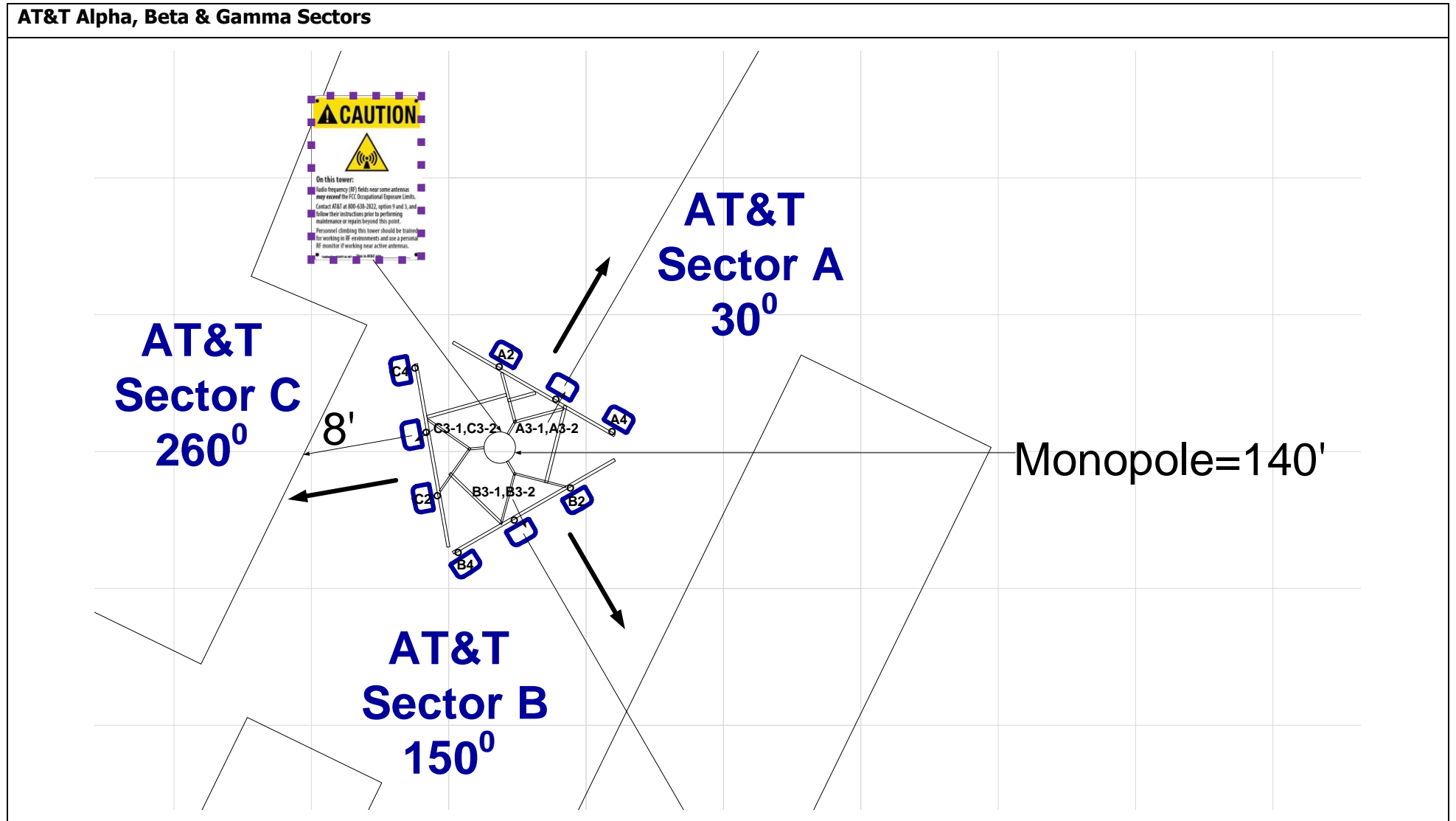
AT&T Gamma Sector:

- No actions required.

Monopole:

- One Caution 2B Sign to be posted at the climbing access, facing outwards so approaching people can see as shown in "Recommendations Map – Detailed View" on page 12. (1 Total Sign)

Recommendations Map – Detailed View



AT&T Antenna		Proposed		Proposed Signage								Map Scale = 10 ft
	Panel		Barrier									
	OMNI		Posts									

Appendix A – Statement of Limiting Conditions

General Model Assumptions

In this site compliance report, it is assumed that all antennas are operating at full power at all times. AT&T has further recommended to assume a 75% duty cycle of maximum radiated power for all LTE & 5G carriers (& consider 100% duty cycle for all UMTS carriers).

In this site compliance report, it is assumed that Mechanical Tilt value of “0°” MUST be retained for C-BAND and/or DoD AAS[^] antenna(s) at all times to ensure that “EME (Predictive) Study” shall remain valid.

AT&T recommended to consider - For C-BAND and/or DoD AAS[^] antenna(s) 75% TDD duty Cycle, 1.5dB Power Tolerance & 0.32 Power Reduction factor¹ are used to calculate Transmitter Power & ERP/EIRP.

AT&T recommended to use worst-case tilts for the simulations.

Power Reduction Factor: IEC Standard 62232: 2017 allows for a statistically conservative power density model to more realistically define the RF exposure area. AT&T recommends a “0.32” factor to calculate the “Actual Maximum” (time averaged) power value, which accounts for “Beam Scanning,” “Scheduling,” and “RBS Utilization” This recommended value is a conservative figure modelled and supported by other vendors and through measurements published in scientific articles and white papers by IEEE and others. Those publication are listed below:

1. IEEE Access, *Time-Averaged Realistic Maximum Power Levels for the Assessment of RF Exposure for 5G Radio Base Stations Using Massive MIMO* (Published Sept. 18, 2017 / BJÖRN THORS, ANDERS FURUSKÄR, DAVIDE COLOMBI, AND CHRISTER TÖRNEVIK)
2. IEEE Explore, *A Statistical Approach for RF Exposure Compliance Boundary Assessment in Massive MIMO Systems* (Published Jan. 25, 2018 / Paolo Baracca, Andreas Weber, Thorsten Wild, Christophe Grangeat)
3. IEEE Access, *In-situ Measurement Methodology for the Assessment of 5G NR Massive MIMO Base Station Exposure at Sub-6 GHz Frequencies* (Published Dec. 20, 2019 / SAM AERTS, LEEN VERLOOCK, MATTHIAS VAN DEN BOSSCHE, DAVIDE COLOMBI, LUC MARTENS, CHRISTER TÖRNEVIK AND WOUT JOSEPH)
4. Applied Sciences, *Analysis of the Actual Power and EMF Exposure from Base Stations in a Commercial 5G Network* (Published July 30, 2020 / Davide Colombi, Paramananda Joshi, Bo Xu, Fatemeh Ghasemifard, Vignesh Narasaraju and Christer Törnevik)
5. Ofcom Technical Report, *Electromagnetic Field (EMF) measurements near 5G mobile phone base stations* (Published Feb. 21, 2020 / Davide Colombi, Paramananda Joshi, Bo Xu, Fatemeh Ghasemifard, Vignesh Narasaraju and Christer Törnevik)

MobileComm believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor). Thus, at any time, if power density measurements were made, we believe the real time measurements would indicate levels below those depicted in the RF emission diagram(s) in this report. By modelling in this way, MobileComm has conservatively shown exclusion areas – areas that should not be entered without the use of a personal monitor, carriers reducing power, or performing real-time measurements to indicate real-time exposure levels.

Use of Generic Antennas

For the purposes of this report, the use of “Generic” as an antenna model, or “Other Carrier” for an operator means the information about a carrier, their FCC license and/or antenna information was not provided and could not be obtained while on site. In the event of unknown information, MobileComm will use our industry specific knowledge of equipment, antenna models, and transmit power to model the site. Information about similar facilities is used when the service is identified and associated with a particular antenna. If no information is available regarding the transmitting service associated with an unidentified antenna, using the antenna manufacturer’s published data regarding the antenna’s physical characteristics makes more conservative assumptions.

Where the frequency is unknown, MobileComm uses the closest frequency in the antenna’s range that corresponds to the highest Maximum Exposure Limit (MPE), resulting in a conservative analysis.

Appendix B – FCC Guidelines and Emissions Threshold Limits

All power density values used in this report were 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 public 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 public 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 limit for the 700 and 800 MHz Bands is approximately $467 \mu\text{W}/\text{cm}^2$ and $567 \mu\text{W}/\text{cm}^2$ respectively, and the general population exposure limit for the 1900 MHz PCS and 2100 MHz AWS 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, have been properly trained in RF safety 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, have been trained in RF safety and can exercise control over his or her exposure by leaving the area or by some other appropriate means. The Occupational/Controlled exposure limits all utilized frequency bands is five (5) times the FCC's General Public / Uncontrolled exposure limit.

Additional details can be found in FCC OET 65.

Table 1: Limits for Maximum Permissible Exposure (MPE)				
(A) Limits for Occupational/Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time [E] ² , [H] ² , or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1,500	--	--	f/300	6
1,500-100,000	--	--	5	6
(B) Limits for General Public/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time [E] ² , [H] ² , or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1,500	--	--	f/1,500	30
1,500-100,000	--	--	1.0	30

Appendix C – Rules & Regulations

Explanation of Applicable Rules and Regulations

FCC has set forth guidelines in OET Bulletin 65 for human exposure to radio frequency electromagnetic fields. Currently, there are two different levels of MPE - General Public MPE and Occupational MPE. An individual classified as Occupational can be defined as an individual who has received appropriate RF training and meets the conditions outlined below. General Public is defined as anyone who does not meet the conditions of being Occupational. FCC Rules and Regulations define compliance in terms of total exposure to total RF energy, regardless of location of or proximity to the sources of energy.

It is the responsibility of all licensees to ensure these guidelines are maintained at all times. It is the ongoing responsibility of all licensees composing the site to maintain ongoing compliance with FCC rules and regulations.

A building owner or site manager can use this report as part of an overall RF Health and Safety Policy. It is important for building owners/site managers to identify areas in excess of the General Population MPE and ensure that only persons qualified as Occupational are granted access to those areas.

Occupational Environment Explained

The FCC definition of Occupational exposure limits apply to persons who:

- *are exposed to RF energy as a consequence of their employment;*
- *have been made aware of the possibility of exposure; and*
- *can exercise control over their exposure.*

FCC guidelines go further to state that persons must complete RF Safety Awareness training and must be trained in the use of appropriate personal protective equipment.

In order to consider this site an Occupational Environment, the site must be controlled to prevent access by any individuals classified as the General Public. Compliance is also maintained when any non-occupational individuals (the General Public) are prevented from accessing areas indicated as Red or Yellow in the attached RF Emissions diagram. In addition, a person must be aware of the RF environment into which they are entering. This can be accomplished by an RF Safety Awareness class, and by appropriate written documentation such as this Site Compliance Report.

Appendix D – General Safety Recommendations

The following are general recommendations appropriate for any site with accessible areas in excess of 100% General Public MPE. These recommendations are not specific to this site. These are safety recommendations appropriate for typical site management, building management, and other tenant operations.

1. All individuals needing access to the main site should be instructed to read and obey all posted placards and signs.
2. The site should be routinely inspected and this or similar report updated with the addition of any antennas or upon any changes to the RF environment including:
 - adding new antennas that may have been located on the site
 - removing of any existing antennas
 - changes in the radiating power or number of RF emitters
3. Post the appropriate SAFETY INSTRUCTIONS, NOTICE, CAUTION & WARNING sign at the main site access point(s) and other locations as required. Note: Please refer to RF Exposure Diagrams in the report section above, to inform everyone who has access to this site that beyond posted signs there may be levels in excess of the limits prescribed by the FCC. The signs below are examples of signs meeting FCC guidelines.



4. Ensure that the site door remains locked (or appropriately controlled) to deny access to the general public if deemed as policy by the building/site owner.
5. For a General Public environment the five color levels identified in measured RF emission diagram can be interpreted in the following manner:
 - White represents areas predicted to be greater than or equal to 0% and less than 1% of the MPE general public limits
 - Green represents areas predicted to be greater than or equal to 1% and less than 100% of the MPE general public limits
 - Blue represents areas predicted to be greater than or equal to 100% and lesser than 500% of the MPE general public limits.
 - Yellow represents areas predicted to be greater than or equal to 500% and lesser than 5000% of the MPE general public limits.
 - Red areas indicates safety predicted levels greater than or equal to 5000% of the MPE general public limits.

Appendix E – References

1 - FCC Definition

FCC defines an Occupational or Controlled environment as one where persons are exposed to RF fields as a consequence of their employment and where those persons exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Typical criteria for an Occupational or Controlled environment is restricted access (i.e. locked doors, gates, etc.) to areas where antennas are located coupled with proper RF warning signage.

FCC defines a site as a General Public or Uncontrolled environment when human exposure to RF fields occurs to the general public or in which persons who are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over the exposure. Typical criteria for a General Public or Uncontrolled environment are unrestricted access (i.e. unlocked or no restrictions) to areas where antennas are located without proper RF warning signage being posted.

2 - Physical Testing measurement procedure and Tools

The Narda Broadband Field Meter NBM-550 can make rapid conformance measurements with evaluation in the time domain when used in conjunction EA5091 probe. This probe is a so-called Shaped Probe, i.e. it is frequency weighted so that it automatically takes account of the FCC Occupational limit values. To collect data, the probe is pointed towards the potential source(s) of EME radiation and moved slowly from ground level up to slightly above head height (approx. 6 ft).

Spatial Average Measurement A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average energy an average sized human body will absorb while present in an electromagnetic field of energy.

3 - Site Safety Procedures

The following items are general safety recommendations that should be administered on a site by site basis as needed by the carrier.

General Maintenance Work: *Any maintenance personnel required to work immediately in front of antennas and / or in areas indicated as above 100% of the Occupational MPE limits should coordinate with the wireless operators to disable transmitters during their work activities.*

Training and Qualification Verification: *All personnel accessing areas indicated as exceeding the General Population MPE limits should have a basic understanding of EME awareness and RF Safety procedures when working around transmitting antennas. Awareness training increases a workers understanding to potential RF exposure scenarios. Awareness can be achieved in a number of ways (e.g. videos, formal classroom lecture or internet based courses).*

Physical Access Control: *Access restrictions to transmitting antennas locations is the primary element in a site safety plan. Examples of access restrictions are as follows:*

- *Locked door or gate*
- *Alarmed door*
- *Locked ladder access*
- *Restrictive Barrier at antenna locations (e.g. Chain link with posted RF Sign)*

RF Signage: *Everyone should obey all posted signs at all times. RF signs play an important role in properly warning a worker prior to entering into a potential RF Exposure area.*

Assume all antennas are active: *Due to the nature of telecommunications transmissions, an antenna transmits intermittently. Always assume an antenna is transmitting. Never stop in front of an antenna. If you have to pass by an antenna, move through as quickly and safely as possible thereby reducing any exposure to a minimum.*

Maintain a 3 foot clearance from all antennas: *There is a direct correlation between the strength of an EME field and the distance from the transmitting antenna. The further away from an antenna, the lower the corresponding EME field is.*

Rooftop RF Emissions Diagram: *Section 4 of this report contains an RF Emissions Diagram that outlines various theoretical Maximum Permissible Exposure (MPE) areas on the rooftop. This analysis is all theoretical and assumes a duty cycle of 75% for each transmitting antenna at full power. This analysis is a worst case scenario. This analysis is based on one of two access control criteria: General Public criteria means the access to the site is uncontrolled and anyone can gain access. Occupational criteria means the access is restricted and only properly trained individuals can gain access to the antenna locations.*

4 - Definitions

Compliance- *The determination of whether a site is safe or not with regards to Human Exposure to Radio Frequency Radiation from transmitting antennas.*

Decibel (dB) – *A unit for measuring power or strength of a signal.*

Duty Cycle – *The percent of pulse duration to the pulse period of a periodic pulse train. Also, may be a measure of the temporal transmission characteristic of an intermittently transmitting RF source such as a paging antenna by dividing average transmission duration by the average period for transmission. A duty cycle of 75% corresponds to continuous operation.*

Effective (or Equivalent) Isotropic Radiated Power (EIRP) – *The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna, this product is divided by the cable losses*

Effective Radiated Power (ERP) – *In a given direction, the relative gain of a transmitting antenna with respect to the maximum directivity of a half wave dipole multiplied by the net power accepted by the antenna from the connecting transmitter.*

Gain (of an antenna in dbd) – *The ratio of the maximum intensity in a given direction to the maximum radiation in the same direction from a reference dipole. Gain is a measure of the relative efficiency of a directional antennas as compared to a reference dipole.*

General Population/Uncontrolled Environment – *Defined by the FCC, as an area where RFR exposure may occur to persons who are unaware of the potential for exposure and who have no control of their exposure. General Population is also referenced as General Public.*

Generic Antenna – *For the purposes of this report, the use of “Generic” as an antenna model means the antenna information was not provided and could not be obtained while on site. In the event of unknown information, MobileComm will use our industry specific knowledge of antenna models to select a worst case scenario antenna to model the site.*

Isotropic Antenna – *An antenna that is completely non-directional. In other words, an antenna that radiates energy equally in all directions.*

Maximum Measurement – *This measurement represents the single largest measurement recorded when performing a spatial average measurement.*

Maximum Exposure Limit (MPE) – *The RMS and peak electric and magnetic field strength, their squares, or the plane-wave equivalent power densities associated with these fields to which a person may be exposed without harmful effect and with acceptable safety factor.*

Occupational/Controlled Environment – *Defined by the FCC, as an area where Radio Frequency Radiation (RFR) exposure may occur to persons who are aware of the potential for exposure as a condition of employment or specific activity and can exercise control over their exposure.*

Radio Frequency Radiation – *Electromagnetic waves that are propagated from antennas through space.*

Spatial Average Measurement – *A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average energy an average sized human body will absorb while present in an electromagnetic field of energy.*

Transmitter Power Output (TPO) – *The radio frequency output power of a transmitter's final radio frequency stage as measured at the output terminal while connected to a load.*

Appendix F – Proprietary Statement

This report was prepared for the use of AT&T Mobility, LLC to meet requirements specified in AT&T's corporate RF safety guidelines. It was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same locale under like circumstances. The conclusions provided by MobileComm are based solely on the information provided by AT&T Mobility and all observations in this report are valid on the date of the investigation. Any additional information that becomes available concerning the site should be provided to MobileComm so that our conclusions may be revised and modified, if necessary. This report has been prepared in accordance with Standard Conditions for Engagement and authorized proposal, both of which are integral parts of this report. No other warranty, expressed or implied, is made.

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SHELTON, CT, US, 06484

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