STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

IN RE:	:	
	:	
A PETITION FOR A DECLARATORY RULING ON THE NEED TO OBTAIN A SITING COUNCIL CERTIFICATE FOR THE PROPOSED MODIFICATION OF AN EXISTING WIRELESS TELECOMMUNICATIONS FACILITY AT 311 OLD GATE LANE, MILFORD, CONNECTICUT	:	PETITION NO. _____
	:	
	:	
	:	
	:	
	:	
	:	NOVEMBER 19, 2021

PETITION FOR A DECLARATORY RULING:
INSTALLATION HAVING NO
SUBSTANTIAL ADVERSE ENVIRONMENTAL EFFECT

I. Introduction

Pursuant to Sections 16-50j-38 and 16-50j-39 of the Regulations of Connecticut State Agencies ("R.C.S.A."), New Cingular Wireless PCS, LLC ("AT&T") hereby petitions the Connecticut Siting Council (the "Council") for a declaratory ruling ("Petition") that no Certificate of Environmental Compatibility and Public Need ("Certificate") is required under Section 16-50k(a) of the Connecticut General Statutes ("C.G.S.") for the modification of an existing wireless telecommunications facility at 311 Old Gate Lane in Milford, Connecticut (the "Existing Facility").

II. Existing Facility

The Existing Facility is located on an approximately 15-acre parcel that is the site of a Lowes home improvement retail store. The Facility consists of a 120-foot tall monopole and associated compound owned by Crown Castle, and currently includes the telecommunications equipment of Sprint and Verizon. **Attachment 1** contains the owner's authorization permitting AT&T to file this Petition. The Facility was originally approved by the City of Milford Planning and Zoning Board on November 6, 1996 as documented in **Attachment 2**.

III. AT&T Facility

AT&T's proposed facility is illustrated on the plans submitted as **Attachment 3**. AT&T proposes the shared use of the Existing Facility to provide FCC licensed services. AT&T will install six (6) panel antennas and twelve (12) remote radiohead units (RRH) on new sector frame mounts installed at the centerline height of approximately 83' AGL.

AT&T has confirmed that the Existing Facility is capable of supporting the addition of AT&T's

antennas and tower mounted equipment once the monopole is reinforced as documented in the tower Structural Modification Report annexed hereto as **Attachment 4**, and once replacement mounts are installed as documented in the Mount Replacement Analysis Report annexed hereto as **Attachment 5**.

AT&T's 12'-6" x 20' lease area is located immediately outside the existing fenced compound. AT&T will install a 14'-6" x 21'-6" fence extension with a 4' gate to fully enclose its ground equipment and will therefore expand the footprint of the Existing Facility by 312 sq. ft., an approximately 25% increase.

Within the lease area, AT&T will install a 6' x 6' unmanned walk-in cabinet mounted on a proposed 8'-6" x 8'-6" concrete pad as well as a new 15kW generator on a 4' x 6' pad for emergency back-up power.

IV. The Proposed Modification Will Not Have A Substantial Adverse Environmental Effect

1. Physical Environmental Effects

The installation of AT&T's antennas to the existing monopole, and the installation of radio and electrical equipment within a 312 square foot compound expansion will not involve a significant alteration to the physical and environmental characteristics of the Property. The compound expansion will alter an existing landscaped area adjacent to the Lowes parking lot. No native trees will need to be removed and no on-site or off-site wetlands or watercourses will be impacted by the proposed facility expansion.

2. Visual Effects

Given the height of the existing tower, 120' AGL, and the existing Verizon and Sprint antennas at 120' AGL and 100' AGL respectively, AT&T's proposed antenna installation at a centerline height of approximately 83' AGL would have a minimal visual impact. The proposed compound expansion will be screened by the existing landscaping and will also have a minimal visual impact.

3. FCC Compliance

Radio frequency ("RF") emissions resulting from AT&T's shared use of the Existing Facility will be well below the standards adopted by the Federal Communications Commission ("FCC"). Included in **Attachment 6** is a Radio Frequency Emissions Analysis Report prepared by EBI Consulting. This report confirms that the modified facility will operate well within the RF emission standards established by the FCC.

V. Notice to the City, Property Owner and Abutting Landowners

On November 19, 2021, a copy of this Petition was sent to City of Milford Mayor Benjamin Blake; David Sulkis, Milford's Town Planner; and BVS JAI ALAI LLC, the owner of the Property. A notice of AT&T's intent to file this Petition and a copy of the Petition itself was also sent to the owners of land that may be considered to abut the Property. Included in **Attachment 7** is a sample abutter's letter and the list of those abutting landowners who

were sent notice and a copy of the Petition.

VI. Conclusion

Based on the information provided above, the Petitioners respectfully requests that the Council issue a determination in the form of a declaratory ruling that the installation of a temporary tower at the Property will not have a substantial adverse environmental effect and does not require the issuance of a Certificate of Environmental Compatibility and Public Need pursuant to § 16-50k of the General Statutes.

Respectfully submitted,

Denise Sabo
Northeast Site Solutions
Agent for AT&T
(860) 209-4690
denise@northeastsitesolutions.com

Attachments

Cc: Mayor Benjamin Blake – Elected Official
City of Milford
110 River Street
Milford, CT 06460

David Sulkis – City Planner
City of Milford
Planning & Zoning Office
70 West River Street
Milford, CT 06460

BVS JAI ALAI LLC – Property Owner
1720 Post Road
Fairfield, CT 06824

ATTACHMENT 1

3 Corporate Dr, Suite 101
Clifton Park, NY 12065

Phone: (201) 236-9224
Fax: (724) 416-6112
www.crowncastle.com

Crown Castle Letter of Authorization

CT - CONNECTICUT SITING COUNCIL
Melanie Bachman, Esq.
Executive Director
10 Franklin Square
New Britain, CT 06051

Re: Tower Share Application
Crown Castle telecommunications site at:
311 OLD GATE LANE, MILFORD, CT 06460

GLOBAL SIGNAL ACQUISITIONS II LLC ("Crown Castle") hereby authorizes NEW CINGULAR WIRELESS PCS, LLC ("AT&T MOBILITY"), including their Agent, to act as our Agent in the processing of all zoning applications, building permits and approvals through the CT - CONNECTICUT SITING COUNCIL for the existing wireless communications site described below:

Crown Site ID/Name: 876309/MILFORD JAI-ALAI
Customer Site ID: S2814/S2814
Site Address: 311 Old Gate Lane, Milford, CT 06460

Crown Castle

By: Anne Marie Zsamba Date: 8/23/21
Anne Marie Zsamba
Project Manager – Site Acquisition

ATTACHMENT 2

City of Milford, Connecticut

Founded 1639

PLANNING AND ZONING BOARD
70 West River Street
Milford, Connecticut 06460
Telephone 783-3245

November 7, 1996

Lewis A. Hurwitz, Esq.
Hurwitz & Sagarin, P.C.
147 North Broad Street
P. O. Box 112
Milford, CT 06460

RE: 311 OLD GATE LANE

Dear Atty. Hurwitz:

At its meeting held Wednesday, November 6, 1996, the Planning & Zoning Board moved to grant the petition of Sprint PCS for an amendment to a Special Permit and Site Plan Review for the construction of a 120' monopole PCS antenna, at 311 Old Gate Lane, parcel 13G, block 810, Assessor's map 79, of which Jai Alai Associates is the owner. This approval shall be in accordance with plans prepared by Grenier, Inc., received by the Planning & Zoning Board 10/3/96, entitled Lucent Technologies/Bechtel Alliance SSLP Project - Cover Sheet, Notes and Details and Partial Topographic Survey, Land of Jai Alai Associates Limited Partnership.

The four to five parking spaces to be removed to allow the construction and location of this communications tower will not result in a deficiency of parking spaces. The site includes excess parking spaces over and above the zoning requirement.

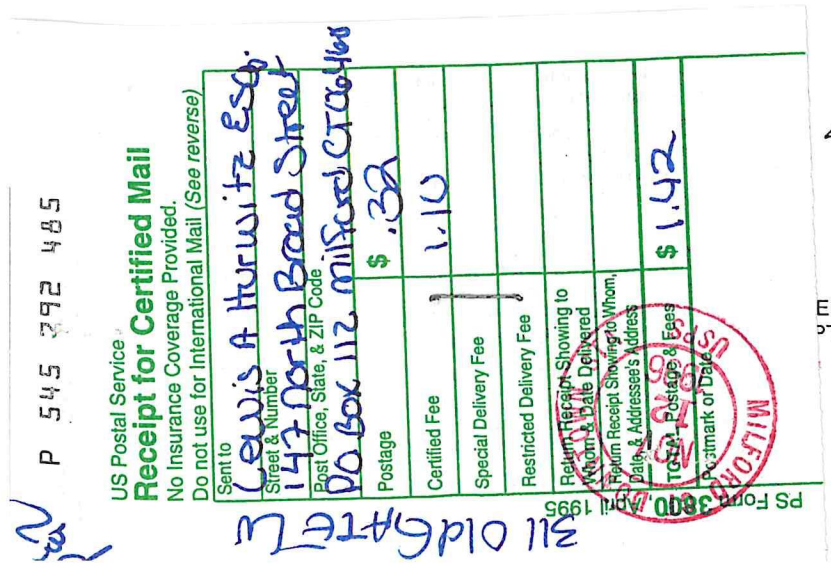
A certificate, which must be filed on the land records in the City Clerk's Office prior to the issuance of a zoning permit, will be retained in this office for your retrieval.

Very truly yours,

Wade E. Pierce

WADE E. PIERCE
Executive Secretary
Planning & Zoning Board

EFORE THE MONDAY FOLLOWING THE TUESDAY MEETING
PTIONS)



City of Milford, Connecticut

THIS IS TO CERTIFY THAT SPRINT PCS

WAS GRANTED A SPECIAL PERMIT AMENDMENT BY THE MILFORD PLANNING & ZONING BOARD ON NOVEMBER 6 , 1996 FOR PROPERTY LOCATED AT

311 OLD GATE LANE

MAP 79 BLOCK 810 PARCEL 13G

IN THE CITY OF MILFORD, COUNTY OF NEW HAVEN, STATE OF CONNECTICUT

FOR WHICH JAI ALAI ASSOCIATES LTD. PARTNERSHIP IS THE OWNER.

THE SPECIAL PERMIT WAS GRANTED TO:

construct a 120' monopole PCS antenna, at 311 Old Gate Lane, parcel 13G, block 810, Assessor's map 79, of which Jai Alai Associates is the owner. This approval shall be in accordance with plans prepared by Grenier, Inc., received by the Planning & Zoning Board 10/3/96, entitled Lucent Technologies/Bechtel Alliance SSLP Project - Cover Sheet, Notes and Details and Partial Topographic Survey, Land of Jai Alai Associates Limited Partnership. The four to five parking spaces to be removed to allow the construction and location of this communications tower will not result in a deficiency of parking spaces. The site includes excess parking spaces over and above the zoning requirement.

"NO VARIANCE, SPECIAL PERMIT OR SPECIAL EXCEPTION GRANTED PURSUANT TO CHAPTER 124 OF ANY SPECIAL ACT SHALL BE EFFECTIVE UNTIL A COPY THEREOF...IS RECORDED IN THE LAND RECORDS OF THE TOWN IN WHICH SUCH PREMISES ARE LOCATED."
P.A. 75-317

RECORDED _____

CITY CLERK REC. NO. _____

PLANNING & ZONING BOARD

BY: _____
WADE E. PIERCE
EXECUTIVE SECRETARY

SPCERT (REV.5/96)

ATTACHMENT 3

AT&T

AT&T SITE NUMBER: CTL02814
AT&T SITE NAME: S2814
AT&T FA CODE: 10546792
AT&T PACE NUMBER: MRCTB048421 MRCTB048819 MRCTB048833 MRCTB048822 MRCTB048828 MRCTB048810
AT&T PROJECT: LTE 1C, LTE 2C, LTE 3C, LTE 4C, LTE 5C, 5G NR 1DR-1

BUSINESS UNIT #: 876309
SITE ADDRESS: 311 OLD GATE LANE MILFORD, CT 06460
COUNTY: NEW HAVEN
SITE TYPE: MONOPOLE
TOWER HEIGHT: 120'-0"

SITE INFORMATION

CROWN CASTLE USA INC. SITE NAME:	MILFORD JAI-ALAI
SITE ADDRESS:	311 OLD GATE LANE MILFORD, CT 06460
COUNTY:	NEW HAVEN
MAP/PARCEL #:	079 810 13 G1
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41.234053°
LONGITUDE:	-73.022889°
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	54' A.M.S.L.
CURRENT ZONING:	ID
JURISDICTION:	CITY OF MILFORD
OCCUPANCY CLASSIFICATION:	U-UNMANNED
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	BVS JAI ALAI LLC 1720 POST RD FAIRFIELD, CT 06824
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:	CONNECTICUT LIGHT & POWER
TELCO PROVIDER:	NOT PROVIDED

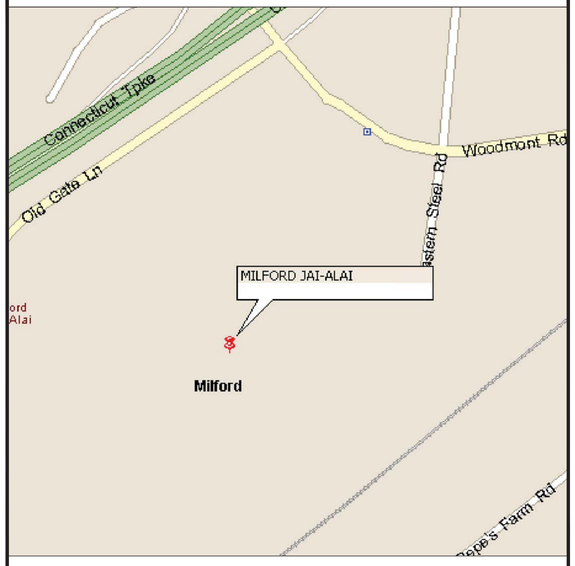
DRAWING INDEX

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1.1	WETLAND MAP
C-1.2	ABUTTERS MAP
C-1.3	SITE PLAN
C-1.4	PROPOSED EQUIPMENT PLAN
C-2	FINAL ELEVATION & ANTENNA PLAN
C-3	FINAL EQUIPMENT SCH. & MOUNTING DETAILS
C-4 - C-5	EQUIPMENT SPECS
C-6 - C-11	CONSTRUCTION DETAILS
E-1	UTILITY PLAN
G-1	GROUNDING PLAN
G-2	GROUNDING DETAILS
ATTACHED	PLUMBING DIAGRAM
ATTACHED	MOUNT SPECS

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.

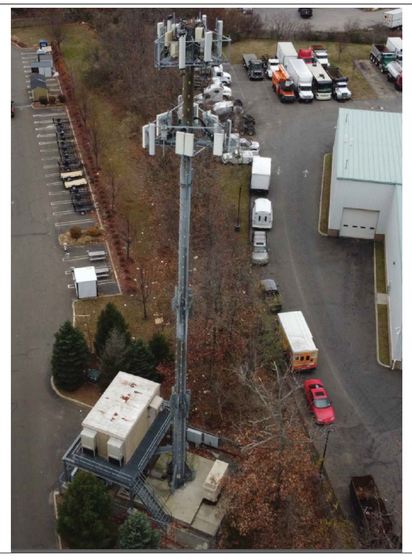
CALL CONNECTICUT ONE CALL
(800) 922-4455 CBYD.COM
CALL 2 WORKING DAYS
BEFORE YOU DIG!

LOCATION MAP



NO SCALE

SITE PHOTO



PROJECT TEAM

A&E FIRM:	B+T GROUP 1717 S BOULDER AVE, SUITE 300 TULSA, OK 74119 MARVIN PHILLIPS marvin.phillips@btgrp.com
CROWN CASTLE USA INC. DISTRICT CONTACTS:	3 CORPORATE PARK DRIVE, SUITE 101 CLIFTON PARK, NY 12065

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

PROJECT DESCRIPTION

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

TOWER SCOPE OF WORK:
- INSTALL SECTOR FRAMES PER MOUNT ANALYSIS BY KIMLEY-HORN AND ASSOCIATES, INC. DATED MAY 27, 2021
- INSTALL (3) CCI ANTENNAS - TPA65R-BU8DA-K ANTENNAS
- INSTALL (3) CCI ANTENNAS - DMP65R-BU8DA-K ANTENNAS
- INSTALL (3) ERICSSON - 4449 B5/B12 RRU
- INSTALL (3) ERICSSON - 4478 B14 RRU
- INSTALL (3) ERICSSON - 4415 B30 RRU
- INSTALL (3) ERICSSON - 8843 B2/B66A RRU
- INSTALL (1) RAYCAP - DC9-48-60-24-8C-EV SQUID
- INSTALL (1) RAYCAP - DC6-48-60-0-8F SQUID
- INSTALL (4) DC POWER CABLES
- INSTALL (1) FIBER CABLE

GROUND SCOPE OF WORK:
- INSTALL AT&T 6'X6' WALK IN CABINET ON 8'-6"X8'-6" CONCRETE PAD
- INSTALL (1) GPS ANTENNA MOUNTED TO PROPOSED W.I.C.
- INSTALL (3) CABLE LADDERS
- INSTALL (1) 200A INTERSECT PTS
- INSTALL (1) AUTOMATIC TRANSFER SWITCH
- INSTALL (1) DC POWER PLANT
- INSTALL (1) ICE BRIDGE
- INSTALL (2) FIF RACKS
- INSTALL (1) 15kW POLAR GENERATOR ON 4'x6' CONCRETE PAD
- INSTALL (1) GENERATOR DISCONNECT
- INSTALL (2) FIBER MANAGEMENT BOXES

APPLICABLE CODES/REFERENCE DOCUMENTS

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

CODE TYPE	CODE
BUILDING	2015 IBC / 2018 CONNECTICUT SBC
MECHANICAL	2015 IMC
ELECTRICAL	2017 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS:	PAUL J. FORD AND COMPANY
DATED:	1/14/21
MOUNT ANALYSIS:	KIMLEY-HORN AND ASSOCIATES, INC.
DATED:	5/27/21
RFDS REVISION:	2
DATED:	11/17/20
ORDER ID:	533279
REVISION:	0

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

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

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

AT&T SITE NUMBER: **CTL02814**

BU #: **876309**
MILFORD JAI-ALAI

311 OLD GATE LANE
MILFORD, CT 06460

EXISTING
120'-0" MONOPOLE W/ 15'-0"
PROPOSED EXTENSION
MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	8/6/21	MTJ	CONSTRUCTION	MTJ
1	8/10/21	JHW	CONSTRUCTION	JHW
2	9/23/21	JHW	CONSTRUCTION	JHW
3	10/7/21	JHW	CONSTRUCTION	JHW

STATE OF CONNECTICUT
GREGORY J. FORD
No. 23024
LICENSED
PROFESSIONAL ENGINEER
10/7/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

SHEET NUMBER: T-1
REVISION: 3

CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

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

GENERAL NOTES:

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

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

ELECTRICAL INSTALLATION NOTES:

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

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

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

APWA UNIFORM COLOR CODE:

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

GREENFIELD GROUNDING NOTES:

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

ABBREVIATIONS:

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

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ATLANTA, GA 30324-3300

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

AT&T SITE NUMBER: **CTL02814**

BU #: **876309**
MILFORD JAI-ALAI

311 OLD GATE LANE
MILFORD, CT 06460

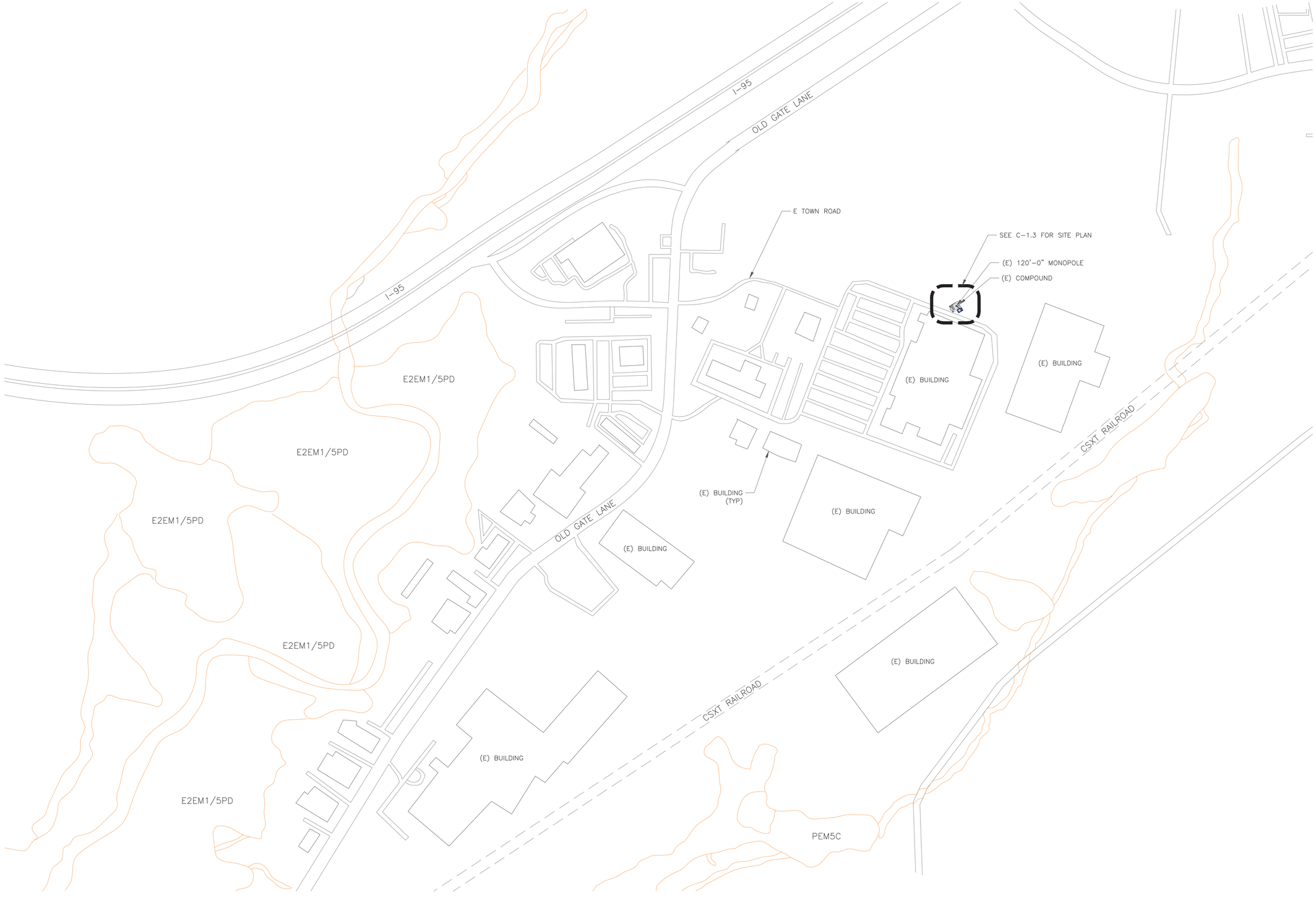
EXISTING
120'-0" MONOPOLE W/ 15'-0"
PROPOSED EXTENSION
MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	8/6/21	MTJ	CONSTRUCTION	MTJ
1	8/10/21	JHW	CONSTRUCTION	JHW
2	9/23/21	JHW	CONSTRUCTION	JHW
3	10/7/21	JHW	CONSTRUCTION	JHW

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

SHEET NUMBER: T-2
REVISION: 3



1 WETLANDS MAP

SCALE: 200' 100' 0 200' 1" = 200'-0" (FULL SIZE) 1" = 400'-0" (11x17)

N

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3	10/7/21	JHW	CONSTRUCTION	JHW

STATE OF CONNECTICUT
GREG T. MAY
No. 23924
LICENSED
PROFESSIONAL ENGINEER
10/7/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

SHEET NUMBER: C-1.1

REVISION: 3

1 ABUTTERS MAP
SCALE: 30' 15' 0 30' 1"=30'-0" (FULL SIZE) 1"=60'-0" (11x17)

N

OLD GATE LN

MAP: 079 / BLOCK 810 / LOT 6 B
401 OLD GATE LN
MILFORD, CT 06460

GABRIELLI REALTY OF MILFORD CT LLC
401 OLD GATE LN
MILFORD, CT 06460

MAP: 079 / BLOCK 810 / LOT 7 A
455 OLD GATE LN
MILFORD, CT 06460

WIEHL ESTATE LLC
497 BIC DR
MILFORD, CT 06460

MAP: 079 / BLOCK 810 / LOT 6 A
365 OLD GATE LN
MILFORD, CT 06460

WIEHL ESTATE LLC
497 BIC DR
MILFORD, CT 06460

MAP: 079 / BLOCK 810 / LOT 5
345 OLD GATE LN
MILFORD, CT 06460

JAMES A & ALBERTA SECONDI 1/2 &
J & J MACY REALTY LLC 1/2
345 OLD GATE LN
MILFORD, CT 06460

MAP: 079 / BLOCK 810 / LOT 13 G
311 OLD GATE LN #UNIT 1
MILFORD, CT 06460

BVS JAI ALAI LLC
1720 POST RD
FAIRFIELD, CT 06824

MAP: 079 / BLOCK 810 / LOT 13 1
311 OLD GATE LN #UNIT 4
MILFORD, CT 06460

BVS JAI ALAI LLC
1720 POST RD
FAIRFIELD, CT 06824

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EXISTING
120'-0" MONOPOLE W/ 15'-0"
PROPOSED EXTENSION
MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	8/6/21	MTJ	CONSTRUCTION	MTJ
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2	9/23/21	JHW	CONSTRUCTION	JHW
3	10/7/21	JHW	CONSTRUCTION	JHW

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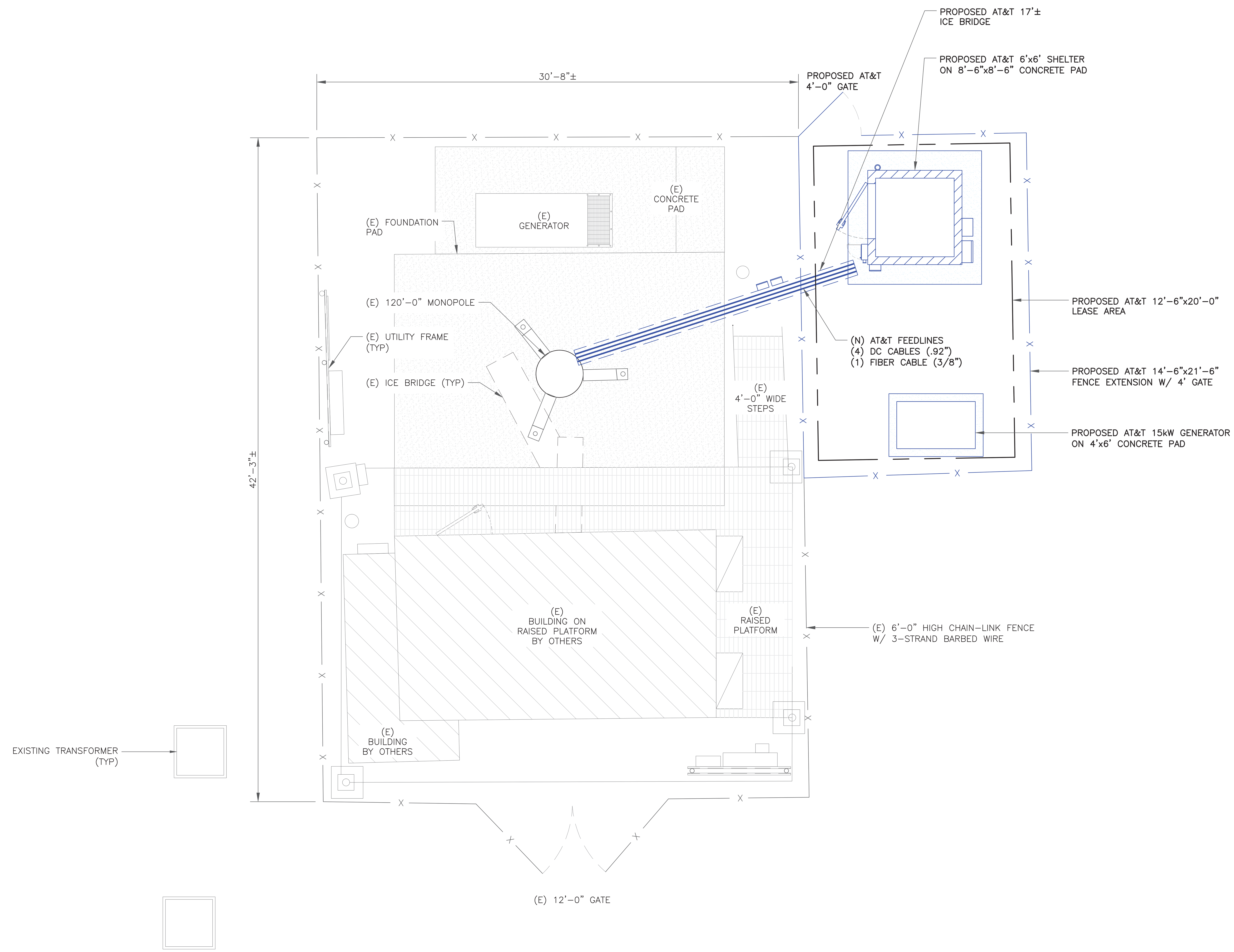
SHEET NUMBER: C-1.2
REVISION: 3



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

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SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

AT&T SITE NUMBER: **CTL02814**

BU #: **876309**
MILFORD JAI-ALAI

311 OLD GATE LANE
MILFORD, CT 06460

EXISTING
120'-0" MONOPOLE W/ 15'-0"
PROPOSED EXTENSION
MONOPOLE

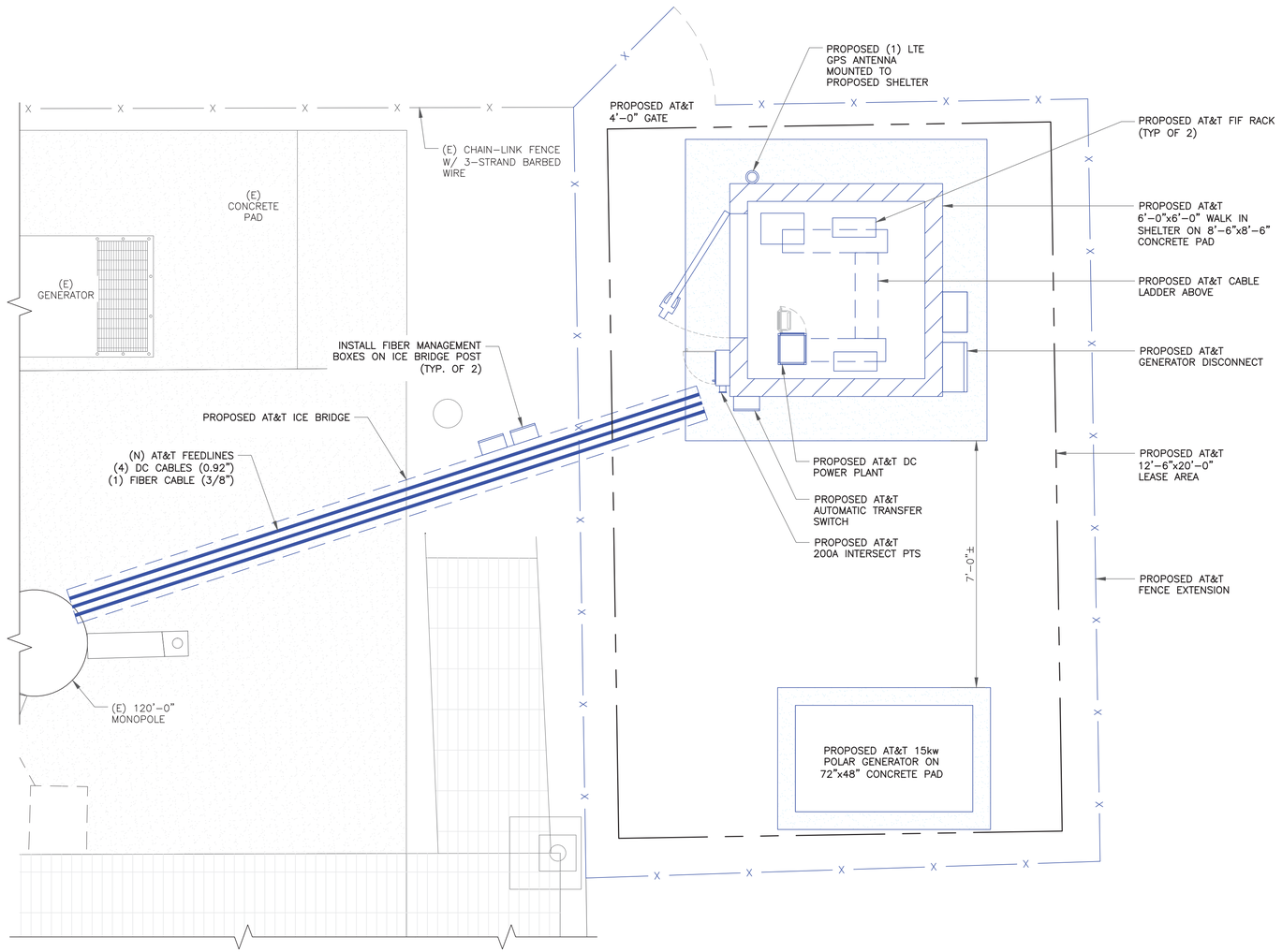
ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	8/6/21	MTJ	CONSTRUCTION	MTJ
1	8/10/21	JHW	CONSTRUCTION	JHW
2	9/23/21	JHW	CONSTRUCTION	JHW
3	10/7/21	JHW	CONSTRUCTION	JHW

STATE OF CONNECTICUT CHAD TUTTLE No. 23924 LICENSED PROFESSIONAL ENGINEER
10/7/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

SHEET NUMBER: C-1.3 **REVISION:** 3



1 PROPOSED EQUIPMENT PLAN

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

N

GROUND SCOPE OF WORK:

- INSTALL (1) 14'-6"x21'-6" FENCE EXTENSION W/ 4' GATE
- INSTALL (1) 8'-6"x8'-6" CONCRETE PAD
- INSTALL (1) 6'-0"x6'-0" SHELTER
- INSTALL (1) 6'-0" H-FRAME
- INSTALL (1) 200A INTERSECT PTS
- INSTALL (1) AUTOMATIC TRANSFER SWITCH
- INSTALL (1) GENERATOR DISCONNECT
- INSTALL (1) DC POWER PLANT
- INSTALL (2) FIF RACKS
- INSTALL (2) 3'-0" CABLE LADDERS
- INSTALL (1) 2'-6" CABLE LADDERS
- INSTALL (1) GPS ANTENNA
- INSTALL (1) 17'-0" ICE BRIDGE
- INSTALL (1) 4'-0"x6'-0" CONCRETE PAD
- INSTALL (1) 15KW POLAR GENERATOR

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.

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

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

B+T GRP
1717 S. BOULDER
SUITE 300
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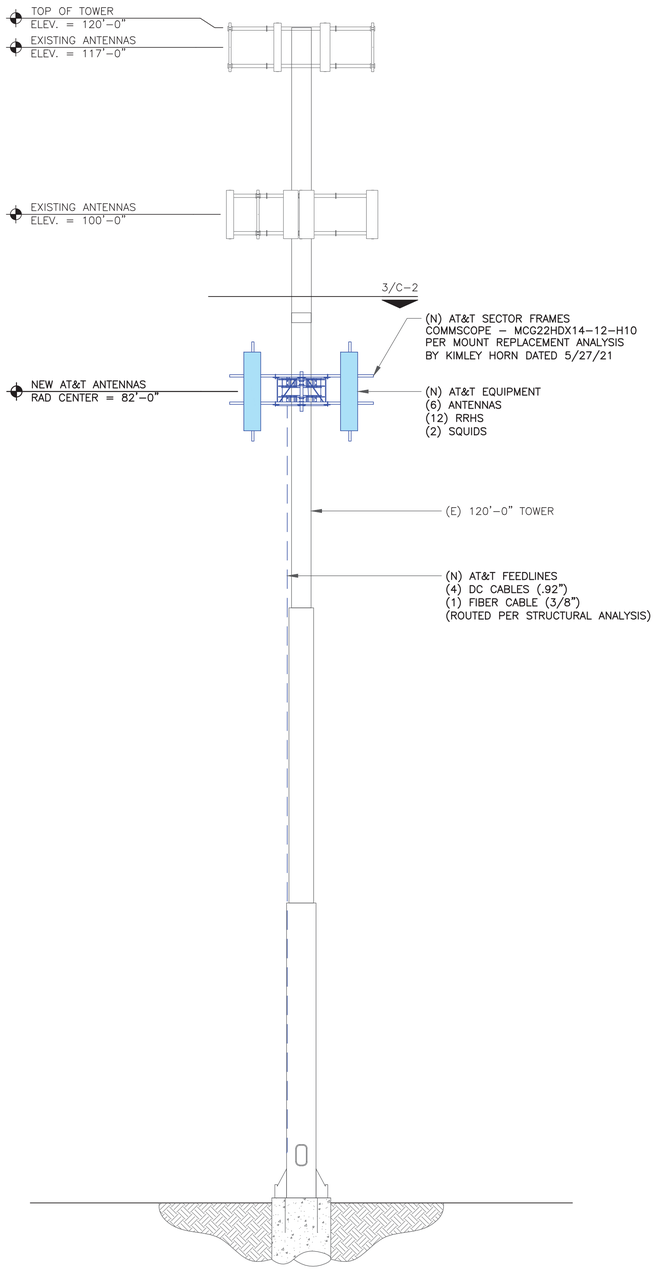
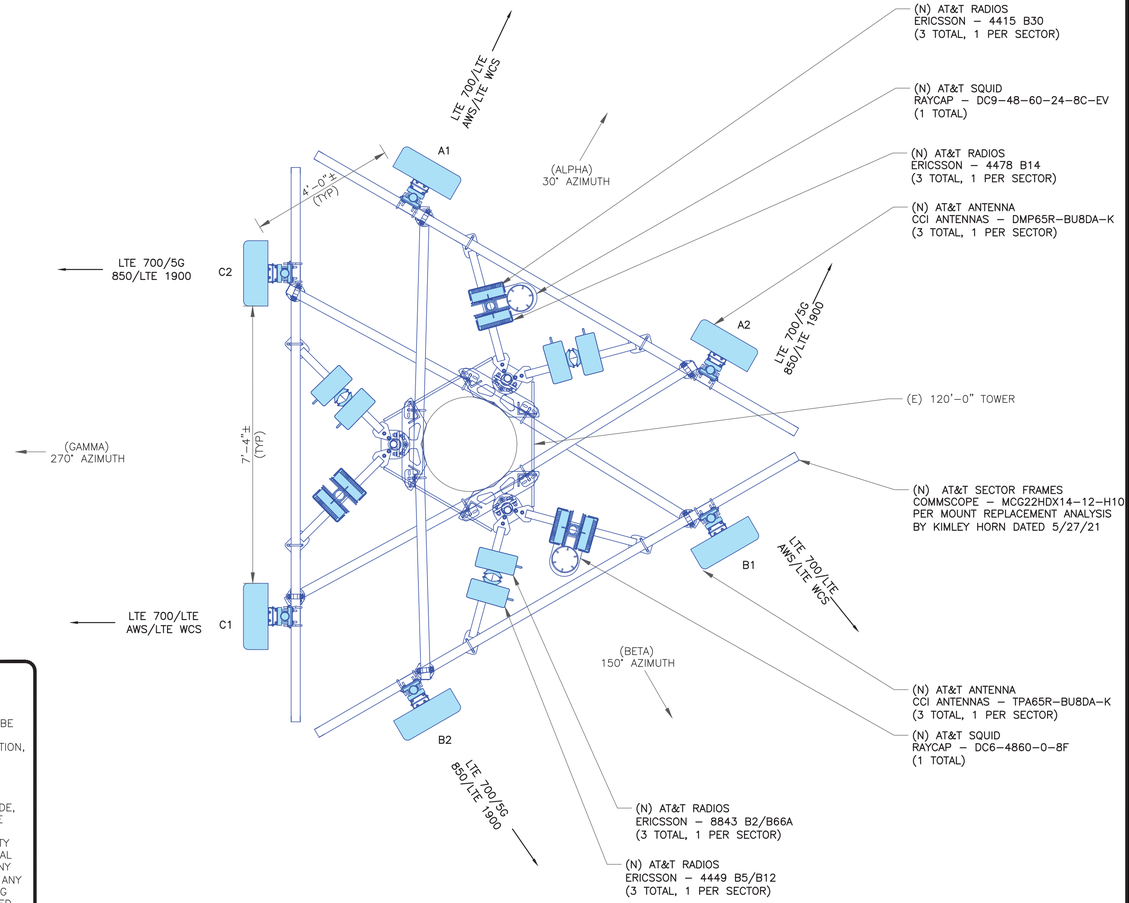
SHEET NUMBER: C-1.4

REVISION: 3



1 FINAL ELEVATION
SCALE: NOT TO SCALE



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

N

"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.

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B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

SHEET NUMBER: C-2

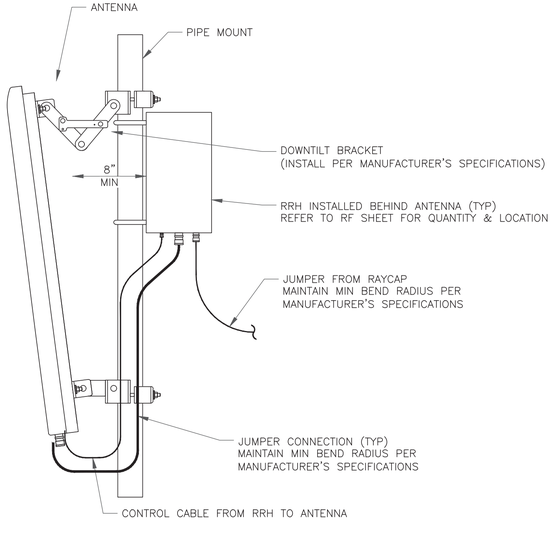
REVISION: 3

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																		
A1	LTE 700/LTE AWS/LTE WCS	NEW	30°	CCI ANTENNAS – TPA65R–BU8DA–K	82'–0"	0°	2°/2°/2°	–	–	–	–	DC6–4860–0–8F	(2) .92" DC LINES (SHARED)	(1) 4478 B14 (1) 4415 B30	TOWER	N	N	N
A2	LTE 700/5G 850/LTE 1900	NEW	30°	CCI ANTENNAS – DMP65R–BU8DA–K	82'–0"	0°	2°/2°/2°	–	–	–	–			(1) 4449 B5/B12 (1) 8843 B2/B66A	TOWER	N	N	N
BETA SECTOR																		
B1	LTE 700/LTE AWS/LTE WCS	NEW	150°	CCI ANTENNAS – TPA65R–BU8DA–K	82'–0"	0°	2°/2°/2°	–	–	–	–	DC9–48–60–24–8C–EV	(2) .92" DC LINES (SHARED) (1) 3/8" FIBER	(1) 4478 B14 (1) 4415 B30	TOWER	N	N	N
B2	LTE 700/5G 850/LTE 1900	NEW	150°	CCI ANTENNAS – DMP65R–BU8DA–K	82'–0"	0°	2°/2°/2°	–	–	–	–			(1) 4449 B5/B12 (1) 8843 B2/B66A	TOWER	N	N	N
GAMMA SECTOR																		
C1	LTE 700/LTE AWS/LTE WCS	NEW	270°	CCI ANTENNAS – TPA65R–BU8DA–K	82'–0"	0°	2°/2°/2°	–	–	–	–	–	–	(1) 4478 B14 (1) 4415 B30	TOWER	N	N	N
C2	LTE 700/5G 850/LTE 1900	NEW	270°	CCI ANTENNAS – DMP65R–BU8DA–K	82'–0"	0°	2°/2°/2°	–	–	–	–			(1) 4449 B5/B12 (1) 8843 B2/B66A	TOWER	N	N	N

NOTE: BOLD DENOTES NEW EQUIPMENT

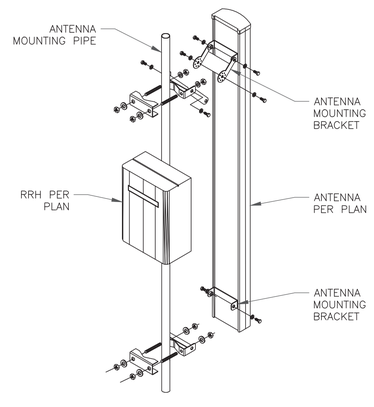
1 ANTENNA & FEEDLINE SCHEDULE
SCALE: NOT TO SCALE



2 GENERIC ANTENNA MOUNTING ELEVATION
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.



3 ANTENNA WITH RRH MOUNTING DETAIL
SCALE: NOT TO SCALE

INSTALLER NOTES:

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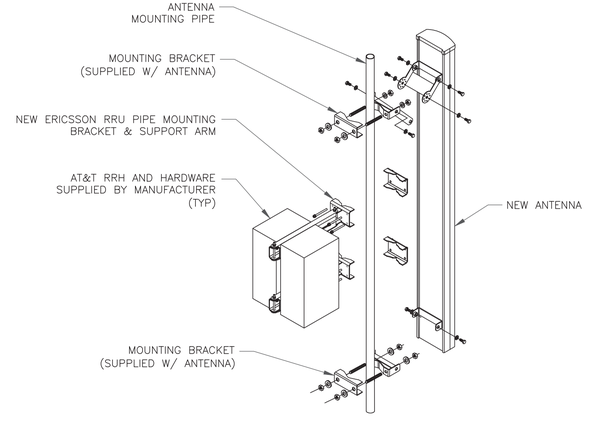

4 ANTENNA WITH DUAL RRH MOUNTING DETAIL
SCALE: NOT TO SCALE

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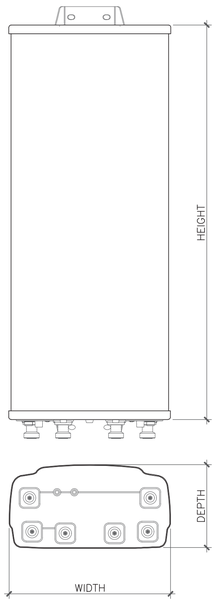
STATE OF CONNECTICUT
GREG MAKE
No. 23924
LICENSED
PROFESSIONAL ENGINEER
10/7/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

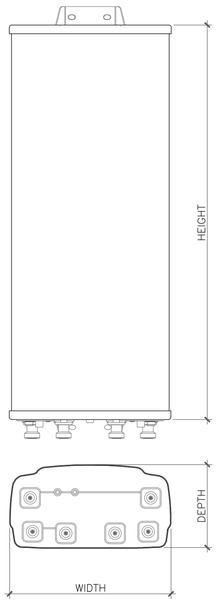
SHEET NUMBER: C-3

REVISION: 3



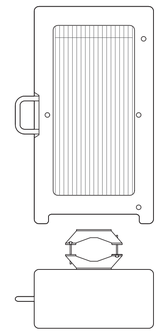
ANTENNA DIMENSIONS (INCHES)				
MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
TPA65R-BU8DA-K	96"	21.0"	7.8"	87.50 lbs

1 ANTENNA DETAIL
SCALE: NOT TO SCALE



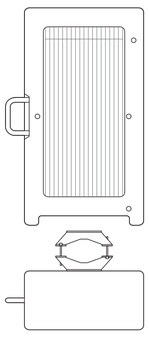
ANTENNA DIMENSIONS (INCHES)				
MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
DMP65R-BU8DA-K	96"	20.70"	7.7"	105.6 lbs

2 ANTENNA DETAIL
SCALE: NOT TO SCALE



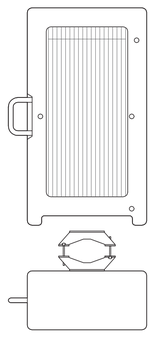
ERICSSON - RRUS 4478B14
WEIGHT (FULLY EQUIPPED): 59.40 LBS
SIZE (HxWxD): 18.10x13.40x8.26 IN.
CONNECTOR TYPE: 4.3-10 FEMALE (4 TOTAL PORTS)

3 ERICSSON - RRUS 4478B14
SCALE: NOT TO SCALE



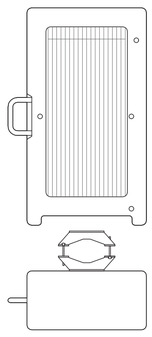
ERICSSON - RRUS 4415 B30
WEIGHT (FULLY EQUIPPED): 47.40 LBS
SIZE (HxWxD): 16.50x13.40x5.90 IN.
CONNECTOR TYPE: 4.3-10 FEMALE (4 TOTAL PORTS)

4 ERICSSON - RRUS 4415 B30
SCALE: NOT TO SCALE



ERICSSON - RRUS 4449 B5/B12
WEIGHT (FULLY EQUIPPED): 71.0 LBS
SIZE (HxWxD): 17.90x13.19x9.44 IN.
CONNECTOR TYPE: 4.3-10 FEMALE (4 TOTAL PORTS)

5 ERICSSON - RRUS 4449 B5/B12
SCALE: NOT TO SCALE



ERICSSON - RRUS 8843 B2/B66A
WEIGHT (FULLY EQUIPPED): 72.0 LBS
SIZE (HxWxD): 14.90x13.20x10.90 IN.
CONNECTOR TYPE: 4.3-10 FEMALE (4 TOTAL PORTS)

6 ERICSSON - RRUS 8843 B2/B66A
SCALE: NOT TO SCALE

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SHEET NUMBER: C-4

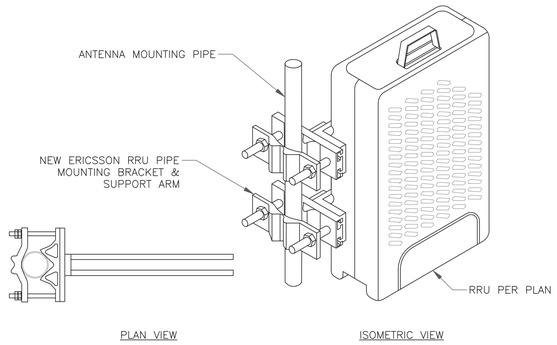
REVISION: 3

ERICSSON RRU MOUNTING KIT:

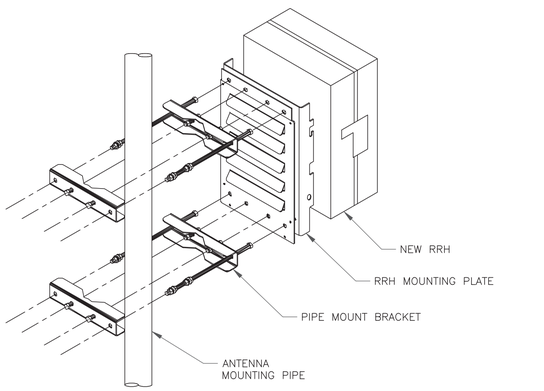
SXK 107 2839/1: SINGLE RRU SUPPORT KIT (PART # 5335) (OR ENGINEER APPROVED EQUIVALENT)
SXK 107 2839/2: EXPANSION KIT (PART # 5336) (OR ENGINEER APPROVED EQUIVALENT)

MOUNTING NOTES:

REFER TO PRODUCT SPECS FOR BOLT SIZE & PIPE DIAMETER TOLERANCES. THE PART NO. SXK107-2839/2 IS REQUIRED FOR (2) RRUS.



1 ERICSSON – SXK 107 2839
SCALE: NOT TO SCALE



NOTE:

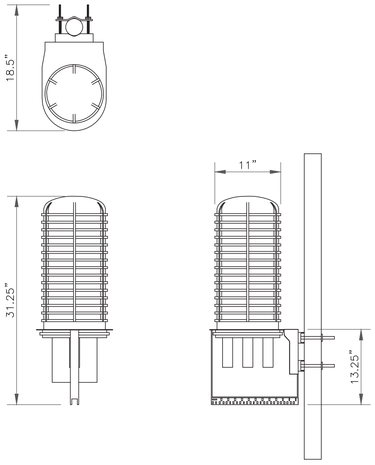
ANTENNA NOT SHOWN FOR CLARITY

2 SINGLE RRH MOUNTING DETAIL
SCALE: NOT TO SCALE

RAYCAP
DC6-48-60-0-8F

RAYCAP – DC6-48-60-0-8F
SIZE: 11x31.25 IN.
WEIGHT: 32.8 LBS
NOMINAL OPERATING VOLTAGE: 48 VDC
VOLTAGE PROTECTION RATING: 400 V
WIND LOADING: 150 MPH SUSTAINED (105.7 LBS)
WIND LOADING: 195 MPH GUST (213.6 LBS)

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



NOTES:

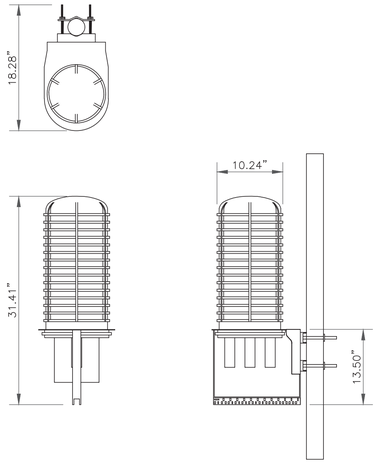
1. REMOVE CABLE SEALING GLAND AND INSTALL M32x1.5 METRIC-TO-1" NPT ADAPTER (COOPER CROUSE-HINES P/N CAP 740 994 OR EQUIVALENT MFR) WHEN CONNECTING CONDUIT TO OVP.

3 SQUID 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)

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



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4 SQUID MOUNTING DETAIL
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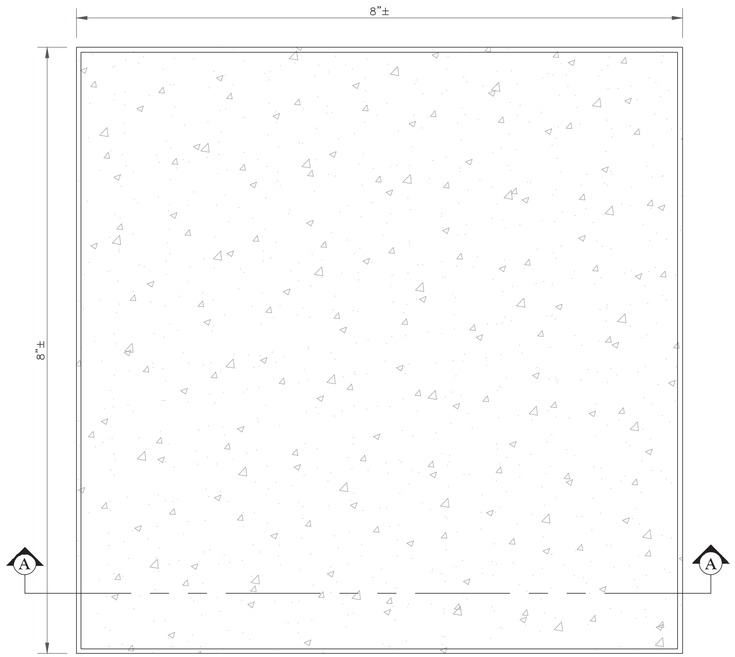
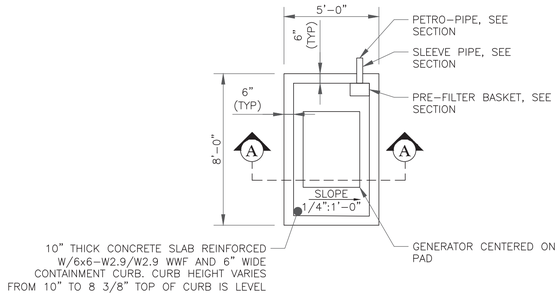
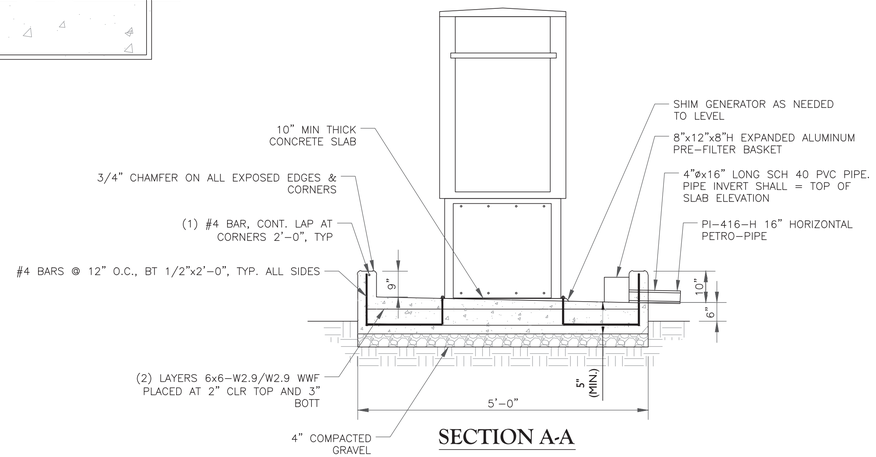


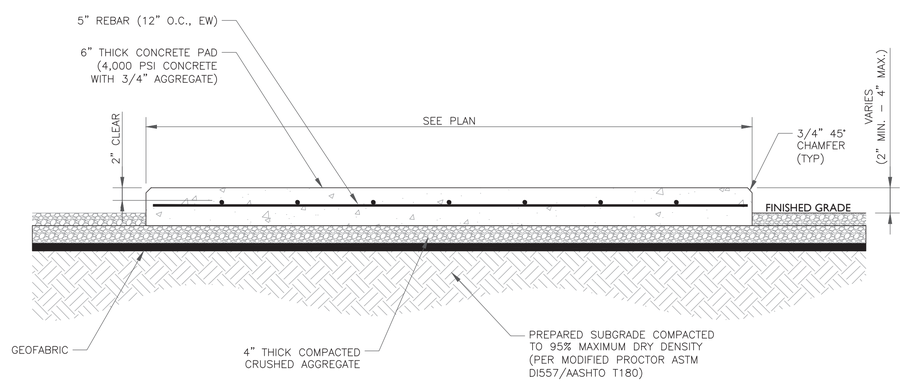
1 EQUIPMENT
SCALE: NOT TO SCALE



2 GENERATOR FOUNDATION SLAB
SCALE: NOT TO SCALE



SECTION A-A



NOTE:

ANCHORS ARE TO BE INSTALLED A MINIMUM OF 4" FROM THE EDGE OF ANY SLAB.

SECTION A-A

FLUID CAPACITY CALCULATIONS:

CAPACITY REQUIRED:
- ENGINE OIL – 2.1 GAL
- ENGINE COOLANT – 3.0 GAL
- DIESEL FUEL – 92.0 GAL
- TOTAL – 97.1 GAL

CAPACITY VOLUME:
{[(7'-0"x4'-0")x(10"+9")] – [(4'-0"x3'-0")x(1/8"+9 7/8")] – (8"x8"x12")}x(1 CF/1728 CI) = 17.76 CF

17.76 CF = 17.76 CF x 7.48 GAL/CF = 132.87 GAL

RESERVE CAPACITY:
132.87 GAL – 97.1 GAL = 35.77 GAL

35.77 GAL = 35.77 GAL x 1 CF / 7.48 GAL = 4.78 CF

HEIGHT = 4.78 CF / [(7'-0"x5'-0")-(4'-0"x3'-0")]
= 2.5" RESERVE HEIGHT

CONCRETE NOTES:

DESIGN INFORMATION:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336A, ASTM A184, ASTM A185, AND THE DESIGN & CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
2. THE DESIGN SHALL CONFORM TO THE INTERNATIONAL BUILDING CODE AS SHOWN ON SHEET T-1.

EARTHWORK:

1. FOUNDATIONS HAVE BEEN DESIGNED TO BEAR ON (UNDISTURBED RESIDUAL SOILS/COMPACTED STRUCTURAL FILL), CAPABLE OF SAFELY SUPPORTING AN ALLOWABLE BEARING PRESSURE OF 1,500 PSF. IF FOUNDATION CONDITIONS PROVE UNACCEPTABLE AT ELEVATIONS SHOWN, EXCAVATION SHALL BE CARRIED DEEPER AND SHALL BE BACKFILLED WITH LEAN CONCRETE TO PLAN FOOTING BOTTOM, OR REDESIGN OF FOUNDATIONS WILL BE REQUIRED AT THE DIRECTION OF THE ENGINEER.
2. DESIGN, FURNISH, AND INSTALL TEMPORARY SHEETING, SHORING, AND DRAINAGE TO MAINTAIN THE EXCAVATION AND PROTECT SURROUNDING STRUCTURES AND UTILITIES.
3. THOROUGHLY COMPACT ALL BOTTOM OF FOOTINGS PRIOR TO PLACING ANY CONCRETE.

CONCRETE:

1. FORMWORK

1.1. CONCRETE CONSTRUCTION SHALL CONFORM TO "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS." (ACI 301-89).

1.2. FORMWORK SHALL CONFORM TO ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS."

2. REINFORCEMENT

2.1. REINFORCING STEEL ASTM A615, GRADE 60. WELDED WIRE ASTM A185 (FLAT SHEET). LAPS 40 BAR DIAMETERS UNLESS NOTED. BARS SHALL BE SECURELY HELD IN ACCURATE POSITION BY SUITABLE ACCESSORIES, TIE BARS, SUPPORT BARS, ETC. HOOK LENGTHS SHALL BE 12 BAR DIAMETERS.

2.2. CONCRETE COVER FOR REINFORCING BARS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED.

2.2.1.	FOOTINGS AND SLABS CAST AGAINST GROUND	3"
2.2.2.	CONCRETE TO BE IN CONTACT WITH GROUND OR WEATHER AT BARS GREATER THAN 5"	2"
2.2.3.	AT BARS #5 OR LESS	1 1/2"
2.2.4.	CONCRETE NOT TO BE EXPOSED TO GROUND OR WEATHER BEAMS, GIRDERS, AND COLUMNS	1 1/2"
2.2.5.	SLABS AND WALLS	3/4"

2.3. CAST IN PLACE CONCRETE

2.3.1. MINIMUM 28 DAY CYLINDER STRENGTH AND MAXIMUM SLUMP, PRIOR TO ADDITION OF SUPER PLASTICIZERS, AS FOLLOWS:

2.3.1.1.	CLASS I FOOTINGS	3000 PSI	3"
2.3.1.2.	CLASS III INTERIOR ELEVATED SLABS AND WALLS	4000 PSI	4"
2.3.1.3.	CLASS V OTHER WORK	4000 PSI	4"
2.3.1.4.	CLASS VI LEAN CONCRETE FOR OVEREXCAVATION OF FOUNDATIONS	2000 PSI	N/A

2.3.2. MIX DESIGN TO BE IN ACCORDANCE WITH ACI 318, CHAPTER 5, NO CALCIUM CHLORIDE ADMIXTURE CONTAINING CHLORIDES SHALL BE USED IN ANY CONCRETE

2.3.3. COARSE AGGREGATE FOR NORMAL WEIGHT CONCRETE SHALL CONFORM TO ASTM C33 SIZE #57. COARSE AGGREGATE FOR LIGHTWEIGHT CONCRETE SHALL CONFORM TO ASTM C330 GRADED 3/4" TO 1/4".

2.3.4. COLD WEATHER PLACEMENT SHALL COMPLY WITH ACI 306.I

2.3.5. HOT WEATHER PLACEMENT SHALL COMPLY WITH ACI 305 R.

2.3.6. CHAMFER ALL EXPOSED EDGES 3/4"

2.3.7. THE MAXIMUM TEMPERATURE OF ALL CONCRETE AT DELIVERY TO THE SITE SHALL BE 85°F

2.3.8. TOTAL DELIVERY TIME SHALL BE LESS THAN 75 MINUTES.

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1717 S. BOULDER
SUITE 300
TULSA, OK 74119
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AT&T SITE NUMBER: **CTL02814**

BU #: **876309**
MILFORD JAI-ALAI

311 OLD GATE LANE
MILFORD, CT 06460

EXISTING
120'-0" MONOPOLE W/ 15'-0"
PROPOSED EXTENSION
MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	8/6/21	MTJ	CONSTRUCTION	MTJ
1	8/10/21	JHW	CONSTRUCTION	JHW
2	9/23/21	JHW	CONSTRUCTION	JHW
3	10/7/21	JHW	CONSTRUCTION	JHW

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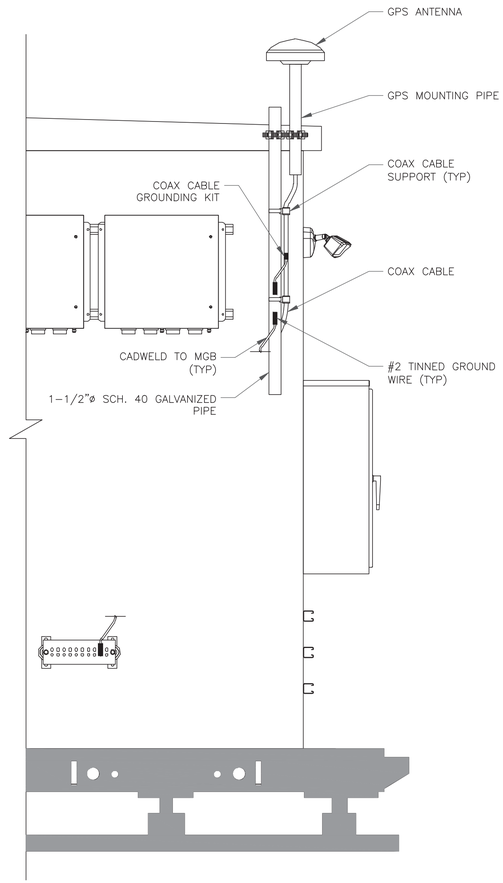
SHEET NUMBER: C-6

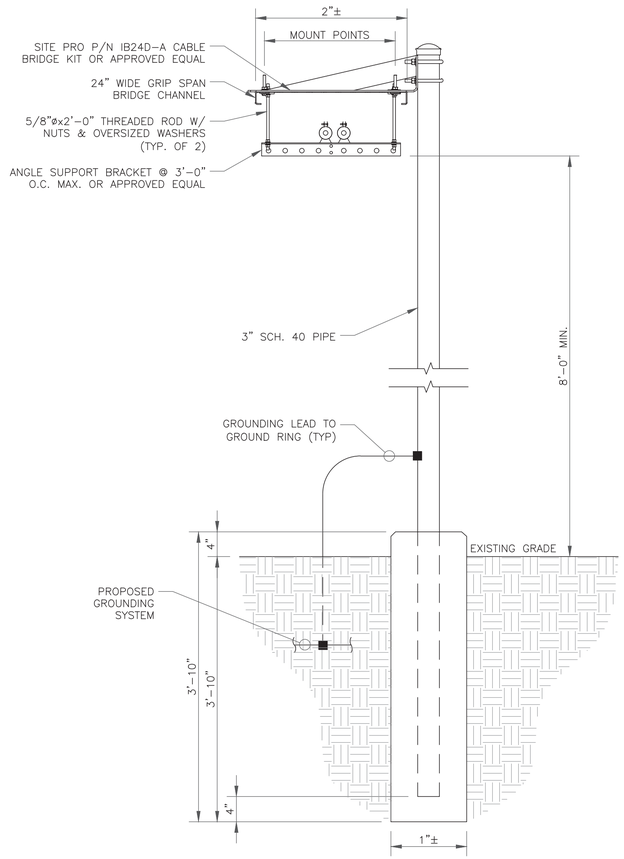
REVISION: 3



1 GPS MOUNTING DETAIL
SCALE: NOT TO SCALE

NOTES:

1. WHEN USING COMPONENTS AS SHOWN IN STANDARD DETAILS, MAXIMUM ALLOWABLE SPAN BETWEEN SUPPORTS ON A CONTINUOUS SINGLE SECTION OF BRIDGE CHANNEL SHALL BE 6 FEET.
2. WHEN USING COMPONENTS FOR SPLICING BRIDGE CHANNEL SECTIONS, THE SPLICE SHOULD BE PROVIDED AT THE SUPPORT, IF POSSIBLE, OR AT A MAXIMUM OF 2 FEET FROM THE SUPPORT.
3. WHEN USING COMPONENTS, SUPPORT SHOULD BE PROVIDED AS CLOSE AS POSSIBLE TO THE ENDS OF ICE BRIDGES, WITH A MAXIMUM CANTILEVER DISTANCE OF 2 FEET FROM THE SUPPORT TO THE FREE END OF THE ICE BRIDGE.
4. CUT BRIDGE CHANNEL SECTIONS SHALL HAVE RAW EDGES TREATED WITH A MATERIAL TO RESTORE THESE EDGES TO THE ORIGINAL CHANNEL, OR EQUIVALENT, FINISH.
5. ICE BRIDGES MAY BE CONSTRUCTED WITH COMPONENTS FROM OTHER MANUFACTURERS, PROVIDED THE MANUFACTURER'S INSTALLATION GUIDELINES ARE FOLLOWED.
6. DEVIATIONS FROM STANDARDS FOR COMPONENT INSTALLATIONS ARE PERMITTED WITH THE RESPECTIVE MANUFACTURER'S APPROVAL.
7. DEVIATIONS FROM ICE BRIDGE FOUNDATIONS REQUIRE ENGINEERING APPROVAL.
8. THE DESIGN IS BASED ON ASCE 7-05, 3 SECOND GUST WIND SPEED OF 90 MPH, EXPOSURE C, ELEVATION AT GRADE.
9. THIS DESIGN IS BASED ON 24" WIDE ICE BRIDGE, 3" STD PIPE, AND (12) 1 5/8" DIA. COAX CABLES IN 3 ROWS OF 4 AND POST SUPPORT SPACING OF 7'-0".
10. HEIGHT OF POST SHALL BE 10'-6" MAX. ABOVE GROUND LEVEL.



2 CABLE BRIDGE DETAIL
SCALE: NOT TO SCALE

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AT&T SITE NUMBER: **CTL02814**

BU #: **876309**
MILFORD JAI-ALAI

311 OLD GATE LANE
MILFORD, CT 06460

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MONOPOLE

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1	8/10/21	JHW	CONSTRUCTION	JHW
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3	10/7/21	JHW	CONSTRUCTION	JHW

STATE OF CONNECTICUT
JACKIE H. WEETER
No. 23924
LICENSED
PROFESSIONAL ENGINEER
10/7/21

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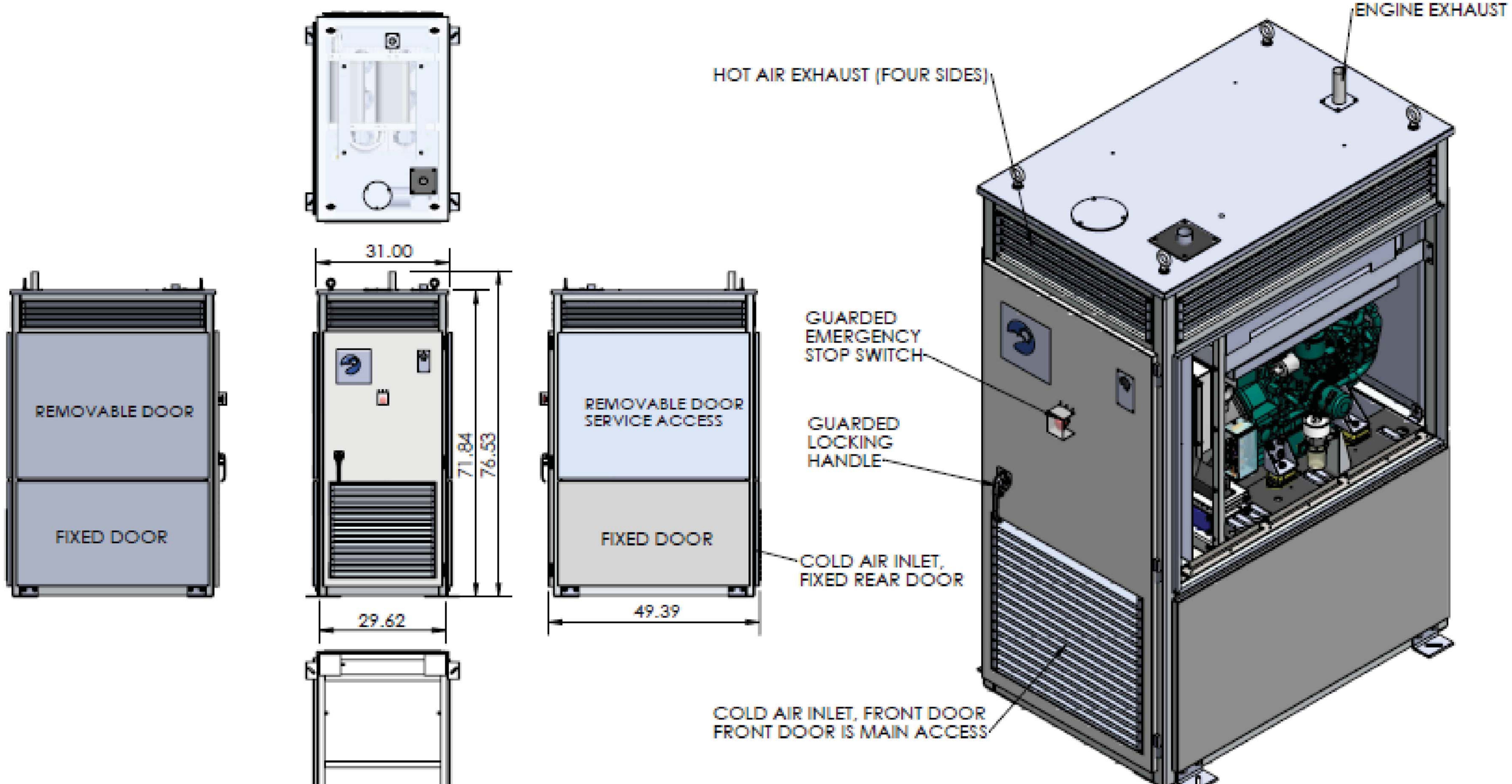
SHEET NUMBER: C-7

REVISION: 3



REV	DESCRIPTION	ECO#	BY	DATE
	INITIAL RELEASE	–		

COMMENTS:

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NEXT ASSY | USED ON | APPLICATION

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ±1/32" DECIMALS X.XX ±.1" X.XXX ±.01" X.XXXX ±.010" ANGLES ±1/2°
MATERIAL
FINISH
DO NOT SCALE DRAWING

CAD GENERATED DRAWING
DO NOT MANUALLY UPDATE

APPROVALS	DATE
DRAWN	1/22/2015
CHECKED	
ENG APPR.	
MFG APPR.	
Q.A.	

POLAR POWER INC.
249 E GARDENA AVE, GARDENA CA. 90248

TITLE: ALUMINUM VERTICAL ENCLOSURE, 72 IN

SIZE: B | DWG. NO. 88-25-0603 | REV A-1

SCALE: 1:24 | WEIGHT: | SHEET 1 OF 4

1 GENERATOR DETAIL
SCALE: NOT TO SCALE

AT&T
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SUITE 300
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AT&T SITE NUMBER: **CTL02814**

BU #: **876309**
MILFORD JAI-ALAI

311 OLD GATE LANE
MILFORD, CT 06460

EXISTING
120'-0" MONOPOLE W/ 15'-0"
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MONOPOLE

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STATE OF CONNECTICUT — CHAD TUTTLE — No. 23924 — LICENSED PROFESSIONAL ENGINEER
10/7/21

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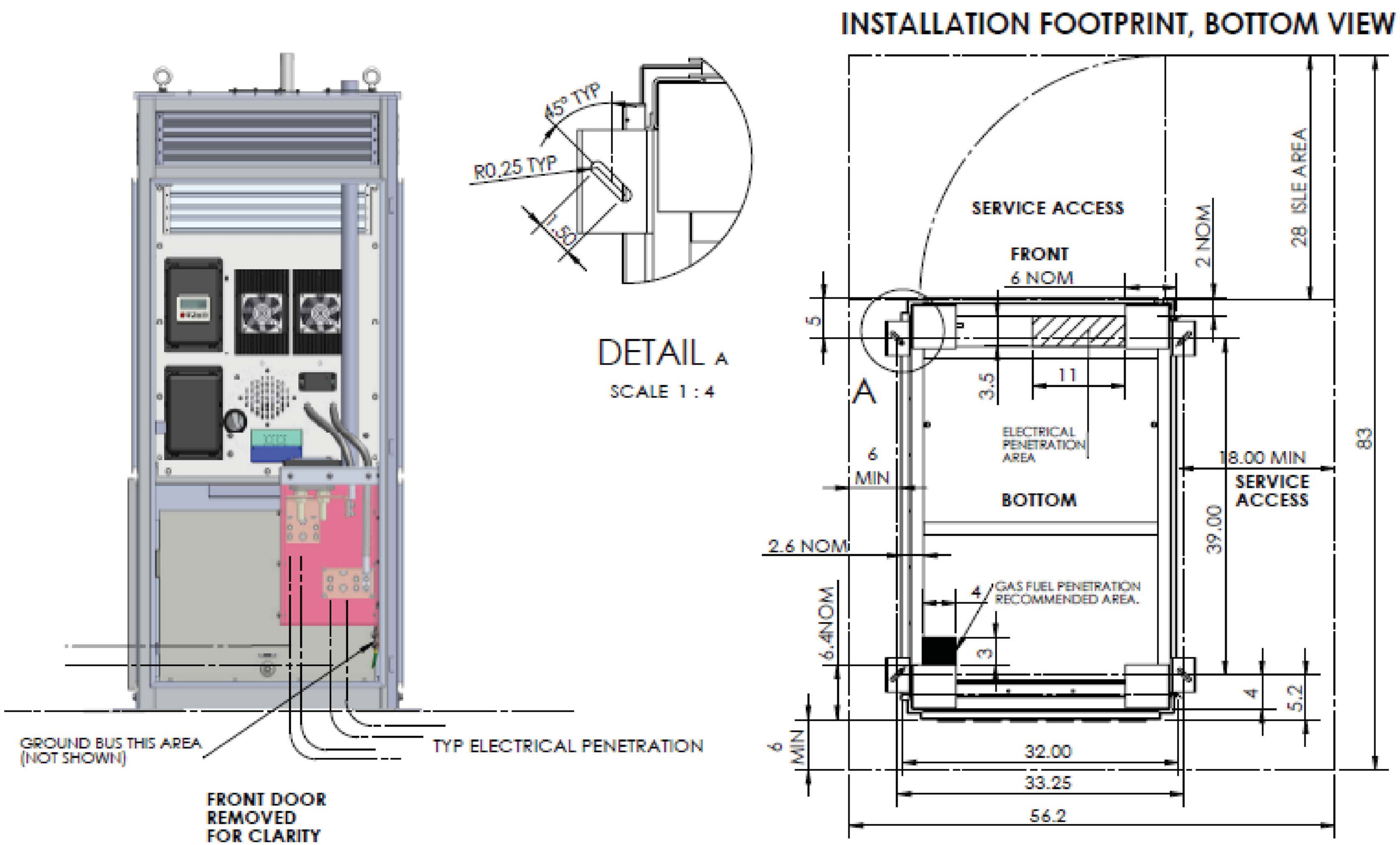
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER:	REVISION:
C-8	3



REV	DESCRIPTION	ECO#	BY	DATE
	INITIAL RELEASE	--		

COMMENTS:

PROPRIETARY AND CONFIDENTIAL

NEXT ASSY | USED ON
APPLICATION

UNLESS OTHERWISE SPECIFIED:
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TOLERANCES ARE:
FRACTIONS ±1/32" DECIMALS X.X±0.1" X.XX±0.03" X.XXX±0.010" ANGLES ±1/2°
MATERIAL
FINISH
DO NOT SCALE DRAWING

CAD GENERATED DRAWING DO NOT MANUALLY UPDATE

APPROVALS	DATE
DRAWN GERSON	1/22/2015
CHECKED	
ENG APPR.	
MFG APPR.	
Q.A.	

POLAR POWER INC.
249 E GARDENA AVE, GARDENA CA. 90248

TITLE: ALUMINUM VERTICAL ENCLOSURE, 72 IN

SIZE B | DWG. NO. 88-25-0603 | REV A-1
SCALE: 1:24 | WEIGHT: | SHEET 2 OF 4

1 GENERATOR DETAIL
SCALE: NOT TO SCALE

AT&T
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BU #: **876309**
MILFORD JAI-ALAI

311 OLD GATE LANE
MILFORD, CT 06460

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STATE OF CONNECTICUT CHAD TUTTLE No. 23924 LICENSED PROFESSIONAL ENGINEER
10/7/21

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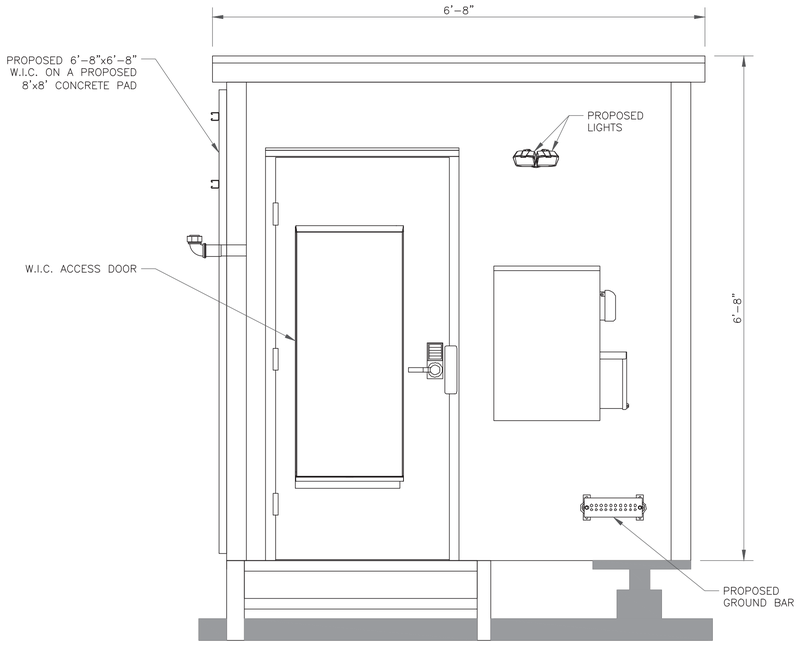
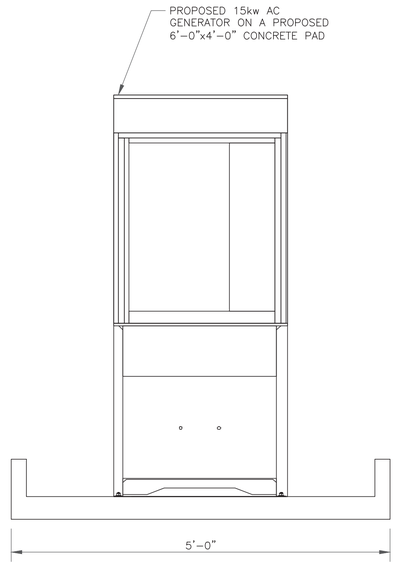
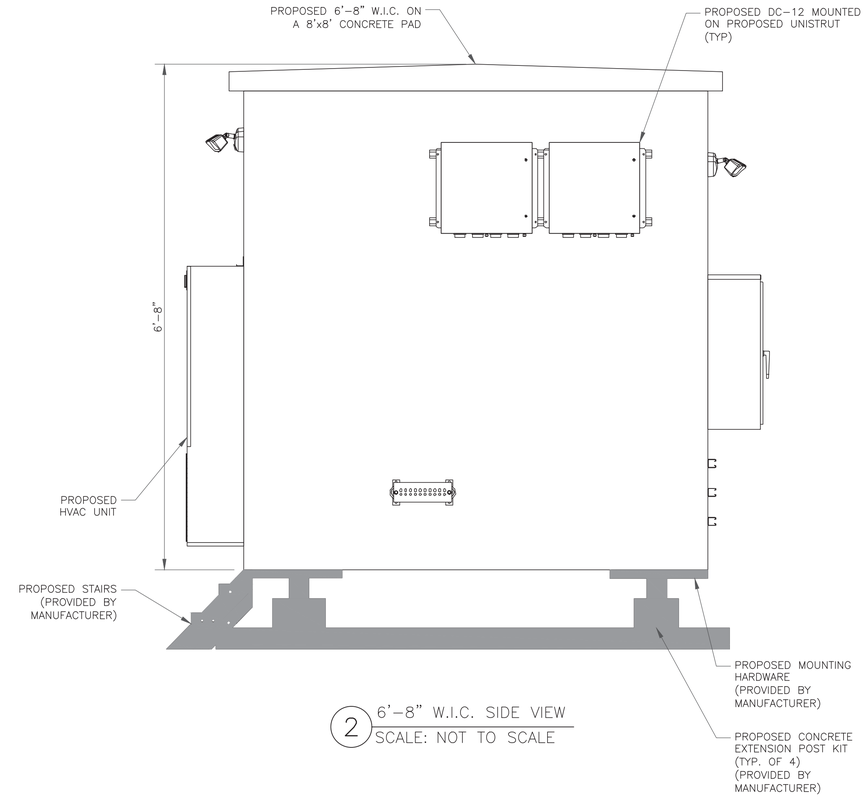
SHEET NUMBER: C-9 | REVISION: 3





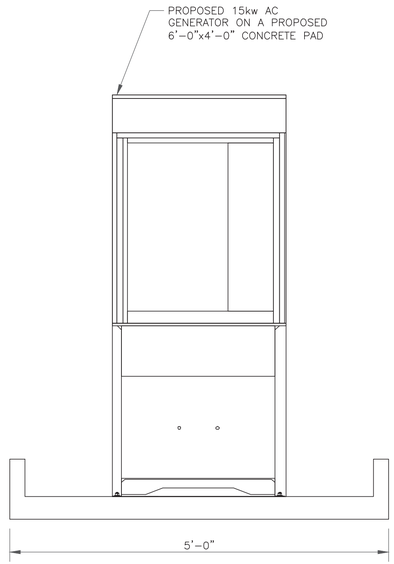
1 6'-8" W.I.C. AND GENERATOR FRONT VIEW
SCALE: NOT TO SCALE

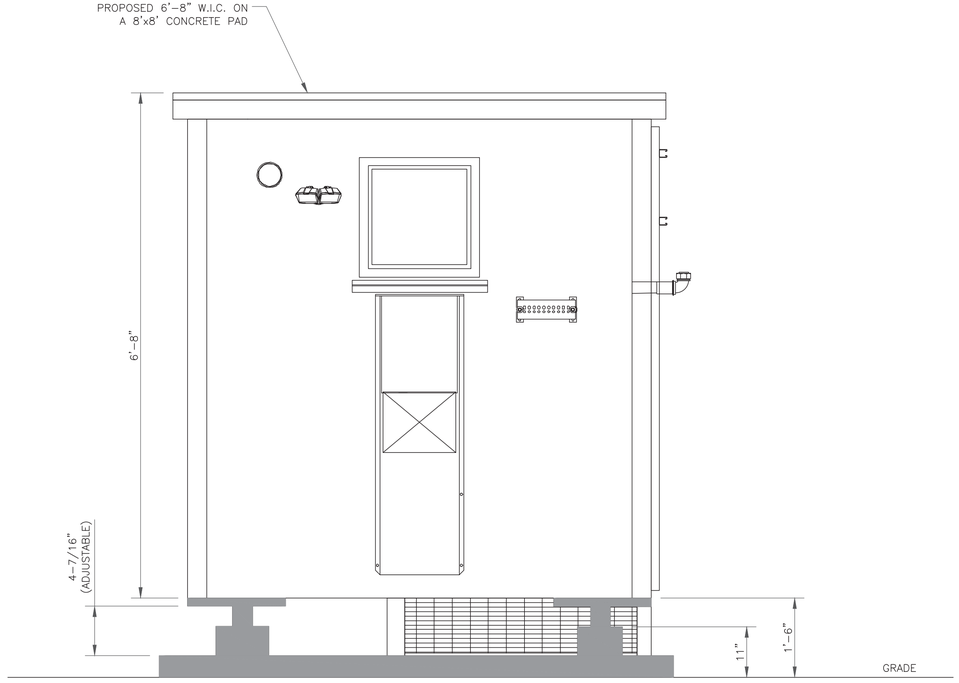


2 6'-8" W.I.C. SIDE VIEW
SCALE: NOT TO SCALE

NOTES:

1. CONTRACTOR SHALL USE MANUFACTURER RECOMMENDED HARDWARE.
2. CONTRACTOR SHALL USE 5/8" HILTI TZ ANCHOR BOLTS W/ 4-7/16" EMBEDMENT (TYP. OF 4)





3 6'-8" W.I.C. AND GENERATOR REAR VIEW
SCALE: NOT TO SCALE

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AT&T SITE NUMBER: **CTL02814**

BU #: **876309**
MILFORD JAI-ALAI

311 OLD GATE LANE
MILFORD, CT 06460

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MONOPOLE

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STATE OF CONNECTICUT
CHRISTOPHER J. GUDE
No. 23924
LICENSED
PROFESSIONAL ENGINEER
10/7/21

B&T ENGINEERING, INC.
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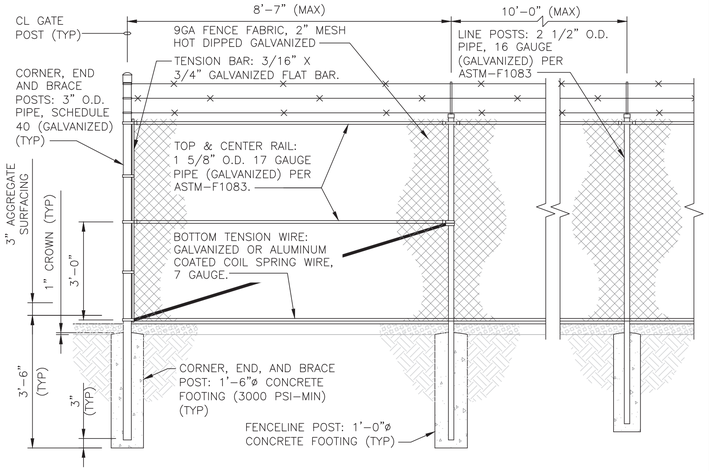
SHEET NUMBER: C-10

REVISION: 3



1 TYPICAL FENCE DETAIL
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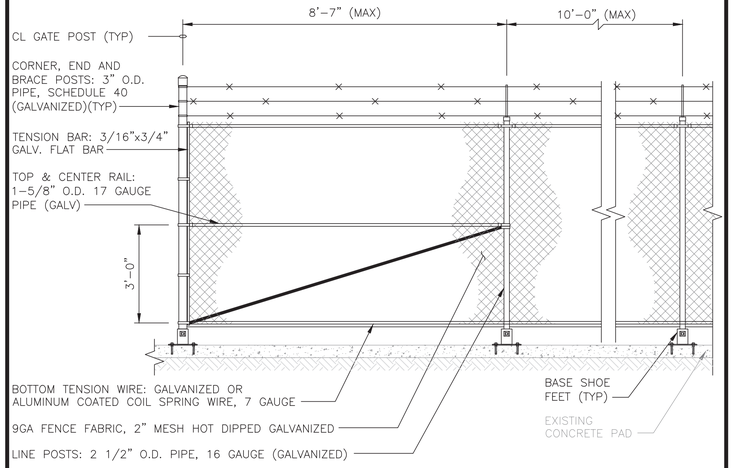
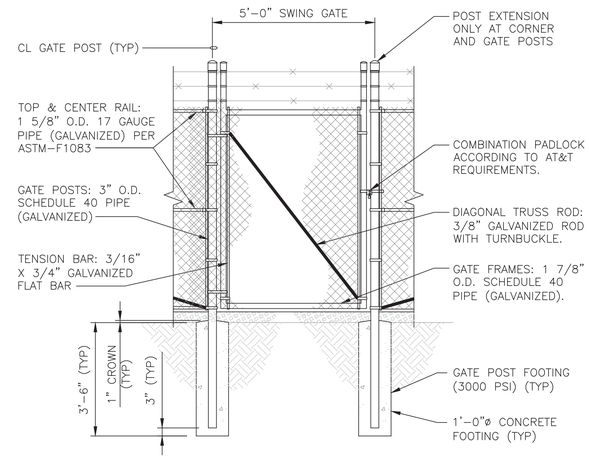
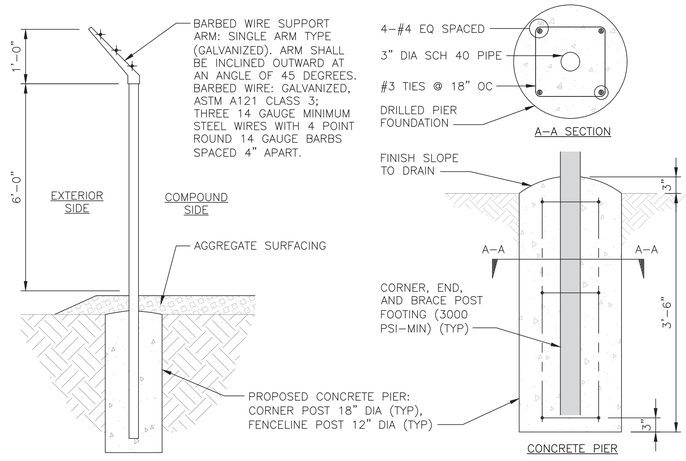


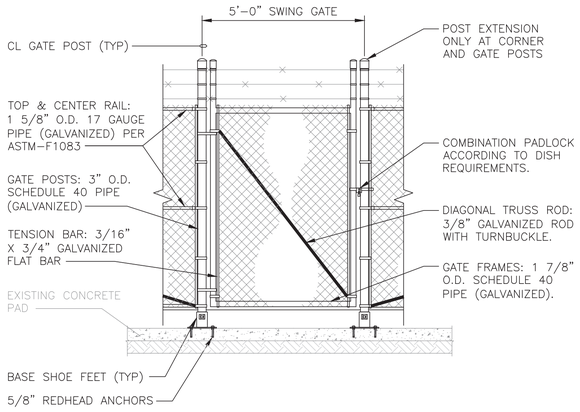
2 TYPICAL FENCE ELEVATION DETAIL
SCALE: NOT TO SCALE



3 TYPICAL MAN-GATE ELEVATION DETAIL
SCALE: NOT TO SCALE



4 TYPICAL FENCE & CONCRETE PIER SECTION
SCALE: NOT TO SCALE



5 TYPICAL MAN-GATE ELEVATION DETAIL
SCALE: NOT TO SCALE

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STATE OF CONNECTICUT
GREG MAYNE
No. 23924
LICENSED
PROFESSIONAL ENGINEER
10/7/21

B&T ENGINEERING, INC.
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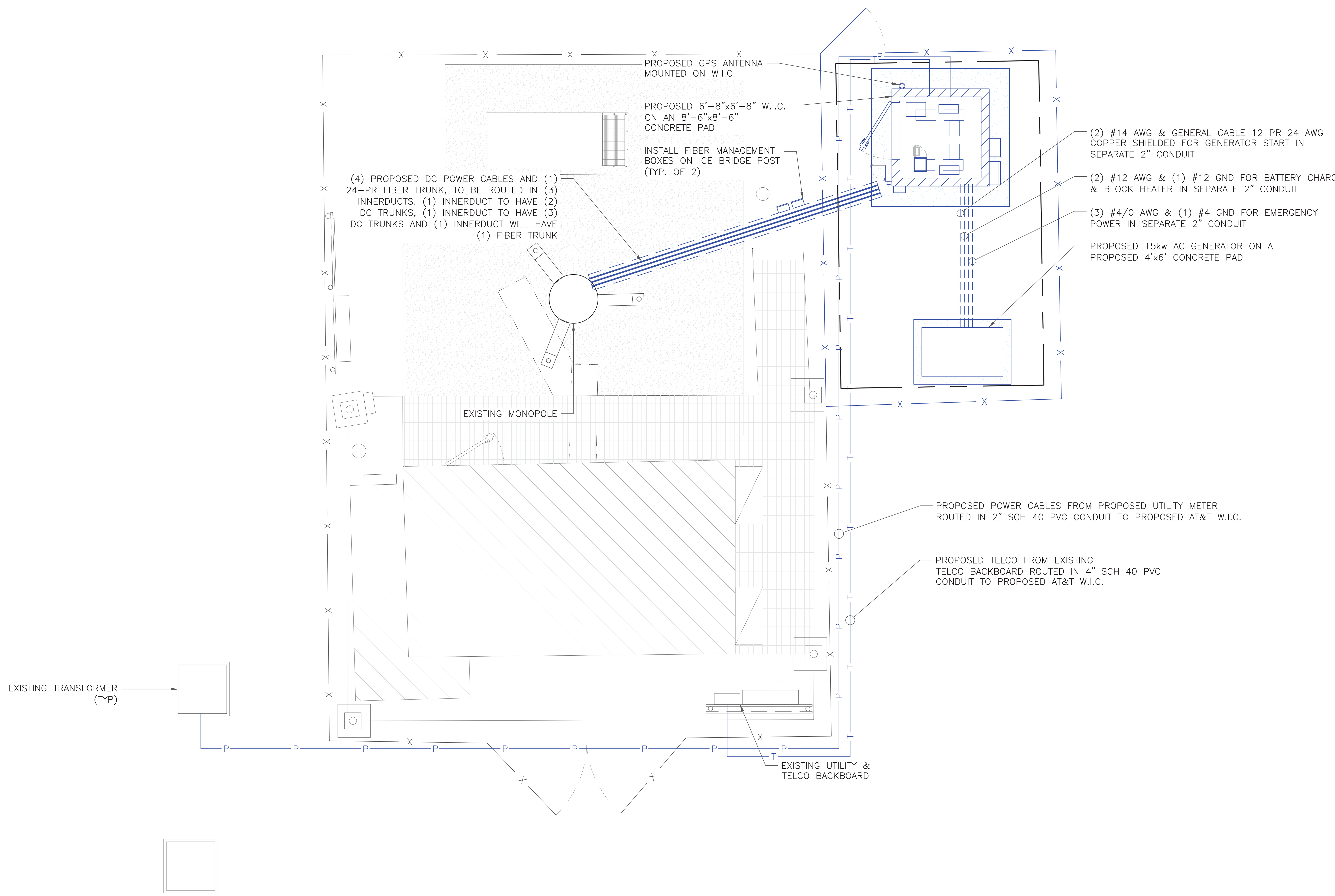
SHEET NUMBER: C-11
REVISION: 3



1 UTILITY PLAN
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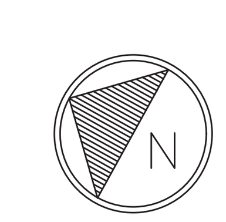

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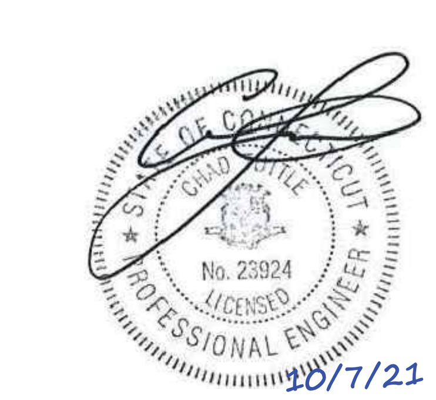

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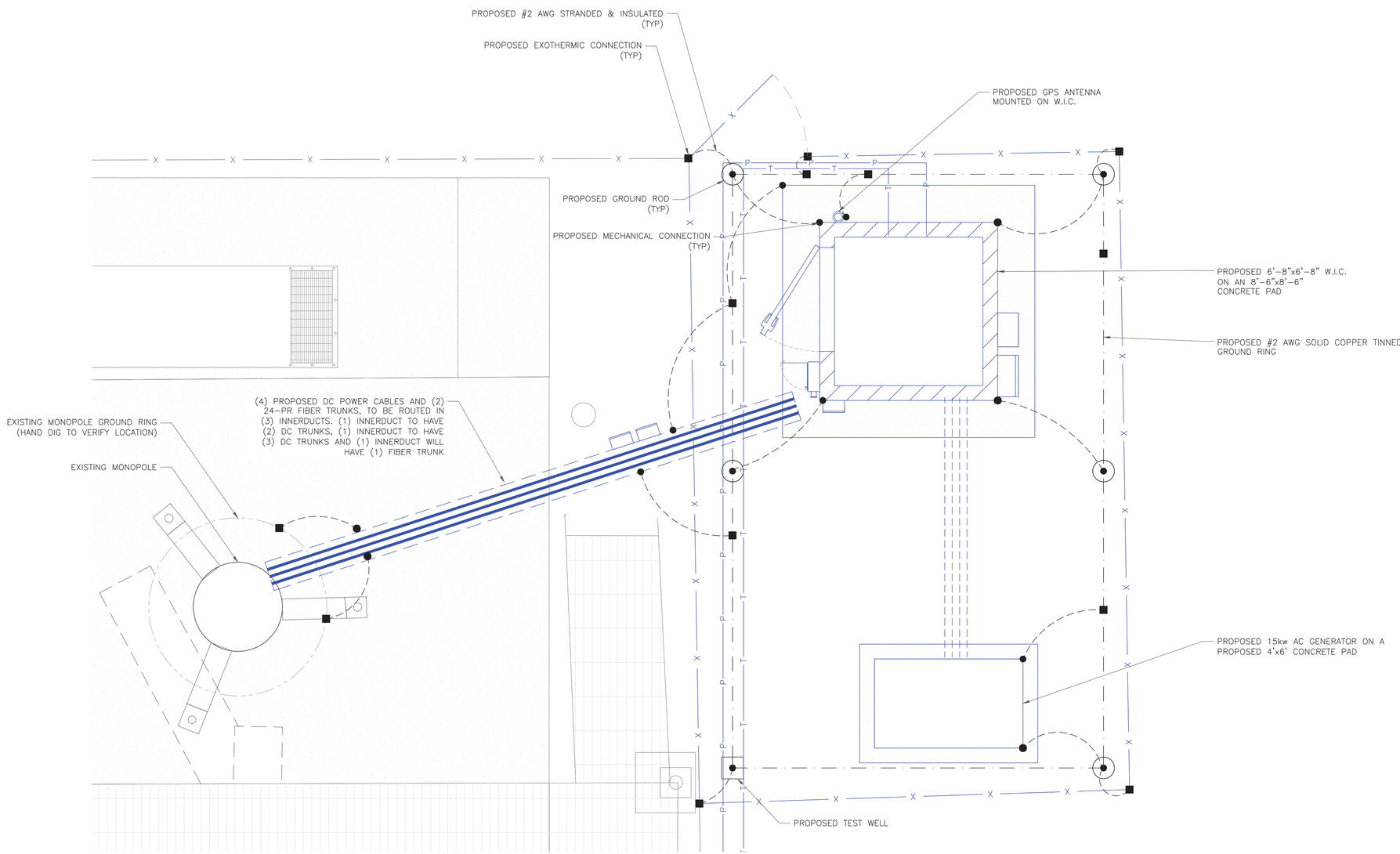
SHEET NUMBER: E-1

REVISION: 3



LEGEND

- MECHANICAL CONNECTION
- EXOTHERMIC CONNECTION
- GROUND ROD
- TEST GROUND ROD WITH INSPECTION SLEEVE
- #2 AWG STRANDED & INSULATED
- #2 AWG SOLID COPPER TINNED

1 GROUNDING PLAN
SCALE: NOT TO SCALE

N

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

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

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

AT&T SITE NUMBER: **CTL02814**

BU #: **876309**
MILFORD JAI-ALAI

311 OLD GATE LANE
MILFORD, CT 06460

EXISTING
120'-0" MONOPOLE W/ 15'-0"
PROPOSED EXTENSION
MONOPOLE

ISSUED FOR:

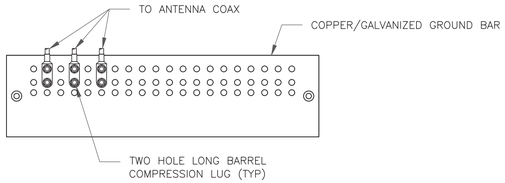
REV	DATE	DRWN	DESCRIPTION	DES./QA
0	8/6/21	MTJ	CONSTRUCTION	MTJ
1	8/10/21	JHW	CONSTRUCTION	JHW
2	9/23/21	JHW	CONSTRUCTION	JHW
3	10/7/21	JHW	CONSTRUCTION	JHW

STATE OF CONNECTICUT
GREGORY THOMAS GOUT
No. 23824
LICENSED
PROFESSIONAL ENGINEER
10/7/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

SHEET NUMBER: G-1

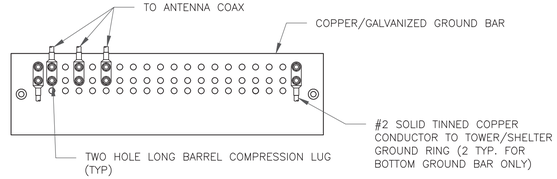
REVISION: 3



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

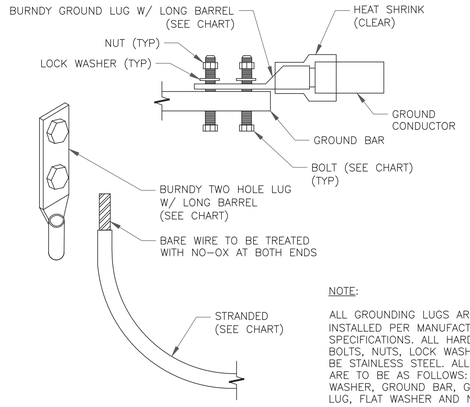


NOTES:

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

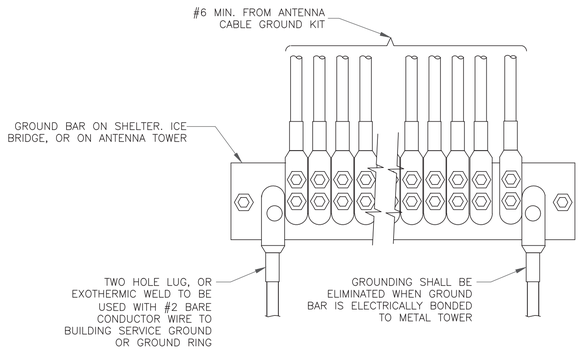
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC SS 2 BOLT
#2 SOLID TINNED	YA3C-2TC38	3/8" - 16 NC SS 2 BOLT
#2 STRANDED	YA2C-2TC38	3/8" - 16 NC SS 2 BOLT
#2/0 STRANDED	YA26-2TC38	3/8" - 16 NC SS 2 BOLT
#4/0 STRANDED	YA28-2N	1/2" - 16 NC SS 2 BOLT



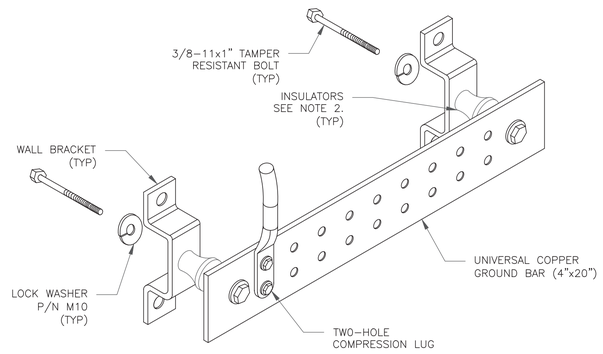
NOTE:

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



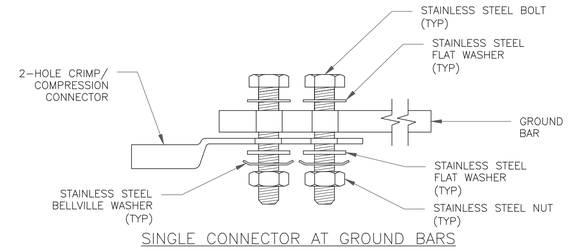
4 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



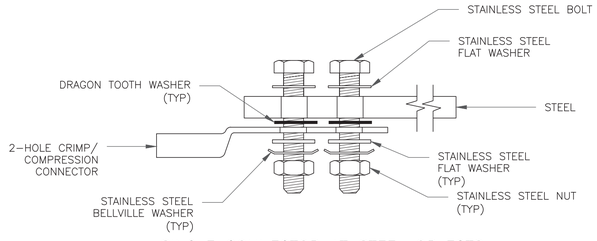
NOTES:

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.

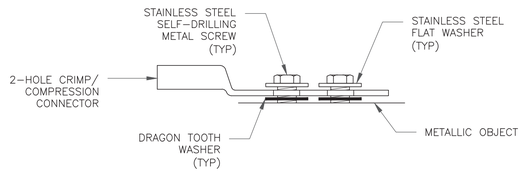
5 GROUND BAR DETAIL
SCALE: NOT TO SCALE



SINGLE CONNECTOR AT GROUND BARS

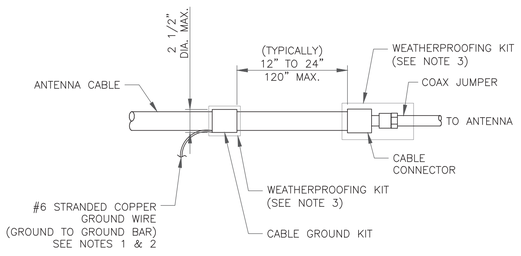


SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

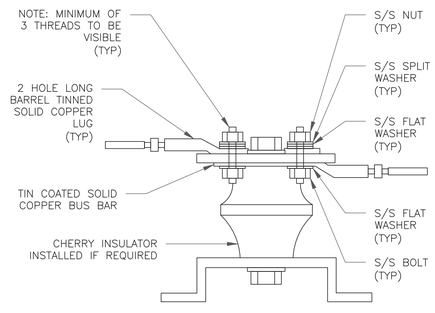
8 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

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

6 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE

AT&T
575 MOROSGO DRIVE
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AT&T SITE NUMBER: **CTL02814**

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MILFORD JAI-ALAI

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3	10/7/21	JHW	CONSTRUCTION	JHW

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

SHEET NUMBER: G-2

REVISION: 3

Diagram - Sector	A	Diagram File Name - CT2814 2ANT 6C.vsd					
Atoll Site Name -	CT2814	Location Name -	S2814	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND
Comments:							

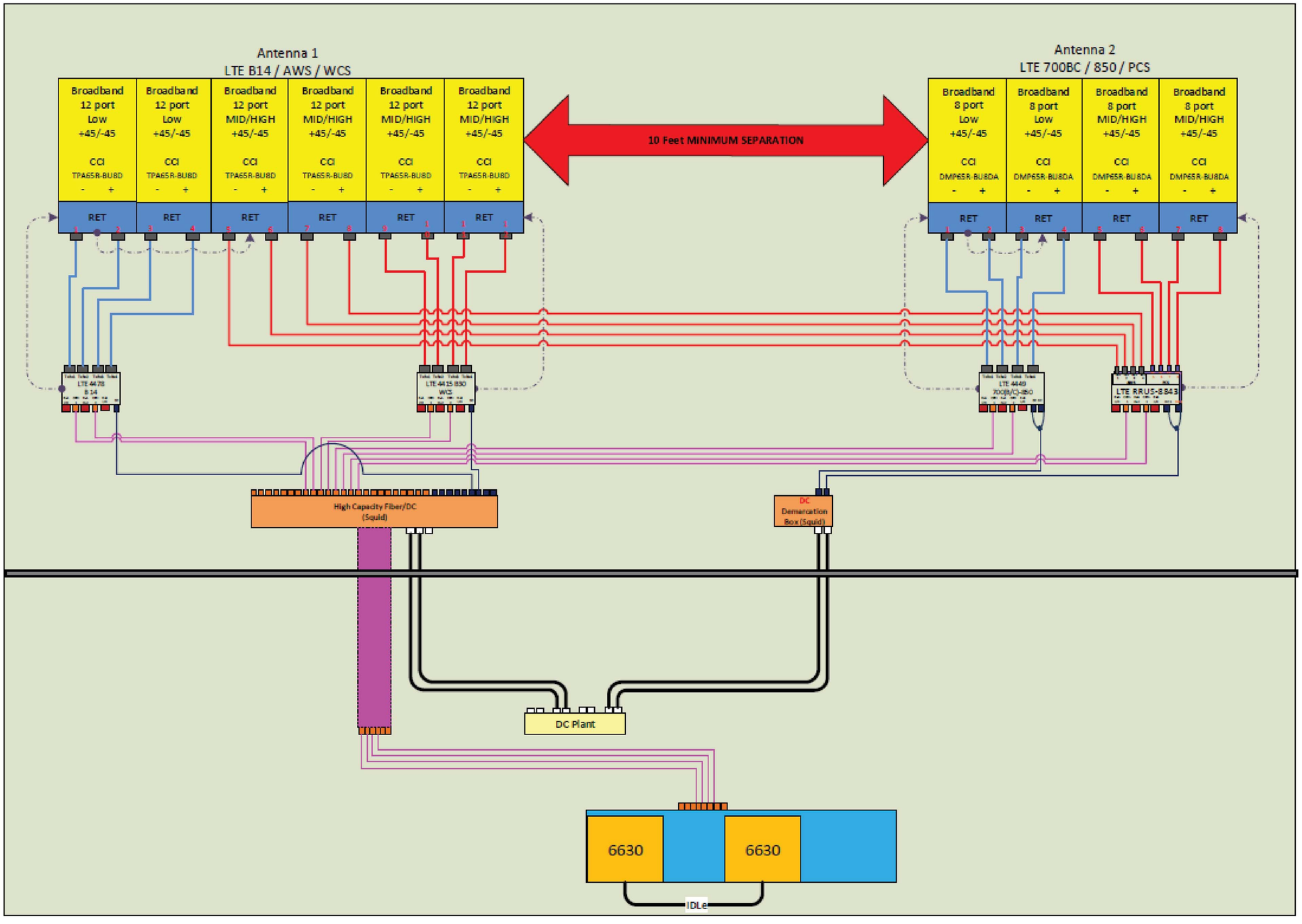


Diagram - Sector	B	Diagram File Name - CT2814 2ANT 6C.vsd					
Atoll Site Name -	CT2814	Location Name -	S2814	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND
Comments:							

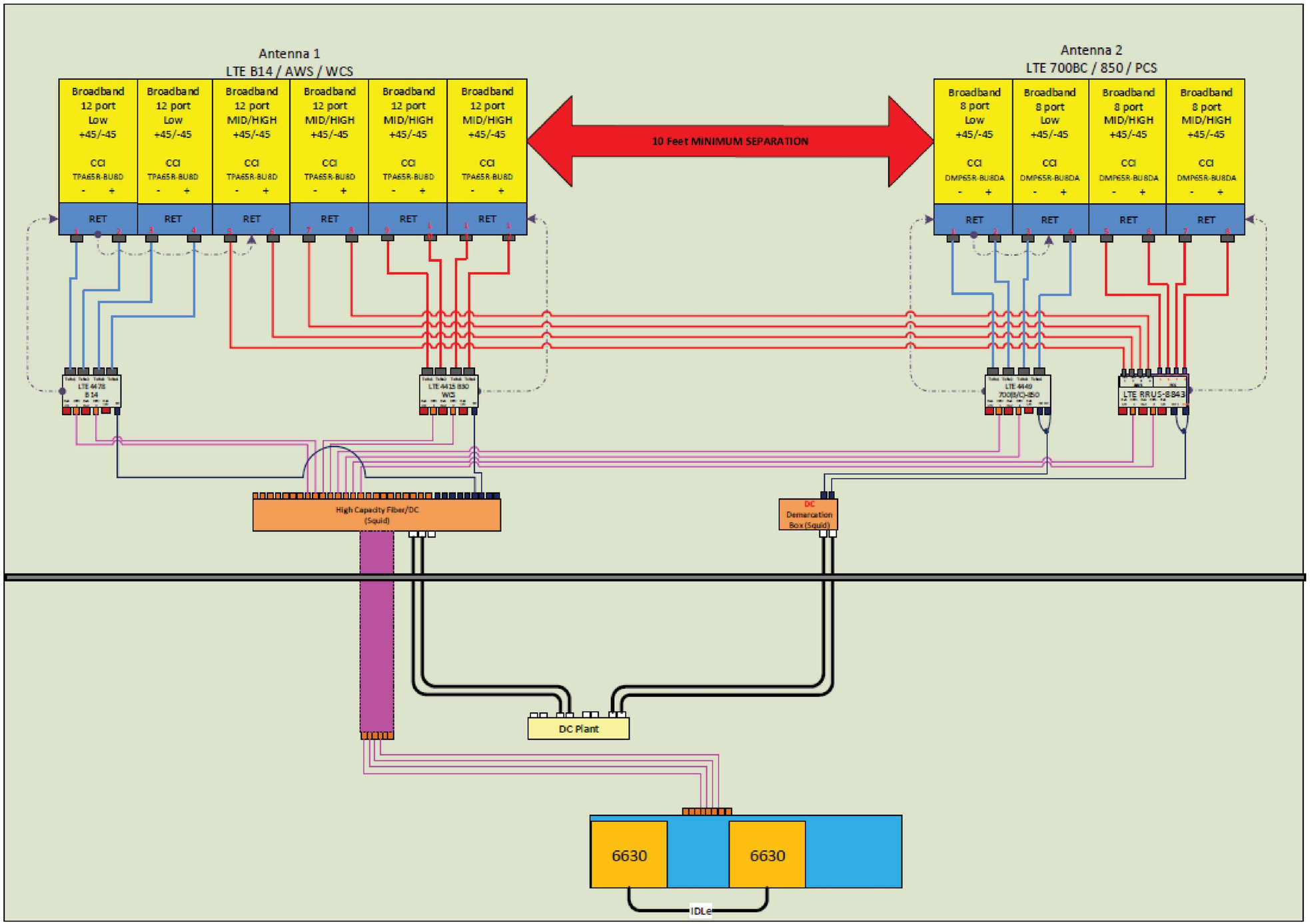
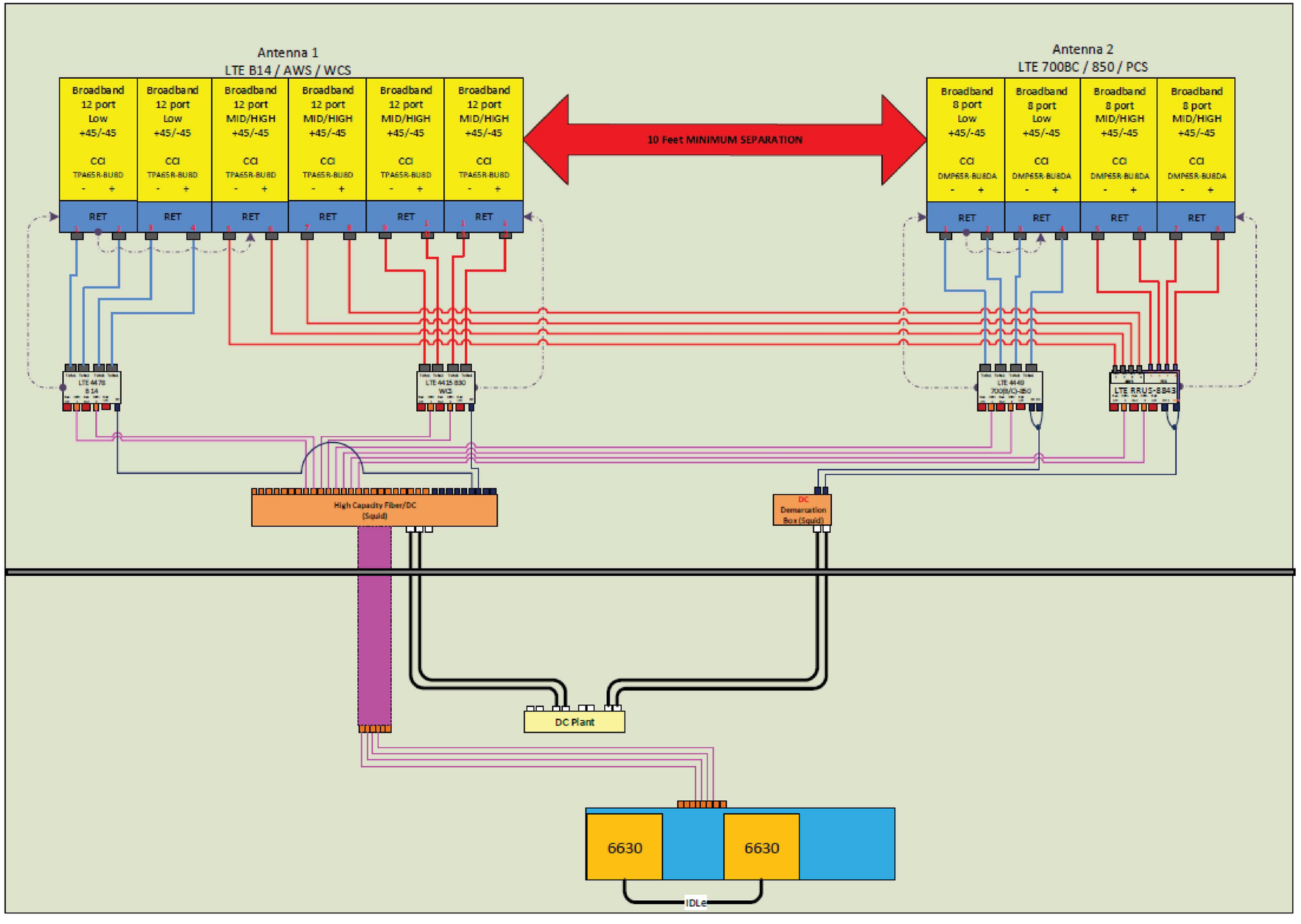
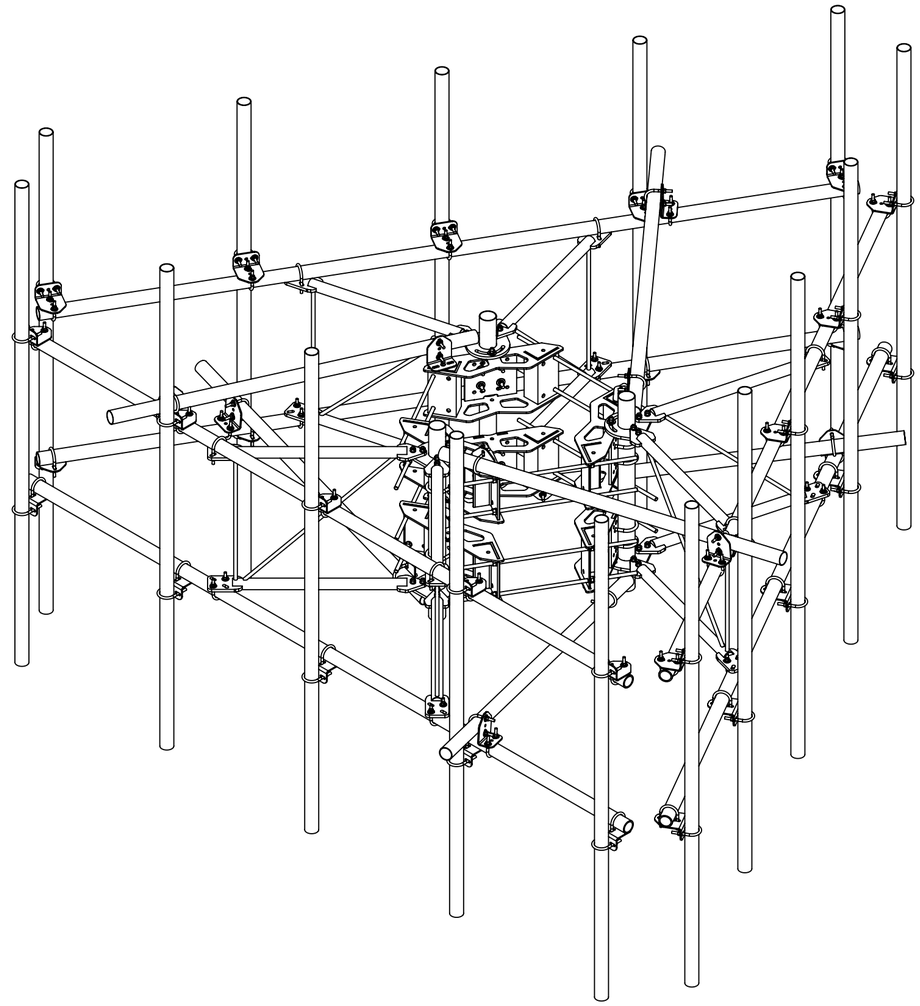


Diagram - Sector	C	Diagram File Name - CT2814 2ANT 6C.vsd					
Atoll Site Name -	CT2814	Location Name -	S2814	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND
Comments:							



REVISIONS				
REV.	ECN	DESCRIPTION	BY	DATE
A	8000033016	INITIAL RELEASE	RJC	01/11/19

NOTES:
1.0 GENERAL
1.1 ALL METRIC DIMENSIONS ARE IN BRACKETS
1.2 FOR PATENT INFO: https://www.commscope.com/ProductPatent/ProductPatent.aspx
2.0 DESIGN NOTES
2.1 Any hazards or obstructions to the climbing facility and safety climb must be identified prior to installing the appurtenance. Additional products may be required to maintain the integrity of the safety climb. During installation, temporary and/or permanent precautionary measures should be taken to preserve the climbing facility and/or safety climb
3.0 MANUFACTURING/SPECIAL REQUIRMENTS
4.0 TEST
5.0 PACKAGING



MCG22HDX14-15-WLL SHOWN FOR REFERENCE

PATENT PENDING

TOP LEVEL ZNSK COMPONENTS

PART NO.	DESCRIPTION	PACK KIT	RING MOUNT	PIPE BUNDLE	WEIGHT (LBS)	AT&T RATING
MCG22HDX12-12-H10	TRIPLE SECTR FRM MONO 12'6" FACE W/12 AP	G22HDXPKM34	MC-RM1550-3D	PB12TEB0607B0612K	2007	HEAVY 10
MCG22HDX12-15-WLL	TRIPLE SECTR FRM MONO 12'6" FACE W/15 AP	G22HDXPKM35	MC-RM1550-3D	PB15TEB0607B0612K	2141	HEAVY WLL
MCG22HDX14-12-H10	TRIPLE SECTR FRM MONO 14'6" FACE W/12 AP	G22HDXPKM34	MC-RM1550-3D	PB12TEB0607B0614K	2076	HEAVY 10
MCG22HDX14-15-WLL	TRIPLE SECTR FRM MONO 14'6" FACE W/15 AP	G22HDXPKM35	MC-RM1550-3D	PB15TEB0607B0614P	2374	HEAVY WLL

PACK KIT COMPONENTS

PACK KIT	CROSSOVER KIT	HARDWARE KIT
G22HDXPKM34	XA30304 (QTY 3)	G22HDXMHK
G22HDXPKM35	XA30305 (QTY 3)	G22HDXMHK

DENSITY	lbs/in³
MASS	lbs
VOLUME	in³
SURFACE AREA	in²
HEIGHT	
LENGTH	
WIDTH	

COMMSCOPE, INC. OF NORTH CAROLINA

TOLERANCES
0 PLACE X ± .25
1 PLACE .X ± 0.12
2 PLACE .XX ± 0.06
ANGLES ± 2°

SAP MATERIAL MASTER: SEE TABLE

FINISH: GALV A123

MATERIAL: A500, A529, A572, A1011/A1018

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES INTERPRET PER ANSI Y 14.5M-1994

	NAME	DATE
CE	RJC	01/11/19
RW		
RV		
AD		
RE	BCAMPBELLCON	02/06/2019

ECN 008000033016

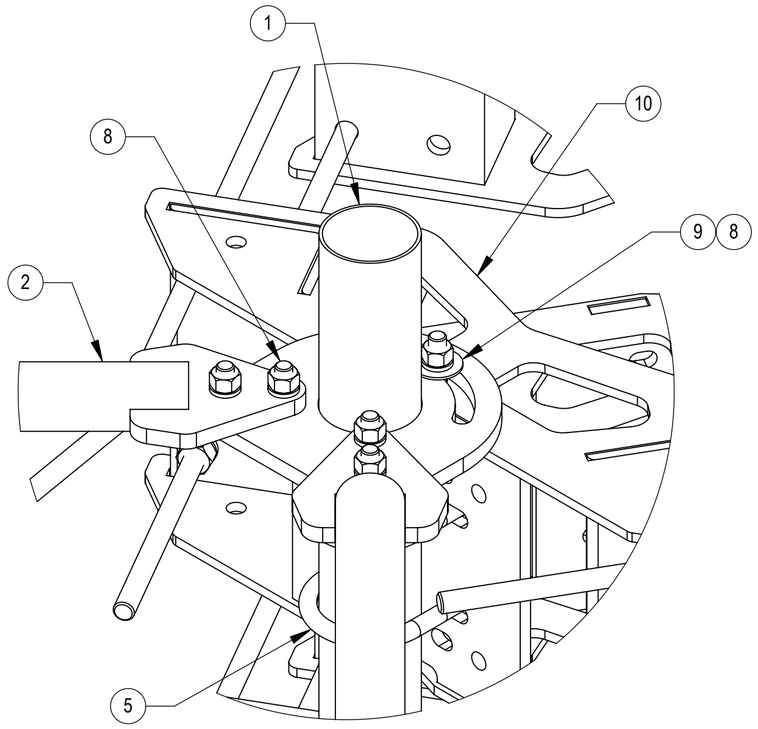
TITLE: MCG22HDX SECTOR FRAME SERIES

SCALE: 1:24

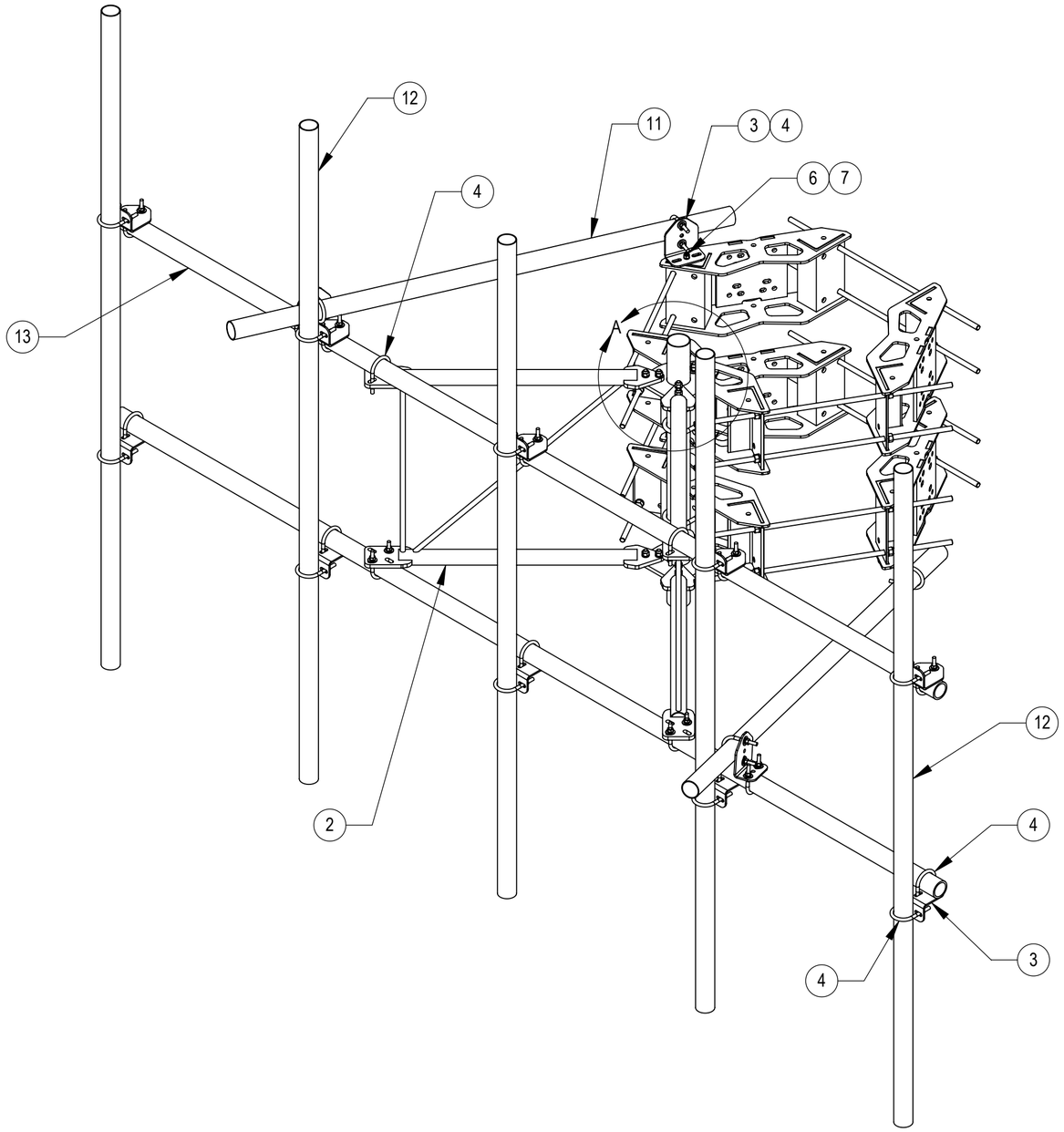
DOCUMENT NO.: MCG22HDX

SIZE	WORK AREA 24	MODEL			DRAWING			SHEET
		VERSION	STATUS	REVISION	VERSION	STATUS	REVISION	
C		00	RE	A	00	RE	A	1 OF 7

NOTES:



DETAIL A
SCALE 1 : 4



SINGLE SECTOR OF MCG22HDX14-5-WLL SHOWN FOR REFERENCE

ITEM	PART NO.	DESCRIPTION	QTY.	WEIGHT	NOTE NO.
1	SFG2270	BACK VERTICAL ARM MOUNT	3	36.90 LBS	
2	SFG2278	ARM, STANDOFF - SFG22	6	40.92 LBS	
3	XAU01	ANGLE, CROSSOVER, 1.9-3.5" X 1.9-3.5" OD	42	2.98 LBS	FOR "H10" MODELS, QTY IS 36
4	GUB-4352	1/2" X 3" X 5-1/4" GALV U-BOLT	90	0.71 LBS	FOR "H10" MODELS, QTY IS 78
5	GUB-53560	5/8" X 3-5/8" X 6" GALV U-BOLT	12	1.30 LBS	
6	GB-04145	1/2" X 1-1/2" GALV BOLT KIT	6	0.13 LBS	
7	GWF-04	1/2" GALV FLAT WASHER	6	0.03 LBS	
8	GB-05225	5/8" X 2-1/4" GALV BOLT KIT	30	0.28 LBS	
9	GWF-05	5/8" GALV FLAT WASHER	6	0.06 LBS	
10	MC-RM1550-3	12" - 50" OD RINGMOUNT	2	230.43 LBS	
11	MT546084120	2.88" OD X .120" WALL X 84" LONG PIPE	6	24.81 LBS	
12	MT546120120	2.88 OD X .120" WALL X 120" LONG PIPE	15	35.44 LBS	FOR "H10" MODELS, QTY IS 12
13	MT546174276	2.88" OD X .276" WALL X 174" LONG PIPE	6	111.49 LBS	FOR 12'6" FACE MODELS, PART NO. IS MT-546-150; FOR 14'6" FACE "H10" MODEL, PART NO. IS MT-546-174

PATENT PENDING

COMMSCOPE, INC. OF NORTH CAROLINA

TITLE
MCG22HDX SECTOR FRAME SERIES

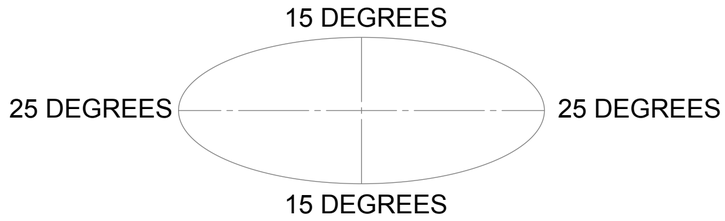
SIZE	SCALE	DOCUMENT NO.			
C	1:16	MCG22HDX			
		DRAWING			SHEET
		VERSION	STATUS	REVISION	
		01	RE	A	2 OF 7

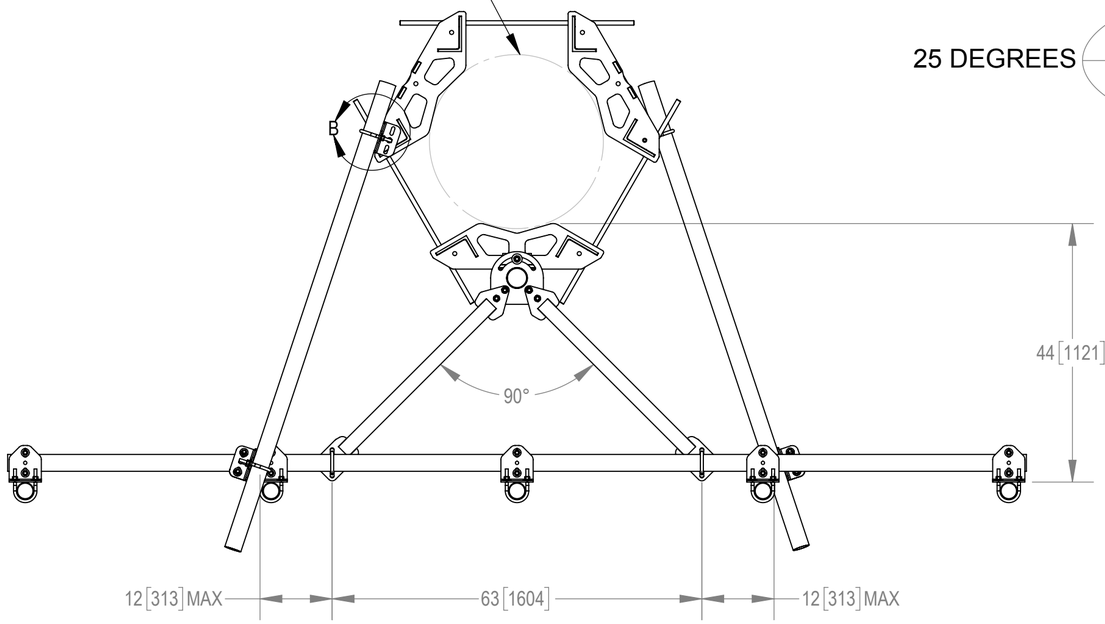
NOTES:

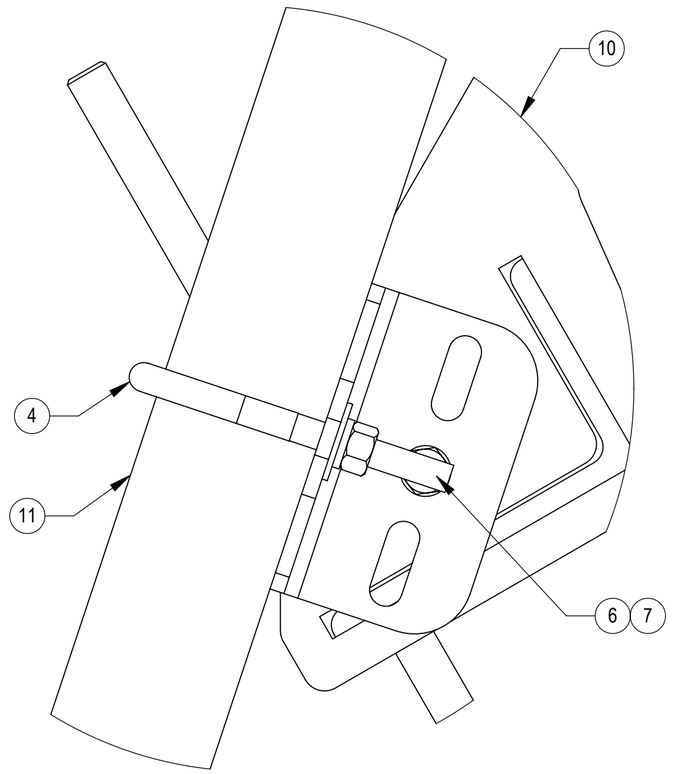
12'6" FACE MODELS: ∅ 12" - 50" POLE
14'6" FACE MODELS: ∅ 24" - 50" POLE

ALLOWABLE TIEBACK ANGLE

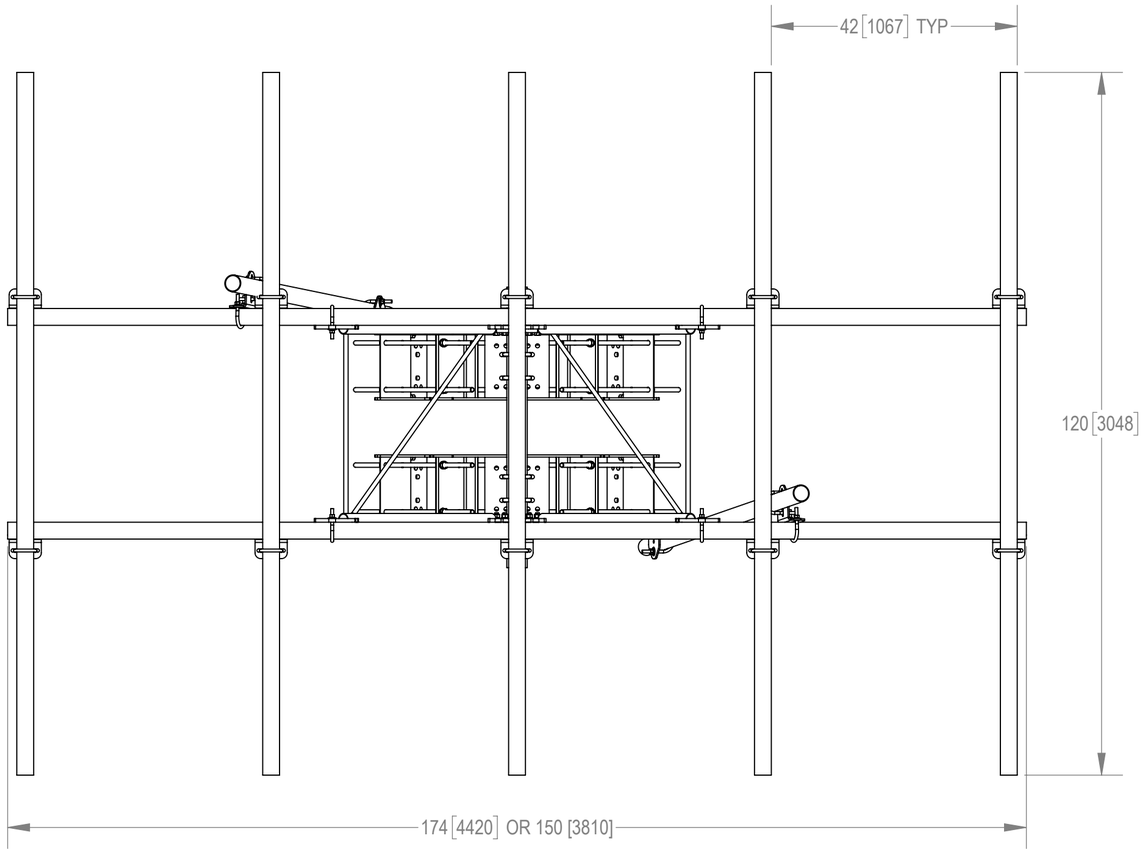
±15 DEGREES VERTICAL
±25 DEGREES HORIZONTAL

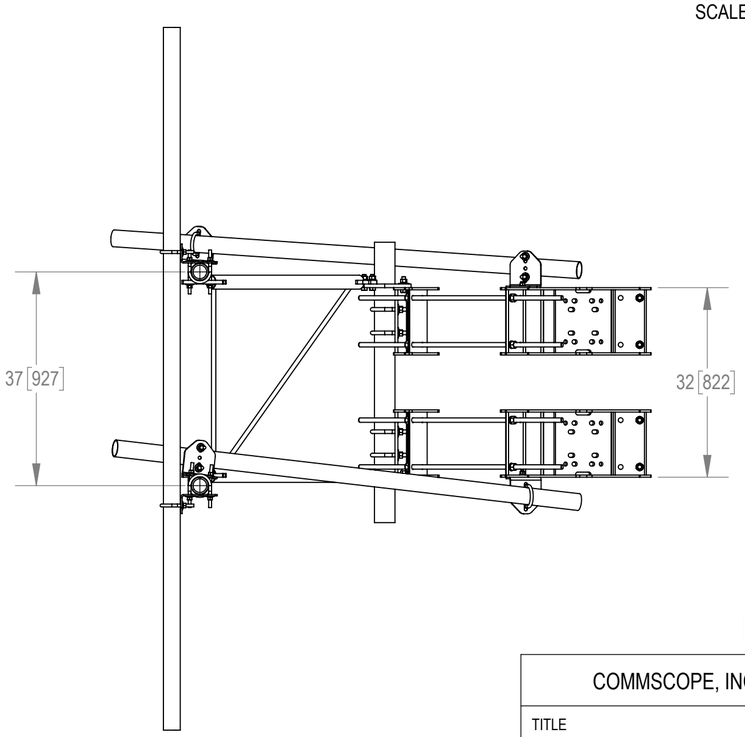






DETAIL B
SCALE 1 : 2





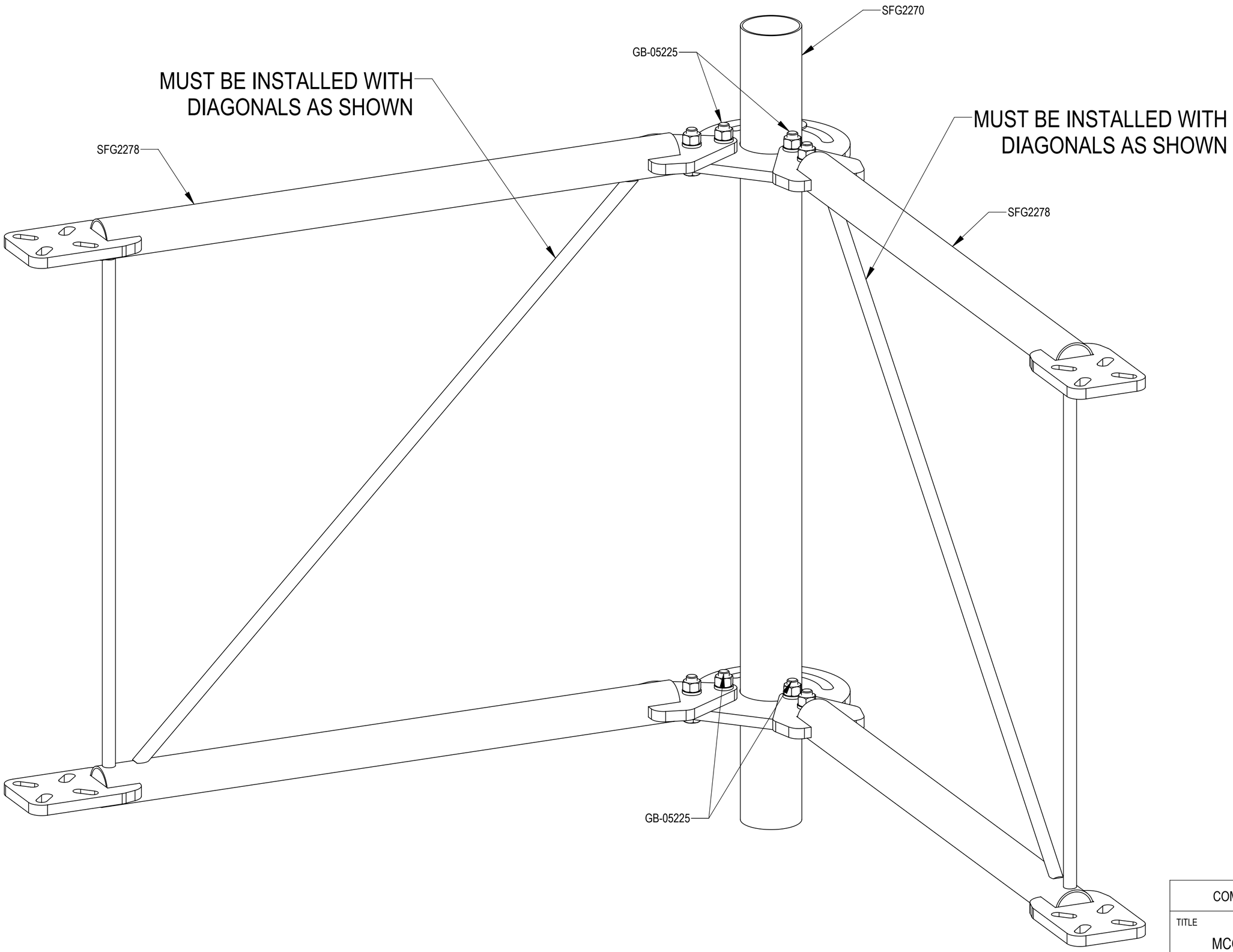
PATENT PENDING

SINGLE SECTOR OF "WLL" MODEL SHOWN FOR REFERENCE

COMMSCOPE, INC. OF NORTH CAROLINA					
TITLE: MCG22HDX SECTOR FRAME SERIES					
SIZE: C	SCALE: 1:20	DOCUMENT NO.: MCG22HDX			
		DRAWING			SHEET
		VERSION	STATUS	REVISION	
		01	RE	A	3 OF 7

NOTES:

STEP 1: ATTACH STANDOFF ARMS (SFG2278) TO BACK VERTICAL ARM MOUNT (SFG2270) USING (GB-05225) BOLT KITS



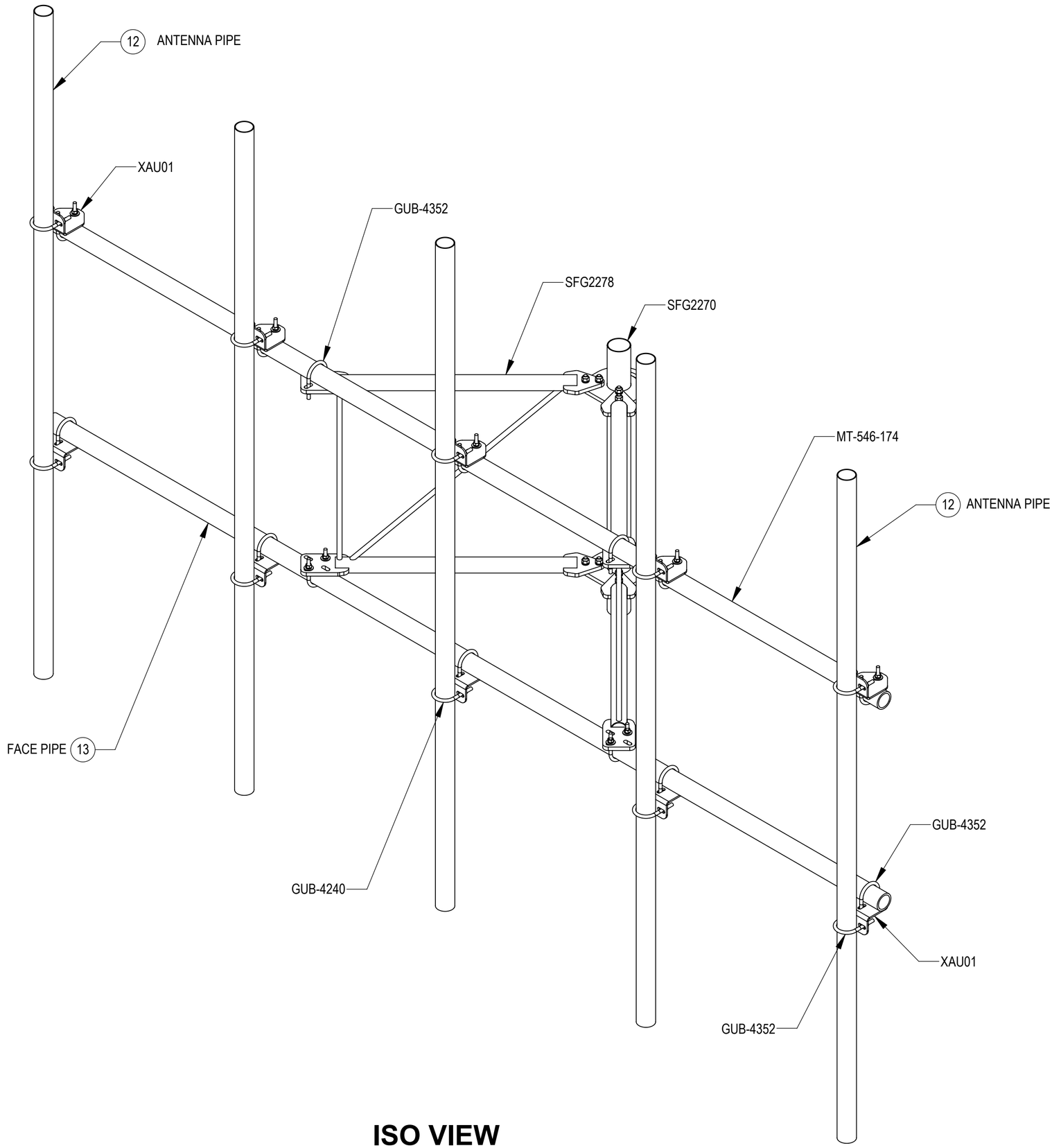
ISO VIEW

PATENT PENDING

COMMSCOPE, INC. OF NORTH CAROLINA			
TITLE: MCG22HDX SECTOR FRAME SERIES			
SIZE: C	SCALE: 1:4	DOCUMENT NO.: MCG22HDX	
		DRAWING: VERSION 01 / STATUS RE / REVISION A	SHEET: 4 OF 7

NOTES:

STEP 2: ATTACH FACE PIPES TO STANDOFF ARMS USING (GUB-4352) U-BOLTS AND THEN ATTACH ANTENNA PIPES USING (XAU01) CROSSOVER ANGLES AND (GUB-4240 & GUB-4352) U-BOLTS



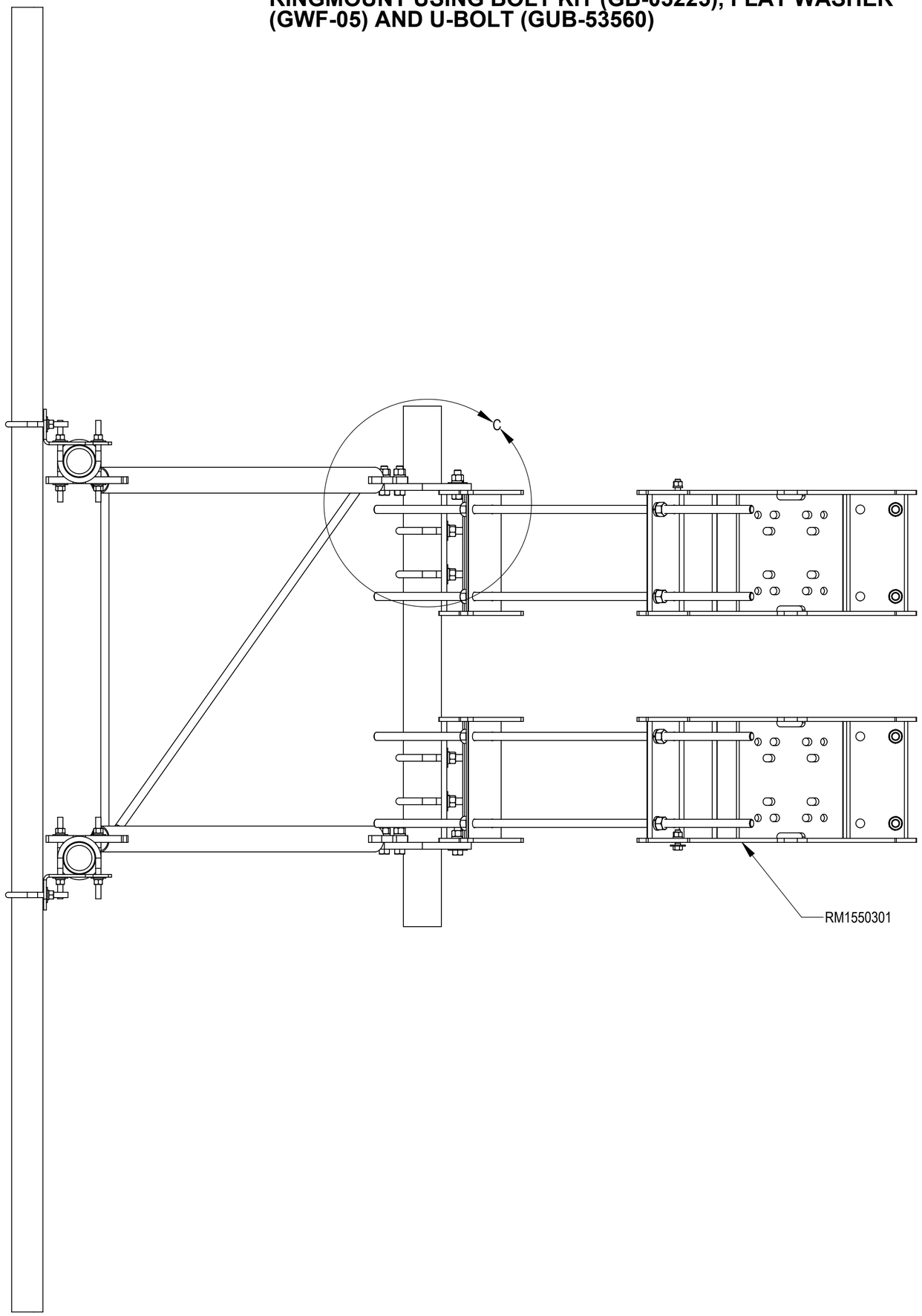
ISO VIEW

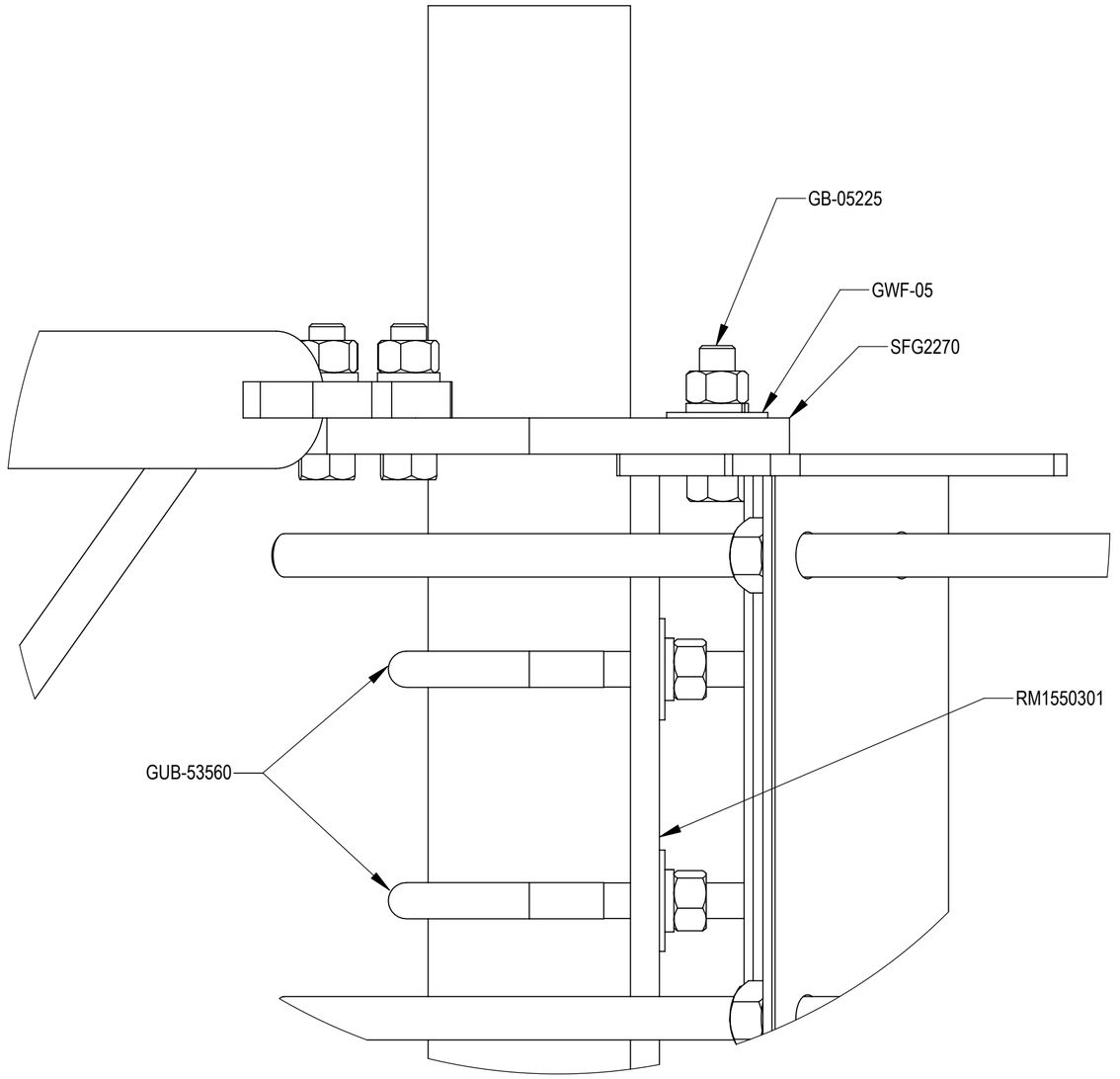
PATENT PENDING

COMMSCOPE, INC. OF NORTH CAROLINA			
TITLE: MCG22HDX SECTOR FRAME SERIES			
SIZE: C	SCALE: 1:12	DOCUMENT NO.: MCG22HDX	
		DRAWING: VERSION 01 / STATUS RE / REVISION A	SHEET: 5 OF 7

NOTES:

STEP 3: ATTACH BACK VERTICAL ARM MOUNT (SFG2270) TO RINGMOUNT USING BOLT KIT (GB-05225), FLAT WASHER (GWF-05) AND U-BOLT (GUB-53560)





DETAIL C
SCALE 1 : 2

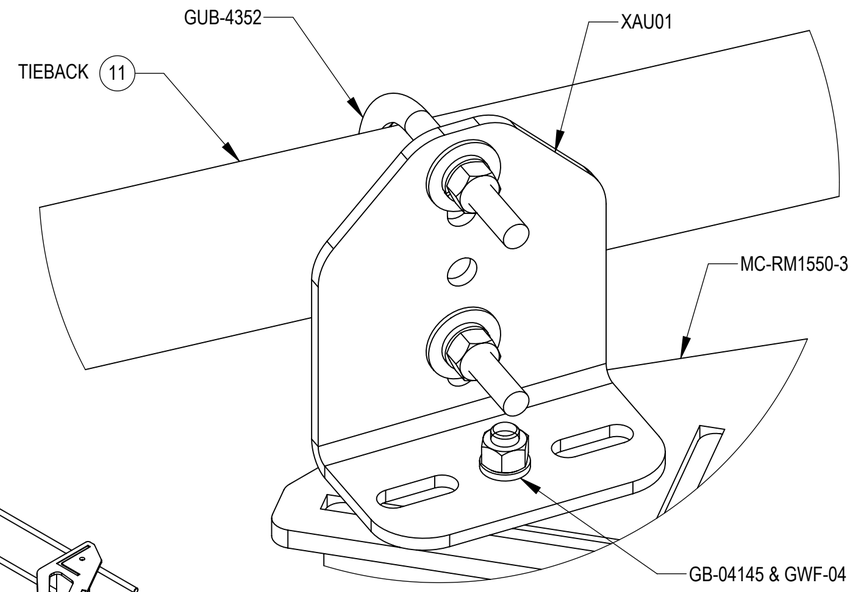
PATENT PENDING

COMMSCOPE, INC. OF NORTH CAROLINA				
TITLE: MCG22HDX SECTOR FRAME SERIES				
SIZE: C	SCALE: 1:8	DOCUMENT NO.: MCG22HDX		
		DRAWING		SHEET
		VERSION: 01	STATUS: RE	REVISION: A
				6 OF 7

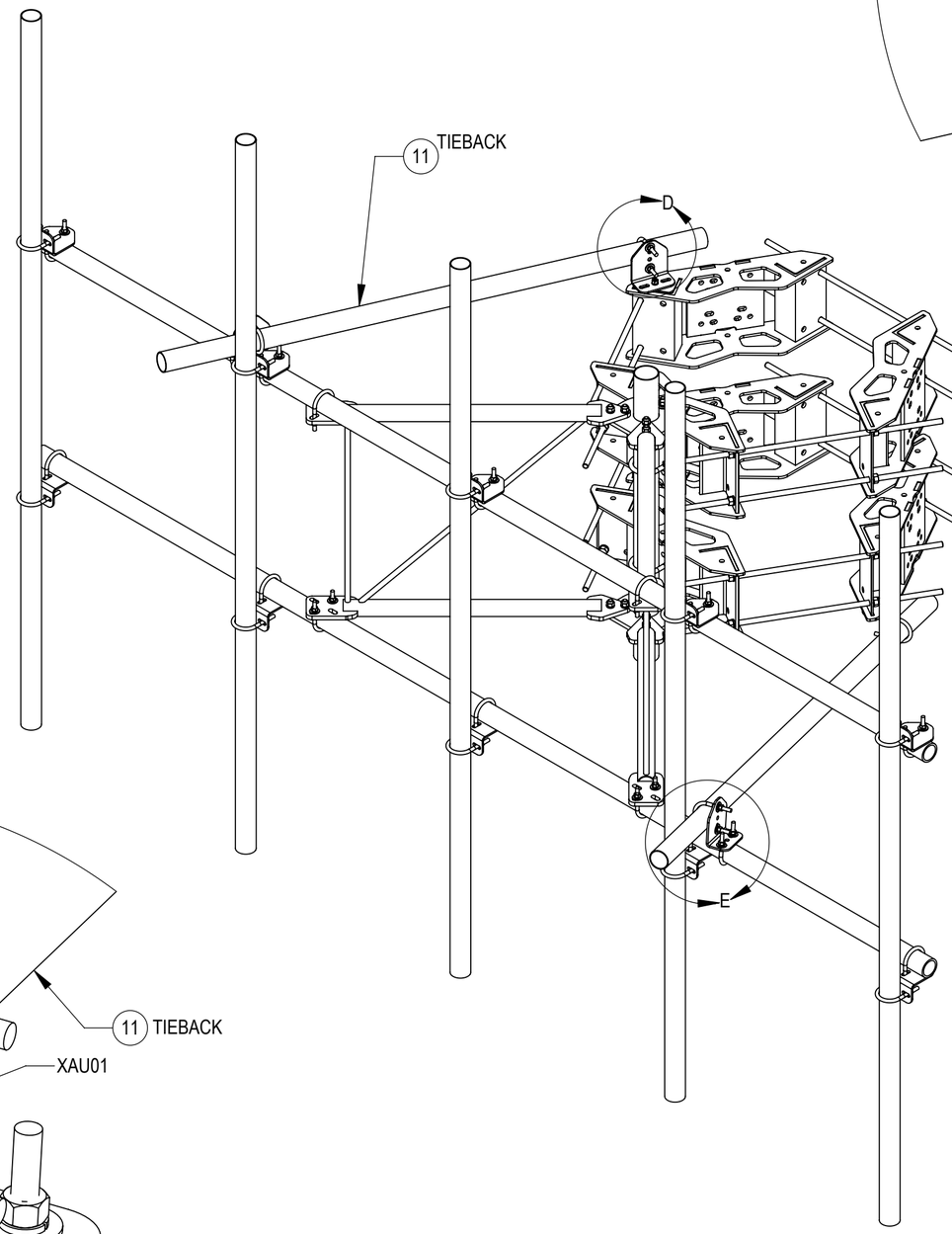
NOTES:

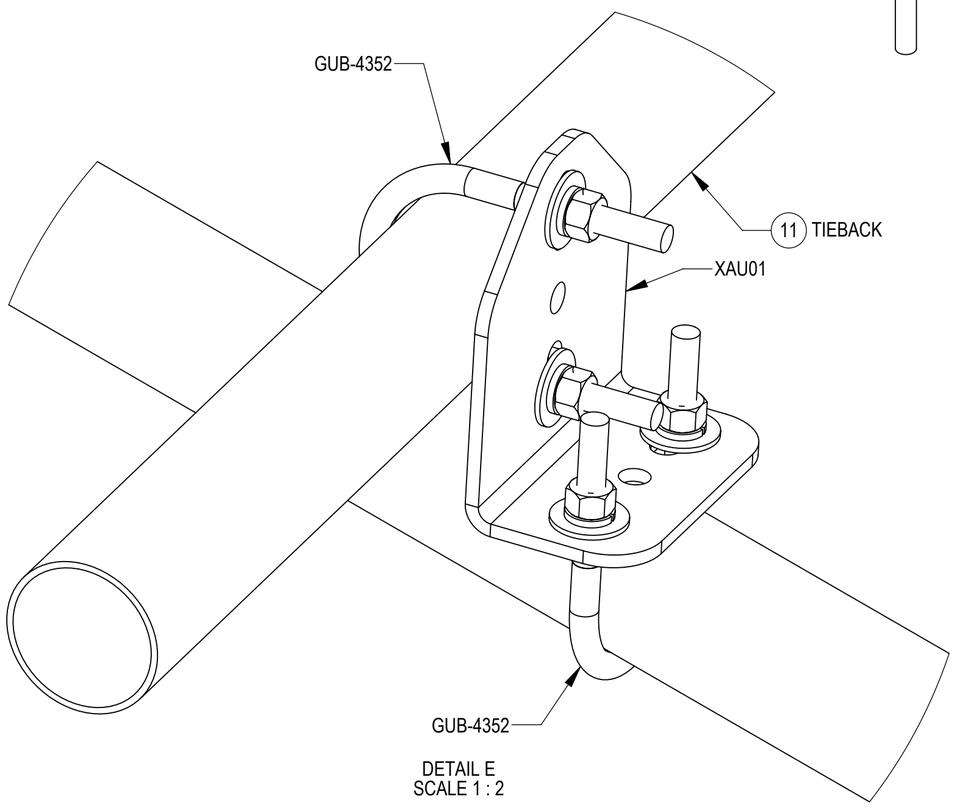
STEP 4: ATTACH TIE BACK PIPES (MT-651-96) TO FACE PIPES USING CROSSOVER ANGLES (XAU01) AND U-BOLTS (GUB-4240 & GUB-4352)

STEP 5: ATTACH TIE BACK PIPES (MT-651-96) TO RINGMOUNT (MC-RM1550-3) USING CROSSOVER ANGLES (XAU01), BOLT KIT (GB-04145), FLAT WASHER (GWF-04) AND U-BOLT (GUB-4240)



DETAIL D
SCALE 1 : 2





DETAIL E
SCALE 1 : 2

PATENT PENDING

COMMSCOPE, INC. OF NORTH CAROLINA					
TITLE: MCG22HDX SECTOR FRAME SERIES					
SIZE: C	SCALE: 1:16	DOCUMENT NO.: MCG22HDX			
		DRAWING			SHEET
		VERSION: 01	STATUS: RE	REVISION: A	7 OF 7

ATTACHMENT 4

PAUL J. FORD & COMPANY

Date: **July 1, 2021**

Paul J. Ford & Company
250 East Broad Street, Suite 600
Columbus, OH 43215
614.221.6679

Subject:	**Structural Modification Report**	
Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Site Number:	S2814
	Site Name:	S2814
	FA#:	10546792
Crown Castle Designation:	**BU Number:**	876309
	Site Name:	MILFORD JAI-ALAI
	JDE Job Number:	623660
	Work Order Number:	1989683
	Order Number:	533279 Rev. 2
Engineering Firm Designation:	**Paul J. Ford & Company Project Number:**	37521-0073.007.7700
Site Data:	**311 Old Gate Lane, Milford, New Haven County, CT**	
	Latitude *41° 14' 2.59"*, Longitude *-73° 1' 22.4"*	
	120 Foot - Monopole Tower	

Paul J. Ford & Company is pleased to submit this **"Structural Modification Report"** to determine the structural integrity of the above-mentioned tower.

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

LC4: Modified Structure w/ Proposed Equipment Configuration **Sufficient Capacity**

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

All modifications and equipment proposed in this report shall be installed in accordance with the attached drawings for the determined available structural capacity to be effective.

Respectfully submitted by:

Thomas J. Dehnke, PE
Project Manager
tdehnke@pauljford.com

BKK

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 120 ft Monopole tower designed by ROHN in December of 1996.

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:	125 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1.5 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)
83.0	83.0	1	commscope	MCG22HDX14-12-H10	2 4	3/8 7/8
		3	cci antennas	DMP65R-BU8D		
		3	cci antennas	TPA65R-BU8D		
		3	ericsson	RRUS 4415 B30		
		3	ericsson	RRUS 4449 B5/B12		
		3	ericsson	RRUS 4478 B14_CCIV2		
		3	ericsson	RRUS 8843 B2/B66A		
		1	raycap	DC6-48-60-0-8F		
		1	raycap	DC9-48-60-24-8C-EV		

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)
117.0	123.0	1	lucent	KS24019-L112A	4 1	1-5/8 1/2
	120.0	3	ericsson	AIR6449 B41_T-MOBILE w/ MP		
		3	ericsson	RADIO 4415 B66A		
		3	ericsson	RADIO 4424 B25_TMO		
		3	ericsson	RADIO 4449 B71 B85A_T-MOBILE		
		3	rfs celwave	APX16DWV-16DWV-S-E-A20 w/ Mount Pipe		
		3	rfs celwave	APXVAALL24_43-U-NA20_TMO w/ Mount Pipe		
	117.0	1	tower mounts	Platform Mount [LP 501-1]		
103.0	103.0	1	tower mounts	Platform Mount [LP 301-1_KCKR]	1 12	1-1/4 1-5/8
	100.0	3	antel	BXA-70063-6BF-EDIN-0		
		3	commscope	CBC78T-DS-43-2X		
		6	commscope	JAHH-65A-R3B w/ Mount Pipe		
		1	raycap	RVZDC-6627-PF-48		
		3	samsung	MT6407-77A w/ Mount Pipe		
		3	samsung	RFV01U-D1A		
		3	samsung	RFV01U-D2A		

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	2221322	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	2068407	CCISITES
4-TOWER MANUFACTURER DRAWINGS	2068406	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	2217524	CCISITES
4-POST-MODIFICATION INSPECTION	2217525	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	2638364	CCISITES
4-POST-MODIFICATION INSPECTION	2638363	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	3088811	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	3139251	CCISITES
4-POST-MODIFICATION INSPECTION	3158394	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	3265183	CCISITES
4-POST-MODIFICATION INSPECTION	3334396	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	5461972	CCISITES
4-POST-MODIFICATION INSPECTION	6078054	CCISITES

3.1) Analysis Method

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

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

3.2) Assumptions

1) Tower and structures were maintained in accordance with the TIA-222 Standard.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
3) The modification referenced in Doc #3088811 does not have a post modification inspection. It was assumed the structure was modified in conformance with the referenced modification drawings.
4) The structure was modified in conformance with the referenced modification drawings as shown in the referenced post modification inspection.
5) The structure will be modified in conformance with the attached proposed modification drawings.

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
120 - 115	Pole	TP24x24x0.25	Pole	5.6%	Pass
115 - 110	Pole	TP24x24x0.25	Pole	12.3%	Pass
110 - 105	Pole	TP24x24x0.25	Pole	19.3%	Pass
105 - 100	Pole	TP24x24x0.25	Pole	28.9%	Pass
100 - 98.5	Pole	TP24x24x0.25	Pole	32.7%	Pass
98.5 - 98.25	Pole + Reinf.	TP24x24x0.3875	Reinf. 15 Tension Rupture	23.5%	Pass
98.25 - 93.25	Pole + Reinf.	TP24x24x0.3875	Reinf. 15 Tension Rupture	33.1%	Pass
93.25 - 90	Pole + Reinf.	TP24x24x0.3875	Reinf. 15 Tension Rupture	39.6%	Pass
90 - 89.75	Pole	TP24x24x0.375	Pole	36.1%	Pass
89.75 - 84.75	Pole	TP24x24x0.375	Pole	45.6%	Pass
84.75 - 79.75	Pole	TP24x24x0.375	Pole	58.6%	Pass
79.75 - 79	Pole	TP24x24x0.375	Pole	60.7%	Pass
79 - 78.75	Pole + Reinf.	TP24x24x0.5188	Reinf. 14 Tension Rupture	52.0%	Pass
78.75 - 75.17	Pole + Reinf.	TP24x24x0.5188	Reinf. 14 Tension Rupture	60.7%	Pass
75.17 - 74.92	Pole + Reinf.	TP24x24x0.675	Reinf. 14 Tension Rupture	48.4%	Pass
74.92 - 69.92	Pole + Reinf.	TP24x24x0.675	Reinf. 14 Tension Rupture	58.3%	Pass
69.92 - 64.92	Pole + Reinf.	TP24x24x0.675	Reinf. 14 Tension Rupture	68.6%	Pass
64.92 - 60	Pole + Reinf.	TP24x24x0.675	Reinf. 14 Tension Rupture	78.9%	Pass
60 - 59.75	Pole + Reinf.	TP30x30x0.5313	Pole	56.0%	Pass
59.75 - 54.75	Pole + Reinf.	TP30x30x0.5313	Pole	64.3%	Pass
54.75 - 49.75	Pole + Reinf.	TP30x30x0.5313	Pole	72.7%	Pass
49.75 - 47.83	Pole + Reinf.	TP30x30x0.5313	Pole	76.1%	Pass
47.83 - 47.58	Pole + Reinf.	TP30x30x0.65	Reinf. 13 Tension Rupture	70.4%	Pass
47.58 - 43	Pole + Reinf.	TP30x30x0.65	Reinf. 13 Tension Rupture	77.8%	Pass
43 - 42.75	Pole + Reinf.	TP30x30x0.8	Reinf. 4 Tension Rupture	71.9%	Pass
42.75 - 37.75	Pole + Reinf.	TP30x30x0.8	Reinf. 4 Tension Rupture	79.6%	Pass
37.75 - 34.5	Pole + Reinf.	TP30x30x0.8	Reinf. 4 Tension Rupture	84.7%	Pass
34.5 - 34.25	Pole + Reinf.	TP30x30x0.65	Reinf. 13 Tension Rupture	92.5%	Pass
34.25 - 30	Pole + Reinf.	TP30x30x0.65	Reinf. 13 Tension Rupture	99.8%	Pass
30 - 29.75	Pole + Reinf.	TP36x36x0.55	Pole	74.5%	Pass
29.75 - 25.58	Pole + Reinf.	TP36x36x0.55	Pole	80.5%	Pass
25.58 - 25.33	Pole + Reinf.	TP36x36x0.65	Reinf. 12 Tension Rupture	74.9%	Pass
25.33 - 20.75	Pole + Reinf.	TP36x36x0.65	Reinf. 12 Tension Rupture	81.1%	Pass
20.75 - 20.5	Pole + Reinf.	TP36x36x0.7875	Reinf. 3 Tension Rupture	73.2%	Pass
20.5 - 17.48	Pole + Reinf.	TP36x36x0.7875	Reinf. 3 Tension Rupture	79.7%	Pass
17.48 - 17.23	Pole + Reinf.	TP36x36x0.7875	Reinf. 3 Tension Rupture	80.0%	Pass
17.23 - 13.5	Pole + Reinf.	TP36x36x0.7875	Reinf. 3 Tension Rupture	84.9%	Pass
13.5 - 13.25	Pole + Reinf.	TP36x36x0.825	Reinf. 3 Tension Rupture	81.8%	Pass
13.25 - 8.25	Pole + Reinf.	TP36x36x0.825	Reinf. 3 Tension Rupture	88.2%	Pass
8.25 - 6.25	Pole + Reinf.	TP36x36x0.825	Reinf. 3 Tension Rupture	90.7%	Pass
6.25 - 6	Pole + Reinf.	TP36x36x1.025	Reinf. 3 Tension Rupture	74.6%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
6 - 5.5	Pole + Reinf.	TP36x36x1.025	Reinf. 3 Tension Rupture	75.2%	Pass
p5.5 - 5.25	Pole + Reinf.	TP36x36x0.8875	Reinf. 3 Tension Rupture	83.6%	Pass
5.25 - 0.25	Pole + Reinf.	TP36x36x0.8875	Reinf. 3 Tension Rupture	89.5%	Pass
0.25 - 0	Pole + Reinf.	TP36x36x0.8875	Reinf. 3 Tension Rupture	89.8%	Pass
				Summary	
			Pole	90.3%	Pass
			Reinforcement	99.8%	Pass
			Overall	99.8%	Pass

Table 5 - Tower Component Stresses vs. Capacity

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Flange Bolts	90	18.4	Pass
	Flange Plates		22.2	Pass
	Flange Jump		36.8	Pass
1	Welded Flange Jumps	60	93.0	Pass
1	Welded Flange Jumps	30	47.7	Pass
1	Anchor Rods	0	70.7	Pass
	Base Plate		29.9	Pass
1	Base Foundation (Soil Interaction)	0	42.6	Pass
	Base Foundation (Structure)		10.5	Pass

Structure Rating (max from all components) =	99.8%

Notes:

- All structural ratings are per TIA-222-H Section 15.5

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

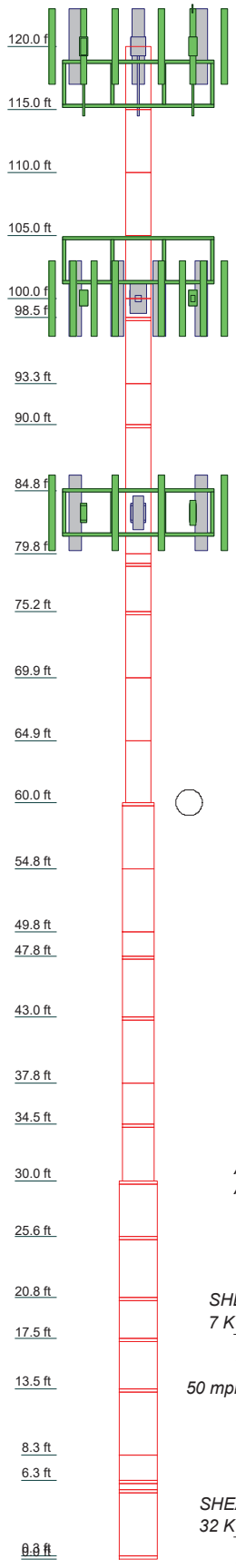
4.1) Recommendations

Perform the modifications detailed in Appendix D to remedy the deficiencies identified in Crown Castle Work Order No. 1976014.

APPENDIX A

TNXTOWER OUTPUT

Section	Size	Length (ft)	Grade	Weight (K)
1	P24x0.25	5.0000	A53-B-42	0.3
2	P24x0.25	5.0000		0.3
3	P24x0.25	5.0000		0.3
4	P24x0.25	5.0000		0.3
5	P24x0.25	5.0000		0.1
6	P24x0.25	5.0000		0.5
7	P24x0.25	5.0000		0.3
8	P24x0.25	5.0000		0.5
9	P24x0.25	5.0000		0.5
10	P24x0.375	5.0000		0.5
11	P24x0.375	5.0000		0.1
12	P24x0.375	5.0000		0.4
13	P24x0.375	5.0000		0.8
14	P24x0.375	5.0000		0.8
15	P24x0.675	5.0000		0.8
16	P24x0.675	5.0000		0.8
17	P24x0.675	5.0000		0.8
18	P24x0.675	5.0000		0.8
19	P30x0.531	5.0000		0.8
20	P30x0.531	5.0000		0.8
21	P30x0.531	5.0000		0.8
22	P30x0.531	5.0000		0.3
23	P30x0.531	5.0000		0.9
24	P30x0.531	5.0000		0.9
25	P30x0.531	5.0000		1.2
26	P30x0.531	5.0000		0.8
27	P30x0.531	5.0000		0.8
28	P30x0.531	5.0000		0.8
29	P30x0.531	5.0000		0.8
30	P30x0.531	5.0000		1.1
31	P30x0.531	5.0000		0.8
32	P30x0.531	5.0000		1.1
33	P30x0.531	5.0000		1.1
34	P30x0.531	5.0000		0.9
35	P30x0.531	5.0000		0.9
36	P30x0.531	5.0000		1.1
37	P30x0.531	5.0000		1.1
38	P30x0.531	5.0000		1.1
39	P30x0.531	5.0000		1.5
40	P36x0.625	5.0000		0.6
41	P36x0.625	5.0000		1.5
42	P36x0.625	5.0000		1.5
43	P36x0.625	5.0000		1.5
44	P36x0.625	5.0000		1.5
45	P36x0.625	0.2500		0.1



ALL REACTIONS ARE FACTORED

AXIAL 73 K

SHEAR 7 K *MOMENT 600 kip-ft*

TORQUE 0 kip-ft
50 mph WIND - 1.5000 in ICE

AXIAL 46 K

SHEAR 32 K *MOMENT 2389 kip-ft*

TORQUE 1 kip-ft
REACTIONS - 125 mph WIND

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 125 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 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 0.0000 ft
8. TIA-222-H Annex S
9. TOWER RATING: 99.8%

Paul J. Ford & Company
250 East Broad Street, Suite 600
Columbus, OH 43215
Phone: 614.221.6679
FAX:

Job:	***120-Ft Monopole / Milford JAI-ALAI***		
Project:	***PJF 37521-0073.005 / BU# 876309***		
Client: Crown Castle	Drawn by: tdehnke		App'd:
Code: TIA-222-H	Date: 07/02/21		Scale: NTS
Path:			Dwg No. E-1

Tower Input Data

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

1) Tower is located in New Haven County, Connecticut.
2) Tower base elevation above sea level: 56.6000 ft.
3) Basic wind speed of 125 mph.
4) Risk Category II.
5) Exposure Category C.
6) Simplified Topographic Factor Procedure for wind speed-up calculations is used.
7) Topographic Category: 1.
8) Crest Height: 0.0000 ft.
9) Nominal ice thickness of 1.5000 in.
10) Ice thickness is considered to increase with height.
11) Ice density of 56.00 pcf.
12) A wind speed of 50 mph is used in combination with ice.
13) Temperature drop of 50 °F.
14) Deflections calculated using a wind speed of 60 mph.
15) TIA-222-H Annex S.
16) TOWER RATING: 99.8%.
17) A non-linear (P-delta) analysis was used.
18) Pressures are calculated at each section.
19) Stress ratio used in pole design is 1.
20) Tower analysis based on target reliabilities in accordance with Annex S.
21) Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
22) Maximum demand-capacity ratio is: 1.05.
23) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Pole Section Geometry

Section	Elevation ft	Section Length ft	Pole Size	Pole Grade	Socket Length ft
L1	120.0000-115.0000	5.0000	P24x0.25	A53-B-42 (42 ksi)	
L2	115.0000-110.0000	5.0000	P24x0.25	A53-B-42 (42 ksi)	
L3	110.0000-105.0000	5.0000	P24x0.25	A53-B-42 (42 ksi)	
L4	105.0000-100.0000	5.0000	P24x0.25	A53-B-42 (42 ksi)	
L5	100.0000-98.5000	1.5000	P24x0.25	A53-B-42 (42 ksi)	
L6	98.5000-98.2500	0.2500	P24x0.3875	A53-B-42 (42 ksi)	
L7	98.2500-93.2500	5.0000	P24x0.3875	A53-B-42 (42 ksi)	
L8	93.2500-90.0000	3.2500	P24x0.3875	A53-B-42 (42 ksi)	
L9	90.0000-89.7500	0.2500	P24x0.375	A53-B-42 (42 ksi)	
L10	89.7500-84.7500	5.0000	P24x0.375	A53-B-42 (42 ksi)	
L11	84.7500-79.7500	5.0000	P24x0.375	A53-B-42 (42 ksi)	
L12	79.7500-79.0000	0.7500	P24x0.375	A53-B-42 (42 ksi)	
L13	79.0000-78.7500	0.2500	P24x0.51875	A53-B-42 (42 ksi)	
L14	78.7500-75.1700	3.5800	P24x0.51875	A53-B-42 (42 ksi)	
L15	75.1700-74.9200	0.2500	P24x0.675	A53-B-42 (42 ksi)	
L16	74.9200-69.9200	5.0000	P24x0.675	A53-B-42 (42 ksi)	
L17	69.9200-64.9200	5.0000	P24x0.675	A53-B-42 (42 ksi)	
L18	64.9200-60.0000	4.9200	P24x0.675	A53-B-42 (42 ksi)	
L19	60.0000-59.7500	0.2500	P30x0.53125	A53-B-42 (42 ksi)	
L20	59.7500-54.7500	5.0000	P30x0.53125	A53-B-42 (42 ksi)	
L21	54.7500-49.7500	5.0000	P30x0.53125	A53-B-42 (42 ksi)	
L22	49.7500-47.8300	1.9200	P30x0.53125	A53-B-42 (42 ksi)	
L23	47.8300-47.5800	0.2500	P30x0.65	A53-B-42 (42 ksi)	
L24	47.5800-43.0000	4.5800	P30x0.65	A53-B-42 (42 ksi)	
L25	43.0000-42.7500	0.2500	P30x0.8	A53-B-42 (42 ksi)	
L26	42.7500-37.7500	5.0000	P30x0.8	A53-B-42 (42 ksi)	
L27	37.7500-34.5000	3.2500	P30x0.8	A53-B-42 (42 ksi)	
L28	34.5000-34.2500	0.2500	P30x0.65	A53-B-42 (42 ksi)	
L29	34.2500-30.0000	4.2500	P30x0.65	A53-B-42 (42 ksi)	
L30	30.0000-29.7500	0.2500	P36x0.55	A53-B-42 (42 ksi)	
L31	29.7500-25.5800	4.1700	P36x0.55	A53-B-42 (42 ksi)	
L32	25.5800-25.3300	0.2500	P36x0.65	A53-B-42 (42 ksi)	
L33	25.3300-20.7500	4.5800	P36x0.65	A53-B-42 (42 ksi)	
L34	20.7500-20.5000	0.2500	P36x0.7875	A53-B-42 (42 ksi)	
L35	20.5000-17.4800	3.0200	P36x0.7875	A53-B-42	

Section	Elevation ft	Section Length ft	Pole Size	Pole Grade	Socket Length ft
L36	17.4800-17.2300	0.2500	P36x0.7875	(42 ksi) A53-B-42 (42 ksi)	
L37	17.2300-13.5000	3.7300	P36x0.7875	A53-B-42 (42 ksi)	
L38	13.5000-13.2500	0.2500	P36x0.825	A53-B-42 (42 ksi)	
L39	13.2500-8.2500	5.0000	P36x0.825	A53-B-42 (42 ksi)	
L40	8.2500-6.2500	2.0000	P36x0.825	A53-B-42 (42 ksi)	
L41	6.2500-6.0000	0.2500	P36x1.025	A53-B-42 (42 ksi)	
L42	6.0000-5.5000	0.5000	P36x1.025	A53-B-42 (42 ksi)	
L43	5.5000-5.2500	0.2500	P36x0.8875	A53-B-42 (42 ksi)	
L44	5.2500-0.2500	5.0000	P36x0.8875	A53-B-42 (42 ksi)	
L45	0.2500-0.0000	0.2500	P36x0.8875	A53-B-42 (42 ksi)	

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 120.0000-115.0000				1	1	1			
L2 115.0000-110.0000				1	1	1			
L3 110.0000-105.0000				1	1	1			
L4 105.0000-100.0000				1	1	1			
L5 100.0000-98.5000				1	1	1			
L6 98.5000-98.2500				1	1	0.962015			
L7 98.2500-93.2500				1	1	0.962015			
L8 93.2500-90.0000				1	1	0.962015			
L9 90.0000-89.7500				1	1	1			
L10 89.7500-84.7500				1	1	1			
L11 84.7500-79.7500				1	1	1			
L12 79.7500-79.0000				1	1	1			
L13 79.0000-78.7500				1	1	0.962504			
L14 78.7500-75.1700				1	1	0.962504			
L15 75.1700-74.9200				1	1	0.921761			
L16 74.9200-69.9200				1	1	0.921761			
L17 69.9200-64.9200				1	1	0.921761			
L18 64.9200-60.0000				1	1	0.921761			
L19 60.0000-59.7500				1	1	0.961544			
L20 59.7500-54.7500				1	1	0.961544			

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L21 54.7500-49.7500				1	1	0.961544			
L22 49.7500-47.8300				1	1	0.961544			
L23 47.8300-47.5800				1	1	0.939223			
L24 47.5800-43.0000				1	1	0.939223			
L25 43.0000-42.7500				1	1	0.933109			
L26 42.7500-37.7500				1	1	0.933109			
L27 37.7500-34.5000				1	1	0.933109			
L28 34.5000-34.2500				1	1	0.939223			
L29 34.2500-30.0000				1	1	0.939223			
L30 30.0000-29.7500				1	1	0.961904			
L31 29.7500-25.5800				1	1	0.961904			
L32 25.5800-25.3300				1	1	0.940899			
L33 25.3300-20.7500				1	1	0.940899			
L34 20.7500-20.5000				1	1	0.930309			
L35 20.5000-17.4800				1	1	0.999183			
L36 17.4800-17.2300				1	1	0.999183			
L37 17.2300-13.5000				1	1	0.999183			
L38 13.5000-13.2500				1	1	0.93811			
L39 13.2500-8.2500				1	1	0.93811			
L40 8.2500-6.2500				1	1	0.93811			
L41 6.2500-6.0000				1	1	0.914389			
L42 6.0000-5.5000				1	1	0.914389			
L43 5.5000-5.2500				1	1	0.8987			
L44 5.2500-0.2500				1	1	0.8987			
L45 0.2500-0.0000				1	1	0.8987			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
HB158-21U6S24-xxM_TMO(1-5/8) ***	C	No	Surface Ar (CaAa)	117.0000 - 0.0000	4	4	0.050 0.250	1.9960		2.50
WR-VG66ST-BRD(7/8) ***	B	No	Surface Ar (CaAa)	83.0000 - 0.0000	6	6	-0.239 -0.089	0.9570		0.91

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
FP 3.50 x 1.25 Reinforcement	B	No	Surface Af (CaAa)	22.0000 - 0.0000	1	1	0.058 0.058	3.5000	9.5000	0.00
FP 3.50 x 1.25 Reinforcement	A	No	Surface Af (CaAa)	22.0000 - 0.0000	1	1	0.067 0.067	3.5000	9.5000	0.00
FP 3.50 x 1.25 Reinforcement	C	No	Surface Af (CaAa)	22.0000 - 0.0000	1	1	0.058 0.058	3.5000	9.5000	0.00
FP 3.25 x 1.25 Reinforcement	B	No	Surface Af (CaAa)	44.0000 - 30.0000	1	1	0.058 0.058	3.2500	9.0000	0.00
FP 3.25 x 1.25 Reinforcement	A	No	Surface Af (CaAa)	44.0000 - 30.0000	1	1	0.067 0.067	3.2500	9.0000	0.00
FP 3.25 x 1.25 Reinforcement	C	No	Surface Af (CaAa)	44.0000 - 30.0000	1	1	0.058 0.058	3.2500	9.0000	0.00
**										
MP3-05 Reinforcement	B	No	Surface Af (CaAa)	8.5000 - 0.0000	1	1	-0.500 -0.500	5.3300	14.8400	0.00
MP3-04 Reinforcement	A	No	Surface Af (CaAa)	14.8750 - 4.8750	1	1	0.250 0.250	4.7800	12.7800	0.00
MP3-05 Reinforcement	B	No	Surface Af (CaAa)	30.0000 - 11.2500	1	1	-0.500 -0.500	5.3300	14.8400	0.00
MP3-05 Reinforcement	C	No	Surface Af (CaAa)	30.0000 - 0.0000	1	1	-0.500 -0.500	5.3300	14.8400	0.00
MP3-05 Reinforcement	A	No	Surface Af (CaAa)	30.0000 - 0.0000	1	1	-0.500 -0.500	5.3300	14.8400	0.00
MP3-04 Reinforcement	C	No	Surface Af (CaAa)	60.0000 - 30.0000	1	1	-0.500 -0.500	4.7800	12.7800	0.00
MP3-04 Reinforcement	B	No	Surface Af (CaAa)	60.0000 - 30.0000	1	1	-0.500 -0.500	4.7800	12.7800	0.00
MP3-04 Reinforcement	A	No	Surface Af (CaAa)	60.0000 - 30.0000	1	1	-0.500 -0.500	4.7800	12.7800	0.00
MP3-03 Reinforcement	C	No	Surface Af (CaAa)	75.2080 - 60.0000	1	1	-0.500 -0.500	4.0600	11.2600	0.00
MP3-03 Reinforcement	B	No	Surface Af (CaAa)	76.2080 - 60.0000	1	1	-0.500 -0.500	4.0600	11.2600	0.00
MP3-03 Reinforcement	A	No	Surface Af (CaAa)	76.2080 - 60.0000	1	1	-0.500 -0.500	4.0600	11.2600	0.00
**										
CCI-040075 Reinforcement	C	No	Surface Af (CaAa)	27.0000 - 17.0000	1	1	-0.125 -0.125	4.0000	9.5000	0.00
CCI-040075 Reinforcement	B	No	Surface Af (CaAa)	27.0000 - 17.0000	1	1	-0.125 -0.125	4.0000	9.5000	0.00
CCI-040075 Reinforcement	A	No	Surface Af (CaAa)	27.0000 - 17.0000	1	1	-0.125 -0.125	4.0000	9.5000	0.00
CCI-040075 Reinforcement	C	No	Surface Af (CaAa)	50.2500 - 30.2500	1	1	-0.125 -0.125	4.0000	9.5000	0.00
CCI-040075 Reinforcement	B	No	Surface Af (CaAa)	50.2500 - 30.2500	1	1	-0.125 -0.125	4.0000	9.5000	0.00
CCI-040075 Reinforcement	A	No	Surface Af (CaAa)	50.2500 - 30.2500	1	1	-0.125 -0.125	4.0000	9.5000	0.00
CCI-040075 Reinforcement	C	No	Surface Af (CaAa)	80.2500 - 60.2500	1	1	-0.125 -0.125	4.0000	9.5000	0.00
CCI-040075 Reinforcement	B	No	Surface Af (CaAa)	80.2500 - 60.2500	1	1	-0.125 -0.125	4.0000	9.5000	0.00
CCI-040075 Reinforcement	A	No	Surface Af (CaAa)	80.2500 - 60.2500	1	1	-0.125 -0.125	4.0000	9.5000	0.00
FP 5.00 X 4.75 Reinforcement	C	No	Surface Af (CaAa)	92.6700 - 87.3300	1	1	-0.500 -0.500	5.0000	19.5000	0.00
FP 5.00 X 4.75 Reinforcement	B	No	Surface Af (CaAa)	92.6700 - 87.3300	1	1	-0.500 -0.500	5.0000	19.5000	0.00
FP 5.00 X 4.75 Reinforcement	A	No	Surface Af (CaAa)	92.6700 - 87.3300	1	1	-0.500 -0.500	5.0000	19.5000	0.00
CCI-040075 Reinforcement	C	No	Surface Af (CaAa)	100.4200 - 92.6700	1	1	-0.500 -0.500	4.0000	9.5000	0.00
CCI-040075 Reinforcement	B	No	Surface Af (CaAa)	100.4200 - 92.6700	1	1	-0.500 -0.500	4.0000	9.5000	0.00
CCI-040075 Reinforcement	A	No	Surface Af (CaAa)	100.4200 - 92.6700	1	1	-0.500 -0.500	4.0000	9.5000	0.00
**										
CCI-040125	C	No	Surface Af	19.0000 -	1	1	-0.292	4.0000	10.5000	0.00

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
			(CaAa)	4.0000			-0.292			
CCI-040125	B	No	Surface Af	19.0000 -	1	1	-0.275	4.0000	10.5000	0.00
			(CaAa)	4.0000			-0.275			
CCI-040125	C	No	Surface Af	19.0000 -	1	1	0.333	4.0000	10.5000	0.00
			(CaAa)	4.0000			0.333			

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
LDF4-50A(1/2)	C	No	No	Inside Pole	117.0000 - 0.0000	1	No Ice	0.0000	0.15
							1/2" Ice	0.0000	0.15
							1" Ice	0.0000	0.15
							2" Ice	0.0000	0.15
***									
561(1-5/8)	C	No	No	Inside Pole	103.0000 - 0.0000	11	No Ice	0.0000	1.35
							1/2" Ice	0.0000	1.35
							1" Ice	0.0000	1.35
							2" Ice	0.0000	1.35
HB158-21U6S12-XXXM-01(1-5/8)	C	No	No	Inside Pole	103.0000 - 0.0000	1	No Ice	0.0000	1.90
							1/2" Ice	0.0000	1.90
							1" Ice	0.0000	1.90
							2" Ice	0.0000	1.90
HFT1208-24S26(1-1/4)	C	No	No	Inside Pole	103.0000 - 0.0000	1	No Ice	0.0000	1.17
							1/2" Ice	0.0000	1.17
							1" Ice	0.0000	1.17
							2" Ice	0.0000	1.17

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	120.0000-115.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	1.597	0.000	0.02
L2	115.0000-110.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	3.992	0.000	0.05
L3	110.0000-105.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	3.992	0.000	0.05
L4	105.0000-100.0000	A	0.000	0.000	0.270	0.000	0.00
		B	0.000	0.000	0.270	0.000	0.00
		C	0.000	0.000	4.262	0.000	0.10
L5	100.0000-98.5000	A	0.000	0.000	0.964	0.000	0.00
		B	0.000	0.000	0.964	0.000	0.00
		C	0.000	0.000	2.162	0.000	0.04
L6	98.5000-98.2500	A	0.000	0.000	0.161	0.000	0.00
		B	0.000	0.000	0.161	0.000	0.00
		C	0.000	0.000	0.360	0.000	0.01
L7	98.2500-93.2500	A	0.000	0.000	3.214	0.000	0.00
		B	0.000	0.000	3.214	0.000	0.00
		C	0.000	0.000	7.206	0.000	0.14
L8	93.2500-90.0000	A	0.000	0.000	2.015	0.000	0.00
		B	0.000	0.000	2.015	0.000	0.00
		C	0.000	0.000	4.610	0.000	0.09
L9	90.0000-89.7500	A	0.000	0.000	0.154	0.000	0.00

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B	0.000	0.000	0.154	0.000	0.00
		C	0.000	0.000	0.353	0.000	0.01
L10	89.7500-84.7500	A	0.000	0.000	1.489	0.000	0.00
		B	0.000	0.000	1.489	0.000	0.00
		C	0.000	0.000	5.481	0.000	0.14
L11	84.7500-79.7500	A	0.000	0.000	0.333	0.000	0.00
		B	0.000	0.000	2.199	0.000	0.02
		C	0.000	0.000	4.325	0.000	0.14
L12	79.7500-79.0000	A	0.000	0.000	0.500	0.000	0.00
		B	0.000	0.000	0.931	0.000	0.00
		C	0.000	0.000	1.099	0.000	0.02
L13	79.0000-78.7500	A	0.000	0.000	0.167	0.000	0.00
		B	0.000	0.000	0.310	0.000	0.00
		C	0.000	0.000	0.366	0.000	0.01
L14	78.7500-75.1700	A	0.000	0.000	3.089	0.000	0.00
		B	0.000	0.000	5.145	0.000	0.02
		C	0.000	0.000	5.271	0.000	0.10
L15	75.1700-74.9200	A	0.000	0.000	0.336	0.000	0.00
		B	0.000	0.000	0.479	0.000	0.00
		C	0.000	0.000	0.535	0.000	0.01
L16	74.9200-69.9200	A	0.000	0.000	6.717	0.000	0.00
		B	0.000	0.000	9.588	0.000	0.03
		C	0.000	0.000	10.709	0.000	0.14
L17	69.9200-64.9200	A	0.000	0.000	6.717	0.000	0.00
		B	0.000	0.000	9.588	0.000	0.03
		C	0.000	0.000	10.709	0.000	0.14
L18	64.9200-60.0000	A	0.000	0.000	6.443	0.000	0.00
		B	0.000	0.000	9.268	0.000	0.03
		C	0.000	0.000	10.371	0.000	0.14
L19	60.0000-59.7500	A	0.000	0.000	0.199	0.000	0.00
		B	0.000	0.000	0.343	0.000	0.00
		C	0.000	0.000	0.399	0.000	0.01
L20	59.7500-54.7500	A	0.000	0.000	3.983	0.000	0.00
		B	0.000	0.000	6.854	0.000	0.03
		C	0.000	0.000	7.975	0.000	0.14
L21	54.7500-49.7500	A	0.000	0.000	4.317	0.000	0.00
		B	0.000	0.000	7.188	0.000	0.03
		C	0.000	0.000	8.309	0.000	0.14
L22	49.7500-47.8300	A	0.000	0.000	2.810	0.000	0.00
		B	0.000	0.000	3.912	0.000	0.01
		C	0.000	0.000	4.343	0.000	0.05
L23	47.8300-47.5800	A	0.000	0.000	0.366	0.000	0.00
		B	0.000	0.000	0.509	0.000	0.00
		C	0.000	0.000	0.565	0.000	0.01
L24	47.5800-43.0000	A	0.000	0.000	7.244	0.000	0.00
		B	0.000	0.000	9.874	0.000	0.03
		C	0.000	0.000	10.900	0.000	0.13
L25	43.0000-42.7500	A	0.000	0.000	0.501	0.000	0.00
		B	0.000	0.000	0.645	0.000	0.00
		C	0.000	0.000	0.701	0.000	0.01
L26	42.7500-37.7500	A	0.000	0.000	10.025	0.000	0.00
		B	0.000	0.000	12.896	0.000	0.03
		C	0.000	0.000	14.017	0.000	0.14
L27	37.7500-34.5000	A	0.000	0.000	6.516	0.000	0.00
		B	0.000	0.000	8.382	0.000	0.02
		C	0.000	0.000	9.111	0.000	0.09
L28	34.5000-34.2500	A	0.000	0.000	0.501	0.000	0.00
		B	0.000	0.000	0.645	0.000	0.00
		C	0.000	0.000	0.701	0.000	0.01
L29	34.2500-30.0000	A	0.000	0.000	8.355	0.000	0.00
		B	0.000	0.000	10.795	0.000	0.02
		C	0.000	0.000	11.748	0.000	0.12
L30	30.0000-29.7500	A	0.000	0.000	0.222	0.000	0.00
		B	0.000	0.000	0.366	0.000	0.00
		C	0.000	0.000	0.422	0.000	0.01
L31	29.7500-25.5800	A	0.000	0.000	4.651	0.000	0.00
		B	0.000	0.000	7.045	0.000	0.02
		C	0.000	0.000	7.980	0.000	0.12
L32	25.5800-25.3300	A	0.000	0.000	0.389	0.000	0.00

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B	0.000	0.000	0.532	0.000	0.00
		C	0.000	0.000	0.588	0.000	0.01
L33	25.3300-20.7500	A	0.000	0.000	7.851	0.000	0.00
		B	0.000	0.000	10.481	0.000	0.03
		C	0.000	0.000	11.508	0.000	0.13
L34	20.7500-20.5000	A	0.000	0.000	0.535	0.000	0.00
		B	0.000	0.000	0.678	0.000	0.00
		C	0.000	0.000	0.734	0.000	0.01
L35	20.5000-17.4800	A	0.000	0.000	6.458	0.000	0.00
		B	0.000	0.000	9.205	0.000	0.02
		C	0.000	0.000	10.896	0.000	0.08
L36	17.4800-17.2300	A	0.000	0.000	0.535	0.000	0.00
		B	0.000	0.000	0.845	0.000	0.00
		C	0.000	0.000	1.068	0.000	0.01
L37	17.2300-13.5000	A	0.000	0.000	6.716	0.000	0.00
		B	0.000	0.000	10.271	0.000	0.02
		C	0.000	0.000	13.594	0.000	0.10
L38	13.5000-13.2500	A	0.000	0.000	0.563	0.000	0.00
		B	0.000	0.000	0.678	0.000	0.00
		C	0.000	0.000	0.901	0.000	0.01
L39	13.2500-8.2500	A	0.000	0.000	11.261	0.000	0.00
		B	0.000	0.000	11.093	0.000	0.03
		C	0.000	0.000	18.017	0.000	0.14
L40	8.2500-6.2500	A	0.000	0.000	4.505	0.000	0.00
		B	0.000	0.000	5.212	0.000	0.01
		C	0.000	0.000	7.207	0.000	0.06
L41	6.2500-6.0000	A	0.000	0.000	0.563	0.000	0.00
		B	0.000	0.000	0.652	0.000	0.00
		C	0.000	0.000	0.901	0.000	0.01
L42	6.0000-5.5000	A	0.000	0.000	1.126	0.000	0.00
		B	0.000	0.000	1.303	0.000	0.00
		C	0.000	0.000	1.802	0.000	0.01
L43	5.5000-5.2500	A	0.000	0.000	0.563	0.000	0.00
		B	0.000	0.000	0.652	0.000	0.00
		C	0.000	0.000	0.901	0.000	0.01
L44	5.2500-0.2500	A	0.000	0.000	7.651	0.000	0.00
		B	0.000	0.000	10.531	0.000	0.03
		C	0.000	0.000	13.017	0.000	0.14
L45	0.2500-0.0000	A	0.000	0.000	0.368	0.000	0.00
		B	0.000	0.000	0.485	0.000	0.00
		C	0.000	0.000	0.568	0.000	0.01

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	120.0000-115.0000	A	1.448	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	2.720	0.000	0.05
L2	115.0000-110.0000	A	1.441	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	6.792	0.000	0.12
L3	110.0000-105.0000	A	1.435	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	6.784	0.000	0.12
L4	105.0000-100.0000	A	1.428	0.000	0.000	0.333	0.000	0.00
		B		0.000	0.000	0.333	0.000	0.00
		C		0.000	0.000	7.108	0.000	0.18
L5	100.0000-98.5000	A	1.423	0.000	0.000	1.187	0.000	0.01
		B		0.000	0.000	1.187	0.000	0.01
		C		0.000	0.000	3.218	0.000	0.07
L6	98.5000-98.2500	A	1.422	0.000	0.000	0.198	0.000	0.00
		B		0.000	0.000	0.198	0.000	0.00
		C		0.000	0.000	0.536	0.000	0.01
L7	98.2500-93.2500	A	1.418	0.000	0.000	3.955	0.000	0.04

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B		0.000	0.000	3.955	0.000	0.04
		C		0.000	0.000	10.718	0.000	0.25
L8	93.2500-90.0000	A	1.412	0.000	0.000	2.536	0.000	0.04
		B		0.000	0.000	2.536	0.000	0.04
		C		0.000	0.000	6.927	0.000	0.18
L9	90.0000-89.7500	A	1.409	0.000	0.000	0.194	0.000	0.00
		B		0.000	0.000	0.194	0.000	0.00
		C		0.000	0.000	0.532	0.000	0.01
L10	89.7500-84.7500	A	1.405	0.000	0.000	1.881	0.000	0.03
		B		0.000	0.000	1.881	0.000	0.03
		C		0.000	0.000	8.628	0.000	0.24
L11	84.7500-79.7500	A	1.397	0.000	0.000	0.473	0.000	0.00
		B		0.000	0.000	3.941	0.000	0.05
		C		0.000	0.000	7.209	0.000	0.21
L12	79.7500-79.0000	A	1.392	0.000	0.000	0.709	0.000	0.01
		B		0.000	0.000	1.508	0.000	0.02
		C		0.000	0.000	1.718	0.000	0.04
L13	79.0000-78.7500	A	1.391	0.000	0.000	0.236	0.000	0.00
		B		0.000	0.000	0.503	0.000	0.01
		C		0.000	0.000	0.573	0.000	0.01
L14	78.7500-75.1700	A	1.388	0.000	0.000	4.371	0.000	0.04
		B		0.000	0.000	8.182	0.000	0.09
		C		0.000	0.000	8.231	0.000	0.18
L15	75.1700-74.9200	A	1.384	0.000	0.000	0.474	0.000	0.00
		B		0.000	0.000	0.740	0.000	0.01
		C		0.000	0.000	0.810	0.000	0.01
L16	74.9200-69.9200	A	1.379	0.000	0.000	9.475	0.000	0.08
		B		0.000	0.000	14.788	0.000	0.16
		C		0.000	0.000	16.189	0.000	0.29
L17	69.9200-64.9200	A	1.369	0.000	0.000	9.456	0.000	0.08
		B		0.000	0.000	14.756	0.000	0.16
		C		0.000	0.000	16.157	0.000	0.29
L18	64.9200-60.0000	A	1.359	0.000	0.000	9.049	0.000	0.08
		B		0.000	0.000	14.252	0.000	0.15
		C		0.000	0.000	15.631	0.000	0.28
L19	60.0000-59.7500	A	1.353	0.000	0.000	0.267	0.000	0.00
		B		0.000	0.000	0.531	0.000	0.01
		C		0.000	0.000	0.601	0.000	0.01
L20	59.7500-54.7500	A	1.347	0.000	0.000	5.331	0.000	0.05
		B		0.000	0.000	10.603	0.000	0.12
		C		0.000	0.000	12.005	0.000	0.25
L21	54.7500-49.7500	A	1.335	0.000	0.000	5.785	0.000	0.05
		B		0.000	0.000	11.043	0.000	0.12
		C		0.000	0.000	12.444	0.000	0.25
L22	49.7500-47.8300	A	1.326	0.000	0.000	3.828	0.000	0.03
		B		0.000	0.000	5.842	0.000	0.06
		C		0.000	0.000	6.380	0.000	0.11
L23	47.8300-47.5800	A	1.323	0.000	0.000	0.498	0.000	0.00
		B		0.000	0.000	0.760	0.000	0.01
		C		0.000	0.000	0.830	0.000	0.01
L24	47.5800-43.0000	A	1.316	0.000	0.000	9.918	0.000	0.08
		B		0.000	0.000	14.712	0.000	0.15
		C		0.000	0.000	15.996	0.000	0.27
L25	43.0000-42.7500	A	1.309	0.000	0.000	0.698	0.000	0.01
		B		0.000	0.000	0.959	0.000	0.01
		C		0.000	0.000	1.029	0.000	0.02
L26	42.7500-37.7500	A	1.301	0.000	0.000	13.927	0.000	0.12
		B		0.000	0.000	19.141	0.000	0.19
		C		0.000	0.000	20.542	0.000	0.32
L27	37.7500-34.5000	A	1.287	0.000	0.000	9.025	0.000	0.07
		B		0.000	0.000	12.403	0.000	0.12
		C		0.000	0.000	13.314	0.000	0.21
L28	34.5000-34.2500	A	1.280	0.000	0.000	0.693	0.000	0.01
		B		0.000	0.000	0.953	0.000	0.01
		C		0.000	0.000	1.023	0.000	0.02
L29	34.2500-30.0000	A	1.272	0.000	0.000	11.534	0.000	0.09
		B		0.000	0.000	15.935	0.000	0.15
		C		0.000	0.000	17.126	0.000	0.26
L30	30.0000-29.7500	A	1.262	0.000	0.000	0.285	0.000	0.00

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B		0.000	0.000	0.544	0.000	0.01
		C		0.000	0.000	0.614	0.000	0.01
L31	29.7500-25.5800	A	1.253	0.000	0.000	5.950	0.000	0.05
		B		0.000	0.000	10.249	0.000	0.11
		C		0.000	0.000	11.417	0.000	0.22
L32	25.5800-25.3300	A	1.242	0.000	0.000	0.495	0.000	0.00
		B		0.000	0.000	0.752	0.000	0.01
		C		0.000	0.000	0.822	0.000	0.01
L33	25.3300-20.7500	A	1.230	0.000	0.000	10.094	0.000	0.08
		B		0.000	0.000	14.789	0.000	0.15
		C		0.000	0.000	16.073	0.000	0.26
L34	20.7500-20.5000	A	1.216	0.000	0.000	0.700	0.000	0.01
		B		0.000	0.000	0.955	0.000	0.01
		C		0.000	0.000	1.026	0.000	0.02
L35	20.5000-17.4800	A	1.206	0.000	0.000	8.441	0.000	0.07
		B		0.000	0.000	12.900	0.000	0.12
		C		0.000	0.000	15.126	0.000	0.21
L36	17.4800-17.2300	A	1.196	0.000	0.000	0.697	0.000	0.01
		B		0.000	0.000	1.178	0.000	0.01
		C		0.000	0.000	1.475	0.000	0.02
L37	17.2300-13.5000	A	1.181	0.000	0.000	8.693	0.000	0.07
		B		0.000	0.000	14.591	0.000	0.13
		C		0.000	0.000	19.004	0.000	0.26
L38	13.5000-13.2500	A	1.165	0.000	0.000	0.711	0.000	0.01
		B		0.000	0.000	0.962	0.000	0.01
		C		0.000	0.000	1.257	0.000	0.02
L39	13.2500-8.2500	A	1.140	0.000	0.000	14.155	0.000	0.11
		B		0.000	0.000	16.002	0.000	0.15
		C		0.000	0.000	24.999	0.000	0.33
L40	8.2500-6.2500	A	1.096	0.000	0.000	5.618	0.000	0.04
		B		0.000	0.000	7.165	0.000	0.07
		C		0.000	0.000	9.907	0.000	0.13
L41	6.2500-6.0000	A	1.077	0.000	0.000	0.700	0.000	0.01
		B		0.000	0.000	0.892	0.000	0.01
		C		0.000	0.000	1.234	0.000	0.02
L42	6.0000-5.5000	A	1.071	0.000	0.000	1.398	0.000	0.01
		B		0.000	0.000	1.782	0.000	0.02
		C		0.000	0.000	2.464	0.000	0.03
L43	5.5000-5.2500	A	1.063	0.000	0.000	0.698	0.000	0.01
		B		0.000	0.000	0.889	0.000	0.01
		C		0.000	0.000	1.230	0.000	0.02
L44	5.2500-0.2500	A	0.994	0.000	0.000	9.680	0.000	0.06
		B		0.000	0.000	14.283	0.000	0.13
		C		0.000	0.000	17.744	0.000	0.26
L45	0.2500-0.0000	A	0.730	0.000	0.000	0.441	0.000	0.00
		B		0.000	0.000	0.623	0.000	0.00
		C		0.000	0.000	0.736	0.000	0.01

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	120.0000-115.0000	-0.8443	2.5984	-0.6282	1.9334
L2	115.0000-110.0000	-1.6047	4.9388	-1.1717	3.6061
L3	110.0000-105.0000	-1.6047	4.9388	-1.1714	3.6053
L4	105.0000-100.0000	-1.4844	4.5685	-1.1229	3.4560
L5	100.0000-98.5000	-0.6236	1.9193	-0.7729	2.3787
L6	98.5000-98.2500	-0.6236	1.9193	-0.7728	2.3786
L7	98.2500-93.2500	-0.6236	1.9193	-0.7727	2.3782
L8	93.2500-90.0000	-0.6076	1.8700	-0.7514	2.3126

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L9	90.0000-89.7500	-0.6042	1.8597	-0.7469	2.2987
L10	89.7500-84.7500	-0.7743	2.3830	-0.9319	2.8680
L11	84.7500-79.7500	-0.0750	2.4572	0.0320	1.7023
L12	79.7500-79.0000	0.3127	0.9638	0.3559	0.7230
L13	79.0000-78.7500	0.3127	0.9638	0.3559	0.7231
L14	78.7500-75.1700	-0.2907	0.8354	-0.1418	0.7915
L15	75.1700-74.9200	0.1789	0.5515	0.2650	0.5391
L16	74.9200-69.9200	0.1789	0.5515	0.2648	0.5393
L17	69.9200-64.9200	0.1789	0.5515	0.2645	0.5398
L18	64.9200-60.0000	0.1814	0.5591	0.2675	0.5472
L19	60.0000-59.7500	0.2649	0.7886	0.3986	0.7898
L20	59.7500-54.7500	0.2649	0.7886	0.3983	0.7902
L21	54.7500-49.7500	0.2569	0.7648	0.3862	0.7682
L22	49.7500-47.8300	0.2019	0.6010	0.3064	0.6107
L23	47.8300-47.5800	0.2019	0.6010	0.3063	0.6109
L24	47.5800-43.0000	0.1981	0.5716	0.2979	0.5808
L25	43.0000-42.7500	0.1866	0.4835	0.2734	0.4901
L26	42.7500-37.7500	0.1866	0.4835	0.2731	0.4905
L27	37.7500-34.5000	0.1866	0.4835	0.2727	0.4912
L28	34.5000-34.2500	0.1866	0.4835	0.2725	0.4915
L29	34.2500-30.0000	0.1888	0.4892	0.2753	0.4974
L30	30.0000-29.7500	0.2833	0.8238	0.4349	0.8592
L31	29.7500-25.5800	0.2589	0.7529	0.4001	0.7921
L32	25.5800-25.3300	0.2219	0.6453	0.3466	0.6878
L33	25.3300-20.7500	0.2174	0.6063	0.3349	0.6456
L34	20.7500-20.5000	0.2071	0.5188	0.3099	0.5512
L35	20.5000-17.4800	0.1304	0.3348	0.2238	0.3645
L36	17.4800-17.2300	0.0669	0.1824	0.1524	0.2097
L37	17.2300-13.5000	0.0384	-0.2815	0.1391	-0.1818
L38	13.5000-13.2500	-0.0257	-1.0877	0.0808	-0.8789
L39	13.2500-8.2500	0.7087	-0.3540	0.7749	-0.1810
L40	8.2500-6.2500	0.1276	-0.9346	0.3021	-0.6552
L41	6.2500-6.0000	0.1276	-0.9346	0.3002	-0.6569
L42	6.0000-5.5000	0.1276	-0.9346	0.2994	-0.6574
L43	5.5000-5.2500	0.1276	-0.9346	0.2987	-0.6581
L44	5.2500-0.2500	0.3841	0.5949	0.5654	0.7351
L45	0.2500-0.0000	0.4586	0.8558	0.6087	0.9754

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	2	HB158-21U6S24-xxM_TMO(1-5/8)	115.00 - 117.00	1.0000	1.0000
L2	2	HB158-21U6S24-xxM_TMO(1-5/8)	110.00 - 115.00	1.0000	1.0000
L3	2	HB158-21U6S24-xxM_TMO(1-5/8)	105.00 - 110.00	1.0000	1.0000
L4	2	HB158-21U6S24-xxM_TMO(1-5/8)	100.00 - 105.00	1.0000	1.0000
L4	47	CCI-040075 Reinforcement	100.00 - 100.42	1.0000	1.0000
L4	48	CCI-040075 Reinforcement	100.00 - 100.42	1.0000	1.0000
L4	49	CCI-040075 Reinforcement	100.00 - 100.42	1.0000	1.0000
L5	2	HB158-21U6S24-xxM_TMO(1-5/8)	98.50 - 100.00	1.0000	1.0000
L5	47	CCI-040075	98.50 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		Reinforcement	100.00		
L5	48	CCI-040075	98.50 -	1.0000	1.0000
		Reinforcement	100.00		
L5	49	CCI-040075	98.50 -	1.0000	1.0000
		Reinforcement	100.00		
L6	2	HB158-21U6S24-xxM_TMO(1-5/8)	98.25 - 98.50	1.0000	1.0000
L6	47	CCI-040075	98.25 -	1.0000	1.0000
		Reinforcement	98.50		
L6	48	CCI-040075	98.25 -	1.0000	1.0000
		Reinforcement	98.50		
L6	49	CCI-040075	98.25 -	1.0000	1.0000
		Reinforcement	98.50		
L7	2	HB158-21U6S24-xxM_TMO(1-5/8)	93.25 - 98.25	1.0000	1.0000
L7	47	CCI-040075	93.25 -	1.0000	1.0000
		Reinforcement	98.25		
L7	48	CCI-040075	93.25 -	1.0000	1.0000
		Reinforcement	98.25		
L7	49	CCI-040075	93.25 -	1.0000	1.0000
		Reinforcement	98.25		
L8	2	HB158-21U6S24-xxM_TMO(1-5/8)	90.00 - 93.25	1.0000	1.0000
L8	44	FP 5.00 X 4.75	90.00 -	1.0000	1.0000
		Reinforcement	92.67		
L8	45	FP 5.00 X 4.75	90.00 -	1.0000	1.0000
		Reinforcement	92.67		
L8	46	FP 5.00 X 4.75	90.00 -	1.0000	1.0000
		Reinforcement	92.67		
L8	47	CCI-040075	92.67 -	1.0000	1.0000
		Reinforcement	93.25		
L8	48	CCI-040075	92.67 -	1.0000	1.0000
		Reinforcement	93.25		
L8	49	CCI-040075	92.67 -	1.0000	1.0000
		Reinforcement	93.25		
L9	2	HB158-21U6S24-xxM_TMO(1-5/8)	89.75 - 90.00	1.0000	1.0000
L9	44	FP 5.00 X 4.75	89.75 -	1.0000	1.0000
		Reinforcement	90.00		
L9	45	FP 5.00 X 4.75	89.75 -	1.0000	1.0000
		Reinforcement	90.00		
L9	46	FP 5.00 X 4.75	89.75 -	1.0000	1.0000
		Reinforcement	90.00		
L10	2	HB158-21U6S24-xxM_TMO(1-5/8)	84.75 - 89.75	1.0000	1.0000
L10	44	FP 5.00 X 4.75	87.33 -	1.0000	1.0000
		Reinforcement	89.75		
L10	45	FP 5.00 X 4.75	87.33 -	1.0000	1.0000
		Reinforcement	89.75		
L10	46	FP 5.00 X 4.75	87.33 -	1.0000	1.0000
		Reinforcement	89.75		
L11	2	HB158-21U6S24-xxM_TMO(1-5/8)	79.75 - 84.75	1.0000	1.0000
L11	14	WR-VG66ST-BRD(7/8)	79.75 - 83.00	1.0000	1.0000
L11	41	CCI-040075	79.75 -	1.0000	1.0000
		Reinforcement	80.25		
L11	42	CCI-040075	79.75 -	1.0000	1.0000
		Reinforcement	80.25		
L11	43	CCI-040075	79.75 -	1.0000	1.0000
		Reinforcement	80.25		
L12	2	HB158-21U6S24-xxM_TMO(1-5/8)	79.00 - 79.75	1.0000	1.0000
L12	14	WR-VG66ST-BRD(7/8)	79.00 - 79.75	1.0000	1.0000
L12	41	CCI-040075	79.00 -	1.0000	1.0000
		Reinforcement	79.75		
L12	42	CCI-040075	79.00 -	1.0000	1.0000
		Reinforcement	79.75		

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L12	43	CCI-040075 Reinforcement	79.00 - 79.75	1.0000	1.0000
L13	2	HB158-21U6S24-xxM_TMO(1-5/8)	78.75 - 79.00	1.0000	1.0000
L13	14	WR-VG66ST-BRD(7/8)	78.75 - 79.00	1.0000	1.0000
L13	41	CCI-040075 Reinforcement	78.75 - 79.00	1.0000	1.0000
L13	42	CCI-040075 Reinforcement	78.75 - 79.00	1.0000	1.0000
L13	43	CCI-040075 Reinforcement	78.75 - 79.00	1.0000	1.0000
L14	2	HB158-21U6S24-xxM_TMO(1-5/8)	75.17 - 78.75	1.0000	1.0000
L14	14	WR-VG66ST-BRD(7/8)	75.17 - 78.75	1.0000	1.0000
L14	31	MP3-03 Reinforcement	75.17 - 75.21	1.0000	1.0000
L14	32	MP3-03 Reinforcement	75.17 - 76.21	1.0000	1.0000
L14	33	MP3-03 Reinforcement	75.17 - 76.21	1.0000	1.0000
L14	41	CCI-040075 Reinforcement	75.17 - 78.75	1.0000	1.0000
L14	42	CCI-040075 Reinforcement	75.17 - 78.75	1.0000	1.0000
L14	43	CCI-040075 Reinforcement	75.17 - 78.75	1.0000	1.0000
L15	2	HB158-21U6S24-xxM_TMO(1-5/8)	74.92 - 75.17	1.0000	1.0000
L15	14	WR-VG66ST-BRD(7/8)	74.92 - 75.17	1.0000	1.0000
L15	31	MP3-03 Reinforcement	74.92 - 75.17	1.0000	1.0000
L15	32	MP3-03 Reinforcement	74.92 - 75.17	1.0000	1.0000
L15	33	MP3-03 Reinforcement	74.92 - 75.17	1.0000	1.0000
L15	41	CCI-040075 Reinforcement	74.92 - 75.17	1.0000	1.0000
L15	42	CCI-040075 Reinforcement	74.92 - 75.17	1.0000	1.0000
L15	43	CCI-040075 Reinforcement	74.92 - 75.17	1.0000	1.0000
L16	2	HB158-21U6S24-xxM_TMO(1-5/8)	69.92 - 74.92	1.0000	1.0000
L16	14	WR-VG66ST-BRD(7/8)	69.92 - 74.92	1.0000	1.0000
L16	31	MP3-03 Reinforcement	69.92 - 74.92	1.0000	1.0000
L16	32	MP3-03 Reinforcement	69.92 - 74.92	1.0000	1.0000
L16	33	MP3-03 Reinforcement	69.92 - 74.92	1.0000	1.0000
L16	41	CCI-040075 Reinforcement	69.92 - 74.92	1.0000	1.0000
L16	42	CCI-040075 Reinforcement	69.92 - 74.92	1.0000	1.0000
L16	43	CCI-040075 Reinforcement	69.92 - 74.92	1.0000	1.0000
L17	2	HB158-21U6S24-xxM_TMO(1-5/8)	64.92 - 69.92	1.0000	1.0000
L17	14	WR-VG66ST-BRD(7/8)	64.92 - 69.92	1.0000	1.0000
L17	31	MP3-03 Reinforcement	64.92 - 69.92	1.0000	1.0000
L17	32	MP3-03 Reinforcement	64.92 - 69.92	1.0000	1.0000
L17	33	MP3-03 Reinforcement	64.92 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			69.92		
L17	41	CCI-040075 Reinforcement	64.92 - 69.92	1.0000	1.0000
L17	42	CCI-040075 Reinforcement	64.92 - 69.92	1.0000	1.0000
L17	43	CCI-040075 Reinforcement	64.92 - 69.92	1.0000	1.0000
L18	2	HB158-21U6S24-xxM_TMO(1-5/8)	60.00 - 64.92	1.0000	1.0000
L18	14	WR-VG66ST-BRD(7/8)	60.00 - 64.92	1.0000	1.0000
L18	31	MP3-03 Reinforcement	60.00 - 64.92	1.0000	1.0000
L18	32	MP3-03 Reinforcement	60.00 - 64.92	1.0000	1.0000
L18	33	MP3-03 Reinforcement	60.00 - 64.92	1.0000	1.0000
L18	41	CCI-040075 Reinforcement	60.25 - 64.92	1.0000	1.0000
L18	42	CCI-040075 Reinforcement	60.25 - 64.92	1.0000	1.0000
L18	43	CCI-040075 Reinforcement	60.25 - 64.92	1.0000	1.0000
L19	2	HB158-21U6S24-xxM_TMO(1-5/8)	59.75 - 60.00	1.0000	1.0000
L19	14	WR-VG66ST-BRD(7/8)	59.75 - 60.00	1.0000	1.0000
L19	28	MP3-04 Reinforcement	59.75 - 60.00	1.0000	1.0000
L19	29	MP3-04 Reinforcement	59.75 - 60.00	1.0000	1.0000
L19	30	MP3-04 Reinforcement	59.75 - 60.00	1.0000	1.0000
L20	2	HB158-21U6S24-xxM_TMO(1-5/8)	54.75 - 59.75	1.0000	1.0000
L20	14	WR-VG66ST-BRD(7/8)	54.75 - 59.75	1.0000	1.0000
L20	28	MP3-04 Reinforcement	54.75 - 59.75	1.0000	1.0000
L20	29	MP3-04 Reinforcement	54.75 - 59.75	1.0000	1.0000
L20	30	MP3-04 Reinforcement	54.75 - 59.75	1.0000	1.0000
L21	2	HB158-21U6S24-xxM_TMO(1-5/8)	49.75 - 54.75	1.0000	1.0000
L21	14	WR-VG66ST-BRD(7/8)	49.75 - 54.75	1.0000	1.0000
L21	28	MP3-04 Reinforcement	49.75 - 54.75	1.0000	1.0000
L21	29	MP3-04 Reinforcement	49.75 - 54.75	1.0000	1.0000
L21	30	MP3-04 Reinforcement	49.75 - 54.75	1.0000	1.0000
L21	38	CCI-040075 Reinforcement	49.75 - 50.25	1.0000	1.0000
L21	39	CCI-040075 Reinforcement	49.75 - 50.25	1.0000	1.0000
L21	40	CCI-040075 Reinforcement	49.75 - 50.25	1.0000	1.0000
L22	2	HB158-21U6S24-xxM_TMO(1-5/8)	47.83 - 49.75	1.0000	1.0000
L22	14	WR-VG66ST-BRD(7/8)	47.83 - 49.75	1.0000	1.0000
L22	28	MP3-04 Reinforcement	47.83 - 49.75	1.0000	1.0000
L22	29	MP3-04 Reinforcement	47.83 - 49.75	1.0000	1.0000
L22	30	MP3-04 Reinforcement	47.83 - 49.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L22	38	CCI-040075 Reinforcement	47.83 - 49.75	1.0000	1.0000
L22	39	CCI-040075 Reinforcement	47.83 - 49.75	1.0000	1.0000
L22	40	CCI-040075 Reinforcement	47.83 - 49.75	1.0000	1.0000
L23	2	HB158-21U6S24-xxM_TMO(1-5/8)	47.58 - 47.83	1.0000	1.0000
L23	14	WR-VG66ST-BRD(7/8)	47.58 - 47.83	1.0000	1.0000
L23	28	MP3-04 Reinforcement	47.58 - 47.83	1.0000	1.0000
L23	29	MP3-04 Reinforcement	47.58 - 47.83	1.0000	1.0000
L23	30	MP3-04 Reinforcement	47.58 - 47.83	1.0000	1.0000
L23	38	CCI-040075 Reinforcement	47.58 - 47.83	1.0000	1.0000
L23	39	CCI-040075 Reinforcement	47.58 - 47.83	1.0000	1.0000
L23	40	CCI-040075 Reinforcement	47.58 - 47.83	1.0000	1.0000
L24	2	HB158-21U6S24-xxM_TMO(1-5/8)	43.00 - 47.58	1.0000	1.0000
L24	14	WR-VG66ST-BRD(7/8)	43.00 - 47.58	1.0000	1.0000
L24	19	FP 3.25 x 1.25 Reinforcement	43.00 - 44.00	1.0000	1.0000
L24	20	FP 3.25 x 1.25 Reinforcement	43.00 - 44.00	1.0000	1.0000
L24	21	FP 3.25 x 1.25 Reinforcement	43.00 - 44.00	1.0000	1.0000
L24	28	MP3-04 Reinforcement	43.00 - 47.58	1.0000	1.0000
L24	29	MP3-04 Reinforcement	43.00 - 47.58	1.0000	1.0000
L24	30	MP3-04 Reinforcement	43.00 - 47.58	1.0000	1.0000
L24	38	CCI-040075 Reinforcement	43.00 - 47.58	1.0000	1.0000
L24	39	CCI-040075 Reinforcement	43.00 - 47.58	1.0000	1.0000
L24	40	CCI-040075 Reinforcement	43.00 - 47.58	1.0000	1.0000
L25	2	HB158-21U6S24-xxM_TMO(1-5/8)	42.75 - 43.00	1.0000	1.0000
L25	14	WR-VG66ST-BRD(7/8)	42.75 - 43.00	1.0000	1.0000
L25	19	FP 3.25 x 1.25 Reinforcement	42.75 - 43.00	1.0000	1.0000
L25	20	FP 3.25 x 1.25 Reinforcement	42.75 - 43.00	1.0000	1.0000
L25	21	FP 3.25 x 1.25 Reinforcement	42.75 - 43.00	1.0000	1.0000
L25	28	MP3-04 Reinforcement	42.75 - 43.00	1.0000	1.0000
L25	29	MP3-04 Reinforcement	42.75 - 43.00	1.0000	1.0000
L25	30	MP3-04 Reinforcement	42.75 - 43.00	1.0000	1.0000
L25	38	CCI-040075 Reinforcement	42.75 - 43.00	1.0000	1.0000
L25	39	CCI-040075 Reinforcement	42.75 - 43.00	1.0000	1.0000
L25	40	CCI-040075 Reinforcement	42.75 - 43.00	1.0000	1.0000
L26	2	HB158-21U6S24-xxM_TMO(1-5/8)	37.75 - 42.75	1.0000	1.0000
L26	14	WR-VG66ST-BRD(7/8)	37.75 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			42.75		
L26	19	FP 3.25 x 1.25 Reinforcement	37.75 - 42.75	1.0000	1.0000
L26	20	FP 3.25 x 1.25 Reinforcement	37.75 - 42.75	1.0000	1.0000
L26	21	FP 3.25 x 1.25 Reinforcement	37.75 - 42.75	1.0000	1.0000
L26	28	MP3-04 Reinforcement	37.75 - 42.75	1.0000	1.0000
L26	29	MP3-04 Reinforcement	37.75 - 42.75	1.0000	1.0000
L26	30	MP3-04 Reinforcement	37.75 - 42.75	1.0000	1.0000
L26	38	CCI-040075 Reinforcement	37.75 - 42.75	1.0000	1.0000
L26	39	CCI-040075 Reinforcement	37.75 - 42.75	1.0000	1.0000
L26	40	CCI-040075 Reinforcement	37.75 - 42.75	1.0000	1.0000
L27	2	HB158-21U6S24-xxM_TMO(1-5/8)	34.50 - 37.75	1.0000	1.0000
L27	14	WR-VG66ST-BRD(7/8)	34.50 - 37.75	1.0000	1.0000
L27	19	FP 3.25 x 1.25 Reinforcement	34.50 - 37.75	1.0000	1.0000
L27	20	FP 3.25 x 1.25 Reinforcement	34.50 - 37.75	1.0000	1.0000
L27	21	FP 3.25 x 1.25 Reinforcement	34.50 - 37.75	1.0000	1.0000
L27	28	MP3-04 Reinforcement	34.50 - 37.75	1.0000	1.0000
L27	29	MP3-04 Reinforcement	34.50 - 37.75	1.0000	1.0000
L27	30	MP3-04 Reinforcement	34.50 - 37.75	1.0000	1.0000
L27	38	CCI-040075 Reinforcement	34.50 - 37.75	1.0000	1.0000
L27	39	CCI-040075 Reinforcement	34.50 - 37.75	1.0000	1.0000
L27	40	CCI-040075 Reinforcement	34.50 - 37.75	1.0000	1.0000
L28	2	HB158-21U6S24-xxM_TMO(1-5/8)	34.25 - 34.50	1.0000	1.0000
L28	14	WR-VG66ST-BRD(7/8)	34.25 - 34.50	1.0000	1.0000
L28	19	FP 3.25 x 1.25 Reinforcement	34.25 - 34.50	1.0000	1.0000
L28	20	FP 3.25 x 1.25 Reinforcement	34.25 - 34.50	1.0000	1.0000
L28	21	FP 3.25 x 1.25 Reinforcement	34.25 - 34.50	1.0000	1.0000
L28	28	MP3-04 Reinforcement	34.25 - 34.50	1.0000	1.0000
L28	29	MP3-04 Reinforcement	34.25 - 34.50	1.0000	1.0000
L28	30	MP3-04 Reinforcement	34.25 - 34.50	1.0000	1.0000
L28	38	CCI-040075 Reinforcement	34.25 - 34.50	1.0000	1.0000
L28	39	CCI-040075 Reinforcement	34.25 - 34.50	1.0000	1.0000
L28	40	CCI-040075 Reinforcement	34.25 - 34.50	1.0000	1.0000
L29	2	HB158-21U6S24-xxM_TMO(1-5/8)	30.00 - 34.25	1.0000	1.0000
L29	14	WR-VG66ST-BRD(7/8)	30.00 - 34.25	1.0000	1.0000
L29	19	FP 3.25 x 1.25 Reinforcement	30.00 - 34.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L29	20	FP 3.25 x 1.25 Reinforcement	30.00 - 34.25	1.0000	1.0000
L29	21	FP 3.25 x 1.25 Reinforcement	30.00 - 34.25	1.0000	1.0000
L29	28	MP3-04 Reinforcement	30.00 - 34.25	1.0000	1.0000
L29	29	MP3-04 Reinforcement	30.00 - 34.25	1.0000	1.0000
L29	30	MP3-04 Reinforcement	30.00 - 34.25	1.0000	1.0000
L29	38	CCI-040075 Reinforcement	30.25 - 34.25	1.0000	1.0000
L29	39	CCI-040075 Reinforcement	30.25 - 34.25	1.0000	1.0000
L29	40	CCI-040075 Reinforcement	30.25 - 34.25	1.0000	1.0000
L30	2	HB158-21U6S24-xxM_TMO(1-5/8)	29.75 - 30.00	1.0000	1.0000
L30	14	WR-VG66ST-BRD(7/8)	29.75 - 30.00	1.0000	1.0000
L30	25	MP3-05 Reinforcement	29.75 - 30.00	1.0000	1.0000
L30	26	MP3-05 Reinforcement	29.75 - 30.00	1.0000	1.0000
L30	27	MP3-05 Reinforcement	29.75 - 30.00	1.0000	1.0000
L31	2	HB158-21U6S24-xxM_TMO(1-5/8)	25.58 - 29.75	1.0000	1.0000
L31	14	WR-VG66ST-BRD(7/8)	25.58 - 29.75	1.0000	1.0000
L31	25	MP3-05 Reinforcement	25.58 - 29.75	1.0000	1.0000
L31	26	MP3-05 Reinforcement	25.58 - 29.75	1.0000	1.0000
L31	27	MP3-05 Reinforcement	25.58 - 29.75	1.0000	1.0000
L31	35	CCI-040075 Reinforcement	25.58 - 27.00	1.0000	1.0000
L31	36	CCI-040075 Reinforcement	25.58 - 27.00	1.0000	1.0000
L31	37	CCI-040075 Reinforcement	25.58 - 27.00	1.0000	1.0000
L32	2	HB158-21U6S24-xxM_TMO(1-5/8)	25.33 - 25.58	1.0000	1.0000
L32	14	WR-VG66ST-BRD(7/8)	25.33 - 25.58	1.0000	1.0000
L32	25	MP3-05 Reinforcement	25.33 - 25.58	1.0000	1.0000
L32	26	MP3-05 Reinforcement	25.33 - 25.58	1.0000	1.0000
L32	27	MP3-05 Reinforcement	25.33 - 25.58	1.0000	1.0000
L32	35	CCI-040075 Reinforcement	25.33 - 25.58	1.0000	1.0000
L32	36	CCI-040075 Reinforcement	25.33 - 25.58	1.0000	1.0000
L32	37	CCI-040075 Reinforcement	25.33 - 25.58	1.0000	1.0000
L33	2	HB158-21U6S24-xxM_TMO(1-5/8)	20.75 - 25.33	1.0000	1.0000
L33	14	WR-VG66ST-BRD(7/8)	20.75 - 25.33	1.0000	1.0000
L33	16	FP 3.50 x 1.25 Reinforcement	20.75 - 22.00	1.0000	1.0000
L33	17	FP 3.50 x 1.25 Reinforcement	20.75 - 22.00	1.0000	1.0000
L33	18	FP 3.50 x 1.25 Reinforcement	20.75 - 22.00	1.0000	1.0000
L33	25	MP3-05 Reinforcement	20.75 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			25.33		
L33	26	MP3-05 Reinforcement	20.75 - 25.33	1.0000	1.0000
L33	27	MP3-05 Reinforcement	20.75 - 25.33	1.0000	1.0000
L33	35	CCI-040075 Reinforcement	20.75 - 25.33	1.0000	1.0000
L33	36	CCI-040075 Reinforcement	20.75 - 25.33	1.0000	1.0000
L33	37	CCI-040075 Reinforcement	20.75 - 25.33	1.0000	1.0000
L34	2	HB158-21U6S24-xxM_TMO(1-5/8)	20.50 - 20.75	1.0000	1.0000
L34	14	WR-VG66ST-BRD(7/8)	20.50 - 20.75	1.0000	1.0000
L34	16	FP 3.50 x 1.25 Reinforcement	20.50 - 20.75	1.0000	1.0000
L34	17	FP 3.50 x 1.25 Reinforcement	20.50 - 20.75	1.0000	1.0000
L34	18	FP 3.50 x 1.25 Reinforcement	20.50 - 20.75	1.0000	1.0000
L34	25	MP3-05 Reinforcement	20.50 - 20.75	1.0000	1.0000
L34	26	MP3-05 Reinforcement	20.50 - 20.75	1.0000	1.0000
L34	27	MP3-05 Reinforcement	20.50 - 20.75	1.0000	1.0000
L34	35	CCI-040075 Reinforcement	20.50 - 20.75	1.0000	1.0000
L34	36	CCI-040075 Reinforcement	20.50 - 20.75	1.0000	1.0000
L34	37	CCI-040075 Reinforcement	20.50 - 20.75	1.0000	1.0000
L35	2	HB158-21U6S24-xxM_TMO(1-5/8)	17.48 - 20.50	1.0000	1.0000
L35	14	WR-VG66ST-BRD(7/8)	17.48 - 20.50	1.0000	1.0000
L35	16	FP 3.50 x 1.25 Reinforcement	17.48 - 20.50	1.0000	1.0000
L35	17	FP 3.50 x 1.25 Reinforcement	17.48 - 20.50	1.0000	1.0000
L35	18	FP 3.50 x 1.25 Reinforcement	17.48 - 20.50	1.0000	1.0000
L35	25	MP3-05 Reinforcement	17.48 - 20.50	1.0000	1.0000
L35	26	MP3-05 Reinforcement	17.48 - 20.50	1.0000	1.0000
L35	27	MP3-05 Reinforcement	17.48 - 20.50	1.0000	1.0000
L35	35	CCI-040075 Reinforcement	17.48 - 20.50	1.0000	1.0000
L35	36	CCI-040075 Reinforcement	17.48 - 20.50	1.0000	1.0000
L35	37	CCI-040075 Reinforcement	17.48 - 20.50	1.0000	1.0000
L35	51	CCI-040125	17.48 - 19.00	1.0000	1.0000
L35	52	CCI-040125	17.48 - 19.00	1.0000	1.0000
L35	53	CCI-040125	17.48 - 19.00	1.0000	1.0000
L36	2	HB158-21U6S24-xxM_TMO(1-5/8)	17.23 - 17.48	1.0000	1.0000
L36	14	WR-VG66ST-BRD(7/8)	17.23 - 17.48	1.0000	1.0000
L36	16	FP 3.50 x 1.25 Reinforcement	17.23 - 17.48	1.0000	1.0000
L36	17	FP 3.50 x 1.25 Reinforcement	17.23 - 17.48	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L36	18	FP 3.50 x 1.25 Reinforcement	17.23 - 17.48	1.0000	1.0000
L36	25	MP3-05 Reinforcement	17.23 - 17.48	1.0000	1.0000
L36	26	MP3-05 Reinforcement	17.23 - 17.48	1.0000	1.0000
L36	27	MP3-05 Reinforcement	17.23 - 17.48	1.0000	1.0000
L36	35	CCI-040075 Reinforcement	17.23 - 17.48	1.0000	1.0000
L36	36	CCI-040075 Reinforcement	17.23 - 17.48	1.0000	1.0000
L36	37	CCI-040075 Reinforcement	17.23 - 17.48	1.0000	1.0000
L36	51	CCI-040125	17.23 - 17.48	1.0000	1.0000
L36	52	CCI-040125	17.23 - 17.48	1.0000	1.0000
L36	53	CCI-040125	17.23 - 17.48	1.0000	1.0000
L37	2	HB158-21U6S24-xxM_TMO(1-5/8)	13.50 - 17.23	1.0000	1.0000
L37	14	WR-VG66ST-BRD(7/8)	13.50 - 17.23	1.0000	1.0000
L37	16	FP 3.50 x 1.25 Reinforcement	13.50 - 17.23	1.0000	1.0000
L37	17	FP 3.50 x 1.25 Reinforcement	13.50 - 17.23	1.0000	1.0000
L37	18	FP 3.50 x 1.25 Reinforcement	13.50 - 17.23	1.0000	1.0000
L37	24	MP3-04 Reinforcement	13.50 - 14.88	1.0000	1.0000
L37	25	MP3-05 Reinforcement	13.50 - 17.23	1.0000	1.0000
L37	26	MP3-05 Reinforcement	13.50 - 17.23	1.0000	1.0000
L37	27	MP3-05 Reinforcement	13.50 - 17.23	1.0000	1.0000
L37	35	CCI-040075 Reinforcement	17.00 - 17.23	1.0000	1.0000
L37	36	CCI-040075 Reinforcement	17.00 - 17.23	1.0000	1.0000
L37	37	CCI-040075 Reinforcement	17.00 - 17.23	1.0000	1.0000
L37	51	CCI-040125	13.50 - 17.23	1.0000	1.0000
L37	52	CCI-040125	13.50 - 17.23	1.0000	1.0000
L37	53	CCI-040125	13.50 - 17.23	1.0000	1.0000
L38	2	HB158-21U6S24-xxM_TMO(1-5/8)	13.25 - 13.50	1.0000	1.0000
L38	14	WR-VG66ST-BRD(7/8)	13.25 - 13.50	1.0000	1.0000
L38	16	FP 3.50 x 1.25 Reinforcement	13.25 - 13.50	1.0000	1.0000
L38	17	FP 3.50 x 1.25 Reinforcement	13.25 - 13.50	1.0000	1.0000
L38	18	FP 3.50 x 1.25 Reinforcement	13.25 - 13.50	1.0000	1.0000
L38	24	MP3-04 Reinforcement	13.25 - 13.50	1.0000	1.0000
L38	25	MP3-05 Reinforcement	13.25 - 13.50	1.0000	1.0000
L38	26	MP3-05 Reinforcement	13.25 - 13.50	1.0000	1.0000
L38	27	MP3-05 Reinforcement	13.25 - 13.50	1.0000	1.0000
L38	51	CCI-040125	13.25 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			13.50		
L38	52	CCI-040125	13.25 - 13.50	1.0000	1.0000
L38	53	CCI-040125	13.25 - 13.50	1.0000	1.0000
L39	2	HB158-21U6S24-xxM_TMO(1-5/8)	8.25 - 13.25	1.0000	1.0000
L39	14	WR-VG66ST-BRD(7/8)	8.25 - 13.25	1.0000	1.0000
L39	16	FP 3.50 x 1.25 Reinforcement	8.25 - 13.25	1.0000	1.0000
L39	17	FP 3.50 x 1.25 Reinforcement	8.25 - 13.25	1.0000	1.0000
L39	18	FP 3.50 x 1.25 Reinforcement	8.25 - 13.25	1.0000	1.0000
L39	23	MP3-05 Reinforcement	8.25 - 8.50	1.0000	1.0000
L39	24	MP3-04 Reinforcement	8.25 - 13.25	1.0000	1.0000
L39	25	MP3-05 Reinforcement	11.25 - 13.25	1.0000	1.0000
L39	26	MP3-05 Reinforcement	8.25 - 13.25	1.0000	1.0000
L39	27	MP3-05 Reinforcement	8.25 - 13.25	1.0000	1.0000
L39	51	CCI-040125	8.25 - 13.25	1.0000	1.0000
L39	52	CCI-040125	8.25 - 13.25	1.0000	1.0000
L39	53	CCI-040125	8.25 - 13.25	1.0000	1.0000
L40	2	HB158-21U6S24-xxM_TMO(1-5/8)	6.25 - 8.25	1.0000	1.0000
L40	14	WR-VG66ST-BRD(7/8)	6.25 - 8.25	1.0000	1.0000
L40	16	FP 3.50 x 1.25 Reinforcement	6.25 - 8.25	1.0000	1.0000
L40	17	FP 3.50 x 1.25 Reinforcement	6.25 - 8.25	1.0000	1.0000
L40	18	FP 3.50 x 1.25 Reinforcement	6.25 - 8.25	1.0000	1.0000
L40	23	MP3-05 Reinforcement	6.25 - 8.25	1.0000	1.0000
L40	24	MP3-04 Reinforcement	6.25 - 8.25	1.0000	1.0000
L40	26	MP3-05 Reinforcement	6.25 - 8.25	1.0000	1.0000
L40	27	MP3-05 Reinforcement	6.25 - 8.25	1.0000	1.0000
L40	51	CCI-040125	6.25 - 8.25	1.0000	1.0000
L40	52	CCI-040125	6.25 - 8.25	1.0000	1.0000
L40	53	CCI-040125	6.25 - 8.25	1.0000	1.0000
L41	2	HB158-21U6S24-xxM_TMO(1-5/8)	6.00 - 6.25	1.0000	1.0000
L41	14	WR-VG66ST-BRD(7/8)	6.00 - 6.25	1.0000	1.0000
L41	16	FP 3.50 x 1.25 Reinforcement	6.00 - 6.25	1.0000	1.0000
L41	17	FP 3.50 x 1.25 Reinforcement	6.00 - 6.25	1.0000	1.0000
L41	18	FP 3.50 x 1.25 Reinforcement	6.00 - 6.25	1.0000	1.0000
L41	23	MP3-05 Reinforcement	6.00 - 6.25	1.0000	1.0000
L41	24	MP3-04 Reinforcement	6.00 - 6.25	1.0000	1.0000
L41	26	MP3-05 Reinforcement	6.00 - 6.25	1.0000	1.0000
L41	27	MP3-05 Reinforcement	6.00 - 6.25	1.0000	1.0000
L41	51	CCI-040125	6.00 - 6.25	1.0000	1.0000
L41	52	CCI-040125	6.00 - 6.25	1.0000	1.0000
L41	53	CCI-040125	6.00 - 6.25	1.0000	1.0000
L42	2	HB158-21U6S24-xxM_TMO(1-5/8)	5.50 - 6.00	1.0000	1.0000
L42	14	WR-VG66ST-BRD(7/8)	5.50 - 6.00	1.0000	1.0000
L42	16	FP 3.50 x 1.25 Reinforcement	5.50 - 6.00	1.0000	1.0000
L42	17	FP 3.50 x 1.25 Reinforcement	5.50 - 6.00	1.0000	1.0000
L42	18	FP 3.50 x 1.25 Reinforcement	5.50 - 6.00	1.0000	1.0000
L42	23	MP3-05 Reinforcement	5.50 - 6.00	1.0000	1.0000
L42	24	MP3-04 Reinforcement	5.50 - 6.00	1.0000	1.0000
L42	26	MP3-05 Reinforcement	5.50 - 6.00	1.0000	1.0000
L42	27	MP3-05 Reinforcement	5.50 - 6.00	1.0000	1.0000
L42	51	CCI-040125	5.50 - 6.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L42	52	CCI-040125	5.50 - 6.00	1.0000	1.0000
L42	53	CCI-040125	5.50 - 6.00	1.0000	1.0000
L43	2	HB158-21U6S24-xxM_TMO(1-5/8)	5.25 - 5.50	1.0000	1.0000
L43	14	WR-VG66ST-BRD(7/8)	5.25 - 5.50	1.0000	1.0000
L43	16	FP 3.50 x 1.25 Reinforcement	5.25 - 5.50	1.0000	1.0000
L43	17	FP 3.50 x 1.25 Reinforcement	5.25 - 5.50	1.0000	1.0000
L43	18	FP 3.50 x 1.25 Reinforcement	5.25 - 5.50	1.0000	1.0000
L43	23	MP3-05 Reinforcement	5.25 - 5.50	1.0000	1.0000
L43	24	MP3-04 Reinforcement	5.25 - 5.50	1.0000	1.0000
L43	26	MP3-05 Reinforcement	5.25 - 5.50	1.0000	1.0000
L43	27	MP3-05 Reinforcement	5.25 - 5.50	1.0000	1.0000
L43	51	CCI-040125	5.25 - 5.50	1.0000	1.0000
L43	52	CCI-040125	5.25 - 5.50	1.0000	1.0000
L43	53	CCI-040125	5.25 - 5.50	1.0000	1.0000
L44	2	HB158-21U6S24-xxM_TMO(1-5/8)	0.25 - 5.25	1.0000	1.0000
L44	14	WR-VG66ST-BRD(7/8)	0.25 - 5.25	1.0000	1.0000
L44	16	FP 3.50 x 1.25 Reinforcement	0.25 - 5.25	1.0000	1.0000
L44	17	FP 3.50 x 1.25 Reinforcement	0.25 - 5.25	1.0000	1.0000
L44	18	FP 3.50 x 1.25 Reinforcement	0.25 - 5.25	1.0000	1.0000
L44	23	MP3-05 Reinforcement	0.25 - 5.25	1.0000	1.0000
L44	24	MP3-04 Reinforcement	4.88 - 5.25	1.0000	1.0000
L44	26	MP3-05 Reinforcement	0.25 - 5.25	1.0000	1.0000
L44	27	MP3-05 Reinforcement	0.25 - 5.25	1.0000	1.0000
L44	51	CCI-040125	4.00 - 5.25	1.0000	1.0000
L44	52	CCI-040125	4.00 - 5.25	1.0000	1.0000
L44	53	CCI-040125	4.00 - 5.25	1.0000	1.0000
L45	2	HB158-21U6S24-xxM_TMO(1-5/8)	0.00 - 0.25	1.0000	1.0000
L45	14	WR-VG66ST-BRD(7/8)	0.00 - 0.25	1.0000	1.0000
L45	16	FP 3.50 x 1.25 Reinforcement	0.00 - 0.25	1.0000	1.0000
L45	17	FP 3.50 x 1.25 Reinforcement	0.00 - 0.25	1.0000	1.0000
L45	18	FP 3.50 x 1.25 Reinforcement	0.00 - 0.25	1.0000	1.0000
L45	23	MP3-05 Reinforcement	0.00 - 0.25	1.0000	1.0000
L45	26	MP3-05 Reinforcement	0.00 - 0.25	1.0000	1.0000
L45	27	MP3-05 Reinforcement	0.00 - 0.25	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
L4	47	CCI-040075 Reinforcement	100.00 - 100.42	Manual	1.0000
L4	48	CCI-040075 Reinforcement	100.00 - 100.42	Manual	1.0000
L4	49	CCI-040075 Reinforcement	100.00 - 100.42	Manual	1.0000
L5	47	CCI-040075 Reinforcement	98.50 - 100.00	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L5	48	CCI-040075 Reinforcement	98.50 - 100.00	Manual	1.0000
L5	49	CCI-040075 Reinforcement	98.50 - 100.00	Manual	1.0000
L6	47	CCI-040075 Reinforcement	98.25 - 98.50	Manual	1.0000
L6	48	CCI-040075 Reinforcement	98.25 - 98.50	Manual	1.0000
L6	49	CCI-040075 Reinforcement	98.25 - 98.50	Manual	1.0000
L7	47	CCI-040075 Reinforcement	93.25 - 98.25	Manual	1.0000
L7	48	CCI-040075 Reinforcement	93.25 - 98.25	Manual	1.0000
L7	49	CCI-040075 Reinforcement	93.25 - 98.25	Manual	1.0000
L8	44	FP 5.00 X 4.75 Reinforcement	90.00 - 92.67	Manual	1.0000
L8	45	FP 5.00 X 4.75 Reinforcement	90.00 - 92.67	Manual	1.0000
L8	46	FP 5.00 X 4.75 Reinforcement	90.00 - 92.67	Manual	1.0000
L8	47	CCI-040075 Reinforcement	92.67 - 93.25	Manual	1.0000
L8	48	CCI-040075 Reinforcement	92.67 - 93.25	Manual	1.0000
L8	49	CCI-040075 Reinforcement	92.67 - 93.25	Manual	1.0000
L9	44	FP 5.00 X 4.75 Reinforcement	89.75 - 90.00	Manual	1.0000
L9	45	FP 5.00 X 4.75 Reinforcement	89.75 - 90.00	Manual	1.0000
L9	46	FP 5.00 X 4.75 Reinforcement	89.75 - 90.00	Manual	1.0000
L10	44	FP 5.00 X 4.75 Reinforcement	87.33 - 89.75	Manual	1.0000
L10	45	FP 5.00 X 4.75 Reinforcement	87.33 - 89.75	Manual	1.0000
L10	46	FP 5.00 X 4.75 Reinforcement	87.33 - 89.75	Manual	1.0000
L11	41	CCI-040075 Reinforcement	79.75 - 80.25	Manual	1.0000
L11	42	CCI-040075 Reinforcement	79.75 - 80.25	Manual	1.0000
L11	43	CCI-040075 Reinforcement	79.75 - 80.25	Manual	1.0000
L12	41	CCI-040075 Reinforcement	79.00 - 79.75	Manual	1.0000
L12	42	CCI-040075 Reinforcement	79.00 - 79.75	Manual	1.0000
L12	43	CCI-040075 Reinforcement	79.00 - 79.75	Manual	1.0000
L13	41	CCI-040075 Reinforcement	78.75 - 79.00	Manual	1.0000
L13	42	CCI-040075 Reinforcement	78.75 - 79.00	Manual	1.0000
L13	43	CCI-040075 Reinforcement	78.75 - 79.00	Manual	1.0000
L14	31	MP3-03 Reinforcement	75.17 - 75.21	Manual	1.0000
L14	32	MP3-03 Reinforcement	75.17 - 76.21	Manual	1.0000
L14	33	MP3-03 Reinforcement	75.17 - 76.21	Manual	1.0000
L14	41	CCI-040075 Reinforcement	75.17 - 78.75	Manual	1.0000
L14	42	CCI-040075 Reinforcement	75.17 - 78.75	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L14	43	CCI-040075 Reinforcement	75.17 - 78.75	Manual	1.0000
L15	31	MP3-03 Reinforcement	74.92 - 75.17	Manual	1.0000
L15	32	MP3-03 Reinforcement	74.92 - 75.17	Manual	1.0000
L15	33	MP3-03 Reinforcement	74.92 - 75.17	Manual	1.0000
L15	41	CCI-040075 Reinforcement	74.92 - 75.17	Manual	1.0000
L15	42	CCI-040075 Reinforcement	74.92 - 75.17	Manual	1.0000
L15	43	CCI-040075 Reinforcement	74.92 - 75.17	Manual	1.0000
L16	31	MP3-03 Reinforcement	69.92 - 74.92	Manual	1.0000
L16	32	MP3-03 Reinforcement	69.92 - 74.92	Manual	1.0000
L16	33	MP3-03 Reinforcement	69.92 - 74.92	Manual	1.0000
L16	41	CCI-040075 Reinforcement	69.92 - 74.92	Manual	1.0000
L16	42	CCI-040075 Reinforcement	69.92 - 74.92	Manual	1.0000
L16	43	CCI-040075 Reinforcement	69.92 - 74.92	Manual	1.0000
L17	31	MP3-03 Reinforcement	64.92 - 69.92	Manual	1.0000
L17	32	MP3-03 Reinforcement	64.92 - 69.92	Manual	1.0000
L17	33	MP3-03 Reinforcement	64.92 - 69.92	Manual	1.0000
L17	41	CCI-040075 Reinforcement	64.92 - 69.92	Manual	1.0000
L17	42	CCI-040075 Reinforcement	64.92 - 69.92	Manual	1.0000
L17	43	CCI-040075 Reinforcement	64.92 - 69.92	Manual	1.0000
L18	31	MP3-03 Reinforcement	60.00 - 64.92	Manual	1.0000
L18	32	MP3-03 Reinforcement	60.00 - 64.92	Manual	1.0000
L18	33	MP3-03 Reinforcement	60.00 - 64.92	Manual	1.0000
L18	41	CCI-040075 Reinforcement	60.25 - 64.92	Manual	1.0000
L18	42	CCI-040075 Reinforcement	60.25 - 64.92	Manual	1.0000
L18	43	CCI-040075 Reinforcement	60.25 - 64.92	Manual	1.0000
L19	28	MP3-04 Reinforcement	59.75 - 60.00	Manual	1.0000
L19	29	MP3-04 Reinforcement	59.75 - 60.00	Manual	1.0000
L19	30	MP3-04 Reinforcement	59.75 - 60.00	Manual	1.0000
L20	28	MP3-04 Reinforcement	54.75 - 59.75	Manual	1.0000
L20	29	MP3-04 Reinforcement	54.75 - 59.75	Manual	1.0000
L20	30	MP3-04 Reinforcement	54.75 - 59.75	Manual	1.0000
L21	28	MP3-04 Reinforcement	49.75 - 54.75	Manual	1.0000
L21	29	MP3-04 Reinforcement	49.75 - 54.75	Manual	1.0000
L21	30	MP3-04 Reinforcement	49.75 - 54.75	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L21	38	CCI-040075 Reinforcement	49.75 - 50.25	Manual	1.0000
L21	39	CCI-040075 Reinforcement	49.75 - 50.25	Manual	1.0000
L21	40	CCI-040075 Reinforcement	49.75 - 50.25	Manual	1.0000
L22	28	MP3-04 Reinforcement	47.83 - 49.75	Manual	1.0000
L22	29	MP3-04 Reinforcement	47.83 - 49.75	Manual	1.0000
L22	30	MP3-04 Reinforcement	47.83 - 49.75	Manual	1.0000
L22	38	CCI-040075 Reinforcement	47.83 - 49.75	Manual	1.0000
L22	39	CCI-040075 Reinforcement	47.83 - 49.75	Manual	1.0000
L22	40	CCI-040075 Reinforcement	47.83 - 49.75	Manual	1.0000
L23	28	MP3-04 Reinforcement	47.58 - 47.83	Manual	1.0000
L23	29	MP3-04 Reinforcement	47.58 - 47.83	Manual	1.0000
L23	30	MP3-04 Reinforcement	47.58 - 47.83	Manual	1.0000
L23	38	CCI-040075 Reinforcement	47.58 - 47.83	Manual	1.0000
L23	39	CCI-040075 Reinforcement	47.58 - 47.83	Manual	1.0000
L23	40	CCI-040075 Reinforcement	47.58 - 47.83	Manual	1.0000
L24	19	FP 3.25 x 1.25 Reinforcement	43.00 - 44.00	Manual	1.0000
L24	20	FP 3.25 x 1.25 Reinforcement	43.00 - 44.00	Manual	1.0000
L24	21	FP 3.25 x 1.25 Reinforcement	43.00 - 44.00	Manual	1.0000
L24	28	MP3-04 Reinforcement	43.00 - 47.58	Manual	1.0000
L24	29	MP3-04 Reinforcement	43.00 - 47.58	Manual	1.0000
L24	30	MP3-04 Reinforcement	43.00 - 47.58	Manual	1.0000
L24	38	CCI-040075 Reinforcement	43.00 - 47.58	Manual	1.0000
L24	39	CCI-040075 Reinforcement	43.00 - 47.58	Manual	1.0000
L24	40	CCI-040075 Reinforcement	43.00 - 47.58	Manual	1.0000
L25	19	FP 3.25 x 1.25 Reinforcement	42.75 - 43.00	Manual	1.0000
L25	20	FP 3.25 x 1.25 Reinforcement	42.75 - 43.00	Manual	1.0000
L25	21	FP 3.25 x 1.25 Reinforcement	42.75 - 43.00	Manual	1.0000
L25	28	MP3-04 Reinforcement	42.75 - 43.00	Manual	1.0000
L25	29	MP3-04 Reinforcement	42.75 - 43.00	Manual	1.0000
L25	30	MP3-04 Reinforcement	42.75 - 43.00	Manual	1.0000
L25	38	CCI-040075 Reinforcement	42.75 - 43.00	Manual	1.0000
L25	39	CCI-040075 Reinforcement	42.75 - 43.00	Manual	1.0000
L25	40	CCI-040075 Reinforcement	42.75 - 43.00	Manual	1.0000
L26	19	FP 3.25 x 1.25 Reinforcement	37.75 - 42.75	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L26	20	FP 3.25 x 1.25 Reinforcement	37.75 - 42.75	Manual	1.0000
L26	21	FP 3.25 x 1.25 Reinforcement	37.75 - 42.75	Manual	1.0000
L26	28	MP3-04 Reinforcement	37.75 - 42.75	Manual	1.0000
L26	29	MP3-04 Reinforcement	37.75 - 42.75	Manual	1.0000
L26	30	MP3-04 Reinforcement	37.75 - 42.75	Manual	1.0000
L26	38	CCI-040075 Reinforcement	37.75 - 42.75	Manual	1.0000
L26	39	CCI-040075 Reinforcement	37.75 - 42.75	Manual	1.0000
L26	40	CCI-040075 Reinforcement	37.75 - 42.75	Manual	1.0000
L27	19	FP 3.25 x 1.25 Reinforcement	34.50 - 37.75	Manual	1.0000
L27	20	FP 3.25 x 1.25 Reinforcement	34.50 - 37.75	Manual	1.0000
L27	21	FP 3.25 x 1.25 Reinforcement	34.50 - 37.75	Manual	1.0000
L27	28	MP3-04 Reinforcement	34.50 - 37.75	Manual	1.0000
L27	29	MP3-04 Reinforcement	34.50 - 37.75	Manual	1.0000
L27	30	MP3-04 Reinforcement	34.50 - 37.75	Manual	1.0000
L27	38	CCI-040075 Reinforcement	34.50 - 37.75	Manual	1.0000
L27	39	CCI-040075 Reinforcement	34.50 - 37.75	Manual	1.0000
L27	40	CCI-040075 Reinforcement	34.50 - 37.75	Manual	1.0000
L28	19	FP 3.25 x 1.25 Reinforcement	34.25 - 34.50	Manual	1.0000
L28	20	FP 3.25 x 1.25 Reinforcement	34.25 - 34.50	Manual	1.0000
L28	21	FP 3.25 x 1.25 Reinforcement	34.25 - 34.50	Manual	1.0000
L28	28	MP3-04 Reinforcement	34.25 - 34.50	Manual	1.0000
L28	29	MP3-04 Reinforcement	34.25 - 34.50	Manual	1.0000
L28	30	MP3-04 Reinforcement	34.25 - 34.50	Manual	1.0000
L28	38	CCI-040075 Reinforcement	34.25 - 34.50	Manual	1.0000
L28	39	CCI-040075 Reinforcement	34.25 - 34.50	Manual	1.0000
L28	40	CCI-040075 Reinforcement	34.25 - 34.50	Manual	1.0000
L29	19	FP 3.25 x 1.25 Reinforcement	30.00 - 34.25	Manual	1.0000
L29	20	FP 3.25 x 1.25 Reinforcement	30.00 - 34.25	Manual	1.0000
L29	21	FP 3.25 x 1.25 Reinforcement	30.00 - 34.25	Manual	1.0000
L29	28	MP3-04 Reinforcement	30.00 - 34.25	Manual	1.0000
L29	29	MP3-04 Reinforcement	30.00 - 34.25	Manual	1.0000
L29	30	MP3-04 Reinforcement	30.00 - 34.25	Manual	1.0000
L29	38	CCI-040075 Reinforcement	30.25 - 34.25	Manual	1.0000
L29	39	CCI-040075 Reinforcement	30.25 - 34.25	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L29	40	CCI-040075 Reinforcement	30.25 - 34.25	Manual	1.0000
L30	25	MP3-05 Reinforcement	29.75 - 30.00	Manual	1.0000
L30	26	MP3-05 Reinforcement	29.75 - 30.00	Manual	1.0000
L30	27	MP3-05 Reinforcement	29.75 - 30.00	Manual	1.0000
L31	25	MP3-05 Reinforcement	25.58 - 29.75	Manual	1.0000
L31	26	MP3-05 Reinforcement	25.58 - 29.75	Manual	1.0000
L31	27	MP3-05 Reinforcement	25.58 - 29.75	Manual	1.0000
L31	35	CCI-040075 Reinforcement	25.58 - 27.00	Manual	1.0000
L31	36	CCI-040075 Reinforcement	25.58 - 27.00	Manual	1.0000
L31	37	CCI-040075 Reinforcement	25.58 - 27.00	Manual	1.0000
L32	25	MP3-05 Reinforcement	25.33 - 25.58	Manual	1.0000
L32	26	MP3-05 Reinforcement	25.33 - 25.58	Manual	1.0000
L32	27	MP3-05 Reinforcement	25.33 - 25.58	Manual	1.0000
L32	35	CCI-040075 Reinforcement	25.33 - 25.58	Manual	1.0000
L32	36	CCI-040075 Reinforcement	25.33 - 25.58	Manual	1.0000
L32	37	CCI-040075 Reinforcement	25.33 - 25.58	Manual	1.0000
L33	16	FP 3.50 x 1.25 Reinforcement	20.75 - 22.00	Manual	1.0000
L33	17	FP 3.50 x 1.25 Reinforcement	20.75 - 22.00	Manual	1.0000
L33	18	FP 3.50 x 1.25 Reinforcement	20.75 - 22.00	Manual	1.0000
L33	25	MP3-05 Reinforcement	20.75 - 25.33	Manual	1.0000
L33	26	MP3-05 Reinforcement	20.75 - 25.33	Manual	1.0000
L33	27	MP3-05 Reinforcement	20.75 - 25.33	Manual	1.0000
L33	35	CCI-040075 Reinforcement	20.75 - 25.33	Manual	1.0000
L33	36	CCI-040075 Reinforcement	20.75 - 25.33	Manual	1.0000
L33	37	CCI-040075 Reinforcement	20.75 - 25.33	Manual	1.0000
L34	16	FP 3.50 x 1.25 Reinforcement	20.50 - 20.75	Manual	1.0000
L34	17	FP 3.50 x 1.25 Reinforcement	20.50 - 20.75	Manual	1.0000
L34	18	FP 3.50 x 1.25 Reinforcement	20.50 - 20.75	Manual	1.0000
L34	25	MP3-05 Reinforcement	20.50 - 20.75	Manual	1.0000
L34	26	MP3-05 Reinforcement	20.50 - 20.75	Manual	1.0000
L34	27	MP3-05 Reinforcement	20.50 - 20.75	Manual	1.0000
L34	35	CCI-040075 Reinforcement	20.50 - 20.75	Manual	1.0000
L34	36	CCI-040075 Reinforcement	20.50 - 20.75	Manual	1.0000
L34	37	CCI-040075 Reinforcement	20.50 - 20.75	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L35	16	FP 3.50 x 1.25 Reinforcement	17.48 - 20.50	Manual	1.0000
L35	17	FP 3.50 x 1.25 Reinforcement	17.48 - 20.50	Manual	1.0000
L35	18	FP 3.50 x 1.25 Reinforcement	17.48 - 20.50	Manual	1.0000
L35	25	MP3-05 Reinforcement	17.48 - 20.50	Manual	1.0000
L35	26	MP3-05 Reinforcement	17.48 - 20.50	Manual	1.0000
L35	27	MP3-05 Reinforcement	17.48 - 20.50	Manual	1.0000
L35	35	CCI-040075 Reinforcement	17.48 - 20.50	Manual	1.0000
L35	36	CCI-040075 Reinforcement	17.48 - 20.50	Manual	1.0000
L35	37	CCI-040075 Reinforcement	17.48 - 20.50	Manual	1.0000
L35	51	CCI-040125	17.48 - 19.00	Manual	1.0000
L35	52	CCI-040125	17.48 - 19.00	Manual	1.0000
L35	53	CCI-040125	17.48 - 19.00	Manual	1.0000
L36	16	FP 3.50 x 1.25 Reinforcement	17.23 - 17.48	Manual	1.0000
L36	17	FP 3.50 x 1.25 Reinforcement	17.23 - 17.48	Manual	1.0000
L36	18	FP 3.50 x 1.25 Reinforcement	17.23 - 17.48	Manual	1.0000
L36	25	MP3-05 Reinforcement	17.23 - 17.48	Manual	1.0000
L36	26	MP3-05 Reinforcement	17.23 - 17.48	Manual	1.0000
L36	27	MP3-05 Reinforcement	17.23 - 17.48	Manual	1.0000
L36	35	CCI-040075 Reinforcement	17.23 - 17.48	Manual	1.0000
L36	36	CCI-040075 Reinforcement	17.23 - 17.48	Manual	1.0000
L36	37	CCI-040075 Reinforcement	17.23 - 17.48	Manual	1.0000
L36	51	CCI-040125	17.23 - 17.48	Manual	1.0000
L36	52	CCI-040125	17.23 - 17.48	Manual	1.0000
L36	53	CCI-040125	17.23 - 17.48	Manual	1.0000
L37	16	FP 3.50 x 1.25 Reinforcement	13.50 - 17.23	Manual	1.0000
L37	17	FP 3.50 x 1.25 Reinforcement	13.50 - 17.23	Manual	1.0000
L37	18	FP 3.50 x 1.25 Reinforcement	13.50 - 17.23	Manual	1.0000
L37	24	MP3-04 Reinforcement	13.50 - 14.88	Manual	1.0000
L37	25	MP3-05 Reinforcement	13.50 - 17.23	Manual	1.0000
L37	26	MP3-05 Reinforcement	13.50 - 17.23	Manual	1.0000
L37	27	MP3-05 Reinforcement	13.50 - 17.23	Manual	1.0000
L37	35	CCI-040075 Reinforcement	17.00 - 17.23	Manual	1.0000
L37	36	CCI-040075 Reinforcement	17.00 - 17.23	Manual	1.0000
L37	37	CCI-040075 Reinforcement	17.00 - 17.23	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L37	51	CCI-040125	13.50 - 17.23	Manual	1.0000
L37	52	CCI-040125	13.50 - 17.23	Manual	1.0000
L37	53	CCI-040125	13.50 - 17.23	Manual	1.0000
L38	16	FP 3.50 x 1.25 Reinforcement	13.25 - 13.50	Manual	1.0000
L38	17	FP 3.50 x 1.25 Reinforcement	13.25 - 13.50	Manual	1.0000
L38	18	FP 3.50 x 1.25 Reinforcement	13.25 - 13.50	Manual	1.0000
L38	24	MP3-04 Reinforcement	13.25 - 13.50	Manual	1.0000
L38	25	MP3-05 Reinforcement	13.25 - 13.50	Manual	1.0000
L38	26	MP3-05 Reinforcement	13.25 - 13.50	Manual	1.0000
L38	27	MP3-05 Reinforcement	13.25 - 13.50	Manual	1.0000
L38	51	CCI-040125	13.25 - 13.50	Manual	1.0000
L38	52	CCI-040125	13.25 - 13.50	Manual	1.0000
L38	53	CCI-040125	13.25 - 13.50	Manual	1.0000
L39	16	FP 3.50 x 1.25 Reinforcement	8.25 - 13.25	Manual	1.0000
L39	17	FP 3.50 x 1.25 Reinforcement	8.25 - 13.25	Manual	1.0000
L39	18	FP 3.50 x 1.25 Reinforcement	8.25 - 13.25	Manual	1.0000
L39	23	MP3-05 Reinforcement	8.25 - 8.50	Manual	1.0000
L39	24	MP3-04 Reinforcement	8.25 - 13.25	Manual	1.0000
L39	25	MP3-05 Reinforcement	11.25 - 13.25	Manual	1.0000
L39	26	MP3-05 Reinforcement	8.25 - 13.25	Manual	1.0000
L39	27	MP3-05 Reinforcement	8.25 - 13.25	Manual	1.0000
L39	51	CCI-040125	8.25 - 13.25	Manual	1.0000
L39	52	CCI-040125	8.25 - 13.25	Manual	1.0000
L39	53	CCI-040125	8.25 - 13.25	Manual	1.0000
L40	16	FP 3.50 x 1.25 Reinforcement	6.25 - 8.25	Manual	1.0000
L40	17	FP 3.50 x 1.25 Reinforcement	6.25 - 8.25	Manual	1.0000
L40	18	FP 3.50 x 1.25 Reinforcement	6.25 - 8.25	Manual	1.0000
L40	23	MP3-05 Reinforcement	6.25 - 8.25	Manual	1.0000
L40	24	MP3-04 Reinforcement	6.25 - 8.25	Manual	1.0000
L40	26	MP3-05 Reinforcement	6.25 - 8.25	Manual	1.0000
L40	27	MP3-05 Reinforcement	6.25 - 8.25	Manual	1.0000
L40	51	CCI-040125	6.25 - 8.25	Manual	1.0000
L40	52	CCI-040125	6.25 - 8.25	Manual	1.0000
L40	53	CCI-040125	6.25 - 8.25	Manual	1.0000
L41	16	FP 3.50 x 1.25 Reinforcement	6.00 - 6.25	Manual	1.0000
L41	17	FP 3.50 x 1.25 Reinforcement	6.00 - 6.25	Manual	1.0000
L41	18	FP 3.50 x 1.25 Reinforcement	6.00 - 6.25	Manual	1.0000
L41	23	MP3-05 Reinforcement	6.00 - 6.25	Manual	1.0000
L41	24	MP3-04 Reinforcement	6.00 - 6.25	Manual	1.0000
L41	26	MP3-05 Reinforcement	6.00 - 6.25	Manual	1.0000
L41	27	MP3-05 Reinforcement	6.00 - 6.25	Manual	1.0000
L41	51	CCI-040125	6.00 - 6.25	Manual	1.0000
L41	52	CCI-040125	6.00 - 6.25	Manual	1.0000
L41	53	CCI-040125	6.00 - 6.25	Manual	1.0000
L42	16	FP 3.50 x 1.25	5.50 - 6.00	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L42	17	FP 3.50 x 1.25 Reinforcement	5.50 - 6.00	Manual	1.0000
L42	18	FP 3.50 x 1.25 Reinforcement	5.50 - 6.00	Manual	1.0000
L42	23	MP3-05 Reinforcement	5.50 - 6.00	Manual	1.0000
L42	24	MP3-04 Reinforcement	5.50 - 6.00	Manual	1.0000
L42	26	MP3-05 Reinforcement	5.50 - 6.00	Manual	1.0000
L42	27	MP3-05 Reinforcement	5.50 - 6.00	Manual	1.0000
L42	51	CCI-040125	5.50 - 6.00	Manual	1.0000
L42	52	CCI-040125	5.50 - 6.00	Manual	1.0000
L42	53	CCI-040125	5.50 - 6.00	Manual	1.0000
L43	16	FP 3.50 x 1.25 Reinforcement	5.25 - 5.50	Manual	1.0000
L43	17	FP 3.50 x 1.25 Reinforcement	5.25 - 5.50	Manual	1.0000
L43	18	FP 3.50 x 1.25 Reinforcement	5.25 - 5.50	Manual	1.0000
L43	23	MP3-05 Reinforcement	5.25 - 5.50	Manual	1.0000
L43	24	MP3-04 Reinforcement	5.25 - 5.50	Manual	1.0000
L43	26	MP3-05 Reinforcement	5.25 - 5.50	Manual	1.0000
L43	27	MP3-05 Reinforcement	5.25 - 5.50	Manual	1.0000
L43	51	CCI-040125	5.25 - 5.50	Manual	1.0000
L43	52	CCI-040125	5.25 - 5.50	Manual	1.0000
L43	53	CCI-040125	5.25 - 5.50	Manual	1.0000
L44	16	FP 3.50 x 1.25 Reinforcement	0.25 - 5.25	Manual	1.0000
L44	17	FP 3.50 x 1.25 Reinforcement	0.25 - 5.25	Manual	1.0000
L44	18	FP 3.50 x 1.25 Reinforcement	0.25 - 5.25	Manual	1.0000
L44	23	MP3-05 Reinforcement	0.25 - 5.25	Manual	1.0000
L44	24	MP3-04 Reinforcement	4.88 - 5.25	Manual	1.0000
L44	26	MP3-05 Reinforcement	0.25 - 5.25	Manual	1.0000
L44	27	MP3-05 Reinforcement	0.25 - 5.25	Manual	1.0000
L44	51	CCI-040125	4.00 - 5.25	Manual	1.0000
L44	52	CCI-040125	4.00 - 5.25	Manual	1.0000
L44	53	CCI-040125	4.00 - 5.25	Manual	1.0000
L45	16	FP 3.50 x 1.25 Reinforcement	0.00 - 0.25	Manual	1.0000
L45	17	FP 3.50 x 1.25 Reinforcement	0.00 - 0.25	Manual	1.0000
L45	18	FP 3.50 x 1.25 Reinforcement	0.00 - 0.25	Manual	1.0000
L45	23	MP3-05 Reinforcement	0.00 - 0.25	Manual	1.0000
L45	26	MP3-05 Reinforcement	0.00 - 0.25	Manual	1.0000
L45	27	MP3-05 Reinforcement	0.00 - 0.25	Manual	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
KS24019-L112A	B	From Leg	4.0000 0.00 6.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice	0.1407 0.1979 0.2621 0.4148	0.1407 0.1979 0.2621 0.4148	0.01 0.01 0.01 0.02

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice			
APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	A	From Leg	4.0000 0.00 3.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.2900 6.8600 7.4500 8.6800	2.7600 3.2700 3.7900 4.9000	0.06 0.11 0.16 0.29
APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	B	From Leg	4.0000 0.00 3.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.2900 6.8600 7.4500 8.6800	2.7600 3.2700 3.7900 4.9000	0.06 0.11 0.16 0.29
APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	C	From Leg	4.0000 0.00 3.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.2900 6.8600 7.4500 8.6800	2.7600 3.2700 3.7900 4.9000	0.06 0.11 0.16 0.29
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	A	From Leg	4.0000 0.00 3.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	14.6900 15.4600 16.2300 17.8200	6.8700 7.5500 8.2500 9.6700	0.18 0.31 0.45 0.78
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	B	From Leg	4.0000 0.00 3.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	14.6900 15.4600 16.2300 17.8200	6.8700 7.5500 8.2500 9.6700	0.18 0.31 0.45 0.78
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	C	From Leg	4.0000 0.00 3.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	14.6900 15.4600 16.2300 17.8200	6.8700 7.5500 8.2500 9.6700	0.18 0.31 0.45 0.78
AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Leg	4.0000 0.00 3.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.1900 5.5900 6.0200 6.9000	2.7100 3.0400 3.3800 4.1200	0.13 0.17 0.23 0.35
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Leg	4.0000 0.00 3.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.1900 5.5900 6.0200 6.9000	2.7100 3.0400 3.3800 4.1200	0.13 0.17 0.23 0.35
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Leg	4.0000 0.00 3.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.1900 5.5900 6.0200 6.9000	2.7100 3.0400 3.3800 4.1200	0.13 0.17 0.23 0.35
RADIO 4424 B25_TMO	A	From Leg	4.0000 0.00 3.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.0520 2.2307 2.4168 2.8113	1.6103 1.7717 1.9406 2.3006	0.09 0.11 0.13 0.19
RADIO 4424 B25_TMO	B	From Leg	4.0000 0.00 3.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.0520 2.2307 2.4168 2.8113	1.6103 1.7717 1.9406 2.3006	0.09 0.11 0.13 0.19
RADIO 4424 B25_TMO	C	From Leg	4.0000 0.00 3.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.0520 2.2307 2.4168 2.8113	1.6103 1.7717 1.9406 2.3006	0.09 0.11 0.13 0.19
RADIO 4415 B66A	A	From Leg	4.0000 0.00 3.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice	1.8563 2.0266 2.2044 2.5822	0.8701 0.9966 1.1344 1.4322	0.05 0.06 0.08 0.12

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice			
RADIO 4415 B66A	B	From Leg	4.0000 0.00 3.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.8563 2.0266 2.2044 2.5822	0.8701 0.9966 1.1344 1.4322	0.05 0.06 0.08 0.12
RADIO 4415 B66A	C	From Leg	4.0000 0.00 3.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.8563 2.0266 2.2044 2.5822	0.8701 0.9966 1.1344 1.4322	0.05 0.06 0.08 0.12
RADIO 4449 B71 B85A_T-MOBILE	A	From Leg	4.0000 0.00 3.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.9701 2.1466 2.3306 2.7207	1.5865 1.7488 1.9185 2.2800	0.07 0.09 0.12 0.17
RADIO 4449 B71 B85A_T-MOBILE	B	From Leg	4.0000 0.00 3.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.9701 2.1466 2.3306 2.7207	1.5865 1.7488 1.9185 2.2800	0.07 0.09 0.12 0.17
RADIO 4449 B71 B85A_T-MOBILE	C	From Leg	4.0000 0.00 3.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.9701 2.1466 2.3306 2.7207	1.5865 1.7488 1.9185 2.2800	0.07 0.09 0.12 0.17
(2) 2.375" OD x 5' Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.1875 1.4956 1.8071 2.4580	1.1875 1.4956 1.8071 2.4580	0.02 0.03 0.04 0.08
(2) 2.375" OD x 5' Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.1875 1.4956 1.8071 2.4580	1.1875 1.4956 1.8071 2.4580	0.02 0.03 0.04 0.08
(2) 2.375" OD x 5' Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.1875 1.4956 1.8071 2.4580	1.1875 1.4956 1.8071 2.4580	0.02 0.03 0.04 0.08
Platform Mount [LP 501-1]	C	None		0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	18.2800 23.5400 28.5300 38.8500	18.2800 23.5400 28.5300 38.8500	0.98 1.28 1.68 2.77
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BXA-70063-6BF-EDIN-0	A	From Leg	4.0000 0.00 -3.00	0.00	103.0000	No Ice 1/2" Ice 1" Ice 2" Ice	7.2623 7.6963 8.1373 9.0403	4.0350 4.4590 4.8905 5.7756	0.02 0.06 0.11 0.22
BXA-70063-6BF-EDIN-0	B	From Leg	4.0000 0.00 -3.00	0.00	103.0000	No Ice 1/2" Ice 1" Ice 2" Ice	7.2623 7.6963 8.1373 9.0403	4.0350 4.4590 4.8905 5.7756	0.02 0.06 0.11 0.22
BXA-70063-6BF-EDIN-0	C	From Leg	4.0000 0.00 -3.00	0.00	103.0000	No Ice 1/2" Ice 1" Ice 2" Ice	7.2623 7.6963 8.1373 9.0403	4.0350 4.4590 4.8905 5.7756	0.02 0.06 0.11 0.22
Platform Mount [LP 301-1_KCKR]	C	None		0.00	103.0000	No Ice 1/2"	35.0300 44.4600	35.0300 44.4600	1.86 2.52

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						Ice	53.7200	53.7200	3.33
						1" Ice	72.2900	72.2900	5.42
						2" Ice			
(2) JAHH-65A-R3B	A	From Leg	4.0000 0.00 -3.00	0.00	103.0000	No Ice 1/2" Ice 1" Ice 2" Ice	3.3000 3.6000 3.9200 4.5600	1.9800 2.2600 2.5500 3.1400	0.05 0.10 0.15 0.27
(2) JAHH-65A-R3B	B	From Leg	4.0000 0.00 -3.00	0.00	103.0000	No Ice 1/2" Ice 1" Ice 2" Ice	3.3000 3.6000 3.9200 4.5600	1.9800 2.2600 2.5500 3.1400	0.05 0.10 0.15 0.27
(2) JAHH-65A-R3B	C	From Leg	4.0000 0.00 -3.00	0.00	103.0000	No Ice 1/2" Ice 1" Ice 2" Ice	3.3000 3.6000 3.9200 4.5600	1.9800 2.2600 2.5500 3.1400	0.05 0.10 0.15 0.27
MT6407-77A	A	From Leg	4.0000 0.00 -3.00	0.00	103.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.6922 4.9799 5.2750 5.8875	1.8402 2.0626 2.2920 2.7719	0.08 0.11 0.14 0.22
MT6407-77A	B	From Leg	4.0000 0.00 -3.00	0.00	103.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.6922 4.9799 5.2750 5.8875	1.8402 2.0626 2.2920 2.7719	0.08 0.11 0.14 0.22
MT6407-77A	C	From Leg	4.0000 0.00 -3.00	0.00	103.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.6922 4.9799 5.2750 5.8875	1.8402 2.0626 2.2920 2.7719	0.08 0.11 0.14 0.22
CBC78T-DS-43-2X	A	From Leg	4.0000 0.00 -3.00	0.00	103.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.3680 0.4456 0.5306 0.7228	0.5120 0.6046 0.7046 0.9268	0.02 0.03 0.04 0.06
CBC78T-DS-43-2X	B	From Leg	4.0000 0.00 -3.00	0.00	103.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.3680 0.4456 0.5306 0.7228	0.5120 0.6046 0.7046 0.9268	0.02 0.03 0.04 0.06
CBC78T-DS-43-2X	C	From Leg	4.0000 0.00 -3.00	0.00	103.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.3680 0.4456 0.5306 0.7228	0.5120 0.6046 0.7046 0.9268	0.02 0.03 0.04 0.06
RFV01U-D1A	A	From Leg	4.0000 0.00 -3.00	0.00	103.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.8750 2.0454 2.2231 2.6009	1.2500 1.3926 1.5426 1.8648	0.08 0.10 0.12 0.18
RFV01U-D1A	B	From Leg	4.0000 0.00 -3.00	0.00	103.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.8750 2.0454 2.2231 2.6009	1.2500 1.3926 1.5426 1.8648	0.08 0.10 0.12 0.18
RFV01U-D1A	C	From Leg	4.0000 0.00 -3.00	0.00	103.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.8750 2.0454 2.2231 2.6009	1.2500 1.3926 1.5426 1.8648	0.08 0.10 0.12 0.18
RFV01U-D2A	A	From Leg	4.0000 0.00	0.00	103.0000	No Ice 1/2"	1.8750 2.0454	1.0125 1.1445	0.07 0.09

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			-3.00			Ice	2.2231	1.2840	0.11
						1" Ice	2.6009	1.5851	0.15
						2" Ice			
RFV01U-D2A	B	From Leg	4.0000	0.00	103.0000	No Ice	1.8750	1.0125	0.07
			0.00			1/2"	2.0454	1.1445	0.09
			-3.00			Ice	2.2231	1.2840	0.11
						1" Ice	2.6009	1.5851	0.15
						2" Ice			
RFV01U-D2A	C	From Leg	4.0000	0.00	103.0000	No Ice	1.8750	1.0125	0.07
			0.00			1/2"	2.0454	1.1445	0.09
			-3.00			Ice	2.2231	1.2840	0.11
						1" Ice	2.6009	1.5851	0.15
						2" Ice			
RVZDC-6627-PF-48	A	From Leg	4.0000	0.00	103.0000	No Ice	3.7922	2.5137	0.03
			0.00			1/2"	4.0441	2.7270	0.06
			-3.00			Ice	4.3033	2.9472	0.10
						1" Ice	4.8439	3.4168	0.18
						2" Ice			
**********									
DMP65R-BU8D w/ Mount Pipe	A	From Leg	4.0000	0.00	83.0000	No Ice	15.8900	7.8900	0.14
			0.00			1/2"	16.8100	8.7400	0.25
			0.00			Ice	17.7600	9.6000	0.38
						1" Ice	19.7000	11.3700	0.68
						2" Ice			
DMP65R-BU8D w/ Mount Pipe	B	From Leg	4.0000	0.00	83.0000	No Ice	15.8900	7.8900	0.14
			0.00			1/2"	16.8100	8.7400	0.25
			0.00			Ice	17.7600	9.6000	0.38
						1" Ice	19.7000	11.3700	0.68
						2" Ice			
DMP65R-BU8D w/ Mount Pipe	C	From Leg	4.0000	0.00	83.0000	No Ice	15.8900	7.8900	0.14
			0.00			1/2"	16.8100	8.7400	0.25
			0.00			Ice	17.7600	9.6000	0.38
						1" Ice	19.7000	11.3700	0.68
						2" Ice			
TPA65R-BU8D w/ Mount Pipe	A	From Leg	4.0000	0.00	83.0000	No Ice	15.9400	7.9100	0.12
			0.00			1/2"	16.8700	8.7600	0.24
			0.00			Ice	17.8200	9.6300	0.36
						1" Ice	19.7600	11.4000	0.67
						2" Ice			
TPA65R-BU8D w/ Mount Pipe	B	From Leg	4.0000	0.00	83.0000	No Ice	15.9400	7.9100	0.12
			0.00			1/2"	16.8700	8.7600	0.24
			0.00			Ice	17.8200	9.6300	0.36
						1" Ice	19.7600	11.4000	0.67
						2" Ice			
TPA65R-BU8D w/ Mount Pipe	C	From Leg	4.0000	0.00	83.0000	No Ice	15.9400	7.9100	0.12
			0.00			1/2"	16.8700	8.7600	0.24
			0.00			Ice	17.8200	9.6300	0.36
						1" Ice	19.7600	11.4000	0.67
						2" Ice			
RRUS 4415 B30	A	From Leg	4.0000	0.00	83.0000	No Ice	1.8425	0.8202	0.05
			0.00			1/2"	2.0123	0.9434	0.06
			0.00			Ice	2.1895	1.0750	0.08
						1" Ice	2.5662	1.3683	0.12
						2" Ice			
RRUS 4415 B30	B	From Leg	4.0000	0.00	83.0000	No Ice	1.8425	0.8202	0.05
			0.00			1/2"	2.0123	0.9434	0.06
			0.00			Ice	2.1895	1.0750	0.08
						1" Ice	2.5662	1.3683	0.12
						2" Ice			
RRUS 4415 B30	C	From Leg	4.0000	0.00	83.0000	No Ice	1.8425	0.8202	0.05
			0.00			1/2"	2.0123	0.9434	0.06
			0.00			Ice	2.1895	1.0750	0.08
						1" Ice	2.5662	1.3683	0.12
						2" Ice			
RRUS 4449 B5/B12	A	From Leg	4.0000	0.00	83.0000	No Ice	1.9675	1.4081	0.07

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00 0.00			1/2" Ice 1" Ice 2" Ice	2.1439 2.3278 2.7177	1.5637 1.7267 2.0749	0.09 0.11 0.16
RRUS 4449 B5/B12	B	From Leg	4.0000 0.00 0.00	0.00	83.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.9675 2.1439 2.3278 2.7177	1.4081 1.5637 1.7267 2.0749	0.07 0.09 0.11 0.16
RRUS 4449 B5/B12	C	From Leg	4.0000 0.00 0.00	0.00	83.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.9675 2.1439 2.3278 2.7177	1.4081 1.5637 1.7267 2.0749	0.07 0.09 0.11 0.16
RRUS 4478 B14_CCIV2	A	From Leg	4.0000 0.00 0.00	0.00	83.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.0212 2.1999 2.3860 2.7804	1.2459 1.3960 1.5536 1.8909	0.06 0.08 0.10 0.15
RRUS 4478 B14_CCIV2	B	From Leg	4.0000 0.00 0.00	0.00	83.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.0212 2.1999 2.3860 2.7804	1.2459 1.3960 1.5536 1.8909	0.06 0.08 0.10 0.15
RRUS 4478 B14_CCIV2	C	From Leg	4.0000 0.00 0.00	0.00	83.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.0212 2.1999 2.3860 2.7804	1.2459 1.3960 1.5536 1.8909	0.06 0.08 0.10 0.15
RRUS 8843 B2/B66A	A	From Leg	4.0000 0.00 0.00	0.00	83.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.6390 1.7988 1.9660 2.3227	1.3534 1.5005 1.6549 1.9860	0.07 0.09 0.11 0.16
RRUS 8843 B2/B66A	B	From Leg	4.0000 0.00 0.00	0.00	83.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.6390 1.7988 1.9660 2.3227	1.3534 1.5005 1.6549 1.9860	0.07 0.09 0.11 0.16
RRUS 8843 B2/B66A	C	From Leg	4.0000 0.00 0.00	0.00	83.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.6390 1.7988 1.9660 2.3227	1.3534 1.5005 1.6549 1.9860	0.07 0.09 0.11 0.16
DC9-48-60-24-8C-EV	A	From Leg	4.0000 0.00 0.00	0.00	83.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.7366 2.9630 3.1964 3.6842	4.7848 5.0645 5.3517 5.9483	0.03 0.06 0.10 0.20
DC6-48-60-0-8F	B	From Leg	4.0000 0.00 0.00	0.00	83.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.9167 1.4583 1.6431 2.0417	0.9167 1.4583 1.6431 2.0417	0.02 0.04 0.06 0.11
MCG22HDX14-12	C	None		0.00	83.0000	No Ice 1/2" Ice 1" Ice 2" Ice	29.8000 41.5000 53.2000 76.6000	29.8000 41.5000 53.2000 76.6000	1.80 2.30 2.80 3.80
**********									
Bridge Stiffener (96" x 16" x 1.25")	A	From Leg	0.0000 0.00 0.00	30.00	30.0000	No Ice 1/2" Ice 1" Ice 2" Ice	14.4593 15.0669 15.6815 16.9317	1.6667 2.5733 3.4923 5.3673	0.51 0.57 0.63 0.79

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Bridge Stiffener (96" x 16" x 1.25")	B	From Leg	0.0000 0.00 0.00	30.00	30.0000	No Ice 1/2" Ice 1" Ice 2" Ice	14.4593 15.0669 15.6815 16.9317	1.6667 2.5733 3.4923 5.3673	0.51 0.57 0.63 0.79
Bridge Stiffener (96" x 16" x 1.25")	C	From Leg	0.0000 0.00 0.00	30.00	30.0000	No Ice 1/2" Ice 1" Ice 2" Ice	14.4593 15.0669 15.6815 16.9317	1.6667 2.5733 3.4923 5.3673	0.51 0.57 0.63 0.79
Bridge Stiffener (96" x 16" x 1.25")	A	From Leg	0.0000 0.00 0.00	30.00	60.0000	No Ice 1/2" Ice 1" Ice 2" Ice	14.4593 15.0669 15.6815 16.9317	1.6667 2.5733 3.4923 5.3673	0.51 0.57 0.63 0.79
Bridge Stiffener (96" x 16" x 1.25")	B	From Leg	0.0000 0.00 0.00	30.00	60.0000	No Ice 1/2" Ice 1" Ice 2" Ice	14.4593 15.0669 15.6815 16.9317	1.6667 2.5733 3.4923 5.3673	0.51 0.57 0.63 0.79
Bridge Stiffener (96" x 16" x 1.25")	C	From Leg	0.0000 0.00 0.00	30.00	60.0000	No Ice 1/2" Ice 1" Ice 2" Ice	14.4593 15.0669 15.6815 16.9317	1.6667 2.5733 3.4923 5.3673	0.51 0.57 0.63 0.79
**									
Bridge Stiffener (58.75" x 14.3125" x 1.25")	A	From Leg	0.0000 0.00 0.00	60.00	30.0000	No Ice 1/2" Ice 1" Ice 2" Ice	7.4236 7.8196 8.2226 9.0496	1.0200 1.5817 2.0932 2.8220	0.22 0.25 0.29 0.38
Bridge Stiffener (58.75" x 14.3125" x 1.25")	B	From Leg	0.0000 0.00 0.00	60.00	30.0000	No Ice 1/2" Ice 1" Ice 2" Ice	7.4236 7.8196 8.2226 9.0496	1.0200 1.5817 2.0932 2.8220	0.22 0.25 0.29 0.38
Bridge Stiffener (58.75" x 14.3125" x 1.25")	C	From Leg	0.0000 0.00 0.00	60.00	30.0000	No Ice 1/2" Ice 1" Ice 2" Ice	7.4236 7.8196 8.2226 9.0496	1.0200 1.5817 2.0932 2.8220	0.22 0.25 0.29 0.38
Bridge Stiffener (58.75" x 14.3125" x 1.25")	A	From Leg	0.0000 0.00 0.00	60.00	60.0000	No Ice 1/2" Ice 1" Ice 2" Ice	7.4236 7.8196 8.2226 9.0496	1.0200 1.5817 2.0932 2.8220	0.22 0.25 0.29 0.38
Bridge Stiffener (58.75" x 14.3125" x 1.25")	B	From Leg	0.0000 0.00 0.00	60.00	60.0000	No Ice 1/2" Ice 1" Ice 2" Ice	7.4236 7.8196 8.2226 9.0496	1.0200 1.5817 2.0932 2.8220	0.22 0.25 0.29 0.38
Bridge Stiffener (58.75" x 14.3125" x 1.25")	C	From Leg	0.0000 0.00 0.00	60.00	60.0000	No Ice 1/2" Ice 1" Ice 2" Ice	7.4236 7.8196 8.2226 9.0496	1.0200 1.5817 2.0932 2.8220	0.22 0.25 0.29 0.38
**									
Bridge Stiffener (93" x 16" x 1.25")	A	From Leg	0.0000 0.00 0.00	-30.00	30.0000	No Ice 1/2" Ice 1" Ice 2" Ice	13.9213 14.5126 15.1108 16.3283	1.6146 2.4934 3.3846 5.1543	0.35 0.41 0.47 0.62
Bridge Stiffener (93" x 16" x 1.25")	B	From Leg	0.0000 0.00 0.00	-30.00	30.0000	No Ice 1/2" Ice	13.9213 14.5126 15.1108	1.6146 2.4934 3.3846	0.35 0.41 0.47

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						1" Ice	16.3283	5.1543	0.62
						2" Ice			
Bridge Stiffener (93" x 16" x 1.25")	C	From Leg	0.0000 0.00 0.00	-30.00	30.0000	No Ice	13.9213	1.6146	0.35
						1/2" Ice	14.5126	2.4934	0.41
						1" Ice	15.1108	3.3846	0.47
						2" Ice	16.3283	5.1543	0.62
**									

Tower Pressures - No Ice

G_H = 1.100

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg % 	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
L1 120.0000-115.0000	117.5000	1.309	47.17	10.000	A	0.000	10.000	10.000	100.00	0.000	0.000
					B	0.000	10.000		100.00	0.000	0.000
					C	0.000	10.000		100.00	1.597	0.000
L2 115.0000-110.0000	112.5000	1.297	46.74	10.000	A	0.000	10.000	10.000	100.00	0.000	0.000
					B	0.000	10.000		100.00	0.000	0.000
					C	0.000	10.000		100.00	3.992	0.000
L3 110.0000-105.0000	107.5000	1.285	46.29	10.000	A	0.000	10.000	10.000	100.00	0.000	0.000
					B	0.000	10.000		100.00	0.000	0.000
					C	0.000	10.000		100.00	3.992	0.000
L4 105.0000-100.0000	102.5000	1.272	45.83	10.000	A	0.000	10.000	10.000	100.00	0.270	0.000
					B	0.000	10.000		100.00	0.270	0.000
					C	0.000	10.000		100.00	4.262	0.000
L5 100.0000-98.5000	99.2500	1.264	45.52	3.000	A	0.000	3.000	3.000	100.00	0.964	0.000
					B	0.000	3.000		100.00	0.964	0.000
					C	0.000	3.000		100.00	2.162	0.000
L6 98.5000-98.2500	98.3750	1.261	45.44	0.500	A	0.000	0.500	0.500	100.00	0.161	0.000
					B	0.000	0.500		100.00	0.161	0.000
					C	0.000	0.500		100.00	0.360	0.000
L7 98.2500-93.2500	95.7500	1.254	45.18	10.000	A	0.000	10.000	10.000	100.00	3.214	0.000
					B	0.000	10.000		100.00	3.214	0.000
					C	0.000	10.000		100.00	7.206	0.000
L8 93.2500-90.0000	91.6250	1.243	44.76	6.500	A	0.000	6.500	6.500	100.00	2.015	0.000
					B	0.000	6.500		100.00	2.015	0.000
					C	0.000	6.500		100.00	4.610	0.000
L9 90.0000-89.7500	89.8750	1.237	44.58	0.500	A	0.000	0.500	0.500	100.00	0.154	0.000
					B	0.000	0.500		100.00	0.154	0.000
					C	0.000	0.500		100.00	0.353	0.000
L10 89.7500-84.7500	87.2500	1.23	44.30	10.000	A	0.000	10.000	10.000	100.00	1.489	0.000
					B	0.000	10.000		100.00	1.489	0.000
					C	0.000	10.000		100.00	5.481	0.000
L11 84.7500-79.7500	82.2500	1.215	43.76	10.000	A	0.000	10.000	10.000	100.00	0.333	0.000
					B	0.000	10.000		100.00	2.199	0.000
					C	0.000	10.000		100.00	4.325	0.000
L12 79.7500-79.0000	79.3750	1.206	43.43	1.500	A	0.000	1.500	1.500	100.00	0.500	0.000
					B	0.000	1.500		100.00	0.931	0.000
					C	0.000	1.500		100.00	1.099	0.000
L13 79.0000-78.7500	78.8750	1.204	43.37	0.500	A	0.000	0.500	0.500	100.00	0.167	0.000
					B	0.000	0.500		100.00	0.310	0.000
					C	0.000	0.500		100.00	0.366	0.000
L14 78.7500-75.1700	76.9600	1.198	43.15	7.160	A	0.000	7.160	7.160	100.00	3.089	0.000
					B	0.000	7.160		100.00	5.145	0.000
					C	0.000	7.160		100.00	5.271	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L15 75.1700-74.9200	75.0450	1.191	42.92	0.500	A	0.000	0.500	0.500	100.00	0.336	0.000
					B	0.000	0.500		100.00	0.479	0.000
					C	0.000	0.500		100.00	0.535	0.000
L16 74.9200-69.9200	72.4200	1.182	42.60	10.000	A	0.000	10.000	10.000	100.00	6.717	0.000
					B	0.000	10.000		100.00	9.588	0.000
					C	0.000	10.000		100.00	10.709	0.000
L17 69.9200-64.9200	67.4200	1.165	41.96	10.000	A	0.000	10.000	10.000	100.00	6.717	0.000
					B	0.000	10.000		100.00	9.588	0.000
					C	0.000	10.000		100.00	10.709	0.000
L18 64.9200-60.0000	62.4600	1.146	41.29	9.840	A	0.000	9.840	9.840	100.00	6.443	0.000
					B	0.000	9.840		100.00	9.268	0.000
					C	0.000	9.840		100.00	10.371	0.000
L19 60.0000-59.7500	59.8750	1.136	40.93	0.625	A	0.000	0.625	0.625	100.00	0.199	0.000
					B	0.000	0.625		100.00	0.343	0.000
					C	0.000	0.625		100.00	0.399	0.000
L20 59.7500-54.7500	57.2500	1.125	40.54	12.500	A	0.000	12.500	12.500	100.00	3.983	0.000
					B	0.000	12.500		100.00	6.854	0.000
					C	0.000	12.500		100.00	7.975	0.000
L21 54.7500-49.7500	52.2500	1.104	39.77	12.500	A	0.000	12.500	12.500	100.00	4.317	0.000
					B	0.000	12.500		100.00	7.188	0.000
					C	0.000	12.500		100.00	8.309	0.000
L22 49.7500-47.8300	48.7900	1.088	39.20	4.800	A	0.000	4.800	4.800	100.00	2.810	0.000
					B	0.000	4.800		100.00	3.912	0.000
					C	0.000	4.800		100.00	4.343	0.000
L23 47.8300-47.5800	47.7050	1.083	39.02	0.625	A	0.000	0.625	0.625	100.00	0.366	0.000
					B	0.000	0.625		100.00	0.509	0.000
					C	0.000	0.625		100.00	0.565	0.000
L24 47.5800-43.0000	45.2900	1.071	38.59	11.450	A	0.000	11.450	11.450	100.00	7.244	0.000
					B	0.000	11.450		100.00	9.874	0.000
					C	0.000	11.450		100.00	10.900	0.000
L25 43.0000-42.7500	42.8750	1.059	38.15	0.625	A	0.000	0.625	0.625	100.00	0.501	0.000
					B	0.000	0.625		100.00	0.645	0.000
					C	0.000	0.625		100.00	0.701	0.000
L26 42.7500-37.7500	40.2500	1.045	37.65	12.500	A	0.000	12.500	12.500	100.00	10.025	0.000
					B	0.000	12.500		100.00	12.896	0.000
					C	0.000	12.500		100.00	14.017	0.000
L27 37.7500-34.5000	36.1250	1.021	36.80	8.125	A	0.000	8.125	8.125	100.00	6.516	0.000
					B	0.000	8.125		100.00	8.382	0.000
					C	0.000	8.125		100.00	9.111	0.000
L28 34.5000-34.2500	34.3750	1.011	36.42	0.625	A	0.000	0.625	0.625	100.00	0.501	0.000
					B	0.000	0.625		100.00	0.645	0.000
					C	0.000	0.625		100.00	0.701	0.000
L29 34.2500-30.0000	32.1250	0.997	35.90	10.625	A	0.000	10.625	10.625	100.00	8.355	0.000
					B	0.000	10.625		100.00	10.795	0.000
					C	0.000	10.625		100.00	11.748	0.000
L30 30.0000-29.7500	29.8750	0.981	35.36	0.750	A	0.000	0.750	0.750	100.00	0.222	0.000
					B	0.000	0.750		100.00	0.366	0.000
					C	0.000	0.750		100.00	0.422	0.000
L31 29.7500-25.5800	27.6650	0.966	34.79	12.510	A	0.000	12.510	12.510	100.00	4.651	0.000
					B	0.000	12.510		100.00	7.045	0.000
					C	0.000	12.510		100.00	7.980	0.000
L32 25.5800-25.3300	25.4550	0.949	34.18	0.750	A	0.000	0.750	0.750	100.00	0.389	0.000
					B	0.000	0.750		100.00	0.532	0.000
					C	0.000	0.750		100.00	0.588	0.000
L33 25.3300-20.7500	23.0400	0.929	33.47	13.740	A	0.000	13.740	13.740	100.00	7.851	0.000
					B	0.000	13.740		100.00	10.481	0.000
					C	0.000	13.740		100.00	11.508	0.000
L34 20.7500-20.5000	20.6250	0.908	32.70	0.750	A	0.000	0.750	0.750	100.00	0.535	0.000
					B	0.000	0.750		100.00	0.678	0.000
					C	0.000	0.750		100.00	0.734	0.000
L35 20.5000-17.4800	18.9900	0.892	32.14	9.060	A	0.000	9.060	9.060	100.00	6.458	0.000
					B	0.000	9.060		100.00	9.205	0.000
					C	0.000	9.060		100.00	10.896	0.000
L36 17.4800-17.2300	17.3550	0.875	31.54	0.750	A	0.000	0.750	0.750	100.00	0.535	0.000
					B	0.000	0.750		100.00	0.845	0.000
					C	0.000	0.750		100.00	1.068	0.000
L37 17.2300-13.5000	15.3650	0.853	30.74	11.190	A	0.000	11.190	11.190	100.00	6.716	0.000
					B	0.000	11.190		100.00	10.271	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
					C	0.000	11.190		100.00	13.594	0.000
L38 13.5000-13.2500	13.3750	0.85	30.62	0.750	A	0.000	0.750	0.750	100.00	0.563	0.000
					B	0.000	0.750		100.00	0.678	0.000
					C	0.000	0.750		100.00	0.901	0.000
L39 13.2500-8.2500	10.7500	0.85	30.62	15.000	A	0.000	15.000	15.000	100.00	11.261	0.000
					B	0.000	15.000		100.00	11.093	0.000
					C	0.000	15.000		100.00	18.017	0.000
L40 8.2500-6.2500	7.2500	0.85	30.62	6.000	A	0.000	6.000	6.000	100.00	4.505	0.000
					B	0.000	6.000		100.00	5.212	0.000
					C	0.000	6.000		100.00	7.207	0.000
L41 6.2500-6.0000	6.1250	0.85	30.62	0.750	A	0.000	0.750	0.750	100.00	0.563	0.000
					B	0.000	0.750		100.00	0.652	0.000
					C	0.000	0.750		100.00	0.901	0.000
L42 6.0000-5.5000	5.7500	0.85	30.62	1.500	A	0.000	1.500	1.500	100.00	1.126	0.000
					B	0.000	1.500		100.00	1.303	0.000
					C	0.000	1.500		100.00	1.802	0.000
L43 5.5000-5.2500	5.3750	0.85	30.62	0.750	A	0.000	0.750	0.750	100.00	0.563	0.000
					B	0.000	0.750		100.00	0.652	0.000
					C	0.000	0.750		100.00	0.901	0.000
L44 5.2500-0.2500	2.7500	0.85	30.62	15.000	A	0.000	15.000	15.000	100.00	7.651	0.000
					B	0.000	15.000		100.00	10.531	0.000
					C	0.000	15.000		100.00	13.017	0.000
L45 0.2500-0.0000	0.1250	0.85	30.62	0.750	A	0.000	0.750	0.750	100.00	0.368	0.000
					B	0.000	0.750		100.00	0.485	0.000
					C	0.000	0.750		100.00	0.568	0.000

Tower Pressure - With Ice

G_H = 1.100

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1 120.0000-115.0000	117.5000	1.309	7.55	1.4476	11.206	A	0.000	11.206	11.206	100.00	0.000	0.000
						B	0.000	11.206		100.00	0.000	0.000
						C	0.000	11.206		100.00	2.720	0.000
L2 115.0000-110.0000	112.5000	1.297	7.48	1.4414	11.201	A	0.000	11.201	11.201	100.00	0.000	0.000
						B	0.000	11.201		100.00	0.000	0.000
						C	0.000	11.201		100.00	6.792	0.000
L3 110.0000-105.0000	107.5000	1.285	7.41	1.4348	11.196	A	0.000	11.196	11.196	100.00	0.000	0.000
						B	0.000	11.196		100.00	0.000	0.000
						C	0.000	11.196		100.00	6.784	0.000
L4 105.0000-100.0000	102.5000	1.272	7.33	1.4280	11.190	A	0.000	11.190	11.190	100.00	0.333	0.000
						B	0.000	11.190		100.00	0.333	0.000
						C	0.000	11.190		100.00	7.108	0.000
L5 100.0000-98.5000	99.2500	1.264	7.28	1.4234	3.356	A	0.000	3.356	3.356	100.00	1.187	0.000
						B	0.000	3.356		100.00	1.187	0.000
						C	0.000	3.356		100.00	3.218	0.000
L6 98.5000-98.2500	98.3750	1.261	7.27	1.4222	0.559	A	0.000	0.559	0.559	100.00	0.198	0.000
						B	0.000	0.559		100.00	0.198	0.000
						C	0.000	0.559		100.00	0.536	0.000
L7 98.2500-93.2500	95.7500	1.254	7.23	1.4183	11.182	A	0.000	11.182	11.182	100.00	3.955	0.000
						B	0.000	11.182		100.00	3.955	0.000
						C	0.000	11.182		100.00	10.718	0.000
L8 93.2500-90.0000	91.6250	1.243	7.16	1.4121	7.265	A	0.000	7.265	7.265	100.00	2.536	0.000
						B	0.000	7.265		100.00	2.536	0.000
						C	0.000	7.265		100.00	6.927	0.000
L9 90.0000-89.7500	89.8750	1.237	7.13	1.4094	0.559	A	0.000	0.559	0.559	100.00	0.194	0.000
						B	0.000	0.559		100.00	0.194	0.000
						C	0.000	0.559		100.00	0.532	0.000
L10 89.7500-84.7500	87.2500	1.23	7.09	1.4052	11.171	A	0.000	11.171	11.171	100.00	1.881	0.000
						B	0.000	11.171		100.00	1.881	0.000
						C	0.000	11.171		100.00	8.628	0.000
L11 84.7500-	82.2500	1.215	7.00	1.3969	11.164	A	0.000	11.164	11.164	100.00	0.473	0.000

Section Elevation	z	K_Z	q_z	t_Z	A_G	Face	A_F	A_R	A_{leg}	Leg %	C_AA_A In Face	C_AA_A Out Face
ft	ft		psf	in	ft^2		ft^2	ft^2	ft^2		ft^2	ft^2
79.7500						B	0.000	11.164		100.00	3.941	0.000
						C	0.000	11.164		100.00	7.209	0.000
L12 79.7500-79.0000	79.3750	1.206	6.95	1.3920	1.674	A	0.000	1.674	1.674	100.00	0.709	0.000
						B	0.000	1.674		100.00	1.508	0.000
						C	0.000	1.674		100.00	1.718	0.000
L13 79.0000-78.7500	78.8750	1.204	6.94	1.3911	0.558	A	0.000	0.558	0.558	100.00	0.236	0.000
						B	0.000	0.558		100.00	0.503	0.000
						C	0.000	0.558		100.00	0.573	0.000
L14 78.7500-75.1700	76.9600	1.198	6.90	1.3877	7.988	A	0.000	7.988	7.988	100.00	4.371	0.000
						B	0.000	7.988		100.00	8.182	0.000
						C	0.000	7.988		100.00	8.231	0.000
L15 75.1700-74.9200	75.0450	1.191	6.87	1.3842	0.558	A	0.000	0.558	0.558	100.00	0.474	0.000
						B	0.000	0.558		100.00	0.740	0.000
						C	0.000	0.558		100.00	0.810	0.000
L16 74.9200-69.9200	72.4200	1.182	6.82	1.3793	11.149	A	0.000	11.149	11.149	100.00	9.475	0.000
						B	0.000	11.149		100.00	14.788	0.000
						C	0.000	11.149		100.00	16.189	0.000
L17 69.9200-64.9200	67.4200	1.165	6.71	1.3694	11.141	A	0.000	11.141	11.141	100.00	9.456	0.000
						B	0.000	11.141		100.00	14.756	0.000
						C	0.000	11.141		100.00	16.157	0.000
L18 64.9200-60.0000	62.4600	1.146	6.61	1.3590	10.954	A	0.000	10.954	10.954	100.00	9.049	0.000
						B	0.000	10.954		100.00	14.252	0.000
						C	0.000	10.954		100.00	15.631	0.000
L19 60.0000-59.7500	59.8750	1.136	6.55	1.3533	0.681	A	0.000	0.681	0.681	100.00	0.267	0.000
						B	0.000	0.681		100.00	0.531	0.000
						C	0.000	0.681		100.00	0.601	0.000
L20 59.7500-54.7500	57.2500	1.125	6.49	1.3472	13.623	A	0.000	13.623	13.623	100.00	5.331	0.000
						B	0.000	13.623		100.00	10.603	0.000
						C	0.000	13.623		100.00	12.005	0.000
L21 54.7500-49.7500	52.2500	1.104	6.36	1.3350	13.612	A	0.000	13.612	13.612	100.00	5.785	0.000
						B	0.000	13.612		100.00	11.043	0.000
						C	0.000	13.612		100.00	12.444	0.000
L22 49.7500-47.8300	48.7900	1.088	6.27	1.3258	5.224	A	0.000	5.224	5.224	100.00	3.828	0.000
						B	0.000	5.224		100.00	5.842	0.000
						C	0.000	5.224		100.00	6.380	0.000
L23 47.8300-47.5800	47.7050	1.083	6.24	1.3229	0.680	A	0.000	0.680	0.680	100.00	0.498	0.000
						B	0.000	0.680		100.00	0.760	0.000
						C	0.000	0.680		100.00	0.830	0.000
L24 47.5800-43.0000	45.2900	1.071	6.17	1.3160	12.455	A	0.000	12.455	12.455	100.00	9.918	0.000
						B	0.000	12.455		100.00	14.712	0.000
						C	0.000	12.455		100.00	15.996	0.000
L25 43.0000-42.7500	42.8750	1.059	6.10	1.3088	0.680	A	0.000	0.680	0.680	100.00	0.698	0.000
						B	0.000	0.680		100.00	0.959	0.000
						C	0.000	0.680		100.00	1.029	0.000
L26 42.7500-37.7500	40.2500	1.045	6.02	1.3006	13.584	A	0.000	13.584	13.584	100.00	13.927	0.000
						B	0.000	13.584		100.00	19.141	0.000
						C	0.000	13.584		100.00	20.542	0.000
L27 37.7500-34.5000	36.1250	1.021	5.89	1.2866	8.822	A	0.000	8.822	8.822	100.00	9.025	0.000
						B	0.000	8.822		100.00	12.403	0.000
						C	0.000	8.822		100.00	13.314	0.000
L28 34.5000-34.2500	34.3750	1.011	5.83	1.2802	0.678	A	0.000	0.678	0.678	100.00	0.693	0.000
						B	0.000	0.678		100.00	0.953	0.000
						C	0.000	0.678		100.00	1.023	0.000
L29 34.2500-30.0000	32.1250	0.997	5.74	1.2716	11.526	A	0.000	11.526	11.526	100.00	11.534	0.000
						B	0.000	11.526		100.00	15.935	0.000
						C	0.000	11.526		100.00	17.126	0.000
L30 30.0000-29.7500	29.8750	0.981	5.66	1.2624	0.803	A	0.000	0.803	0.803	100.00	0.285	0.000
						B	0.000	0.803		100.00	0.544	0.000
						C	0.000	0.803		100.00	0.614	0.000
L31 29.7500-25.5800	27.6650	0.966	5.57	1.2527	13.381	A	0.000	13.381	13.381	100.00	5.950	0.000
						B	0.000	13.381		100.00	10.249	0.000
						C	0.000	13.381		100.00	11.417	0.000
L32 25.5800-25.3300	25.4550	0.949	5.47	1.2423	0.802	A	0.000	0.802	0.802	100.00	0.495	0.000
						B	0.000	0.802		100.00	0.752	0.000
						C	0.000	0.802		100.00	0.822	0.000
L33 25.3300-20.7500	23.0400	0.929	5.36	1.2300	14.679	A	0.000	14.679	14.679	100.00	10.094	0.000
						B	0.000	14.679		100.00	14.789	0.000
						C	0.000	14.679		100.00	16.073	0.000

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L34 20.7500-20.5000	20.6250	0.908	5.23	1.2165	0.801	A	0.000	0.801	0.801	100.00	0.700	0.000
						B	0.000	0.801		100.00	0.955	0.000
						C	0.000	0.801		100.00	1.026	0.000
L35 20.5000-17.4800	18.9900	0.892	5.14	1.2065	9.667	A	0.000	9.667	9.667	100.00	8.441	0.000
						B	0.000	9.667		100.00	12.900	0.000
						C	0.000	9.667		100.00	15.126	0.000
L36 17.4800-17.2300	17.3550	0.875	5.05	1.1956	0.800	A	0.000	0.800	0.800	100.00	0.697	0.000
						B	0.000	0.800		100.00	1.178	0.000
						C	0.000	0.800		100.00	1.475	0.000
L37 17.2300-13.5000	15.3650	0.853	4.92	1.1812	11.924	A	0.000	11.924	11.924	100.00	8.693	0.000
						B	0.000	11.924		100.00	14.591	0.000
						C	0.000	11.924		100.00	19.004	0.000
L38 13.5000-13.2500	13.3750	0.85	4.90	1.1649	0.799	A	0.000	0.799	0.799	100.00	0.711	0.000
						B	0.000	0.799		100.00	0.962	0.000
						C	0.000	0.799		100.00	1.257	0.000
L39 13.2500-8.2500	10.7500	0.85	4.90	1.1397	15.950	A	0.000	15.950	15.950	100.00	14.155	0.000
						B	0.000	15.950		100.00	16.002	0.000
						C	0.000	15.950		100.00	24.999	0.000
L40 8.2500-6.2500	7.2500	0.85	4.90	1.0957	6.365	A	0.000	6.365	6.365	100.00	5.618	0.000
						B	0.000	6.365		100.00	7.165	0.000
						C	0.000	6.365		100.00	9.907	0.000
L41 6.2500-6.0000	6.1250	0.85	4.90	1.0774	0.795	A	0.000	0.795	0.795	100.00	0.700	0.000
						B	0.000	0.795		100.00	0.892	0.000
						C	0.000	0.795		100.00	1.234	0.000
L42 6.0000-5.5000	5.7500	0.85	4.90	1.0706	1.589	A	0.000	1.589	1.589	100.00	1.398	0.000
						B	0.000	1.589		100.00	1.782	0.000
						C	0.000	1.589		100.00	2.464	0.000
L43 5.5000-5.2500	5.3750	0.85	4.90	1.0634	0.794	A	0.000	0.794	0.794	100.00	0.698	0.000
						B	0.000	0.794		100.00	0.889	0.000
						C	0.000	0.794		100.00	1.230	0.000
L44 5.2500-0.2500	2.7500	0.85	4.90	0.9945	15.829	A	0.000	15.829	15.829	100.00	9.680	0.000
						B	0.000	15.829		100.00	14.283	0.000
						C	0.000	15.829		100.00	17.744	0.000
L45 0.2500-0.0000	0.1250	0.85	4.90	0.7300	0.780	A	0.000	0.780	0.780	100.00	0.441	0.000
						B	0.000	0.780		100.00	0.623	0.000
						C	0.000	0.780		100.00	0.736	0.000

Tower Pressure - Service

G_H = 1.100

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1 120.0000-115.0000	117.5000	1.309	10.24	10.000	A	0.000	10.000	10.000	100.00	0.000	0.000
					B	0.000	10.000		100.00	0.000	0.000
					C	0.000	10.000		100.00	1.597	0.000
L2 115.0000-110.0000	112.5000	1.297	10.14	10.000	A	0.000	10.000	10.000	100.00	0.000	0.000
					B	0.000	10.000		100.00	0.000	0.000
					C	0.000	10.000		100.00	3.992	0.000
L3 110.0000-105.0000	107.5000	1.285	10.05	10.000	A	0.000	10.000	10.000	100.00	0.000	0.000
					B	0.000	10.000		100.00	0.000	0.000
					C	0.000	10.000		100.00	3.992	0.000
L4 105.0000-100.0000	102.5000	1.272	9.95	10.000	A	0.000	10.000	10.000	100.00	0.270	0.000
					B	0.000	10.000		100.00	0.270	0.000
					C	0.000	10.000		100.00	4.262	0.000
L5 100.0000-98.5000	99.2500	1.264	9.88	3.000	A	0.000	3.000	3.000	100.00	0.964	0.000
					B	0.000	3.000		100.00	0.964	0.000
					C	0.000	3.000		100.00	2.162	0.000
L6 98.5000-98.2500	98.3750	1.261	9.86	0.500	A	0.000	0.500	0.500	100.00	0.161	0.000
					B	0.000	0.500		100.00	0.161	0.000
					C	0.000	0.500		100.00	0.360	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L7 98.2500-93.2500	95.7500	1.254	9.80	10.000	A	0.000	10.000	10.000	100.00	3.214	0.000
					B	0.000	10.000		100.00	3.214	0.000
					C	0.000	10.000		100.00	7.206	0.000
L8 93.2500-90.0000	91.6250	1.243	9.71	6.500	A	0.000	6.500	6.500	100.00	2.015	0.000
					B	0.000	6.500		100.00	2.015	0.000
					C	0.000	6.500		100.00	4.610	0.000
L9 90.0000-89.7500	89.8750	1.237	9.67	0.500	A	0.000	0.500	0.500	100.00	0.154	0.000
					B	0.000	0.500		100.00	0.154	0.000
					C	0.000	0.500		100.00	0.353	0.000
L10 89.7500-84.7500	87.2500	1.23	9.61	10.000	A	0.000	10.000	10.000	100.00	1.489	0.000
					B	0.000	10.000		100.00	1.489	0.000
					C	0.000	10.000		100.00	5.481	0.000
L11 84.7500-79.7500	82.2500	1.215	9.50	10.000	A	0.000	10.000	10.000	100.00	0.333	0.000
					B	0.000	10.000		100.00	2.199	0.000
					C	0.000	10.000		100.00	4.325	0.000
L12 79.7500-79.0000	79.3750	1.206	9.42	1.500	A	0.000	1.500	1.500	100.00	0.500	0.000
					B	0.000	1.500		100.00	0.931	0.000
					C	0.000	1.500		100.00	1.099	0.000
L13 79.0000-78.7500	78.8750	1.204	9.41	0.500	A	0.000	0.500	0.500	100.00	0.167	0.000
					B	0.000	0.500		100.00	0.310	0.000
					C	0.000	0.500		100.00	0.366	0.000
L14 78.7500-75.1700	76.9600	1.198	9.36	7.160	A	0.000	7.160	7.160	100.00	3.089	0.000
					B	0.000	7.160		100.00	5.145	0.000
					C	0.000	7.160		100.00	5.271	0.000
L15 75.1700-74.9200	75.0450	1.191	9.31	0.500	A	0.000	0.500	0.500	100.00	0.336	0.000
					B	0.000	0.500		100.00	0.479	0.000
					C	0.000	0.500		100.00	0.535	0.000
L16 74.9200-69.9200	72.4200	1.182	9.24	10.000	A	0.000	10.000	10.000	100.00	6.717	0.000
					B	0.000	10.000		100.00	9.588	0.000
					C	0.000	10.000		100.00	10.709	0.000
L17 69.9200-64.9200	67.4200	1.165	9.11	10.000	A	0.000	10.000	10.000	100.00	6.717	0.000
					B	0.000	10.000		100.00	9.588	0.000
					C	0.000	10.000		100.00	10.709	0.000
L18 64.9200-60.0000	62.4600	1.146	8.96	9.840	A	0.000	9.840	9.840	100.00	6.443	0.000
					B	0.000	9.840		100.00	9.268	0.000
					C	0.000	9.840		100.00	10.371	0.000
L19 60.0000-59.7500	59.8750	1.136	8.88	0.625	A	0.000	0.625	0.625	100.00	0.199	0.000
					B	0.000	0.625		100.00	0.343	0.000
					C	0.000	0.625		100.00	0.399	0.000
L20 59.7500-54.7500	57.2500	1.125	8.80	12.500	A	0.000	12.500	12.500	100.00	3.983	0.000
					B	0.000	12.500		100.00	6.854	0.000
					C	0.000	12.500		100.00	7.975	0.000
L21 54.7500-49.7500	52.2500	1.104	8.63	12.500	A	0.000	12.500	12.500	100.00	4.317	0.000
					B	0.000	12.500		100.00	7.188	0.000
					C	0.000	12.500		100.00	8.309	0.000
L22 49.7500-47.8300	48.7900	1.088	8.51	4.800	A	0.000	4.800	4.800	100.00	2.810	0.000
					B	0.000	4.800		100.00	3.912	0.000
					C	0.000	4.800		100.00	4.343	0.000
L23 47.8300-47.5800	47.7050	1.083	8.47	0.625	A	0.000	0.625	0.625	100.00	0.366	0.000
					B	0.000	0.625		100.00	0.509	0.000
					C	0.000	0.625		100.00	0.565	0.000
L24 47.5800-43.0000	45.2900	1.071	8.37	11.450	A	0.000	11.450	11.450	100.00	7.244	0.000
					B	0.000	11.450		100.00	9.874	0.000
					C	0.000	11.450		100.00	10.900	0.000
L25 43.0000-42.7500	42.8750	1.059	8.28	0.625	A	0.000	0.625	0.625	100.00	0.501	0.000
					B	0.000	0.625		100.00	0.645	0.000
					C	0.000	0.625		100.00	0.701	0.000
L26 42.7500-37.7500	40.2500	1.045	8.17	12.500	A	0.000	12.500	12.500	100.00	10.025	0.000
					B	0.000	12.500		100.00	12.896	0.000
					C	0.000	12.500		100.00	14.017	0.000
L27 37.7500-34.5000	36.1250	1.021	7.99	8.125	A	0.000	8.125	8.125	100.00	6.516	0.000
					B	0.000	8.125		100.00	8.382	0.000
					C	0.000	8.125		100.00	9.111	0.000
L28 34.5000-34.2500	34.3750	1.011	7.90	0.625	A	0.000	0.625	0.625	100.00	0.501	0.000
					B	0.000	0.625		100.00	0.645	0.000
					C	0.000	0.625		100.00	0.701	0.000
L29 34.2500-30.0000	32.1250	0.997	7.79	10.625	A	0.000	10.625	10.625	100.00	8.355	0.000
					B	0.000	10.625		100.00	10.795	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
					C	0.000	10.625		100.00	11.748	0.000
L30 30.0000-29.7500	29.8750	0.981	7.67	0.750	A	0.000	0.750	0.750	100.00	0.222	0.000
					B	0.000	0.750		100.00	0.366	0.000
					C	0.000	0.750		100.00	0.422	0.000
L31 29.7500-25.5800	27.6650	0.966	7.55	12.510	A	0.000	12.510	12.510	100.00	4.651	0.000
					B	0.000	12.510		100.00	7.045	0.000
					C	0.000	12.510		100.00	7.980	0.000
L32 25.5800-25.3300	25.4550	0.949	7.42	0.750	A	0.000	0.750	0.750	100.00	0.389	0.000
					B	0.000	0.750		100.00	0.532	0.000
					C	0.000	0.750		100.00	0.588	0.000
L33 25.3300-20.7500	23.0400	0.929	7.26	13.740	A	0.000	13.740	13.740	100.00	7.851	0.000
					B	0.000	13.740		100.00	10.481	0.000
					C	0.000	13.740		100.00	11.508	0.000
L34 20.7500-20.5000	20.6250	0.908	7.10	0.750	A	0.000	0.750	0.750	100.00	0.535	0.000
					B	0.000	0.750		100.00	0.678	0.000
					C	0.000	0.750		100.00	0.734	0.000
L35 20.5000-17.4800	18.9900	0.892	6.97	9.060	A	0.000	9.060	9.060	100.00	6.458	0.000
					B	0.000	9.060		100.00	9.205	0.000
					C	0.000	9.060		100.00	10.896	0.000
L36 17.4800-17.2300	17.3550	0.875	6.84	0.750	A	0.000	0.750	0.750	100.00	0.535	0.000
					B	0.000	0.750		100.00	0.845	0.000
					C	0.000	0.750		100.00	1.068	0.000
L37 17.2300-13.5000	15.3650	0.853	6.67	11.190	A	0.000	11.190	11.190	100.00	6.716	0.000
					B	0.000	11.190		100.00	10.271	0.000
					C	0.000	11.190		100.00	13.594	0.000
L38 13.5000-13.2500	13.3750	0.85	6.64	0.750	A	0.000	0.750	0.750	100.00	0.563	0.000
					B	0.000	0.750		100.00	0.678	0.000
					C	0.000	0.750		100.00	0.901	0.000
L39 13.2500-8.2500	10.7500	0.85	6.64	15.000	A	0.000	15.000	15.000	100.00	11.261	0.000
					B	0.000	15.000		100.00	11.093	0.000
					C	0.000	15.000		100.00	18.017	0.000
L40 8.2500-6.2500	7.2500	0.85	6.64	6.000	A	0.000	6.000	6.000	100.00	4.505	0.000
					B	0.000	6.000		100.00	5.212	0.000
					C	0.000	6.000		100.00	7.207	0.000
L41 6.2500-6.0000	6.1250	0.85	6.64	0.750	A	0.000	0.750	0.750	100.00	0.563	0.000
					B	0.000	0.750		100.00	0.652	0.000
					C	0.000	0.750		100.00	0.901	0.000
L42 6.0000-5.5000	5.7500	0.85	6.64	1.500	A	0.000	1.500	1.500	100.00	1.126	0.000
					B	0.000	1.500		100.00	1.303	0.000
					C	0.000	1.500		100.00	1.802	0.000
L43 5.5000-5.2500	5.3750	0.85	6.64	0.750	A	0.000	0.750	0.750	100.00	0.563	0.000
					B	0.000	0.750		100.00	0.652	0.000
					C	0.000	0.750		100.00	0.901	0.000
L44 5.2500-0.2500	2.7500	0.85	6.64	15.000	A	0.000	15.000	15.000	100.00	7.651	0.000
					B	0.000	15.000		100.00	10.531	0.000
					C	0.000	15.000		100.00	13.017	0.000
L45 0.2500-0.0000	0.1250	0.85	6.64	0.750	A	0.000	0.750	0.750	100.00	0.368	0.000
					B	0.000	0.750		100.00	0.485	0.000
					C	0.000	0.750		100.00	0.568	0.000

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice

Comb. No.	Description
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	120 - 115	Pole	Max Tension	2	0.00	0.00	-0.00
			Max. Compression	26	-8.24	-0.06	-0.09
			Max. Mx	8	-3.43	-21.05	-0.04
			Max. My	14	-3.43	-0.02	-21.06
			Max. Vy	20	-5.29	21.00	-0.04
			Max. Vx	2	-5.30	-0.02	21.00
			Max. Torque	4			-0.03
L2	115 - 110	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-8.98	-0.06	-0.23
			Max. Mx	8	-3.85	-48.36	-0.10
			Max. My	14	-3.85	-0.03	-48.42
			Max. Vy	20	-5.63	48.31	-0.10
			Max. Vx	2	-5.64	-0.03	48.28
			Max. Torque	4			-0.03
L3	110 - 105	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-9.71	-0.06	-0.37
			Max. Mx	8	-4.27	-77.35	-0.16
			Max. My	14	-4.28	-0.03	-77.47
			Max. Vy	20	-5.97	77.30	-0.16
			Max. Vx	2	-5.97	-0.03	77.25
			Max. Torque	4			-0.03
L4	105 - 100	Pole	Max Tension	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	26	-18.62	-0.06	0.19
			Max. Mx	8	-8.08	-114.09	-0.08
			Max. My	2	-8.05	-0.03	114.18
			Max. Vy	20	-10.55	114.05	-0.08
			Max. Vx	2	-10.62	-0.03	114.18
			Max. Torque	20			-0.50
L5	100 - 98.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-18.91	-0.06	0.15
			Max. Mx	8	-8.25	-129.98	-0.10
			Max. My	2	-8.21	-0.03	130.22
			Max. Vy	20	-10.65	129.94	-0.10
			Max. Vx	2	-10.81	-0.03	130.22
			Max. Torque	20			-0.50
L6	98.5 - 98.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-18.96	-0.06	0.14
			Max. Mx	8	-8.29	-132.65	-0.10
			Max. My	2	-8.25	-0.03	132.93
			Max. Vy	20	-10.67	132.61	-0.10
			Max. Vx	2	-10.84	-0.03	132.93
			Max. Torque	20			-0.50
L7	98.25 - 93.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-20.11	-0.06	0.00
			Max. Mx	8	-9.01	-186.83	-0.16
			Max. My	2	-8.96	-0.03	188.64
			Max. Vy	20	-11.01	186.80	-0.16
			Max. Vx	2	-11.48	-0.03	188.64
			Max. Torque	20			-0.50
L8	93.25 - 90	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-20.89	-0.06	-0.09
			Max. Mx	8	-9.47	-223.47	-0.20
			Max. My	2	-9.42	-0.03	226.60
			Max. Vy	20	-11.54	223.44	-0.20
			Max. Vx	2	-11.91	-0.03	226.60
			Max. Torque	20			-0.50
L9	90 - 89.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-20.95	-0.06	-0.09
			Max. Mx	8	-9.51	-226.36	-0.20
			Max. My	2	-9.46	-0.03	229.58
			Max. Vy	20	-11.58	226.33	-0.20
			Max. Vx	2	-11.96	-0.03	229.58
			Max. Torque	20			-0.46
L10	89.75 - 84.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-22.07	-0.06	-0.23
			Max. Mx	8	-10.25	-285.18	-0.26
			Max. My	2	-10.19	-0.03	290.82
			Max. Vy	20	-11.96	285.16	-0.26
			Max. Vx	2	-12.57	-0.03	290.82
			Max. Torque	20			-0.46
L11	84.75 - 79.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-31.62	-0.46	0.20
			Max. Mx	8	-14.76	-363.27	-0.24
			Max. My	2	-14.69	-0.15	371.70
			Max. Vy	20	-17.62	363.01	-0.24
			Max. Vx	2	-18.17	-0.15	371.70
			Max. Torque	20			-1.29
L12	79.75 - 79	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-31.80	-0.47	0.19
			Max. Mx	8	-14.89	-376.50	-0.25
			Max. My	2	-14.82	-0.16	385.33
			Max. Vy	20	-17.70	376.25	-0.25
			Max. Vx	2	-18.21	-0.16	385.33
			Max. Torque	20			-1.29
L13	79 - 78.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-31.87	-0.47	0.18
			Max. Mx	8	-14.94	-380.92	-0.25
			Max. My	2	-14.87	-0.16	389.88

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	20	-17.73	380.68	-0.25
			Max. Vx	2	-18.22	-0.16	389.88
			Max. Torque	20			-1.29
L14	78.75 - 75.17	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32.89	-0.51	0.12
			Max. Mx	8	-15.64	-444.93	-0.28
			Max. My	2	-15.57	-0.18	455.78
			Max. Vy	20	-18.14	444.86	-0.28
			Max. Vx	2	-18.63	-0.18	455.78
			Max. Torque	20			-1.29
L15	75.17 - 74.92	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32.98	-0.52	0.12
			Max. Mx	8	-15.71	-449.45	-0.28
			Max. My	2	-15.64	-0.18	460.44
			Max. Vy	20	-18.17	449.39	-0.28
			Max. Vx	2	-18.66	-0.18	460.44
			Max. Torque	20			-1.29
L16	74.92 - 69.92	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-34.69	-0.59	0.02
			Max. Mx	20	-16.86	541.71	-0.33
			Max. My	2	-16.80	-0.21	555.19
			Max. Vy	20	-18.77	541.71	-0.33
			Max. Vx	2	-19.27	-0.21	555.19
			Max. Torque	20			-1.29
L17	69.92 - 64.92	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-36.39	-0.66	-0.07
			Max. Mx	20	-18.04	636.95	-0.38
			Max. My	2	-17.98	-0.25	652.93
			Max. Vy	20	-19.35	636.95	-0.38
			Max. Vx	2	-19.85	-0.25	652.93
			Max. Torque	20			-1.29
L18	64.92 - 60	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38.06	-0.73	-0.16
			Max. Mx	20	-19.22	733.37	-0.42
			Max. My	2	-19.16	-0.28	751.85
			Max. Vy	20	-19.88	733.37	-0.42
			Max. Vx	2	-20.40	-0.28	751.85
			Max. Torque	20			-1.29
L19	60 - 59.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41.61	-0.74	-0.17
			Max. Mx	20	-21.84	738.78	-0.42
			Max. My	2	-21.78	-0.28	757.39
			Max. Vy	20	-21.67	738.78	-0.42
			Max. Vx	2	-22.22	-0.28	757.39
			Max. Torque	20			-1.29
L20	59.75 - 54.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.29	-0.82	-0.28
			Max. Mx	20	-23.06	847.86	-0.48
			Max. My	2	-22.99	-0.32	869.96
			Max. Vy	20	-21.99	847.86	-0.48
			Max. Vx	2	-22.86	-0.32	869.96
			Max. Torque	20			-1.29
L21	54.75 - 49.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-44.97	-0.91	-0.40
			Max. Mx	20	-24.31	958.47	-0.54
			Max. My	2	-24.23	-0.36	985.68
			Max. Vy	20	-22.28	958.47	-0.54
			Max. Vx	2	-23.47	-0.36	985.68
			Max. Torque	20			-1.29
L22	49.75 - 47.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.65	-0.94	-0.44
			Max. Mx	20	-24.77	1001.44	-0.56

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	2	-24.70	-0.37	1030.93
			Max. Vy	20	-22.53	1001.44	-0.56
			Max. Vx	2	-23.72	-0.37	1030.93
			Max. Torque	8			1.29
L23	47.83 - 47.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.75	-0.95	-0.44
			Max. Mx	20	-24.86	1007.07	-0.56
			Max. My	2	-24.79	-0.37	1036.86
			Max. Vy	20	-22.54	1007.07	-0.56
			Max. Vx	2	-23.75	-0.37	1036.86
			Max. Torque	8			1.29
L24	47.58 - 43	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47.56	-1.03	-0.55
			Max. Mx	20	-26.15	1111.55	-0.62
			Max. My	2	-26.09	-0.41	1146.79
			Max. Vy	20	-23.11	1111.55	-0.62
			Max. Vx	2	-24.31	-0.41	1146.79
			Max. Torque	8			1.29
L25	43 - 42.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47.68	-1.03	-0.55
			Max. Mx	20	-26.25	1117.32	-0.62
			Max. My	2	-26.18	-0.41	1152.87
			Max. Vy	20	-23.13	1117.32	-0.62
			Max. Vx	2	-24.35	-0.41	1152.87
			Max. Torque	8			1.29
L26	42.75 - 37.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-49.98	-1.12	-0.67
			Max. Mx	20	-27.90	1234.48	-0.68
			Max. My	2	-27.84	-0.45	1276.03
			Max. Vy	20	-23.76	1234.48	-0.68
			Max. Vx	2	-24.97	-0.45	1276.03
			Max. Torque	8			1.29
L27	37.75 - 34.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-51.47	-1.17	-0.74
			Max. Mx	20	-28.99	1312.25	-0.72
			Max. My	2	-28.94	-0.47	1357.72
			Max. Vy	20	-24.14	1312.25	-0.72
			Max. Vx	2	-25.35	-0.47	1357.72
			Max. Torque	8			1.29
L28	34.5 - 34.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-51.58	-1.18	-0.74
			Max. Mx	20	-29.07	1318.28	-0.72
			Max. My	2	-29.02	-0.48	1364.06
			Max. Vy	20	-24.16	1318.28	-0.72
			Max. Vx	2	-25.38	-0.48	1364.06
			Max. Torque	8			1.29
L29	34.25 - 30	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-53.30	-1.25	-0.84
			Max. Mx	20	-30.31	1421.83	-0.77
			Max. My	2	-30.26	-0.51	1472.75
			Max. Vy	20	-24.60	1421.83	-0.77
			Max. Vx	2	-25.82	-0.51	1472.75
			Max. Torque	8			1.29
L30	30 - 29.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.54	-1.26	-0.84
			Max. Mx	20	-34.23	1428.58	-0.78
			Max. My	2	-34.18	-0.51	1479.81
			Max. Vy	20	-27.03	1428.58	-0.78
			Max. Vx	2	-28.28	-0.51	1479.81
			Max. Torque	8			1.29
L31	29.75 - 25.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.18	-1.34	-0.95
			Max. Mx	20	-35.47	1542.25	-0.84
			Max. My	2	-35.43	-0.55	1598.65
			Max. Vy	20	-27.52	1542.25	-0.84
			Max. Vx	2	-28.78	-0.55	1598.65

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Torque	8			1.29
L32	25.58 - 25.33	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.29	-1.34	-0.96
			Max. Mx	20	-35.56	1549.13	-0.84
			Max. My	2	-35.52	-0.55	1605.84
			Max. Vy	20	-27.55	1549.13	-0.84
			Max. Vx	2	-28.81	-0.55	1605.84
			Max. Torque	8			1.29
L33	25.33 - 20.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.34	-1.43	-1.08
			Max. Mx	20	-37.09	1676.45	-0.90
			Max. My	2	-37.05	-0.59	1738.89
			Max. Vy	20	-28.09	1676.45	-0.90
			Max. Vx	2	-29.35	-0.59	1738.89
			Max. Torque	8			1.29
L34	20.75 - 20.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.47	-1.44	-1.08
			Max. Mx	20	-37.19	1683.47	-0.91
			Max. My	2	-37.16	-0.59	1746.23
			Max. Vy	20	-28.11	1683.47	-0.91
			Max. Vx	2	-29.38	-0.59	1746.23
			Max. Torque	8			1.29
L35	20.5 - 17.48	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-64.12	-1.51	-1.18
			Max. Mx	20	-38.43	1768.87	-0.95
			Max. My	2	-38.40	-0.62	1835.43
			Max. Vy	20	-28.48	1768.87	-0.95
			Max. Vx	2	-29.75	-0.62	1835.43
			Max. Torque	8			1.29
L36	17.48 - 17.23	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-64.26	-1.51	-1.19
			Max. Mx	20	-38.54	1775.99	-0.95
			Max. My	2	-38.51	-0.62	1842.87
			Max. Vy	20	-28.50	1775.99	-0.95
			Max. Vx	2	-29.78	-0.62	1842.87
			Max. Torque	8			1.29
L37	17.23 - 13.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-66.27	-1.60	-1.31
			Max. Mx	20	-40.07	1883.02	-1.01
			Max. My	2	-40.05	-0.66	1954.63
			Max. Vy	20	-28.92	1883.02	-1.01
			Max. Vx	2	-30.21	-0.66	1954.63
			Max. Torque	8			1.29
L38	13.5 - 13.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-66.40	-1.60	-1.31
			Max. Mx	20	-40.18	1890.25	-1.01
			Max. My	2	-40.16	-0.66	1962.18
			Max. Vy	20	-28.94	1890.25	-1.01
			Max. Vx	2	-30.23	-0.66	1962.18
			Max. Torque	8			1.29
L39	13.25 - 8.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-69.03	-1.67	-1.49
			Max. Mx	20	-42.22	2036.17	-1.08
			Max. My	2	-42.20	-0.70	2114.56
			Max. Vy	20	-29.47	2036.17	-1.08
			Max. Vx	2	-30.78	-0.70	2114.56
			Max. Torque	8			1.29
L40	8.25 - 6.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-70.08	-1.70	-1.53
			Max. Mx	20	-43.04	2095.26	-1.11
			Max. My	2	-43.03	-0.72	2176.26
			Max. Vy	20	-29.67	2095.26	-1.11
			Max. Vx	2	-30.99	-0.72	2176.26
			Max. Torque	8			1.29
L41	6.25 - 6	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-70.23	-1.71	-1.54

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	20	-43.17	2102.68	-1.11
			Max. My	2	-43.16	-0.72	2184.00
			Max. Vy	20	-29.69	2102.68	-1.11
			Max. Vx	2	-31.00	-0.72	2184.00
			Max. Torque	8			1.29
L42	6 - 5.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-70.53	-1.71	-1.55
			Max. Mx	20	-43.40	2117.53	-1.12
			Max. My	2	-43.39	-0.73	2199.51
			Max. Vy	20	-29.74	2117.53	-1.12
			Max. Vx	2	-31.06	-0.73	2199.51
			Max. Torque	8			1.29
L43	5.5 - 5.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-70.66	-1.72	-1.56
			Max. Mx	20	-43.51	2124.96	-1.12
			Max. My	2	-43.50	-0.73	2207.27
			Max. Vy	20	-29.76	2124.96	-1.12
			Max. Vx	2	-31.09	-0.73	2207.27
			Max. Torque	8			1.29
L44	5.25 - 0.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-73.17	-1.81	-1.68
			Max. Mx	20	-45.61	2274.90	-1.20
			Max. My	2	-45.61	-0.77	2363.81
			Max. Vy	20	-30.25	2274.90	-1.20
			Max. Vx	2	-31.58	-0.77	2363.81
			Max. Torque	8			1.29
L45	0.25 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-73.28	-1.81	-1.69
			Max. Mx	20	-45.72	2282.46	-1.20
			Max. My	2	-45.72	-0.78	2371.69
			Max. Vy	21	-30.25	2262.02	-0.89
			Max. Vx	3	-31.58	-0.58	2350.71
			Max. Torque	8			1.29

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	73.28	-0.00	-0.00
	Max. H_x	21	34.29	30.25	0.00
	Max. H_z	3	34.29	-0.00	31.58
	Max. M_x	2	2371.69	0.00	31.58
	Max. M_z	8	2269.98	-29.91	0.00
	Max. Torsion	8	1.29	-29.91	0.00
	Min. Vert	3	34.29	-0.00	31.58
	Min. H_x	9	34.29	-29.91	0.00
	Min. H_z	15	34.29	-0.00	-29.76
	Min. M_x	14	-2255.02	0.00	-29.76
	Min. M_z	20	-2282.46	30.25	0.00
	Min. Torsion	20	-1.29	30.25	0.00

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	38.10	0.00	0.00	0.96	-0.62	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	45.72	-0.00	-31.58	-2371.69	-0.78	0.18
0.9 Dead+1.0 Wind 0 deg -	34.29	0.00	-31.58	-2350.71	-0.58	0.18

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
No Ice						
1.2 Dead+1.0 Wind 30 deg - No Ice	45.72	15.01	-25.98	-1956.91	-1132.01	-0.50
0.9 Dead+1.0 Wind 30 deg - No Ice	34.29	15.01	-25.98	-1939.50	-1121.58	-0.50
1.2 Dead+1.0 Wind 60 deg - No Ice	45.72	25.77	-14.86	-1125.60	-1953.70	-1.05
0.9 Dead+1.0 Wind 60 deg - No Ice	34.29	25.77	-14.86	-1115.68	-1935.79	-1.05
1.2 Dead+1.0 Wind 90 deg - No Ice	45.72	29.91	-0.00	1.20	-2269.98	-1.29
0.9 Dead+1.0 Wind 90 deg - No Ice	34.29	29.91	-0.00	0.89	-2249.21	-1.28
1.2 Dead+1.0 Wind 120 deg - No Ice	45.72	27.48	15.85	1194.28	-2068.51	-1.20
0.9 Dead+1.0 Wind 120 deg - No Ice	34.29	27.48	15.85	1183.24	-2049.71	-1.20
1.2 Dead+1.0 Wind 150 deg - No Ice	45.72	15.00	25.96	1958.98	-1131.82	-0.83
0.9 Dead+1.0 Wind 150 deg - No Ice	34.29	15.00	25.96	1940.96	-1121.39	-0.82
1.2 Dead+1.0 Wind 180 deg - No Ice	45.72	-0.00	29.76	2255.02	-0.78	-0.18
0.9 Dead+1.0 Wind 180 deg - No Ice	34.29	0.00	29.76	2234.33	-0.58	-0.18
1.2 Dead+1.0 Wind 210 deg - No Ice	45.72	-14.83	25.66	1946.32	1122.97	0.51
0.9 Dead+1.0 Wind 210 deg - No Ice	34.29	-14.83	25.66	1928.36	1112.97	0.51
1.2 Dead+1.0 Wind 240 deg - No Ice	45.72	-27.34	15.77	1187.45	2055.13	1.06
0.9 Dead+1.0 Wind 240 deg - No Ice	34.29	-27.34	15.77	1176.47	2036.83	1.06
1.2 Dead+1.0 Wind 270 deg - No Ice	45.72	-30.25	-0.00	1.20	2282.46	1.29
0.9 Dead+1.0 Wind 270 deg - No Ice	34.29	-30.25	-0.00	0.89	2262.02	1.28
1.2 Dead+1.0 Wind 300 deg - No Ice	45.72	-25.94	-14.96	-1134.99	1968.41	1.19
0.9 Dead+1.0 Wind 300 deg - No Ice	34.29	-25.94	-14.96	-1124.99	1950.75	1.19
1.2 Dead+1.0 Wind 330 deg - No Ice	45.72	-14.73	-25.49	-1929.93	1114.89	0.81
0.9 Dead+1.0 Wind 330 deg - No Ice	34.29	-14.73	-25.49	-1912.70	1104.96	0.81
1.2 Dead+1.0 Ice+1.0 Temp	73.28	0.00	0.00	1.69	-1.81	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	73.28	0.00	-7.10	-592.26	-1.96	0.07
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	73.28	3.53	-6.11	-510.86	-298.08	-0.09
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	73.28	6.12	-3.53	-294.26	-514.97	-0.23
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	73.28	7.09	0.00	1.77	-596.77	-0.30
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	73.28	6.18	3.56	300.35	-519.36	-0.30
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	73.28	3.53	6.11	514.35	-298.05	-0.22
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	73.28	0.00	7.06	593.92	-1.96	-0.07
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	73.28	-3.53	6.11	514.05	293.95	0.09
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	73.28	-6.15	3.55	298.74	512.67	0.23
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	73.28	-7.09	0.00	1.77	593.15	0.30
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	73.28	-6.14	-3.54	-295.78	513.68	0.30
1.2 Dead+1.0 Wind 330	73.28	-3.53	-6.11	-510.50	293.95	0.22

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
deg+1.0 Ice+1.0 Temp						
Dead+Wind 0 deg - Service	38.10	-0.00	-6.85	-511.32	-0.64	0.04
Dead+Wind 30 deg - Service	38.10	3.26	-5.64	-421.73	-244.86	-0.10
Dead+Wind 60 deg - Service	38.10	5.59	-3.23	-242.26	-422.24	-0.23
Dead+Wind 90 deg - Service	38.10	6.49	-0.00	0.99	-490.49	-0.28
Dead+Wind 120 deg - Service	38.10	5.96	3.44	258.58	-447.07	-0.26
Dead+Wind 150 deg - Service	38.10	3.26	5.63	423.64	-244.82	-0.18
Dead+Wind 180 deg - Service	38.10	-0.00	6.46	487.54	-0.64	-0.04
Dead+Wind 210 deg - Service	38.10	-3.22	5.57	420.90	241.95	0.11
Dead+Wind 240 deg - Service	38.10	-5.93	3.42	257.10	443.23	0.23
Dead+Wind 270 deg - Service	38.10	-6.56	-0.00	0.99	492.24	0.28
Dead+Wind 300 deg - Service	38.10	-5.63	-3.25	-244.29	424.46	0.26
Dead+Wind 330 deg - Service	38.10	-3.20	-5.53	-415.89	240.20	0.18

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-38.10	0.00	-0.00	38.10	-0.00	0.000%
2	0.00	-45.72	-31.58	0.00	45.72	31.58	0.003%
3	0.00	-34.29	-31.58	-0.00	34.29	31.58	0.003%
4	15.01	-45.72	-25.98	-15.01	45.72	25.98	0.000%
5	15.01	-34.29	-25.98	-15.01	34.29	25.98	0.000%
6	25.77	-45.72	-14.86	-25.77	45.72	14.86	0.000%
7	25.77	-34.29	-14.86	-25.77	34.29	14.86	0.000%
8	29.91	-45.72	0.00	-29.91	45.72	0.00	0.001%
9	29.91	-34.29	0.00	-29.91	34.29	0.00	0.000%
10	27.48	-45.72	15.85	-27.48	45.72	-15.85	0.000%
11	27.48	-34.29	15.85	-27.48	34.29	-15.85	0.000%
12	15.00	-45.72	25.96	-15.00	45.72	-25.96	0.000%
13	15.00	-34.29	25.96	-15.00	34.29	-25.96	0.000%
14	0.00	-45.72	29.76	0.00	45.72	-29.76	0.003%
15	0.00	-34.29	29.76	-0.00	34.29	-29.76	0.002%
16	-14.83	-45.72	25.66	14.83	45.72	-25.66	0.000%
17	-14.83	-34.29	25.66	14.83	34.29	-25.66	0.000%
18	-27.34	-45.72	15.77	27.34	45.72	-15.77	0.000%
19	-27.34	-34.29	15.77	27.34	34.29	-15.77	0.000%
20	-30.25	-45.72	0.00	30.25	45.72	0.00	0.001%
21	-30.25	-34.29	0.00	30.25	34.29	0.00	0.000%
22	-25.94	-45.72	-14.96	25.94	45.72	14.96	0.000%
23	-25.94	-34.29	-14.96	25.94	34.29	14.96	0.000%
24	-14.73	-45.72	-25.49	14.73	45.72	25.49	0.000%
25	-14.73	-34.29	-25.49	14.73	34.29	25.49	0.000%
26	0.00	-73.28	0.00	-0.00	73.28	-0.00	0.000%
27	0.00	-73.28	-7.10	-0.00	73.28	7.10	0.000%
28	3.53	-73.28	-6.11	-3.53	73.28	6.11	0.000%
29	6.12	-73.28	-3.53	-6.12	73.28	3.53	0.000%
30	7.09	-73.28	0.00	-7.09	73.28	-0.00	0.000%
31	6.18	-73.28	3.56	-6.18	73.28	-3.56	0.000%
32	3.53	-73.28	6.11	-3.53	73.28	-6.11	0.000%
33	0.00	-73.28	7.06	-0.00	73.28	-7.06	0.000%
34	-3.53	-73.28	6.11	3.53	73.28	-6.11	0.000%
35	-6.15	-73.28	3.55	6.15	73.28	-3.55	0.000%
36	-7.09	-73.28	0.00	7.09	73.28	-0.00	0.000%
37	-6.14	-73.28	-3.54	6.14	73.28	3.54	0.000%
38	-3.53	-73.28	-6.11	3.53	73.28	6.11	0.000%
39	0.00	-38.10	-6.85	0.00	38.10	6.85	0.002%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
40	3.26	-38.10	-5.64	-3.26	38.10	5.64	0.001%
41	5.59	-38.10	-3.23	-5.59	38.10	3.23	0.001%
42	6.49	-38.10	0.00	-6.49	38.10	0.00	0.002%
43	5.96	-38.10	3.44	-5.96	38.10	-3.44	0.001%
44	3.26	-38.10	5.63	-3.26	38.10	-5.63	0.001%
45	0.00	-38.10	6.46	0.00	38.10	-6.46	0.002%
46	-3.22	-38.10	5.57	3.22	38.10	-5.57	0.001%
47	-5.93	-38.10	3.42	5.93	38.10	-3.42	0.001%
48	-6.57	-38.10	0.00	6.56	38.10	0.00	0.002%
49	-5.63	-38.10	-3.25	5.63	38.10	3.25	0.001%
50	-3.20	-38.10	-5.53	3.20	38.10	5.53	0.001%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	15	0.00004706	0.00014803
3	Yes	15	0.00003178	0.00010122
4	Yes	20	0.00000001	0.00014696
5	Yes	20	0.00000001	0.00010720
6	Yes	21	0.00000001	0.00006400
7	Yes	20	0.00000001	0.00011187
8	Yes	17	0.00000001	0.00012463
9	Yes	17	0.00000001	0.00009816
10	Yes	21	0.00000001	0.00006761
11	Yes	20	0.00000001	0.00011691
12	Yes	21	0.00000001	0.00006379
13	Yes	20	0.00000001	0.00011136
14	Yes	15	0.00004723	0.00014558
15	Yes	15	0.00003190	0.00010033
16	Yes	21	0.00000001	0.00006278
17	Yes	20	0.00000001	0.00010973
18	Yes	21	0.00000001	0.00006676
19	Yes	20	0.00000001	0.00011559
20	Yes	17	0.00000001	0.00012456
21	Yes	17	0.00000001	0.00009800
22	Yes	21	0.00000001	0.00006544
23	Yes	20	0.00000001	0.00011431
24	Yes	20	0.00000001	0.00014264
25	Yes	20	0.00000001	0.00010431
26	Yes	6	0.00000001	0.00000001
27	Yes	19	0.00000001	0.00007775
28	Yes	19	0.00000001	0.00008941
29	Yes	19	0.00000001	0.00008986
30	Yes	19	0.00000001	0.00007841
31	Yes	19	0.00000001	0.00009046
32	Yes	19	0.00000001	0.00009011
33	Yes	19	0.00000001	0.00007786
34	Yes	19	0.00000001	0.00008932
35	Yes	19	0.00000001	0.00008928
36	Yes	19	0.00000001	0.00007787
37	Yes	19	0.00000001	0.00008990
38	Yes	19	0.00000001	0.00008868
39	Yes	14	0.00000001	0.00005764
40	Yes	15	0.00000001	0.00011954
41	Yes	15	0.00000001	0.00013859
42	Yes	14	0.00000001	0.00008834
43	Yes	15	0.00000001	0.00013096
44	Yes	15	0.00000001	0.00013673
45	Yes	14	0.00000001	0.00005564
46	Yes	15	0.00000001	0.00013002
47	Yes	15	0.00000001	0.00012930
48	Yes	14	0.00000001	0.00008834
49	Yes	15	0.00000001	0.00014325

50	Yes	15	0.00000001	0.00011303

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	120 - 115	14.48	43	1.00	0.00
L2	115 - 110	13.43	43	1.00	0.00
L3	110 - 105	12.38	43	0.99	0.00
L4	105 - 100	11.35	43	0.98	0.00
L5	100 - 98.5	10.34	43	0.96	0.00
L6	98.5 - 98.25	10.04	43	0.95	0.00
L7	98.25 - 93.25	9.99	43	0.95	0.00
L8	93.25 - 90	9.01	43	0.92	0.00
L9	90 - 89.75	8.39	43	0.90	0.00
L10	89.75 - 84.75	8.34	43	0.90	0.00
L11	84.75 - 79.75	7.42	43	0.86	0.00
L12	79.75 - 79	6.54	43	0.81	0.00
L13	79 - 78.75	6.42	43	0.80	0.00
L14	78.75 - 75.17	6.37	43	0.80	0.00
L15	75.17 - 74.92	5.79	43	0.76	0.00
L16	74.92 - 69.92	5.75	43	0.76	0.00
L17	69.92 - 64.92	4.98	43	0.71	0.00
L18	64.92 - 60	4.26	43	0.66	0.00
L19	60 - 59.75	3.62	43	0.59	0.00
L20	59.75 - 54.75	3.59	43	0.59	0.00
L21	54.75 - 49.75	2.99	43	0.54	0.00
L22	49.75 - 47.83	2.45	43	0.49	0.00
L23	47.83 - 47.58	2.26	43	0.47	0.00
L24	47.58 - 43	2.23	43	0.47	0.00
L25	43 - 42.75	1.81	43	0.42	0.00
L26	42.75 - 37.75	1.79	43	0.42	0.00
L27	37.75 - 34.5	1.38	43	0.37	0.00
L28	34.5 - 34.25	1.14	43	0.33	0.00
L29	34.25 - 30	1.12	43	0.33	0.00
L30	30 - 29.75	0.85	43	0.27	0.00
L31	29.75 - 25.58	0.84	43	0.27	0.00
L32	25.58 - 25.33	0.62	43	0.23	0.00
L33	25.33 - 20.75	0.61	43	0.23	0.00
L34	20.75 - 20.5	0.41	43	0.18	0.00
L35	20.5 - 17.48	0.40	43	0.18	0.00
L36	17.48 - 17.23	0.29	43	0.16	0.00
L37	17.23 - 13.5	0.29	43	0.16	0.00
L38	13.5 - 13.25	0.18	43	0.12	0.00
L39	13.25 - 8.25	0.17	43	0.12	0.00
L40	8.25 - 6.25	0.07	43	0.08	0.00
L41	6.25 - 6	0.04	43	0.06	0.00
L42	6 - 5.5	0.04	43	0.06	0.00
L43	5.5 - 5.25	0.03	43	0.05	0.00
L44	5.25 - 0.25	0.03	43	0.05	0.00
L45	0.25 - 0	0.00	1	0.00	0.00

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
117.0000	KS24019-L112A	43	13.85	1.00	0.00	60095
103.0000	BXA-70063-6BF-EDIN-0	43	10.94	0.97	0.00	13592
83.0000	DMP65R-BU8D w/ Mount Pipe	43	7.10	0.84	0.00	5724
60.0000	Bridge Stiffener (96" x 16" x 1.25")	43	3.62	0.59	0.00	5137
30.0000	Bridge Stiffener (96" x 16" x	43	0.85	0.27	0.00	4890

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
	1.25")					

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	120 - 115	66.99	10	4.65	0.01
L2	115 - 110	62.13	10	4.64	0.01
L3	110 - 105	57.30	10	4.60	0.01
L4	105 - 100	52.52	10	4.53	0.01
L5	100 - 98.5	47.83	10	4.43	0.01
L6	98.5 - 98.25	46.45	10	4.39	0.01
L7	98.25 - 93.25	46.22	10	4.39	0.01
L8	93.25 - 90	41.68	10	4.28	0.01
L9	90 - 89.75	38.81	10	4.18	0.01
L10	89.75 - 84.75	38.59	10	4.17	0.01
L11	84.75 - 79.75	34.32	10	3.98	0.01
L12	79.75 - 79	30.28	10	3.74	0.01
L13	79 - 78.75	29.70	10	3.70	0.01
L14	78.75 - 75.17	29.50	10	3.69	0.01
L15	75.17 - 74.92	26.80	10	3.52	0.01
L16	74.92 - 69.92	26.62	10	3.51	0.01
L17	69.92 - 64.92	23.05	10	3.30	0.00
L18	64.92 - 60	19.73	10	3.04	0.00
L19	60 - 59.75	16.75	10	2.75	0.00
L20	59.75 - 54.75	16.60	10	2.74	0.00
L21	54.75 - 49.75	13.85	10	2.52	0.00
L22	49.75 - 47.83	11.34	10	2.27	0.00
L23	47.83 - 47.58	10.45	10	2.17	0.00
L24	47.58 - 43	10.34	10	2.16	0.00
L25	43 - 42.75	8.37	10	1.93	0.00
L26	42.75 - 37.75	8.27	10	1.92	0.00
L27	37.75 - 34.5	6.37	10	1.70	0.00
L28	34.5 - 34.25	5.27	10	1.54	0.00
L29	34.25 - 30	5.19	10	1.53	0.00
L30	30 - 29.75	3.95	10	1.26	0.00
L31	29.75 - 25.58	3.88	10	1.25	0.00
L32	25.58 - 25.33	2.87	10	1.06	0.00
L33	25.33 - 20.75	2.82	10	1.05	0.00
L34	20.75 - 20.5	1.90	10	0.85	0.00
L35	20.5 - 17.48	1.86	10	0.84	0.00
L36	17.48 - 17.23	1.36	10	0.73	0.00
L37	17.23 - 13.5	1.32	10	0.72	0.00
L38	13.5 - 13.25	0.82	10	0.57	0.00
L39	13.25 - 8.25	0.79	10	0.56	0.00
L40	8.25 - 6.25	0.31	10	0.35	0.00
L41	6.25 - 6	0.18	10	0.27	0.00
L42	6 - 5.5	0.17	10	0.26	0.00
L43	5.5 - 5.25	0.14	10	0.24	0.00
L44	5.25 - 0.25	0.13	10	0.23	0.00
L45	0.25 - 0	0.00	10	0.01	0.00

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
117.0000	KS24019-L112A	10	64.08	4.65	0.01	13229
103.0000	BXA-70063-6BF-EDIN-0	10	50.63	4.50	0.01	2973
83.0000	DMP65R-BU8D w/ Mount Pipe	10	32.88	3.91	0.01	1247
60.0000	Bridge Stiffener (96" x 16" x	10	16.75	2.75	0.00	1114

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
30.0000	1.25") Bridge Stiffener (96" x 16" x 1.25")	10	3.95	1.26	0.00	1057

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K
L1	120 - 115 (1)	P24x0.25	5.0000	0.0000	0.0	18.6532	-3.42
L2	115 - 110 (2)	P24x0.25	5.0000	0.0000	0.0	18.6532	-3.84
L3	110 - 105 (3)	P24x0.25	5.0000	0.0000	0.0	18.6532	-4.26
L4	105 - 100 (4)	P24x0.25	5.0000	0.0000	0.0	18.6532	-8.05
L5	100 - 98.5 (5)	P24x0.25	1.5000	0.0000	0.0	18.6532	-8.21
L6	98.5 - 98.25 (6)	P24x0.3875	0.2500	0.0000	0.0	28.7451	-8.25
L7	98.25 - 93.25 (7)	P24x0.3875	5.0000	0.0000	0.0	28.7451	-8.95
L8	93.25 - 90 (8)	P24x0.3875	3.2500	0.0000	0.0	28.7451	-9.41
L9	90 - 89.75 (9)	P24x0.375	0.2500	0.0000	0.0	27.8325	-9.44
L10	89.75 - 84.75 (10)	P24x0.375	5.0000	0.0000	0.0	27.8325	-10.17
L11	84.75 - 79.75 (11)	P24x0.375	5.0000	0.0000	0.0	27.8325	-14.67
L12	79.75 - 79 (12)	P24x0.375	0.7500	0.0000	0.0	27.8325	-14.80
L13	79 - 78.75 (13)	P24x0.51875	0.2500	0.0000	0.0	38.2674	-14.85
L14	78.75 - 75.17 (14)	P24x0.51875	3.5800	0.0000	0.0	38.2674	-15.55
L15	75.17 - 74.92 (15)	P24x0.675	0.2500	0.0000	0.0	49.4624	-15.62
L16	74.92 - 69.92 (16)	P24x0.675	5.0000	0.0000	0.0	49.4624	-16.78
L17	69.92 - 64.92 (17)	P24x0.675	5.0000	0.0000	0.0	49.4624	-17.96
L18	64.92 - 60 (18)	P24x0.675	4.9200	0.0000	0.0	49.4624	-19.15
L19	60 - 59.75 (19)	P30x0.53125	0.2500	0.0000	0.0	49.1825	-21.76
L20	59.75 - 54.75 (20)	P30x0.53125	5.0000	0.0000	0.0	49.1825	-22.98
L21	54.75 - 49.75 (21)	P30x0.53125	5.0000	0.0000	0.0	49.1825	-24.22
L22	49.75 - 47.83 (22)	P30x0.53125	1.9200	0.0000	0.0	49.1825	-24.69
L23	47.83 - 47.58 (23)	P30x0.65	0.2500	0.0000	0.0	59.9337	-24.78
L24	47.58 - 43 (24)	P30x0.65	4.5800	0.0000	0.0	59.9337	-26.07
L25	43 - 42.75 (25)	P30x0.8	0.2500	0.0000	0.0	73.3876	-26.17
L26	42.75 - 37.75 (26)	P30x0.8	5.0000	0.0000	0.0	73.3876	-27.83
L27	37.75 - 34.5 (27)	P30x0.8	3.2500	0.0000	0.0	73.3876	-28.93
L28	34.5 - 34.25 (28)	P30x0.65	0.2500	0.0000	0.0	59.9337	-29.01
L29	34.25 - 30 (29)	P30x0.65	4.2500	0.0000	0.0	59.9337	-30.25
L30	30 - 29.75 (30)	P36x0.55	0.2500	0.0000	0.0	61.2532	-34.17
L31	29.75 - 25.58 (31)	P36x0.55	4.1700	0.0000	0.0	61.2532	-35.42
L32	25.58 - 25.33 (32)	P36x0.65	0.2500	0.0000	0.0	72.1859	-35.51
L33	25.33 - 20.75 (33)	P36x0.65	4.5800	0.0000	0.0	72.1859	-37.05
L34	20.75 - 20.5 (34)	P36x0.7875	0.2500	0.0000	0.0	87.1159	-37.15
L35	20.5 - 17.48 (35)	P36x0.7875	3.0200	0.0000	0.0	87.1159	-38.39
L36	17.48 - 17.23 (36)	P36x0.7875	0.2500	0.0000	0.0	87.1159	-38.51
L37	17.23 - 13.5 (37)	P36x0.7875	3.7300	0.0000	0.0	87.1159	-40.04
L38	13.5 - 13.25 (38)	P36x0.825	0.2500	0.0000	0.0	91.1671	-40.16
L39	13.25 - 8.25 (39)	P36x0.825	5.0000	0.0000	0.0	91.1671	-42.20
L40	8.25 - 6.25 (40)	P36x0.825	2.0000	0.0000	0.0	91.1671	-43.02
L41	6.25 - 6 (41)	P36x1.025	0.2500	0.0000	0.0	112.6240	-43.15
L42	6 - 5.5 (42)	P36x1.025	0.5000	0.0000	0.0	112.6240	-43.39
L43	5.5 - 5.25 (43)	P36x0.8875	0.2500	0.0000	0.0	97.8994	-43.50
L44	5.25 - 0.25 (44)	P36x0.8875	5.0000	0.0000	0.0	97.8994	-45.61
L45	0.25 - 0 (45)	P36x0.8875	0.2500	0.0000	0.0	97.8994	-45.72

Pole Bending Design Data

Section No.	Elevation	Size	M_{ux}
	ft		kip-ft
L1	120 - 115 (1)	P24x0.25	21.08
L2	115 - 110 (2)	P24x0.25	48.48
L3	110 - 105 (3)	P24x0.25	77.56
L4	105 - 100 (4)	P24x0.25	114.33
L5	100 - 98.5 (5)	P24x0.25	130.36
L6	98.5 - 98.25 (6)	P24x0.3875	133.06
L7	98.25 - 93.25 (7)	P24x0.3875	188.70
L8	93.25 - 90 (8)	P24x0.3875	226.81
L9	90 - 89.75 (9)	P24x0.375	229.82
L10	89.75 - 84.75 (10)	P24x0.375	291.62
L11	84.75 - 79.75 (11)	P24x0.375	373.19
L12	79.75 - 79 (12)	P24x0.375	386.96
L13	79 - 78.75 (13)	P24x0.51875	391.56
L14	78.75 - 75.17 (14)	P24x0.51875	458.14
L15	75.17 - 74.92 (15)	P24x0.675	462.85
L16	74.92 - 69.92 (16)	P24x0.675	558.57
L17	69.92 - 64.92 (17)	P24x0.675	657.28
L18	64.92 - 60 (18)	P24x0.675	757.16
L19	60 - 59.75 (19)	P30x0.53125	762.75
L20	59.75 - 54.75 (20)	P30x0.53125	876.31
L21	54.75 - 49.75 (21)	P30x0.53125	993.03
L22	49.75 - 47.83 (22)	P30x0.53125	1038.67
L23	47.83 - 47.58 (23)	P30x0.65	1044.64
L24	47.58 - 43 (24)	P30x0.65	1155.48
L25	43 - 42.75 (25)	P30x0.8	1161.61
L26	42.75 - 37.75 (26)	P30x0.8	1285.77
L27	37.75 - 34.5 (27)	P30x0.8	1368.10
L28	34.5 - 34.25 (28)	P30x0.65	1374.48
L29	34.25 - 30 (29)	P30x0.65	1484.03
L30	30 - 29.75 (30)	P36x0.55	1491.13
L31	29.75 - 25.58 (31)	P36x0.55	1610.81
L32	25.58 - 25.33 (32)	P36x0.65	1618.05
L33	25.33 - 20.75 (33)	P36x0.65	1752.03
L34	20.75 - 20.5 (34)	P36x0.7875	1759.41
L35	20.5 - 17.48 (35)	P36x0.7875	1849.21
L36	17.48 - 17.23 (36)	P36x0.7875	1856.69
L37	17.23 - 13.5 (37)	P36x0.7875	1969.15
L38	13.5 - 13.25 (38)	P36x0.825	1976.74
L39	13.25 - 8.25 (39)	P36x0.825	2129.99
L40	8.25 - 6.25 (40)	P36x0.825	2192.03
L41	6.25 - 6 (41)	P36x1.025	2199.82
L42	6 - 5.5 (42)	P36x1.025	2215.41
L43	5.5 - 5.25 (43)	P36x0.8875	2223.22
L44	5.25 - 0.25 (44)	P36x0.8875	2380.59
L45	0.25 - 0 (45)	P36x0.8875	2388.53

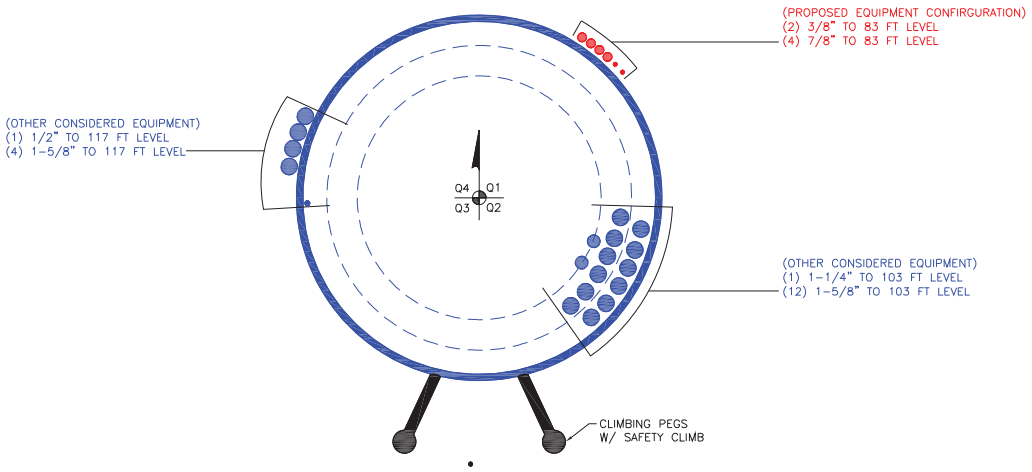
Pole Shear Design Data

Section No.	Elevation	Size	Actual V_u
	ft		K
L1	120 - 115 (1)	P24x0.25	5.30
L2	115 - 110 (2)	P24x0.25	5.64
L3	110 - 105 (3)	P24x0.25	5.98
L4	105 - 100 (4)	P24x0.25	10.59
L5	100 - 98.5 (5)	P24x0.25	10.77
L6	98.5 - 98.25 (6)	P24x0.3875	10.81
L7	98.25 - 93.25 (7)	P24x0.3875	11.44
L8	93.25 - 90 (8)	P24x0.3875	12.00
L9	90 - 89.75 (9)	P24x0.375	12.05
L10	89.75 - 84.75 (10)	P24x0.375	12.66
L11	84.75 - 79.75 (11)	P24x0.375	18.33
L12	79.75 - 79 (12)	P24x0.375	18.37
L13	79 - 78.75 (13)	P24x0.51875	18.39
L14	78.75 - 75.17 (14)	P24x0.51875	18.80
L15	75.17 - 74.92 (15)	P24x0.675	18.84

Section No.	Elevation ft	Size	Actual V_u K
L16	74.92 - 69.92 (16)	P24x0.675	19.45
L17	69.92 - 64.92 (17)	P24x0.675	20.03
L18	64.92 - 60 (18)	P24x0.675	20.57
L19	60 - 59.75 (19)	P30x0.53125	22.38
L20	59.75 - 54.75 (20)	P30x0.53125	23.03
L21	54.75 - 49.75 (21)	P30x0.53125	23.65
L22	49.75 - 47.83 (22)	P30x0.53125	23.90
L23	47.83 - 47.58 (23)	P30x0.65	23.91
L24	47.58 - 43 (24)	P30x0.65	24.49
L25	43 - 42.75 (25)	P30x0.8	24.51
L26	42.75 - 37.75 (26)	P30x0.8	25.14
L27	37.75 - 34.5 (27)	P30x0.8	25.53
L28	34.5 - 34.25 (28)	P30x0.65	25.54
L29	34.25 - 30 (29)	P30x0.65	26.00
L30	30 - 29.75 (30)	P36x0.55	28.44
L31	29.75 - 25.58 (31)	P36x0.55	28.95
L32	25.58 - 25.33 (32)	P36x0.65	28.97
L33	25.33 - 20.75 (33)	P36x0.65	29.52
L34	20.75 - 20.5 (34)	P36x0.7875	29.54
L35	20.5 - 17.48 (35)	P36x0.7875	29.91
L36	17.48 - 17.23 (36)	P36x0.7875	29.93
L37	17.23 - 13.5 (37)	P36x0.7875	30.36
L38	13.5 - 13.25 (38)	P36x0.825	30.37
L39	13.25 - 8.25 (39)	P36x0.825	30.92
L40	8.25 - 6.25 (40)	P36x0.825	31.13
L41	6.25 - 6 (41)	P36x1.025	31.14
L42	6 - 5.5 (42)	P36x1.025	31.20
L43	5.5 - 5.25 (43)	P36x0.8875	31.22
L44	5.25 - 0.25 (44)	P36x0.8875	31.71
L45	0.25 - 0 (45)	P36x0.8875	31.72

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 876309 TOWER ID:C_BASELEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- H

Site BU: 876309

Work Order:

CROWN CASTLE

Pole Geometry

	Pole Height Above Base (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Bend Radius (in)	Pole Material
1	120	30		0	24	24	0.25		A53-B-42
2	90	30		0	24.00	24	0.375		A53-B-42
3	60	30		0	30.00	30	0.375		A53-B-42
4	30	30		0	36.00	36	0.375		A53-B-42

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	5.5	17.5	plate	CCI-SFP-040125	2	35	320																
2	5.5	17.5	plate	I-040125; (1) (1.1875)	1			153															
3	0	20.75	plate	3.5 x 1.25; (1) (1.1875	3				113	232	353												
4	34.5	43	plate	3.25 x 1.25; (1) (1.1875	3							113	232	353									
5	0	6.25	channel	MP3-05 (1.1875")	1										180								
6	6.25	13.5	channel	MP3-04 (1.1875")	1											210							
7	13.5	30	channel	MP3-05 (1.1875")	1												180						
8	0	30	channel	MP3-05 (1.1875")	2													300	60				
9	30	60	channel	MP3-04 (1.1875")	3															60	180	300	
10	60	75.17	channel	MP3-03 (1.1875")	3																60	180	300
11	0	6.25	plate	FP 1.25 x 4.25_1	3	20	133	246															
12	17.58	25.58	plate	CCI-SFP-040075	3				15	135	255												
13	30	47.83	plate	CCI-SFP-040075	3							15	135	255									
14	60	79	plate	CCI-SFP-040075	3										15	135	255						
15	90	98.5	plate	I-040075; (1) (1.1875)	3													60	180	300			
16																							

Reinforcement Details

	B (in)	H (in)	Gross Area (in^2)	Pole Face to Centroid (in)	Bottom Termination Type	Bottom Termination Length (in)	Top Termination Type	Top Termination Length (in)	Lu (in)	Net Area (in2)	Bolt Hole Size (in)	Reinforcement Material
1	4	1.25	5	0.625	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	27.000	3.438	1.1875	A572-65
2	4	1.25	5	0.625	None	n/a	PC 8.8 - M20 (100)	18.000	27.000	3.438	1.1875	A572-65
3	3.5	1.25	4.375	0.625	None	n/a	PC 8.8 - M20 (100)	15.000	24.000	2.813	1.1875	A572-65
4	3.25	1.25	4.0625	0.625	PC 8.8 - M20 (100)	15	PC 8.8 - M20 (100)	12.000	24.000	2.500	1.1875	A572-65
5	5.33	2.09	5.65	0.79	PC 8.8 - M20 (100)	29	PC 8.8 - M20 (100)	29.000	18.000	5.025	1.1875	A572-65
6	4.78	1.61	4.13	0.61	PC 8.8 - M20 (100)	17	PC 8.8 - M20 (100)	17.000	18.000	3.593	1.1875	A572-65
7	5.33	2.09	5.65	0.79	PC 8.8 - M20 (100)	29	PC 8.8 - M20 (100)	29.000	18.000	5.025	1.1875	A572-65
8	5.33	2.09	5.65	0.79	PC 8.8 - M20 (100)	29	PC 8.8 - M20 (100)	29.000	18.000	5.025	1.1875	A572-65
9	4.78	1.61	4.13	0.61	PC 8.8 - M20 (100)	17	PC 8.8 - M20 (100)	17.000	18.000	3.593	1.1875	A572-65
10	4.06	1.57	2.92	0.59	PC 8.8 - M20 (100)	14	PC 8.8 - M20 (100)	14.000	18.000	2.545	1.1875	A572-65
11	1.25	4.25	5.3125	2.125	None	n/a	None	n/a	0.000	5.313	0.0000	A572-65
12	4	0.75	3	0.375	PC 8.8 - M20 (100)	12	PC 8.8 - M20 (100)	12.000	16.000	2.063	1.1875	A572-65
13	4	0.75	3	0.375	PC 8.8 - M20 (100)	12	PC 8.8 - M20 (100)	12.000	16.000	2.063	1.1875	A572-65
14	4	0.75	3	0.375	PC 8.8 - M20 (100)	12	PC 8.8 - M20 (100)	12.000	16.000	2.063	1.1875	A572-65
15	4	0.75	3	0.375	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	18.000	16.000	2.063	1.1875	A572-65

Connection Details for Custom Reinforcements

Reinforcement	End	# Bolts	N or X	Bolt Spacing (in)	Edge Dist (in)	Weld Grade (ksi)	Transverse (Horiz.) Weld Type	Horiz. Weld Length (in)	Horiz. Groove Depth (in)	Horiz. Groove Angle (deg)	Horiz. Fillet Size (in)	Vertical Weld Length (in)	Vertical Fillet Size (in)	Rev H Connection Capacity (kip)
CCI-040125; (1) (1.1875)_1	Top	6	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-				-	-		-	-	-
FP 3.5 x 1.25; (1) (1.1875)_1	Top	5	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-				-	-		-	-	-
FP 3.25 x 1.25; (1) (1.1875)_1	Top	4	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	5	N	3	3	-	-	-	-	-	-	-	-	-
FP 1.25 x 4.25_1	Top					-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-				-	-		-	-	-
CCI-040075; (1) (1.1875)_1	Top	6	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	8	N	3	3	-	-	-	-	-	-	-	-	-

TNX Geometry Input

Increment (ft): 5 Export to TNX

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	120 - 115	5		0	24.000	24.000	0.25	A53-B-42	1.000
2	115 - 110	5		0	24.000	24.000	0.25	A53-B-42	1.000
3	110 - 105	5		0	24.000	24.000	0.25	A53-B-42	1.000
4	105 - 100	5		0	24.000	24.000	0.25	A53-B-42	1.000
5	100 - 98.5	1.5		0	24.000	24.000	0.25	A53-B-42	1.000
6	98.5 - 98.25	0.25		0	24.000	24.000	0.3875	A53-B-42	0.962
7	98.25 - 93.25	5		0	24.000	24.000	0.3875	A53-B-42	0.962
8	93.25 - 90	3.25	0	0	24.000	24.000	0.3875	A53-B-42	0.962
9	90 - 89.75	0.25		0	24.000	24.000	0.375	A53-B-42	1.000
10	89.75 - 84.75	5		0	24.000	24.000	0.375	A53-B-42	1.000
11	84.75 - 79.75	5		0	24.000	24.000	0.375	A53-B-42	1.000
12	79.75 - 79	0.75		0	24.000	24.000	0.375	A53-B-42	1.000
13	79 - 78.75	0.25		0	24.000	24.000	0.51875	A53-B-42	0.963
14	78.75 - 75.17	3.58		0	24.000	24.000	0.51875	A53-B-42	0.963
15	75.17 - 74.92	0.25		0	24.000	24.000	0.675	A53-B-42	0.922
16	74.92 - 69.92	5		0	24.000	24.000	0.675	A53-B-42	0.922
17	69.92 - 64.92	5		0	24.000	24.000	0.675	A53-B-42	0.922
18	64.92 - 60	4.92	0	0	24.000	24.000	0.675	A53-B-42	0.922
19	60 - 59.75	0.25		0	30.000	30.000	0.53125	A53-B-42	0.962
20	59.75 - 54.75	5		0	30.000	30.000	0.53125	A53-B-42	0.962
21	54.75 - 49.75	5		0	30.000	30.000	0.53125	A53-B-42	0.962
22	49.75 - 47.83	1.92		0	30.000	30.000	0.53125	A53-B-42	0.962
23	47.83 - 47.58	0.25		0	30.000	30.000	0.65	A53-B-42	0.939
24	47.58 - 43	4.58		0	30.000	30.000	0.65	A53-B-42	0.939
25	43 - 42.75	0.25		0	30.000	30.000	0.8	A53-B-42	0.933
26	42.75 - 37.75	5		0	30.000	30.000	0.8	A53-B-42	0.933
27	37.75 - 34.5	3.25		0	30.000	30.000	0.8	A53-B-42	0.933
28	34.5 - 34.25	0.25		0	30.000	30.000	0.65	A53-B-42	0.939
29	34.25 - 30	4.25	0	0	30.000	30.000	0.65	A53-B-42	0.939
30	30 - 29.75	0.25		0	36.000	36.000	0.55	A53-B-42	0.962
31	29.75 - 25.58	4.17		0	36.000	36.000	0.55	A53-B-42	0.962
32	25.58 - 25.33	0.25		0	36.000	36.000	0.65	A53-B-42	0.941
33	25.33 - 20.75	4.58		0	36.000	36.000	0.65	A53-B-42	0.941
34	20.75 - 20.5	0.25		0	36.000	36.000	0.7875	A53-B-42	0.930
35	20.5 - 17.48	3.02		0	36.000	36.000	0.7875	A53-B-42	0.999
36	17.48 - 17.23	0.25		0	36.000	36.000	0.7875	A53-B-42	0.999
37	17.23 - 13.5	3.73		0	36.000	36.000	0.7875	A53-B-42	0.999
38	13.5 - 13.25	0.25		0	36.000	36.000	0.825	A53-B-42	0.938
39	13.25 - 8.25	5		0	36.000	36.000	0.825	A53-B-42	0.938
40	8.25 - 6.25	2		0	36.000	36.000	0.825	A53-B-42	0.938
41	6.25 - 6	0.25		0	36.000	36.000	1.025	A53-B-42	0.914
42	6 - 5.5	0.5		0	36.000	36.000	1.025	A53-B-42	0.914
43	5.5 - 5.25	0.25		0	36.000	36.000	0.8875	A53-B-42	0.899
44	5.25 - 0.25	5		0	36.000	36.000	0.8875	A53-B-42	0.899
45	0.25 - 0	0.25		0	36.000	36.000	0.8875	A53-B-42	0.899

TNX Section Forces

Increment (ft):	5	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	120 - 115	3.42	21.08	5.30
2	115 - 110	3.84	48.48	5.64
3	110 - 105	4.26	77.56	5.98
4	105 - 100	8.05	114.33	10.59
5	100 - 98.5	8.21	130.36	10.77
6	98.5 - 98.25	8.25	133.06	10.81
7	98.25 - 93.25	8.95	188.70	11.44
8	93.25 - 90	9.41	226.81	12.00
9	90 - 89.75	9.44	229.82	12.05
10	89.75 - 84.75	10.17	291.62	12.66
11	84.75 - 79.75	14.67	373.19	18.33
12	79.75 - 79	14.80	386.96	18.37
13	79 - 78.75	14.85	391.56	18.39
14	78.75 - 75.17	15.55	458.14	18.80
15	75.17 - 74.92	15.62	462.85	18.84
16	74.92 - 69.92	16.78	558.57	19.45
17	69.92 - 64.92	17.96	657.28	20.03
18	64.92 - 60	19.15	757.16	20.57
19	60 - 59.75	21.76	762.75	22.38
20	59.75 - 54.75	22.98	876.31	23.03
21	54.75 - 49.75	24.22	993.03	23.65
22	49.75 - 47.83	24.69	1038.66	23.90
23	47.83 - 47.58	24.78	1044.64	23.91
24	47.58 - 43	26.07	1155.49	24.49
25	43 - 42.75	26.17	1161.61	24.51
26	42.75 - 37.75	27.83	1285.77	25.14
27	37.75 - 34.5	28.93	1368.10	25.53
28	34.5 - 34.25	29.01	1374.49	25.54
29	34.25 - 30	30.25	1484.02	26.00
30	30 - 29.75	34.17	1491.13	28.44
31	29.75 - 25.58	35.42	1610.81	28.95
32	25.58 - 25.33	35.51	1618.05	28.97
33	25.33 - 20.75	37.05	1752.02	29.52
34	20.75 - 20.5	37.15	1759.41	29.54
35	20.5 - 17.48	38.39	1849.21	29.91
36	17.48 - 17.23	38.51	1856.69	29.93
37	17.23 - 13.5	40.04	1969.15	30.36
38	13.5 - 13.25	40.16	1976.74	30.37
39	13.25 - 8.25	42.20	2130.00	30.92
40	8.25 - 6.25	43.02	2192.04	31.13
41	6.25 - 6	43.15	2199.82	31.14
42	6 - 5.5	43.39	2215.41	31.20
43	5.5 - 5.25	43.50	2223.22	31.22
44	5.25 - 0.25	45.61	2380.59	31.71
45	0.25 - 0	45.72	2388.52	31.72

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
120 - 115	Pole	TP24x24x0.25	Pole	5.6%	Pass
115 - 110	Pole	TP24x24x0.25	Pole	12.3%	Pass
110 - 105	Pole	TP24x24x0.25	Pole	19.3%	Pass
105 - 100	Pole	TP24x24x0.25	Pole	28.9%	Pass
100 - 98.5	Pole	TP24x24x0.25	Pole	32.7%	Pass
98.5 - 98.25	Pole + Reinf.	TP24x24x0.3875	Reinf. 15 Tension Rupture	23.5%	Pass
98.25 - 93.25	Pole + Reinf.	TP24x24x0.3875	Reinf. 15 Tension Rupture	33.1%	Pass
93.25 - 90	Pole + Reinf.	TP24x24x0.3875	Reinf. 15 Tension Rupture	39.6%	Pass
90 - 89.75	Pole	TP24x24x0.375	Pole	36.1%	Pass
89.75 - 84.75	Pole	TP24x24x0.375	Pole	45.6%	Pass
84.75 - 79.75	Pole	TP24x24x0.375	Pole	58.6%	Pass
79.75 - 79	Pole	TP24x24x0.375	Pole	60.7%	Pass
79 - 78.75	Pole + Reinf.	TP24x24x0.5188	Reinf. 14 Tension Rupture	52.0%	Pass
78.75 - 75.17	Pole + Reinf.	TP24x24x0.5188	Reinf. 14 Tension Rupture	60.7%	Pass
75.17 - 74.92	Pole + Reinf.	TP24x24x0.675	Reinf. 14 Tension Rupture	48.4%	Pass
74.92 - 69.92	Pole + Reinf.	TP24x24x0.675	Reinf. 14 Tension Rupture	58.3%	Pass
69.92 - 64.92	Pole + Reinf.	TP24x24x0.675	Reinf. 14 Tension Rupture	68.6%	Pass
64.92 - 60	Pole + Reinf.	TP24x24x0.675	Reinf. 14 Tension Rupture	78.9%	Pass
60 - 59.75	Pole + Reinf.	TP30x30x0.5313	Pole	56.0%	Pass
59.75 - 54.75	Pole + Reinf.	TP30x30x0.5313	Pole	64.3%	Pass
54.75 - 49.75	Pole + Reinf.	TP30x30x0.5313	Pole	72.7%	Pass
49.75 - 47.83	Pole + Reinf.	TP30x30x0.5313	Pole	76.1%	Pass
47.83 - 47.58	Pole + Reinf.	TP30x30x0.65	Reinf. 13 Tension Rupture	70.4%	Pass
47.58 - 43	Pole + Reinf.	TP30x30x0.65	Reinf. 13 Tension Rupture	77.8%	Pass
43 - 42.75	Pole + Reinf.	TP30x30x0.8	Reinf. 4 Tension Rupture	71.9%	Pass
42.75 - 37.75	Pole + Reinf.	TP30x30x0.8	Reinf. 4 Tension Rupture	79.6%	Pass
37.75 - 34.5	Pole + Reinf.	TP30x30x0.8	Reinf. 4 Tension Rupture	84.7%	Pass
34.5 - 34.25	Pole + Reinf.	TP30x30x0.65	Reinf. 13 Tension Rupture	92.5%	Pass
34.25 - 30	Pole + Reinf.	TP30x30x0.65	Reinf. 13 Tension Rupture	99.8%	Pass
30 - 29.75	Pole + Reinf.	TP36x36x0.55	Pole	74.5%	Pass
29.75 - 25.58	Pole + Reinf.	TP36x36x0.55	Pole	80.5%	Pass
25.58 - 25.33	Pole + Reinf.	TP36x36x0.65	Reinf. 12 Tension Rupture	74.9%	Pass
25.33 - 20.75	Pole + Reinf.	TP36x36x0.65	Reinf. 12 Tension Rupture	81.1%	Pass
20.75 - 20.5	Pole + Reinf.	TP36x36x0.7875	Reinf. 3 Tension Rupture	73.2%	Pass
20.5 - 17.48	Pole + Reinf.	TP36x36x0.7875	Reinf. 3 Tension Rupture	79.7%	Pass
17.48 - 17.23	Pole + Reinf.	TP36x36x0.7875	Reinf. 3 Tension Rupture	80.0%	Pass
17.23 - 13.5	Pole + Reinf.	TP36x36x0.7875	Reinf. 3 Tension Rupture	84.9%	Pass
13.5 - 13.25	Pole + Reinf.	TP36x36x0.825	Reinf. 3 Tension Rupture	81.8%	Pass
13.25 - 8.25	Pole + Reinf.	TP36x36x0.825	Reinf. 3 Tension Rupture	88.2%	Pass
8.25 - 6.25	Pole + Reinf.	TP36x36x0.825	Reinf. 3 Tension Rupture	90.7%	Pass
6.25 - 6	Pole + Reinf.	TP36x36x1.025	Reinf. 3 Tension Rupture	74.6%	Pass
6 - 5.5	Pole + Reinf.	TP36x36x1.025	Reinf. 3 Tension Rupture	75.2%	Pass
5.5 - 5.25	Pole + Reinf.	TP36x36x0.8875	Reinf. 3 Tension Rupture	83.6%	Pass
5.25 - 0.25	Pole + Reinf.	TP36x36x0.8875	Reinf. 3 Tension Rupture	89.5%	Pass
0.25 - 0	Pole + Reinf.	TP36x36x0.8875	Reinf. 3 Tension Rupture	89.8%	Pass
				Summary	
			Pole	90.3%	Pass
			Reinforcement	99.8%	Pass
			Overall	99.8%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in^4)			Area (in^2)			% Capacity*														
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
120 - 115	1315	n/a	1315	18.65	n/a	18.65	5.6%															
115 - 110	1315	n/a	1315	18.65	n/a	18.65	12.3%															
110 - 105	1315	n/a	1315	18.65	n/a	18.65	19.3%															
105 - 100	1315	n/a	1315	18.65	n/a	18.65	28.9%															
100 - 98.5	1315	n/a	1315	18.65	n/a	18.65	32.7%															
98.5 - 98.25	1315	695	2011	18.65	9.00	27.65	21.7%															23.5%
98.25 - 93.25	1315	695	2011	18.65	9.00	27.65	30.5%															33.1%
93.25 - 90	1315	695	2011	18.65	9.00	27.65	36.5%															39.6%
90 - 89.75	1942	n/a	1942	27.83	n/a	27.83	36.1%															
89.75 - 84.75	1942	n/a	1942	27.83	n/a	27.83	45.6%															
84.75 - 79.75	1942	n/a	1942	27.83	n/a	27.83	58.6%															
79.75 - 79	1942	n/a	1942	27.83	n/a	27.83	60.7%															
79 - 78.75	1942	695	2638	27.83	9.00	36.83	45.1%														52.0%	
78.75 - 75.17	1942	695	2638	27.83	9.00	36.83	52.7%														60.7%	
75.17 - 74.92	1942	1392	3335	27.83	17.76	45.59	42.0%										41.0%				48.4%	
74.92 - 69.92	1942	1392	3335	27.83	17.76	45.59	50.6%										49.4%				58.3%	
69.92 - 64.92	1942	1392	3335	27.83	17.76	45.59	59.4%										58.0%				68.6%	
64.92 - 60	1942	1392	3335	27.83	17.76	45.59	68.4%										66.7%				78.9%	
60 - 59.75	3829	1516	5346	34.90	12.39	47.29	56.0%									52.0%						
59.75 - 54.75	3829	1516	5346	34.90	12.39	47.29	64.3%									59.6%						
54.75 - 49.75	3829	1516	5346	34.90	12.39	47.29	72.7%									67.5%						
49.75 - 47.83	3829	1516	5346	34.90	12.39	47.29	76.1%									70.5%						
47.83 - 47.58	3829	2586	6416	34.90	21.39	56.29	63.7%									59.1%				70.4%		
47.58 - 43	3829	2586	6416	34.90	21.39	56.29	70.4%									65.3%				77.8%		
43 - 42.75	3829	4066	7895	34.90	33.58	68.48	57.6%				71.9%					53.4%				63.6%		
42.75 - 37.75	3829	4066	7895	34.90	33.58	68.48	63.7%				79.6%					59.0%				70.3%		
37.75 - 34.5	3829	4066	7895	34.90	33.58	68.48	67.7%				84.7%					62.8%				74.8%		
34.5 - 34.25	3829	2586	6416	34.90	21.39	56.29	83.7%									77.6%				92.5%		
34.25 - 30	3829	2586	6416	34.90	21.39	56.29	90.3%									83.7%				99.8%		
30 - 29.75	6659	3003	9662	41.97	16.95	58.92	74.5%							65.4%	65.4%							
29.75 - 25.58	6659	3003	9662	41.97	16.95	58.92	80.5%							70.6%	70.6%							
25.58 - 25.33	6659	4529	11188	41.97	25.95	67.92	69.8%							61.2%	61.2%				74.9%			
25.33 - 20.75	6659	4529	11188	41.97	25.95	67.92	75.5%							66.2%	66.2%				81.1%			
20.75 - 20.5	6659	6791	13450	41.97	39.08	81.04	63.1%			73.2%				55.1%	55.3%				67.7%			
20.5 - 17.48	6683	6802	13486	41.97	45.08	87.04	68.7%	66.3%	63.2%	79.7%				52.9%	56.2%							
17.48 - 17.23	6683	6802	13486	41.97	45.08	87.04	69.0%	66.5%	63.5%	80.0%				53.1%	56.5%							
17.23 - 13.5	6683	6802	13486	41.97	45.08	87.04	73.2%	70.5%	67.3%	84.9%				56.3%	59.8%							
13.5 - 13.25	6683	7372	14055	41.97	43.56	85.52	70.5%	69.4%	75.7%	81.8%			63.3%		58.1%							
13.25 - 8.25	6683	7372	14055	41.97	43.56	85.52	76.0%	74.7%	81.5%	88.2%			68.2%		62.6%							
8.25 - 6.25	6683	7372	14055	41.97	43.56	85.52	78.2%	76.9%	83.9%	90.7%			70.1%		64.4%							
6.25 - 6	6679	10432	17111	41.97	61.01	102.98	64.4%	63.9%	62.7%	74.6%		51.0%			54.3%			54.2%				
6 - 5.5	6679	10432	17111	41.97	61.01	102.98	64.9%	64.3%	63.1%	75.2%		51.4%			54.6%			54.6%				
5.5 - 5.25	6661	8427	15088	41.97	46.01	87.98	72.1%			83.6%		61.3%			64.7%			59.8%				
5.25 - 0.25	6661	8427	15088	41.97	46.01	87.98	77.2%			89.5%		65.6%			69.2%			64.0%				
0.25 - 0	6661	8427	15088	41.97	46.01	87.98	77.4%			89.8%		65.8%			69.4%			64.2%				

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

Monopole Flange Plate Connection

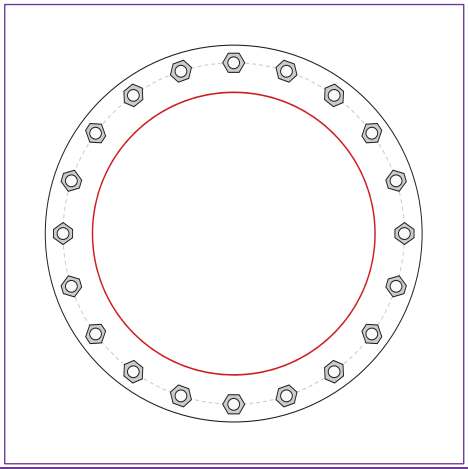
Elevation = 90 ft.

BU #	876309
Site Name	MILFORD JAI-ALAI
Order #	533279 Rev. 2
TIA-222 Revision	H

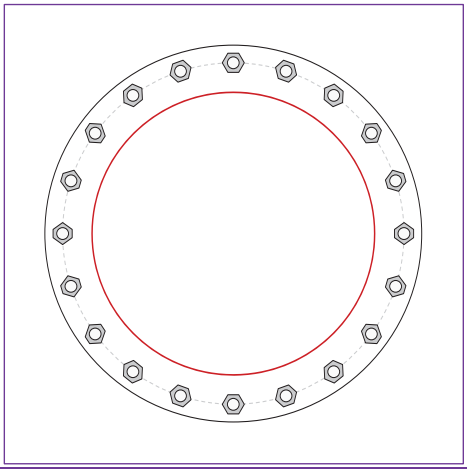
Applied Loads	
Moment (kip-ft)	130.72
Axial Force (kips)	5.98
Shear Force (kips)	12.00

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(20) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 29" BC

Top Plate Data

32" OD x 1.5" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Plate Data

32" OD x 1.5" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

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

Bottom Pole Data

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

Analysis Results

Bolt Capacity

Max Load (kips)	10.51	
Allowable (kips)	54.53	
Stress Rating:	**18.4%**	Pass

Top Plate Capacity

Max Stress (ksi):	7.56	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**22.2%**	Pass
Tension Side Stress Rating:	**10.5%**	Pass

Bottom Plate Capacity

Max Stress (ksi):	7.56	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**22.2%**	Pass
Tension Side Stress Rating:	**10.5%**	Pass

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Phone 614.221.6679 www.pauljford.com

Project Number:	37521-0073.007.7700
Engineer:	RMF
Date:	7/2/2021
Site Name:	MILFORD JAI-ALAI
BU Number:	876309
WO Number:	1989683
Order Number:	533279 Rev 2

Bolted Flange Jump Analysis

(Version v3.1 - Effective Date 9/10/2020)

Settings

Code:	TIA-222-H
Analysis Elevation:	90.00
Deformation At Bolt Hole Is A Design Consideration:	Yes
Bolt Tension Method:	Case II

Calculation Method / Distributed Load

Generations Considered: 1

		Load To Gen	Override
Generation 1 :	Analysis	47.81 kip	

Pole Definition

	Upper Section	Lower Section	
Number Of Sides:	Round	Round	
Diameter:	24.000	24.000	in (Flat to Flat)
Thickness:	0.2500	0.3750	in
Yield Strength (F_y):	42	42	ksi
Ultimate Strength (F_u):	63	63	ksi

Source: G:\TOWER\375_Crown_Castle\2021\37521-0073_876309_MILFORD JAI-ALAI\37521-0073.007.7700_SDD_1989683

Pole Loading Definition

	At 90' Elevation	
Applied Moment:	226.81	kip-ft
Applied Axial:	9.41	kip
Applied Shear:	12.00	kip

Flange Plate Definitions

	Upper Flange	Lower Flange	
Flange Connection Type:	Butt	Butt	
Bolt Groups:	1	1	
Diameter:	32.00	32.00	in
Thickness:	1.50	1.50	in
Stiffeners Present:	No	No	

Flange Bolt Definition

	Bolt Group 1	
Bolt Quantity:	20	
Bolt Diameter:	1.00	in
Bolt Circle:	29.00	in
Start Angle:	0.00	deg
Moment To Group:	130.72 kip-ft	
Axial To Group:	5.98 kip	
Shear To Group:	12.00 kip	

Jump Plate Definition

Generation 1

Graphed Generation: 1

General:

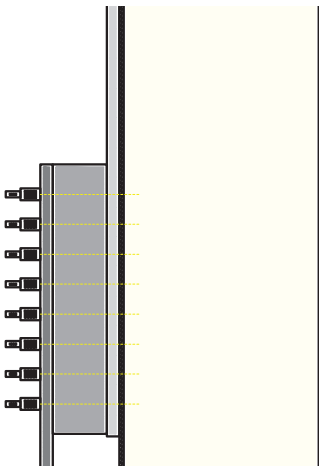
Reference Document:	6078054
Connected Reinforcement Present:	Yes

Member:

Crown Standard:	CFP-040075	
Clear Distance (From Flange Edge):	0.00	in
Bar Circle (Diameter):	32.75	in
Top Elevation Increase:	0.23	in
Bottom Elevation Decrease:	0.23	in
Minimum Unbraced Length:	15.54	in
Actual Unbraced Length:	16.00	in
Single Bar Capacity Override:		kip
Calculated Single Bar Capacity:	123.75	kip

Location:

Member 1 (Degree):	90
Member 2 (Degree):	210
Member 3 (Degree):	330
Member 4 (Degree):	
Member 5 (Degree):	
Member 6 (Degree):	
Quantity:	3



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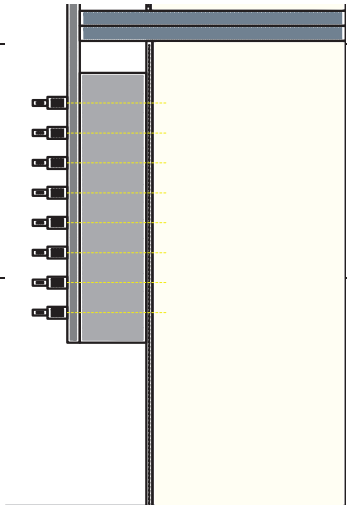
Project Number:	37521-0073.007.7700
Engineer:	RMF
Date:	7/2/2021
Site Name:	MILFORD JAI-ALAI
BU Number:	876309
WO Number:	1989683
Order Number:	533279 Rev 2

Bolted Flange Jump Analysis

(Version v3.1 - Effective Date 9/10/2020)



Reinforcement Definition — Generation 1

Upper Run:	Run Present:	Yes	
	Type:	Existing	
	Start Elevation:	90.42	ft
	Crown Standard:	CCI-SFP-040075	
Lower Run:	Run Present:	No	

Connection Defintion — Generation 1

Blind Bolts:	Bolt Type:	Current AJAX (1.141")	
	Bolt Diameter:	0.7874	in
	Shear Sleeve Diameter:	1.1410	in
	Single Bolt Shear Capacity:	37.00	kip
	Single Bolt Tensile Capacity:	33.00	kip
	Max Available Grip Length:	8.46	in
Top Layout:	Bolt Quantity:	8	
	Termination Spacing:	3.00	in
	End Spacing:	3.00	in
	Hole Diameter:	1.1875	in
	Eccentricity:	4.375	in
Bottom Layout:	Bolt Quantity:	8	
	Termination Spacing:	3.00	in
	End Spacing:	3.00	in
	Hole Diameter:	1.1875	in
	Eccentricity:	4.375	in

Summary Capacity Results — Generation 1

Jump Plate	36.79%	36.8%	Pass
Applied Axial Load:	47.81 kip		
Available Axial Strength:	123.75 kip		
Upper Connection	17.94%	17.9%	Pass
Lower Connection	15.38%	15.4%	Pass

Generation 1 Jump Plate Controls 36.8% Pass

Grip Length Check

Sufficient

Notes

1. Allowable capacity is 100% (with values normalized by dividing by 1.05).
2. Bolt hole deformation was a design consideration.
3. AISC shear reduction factor used to discount for connection length.
4. Applied tension based on AISC Case II methodology.
5. TIA methodology used for bearing calculations.

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v2.1, Effective Date: 05-03-17

Date: 7/2/2021
Project No: 37521-0073.007.7700
Site Name: Milford JAI-ALAI
Site Number/BUN: 876309
Description: 120' Monopole
Owner: CCI
Engineer: RMF

Welded Bridge Stiffener Analysis per TIA-222-H & AISC 13th Ed. (Black)

General Parameters and Loading:

Flange Elevation:	60.00	ft
TIA Reference Standard:	TIA-222-H	
AISC Manual:	13th Ed. (Black)	
Method:	LRFD	
ASD Stress Increase, ASIF:	N/A	
Moment, Muf:	757.2	k-ft
Axial, Puf:	19.2	kips
Shear, Vf:	20.6	kips

Pole Parameters:

	Upper Pole	Lower Pole	
Pole Diameter, Dp:	24.00	30.00	in
Pole Thickness, tp:	0.3750	0.3750	in
Pole Fy:	42	42	ksi
Pole Fu:	63	63	ksi
Flange Diameter, Df:	41.00	41.00	in

Bridge Stiffener Parameters:

	Stiffener Type 1	Stiffener Type 2	
Qty. Stiffeners:	3	3	
Upper Weld Length, L1:	25.00	47.25	in
Lower Weld Length, L2:	22.00	44.13	in
Weld Size, w:	0.3750	0.3750	in
Electrode:	E70	E80	
Effective Stiffener Width, Ws:	7.05	7.00	in
Stiffener Thickness, ts:	1.37	1.25	in
Notch, n:	1.56	0.50	in
Stiffener Fy:	65	65	ksi
Stiffener Fu:	80	80	ksi
Unbraced Length, L:	11.75	4.63	in
K:	0.80	0.80	
Stiffener Spacing:	Symmetric	Symmetric	
Start Angle, for Symmetric:	0	75	degrees
Stiffener Circle:	51.17	49.00	in = Df + 2 n + Ws
Upper Eccentricity, e1:	13.59	12.50	in = (Df - Dp) / 2 + n + Ws / 2
Lower Eccentricity, e2:	10.59	9.50	in = (Df - Dp) / 2 + n + Ws / 2

Flange Bolt Parameters:

Number of Bolt Circles: (1) Bolt Circle

	Bolt Circle 1	Bolt Circle 2	
Qty. Bolts:	0	0	
Bolt Diameter:	1.50	0.00	in
Bolt Circle:	35.00	0.00	in
Bolt Spacing:	Symmetric	Symmetric	
Start Angle, for Symmetric:	0	0	degrees
Bolt Area, Ag:	0.0000	0.0000	in
Max. Tension:	0.00	0.00	kips
Max. Net Tension:	0.00	0.00	kips
Max. Net Compression:	0.00	0.00	kips
Moment to Bolt Circle:	0.00	0.00	k-ft
Axial to Bolt Circle:	0.00	0.00	kips
Shear to Bolt Circle:	0.00	0.00	kips
Equivalent Bolt Circle:	0.00	0.00	in

Weld Analysis per AISC Tables 8-4 & 8-3:

Upper Pole	Stiffener Type 1	Stiffener Type 2	
D:	6	6	Num. of Sixteenths in Weld
a:	0.5434	0.2646	= e1 / L1
k:	0	0	
C:	2.1641	3.2460	Tabulated Cofficient
C1:	1.0000	1.0300	Coefficient for Electrode
Φ:	0.7500	0.7500	
Stiffener Axial, Pu:	132.8	115.4	kips
Axial Capacity, ΦPn:	243.5	710.9	kips = Φ C C1 D L
Ratio:	54.6%	16.2%	
Lower Pole			
D:	6	6	Num. of Sixteenths in Weld
a:	0.4811	0.2153	= e2 / L2
k:	0	0	
C:	2.3598	3.4488	Tabulated Cofficient
C1:	1.0000	1.0300	Coefficient for Electrode
Φ:	0.7500	0.7500	
Stiffener Axial, Pu:	132.8	115.4	kips
Axial Capacity, ΦPn:	233.6	705.3	kips = Φ C C1 D L
Ratio:	56.9%	16.4%	

Pole Analysis per AISC Table J2.5 & Sect. J4.2:

Upper Pole	Stiffener Type 1	Stiffener Type 2	
Stiffener Axial, Pu:	132.8	115.4	kips
Effective Throat, te:	0.2651	0.2651	in = 0.707 w
Shear Stress, fuv:	2.7	1.2	kips/in= Pu / (2 L1)
Section Modulus, S:	208.3	744.2	in^2 = $L1^2$ / 3
Bending Stress, fub:	8.7	1.9	kips/in = Pu e1 / S
Combined Stress, fu:	9.1	2.3	kips/in = $(fuv^2 + fub^2)^{1/2}$
Φ:	1.0000	1.0000	
Stress Capacity, ΦFn	9.5	9.5	kips/in = Φ 0.6 Fy tp
Ratio:	95.9%	24.2%	
Lower Pole			
Stiffener Axial, Pu:	132.8	115.4	kips
Effective Throat, te:	0.2651	0.2651	in = 0.707 w
Shear Stress, fuv:	3.0	1.3	ksi = Pu / (2 L2)
Section Modulus, S:	161.3	649.0	in^2 = $L2^2$ / 3
Bending Stress, fub:	8.7	1.7	ksi = Pu e2 / S
Combined Stress, fu:	9.2	2.1	kips/in = $(fuv^2 + fub^2)^{1/2}$
Φ:	1.0000	1.0000	
Stress Capacity, ΦFn	9.5	9.5	kips/in = Φ 0.6 Fy tp
Ratio:	97.6%	22.6%	

Stiffener 1 Analysis per AISC Sect. D2, E3 & E7

	Stiffener Type 1	
Gross Area, Ag:	9.6585	in^2
Effective Net Area, Aen:	9.6585	in^2 = Ag U, where U = 1.000
Stiffener Axial, Pu:	132.8	kips
Stiffener Stress, fu:	13.8	ksi = Pu / Ag
b:	17.1100	in = (Df - Dp) / 2 + n + Ws, Upper Pole
b / ts:	12.4891	in
Q, Where Qa = 1.0:	0.8906	= Qa 1.34 - 0.76 (b / ts) (Fy / E)$^{1/2}$
r:	0.3955	in^3
K L / r:	23.7683	
Φ:	0.9000	
Axial Capacity, ΦFcr:	49.67	ksi = Φ Q [0.658$^{Q Fy / Fe}$] Fy
Φ:	0.9000	
Ten. Yielding Cap., ΦFnt:	58.50	ksi = Φ Fy
Φ:	0.7500	
Ten. Rupture Cap., ΦFnr:	60.00	ksi = Φ Fu (Aen / Ag)
Ratio:	27.7%	

Stiffener 2 Analysis per AISC Sect. D2, E3 & E7

	Stiffener Type 2	
Gross Area, Ag:	8.7500	in^2
Effective Net Area, Aen:	8.7500	in^2 = Ag U, where U = 1.000
Stiffener Axial, Pu:	115.4	kips
Stiffener Stress, fu:	13.2	ksi = Pu / Ag
b:	16.0000	in = (Df - Dp) / 2 + n + Ws, Upper Pole
b / ts:	12.8000	in
Q, Where Qa = 1.0:	0.8794	= Qa 1.34 - 0.76 (b / ts) (Fy / E)$^{1/2}$
r:	0.3608	in^3
K L / r:	10.2537	
Φ:	0.9000	
Axial Capacity, ΦFcr:	51.00	ksi = Φ Q [0.658$^{Q Fy / Fe}$] Fy
Φ:	0.9000	
Ten. Yielding Cap., ΦFnt:	58.50	ksi = Φ Fy
Φ:	0.7500	
Ten. Rupture Cap., ΦFnr:	60.00	ksi = Φ Fu (Aen / Ag)
Ratio:	25.9%	

Analysis Summary:

Bridge Stiffener Type 1	*Bridge Stiffener Type 2*
Weld Analysis Ratio: 56.9% PASS	Weld Analysis Ratio: 16.4% PASS
Pole Analysis Ratio: 97.6% PASS	Pole Analysis Ratio: 24.2% PASS
Stiffener Analysis Ratio: 27.7% PASS	Stiffener Analysis Ratio: 25.9% PASS

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v2.1, Effective Date: 05-03-17

Date: 7/2/2021
Project No: 37521-0073.007.7700
Site Name: Milford JAI-ALAI
Site Number/BUN: 876309
Description: 120' Monopole
Owner: CCI
Engineer: RMF

Welded Bridge Stiffener Analysis per TIA-222-H & AISC 13th Ed. (Black)

General Parameters and Loading:

Flange Elevation:	30.00	ft
TIA Reference Standard:	TIA-222-H	
AISC Manual:	13th Ed. (Black)	
Method:	LRFD	
ASD Stress Increase, ASIF:	N/A	
Moment, Muf:	1484.0	k-ft
Axial, Puf:	30.3	kips
Shear, Vf:	26.0	kips

Pole Parameters:

	Upper Pole	Lower Pole	
Pole Diameter, Dp:	30.00	36.00	in
Pole Thickness, tp:	0.3750	0.3750	in
Pole Fy:	42	42	ksi
Pole Fu:	63	63	ksi
Flange Diameter, Df:	47.00	47.00	in

Bridge Stiffener Parameters:

	Stiffener Type 1	Stiffener Type 2	
Qty. Stiffeners:	3	3	
Upper Weld Length, L1:	45.25	47.25	in
Lower Weld Length, L2:	42.25	44.13	in
Weld Size, w:	0.3750	0.3750	in
Electrode:	E70	E80	
Effective Stiffener Width, Ws:	7.00	7.00	in
Stiffener Thickness, ts:	1.25	1.25	in
Notch, n:	0.50	0.50	in
Stiffener Fy:	65	65	ksi
Stiffener Fu:	80	80	ksi
Unbraced Length, L:	5.63	4.63	in
K:	0.80	0.80	
Stiffener Spacing:	Symmetric	Symmetric	
Start Angle, for Symmetric:	22.5	75	degrees
Stiffener Circle:	55.00	55.00	in = Df + 2 n + Ws
Upper Eccentricity, e1:	12.50	12.50	in = (Df - Dp) / 2 + n + Ws / 2
Lower Eccentricity, e2:	9.50	9.50	in = (Df - Dp) / 2 + n + Ws / 2

Flange Bolt Parameters:

Number of Bolt Circles: (1) Bolt Circle

	Bolt Circle 1	Bolt Circle 2	
Qty. Bolts:	0	0	
Bolt Diameter:	1.50	0.00	in
Bolt Circle:	41.00	0.00	in
Bolt Spacing:	Symmetric	Symmetric	
Start Angle, for Symmetric:	0	0	degrees
Bolt Area, Ag:	0.0000	0.0000	in
Max. Tension:	0.00	0.00	kips
Max. Net Tension:	0.00	0.00	kips
Max. Net Compression:	0.00	0.00	kips
Moment to Bolt Circle:	0.00	0.00	k-ft
Axial to Bolt Circle:	0.00	0.00	kips
Shear to Bolt Circle:	0.00	0.00	kips
Equivalent Bolt Circle:	0.00	0.00	in

Weld Analysis per AISC Tables 8-4 & 8-3:

Upper Pole	Stiffener Type 1	Stiffener Type 2	
D:	6	6	Num. of Sixteenths in Weld
a:	0.2762	0.2646	= e1 / L1
k:	0	0	
C:	3.1945	3.2460	Tabulated Cofficient
C1:	1.0000	1.0300	Coefficient for Electrode
Φ:	0.7500	0.7500	
Stiffener Axial, Pu:	221.0	221.0	kips
Axial Capacity, ΦPn:	650.5	710.9	kips = Φ C C1 D L
Ratio:	34.0%	31.1%	
Lower Pole			
D:	6	6	Num. of Sixteenths in Weld
a:	0.2249	0.2153	= e2 / L2
k:	0	0	
C:	3.4106	3.4488	Tabulated Cofficient
C1:	1.0000	1.0300	Coefficient for Electrode
Φ:	0.7500	0.7500	
Stiffener Axial, Pu:	221.0	221.0	kips
Axial Capacity, ΦPn:	648.4	705.3	kips = Φ C C1 D L
Ratio:	34.1%	31.3%	

Pole Analysis per AISC Table J2.5 & Sect. J4.2:

Upper Pole	Stiffener Type 1	Stiffener Type 2	
Stiffener Axial, Pu:	221.0	221.0	kips
Effective Throat, te:	0.2651	0.2651	in = 0.707 w
Shear Stress, fuv:	2.4	2.3	kips/in= Pu / (2 L1)
Section Modulus, S:	682.5	744.2	in^2 = $L1^2$ / 3
Bending Stress, fub:	4.0	3.7	kips/in = Pu e1 / S
Combined Stress, fu:	4.7	4.4	kips/in = $(fuv^2 + fub^2)^{1/2}$
Φ:	1.0000	1.0000	
Stress Capacity, ΦFn	9.5	9.5	kips/in = Φ 0.6 Fy tp
Ratio:	50.0%	46.4%	
Lower Pole			
Stiffener Axial, Pu:	221.0	221.0	kips
Effective Throat, te:	0.2651	0.2651	in = 0.707 w
Shear Stress, fuv:	2.6	2.5	ksi = Pu / (2 L2)
Section Modulus, S:	595.0	649.0	in^2 = $L2^2$ / 3
Bending Stress, fub:	3.5	3.2	ksi = Pu e2 / S
Combined Stress, fu:	4.4	4.1	kips/in = $(fuv^2 + fub^2)^{1/2}$
Φ:	1.0000	1.0000	
Stress Capacity, ΦFn	9.5	9.5	kips/in = Φ 0.6 Fy tp
Ratio:	46.5%	43.3%	

Stiffener 1 Analysis per AISC Sect. D2, E3 & E7

	Stiffener Type 1	
Gross Area, Ag:	8.7500	in^2
Effective Net Area, Aen:	8.7500	in^2 = Ag U, where U = 1.000
Stiffener Axial, Pu:	221.0	kips
Stiffener Stress, fu:	25.3	ksi = Pu / Ag
b:	16.0000	in = (Df - Dp) / 2 + n + Ws, Upper Pole
b / ts:	12.8000	in
Q, Where Qa = 1.0:	0.8794	= Qa 1.34 - 0.76 (b / ts) (Fy / E)$^{1/2}$
r:	0.3608	in^3
K L / r:	12.4708	
Φ:	0.9000	
Axial Capacity, ΦFcr:	50.78	ksi = Φ Q [0.658$^{Q\,Fy\,/\,Fe}$] Fy
Φ:	0.9000	
Ten. Yielding Cap., ΦFnt:	58.50	ksi = Φ Fy
Φ:	0.7500	
Ten. Rupture Cap., ΦFnr:	60.00	ksi = Φ Fu (Aen / Ag)
Ratio:	49.7%	

Stiffener 2 Analysis per AISC Sect. D2, E3 & E7

	Stiffener Type 2	
Gross Area, Ag:	8.7500	in^2
Effective Net Area, Aen:	8.7500	in^2 = Ag U, where U = 1.000
Stiffener Axial, Pu:	221.0	kips
Stiffener Stress, fu:	25.3	ksi = Pu / Ag
b:	16.0000	in = (Df - Dp) / 2 + n + Ws, Upper Pole
b / ts:	12.8000	in
Q, Where Qa = 1.0:	0.8794	= Qa 1.34 - 0.76 (b / ts) (Fy / E)$^{1/2}$
r:	0.3608	in^3
K L / r:	10.2537	
Φ:	0.9000	
Axial Capacity, ΦFcr:	51.00	ksi = Φ Q [0.658$^{Q\,Fy\,/\,Fe}$] Fy
Φ:	0.9000	
Ten. Yielding Cap., ΦFnt:	58.50	ksi = Φ Fy
Φ:	0.7500	
Ten. Rupture Cap., ΦFnr:	60.00	ksi = Φ Fu (Aen / Ag)
Ratio:	49.5%	

Analysis Summary:

Bridge Stiffener Type 1	Bridge Stiffener Type 2
Weld Analysis Ratio: 34.1% PASS	Weld Analysis Ratio: 31.3% PASS
Pole Analysis Ratio: 50.0% PASS	Pole Analysis Ratio: 46.4% PASS
Stiffener Analysis Ratio: 49.7% PASS	Stiffener Analysis Ratio: 49.5% PASS

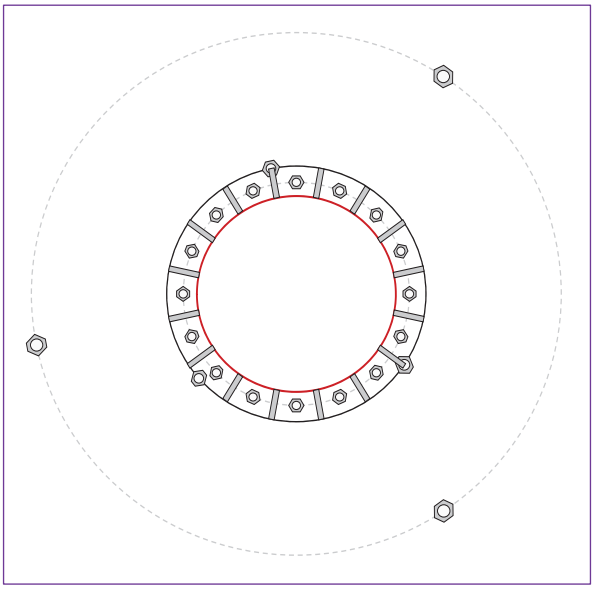
Monopole Base Plate Connection

Site Info	
BU #	876309
Site Name	MILFORD JAI-ALAI
Order #	533279 Rev. 2

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

Applied Loads	
Moment (kip-ft)	2388.52
Axial Force (kips)	45.72
Shear Force (kips)	31.72

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

GROUP 1: (16) 1-1/2" ø bolts (A354-BC N; Fy=109 ksi, Fu=125 ksi) on 41" BC
GROUP 2: (2) 1-3/4" ø bolts (Dywidag N; Fy=120 ksi, Fu=125 ksi) on 47" BC
pos. (deg): 101.3, 221.3

GROUP 3: (1) 2" ø bolts (A193 Gr. B7 N; Fy=105 ksi, Fu=125 ksi) on 47" BC
pos. (deg): 326.3

GROUP 4: (3) 2-1/4" ø bolts (Williams R71 N; Fy=120 ksi, Fu=125 ksi) on 96" BC
pos. (deg): 56.3, 191.3, 303.8

Base Plate Data

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

Stiffener Data

(16) 18"H x 5.5"W x 1"T, Notch: 0.75"
plate: Fy= 50 ksi ; weld: Fy= 70 ksi
horiz. weld: 0.4375" groove, 45° dbl bevelFALSE
vert. weld: 0.25" fillet

Pole Data

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

Analysis Results

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

GROUP 1:		
Pu_t = 42.4	ϕPn_t = 132.19	**Stress Rating**
Vu = 1.98	ϕVn = 82.83	**30.5%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 2:		
Pu_t = 94.02	ϕPn_t = 245.63	**Stress Rating**
Vu = 0	ϕVn = 122.81	**36.5%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 3:		
Pu_t = 82.3	ϕPn_t = 234.38	**Stress Rating**
Vu = 0	ϕVn = 147.26	**33.4%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 4:		
Pu_t = 283.92	ϕPn_t = 382.5	**Stress Rating**
Vu = 0	ϕVn = 191.25	**70.7%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	10.18	(Roark's Flexural)
Allowable Stress (ksi):	32.4	
Stress Rating:	**29.9%**	**Pass**

Stiffener Summary

Horizontal Weld:	**29.5%**	**Pass**
Vertical Weld:	**15.5%**	**Pass**
Plate Flexure+Shear:	**2.0%**	**Pass**
Plate Tension+Shear:	**12.7%**	**Pass**
Plate Compression:	**13.0%**	**Pass**
Pole Summary		
Punching Shear:	**4.1%**	**Pass**

CCIplate

Elevation (ft)	0	*(Base)*

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

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

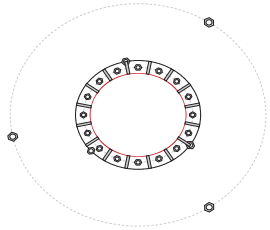
Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η:	l_{tr} (in):	Thread Type	Area Override, in^2	Tension Only
1	1	0	1.5	A354-BC	41	0.5	0	N-Included		No
2	1	22.5	1.5	A354-BC	41	0.5	0	N-Included		No
3	1	45	1.5	A354-BC	41	0.5	0	N-Included		No
4	1	67.5	1.5	A354-BC	41	0.5	0	N-Included		No
5	1	90	1.5	A354-BC	41	0.5	0	N-Included		No
6	1	112.5	1.5	A354-BC	41	0.5	0	N-Included		No
7	1	135	1.5	A354-BC	41	0.5	0	N-Included		No
8	1	157.5	1.5	A354-BC	41	0.5	0	N-Included		No
9	1	180	1.5	A354-BC	41	0.5	0	N-Included		No
10	1	202.5	1.5	A354-BC	41	0.5	0	N-Included		No
11	1	225	1.5	A354-BC	41	0.5	0	N-Included		No
12	1	247.5	1.5	A354-BC	41	0.5	0	N-Included		No
13	1	270	1.5	A354-BC	41	0.5	0	N-Included		No
14	1	292.5	1.5	A354-BC	41	0.5	0	N-Included		No
15	1	315	1.5	A354-BC	41	0.5	0	N-Included		No
16	1	337.5	1.5	A354-BC	41	0.5	0	N-Included		No
17	2	101.3	1.75	Dywidag	47	0.5	0	N-Included	2.62	No
18	2	221.3	1.75	Dywidag	47	0.5	0	N-Included	2.62	No
19	3	326.3	2	A193 Gr. B7	47	0.5	0	N-Included		No
20	4	56.3	2.25	Williams R71	96	0.5	0	N-Included	4.08	No
21	4	191.3	2.25	Williams R71	96	0.5	0	N-Included	4.08	No
22	4	303.8	2.25	Williams R71	96	0.5	0	N-Included	4.08	No

Custom Stiffener Connection

Stiffener	Stiffener Group ID	Location (deg.)	Width (in)	Height (in)	Thickness (in)	H. Notch (in)	V. Notch (in)	Grade (ksi)	Weld Type	Groove Depth (in)	Groove Angle (deg.)	H. Fillet Weld Size (in)	V. Fillet Weld Size (in)	Weld Strength (ksi)
1	1	11.25	5.5	18	1	0.75	0.75	50	Groove	0.4375	45		0.25	70
2	1	33.75	5.5	18	1	0.75	0.75	50	Groove	0.4375	45		0.25	70
3	1	56.25	5.5	18	1	0.75	0.75	50	Groove	0.4375	45		0.25	70
4	1	78.75	5.5	18	1	0.75	0.75	50	Groove	0.4375	45		0.25	70
5	1	101.25	5.5	18	1	0.75	0.75	50	Groove	0.4375	45		0.25	70
6	1	123.75	5.5	18	1	0.75	0.75	50	Groove	0.4375	45		0.25	70
7	1	146.25	5.5	18	1	0.75	0.75	50	Groove	0.4375	45		0.25	70
8	1	168.75	5.5	18	1	0.75	0.75	50	Groove	0.4375	45		0.25	70
9	1	191.25	5.5	18	1	0.75	0.75	50	Groove	0.4375	45		0.25	70
10	1	213.75	5.5	18	1	0.75	0.75	50	Groove	0.4375	45		0.25	70
11	1	236.25	5.5	18	1	0.75	0.75	50	Groove	0.4375	45		0.25	70
12	1	258.75	5.5	18	1	0.75	0.75	50	Groove	0.4375	45		0.25	70
13	1	281.25	5.5	18	1	0.75	0.75	50	Groove	0.4375	45		0.25	70
14	1	303.75	5.5	18	1	0.75	0.75	50	Groove	0.4375	45		0.25	70
15	1	326.25	5.5	18	1	0.75	0.75	50	Groove	0.4375	45		0.25	70
16	1	348.75	5.5	18	1	0.75	0.75	50	Groove	0.4375	45		0.25	70

Plot Graphic



Pier and Pad Foundation

BU # :	876309
Site Name:	MILFORD JAI-ALA
App. Number:	533279 Rev. 2

TIA-222 Revision:	H
Tower Type:	Monopole

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

Superstructure Analysis Reactions		
Compression, P_{comp}:	45.72	kips
Base Shear, Vu_comp:	31.72	kips
Moment, M_u:	921.94	ft-kips
Tower Height, **H**:	120	ft
BP Dist. Above Fdn, bp_{dist}:	4	in
Bolt Circle / Bearing Plate Width, **BC**:	41	in

Foundation Analysis Checks	Capacity	Demand	Rating*	Check
Lateral (Sliding) (kips)	179.56	31.72	**16.8%**	**Pass**
Bearing Pressure (ksf)	23.08	2.24	**9.2%**	**Pass**
*Overturning (kip*ft)*	2710.48	1154.55	**42.6%**	**Pass**
*Pad Flexure (kip*ft)*	4754.85	521.78	**10.5%**	**Pass**
Pad Shear - 1-way (kips)	1254.07	35.24	**2.7%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.164	0.001	**0.7%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	9533.38	0.00	**0.0%**	**Pass**

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

Soil Rating*:	**42.6%**
Structural Rating*:	**10.5%**

Pad Properties		
Depth, **D**:	5.5	ft
Pad Width, W_1:	16	ft
Pad Width, W_2:	21	ft
Pad Thickness, **T**:	7	ft
Pad Rebar Size (Bottom dir. 1), Sp_1:	8	
Pad Rebar Quantity (Bottom dir. 1), mp_1:	17	
Pad Rebar Size (Bottom dir. 2), Sp_2:	8	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	17	
Pad Clear Cover, cc_{pad}:	3	in

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

Soil Properties		
Total Soil Unit Weight, γ:	140	pcf
Ultimate Net Bearing, Qnet:	30.000	ksf
Cohesion, **Cu**:	0.000	ksf
Friction Angle, φ:	40	degrees
SPT Blow Count, N_{blows}:	100	
Base Friction, μ:	0.4	
Neglected Depth, **N**:	3.33	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	N/A	ft

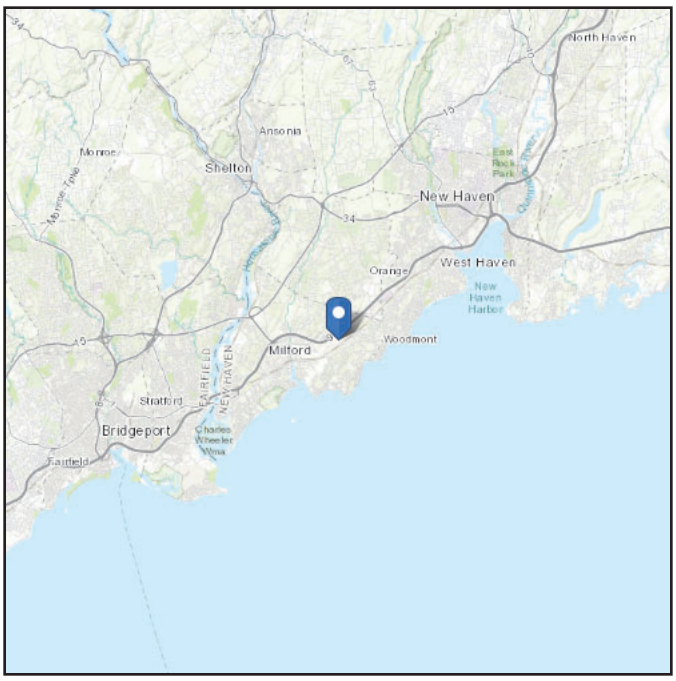
<--Toggle between Gross and Net

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 56.6 ft (NAVD 88)
Latitude: 41.234053
Longitude: -73.022889



Wind

Results:

Wind Speed:	125 Vmph
10-year MRI	77 Vmph
25-year MRI	87 Vmph
50-year MRI	94 Vmph
100-year MRI	101 Vmph
Data Source:	ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, incorporating errata of March 12, 2014
Date Accessed:	Wed Jan 13 2021

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

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

Mountainous terrain, gorges, ocean promontories, and special wind regions should be examined for unusual wind conditions.

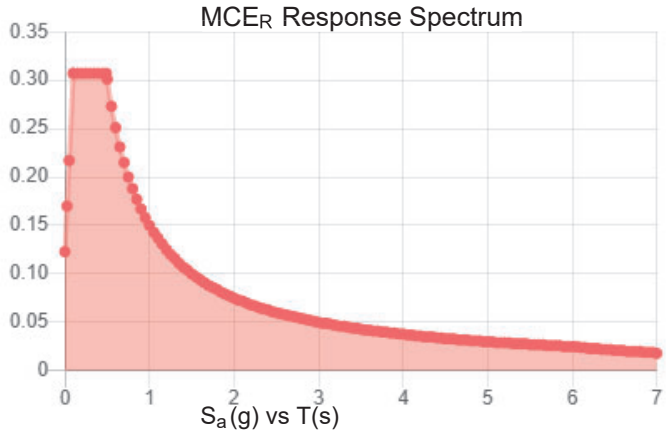
Seismic

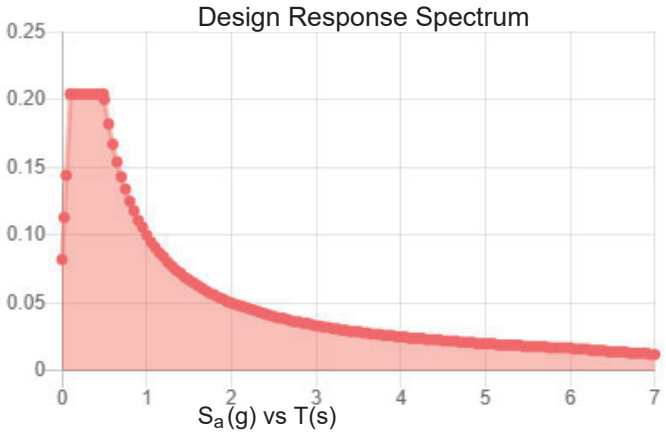
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.192	S_{DS} :	0.204
S_1 :	0.063	S_{D1} :	0.1
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.101
S_{MS} :	0.307	PGA_M :	0.162
S_{M1} :	0.15	F_{PGA} :	1.597
		I_e :	1

Seismic Design Category B





Data Accessed: Wed Jan 13 2021

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

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Wed Jan 13 2021

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

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

APPENDIX D

MODIFICATION DRAWINGS

MODIFIED 120'-0" MONOPOLE

BU #876309; MILFORD JAI-ALAI

311 OLD GATE LANE
MILFORD, CONNECTICUT 06460
NEW HAVEN COUNTY
LAT: 41° 14' 02.59"; LONG: -073° 01' 22.40"
ORDER: 533279 REV. 2; WO: 1989683

PROJECT CONTACTS
STRUCTURE OWNER: CROWN CASTLE MOD PM: JOHN MCGEE AT JOHN.MCGEE@CROWNCASTLE.COM PH: (704) 877-8397
ENGINEER OF RECORD: PJFMOD@PAULJFORD.COM

WIND DESIGN DATA	
REFERENCE STANDARD	ANSI/TIA-222-H-2017
LOCAL CODE	2018 CONNECTICUT STATE BUILDING CODE
BASIC WIND SPEED (MPH)	125
ICE THICKNESS (IN)	1.5
ICE WIND SPEED (MPH)	50
SERVICE WIND SPEED (MPH)	60
RISK CATEGORY	II
EXPOSURE CATEGORY	C
MAXIMUM TOPOGRAPHIC FACTOR, K_{ZT}	1.0

SHEET INDEX	
SHEET NUMBER	DESCRIPTION
T-1	TITLE SHEET
MI-1	MI CHECKLIST
N-1	GENERAL NOTES
S-1	MONOPOLE PROFILE
S-2	SHAFT REINFORCING
S-3	BASE DETAILS

HOT WORK INCLUDED	
NA	BASE GRINDING ONLY
X	BASE WELDING (AND GRINDING)
NA	AERIAL GRINDING ONLY
X	AERIAL WELDING (AND GRINDING)

TOWER MANUFACTUER: ROHN

TOWER MANUFACTUERER #: 34738

THE ASSOCIATED WO NUMBER FOR THIS PROJECT IS 1976014.

QUALIFIED ENGINEERING SERVICES ARE AVAILABLE FROM PAUL J. FORD & COMPANY TO ASSIST CONTRACTORS IN CLASS IV RIGGING PLAN REVIEWS. FOR REQUESTED QUALIFIED ENGINEERING SERVICES, PLEASE CONTACT PJFMOD@PAULJFORD.COM.

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

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

REV	DATE	DESCRIPTION

7-6-21

PAUL J. FORD & COMPANY
250 E Broad St, Ste 600 Columbus, OH 43215
Phone 614.221.6679
www.pauljford.com

CROWN CASTLE
3 CORPORATE PARK DRIVE SUITE 101 CLIFTON PARK, NY 12065
PH: (602) 345-1751

BU #876309; MILFORD JAI-ALAI
MILFORD, CONNECTICUT
MODIFIED 120'-0" MONOPOLE

PROJECT No:	A37521-0073.007.7700
DRAWN BY:	RMK
DESIGNED BY:	TJD
CHECKED BY:	
DATE:	7/1/2021

TITLE SHEET

T-1

V:\0.37521\0073.007.DWG

CED-FRM-10354 MI CHECKLIST

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

THE MI CHECKLIST SHALL BE REVIEWED PRIOR TO THE START OF CONSTRUCTION. ALL PARTIES TO THE MODIFICATION SHALL UNDERSTAND CROWN REQUIREMENTS AND INSPECTIONS/DOCUMENTATION THAT ARE APPLICABLE TO THE SOW THEY ARE PERFORMING. ERRORS ON THE CHECKLIST DO NOT ABSOLVE THE GC OR MI INSPECTOR FROM PERFORMING/COLLECTING DOCUMENTATION.

MODIFICATION INSPECTION NOTES

GENERAL

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

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

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

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

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

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

SERVICE LEVEL COMMITMENT

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

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

REQUIRED PHOTOS

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

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

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

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

REV	DATE	DESCRIPTION

STATE OF CONNECTICUT · JUSTIN T. KLINE · No. 30301 · LICENSED PROFESSIONAL ENGINEER

7-6-21

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PH: (602) 345-1751

BU #876309; MILFORD JAI-ALAI
MILFORD, CONNECTICUT
MODIFIED 120'-0" MONOPOLE

PROJECT No:	A37521-0073.007.7700
DRAWN BY:	RMK
DESIGNED BY:	TJD
CHECKED BY:	
DATE:	7/1/2021

MI CHECKLIST

MI-1

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GENERAL NOTES:

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

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

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

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

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

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7-6-21

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BU #876309; MILFORD JAI-ALAI
MILFORD, CONNECTICUT
MODIFIED 120'-0" MONOPOLE

PROJECT No:	A37521-0073.007.7700
DRAWN BY:	RMK
DESIGNED BY:	TJD
CHECKED BY:	
DATE:	7/1/2021

GENERAL NOTES

N-1

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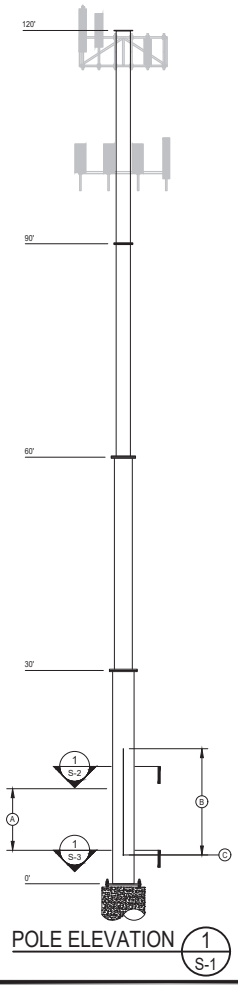

POLE ELEVATION 1 S-1

TOWER MODIFICATION SCHEDULE

	ELEVATION	TOWER MODIFICATION DESCRIPTION	REFERENCE SHEETS
A	4'-9" TO 14'-9"	REMOVE EXISTING SHAFT REINFORCING. SEE REMOVAL CHART ON THIS SHEET.	S-1
B	4'-0" TO 19'-0"	INSTALL NEW SHAFT REINFORCING	S-2 & S-3
C	4'-0"	CONTRACTOR SHALL POST SIGNAGE INDICATING OBSTRUCTED CLIMBING FACILITIES	S-1

** CONTRACTOR NOTE: REFER TO THE OBSTRUCTION CLIMBING FACILITIES SIGNAGE SHEET OF CROWN DOCUMENT CAT-CED-10300 FOR INFORMATION REGARDING OBSTRUCTION SIGNAGE.

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

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

MANUFACTURER POLE SPECIFICATIONS

TAPER	0 IN/FT
BASE PLATE STEEL	ASTM A36 (FY=36KSI)
ANCHOR RODS	1 1/2"ø ASTM A354-BC
FLANGE BOLTS	1"ø ASTM A325

SHAFT SECTION DATA

SHAFT SECTION	SECTION LENGTH (FT)	POLE SHAFT THICKNESS (IN)	LAP SPLICE (FT)	DIAMETER ACROSS FLATS (IN)		POLE GRADE (KSI)	FLANGE PLATE GRADE (KSI)	POLE SHAPE
				@ TOP	@ BOTTOM			
1	30.000	0.2500		24.000	24.000	42	36	ROUND
2	30.000	0.3750		24.000	24.000	42	36	ROUND
3	30.000	0.3750		30.000	30.000	42	36	ROUND
4	30.000	0.3750		36.000	36.000	42	36	ROUND

NOTE: DIMENSIONS SHOWN DO NOT INCLUDE GALVANIZING TOLERANCES

NEW REINFORCING SCHEDULE

BOTTOM ELEVATION	TOP ELEVATION	PART NUMBER	FLAT # / DEGREE	TERMINATION BOLTS (BOTTOM)	TERMINATION BOLTS (TOP)	MAXIMUM INTERMEDIATE BOLT SPACING	BOLT QUANTITY PER PLATE	STEEL WEIGHT PER PLATE (BLACK)	TOTAL BOLT QUANTITY	TOTAL STEEL WEIGHT (BLACK)
4' - 0"	19' - 0"	CCI-SFP-04012515	35 & 320	6	6	27"	17	255 LBS.	34	510 LBS.
4' - 0"	19' - 0"	WCFP-04012515 #1	153	0	6	27"	11	255 LBS.	11	255 LBS.
									45	765 LBS.

BOLT COUNT BY LENGTH

LENGTH	QTY
SHORT	45
MEDIUM	0
LONG	0
TOTAL	45

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

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

NEXGEN2	APPROVED	SPECIALTY FASTENERS	NA

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

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

ALLOWABLE FLAT PLATE CENTERING TOLERANCE	3/8"

GC SHALL REDLINE ALL DEVIATIONS FROM CENTER, INCLUDING THOSE WITHIN TOLERANCE.

3. GC SHALL REPLACE ANY STEP BOLTS AND STEP BOLT CLIPS THAT INTERFERE WITH THE INSTALLATION OF FLAT PLATE. REFERENCE CED-CAT-10300 FOR APPROVED OPTIONS. CCI-SB-0100 IS THE DEFAULT OPTION; OTHER OPTIONS MAY BE REQUIRED FOR FIT-UP
4. FOR PLATES STARTING AT 6", THE BOTTOM OF THE FLAT PLATE SHALL BEGIN AT 6" ± 1". FOR SINGLE PLATES OR MULTIPLE PLATES SPLICED TOGETHER, THE BOTTOM OF THE FLAT PLATE RUN SHALL BEGIN AT THE PROPOSED ELEVATION ± 3". FOR MULTIPLE PLATES SPLICED TOGETHER, THE TOP OF THE FLAT PLATE IS TO BE PLACED SUCH THAT THERE IS NO MORE THAN 3" DIFFERENCE BETWEEN THE ACTUAL OVERALL LENGTH OF THE SPAN AND THE PROPOSED OVERALL LENGTH OF THE SPAN, FROM THE BOTTOM OF THE BOTTOM PLATE TO THE TOP OF THE PLATE
5. SHIMS FOR MONOPOLE REINFORCEMENT MEMBER SHALL BE REQUIRED WHERE GAPS BETWEEN THE POLE SHAFT AND REINFORCING MEMBER EXIST AT FASTENER LOCATIONS. FOR INTERMEDIATE CONNECTIONS, THE MINIMUM SHIM LENGTH AND WIDTH SHALL BE THE WIDTH OF THE REINFORCING MEMBER. FOR TERMINATION CONNECTIONS, A CONTINUOUS SHIM PLATE (PREFERRED) OR EQUIVALENT INDIVIDUAL SHIM PLATES THE WIDTH OF THE REINFORCING MEMBER MAY BE USED. SHIM THICKNESSES SHALL BE NO LESS THAN 1/16". STACKING OF SHIMS IS PERMITTED. FINGER SHIMS AND HORSESHOE SHIMS ARE PERMITTED. SINGLE AND STACKED SHIMS IN BOLT TERMINATION REGIONS SHALL BE NO GREATER THAN A TOTAL OF ½" WITHOUT EOR APPROVAL. SINGLE AND STACKED SHIMS AT INTERMEDIATE CONNECTIONS SHALL BE NO GREATER THAN A TOTAL OF 5/8" WITHOUT EOR APPROVAL.
6. SHIM MATERIAL SHALL BE STEEL GRADE A36 OR GREATER IF WELDED, UNO, AND SHALL REQUIRE MTR; IF SHIMS ARE NOT WELDED, THERE IS NO MINIMUM REQUIRED STEEL GRADE.
7. IF UNEXPECTED HOLES ARE FOUND IN A LOCATION WHERE FLAT PLATE IS PROPOSED TO BE INSTALLED, THE GC SHALL NOT PLACE NEW BOLT HOLES WITHIN A CENTER-TO-CENTER DISTANCE OF 3 TIMES THE DIAMETER OF THE LARGER OF THE TWO HOLES, WITHOUT EOR APPROVAL. EXISTING HOLES MAY INCLUDE BUT ARE NOT LIMITED TO EMPTY BOLT HOLES AND JACKING NUTS WITH CENTER HOLES.

REMOVAL CHART

TYPE OF MODIFICATION	FLAT / ANGLE	START ELEVATION	END ELEVATION
MP304 SHAFT REINFORCING	150°	4'-9"	14'-9"

7-6-21

CROWN CASTLE US PATENT NOS 8,046,972; 8,156,712; 7,849,659; 8,424,269 AND PATENT PENDING

REV	DATE	DESCRIPTION

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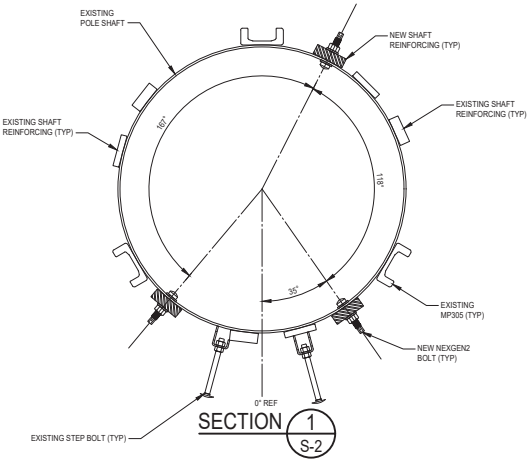
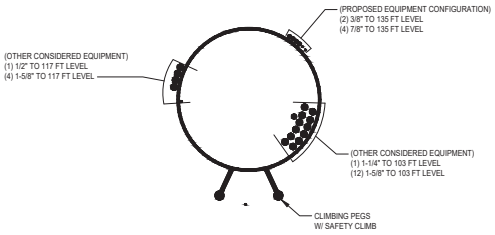
MONOPOLE PROFILE

S-1

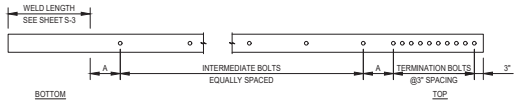
V1.0 37521-0073.007.DWG



SECTION 1 / S-2



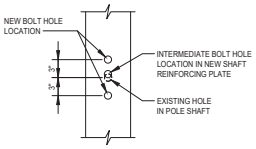
COAX LAYOUT 2 / S-2



CUSTOM WELDED FLAT PLATE DETAIL

NOTE: "A" DIMENSION MAY VARY, NOT TO EXCEED MAXIMUM INTERMEDIATE BOLT SPACING

CUSTOM FLAT PLATE PART NUMBER BREAKDOWN



INTERMEDIATE BOLT HOLE FIX

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JUSTIN T. KLINE
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SHAFT REINFORCING

S-2

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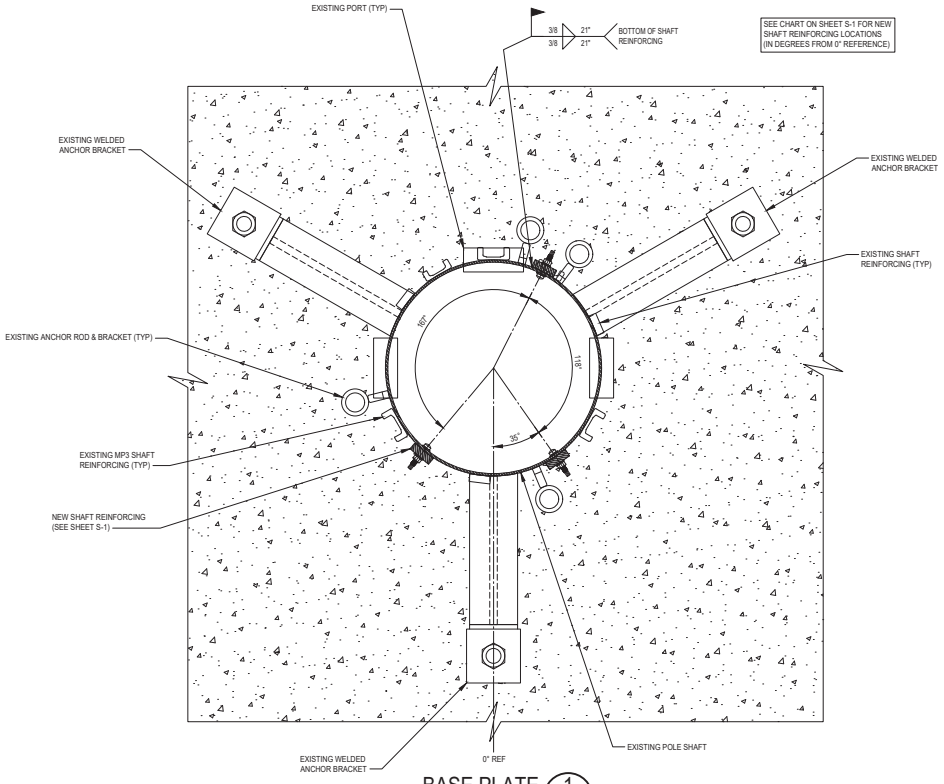


BASE PLATE 1 / S-3

REV	DATE	DESCRIPTION

PAUL J. FORD & COMPANY
250 E Broad St, Ste 400 Columbus, OH 43215
Phone 614.221.6679
www.pauljford.com

CROWN CASTLE
3 CORPORATE PARK DRIVE SUITE 101 CLIFTON PARK, NY 12065
PH: (602) 345-1751

BU #876309; MILFORD JAI-ALAI
MILFORD, CONNECTICUT
MODIFIED 120'-0" MONOPOLE

PROJECT No:	A37521-0073.007.7700
DRAWN BY:	RMK
DESIGNED BY:	TJD
CHECKED BY:	
DATE:	7/1/2021

BASE DETAILS

S-3

STATE OF CONNECTICUT
JUSTIN T. KLINE
No. 30301
LICENSED PROFESSIONAL ENGINEER
7-6-21

V:\0.3\521\0073.007.DWG

ATTACHMENT 5

Date: **May 27, 2021**

Kimley-Horn and Associates, Inc.
421 Fayetteville Street, Suite 600
Raleigh, NC 27601
(919) 677-2000
CrownMounts@kimley-horn.com

Subject:	**Mount Replacement Analysis Report**	
Carrier Designation:	**AT&T Mobility Equipment Change-Out**	
	Carrier Site Number:	S2814
	Carrier Site Name:	S2814
Crown Castle Designation:	**BU Number:**	876309
	Site Name:	MILFORD JAI-ALAI
	JDE Job Number:	623660
	Order Number:	533279, Rev. 2
Engineering Firm Designation:	**Kimley-Horn Project Number:**	019558055
Site Data:	**311 Old Gate Ln, Milford, New Haven County, CT 06460**	
	Latitude 41° 14' 2.59" Longitude -73° 1' 22.40"	
Structure Information:	**Tower Height & Type:**	**120 ft Monopole**
	Mount Elevation:	**83 ft**
	Mount Type:	**14.5 ft Sector Frames**

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

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

Sector Frames (Typical) **Sufficient**

This analysis has been performed in accordance with the 2018 International Building Code based upon an ultimate 3-second gust wind speed of 125 mph. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Wassan Nakkash, E.I.
under supervision of Steven C Ball.

Respectfully Submitted by:

Steven C. Ball, P.E., S.E.

Lic. #PEN.0020813, Exp. 1/31/2022
Kimley-Horn and Associates, Inc. COA #PEC.0000738

5.28.21

TABLE OF CONTENTS

1) INTRODUCTION

The mounting configuration consists of (3) proposed 14.5 ft Sector Frames designed by CommScope.

2) ANALYSIS CRITERIA

Building Code:	2018 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	125 mph
Exposure Category:	C
Topographic Factor at Base:	1.0
Topographic Factor at Mount:	1.0
Ice Thickness:	1 in
Wind Speed with Ice:	50 mph
Live Loading Wind Speed:	30 mph
Man Live Load at Mount Pipes:	500 lb

Table 1 – Proposed Equipment Configuration

Elevation (ft)		Antennas			
Mount	**Centerline**	**#**	**Manufacturer**	**Model**	
83	83	3	CCI	Antennas DMP65R-BU8D	(3) Proposed 14.5 ft Sector Frames designed by CommScope
		3	CCI	Antennas TPA65R-BU8D	
		1	Raycap	DC9-48-60-24-8C-EV	
		1	Raycap	DC6-48-60-0-8F	
		3	Ericsson	RRUS 4478 B14_CCIV2	
		3	Ericsson	RRUS 4449 B5/B12	
		3	Ericsson	RRUS 4415 B30	
		3	Ericsson	RRUS 8843 B2/B66A	

3) ANALYSIS PROCEDURE

Table 2 – Documents Provided

Document	Remarks	Reference	Source
Mount Analysis	Kimley-Horn	9703221	CCISites

3.1) Analysis Method

RISA-3D (version 17.02.00), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

A proprietary tool internally developed by Kimley-Horn was used to calculate wind loading on all appurtenances, dishes and mount members 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 *Mount Analysis* (Revision D).

3.2) Assumptions

1) The antenna mounting system (including any considered modifications) was properly fabricated, installed and maintained in good condition in accordance with its original design, TIA standards, and/or manufacturer specifications.
2) The configuration of antennas, mounts, and other appurtenances are as specified in Table 1 and the provided reference information.
3) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
4) The analysis will be required to be revised if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members that could not be verified at this time.
5) Any referenced prior structural modifications to the tower mounting system are assumed to be installed as shown per available data unless noted otherwise.
6) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	ASTM A36 (Gr. 36)
HSS (Rectangular)	ASTM A36 (Gr. 36)
Pipe	ASTM A53 (Gr. B-35)
Connection Bolts	ASTM A325
Threaded Rods	ASTM A36 (Gr. 36)

This analysis may be affected if any assumptions are not valid or have been made in error. Kimley-Horn 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

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1	Vertical Pipe	M1	83	59%	Pass
1	Front Face Horizontal	M34A		46%	Pass
1	Mount Pipes	M40		21%	Pass
1	Stand Off Horizontals	M30		19%	Pass

Structure Rating (max from all components) =	59%

Notes:
1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
2) A structure rating of 105% or less is within engineering tolerances and considered acceptable.
3) All sectors are typical.

4.1) Recommendations

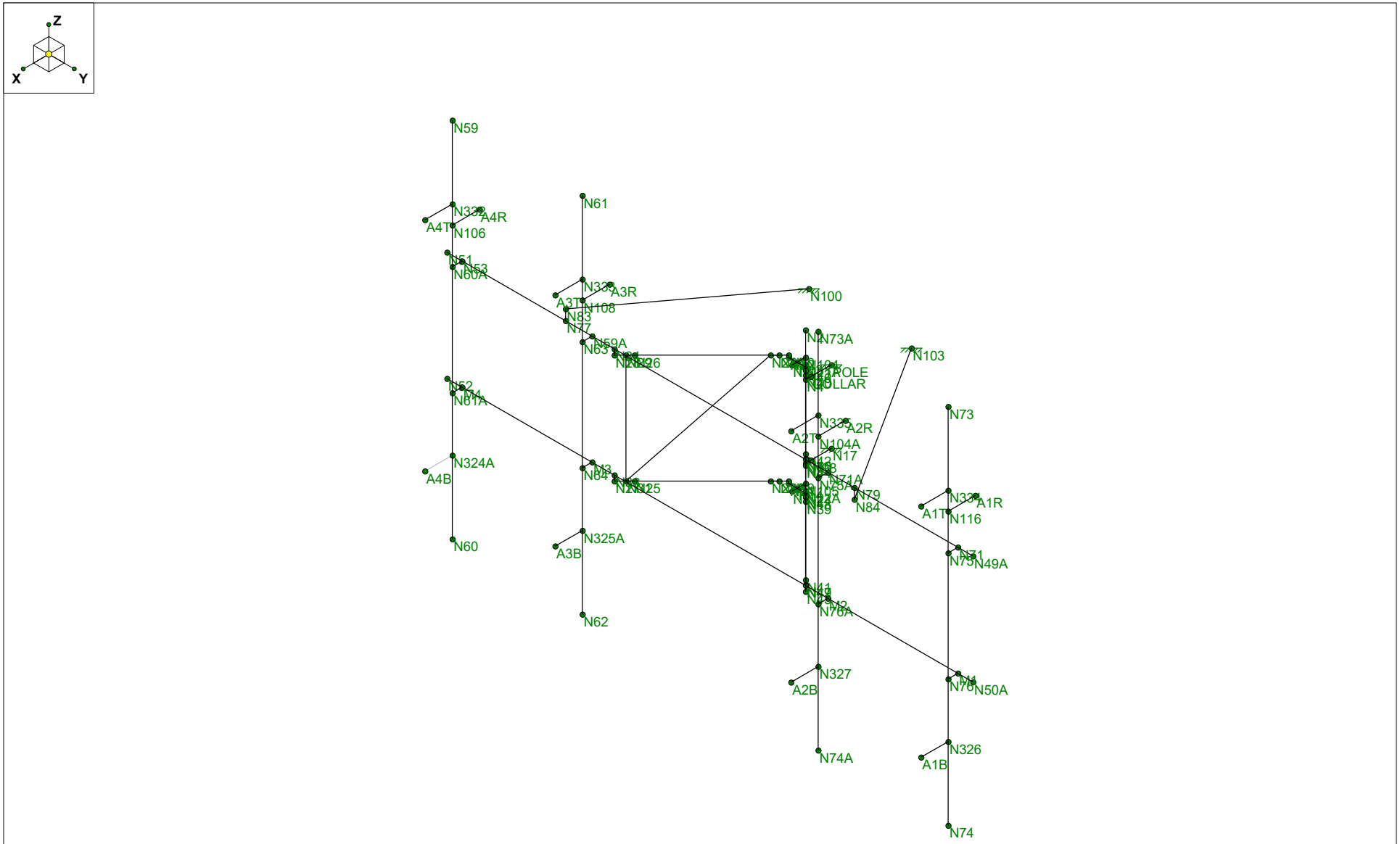
The proposed mounting configuration will have sufficient capacity to carry the referenced loading. In order for the results of this analysis to be considered valid, the following mounting configuration shall be installed:

- **Replace existing mounts with a new CommScope MCG22HDX14-12-H10 tri-sector kit. Vertically center all equipment on mount face.**

Beyond the mount replacement, no structural modifications are required at this time, provided that the above-listed changes are implemented.

APPENDIX A

WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

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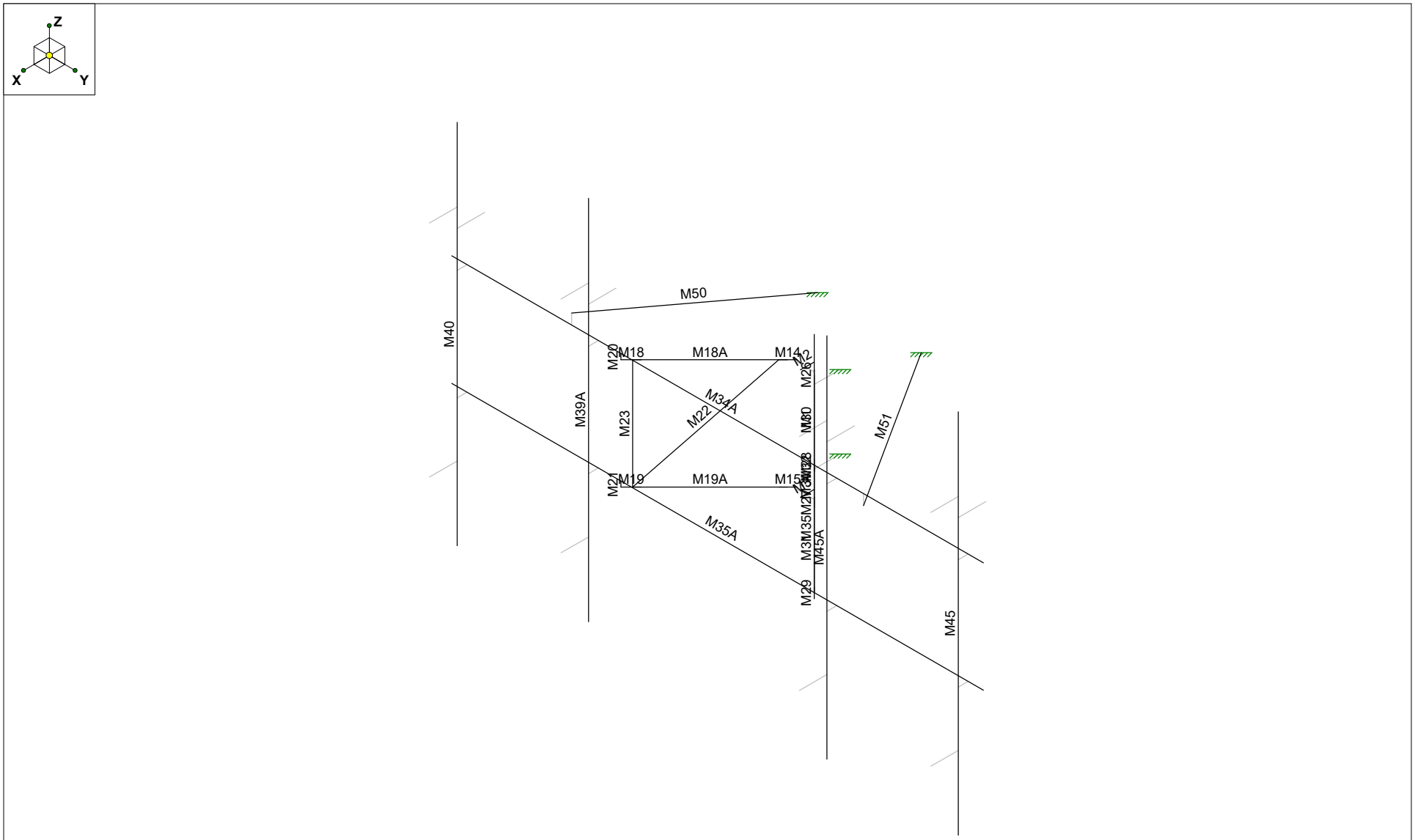

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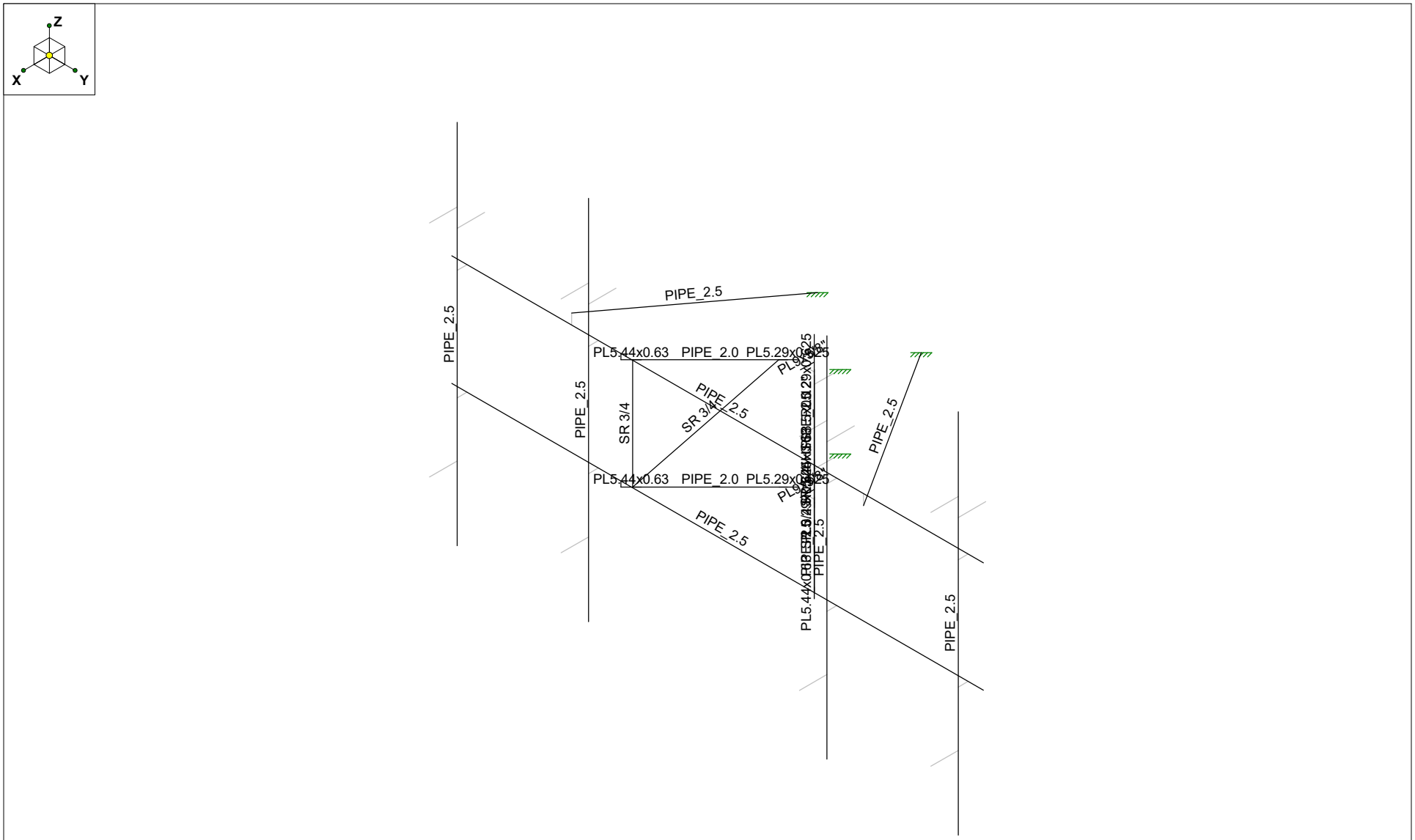

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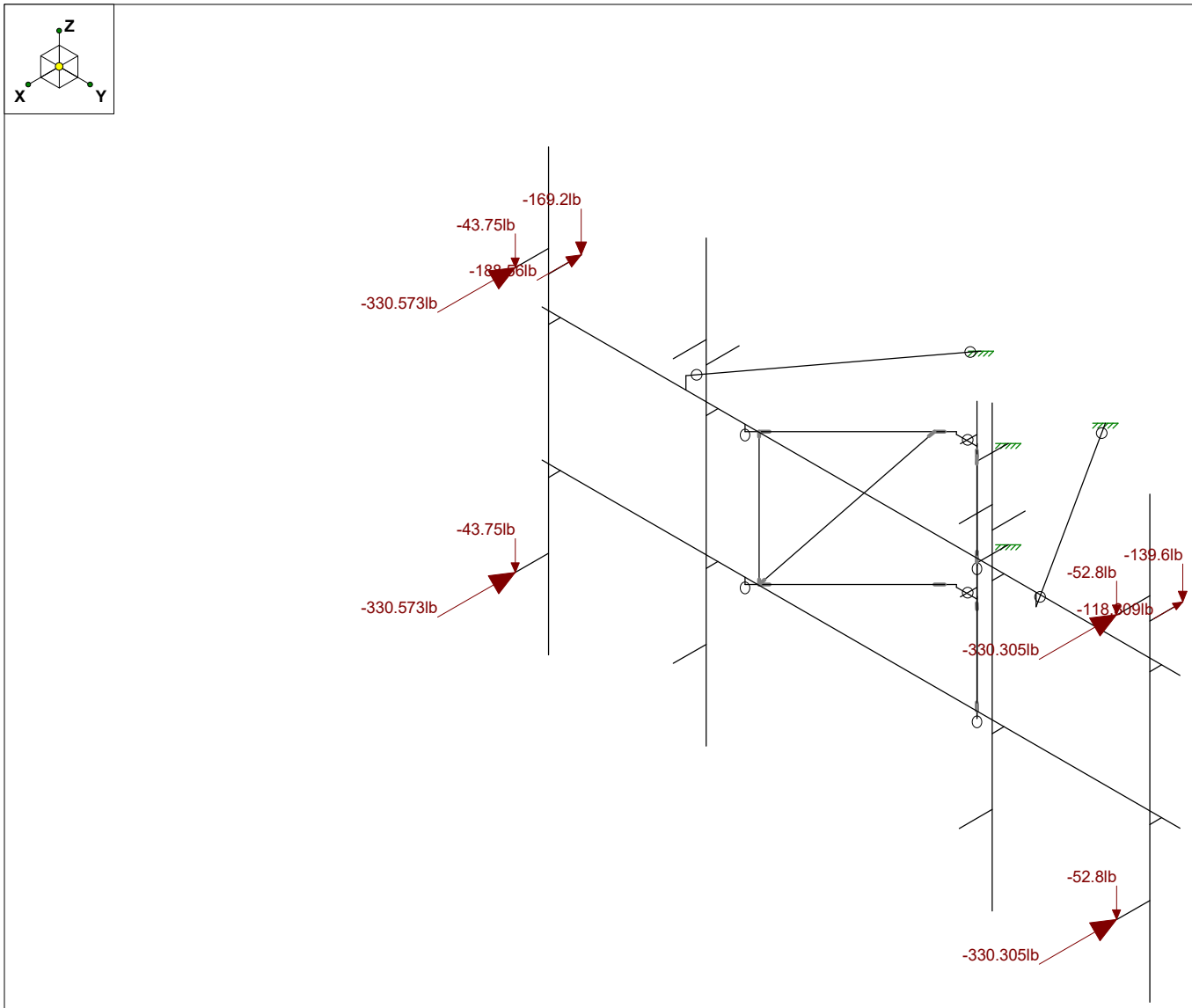

Loads: LC 1, Summary: 1.0D + 1.0W
Envelope Only Solution

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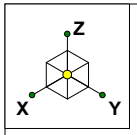

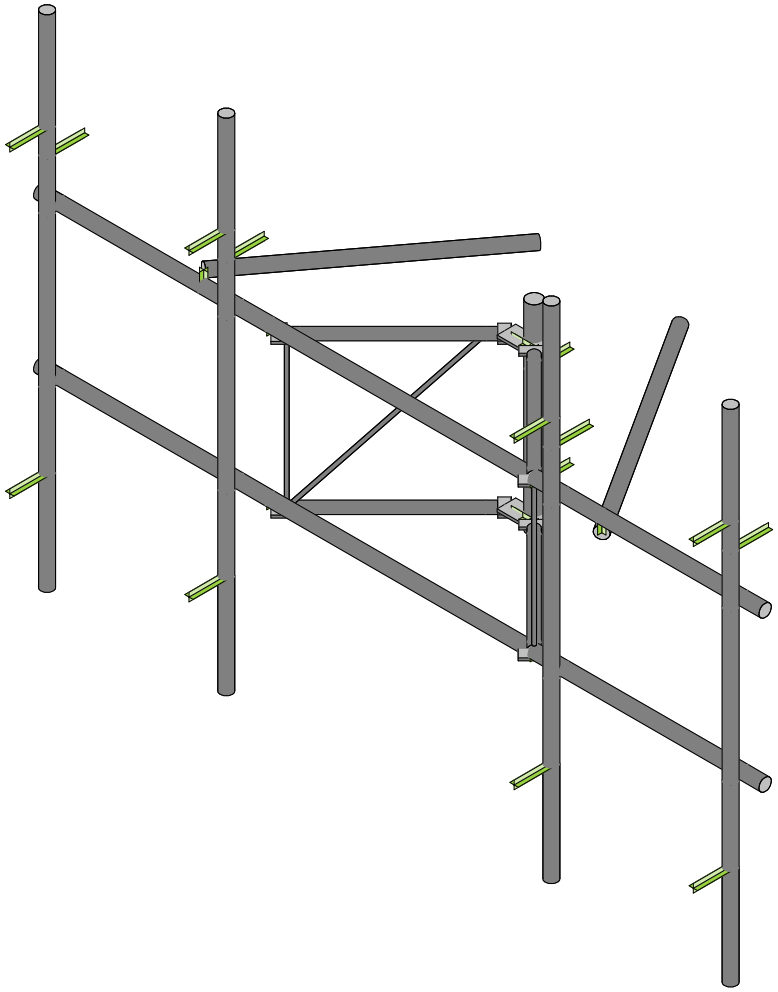

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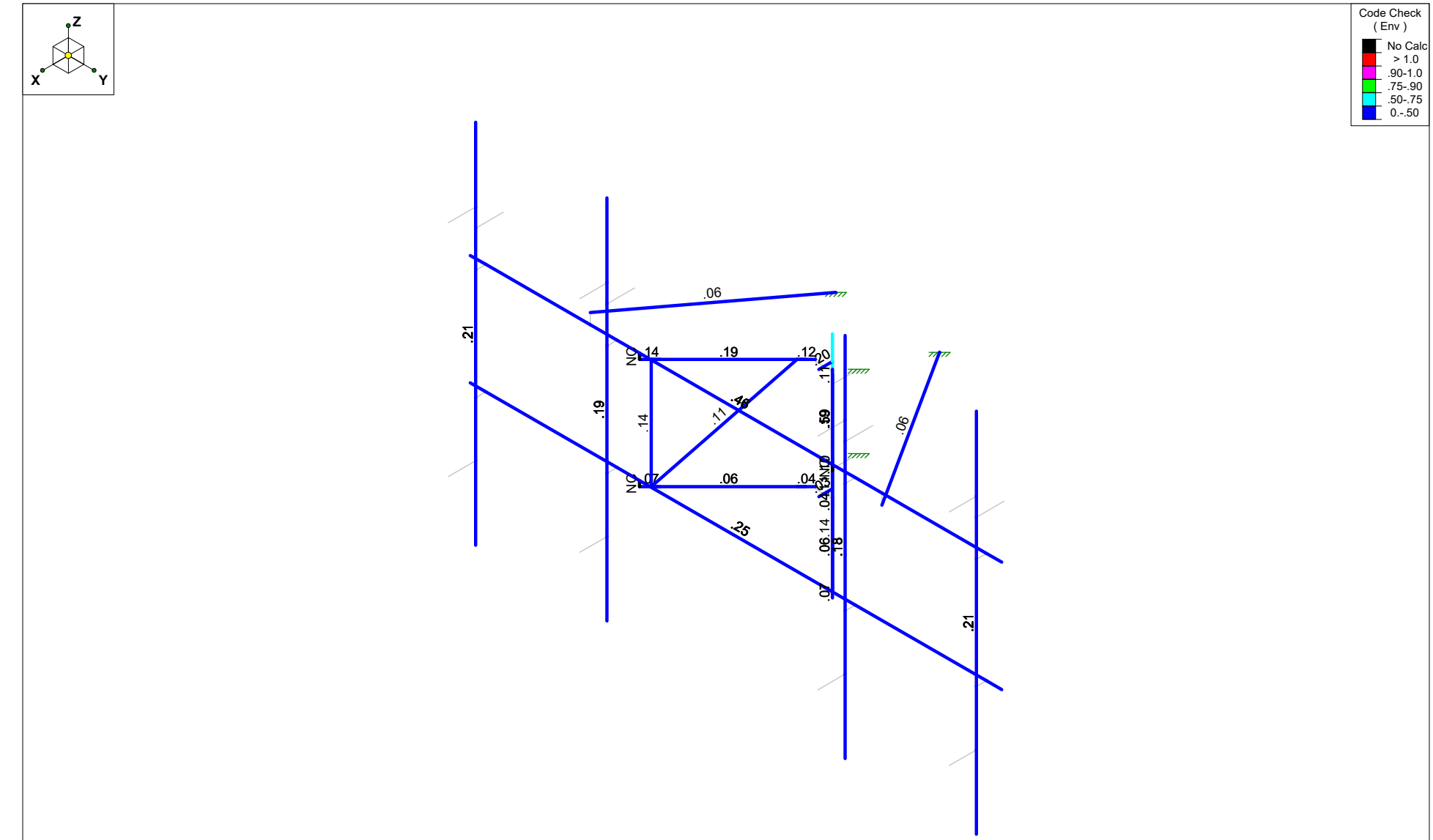

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Envelope Only Solution

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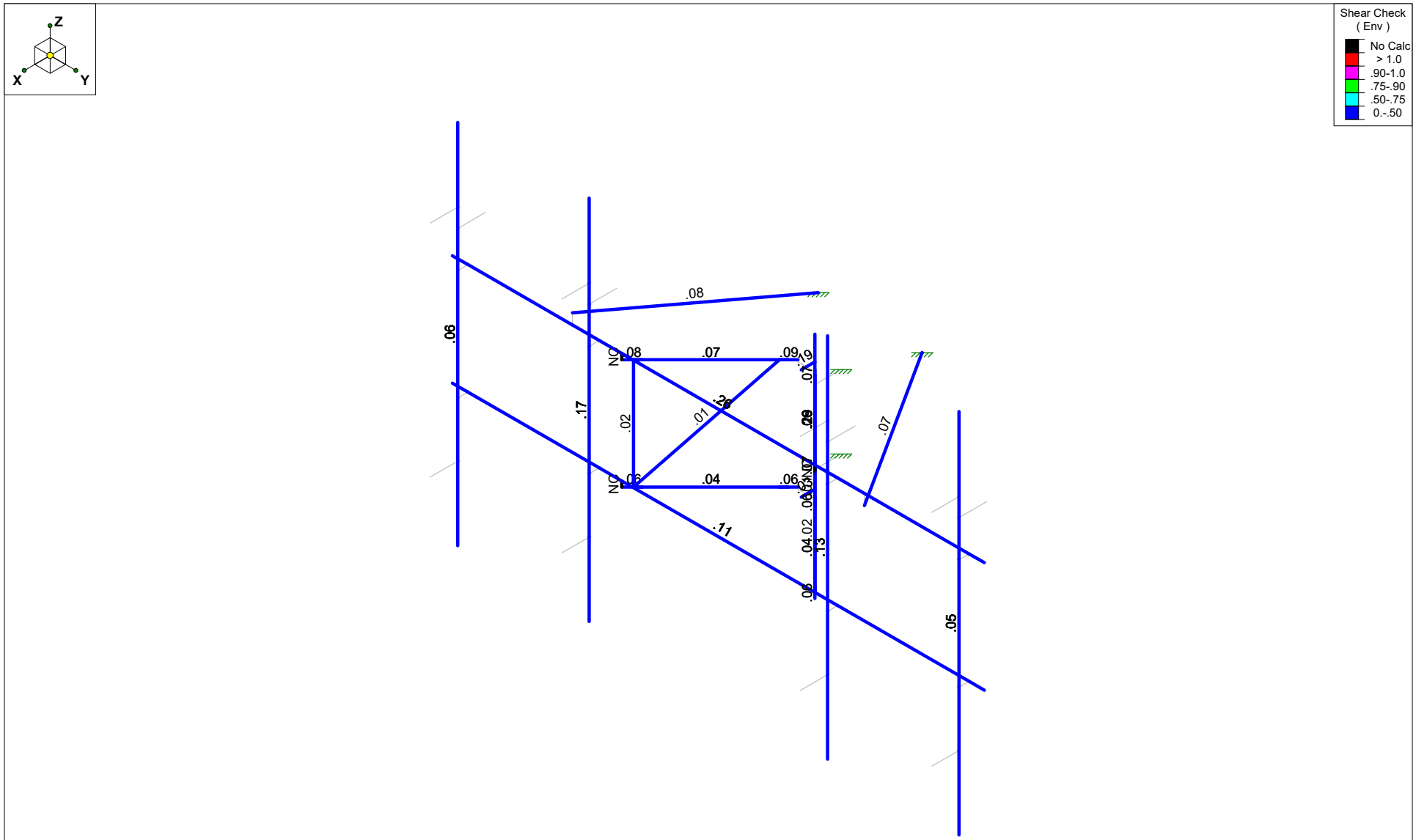

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APPENDIX B

SOFTWARE INPUT CALCULATIONS

General Criteria	
TIA Standard	H
IBC Edition	2018
Structure Class	-
Risk Category	II

Site-Specific Criteria	
Exposure Category	C
Topographic Factor, K_{zt}	1.00
Structure Base Elev. (AMSL), z_s (ft)	56.60
Ground Effect Factor, K_e	1.00

Mount & Structure Criteria	
Mount Elevation (AGL) (ft)	83.00
Structure Height (ft)	120.00
Structure Type	Monopole

Constants	
Wind Direction Probability Factor, K_d	0.95
Gust Effect Factor, G_h	1
Shielding Factor, K_a **(antenna)**	0.9
Shielding Factor, K_a **(mount)**	0.9

Wind Summary	
Basic Wind Speed w/o Ice, **V** (mph)	125.00
Velocity Pressure Coeff., K_z	1.22
Velocity Pressure, q_z **(w/o Ice)** (psf)	46.15

Ice Load Summary	
Basic Wind Speed w/ Ice, V_i (mph)	50.00
Design Ice Thick. (ASCE 7-16) , t_i (in)	1
Velocity Pressure, q_z **(w/ Ice)** (psf)	7.38
Escalated Ice Thick. @ Mount, t_{iz} (in)	1.10

Seismic Load Summary	
Spectral Response (Short Periods), S_s	-
Spectral Response (1-Sec. Period), S_1	-
Site Class	-
Seismic Design Category	-
Seismic Risk Category	-

Snow Load Summary	
Ground Snow Load, p_g (psf)	-
Snow Load on Flat Roofs, p_f (psf)	-

Kimley»Horn

Date	May 27, 2021
Client	Crown Castle
Site #	876309
Site Name	MILFORD JAI-ALAI
Project #	19558055

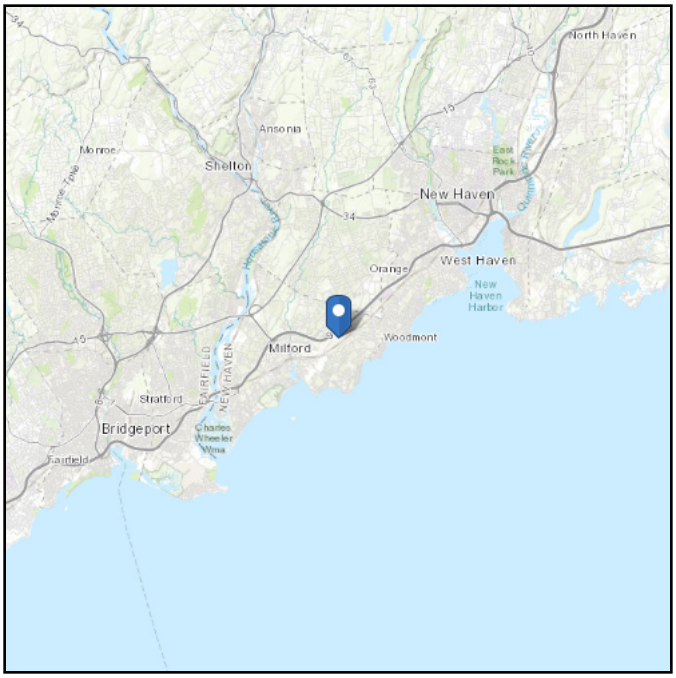
Antenna Name	Qty	Shape	Dimensions (in)			Weight (lb)	Joint Labels								EPA (ft^2)		Wind Force, F_A (lb)			
																	No Ice		With Ice	
			H	W	D		Alpha		Beta		Gamma		Delta		Front	Side	Front	Side	Front	Side
DMP65R-BU8D	3	Flat	96	20.7	7.7	105.6	A1B	A1T							15.91	5.93	660.61	246.26	118.14	49.01
TPA65R-BU8D	3	Flat	96	21	7.8	87.5	A4B	A4T							15.92	5.99	661.15	248.62	118.11	49.39
RRUS 4415 B30	3	Flat	16.5	13.4	5.9	47.4	A1R								0.92	0.82	38.26	34.06	8.07	8.38
RRUS 4449 B5/B12	3	Flat	17.9	13.2	9.4	71	A4R								0.98	1.41	40.86	58.49	8.56	12.94
RRUS 4478 B14_CCIV2	3	Flat	18.1	13.4	8.3	59.4	A1R								1.01	1.25	41.97	51.75	8.76	11.75
RRUS 8843 B2/B66A	3	Flat	14.9	13.2	10.9	72	A4R								0.82	1.35	34.04	56.21	7.29	12.39
DC6-48-60-0-8F	1	Round	24	11	11	32.8	A1R								0.92	0.92	38.07	38.07	9.02	9.02
DC9-48-60-24-8C-EV	1	Flat	31.4	10.2	18.3	26.2	A4R								2.74	4.78	113.66	198.73	23.31	38.1

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 56.6 ft (NAVD 88)
Latitude: 41.234053
Longitude: -73.022889



Wind

Results:

Wind Speed:	120 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	91 Vmph
100-year MRI	99 Vmph

Data Source:	ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed:	Wed May 26 2021

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

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

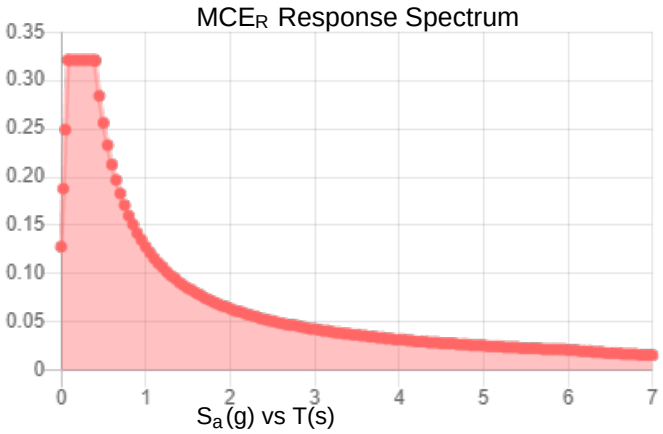
Seismic

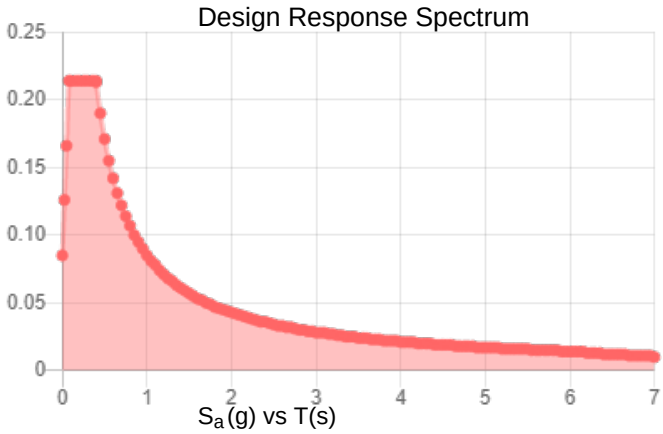
Site Soil Class: D - Stiff Soil

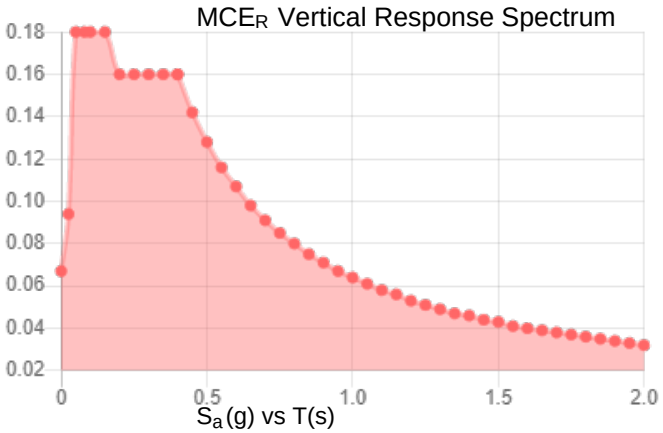
Results:

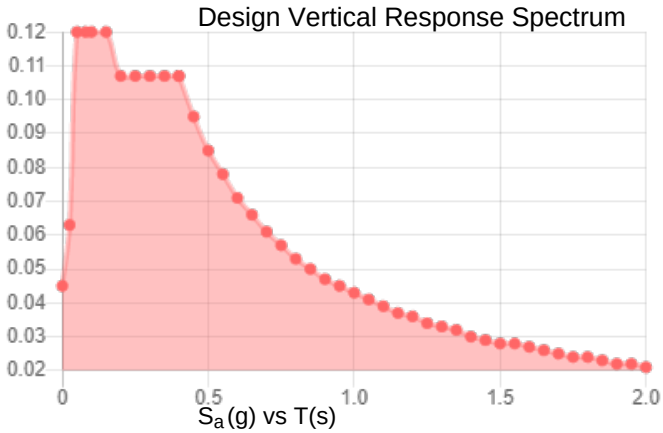
S_S :	0.2	S_{D1} :	0.085
S_1 :	0.053	T_L :	6
F_a :	1.6	PGA :	0.112
F_v :	2.4	PGA_M :	0.177
S_{MS} :	0.321	F_{PGA} :	1.575
S_{M1} :	0.128	I_e :	1
S_{DS} :	0.214	C_v :	0.701

Seismic Design Category B









Data Accessed: Wed May 26 2021

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Wed May 26 2021

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

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

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E...	Density[lb/f...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	490	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	490	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	490	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	490	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	490	50	1.4	65	1.3
8	A913 Gr.65	29000	11154	.3	.65	490	65	1.1	80	1.1
9	A500 Gr. C RND	29000	11154	.3	.65	490	46	1.5	62	1.2
10	A529 GR 50	29000	11154	.3	.65	490	50	1.5	65	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design...	Material	Design...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Vertical Mount Tube	HSS3.5x0.12"	Beam	None	A500 Gr. C RND	Typical	1.274	1.822	1.822	3.644
2	Vertical Arm Mount Plate	PL9x5/8"	Beam	None	A572 Gr.50	Typical	5.625	.183	37.969	.7
3	Arm, Flange Plate 2	PL5.44x0.63	Beam	None	A572 Gr.50	Typical	3.398	.111	8.373	.41
4	Arm, Flange Plate 1	PL5.29x0.625	Beam	None	A572 Gr.50	Typical	3.306	.108	7.71	.398
5	Arm, Standoff - Horizontal	PIPE_2.0	Beam	None	A500 Gr. C RND	Typical	1.02	.627	.627	1.25
6	Arm, Diagonal Rod	SR 3/4	Beam	None	A529 GR 50	Typical	.442	.016	.016	.031
7	Arm, Tube Brace	SR 3/4	Beam	None	A500 Gr. C RND	Typical	.442	.016	.016	.031
8	Front Face Horizontal	PIPE_2.5	Beam	None	A500 Gr. C RND	Typical	1.61	1.45	1.45	2.89
9	Mount Pipe	PIPE_2.5	Beam	None	A500 Gr. C RND	Typical	1.61	1.45	1.45	2.89
10	Stiff Arm	PIPE_2.5	Beam	None	A500 Gr. C RND	Typical	1.61	1.45	1.45	2.89

Joint Coordinates and Temperatures

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
1	N1	20.5	0	-24.375	0	
2	N2	20.5	0	23.525	0	
3	N3	20.5	0	-14.6825	0	
4	N4	20.5	0	9.3075	0	
5	N7	25	-0.	-20.4325	0	
6	N8	25	-0.	15.6825	0	
7	N21	23.295	-2.795	-20.4325	0	
8	N22	23.295	-2.795	15.6825	0	
9	N23	23.295	2.795	15.6825	0	
10	N24	23.295	2.795	-20.4325	0	
11	N13	23.295	0	15.6825	0	
12	N14	23.295	0	-20.4325	0	
13	N17	12	-0.	-14.6825	0	
14	POLE	12	0	9.3075	0	
15	N19	23.295	-2.795	-19.8075	0	
16	N20	23.295	-2.795	16.3075	0	
17	N21A	23.295	2.795	16.3075	0	
18	N22A	23.295	2.795	-19.8075	0	
19	N23A	26.300204	-5.800204	-19.8075	0	
20	N24A	26.300204	-5.800204	16.3075	0	
21	N25	48.786199	-28.286199	-19.8075	0	
22	N26	48.786199	-28.286199	16.3075	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
23	N27	52.109601	-31.609601	-19.8075	0	
24	N28	52.109601	-31.609601	16.3075	0	
25	N29	50.200413	-29.700413	16.3075	0	
26	N30	24.88599	-4.38599	16.3075	0	
27	N31	50.200413	-29.700413	-19.8075	0	
28	N32	24.88599	-4.38599	-19.8075	0	
29	N33	52.109601	-31.609601	-18.0575	0	
30	N34	52.109601	-31.609601	18.0575	0	
31	N39	26.300204	5.800204	-19.8075	0	
32	N40	26.300204	5.800204	16.3075	0	
33	N41	48.786199	28.286199	-19.8075	0	
34	N42	48.786199	28.286199	16.3075	0	
35	N43	52.109601	31.609601	-19.8075	0	
36	N44	52.109601	31.609601	16.3075	0	
37	N45	50.200413	29.700413	16.3075	0	
38	N46	24.88599	4.38599	16.3075	0	
39	N47	50.200413	29.700413	-19.8075	0	
40	N48	24.88599	4.38599	-19.8075	0	
41	N49	52.109601	31.609601	-18.0575	0	
42	N50	52.109601	31.609601	18.0575	0	
43	N49A	52.109601	87	18.0575	0	
44	N50A	52.109601	87	-18.0575	0	
45	N51	52.109601	-87	18.0575	0	
46	N52	52.109601	-87	-18.0575	0	
47	N53	52.109601	-82	18.0575	0	
48	M4	52.109601	-82	-18.0575	0	
49	N59	55.359601	-82	60	0	
50	N60	55.359601	-82	-60	0	
51	N60A	55.359601	-82	18.0575	0	
52	N61A	55.359601	-82	-18.0575	0	
53	N59A	52.109601	-39	18.0575	0	
54	M3	52.109601	-39	-18.0575	0	
55	N61	55.359601	-39	60	0	
56	N62	55.359601	-39	-60	0	
57	N63	55.359601	-39	18.0575	0	
58	N64	55.359601	-39	-18.0575	0	
59	N71	52.109601	82	18.0575	0	
60	M1	52.109601	82	-18.0575	0	
61	N73	55.359601	82	60	0	
62	N74	55.359601	82	-60	0	
63	N75	55.359601	82	18.0575	0	
64	N76	55.359601	82	-18.0575	0	
65	N71A	52.109601	39	18.0575	0	
66	M2	52.109601	39	-18.0575	0	
67	N73A	55.359601	39	60	0	
68	N74A	55.359601	39	-60	0	
69	N75A	55.359601	39	18.0575	0	
70	N76A	55.359601	39	-18.0575	0	
71	N77	52.109601	-47.75	18.0575	0	
72	N79	52.109601	47.75	18.0575	0	
73	N83	52.109601	-47.75	21.495	0	
74	N84	52.109601	47.75	14.62	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
75	N324A	55.359601	-82	-36	0	
76	N325A	55.359601	-39	-36	0	
77	N326	55.359601	82	-36	0	
78	N327	55.359601	39	-36	0	
79	A4B	64.359601	-82	-36	0	
80	A3B	64.359601	-39	-36	0	
81	A1B	64.359601	82	-36	0	
82	A2B	64.359601	39	-36	0	
83	N332	55.359601	-82	36	0	
84	N333	55.359601	-39	36	0	
85	N334	55.359601	82	36	0	
86	N335	55.359601	39	36	0	
87	A4T	64.359601	-82	36	0	
88	A3T	64.359601	-39	36	0	
89	A1T	64.359601	82	36	0	
90	A2T	64.359601	39	36	0	
91	N116	55.359601	82	30	0	
92	A1R	46.359601	82	30	0	
93	COLLAR	18.75	0	9.3075	0	
94	N98	18.75	0	-14.6825	0	
95	N100	2.45152	-17.003843	17.8075	0	
96	N103	2.45152	17.003843	17.8075	0	
97	N104	20.5	0	15.6825	0	
98	N105	20.5	0	-20.4325	0	
99	N104A	55.359601	39	30	0	
100	A2R	46.359601	39	30	0	
101	N106	55.359601	-82	30	0	
102	A4R	46.359601	-82	30	0	
103	N108	55.359601	-39	30	0	
104	A3R	46.359601	-39	30	0	

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
1	M1	Vertical Mo...	47.9			Lbyy						Lateral
2	M2	Vertical Arm...	4.5			Lbyy						Lateral
3	M3	Vertical Arm...	4.5			Lbyy						Lateral
4	M14	Arm, Flange...	4.25			Lbyy						Lateral
5	M15	Arm, Flange...	4.25			Lbyy						Lateral
6	M18	Arm, Flange...	4.7			Lbyy						Lateral
7	M19	Arm, Flange...	4.7			Lbyy						Lateral
8	M18A	Arm, Stand...	35.8			Lbyy						Lateral
9	M19A	Arm, Stand...	35.8			Lbyy						Lateral
10	M22	Arm, Diago...	49.464			Lbyy			.65	.65		Lateral
11	M23	Arm, Tube ...	36.115			Lbyy			.65	.65		Lateral
12	M26	Arm, Flange...	4.25			Lbyy						Lateral
13	M27	Arm, Flange...	4.25			Lbyy						Lateral
14	M28	Arm, Flange...	4.7			Lbyy						Lateral
15	M29	Arm, Flange...	4.7			Lbyy						Lateral
16	M30	Arm, Stand...	35.8			Lbyy						Lateral
17	M31	Arm, Stand...	35.8			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
18	M34	Arm, Diago...	49.464			Lbyy			.65	.65		Lateral
19	M35	Arm, Tube ...	36.115			Lbyy			.65	.65		Lateral
20	M34A	Front Face ...	174	63	63	Lbyy		63				Lateral
21	M35A	Front Face ...	174	63	63	Lbyy		63				Lateral
22	M40	Mount Pipe	120			Lbyy						Lateral
23	M39A	Mount Pipe	120			Lbyy						Lateral
24	M45	Mount Pipe	120			Lbyy						Lateral
25	M45A	Mount Pipe	120			Lbyy						Lateral
26	M50	Stiff Arm	58.522			Lbyy						Lateral
27	M51	Stiff Arm	58.493			Lbyy						Lateral

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Dead	DL			-1	10				
2	Dead of Ice	RL				10		27		
4	Structure Wind (0)	None						54		
5	Structure Wind (30)	None						54		
6	Structure Wind (45)	None						54		
7	Structure Wind (60)	None						54		
8	Structure Wind (90)	None						54		
9	Structure Wind (120)	None						54		
10	Structure Wind (135)	None						54		
11	Structure Wind (150)	None						54		
12	Structure Wind w/ Ice...	None						54		
13	Structure Wind w/ Ice...	None						54		
14	Structure Wind w/ Ice...	None						54		
15	Structure Wind w/ Ice...	None						54		
16	Structure Wind w/ Ice...	None						54		
17	Structure Wind w/ Ice...	None						54		
18	Structure Wind w/ Ice...	None						54		
19	Structure Wind w/ Ice...	None						54		
20	Antenna Wind (0)	None				20				
21	Antenna Wind (30)	None				20				
22	Antenna Wind (45)	None				20				
23	Antenna Wind (60)	None				20				
24	Antenna Wind (90)	None				20				
25	Antenna Wind (120)	None				20				
26	Antenna Wind (135)	None				20				
27	Antenna Wind (150)	None				20				
28	Antenna Wind w/ Ice ...	None				20				
29	Antenna Wind w/ Ice ...	None				20				
30	Antenna Wind w/ Ice ...	None				20				
31	Antenna Wind w/ Ice ...	None				20				
32	Antenna Wind w/ Ice ...	None				20				
33	Antenna Wind w/ Ice ...	None				20				
34	Antenna Wind w/ Ice ...	None				20				
35	Antenna Wind w/ Ice ...	None				20				
36	Maintenance Live Lm ...	OL1				1				
37	Maintenance Live Lm ...	OL2				1				
38	Maintenance Live Lm ...	OL3				1				

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
39	Maintenance Live Lm ...	OL4				1				

Load Combinations

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	Summary: 1.0D + 1.0W	Y...	Y		DL	1	20	1																			
2	1.4D	Y...	Y		DL	1.4																					
3	1.2D + 1.0W(0)	Y...	Y		DL	1.2	4	1	20	1																	
4	1.2D + 1.0W(30)	Y...	Y		DL	1.2	5	1	21	1																	
5	1.2D + 1.0W(45)	Y...	Y		DL	1.2	6	1	22	1																	
6	1.2D + 1.0W(60)	Y...	Y		DL	1.2	7	1	23	1																	
7	1.2D + 1.0W(90)	Y...	Y		DL	1.2	8	1	24	1																	
8	1.2D + 1.0W(120)	Y...	Y		DL	1.2	9	1	25	1																	
9	1.2D + 1.0W(135)	Y...	Y		DL	1.2	10	1	26	1																	
10	1.2D + 1.0W(150)	Y...	Y		DL	1.2	11	1	27	1																	
11	1.2D + 1.0W(180)	Y...	Y		DL	1.2	4	-1	20	-1																	
12	1.2D + 1.0W(210)	Y...	Y		DL	1.2	5	-1	21	-1																	
13	1.2D + 1.0W(225)	Y...	Y		DL	1.2	6	-1	22	-1																	
14	1.2D + 1.0W(240)	Y...	Y		DL	1.2	7	-1	23	-1																	
15	1.2D + 1.0W(270)	Y...	Y		DL	1.2	8	-1	24	-1																	
16	1.2D + 1.0W(300)	Y...	Y		DL	1.2	9	-1	25	-1																	
17	1.2D + 1.0W(315)	Y...	Y		DL	1.2	10	-1	26	-1																	
18	1.2D + 1.0W(330)	Y...	Y		DL	1.2	11	-1	27	-1																	
19	1.2D + 1.0Di + 1.0Wi(0)	Y...	Y		DL	1.2	RL	1	12	1	28	1															
20	1.2D + 1.0Di + 1.0Wi(30)	Y...	Y		DL	1.2	RL	1	13	1	29	1															
21	1.2D + 1.0Di + 1.0Wi(45)	Y...	Y		DL	1.2	RL	1	14	1	30	1															
22	1.2D + 1.0Di + 1.0Wi(60)	Y...	Y		DL	1.2	RL	1	15	1	31	1															
23	1.2D + 1.0Di + 1.0Wi(90)	Y...	Y		DL	1.2	RL	1	16	1	32	1															
24	1.2D + 1.0Di + 1.0Wi(120)	Y...	Y		DL	1.2	RL	1	17	1	33	1															
25	1.2D + 1.0Di + 1.0Wi(135)	Y...	Y		DL	1.2	RL	1	18	1	34	1															
26	1.2D + 1.0Di + 1.0Wi(150)	Y...	Y		DL	1.2	RL	1	19	1	35	1															
27	1.2D + 1.0Di + 1.0Wi(180)	Y...	Y		DL	1.2	RL	1	12	-1	28	-1															
28	1.2D + 1.0Di + 1.0Wi(210)	Y...	Y		DL	1.2	RL	1	13	-1	39	-1															
29	1.2D + 1.0Di + 1.0Wi(225)	Y...	Y		DL	1.2	RL	1	14	-1	30	-1															
30	1.2D + 1.0Di + 1.0Wi(240)	Y...	Y		DL	1.2	RL	1	15	-1	31	-1															
31	1.2D + 1.0Di + 1.0Wi(270)	Y...	Y		DL	1.2	RL	1	16	-1	32	-1															
32	1.2D + 1.0Di + 1.0Wi(300)	Y...	Y		DL	1.2	RL	1	17	-1	33	-1															
33	1.2D + 1.0Di + 1.0Wi(315)	Y...	Y		DL	1.2	RL	1	18	-1	34	-1															
34	1.2D + 1.0Di + 1.0Wi(330)	Y...	Y		DL	1.2	RL	1	19	-1	35	-1															
35	1.2D + 1.5Lm(1) + 1.0Wm(0)	Y...	Y		DL	1.2	4	.058	20	.058	O...	1.5															
36	1.2D + 1.5Lm(1) + 1.0Wm(30)	Y...	Y		DL	1.2	5	.058	21	.058	O...	1.5															
37	1.2D + 1.5Lm(1) + 1.0Wm(45)	Y...	Y		DL	1.2	6	.058	22	.058	O...	1.5															
38	1.2D + 1.5Lm(1) + 1.0Wm(60)	Y...	Y		DL	1.2	7	.058	23	.058	O...	1.5															
39	1.2D + 1.5Lm(1) + 1.0Wm(90)	Y...	Y		DL	1.2	8	.058	24	.058	O...	1.5															
40	1.2D + 1.5Lm(1) + 1.0Wm(120)	Y...	Y		DL	1.2	9	.058	25	.058	O...	1.5															
41	1.2D + 1.5Lm(1) + 1.0Wm(135)	Y...	Y		DL	1.2	10	.058	26	.058	O...	1.5															
42	1.2D + 1.5Lm(1) + 1.0Wm(150)	Y...	Y		DL	1.2	11	.058	27	.058	O...	1.5															
43	1.2D + 1.5Lm(1) + 1.0Wm(180)	Y...	Y		DL	1.2	4	-.0...	20	-.0...	O...	1.5															
44	1.2D + 1.5Lm(1) + 1.0Wm(210)	Y...	Y		DL	1.2	5	-.0...	21	-.0...	O...	1.5															
45	1.2D + 1.5Lm(1) + 1.0Wm(225)	Y...	Y		DL	1.2	6	-.0...	22	-.0...	O...	1.5															
46	1.2D + 1.5Lm(1) + 1.0Wm(240)	Y...	Y		DL	1.2	7	-.0...	23	-.0...	O...	1.5															

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
47	1.2D + 1.5Lm(1) + 1.0Wm(270)	Y...	Y		DL	1.2	8	-.0...	24	-.0...	O...	1.5														
48	1.2D + 1.5Lm(1) + 1.0Wm(300)	Y...	Y		DL	1.2	9	-.0...	25	-.0...	O...	1.5														
49	1.2D + 1.5Lm(1) + 1.0Wm(315)	Y...	Y		DL	1.2	10	-.0...	26	-.0...	O...	1.5														
50	1.2D + 1.5Lm(1) + 1.0Wm(330)	Y...	Y		DL	1.2	11	-.0...	27	-.0...	O...	1.5														
51	1.2D + 1.5Lm(2) + 1.0Wm(0)	Y...	Y		DL	1.2	4	.058	20	.058	O...	1.5														
52	1.2D + 1.5Lm(2) + 1.0Wm(30)	Y...	Y		DL	1.2	5	.058	21	.058	O...	1.5														
53	1.2D + 1.5Lm(2) + 1.0Wm(45)	Y...	Y		DL	1.2	6	.058	22	.058	O...	1.5														
54	1.2D + 1.5Lm(2) + 1.0Wm(60)	Y...	Y		DL	1.2	7	.058	23	.058	O...	1.5														
55	1.2D + 1.5Lm(2) + 1.0Wm(90)	Y...	Y		DL	1.2	8	.058	24	.058	O...	1.5														
56	1.2D + 1.5Lm(2) + 1.0Wm(120)	Y...	Y		DL	1.2	9	.058	25	.058	O...	1.5														
57	1.2D + 1.5Lm(2) + 1.0Wm(135)	Y...	Y		DL	1.2	10	.058	26	.058	O...	1.5														
58	1.2D + 1.5Lm(2) + 1.0Wm(150)	Y...	Y		DL	1.2	11	.058	27	.058	O...	1.5														
59	1.2D + 1.5Lm(2) + 1.0Wm(180)	Y...	Y		DL	1.2	4	-.0...	20	-.0...	O...	1.5														
60	1.2D + 1.5Lm(2) + 1.0Wm(210)	Y...	Y		DL	1.2	5	-.0...	21	-.0...	O...	1.5														
61	1.2D + 1.5Lm(2) + 1.0Wm(225)	Y...	Y		DL	1.2	6	-.0...	22	-.0...	O...	1.5														
62	1.2D + 1.5Lm(2) + 1.0Wm(240)	Y...	Y		DL	1.2	7	-.0...	23	-.0...	O...	1.5														
63	1.2D + 1.5Lm(2) + 1.0Wm(270)	Y...	Y		DL	1.2	8	-.0...	24	-.0...	O...	1.5														
64	1.2D + 1.5Lm(2) + 1.0Wm(300)	Y...	Y		DL	1.2	9	-.0...	25	-.0...	O...	1.5														
65	1.2D + 1.5Lm(2) + 1.0Wm(315)	Y...	Y		DL	1.2	10	-.0...	26	-.0...	O...	1.5														
66	1.2D + 1.5Lm(2) + 1.0Wm(330)	Y...	Y		DL	1.2	11	-.0...	27	-.0...	O...	1.5														
67	1.2D + 1.5Lm(3) + 1.0Wm(0)	Y...	Y		DL	1.2	4	.058	20	.058	O...	1.5														
68	1.2D + 1.5Lm(3) + 1.0Wm(30)	Y...	Y		DL	1.2	5	.058	21	.058	O...	1.5														
69	1.2D + 1.5Lm(3) + 1.0Wm(45)	Y...	Y		DL	1.2	6	.058	22	.058	O...	1.5														
70	1.2D + 1.5Lm(3) + 1.0Wm(60)	Y...	Y		DL	1.2	7	.058	23	.058	O...	1.5														
71	1.2D + 1.5Lm(3) + 1.0Wm(90)	Y...	Y		DL	1.2	8	.058	24	.058	O...	1.5														
72	1.2D + 1.5Lm(3) + 1.0Wm(120)	Y...	Y		DL	1.2	9	.058	25	.058	O...	1.5														
73	1.2D + 1.5Lm(3) + 1.0Wm(135)	Y...	Y		DL	1.2	10	.058	26	.058	O...	1.5														
74	1.2D + 1.5Lm(3) + 1.0Wm(150)	Y...	Y		DL	1.2	11	.058	27	.058	O...	1.5														
75	1.2D + 1.5Lm(3) + 1.0Wm(180)	Y...	Y		DL	1.2	4	-.0...	20	-.0...	O...	1.5														
76	1.2D + 1.5Lm(3) + 1.0Wm(210)	Y...	Y		DL	1.2	5	-.0...	21	-.0...	O...	1.5														
77	1.2D + 1.5Lm(3) + 1.0Wm(225)	Y...	Y		DL	1.2	6	-.0...	22	-.0...	O...	1.5														
78	1.2D + 1.5Lm(3) + 1.0Wm(240)	Y...	Y		DL	1.2	7	-.0...	23	-.0...	O...	1.5														
79	1.2D + 1.5Lm(3) + 1.0Wm(270)	Y...	Y		DL	1.2	8	-.0...	24	-.0...	O...	1.5														
80	1.2D + 1.5Lm(3) + 1.0Wm(300)	Y...	Y		DL	1.2	9	-.0...	25	-.0...	O...	1.5														
81	1.2D + 1.5Lm(3) + 1.0Wm(315)	Y...	Y		DL	1.2	10	-.0...	26	-.0...	O...	1.5														
82	1.2D + 1.5Lm(3) + 1.0Wm(330)	Y...	Y		DL	1.2	11	-.0...	27	-.0...	O...	1.5														
83	1.2D + 1.5Lm(4) + 1.0Wm(0)	Y...	Y		DL	1.2	4	.058	20	.058	O...	1.5														
84	1.2D + 1.5Lm(4) + 1.0Wm(30)	Y...	Y		DL	1.2	5	.058	21	.058	O...	1.5														
85	1.2D + 1.5Lm(4) + 1.0Wm(45)	Y...	Y		DL	1.2	6	.058	22	.058	O...	1.5														
86	1.2D + 1.5Lm(4) + 1.0Wm(60)	Y...	Y		DL	1.2	7	.058	23	.058	O...	1.5														
87	1.2D + 1.5Lm(4) + 1.0Wm(90)	Y...	Y		DL	1.2	8	.058	24	.058	O...	1.5														
88	1.2D + 1.5Lm(4) + 1.0Wm(120)	Y...	Y		DL	1.2	9	.058	25	.058	O...	1.5														
89	1.2D + 1.5Lm(4) + 1.0Wm(135)	Y...	Y		DL	1.2	10	.058	26	.058	O...	1.5														
90	1.2D + 1.5Lm(4) + 1.0Wm(150)	Y...	Y		DL	1.2	11	.058	27	.058	O...	1.5														
91	1.2D + 1.5Lm(4) + 1.0Wm(180)	Y...	Y		DL	1.2	4	-.0...	20	-.0...	O...	1.5														
92	1.2D + 1.5Lm(4) + 1.0Wm(210)	Y...	Y		DL	1.2	5	-.0...	21	-.0...	O...	1.5														
93	1.2D + 1.5Lm(4) + 1.0Wm(225)	Y...	Y		DL	1.2	6	-.0...	22	-.0...	O...	1.5														
94	1.2D + 1.5Lm(4) + 1.0Wm(240)	Y...	Y		DL	1.2	7	-.0...	23	-.0...	O...	1.5														
95	1.2D + 1.5Lm(4) + 1.0Wm(270)	Y...	Y		DL	1.2	8	-.0...	24	-.0...	O...	1.5														
96	1.2D + 1.5Lm(4) + 1.0Wm(300)	Y...	Y		DL	1.2	9	-.0...	25	-.0...	O...	1.5														
97	1.2D + 1.5Lm(4) + 1.0Wm(315)	Y...	Y		DL	1.2	10	-.0...	26	-.0...	O...	1.5														
98	1.2D + 1.5Lm(4) + 1.0Wm(330)	Y...	Y		DL	1.2	11	-.0...	27	-.0...	O...	1.5														

Joint Loads and Enforced Displacements (BLC 1 : Dead)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	A1B	L	Z	-52.8
2	A1T	L	Z	-52.8
3	A4B	L	Z	-43.75
4	A4T	L	Z	-43.75
5	A1R	L	Z	-47.4
6	A4R	L	Z	-71
7	A1R	L	Z	-59.4
8	A4R	L	Z	-72
9	A1R	L	Z	-32.8
10	A4R	L	Z	-26.2

Joint Loads and Enforced Displacements (BLC 2 : Dead of Ice)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	A1B	L	Z	-110.173
2	A1T	L	Z	-110.173
3	A4B	L	Z	-111.718
4	A4T	L	Z	-111.718
5	A1R	L	Z	-32.637
6	A4R	L	Z	-42.604
7	A1R	L	Z	-40.601
8	A4R	L	Z	-40.525
9	A1R	L	Z	-39.899
10	A4R	L	Z	-84.314

Joint Loads and Enforced Displacements (BLC 20 : Antenna Wind (0))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	A1B	L	X	-330.305
2	A1B	L	Y	0
3	A1T	L	X	-330.305
4	A1T	L	Y	0
5	A4B	L	X	-330.573
6	A4B	L	Y	0
7	A4T	L	X	-330.573
8	A4T	L	Y	0
9	A1R	L	X	-38.263
10	A1R	L	Y	0
11	A4R	L	X	-40.859
12	A4R	L	Y	0
13	A1R	L	X	-41.973
14	A1R	L	Y	0
15	A4R	L	X	-34.037
16	A4R	L	Y	0
17	A1R	L	X	-38.073
18	A1R	L	Y	0
19	A4R	L	X	-113.664
20	A4R	L	Y	0

Joint Loads and Enforced Displacements (BLC 21 : Antenna Wind (30))

Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...

Joint Loads and Enforced Displacements (BLC 21 : Antenna Wind (30)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	A1B	L	X	-241.198
2	A1B	L	Y	139.256
3	A1T	L	X	-241.198
4	A1T	L	Y	139.256
5	A4B	L	X	-241.628
6	A4B	L	Y	139.504
7	A4T	L	X	-241.628
8	A4T	L	Y	139.504
9	A1R	L	X	-32.228
10	A1R	L	Y	18.607
11	A4R	L	X	-39.201
12	A4R	L	Y	22.633
13	A1R	L	X	-38.466
14	A1R	L	Y	22.208
15	A4R	L	X	-34.278
16	A4R	L	Y	19.79
17	A1R	L	X	-32.972
18	A1R	L	Y	19.036
19	A4R	L	X	-116.853
20	A4R	L	Y	67.465

Joint Loads and Enforced Displacements (BLC 22 : Antenna Wind (45))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	A1B	L	X	-160.314
2	A1B	L	Y	160.314
3	A1T	L	X	-160.314
4	A1T	L	Y	160.314
5	A4B	L	X	-160.826
6	A4B	L	Y	160.826
7	A4T	L	X	-160.826
8	A4T	L	Y	160.826
9	A1R	L	X	-25.572
10	A1R	L	Y	25.572
11	A4R	L	X	-35.124
12	A4R	L	Y	35.124
13	A1R	L	X	-33.135
14	A1R	L	Y	33.135
15	A4R	L	X	-31.908
16	A4R	L	Y	31.908
17	A1R	L	X	-26.922
18	A1R	L	Y	26.922
19	A4R	L	X	-110.448
20	A4R	L	Y	110.448

Joint Loads and Enforced Displacements (BLC 23 : Antenna Wind (60))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	A1B	L	X	-87.463
2	A1B	L	Y	151.49
3	A1T	L	X	-87.463
4	A1T	L	Y	151.49
5	A4B	L	X	-87.938

Joint Loads and Enforced Displacements (BLC 23 : Antenna Wind (60)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
6	A4B	L	Y	152.314
7	A4T	L	X	-87.938
8	A4T	L	Y	152.314
9	A1R	L	X	-17.557
10	A1R	L	Y	30.41
11	A4R	L	X	-27.039
12	A4R	L	Y	46.834
13	A1R	L	X	-24.652
14	A1R	L	Y	42.698
15	A4R	L	X	-25.334
16	A4R	L	Y	43.88
17	A1R	L	X	-19.036
18	A1R	L	Y	32.972
19	A4R	L	X	-88.732
20	A4R	L	Y	153.689

Joint Loads and Enforced Displacements (BLC 24 : Antenna Wind (90))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	A1B	L	X	-2.793e-5
2	A1B	L	Y	123.132
3	A1T	L	X	-2.793e-5
4	A1T	L	Y	123.132
5	A4B	L	X	-2.819e-5
6	A4B	L	Y	124.311
7	A4T	L	X	-2.819e-5
8	A4T	L	Y	124.311
9	A1R	L	X	-7.726e-6
10	A1R	L	Y	34.065
11	A4R	L	X	-1.326e-5
12	A4R	L	Y	58.485
13	A1R	L	X	-1.174e-5
14	A1R	L	Y	51.746
15	A4R	L	X	-1.275e-5
16	A4R	L	Y	56.213
17	A1R	L	X	-8.635e-6
18	A1R	L	Y	38.073
19	A4R	L	X	-4.507e-5
20	A4R	L	Y	198.731

Joint Loads and Enforced Displacements (BLC 25 : Antenna Wind (120))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	A1B	L	X	87.462
2	A1B	L	Y	151.49
3	A1T	L	X	87.462
4	A1T	L	Y	151.49
5	A4B	L	X	87.938
6	A4B	L	Y	152.314
7	A4T	L	X	87.938
8	A4T	L	Y	152.314
9	A1R	L	X	17.557
10	A1R	L	Y	30.41

Joint Loads and Enforced Displacements (BLC 25 : Antenna Wind (120)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
11	A4R	L	X	27.039
12	A4R	L	Y	46.834
13	A1R	L	X	24.652
14	A1R	L	Y	42.698
15	A4R	L	X	25.334
16	A4R	L	Y	43.88
17	A1R	L	X	19.036
18	A1R	L	Y	32.972
19	A4R	L	X	88.732
20	A4R	L	Y	153.689

Joint Loads and Enforced Displacements (BLC 26 : Antenna Wind (135))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	A1B	L	X	160.314
2	A1B	L	Y	160.314
3	A1T	L	X	160.314
4	A1T	L	Y	160.314
5	A4B	L	X	160.826
6	A4B	L	Y	160.826
7	A4T	L	X	160.826
8	A4T	L	Y	160.826
9	A1R	L	X	25.572
10	A1R	L	Y	25.572
11	A4R	L	X	35.124
12	A4R	L	Y	35.124
13	A1R	L	X	33.135
14	A1R	L	Y	33.135
15	A4R	L	X	31.908
16	A4R	L	Y	31.908
17	A1R	L	X	26.922
18	A1R	L	Y	26.922
19	A4R	L	X	110.448
20	A4R	L	Y	110.448

Joint Loads and Enforced Displacements (BLC 27 : Antenna Wind (150))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	A1B	L	X	241.198
2	A1B	L	Y	139.256
3	A1T	L	X	241.198
4	A1T	L	Y	139.256
5	A4B	L	X	241.628
6	A4B	L	Y	139.504
7	A4T	L	X	241.628
8	A4T	L	Y	139.504
9	A1R	L	X	32.228
10	A1R	L	Y	18.607
11	A4R	L	X	39.201
12	A4R	L	Y	22.633
13	A1R	L	X	38.466
14	A1R	L	Y	22.208
15	A4R	L	X	34.278

Joint Loads and Enforced Displacements (BLC 27 : Antenna Wind (150)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
16	A4R	L	Y	19.79
17	A1R	L	X	32.972
18	A1R	L	Y	19.036
19	A4R	L	X	116.853
20	A4R	L	Y	67.465

Joint Loads and Enforced Displacements (BLC 28 : Antenna Wind w/ Ice (0))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	A1B	L	X	-59.069
2	A1B	L	Y	0
3	A1T	L	X	-59.069
4	A1T	L	Y	0
5	A4B	L	X	-59.056
6	A4B	L	Y	0
7	A4T	L	X	-59.056
8	A4T	L	Y	0
9	A1R	L	X	-8.071
10	A1R	L	Y	0
11	A4R	L	X	-8.559
12	A4R	L	Y	0
13	A1R	L	X	-8.762
14	A1R	L	Y	0
15	A4R	L	X	-7.286
16	A4R	L	Y	0
17	A1R	L	X	-9.021
18	A1R	L	Y	0
19	A4R	L	X	-23.311
20	A4R	L	Y	0

Joint Loads and Enforced Displacements (BLC 29 : Antenna Wind w/ Ice (30))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	A1B	L	X	-43.671
2	A1B	L	Y	25.214
3	A1T	L	X	-43.671
4	A1T	L	Y	25.214
5	A4B	L	X	-43.705
6	A4B	L	Y	25.233
7	A4T	L	X	-43.705
8	A4T	L	Y	25.233
9	A1R	L	X	-7.056
10	A1R	L	Y	4.074
11	A4R	L	X	-8.362
12	A4R	L	Y	4.828
13	A1R	L	X	-8.234
14	A1R	L	Y	4.754
15	A4R	L	X	-7.416
16	A4R	L	Y	4.281
17	A1R	L	X	-7.813
18	A1R	L	Y	4.511
19	A4R	L	X	-23.389
20	A4R	L	Y	13.504

Joint Loads and Enforced Displacements (BLC 30 : Antenna Wind w/ Ice (45))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	A1B	L	X	-29.547
2	A1B	L	Y	29.547
3	A1T	L	X	-29.547
4	A1T	L	Y	29.547
5	A4B	L	X	-29.611
6	A4B	L	Y	29.611
7	A4T	L	X	-29.611
8	A4T	L	Y	29.611
9	A1R	L	X	-5.816
10	A1R	L	Y	5.816
11	A4R	L	X	-7.603
12	A4R	L	Y	7.603
13	A1R	L	X	-7.251
14	A1R	L	Y	7.251
15	A4R	L	X	-6.958
16	A4R	L	Y	6.958
17	A1R	L	X	-6.379
18	A1R	L	Y	6.379
19	A4R	L	X	-21.711
20	A4R	L	Y	21.711

Joint Loads and Enforced Displacements (BLC 31 : Antenna Wind w/ Ice (60))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	A1B	L	X	-16.573
2	A1B	L	Y	28.705
3	A1T	L	X	-16.573
4	A1T	L	Y	28.705
5	A4B	L	X	-16.644
6	A4B	L	Y	28.827
7	A4T	L	X	-16.644
8	A4T	L	Y	28.827
9	A1R	L	X	-4.151
10	A1R	L	Y	7.189
11	A4R	L	X	-5.924
12	A4R	L	Y	10.261
13	A1R	L	X	-5.501
14	A1R	L	Y	9.527
15	A4R	L	X	-5.558
16	A4R	L	Y	9.628
17	A1R	L	X	-4.511
18	A1R	L	Y	7.813
19	A4R	L	X	-17.201
20	A4R	L	Y	29.793

Joint Loads and Enforced Displacements (BLC 32 : Antenna Wind w/ Ice (90))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	A1B	L	X	-5.557e-6
2	A1B	L	Y	24.504
3	A1T	L	X	-5.557e-6
4	A1T	L	Y	24.504
5	A4B	L	X	-5.601e-6

Joint Loads and Enforced Displacements (BLC 32 : Antenna Wind w/ Ice (90)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
6	A4B	L	Y	24.697
7	A4T	L	X	-5.601e-6
8	A4T	L	Y	24.697
9	A1R	L	X	-1.9e-6
10	A1R	L	Y	8.378
11	A4R	L	X	-2.936e-6
12	A4R	L	Y	12.945
13	A1R	L	X	-2.664e-6
14	A1R	L	Y	11.747
15	A4R	L	X	-2.811e-6
16	A4R	L	Y	12.394
17	A1R	L	X	-2.046e-6
18	A1R	L	Y	9.021
19	A4R	L	X	-8.641e-6
20	A4R	L	Y	38.099

Joint Loads and Enforced Displacements (BLC 33 : Antenna Wind w/ Ice (120))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	A1B	L	X	16.573
2	A1B	L	Y	28.705
3	A1T	L	X	16.573
4	A1T	L	Y	28.705
5	A4B	L	X	16.643
6	A4B	L	Y	28.827
7	A4T	L	X	16.643
8	A4T	L	Y	28.827
9	A1R	L	X	4.151
10	A1R	L	Y	7.189
11	A4R	L	X	5.924
12	A4R	L	Y	10.261
13	A1R	L	X	5.501
14	A1R	L	Y	9.527
15	A4R	L	X	5.558
16	A4R	L	Y	9.628
17	A1R	L	X	4.511
18	A1R	L	Y	7.813
19	A4R	L	X	17.201
20	A4R	L	Y	29.793

Joint Loads and Enforced Displacements (BLC 34 : Antenna Wind w/ Ice (135))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	A1B	L	X	29.547
2	A1B	L	Y	29.547
3	A1T	L	X	29.547
4	A1T	L	Y	29.547
5	A4B	L	X	29.611
6	A4B	L	Y	29.611
7	A4T	L	X	29.611
8	A4T	L	Y	29.611
9	A1R	L	X	5.816
10	A1R	L	Y	5.816

Joint Loads and Enforced Displacements (BLC 34 : Antenna Wind w/ Ice (135)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
11	A4R	L	X	7.603
12	A4R	L	Y	7.603
13	A1R	L	X	7.251
14	A1R	L	Y	7.251
15	A4R	L	X	6.958
16	A4R	L	Y	6.958
17	A1R	L	X	6.379
18	A1R	L	Y	6.379
19	A4R	L	X	21.711
20	A4R	L	Y	21.711

Joint Loads and Enforced Displacements (BLC 35 : Antenna Wind w/ Ice (150))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	A1B	L	X	43.671
2	A1B	L	Y	25.214
3	A1T	L	X	43.671
4	A1T	L	Y	25.214
5	A4B	L	X	43.705
6	A4B	L	Y	25.233
7	A4T	L	X	43.705
8	A4T	L	Y	25.233
9	A1R	L	X	7.056
10	A1R	L	Y	4.074
11	A4R	L	X	8.362
12	A4R	L	Y	4.828
13	A1R	L	X	8.234
14	A1R	L	Y	4.754
15	A4R	L	X	7.416
16	A4R	L	Y	4.281
17	A1R	L	X	7.813
18	A1R	L	Y	4.511
19	A4R	L	X	23.389
20	A4R	L	Y	13.504

Joint Loads and Enforced Displacements (BLC 36 : Maintenance Live Lm (1))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	M1	L	Z	-500

Joint Loads and Enforced Displacements (BLC 37 : Maintenance Live Lm (2))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	M2	L	Z	-500

Joint Loads and Enforced Displacements (BLC 38 : Maintenance Live Lm (3))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	M3	L	Z	-500

Joint Loads and Enforced Displacements (BLC 39 : Maintenance Live Lm (4))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	M4	L	Z	-500

Member Distributed Loads (BLC 2 : Dead of Ice)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	Z	-6.158	-6.158	0	0
2	M2	Z	-9.679	-9.679	0	0
3	M3	Z	-9.679	-9.679	0	0
4	M14	Z	-6.514	-6.514	0	0
5	M15	Z	-6.514	-6.514	0	0
6	M18	Z	-6.641	-6.641	0	0
7	M19	Z	-6.641	-6.641	0	0
8	M18A	Z	-4.651	-4.651	0	0
9	M19A	Z	-4.651	-4.651	0	0
10	M22	Z	-2.474	-2.474	0	0
11	M23	Z	-2.474	-2.474	0	0
12	M26	Z	-6.514	-6.514	0	0
13	M27	Z	-6.514	-6.514	0	0
14	M28	Z	-6.641	-6.641	0	0
15	M29	Z	-6.641	-6.641	0	0
16	M30	Z	-4.651	-4.651	0	0
17	M31	Z	-4.651	-4.651	0	0
18	M34	Z	-2.474	-2.474	0	0
19	M35	Z	-2.474	-2.474	0	0
20	M34A	Z	-5.321	-5.321	0	0
21	M35A	Z	-5.321	-5.321	0	0
22	M40	Z	-5.321	-5.321	0	0
23	M39A	Z	-5.321	-5.321	0	0
24	M45	Z	-5.321	-5.321	0	0
25	M45A	Z	-5.321	-5.321	0	0
26	M50	Z	-5.321	-5.321	0	0
27	M51	Z	-5.321	-5.321	0	0

Member Distributed Loads (BLC 4 : Structure Wind (0))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	X	-14.537	-14.537	0	0
2	M1	Y	0	0	0	0
3	M2	X	0	0	0	0
4	M2	Y	0	0	0	0
5	M3	X	0	0	0	0
6	M3	Y	0	0	0	0
7	M14	X	-18.31	-18.31	0	0
8	M14	Y	0	0	0	0
9	M15	X	-18.31	-18.31	0	0
10	M15	Y	0	0	0	0
11	M18	X	-18.822	-18.822	0	0
12	M18	Y	0	0	0	0
13	M19	X	-18.822	-18.822	0	0
14	M19	Y	0	0	0	0
15	M18A	X	-4.932	-4.932	0	0
16	M18A	Y	0	0	0	0
17	M19A	X	-4.932	-4.932	0	0
18	M19A	Y	0	0	0	0
19	M22	X	-2.388	-2.388	0	0
20	M22	Y	0	0	0	0

Member Distributed Loads (BLC 4 : Structure Wind (0)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
21	M23	X	-3.115	-3.115	0	0
22	M23	Y	0	0	0	0
23	M26	X	-18.31	-18.31	0	0
24	M26	Y	0	0	0	0
25	M27	X	-18.31	-18.31	0	0
26	M27	Y	0	0	0	0
27	M28	X	-18.822	-18.822	0	0
28	M28	Y	0	0	0	0
29	M29	X	-18.822	-18.822	0	0
30	M29	Y	0	0	0	0
31	M30	X	-4.932	-4.932	0	0
32	M30	Y	0	0	0	0
33	M31	X	-4.932	-4.932	0	0
34	M31	Y	0	0	0	0
35	M34	X	-2.388	-2.388	0	0
36	M34	Y	0	0	0	0
37	M35	X	-3.115	-3.115	0	0
38	M35	Y	0	0	0	0
39	M34A	X	-11.941	-11.941	0	0
40	M34A	Y	0	0	0	0
41	M35A	X	-11.941	-11.941	0	0
42	M35A	Y	0	0	0	0
43	M40	X	-11.941	-11.941	0	0
44	M40	Y	0	0	0	0
45	M39A	X	-11.941	-11.941	0	0
46	M39A	Y	0	0	0	0
47	M45	X	-11.941	-11.941	0	0
48	M45	Y	0	0	0	0
49	M45A	X	-11.941	-11.941	0	0
50	M45A	Y	0	0	0	0
51	M50	X	-3.343	-3.343	0	0
52	M50	Y	0	0	0	0
53	M51	X	-3.335	-3.335	0	0
54	M51	Y	0	0	0	0

Member Distributed Loads (BLC 5 : Structure Wind (30))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	X	-12.589	-12.589	0	0
2	M1	Y	7.268	7.268	0	0
3	M2	X	-13.489	-13.489	0	0
4	M2	Y	7.788	7.788	0	0
5	M3	X	-13.489	-13.489	0	0
6	M3	Y	7.788	7.788	0	0
7	M14	X	-2.124	-2.124	0	0
8	M14	Y	1.227	1.227	0	0
9	M15	X	-2.124	-2.124	0	0
10	M15	Y	1.227	1.227	0	0
11	M18	X	-2.184	-2.184	0	0
12	M18	Y	1.261	1.261	0	0
13	M19	X	-2.184	-2.184	0	0
14	M19	Y	1.261	1.261	0	0

Member Distributed Loads (BLC 5 : Structure Wind (30)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
15	M18A	X	-.572	-.572	0	0
16	M18A	Y	.33	.33	0	0
17	M19A	X	-.572	-.572	0	0
18	M19A	Y	.33	.33	0	0
19	M22	X	-1.522	-1.522	0	0
20	M22	Y	.879	.879	0	0
21	M23	X	-2.698	-2.698	0	0
22	M23	Y	1.558	1.558	0	0
23	M26	X	-29.589	-29.589	0	0
24	M26	Y	17.083	17.083	0	0
25	M27	X	-29.589	-29.589	0	0
26	M27	Y	17.083	17.083	0	0
27	M28	X	-30.416	-30.416	0	0
28	M28	Y	17.561	17.561	0	0
29	M29	X	-30.416	-30.416	0	0
30	M29	Y	17.561	17.561	0	0
31	M30	X	-7.97	-7.97	0	0
32	M30	Y	4.602	4.602	0	0
33	M31	X	-7.97	-7.97	0	0
34	M31	Y	4.602	4.602	0	0
35	M34	X	-2.613	-2.613	0	0
36	M34	Y	1.509	1.509	0	0
37	M35	X	-2.698	-2.698	0	0
38	M35	Y	1.558	1.558	0	0
39	M34A	X	-7.756	-7.756	0	0
40	M34A	Y	4.478	4.478	0	0
41	M35A	X	-7.756	-7.756	0	0
42	M35A	Y	4.478	4.478	0	0
43	M40	X	-10.341	-10.341	0	0
44	M40	Y	5.971	5.971	0	0
45	M39A	X	-10.341	-10.341	0	0
46	M39A	Y	5.971	5.971	0	0
47	M45	X	-10.341	-10.341	0	0
48	M45	Y	5.971	5.971	0	0
49	M45A	X	-10.341	-10.341	0	0
50	M45A	Y	5.971	5.971	0	0
51	M50	X	-.051	-.051	0	0
52	M50	Y	.029	.029	0	0
53	M51	X	-8.033	-8.033	0	0
54	M51	Y	4.638	4.638	0	0

Member Distributed Loads (BLC 6 : Structure Wind (45))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	X	-10.279	-10.279	0	0
2	M1	Y	10.279	10.279	0	0
3	M2	X	-22.027	-22.027	0	0
4	M2	Y	22.027	22.027	0	0
5	M3	X	-22.027	-22.027	0	0
6	M3	Y	22.027	22.027	0	0
7	M14	X	-3.33e-13	-3.33e-13	0	0
8	M14	Y	3.33e-13	3.33e-13	0	0

Member Distributed Loads (BLC 6 : Structure Wind (45)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
9	M15	X	-3.33e-13	-3.33e-13	0	0
10	M15	Y	3.33e-13	3.33e-13	0	0
11	M18	X	-3.423e-13	-3.423e-13	0	0
12	M18	Y	3.423e-13	3.423e-13	0	0
13	M19	X	-3.423e-13	-3.423e-13	0	0
14	M19	Y	3.423e-13	3.423e-13	0	0
15	M18A	X	-8.969e-14	-8.969e-14	0	0
16	M18A	Y	8.969e-14	8.969e-14	0	0
17	M19A	X	-8.969e-14	-8.969e-14	0	0
18	M19A	Y	8.969e-14	8.969e-14	0	0
19	M22	X	-1.174	-1.174	0	0
20	M22	Y	1.174	1.174	0	0
21	M23	X	-2.203	-2.203	0	0
22	M23	Y	2.203	2.203	0	0
23	M26	X	-25.894	-25.894	0	0
24	M26	Y	25.894	25.894	0	0
25	M27	X	-25.894	-25.894	0	0
26	M27	Y	25.894	25.894	0	0
27	M28	X	-26.618	-26.618	0	0
28	M28	Y	26.618	26.618	0	0
29	M29	X	-26.618	-26.618	0	0
30	M29	Y	26.618	26.618	0	0
31	M30	X	-6.975	-6.975	0	0
32	M30	Y	6.975	6.975	0	0
33	M31	X	-6.975	-6.975	0	0
34	M31	Y	6.975	6.975	0	0
35	M34	X	-2.203	-2.203	0	0
36	M34	Y	2.203	2.203	0	0
37	M35	X	-2.203	-2.203	0	0
38	M35	Y	2.203	2.203	0	0
39	M34A	X	-4.222	-4.222	0	0
40	M34A	Y	4.222	4.222	0	0
41	M35A	X	-4.222	-4.222	0	0
42	M35A	Y	4.222	4.222	0	0
43	M40	X	-8.444	-8.444	0	0
44	M40	Y	8.444	8.444	0	0
45	M39A	X	-8.444	-8.444	0	0
46	M39A	Y	8.444	8.444	0	0
47	M45	X	-8.444	-8.444	0	0
48	M45	Y	8.444	8.444	0	0
49	M45A	X	-8.444	-8.444	0	0
50	M45A	Y	8.444	8.444	0	0
51	M50	X	-.474	-.474	0	0
52	M50	Y	.474	.474	0	0
53	M51	X	-8.002	-8.002	0	0
54	M51	Y	8.002	8.002	0	0

Member Distributed Loads (BLC 7 : Structure Wind (60))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	X	-7.268	-7.268	0	0
2	M1	Y	12.589	12.589	0	0

Member Distributed Loads (BLC 7 : Structure Wind (60)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
3	M2	X	-23.363	-23.363	0	0
4	M2	Y	40.466	40.466	0	0
5	M3	X	-23.363	-23.363	0	0
6	M3	Y	40.466	40.466	0	0
7	M14	X	-1.227	-1.227	0	0
8	M14	Y	2.124	2.124	0	0
9	M15	X	-1.227	-1.227	0	0
10	M15	Y	2.124	2.124	0	0
11	M18	X	-1.261	-1.261	0	0
12	M18	Y	2.184	2.184	0	0
13	M19	X	-1.261	-1.261	0	0
14	M19	Y	2.184	2.184	0	0
15	M18A	X	-.33	-.33	0	0
16	M18A	Y	.572	.572	0	0
17	M19A	X	-.33	-.33	0	0
18	M19A	Y	.572	.572	0	0
19	M22	X	-.879	-.879	0	0
20	M22	Y	1.522	1.522	0	0
21	M23	X	-1.558	-1.558	0	0
22	M23	Y	2.698	2.698	0	0
23	M26	X	-17.083	-17.083	0	0
24	M26	Y	29.589	29.589	0	0
25	M27	X	-17.083	-17.083	0	0
26	M27	Y	29.589	29.589	0	0
27	M28	X	-17.561	-17.561	0	0
28	M28	Y	30.416	30.416	0	0
29	M29	X	-17.561	-17.561	0	0
30	M29	Y	30.416	30.416	0	0
31	M30	X	-4.602	-4.602	0	0
32	M30	Y	7.97	7.97	0	0
33	M31	X	-4.602	-4.602	0	0
34	M31	Y	7.97	7.97	0	0
35	M34	X	-1.509	-1.509	0	0
36	M34	Y	2.613	2.613	0	0
37	M35	X	-1.558	-1.558	0	0
38	M35	Y	2.698	2.698	0	0
39	M34A	X	-1.493	-1.493	0	0
40	M34A	Y	2.585	2.585	0	0
41	M35A	X	-1.493	-1.493	0	0
42	M35A	Y	2.585	2.585	0	0
43	M40	X	-5.971	-5.971	0	0
44	M40	Y	10.341	10.341	0	0
45	M39A	X	-5.971	-5.971	0	0
46	M39A	Y	10.341	10.341	0	0
47	M45	X	-5.971	-5.971	0	0
48	M45	Y	10.341	10.341	0	0
49	M45A	X	-5.971	-5.971	0	0
50	M45A	Y	10.341	10.341	0	0
51	M50	X	-1.355	-1.355	0	0
52	M50	Y	2.347	2.347	0	0
53	M51	X	-5.965	-5.965	0	0
54	M51	Y	10.331	10.331	0	0

Member Distributed Loads (BLC 8 : Structure Wind (90))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	X	-3.297e-6	-3.297e-6	0	0
2	M1	Y	14.537	14.537	0	0
3	M2	X	-1.413e-5	-1.413e-5	0	0
4	M2	Y	62.301	62.301	0	0
5	M3	X	-1.413e-5	-1.413e-5	0	0
6	M3	Y	62.301	62.301	0	0
7	M14	X	-4.153e-6	-4.153e-6	0	0
8	M14	Y	18.31	18.31	0	0
9	M15	X	-4.153e-6	-4.153e-6	0	0
10	M15	Y	18.31	18.31	0	0
11	M18	X	-4.269e-6	-4.269e-6	0	0
12	M18	Y	18.822	18.822	0	0
13	M19	X	-4.269e-6	-4.269e-6	0	0
14	M19	Y	18.822	18.822	0	0
15	M18A	X	-1.119e-6	-1.119e-6	0	0
16	M18A	Y	4.932	4.932	0	0
17	M19A	X	-1.119e-6	-1.119e-6	0	0
18	M19A	Y	4.932	4.932	0	0
19	M22	X	-5.415e-7	-5.415e-7	0	0
20	M22	Y	2.388	2.388	0	0
21	M23	X	-7.065e-7	-7.065e-7	0	0
22	M23	Y	3.115	3.115	0	0
23	M26	X	-4.153e-6	-4.153e-6	0	0
24	M26	Y	18.31	18.31	0	0
25	M27	X	-4.153e-6	-4.153e-6	0	0
26	M27	Y	18.31	18.31	0	0
27	M28	X	-4.269e-6	-4.269e-6	0	0
28	M28	Y	18.822	18.822	0	0
29	M29	X	-4.269e-6	-4.269e-6	0	0
30	M29	Y	18.822	18.822	0	0
31	M30	X	-1.119e-6	-1.119e-6	0	0
32	M30	Y	4.932	4.932	0	0
33	M31	X	-1.119e-6	-1.119e-6	0	0
34	M31	Y	4.932	4.932	0	0
35	M34	X	-5.415e-7	-5.415e-7	0	0
36	M34	Y	2.388	2.388	0	0
37	M35	X	-7.065e-7	-7.065e-7	0	0
38	M35	Y	3.115	3.115	0	0
39	M34A	X	-1.393e-19	-1.393e-19	0	0
40	M34A	Y	6.142e-13	6.142e-13	0	0
41	M35A	X	-1.393e-19	-1.393e-19	0	0
42	M35A	Y	6.142e-13	6.142e-13	0	0
43	M40	X	-2.708e-6	-2.708e-6	0	0
44	M40	Y	11.941	11.941	0	0
45	M39A	X	-2.708e-6	-2.708e-6	0	0
46	M39A	Y	11.941	11.941	0	0
47	M45	X	-2.708e-6	-2.708e-6	0	0
48	M45	Y	11.941	11.941	0	0
49	M45A	X	-2.708e-6	-2.708e-6	0	0
50	M45A	Y	11.941	11.941	0	0
51	M50	X	-1.961e-6	-1.961e-6	0	0
52	M50	Y	8.645	8.645	0	0

Member Distributed Loads (BLC 8 : Structure Wind (90)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
53	M51	X	-1.96e-6	-1.96e-6	0	0
54	M51	Y	8.642	8.642	0	0

Member Distributed Loads (BLC 9 : Structure Wind (120))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	X	7.268	7.268	0	0
2	M1	Y	12.589	12.589	0	0
3	M2	X	23.363	23.363	0	0
4	M2	Y	40.466	40.466	0	0
5	M3	X	23.363	23.363	0	0
6	M3	Y	40.466	40.466	0	0
7	M14	X	17.083	17.083	0	0
8	M14	Y	29.589	29.589	0	0
9	M15	X	17.083	17.083	0	0
10	M15	Y	29.589	29.589	0	0
11	M18	X	17.561	17.561	0	0
12	M18	Y	30.416	30.416	0	0
13	M19	X	17.561	17.561	0	0
14	M19	Y	30.416	30.416	0	0
15	M18A	X	4.602	4.602	0	0
16	M18A	Y	7.97	7.97	0	0
17	M19A	X	4.602	4.602	0	0
18	M19A	Y	7.97	7.97	0	0
19	M22	X	1.509	1.509	0	0
20	M22	Y	2.613	2.613	0	0
21	M23	X	1.558	1.558	0	0
22	M23	Y	2.698	2.698	0	0
23	M26	X	1.227	1.227	0	0
24	M26	Y	2.124	2.124	0	0
25	M27	X	1.227	1.227	0	0
26	M27	Y	2.124	2.124	0	0
27	M28	X	1.261	1.261	0	0
28	M28	Y	2.184	2.184	0	0
29	M29	X	1.261	1.261	0	0
30	M29	Y	2.184	2.184	0	0
31	M30	X	.33	.33	0	0
32	M30	Y	.572	.572	0	0
33	M31	X	.33	.33	0	0
34	M31	Y	.572	.572	0	0
35	M34	X	.879	.879	0	0
36	M34	Y	1.522	1.522	0	0
37	M35	X	1.558	1.558	0	0
38	M35	Y	2.698	2.698	0	0
39	M34A	X	1.493	1.493	0	0
40	M34A	Y	2.585	2.585	0	0
41	M35A	X	1.493	1.493	0	0
42	M35A	Y	2.585	2.585	0	0
43	M40	X	5.97	5.97	0	0
44	M40	Y	10.341	10.341	0	0
45	M39A	X	5.97	5.97	0	0
46	M39A	Y	10.341	10.341	0	0

Member Distributed Loads (BLC 9 : Structure Wind (120)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
47	M45	X	5.97	5.97	0	0
48	M45	Y	10.341	10.341	0	0
49	M45A	X	5.97	5.97	0	0
50	M45A	Y	10.341	10.341	0	0
51	M50	X	5.965	5.965	0	0
52	M50	Y	10.331	10.331	0	0
53	M51	X	1.35	1.35	0	0
54	M51	Y	2.338	2.338	0	0

Member Distributed Loads (BLC 10 : Structure Wind (135))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	X	10.279	10.279	0	0
2	M1	Y	10.279	10.279	0	0
3	M2	X	22.027	22.027	0	0
4	M2	Y	22.027	22.027	0	0
5	M3	X	22.027	22.027	0	0
6	M3	Y	22.027	22.027	0	0
7	M14	X	25.894	25.894	0	0
8	M14	Y	25.894	25.894	0	0
9	M15	X	25.894	25.894	0	0
10	M15	Y	25.894	25.894	0	0
11	M18	X	26.618	26.618	0	0
12	M18	Y	26.618	26.618	0	0
13	M19	X	26.618	26.618	0	0
14	M19	Y	26.618	26.618	0	0
15	M18A	X	6.975	6.975	0	0
16	M18A	Y	6.975	6.975	0	0
17	M19A	X	6.975	6.975	0	0
18	M19A	Y	6.975	6.975	0	0
19	M22	X	2.203	2.203	0	0
20	M22	Y	2.203	2.203	0	0
21	M23	X	2.203	2.203	0	0
22	M23	Y	2.203	2.203	0	0
23	M26	X	2.997e-12	2.997e-12	0	0
24	M26	Y	2.997e-12	2.997e-12	0	0
25	M27	X	2.997e-12	2.997e-12	0	0
26	M27	Y	2.997e-12	2.997e-12	0	0
27	M28	X	3.081e-12	3.081e-12	0	0
28	M28	Y	3.081e-12	3.081e-12	0	0
29	M29	X	3.081e-12	3.081e-12	0	0
30	M29	Y	3.081e-12	3.081e-12	0	0
31	M30	X	8.072e-13	8.072e-13	0	0
32	M30	Y	8.072e-13	8.072e-13	0	0
33	M31	X	8.072e-13	8.072e-13	0	0
34	M31	Y	8.072e-13	8.072e-13	0	0
35	M34	X	1.174	1.174	0	0
36	M34	Y	1.174	1.174	0	0
37	M35	X	2.203	2.203	0	0
38	M35	Y	2.203	2.203	0	0
39	M34A	X	4.222	4.222	0	0
40	M34A	Y	4.222	4.222	0	0

Member Distributed Loads (BLC 10 : Structure Wind (135)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
41	M35A	X	4.222	4.222	0	0
42	M35A	Y	4.222	4.222	0	0
43	M40	X	8.444	8.444	0	0
44	M40	Y	8.444	8.444	0	0
45	M39A	X	8.444	8.444	0	0
46	M39A	Y	8.444	8.444	0	0
47	M45	X	8.444	8.444	0	0
48	M45	Y	8.444	8.444	0	0
49	M45A	X	8.444	8.444	0	0
50	M45A	Y	8.444	8.444	0	0
51	M50	X	8.003	8.003	0	0
52	M50	Y	8.003	8.003	0	0
53	M51	X	.466	.466	0	0
54	M51	Y	.466	.466	0	0

Member Distributed Loads (BLC 11 : Structure Wind (150))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	X	12.589	12.589	0	0
2	M1	Y	7.268	7.268	0	0
3	M2	X	13.489	13.489	0	0
4	M2	Y	7.788	7.788	0	0
5	M3	X	13.489	13.489	0	0
6	M3	Y	7.788	7.788	0	0
7	M14	X	29.589	29.589	0	0
8	M14	Y	17.083	17.083	0	0
9	M15	X	29.589	29.589	0	0
10	M15	Y	17.083	17.083	0	0
11	M18	X	30.416	30.416	0	0
12	M18	Y	17.561	17.561	0	0
13	M19	X	30.416	30.416	0	0
14	M19	Y	17.561	17.561	0	0
15	M18A	X	7.97	7.97	0	0
16	M18A	Y	4.602	4.602	0	0
17	M19A	X	7.97	7.97	0	0
18	M19A	Y	4.602	4.602	0	0
19	M22	X	2.613	2.613	0	0
20	M22	Y	1.509	1.509	0	0
21	M23	X	2.698	2.698	0	0
22	M23	Y	1.558	1.558	0	0
23	M26	X	2.124	2.124	0	0
24	M26	Y	1.227	1.227	0	0
25	M27	X	2.124	2.124	0	0
26	M27	Y	1.227	1.227	0	0
27	M28	X	2.184	2.184	0	0
28	M28	Y	1.261	1.261	0	0
29	M29	X	2.184	2.184	0	0
30	M29	Y	1.261	1.261	0	0
31	M30	X	.572	.572	0	0
32	M30	Y	.33	.33	0	0
33	M31	X	.572	.572	0	0
34	M31	Y	.33	.33	0	0

Member Distributed Loads (BLC 11 : Structure Wind (150)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
35	M34	X	1.522	1.522	0	0
36	M34	Y	.879	.879	0	0
37	M35	X	2.698	2.698	0	0
38	M35	Y	1.558	1.558	0	0
39	M34A	X	7.756	7.756	0	0
40	M34A	Y	4.478	4.478	0	0
41	M35A	X	7.756	7.756	0	0
42	M35A	Y	4.478	4.478	0	0
43	M40	X	10.341	10.341	0	0
44	M40	Y	5.971	5.971	0	0
45	M39A	X	10.341	10.341	0	0
46	M39A	Y	5.971	5.971	0	0
47	M45	X	10.341	10.341	0	0
48	M45	Y	5.971	5.971	0	0
49	M45A	X	10.341	10.341	0	0
50	M45A	Y	5.971	5.971	0	0
51	M50	X	8.036	8.036	0	0
52	M50	Y	4.639	4.639	0	0
53	M51	X	.04	.04	0	0
54	M51	Y	.023	.023	0	0

Member Distributed Loads (BLC 12 : Structure Wind w/ Ice (0))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	X	-3.783	-3.783	0	0
2	M1	Y	0	0	0	0
3	M2	X	0	0	0	0
4	M2	Y	0	0	0	0
5	M3	X	0	0	0	0
6	M3	Y	0	0	0	0
7	M14	X	-2.499	-2.499	0	0
8	M14	Y	0	0	0	0
9	M15	X	-2.499	-2.499	0	0
10	M15	Y	0	0	0	0
11	M18	X	-2.548	-2.548	0	0
12	M18	Y	0	0	0	0
13	M19	X	-2.548	-2.548	0	0
14	M19	Y	0	0	0	0
15	M18A	X	-1.518	-1.518	0	0
16	M18A	Y	0	0	0	0
17	M19A	X	-1.518	-1.518	0	0
18	M19A	Y	0	0	0	0
19	M22	X	-1.499	-1.499	0	0
20	M22	Y	0	0	0	0
21	M23	X	-1.956	-1.956	0	0
22	M23	Y	0	0	0	0
23	M26	X	-2.499	-2.499	0	0
24	M26	Y	0	0	0	0
25	M27	X	-2.499	-2.499	0	0
26	M27	Y	0	0	0	0
27	M28	X	-2.548	-2.548	0	0
28	M28	Y	0	0	0	0

Member Distributed Loads (BLC 12 : Structure Wind w/ Ice (0)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
29	M29	X	-2.548	-2.548	0	0
30	M29	Y	0	0	0	0
31	M30	X	-1.518	-1.518	0	0
32	M30	Y	0	0	0	0
33	M31	X	-1.518	-1.518	0	0
34	M31	Y	0	0	0	0
35	M34	X	-1.499	-1.499	0	0
36	M34	Y	0	0	0	0
37	M35	X	-1.956	-1.956	0	0
38	M35	Y	0	0	0	0
39	M34A	X	-3.368	-3.368	0	0
40	M34A	Y	0	0	0	0
41	M35A	X	-3.368	-3.368	0	0
42	M35A	Y	0	0	0	0
43	M40	X	-3.368	-3.368	0	0
44	M40	Y	0	0	0	0
45	M39A	X	-3.368	-3.368	0	0
46	M39A	Y	0	0	0	0
47	M45	X	-3.368	-3.368	0	0
48	M45	Y	0	0	0	0
49	M45A	X	-3.368	-3.368	0	0
50	M45A	Y	0	0	0	0
51	M50	X	-.943	-.943	0	0
52	M50	Y	0	0	0	0
53	M51	X	-.941	-.941	0	0
54	M51	Y	0	0	0	0

Member Distributed Loads (BLC 13 : Structure Wind w/ Ice (30))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	X	-3.277	-3.277	0	0
2	M1	Y	1.892	1.892	0	0
3	M2	X	-1.614	-1.614	0	0
4	M2	Y	.932	.932	0	0
5	M3	X	-1.614	-1.614	0	0
6	M3	Y	.932	.932	0	0
7	M14	X	-.29	-.29	0	0
8	M14	Y	.167	.167	0	0
9	M15	X	-.29	-.29	0	0
10	M15	Y	.167	.167	0	0
11	M18	X	-.296	-.296	0	0
12	M18	Y	.171	.171	0	0
13	M19	X	-.296	-.296	0	0
14	M19	Y	.171	.171	0	0
15	M18A	X	-.176	-.176	0	0
16	M18A	Y	.102	.102	0	0
17	M19A	X	-.176	-.176	0	0
18	M19A	Y	.102	.102	0	0
19	M22	X	-.956	-.956	0	0
20	M22	Y	.552	.552	0	0
21	M23	X	-1.694	-1.694	0	0
22	M23	Y	.978	.978	0	0

Member Distributed Loads (BLC 13 : Structure Wind w/ Ice (30)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
23	M26	X	-4.038	-4.038	0	0
24	M26	Y	2.331	2.331	0	0
25	M27	X	-4.038	-4.038	0	0
26	M27	Y	2.331	2.331	0	0
27	M28	X	-4.117	-4.117	0	0
28	M28	Y	2.377	2.377	0	0
29	M29	X	-4.117	-4.117	0	0
30	M29	Y	2.377	2.377	0	0
31	M30	X	-2.453	-2.453	0	0
32	M30	Y	1.416	1.416	0	0
33	M31	X	-2.453	-2.453	0	0
34	M31	Y	1.416	1.416	0	0
35	M34	X	-1.641	-1.641	0	0
36	M34	Y	.947	.947	0	0
37	M35	X	-1.694	-1.694	0	0
38	M35	Y	.978	.978	0	0
39	M34A	X	-2.188	-2.188	0	0
40	M34A	Y	1.263	1.263	0	0
41	M35A	X	-2.188	-2.188	0	0
42	M35A	Y	1.263	1.263	0	0
43	M40	X	-2.917	-2.917	0	0
44	M40	Y	1.684	1.684	0	0
45	M39A	X	-2.917	-2.917	0	0
46	M39A	Y	1.684	1.684	0	0
47	M45	X	-2.917	-2.917	0	0
48	M45	Y	1.684	1.684	0	0
49	M45A	X	-2.917	-2.917	0	0
50	M45A	Y	1.684	1.684	0	0
51	M50	X	-.014	-.014	0	0
52	M50	Y	.008	.008	0	0
53	M51	X	-2.266	-2.266	0	0
54	M51	Y	1.308	1.308	0	0

Member Distributed Loads (BLC 14 : Structure Wind w/ Ice (45))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	X	-2.675	-2.675	0	0
2	M1	Y	2.675	2.675	0	0
3	M2	X	-2.635	-2.635	0	0
4	M2	Y	2.635	2.635	0	0
5	M3	X	-2.635	-2.635	0	0
6	M3	Y	2.635	2.635	0	0
7	M14	X	-4.544e-14	-4.544e-14	0	0
8	M14	Y	4.544e-14	4.544e-14	0	0
9	M15	X	-4.544e-14	-4.544e-14	0	0
10	M15	Y	4.544e-14	4.544e-14	0	0
11	M18	X	-4.633e-14	-4.633e-14	0	0
12	M18	Y	4.633e-14	4.633e-14	0	0
13	M19	X	-4.633e-14	-4.633e-14	0	0
14	M19	Y	4.633e-14	4.633e-14	0	0
15	M18A	X	-2.76e-14	-2.76e-14	0	0
16	M18A	Y	2.76e-14	2.76e-14	0	0

Member Distributed Loads (BLC 14 : Structure Wind w/ Ice (45)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
17	M19A	X	-2.76e-14	-2.76e-14	0	0
18	M19A	Y	2.76e-14	2.76e-14	0	0
19	M22	X	-.737	-.737	0	0
20	M22	Y	.737	.737	0	0
21	M23	X	-1.383	-1.383	0	0
22	M23	Y	1.383	1.383	0	0
23	M26	X	-3.534	-3.534	0	0
24	M26	Y	3.534	3.534	0	0
25	M27	X	-3.534	-3.534	0	0
26	M27	Y	3.534	3.534	0	0
27	M28	X	-3.603	-3.603	0	0
28	M28	Y	3.603	3.603	0	0
29	M29	X	-3.603	-3.603	0	0
30	M29	Y	3.603	3.603	0	0
31	M30	X	-2.147	-2.147	0	0
32	M30	Y	2.147	2.147	0	0
33	M31	X	-2.147	-2.147	0	0
34	M31	Y	2.147	2.147	0	0
35	M34	X	-1.383	-1.383	0	0
36	M34	Y	1.383	1.383	0	0
37	M35	X	-1.383	-1.383	0	0
38	M35	Y	1.383	1.383	0	0
39	M34A	X	-1.191	-1.191	0	0
40	M34A	Y	1.191	1.191	0	0
41	M35A	X	-1.191	-1.191	0	0
42	M35A	Y	1.191	1.191	0	0
43	M40	X	-2.382	-2.382	0	0
44	M40	Y	2.382	2.382	0	0
45	M39A	X	-2.382	-2.382	0	0
46	M39A	Y	2.382	2.382	0	0
47	M45	X	-2.382	-2.382	0	0
48	M45	Y	2.382	2.382	0	0
49	M45A	X	-2.382	-2.382	0	0
50	M45A	Y	2.382	2.382	0	0
51	M50	X	-.134	-.134	0	0
52	M50	Y	.134	.134	0	0
53	M51	X	-2.257	-2.257	0	0
54	M51	Y	2.257	2.257	0	0

Member Distributed Loads (BLC 15 : Structure Wind w/ Ice (60))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	X	-1.892	-1.892	0	0
2	M1	Y	3.277	3.277	0	0
3	M2	X	-2.795	-2.795	0	0
4	M2	Y	4.841	4.841	0	0
5	M3	X	-2.795	-2.795	0	0
6	M3	Y	4.841	4.841	0	0
7	M14	X	-.167	-.167	0	0
8	M14	Y	.29	.29	0	0
9	M15	X	-.167	-.167	0	0
10	M15	Y	.29	.29	0	0

Member Distributed Loads (BLC 15 : Structure Wind w/ Ice (60)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
11	M18	X	-.171	-.171	0	0
12	M18	Y	.296	.296	0	0
13	M19	X	-.171	-.171	0	0
14	M19	Y	.296	.296	0	0
15	M18A	X	-.102	-.102	0	0
16	M18A	Y	.176	.176	0	0
17	M19A	X	-.102	-.102	0	0
18	M19A	Y	.176	.176	0	0
19	M22	X	-.552	-.552	0	0
20	M22	Y	.956	.956	0	0
21	M23	X	-.978	-.978	0	0
22	M23	Y	1.694	1.694	0	0
23	M26	X	-2.331	-2.331	0	0
24	M26	Y	4.038	4.038	0	0
25	M27	X	-2.331	-2.331	0	0
26	M27	Y	4.038	4.038	0	0
27	M28	X	-2.377	-2.377	0	0
28	M28	Y	4.117	4.117	0	0
29	M29	X	-2.377	-2.377	0	0
30	M29	Y	4.117	4.117	0	0
31	M30	X	-1.416	-1.416	0	0
32	M30	Y	2.453	2.453	0	0
33	M31	X	-1.416	-1.416	0	0
34	M31	Y	2.453	2.453	0	0
35	M34	X	-.947	-.947	0	0
36	M34	Y	1.641	1.641	0	0
37	M35	X	-.978	-.978	0	0
38	M35	Y	1.694	1.694	0	0
39	M34A	X	-.421	-.421	0	0
40	M34A	Y	.729	.729	0	0
41	M35A	X	-.421	-.421	0	0
42	M35A	Y	.729	.729	0	0
43	M40	X	-1.684	-1.684	0	0
44	M40	Y	2.917	2.917	0	0
45	M39A	X	-1.684	-1.684	0	0
46	M39A	Y	2.917	2.917	0	0
47	M45	X	-1.684	-1.684	0	0
48	M45	Y	2.917	2.917	0	0
49	M45A	X	-1.684	-1.684	0	0
50	M45A	Y	2.917	2.917	0	0
51	M50	X	-.382	-.382	0	0
52	M50	Y	.662	.662	0	0
53	M51	X	-1.682	-1.682	0	0
54	M51	Y	2.914	2.914	0	0

Member Distributed Loads (BLC 16 : Structure Wind w/ Ice (90))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	X	-8.581e-7	-8.581e-7	0	0
2	M1	Y	3.783	3.783	0	0
3	M2	X	-1.69e-6	-1.69e-6	0	0
4	M2	Y	7.453	7.453	0	0

Member Distributed Loads (BLC 16 : Structure Wind w/ Ice (90)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
5	M3	X	-1.69e-6	-1.69e-6	0	0
6	M3	Y	7.453	7.453	0	0
7	M14	X	-5.667e-7	-5.667e-7	0	0
8	M14	Y	2.499	2.499	0	0
9	M15	X	-5.667e-7	-5.667e-7	0	0
10	M15	Y	2.499	2.499	0	0
11	M18	X	-5.778e-7	-5.778e-7	0	0
12	M18	Y	2.548	2.548	0	0
13	M19	X	-5.778e-7	-5.778e-7	0	0
14	M19	Y	2.548	2.548	0	0
15	M18A	X	-3.443e-7	-3.443e-7	0	0
16	M18A	Y	1.518	1.518	0	0
17	M19A	X	-3.443e-7	-3.443e-7	0	0
18	M19A	Y	1.518	1.518	0	0
19	M22	X	-3.4e-7	-3.4e-7	0	0
20	M22	Y	1.499	1.499	0	0
21	M23	X	-4.436e-7	-4.436e-7	0	0
22	M23	Y	1.956	1.956	0	0
23	M26	X	-5.667e-7	-5.667e-7	0	0
24	M26	Y	2.499	2.499	0	0
25	M27	X	-5.667e-7	-5.667e-7	0	0
26	M27	Y	2.499	2.499	0	0
27	M28	X	-5.778e-7	-5.778e-7	0	0
28	M28	Y	2.548	2.548	0	0
29	M29	X	-5.778e-7	-5.778e-7	0	0
30	M29	Y	2.548	2.548	0	0
31	M30	X	-3.443e-7	-3.443e-7	0	0
32	M30	Y	1.518	1.518	0	0
33	M31	X	-3.443e-7	-3.443e-7	0	0
34	M31	Y	1.518	1.518	0	0
35	M34	X	-3.4e-7	-3.4e-7	0	0
36	M34	Y	1.499	1.499	0	0
37	M35	X	-4.436e-7	-4.436e-7	0	0
38	M35	Y	1.956	1.956	0	0
39	M34A	X	-3.929e-20	-3.929e-20	0	0
40	M34A	Y	1.732e-13	1.732e-13	0	0
41	M35A	X	-3.929e-20	-3.929e-20	0	0
42	M35A	Y	1.732e-13	1.732e-13	0	0
43	M40	X	-7.639e-7	-7.639e-7	0	0
44	M40	Y	3.368	3.368	0	0
45	M39A	X	-7.639e-7	-7.639e-7	0	0
46	M39A	Y	3.368	3.368	0	0
47	M45	X	-7.639e-7	-7.639e-7	0	0
48	M45	Y	3.368	3.368	0	0
49	M45A	X	-7.639e-7	-7.639e-7	0	0
50	M45A	Y	3.368	3.368	0	0
51	M50	X	-5.53e-7	-5.53e-7	0	0
52	M50	Y	2.438	2.438	0	0
53	M51	X	-5.528e-7	-5.528e-7	0	0
54	M51	Y	2.437	2.437	0	0

Member Distributed Loads (BLC 17 : Structure Wind w/ Ice (120))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	X	1.892	1.892	0	0
2	M1	Y	3.277	3.277	0	0
3	M2	X	2.795	2.795	0	0
4	M2	Y	4.841	4.841	0	0
5	M3	X	2.795	2.795	0	0
6	M3	Y	4.841	4.841	0	0
7	M14	X	2.331	2.331	0	0
8	M14	Y	4.038	4.038	0	0
9	M15	X	2.331	2.331	0	0
10	M15	Y	4.038	4.038	0	0
11	M18	X	2.377	2.377	0	0
12	M18	Y	4.117	4.117	0	0
13	M19	X	2.377	2.377	0	0
14	M19	Y	4.117	4.117	0	0
15	M18A	X	1.416	1.416	0	0
16	M18A	Y	2.453	2.453	0	0
17	M19A	X	1.416	1.416	0	0
18	M19A	Y	2.453	2.453	0	0
19	M22	X	.947	.947	0	0
20	M22	Y	1.641	1.641	0	0
21	M23	X	.978	.978	0	0
22	M23	Y	1.694	1.694	0	0
23	M26	X	.167	.167	0	0
24	M26	Y	.29	.29	0	0
25	M27	X	.167	.167	0	0
26	M27	Y	.29	.29	0	0
27	M28	X	.171	.171	0	0
28	M28	Y	.296	.296	0	0
29	M29	X	.171	.171	0	0
30	M29	Y	.296	.296	0	0
31	M30	X	.102	.102	0	0
32	M30	Y	.176	.176	0	0
33	M31	X	.102	.102	0	0
34	M31	Y	.176	.176	0	0
35	M34	X	.552	.552	0	0
36	M34	Y	.956	.956	0	0
37	M35	X	.978	.978	0	0
38	M35	Y	1.694	1.694	0	0
39	M34A	X	.421	.421	0	0
40	M34A	Y	.729	.729	0	0
41	M35A	X	.421	.421	0	0
42	M35A	Y	.729	.729	0	0
43	M40	X	1.684	1.684	0	0
44	M40	Y	2.917	2.917	0	0
45	M39A	X	1.684	1.684	0	0
46	M39A	Y	2.917	2.917	0	0
47	M45	X	1.684	1.684	0	0
48	M45	Y	2.917	2.917	0	0
49	M45A	X	1.684	1.684	0	0
50	M45A	Y	2.917	2.917	0	0
51	M50	X	1.682	1.682	0	0
52	M50	Y	2.914	2.914	0	0

Member Distributed Loads (BLC 17 : Structure Wind w/ Ice (120)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
53	M51	X	.381	.381	0	0
54	M51	Y	.66	.66	0	0

Member Distributed Loads (BLC 18 : Structure Wind w/ Ice (135))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	X	2.675	2.675	0	0
2	M1	Y	2.675	2.675	0	0
3	M2	X	2.635	2.635	0	0
4	M2	Y	2.635	2.635	0	0
5	M3	X	2.635	2.635	0	0
6	M3	Y	2.635	2.635	0	0
7	M14	X	3.534	3.534	0	0
8	M14	Y	3.534	3.534	0	0
9	M15	X	3.534	3.534	0	0
10	M15	Y	3.534	3.534	0	0
11	M18	X	3.603	3.603	0	0
12	M18	Y	3.603	3.603	0	0
13	M19	X	3.603	3.603	0	0
14	M19	Y	3.603	3.603	0	0
15	M18A	X	2.147	2.147	0	0
16	M18A	Y	2.147	2.147	0	0
17	M19A	X	2.147	2.147	0	0
18	M19A	Y	2.147	2.147	0	0
19	M22	X	1.383	1.383	0	0
20	M22	Y	1.383	1.383	0	0
21	M23	X	1.383	1.383	0	0
22	M23	Y	1.383	1.383	0	0
23	M26	X	4.09e-13	4.09e-13	0	0
24	M26	Y	4.09e-13	4.09e-13	0	0
25	M27	X	4.09e-13	4.09e-13	0	0
26	M27	Y	4.09e-13	4.09e-13	0	0
27	M28	X	4.17e-13	4.17e-13	0	0
28	M28	Y	4.17e-13	4.17e-13	0	0
29	M29	X	4.17e-13	4.17e-13	0	0
30	M29	Y	4.17e-13	4.17e-13	0	0
31	M30	X	2.484e-13	2.484e-13	0	0
32	M30	Y	2.484e-13	2.484e-13	0	0
33	M31	X	2.484e-13	2.484e-13	0	0
34	M31	Y	2.484e-13	2.484e-13	0	0
35	M34	X	.737	.737	0	0
36	M34	Y	.737	.737	0	0
37	M35	X	1.383	1.383	0	0
38	M35	Y	1.383	1.383	0	0
39	M34A	X	1.191	1.191	0	0
40	M34A	Y	1.191	1.191	0	0
41	M35A	X	1.191	1.191	0	0
42	M35A	Y	1.191	1.191	0	0
43	M40	X	2.382	2.382	0	0
44	M40	Y	2.382	2.382	0	0
45	M39A	X	2.382	2.382	0	0
46	M39A	Y	2.382	2.382	0	0

Member Distributed Loads (BLC 18 : Structure Wind w/ Ice (135)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
47	M45	X	2.382	2.382	0	0
48	M45	Y	2.382	2.382	0	0
49	M45A	X	2.382	2.382	0	0
50	M45A	Y	2.382	2.382	0	0
51	M50	X	2.257	2.257	0	0
52	M50	Y	2.257	2.257	0	0
53	M51	X	.132	.132	0	0
54	M51	Y	.132	.132	0	0

Member Distributed Loads (BLC 19 : Structure Wind w/ Ice (150))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	X	3.277	3.277	0	0
2	M1	Y	1.892	1.892	0	0
3	M2	X	1.614	1.614	0	0
4	M2	Y	.932	.932	0	0
5	M3	X	1.614	1.614	0	0
6	M3	Y	.932	.932	0	0
7	M14	X	4.038	4.038	0	0
8	M14	Y	2.331	2.331	0	0
9	M15	X	4.038	4.038	0	0
10	M15	Y	2.331	2.331	0	0
11	M18	X	4.117	4.117	0	0
12	M18	Y	2.377	2.377	0	0
13	M19	X	4.117	4.117	0	0
14	M19	Y	2.377	2.377	0	0
15	M18A	X	2.453	2.453	0	0
16	M18A	Y	1.416	1.416	0	0
17	M19A	X	2.453	2.453	0	0
18	M19A	Y	1.416	1.416	0	0
19	M22	X	1.641	1.641	0	0
20	M22	Y	.947	.947	0	0
21	M23	X	1.694	1.694	0	0
22	M23	Y	.978	.978	0	0
23	M26	X	.29	.29	0	0
24	M26	Y	.167	.167	0	0
25	M27	X	.29	.29	0	0
26	M27	Y	.167	.167	0	0
27	M28	X	.296	.296	0	0
28	M28	Y	.171	.171	0	0
29	M29	X	.296	.296	0	0
30	M29	Y	.171	.171	0	0
31	M30	X	.176	.176	0	0
32	M30	Y	.102	.102	0	0
33	M31	X	.176	.176	0	0
34	M31	Y	.102	.102	0	0
35	M34	X	.956	.956	0	0
36	M34	Y	.552	.552	0	0
37	M35	X	1.694	1.694	0	0
38	M35	Y	.978	.978	0	0
39	M34A	X	2.188	2.188	0	0
40	M34A	Y	1.263	1.263	0	0

Member Distributed Loads (BLC 19 : Structure Wind w/ Ice (150)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
41	M35A	X	2.188	2.188	0	0
42	M35A	Y	1.263	1.263	0	0
43	M40	X	2.917	2.917	0	0
44	M40	Y	1.684	1.684	0	0
45	M39A	X	2.917	2.917	0	0
46	M39A	Y	1.684	1.684	0	0
47	M45	X	2.917	2.917	0	0
48	M45	Y	1.684	1.684	0	0
49	M45A	X	2.917	2.917	0	0
50	M45A	Y	1.684	1.684	0	0
51	M50	X	2.267	2.267	0	0
52	M50	Y	1.309	1.309	0	0
53	M51	X	.011	.011	0	0
54	M51	Y	.007	.007	0	0

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N17	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	POLE	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N100	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N103	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N17	max	2304.242	19	1433.467	49	75.316	27	720.153	49	53.76	11	1015.373	49
2		min	-209.49	11	-1484.594	89	2.31	1	-750.593	89	-1093.768	19	-1051.588	89
3	POLE	max	2703.776	11	2750.113	16	2435.323	24	1350.141	8	360.34	11	1947.996	16
4		min	-4503.498	3	-2697.675	8	986.094	1	-1404	16	-3703.12	19	-1910.853	8
5	N100	max	2851.067	18	1789.381	10	223.415	18	93.86	18	169.135	90	6.97	18
6		min	-2938.39	10	-1749.309	18	-198.012	10	-273.17	90	-58.114	18	-20.285	90
7	N103	max	2689.8	4	1647.525	4	193.314	12	256.537	50	158.837	50	4.926	90
8		min	-2778.139	12	-1690.113	12	-159.823	4	-76.747	90	-47.519	90	-16.467	50
9	Totals:	max	2668.673	3	1724.426	15	2529.131	34						
10		min	-2668.672	11	-1724.426	7	1045.369	1						

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

	Memb...	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc...	phi*...	phi*M...	phi*...	Cb	Eqn
1	M1	HSS3.5x0....	.590	33.782	3	.286	39.833		3	47355.43	527...	4731....	473...	2....	H1-1b
2	M34A	PIPE 2.5	.462	39.379	3	.263	39.379		10	49554....	66654	4726.5	472...	2....	H1-1b
3	M35A	PIPE 2.5	.250	47.621	3	.107	47.621		3	49554....	66654	4726.5	472...	1....	H1-1b
4	M40	PIPE 2.5	.214	77.684	95	.058	78.316		15	22748....	66654	4726.5	472...	4....	H1-1b
5	M45	PIPE 2.5	.213	77.684	42	.048	77.684		36	22748....	66654	4726.5	472...	4....	H1-1b
6	M2	PL9x5/8"	.200	0	20	.192	0	y	91	241869...	253...	3295....	474...	1....	H1-1b
7	M18A	PIPE 2.0	.194	2.073	98	.067	33.727		25	36702.04	42228	2459....	245...	2....	H1-1b
8	M39A	PIPE 2.5	.190	42.316	34	.174	77.684		18	22748....	66654	4726.5	472...	4....	H1-1b
9	M30	PIPE 2.0	.189	2.073	36	.062	33.727		50	36702.04	42228	2459....	245...	2....	H1-1b
10	M45A	PIPE 2.5	.184	42.316	41	.134	42.316		12	22748....	66654	4726.5	472...	4....	H1-1b

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

	Memb...	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc...	phi*...	phi*M...	phi*...	Cb	Eqn
11	M23	SR 3/4	.144	0	90	.016	33.74		90	7287.015	182...	228.6...	228...	1....	H1-1b*
12	M18	PL5.44x0.63	.140	2.7	18	.083	2.7	y	9	150435...	152...	1991....	173...	1....	H1-1b
13	M35	SR 3/4	.138	0	35	.016	33.74		90	7287.015	182...	228.6...	228...	1....	H1-1b*
14	M14	PL5.29x0.6...	.116	2.25	98	.086	0	y	9	147099...	148...	1937....	163...	1....	H1-1b
15	M26	PL5.29x0.6...	.112	2.25	36	.074	0	y	33	147099...	148...	1937....	163...	1....	H1-1b
16	M22	SR 3/4	.110	0	90	.013	46.464		35	3846.791	198...	248.5...	248...	2....	H1-1b
17	M34	SR 3/4	.108	46.464	35	.014	46.464		92	3846.791	198...	248.5...	248...	2....	H1-1b
18	M28	PL5.44x0.63	.104	0	36	.070	2.7	y	34	150435...	152...	1991....	173...	1....	H1-1b
19	M19	PL5.44x0.63	.066	2.7	90	.062	0	y	91	150435...	152...	1991....	173...	1....	H1-1b
20	M29	PL5.44x0.63	.065	2.7	44	.060	0	y	44	150435...	152...	1991....	173...	1....	H1-1b
21	M50	PIPE 2.5	.065	58.522	18	.078	0		90	51609....	66654	4726.5	472...	1....	H1-1b*
22	M51	PIPE 2.5	.061	58.493	4	.073	0		50	51623....	66654	4726.5	472...	1....	H1-1b*
23	M19A	PIPE 2.0	.060	2.073	83	.043	2.073		91	36702.04	42228	2459....	245...	1....	H1-1b*
24	M31	PIPE 2.0	.059	2.073	50	.041	2.073		44	36702.04	42228	2459....	245...	1....	H1-1b*
25	M15	PL5.29x0.6...	.040	0	92	.064	0	y	91	147099...	148...	1937....	163...	1....	H1-1b
26	M27	PL5.29x0.6...	.039	0	36	.061	0	y	44	147099...	148...	1937....	163...	1....	H1-1b
27	M3	PL9x5/8"	.027	2.795	49	.031	0	y	91	241869...	253...	3295....	474...	1....	H1-1b

Envelope Plate/Shell Principal Stresses

Plate	Surfa...	Sigma1 [ksi]	LC	Sigma2 [ksi]	LC	Tau Max [ksi]	LC	Angle [rad]	LC	Von Mises [...	LC
No Data to Print ...											

APPENDIX D

SUPPLEMENTAL DRAWINGS

NOTES:

1.0 GENERAL
- 1.1 ALL METRIC DIMENSIONS ARE IN BRACKETS
- 1.2 FOR PATENT INFO: https://www.cs-pat.com

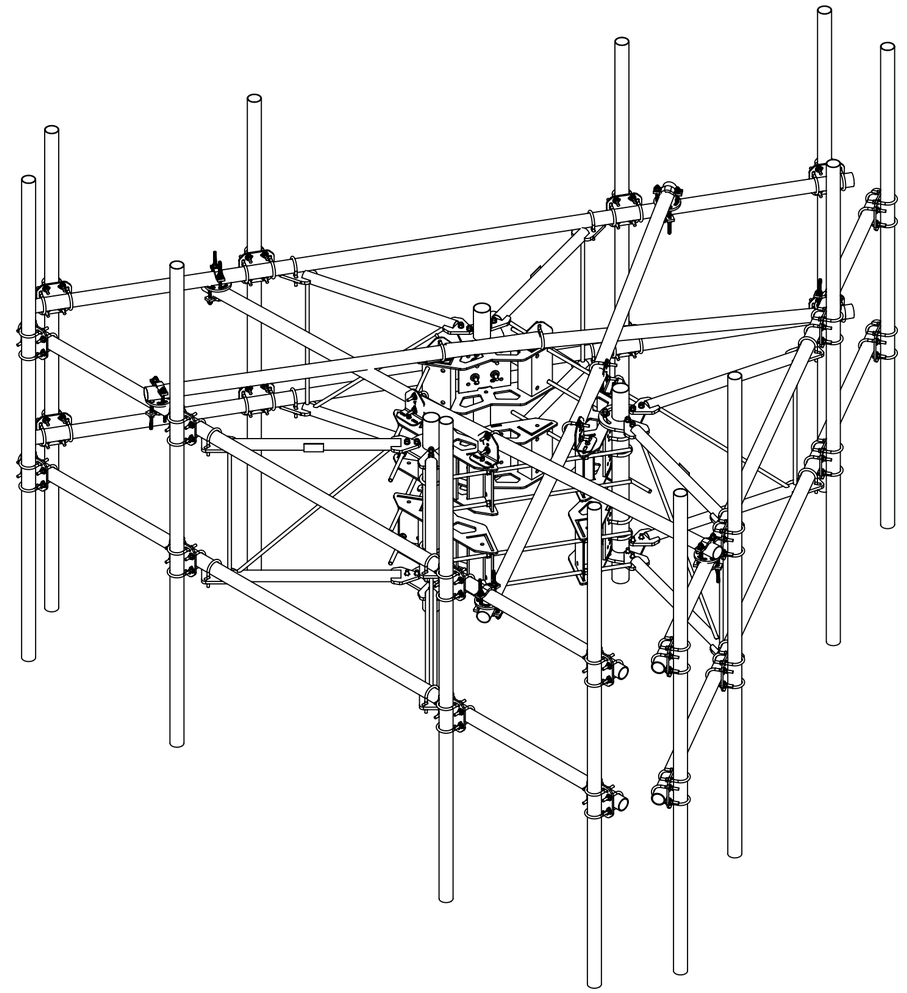
2.0 DESIGN NOTES
- 2.1 ANY HAZARDS OR OBSTRUCTIONS TO THE CLIMBING FACILITY AND SAFETY CLIMB MUST BE IDENTIFIED PRIOR TO INSTALLING THE APPURTENANCE. ADDITIONAL PRODUCTS MAY BE REQUIRED TO MAINTAIN THE INTEGRITY OF THE SAFETY CLIMB. DURING INSTALLATION, TEMPORARY AND/OR PERMANENT PRECAUTIONARY MEASURES SHOULD BE TAKEN TO PRESERVE THE CLIMBING FACILITY AND/OR SAFETY CLIMB.
- 2.2 FITS MONOPOLES 15" TO 50" OD.

3.0 MANUFACTURING/SPECIAL REQUIREMENTS
- 3.1 FOR LOADING SEE ENGINEERING SPEC SHEET.
- 3.2 TORQUE 1/2" HARDWARE TO 50 FT-LBS.
  TORQUE 5/8" HARDWARE TO 50 FT-LBS.
  TORQUE U-BOLTS TO 44 FT-LBS.

4.0 TEST

5.0 PACKAGING
- 5.1 PIPES ARE TO BE BUNDLED SEPARATELY FOR EACH SECTOR FRAME.

REVISIONS				
REV.	ECN	DESCRIPTION	BY	DATE
A	8000033016	INITIAL RELEASE	RJC	01/11/19
B	8000042648	UPDATED PACK KITS	ES1081	09/21/20



MCG22HDX14-4-126 SHOWN FOR REFERENCE

PATENT PENDING

TOP LEVEL ZNSK COMPONENTS

PART NO.	DESCRIPTION	PACK KIT	RING MOUNT	PIPE BUNDLE
MCG22HDX12-3-96	TRIPLE SECTR FRM MONO 12'6" FACE W/9 AP	G22HDXPKM33	MC-RM1550-3D	PB0612K0908B0607B
MCG22HDX12-3-126	TRIPLE SECTR FRM MONO 12'6" FACE W/9 AP	G22HDXPKM33	MC-RM1550-3D	PB0612K09TEB0607B
MCG22HDX14-3-96	TRIPLE SECTR FRM MONO 14'6" FACE W/9 AP	G22HDXPKM33	MC-RM1550-3D	PB0614K0908B0607B
MCG22HDX14-3-126	TRIPLE SECTR FRM MONO 14'6" FACE W/9 AP	G22HDXPKM33	MC-RM1550-3D	PB0614K09TEB0607B
MCG22HDX12-4-96	TRIPLE SECTR FRM MONO 12'6" FACE W/12 AP	G22HDXPKM34	MC-RM1550-3D	PB0612K1208B0607B
MCG22HDX12-4-126	TRIPLE SECTR FRM MONO 12'6" FACE W/12 AP	G22HDXPKM34	MC-RM1550-3D	PB0612K12TEB0607B
MCG22HDX14-4-96	TRIPLE SECTR FRM MONO 14'6" FACE W/12 AP	G22HDXPKM34	MC-RM1550-3D	PB0614K1208B0607B
MCG22HDX14-4-126	TRIPLE SECTR FRM MONO 14'6" FACE W/12 AP	G22HDXPKM34	MC-RM1550-3D	PB0614K12TEB0607B

B

PACK KIT COMPONENTS

PACK KIT	CROSSOVER KIT	HARDWARE KIT
G22HDXPKM33	XP-2525 (QTY 24)	G22HDXMHK
G22HDXPKM34	XP-2525 (QTY 30)	G22HDXMHK

DENSITY	lbs/in³
MASS	lbs
VOLUME	in³
SURFACE AREA	in²
HEIGHT	
LENGTH	
WIDTH	

COMMSCOPE, INC. OF NORTH CAROLINA

TOLERANCES
0 PLACE X ± .25 | 2 PLACE .XX ± 0.06
1 PLACE .X ± 0.12 | ANGLES ± 2°

SAP MATERIAL MASTER: SEE TABLE

FINISH: GALV A123

MATERIAL: A500, A529, A572, A1011/A1018

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES INTERPRET PER ANSI Y 14.5M-1994

	NAME	DATE
CE	RJC	01/11/19
RW		
RV		
AD		
RE	BCROSS	10/29/2020

ECN 008000033016

TITLE: MCG22HDX SECTOR FRAME SERIES

SCALE: 1:24

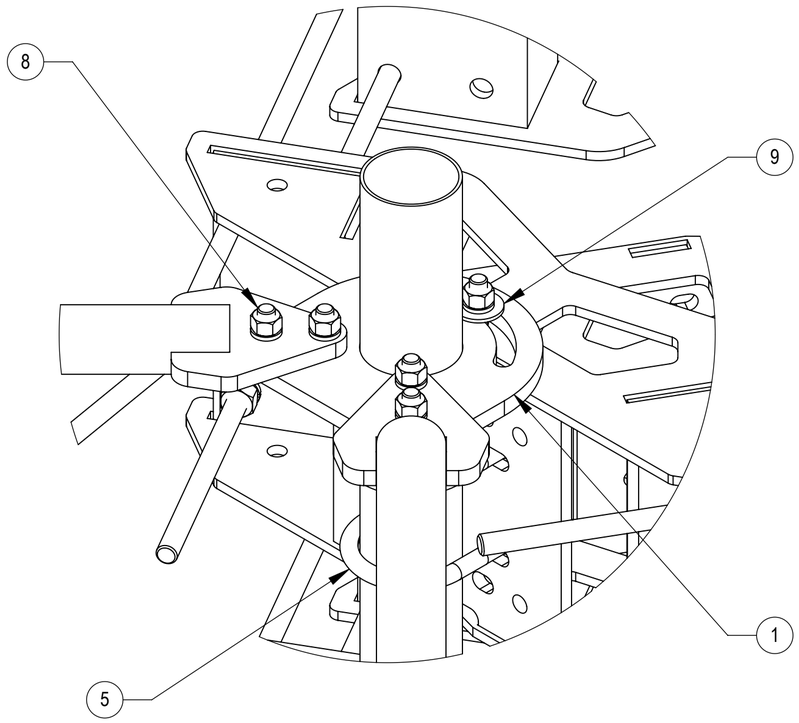
DOCUMENT NO.: MCG22HDX

SIZE: C

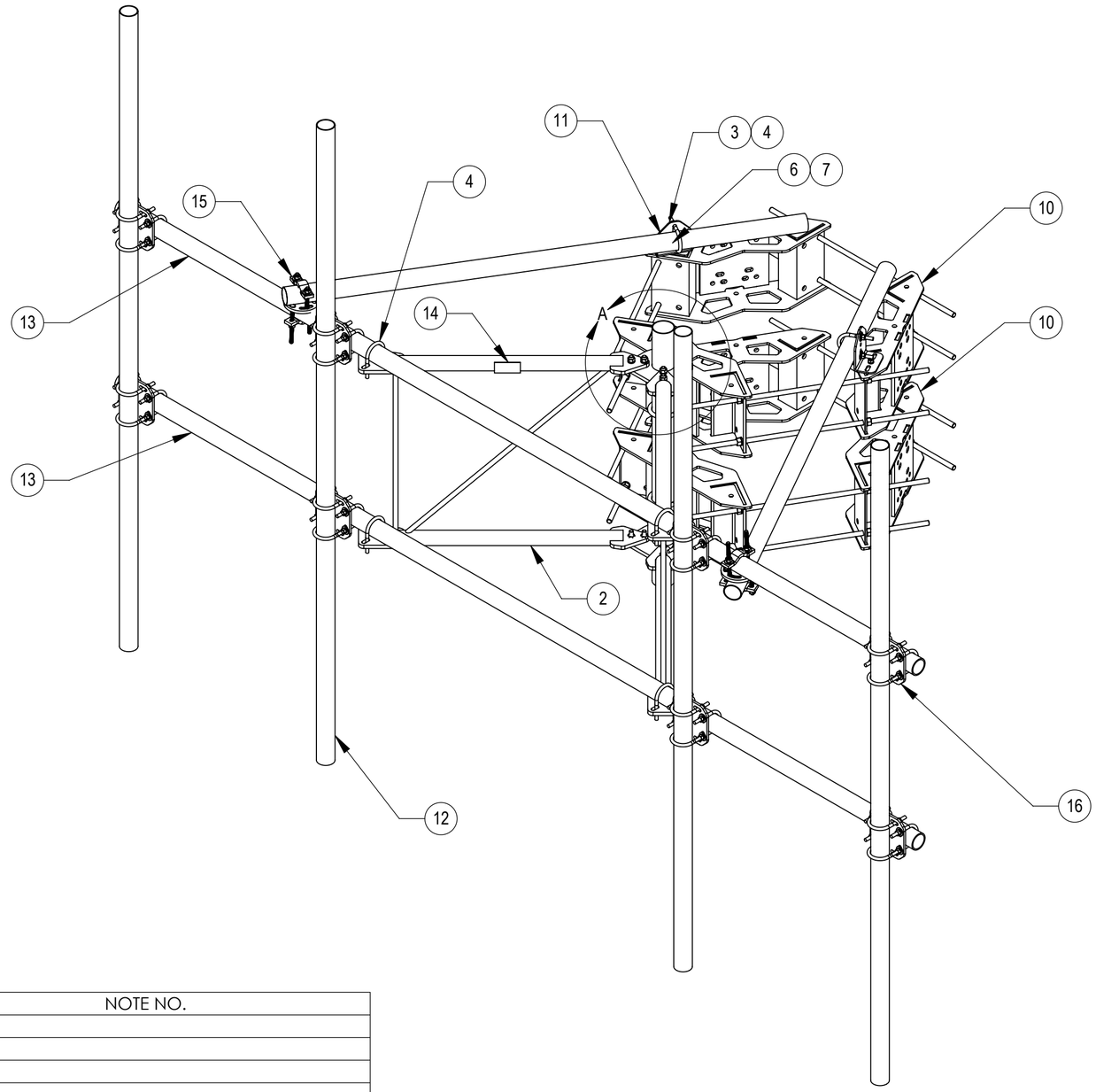
WORK AREA 24

MODEL			DRAWING			SHEET
VERSION	STATUS	REVISION	VERSION	STATUS	REVISION	
00	RE	B	00	RE	B	1 OF 7

NOTES:



DETAIL A
SCALE 1 : 4



ITEM	PART NO.	DESCRIPTION	QTY.	WEIGHT	NOTE NO.
1	SFG2270	BACK VERTICAL ARM MOUNT	3	36.96 LBS	
2	SFG2278	ARM, STANDOFF - SFG22	6	40.92 LBS	
3	XAU01	ANGLE, CROSSOVER, 1.9-3.5" X 1.9-3.5" OD	6	2.98 LBS	
4	GUB-4352	1/2" X 3" X 5-1/4" GALV U-BOLT	18	0.71 LBS	
5	GUB-53560	5/8" X 3-5/8" X 6" GALV U-BOLT	12	1.30 LBS	
6	GB-04145	1/2" X 1-1/2" GALV BOLT KIT	6	0.13 LBS	
7	GWF-04	1/2" GALV FLAT WASHER	6	0.04 LBS	
8	GB-05225	5/8" X 2-1/4" GALV BOLT KIT	30	0.28 LBS	
9	GWF-05	5/8" GALV FLAT WASHER, 1.7OD	6	0.08 LBS	
10	MC-RM1550-3	12" - 50" OD RINGMOUNT	2	230.13 LBS	
11	MT546084120	2.88" OD X .120" WALL X 84" LONG PIPE	6	24.81 LBS	
12	MT546120120	2.88 OD X .120" WALL X 120" LONG PIPE	12	35.44 LBS	
13	MT-546-174	PIPE GALV, 2-7/8 X 174, SCH40	6	84.30 LBS	
14	SFG2250	LABEL, SFG22	3	0.03 LBS	
15	XP-R	CROSSOVER PLATE, ROUND, UP TO 3.5" OD	6	6.27 LBS	
16	XP-2525	CROSSOVER PLATE KIT, 2-7/8 OD X 2-7/8 OD	24	7.77 LBS	

SINGLE SECTOR OF MCG22HDX14-4-126 SHOWN FOR REFERENCE

PATENT PENDING

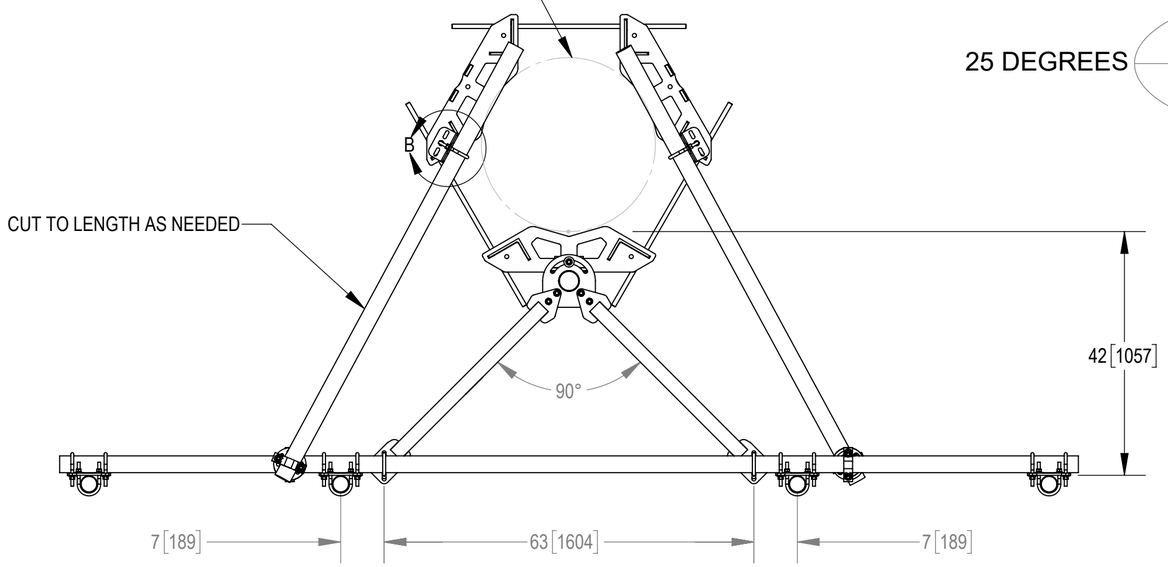
COMMSCOPE, INC. OF NORTH CAROLINA

TITLE
MCG22HDX SECTOR FRAME SERIES

SIZE	SCALE	DOCUMENT NO.			
C	1:16	MCG22HDX			
		DRAWING			SHEET
		VERSION	STATUS	REVISION	
		04	RE	B	2 OF 7

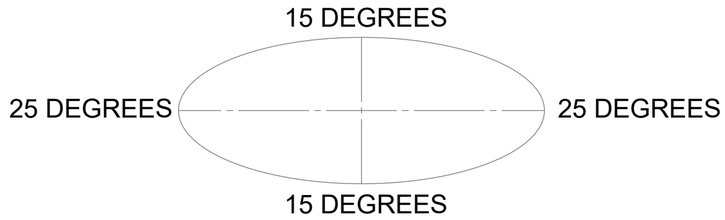
NOTES:

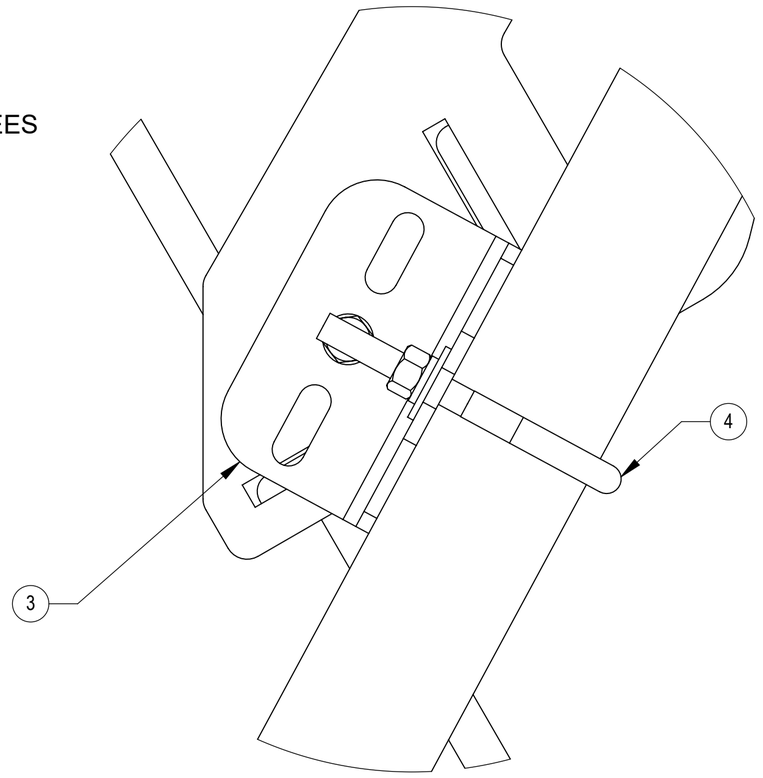
12'6" FACE MODELS: ∅ 12" - 50" POLE
14'6" FACE MODELS: ∅ 24" - 50" POLE



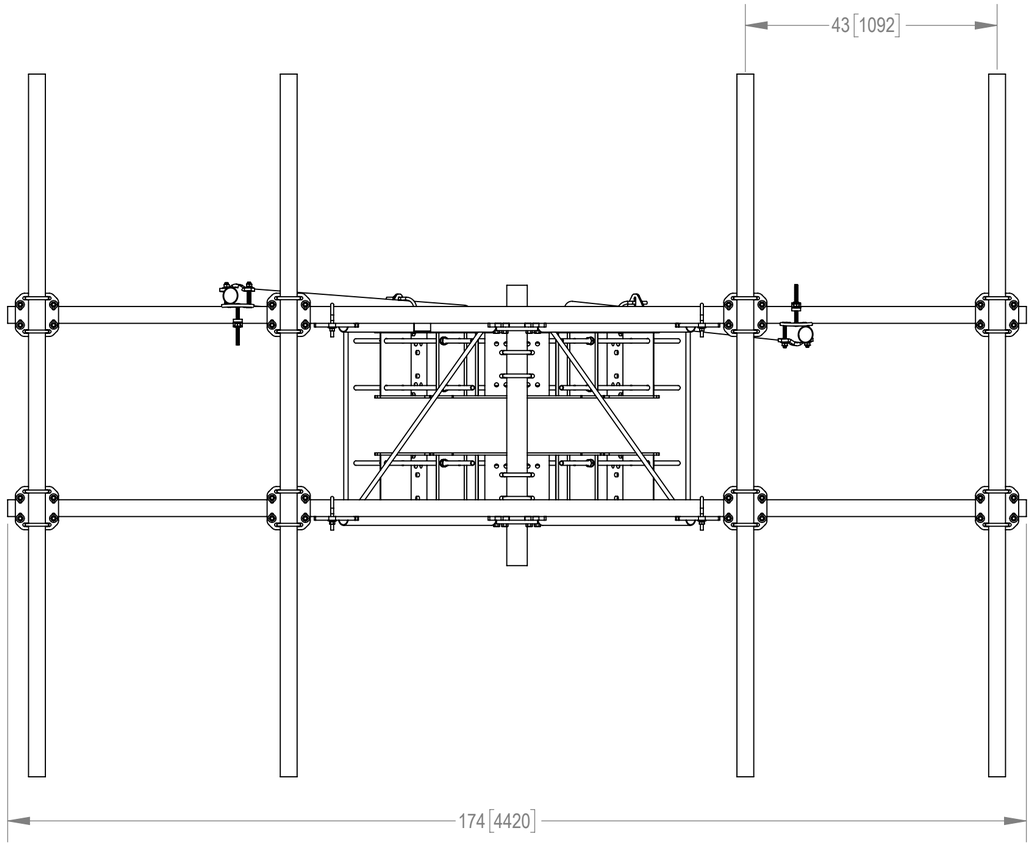
ALLOWABLE TIEBACK ANGLE

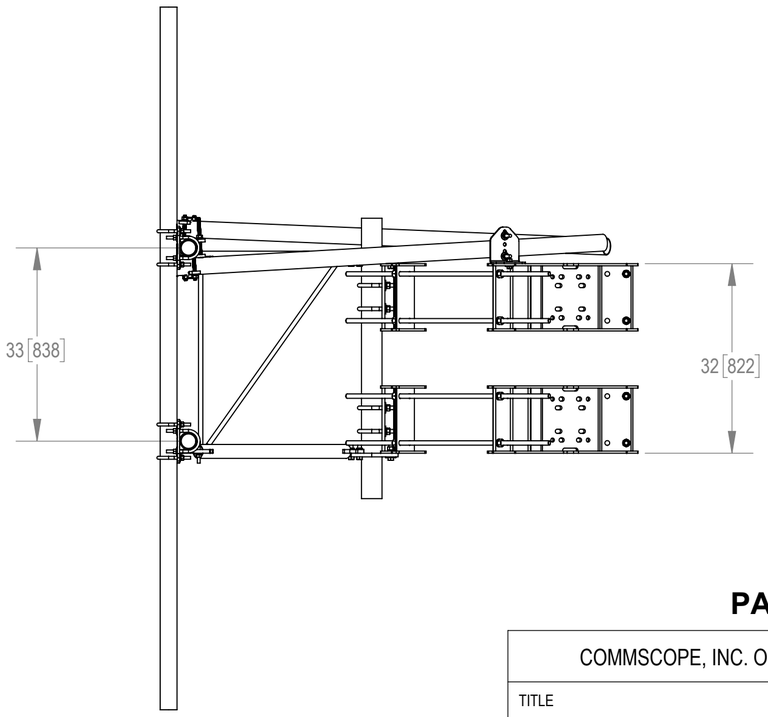
±15 DEGREES VERTICAL
±25 DEGREES HORIZONTAL





DETAIL B
SCALE 1 : 2





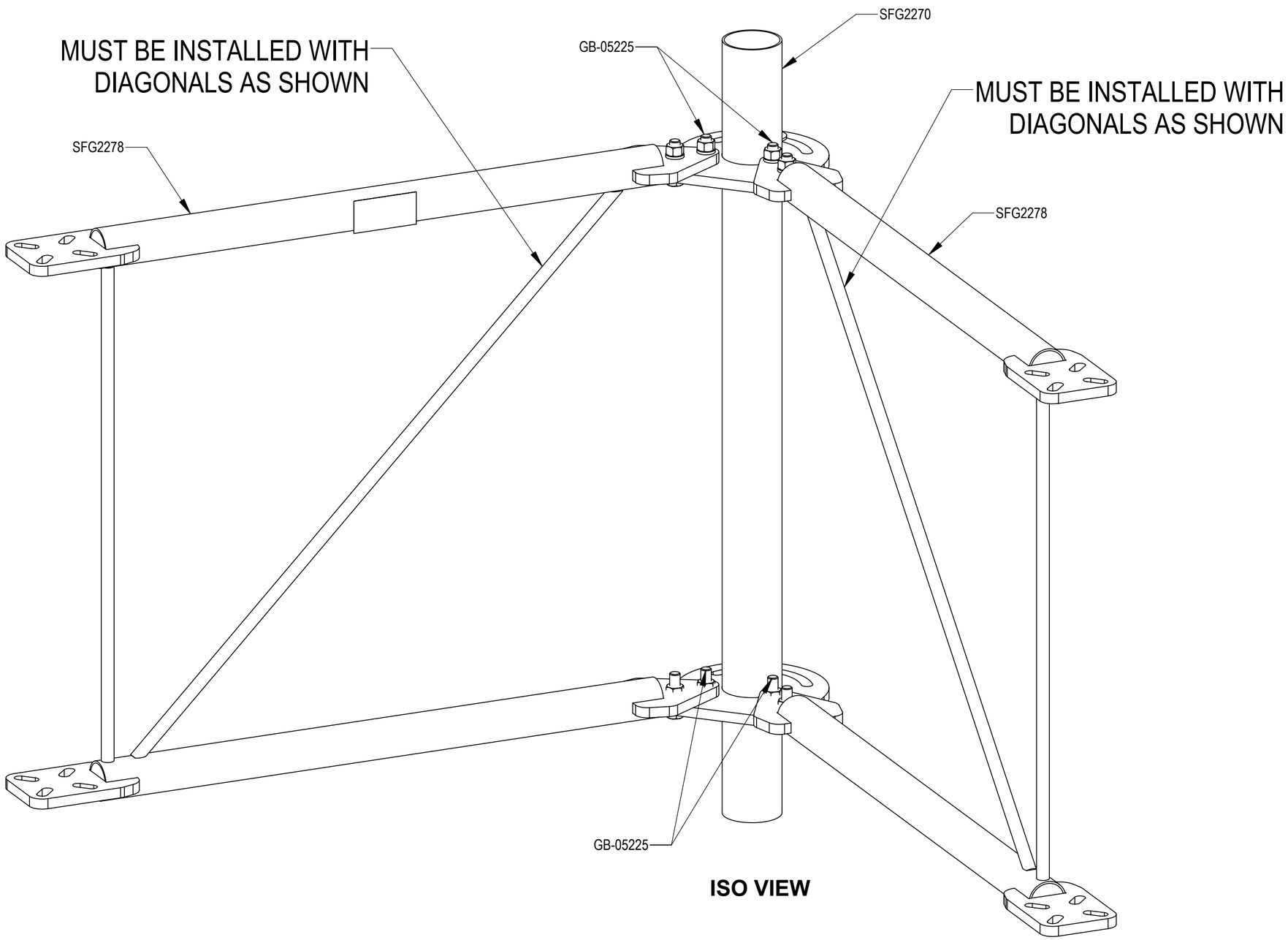
PATENT PENDING

SINGLE SECTOR OF "WLL" MODEL SHOWN FOR REFERENCE

COMMSCOPE, INC. OF NORTH CAROLINA					
TITLE: MCG22HDX SECTOR FRAME SERIES					
SIZE: C	SCALE: 1:20	DOCUMENT NO.: MCG22HDX			
		DRAWING			SHEET
		VERSION	STATUS	REVISION	
		04	RE	B	3 OF 7

NOTES:

STEP 1: ATTACH STANDOFF ARMS (SFG2278) TO BACK VERTICAL ARM MOUNT (SFG2270) USING (GB-05225) BOLT KITS



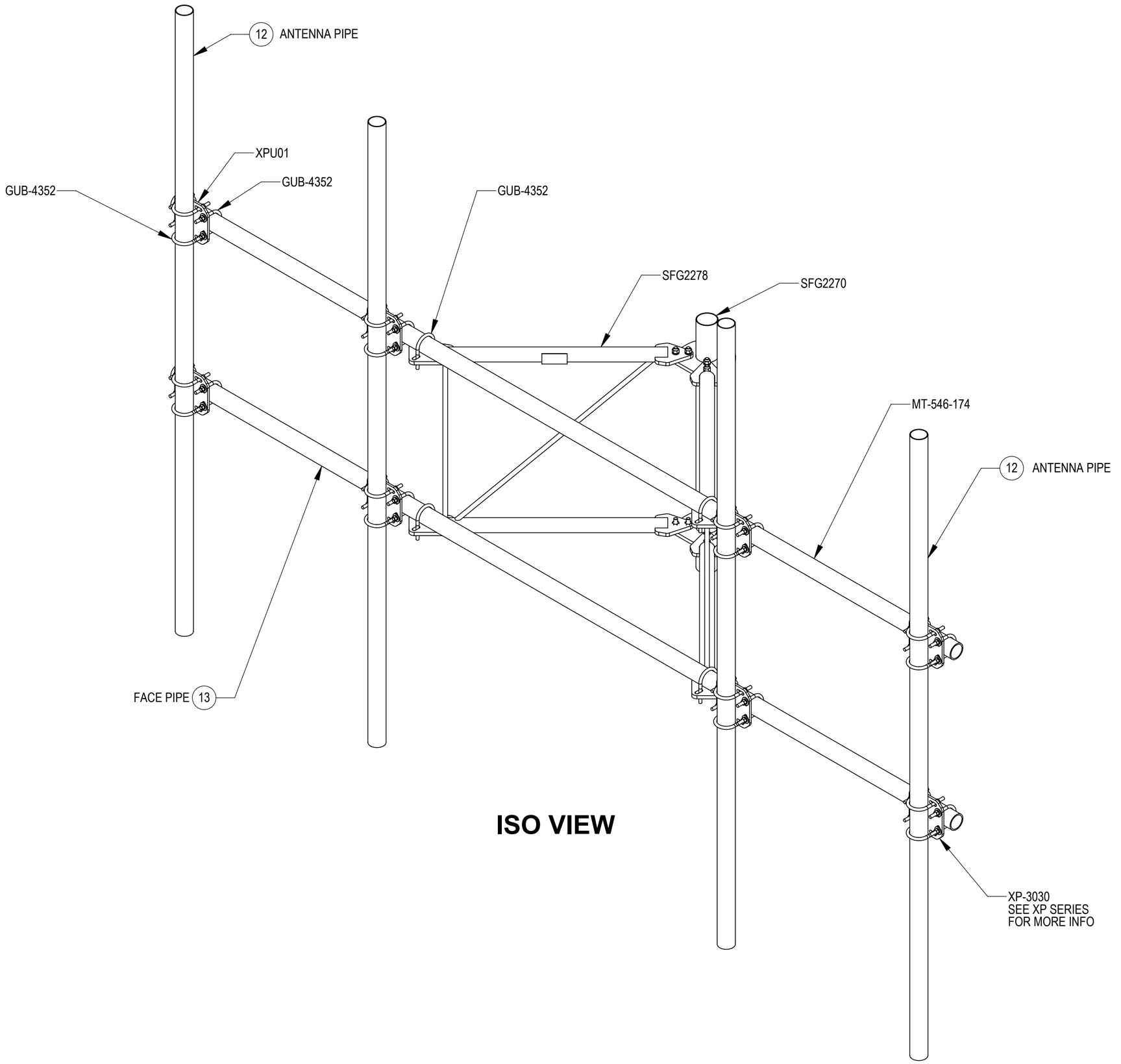
ISO VIEW

PATENT PENDING

COMMSCOPE, INC. OF NORTH CAROLINA			
TITLE: MCG22HDX SECTOR FRAME SERIES			
SIZE: C	SCALE: 1:4	DOCUMENT NO.: MCG22HDX	
		DRAWING: VERSION 04 / STATUS RE / REVISION B	SHEET: 4 OF 7

NOTES:

STEP 2: ATTACH FACE PIPES TO STANDOFF ARMS USING (GUB-4352) U-BOLTS AND THEN ATTACH ANTENNA PIPES USING (XPU01) CROSSOVER PLATES AND (GUB-4352) U-BOLTS



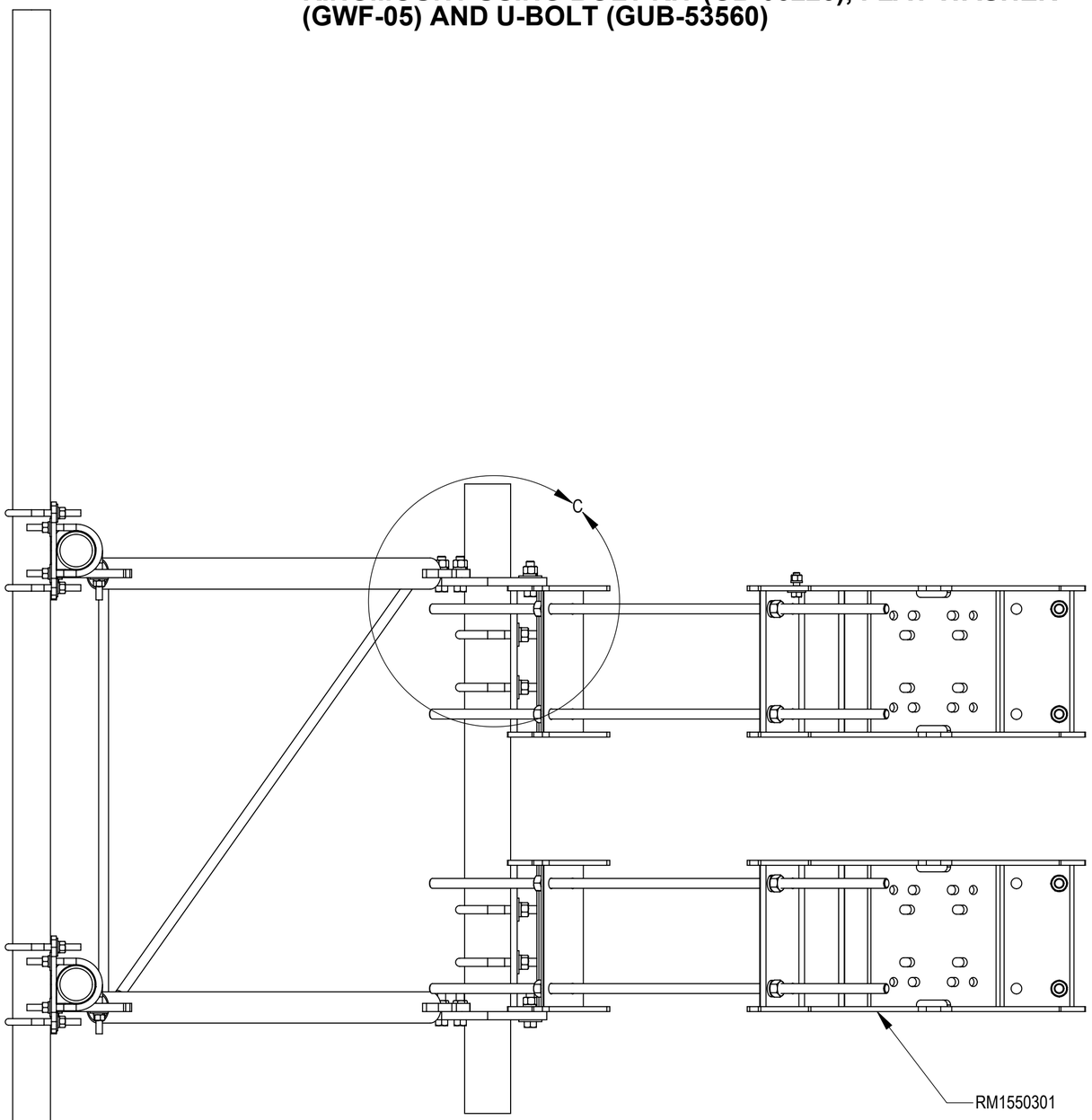
ISO VIEW

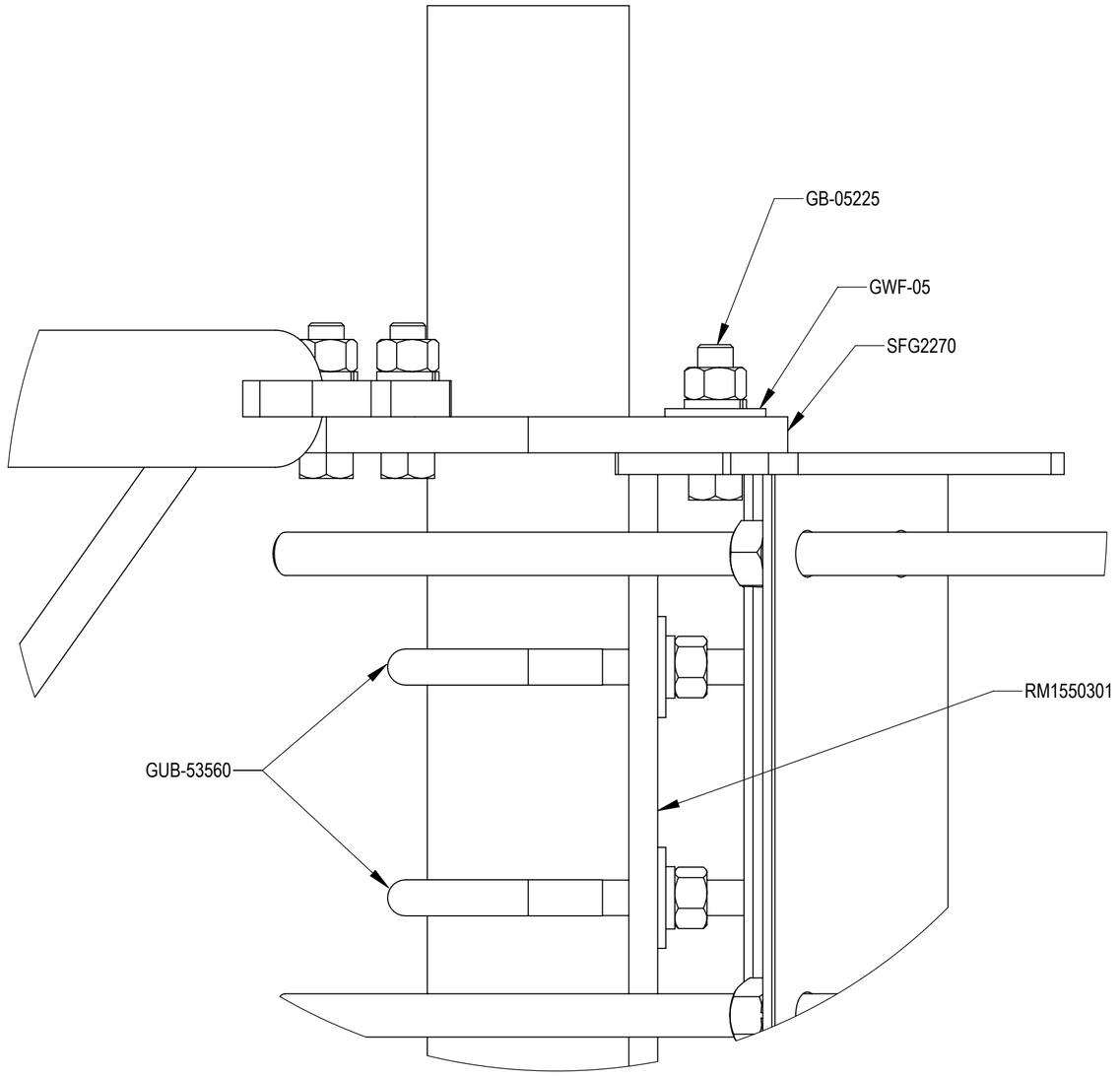
PATENT PENDING

COMMSCOPE, INC. OF NORTH CAROLINA			
TITLE: MCG22HDX SECTOR FRAME SERIES			
SIZE: C	SCALE: 1:12	DOCUMENT NO.: MCG22HDX	
		DRAWING: VERSION 04 / STATUS RE / REVISION B	SHEET: 5 OF 7

NOTES:

STEP 3: ATTACH BACK VERTICAL ARM MOUNT (SFG2270) TO RINGMOUNT USING BOLT KIT (GB-05225), FLAT WASHER (GWF-05) AND U-BOLT (GUB-53560)





DETAIL C
SCALE 1 : 2

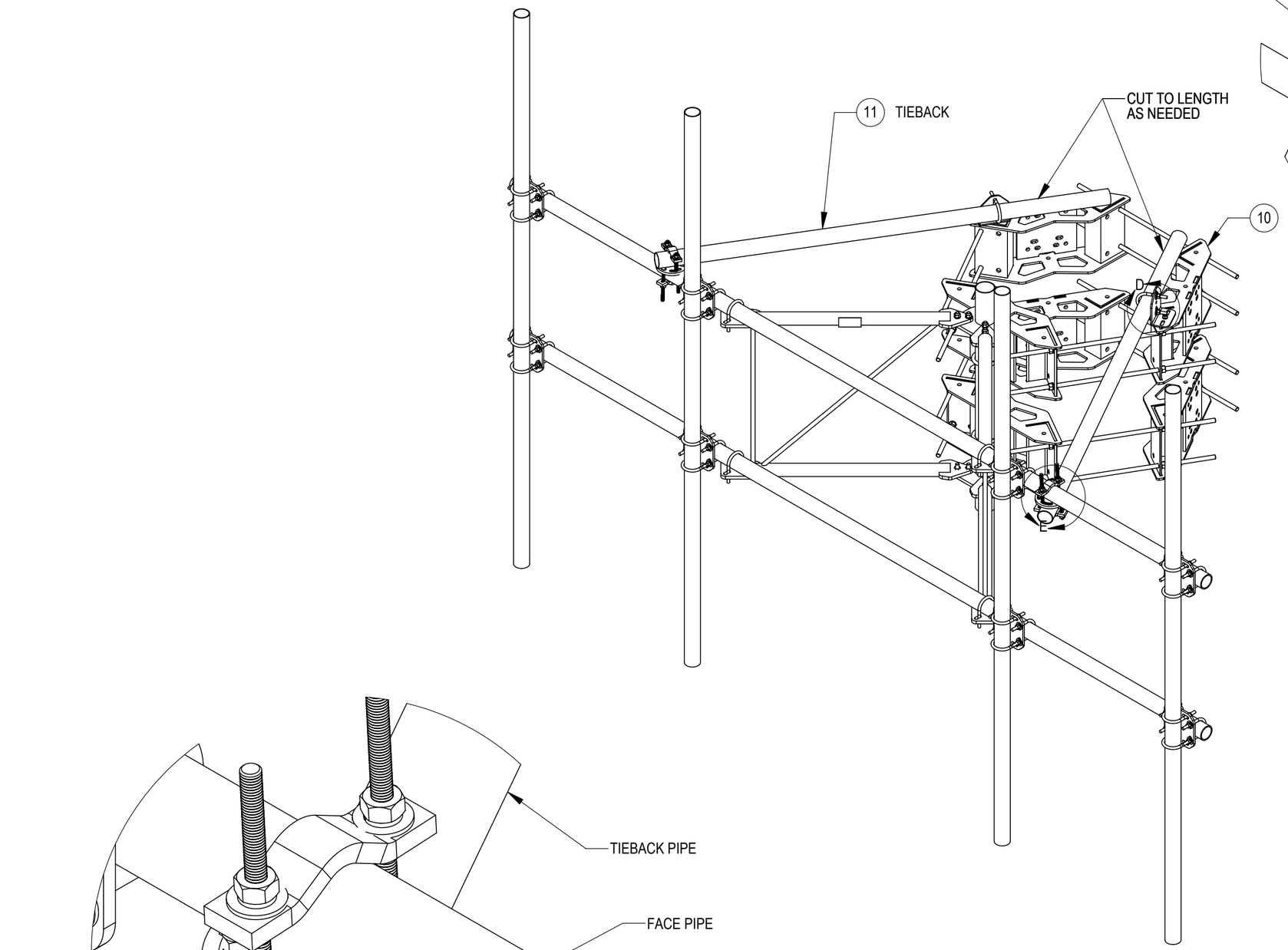
PATENT PENDING

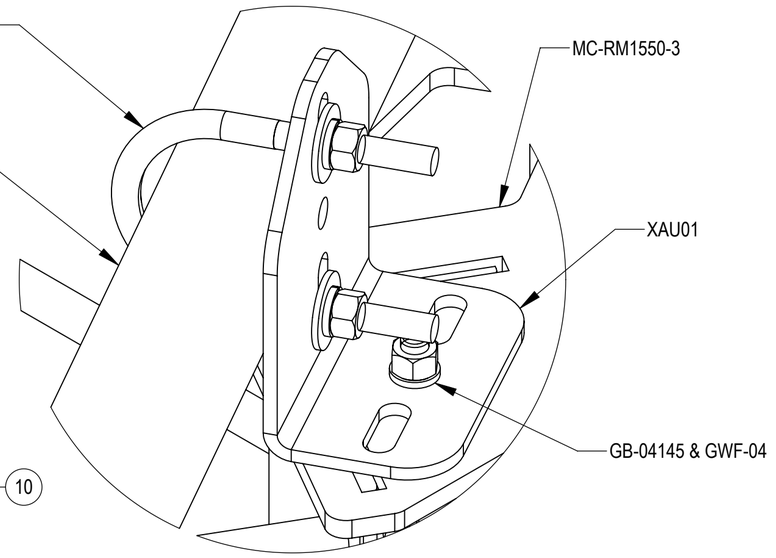
COMMSCOPE, INC. OF NORTH CAROLINA				
TITLE: MCG22HDX SECTOR FRAME SERIES				
SIZE: C	SCALE: 1:8	DOCUMENT NO.: MCG22HDX		
		DRAWING		SHEET
		VERSION: 04	STATUS: RE	REVISION: B
				6 OF 7

NOTES:

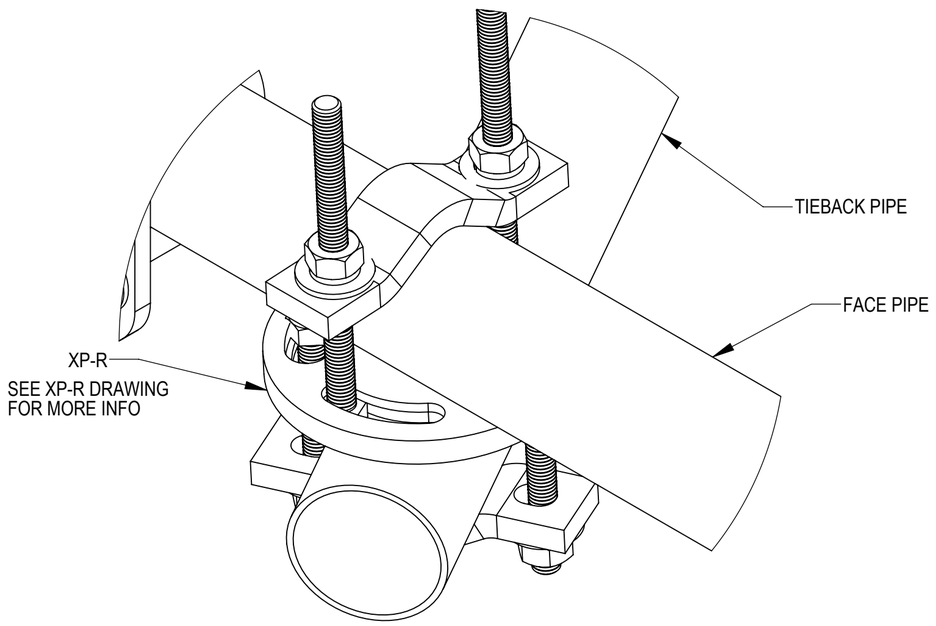
STEP 4: ATTACH TIE BACK PIPES TO FACE PIPES USING XP-R

STEP 5: ATTACH TIE BACK PIPES TO RINGMOUNT (MC-RM1550-3) USING CROSSOVER ANGLES (XAU01), BOLT KIT (GB-04145), FLAT WASHER (GWF-04) AND U-BOLT (GUB-4352)





DETAIL D
SCALE 1 : 2



DETAIL E
SCALE 1 : 2

PATENT PENDING

COMMSCOPE, INC. OF NORTH CAROLINA					
TITLE: MCG22HDX SECTOR FRAME SERIES					
SIZE: C	SCALE: 1:16	DOCUMENT NO.: MCG22HDX			
		DRAWING			SHEET
		VERSION	STATUS	REVISION	
		04	RE	B	7 OF 7

ATTACHMENT 6

EBI Consulting

environmental | engineering | due diligence

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

AT&T Existing Facility

Site ID: 876309 / CTL02814

S2814
311 Old Gate Lane
Milford, Connecticut 06460

August 24, 2021

EBI Project Number: 6221004640

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**38.40%**

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

August 24, 2021

Emissions Analysis for Site: 876309 / CTL02814 - S2814

EBI Consulting was directed to analyze the proposed AT&T facility located at **311 Old Gate Lane** in **Milford, Connecticut** for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

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

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

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

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

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of

incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed AT&T Wireless antenna facility located at 311 Old Gate Lane in Milford, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

1) 4 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

2) 4 LTE FN channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

3) 4 5G channels (850 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

4) 4 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

5) 4 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

6) 4 LTE channels (WCS Band – 2300 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 25 Watts per Channel.

7) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated

value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

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

9) The antennas used in this modeling are the CCI TPA65R-BU8DA-K for the 700 MHz / 2100 MHz / 2300 MHz channel(s), the CCI DMP65R-BU8DA-K for the 700 MHz / 850 MHz / 1900 MHz channel(s) in Sector A, the CCI TPA65R-BU8DA-K for the 700 MHz / 2100 MHz / 2300 MHz channel(s), the CCI DMP65R-BU8DA-K for the 700 MHz / 850 MHz / 1900 MHz channel(s) in Sector B, the CCI TPA65R-BU8DA-K for the 700 MHz / 2100 MHz / 2300 MHz channel(s), the CCI DMP65R-BU8DA-K for the 700 MHz / 850 MHz / 1900 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

10) The antenna mounting height centerline of the proposed antennas is 83 feet above ground level (AGL).

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

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

AT&T Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	CCI TPA65R-BU8DA-K	Make / Model:	CCI TPA65R-BU8DA-K	Make / Model:	CCI TPA65R-BU8DA-K
Frequency Bands:	700 MHz / 2100 MHz / 2300 MHz	Frequency Bands:	700 MHz / 2100 MHz / 2300 MHz	Frequency Bands:	700 MHz / 2100 MHz / 2300 MHz
Gain:	13.45 dBd / 16.15 dBd / 15.85 dBd	Gain:	13.45 dBd / 16.15 dBd / 15.85 dBd	Gain:	13.45 dBd / 16.15 dBd / 15.85 dBd
Height (AGL):	83 feet	Height (AGL):	83 feet	Height (AGL):	83 feet
Channel Count:	12	Channel Count:	12	Channel Count:	12
Total TX Power (W):	420 Watts	Total TX Power (W):	420 Watts	Total TX Power (W):	420 Watts
ERP (W):	13,980.43	ERP (W):	13,980.43	ERP (W):	13,980.43
Antenna A1 MPE %:	**10.93%**	Antenna B1 MPE %:	**10.93%**	Antenna C1 MPE %:	**10.93%**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	CCI DMP65R-BU8DA-K	Make / Model:	CCI DMP65R-BU8DA-K	Make / Model:	CCI DMP65R-BU8DA-K
Frequency Bands:	700 MHz / 850 MHz / 1900 MHz	Frequency Bands:	700 MHz / 850 MHz / 1900 MHz	Frequency Bands:	700 MHz / 850 MHz / 1900 MHz
Gain:	11.85 dBd / 12.45 dBd / 15.55 dBd	Gain:	11.85 dBd / 12.45 dBd / 15.55 dBd	Gain:	11.85 dBd / 12.45 dBd / 15.55 dBd
Height (AGL):	83 feet	Height (AGL):	83 feet	Height (AGL):	83 feet
Channel Count:	12	Channel Count:	12	Channel Count:	12
Total TX Power (W):	480 Watts	Total TX Power (W):	480 Watts	Total TX Power (W):	480 Watts
ERP (W):	11,005.17	ERP (W):	11,005.17	ERP (W):	11,005.17
Antenna A2 MPE %:	**9.67%**	Antenna B2 MPE %:	**9.67%**	Antenna C2 MPE %:	**9.67%**

Site Composite MPE %	
Carrier	**MPE %**
AT&T (Max at Sector A):	20.60%
Clearwire	0.14%
T-Mobile	9.92%
Verizon	7.74%
Site Total MPE % :	38.40%

AT&T MPE % Per Sector	
AT&T Sector A Total:	20.60%
AT&T Sector B Total:	20.60%
AT&T Sector C Total:	20.60%
Site Total MPE % :	38.40%

AT&T Maximum MPE Power Values (Sector A)

AT&T Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
AT&T 700 MHz LTE FN	4	885.24	83.0	21.47	700 MHz LTE FN	467	4.60%
AT&T 2100 MHz LTE	4	1648.39	83.0	39.98	2100 MHz LTE	1000	4.00%
AT&T 2300 MHz LTE	4	961.48	83.0	23.32	2300 MHz LTE	1000	2.33%
AT&T 700 MHz LTE	4	612.43	83.0	14.85	700 MHz LTE	467	3.18%
AT&T 850 MHz 5G	4	703.17	83.0	17.06	850 MHz 5G	567	3.01%
AT&T 1900 MHz LTE	4	1435.69	83.0	34.82	1900 MHz LTE	1000	3.48%
						Total:	**20.60%**

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

Summary

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

The anticipated maximum composite contributions from the AT&T facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

AT&T Sector	Power Density Value (%)
Sector A:	20.60%
Sector B:	20.60%
Sector C:	20.60%
AT&T Maximum MPE % (Sector A):	20.60%
Site Total:	38.40%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **38.40%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

ATTACHMENT 7

November 19, 2021

VIA USPS CERTIFIED MAIL/
RETURN RECEIPT REQUESTED

BVS JAI ALAI LLC
1720 POST ROAD
FAIRFIELD, CT 06824

RE: **Notice letter**
New Cingular Wireless PCS, LLC ("AT&T")
Proposed Modification to Existing Wireless Telecommunications Facility
311 Old Gate Road, Milford, CT

Dear Sir or Madam

We are writing to you on behalf of our client New Cingular Wireless PCS, LLC ("AT&T") with respect to the above referenced matter and our client's intent to file a petition with the State of Connecticut Siting Council for approval of a modification to a wireless communications tower facility (the "Facility") within the City of Milford.

State law requires that record owners of property abutting a parcel on which a facility is proposed be sent notice of an applicant's intent to file a petition with the Siting Council.

Included with this letter please find a Notice of this submission and details of the proposal. The petition, dated November 19, 2021 has been submitted to the CT Siting Council and is under review.

If you have any questions concerning this petition, please contact the Connecticut Siting Council or the undersigned after December 19, 2021.

Sincerely,

Victoria Masse
Enclosure

NOTICE

Notice is hereby given, pursuant to Section 16-50j-40(a) of the Regulations of Connecticut State Agencies of a Petition to be file with the Connecticut Siting Council ("Siting Council" on or after November 19, 2021 by New Cingular Wireless PCS, LLC ("AT&T") the ("Petitioner"). AT&T seeks a declaratory ruling that the modification of an existing wireless facility does not have significant adverse environmental effects that might otherwise require a certificate of environmental compatibility and public need ("Certificate").

The Petition will provide details of the Existing Facility modification and explain why it will have no significant adverse environmental effect. The location, height and other features of the facility are subject to review and potential change under provisions of the Connecticut General Statutes Sections 16-50g et. seq.

Copies of the Petition will be available for review during normal business hours on or after December 19, 2021 at the following:

Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

City of Milford
Planning & Zoning Office
70 West River Street
Milford, CT 06460

or the offices of the undersigned. All inquiries should be addressed to the Connecticut Siting Council or to the undersigned.

Victoria Masse
Northeast Site Solutions
420 Main Street #2
Sturbridge, MA 01566
(860)209-4690

CERTIFICATE OF SERVICE

I hereby certify that on the 19th day of November 2021, a copy of the following letter and notice of intended filing of a Petition with the Connecticut Siting Council for a declaratory ruling was sent by certified mail, return receipt requested, to the attached list of abutting property owners.

Dated: 12-2-2021

Northeast Site Solutions
420 Main Street #2
Sturbridge, MA 01566

GARIELLI REALTY OF MILFORD CT LLC
401 OLD GATE LN
MILFORD, CT 06460

WIEHL ESTATE LLC
497 BIC DR
MILFORD, CT 06460

JAMES A. & ALBERTA SECONDI &
J & J MACY REALTY LLC
345 OLD GATE LN
MILFORD, CT 06460

BVS JAI ALAI LLC
1720 POST ROAD
FAIRFIELD, CT 06824

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- Adult Signature Restricted Delivery $

$3.05
Postage $0.58
Total Postage and Fees $7.38

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12/02/2021

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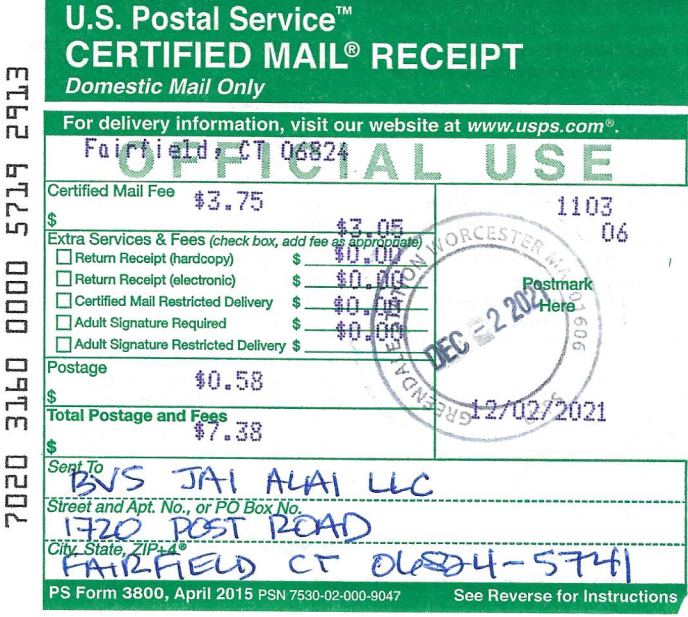
Street and Apt. No., or PO Box No. 401 OLD GATE LANE
City, State, ZIP+4® MILFORD, CT 06460-8625

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7020 3160 0000 5719 2944



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Fairfield, CT 06824

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- Return Receipt (electronic) $0.00
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- Adult Signature Required $0.00
- Adult Signature Restricted Delivery $

$3.05
Postage $0.58
Total Postage and Fees $7.38

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DEC - 2 2021
12/02/2021

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City, State, ZIP+4® FAIRFIELD CT 06824-5741

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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- Return Receipt (hardcopy) $0.00
- Return Receipt (electronic) $0.00
- Certified Mail Restricted Delivery $0.00
- Adult Signature Required $0.00
- Adult Signature Restricted Delivery $

$3.05
Postage $0.58
Total Postage and Fees $7.38

1103 06
GREENDALE STATION WORCESTER MA 01606
Postmark Here
DEC - 2 2021
12/02/2021

Sent To WIEHL ESTATE LLC
Street and Apt. No., or PO Box No. 497 BIC DRIVE
City, State, ZIP+4® MILFORD, CT 06461-1702

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7020 3160 0000 5719 2920

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Milford, CT 06460

OFFICIAL USE

Certified Mail Fee $3.75
Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $0.00
- Return Receipt (electronic) $0.00
- Certified Mail Restricted Delivery $0.00
- Adult Signature Required $0.00
- Adult Signature Restricted Delivery $

$3.05
Postage $0.58
Total Postage and Fees $7.38

1103 06
GREENDALE STATION WORCESTER MA 01606
Postmark Here
DEC - 2 2021
12/02/2021

Sent To JAMES/ALBERTA SECONDI
Street and Apt. No., or PO Box No. 345 OLD GATE LANE
City, State, ZIP+4® MILFORD, CT 06460-8615

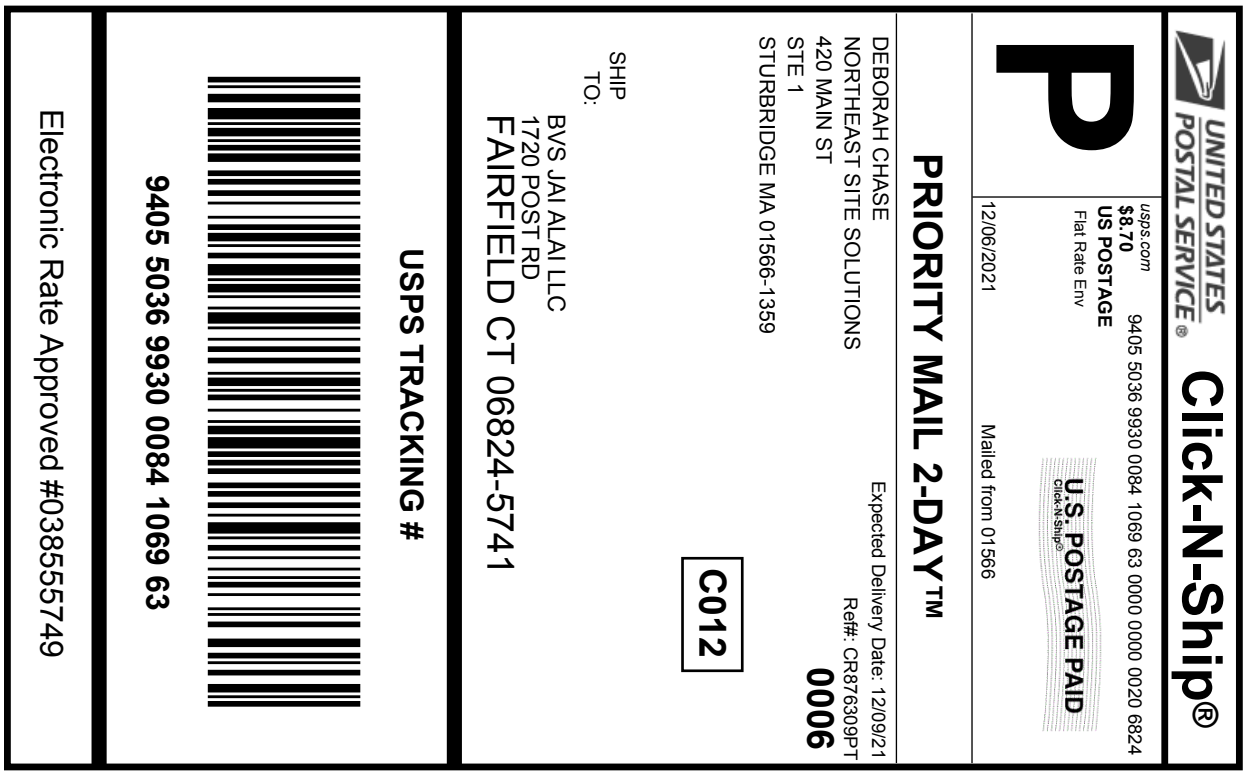
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7020 3160 0000 5719 2937

GREENDALE
290 W BOYLSTON ST
WORCESTER, MA 01606-2378
(800)275-8777

12/02/2021 11:11 AM

Product	Qty	Unit Price	Price
First-Class Mail® Letter Milford, CT 06461 Weight: 0 lb 0.60 oz Estimated Delivery Date Mon 12/06/2021	1		$0.58
Certified Mail® Tracking #: 70203160000057192920			$3.75
Return Receipt Tracking #: 9590 9402 6785 1074 9932 23			$3.05
Total			$7.38
First-Class Mail® Letter Milford, CT 06460 Weight: 0 lb 0.60 oz Estimated Delivery Date Mon 12/06/2021	1		$0.58
Certified Mail® Tracking #: 70203160000057192937			$3.75
Return Receipt Tracking #: 9590 9402 6785 1074 9932 09			$3.05
Total			$7.38
First-Class Mail® Letter Fairfield, CT 06824 Weight: 0 lb 0.60 oz Estimated Delivery Date Mon 12/06/2021	1		$0.58
Certified Mail® Tracking #: 70203160000057192913			$3.75
Return Receipt Tracking #: 9590 9402 6785 1074 9932 30			$3.05
Total			$7.38
First-Class Mail® Letter Milford, CT 06460 Weight: 0 lb 0.60 oz Estimated Delivery Date Mon 12/06/2021	1		$0.58
Certified Mail® Tracking #: 70203160000057192944			$3.75
Return Receipt Tracking #: 9590 9402 6785 1074 9932 47			$3.05
Total			$7.38



Cut on dotted line.

Instructions

1. **Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.**
2. **Place your label so it does not wrap around the edge of the package.**
3. **Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.**
4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0084 1069 63

Trans. #:	550068881
Print Date:	12/06/2021
Ship Date:	12/06/2021
Expected Delivery Date:	12/09/2021

Priority Mail® Postage:	**$8.70**
Total:	**$8.70**

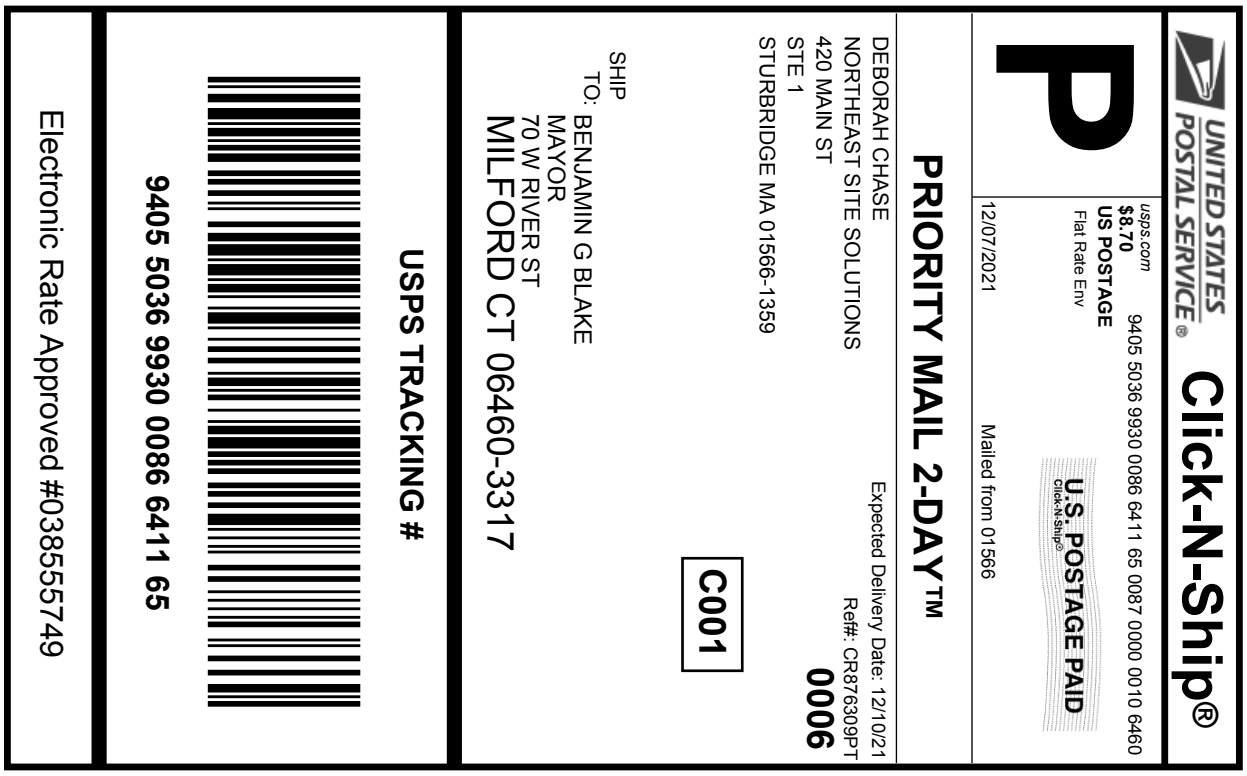
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: CR876309PT

To: BVS JAI ALAI LLC
1720 POST RD
FAIRFIELD CT 06824-5741

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com



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5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0086 6411 65

Trans. #:	550251234
Print Date:	12/07/2021
Ship Date:	12/07/2021
Expected Delivery Date:	12/10/2021

Priority Mail® Postage:	**$8.70**
Total:	**$8.70**

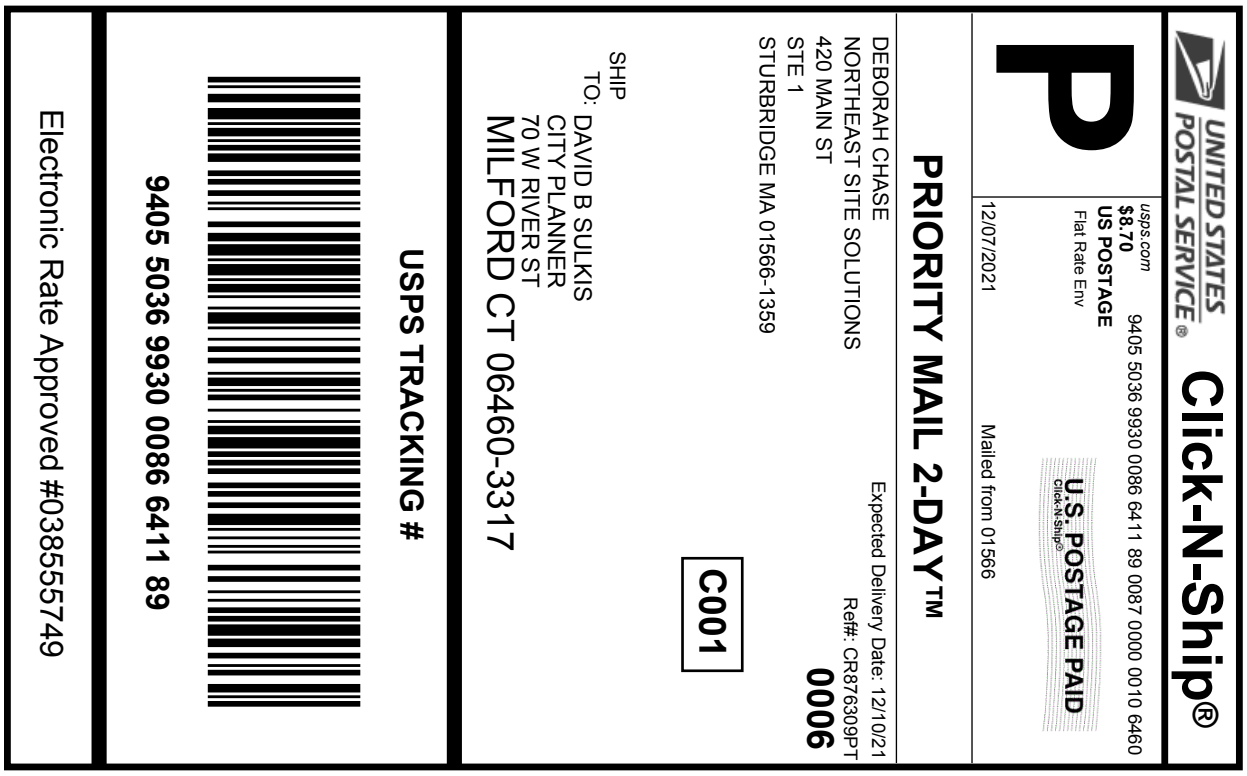
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: CR876309PT

To: BENJAMIN G BLAKE
MAYOR
70 W RIVER ST
MILFORD CT 06460-3317

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com



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Instructions

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4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0086 6411 89

Trans. #:	550251234
Print Date:	12/07/2021
Ship Date:	12/07/2021
Expected Delivery Date:	12/10/2021

Priority Mail® Postage:	**$8.70**
Total:	**$8.70**

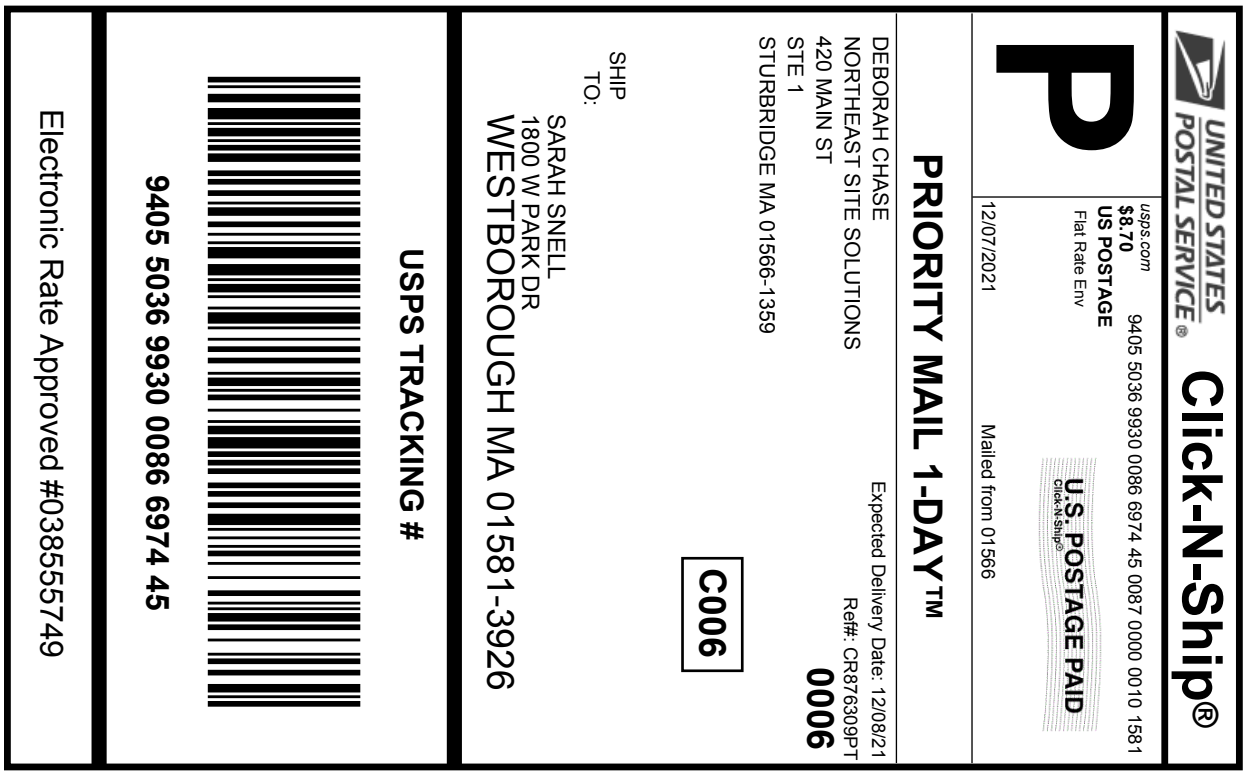
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: CR876309PT

To: DAVID B SULKIS
CITY PLANNER
70 W RIVER ST
MILFORD CT 06460-3317

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com



Cut on dotted line.

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5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0086 6974 45

Trans. #:	550255981
Print Date:	12/07/2021
Ship Date:	12/07/2021
Expected Delivery Date:	12/08/2021

Priority Mail® Postage:	**$8.70**
Total:	**$8.70**

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: CR876309PT

To: SARAH SNELL
1800 W PARK DR
WESTBOROUGH MA 01581-3926

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com

876309

UNITED STATES POSTAL SERVICE.

FARMINGTON
210 MAIN ST
FARMINGTON, CT 06032-9998
(800)275-8777

12/08/2021 12:32 PM

Product	Qty	Unit Price	Price
Prepaid Mail Westborough, MA 01581 Weight: 1 lb 2.30 oz Acceptance Date: Wed 12/08/2021 Tracking #: 9405 5036 9930 0086 6974 45	1		$0.00
Prepaid Mail Fairfield, CT 06824 Weight: 1 lb 2.20 oz Acceptance Date: Wed 12/08/2021 Tracking #: 9405 5036 9930 0084 1069 63	1		$0.00
Prepaid Mail Milford, CT 06460 Weight: 1 lb 2.20 oz Acceptance Date: Wed 12/08/2021 Tracking #: 9405 5036 9930 0086 6411 89	1		$0.00
Prepaid Mail Milford, CT 06460 Weight: 1 lb 2.20 oz Acceptance Date: Wed 12/08/2021 Tracking #: 9405 5036 9930 0086 6411 65	1		$0.00