November 8, 2019

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

Re:	**Notice of Exempt Modification – Antenna and RRU Add**
Property Address:	**1021 Straits Turnpike Middlebury, CT 06762**
Applicant:	**AT&T Mobility, LLC**

Dear Ms. Bachman:

On behalf of AT&T, please accept this application as notification pursuant to R.C.S.A. §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16- 50j-72(b) (2).

AT&T currently maintains a wireless telecommunications facility consisting of nine (9) wireless telecommunication antennas at an antenna center line height of 191-feet on an existing 201-foot Self Support, owned by Phoenix Tower International, 999 Yamato Rd Suite 100, Boca Raton, FL 33431. AT&T now intends to remove three (3) Powerwave P65-17-XLH-RR Panel Antennas, each currently installed in position [2], and install six (6) CCI DMP65R-BU6DA Panel Antennas, each to be installed in position [3] and [2], all sectors. In addition, AT&T intends to remove (3) RRUS-11 and (3) RRUs-12 as well as (3) RRUS-11 B5.Additionally, the installation of (3) B14 4478, (3) 4449 B5/B12, (3) 8843 B2/B66A. AT&T is also proposing to add (1) DC Squid, With (2) DC cables and (1) idle cable.

Attached is a summary of the planned modifications including power density calculations reflecting the change in AT&T's operations at the site. Also included is documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration.

Please accept this letter pursuant to Regulation of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-5I0j-72(b) (2). In accordance with R.C.S.A., a copy of this letter is being sent to Ollie LeDuc- Building Official, Town of Middlebury,CT 06762, Edward B. St. John-First Selectman, Town of Middlebury, CT 06762, and Phoenix Tower International 999 Yamato Rd, Suite 100, Boca Raton, FL 33431.

The following is a list of subsequent decisions by the Connecticut Siting Council:

- **EM-SPRINT/AT&T-081-991215** - Sprint PCS and AT&T Wireless PCS notice of intent to modify an existing telecommunications facility located at 1021 Straights Turnpike (a.k.a. 1 Service Road) in **Middlebury**, Connecticut.
- **EM-VER-081-060410** - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 1021 Straights Turnpike, **Middlebury**, Connecticut.
- **EM-CING-081-126-131-164-165-070808** - New Cingular Wireless PCS, LLC notice of intent to modify existing telecommunications facilities located at 1021 Straits Turnpike, **Middlebury**; 70 Platt Road, Shelton; 1394 (a/k/a 250) Meriden Waterbury Road, Southington; 404 Hayden Station Road, Windsor; and 4 (a/k/a 2) Volunteer Drive, Windsor Locks, Connecticut.
- **EM-SPRINT-NEXTEL-081-071227** – Sprint Nextel Corporation notice of intent to modify an existing telecommunications facility located at 1021 Straits Turnpike, **Middlebury**, Connecticut.
- **EM-AT&T-081-120907 –** AT&T Mobility notice of intent to modify an existing telecommunications facility located at 1021 Straits Turnpike, **Middlebury**, Connecticut.
- **EM-AT&T-081-140127 -** American Telephone & Telegraph (AT&T) notice of intent to modify an existing telecommunications facility located at 1021 Straits Turnpike, **Middlebury**, Connecticut.

The planned modifications to AT&T's facility fall squarely within those activities explicitly provided for in R.C.S.A. §16-50j-72(b) (2).

1. The proposed modifications will not result in an increase in the height of the existing tower. AT&T's replacement antennas will be installed at the 191-foot level of the 201-foot self-support tower.
2. The proposed modifications will not involve any changes to ground-mounted equipment and, therefore, will not require and extension of the site boundary.
3. The proposed modifications will not increase the noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative worst-case RF emissions calculation for AT&T's modified facility is provided in the RF Emissions Compliance Report, included in Tab 2.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The tower and its foundation can support AT&T's proposed modifications. (See Structural Analysis Report included in Tab 3).

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

Sincerely,

Will Noel

CC w/enclosures:
Ollie LeDuc- Building Official, Town of Middlebury,CT
Edward B. St. John-First Selectman, Town of Middlebury, CT 06762
Phoenix Tower International 999 Yamato Rd, Suite 100, Boca Raton, FL 33431

85 Rangeway Road, Building 3, Suite 102
Billerica, MA 01862

To: **FILE**

From: **Will Noel**

Date: **12/16/2019**

Subject: **No CSC Original Decision– CTL01129/ FA# 10035253 /MRCTB0040858**

Upon review of the "Decisions" section of the CSC website and per conversation with Middlebury Connecticut Town Clerk, (203)-758-2557, the Connecticut Siting Council Original Decision for 1021 Straits Turnpike or 1 Service Road could not be obtained.

Your package has been delivered

Tracking # 777148431453

Ship date:
Thu, 12/5/2019

Will Noel
Smartlink LLC
North Billerica, MA 01821
US

Delivery date:
Mon, 12/9/2019 4:15 pm

Ollie LeDuc
TOWN OF MIDDLEBURY
1212 WHITTEMORE RD
MIDDLEBURY, CT
06762242512
US

Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	777148431453
Status:	Delivered: 12/09/2019 4:15 PM Signed for By: Signature Not Req
Reference:	CTL01129- Middlebury
Signed for by:	Signature Not Req
Service type:	FedEx Ground
Packaging type:	Package
Number of pieces:	1
Weight:	1.00 lb.

Your package has been delivered

Tracking # 777148540510

Ship date:
Thu, 12/5/2019

Will Noel
Smartlink LLC
North Billerica, MA 01821
US

Delivery date:
Wed, 12/11/2019 5:21 pm

Phoenix Tower International
PHOENIX TOWER INTERNATIONAL
999 NW 51ST ST
STE 100
BOCA RATON, FL
33431447825
US

Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	777148540510
Status:	Delivered: 12/11/2019 5:21 PM Signed for By: DDAY
Reference:	CTL01129-Middlebury
Signed for by:	DDAY
Delivery location:	Boca Raton, FL
Service type:	FedEx Ground
Packaging type:	Package

Your package has been delivered

Tracking # 777148489790

Ship date:
Thu, 12/5/2019

Will Noel
Smartlink LLC
North Billerica, MA 01821
US

Delivered

Delivery date:
Mon, 12/9/2019 4:15 pm

Edward B. St John
TOWN OF MIDDLEBURY
1212 WHITTEMORE RD
MIDDLEBURY, CT
06762242512
US

Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	777148489790
Status:	Delivered: 12/09/2019 4:15 PM Signed for By: Signature Not Req
Reference:	CTL01129- Middlebury
Signed for by:	Signature Not Req
Service type:	FedEx Ground
Packaging type:	Package
Number of pieces:	1
Weight:	1.00 lb.

SHEET INDEX

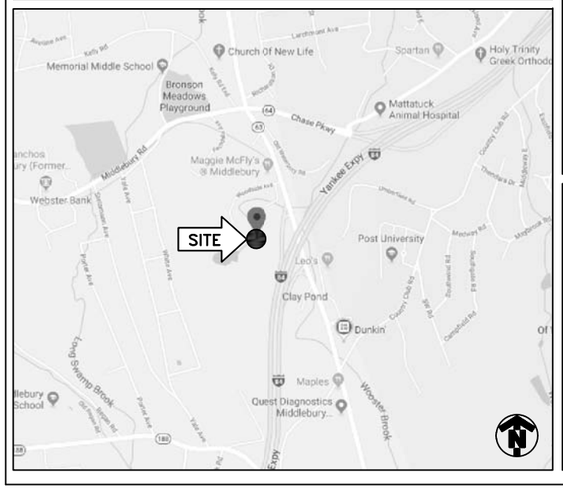
NO.	DESCRIPTION
T1	TITLE SHEET
C1	GENERAL NOTES
C2	OVERALL SITE PLAN
C2A	ENLARGED SITE PLAN
C3	ELEVATION VIEW
C4	ANTENNA ORIENTATION PLAN
C5	EQUIPMENT DETAILS
C6	PLUMBING DIAGRAM
C7	GROUNDING DETAILS
S1–S3	MODIFICATION DETAILS

DRIVING DIRECTIONS

FROM 550 COCHITUATE RD.:

GET ON I–90 WEST/MASSACHUETTS TURNPIKE. HEAD NORTHEAST TOWARD LEGGATT MCCALL CONN. TURN LEFT ONTO LEGGATT MCCALL CONN. CONTINUE ONTO BURR STREET. TURN LEFT ONTO COCHITUATE ROAD. USE THE RIGHT LANE TO TAKE THE RAMP TO I–90 EAST/MASSPIKE WEST/SPRINGFIELD/BOSTON. KEEP LEFT AT THE FORK, FOLLOW SIGNS FOR I–90 WEST/MASSACHUETTS TURNPIKE/WORCESTER/SPRINGFIELD AND MERGE ONTO I–90 WEST/MASSACHUETTS TURNPIKE. FOLLOW I–90 WEST/MASSACHUETTS TURNPIKE AND I–84 TO CT–64 WEST/CHASE PKWY IN WATERBURY. TAKE EXIT 17 FROM I–84. MERGE ONTO I–90 WEST/MASSACHUETTS TURNPIKE. USE THE RIGHT 2 LANES TO TAKE EXIT 9 FOR I–84 TOWARD US–20/HARTFORD/NEW YORK CITY. CONTINUE ONTO I–84. TAKE EXIT 17 FOR CT–64 TOWARD CT–63/MIDDLEBURY/WATERTOWN. CONTINUE ON CT–64 WEST. DRIVE TO CT–63 SOUTH IN MIDDLEBURY. CONTINUE ONTO CT–64 WEST/CHASE PKWY. TURN LEFT ONTO CT–63 SOUTH.

LOCATION MAP



PROJECT

LTE 5C/6C/RETROFIT/5G NR

SITE NAME

MIDDLEBURY STRAITS TPKE

PTI SITE NAME/NUMBER

STRAITS TURNPIKE/US-CT-1003

CELL SITE ID

CTL01129

FA SITE NUMBER

10035253

PACE ID

MRCTB040858/MRCTB040676/MRCTB040834
MRCTB040638/MRCTB040525

SITE ADDRESS

1021 STRAITS TURNPIKE
MIDDLEBURY, CT 06762

STRUCTURE TYPE

SELF SUPPORT

PROJECT TEAM

smartlink

PROJECT MANAGER

INFINIGY

1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

ENGINEER

SCOPE OF WORK (PER LTE RFDS, DATED 06/17/2019 V2.00):

- HANDICAP ACCESS REQUIREMENTS ARE NOT REQUIRED.
- FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.
- FACILITY HAS NO PLUMBING OR REFRIGERANTS.
- THIS FACILITY SHALL MEET OR EXCEED ALL FAA AND FCC REGULATORY REQUIREMENTS.
- ALL NEW MATERIAL SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR UNLESS NOTED OTHERWISE. EQUIPMENT, ANTENNAS/RRU AND CABLES FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR.

TOWER
- REMOVE (3) PANEL ANTENNAS
- INSTALL (6) PANEL ANTENNAS
- REMOVE (3) RRUS–11 B12
- REMOVE (3) RRUS–12 B2
- REMOVE (3) RRUS–32 B30
- INSTALL (3) B14 4478
- INSTALL (3) 4449 B5/B12
- INSTALL (3) 8843 B2/B66A
- INSTALL (1) DC SQUID WITH (2) DC CABLES

GROUND
- REMOVE (3) RRUS–11 B5
- SWAP BB WITH (2) 6630
- ADD XMU
- ADD IDLe CABLE

PROJECT SUMMARY

SITE NAME:	MIDDLEBURY STRAITS TPKE	
CELL SITE ID:	CTL01129	
FA SITE #:	10035253	
SITE ADDRESS:	1021 STRAITS TURNPIKE MIDDLEBURY, CT 06762	
COUNTY:	NEW HAVEN	
SITE COORDINATES: LATITUDE: LONGITUDE:	 41.5357700° N 73.0892489° W	 (NAD 83) (NAD 83)
RAD CENTER	±185'	(AGL)
LANDLORD:	PHOENIX TOWER INTERNATIONAL	
APPLICANT:	AT&T MOBILITY 550 COCHITUATE RD. FRAMINGHAM, MA 01701	
CLIENT REPRESENTATIVE:	SMARTLINK, LLC 85 RANGEWAY RD., BUILDING 3, SUITE 102 NORTH BILLERICA, MA 01862	
CONTACT:	EDWARD WEISSMAN (917)528–1857	
ENGINEER:	INFINIGY 1033 WATERVLIET SHAKER ROAD ALBANY, NY 12205	
CONTACT:	ALEX WELLER (518) 690–0790	
BUILDING CODE:	2018 CT STATE BUILDING CODE 2015 INTERNATIONAL BUILDING CODE ANSI/TIA–222 G 2015 INTERNATIONAL PLUMBING CODE 2015 INTERNATIONAL MECHANICAL CODE 2015 INTERNATIONAL ENERGY CONSERVATION CODE 2017 NFPA 70	
ELECTRICAL CODE:	NATIONAL ELECTRICAL CODE (LATEST EDITION)	

811 Know what's below. Call before you dig.

TO OBTAIN LOCATION OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN CONNECTICUT, CONTACT CALL BEFORE YOU DIG
TOLL FREE: 1-800-922-4455 OR
www.cbyd.com
CONNECTICUT STATUTE REQUIRES MIN OF 2 WORKING DAYS NOTICE BEFORE YOU EXCAVATE

INFINIGY
INFINIGY ENGINEERING, PLLC
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

at&t

STATE OF CONNECTICUT · JOHN E. STEVENS · LICENSED PROFESSIONAL ENGINEER
01/09/2020

No.	Submittal / Revision	App'd	Date
4	REVISED FOR PERMIT	BMM	01/09/20
3	REVISED FOR PERMIT	BMM	12/20/19
2	REVISED FOR PERMIT	ASW	10/16/19
1	ISSUED FOR PERMIT	BMM	09/25/19
0	ISSUED FOR REVIEW	BMM	08/29/19

Drawn: BMM Date: 08/29/19
Designed: ASW Date: 08/29/19
Checked: AJD Date: 08/29/19

Project Number: 499-006

Project Title: MIDDLEBURY STRAITS TPKE
CTL01129
FA# 10035253
1021 STRAITS TURNPIKE
MIDDLEBURY, CT 06762

Prepared For: smartlink

Drawing Scale: AS NOTED
Date: 01/09/20

CD

Drawing Title: **TITLE PAGE**

Drawing Number: **T1**

GENERAL NOTES

PART 1 – GENERAL REQUIREMENTS

1.1 THE WORK SHALL COMPLY WITH APPLICABLE NATIONAL CODES AND STANDARDS, LATEST EDITION, AND PORTIONS THEREOF, INCLUDED BUT NOT LIMITED TO THE FOLLOWING:
- A. GR-63-CORE NEBS REQUIREMENTS: PHYSICAL PROTECTION
- B. GR-78-CORE GENERIC REQUIREMENTS FOR THE PHYSICAL DESIGN AND MANUFACTURE OF TELECOMMUNICATIONS EQUIPMENT.
- C. NATIONAL FIRE PROTECTION ASSOCIATION CODES AND STANDARDS (NFPA) INCLUDING NFPA 70 (NATIONAL ELECTRICAL CODE – "NEC").
- D. AND NFPA 101 (LIFE SAFETY CODE).
- E. AMERICAN SOCIETY FOR TESTING OF MATERIALS (ASTM).
- F. INSTITUTE OF ELECTRONIC AND ELECTRICAL ENGINEERS (IEEE).

1.2 DEFINITIONS:
A: WORK: THE SUM OF TASKS AND RESPONSIBILITIES IDENTIFIED IN THE CONTRACT DOCUMENTS.
B: COMPANY: AT&T CORPORATION
C. ENGINEER: SYNONYMOUS WITH ARCHITECT & ENGINEER AND "A&E". THE DESIGN PROFESSIONAL HAVING PROFESSIONAL RESPONSIBILITY FOR DESIGN OF THE PROJECT.
D: CONTRACTOR: CONSTRUCTION CONTRACTOR; CONSTRUCTION VENDOR; INDIVIDUAL OR ENTITY WHO AFTER EXECUTION OF A CONTRACT IS BOUND TO ACCOMPLISH THE WORK.
E: THIRD PARTY VENDOR OR AGENCY: A VENDOR OR AGENCY ENGAGED SEPARATELY BY THE COMPANY, A&E, OR CONTRACTOR TO PROVIDE MATERIALS OR TO ACCOMPLISH SPECIFIC TASKS RELATED TO BUT NOT INCLUDED IN THE WORK.

1.3 POINT OF CONTACT: COMMUNICATION BETWEEN THE COMPANY AND THE CONTRACTOR SHALL FLOW THROUGH THE SINGLE COMPANY SITE DEVELOPMENT SPECIALIST OR OTHER PROJECT COORDINATOR APPOINTED TO MANAGE THE PROJECT FOR THE COMPANY.

1.4 ON-SITE SUPERVISION: THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL EMPLOY A COMPETENT SUPERINTENDENT WHO SHALL BE IN ATTENDANCE AT THE SITE AT ALL TIMES DURING PERFORMANCE OF THE WORK.

1.5 DRAWINGS, SPECIFICATIONS AND DETAILS REQUIRED AT JOBSITE: THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A FULL SET OF THE CONSTRUCTION DRAWINGS, STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES, AND THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES AT THE JOBSITE FROM MOBILIZATION THROUGH CONSTRUCTION COMPLETION.
A. THE JOBSITE DRAWINGS, SPECIFICATIONS AND DETAILS SHALL BE CLEARLY MARKED DAILY IN PENCIL WITH ANY CHANGES IN CONSTRUCTION OVER WHAT IS DEPICTED IN THE DOCUMENTS. AT CONSTRUCTION COMPLETION, THIS JOBSITE MARKUP SET SHALL BE DELIVERED TO THE COMPANY OR COMPANY'S DESIGNATED REPRESENTATIVE TO BE FORWARDED TO THE COMPANY'S A&E VENDOR FOR PRODUCTION OF "AS-BUILT" DRAWINGS.

1.6 USE OF JOB SITE: THE CONTRACTOR SHALL CONFINE ALL CONSTRUCTION AND RELATED OPERATIONS INCLUDING STAGING AND STORAGE OF MATERIALS AND EQUIPMENT, PARKING, TEMPORARY FACILITIES, AND WASTE STORAGE TO THE LEASE PARCEL UNLESS OTHERWISE PERMITTED BY THE CONTRACT DOCUMENTS.

1.7 NOTICE TO PROCEED:
A. NO WORK SHALL COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED.
B. UPON RECEIVING NOTICE TO PROCEED, CONTRACTOR SHALL FULLY PERFORM ALL WORK NECESSARY TO PROVIDE AT&T WITH AN OPERATIONAL WIRELESS FACILITY.

PART 2 – EXECUTION

2.1 TEMPORARY UTILITIES AND FACILITIES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY UTILITIES AND FACILITIES NECESSARY EXCEPT AS OTHERWISE INDICATED IN THE CONSTRUCTION DOCUMENTS. TEMPORARY UTILITIES AND FACILITIES INCLUDE, POTABLE WATER, HEAT, HVAC, ELECTRICITY, SANITARY FACILITIES, WASTE DISPOSAL FACILITIES, AND TELEPHONE/COMMUNICATION SERVICES. PROVIDE TEMPORARY UTILITIES AND FACILITIES IN ACCORDANCE WITH OSHA AND THE AUTHORITY HAVING JURISDICTION. CONTRACTOR MAY UTILIZE THE COMPANY ELECTRICAL SERVICE IN THE COMPLETION OF THE WORK WHEN IT BECOMES AVAILABLE. USE OF THE LESSORS OR SITE OWNER'S UTILITIES OR FACILITIES IS EXPRESSLY FORBIDDEN EXCEPT AS OTHERWISE ALLOWED IN THE CONTRACT DOCUMENTS.

2.2 ACCESS TO WORK: THE CONTRACTOR SHALL PROVIDE ACCESS TO THE JOB SITE FOR AUTHORIZED COMPANY PERSONNEL AND AUTHORIZED REPRESENTATIVES OF THE ARCHITECT/ENGINEER DURING ALL PHASES OF THE WORK.

2.3 TESTING: REQUIREMENTS FOR TESTING BY THIS CONTRACTOR SHALL BE AS INDICATED HEREWITH, ON THE CONSTRUCTION DRAWINGS, AND IN THE INDIVIDUAL SECTIONS OF THESE SPECIFICATIONS. SHOULD COMPANY CHOOSE TO ENGAGE ANY THIRD-PARTY TO CONDUCT ADDITIONAL TESTING, THE CONTRACTOR SHALL COOPERATE WITH AND PROVIDE A WORK AREA FOR COMPANY'S TEST AGENCY.

2.4 COMPANY FURNISHED MATERIAL AND EQUIPMENT: ALL HANDLING, STORAGE AND INSTALLATION OF COMPANY FURNISHED MATERIAL AND EQUIPMENT SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.
A. CONTRACTOR SHALL PROCURE ALL OTHER REQUIRED WORK RELATED MATERIALS NOT PROVIDED BY AT&T TO SUCCESSFULLY CONSTRUCT A WIRELESS FACILITY.

2.5 DIMENSIONS: VERIFY DIMENSIONS INDICATED ON DRAWINGS WITH FIELD DIMENSIONS BEFORE FABRICATION OR ORDERING OF MATERIALS. DO NOT SCALE DRAWINGS.

2.6 EXISTING CONDITIONS: NOTIFY THE COMPANY REPRESENTATIVE OF EXISTING CONDITIONS DIFFERING FROM THOSE INDICATED ON THE DRAWINGS. DO NOT REMOVE OR ALTER STRUCTURAL COMPONENTS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT AND ENGINEER.

PART 3 – RECEIPT OF MATERIAL & EQUIPMENT

3.1 RECEIPT OF MATERIAL AND EQUIPMENT: CONTRACTOR IS RESPONSIBLE FOR AT&T PROVIDED MATERIAL AND EQUIPMENT AND UPON RECEIPT SHALL:
- A. ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT.
- B. VERIFY COMPLETENESS AND CONDITION OF ALL DELIVERIES.
- C. TAKE RESPONSIBILITY FOR EQUIPMENT AND PROVIDE INSURANCE PROTECTION AS REQUIRED IN AGREEMENT.
- D. RECORD ANY DEFECTS OR DAMAGES AND WITHIN TWENTY-FOUR HOURS AFTER RECEIPT, REPORT TO AT&T OR ITS DESIGNATED PROJECT REPRESENTATIVE OF SUCH.
- E. PROVIDE SECURE AND NECESSARY WEATHER PROTECTED WAREHOUSING.
- F. COORDINATE SAFE AND SECURE TRANSPORTATION OF MATERIAL AND EQUIPMENT, DELIVERING AND OFF-LOADING FROM CONTRACTOR'S WAREHOUSE TO SITE.

PART 4 – GENERAL REQUIREMENTS FOR CONSTRUCTION

4.1 CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH. AT THE COMPLETION OF THE WORK, CONTRACTOR SHALL REMOVE FROM THE SITE ALL REMAINING RUBBISH, IMPLEMENTS, TEMPORARY FACILITIES, AND SURPLUS MATERIALS.

4.2 EQUIPMENT ROOMS SHALL AT ALL TIMES BE MAINTAINED "BROOM CLEAN" AND CLEAR OF DEBRIS.

4.3 CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO DISCOVER AND LOCATE ANY HAZARDOUS CONDITION.
A. IN THE EVENT CONTRACTOR ENCOUNTERS ANY HAZARDOUS CONDITION WHICH HAS NOT BEEN ABATED OR OTHERWISE MITIGATED, CONTRACTOR AND ALL OTHER PERSONS SHALL IMMEDIATELY STOP WORK IN THE AFFECTED AREA AND NOTIFY COMPANY IN WRITING. THE WORK IN THE AFFECTED AREA SHALL NOT BE RESUMED EXCEPT BY WRITTEN NOTIFICATION BY COMPANY.
B. CONTRACTOR AGREES TO USE CARE WHILE ON THE SITE AND SHALL NOT TAKE ANY ACTION THAT WILL OR MAY RESULT IN OR CAUSE THE HAZARDOUS CONDITION TO BE FURTHER RELEASED IN THE ENVIRONMENT, OR TO FURTHER EXPOSE INDIVIDUALS TO THE HAZARD.

4.4 CONTRACTOR'S ACTIVITIES SHALL BE RESTRICTED TO THE PROJECT LIMITS. SHOULD AREAS OUTSIDE THE PROJECT LIMITS BE AFFECTED BY CONTRACTOR'S ACTIVITIES, CONTRACTOR SHALL IMMEDIATELY RETURN THEM TO ORIGINAL CONDITION.

4.5 CONDUCT TESTING AS REQUIRED HEREIN.

PART 5 – TESTS AND INSPECTIONS

5.1 TESTS AND INSPECTIONS:
- A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTS, INSPECTIONS AND PROJECT DOCUMENTATION.
- B. CONTRACTOR SHALL COORDINATE TEST AND INSPECTION SCHEDULES WITH COMPANY'S REPRESENTATIVE WHO MUST BE ON SITE TO WITNESS SUCH TESTS AND INSPECTIONS.
- C. WHEN THE USE OF A THIRD PARTY INDEPENDENT TESTING AGENCY IS REQUIRED, THE AGENCY THAT IS SELECTED MUST PERFORM SUCH WORK ON A REGULAR BASIS IN THE STATE WHERE THE PROJECT IS LOCATED AND HAVE A THOROUGH UNDERSTANDING OF LOCAL AVAILABLE MATERIALS, INCLUDING THE SOIL, ROCK, AND GROUNDWATER CONDITIONS.
- D. THE THIRD PARTY TESTING AGENCY IS TO BE FAMILIAR WITH THE APPLICABLE REQUIREMENTS FOR THE TESTS TO BE DONE, EQUIPMENT TO BE USED, AND ASSOCIATED HEALTH AND SAFETY ISSUES.
- E. SITE RESISTANCE TO EARTH TESTING PER EXHIBIT: CELL SITE GROUNDING SYSTEM DESIGN.
- F. ANTENNA AND COAX SWEEP TESTS PER EXHIBIT: ANTENNA TRANSMISSION LINE ACCEPTANCE STANDARDS.
- G. ALL OTHER TESTS REQUIRED BY COMPANY OR JURISDICTION.

PART 6 – TRENCHING AND BACKFILLING

6.1 TRENCHING AND BACKFILLING: THE CONTRACTOR SHALL PERFORM ALL EXCAVATION OF EVERY DESCRIPTION AND OF WHATEVER SUBSTANCES ENCOUNTERED, TO THE DEPTHS INDICATED ON THE CONSTRUCTION DRAWINGS OR AS OTHERWISE SPECIFIED.

A. PROTECTION OF EXISTING UTILITIES: THE CONTRACTOR SHALL CHECK WITH THE LOCAL UTILITIES AND THE RESPECTIVE UTILITY LOCATOR COMPANIES PRIOR TO STARTING EXCAVATION OPERATIONS IN EACH RESPECTIVE AREA TO ASCERTAIN THE LOCATIONS OF KNOWN UTILITY LINES. THE LOCATIONS, NUMBER AND TYPES OF EXISTING UTILITY LINES DETAILED ON THE CONSTRUCTION DRAWINGS ARE APPROXIMATE AND DO NOT REPRESENT EXACT INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ALL LINES DAMAGED DURING EXCAVATION AND ALL ASSOCIATED OPERATIONS. ALL UTILITY LINES UNCOVERED DURING THE EXCAVATION OPERATIONS, SHALL BE PROTECTED FROM DAMAGE DURING EXCAVATION AND ASSOCIATED OPERATIONS. ALL REPAIRS SHALL BE APPROVED BY THE UTILITY COMPANY.

B. HAND DIGGING: UNLESS APPROVED IN WRITING OTHERWISE, ALL DIGGING WITHIN AN EXISTING CELL SITE COMPOUND IS TO BE DONE BY HAND.

C. DURING EXCAVATION, MATERIAL SUITABLE FOR BACKFILLING SHALL BE STOCKPILED IN AN ORDERLY MANNER A SUFFICIENT DISTANCE FROM THE BANKS OF THE TRENCH TO AVOID OVERLOADING AND TO PREVENT SLIDES OR CAVE-INS. ALL EXCAVATED MATERIALS NOT REQUIRED OR SUITABLE FOR BACKFILL SHALL BE REMOVED AND DISPOSED OF AT THE CONTRACTOR'S EXPENSE.

D. GRADING SHALL BE DONE AS MAY BE NECESSARY TO PREVENT SURFACE WATER FROM FLOWING INTO TRENCHES OR OTHER EXCAVATIONS, AND ANY WATER ACCUMULATING THEREIN SHALL BE REMOVED BY PUMPING OR BY OTHER APPROVED METHOD.

E. SHEETING AND SHORING SHALL BE DONE AS NECESSARY FOR THE PROTECTION OF THE WORK AND FOR THE SAFETY OF PERSONNEL. UNLESS OTHERWISE INDICATED, EXCAVATION SHALL BE BY OPEN CUT, EXCEPT THAT SHORT SECTIONS OF A TRENCH MAY BE TUNNELED IF, THE CONDUIT CAN BE SAFELY AND PROPERLY INSTALLED AND BACKFILL CAN BE PROPERLY TAMPED IN SUCH TUNNEL SECTIONS. EARTH EXCAVATION SHALL COMPRISE ALL MATERIALS AND SHALL INCLUDE CLAY, SILT, SAND, MUCK, GRAVEL, HARDPAN, LOOSE SHALE, AND LOOSE STONE.

F. TRENCHES SHALL BE OF NECESSARY WIDTH FOR THE PROPER LAYING OF THE CONDUIT OR CABLE, AND THE BANKS SHALL BE AS NEARLY VERTICAL AS PRACTICABLE. THE BOTTOM OF THE TRENCHES SHALL BE ACCURATELY GRADED TO PROVIDE UNIFORM BEARING AND SUPPORT FOR EACH SECTION OF THE CONDUIT OR CABLE ON UNDISTURBED SOIL AT EVERY POINT ALONG ITS ENTIRE LENGTH. EXCEPT WHERE ROCK IS ENCOUNTERED, CARE SHALL BE TAKEN NOT TO EXCAVATE BELOW THE DEPTHS INDICATED. WHERE ROCK EXCAVATIONS ARE NECESSARY, THE ROCK SHALL BE EXCAVATED TO A MINIMUM OVER DEPTH OF 6 INCHES BELOW THE TRENCH DEPTHS INDICATED ON THE CONSTRUCTION DRAWINGS OR SPECIFIED. OVER DEPTHS IN THE ROCK EXCAVATION AND UNAUTHORIZED OVER DEPTHS SHALL BE THOROUGHLY BACK FILLED AND TAMPED TO THE APPROPRIATE GRADE. WHENEVER WET OR OTHERWISE UNSTABLE SOIL THAT IS INCAPABLE OF PROPERLY SUPPORTING THE CONDUIT OR CABLE IS ENCOUNTERED IN THE BOTTOM OF THE TRENCH, SUCH SOLID SHALL BE REMOVED TO A MINIMUM OVER DEPTH OF 6 INCHES AND THE TRENCH BACKFILLED TO THE PROPER GRADE WITH EARTH OF OTHER SUITABLE MATERIAL, AS HEREINAFTER SPECIFIED.

G. BACKFILLING OF TRENCHES. TRENCHES SHALL NOT BE BACKFILLED UNTIL ALL SPECIFIED TESTS HAVE BEEN PERFORMED AND ACCEPTED. WHERE COMPACTED BACKFILL IS NOT INDICATED THE TRENCHES SHALL BE CAREFULLY BACKFILLED WITH SELECT MATERIAL SUCH AS EXCAVATED SOILS THAT ARE FREE OF ROOTS, SOD, RUBBISH OR STONES, DEPOSITED IN 6 INCH LAYERS AND THOROUGHLY AND CAREFULLY RAMMED UNTIL THE CONDUIT OR CABLE HAS A COVER OF NOT LESS THAN 1 FOOT. THE REMAINDER OF THE BACKFILL MATERIAL SHALL BE GRANULAR IN NATURE AND SHALL NOT CONTAIN ROOTS, SOD, RUBBING, OR STONES OF 2-1/2 INCH MAXIMUM DIMENSION. BACKFILL SHALL BE CAREFULLY PLACED IN THE TRENCH AND IN 1 FOOT LAYERS AND EACH LAYER TAMPED. SETTLING THE BACKFILL WITH WATER WILL BE PERMITTED. THE SURFACE SHALL BE GRADED TO A REASONABLE UNIFORMITY AND THE MOUNDING OVER THE TRENCHES LEFT IN A UNIFORM AND NEAT CONDITION.

SYMBOL	DESCRIPTION
	CIRCUIT BREAKER
	NON-FUSIBLE DISCONNECT SWITCH
F	FUSIBLE DISCONNECT SWITCH
	SURFACE MOUNTED PANEL BOARD
T	TRANSFORMER
M	KILOWATT HOUR METER
JB	JUNCTION BOX
PB	PULL BOX TO NEC/TELCO STANDARDS
----------	UNDERGROUND UTILITIES
●	EXOTHERMIC WELD CONNECTION
■	MECHANICAL CONNECTION
OR ⊗	GROUND ROD
OR ⊠	GROUND ROD WITH INSPECTION SLEEVE
	GROUND BAR
	120AC DUPLEX RECEPTACLE
G	GROUND CONDUCTOR
	DC POWER AND FIBER OPTIC TRUNK CABLES
	DC POWER CABLES
# / #	REPRESENTS DETAIL NUMBER / REF. DRAWING NUMBER

ABBREVIATIONS

CIGBE	COAX ISOLATED GROUND BAR EXTERNAL
MIGB	MASTER ISOLATED GROUND BAR
SST	SELF SUPPORTING TOWER
GPS	GLOBAL POSITIONING SYSTEM
TYP.	TYPICAL
DWG	DRAWING
BCW	BARE COPPER WIRE
BFG	BELOW FINISH GRADE
PVC	POLYVINYL CHLORIDE
CAB	CABINET
C	CONDUIT
SS	STAINLESS STEEL
G	GROUND
AWG	AMERICAN WIRE GAUGE
RGS	RIGID GALVANIZED STEEL
AHJ	AUTHORITY HAVING JURISDICTION
TTLNA	TOWER TOP LOW NOISE AMPLIFIER
UNO	UNLESS NOTED OTHERWISE
EMT	ELECTRICAL METALLIC TUBING
AGL	ABOVE GROUND LEVEL

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Project Number: 499-006

Project Title:
MIDDLEBURY
STRAITS TPKE

CTL01129
FA# 10035253
1021 STRAITS TURNPIKE
MIDDLEBURY, CT 06762

Prepared For: smartlink

Drawing Scale: AS NOTED
Date: 01/09/20
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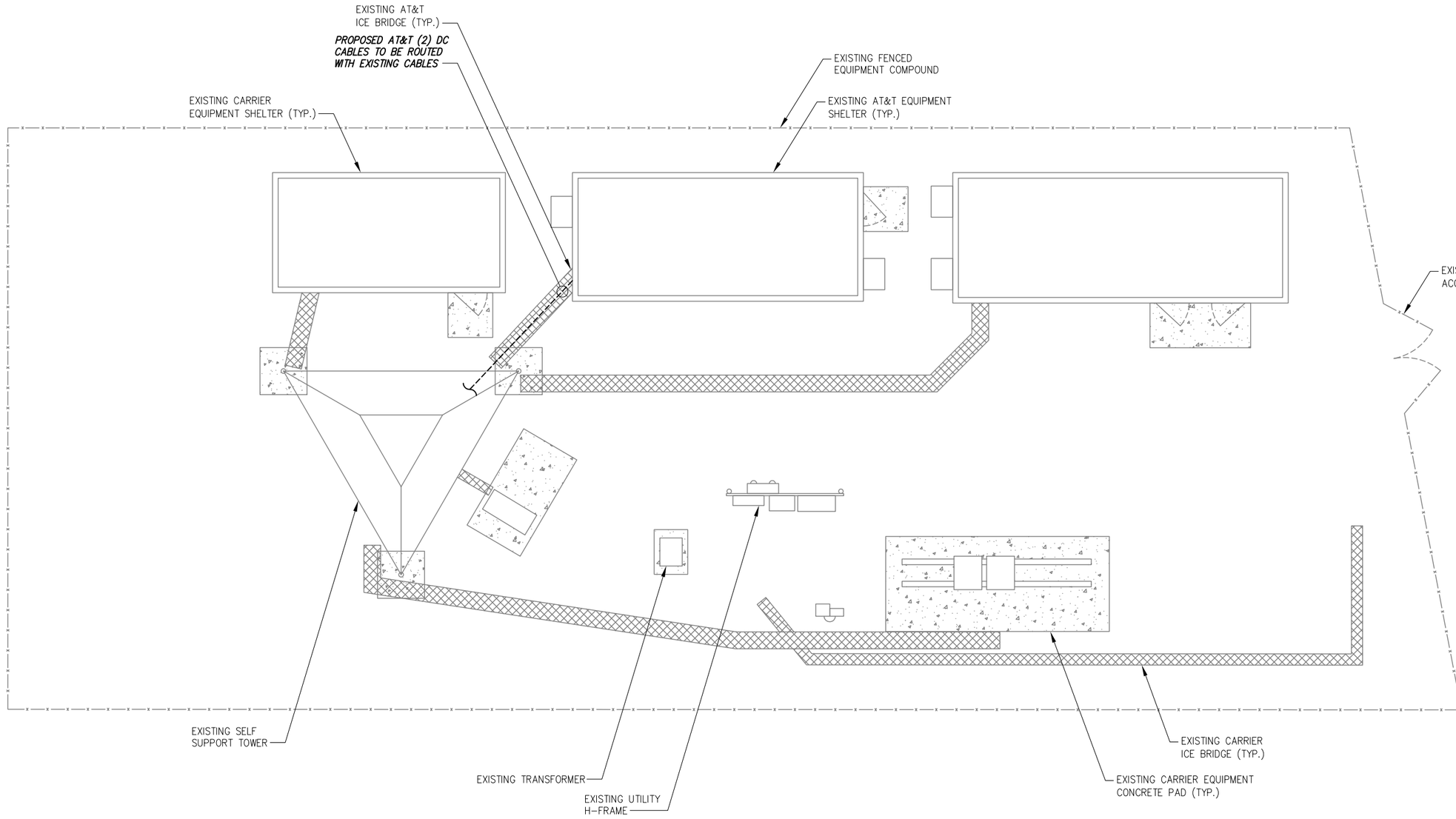
Drawing Title
GENERAL NOTES

Drawing Number
C1



BASEMAPPING PREPARED FROM A SITE WALK PERFORMED BY INFINIGY ENGINEERING AND PROVIDED INFORMATION, AND DOES NOT REPRESENT AN ACTUAL FIELD SURVEY.

TRUE NORTH

1 SITE PLAN
SCALE: AS NOTED

GRAPHIC SCALE:
10' 5' 0 5' 10'
SCALE (11x17): 1" = 10'-0"
SCALE (22x34): 1" = 5'-0"

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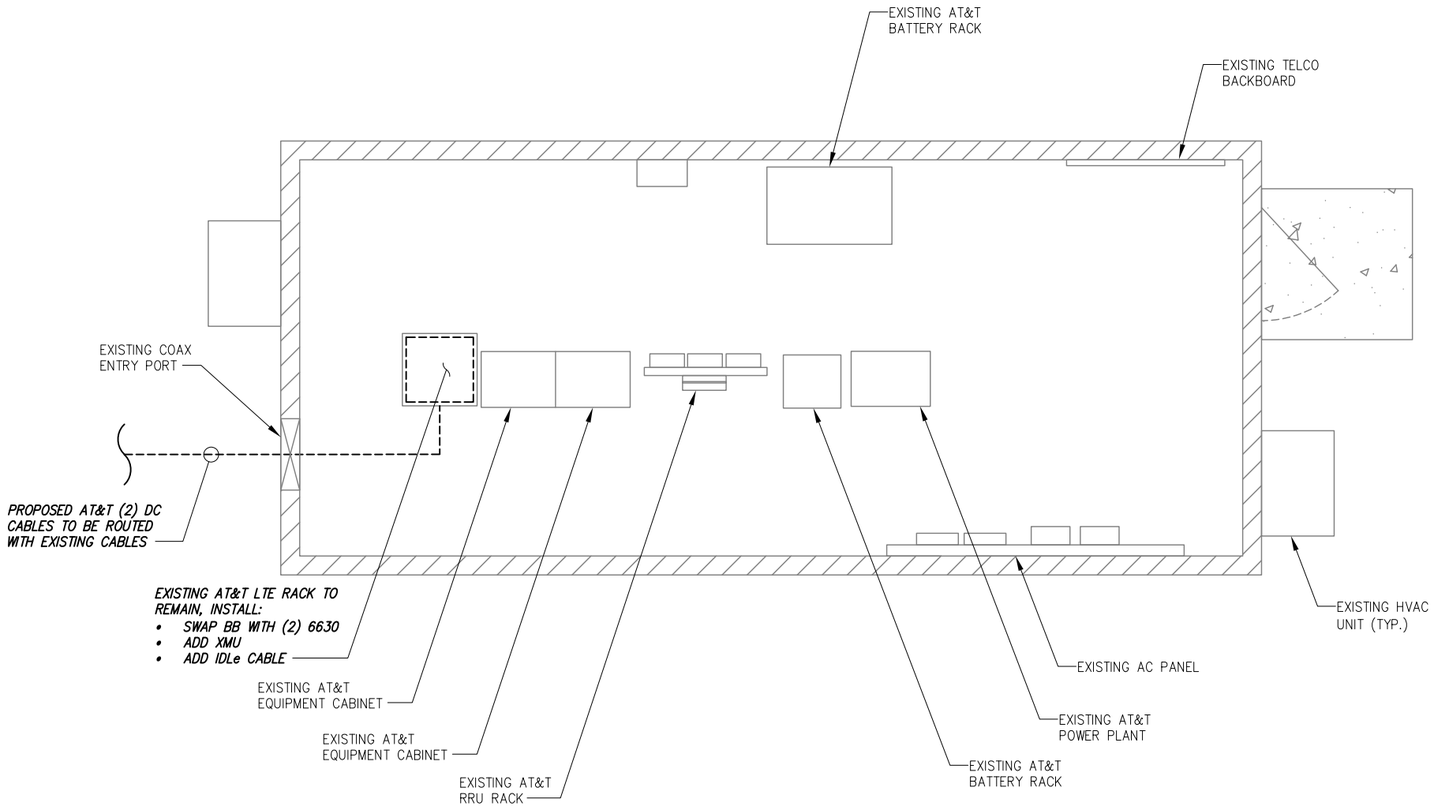
Drawing Title
OVERALL SITE PLAN

Drawing Number
C2



BASEMAPPING PREPARED FROM A SITE WALK PERFORMED BY INFINIGY ENGINEERING AND PROVIDED INFORMATION, AND DOES NOT REPRESENT AN ACTUAL FIELD SURVEY.

TRUE NORTH

2 ENLARGED EQUIPMENT PLAN
SCALE: AS NOTED

GRAPHIC SCALE:
4' 2' 0 2' 4'
SCALE (11x17): 1" = 4'-0"
SCALE (22x34): 1" = 2'-0"

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Drawing Scale: AS NOTED
Date: 01/09/20

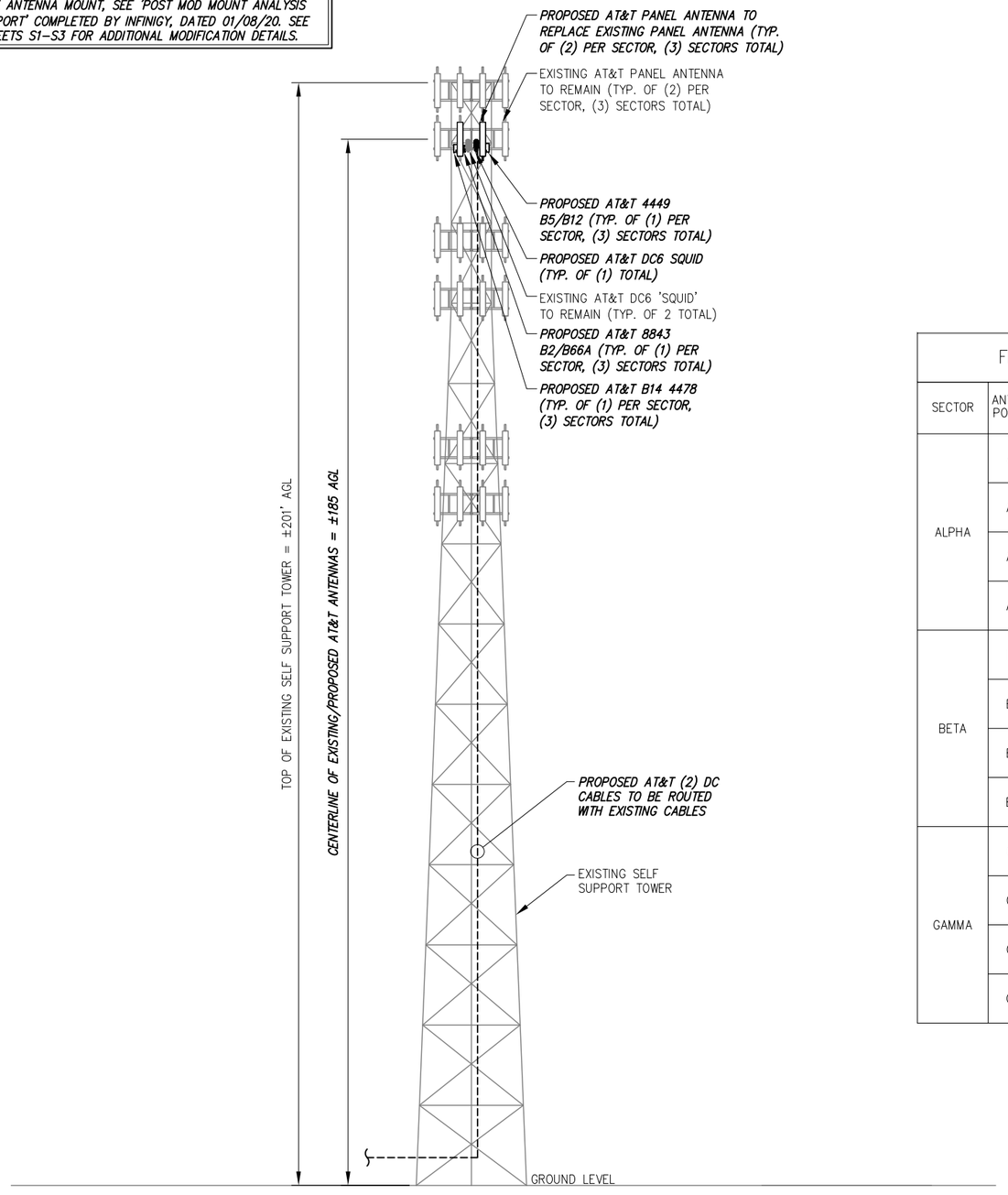
CD

Drawing Title
ENLARGED SITE PLAN

Drawing Number
C2A

NOTE:
- *INFINIGY ENGINEERING HAS NOT EVALUATED THE TOWER LOADING FOR THIS SITE, AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY REGARDING ITS EXISTING OR PROPOSED LOADING. FINAL INSTALLATION TO COMPLY STRUCTURAL ANALYSIS.*
- *FOR ADDITIONAL STRUCTURAL INFORMATION PERTAINING TO THE ANTENNA MOUNT, SEE 'POST MOD MOUNT ANALYSIS REPORT' COMPLETED BY INFINIGY, DATED 01/08/20. SEE SHEETS S1-S3 FOR ADDITIONAL MODIFICATION DETAILS.*

NOTE:
- 3' MINIMUM SEPARATION BETWEEN ALL LTE ANTENNAS
- 6' MINIMUM SEPARATION BETWEEN 700 BC/700 DE ANTENNAS



1 ELEVATION VIEW
NOT TO SCALE

FINAL ANTENNA CONFIGURATION & CABLE SCHEDULE BASED ON LTE RFDS DATED 06/17/19, V 2.00

SECTOR	ANTENNA POSITION	ANTENNA STATUS & TECHNOLOGY	ANTENNA MANF/MODEL	TMA/ DIPLEXER	RRUS	AZIMUTH	ANTENNA ℄ HEIGHT	CABLE FEEDER TYPE	CABLE FEEDER LENGTH	RAYCAP UNIT
ALPHA	A-1	(E) UMTS 850	POWERWAVE 7770	(2) (E) LGP21401	--	143°	±185'	(2) (E) 1-5/8" COAX CABLES	±230'	(2) (E) DC6 'SQUID' (1) (P) DC6 'SQUID'
	A-2	*(P) LTE 700/850/AWS /5G 850*	*CCI DMP65R-BU6DA*	--	*(1) (P) 4449 B5/B12*	*23°*	*±185'*	(1) (E) FIBER CABLE (2) (E) DC CABLES	--	
	A-3	*(P) LTE 700/1900*	*CCI DMP65R-BU6DA*	--	*(1) (P) B14 4478 (1) (P) 8843 B2/B66A*	*23°*	*±185'*	SHARED WITH POSITION A-2	--	
	A-4	(E) LTE WCS	ANDREW SBNHH-1D65A	--	--	23°	±185'	(2) (E) 1-5/8" COAX CABLES	--	
BETA	B-1	(E) UMTS 850	POWERWAVE 7770	(2) (E) LGP21401	--	263°	±185'	(2) (E) 1-5/8" COAX CABLES	±230'	
	B-2	*(P) LTE 700/850/AWS /5G 850*	*CCI DMP65R-BU6DA*	--	*(1) (P) 4449 B5/B12*	*143°*	*±185'*	*(2) (P) DC CABLES*	--	
	B-3	*(P) LTE 700/1900*	*CCI DMP65R-BU6DA*	--	*(1) (P) B14 4478 (1) (P) 8843 B2/B66A*	*143°*	*±185'*	SHARED WITH POSITION A-2	--	
	B-4	(E) LTE WCS	ANDREW SBNHH-1D65A	--	--	143°	±185'	(2) (E) 1-5/8" COAX CABLES	--	
GAMMA	G-1	(E) UMTS 850	POWERWAVE 7770	(2) (E) LGP21401	--	23°	±185'	(2) (E) 1-5/8" COAX CABLES	±230'	
	G-2	*(P) LTE 700/850/AWS /5G 850*	*CCI DMP65R-BU8DA*	--	*(1) (P) 4449 B5/B12*	*263°*	*±185'*	(1) (E) FIBER CABLE (2) (E) DC CABLES	--	
	G-3	*(P) LTE 700/1900*	*CCI DMP65R-BU8DA*	--	*(1) (P) B14 4478 (1) (P) 8843 B2/B66A*	*263°*	*±185'*	SHARED WITH POSITION G-2	--	
	G-4	(E) LTE WCS	ANDREW SBNHH-1D65A	--	--	263°	±185'	(2) (E) 1-5/8" COAX CABLES	--	

2 AT&T ANTENNA SCHEDULE
NOT TO SCALE

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STRAITS TPKE

CTL01129
FA# 10035253
1021 STRAITS TURNPIKE
MIDDLEBURY, CT 06762

Prepared For: smartlink

Drawing Scale: AS NOTED
Date: 01/09/20
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Drawing Title
ELEVATION VIEW

Drawing Number
C3

NOTE:
- 3' MINIMUM SEPARATION BETWEEN ALL LTE ANTENNAS
- 6' MINIMUM SEPARATION BETWEEN 700 BC/700 DE ANTENNAS

NOTE:
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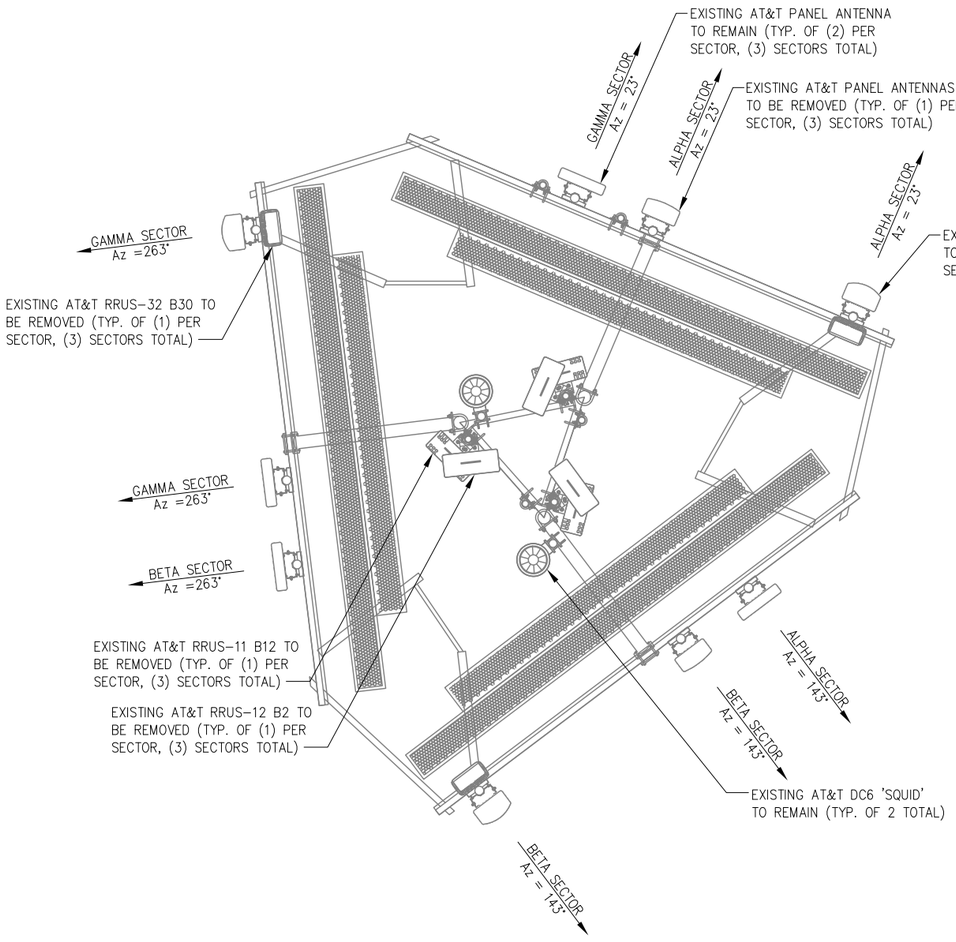
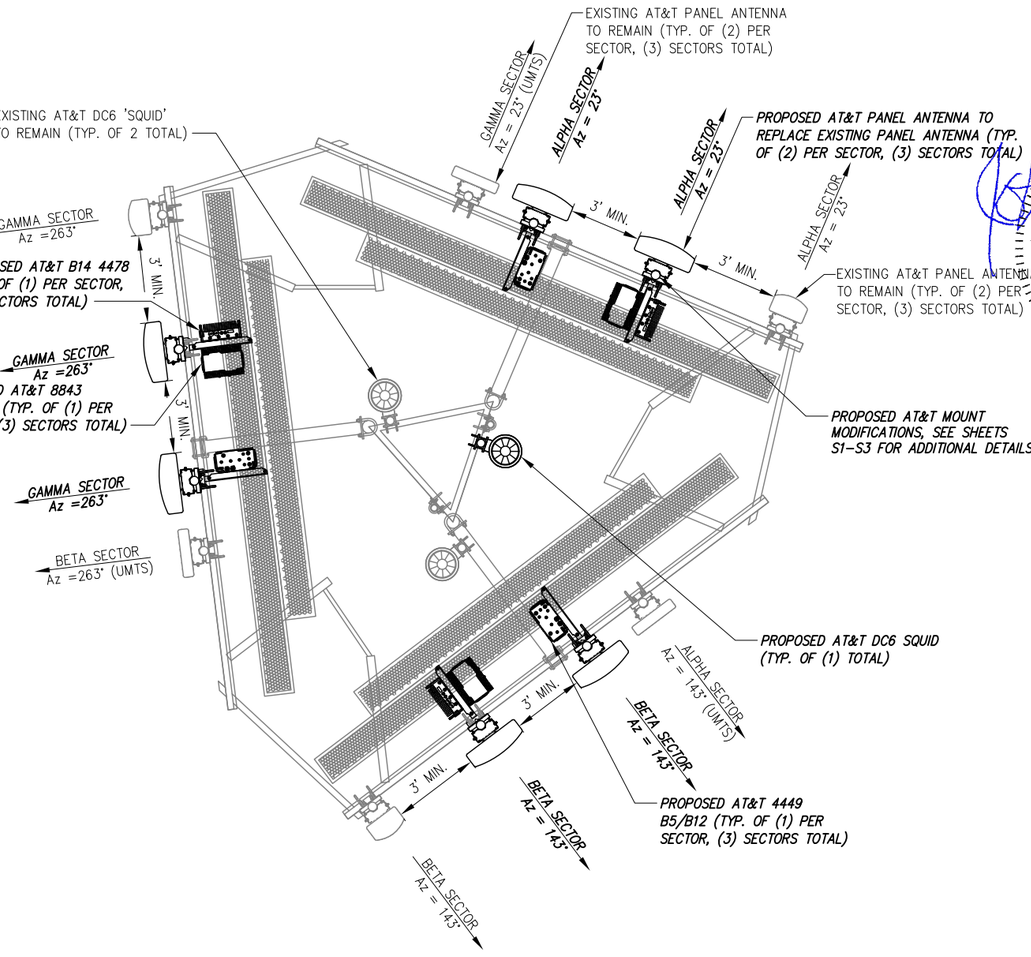
- ***FOR ADDITIONAL STRUCTURAL INFORMATION PERTAINING TO THE ANTENNA MOUNT, SEE 'POST MOD MOUNT ANALYSIS REPORT' COMPLETED BY INFINIGY, DATED 01/08/20. SEE SHEETS S1-S3 FOR ADDITIONAL MODIFICATION DETAILS.***



1 EXISTING ANTENNA ORIENTATION PLAN
NOT TO SCALE



2 PROPOSED ANTENNA ORIENTATION PLAN
NOT TO SCALE

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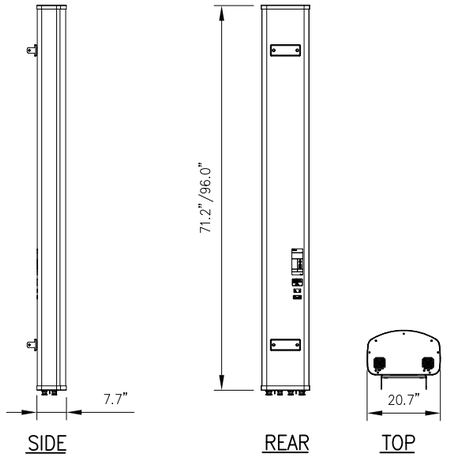
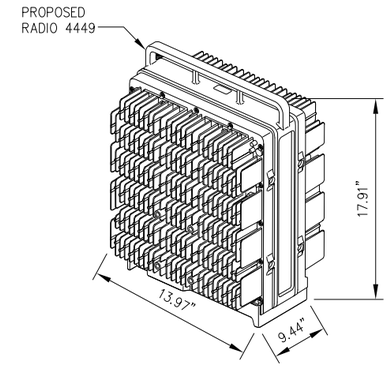
Drawing Title
ANTENNA ORIENTATION PLAN

Drawing Number
C4



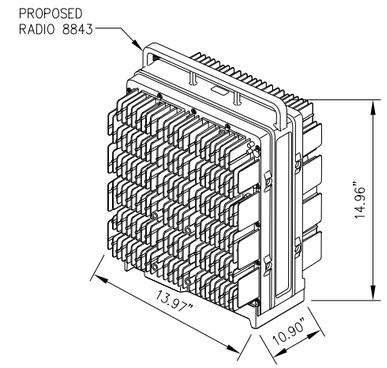
CCI MODEL NO.:	DMP65R-BU8DA
RADOME MATERIAL:	FIBERGLASS
RADOME COLOR:	LIGHT GRAY
DIMENSIONS, HxWxD:	96.0"x20.7"x7.7"
WEIGHT, W/ PRE-MOUNTED BRACKETS:	95.7 LBS
CONNECTOR:	7-16 DIN FEMALE

1 ANTENNA DETAIL
NOT TO SCALE



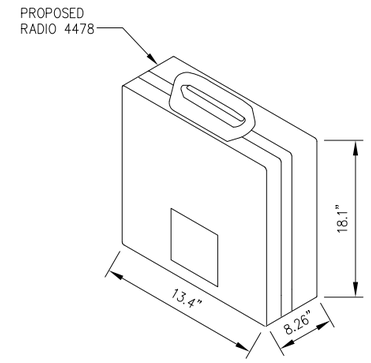
RADIO 4449 SPECIFICATIONS
- HxWxD, (INCHES) : 14.96"x13.9"x10.3"
- WEIGHT (LBS) : 73
- COLOR : GRAY

2 ERICSSON RADIO 4449 DETAIL
NOT TO SCALE



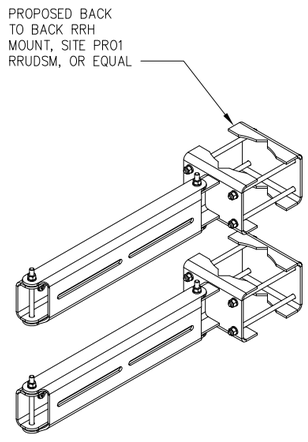
RADIO 8843 SPECIFICATIONS
- HxWxD, (INCHES) : 14.9"x13.2"x10.9"
- WEIGHT (LBS) : 72
- COLOR : GRAY

3 ERICSSON RADIO 8843 DETAIL
NOT TO SCALE

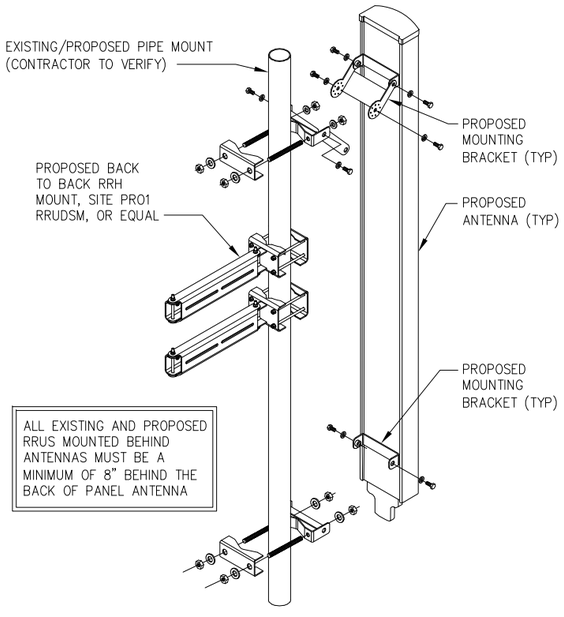


RADIO 4478-B14 SPECIFICATIONS
- HxWxD, (INCHES) : 18.1"x13.5"x7.8"
- WEIGHT (LBS) : 56.1
- COLOR : GRAY

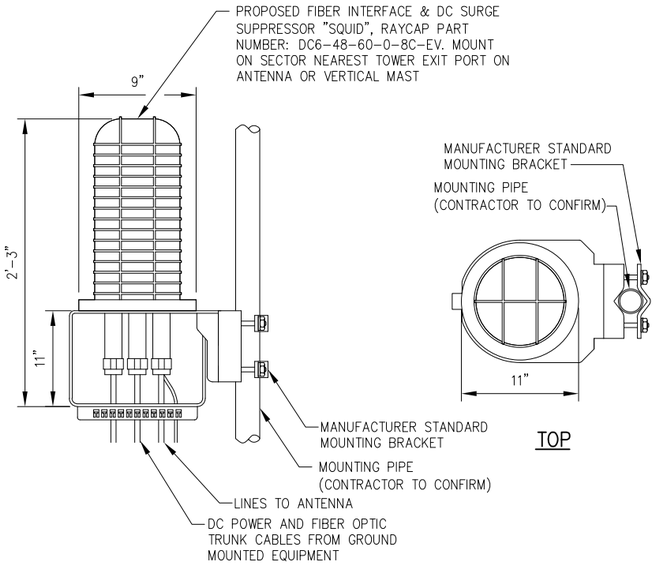
4 ERICSSON RADIO 4478-B14 DETAIL
NOT TO SCALE



5 BACK TO BACK PIPE MOUNT DETAIL
NOT TO SCALE



6 ANTENNA MOUNTING DETAIL
NOT TO SCALE



7 SQUID DETAIL
NOT TO SCALE

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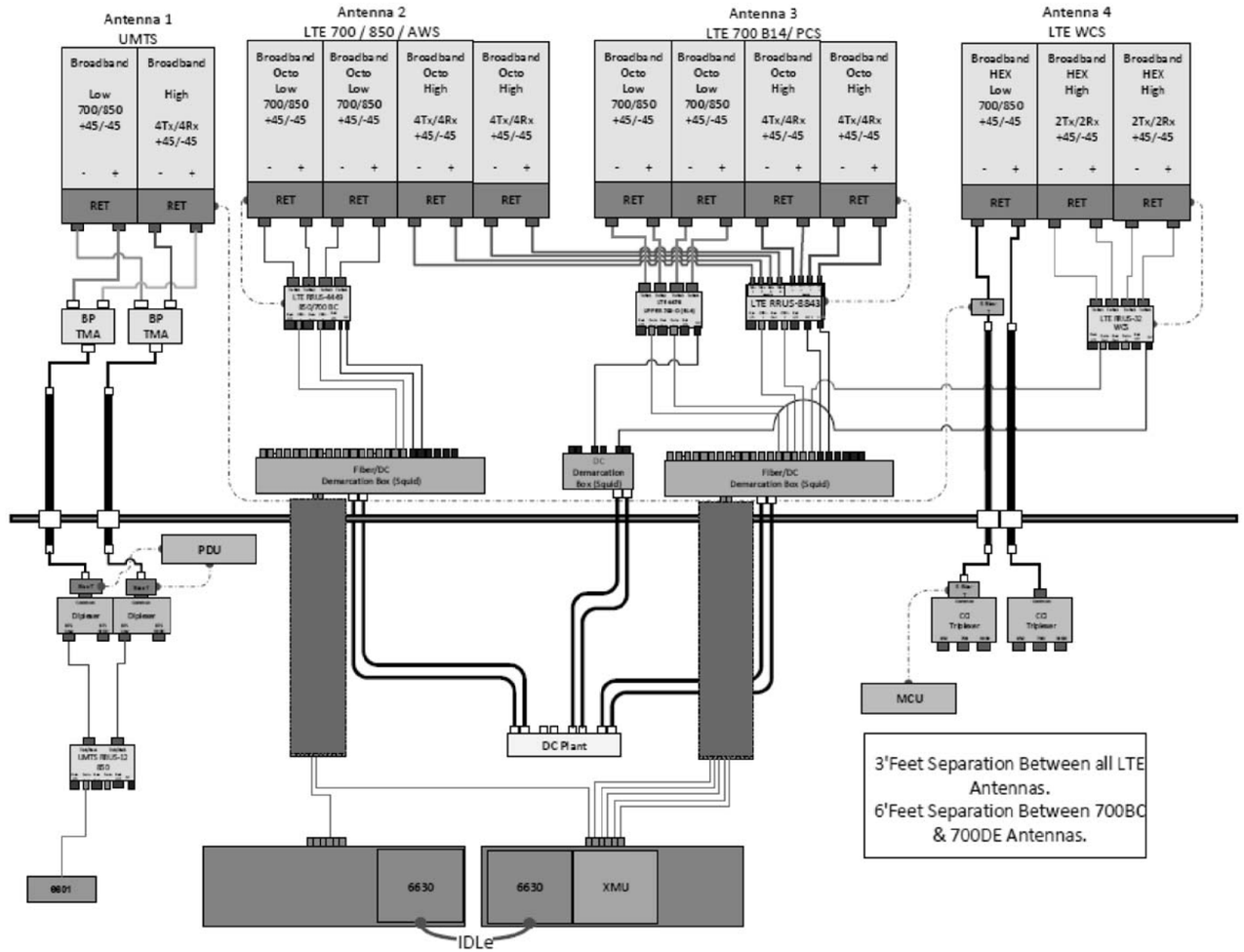
Drawing Title
EQUIPMENT DETAILS

Drawing Number
C5



ALPHA/BETA/GAMMA

1 PLUMBING DIAGRAM (FINAL CONFIGURATION)
NOT TO SCALE

*BASED ON LTE RFDS, DATED 06/17/2019, V2.00

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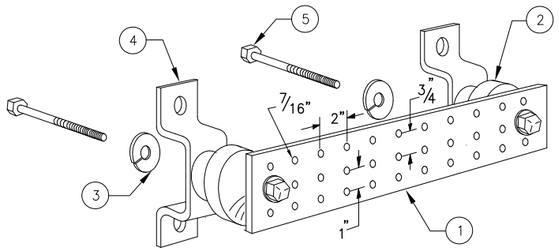
Drawing Title
PLUMBING DIAGRAM

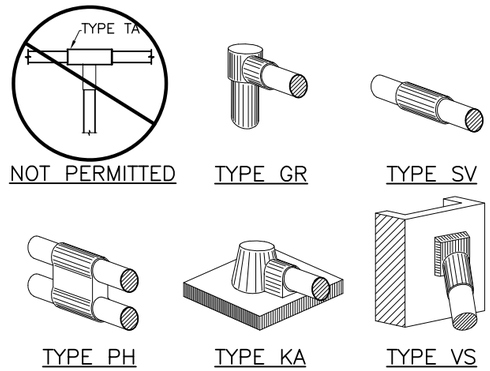
Drawing Number
C6



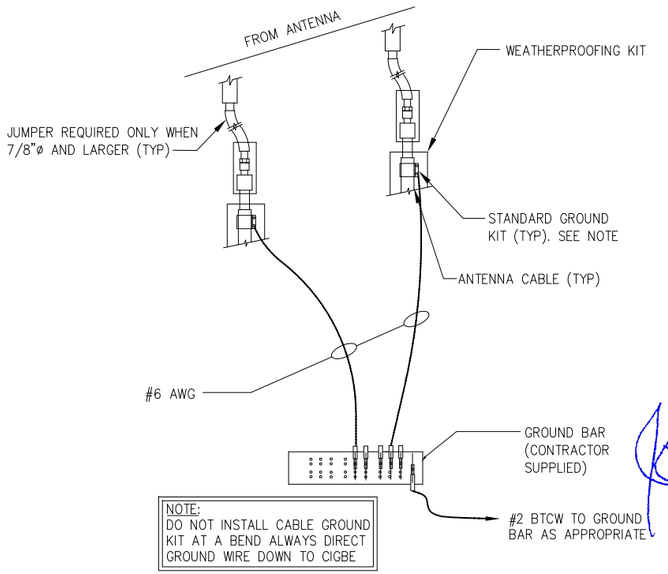
LEGEND

1 – SOLID TINNED COPPER GROUND BAR, 1/4"x 4"x 20" MIN., NEWTON INSTRUMENT CO. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION
2 – INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061–4
3 – 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015–8
4 – WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT NO. A–6056
5 – 5/8–11 X 1" H.H.C.S. BOLTS, NEWTON INSTRUMENT CO. CAT NO. 3012–1
6 – GROUND BAR SHALL BE SIZED TO ACCOMODATE ALL GROUNDING CONNECTIONS REQUIRED PLUS PROVIDE 50% SPARE CAPACITY
7 – GROUND BARS SHALL NEITHER BE FIELD FABRICATED NOR NEW HOLES DRILLED
8 – GROUND LUGS SHALL MATCH THE HOLE SPACING ON THE BAR
9 – HARDWARE DIAMETER SHALL BE MINIMUM 3/8"

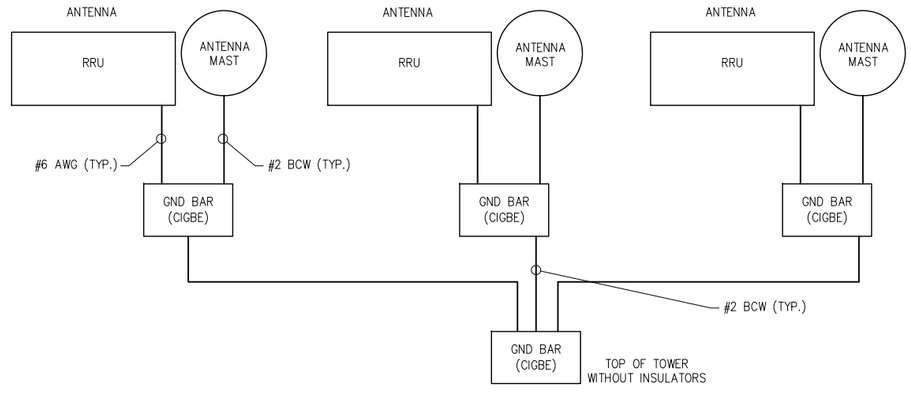
1 — GROUND BAR
NOT TO SCALE



2 — CADWELDS (TYPICAL)
NOT TO SCALE



3 — CONNECTION OF GROUND WIRES TO GROUNDING BARS @ ANTENNAS
NOT TO SCALE



4 — SCHEMATIC DIAGRAM GROUNDING SYSTEM
NOT TO SCALE

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01/09/2020

No.	Submittal / Revision	App'd	Date
4	REVISED FOR PERMIT	BMM	01/09/20
3	REVISED FOR PERMIT	BMM	12/20/19
2	REVISED FOR PERMIT	ASW	10/16/19
1	ISSUED FOR PERMIT	BMM	09/25/19
0	ISSUED FOR REVIEW	BMM	08/29/19

Drawn: BMM Date: 08/29/19
Designed: ASW Date: 08/29/19
Checked: AJD Date: 08/29/19

Project Number: 499-006

Project Title:
MIDDLEBURY
STRAITS TPKE

CTL01129
FA# 10035253
1021 STRAITS TURNPIKE
MIDDLEBURY, CT 06762

Prepared For: smartlink

Drawing Scale: AS NOTED
Date: 01/09/20

CD

Drawing Title
GROUNDING DETAILS

Drawing Number
C7

GENERAL NOTES:

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

STEEL CONSTRUCTION NOTES:

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

CONCRETE CONSTRUCTION NOTES:

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

FIBER REINFORCED POLYMER (FRP) NOTES:

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

INSTALLATION TORQUE TABLE

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

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

RATIO OF EDGE DISTANCE TO FRP FASTENER DIAMETER

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

WOOD CONSTRUCTION NOTES:

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

MASONRY CONSTRUCTION NOTES:

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

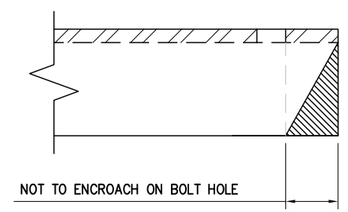
TOWER PLUMB & TENSION NOTES:

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

SPECIAL INSPECTIONS NOTES:

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

MAXIMUM ALLOWABLE ANGLE CLIP



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01-08-20

No.	Submittal / Revision	App'd	Date
0	ISSUED FOR REVIEW	BA	01/03/20

Drawn: BE Date: 01/03/20
Designed: TM Date: 01/03/20
Checked: BA Date: 01/03/20

Project Number: 1106-A0001-B

Project Title:
MIDDLEBURY
STRAITS TPKE

CTL01129
FA# 10035253
1021 STRAITS TURNPIKE
MIDDLEBURY, CT 06762

Prepared For: smartlink

Drawing Scale: AS NOTED
Date: 01/03/20
0

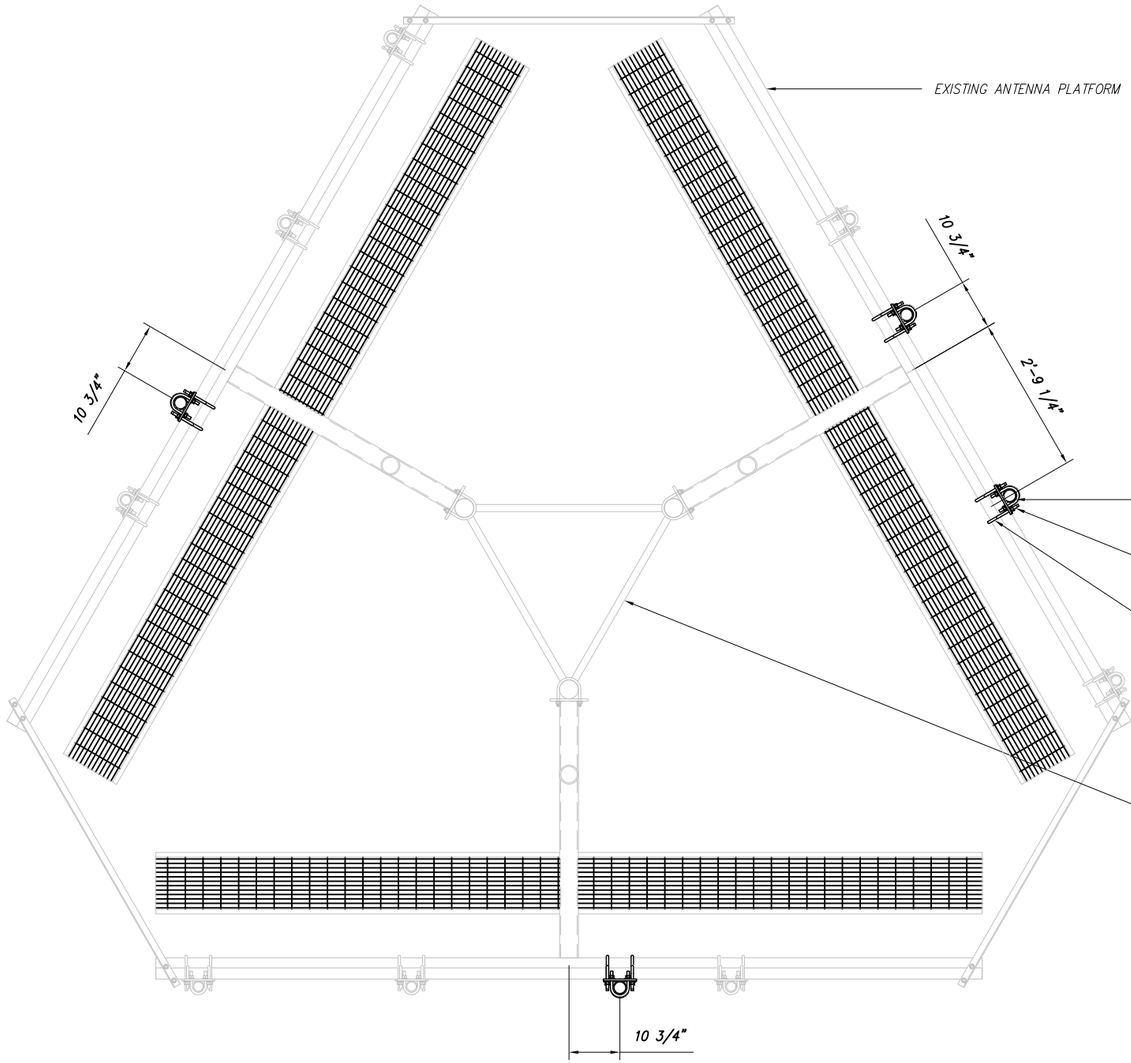
Drawing Title
GENERAL NOTES

Drawing Number
S1

NOTES:

1. VARIOUS EXISITNG CONDITIONS AND PROPOSED MODIFICATIONS NOT SHOWN FOR CLARITY.

2. ALL SITE PRO 1 PARTS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.



EXISTING MOUNTING PIPE TO BE REMOVED AND REPLACED WITH PROPOSED 2.875" O.D. SCH 40 PIPE, 6'-0" LONG (TYP OF 4)

EXISTING CROSSOVER PLATE TO BE REMOVED AND REPLACED WITH PROPOSED CROSSOVER PLATE KIT SITE PRO 1 PART# SCX2-K (TYP OF 4)

EXISTING CROSSOVER PLATE TO BE REMOVED AND REPLACED WITH PROPOSED CROSSOVER PLATE KIT SITE PRO 1 PART# SCX6-K (TYP OF 4)

EXISTING SELF SUPPORT TOWER

1 PLAN VIEW
SCALE: NOT TO SCALE

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01-08-20

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0	ISSUED FOR REVIEW	BA	01/03/20

Drawn: BE Date: 01/03/20
Designed: TW Date: 01/03/20
Checked: BA Date: 01/03/20

Project Number: 1106-A0001-B

Project Title:
MIDDLEBURY
STRAITS TPKE

CTL01129
FA# 10035253
1021 STRAITS TURNPIKE
MIDDLEBURY, CT 06762

Prepared For:
smartlink

Drawing Scale: AS NOTED
Date: 01/03/20
0

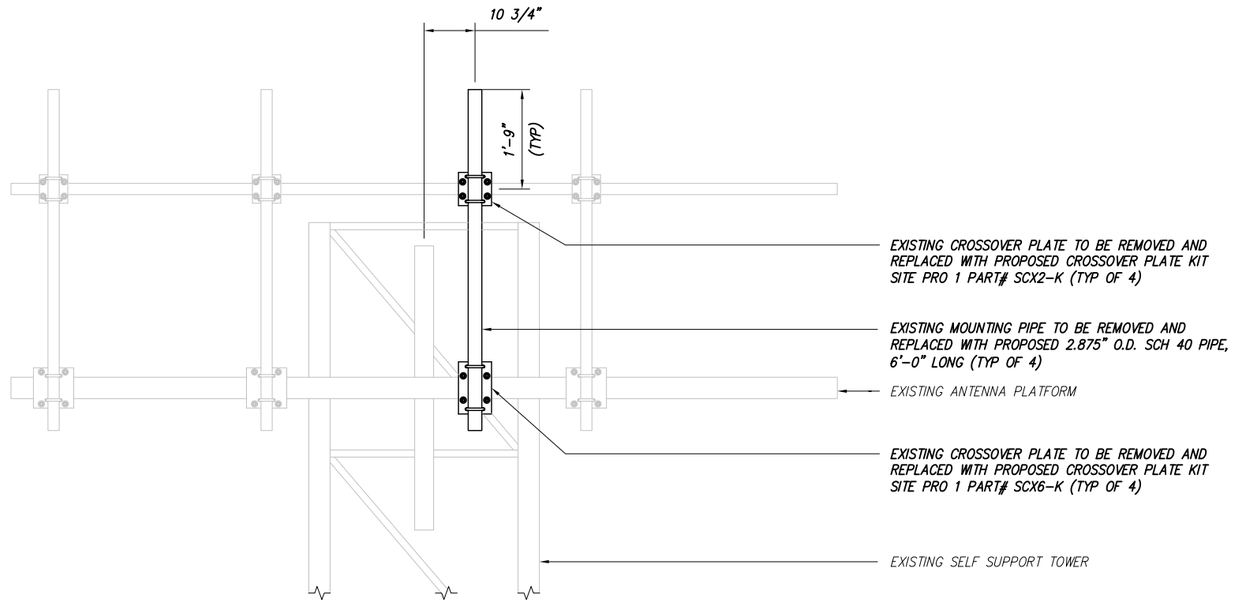
Drawing Title
MOUNT MODIFICATION

Drawing Number
S2

NOTES:

1. VARIOUS EXISITNG CONDITIONS AND PROPOSED MODIFICATIONS NOT SHOWN FOR CLARITY.

2. ALL SITE PRO 1 PARTS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.



1 ELEVATION VIEW
SCALE: NOT TO SCALE

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01-08-20

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0	ISSUED FOR REVIEW	BA	01/03/20

Drawn: BE Date: 01/03/20
Designed: TM Date: 01/03/20
Checked: BA Date: 01/03/20

Project Number: 1106-A0001-B

Project Title:
MIDDLEBURY
STRAITS TPKE

CTL01129
FA# 10035253
1021 STRAITS TURNPIKE
MIDDLEBURY, CT 06762

Prepared For: smartlink

Drawing Scale: AS NOTED
Date: 01/03/20
0

Drawing Title
MOUNT MODIFICATION

Drawing Number
S3

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

1033 WATERVLIET SHAKER RD, ALBANY, NY 12205

Post Mod Mount Analysis Report

January 8, 2020

Site Name	Middlebury Straits TPKE
Site Number	CTL01129
AT&T FA Number	10035253
PACE Number	2051A0PQY2 / 2051A0PR0H / 2051A0PR0F 2051A0PQD4 / 2051A0PQPN
PTN Number	MRCTB040858 / MRCTB040676 / MRCTB040834 MRCTB040638 / MRCTB040525
Infinigy Job Number	1106-A0001-B
Client	Smartlink
Carrier	AT&T Mobility
Site Location	1021 Straits Turnpike Middlebury, CT 06762 New Haven County 41.5357700 N NAD83 73.0892489 W NAD83
Mount Centerline EL.	185.0 ft
Mount Type	Platform
Structural Usage Ratio	**88.1%**
Overall Result	**Pass**
Note	**See appended documents for mount modifications.**

Upon reviewing the results of this analysis, it is our opinion that the post modification mount meets the specified TIA code requirements. The mounts and connections for the proposed carrier are therefore deemed adequate to support the final loading configuration as listed in this report.

Thomas Marr
Project Engineer I

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Mount Usages…….……... 4

Mount Connection Usages..……... 4

Assumptions and Limitations…… 5

Calculations…….. Appended

Introduction

Infinigy Engineering has been requested to perform a post modification mount analysis on the existing AT&T Mobility mounts. All referenced supporting documents have been obtained from the client and are assumed to be accurate and applicable to this site. The mount was analyzed using RISA-3D Version 17.0.4 analysis software.

Supporting Documentation

RFDS	RFDS ID #3084504, dated June 17, 2019
Construction Drawings	Infinigy Engineering, PLLC. Job #499-006, dated December 20, 2019
Structural Report	Infinigy Engineering, PLLC. Job #1106-A0001-B, dated September 5, 2019
Site Photos	Smartlink Provided, dated June 27, 2019

Analysis Code Requirements

Wind Speed	120 mph (3-Second Gust)
Wind Speed w/ Ice	50 mph (3 Second Gust) w/ 1.275" Ice
TIA Revision	ANSI/TIA-222-H
Adopted IBC	2015 IBC / 2018 Connecticut State Building Code
Structure Class	II
Exposure Category	B
Topographic Category	1
Spectral Response	S_s = 0.191 g, S_1 = 0.064 g
Site Class	D - Stiff Soil
HMSL	433 ft.

Conclusion

Upon reviewing the results of this analysis, it is our opinion that the post modification mount meets the specified TIA code requirements. The mount and connections are therefore deemed adequate to support the existing and proposed loading as listed in this report.

If you have any questions, require additional information, or actual conditions differ from those as detailed in this report please contact me via the information below:

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Final Configuration Loading

Mount CL (ft)	Vert. O/S (ft)	Rad. HT (ft)	Horiz. O/S (ft) (1)	Qty	Appurtenance	Carrier
185.0	0.0	185.0	10.0	3	POWERWAVE 7770	AT&T
			4.5, 8.0	4	CCI DMP65R-BU6DA	
			4.5, 8.0	2	CCI DMP65R-BU8DA	
			1.0	3	ANDREW SBNHH-1D65A	
			4.5	3	ERICSSON 4449 B5/B12	
			8.0	3	ERICSSON B14 4478	
			8.0	3	ERICSSON 8843 B2/B66A	
			10.0	6	POWERWAVE LGP21401	
			-	3	RAYCAP DC6-48-60-18-8F (2)	

(1) Horizontal Offset is defined as the distance from the left most edge of the mount face horizontal when viewed facing the tower
(2) Raycap assumed to be installed directly on tower

Mount Usages

Horizontals	75.5%	Pass
Standoffs	88.1%	Pass
Mount Pipes	81.8%	Pass
Tieback	19.9%	Pass
Bracing	86.9%	Pass
Bolts	45.7%	Pass
Max Usage	**88.1%**	**Pass**

Mount Connection Usages

Reaction Data	Design Capacity*	Analysis Reactions	Results
Max Tension (lbs.)	10170.07	4649.56	45.7%
Max Shear (lbs.)	6212.62	684.92	11.0%
Unity Check	-	-	22.1%

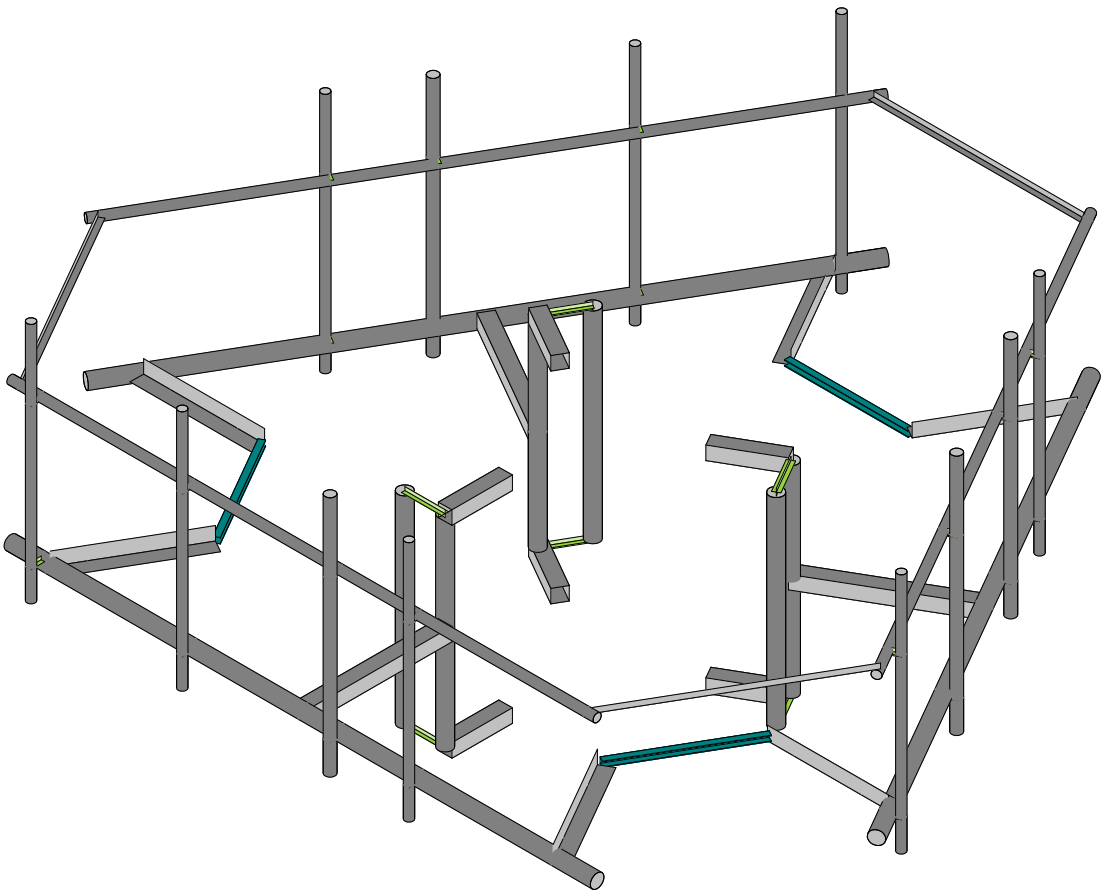
***Assumed (1) 0.625" A307 Bolts, Total (4) per Connection. Contractor to field verify prior to proposed installation.**

Assumptions and Limitations

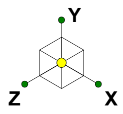
Our structural calculations are completed assuming all information provided to Infinigy Engineering is accurate and applicable to this site. For the purposes of calculations, we assume an overall structure condition of "like new" and all members and connections to be free of corrosion and/or structural defects. The structure owner and/or contractor shall verify the structure's condition prior to installation of any proposed equipment. If actual conditions differ from those described in this report Infinigy Engineering should be notified immediately to complete a revised evaluation.

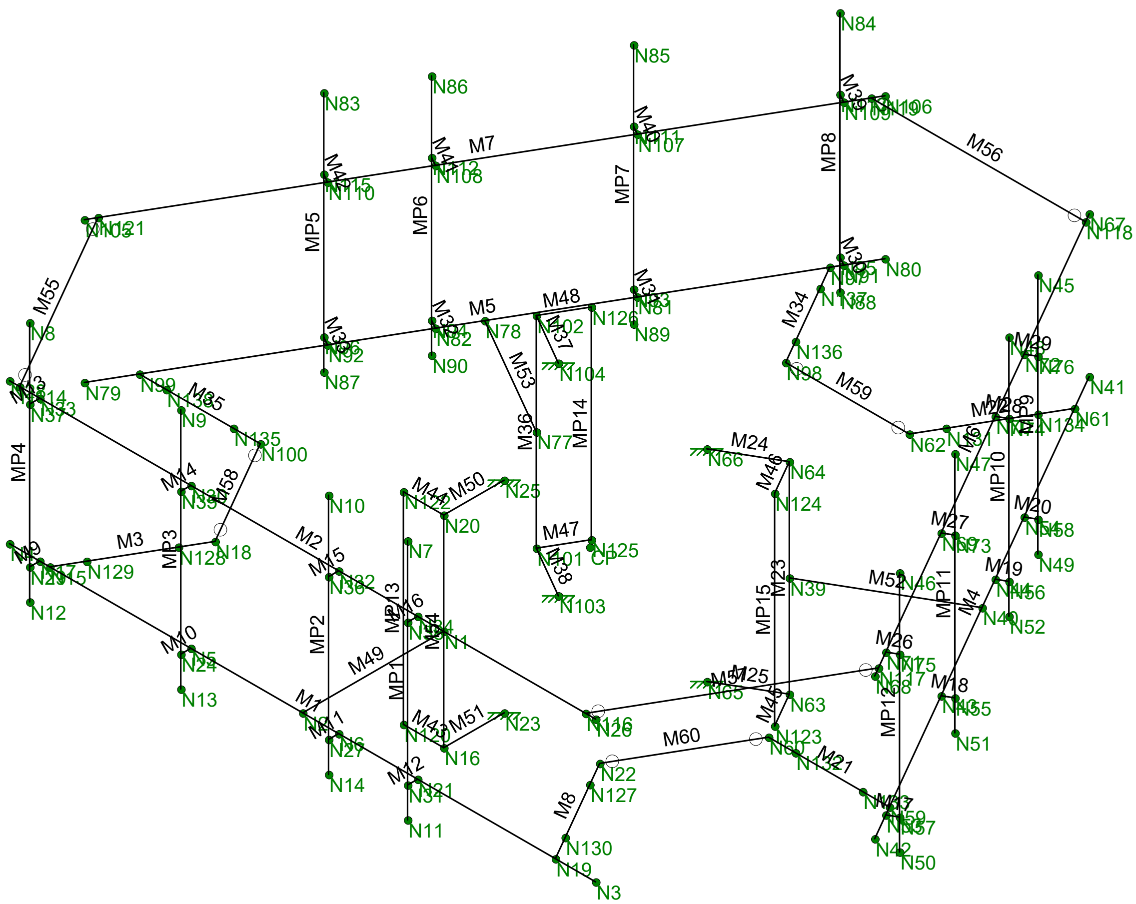
Our evaluation is completed using standard TIA, AISC, ACI, and ASCE methods and procedures. Our structural results are proprietary and should not be used by others as their own. Infinigy Engineering is not responsible for decisions made by others that are or are not based on our supplied assumptions and conclusions.

This report is an evaluation of the proposed carriers mount structure only and does not reflect adequacy of the existing tower, other mounts, or coax mounting attachments. These elements are assumed to be adequate for the purposes of this analysis and are assumed to have been installed per their manufacturer requirements.



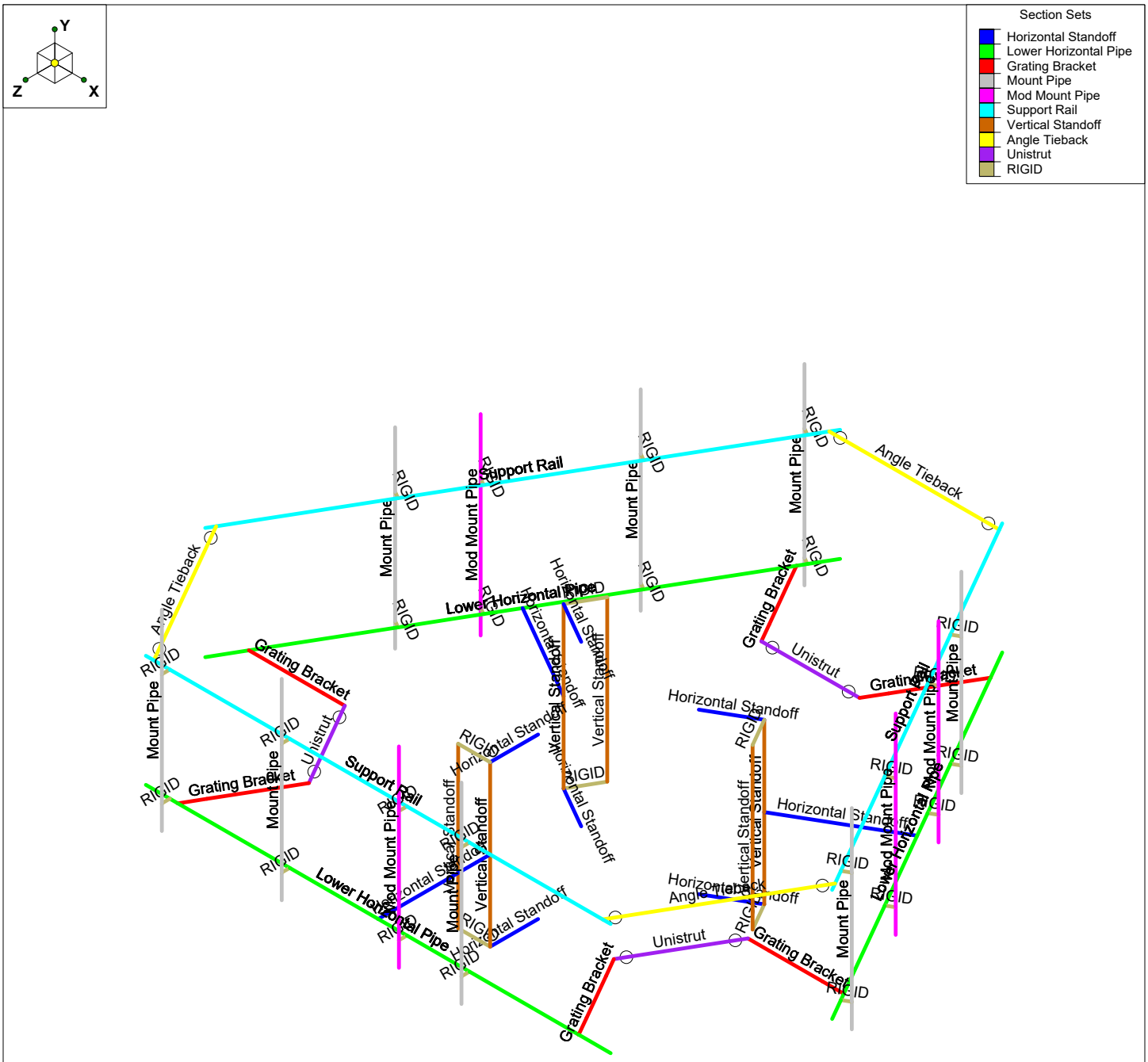
Infinigy Engineering	Middlebury Straits TPKE CT	Final Configuration
TM		Jan 2, 2020 at 1:39 PM
1106-A0001-B		Middlebury Straits TPKE CT_MOD...





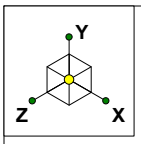
Envelope Only Solution

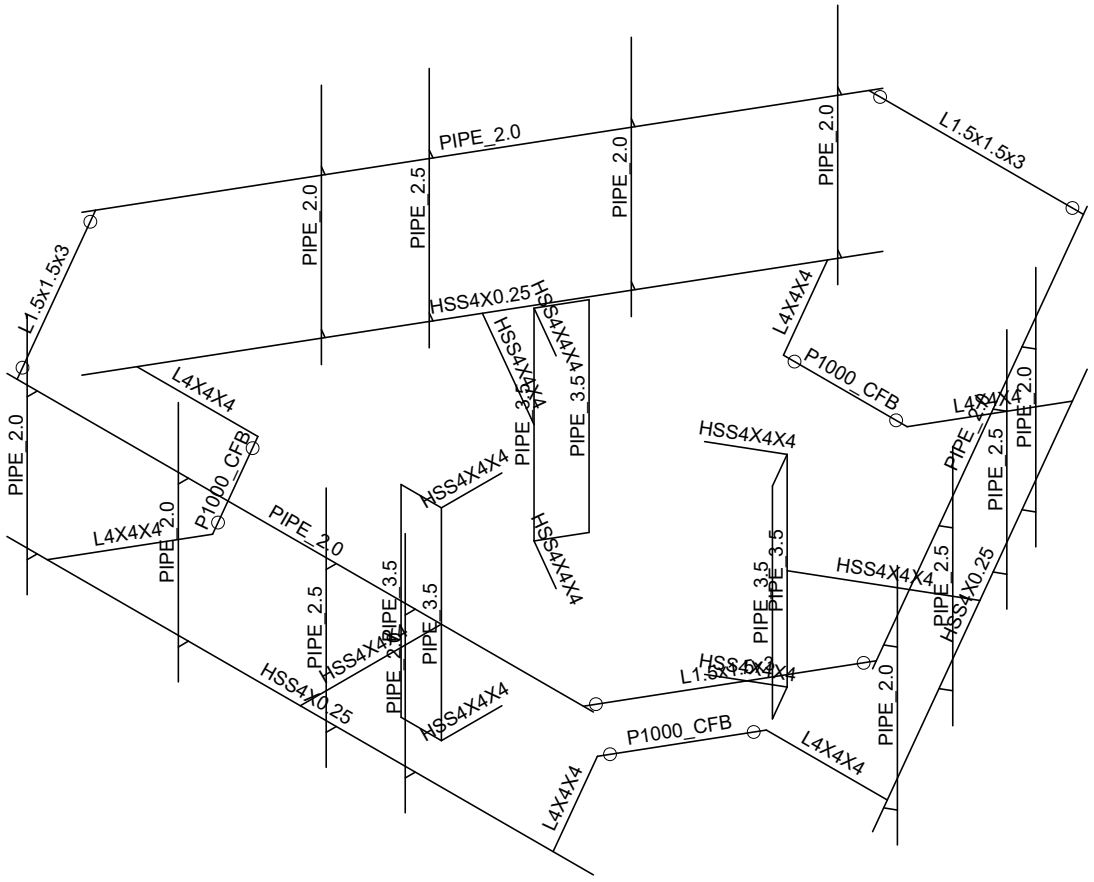
Infinigy Engineering	Middlebury Straits TPKE CT	Wire Frame
TM		Jan 2, 2020 at 9:55 AM
1106-A0001-B		Middlebury Straits TPKE CT_MOD...



Envelope Only Solution

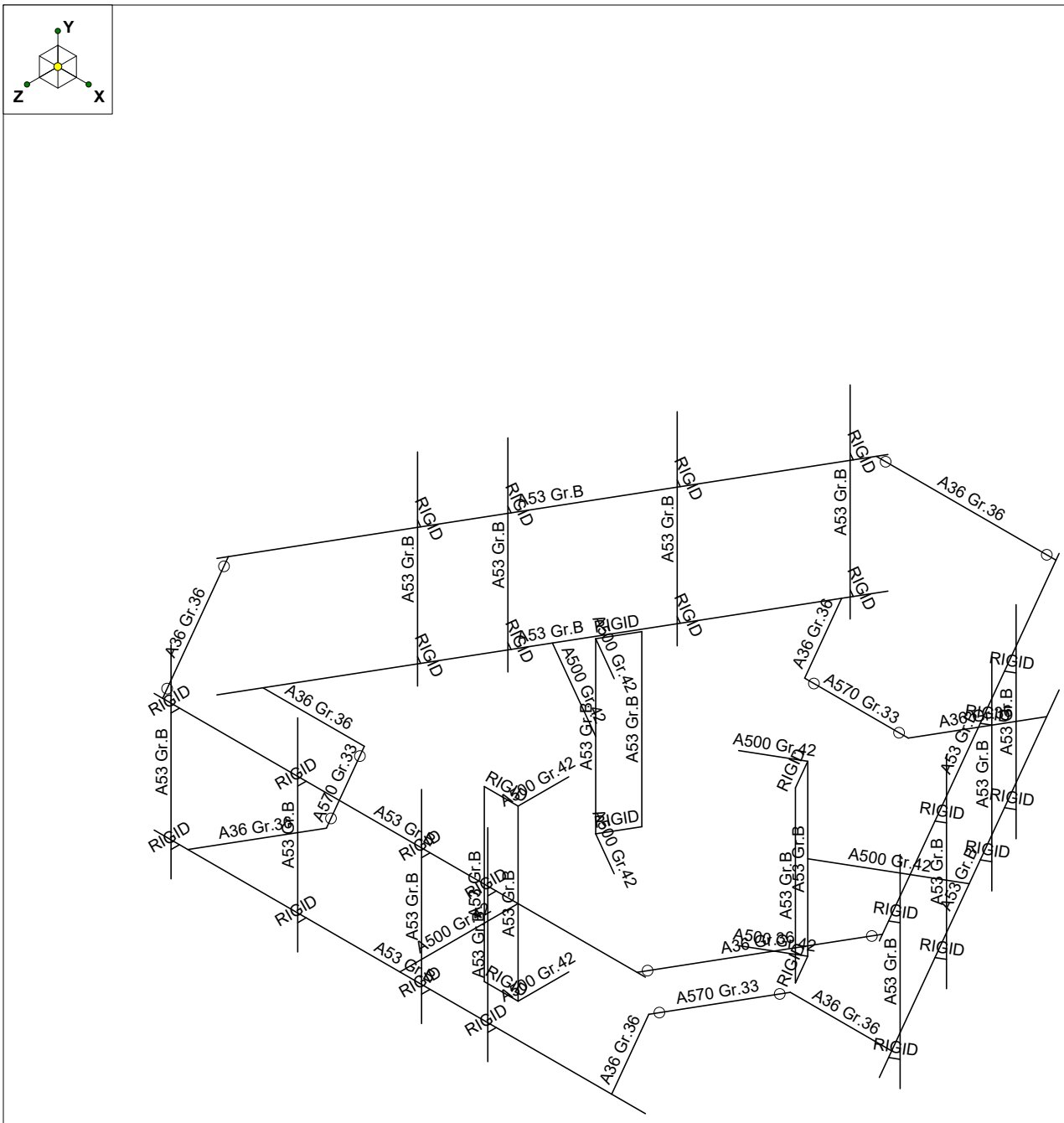
Infinigy Engineering	Middlebury Straits TPKE CT	Section Sets
TM		Jan 2, 2020 at 9:55 AM
1106-A0001-B		Middlebury Straits TPKE CT_MOD...





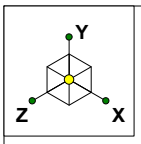
Envelope Only Solution

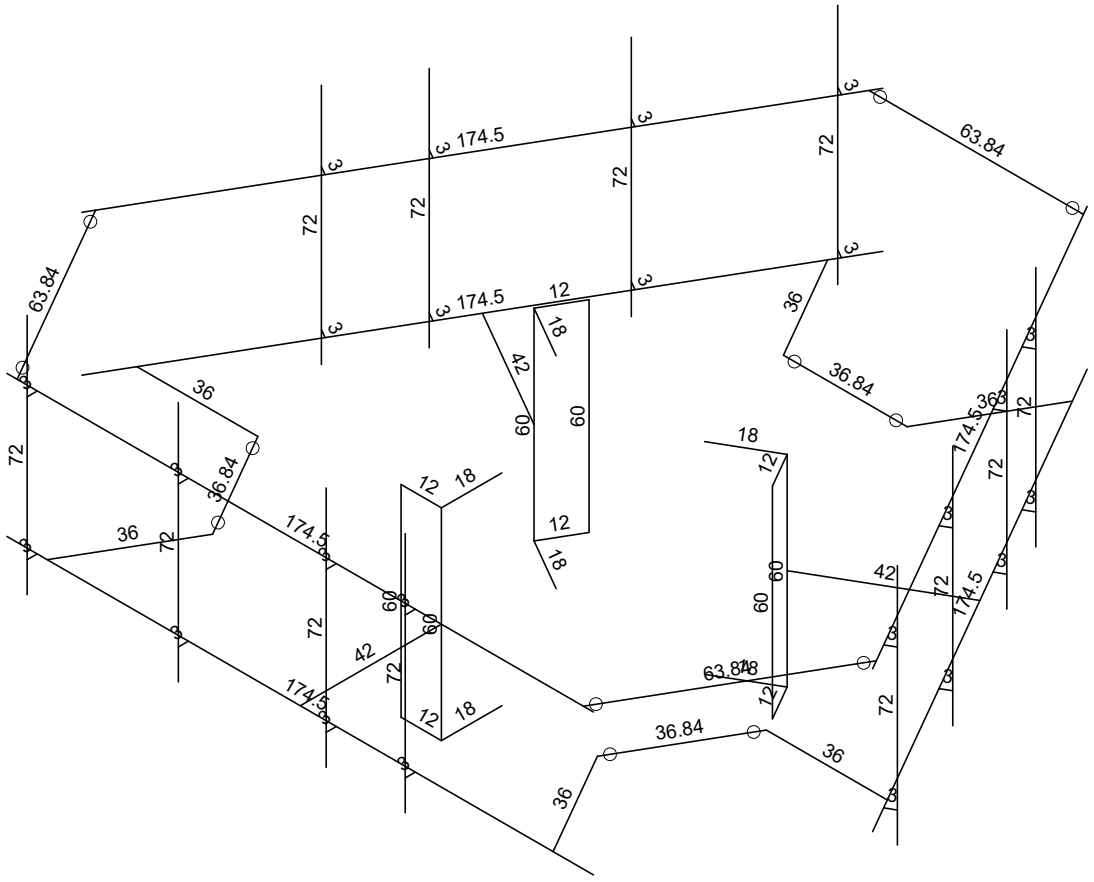
Infinigy Engineering	Middlebury Straits TPKE CT	Member Shape
TM		Jan 2, 2020 at 9:56 AM
1106-A0001-B		Middlebury Straits TPKE CT_MOD...



Envelope Only Solution

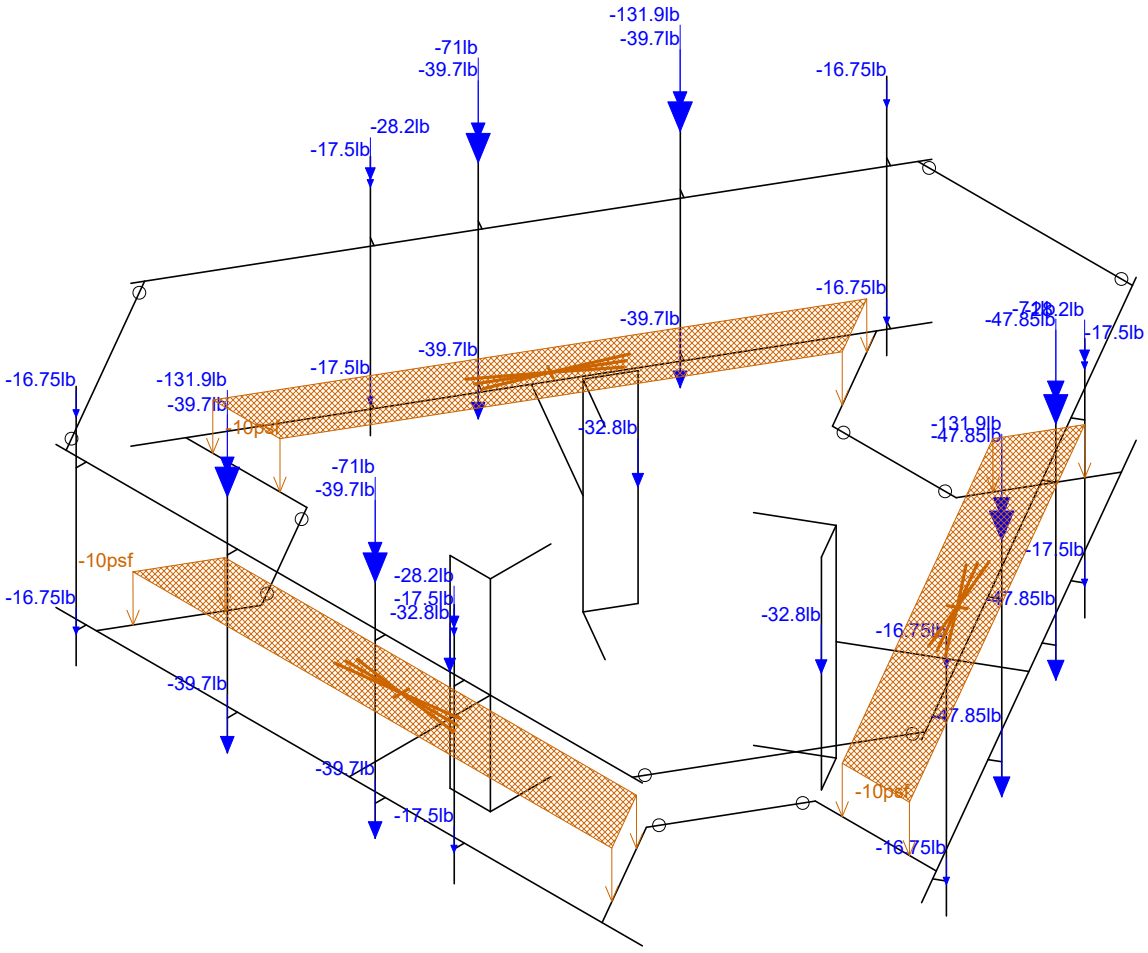
Infinigy Engineering	Middlebury Straits TPKE CT	Material Sets
TM		Jan 2, 2020 at 9:56 AM
1106-A0001-B		Middlebury Straits TPKE CT_MOD...





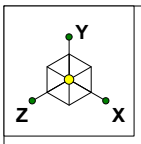
Member Length (in) Displayed
Envelope Only Solution

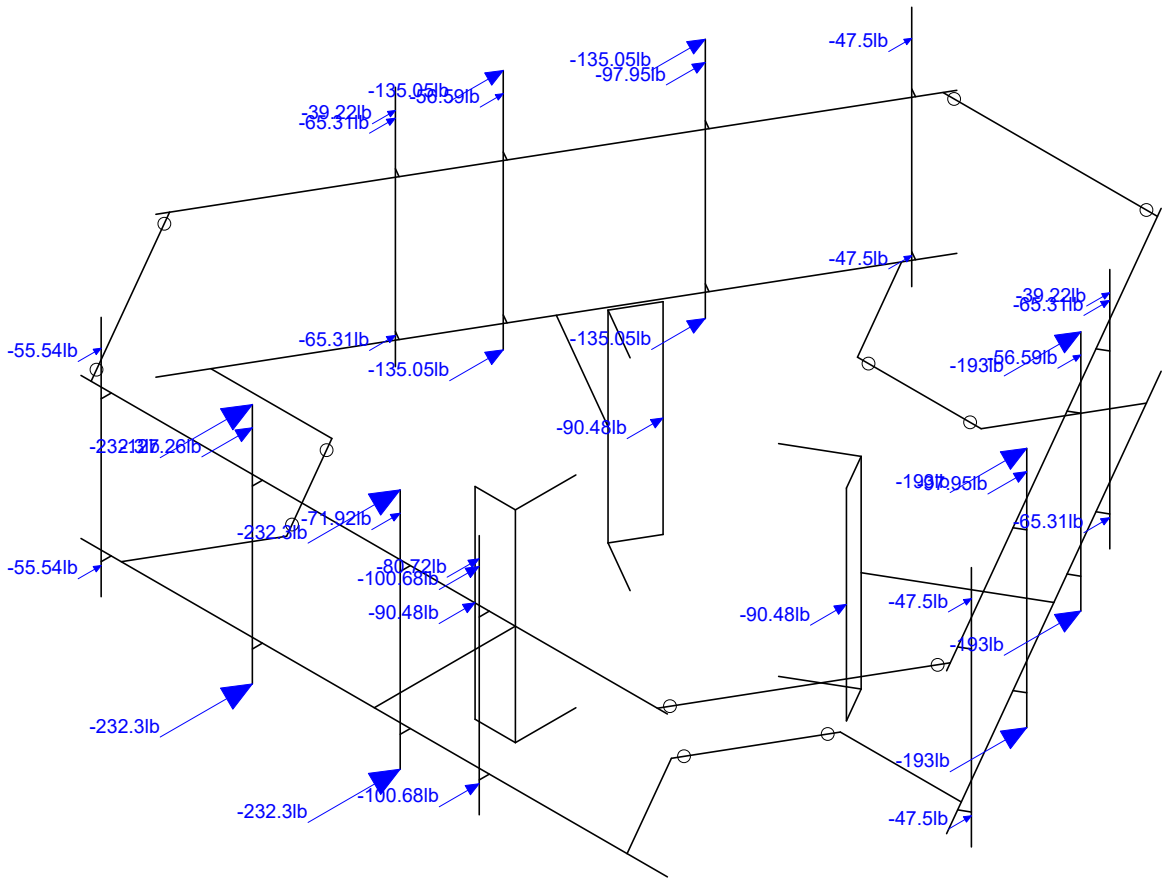
Infinigy Engineering	Middlebury Straits TPKE CT	Member Length
TM		Jan 2, 2020 at 9:56 AM
1106-A0001-B		Middlebury Straits TPKE CT_MOD...



Loads: BLC 1, Self Weight
Envelope Only Solution

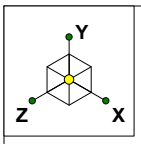
Infinigy Engineering	Middlebury Straits TPKE CT	Self Weight
TM		Jan 2, 2020 at 9:56 AM
1106-A0001-B		Middlebury Straits TPKE CT_MOD...

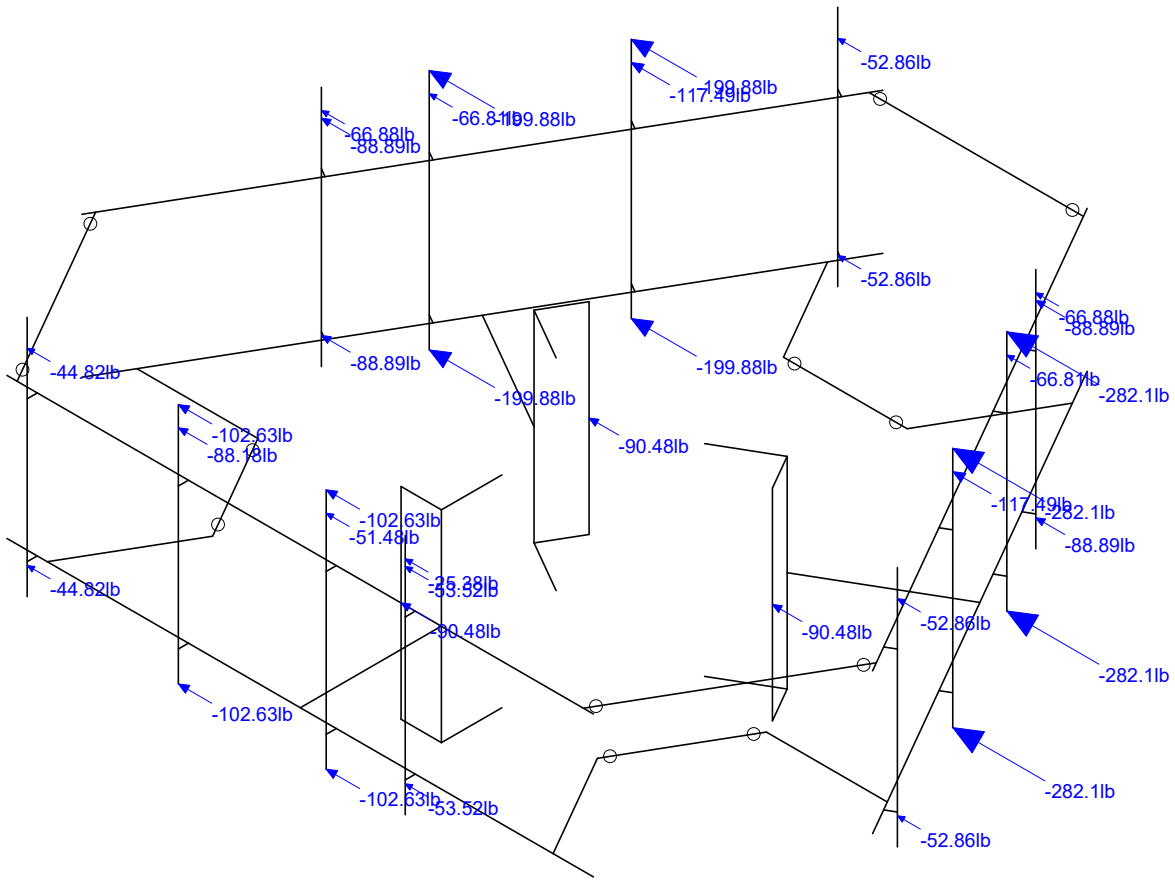




Loads: BLC 2, Wind Load AZI 0
Envelope Only Solution

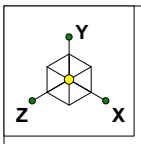
Infinigy Engineering	Middlebury Straits TPKE CT	Wind Load AZI 000
TM		Jan 2, 2020 at 9:56 AM
1106-A0001-B		Middlebury Straits TPKE CT_MOD...

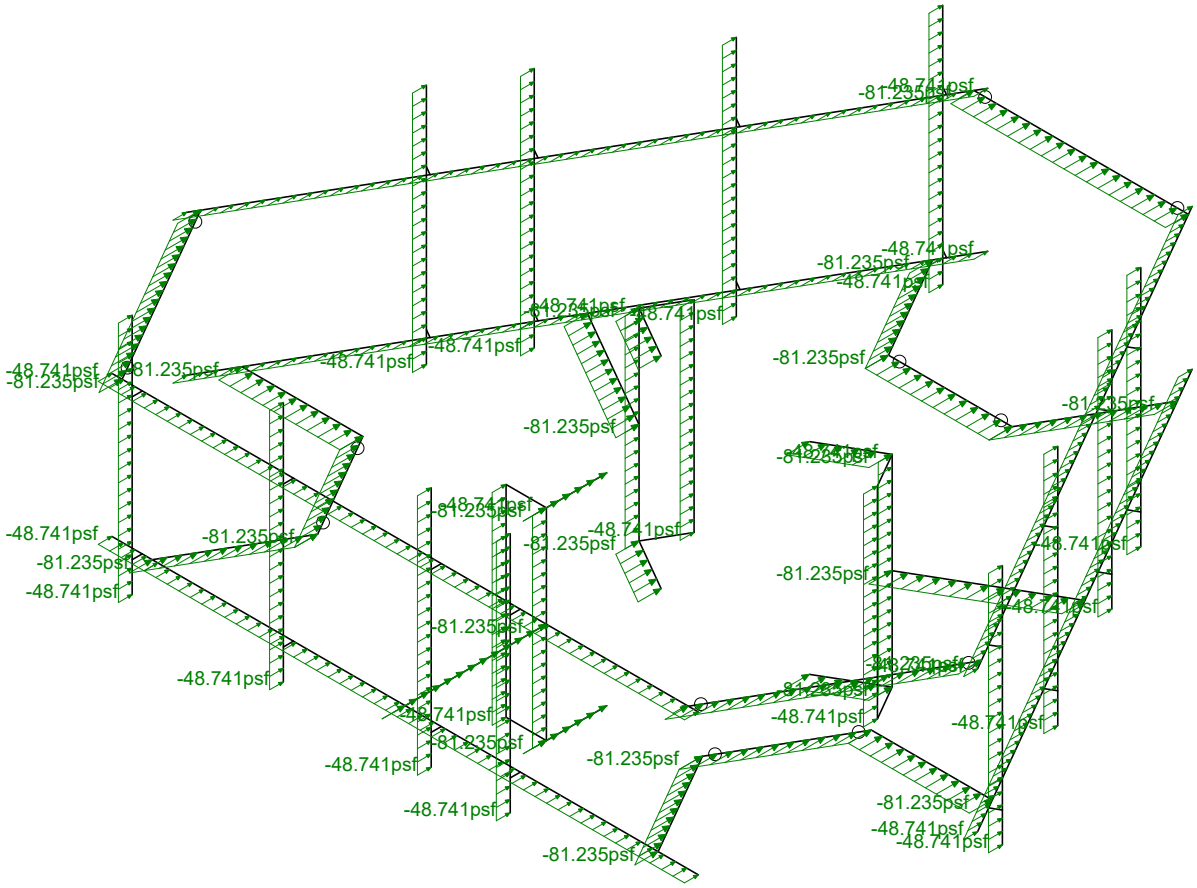




Loads: BLC 5, Wind Load AZI 90
Envelope Only Solution

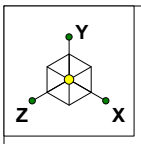
Infinigy Engineering	Middlebury Straits TPKE CT	Wind Load AZI 090
TM		Jan 2, 2020 at 9:57 AM
1106-A0001-B		Middlebury Straits TPKE CT_MOD...

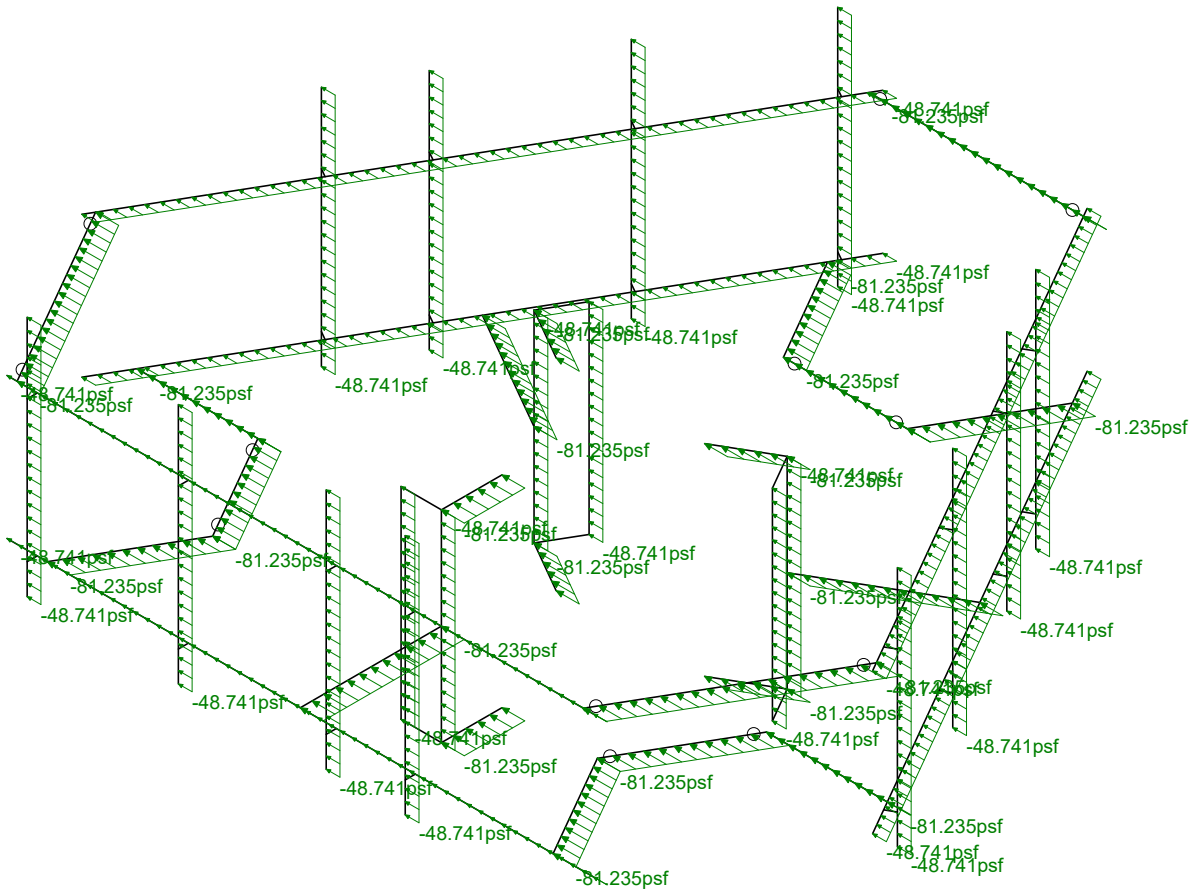




Loads: BLC 14, Distr. Wind Load Z
Envelope Only Solution

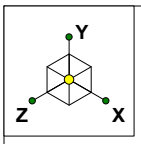
Infinigy Engineering	Middlebury Straits TPKE CT	Distr Wind Load AZI 000
TM		Jan 2, 2020 at 9:57 AM
1106-A0001-B		Middlebury Straits TPKE CT_MOD...

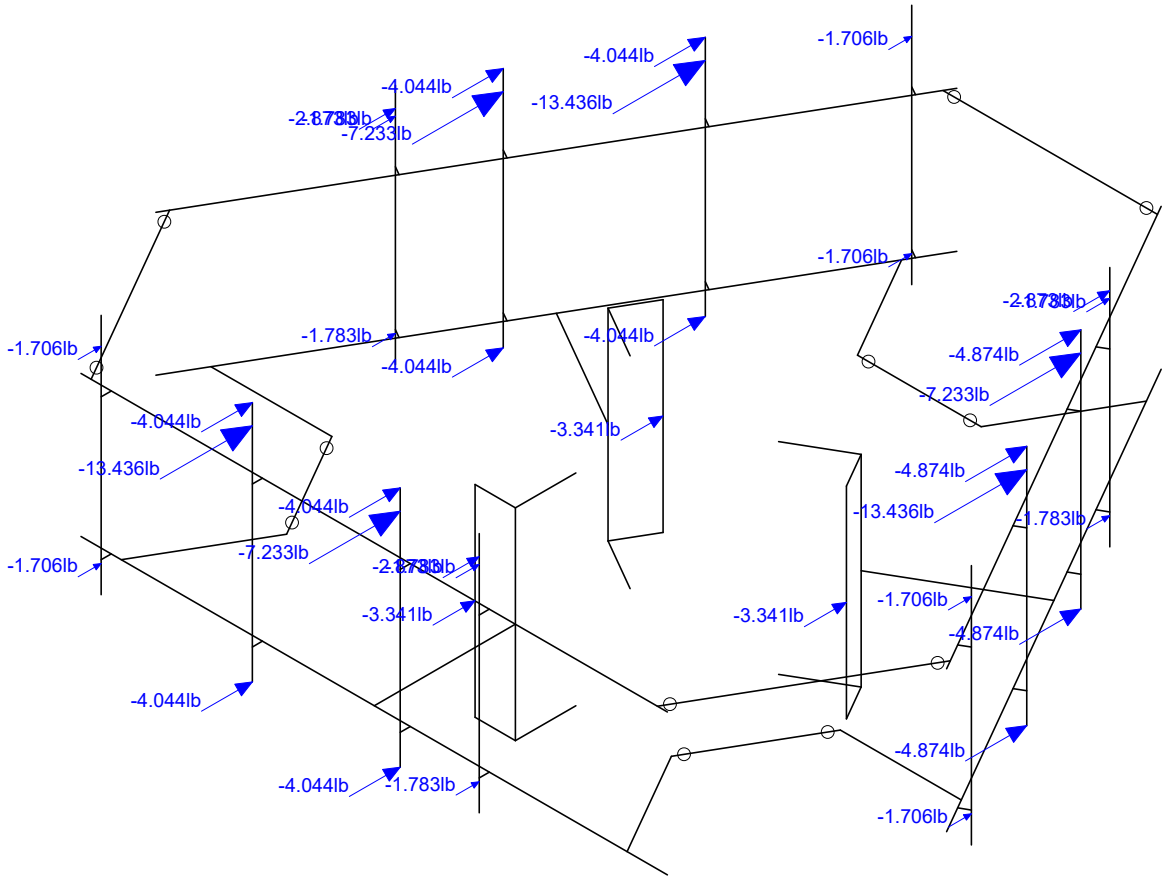




Loads: BLC 15, Distr. Wind Load X
Envelope Only Solution

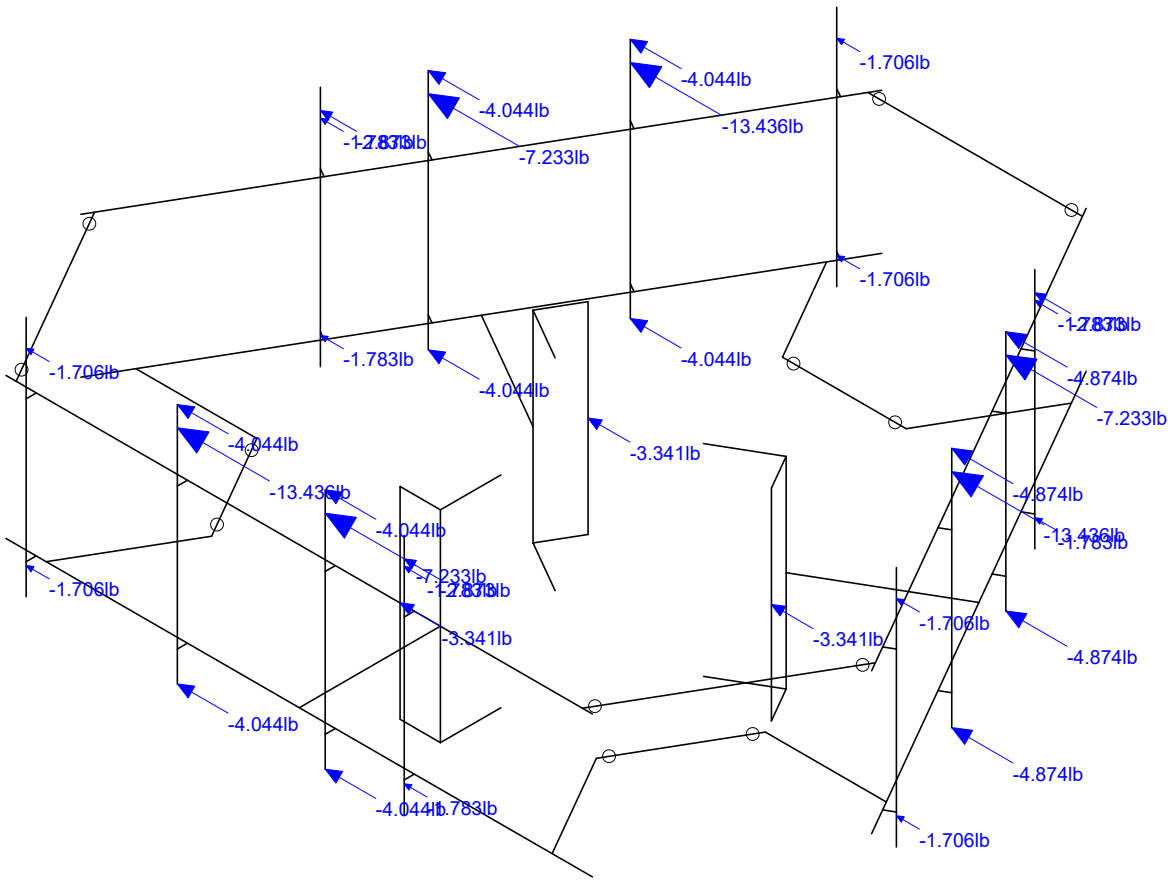
Infinigy Engineering	Middlebury Straits TPKE CT	Distr Wind Load AZI 090
TM		Jan 2, 2020 at 9:57 AM
1106-A0001-B		Middlebury Straits TPKE CT_MOD...





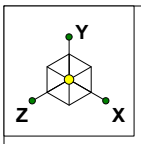
Loads: BLC 31, Seismic Load Z
Envelope Only Solution

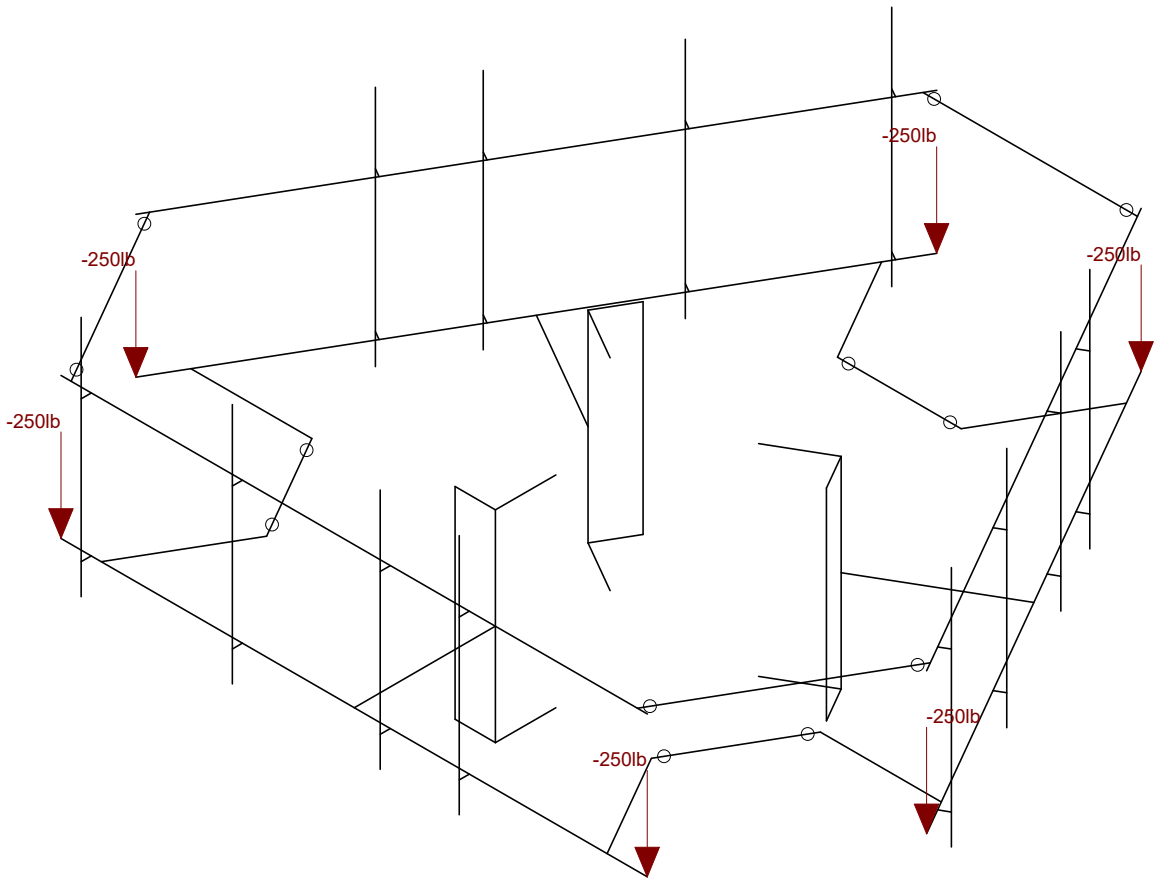
Infinigy Engineering	Middlebury Straits TPKE CT	Seismic Load AZI 000
TM		Jan 2, 2020 at 9:57 AM
1106-A0001-B		Middlebury Straits TPKE CT_MOD...



Loads: BLC 32, Seismic Load X
Envelope Only Solution

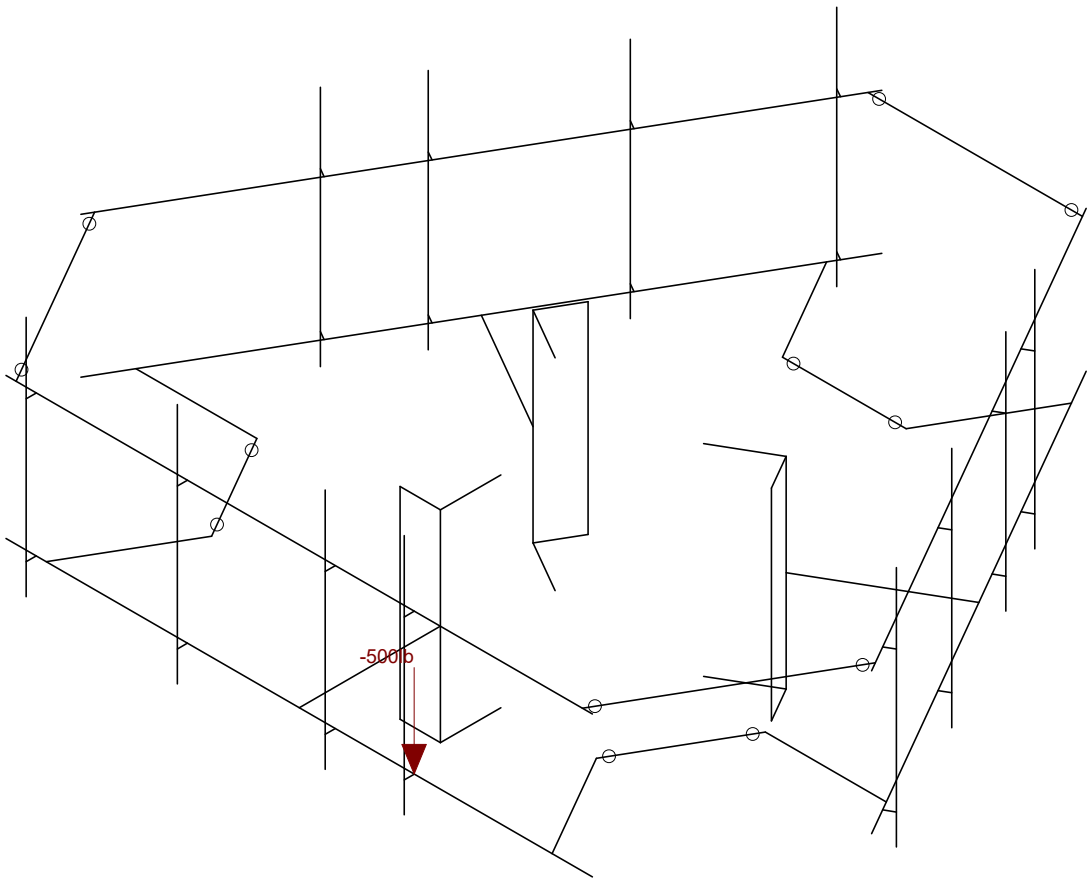
Infinigy Engineering	Middlebury Straits TPKE CT	Seismic Load AZI 090
TM		Jan 2, 2020 at 9:57 AM
1106-A0001-B		Middlebury Straits TPKE CT_MOD...





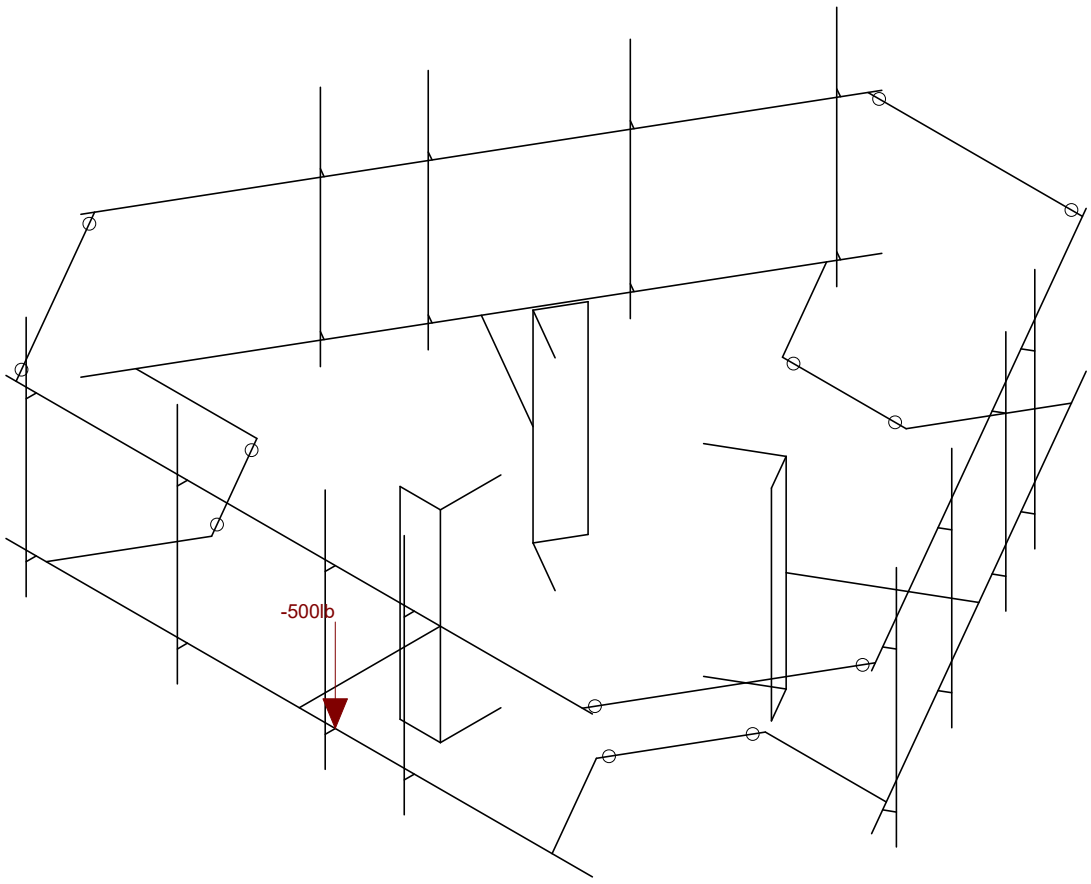
Loads: BLC 33, Service Live Loads
Envelope Only Solution

Infinigy Engineering	Middlebury Straits TPKE CT	Service Load
TM		Jan 2, 2020 at 9:58 AM
1106-A0001-B		Middlebury Straits TPKE CT_MOD...



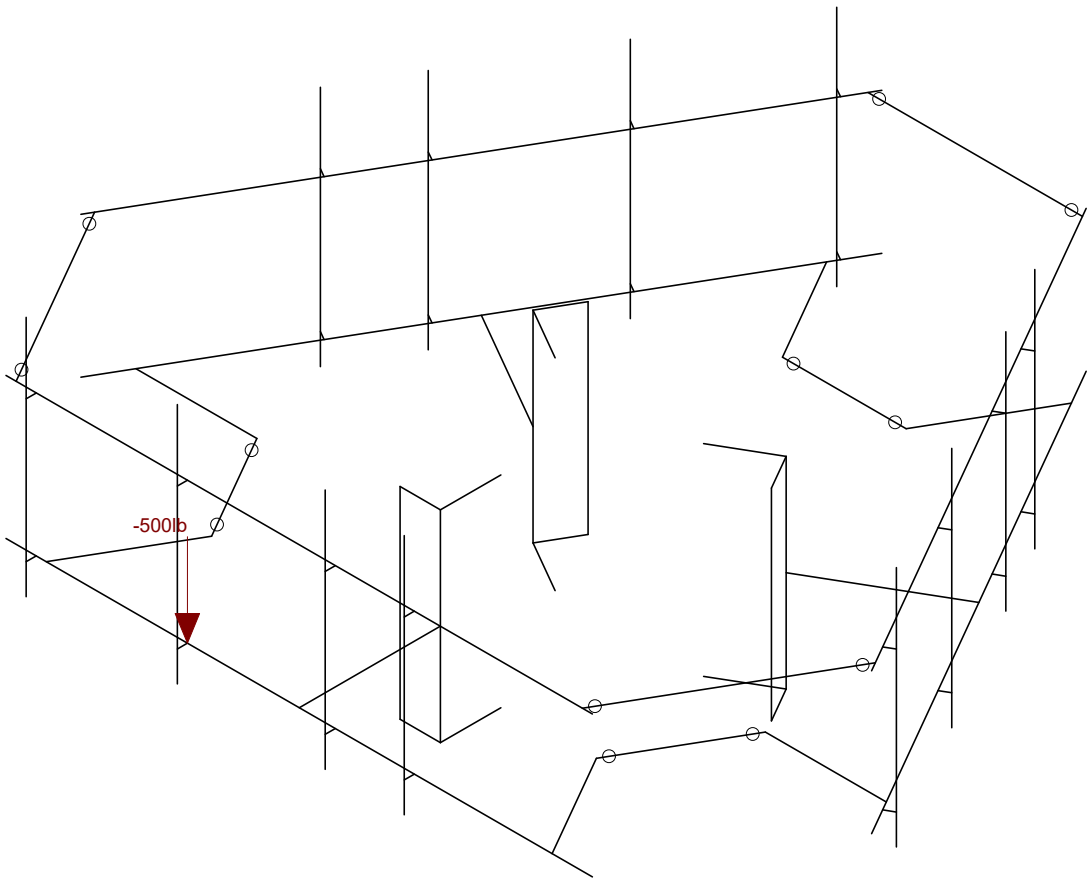
Loads: BLC 34, Maintenance Load 1
Envelope Only Solution

Infinigy Engineering	Middlebury Straits TPKE CT	Maintenance Load 1
TM		Jan 2, 2020 at 9:58 AM
1106-A0001-B		Middlebury Straits TPKE CT_MOD...



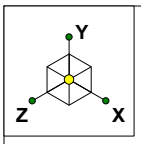
Loads: BLC 35, Maintenance Load 2
Envelope Only Solution

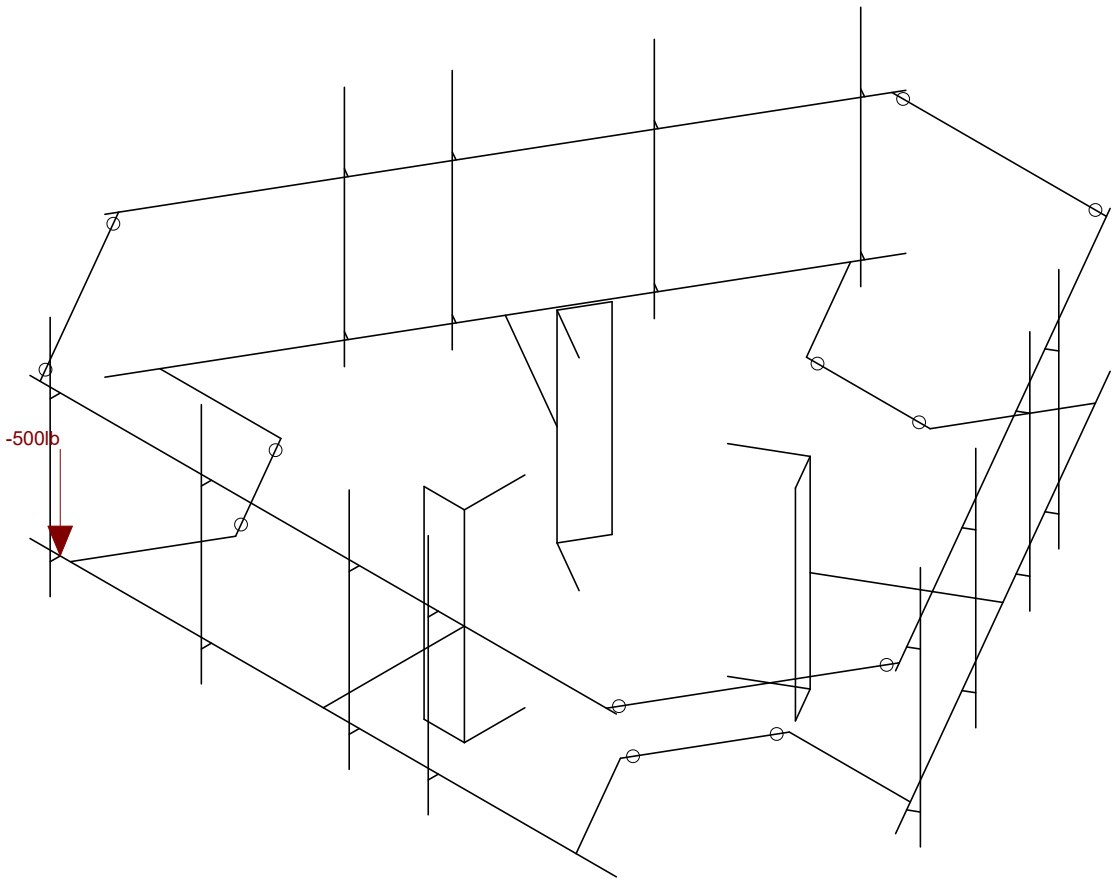
Infinigy Engineering	Middlebury Straits TPKE CT	Maintenance Load 2
TM		Jan 2, 2020 at 9:58 AM
1106-A0001-B		Middlebury Straits TPKE CT_MOD...



Loads: BLC 36, Maintenance Load 3
Envelope Only Solution

Infinigy Engineering	Middlebury Straits TPKE CT	Maintenance Load 3
TM		Jan 2, 2020 at 9:58 AM
1106-A0001-B		Middlebury Straits TPKE CT_MOD...





Loads: BLC 37, Maintenance Load 4
Envelope Only Solution

Infinigy Engineering	Middlebury Straits TPKE CT	Maintenance Load 4
TM		Jan 2, 2020 at 9:58 AM
1106-A0001-B		Middlebury Straits TPKE CT_MOD...

Program Inputs

PROJECT INFORMATION	
Client:	Smartlink
Carrier:	AT&T Mobility
Engineer:	Thomas Marr

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	B	
Topo Category:	1	
Site Class:	D - Stiff Soil	
Ground Elevation:	433	ft *Rev H

MOUNT INFORMATION		
Mount Type:	Platform	
Num Sectors:	3	
Centerline AGL:	185.0	ft
Tower Height AGL:	201.0	ft

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

FACTORS		
Directionality Fact. (K_d):	0.95	
Ground Ele. Factor (K_e):	0.98	*Rev H Only
Rooftop Speed-Up (K_s):	1.00	*Rev H Only
Topographic Factor (K_{zt}):	1.00	
Gust Effect Factor (G_h):	1.0	

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

WIND AND ICE DATA		
Ultimate Wind (V_{ult}):	120	mph
Design Wind (V):	N/A	mph
Ice Wind (V_{ice}):	50	mph
Base Ice Thickness (t_i):	1.275	in
Flat Pressure:	81.23	psf
Round Pressure:	48.74	psf
Ice Wind Pressure:	8.46	psf

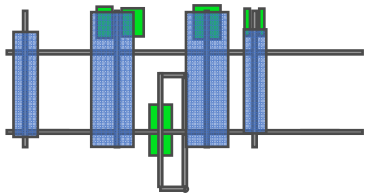
SEISMIC DATA		
Short-Period Accel. (S_s):	0.19	g
1-Second Accel. (S_1):	0.06	g
Short-Period Design (S_{DS}):	0.20	
1-Second Design (S_{D1}):	0.10	
Short-Period Coeff. (F_a):	1.60	
1-Second Coeff. (F_v):	2.40	
Amplification Factor (a_p):	1.00	
Response Mod. (R_p):	2.50	
Overstrength (Ω_o):	1.00	

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

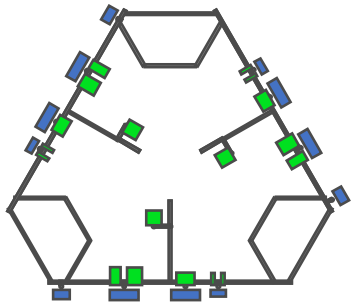
Infinigy Load Calculator V2.1.3

Program Inputs

ELEVATION VIEW



PLAN VIEW



INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

Infinigy Wind Load Calculator V2.1.3

APPURTENANCE INFORMATION

Appurtenance Name	Elevation	Qty.	K_a	q_z (psf)	EPA_N (ft^2)	EPA_T (ft^2)	Wind F_z (lbs)	Wind F_x (lbs)	Weight (lbs)	Seismic F (lbs)	Member (α sector)
POWERWAVE TECHNOLOGIES 7770	185.0	3	0.90	40.62	5.51	2.93	201.37	107.04	35.00	3.57	MP1
CCI ANTENNAS DMP65R-BU6DA	185.0	2	0.90	40.62	12.71	5.62	464.60	205.27	79.40	8.09	MP2
CCI ANTENNAS DMP65R-BU6DA	185.0	2	0.90	40.62	12.71	5.62	464.60	205.27	79.40	8.09	MP3
CCI ANTENNAS DMP65R-BU8DA	185.0	1	0.90	40.62	17.87	8.12	653.29	296.91	95.70	9.75	Leg/Flush
CCI ANTENNAS DMP65R-BU8DA	185.0	1	0.90	40.62	17.87	8.12	653.29	296.91	95.70	9.75	Leg/Flush
ANDREW SBNHH-1D65A	185.0	3	0.90	40.62	3.04	2.45	111.09	89.65	33.50	3.41	MP4
ERICSSON 4449 B5/B12	185.0	3	0.90	40.62	1.97	1.41	71.92	51.48	71.00	7.23	MP2
ERICSSON B14 4478	185.0	3	0.90	40.62	1.84	1.06	67.35	38.70	59.90	6.10	MP3
ERICSSON 8843 B2/B66A	185.0	3	0.90	40.62	1.64	1.35	59.91	49.48	72.00	7.33	MP3
POWERWAVE TECHNOLOGIES LGP21401	185.0	3	0.90	40.62	1.10	0.35	40.36	12.69	14.10	1.44	MP1
POWERWAVE TECHNOLOGIES LGP21401	185.0	3	0.90	40.62	1.10	0.35	40.36	12.69	14.10	1.44	MP1
RAYCAP TME-DC6-48-60-18-8F	185.0	3	0.90	40.62	2.90	2.90	106.04	106.04	32.80	3.34	MP13

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N4	N3			Lower Horizontal...	None	None	A53 Gr.B	Typical
2	M2	N28	N26			Support Rail	None	None	A53 Gr.B	Typical
3	M3	N15	N18			Grating Bracket	None	None	A36 Gr.36	Typical
4	M4	N42	N41			Lower Horizontal...	None	None	A53 Gr.B	Typical
5	M5	N80	N79			Lower Horizontal...	None	None	A53 Gr.B	Typical
6	M6	N68	N67			Support Rail	None	None	A53 Gr.B	Typical
7	M7	N106	N105			Support Rail	None	None	A53 Gr.B	Typical
8	M8	N19	N22			Grating Bracket	None	None	A36 Gr.36	Typical
9	M9	N29	N17			RIGID	None	None	RIGID	Typical
10	M10	N24	N5			RIGID	None	None	RIGID	Typical
11	M11	N27	N6			RIGID	None	None	RIGID	Typical
12	M12	N31	N21			RIGID	None	None	RIGID	Typical
13	M13	N37	N33			RIGID	None	None	RIGID	Typical
14	M14	N35	N30			RIGID	None	None	RIGID	Typical
15	M15	N36	N32			RIGID	None	None	RIGID	Typical
16	M16	N38	N34			RIGID	None	None	RIGID	Typical
17	M17	N57	N53			RIGID	None	None	RIGID	Typical
18	M18	N55	N43			RIGID	None	None	RIGID	Typical
19	M19	N56	N44			RIGID	None	None	RIGID	Typical
20	M20	N58	N54			RIGID	None	None	RIGID	Typical
21	M21	N59	N60			Grating Bracket	None	None	A36 Gr.36	Typical
22	M22	N61	N62			Grating Bracket	None	None	A36 Gr.36	Typical
23	M23	N64	N63			Vertical Standoff	None	None	A53 Gr.B	Typical
24	M24	N64	N66			Horizontal Stand...	None	None	A500 Gr.42	Typical
25	M25	N63	N65			Horizontal Stand...	None	None	A500 Gr.42	Typical
26	M26	N75	N71			RIGID	None	None	RIGID	Typical
27	M27	N73	N69			RIGID	None	None	RIGID	Typical
28	M28	N74	N70			RIGID	None	None	RIGID	Typical
29	M29	N76	N72			RIGID	None	None	RIGID	Typical
30	M30	N95	N91			RIGID	None	None	RIGID	Typical
31	M31	N93	N81			RIGID	None	None	RIGID	Typical
32	M32	N94	N82			RIGID	None	None	RIGID	Typical
33	M33	N96	N92			RIGID	None	None	RIGID	Typical
34	M34	N97	N98			Grating Bracket	None	None	A36 Gr.36	Typical
35	M35	N99	N100			Grating Bracket	None	None	A36 Gr.36	Typical
36	M36	N102	N101			Vertical Standoff	None	None	A53 Gr.B	Typical
37	M37	N102	N104			Horizontal Stand...	None	None	A500 Gr.42	Typical
38	M38	N101	N103			Horizontal Stand...	None	None	A500 Gr.42	Typical
39	M39	N113	N109			RIGID	None	None	RIGID	Typical
40	M40	N111	N107			RIGID	None	None	RIGID	Typical
41	M41	N112	N108			RIGID	None	None	RIGID	Typical
42	M42	N115	N110			RIGID	None	None	RIGID	Typical
43	M43	N16	N120			RIGID	None	None	RIGID	Typical
44	M44	N20	N122			RIGID	None	None	RIGID	Typical
45	M45	N63	N123			RIGID	None	None	RIGID	Typical
46	M46	N64	N124			RIGID	None	None	RIGID	Typical
47	M47	N101	N125			RIGID	None	None	RIGID	Typical
48	M48	N102	N126			RIGID	None	None	RIGID	Typical
49	M49	N1	N2			Horizontal Stand...	None	None	A500 Gr.42	Typical
50	M50	N20	N25			Horizontal Stand...	None	None	A500 Gr.42	Typical
51	M51	N16	N23			Horizontal Stand...	None	None	A500 Gr.42	Typical
52	M52	N39	N40			Horizontal Stand...	None	None	A500 Gr.42	Typical
53	M53	N77	N78			Horizontal Stand...	None	None	A500 Gr.42	Typical
54	M54	N20	N16			Vertical Standoff	None	None	A53 Gr.B	Typical
55	M55	N114	N121			Angle Tieback	None	None	A36 Gr.36	Typical
56	M56	N119	N118			Angle Tieback	None	None	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Rules
57	M57	N117	N116			Angle Tieback	None	None	A36 Gr.36	Typical
58	M58	N18	N100			Unistrut	Beam	CU	A570 Gr.33	Typical
59	M59	N98	N62			Unistrut	Beam	CU	A570 Gr.33	Typical
60	M60	N22	N60			Unistrut	Beam	CU	A570 Gr.33	Typical
61	MP1	N11	N7			Mount Pipe	None	None	A53 Gr.B	Typical
62	MP2	N14	N10			Mod Mount Pipe	None	None	A53 Gr.B	Typical
63	MP3	N13	N9			Mount Pipe	None	None	A53 Gr.B	Typical
64	MP4	N12	N8			Mount Pipe	None	None	A53 Gr.B	Typical
65	MP5	N87	N83			Mount Pipe	None	None	A53 Gr.B	Typical
66	MP6	N90	N86			Mod Mount Pipe	None	None	A53 Gr.B	Typical
67	MP7	N89	N85			Mount Pipe	None	None	A53 Gr.B	Typical
68	MP8	N88	N84			Mount Pipe	None	None	A53 Gr.B	Typical
69	MP9	N49	N45			Mount Pipe	None	None	A53 Gr.B	Typical
70	MP10	N52	N48			Mod Mount Pipe	None	None	A53 Gr.B	Typical
71	MP11	N51	N47			Mod Mount Pipe	None	None	A53 Gr.B	Typical
72	MP12	N50	N46			Mount Pipe	None	None	A53 Gr.B	Typical
73	MP13	N120	N122			Vertical Standoff	None	None	A53 Gr.B	Typical
74	MP14	N125	N126			Vertical Standoff	None	None	A53 Gr.B	Typical
75	MP15	N123	N124			Vertical Standoff	None	None	A53 Gr.B	Typical

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General				
2	RIGID		30	144	0
3	Total General		30	144	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	L4X4X4	6	216	118.213
7	A36 Gr.36	L1.5x1.5x3	3	191.5	28.639
8	A500 Gr.42	HSS4X4X4	9	234	223.614
9	A53 Gr.B	HSS4X0.25	3	523.5	409.712
10	A53 Gr.B	PIPE_2.0	11	1099.5	318.015
11	A53 Gr.B	PIPE_2.5	4	288	131.483
12	A53 Gr.B	PIPE_3.5	6	360	255.208
13	Total HR Steel		42	2912.5	1484.885
14					
15	Cold Formed Steel				
16	A570 Gr.33	P1000_CFB	3	110.5	17.975
17	Total CF Steel		3	110.5	17.975

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...	Surface(...
1	Self Weight	DL		-1			42		3	
2	Wind Load AZI 0	WLZ					84			
3	Wind Load AZI 30	None					84			
4	Wind Load AZI 60	None					84			
5	Wind Load AZI 90	WLX					84			
6	Wind Load AZI 120	None					84			
7	Wind Load AZI 150	None					84			
8	Wind Load AZI 180	None					84			
9	Wind Load AZI 210	None					84			
10	Wind Load AZI 240	None					84			
11	Wind Load AZI 270	None					84			
12	Wind Load AZI 300	None					84			

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...	Surface(...
13	Wind Load AZI 330	None					84			
14	Distr. Wind Load Z	WLZ						75		
15	Distr. Wind Load X	WLX						75		
16	Ice Weight	OL1					42	75	3	
17	Ice Wind Load AZI 0	OL2					84			
18	Ice Wind Load AZI 30	None					84			
19	Ice Wind Load AZI 60	None					84			
20	Ice Wind Load AZI 90	OL3					84			
21	Ice Wind Load AZI 120	None					84			
22	Ice Wind Load AZI 150	None					84			
23	Ice Wind Load AZI 180	None					84			
24	Ice Wind Load AZI 210	None					84			
25	Ice Wind Load AZI 240	None					84			
26	Ice Wind Load AZI 270	None					84			
27	Ice Wind Load AZI 300	None					84			
28	Ice Wind Load AZI 330	None					84			
29	Distr. Ice Wind Load Z	OL2						75		
30	Distr. Ice Wind Load X	OL3						75		
31	Seismic Load Z	ELZ			-.102		42			
32	Seismic Load X	ELX	-.102				42			
33	Service Live Loads	LL				6				
34	Maintenance Load 1	LL				1				
35	Maintenance Load 2	LL				1				
36	Maintenance Load 3	LL				1				
37	Maintenance Load 4	LL				1				
38	Maintenance Load 5	LL				1				
39	Maintenance Load 6	LL				1				
40	Maintenance Load 7	LL				1				
41	Maintenance Load 8	LL				1				
42	Maintenance Load 9	LL				1				
43	Maintenance Load 10	LL				1				
44	Maintenance Load 11	LL				1				
45	Maintenance Load 12	LL				1				
46	Maintenance Load 13	LL				1				
47	Maintenance Load 14	LL				1				
48	Maintenance Load 15	LL				1				
49	BLC 1 Transient Area Loads	None						30		
50	BLC 16 Transient Area Loads	None						30		

Load Combinations

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
1	1.4DL	Yes	Y		1	1.4																		
2	1.2DL + 1WL AZI 0	Yes	Y		1	1.2	2	1	14	1	15													
3	1.2DL + 1WL AZI ..	Yes	Y		1	1.2	3	1	14	.866	15	.5												
4	1.2DL + 1WL AZI ..	Yes	Y		1	1.2	4	1	14	.5	15	.866												
5	1.2DL + 1WL AZI ..	Yes	Y		1	1.2	5	1	14		15	1												
6	1.2DL + 1WL AZI ..	Yes	Y		1	1.2	6	1	14	-.5	15	.866												
7	1.2DL + 1WL AZI ..	Yes	Y		1	1.2	7	1	14	-.866	15	.5												
8	1.2DL + 1WL AZI ..	Yes	Y		1	1.2	8	1	14	-1	15													
9	1.2DL + 1WL AZI ..	Yes	Y		1	1.2	9	1	14	-.866	15	-.5												
10	1.2DL + 1WL AZI ..	Yes	Y		1	1.2	10	1	14	-.5	15	-.866												
11	1.2DL + 1WL AZI ..	Yes	Y		1	1.2	11	1	14		15	-1												
12	1.2DL + 1WL AZI ..	Yes	Y		1	1.2	12	1	14	.5	15	-.866												
13	1.2DL + 1WL AZI ..	Yes	Y		1	1.2	13	1	14	.866	15	-.5												
14	0.9DL + 1WL AZI 0	Yes	Y		1	.9	2	1	14	1	15													

Load Combinations (Continued)

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
15	0.9DL + 1WL AZI ...	Yes	Y		1	.9	3	1	14	.866	15	.5												
16	0.9DL + 1WL AZI ...	Yes	Y		1	.9	4	1	14	.5	15	.866												
17	0.9DL + 1WL AZI ...	Yes	Y		1	.9	5	1	14		15	1												
18	0.9DL + 1WL AZI ...	Yes	Y		1	.9	6	1	14	-.5	15	.866												
19	0.9DL + 1WL AZI ...	Yes	Y		1	.9	7	1	14	-.866	15	.5												
20	0.9DL + 1WL AZI ...	Yes	Y		1	.9	8	1	14	-1	15													
21	0.9DL + 1WL AZI ...	Yes	Y		1	.9	9	1	14	-.866	15	-.5												
22	0.9DL + 1WL AZI ...	Yes	Y		1	.9	10	1	14	-.5	15	-.866												
23	0.9DL + 1WL AZI ...	Yes	Y		1	.9	11	1	14		15	-1												
24	0.9DL + 1WL AZI ...	Yes	Y		1	.9	12	1	14	.5	15	-.866												
25	0.9DL + 1WL AZI ...	Yes	Y		1	.9	13	1	14	.866	15	-.5												
26	1.2D + 1.0Di	Yes	Y		1	1.2	16	1																
27	1.2D + 1.0Di +1.0...	Yes	Y		1	1.2	16	1	17	1	29	1	30											
28	1.2D + 1.0Di +1.0...	Yes	Y		1	1.2	16	1	18	1	29	.866	30	.5										
29	1.2D + 1.0Di +1.0...	Yes	Y		1	1.2	16	1	19	1	29	.5	30	.866										
30	1.2D + 1.0Di +1.0...	Yes	Y		1	1.2	16	1	20	1	29		30	1										
31	1.2D + 1.0Di +1.0...	Yes	Y		1	1.2	16	1	21	1	29	-.5	30	.866										
32	1.2D + 1.0Di +1.0...	Yes	Y		1	1.2	16	1	22	1	29	-.866	30	.5										
33	1.2D + 1.0Di +1.0...	Yes	Y		1	1.2	16	1	23	1	29	-1	30											
34	1.2D + 1.0Di +1.0...	Yes	Y		1	1.2	16	1	24	1	29	-.866	30	-.5										
35	1.2D + 1.0Di +1.0...	Yes	Y		1	1.2	16	1	25	1	29	-.5	30	-.866										
36	1.2D + 1.0Di +1.0...	Yes	Y		1	1.2	16	1	26	1	29		30	-1										
37	1.2D + 1.0Di +1.0...	Yes	Y		1	1.2	16	1	27	1	29	.5	30	-.866										
38	1.2D + 1.0Di +1.0...	Yes	Y		1	1.2	16	1	28	1	29	.866	30	-.5										
39	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.241	31	1	32															
40	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.241	31	.866	32	.5														
41	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.241	31	.5	32	.866														
42	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.241	31		32	1														
43	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.241	31	-.5	32	.866														
44	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.241	31	-.866	32	.5														
45	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.241	31	-1	32															
46	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.241	31	-.866	32	-.5														
47	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.241	31	-.5	32	-.866														
48	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.241	31		32	-1														
49	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.241	31	.5	32	-.866														
50	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.241	31	.866	32	-.5														
51	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.859	31	1	32															
52	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.859	31	.866	32	.5														
53	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.859	31	.5	32	.866														
54	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.859	31		32	1														
55	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.859	31	-.5	32	.866														
56	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.859	31	-.866	32	.5														
57	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.859	31	-1	32															
58	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.859	31	-.866	32	-.5														
59	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.859	31	-.5	32	-.866														
60	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.859	31		32	-1														
61	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.859	31	.5	32	-.866														
62	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.859	31	.866	32	-.5														
63	1.0DL + 1.5LL + 1...	Yes	Y		1	1	2	.25	14	.25	15		33	1.5										
64	1.0DL + 1.5LL + 1...	Yes	Y		1	1	3	.25	14	.216	15	.125	33	1.5										
65	1.0DL + 1.5LL + 1...	Yes	Y		1	1	4	.25	14	.125	15	.216	33	1.5										
66	1.0DL + 1.5LL + 1...	Yes	Y		1	1	5	.25	14		15	.25	33	1.5										
67	1.0DL + 1.5LL + 1...	Yes	Y		1	1	6	.25	14	-.125	15	.216	33	1.5										
68	1.0DL + 1.5LL + 1...	Yes	Y		1	1	7	.25	14	-.216	15	.125	33	1.5										
69	1.0DL + 1.5LL + 1...	Yes	Y		1	1	8	.25	14	-.25	15		33	1.5										
70	1.0DL + 1.5LL + 1...	Yes	Y		1	1	9	.25	14	-.216	15	-.125	33	1.5										
71	1.0DL + 1.5LL + 1...	Yes	Y		1	1	10	.25	14	-.125	15	-.216	33	1.5										

Load Combinations (Continued)

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
72	1.0DL + 1.5LL + 1...	Yes	Y		1	1	11	.25	14		15	-.25	33	1.5												
73	1.0DL + 1.5LL + 1...	Yes	Y		1	1	12	.25	14	.125	15	-.216	33	1.5												
74	1.0DL + 1.5LL + 1...	Yes	Y		1	1	13	.25	14	.216	15	-.125	33	1.5												
75	1.2DL + 1.5LL	Yes	Y		1	1.2	33	1.5																		
76	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	34	1.5	2	.063	14	.063	15													
77	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	34	1.5	3	.063	14	.054	15	.031												
78	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	34	1.5	4	.063	14	.031	15	.054												
79	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	34	1.5	5	.063	14		15	.063												
80	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	34	1.5	6	.063	14	-.031	15	.054												
81	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	34	1.5	7	.063	14	-.054	15	.031												
82	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	34	1.5	8	.063	14	-.063	15													
83	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	34	1.5	9	.063	14	-.054	15	-.031												
84	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	34	1.5	10	.063	14	-.031	15	-.054												
85	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	34	1.5	11	.063	14		15	-.063												
86	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	34	1.5	12	.063	14	.031	15	-.054												
87	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	34	1.5	13	.063	14	.054	15	-.031												
88	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	35	1.5	2	.063	14	.063	15													
89	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	35	1.5	3	.063	14	.054	15	.031												
90	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	35	1.5	4	.063	14	.031	15	.054												
91	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	35	1.5	5	.063	14		15	.063												
92	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	35	1.5	6	.063	14	-.031	15	.054												
93	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	35	1.5	7	.063	14	-.054	15	.031												
94	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	35	1.5	8	.063	14	-.063	15													
95	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	35	1.5	9	.063	14	-.054	15	-.031												
96	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	35	1.5	10	.063	14	-.031	15	-.054												
97	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	35	1.5	11	.063	14		15	-.063												
98	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	35	1.5	12	.063	14	.031	15	-.054												
99	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	35	1.5	13	.063	14	.054	15	-.031												
100	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	36	1.5	2	.063	14	.063	15													
101	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	36	1.5	3	.063	14	.054	15	.031												
102	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	36	1.5	4	.063	14	.031	15	.054												
103	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	36	1.5	5	.063	14		15	.063												
104	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	36	1.5	6	.063	14	-.031	15	.054												
105	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	36	1.5	7	.063	14	-.054	15	.031												
106	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	36	1.5	8	.063	14	-.063	15													
107	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	36	1.5	9	.063	14	-.054	15	-.031												
108	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	36	1.5	10	.063	14	-.031	15	-.054												
109	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	36	1.5	11	.063	14		15	-.063												
110	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	36	1.5	12	.063	14	.031	15	-.054												
111	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	36	1.5	13	.063	14	.054	15	-.031												
112	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	37	1.5	2	.063	14	.063	15													
113	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	37	1.5	3	.063	14	.054	15	.031												
114	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	37	1.5	4	.063	14	.031	15	.054												
115	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	37	1.5	5	.063	14		15	.063												
116	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	37	1.5	6	.063	14	-.031	15	.054												
117	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	37	1.5	7	.063	14	-.054	15	.031												
118	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	37	1.5	8	.063	14	-.063	15													
119	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	37	1.5	9	.063	14	-.054	15	-.031												
120	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	37	1.5	10	.063	14	-.031	15	-.054												
121	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	37	1.5	11	.063	14		15	-.063												
122	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	37	1.5	12	.063	14	.031	15	-.054												
123	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	37	1.5	13	.063	14	.054	15	-.031												
124	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	38	1.5	2	.063	14	.063	15													
125	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	38	1.5	3	.063	14	.054	15	.031												
126	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	38	1.5	4	.063	14	.031	15	.054												
127	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	38	1.5	5	.063	14		15	.063												
128	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	38	1.5	6	.063	14	-.031	15	.054												

Load Combinations (Continued)

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
129	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	38	1.5	7	.063	14	-.054	15	.031												
130	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	38	1.5	8	.063	14	-.063	15													
131	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	38	1.5	9	.063	14	-.054	15	-.031												
132	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	38	1.5	10	.063	14	-.031	15	-.054												
133	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	38	1.5	11	.063	14		15	-.063												
134	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	38	1.5	12	.063	14	.031	15	-.054												
135	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	38	1.5	13	.063	14	.054	15	-.031												
136	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	39	1.5	2	.063	14	.063	15													
137	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	39	1.5	3	.063	14	.054	15	.031												
138	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	39	1.5	4	.063	14	.031	15	.054												
139	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	39	1.5	5	.063	14		15	.063												
140	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	39	1.5	6	.063	14	-.031	15	.054												
141	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	39	1.5	7	.063	14	-.054	15	.031												
142	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	39	1.5	8	.063	14	-.063	15													
143	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	39	1.5	9	.063	14	-.054	15	-.031												
144	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	39	1.5	10	.063	14	-.031	15	-.054												
145	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	39	1.5	11	.063	14		15	-.063												
146	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	39	1.5	12	.063	14	.031	15	-.054												
147	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	39	1.5	13	.063	14	.054	15	-.031												
148	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	40	1.5	2	.063	14	.063	15													
149	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	40	1.5	3	.063	14	.054	15	.031												
150	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	40	1.5	4	.063	14	.031	15	.054												
151	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	40	1.5	5	.063	14		15	.063												
152	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	40	1.5	6	.063	14	-.031	15	.054												
153	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	40	1.5	7	.063	14	-.054	15	.031												
154	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	40	1.5	8	.063	14	-.063	15													
155	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	40	1.5	9	.063	14	-.054	15	-.031												
156	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	40	1.5	10	.063	14	-.031	15	-.054												
157	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	40	1.5	11	.063	14		15	-.063												
158	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	40	1.5	12	.063	14	.031	15	-.054												
159	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	40	1.5	13	.063	14	.054	15	-.031												
160	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	41	1.5	2	.063	14	.063	15													
161	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	41	1.5	3	.063	14	.054	15	.031												
162	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	41	1.5	4	.063	14	.031	15	.054												
163	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	41	1.5	5	.063	14		15	.063												
164	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	41	1.5	6	.063	14	-.031	15	.054												
165	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	41	1.5	7	.063	14	-.054	15	.031												
166	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	41	1.5	8	.063	14	-.063	15													
167	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	41	1.5	9	.063	14	-.054	15	-.031												
168	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	41	1.5	10	.063	14	-.031	15	-.054												
169	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	41	1.5	11	.063	14		15	-.063												
170	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	41	1.5	12	.063	14	.031	15	-.054												
171	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	41	1.5	13	.063	14	.054	15	-.031												
172	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	42	1.5	2	.063	14	.063	15													
173	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	42	1.5	3	.063	14	.054	15	.031												
174	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	42	1.5	4	.063	14	.031	15	.054												
175	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	42	1.5	5	.063	14		15	.063												
176	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	42	1.5	6	.063	14	-.031	15	.054												
177	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	42	1.5	7	.063	14	-.054	15	.031												
178	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	42	1.5	8	.063	14	-.063	15													
179	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	42	1.5	9	.063	14	-.054	15	-.031												
180	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	42	1.5	10	.063	14	-.031	15	-.054												
181	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	42	1.5	11	.063	14		15	-.063												
182	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	42	1.5	12	.063	14	.031	15	-.054												
183	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	42	1.5	13	.063	14	.054	15	-.031												
184	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	43	1.5	2	.063	14	.063	15													
185	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	43	1.5	3	.063	14	.054	15	.031												

Load Combinations (Continued)

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
186	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	43	1.5	4	.063	14	.031	15	.054										
187	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	43	1.5	5	.063	14		15	.063										
188	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	43	1.5	6	.063	14	-.031	15	.054										
189	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	43	1.5	7	.063	14	-.054	15	.031										
190	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	43	1.5	8	.063	14	-.063	15											
191	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	43	1.5	9	.063	14	-.054	15	-.031										
192	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	43	1.5	10	.063	14	-.031	15	-.054										
193	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	43	1.5	11	.063	14		15	-.063										
194	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	43	1.5	12	.063	14	.031	15	-.054										
195	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	43	1.5	13	.063	14	.054	15	-.031										
196	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	44	1.5	2	.063	14	.063	15											
197	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	44	1.5	3	.063	14	.054	15	.031										
198	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	44	1.5	4	.063	14	.031	15	.054										
199	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	44	1.5	5	.063	14		15	.063										
200	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	44	1.5	6	.063	14	-.031	15	.054										
201	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	44	1.5	7	.063	14	-.054	15	.031										
202	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	44	1.5	8	.063	14	-.063	15											
203	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	44	1.5	9	.063	14	-.054	15	-.031										
204	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	44	1.5	10	.063	14	-.031	15	-.054										
205	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	44	1.5	11	.063	14		15	-.063										
206	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	44	1.5	12	.063	14	.031	15	-.054										
207	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	44	1.5	13	.063	14	.054	15	-.031										
208	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	45	1.5	2	.063	14	.063	15											
209	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	45	1.5	3	.063	14	.054	15	.031										
210	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	45	1.5	4	.063	14	.031	15	.054										
211	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	45	1.5	5	.063	14		15	.063										
212	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	45	1.5	6	.063	14	-.031	15	.054										
213	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	45	1.5	7	.063	14	-.054	15	.031										
214	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	45	1.5	8	.063	14	-.063	15											
215	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	45	1.5	9	.063	14	-.054	15	-.031										
216	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	45	1.5	10	.063	14	-.031	15	-.054										
217	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	45	1.5	11	.063	14		15	-.063										
218	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	45	1.5	12	.063	14	.031	15	-.054										
219	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	45	1.5	13	.063	14	.054	15	-.031										
220	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	46	1.5	2	.063	14	.063	15											
221	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	46	1.5	3	.063	14	.054	15	.031										
222	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	46	1.5	4	.063	14	.031	15	.054										
223	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	46	1.5	5	.063	14		15	.063										
224	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	46	1.5	6	.063	14	-.031	15	.054										
225	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	46	1.5	7	.063	14	-.054	15	.031										
226	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	46	1.5	8	.063	14	-.063	15											
227	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	46	1.5	9	.063	14	-.054	15	-.031										
228	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	46	1.5	10	.063	14	-.031	15	-.054										
229	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	46	1.5	11	.063	14		15	-.063										
230	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	46	1.5	12	.063	14	.031	15	-.054										
231	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	46	1.5	13	.063	14	.054	15	-.031										
232	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	47	1.5	2	.063	14	.063	15											
233	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	47	1.5	3	.063	14	.054	15	.031										
234	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	47	1.5	4	.063	14	.031	15	.054										
235	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	47	1.5	5	.063	14		15	.063										
236	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	47	1.5	6	.063	14	-.031	15	.054										
237	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	47	1.5	7	.063	14	-.054	15	.031										
238	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	47	1.5	8	.063	14	-.063	15											
239	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	47	1.5	9	.063	14	-.054	15	-.031										
240	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	47	1.5	10	.063	14	-.031	15	-.054										
241	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	47	1.5	11	.063	14		15	-.063										
242	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	47	1.5	12	.063	14	.031	15	-.054										

Load Combinations (Continued)

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
243	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	47	1.5	13	.063	14	.054	15	-.031										
244	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	48	1.5	2	.063	14	.063	15											
245	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	48	1.5	3	.063	14	.054	15	.031										
246	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	48	1.5	4	.063	14	.031	15	.054										
247	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	48	1.5	5	.063	14		15	.063										
248	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	48	1.5	6	.063	14	-.031	15	.054										
249	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	48	1.5	7	.063	14	-.054	15	.031										
250	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	48	1.5	8	.063	14	-.063	15											
251	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	48	1.5	9	.063	14	-.054	15	-.031										
252	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	48	1.5	10	.063	14	-.031	15	-.054										
253	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	48	1.5	11	.063	14		15	-.063										
254	1.2DL + 1.5LM-M...	Yes	Y		1	1.2	48	1.5	12	.063	14	.031	15	-.054										

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	N23	max	287.538	83	2008.303	27	2684.121	27	567.069	20	785.56	18	182.279	116
2		min	-1168.896	113	-748.079	20	457.023	20	-1250.4...	2	-1522.67	119	-123.349	230
3	N25	max	1489.351	6	1924.136	8	1923.079	14	-206.239	25	2783.529	6	189.001	114
4		min	-1209.014	24	-779.339	14	-3580.45	8	-936.732	32	-2411.5...	24	-153.777	22
5	N65	max	2764.003	31	2130.566	6	153.072	217	673.833	6	1249.746	22	1188.324	6
6		min	468.01	24	-854.132	24	-1100.924	175	-302.656	24	-1658.4...	4	-583.157	24
7	N66	max	2028.702	17	2080.107	12	2431.934	13	548.11	34	3622.249	10	834.881	38
8		min	-3711.53	11	-885.755	18	-1820.329	19	-16.128	16	-3227.55	16	138.254	19
9	N103	max	-337.242	16	1999.335	35	-286.723	16	634.263	9	1135.599	23	463.771	16
10		min	-2081.889	35	-725.256	16	-1880.801	168	-304.934	15	-1553.8...	163	-1063.2...	10
11	N104	max	3031.789	5	1904.495	4	2625.751	3	466.435	236	2970.058	12	-123.719	20
12		min	-1720.129	23	-757.364	22	-1530.092	21	-17.706	24	-2579.6...	18	-837.873	27
13	Totals:	max	6709.248	5	10509.96	34	6733.021	14						
14		min	-6709.225	23	2996.357	53	-6733.097	8						

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

	Member	Shape	Code Ch...	Loc[in]	LC	Shear C...	Loc.....		LC	phi*Pn...	phi*Pn...	phi*M...	phi*M...	...	Eqn
1	M52	HSS4X4X4	.881	0	11	.518	0	y	216	10563...	127386	14773.5	14773.5	...	H3-6
2	M23	PIPE_3.5	.869	30	12	.340	30		11	71119...	78750	7953.75	7953.75	...	H1-1b
3	MP10	PIPE_2.5	.818	9	6	.108	9		12	37773...	50715	3596.25	3596.25	...	H1-1b
4	MP2	PIPE_2.5	.802	9	2	.109	9		8	37773...	50715	3596.25	3596.25	...	H1-1b
5	M53	HSS4X4X4	.794	0	27	.509	0	y	160	10563...	127386	14773.5	14773.5	...	H3-6
6	M54	PIPE_3.5	.789	30	8	.289	30		7	71119...	78750	7953.75	7953.75	...	H1-1b
7	MP6	PIPE_2.5	.787	9	10	.110	9		4	37773...	50715	3596.25	3596.25	...	H1-1b
8	M49	HSS4X4X4	.782	0	31	.507	0	y	116	10563...	127386	14773.5	14773.5	...	H3-6
9	M36	PIPE_3.5	.779	30	4	.290	30		5	71119...	78750	7953.75	7953.75	...	H1-1b
10	M4	HSS4X0.25	.755	87.25	6	.545	87....		6	36203...	86940	8688.75	8688.75	...	H3-6
11	M1	HSS4X0.25	.730	87.25	2	.544	87....		2	36203...	86940	8688.75	8688.75	...	H3-6
12	M5	HSS4X0.25	.721	87.25	10	.530	87....		10	36203...	86940	8688.75	8688.75	...	H3-6
13	MP3	PIPE_2.0	.653	9	2	.070	51		8	20866...	32130	1871....	1871....	...	H1-1b
14	MP7	PIPE_2.0	.647	9	10	.070	51		4	20866...	32130	1871....	1871....	...	H1-1b
15	MP11	PIPE_2.5	.607	9	6	.070	51		12	37773...	50715	3596.25	3596.25	...	H1-1b
16	MP1	PIPE_2.0	.562	9	2	.178	51		37	20866...	32130	1871....	1871....	...	H1-1b
17	MP9	PIPE_2.0	.561	9	6	.184	9		32	20866...	32130	1871....	1871....	...	H1-1b
18	MP5	PIPE_2.0	.547	9	10	.174	9		34	20866...	32130	1871....	1871....	...	H1-1b
19	M22	L4X4X4	.481	0	2	.026	36	z	2	47934...	62532	3137....	6714....	...	H2-1
20	M34	L4X4X4	.458	0	2	.026	36	z	2	47934...	62532	3137....	6714....	...	H2-1
21	M8	L4X4X4	.455	0	9	.025	36	z	10	47934...	62532	3137....	6714....	...	H2-1
22	M35	L4X4X4	.450	0	6	.025	36	z	6	47934...	62532	3137....	6714....	...	H2-1

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

	Member	Shape	Code Ch...	Loc[in]	LC	Shear C...	Loc.....		LC	phi*Pn...	phi*Pn...	phi*M...	phi*M...	...	Eqn
23	M21	L4X4X4	.429	0	10	.026	36	z	10	47934...	62532	3137....	6714....	...	H2-1
24	M3	L4X4X4	.422	0	6	.025	36	z	6	47934...	62532	3137....	6714....	...	H2-1
25	MP4	PIPE_2.0	.421	9	123	.088	51		33	20866...	32130	1871....	1871....	...	H1-1b
26	MP8	PIPE_2.0	.421	9	167	.093	9		32	20866...	32130	1871....	1871....	...	H1-1b
27	M6	PIPE_2.0	.406	98.156	69	.111	52....		12	4651....	32130	1871....	1871....	...	H1-1b
28	M7	PIPE_2.0	.383	98.156	73	.133	9.0...		4	4651....	32130	1871....	1871....	...	H1-1b
29	M2	PIPE_2.0	.380	98.156	65	.134	9.0...		8	4651....	32130	1871....	1871....	...	H1-1b
30	MP12	PIPE_2.0	.378	9	211	.088	9		29	20866...	32130	1871....	1871....	...	H1-1b
31	M24	HSS4X4X4	.285	18	10	.065	18	z	10	12629...	127386	14773.5	14773.5	...	H1-1b
32	M37	HSS4X4X4	.234	18	2	.058	18	y	5	12629...	127386	14773.5	14773.5	...	H1-1b
33	M50	HSS4X4X4	.227	18	6	.058	18	y	7	12629...	127386	14773.5	14773.5	...	H1-1b
34	M25	HSS4X4X4	.211	0	7	.063	18	y	31	12629...	127386	14773.5	14773.5	...	H1-1b
35	M38	HSS4X4X4	.204	0	11	.059	18	y	35	12629...	127386	14773.5	14773.5	...	H1-1b
36	M56	L1.5x1.5x3	.199	31.92	2	.043	0	y	164	2515....	17085...	292.867	544.872	...	H2-1
37	M51	HSS4X4X4	.176	0	3	.059	18	y	27	12629...	127386	14773.5	14773.5	...	H1-1b
38	M55	L1.5x1.5x3	.157	31.92	6	.043	0	y	120	2515....	17085...	292.867	544.872	...	H2-1
39	M57	L1.5x1.5x3	.157	31.92	10	.045	63....	y	217	2515....	17085...	292.867	544.872	...	H2-1
40	MP15	PIPE_3.5	.079	60	12	.037	0		216	71119...	78750	7953.75	7953.75	...	H1-1b
41	MP14	PIPE_3.5	.070	0	160	.036	0		160	71119...	78750	7953.75	7953.75	...	H1-1b
42	MP13	PIPE_3.5	.070	60	8	.036	0		116	71119...	78750	7953.75	7953.75	...	H1-1b

Envelope AISI S100-16: LRFD Cold Formed Steel Code Checks

	Member	Shape	Code Check	Loc[in]	LC	Shear ...	Loc[...	Dir	LC	phi*Pn...	phi*Tn...	phi*M...	phi*M...	phi*...	phi*...	Cb	Eqn
1	M59	P1000_CFB	.090	18.42	2	.056	36.84	y	1..	9987....	17034...	428.465	705.791	205...	411...	1.136	H1.2-1
2	M60	P1000_CFB	.086	18.42	10	.057	0	y	2..	9987....	17034...	348.998	705.791	205...	411...	1.136	H1.2-1
3	M58	P1000_CFB	.080	18.42	6	.056	36.84	y	1..	9987....	17034...	428.465	705.791	205...	411...	1.136	H1.2-1

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Horizontal Stand...	HSS4X4X4	None	None	A500 Gr.42	Typical	3.37	7.8	7.8	12.8
2	Lower Horizontal...	HSS4X0.25	None	None	A53 Gr.B	Typical	2.76	4.91	4.91	9.82
3	Grating Bracket	L4X4X4	None	None	A36 Gr.36	Typical	1.93	3	3	.044
4	Mount Pipe	PIPE_2.0	None	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
5	Mod Mount Pipe	PIPE_2.5	None	None	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
6	Support Rail	PIPE_2.0	None	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
7	Vertical Standoff	PIPE_3.5	None	None	A53 Gr.B	Typical	2.5	4.52	4.52	9.04
8	Angle Tieback	L1.5x1.5x3	None	None	A36 Gr.36	Typical	.527	.11	.11	.006

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Unistrut	P1000_CFB	Beam	CU	A570 Gr.33	Typical	.574	.165	.232	.003

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1						Yes	** NA **			None
2	M2						Yes	** NA **			None
3	M3						Yes	** NA **			None
4	M4						Yes	** NA **			None
5	M5						Yes	** NA **			None
6	M6						Yes	** NA **			None
7	M7						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
8	M8						Yes	** NA **			None
9	M9						Yes	** NA **			None
10	M10						Yes	** NA **			None
11	M11						Yes	** NA **			None
12	M12						Yes	** NA **			None
13	M13						Yes	** NA **			None
14	M14						Yes	** NA **			None
15	M15						Yes	** NA **			None
16	M16						Yes	** NA **			None
17	M17						Yes	** NA **			None
18	M18						Yes	** NA **			None
19	M19						Yes	** NA **			None
20	M20						Yes	** NA **			None
21	M21						Yes	** NA **			None
22	M22						Yes	** NA **			None
23	M23						Yes	** NA **			None
24	M24						Yes	** NA **			None
25	M25						Yes	** NA **			None
26	M26						Yes	** NA **			None
27	M27						Yes	** NA **			None
28	M28						Yes	** NA **			None
29	M29						Yes	** NA **			None
30	M30						Yes	** NA **			None
31	M31						Yes	** NA **			None
32	M32						Yes	** NA **			None
33	M33						Yes	** NA **			None
34	M34						Yes	** NA **			None
35	M35						Yes	** NA **			None
36	M36						Yes	** NA **			None
37	M37						Yes	** NA **			None
38	M38						Yes	** NA **			None
39	M39						Yes	** NA **			None
40	M40						Yes	** NA **			None
41	M41						Yes	** NA **			None
42	M42						Yes	** NA **			None
43	M43						Yes	** NA **			None
44	M44						Yes	** NA **			None
45	M45						Yes	** NA **			None
46	M46						Yes	** NA **			None
47	M47						Yes	** NA **			None
48	M48						Yes	** NA **			None
49	M49						Yes	** NA **			None
50	M50						Yes	** NA **			None
51	M51						Yes	** NA **			None
52	M52						Yes	** NA **			None
53	M53						Yes	** NA **			None
54	M54						Yes	** NA **			None
55	M55	BenPIN	BenPIN				Yes	** NA **			None
56	M56	BenPIN	BenPIN				Yes	** NA **			None
57	M57	BenPIN	BenPIN				Yes	** NA **			None
58	M58	BenPIN	BenPIN				Yes				None
59	M59	BenPIN	BenPIN				Yes				None
60	M60	BenPIN	BenPIN				Yes				None
61	MP1						Yes	** NA **			None
62	MP2						Yes	** NA **			None
63	MP3						Yes	** NA **			None
64	MP4						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
65	MP5						Yes	** NA **			None
66	MP6						Yes	** NA **			None
67	MP7						Yes	** NA **			None
68	MP8						Yes	** NA **			None
69	MP9						Yes	** NA **			None
70	MP10						Yes	** NA **			None
71	MP11						Yes	** NA **			None
72	MP12						Yes	** NA **			None
73	MP13						Yes	** NA **			None
74	MP14						Yes	** NA **			None
75	MP15						Yes	** NA **			None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[i...	Lbyy[in]	Lbzz[in]	Lcomp top[...	Lcomp bot[...	L-torque[i...	Kyy	Kzz	Cb	Functi...
1	M1	Lower Horizonta...	174.5			Lbyy						Lateral
2	M2	Support Rail	174.5			Lbyy						Lateral
3	M3	Grating Bracket	36			Lbyy						Lateral
4	M4	Lower Horizonta...	174.5			Lbyy						Lateral
5	M5	Lower Horizonta...	174.5			Lbyy						Lateral
6	M6	Support Rail	174.5			Lbyy						Lateral
7	M7	Support Rail	174.5			Lbyy						Lateral
8	M8	Grating Bracket	36			Lbyy						Lateral
9	M21	Grating Bracket	36			Lbyy						Lateral
10	M22	Grating Bracket	36			Lbyy						Lateral
11	M23	Vertical Standoff	60									Lateral
12	M24	Horizontal Stand...	18			Lbyy						Lateral
13	M25	Horizontal Stand...	18			Lbyy						Lateral
14	M34	Grating Bracket	36			Lbyy						Lateral
15	M35	Grating Bracket	36			Lbyy						Lateral
16	M36	Vertical Standoff	60									Lateral
17	M37	Horizontal Stand...	18			Lbyy						Lateral
18	M38	Horizontal Stand...	18			Lbyy						Lateral
19	M49	Horizontal Stand...	42	42		Lbyy			2	2		Lateral
20	M50	Horizontal Stand...	18			Lbyy						Lateral
21	M51	Horizontal Stand...	18			Lbyy						Lateral
22	M52	Horizontal Stand...	42	42		Lbyy			2	2		Lateral
23	M53	Horizontal Stand...	42	42		Lbyy			2	2		Lateral
24	M54	Vertical Standoff	60									Lateral
25	M55	Angle Tieback	63.84			Lbyy						Lateral
26	M56	Angle Tieback	63.84			Lbyy						Lateral
27	M57	Angle Tieback	63.84			Lbyy						Lateral
28	MP1	Mount Pipe	72			Lbyy						Lateral
29	MP2	Mod Mount Pipe	72			Lbyy						Lateral
30	MP3	Mount Pipe	72			Lbyy						Lateral
31	MP4	Mount Pipe	72			Lbyy						Lateral
32	MP5	Mount Pipe	72			Lbyy						Lateral
33	MP6	Mod Mount Pipe	72			Lbyy						Lateral
34	MP7	Mount Pipe	72			Lbyy						Lateral
35	MP8	Mount Pipe	72			Lbyy						Lateral
36	MP9	Mount Pipe	72			Lbyy						Lateral
37	MP10	Mod Mount Pipe	72			Lbyy						Lateral
38	MP11	Mod Mount Pipe	72			Lbyy						Lateral
39	MP12	Mount Pipe	72			Lbyy						Lateral
40	MP13	Vertical Standoff	60									Lateral
41	MP14	Vertical Standoff	60									Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[i...	Lbyy[in]	Lbzz[in]	Lcomp top[...	Lcomp bot[...	L-torque[i...	Kyy	Kzz	Cb	Functi...
42	MP15	Vertical Standoff	60									Lateral

Cold Formed Steel Design Parameters

	Label	Shape	Length...	Lbyy[in]	Lbzz[in]	Lcomp to...	Lcomp bo...	L-torque[in]	Kyy	Kzz	Cb	R	a[in]	Funct...
1	M58	Unistrut	36.84			Lbyy								Lateral
2	M59	Unistrut	36.84			Lbyy								Lateral
3	M60	Unistrut	36.84			Lbyy								Lateral

Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-17.5	8
2	MP1	Y	-17.5	64
3	MP2	Y	-39.7	0
4	MP2	Y	-39.7	72
5	MP3	Y	-39.7	0
6	MP3	Y	-39.7	72
7	MP4	Y	-16.75	8
8	MP4	Y	-16.75	64
9	MP2	Y	-71	66
10	MP3	Y	-59.9	66
11	MP3	Y	-72	66
12	MP1	Y	-14.1	66
13	MP1	Y	-14.1	66
14	MP13	Y	-32.8	30
15	MP5	Y	-17.5	8
16	MP5	Y	-17.5	64
17	MP6	Y	-39.7	0
18	MP6	Y	-39.7	72
19	MP7	Y	-39.7	0
20	MP7	Y	-39.7	72
21	MP8	Y	-16.75	8
22	MP8	Y	-16.75	64
23	MP6	Y	-71	66
24	MP7	Y	-59.9	66
25	MP7	Y	-72	66
26	MP5	Y	-14.1	66
27	MP5	Y	-14.1	66
28	MP14	Y	-32.8	30
29	MP9	Y	-17.5	8
30	MP9	Y	-17.5	64
31	MP10	Y	-47.85	0
32	MP10	Y	-47.85	72
33	MP11	Y	-47.85	0
34	MP11	Y	-47.85	72
35	MP12	Y	-16.75	8
36	MP12	Y	-16.75	64
37	MP10	Y	-71	66
38	MP11	Y	-59.9	66
39	MP11	Y	-72	66
40	MP9	Y	-14.1	66
41	MP9	Y	-14.1	66
42	MP15	Y	-32.8	30

Member Point Loads (BLC 2 : Wind Load AZI 0)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	8
2	MP1	Z	-100.68	8
3	MP1	X	0	64
4	MP1	Z	-100.68	64
5	MP2	X	0	0
6	MP2	Z	-232.3	0
7	MP2	X	0	72
8	MP2	Z	-232.3	72
9	MP3	X	0	0
10	MP3	Z	-232.3	0
11	MP3	X	0	72
12	MP3	Z	-232.3	72
13	MP4	X	0	8
14	MP4	Z	-55.54	8
15	MP4	X	0	64
16	MP4	Z	-55.54	64
17	MP2	X	0	66
18	MP2	Z	-71.92	66
19	MP3	X	0	66
20	MP3	Z	-67.35	66
21	MP3	X	0	66
22	MP3	Z	-59.91	66
23	MP1	X	0	66
24	MP1	Z	-40.36	66
25	MP1	X	0	66
26	MP1	Z	-40.36	66
27	MP13	X	0	30
28	MP13	Z	-90.48	30
29	MP5	X	0	8
30	MP5	Z	-65.31	8
31	MP5	X	0	64
32	MP5	Z	-65.31	64
33	MP6	X	0	0
34	MP6	Z	-135.05	0
35	MP6	X	0	72
36	MP6	Z	-135.05	72
37	MP7	X	0	0
38	MP7	Z	-135.05	0
39	MP7	X	0	72
40	MP7	Z	-135.05	72
41	MP8	X	0	8
42	MP8	Z	-47.5	8
43	MP8	X	0	64
44	MP8	Z	-47.5	64
45	MP6	X	0	66
46	MP6	Z	-56.59	66
47	MP7	X	0	66
48	MP7	Z	-45.87	66
49	MP7	X	0	66
50	MP7	Z	-52.08	66
51	MP5	X	0	66
52	MP5	Z	-19.61	66
53	MP5	X	0	66
54	MP5	Z	-19.61	66
55	MP14	X	0	30
56	MP14	Z	-90.48	30
57	MP9	X	0	8

Member Point Loads (BLC 2 : Wind Load AZI 0) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
58	MP9	Z	-65.31	8
59	MP9	X	0	64
60	MP9	Z	-65.31	64
61	MP10	X	0	0
62	MP10	Z	-193	0
63	MP10	X	0	72
64	MP10	Z	-193	72
65	MP11	X	0	0
66	MP11	Z	-193	0
67	MP11	X	0	72
68	MP11	Z	-193	72
69	MP12	X	0	8
70	MP12	Z	-47.5	8
71	MP12	X	0	64
72	MP12	Z	-47.5	64
73	MP10	X	0	66
74	MP10	Z	-56.59	66
75	MP11	X	0	66
76	MP11	Z	-45.87	66
77	MP11	X	0	66
78	MP11	Z	-52.08	66
79	MP9	X	0	66
80	MP9	Z	-19.61	66
81	MP9	X	0	66
82	MP9	Z	-19.61	66
83	MP15	X	0	30
84	MP15	Z	-90.48	30

Member Point Loads (BLC 3 : Wind Load AZI 30)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-44.45	8
2	MP1	Z	-76.98	8
3	MP1	X	-44.45	64
4	MP1	Z	-76.98	64
5	MP2	X	-99.94	0
6	MP2	Z	-173.1	0
7	MP2	X	-99.94	72
8	MP2	Z	-173.1	72
9	MP3	X	-99.94	0
10	MP3	Z	-173.1	0
11	MP3	X	-99.94	72
12	MP3	Z	-173.1	72
13	MP4	X	-26.43	8
14	MP4	Z	-45.78	8
15	MP4	X	-26.43	64
16	MP4	Z	-45.78	64
17	MP2	X	-33.41	66
18	MP2	Z	-57.86	66
19	MP3	X	-30.1	66
20	MP3	Z	-52.13	66
21	MP3	X	-28.65	66
22	MP3	Z	-49.63	66
23	MP1	X	-16.72	66
24	MP1	Z	-28.96	66
25	MP1	X	-16.72	66
26	MP1	Z	-28.96	66

Member Point Loads (BLC 3 : Wind Load AZI 30) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
27	MP13	X	-45.24	30
28	MP13	Z	-78.35	30
29	MP5	X	-44.45	8
30	MP5	Z	-76.98	8
31	MP5	X	-44.45	64
32	MP5	Z	-76.98	64
33	MP6	X	-99.94	0
34	MP6	Z	-173.1	0
35	MP6	X	-99.94	72
36	MP6	Z	-173.1	72
37	MP7	X	-99.94	0
38	MP7	Z	-173.1	0
39	MP7	X	-99.94	72
40	MP7	Z	-173.1	72
41	MP8	X	-26.43	8
42	MP8	Z	-45.78	8
43	MP8	X	-26.43	64
44	MP8	Z	-45.78	64
45	MP6	X	-33.41	66
46	MP6	Z	-57.86	66
47	MP7	X	-30.1	66
48	MP7	Z	-52.13	66
49	MP7	X	-28.65	66
50	MP7	Z	-49.63	66
51	MP5	X	-16.72	66
52	MP5	Z	-28.96	66
53	MP5	X	-16.72	66
54	MP5	Z	-28.96	66
55	MP14	X	-45.24	30
56	MP14	Z	-78.35	30
57	MP9	X	-26.76	8
58	MP9	Z	-46.35	8
59	MP9	X	-26.76	64
60	MP9	Z	-46.35	64
61	MP10	X	-74.23	0
62	MP10	Z	-128.57	0
63	MP10	X	-74.23	72
64	MP10	Z	-128.57	72
65	MP11	X	-74.23	0
66	MP11	Z	-128.57	0
67	MP11	X	-74.23	72
68	MP11	Z	-128.57	72
69	MP12	X	-22.41	8
70	MP12	Z	-38.82	8
71	MP12	X	-22.41	64
72	MP12	Z	-38.82	64
73	MP10	X	-25.74	66
74	MP10	Z	-44.58	66
75	MP11	X	-19.35	66
76	MP11	Z	-33.52	66
77	MP11	X	-24.74	66
78	MP11	Z	-42.85	66
79	MP9	X	-6.34	66
80	MP9	Z	-10.99	66
81	MP9	X	-6.34	66
82	MP9	Z	-10.99	66
83	MP15	X	-45.24	30

Member Point Loads (BLC 3 : Wind Load AZI 30) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
84	MP15	Z	-78.35	30

Member Point Loads (BLC 4 : Wind Load AZI 60)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-56.56	8
2	MP1	Z	-32.66	8
3	MP1	X	-56.56	64
4	MP1	Z	-32.66	64
5	MP2	X	-116.96	0
6	MP2	Z	-67.53	0
7	MP2	X	-116.96	72
8	MP2	Z	-67.53	72
9	MP3	X	-116.96	0
10	MP3	Z	-67.53	0
11	MP3	X	-116.96	72
12	MP3	Z	-67.53	72
13	MP4	X	-41.14	8
14	MP4	Z	-23.75	8
15	MP4	X	-41.14	64
16	MP4	Z	-23.75	64
17	MP2	X	-49.01	66
18	MP2	Z	-28.29	66
19	MP3	X	-39.72	66
20	MP3	Z	-22.93	66
21	MP3	X	-45.11	66
22	MP3	Z	-26.04	66
23	MP1	X	-16.98	66
24	MP1	Z	-9.8	66
25	MP1	X	-16.98	66
26	MP1	Z	-9.8	66
27	MP13	X	-78.35	30
28	MP13	Z	-45.24	30
29	MP5	X	-87.19	8
30	MP5	Z	-50.34	8
31	MP5	X	-87.19	64
32	MP5	Z	-50.34	64
33	MP6	X	-201.18	0
34	MP6	Z	-116.15	0
35	MP6	X	-201.18	72
36	MP6	Z	-116.15	72
37	MP7	X	-201.18	0
38	MP7	Z	-116.15	0
39	MP7	X	-201.18	72
40	MP7	Z	-116.15	72
41	MP8	X	-48.1	8
42	MP8	Z	-27.77	8
43	MP8	X	-48.1	64
44	MP8	Z	-27.77	64
45	MP6	X	-62.29	66
46	MP6	Z	-35.96	66
47	MP7	X	-58.33	66
48	MP7	Z	-33.68	66
49	MP7	X	-51.89	66
50	MP7	Z	-29.96	66
51	MP5	X	-34.95	66
52	MP5	Z	-20.18	66

Member Point Loads (BLC 4 : Wind Load AZI 60) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
53	MP5	X	-34.95	66
54	MP5	Z	-20.18	66
55	MP14	X	-78.35	30
56	MP14	Z	-45.24	30
57	MP9	X	-56.56	8
58	MP9	Z	-32.66	8
59	MP9	X	-56.56	64
60	MP9	Z	-32.66	64
61	MP10	X	-167.15	0
62	MP10	Z	-96.5	0
63	MP10	X	-167.15	72
64	MP10	Z	-96.5	72
65	MP11	X	-167.15	0
66	MP11	Z	-96.5	0
67	MP11	X	-167.15	72
68	MP11	Z	-96.5	72
69	MP12	X	-41.14	8
70	MP12	Z	-23.75	8
71	MP12	X	-41.14	64
72	MP12	Z	-23.75	64
73	MP10	X	-49.01	66
74	MP10	Z	-28.29	66
75	MP11	X	-39.72	66
76	MP11	Z	-22.93	66
77	MP11	X	-45.11	66
78	MP11	Z	-26.04	66
79	MP9	X	-16.98	66
80	MP9	Z	-9.8	66
81	MP9	X	-16.98	66
82	MP9	Z	-9.8	66
83	MP15	X	-78.35	30
84	MP15	Z	-45.24	30

Member Point Loads (BLC 5 : Wind Load AZI 90)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-53.52	8
2	MP1	Z	0	8
3	MP1	X	-53.52	64
4	MP1	Z	0	64
5	MP2	X	-102.63	0
6	MP2	Z	0	0
7	MP2	X	-102.63	72
8	MP2	Z	0	72
9	MP3	X	-102.63	0
10	MP3	Z	0	0
11	MP3	X	-102.63	72
12	MP3	Z	0	72
13	MP4	X	-44.82	8
14	MP4	Z	0	8
15	MP4	X	-44.82	64
16	MP4	Z	0	64
17	MP2	X	-51.48	66
18	MP2	Z	0	66
19	MP3	X	-38.7	66
20	MP3	Z	0	66
21	MP3	X	-49.48	66

Member Point Loads (BLC 5 : Wind Load AZI 90) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
22	MP3	Z	0	66
23	MP1	X	-12.69	66
24	MP1	Z	0	66
25	MP1	X	-12.69	66
26	MP1	Z	0	66
27	MP13	X	-90.48	30
28	MP13	Z	0	30
29	MP5	X	-88.89	8
30	MP5	Z	0	8
31	MP5	X	-88.89	64
32	MP5	Z	0	64
33	MP6	X	-199.88	0
34	MP6	Z	0	0
35	MP6	X	-199.88	72
36	MP6	Z	0	72
37	MP7	X	-199.88	0
38	MP7	Z	0	0
39	MP7	X	-199.88	72
40	MP7	Z	0	72
41	MP8	X	-52.86	8
42	MP8	Z	0	8
43	MP8	X	-52.86	64
44	MP8	Z	0	64
45	MP6	X	-66.81	66
46	MP6	Z	0	66
47	MP7	X	-60.19	66
48	MP7	Z	0	66
49	MP7	X	-57.3	66
50	MP7	Z	0	66
51	MP5	X	-33.44	66
52	MP5	Z	0	66
53	MP5	X	-33.44	66
54	MP5	Z	0	66
55	MP14	X	-90.48	30
56	MP14	Z	0	30
57	MP9	X	-88.89	8
58	MP9	Z	0	8
59	MP9	X	-88.89	64
60	MP9	Z	0	64
61	MP10	X	-282.1	0
62	MP10	Z	0	0
63	MP10	X	-282.1	72
64	MP10	Z	0	72
65	MP11	X	-282.1	0
66	MP11	Z	0	0
67	MP11	X	-282.1	72
68	MP11	Z	0	72
69	MP12	X	-52.86	8
70	MP12	Z	0	8
71	MP12	X	-52.86	64
72	MP12	Z	0	64
73	MP10	X	-66.81	66
74	MP10	Z	0	66
75	MP11	X	-60.19	66
76	MP11	Z	0	66
77	MP11	X	-57.3	66
78	MP11	Z	0	66

Member Point Loads (BLC 5 : Wind Load AZI 90) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
79	MP9	X	-33.44	66
80	MP9	Z	0	66
81	MP9	X	-33.44	66
82	MP9	Z	0	66
83	MP15	X	-90.48	30
84	MP15	Z	0	30

Member Point Loads (BLC 6 : Wind Load AZI 120)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-56.56	8
2	MP1	Z	32.66	8
3	MP1	X	-56.56	64
4	MP1	Z	32.66	64
5	MP2	X	-116.96	0
6	MP2	Z	67.53	0
7	MP2	X	-116.96	72
8	MP2	Z	67.53	72
9	MP3	X	-116.96	0
10	MP3	Z	67.53	0
11	MP3	X	-116.96	72
12	MP3	Z	67.53	72
13	MP4	X	-41.14	8
14	MP4	Z	23.75	8
15	MP4	X	-41.14	64
16	MP4	Z	23.75	64
17	MP2	X	-49.01	66
18	MP2	Z	28.29	66
19	MP3	X	-39.72	66
20	MP3	Z	22.93	66
21	MP3	X	-45.11	66
22	MP3	Z	26.04	66
23	MP1	X	-16.98	66
24	MP1	Z	9.8	66
25	MP1	X	-16.98	66
26	MP1	Z	9.8	66
27	MP13	X	-78.35	30
28	MP13	Z	45.24	30
29	MP5	X	-56.56	8
30	MP5	Z	32.66	8
31	MP5	X	-56.56	64
32	MP5	Z	32.66	64
33	MP6	X	-116.96	0
34	MP6	Z	67.53	0
35	MP6	X	-116.96	72
36	MP6	Z	67.53	72
37	MP7	X	-116.96	0
38	MP7	Z	67.53	0
39	MP7	X	-116.96	72
40	MP7	Z	67.53	72
41	MP8	X	-41.14	8
42	MP8	Z	23.75	8
43	MP8	X	-41.14	64
44	MP8	Z	23.75	64
45	MP6	X	-49.01	66
46	MP6	Z	28.29	66
47	MP7	X	-39.72	66

Member Point Loads (BLC 6 : Wind Load AZI 120) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
48	MP7	Z	22.93	66
49	MP7	X	-45.11	66
50	MP7	Z	26.04	66
51	MP5	X	-16.98	66
52	MP5	Z	9.8	66
53	MP5	X	-16.98	66
54	MP5	Z	9.8	66
55	MP14	X	-78.35	30
56	MP14	Z	45.24	30
57	MP9	X	-87.19	8
58	MP9	Z	50.34	8
59	MP9	X	-87.19	64
60	MP9	Z	50.34	64
61	MP10	X	-282.88	0
62	MP10	Z	163.32	0
63	MP10	X	-282.88	72
64	MP10	Z	163.32	72
65	MP11	X	-282.88	0
66	MP11	Z	163.32	0
67	MP11	X	-282.88	72
68	MP11	Z	163.32	72
69	MP12	X	-48.1	8
70	MP12	Z	27.77	8
71	MP12	X	-48.1	64
72	MP12	Z	27.77	64
73	MP10	X	-62.29	66
74	MP10	Z	35.96	66
75	MP11	X	-58.33	66
76	MP11	Z	33.68	66
77	MP11	X	-51.89	66
78	MP11	Z	29.96	66
79	MP9	X	-34.95	66
80	MP9	Z	20.18	66
81	MP9	X	-34.95	66
82	MP9	Z	20.18	66
83	MP15	X	-78.35	30
84	MP15	Z	45.24	30

Member Point Loads (BLC 7 : Wind Load AZI 150)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-44.45	8
2	MP1	Z	76.98	8
3	MP1	X	-44.45	64
4	MP1	Z	76.98	64
5	MP2	X	-99.94	0
6	MP2	Z	173.1	0
7	MP2	X	-99.94	72
8	MP2	Z	173.1	72
9	MP3	X	-99.94	0
10	MP3	Z	173.1	0
11	MP3	X	-99.94	72
12	MP3	Z	173.1	72
13	MP4	X	-26.43	8
14	MP4	Z	45.78	8
15	MP4	X	-26.43	64
16	MP4	Z	45.78	64

Member Point Loads (BLC 7 : Wind Load AZI 150) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
17	MP2	X	-33.41	66
18	MP2	Z	57.86	66
19	MP3	X	-30.1	66
20	MP3	Z	52.13	66
21	MP3	X	-28.65	66
22	MP3	Z	49.63	66
23	MP1	X	-16.72	66
24	MP1	Z	28.96	66
25	MP1	X	-16.72	66
26	MP1	Z	28.96	66
27	MP13	X	-45.24	30
28	MP13	Z	78.35	30
29	MP5	X	-26.76	8
30	MP5	Z	46.35	8
31	MP5	X	-26.76	64
32	MP5	Z	46.35	64
33	MP6	X	-51.32	0
34	MP6	Z	88.88	0
35	MP6	X	-51.32	72
36	MP6	Z	88.88	72
37	MP7	X	-51.32	0
38	MP7	Z	88.88	0
39	MP7	X	-51.32	72
40	MP7	Z	88.88	72
41	MP8	X	-22.41	8
42	MP8	Z	38.82	8
43	MP8	X	-22.41	64
44	MP8	Z	38.82	64
45	MP6	X	-25.74	66
46	MP6	Z	44.58	66
47	MP7	X	-19.35	66
48	MP7	Z	33.52	66
49	MP7	X	-24.74	66
50	MP7	Z	42.85	66
51	MP5	X	-6.34	66
52	MP5	Z	10.99	66
53	MP5	X	-6.34	66
54	MP5	Z	10.99	66
55	MP14	X	-45.24	30
56	MP14	Z	78.35	30
57	MP9	X	-44.45	8
58	MP9	Z	76.98	8
59	MP9	X	-44.45	64
60	MP9	Z	76.98	64
61	MP10	X	-141.05	0
62	MP10	Z	244.3	0
63	MP10	X	-141.05	72
64	MP10	Z	244.3	72
65	MP11	X	-141.05	0
66	MP11	Z	244.3	0
67	MP11	X	-141.05	72
68	MP11	Z	244.3	72
69	MP12	X	-26.43	8
70	MP12	Z	45.78	8
71	MP12	X	-26.43	64
72	MP12	Z	45.78	64
73	MP10	X	-33.41	66

Member Point Loads (BLC 7 : Wind Load AZI 150) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
74	MP10	Z	57.86	66
75	MP11	X	-30.1	66
76	MP11	Z	52.13	66
77	MP11	X	-28.65	66
78	MP11	Z	49.63	66
79	MP9	X	-16.72	66
80	MP9	Z	28.96	66
81	MP9	X	-16.72	66
82	MP9	Z	28.96	66
83	MP15	X	-45.24	30
84	MP15	Z	78.35	30

Member Point Loads (BLC 8 : Wind Load AZI 180)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	8
2	MP1	Z	100.68	8
3	MP1	X	0	64
4	MP1	Z	100.68	64
5	MP2	X	0	0
6	MP2	Z	232.3	0
7	MP2	X	0	72
8	MP2	Z	232.3	72
9	MP3	X	0	0
10	MP3	Z	232.3	0
11	MP3	X	0	72
12	MP3	Z	232.3	72
13	MP4	X	0	8
14	MP4	Z	55.54	8
15	MP4	X	0	64
16	MP4	Z	55.54	64
17	MP2	X	0	66
18	MP2	Z	71.92	66
19	MP3	X	0	66
20	MP3	Z	67.35	66
21	MP3	X	0	66
22	MP3	Z	59.91	66
23	MP1	X	0	66
24	MP1	Z	40.36	66
25	MP1	X	0	66
26	MP1	Z	40.36	66
27	MP13	X	0	30
28	MP13	Z	90.48	30
29	MP5	X	0	8
30	MP5	Z	65.31	8
31	MP5	X	0	64
32	MP5	Z	65.31	64
33	MP6	X	0	0
34	MP6	Z	135.05	0
35	MP6	X	0	72
36	MP6	Z	135.05	72
37	MP7	X	0	0
38	MP7	Z	135.05	0
39	MP7	X	0	72
40	MP7	Z	135.05	72
41	MP8	X	0	8
42	MP8	Z	47.5	8

Member Point Loads (BLC 8 : Wind Load AZI 180) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
43	MP8	X	0	64
44	MP8	Z	47.5	64
45	MP6	X	0	66
46	MP6	Z	56.59	66
47	MP7	X	0	66
48	MP7	Z	45.87	66
49	MP7	X	0	66
50	MP7	Z	52.08	66
51	MP5	X	0	66
52	MP5	Z	19.61	66
53	MP5	X	0	66
54	MP5	Z	19.61	66
55	MP14	X	0	30
56	MP14	Z	90.48	30
57	MP9	X	0	8
58	MP9	Z	65.31	8
59	MP9	X	0	64
60	MP9	Z	65.31	64
61	MP10	X	0	0
62	MP10	Z	193	0
63	MP10	X	0	72
64	MP10	Z	193	72
65	MP11	X	0	0
66	MP11	Z	193	0
67	MP11	X	0	72
68	MP11	Z	193	72
69	MP12	X	0	8
70	MP12	Z	47.5	8
71	MP12	X	0	64
72	MP12	Z	47.5	64
73	MP10	X	0	66
74	MP10	Z	56.59	66
75	MP11	X	0	66
76	MP11	Z	45.87	66
77	MP11	X	0	66
78	MP11	Z	52.08	66
79	MP9	X	0	66
80	MP9	Z	19.61	66
81	MP9	X	0	66
82	MP9	Z	19.61	66
83	MP15	X	0	30
84	MP15	Z	90.48	30

Member Point Loads (BLC 9 : Wind Load AZI 210)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	44.45	8
2	MP1	Z	76.98	8
3	MP1	X	44.45	64
4	MP1	Z	76.98	64
5	MP2	X	99.94	0
6	MP2	Z	173.1	0
7	MP2	X	99.94	72
8	MP2	Z	173.1	72
9	MP3	X	99.94	0
10	MP3	Z	173.1	0
11	MP3	X	99.94	72

Member Point Loads (BLC 9 : Wind Load AZI 210) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
12	MP3	Z	173.1	72
13	MP4	X	26.43	8
14	MP4	Z	45.78	8
15	MP4	X	26.43	64
16	MP4	Z	45.78	64
17	MP2	X	33.41	66
18	MP2	Z	57.86	66
19	MP3	X	30.1	66
20	MP3	Z	52.13	66
21	MP3	X	28.65	66
22	MP3	Z	49.63	66
23	MP1	X	16.72	66
24	MP1	Z	28.96	66
25	MP1	X	16.72	66
26	MP1	Z	28.96	66
27	MP13	X	45.24	30
28	MP13	Z	78.35	30
29	MP5	X	44.45	8
30	MP5	Z	76.98	8
31	MP5	X	44.45	64
32	MP5	Z	76.98	64
33	MP6	X	99.94	0
34	MP6	Z	173.1	0
35	MP6	X	99.94	72
36	MP6	Z	173.1	72
37	MP7	X	99.94	0
38	MP7	Z	173.1	0
39	MP7	X	99.94	72
40	MP7	Z	173.1	72
41	MP8	X	26.43	8
42	MP8	Z	45.78	8
43	MP8	X	26.43	64
44	MP8	Z	45.78	64
45	MP6	X	33.41	66
46	MP6	Z	57.86	66
47	MP7	X	30.1	66
48	MP7	Z	52.13	66
49	MP7	X	28.65	66
50	MP7	Z	49.63	66
51	MP5	X	16.72	66
52	MP5	Z	28.96	66
53	MP5	X	16.72	66
54	MP5	Z	28.96	66
55	MP14	X	45.24	30
56	MP14	Z	78.35	30
57	MP9	X	26.76	8
58	MP9	Z	46.35	8
59	MP9	X	26.76	64
60	MP9	Z	46.35	64
61	MP10	X	74.23	0
62	MP10	Z	128.57	0
63	MP10	X	74.23	72
64	MP10	Z	128.57	72
65	MP11	X	74.23	0
66	MP11	Z	128.57	0
67	MP11	X	74.23	72
68	MP11	Z	128.57	72

Member Point Loads (BLC 9 : Wind Load AZI 210) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
69	MP12	X	22.41	8
70	MP12	Z	38.82	8
71	MP12	X	22.41	64
72	MP12	Z	38.82	64
73	MP10	X	25.74	66
74	MP10	Z	44.58	66
75	MP11	X	19.35	66
76	MP11	Z	33.52	66
77	MP11	X	24.74	66
78	MP11	Z	42.85	66
79	MP9	X	6.34	66
80	MP9	Z	10.99	66
81	MP9	X	6.34	66
82	MP9	Z	10.99	66
83	MP15	X	45.24	30
84	MP15	Z	78.35	30

Member Point Loads (BLC 10 : Wind Load AZI 240)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	56.56	8
2	MP1	Z	32.66	8
3	MP1	X	56.56	64
4	MP1	Z	32.66	64
5	MP2	X	116.96	0
6	MP2	Z	67.53	0
7	MP2	X	116.96	72
8	MP2	Z	67.53	72
9	MP3	X	116.96	0
10	MP3	Z	67.53	0
11	MP3	X	116.96	72
12	MP3	Z	67.53	72
13	MP4	X	41.14	8
14	MP4	Z	23.75	8
15	MP4	X	41.14	64
16	MP4	Z	23.75	64
17	MP2	X	49.01	66
18	MP2	Z	28.29	66
19	MP3	X	39.72	66
20	MP3	Z	22.93	66
21	MP3	X	45.11	66
22	MP3	Z	26.04	66
23	MP1	X	16.98	66
24	MP1	Z	9.8	66
25	MP1	X	16.98	66
26	MP1	Z	9.8	66
27	MP13	X	78.35	30
28	MP13	Z	45.24	30
29	MP5	X	87.19	8
30	MP5	Z	50.34	8
31	MP5	X	87.19	64
32	MP5	Z	50.34	64
33	MP6	X	201.18	0
34	MP6	Z	116.15	0
35	MP6	X	201.18	72
36	MP6	Z	116.15	72
37	MP7	X	201.18	0

Member Point Loads (BLC 10 : Wind Load AZI 240) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
38	MP7	Z	116.15	0
39	MP7	X	201.18	72
40	MP7	Z	116.15	72
41	MP8	X	48.1	8
42	MP8	Z	27.77	8
43	MP8	X	48.1	64
44	MP8	Z	27.77	64
45	MP6	X	62.29	66
46	MP6	Z	35.96	66
47	MP7	X	58.33	66
48	MP7	Z	33.68	66
49	MP7	X	51.89	66
50	MP7	Z	29.96	66
51	MP5	X	34.95	66
52	MP5	Z	20.18	66
53	MP5	X	34.95	66
54	MP5	Z	20.18	66
55	MP14	X	78.35	30
56	MP14	Z	45.24	30
57	MP9	X	56.56	8
58	MP9	Z	32.66	8
59	MP9	X	56.56	64
60	MP9	Z	32.66	64
61	MP10	X	167.15	0
62	MP10	Z	96.5	0
63	MP10	X	167.15	72
64	MP10	Z	96.5	72
65	MP11	X	167.15	0
66	MP11	Z	96.5	0
67	MP11	X	167.15	72
68	MP11	Z	96.5	72
69	MP12	X	41.14	8
70	MP12	Z	23.75	8
71	MP12	X	41.14	64
72	MP12	Z	23.75	64
73	MP10	X	49.01	66
74	MP10	Z	28.29	66
75	MP11	X	39.72	66
76	MP11	Z	22.93	66
77	MP11	X	45.11	66
78	MP11	Z	26.04	66
79	MP9	X	16.98	66
80	MP9	Z	9.8	66
81	MP9	X	16.98	66
82	MP9	Z	9.8	66
83	MP15	X	78.35	30
84	MP15	Z	45.24	30

Member Point Loads (BLC 11 : Wind Load AZI 270)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	53.52	8
2	MP1	Z	0	8
3	MP1	X	53.52	64
4	MP1	Z	0	64
5	MP2	X	102.63	0
6	MP2	Z	0	0

Member Point Loads (BLC 11 : Wind Load AZI 270) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
7	MP2	X	102.63	72
8	MP2	Z	0	72
9	MP3	X	102.63	0
10	MP3	Z	0	0
11	MP3	X	102.63	72
12	MP3	Z	0	72
13	MP4	X	44.82	8
14	MP4	Z	0	8
15	MP4	X	44.82	64
16	MP4	Z	0	64
17	MP2	X	51.48	66
18	MP2	Z	0	66
19	MP3	X	38.7	66
20	MP3	Z	0	66
21	MP3	X	49.48	66
22	MP3	Z	0	66
23	MP1	X	12.69	66
24	MP1	Z	0	66
25	MP1	X	12.69	66
26	MP1	Z	0	66
27	MP13	X	90.48	30
28	MP13	Z	0	30
29	MP5	X	88.89	8
30	MP5	Z	0	8
31	MP5	X	88.89	64
32	MP5	Z	0	64
33	MP6	X	199.88	0
34	MP6	Z	0	0
35	MP6	X	199.88	72
36	MP6	Z	0	72
37	MP7	X	199.88	0
38	MP7	Z	0	0
39	MP7	X	199.88	72
40	MP7	Z	0	72
41	MP8	X	52.86	8
42	MP8	Z	0	8
43	MP8	X	52.86	64
44	MP8	Z	0	64
45	MP6	X	66.81	66
46	MP6	Z	0	66
47	MP7	X	60.19	66
48	MP7	Z	0	66
49	MP7	X	57.3	66
50	MP7	Z	0	66
51	MP5	X	33.44	66
52	MP5	Z	0	66
53	MP5	X	33.44	66
54	MP5	Z	0	66
55	MP14	X	90.48	30
56	MP14	Z	0	30
57	MP9	X	88.89	8
58	MP9	Z	0	8
59	MP9	X	88.89	64
60	MP9	Z	0	64
61	MP10	X	282.1	0
62	MP10	Z	0	0
63	MP10	X	282.1	72

Member Point Loads (BLC 11 : Wind Load AZI 270) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
64	MP10	Z	0	72
65	MP11	X	282.1	0
66	MP11	Z	0	0
67	MP11	X	282.1	72
68	MP11	Z	0	72
69	MP12	X	52.86	8
70	MP12	Z	0	8
71	MP12	X	52.86	64
72	MP12	Z	0	64
73	MP10	X	66.81	66
74	MP10	Z	0	66
75	MP11	X	60.19	66
76	MP11	Z	0	66
77	MP11	X	57.3	66
78	MP11	Z	0	66
79	MP9	X	33.44	66
80	MP9	Z	0	66
81	MP9	X	33.44	66
82	MP9	Z	0	66
83	MP15	X	90.48	30
84	MP15	Z	0	30

Member Point Loads (BLC 12 : Wind Load AZI 300)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	56.56	8
2	MP1	Z	-32.66	8
3	MP1	X	56.56	64
4	MP1	Z	-32.66	64
5	MP2	X	116.96	0
6	MP2	Z	-67.53	0
7	MP2	X	116.96	72
8	MP2	Z	-67.53	72
9	MP3	X	116.96	0
10	MP3	Z	-67.53	0
11	MP3	X	116.96	72
12	MP3	Z	-67.53	72
13	MP4	X	41.14	8
14	MP4	Z	-23.75	8
15	MP4	X	41.14	64
16	MP4	Z	-23.75	64
17	MP2	X	49.01	66
18	MP2	Z	-28.29	66
19	MP3	X	39.72	66
20	MP3	Z	-22.93	66
21	MP3	X	45.11	66
22	MP3	Z	-26.04	66
23	MP1	X	16.98	66
24	MP1	Z	-9.8	66
25	MP1	X	16.98	66
26	MP1	Z	-9.8	66
27	MP13	X	78.35	30
28	MP13	Z	-45.24	30
29	MP5	X	56.56	8
30	MP5	Z	-32.66	8
31	MP5	X	56.56	64
32	MP5	Z	-32.66	64

Member Point Loads (BLC 12 : Wind Load AZI 300) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
33	MP6	X	116.96	0
34	MP6	Z	-67.53	0
35	MP6	X	116.96	72
36	MP6	Z	-67.53	72
37	MP7	X	116.96	0
38	MP7	Z	-67.53	0
39	MP7	X	116.96	72
40	MP7	Z	-67.53	72
41	MP8	X	41.14	8
42	MP8	Z	-23.75	8
43	MP8	X	41.14	64
44	MP8	Z	-23.75	64
45	MP6	X	49.01	66
46	MP6	Z	-28.29	66
47	MP7	X	39.72	66
48	MP7	Z	-22.93	66
49	MP7	X	45.11	66
50	MP7	Z	-26.04	66
51	MP5	X	16.98	66
52	MP5	Z	-9.8	66
53	MP5	X	16.98	66
54	MP5	Z	-9.8	66
55	MP14	X	78.35	30
56	MP14	Z	-45.24	30
57	MP9	X	87.19	8
58	MP9	Z	-50.34	8
59	MP9	X	87.19	64
60	MP9	Z	-50.34	64
61	MP10	X	282.88	0
62	MP10	Z	-163.32	0
63	MP10	X	282.88	72
64	MP10	Z	-163.32	72
65	MP11	X	282.88	0
66	MP11	Z	-163.32	0
67	MP11	X	282.88	72
68	MP11	Z	-163.32	72
69	MP12	X	48.1	8
70	MP12	Z	-27.77	8
71	MP12	X	48.1	64
72	MP12	Z	-27.77	64
73	MP10	X	62.29	66
74	MP10	Z	-35.96	66
75	MP11	X	58.33	66
76	MP11	Z	-33.68	66
77	MP11	X	51.89	66
78	MP11	Z	-29.96	66
79	MP9	X	34.95	66
80	MP9	Z	-20.18	66
81	MP9	X	34.95	66
82	MP9	Z	-20.18	66
83	MP15	X	78.35	30
84	MP15	Z	-45.24	30

Member Point Loads (BLC 13 : Wind Load AZI 330)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	44.45	8

Member Point Loads (BLC 13 : Wind Load AZI 330) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
2	MP1	Z	-76.98	8
3	MP1	X	44.45	64
4	MP1	Z	-76.98	64
5	MP2	X	99.94	0
6	MP2	Z	-173.1	0
7	MP2	X	99.94	72
8	MP2	Z	-173.1	72
9	MP3	X	99.94	0
10	MP3	Z	-173.1	0
11	MP3	X	99.94	72
12	MP3	Z	-173.1	72
13	MP4	X	26.43	8
14	MP4	Z	-45.78	8
15	MP4	X	26.43	64
16	MP4	Z	-45.78	64
17	MP2	X	33.41	66
18	MP2	Z	-57.86	66
19	MP3	X	30.1	66
20	MP3	Z	-52.13	66
21	MP3	X	28.65	66
22	MP3	Z	-49.63	66
23	MP1	X	16.72	66
24	MP1	Z	-28.96	66
25	MP1	X	16.72	66
26	MP1	Z	-28.96	66
27	MP13	X	45.24	30
28	MP13	Z	-78.35	30
29	MP5	X	26.76	8
30	MP5	Z	-46.35	8
31	MP5	X	26.76	64
32	MP5	Z	-46.35	64
33	MP6	X	51.32	0
34	MP6	Z	-88.88	0
35	MP6	X	51.32	72
36	MP6	Z	-88.88	72
37	MP7	X	51.32	0
38	MP7	Z	-88.88	0
39	MP7	X	51.32	72
40	MP7	Z	-88.88	72
41	MP8	X	22.41	8
42	MP8	Z	-38.82	8
43	MP8	X	22.41	64
44	MP8	Z	-38.82	64
45	MP6	X	25.74	66
46	MP6	Z	-44.58	66
47	MP7	X	19.35	66
48	MP7	Z	-33.52	66
49	MP7	X	24.74	66
50	MP7	Z	-42.85	66
51	MP5	X	6.34	66
52	MP5	Z	-10.99	66
53	MP5	X	6.34	66
54	MP5	Z	-10.99	66
55	MP14	X	45.24	30
56	MP14	Z	-78.35	30
57	MP9	X	44.45	8
58	MP9	Z	-76.98	8

Member Point Loads (BLC 13 : Wind Load AZI 330) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
59	MP9	X	44.45	64
60	MP9	Z	-76.98	64
61	MP10	X	141.05	0
62	MP10	Z	-244.3	0
63	MP10	X	141.05	72
64	MP10	Z	-244.3	72
65	MP11	X	141.05	0
66	MP11	Z	-244.3	0
67	MP11	X	141.05	72
68	MP11	Z	-244.3	72
69	MP12	X	26.43	8
70	MP12	Z	-45.78	8
71	MP12	X	26.43	64
72	MP12	Z	-45.78	64
73	MP10	X	33.41	66
74	MP10	Z	-57.86	66
75	MP11	X	30.1	66
76	MP11	Z	-52.13	66
77	MP11	X	28.65	66
78	MP11	Z	-49.63	66
79	MP9	X	16.72	66
80	MP9	Z	-28.96	66
81	MP9	X	16.72	66
82	MP9	Z	-28.96	66
83	MP15	X	45.24	30
84	MP15	Z	-78.35	30

Member Point Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-56.913	8
2	MP1	Y	-56.913	64
3	MP2	Y	-122.36	0
4	MP2	Y	-122.36	72
5	MP3	Y	-122.36	0
6	MP3	Y	-122.36	72
7	MP4	Y	-67.556	8
8	MP4	Y	-67.556	64
9	MP2	Y	-64.957	66
10	MP3	Y	-56.401	66
11	MP3	Y	-61.888	66
12	MP1	Y	-27.728	66
13	MP1	Y	-27.728	66
14	MP13	Y	-85.681	30
15	MP5	Y	-56.913	8
16	MP5	Y	-56.913	64
17	MP6	Y	-122.36	0
18	MP6	Y	-122.36	72
19	MP7	Y	-122.36	0
20	MP7	Y	-122.36	72
21	MP8	Y	-67.556	8
22	MP8	Y	-67.556	64
23	MP6	Y	-64.957	66
24	MP7	Y	-56.401	66
25	MP7	Y	-61.888	66
26	MP5	Y	-27.728	66
27	MP5	Y	-27.728	66

Member Point Loads (BLC 16 : Ice Weight) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
28	MP14	Y	-85.681	30
29	MP9	Y	-56.913	8
30	MP9	Y	-56.913	64
31	MP10	Y	-160.626	0
32	MP10	Y	-160.626	72
33	MP11	Y	-160.626	0
34	MP11	Y	-160.626	72
35	MP12	Y	-67.556	8
36	MP12	Y	-67.556	64
37	MP10	Y	-64.957	66
38	MP11	Y	-56.401	66
39	MP11	Y	-61.888	66
40	MP9	Y	-27.728	66
41	MP9	Y	-27.728	66
42	MP15	Y	-85.681	30

Member Point Loads (BLC 17 : Ice Wind Load AZI 0)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	8
2	MP1	Z	-10.62	8
3	MP1	X	0	64
4	MP1	Z	-10.62	64
5	MP2	X	0	0
6	MP2	Z	-19.95	0
7	MP2	X	0	72
8	MP2	Z	-19.95	72
9	MP3	X	0	0
10	MP3	Z	-19.95	0
11	MP3	X	0	72
12	MP3	Z	-19.95	72
13	MP4	X	0	8
14	MP4	Z	-11.01	8
15	MP4	X	0	64
16	MP4	Z	-11.01	64
17	MP2	X	0	66
18	MP2	Z	-7.74	66
19	MP3	X	0	66
20	MP3	Z	-7.27	66
21	MP3	X	0	66
22	MP3	Z	-6.64	66
23	MP1	X	0	66
24	MP1	Z	-5.58	66
25	MP1	X	0	66
26	MP1	Z	-5.58	66
27	MP13	X	0	30
28	MP13	Z	-10.31	30
29	MP5	X	0	8
30	MP5	Z	-8.85	8
31	MP5	X	0	64
32	MP5	Z	-8.85	64
33	MP6	X	0	0
34	MP6	Z	-14.61	0
35	MP6	X	0	72
36	MP6	Z	-14.61	72
37	MP7	X	0	0
38	MP7	Z	-14.61	0

Member Point Loads (BLC 17 : Ice Wind Load AZI 0) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
39	MP7	X	0	72
40	MP7	Z	-14.61	72
41	MP8	X	0	8
42	MP8	Z	-9.86	8
43	MP8	X	0	64
44	MP8	Z	-9.86	64
45	MP6	X	0	66
46	MP6	Z	-7.01	66
47	MP7	X	0	66
48	MP7	Z	-6.2	66
49	MP7	X	0	66
50	MP7	Z	-6.26	66
51	MP5	X	0	66
52	MP5	Z	-3.71	66
53	MP5	X	0	66
54	MP5	Z	-3.71	66
55	MP14	X	0	30
56	MP14	Z	-10.31	30
57	MP9	X	0	8
58	MP9	Z	-8.85	8
59	MP9	X	0	64
60	MP9	Z	-8.85	64
61	MP10	X	0	0
62	MP10	Z	-20.35	0
63	MP10	X	0	72
64	MP10	Z	-20.35	72
65	MP11	X	0	0
66	MP11	Z	-20.35	0
67	MP11	X	0	72
68	MP11	Z	-20.35	72
69	MP12	X	0	8
70	MP12	Z	-9.86	8
71	MP12	X	0	64
72	MP12	Z	-9.86	64
73	MP10	X	0	66
74	MP10	Z	-7.01	66
75	MP11	X	0	66
76	MP11	Z	-6.2	66
77	MP11	X	0	66
78	MP11	Z	-6.26	66
79	MP9	X	0	66
80	MP9	Z	-3.71	66
81	MP9	X	0	66
82	MP9	Z	-3.71	66
83	MP15	X	0	30
84	MP15	Z	-10.31	30

Member Point Loads (BLC 18 : Ice Wind Load AZI 30)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-5.02	8
2	MP1	Z	-8.69	8
3	MP1	X	-5.02	64
4	MP1	Z	-8.69	64
5	MP2	X	-9.09	0
6	MP2	Z	-15.74	0
7	MP2	X	-9.09	72

Member Point Loads (BLC 18 : Ice Wind Load AZI 30) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
8	MP2	Z	-15.74	72
9	MP3	X	-9.09	0
10	MP3	Z	-15.74	0
11	MP3	X	-9.09	72
12	MP3	Z	-15.74	72
13	MP4	X	-5.31	8
14	MP4	Z	-9.2	8
15	MP4	X	-5.31	64
16	MP4	Z	-9.2	64
17	MP2	X	-3.75	66
18	MP2	Z	-6.49	66
19	MP3	X	-3.46	66
20	MP3	Z	-5.99	66
21	MP3	X	-3.25	66
22	MP3	Z	-5.64	66
23	MP1	X	-2.48	66
24	MP1	Z	-4.29	66
25	MP1	X	-2.48	66
26	MP1	Z	-4.29	66
27	MP13	X	-5.15	30
28	MP13	Z	-8.93	30
29	MP5	X	-5.02	8
30	MP5	Z	-8.69	8
31	MP5	X	-5.02	64
32	MP5	Z	-8.69	64
33	MP6	X	-9.09	0
34	MP6	Z	-15.74	0
35	MP6	X	-9.09	72
36	MP6	Z	-15.74	72
37	MP7	X	-9.09	0
38	MP7	Z	-15.74	0
39	MP7	X	-9.09	72
40	MP7	Z	-15.74	72
41	MP8	X	-5.31	8
42	MP8	Z	-9.2	8
43	MP8	X	-5.31	64
44	MP8	Z	-9.2	64
45	MP6	X	-3.75	66
46	MP6	Z	-6.49	66
47	MP7	X	-3.46	66
48	MP7	Z	-5.99	66
49	MP7	X	-3.25	66
50	MP7	Z	-5.64	66
51	MP5	X	-2.48	66
52	MP5	Z	-4.29	66
53	MP5	X	-2.48	66
54	MP5	Z	-4.29	66
55	MP14	X	-5.15	30
56	MP14	Z	-8.93	30
57	MP9	X	-4.13	8
58	MP9	Z	-7.16	8
59	MP9	X	-4.13	64
60	MP9	Z	-7.16	64
61	MP10	X	-8.93	0
62	MP10	Z	-15.47	0
63	MP10	X	-8.93	72
64	MP10	Z	-15.47	72

Member Point Loads (BLC 18 : Ice Wind Load AZI 30) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
65	MP11	X	-8.93	0
66	MP11	Z	-15.47	0
67	MP11	X	-8.93	72
68	MP11	Z	-15.47	72
69	MP12	X	-4.74	8
70	MP12	Z	-8.2	8
71	MP12	X	-4.74	64
72	MP12	Z	-8.2	64
73	MP10	X	-3.38	66
74	MP10	Z	-5.86	66
75	MP11	X	-2.92	66
76	MP11	Z	-5.06	66
77	MP11	X	-3.07	66
78	MP11	Z	-5.31	66
79	MP9	X	-1.54	66
80	MP9	Z	-2.67	66
81	MP9	X	-1.54	66
82	MP9	Z	-2.67	66
83	MP15	X	-5.15	30
84	MP15	Z	-8.93	30

Member Point Loads (BLC 19 : Ice Wind Load AZI 60)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-7.67	8
2	MP1	Z	-4.43	8
3	MP1	X	-7.67	64
4	MP1	Z	-4.43	64
5	MP2	X	-12.66	0
6	MP2	Z	-7.31	0
7	MP2	X	-12.66	72
8	MP2	Z	-7.31	72
9	MP3	X	-12.66	0
10	MP3	Z	-7.31	0
11	MP3	X	-12.66	72
12	MP3	Z	-7.31	72
13	MP4	X	-8.54	8
14	MP4	Z	-4.93	8
15	MP4	X	-8.54	64
16	MP4	Z	-4.93	64
17	MP2	X	-6.07	66
18	MP2	Z	-3.5	66
19	MP3	X	-5.37	66
20	MP3	Z	-3.1	66
21	MP3	X	-5.42	66
22	MP3	Z	-3.13	66
23	MP1	X	-3.21	66
24	MP1	Z	-1.85	66
25	MP1	X	-3.21	66
26	MP1	Z	-1.85	66
27	MP13	X	-8.93	30
28	MP13	Z	-5.15	30
29	MP5	X	-9.2	8
30	MP5	Z	-5.31	8
31	MP5	X	-9.2	64
32	MP5	Z	-5.31	64
33	MP6	X	-17.28	0

Member Point Loads (BLC 19 : Ice Wind Load AZI 60) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
34	MP6	Z	-9.97	0
35	MP6	X	-17.28	72
36	MP6	Z	-9.97	72
37	MP7	X	-17.28	0
38	MP7	Z	-9.97	0
39	MP7	X	-17.28	72
40	MP7	Z	-9.97	72
41	MP8	X	-9.53	8
42	MP8	Z	-5.5	8
43	MP8	X	-9.53	64
44	MP8	Z	-5.5	64
45	MP6	X	-6.71	66
46	MP6	Z	-3.87	66
47	MP7	X	-6.3	66
48	MP7	Z	-3.64	66
49	MP7	X	-5.75	66
50	MP7	Z	-3.32	66
51	MP5	X	-4.83	66
52	MP5	Z	-2.79	66
53	MP5	X	-4.83	66
54	MP5	Z	-2.79	66
55	MP14	X	-8.93	30
56	MP14	Z	-5.15	30
57	MP9	X	-7.67	8
58	MP9	Z	-4.43	8
59	MP9	X	-7.67	64
60	MP9	Z	-4.43	64
61	MP10	X	-17.62	0
62	MP10	Z	-10.17	0
63	MP10	X	-17.62	72
64	MP10	Z	-10.17	72
65	MP11	X	-17.62	0
66	MP11	Z	-10.17	0
67	MP11	X	-17.62	72
68	MP11	Z	-10.17	72
69	MP12	X	-8.54	8
70	MP12	Z	-4.93	8
71	MP12	X	-8.54	64
72	MP12	Z	-4.93	64
73	MP10	X	-6.07	66
74	MP10	Z	-3.5	66
75	MP11	X	-5.37	66
76	MP11	Z	-3.1	66
77	MP11	X	-5.42	66
78	MP11	Z	-3.13	66
79	MP9	X	-3.21	66
80	MP9	Z	-1.85	66
81	MP9	X	-3.21	66
82	MP9	Z	-1.85	66
83	MP15	X	-8.93	30
84	MP15	Z	-5.15	30

Member Point Loads (BLC 20 : Ice Wind Load AZI 90)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-8.27	8
2	MP1	Z	0	8

Member Point Loads (BLC 20 : Ice Wind Load AZI 90) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
3	MP1	X	-8.27	64
4	MP1	Z	0	64
5	MP2	X	-12.84	0
6	MP2	Z	0	0
7	MP2	X	-12.84	72
8	MP2	Z	0	72
9	MP3	X	-12.84	0
10	MP3	Z	0	0
11	MP3	X	-12.84	72
12	MP3	Z	0	72
13	MP4	X	-9.47	8
14	MP4	Z	0	8
15	MP4	X	-9.47	64
16	MP4	Z	0	64
17	MP2	X	-6.76	66
18	MP2	Z	0	66
19	MP3	X	-5.84	66
20	MP3	Z	0	66
21	MP3	X	-6.13	66
22	MP3	Z	0	66
23	MP1	X	-3.08	66
24	MP1	Z	0	66
25	MP1	X	-3.08	66
26	MP1	Z	0	66
27	MP13	X	-10.31	30
28	MP13	Z	0	30
29	MP5	X	-10.03	8
30	MP5	Z	0	8
31	MP5	X	-10.03	64
32	MP5	Z	0	64
33	MP6	X	-18.17	0
34	MP6	Z	0	0
35	MP6	X	-18.17	72
36	MP6	Z	0	72
37	MP7	X	-18.17	0
38	MP7	Z	0	0
39	MP7	X	-18.17	72
40	MP7	Z	0	72
41	MP8	X	-10.62	8
42	MP8	Z	0	8
43	MP8	X	-10.62	64
44	MP8	Z	0	64
45	MP6	X	-7.5	66
46	MP6	Z	0	66
47	MP7	X	-6.91	66
48	MP7	Z	0	66
49	MP7	X	-6.51	66
50	MP7	Z	0	66
51	MP5	X	-4.95	66
52	MP5	Z	0	66
53	MP5	X	-4.95	66
54	MP5	Z	0	66
55	MP14	X	-10.31	30
56	MP14	Z	0	30
57	MP9	X	-10.03	8
58	MP9	Z	0	8
59	MP9	X	-10.03	64

Member Point Loads (BLC 20 : Ice Wind Load AZI 90) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
60	MP9	Z	0	64
61	MP10	X	-25.33	0
62	MP10	Z	0	0
63	MP10	X	-25.33	72
64	MP10	Z	0	72
65	MP11	X	-25.33	0
66	MP11	Z	0	0
67	MP11	X	-25.33	72
68	MP11	Z	0	72
69	MP12	X	-10.62	8
70	MP12	Z	0	8
71	MP12	X	-10.62	64
72	MP12	Z	0	64
73	MP10	X	-7.5	66
74	MP10	Z	0	66
75	MP11	X	-6.91	66
76	MP11	Z	0	66
77	MP11	X	-6.51	66
78	MP11	Z	0	66
79	MP9	X	-4.95	66
80	MP9	Z	0	66
81	MP9	X	-4.95	66
82	MP9	Z	0	66
83	MP15	X	-10.31	30
84	MP15	Z	0	30

Member Point Loads (BLC 21 : Ice Wind Load AZI 120)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-7.67	8
2	MP1	Z	4.43	8
3	MP1	X	-7.67	64
4	MP1	Z	4.43	64
5	MP2	X	-12.66	0
6	MP2	Z	7.31	0
7	MP2	X	-12.66	72
8	MP2	Z	7.31	72
9	MP3	X	-12.66	0
10	MP3	Z	7.31	0
11	MP3	X	-12.66	72
12	MP3	Z	7.31	72
13	MP4	X	-8.54	8
14	MP4	Z	4.93	8
15	MP4	X	-8.54	64
16	MP4	Z	4.93	64
17	MP2	X	-6.07	66
18	MP2	Z	3.5	66
19	MP3	X	-5.37	66
20	MP3	Z	3.1	66
21	MP3	X	-5.42	66
22	MP3	Z	3.13	66
23	MP1	X	-3.21	66
24	MP1	Z	1.85	66
25	MP1	X	-3.21	66
26	MP1	Z	1.85	66
27	MP13	X	-8.93	30
28	MP13	Z	5.15	30

Member Point Loads (BLC 21 : Ice Wind Load AZI 120) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
29	MP5	X	-7.67	8
30	MP5	Z	4.43	8
31	MP5	X	-7.67	64
32	MP5	Z	4.43	64
33	MP6	X	-12.66	0
34	MP6	Z	7.31	0
35	MP6	X	-12.66	72
36	MP6	Z	7.31	72
37	MP7	X	-12.66	0
38	MP7	Z	7.31	0
39	MP7	X	-12.66	72
40	MP7	Z	7.31	72
41	MP8	X	-8.54	8
42	MP8	Z	4.93	8
43	MP8	X	-8.54	64
44	MP8	Z	4.93	64
45	MP6	X	-6.07	66
46	MP6	Z	3.5	66
47	MP7	X	-5.37	66
48	MP7	Z	3.1	66
49	MP7	X	-5.42	66
50	MP7	Z	3.13	66
51	MP5	X	-3.21	66
52	MP5	Z	1.85	66
53	MP5	X	-3.21	66
54	MP5	Z	1.85	66
55	MP14	X	-8.93	30
56	MP14	Z	5.15	30
57	MP9	X	-9.2	8
58	MP9	Z	5.31	8
59	MP9	X	-9.2	64
60	MP9	Z	5.31	64
61	MP10	X	-24.09	0
62	MP10	Z	13.91	0
63	MP10	X	-24.09	72
64	MP10	Z	13.91	72
65	MP11	X	-24.09	0
66	MP11	Z	13.91	0
67	MP11	X	-24.09	72
68	MP11	Z	13.91	72
69	MP12	X	-9.53	8
70	MP12	Z	5.5	8
71	MP12	X	-9.53	64
72	MP12	Z	5.5	64
73	MP10	X	-6.71	66
74	MP10	Z	3.87	66
75	MP11	X	-6.3	66
76	MP11	Z	3.64	66
77	MP11	X	-5.75	66
78	MP11	Z	3.32	66
79	MP9	X	-4.83	66
80	MP9	Z	2.79	66
81	MP9	X	-4.83	66
82	MP9	Z	2.79	66
83	MP15	X	-8.93	30
84	MP15	Z	5.15	30

Member Point Loads (BLC 22 : Ice Wind Load AZI 150)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-5.02	8
2	MP1	Z	8.69	8
3	MP1	X	-5.02	64
4	MP1	Z	8.69	64
5	MP2	X	-9.09	0
6	MP2	Z	15.74	0
7	MP2	X	-9.09	72
8	MP2	Z	15.74	72
9	MP3	X	-9.09	0
10	MP3	Z	15.74	0
11	MP3	X	-9.09	72
12	MP3	Z	15.74	72
13	MP4	X	-5.31	8
14	MP4	Z	9.2	8
15	MP4	X	-5.31	64
16	MP4	Z	9.2	64
17	MP2	X	-3.75	66
18	MP2	Z	6.49	66
19	MP3	X	-3.46	66
20	MP3	Z	5.99	66
21	MP3	X	-3.25	66
22	MP3	Z	5.64	66
23	MP1	X	-2.48	66
24	MP1	Z	4.29	66
25	MP1	X	-2.48	66
26	MP1	Z	4.29	66
27	MP13	X	-5.15	30
28	MP13	Z	8.93	30
29	MP5	X	-4.13	8
30	MP5	Z	7.16	8
31	MP5	X	-4.13	64
32	MP5	Z	7.16	64
33	MP6	X	-6.42	0
34	MP6	Z	11.12	0
35	MP6	X	-6.42	72
36	MP6	Z	11.12	72
37	MP7	X	-6.42	0
38	MP7	Z	11.12	0
39	MP7	X	-6.42	72
40	MP7	Z	11.12	72
41	MP8	X	-4.74	8
42	MP8	Z	8.2	8
43	MP8	X	-4.74	64
44	MP8	Z	8.2	64
45	MP6	X	-3.38	66
46	MP6	Z	5.86	66
47	MP7	X	-2.92	66
48	MP7	Z	5.06	66
49	MP7	X	-3.07	66
50	MP7	Z	5.31	66
51	MP5	X	-1.54	66
52	MP5	Z	2.67	66
53	MP5	X	-1.54	66
54	MP5	Z	2.67	66
55	MP14	X	-5.15	30
56	MP14	Z	8.93	30
57	MP9	X	-5.02	8

Member Point Loads (BLC 22 : Ice Wind Load AZI 150) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
58	MP9	Z	8.69	8
59	MP9	X	-5.02	64
60	MP9	Z	8.69	64
61	MP10	X	-12.66	0
62	MP10	Z	21.93	0
63	MP10	X	-12.66	72
64	MP10	Z	21.93	72
65	MP11	X	-12.66	0
66	MP11	Z	21.93	0
67	MP11	X	-12.66	72
68	MP11	Z	21.93	72
69	MP12	X	-5.31	8
70	MP12	Z	9.2	8
71	MP12	X	-5.31	64
72	MP12	Z	9.2	64
73	MP10	X	-3.75	66
74	MP10	Z	6.49	66
75	MP11	X	-3.46	66
76	MP11	Z	5.99	66
77	MP11	X	-3.25	66
78	MP11	Z	5.64	66
79	MP9	X	-2.48	66
80	MP9	Z	4.29	66
81	MP9	X	-2.48	66
82	MP9	Z	4.29	66
83	MP15	X	-5.15	30
84	MP15	Z	8.93	30

Member Point Loads (BLC 23 : Ice Wind Load AZI 180)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	8
2	MP1	Z	10.62	8
3	MP1	X	0	64
4	MP1	Z	10.62	64
5	MP2	X	0	0
6	MP2	Z	19.95	0
7	MP2	X	0	72
8	MP2	Z	19.95	72
9	MP3	X	0	0
10	MP3	Z	19.95	0
11	MP3	X	0	72
12	MP3	Z	19.95	72
13	MP4	X	0	8
14	MP4	Z	11.01	8
15	MP4	X	0	64
16	MP4	Z	11.01	64
17	MP2	X	0	66
18	MP2	Z	7.74	66
19	MP3	X	0	66
20	MP3	Z	7.27	66
21	MP3	X	0	66
22	MP3	Z	6.64	66
23	MP1	X	0	66
24	MP1	Z	5.58	66
25	MP1	X	0	66
26	MP1	Z	5.58	66

Member Point Loads (BLC 23 : Ice Wind Load AZI 180) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
27	MP13	X	0	30
28	MP13	Z	10.31	30
29	MP5	X	0	8
30	MP5	Z	8.85	8
31	MP5	X	0	64
32	MP5	Z	8.85	64
33	MP6	X	0	0
34	MP6	Z	14.61	0
35	MP6	X	0	72
36	MP6	Z	14.61	72
37	MP7	X	0	0
38	MP7	Z	14.61	0
39	MP7	X	0	72
40	MP7	Z	14.61	72
41	MP8	X	0	8
42	MP8	Z	9.86	8
43	MP8	X	0	64
44	MP8	Z	9.86	64
45	MP6	X	0	66
46	MP6	Z	7.01	66
47	MP7	X	0	66
48	MP7	Z	6.2	66
49	MP7	X	0	66
50	MP7	Z	6.26	66
51	MP5	X	0	66
52	MP5	Z	3.71	66
53	MP5	X	0	66
54	MP5	Z	3.71	66
55	MP14	X	0	30
56	MP14	Z	10.31	30
57	MP9	X	0	8
58	MP9	Z	8.85	8
59	MP9	X	0	64
60	MP9	Z	8.85	64
61	MP10	X	0	0
62	MP10	Z	20.35	0
63	MP10	X	0	72
64	MP10	Z	20.35	72
65	MP11	X	0	0
66	MP11	Z	20.35	0
67	MP11	X	0	72
68	MP11	Z	20.35	72
69	MP12	X	0	8
70	MP12	Z	9.86	8
71	MP12	X	0	64
72	MP12	Z	9.86	64
73	MP10	X	0	66
74	MP10	Z	7.01	66
75	MP11	X	0	66
76	MP11	Z	6.2	66
77	MP11	X	0	66
78	MP11	Z	6.26	66
79	MP9	X	0	66
80	MP9	Z	3.71	66
81	MP9	X	0	66
82	MP9	Z	3.71	66
83	MP15	X	0	30

Member Point Loads (BLC 23 : Ice Wind Load AZI 180) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
84	MP15	Z	10.31	30

Member Point Loads (BLC 24 : Ice Wind Load AZI 210)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	5.02	8
2	MP1	Z	8.69	8
3	MP1	X	5.02	64
4	MP1	Z	8.69	64
5	MP2	X	9.09	0
6	MP2	Z	15.74	0
7	MP2	X	9.09	72
8	MP2	Z	15.74	72
9	MP3	X	9.09	0
10	MP3	Z	15.74	0
11	MP3	X	9.09	72
12	MP3	Z	15.74	72
13	MP4	X	5.31	8
14	MP4	Z	9.2	8
15	MP4	X	5.31	64
16	MP4	Z	9.2	64
17	MP2	X	3.75	66
18	MP2	Z	6.49	66
19	MP3	X	3.46	66
20	MP3	Z	5.99	66
21	MP3	X	3.25	66
22	MP3	Z	5.64	66
23	MP1	X	2.48	66
24	MP1	Z	4.29	66
25	MP1	X	2.48	66
26	MP1	Z	4.29	66
27	MP13	X	5.15	30
28	MP13	Z	8.93	30
29	MP5	X	5.02	8
30	MP5	Z	8.69	8
31	MP5	X	5.02	64
32	MP5	Z	8.69	64
33	MP6	X	9.09	0
34	MP6	Z	15.74	0
35	MP6	X	9.09	72
36	MP6	Z	15.74	72
37	MP7	X	9.09	0
38	MP7	Z	15.74	0
39	MP7	X	9.09	72
40	MP7	Z	15.74	72
41	MP8	X	5.31	8
42	MP8	Z	9.2	8
43	MP8	X	5.31	64
44	MP8	Z	9.2	64
45	MP6	X	3.75	66
46	MP6	Z	6.49	66
47	MP7	X	3.46	66
48	MP7	Z	5.99	66
49	MP7	X	3.25	66
50	MP7	Z	5.64	66
51	MP5	X	2.48	66
52	MP5	Z	4.29	66

Member Point Loads (BLC 24 : Ice Wind Load AZI 210) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
53	MP5	X	2.48	66
54	MP5	Z	4.29	66
55	MP14	X	5.15	30
56	MP14	Z	8.93	30
57	MP9	X	4.13	8
58	MP9	Z	7.16	8
59	MP9	X	4.13	64
60	MP9	Z	7.16	64
61	MP10	X	8.93	0
62	MP10	Z	15.47	0
63	MP10	X	8.93	72
64	MP10	Z	15.47	72
65	MP11	X	8.93	0
66	MP11	Z	15.47	0
67	MP11	X	8.93	72
68	MP11	Z	15.47	72
69	MP12	X	4.74	8
70	MP12	Z	8.2	8
71	MP12	X	4.74	64
72	MP12	Z	8.2	64
73	MP10	X	3.38	66
74	MP10	Z	5.86	66
75	MP11	X	2.92	66
76	MP11	Z	5.06	66
77	MP11	X	3.07	66
78	MP11	Z	5.31	66
79	MP9	X	1.54	66
80	MP9	Z	2.67	66
81	MP9	X	1.54	66
82	MP9	Z	2.67	66
83	MP15	X	5.15	30
84	MP15	Z	8.93	30

Member Point Loads (BLC 25 : Ice Wind Load AZI 240)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	7.67	8
2	MP1	Z	4.43	8
3	MP1	X	7.67	64
4	MP1	Z	4.43	64
5	MP2	X	12.66	0
6	MP2	Z	7.31	0
7	MP2	X	12.66	72
8	MP2	Z	7.31	72
9	MP3	X	12.66	0
10	MP3	Z	7.31	0
11	MP3	X	12.66	72
12	MP3	Z	7.31	72
13	MP4	X	8.54	8
14	MP4	Z	4.93	8
15	MP4	X	8.54	64
16	MP4	Z	4.93	64
17	MP2	X	6.07	66
18	MP2	Z	3.5	66
19	MP3	X	5.37	66
20	MP3	Z	3.1	66
21	MP3	X	5.42	66

Member Point Loads (BLC 25 : Ice Wind Load AZI 240) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
22	MP3	Z	3.13	66
23	MP1	X	3.21	66
24	MP1	Z	1.85	66
25	MP1	X	3.21	66
26	MP1	Z	1.85	66
27	MP13	X	8.93	30
28	MP13	Z	5.15	30
29	MP5	X	9.2	8
30	MP5	Z	5.31	8
31	MP5	X	9.2	64
32	MP5	Z	5.31	64
33	MP6	X	17.28	0
34	MP6	Z	9.97	0
35	MP6	X	17.28	72
36	MP6	Z	9.97	72
37	MP7	X	17.28	0
38	MP7	Z	9.97	0
39	MP7	X	17.28	72
40	MP7	Z	9.97	72
41	MP8	X	9.53	8
42	MP8	Z	5.5	8
43	MP8	X	9.53	64
44	MP8	Z	5.5	64
45	MP6	X	6.71	66
46	MP6	Z	3.87	66
47	MP7	X	6.3	66
48	MP7	Z	3.64	66
49	MP7	X	5.75	66
50	MP7	Z	3.32	66
51	MP5	X	4.83	66
52	MP5	Z	2.79	66
53	MP5	X	4.83	66
54	MP5	Z	2.79	66
55	MP14	X	8.93	30
56	MP14	Z	5.15	30
57	MP9	X	7.67	8
58	MP9	Z	4.43	8
59	MP9	X	7.67	64
60	MP9	Z	4.43	64
61	MP10	X	17.62	0
62	MP10	Z	10.17	0
63	MP10	X	17.62	72
64	MP10	Z	10.17	72
65	MP11	X	17.62	0
66	MP11	Z	10.17	0
67	MP11	X	17.62	72
68	MP11	Z	10.17	72
69	MP12	X	8.54	8
70	MP12	Z	4.93	8
71	MP12	X	8.54	64
72	MP12	Z	4.93	64
73	MP10	X	6.07	66
74	MP10	Z	3.5	66
75	MP11	X	5.37	66
76	MP11	Z	3.1	66
77	MP11	X	5.42	66
78	MP11	Z	3.13	66

Member Point Loads (BLC 25 : Ice Wind Load AZI 240) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
79	MP9	X	3.21	66
80	MP9	Z	1.85	66
81	MP9	X	3.21	66
82	MP9	Z	1.85	66
83	MP15	X	8.93	30
84	MP15	Z	5.15	30

Member Point Loads (BLC 26 : Ice Wind Load AZI 270)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	8.27	8
2	MP1	Z	0	8
3	MP1	X	8.27	64
4	MP1	Z	0	64
5	MP2	X	12.84	0
6	MP2	Z	0	0
7	MP2	X	12.84	72
8	MP2	Z	0	72
9	MP3	X	12.84	0
10	MP3	Z	0	0
11	MP3	X	12.84	72
12	MP3	Z	0	72
13	MP4	X	9.47	8
14	MP4	Z	0	8
15	MP4	X	9.47	64
16	MP4	Z	0	64
17	MP2	X	6.76	66
18	MP2	Z	0	66
19	MP3	X	5.84	66
20	MP3	Z	0	66
21	MP3	X	6.13	66
22	MP3	Z	0	66
23	MP1	X	3.08	66
24	MP1	Z	0	66
25	MP1	X	3.08	66
26	MP1	Z	0	66
27	MP13	X	10.31	30
28	MP13	Z	0	30
29	MP5	X	10.03	8
30	MP5	Z	0	8
31	MP5	X	10.03	64
32	MP5	Z	0	64
33	MP6	X	18.17	0
34	MP6	Z	0	0
35	MP6	X	18.17	72
36	MP6	Z	0	72
37	MP7	X	18.17	0
38	MP7	Z	0	0
39	MP7	X	18.17	72
40	MP7	Z	0	72
41	MP8	X	10.62	8
42	MP8	Z	0	8
43	MP8	X	10.62	64
44	MP8	Z	0	64
45	MP6	X	7.5	66
46	MP6	Z	0	66
47	MP7	X	6.91	66

Member Point Loads (BLC 26 : Ice Wind Load AZI 270) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
48	MP7	Z	0	66
49	MP7	X	6.51	66
50	MP7	Z	0	66
51	MP5	X	4.95	66
52	MP5	Z	0	66
53	MP5	X	4.95	66
54	MP5	Z	0	66
55	MP14	X	10.31	30
56	MP14	Z	0	30
57	MP9	X	10.03	8
58	MP9	Z	0	8
59	MP9	X	10.03	64
60	MP9	Z	0	64
61	MP10	X	25.33	0
62	MP10	Z	0	0
63	MP10	X	25.33	72
64	MP10	Z	0	72
65	MP11	X	25.33	0
66	MP11	Z	0	0
67	MP11	X	25.33	72
68	MP11	Z	0	72
69	MP12	X	10.62	8
70	MP12	Z	0	8
71	MP12	X	10.62	64
72	MP12	Z	0	64
73	MP10	X	7.5	66
74	MP10	Z	0	66
75	MP11	X	6.91	66
76	MP11	Z	0	66
77	MP11	X	6.51	66
78	MP11	Z	0	66
79	MP9	X	4.95	66
80	MP9	Z	0	66
81	MP9	X	4.95	66
82	MP9	Z	0	66
83	MP15	X	10.31	30
84	MP15	Z	0	30

Member Point Loads (BLC 27 : Ice Wind Load AZI 300)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	7.67	8
2	MP1	Z	-4.43	8
3	MP1	X	7.67	64
4	MP1	Z	-4.43	64
5	MP2	X	12.66	0
6	MP2	Z	-7.31	0
7	MP2	X	12.66	72
8	MP2	Z	-7.31	72
9	MP3	X	12.66	0
10	MP3	Z	-7.31	0
11	MP3	X	12.66	72
12	MP3	Z	-7.31	72
13	MP4	X	8.54	8
14	MP4	Z	-4.93	8
15	MP4	X	8.54	64
16	MP4	Z	-4.93	64

Member Point Loads (BLC 27 : Ice Wind Load AZI 300) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
17	MP2	X	6.07	66
18	MP2	Z	-3.5	66
19	MP3	X	5.37	66
20	MP3	Z	-3.1	66
21	MP3	X	5.42	66
22	MP3	Z	-3.13	66
23	MP1	X	3.21	66
24	MP1	Z	-1.85	66
25	MP1	X	3.21	66
26	MP1	Z	-1.85	66
27	MP13	X	8.93	30
28	MP13	Z	-5.15	30
29	MP5	X	7.67	8
30	MP5	Z	-4.43	8
31	MP5	X	7.67	64
32	MP5	Z	-4.43	64
33	MP6	X	12.66	0
34	MP6	Z	-7.31	0
35	MP6	X	12.66	72
36	MP6	Z	-7.31	72
37	MP7	X	12.66	0
38	MP7	Z	-7.31	0
39	MP7	X	12.66	72
40	MP7	Z	-7.31	72
41	MP8	X	8.54	8
42	MP8	Z	-4.93	8
43	MP8	X	8.54	64
44	MP8	Z	-4.93	64
45	MP6	X	6.07	66
46	MP6	Z	-3.5	66
47	MP7	X	5.37	66
48	MP7	Z	-3.1	66
49	MP7	X	5.42	66
50	MP7	Z	-3.13	66
51	MP5	X	3.21	66
52	MP5	Z	-1.85	66
53	MP5	X	3.21	66
54	MP5	Z	-1.85	66
55	MP14	X	8.93	30
56	MP14	Z	-5.15	30
57	MP9	X	9.2	8
58	MP9	Z	-5.31	8
59	MP9	X	9.2	64
60	MP9	Z	-5.31	64
61	MP10	X	24.09	0
62	MP10	Z	-13.91	0
63	MP10	X	24.09	72
64	MP10	Z	-13.91	72
65	MP11	X	24.09	0
66	MP11	Z	-13.91	0
67	MP11	X	24.09	72
68	MP11	Z	-13.91	72
69	MP12	X	9.53	8
70	MP12	Z	-5.5	8
71	MP12	X	9.53	64
72	MP12	Z	-5.5	64
73	MP10	X	6.71	66

Member Point Loads (BLC 27 : Ice Wind Load AZI 300) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
74	MP10	Z	-3.87	66
75	MP11	X	6.3	66
76	MP11	Z	-3.64	66
77	MP11	X	5.75	66
78	MP11	Z	-3.32	66
79	MP9	X	4.83	66
80	MP9	Z	-2.79	66
81	MP9	X	4.83	66
82	MP9	Z	-2.79	66
83	MP15	X	8.93	30
84	MP15	Z	-5.15	30

Member Point Loads (BLC 28 : Ice Wind Load AZI 330)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	5.02	8
2	MP1	Z	-8.69	8
3	MP1	X	5.02	64
4	MP1	Z	-8.69	64
5	MP2	X	9.09	0
6	MP2	Z	-15.74	0
7	MP2	X	9.09	72
8	MP2	Z	-15.74	72
9	MP3	X	9.09	0
10	MP3	Z	-15.74	0
11	MP3	X	9.09	72
12	MP3	Z	-15.74	72
13	MP4	X	5.31	8
14	MP4	Z	-9.2	8
15	MP4	X	5.31	64
16	MP4	Z	-9.2	64
17	MP2	X	3.75	66
18	MP2	Z	-6.49	66
19	MP3	X	3.46	66
20	MP3	Z	-5.99	66
21	MP3	X	3.25	66
22	MP3	Z	-5.64	66
23	MP1	X	2.48	66
24	MP1	Z	-4.29	66
25	MP1	X	2.48	66
26	MP1	Z	-4.29	66
27	MP13	X	5.15	30
28	MP13	Z	-8.93	30
29	MP5	X	4.13	8
30	MP5	Z	-7.16	8
31	MP5	X	4.13	64
32	MP5	Z	-7.16	64
33	MP6	X	6.42	0
34	MP6	Z	-11.12	0
35	MP6	X	6.42	72
36	MP6	Z	-11.12	72
37	MP7	X	6.42	0
38	MP7	Z	-11.12	0
39	MP7	X	6.42	72
40	MP7	Z	-11.12	72
41	MP8	X	4.74	8
42	MP8	Z	-8.2	8

Member Point Loads (BLC 28 : Ice Wind Load AZI 330) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
43	MP8	X	4.74	64
44	MP8	Z	-8.2	64
45	MP6	X	3.38	66
46	MP6	Z	-5.86	66
47	MP7	X	2.92	66
48	MP7	Z	-5.06	66
49	MP7	X	3.07	66
50	MP7	Z	-5.31	66
51	MP5	X	1.54	66
52	MP5	Z	-2.67	66
53	MP5	X	1.54	66
54	MP5	Z	-2.67	66
55	MP14	X	5.15	30
56	MP14	Z	-8.93	30
57	MP9	X	5.02	8
58	MP9	Z	-8.69	8
59	MP9	X	5.02	64
60	MP9	Z	-8.69	64
61	MP10	X	12.66	0
62	MP10	Z	-21.93	0
63	MP10	X	12.66	72
64	MP10	Z	-21.93	72
65	MP11	X	12.66	0
66	MP11	Z	-21.93	0
67	MP11	X	12.66	72
68	MP11	Z	-21.93	72
69	MP12	X	5.31	8
70	MP12	Z	-9.2	8
71	MP12	X	5.31	64
72	MP12	Z	-9.2	64
73	MP10	X	3.75	66
74	MP10	Z	-6.49	66
75	MP11	X	3.46	66
76	MP11	Z	-5.99	66
77	MP11	X	3.25	66
78	MP11	Z	-5.64	66
79	MP9	X	2.48	66
80	MP9	Z	-4.29	66
81	MP9	X	2.48	66
82	MP9	Z	-4.29	66
83	MP15	X	5.15	30
84	MP15	Z	-8.93	30

Member Point Loads (BLC 31 : Seismic Load Z)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-1.783	8
2	MP1	Z	-1.783	64
3	MP2	Z	-4.044	0
4	MP2	Z	-4.044	72
5	MP3	Z	-4.044	0
6	MP3	Z	-4.044	72
7	MP4	Z	-1.706	8
8	MP4	Z	-1.706	64
9	MP2	Z	-7.233	66
10	MP3	Z	-6.102	66
11	MP3	Z	-7.334	66

Member Point Loads (BLC 31 : Seismic Load Z) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
12	MP1	Z	-1.436	66
13	MP1	Z	-1.436	66
14	MP13	Z	-3.341	30
15	MP5	Z	-1.783	8
16	MP5	Z	-1.783	64
17	MP6	Z	-4.044	0
18	MP6	Z	-4.044	72
19	MP7	Z	-4.044	0
20	MP7	Z	-4.044	72
21	MP8	Z	-1.706	8
22	MP8	Z	-1.706	64
23	MP6	Z	-7.233	66
24	MP7	Z	-6.102	66
25	MP7	Z	-7.334	66
26	MP5	Z	-1.436	66
27	MP5	Z	-1.436	66
28	MP14	Z	-3.341	30
29	MP9	Z	-1.783	8
30	MP9	Z	-1.783	64
31	MP10	Z	-4.874	0
32	MP10	Z	-4.874	72
33	MP11	Z	-4.874	0
34	MP11	Z	-4.874	72
35	MP12	Z	-1.706	8
36	MP12	Z	-1.706	64
37	MP10	Z	-7.233	66
38	MP11	Z	-6.102	66
39	MP11	Z	-7.334	66
40	MP9	Z	-1.436	66
41	MP9	Z	-1.436	66
42	MP15	Z	-3.341	30

Member Point Loads (BLC 32 : Seismic Load X)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-1.783	8
2	MP1	X	-1.783	64
3	MP2	X	-4.044	0
4	MP2	X	-4.044	72
5	MP3	X	-4.044	0
6	MP3	X	-4.044	72
7	MP4	X	-1.706	8
8	MP4	X	-1.706	64
9	MP2	X	-7.233	66
10	MP3	X	-6.102	66
11	MP3	X	-7.334	66
12	MP1	X	-1.436	66
13	MP1	X	-1.436	66
14	MP13	X	-3.341	30
15	MP5	X	-1.783	8
16	MP5	X	-1.783	64
17	MP6	X	-4.044	0
18	MP6	X	-4.044	72
19	MP7	X	-4.044	0
20	MP7	X	-4.044	72
21	MP8	X	-1.706	8
22	MP8	X	-1.706	64

Member Point Loads (BLC 32 : Seismic Load X) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
23	MP6	X	-7.233	66
24	MP7	X	-6.102	66
25	MP7	X	-7.334	66
26	MP5	X	-1.436	66
27	MP5	X	-1.436	66
28	MP14	X	-3.341	30
29	MP9	X	-1.783	8
30	MP9	X	-1.783	64
31	MP10	X	-4.874	0
32	MP10	X	-4.874	72
33	MP11	X	-4.874	0
34	MP11	X	-4.874	72
35	MP12	X	-1.706	8
36	MP12	X	-1.706	64
37	MP10	X	-7.233	66
38	MP11	X	-6.102	66
39	MP11	X	-7.334	66
40	MP9	X	-1.436	66
41	MP9	X	-1.436	66
42	MP15	X	-3.341	30

Member Distributed Loads (BLC 14 : Distr. Wind Load Z)

	Member Label	Direction	Start Magnitude[l...	End Magnitude[lb/ft,F,psf]	Start Location[in,...	End Location[in,...
1	M1	SZ	-48.741	-48.741	0	%100
2	M2	SZ	-48.741	-48.741	0	%100
3	M3	SZ	-81.235	-81.235	0	%100
4	M4	SZ	-48.741	-48.741	0	%100
5	M5	SZ	-48.741	-48.741	0	%100
6	M6	SZ	-48.741	-48.741	0	%100
7	M7	SZ	-48.741	-48.741	0	%100
8	M8	SZ	-81.235	-81.235	0	%100
9	M9	SZ	0	0	0	%100
10	M10	SZ	0	0	0	%100
11	M11	SZ	0	0	0	%100
12	M12	SZ	0	0	0	%100
13	M13	SZ	0	0	0	%100
14	M14	SZ	0	0	0	%100
15	M15	SZ	0	0	0	%100
16	M16	SZ	0	0	0	%100
17	M17	SZ	0	0	0	%100
18	M18	SZ	0	0	0	%100
19	M19	SZ	0	0	0	%100
20	M20	SZ	0	0	0	%100
21	M21	SZ	-81.235	-81.235	0	%100
22	M22	SZ	-81.235	-81.235	0	%100
23	M23	SZ	-48.741	-48.741	0	%100
24	M24	SZ	-81.235	-81.235	0	%100
25	M25	SZ	-81.235	-81.235	0	%100
26	M26	SZ	0	0	0	%100
27	M27	SZ	0	0	0	%100
28	M28	SZ	0	0	0	%100
29	M29	SZ	0	0	0	%100
30	M30	SZ	0	0	0	%100
31	M31	SZ	0	0	0	%100
32	M32	SZ	0	0	0	%100

Member Distributed Loads (BLC 14 : Distr. Wind Load Z) (Continued)

	Member Label	Direction	Start Magnitude[l...	End Magnitude[lb/ft,F,psf]	Start Location[in,...	End Location[in,...
33	M33	SZ	0	0	0	%100
34	M34	SZ	-81.235	-81.235	0	%100
35	M35	SZ	-81.235	-81.235	0	%100
36	M36	SZ	-48.741	-48.741	0	%100
37	M37	SZ	-81.235	-81.235	0	%100
38	M38	SZ	-81.235	-81.235	0	%100
39	M39	SZ	0	0	0	%100
40	M40	SZ	0	0	0	%100
41	M41	SZ	0	0	0	%100
42	M42	SZ	0	0	0	%100
43	M43	SZ	0	0	0	%100
44	M44	SZ	0	0	0	%100
45	M45	SZ	0	0	0	%100
46	M46	SZ	0	0	0	%100
47	M47	SZ	0	0	0	%100
48	M48	SZ	0	0	0	%100
49	M49	SZ	-81.235	-81.235	0	%100
50	M50	SZ	-81.235	-81.235	0	%100
51	M51	SZ	-81.235	-81.235	0	%100
52	M52	SZ	-81.235	-81.235	0	%100
53	M53	SZ	-81.235	-81.235	0	%100
54	M54	SZ	-48.741	-48.741	0	%100
55	M55	SZ	-81.235	-81.235	0	%100
56	M56	SZ	-81.235	-81.235	0	%100
57	M57	SZ	-81.235	-81.235	0	%100
58	M58	SZ	-81.235	-81.235	0	%100
59	M59	SZ	-81.235	-81.235	0	%100
60	M60	SZ	-81.235	-81.235	0	%100
61	MP1	SZ	-48.741	-48.741	0	%100
62	MP2	SZ	-48.741	-48.741	0	%100
63	MP3	SZ	-48.741	-48.741	0	%100
64	MP4	SZ	-48.741	-48.741	0	%100
65	MP5	SZ	-48.741	-48.741	0	%100
66	MP6	SZ	-48.741	-48.741	0	%100
67	MP7	SZ	-48.741	-48.741	0	%100
68	MP8	SZ	-48.741	-48.741	0	%100
69	MP9	SZ	-48.741	-48.741	0	%100
70	MP10	SZ	-48.741	-48.741	0	%100
71	MP11	SZ	-48.741	-48.741	0	%100
72	MP12	SZ	-48.741	-48.741	0	%100
73	MP13	SZ	-48.741	-48.741	0	%100
74	MP14	SZ	-48.741	-48.741	0	%100
75	MP15	SZ	-48.741	-48.741	0	%100

Member Distributed Loads (BLC 15 : Distr. Wind Load X)

	Member Label	Direction	Start Magnitude[l...	End Magnitude[lb/ft,F,psf]	Start Location[in,...	End Location[in,...
1	M1	SX	-48.741	-48.741	0	%100
2	M2	SX	-48.741	-48.741	0	%100
3	M3	SX	-81.235	-81.235	0	%100
4	M4	SX	-48.741	-48.741	0	%100
5	M5	SX	-48.741	-48.741	0	%100
6	M6	SX	-48.741	-48.741	0	%100
7	M7	SX	-48.741	-48.741	0	%100
8	M8	SX	-81.235	-81.235	0	%100
9	M9	SX	0	0	0	%100
10	M10	SX	0	0	0	%100

Member Distributed Loads (BLC 15 : Distr. Wind Load X) (Continued)

	Member Label	Direction	Start Magnitude[l...	End Magnitude[lb/ft,F,psf]	Start Location[in,...	End Location[in,...
11	M11	SX	0	0	0	%100
12	M12	SX	0	0	0	%100
13	M13	SX	0	0	0	%100
14	M14	SX	0	0	0	%100
15	M15	SX	0	0	0	%100
16	M16	SX	0	0	0	%100
17	M17	SX	0	0	0	%100
18	M18	SX	0	0	0	%100
19	M19	SX	0	0	0	%100
20	M20	SX	0	0	0	%100
21	M21	SX	-81.235	-81.235	0	%100
22	M22	SX	-81.235	-81.235	0	%100
23	M23	SX	-48.741	-48.741	0	%100
24	M24	SX	-81.235	-81.235	0	%100
25	M25	SX	-81.235	-81.235	0	%100
26	M26	SX	0	0	0	%100
27	M27	SX	0	0	0	%100
28	M28	SX	0	0	0	%100
29	M29	SX	0	0	0	%100
30	M30	SX	0	0	0	%100
31	M31	SX	0	0	0	%100
32	M32	SX	0	0	0	%100
33	M33	SX	0	0	0	%100
34	M34	SX	-81.235	-81.235	0	%100
35	M35	SX	-81.235	-81.235	0	%100
36	M36	SX	-48.741	-48.741	0	%100
37	M37	SX	-81.235	-81.235	0	%100
38	M38	SX	-81.235	-81.235	0	%100
39	M39	SX	0	0	0	%100
40	M40	SX	0	0	0	%100
41	M41	SX	0	0	0	%100
42	M42	SX	0	0	0	%100
43	M43	SX	0	0	0	%100
44	M44	SX	0	0	0	%100
45	M45	SX	0	0	0	%100
46	M46	SX	0	0	0	%100
47	M47	SX	0	0	0	%100
48	M48	SX	0	0	0	%100
49	M49	SX	-81.235	-81.235	0	%100
50	M50	SX	-81.235	-81.235	0	%100
51	M51	SX	-81.235	-81.235	0	%100
52	M52	SX	-81.235	-81.235	0	%100
53	M53	SX	-81.235	-81.235	0	%100
54	M54	SX	-48.741	-48.741	0	%100
55	M55	SX	-81.235	-81.235	0	%100
56	M56	SX	-81.235	-81.235	0	%100
57	M57	SX	-81.235	-81.235	0	%100
58	M58	SX	-81.235	-81.235	0	%100
59	M59	SX	-81.235	-81.235	0	%100
60	M60	SX	-81.235	-81.235	0	%100
61	MP1	SX	-48.741	-48.741	0	%100
62	MP2	SX	-48.741	-48.741	0	%100
63	MP3	SX	-48.741	-48.741	0	%100
64	MP4	SX	-48.741	-48.741	0	%100
65	MP5	SX	-48.741	-48.741	0	%100
66	MP6	SX	-48.741	-48.741	0	%100
67	MP7	SX	-48.741	-48.741	0	%100

Member Distributed Loads (BLC 15 : Distr. Wind Load X) (Continued)

	Member Label	Direction	Start Magnitude[l...	End Magnitude[lb/ft,F,psf]	Start Location[in,...	End Location[in,...
68	MP8	SX	-48.741	-48.741	0	%100
69	MP9	SX	-48.741	-48.741	0	%100
70	MP10	SX	-48.741	-48.741	0	%100
71	MP11	SX	-48.741	-48.741	0	%100
72	MP12	SX	-48.741	-48.741	0	%100
73	MP13	SX	-48.741	-48.741	0	%100
74	MP14	SX	-48.741	-48.741	0	%100
75	MP15	SX	-48.741	-48.741	0	%100

Member Distributed Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Start Magnitude[l...	End Magnitude[lb/ft,F,psf]	Start Location[in,...	End Location[in,...
1	M1	Y	-10.207	-10.207	0	%100
2	M2	Y	-7.199	-7.199	0	%100
3	M3	Y	-13.273	-13.273	0	%100
4	M4	Y	-10.207	-10.207	0	%100
5	M5	Y	-10.207	-10.207	0	%100
6	M6	Y	-7.199	-7.199	0	%100
7	M7	Y	-7.199	-7.199	0	%100
8	M8	Y	-13.273	-13.273	0	%100
9	M9	Y	-2.804	-2.804	0	%100
10	M10	Y	-2.804	-2.804	0	%100
11	M11	Y	-2.804	-2.804	0	%100
12	M12	Y	-2.804	-2.804	0	%100
13	M13	Y	-2.804	-2.804	0	%100
14	M14	Y	-2.804	-2.804	0	%100
15	M15	Y	-2.804	-2.804	0	%100
16	M16	Y	-2.804	-2.804	0	%100
17	M17	Y	-2.804	-2.804	0	%100
18	M18	Y	-2.804	-2.804	0	%100
19	M19	Y	-2.804	-2.804	0	%100
20	M20	Y	-2.804	-2.804	0	%100
21	M21	Y	-13.273	-13.273	0	%100
22	M22	Y	-13.273	-13.273	0	%100
23	M23	Y	-10.207	-10.207	0	%100
24	M24	Y	-13.273	-13.273	0	%100
25	M25	Y	-13.273	-13.273	0	%100
26	M26	Y	-2.804	-2.804	0	%100
27	M27	Y	-2.804	-2.804	0	%100
28	M28	Y	-2.804	-2.804	0	%100
29	M29	Y	-2.804	-2.804	0	%100
30	M30	Y	-2.804	-2.804	0	%100
31	M31	Y	-2.804	-2.804	0	%100
32	M32	Y	-2.804	-2.804	0	%100
33	M33	Y	-2.804	-2.804	0	%100
34	M34	Y	-13.273	-13.273	0	%100
35	M35	Y	-13.273	-13.273	0	%100
36	M36	Y	-10.207	-10.207	0	%100
37	M37	Y	-13.273	-13.273	0	%100
38	M38	Y	-13.273	-13.273	0	%100
39	M39	Y	-2.804	-2.804	0	%100
40	M40	Y	-2.804	-2.804	0	%100
41	M41	Y	-2.804	-2.804	0	%100
42	M42	Y	-2.804	-2.804	0	%100
43	M43	Y	-2.804	-2.804	0	%100
44	M44	Y	-2.804	-2.804	0	%100
45	M45	Y	-2.804	-2.804	0	%100

Member Distributed Loads (BLC 16 : Ice Weight) (Continued)

	Member Label	Direction	Start Magnitude[l...	End Magnitude[lb/ft,F,psf]	Start Location[in,...	End Location[in,...
46	M46	Y	-2.804	-2.804	0	%100
47	M47	Y	-2.804	-2.804	0	%100
48	M48	Y	-2.804	-2.804	0	%100
49	M49	Y	-13.273	-13.273	0	%100
50	M50	Y	-13.273	-13.273	0	%100
51	M51	Y	-13.273	-13.273	0	%100
52	M52	Y	-13.273	-13.273	0	%100
53	M53	Y	-13.273	-13.273	0	%100
54	M54	Y	-10.207	-10.207	0	%100
55	M55	Y	-6.73	-6.73	0	%100
56	M56	Y	-6.73	-6.73	0	%100
57	M57	Y	-6.73	-6.73	0	%100
58	M58	Y	-7.057	-7.057	0	%100
59	M59	Y	-7.057	-7.057	0	%100
60	M60	Y	-7.057	-7.057	0	%100
61	MP1	Y	-7.199	-7.199	0	%100
62	MP2	Y	-8.125	-8.125	0	%100
63	MP3	Y	-7.199	-7.199	0	%100
64	MP4	Y	-7.199	-7.199	0	%100
65	MP5	Y	-7.199	-7.199	0	%100
66	MP6	Y	-8.125	-8.125	0	%100
67	MP7	Y	-7.199	-7.199	0	%100
68	MP8	Y	-7.199	-7.199	0	%100
69	MP9	Y	-7.199	-7.199	0	%100
70	MP10	Y	-8.125	-8.125	0	%100
71	MP11	Y	-8.125	-8.125	0	%100
72	MP12	Y	-7.199	-7.199	0	%100
73	MP13	Y	-10.207	-10.207	0	%100
74	MP14	Y	-10.207	-10.207	0	%100
75	MP15	Y	-10.207	-10.207	0	%100

Member Distributed Loads (BLC 29 : Distr. Ice Wind Load Z)

	Member Label	Direction	Start Magnitude[l...	End Magnitude[lb/ft,F,psf]	Start Location[in,...	End Location[in,...
1	M1	SZ	-14.871	-14.871	0	%100
2	M2	SZ	-19.257	-19.257	0	%100
3	M3	SZ	-12.994	-12.994	0	%100
4	M4	SZ	-14.871	-14.871	0	%100
5	M5	SZ	-14.871	-14.871	0	%100
6	M6	SZ	-19.257	-19.257	0	%100
7	M7	SZ	-19.257	-19.257	0	%100
8	M8	SZ	-12.994	-12.994	0	%100
9	M9	SZ	0	0	0	%100
10	M10	SZ	0	0	0	%100
11	M11	SZ	0	0	0	%100
12	M12	SZ	0	0	0	%100
13	M13	SZ	0	0	0	%100
14	M14	SZ	0	0	0	%100
15	M15	SZ	0	0	0	%100
16	M16	SZ	0	0	0	%100
17	M17	SZ	0	0	0	%100
18	M18	SZ	0	0	0	%100
19	M19	SZ	0	0	0	%100
20	M20	SZ	0	0	0	%100
21	M21	SZ	-12.994	-12.994	0	%100
22	M22	SZ	-12.994	-12.994	0	%100
23	M23	SZ	-14.871	-14.871	0	%100

Member Distributed Loads (BLC 29 : Distr. Ice Wind Load Z) (Continued)

	Member Label	Direction	Start Magnitude[l...	End Magnitude[lb/ft,F,psf]	Start Location[in,...	End Location[in,...
24	M24	SZ	-12.994	-12.994	0	%100
25	M25	SZ	-12.994	-12.994	0	%100
26	M26	SZ	0	0	0	%100
27	M27	SZ	0	0	0	%100
28	M28	SZ	0	0	0	%100
29	M29	SZ	0	0	0	%100
30	M30	SZ	0	0	0	%100
31	M31	SZ	0	0	0	%100
32	M32	SZ	0	0	0	%100
33	M33	SZ	0	0	0	%100
34	M34	SZ	-12.994	-12.994	0	%100
35	M35	SZ	-12.994	-12.994	0	%100
36	M36	SZ	-14.871	-14.871	0	%100
37	M37	SZ	-12.994	-12.994	0	%100
38	M38	SZ	-12.994	-12.994	0	%100
39	M39	SZ	0	0	0	%100
40	M40	SZ	0	0	0	%100
41	M41	SZ	0	0	0	%100
42	M42	SZ	0	0	0	%100
43	M43	SZ	0	0	0	%100
44	M44	SZ	0	0	0	%100
45	M45	SZ	0	0	0	%100
46	M46	SZ	0	0	0	%100
47	M47	SZ	0	0	0	%100
48	M48	SZ	0	0	0	%100
49	M49	SZ	-12.994	-12.994	0	%100
50	M50	SZ	-12.994	-12.994	0	%100
51	M51	SZ	-12.994	-12.994	0	%100
52	M52	SZ	-12.994	-12.994	0	%100
53	M53	SZ	-12.994	-12.994	0	%100
54	M54	SZ	-14.871	-14.871	0	%100
55	M55	SZ	-20.548	-20.548	0	%100
56	M56	SZ	-20.548	-20.548	0	%100
57	M57	SZ	-20.548	-20.548	0	%100
58	M58	SZ	-19.618	-19.618	0	%100
59	M59	SZ	-19.618	-19.618	0	%100
60	M60	SZ	-19.618	-19.618	0	%100
61	MP1	SZ	-19.257	-19.257	0	%100
62	MP2	SZ	-17.379	-17.379	0	%100
63	MP3	SZ	-19.257	-19.257	0	%100
64	MP4	SZ	-19.257	-19.257	0	%100
65	MP5	SZ	-19.257	-19.257	0	%100
66	MP6	SZ	-17.379	-17.379	0	%100
67	MP7	SZ	-19.257	-19.257	0	%100
68	MP8	SZ	-19.257	-19.257	0	%100
69	MP9	SZ	-19.257	-19.257	0	%100
70	MP10	SZ	-17.379	-17.379	0	%100
71	MP11	SZ	-17.379	-17.379	0	%100
72	MP12	SZ	-19.257	-19.257	0	%100
73	MP13	SZ	-14.871	-14.871	0	%100
74	MP14	SZ	-14.871	-14.871	0	%100
75	MP15	SZ	-14.871	-14.871	0	%100

Member Distributed Loads (BLC 30 : Distr. Ice Wind Load X)

	Member Label	Direction	Start Magnitude[l...	End Magnitude[lb/ft,F,psf]	Start Location[in,...	End Location[in,...
1	M1	SX	-14.871	-14.871	0	%100

Member Distributed Loads (BLC 30 : Distr. Ice Wind Load X) (Continued)

	Member Label	Direction	Start Magnitude[l...	End Magnitude[lb/ft,F,psf]	Start Location[in,...	End Location[in,...
2	M2	SX	-19.257	-19.257	0	%100
3	M3	SX	-12.994	-12.994	0	%100
4	M4	SX	-14.871	-14.871	0	%100
5	M5	SX	-14.871	-14.871	0	%100
6	M6	SX	-19.257	-19.257	0	%100
7	M7	SX	-19.257	-19.257	0	%100
8	M8	SX	-12.994	-12.994	0	%100
9	M9	SX	0	0	0	%100
10	M10	SX	0	0	0	%100
11	M11	SX	0	0	0	%100
12	M12	SX	0	0	0	%100
13	M13	SX	0	0	0	%100
14	M14	SX	0	0	0	%100
15	M15	SX	0	0	0	%100
16	M16	SX	0	0	0	%100
17	M17	SX	0	0	0	%100
18	M18	SX	0	0	0	%100
19	M19	SX	0	0	0	%100
20	M20	SX	0	0	0	%100
21	M21	SX	-12.994	-12.994	0	%100
22	M22	SX	-12.994	-12.994	0	%100
23	M23	SX	-14.871	-14.871	0	%100
24	M24	SX	-12.994	-12.994	0	%100
25	M25	SX	-12.994	-12.994	0	%100
26	M26	SX	0	0	0	%100
27	M27	SX	0	0	0	%100
28	M28	SX	0	0	0	%100
29	M29	SX	0	0	0	%100
30	M30	SX	0	0	0	%100
31	M31	SX	0	0	0	%100
32	M32	SX	0	0	0	%100
33	M33	SX	0	0	0	%100
34	M34	SX	-12.994	-12.994	0	%100
35	M35	SX	-12.994	-12.994	0	%100
36	M36	SX	-14.871	-14.871	0	%100
37	M37	SX	-12.994	-12.994	0	%100
38	M38	SX	-12.994	-12.994	0	%100
39	M39	SX	0	0	0	%100
40	M40	SX	0	0	0	%100
41	M41	SX	0	0	0	%100
42	M42	SX	0	0	0	%100
43	M43	SX	0	0	0	%100
44	M44	SX	0	0	0	%100
45	M45	SX	0	0	0	%100
46	M46	SX	0	0	0	%100
47	M47	SX	0	0	0	%100
48	M48	SX	0	0	0	%100
49	M49	SX	-12.994	-12.994	0	%100
50	M50	SX	-12.994	-12.994	0	%100
51	M51	SX	-12.994	-12.994	0	%100
52	M52	SX	-12.994	-12.994	0	%100
53	M53	SX	-12.994	-12.994	0	%100
54	M54	SX	-14.871	-14.871	0	%100
55	M55	SX	-20.548	-20.548	0	%100
56	M56	SX	-20.548	-20.548	0	%100
57	M57	SX	-20.548	-20.548	0	%100
58	M58	SX	-19.618	-19.618	0	%100

Member Distributed Loads (BLC 30 : Distr. Ice Wind Load X) (Continued)

	Member Label	Direction	Start Magnitude[l...	End Magnitude[lb/ft,F,psf]	Start Location[in,...	End Location[in,...
59	M59	SX	-19.618	-19.618	0	%100
60	M60	SX	-19.618	-19.618	0	%100
61	MP1	SX	-19.257	-19.257	0	%100
62	MP2	SX	-17.379	-17.379	0	%100
63	MP3	SX	-19.257	-19.257	0	%100
64	MP4	SX	-19.257	-19.257	0	%100
65	MP5	SX	-19.257	-19.257	0	%100
66	MP6	SX	-17.379	-17.379	0	%100
67	MP7	SX	-19.257	-19.257	0	%100
68	MP8	SX	-19.257	-19.257	0	%100
69	MP9	SX	-19.257	-19.257	0	%100
70	MP10	SX	-17.379	-17.379	0	%100
71	MP11	SX	-17.379	-17.379	0	%100
72	MP12	SX	-19.257	-19.257	0	%100
73	MP13	SX	-14.871	-14.871	0	%100
74	MP14	SX	-14.871	-14.871	0	%100
75	MP15	SX	-14.871	-14.871	0	%100

Member Distributed Loads (BLC 49 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude[l...	End Magnitude[lb/ft,F,psf]	Start Location[in,...	End Location[in,...
1	M5	Y	-1.912	-8.204	17.45	45.37
2	M5	Y	-8.204	-8.194	45.37	73.29
3	M5	Y	-8.194	-8.194	73.29	101.21
4	M5	Y	-8.194	-8.204	101.21	129.13
5	M5	Y	-8.204	-1.912	129.13	157.05
6	M34	Y	-.826	-8.268	7.2	21.6
7	M34	Y	-8.268	-15.709	21.6	36
8	M35	Y	-.826	-8.268	7.2	21.6
9	M35	Y	-8.268	-15.709	21.6	36
10	M53	Y	-26.974	-26.974	17.751	35.072
11	M1	Y	-1.819	-8.111	17.45	45.37
12	M1	Y	-8.111	-8.108	45.37	73.29
13	M1	Y	-8.108	-8.131	73.29	101.21
14	M1	Y	-8.131	-7.029	101.21	129.13
15	M1	Y	-7.029	-.536	129.13	157.05
16	M3	Y	-.826	-8.268	7.2	21.6
17	M3	Y	-8.268	-15.709	21.6	36
18	M8	Y	-7.089	-10.329	7.2	21.6
19	M8	Y	-10.329	-13.569	21.6	36
20	M49	Y	-27.015	-27.015	17.751	35.072
21	M4	Y	-1.819	-8.111	17.45	45.37
22	M4	Y	-8.111	-8.108	45.37	73.29
23	M4	Y	-8.108	-8.131	73.29	101.21
24	M4	Y	-8.131	-7.029	101.21	129.13
25	M4	Y	-7.029	-.536	129.13	157.05
26	M21	Y	-.826	-8.268	7.2	21.6
27	M21	Y	-8.268	-15.709	21.6	36
28	M22	Y	-7.089	-10.329	7.2	21.6
29	M22	Y	-10.329	-13.569	21.6	36
30	M52	Y	-27.015	-27.015	17.751	35.072

Member Distributed Loads (BLC 50 : BLC 16 Transient Area Loads)

	Member Label	Direction	Start Magnitude[l...	End Magnitude[lb/ft,F,psf]	Start Location[in,...	End Location[in,...
1	M5	Y	-2.695	-11.568	17.45	45.37
2	M5	Y	-11.568	-11.554	45.37	73.29
3	M5	Y	-11.554	-11.554	73.29	101.21

Member Distributed Loads (BLC 50 : BLC 16 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[l...	End Magnitude[lb/ft,F,psf]	Start Location[in,...	End Location[in,...
4	M5	Y	-11.554	-11.568	101.21	129.13
5	M5	Y	-11.568	-2.695	129.13	157.05
6	M34	Y	-1.164	-11.657	7.2	21.6
7	M34	Y	-11.657	-22.15	21.6	36
8	M35	Y	-1.164	-11.657	7.2	21.6
9	M35	Y	-11.657	-22.15	21.6	36
10	M53	Y	-38.033	-38.033	17.751	35.072
11	M1	Y	-2.564	-11.437	17.45	45.37
12	M1	Y	-11.437	-11.432	45.37	73.29
13	M1	Y	-11.432	-11.465	73.29	101.21
14	M1	Y	-11.465	-9.911	101.21	129.13
15	M1	Y	-9.911	-.756	129.13	157.05
16	M3	Y	-1.164	-11.657	7.2	21.6
17	M3	Y	-11.657	-22.15	21.6	36
18	M8	Y	-9.996	-14.564	7.2	21.6
19	M8	Y	-14.564	-19.132	21.6	36
20	M49	Y	-38.091	-38.091	17.751	35.072
21	M4	Y	-2.564	-11.437	17.45	45.37
22	M4	Y	-11.437	-11.432	45.37	73.29
23	M4	Y	-11.432	-11.465	73.29	101.21
24	M4	Y	-11.465	-9.911	101.21	129.13
25	M4	Y	-9.911	-.756	129.13	157.05
26	M21	Y	-1.164	-11.657	7.2	21.6
27	M21	Y	-11.657	-22.15	21.6	36
28	M22	Y	-9.996	-14.564	7.2	21.6
29	M22	Y	-14.564	-19.132	21.6	36
30	M52	Y	-38.091	-38.091	17.751	35.072

Member Area Loads (BLC 1 : Self Weight)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N135	N136	N137	N138	Y	Two Way	-10
2	N129	N130	N127	N128	Y	Two Way	-10
3	N133	N134	N131	N132	Y	Two Way	-10

Member Area Loads (BLC 16 : Ice Weight)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N135	N136	N137	N138	Y	Two Way	-14.1
2	N129	N130	N127	N128	Y	Two Way	-14.1
3	N133	N134	N131	N132	Y	Two Way	-14.1

Plate Surface Loads

Plate Label	Direction	Magnitude[psf,F]
No Data to Print ...		

INFINIGY

FROM ZERO TO INFINIGY

the solutions are endless

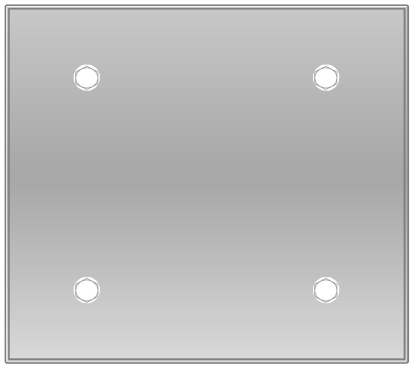
Bolt Calculation Tool, V1.1

PROJECT DATA	
Site Name:	Middlebury Straits TPKE
Site Number:	CTL01129
Job Code:	1106-A0001-B

APPLIED LOADS		
Bolt Tension:	4649.56	lbs
Bolt Shear:	684.92	lbs

BOLT PROPERTIES		
Bolt Type:	Bolt	-
Bolt Diameter:	0.625	in
Bolt Grade:	A307	-
# of Bolts:	4	-
Threads Excluded?	No	-

BOLT CHECK	
Tensile Strength	10170.07
Shear Strength	6212.62
Tensile Usage	45.7%
Shear Usage	11.0%
Interaction Check	22.1%
Result	Pass



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STEEL CONSTRUCTION NOTES:

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

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

FIBER REINFORCED POLYMER (FRP) NOTES:

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

INSTALLATION TORQUE TABLE

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

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

RATIO OF EDGE DISTANCE TO FRP FASTENER DIAMETER

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

WOOD CONSTRUCTION NOTES:

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

MASONRY CONSTRUCTION NOTES:

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

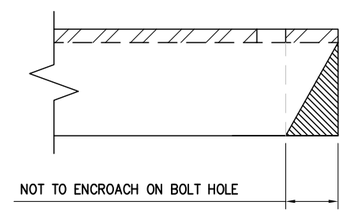
TOWER PLUMB & TENSION NOTES:

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

SPECIAL INSPECTIONS NOTES:

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

MAXIMUM ALLOWABLE ANGLE CLIP



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Fax # (518) 690-0793

at&t

STATE OF CONNECTICUT
JOHN S. STEVENS
24705
LICENSED PROFESSIONAL ENGINEER

01-08-20

No.	Submittal / Revision	App'd	Date
0	ISSUED FOR REVIEW	BA	01/03/20

Drawn: BE Date: 01/03/20
Designed: TM Date: 01/03/20
Checked: BA Date: 01/03/20

Project Number: 1106-A0001-B

Project Title:
MIDDLEBURY
STRAITS TPKE

CTL01129
FA# 10035253
1021 STRAITS TURNPIKE
MIDDLEBURY, CT 06762

Prepared For: smartlink

Drawing Scale: AS NOTED
Date: 01/03/20
0

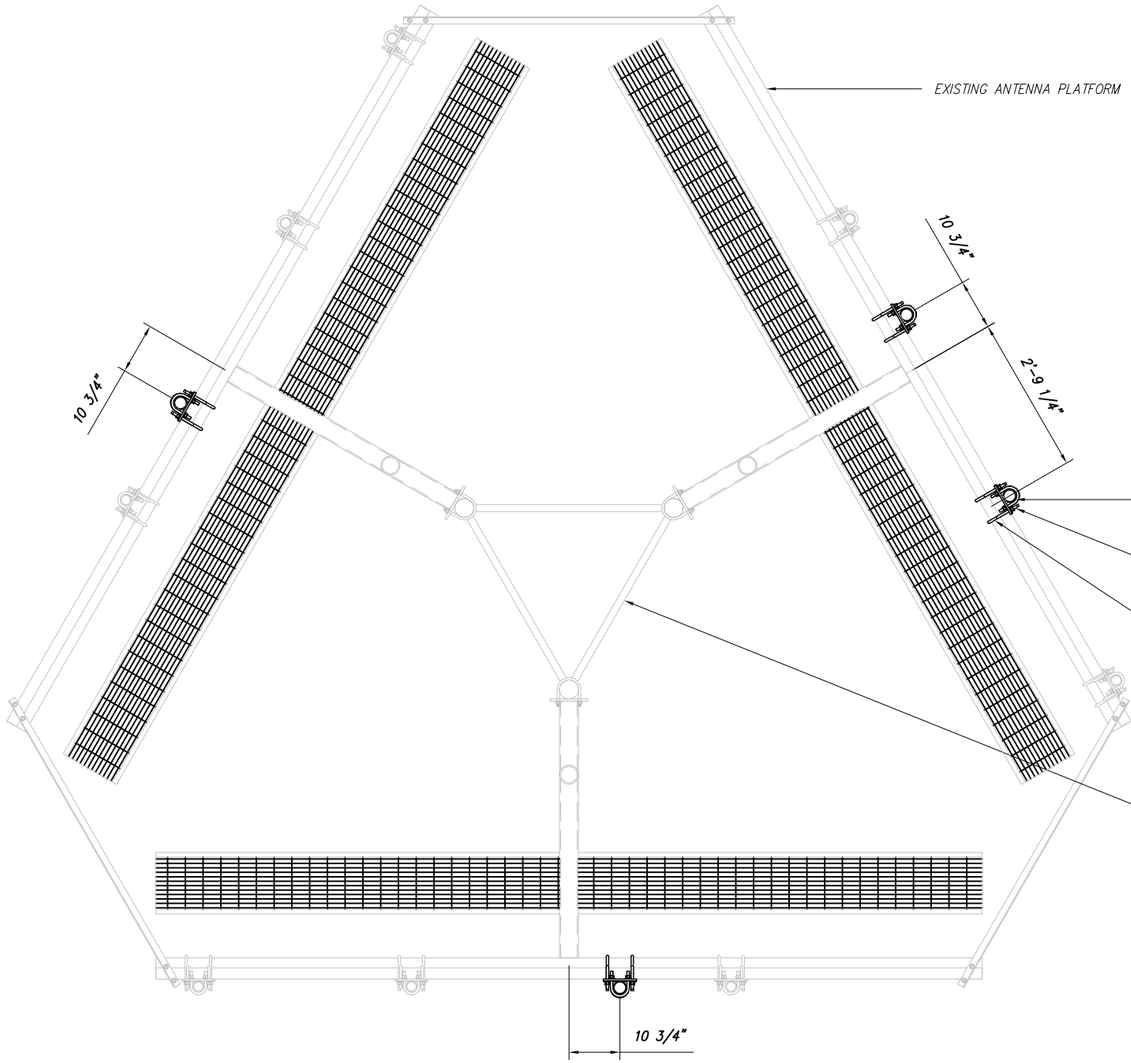
Drawing Title
GENERAL NOTES

Drawing Number
S1

NOTES:

1. VARIOUS EXISITNG CONDITIONS AND PROPOSED MODIFICATIONS NOT SHOWN FOR CLARITY.

2. ALL SITE PRO 1 PARTS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.



EXISTING MOUNTING PIPE TO BE REMOVED AND REPLACED WITH PROPOSED 2.875" O.D. SCH 40 PIPE, 6'-0" LONG (TYP OF 4)

EXISTING CROSSOVER PLATE TO BE REMOVED AND REPLACED WITH PROPOSED CROSSOVER PLATE KIT SITE PRO 1 PART# SCX2-K (TYP OF 4)

EXISTING CROSSOVER PLATE TO BE REMOVED AND REPLACED WITH PROPOSED CROSSOVER PLATE KIT SITE PRO 1 PART# SCX6-K (TYP OF 4)

EXISTING SELF SUPPORT TOWER

1 PLAN VIEW
SCALE: NOT TO SCALE

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Prepared For:
smartlink

Drawing Scale: AS NOTED
Date: 01/03/20
0

Drawing Title
MOUNT MODIFICATION

Drawing Number
S2

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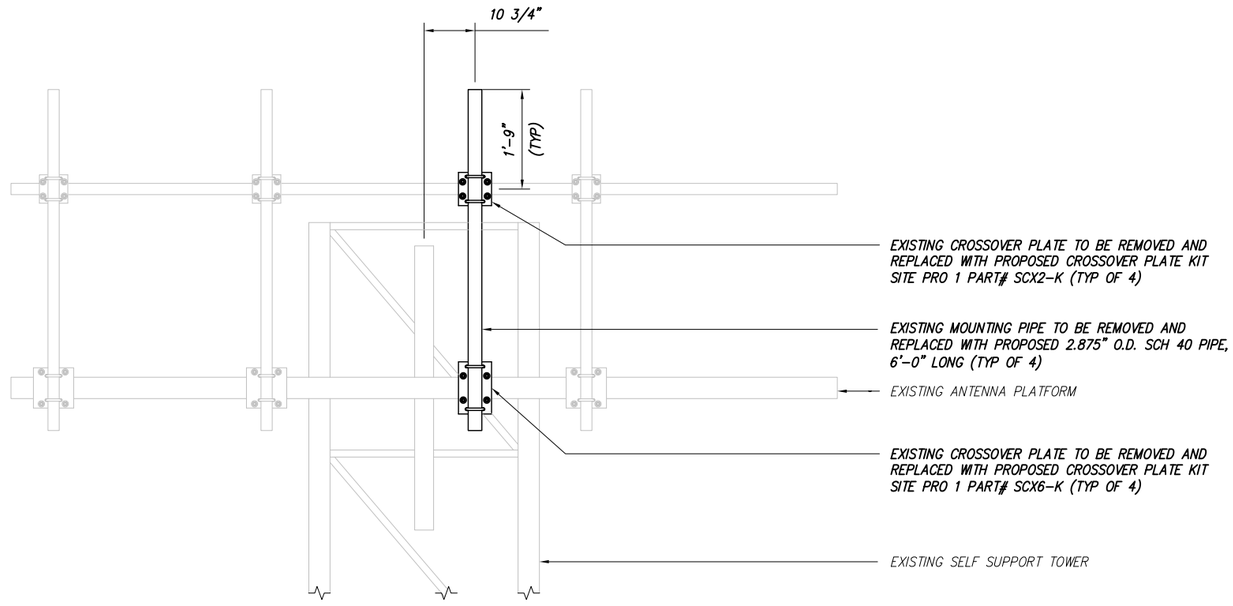

1 ELEVATION VIEW
SCALE: NOT TO SCALE

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Project Title:
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STRAITS TPKE

CTL01129
FA# 10035253
1021 STRAITS TURNPIKE
MIDDLEBURY, CT 06762

Prepared For: smartlink

Drawing Scale: AS NOTED
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Drawing Title
MOUNT MODIFICATION

Drawing Number
S3

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CONCRETE CONSTRUCTION NOTES:

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

FIBER REINFORCED POLYMER (FRP) NOTES:

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

INSTALLATION TORQUE TABLE

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

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

RATIO OF EDGE DISTANCE TO FRP FASTENER DIAMETER

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

WOOD CONSTRUCTION NOTES:

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

MASONRY CONSTRUCTION NOTES:

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

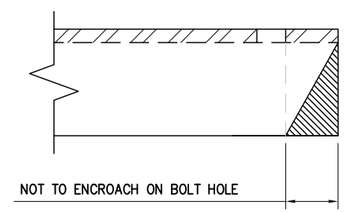
TOWER PLUMB & TENSION NOTES:

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

SPECIAL INSPECTIONS NOTES:

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

MAXIMUM ALLOWABLE ANGLE CLIP



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LICENSED PROFESSIONAL ENGINEER

01-08-20

No.	Submittal / Revision	App'd	Date
0	ISSUED FOR REVIEW	BA	01/03/20

Drawn: BE Date: 01/03/20
Designed: TM Date: 01/03/20
Checked: BA Date: 01/03/20

Project Number: 1106-A0001-B

Project Title:
MIDDLEBURY
STRAITS TPKE

CTL01129
FA# 10035253
1021 STRAITS TURNPIKE
MIDDLEBURY, CT 06762

Prepared For: smartlink

Drawing Scale: AS NOTED
Date: 01/03/20
0

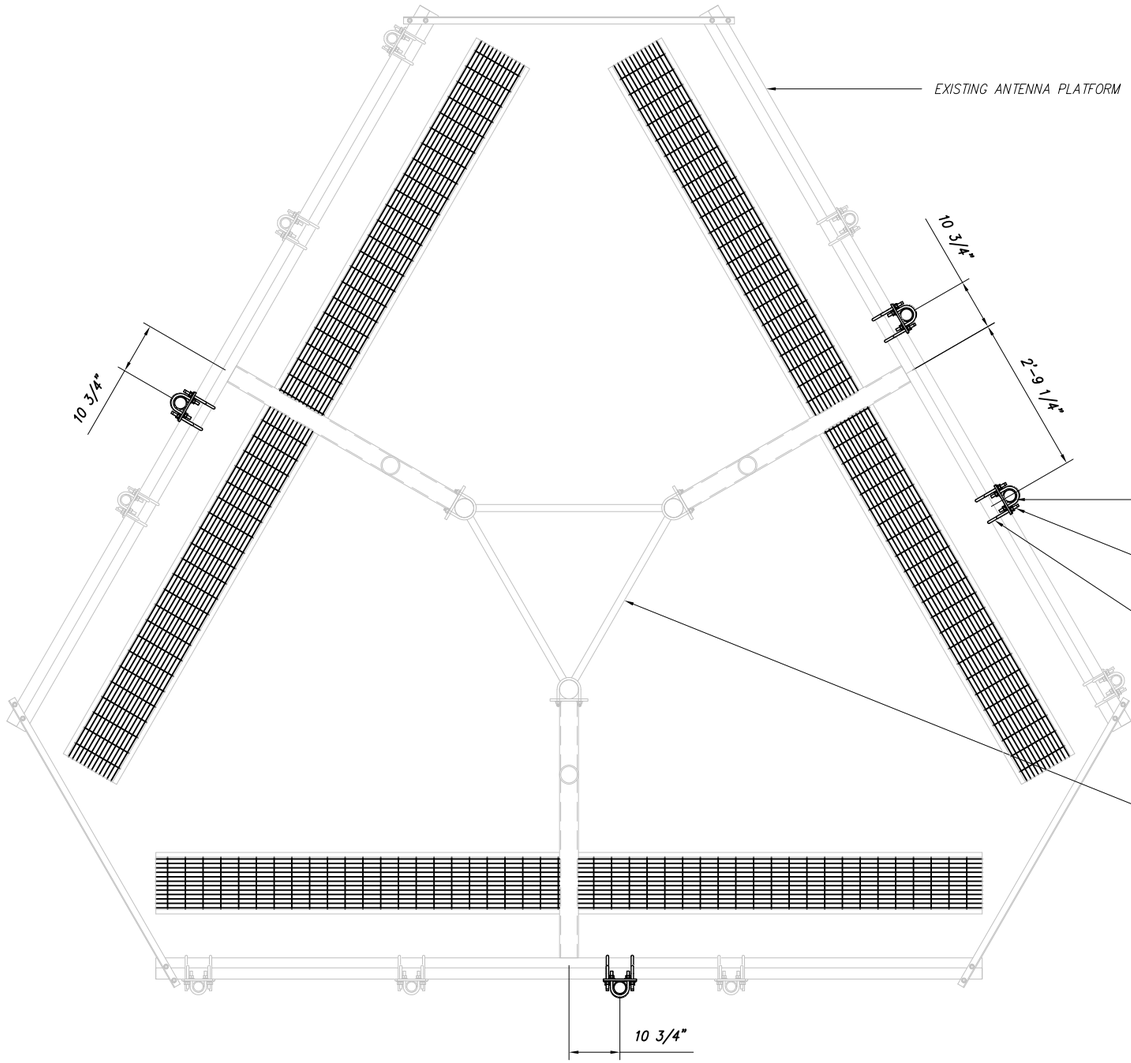
Drawing Title
GENERAL NOTES

Drawing Number
S1

NOTES:

1. VARIOUS EXISITNG CONDITIONS AND PROPOSED MODIFICATIONS NOT SHOWN FOR CLARITY.

2. ALL SITE PRO 1 PARTS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.



EXISTING MOUNTING PIPE TO BE REMOVED AND REPLACED WITH PROPOSED 2.875" O.D. SCH 40 PIPE, 6'-0" LONG (TYP OF 4)

EXISTING CROSSOVER PLATE TO BE REMOVED AND REPLACED WITH PROPOSED CROSSOVER PLATE KIT SITE PRO 1 PART# SCX2-K (TYP OF 4)

EXISTING CROSSOVER PLATE TO BE REMOVED AND REPLACED WITH PROPOSED CROSSOVER PLATE KIT SITE PRO 1 PART# SCX6-K (TYP OF 4)

EXISTING SELF SUPPORT TOWER

1 PLAN VIEW
SCALE: NOT TO SCALE

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CTL01129
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1021 STRAITS TURNPIKE
MIDDLEBURY, CT 06762

Prepared For:
smartlink

Drawing Scale: AS NOTED
Date: 01/03/20
0

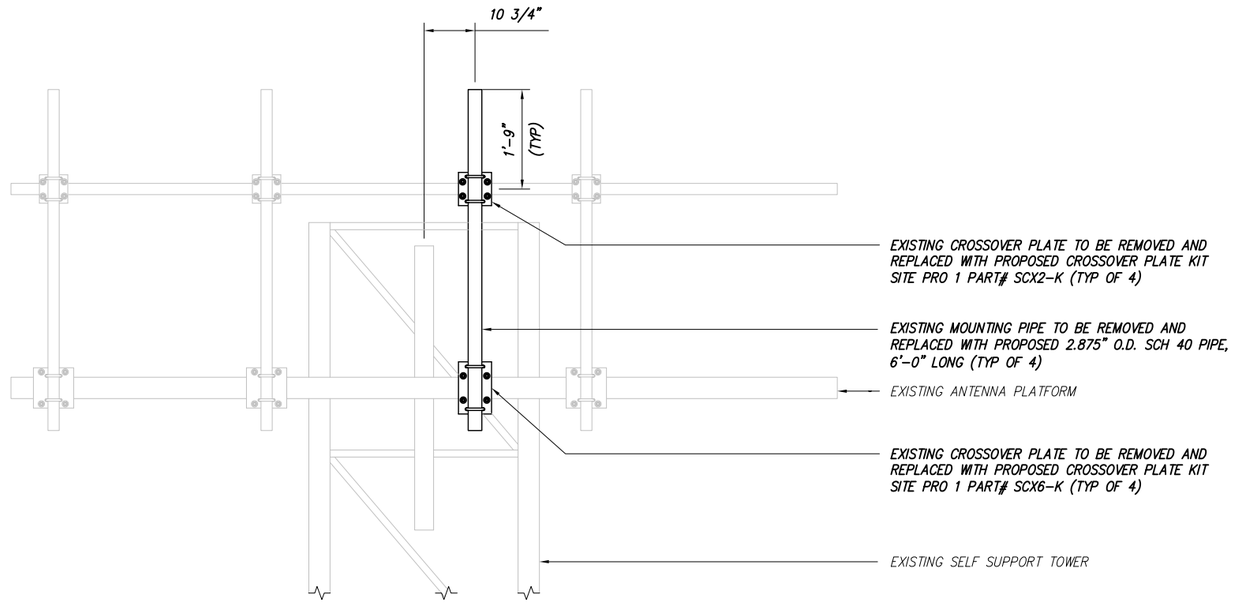
Drawing Title
MOUNT MODIFICATION

Drawing Number
S2

NOTES:

1. VARIOUS EXISITNG CONDITIONS AND PROPOSED MODIFICATIONS NOT SHOWN FOR CLARITY.

2. ALL SITE PRO 1 PARTS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.



1 ELEVATION VIEW
SCALE: NOT TO SCALE

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STRAITS TPKE

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FA# 10035253
1021 STRAITS TURNPIKE
MIDDLEBURY, CT 06762

Prepared For: smartlink

Drawing Scale: AS NOTED
Date: 01/03/20
0

Drawing Title
MOUNT MODIFICATION

Drawing Number
S3

Date: **November 19, 2019**

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Subject: Structural Analysis Report

Carrier Designation:	***AT&T Mobility* Reconfiguration**	
	Carrier Site Number & Name:	CTL01129 Middlebury Straits Turnpike
	Carrier Project Number/Name:	10035253
Phoenix Tower Designation:	**PTI Site Number:**	US-CT-1003
	PTI Site Name:	Straits Turnpike
Engineering Firm Designation:	**TEP Project Number:**	25628.295644, Rev. 1
Site Data:	**1021 Straits Turnpike, Middlebury, New Haven County, CT 06762** **Latitude *41° 32' 8.78",* Longitude *-73° 05' 21.27"*** **195 Foot - Self Supporting Tower**	

Dear David Rodriguez,

Tower Engineering Professionals, Inc. is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above-mentioned tower.

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

LC1: Existing + Proposed + Future Loading **Sufficient Capacity**
Note: See Table 1 for the existing, proposed, and future loading

Structure Capacity	Foundation Capacity
94.2%	53.0%

The analysis has been performed in accordance with the ANSI/TIA-222-H-2017 Structural Standard for Antenna Supporting Structures, Antennas and Small Wind Turbine Support Structures and the 2018 Connecticut State Building Code.

All modifications and equipment proposed in this report shall be installed in accordance with the appurtenances listed in Table 1 and the attached drawings for the determined available structural capacity to be effective.

We at *Tower Engineering Professionals, Inc.,* appreciate the opportunity of providing our continuing professional services to you and *Phoenix Tower International*. If you have any questions or need further assistance on this or any other projects please give us a call.

Structural analysis prepared by: Magdalena Wielgus, E.I.

Respectfully submitted by:

Aaron T. Rucker, P.E.

11/19/2019

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1) INTRODUCTION

This tower is a 195-ft self supporting tower designed by Fred A. Nudd Corporation in May of 1998. The tower was originally designed for a wind speed of 85 mph per ANSI/EIA/TIA-222-F. TEP visited the site in June of 2010 to gather existing steel and appurtenance information. This tower has been modified multiple times in the past to accommodate additional loading. All other information provided to TEP was assumed to be accurate and complete.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	120 mph
Exposure Category:	B
Topographic Category:	1 (Kzt = 1.0)
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Seismic Design Category:	B
Seismic Ss:	0.191
Seismic S1:	0.064
Service Wind Speed:	60 mph

Table 1 - Existing, Proposed, and Future Antenna and Cable Information

Existing/ Proposed	Elevation	Qty	Antenna Model	Mount Type	Qty Coax	Coax Size (in)	Coax[1] Location	Owner/ Tenant
Future	***195.0***	***-***	***T-Mobile Future Loading[2]***	***-***	***3***	***1-5/8***	***AB Face***	***T-Mobile***
Reserved	***195.0***	***3***	***RFS APXVAAR24-43-U-NA20***	(3) 12.5' Sector Frames	***2***	***Fiber***	***AB Face***	***T-Mobile***
		3	***Ericsson Radio 4449 B71/B12***					
Existing	195.0	3	Ericsson KRD-901146-1		18 1	1-5/8 Fiber	AB Face	T-Mobile
		6	Ericsson KRY-112-71					
		3	RFS APX16DWV-16DWV-S-E-A20					
To Be Removed	*195.0*	*3*	*Commscope LNX-6515DS-A1M*	-	-	-	-	*T-Mobile*
Proposed	***185.0***	***6***	***CCI DMP65R-BU8DA***	(3) 15.0' T-Frames with Catwalk and MT195-14 Handrail Kit	***6***	***7/8"Ø DC***	***CA Face***	***AT&T***
		3	***Ericsson 4449 B5/B12***					
		3	***Ericsson 4478 B14***					
		3	***Ericsson 8843 B2/B66A***					
		1	***Raycap DC6-48-60-0-8C-EV***					
Existing	185.0	3	Powerwave 7770		12 2	1-5/8 3/8"Ø Fiber	CA Face	AT&T
		3	Andrew SBNHH-1D65A					
		6	Powerwave LGP 13519					
		2	Raycap DC6-48-60-18-8F					
To Be Removed	*185.0*	*2*	*KMW AM-X-CD-16-65-00T-RET*	-	*2*	*3/8"Ø Power*	*CA Face*	*AT&T*
		1	*Powerwave P65-17-XLH-RR*					
		3	*Ericsson RRUS-12*					
		3	*Ericsson RRUS-11*					
		3	*Ericsson RRUS-32*					

Existing/ Proposed	Elevation	Qty	Antenna Model	Mount Type	Qty Coax	Coax Size (in)	Coax[1] Location	Owner/ Tenant
Existing	169.0	2	Antel BXA-70063-6CF	(3) 15.0' T-Frames with Catwalk	12 1	1-5/8 Fiber	AB Face	Verizon
		4	Decibel DB844G65ZAXY					
		1	Antel BXA 70080/6CF					
		2	Decibel DB846F65ZAXY					
		6	RFSFD9R6004/2C-3L					
		3	Alcatel Lucent RRH2x60-AWS					
		3	Alcatel Lucent RRH2x60-PCS					
		1	RFS DB-T1-6Z-8AB-0Z					
		6	HBXX-6517DS-A2M					
Existing	153.0	3	Commscope DT465B-2XR	(3) 12.0' Sector Frames	4	1-1/4" Hybridflex	BC Face	Sprint
		3	ALU TD-RRH8x20-25 w/ Solar Shield					
		3	ALU RRH2x50-08					
		3	RFS APXVSPP18-C-A20					
		3	ALU RRH 1900 4x45 65MHz					
		3	ALU 2x50W 800 MHz RRH					
Existing	75.5	1	GPS Antenna	4.5' Standoff	1	5/8"Ø	BC Face	Unknown

Notes:
1) See "Appendix B – Coax Configuration" for feed line configuration
2) T-Mobile Future Loading consists of 1,524.15 in^2 of wind area and (3) feed lines at the 195-ft level.

Table 2 - Detailed Future Loading Information[1]

Existing/ Proposed	Elevation (ft)	Wind Area (in^2) (includes Ca factors)	Weight (lb)	Qty Coax	Coax Size	% Capacity	Owner/ Tenant
Existing/ Proposed	***195***	***20,475.85***	***2,645.32***	***18 3***	***1-5/8 Fiber***	***87.5***	***T-Mobile***
Future	***195***	***1,524.15***	***196.91***	***3***	***1-5/8***	***-***	***T-Mobile***
Total	195	22,000.00	2,842.23	21 3	1-5/8 Fiber	91.1	T-Mobile

Notes:
1) Future loading capacities taken from previous Structural Analysis, dated July 12, 2018 (TEP No. 25628.165387).

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Source
Tower and Foundation Drawings	Fred A. Nudd Corporation, dated May 6, 1998 Project No. 5974	PTI
Structural Modification Drawings	Fred A. Nudd Corporation, dated April 30, 1999 Drawing No. 99-6726-1	PTI
Steel and Appurtenance Mapping	Tower Engineering Professionals, Inc., dated June 3, 2010 TEP No. 102056	TEP
Post Modification Inspection	Tower Engineering Professionals, Inc., dated April 21, 2011 TEP No. 102056	TEP
Geotechnical Report	Dr. Clarence Welti, P.E., P.C., dated April 17, 1998 Project No. 25628	PTI
Structural Modification Drawings	Tower Engineering Professionals, Inc., dated August 29, 2011 TEP No. 102056	TEP
Structural Modification Drawings	Tower Engineering Professionals, Inc., dated July 26, 2012 TEP No. 102056	TEP
Structural Modification Drawings	Tower Engineering Professionals, Inc., dated August 1, 2013 TEP No. 25628.4865	TEP
Structural Modification Drawings	Tower Engineering Professionals, Inc., dated August 24, 2016 TEP No. 25628.93911	TEP
Structural Modification Drawings	Tower Engineering Professionals, Inc., dated April 19, 2016 TEP No. 25628.47301	TEP
Post Modification Inspection	Tower Engineering Professionals, Inc., dated October 26, 2016 TEP No. 25628.58752	TEP
Previous Structural Analysis	Tower Engineering Professionals, Inc., dated July 12, 2018 TEP No. 25628.165387	TEP
Correspondence	Correspondence with Phoenix Tower International regarding the existing, proposed, and future loading.	PTI

3.1) Analysis Method

tnxTower (version 8.0.5.0), 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.

3.2) Assumptions

1) The tower and foundation were built and maintained in accordance with the manufacturer's specification.
2) The configuration of existing antennas, transmission cables, mounts and other appurtenances are as specified in the tower mapping report by TEP.
3) Unless specified by the client or tower mapping, the location of the existing and proposed coax is assumed by TEP and listed in Table 1.
4) All tower components are in sufficient condition to carry their full design capacity.
5) Serviceability with respect to antenna twist, tilt, roll, or lateral translation, is not checked and is left to the carrier or tower owner to ensure conformance.
6) All antenna mounts and mounting hardware are structurally sufficient to carry the full design capacity requirements of appurtenance wind area and weight as provided by the original manufacturer specifications. It is the carrier's responsibility to ensure compliance to the structural limitations of the existing and/or proposed antenna mounts. TEP did not perform a site visit to verify the size, condition or capacity of the antenna mounts and did not analyze antennas supporting mounts as part of this structural analysis report.

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (lb)	ØP_allow (lb)	% Capacity	Pass / Fail
T1	195 - 180	Leg	PIPE 2.5 STD (SCH 40)	1	-35268.20	74059.12	47.6	Pass
T2	180 - 175	Leg	PIPE 2.5 STD (SCH 40)	43	-39368.90	80957.20	48.6	Pass
T3	175 - 170	Leg	PIPE 2.5 STD (SCH 40)	55	-50194.90	81066.08	61.9	Pass
T4	170 - 160	Leg	2-1/2SCH40 w/ 3SCH80 Half Sleeve	67	Note 1	Note 1	75.5	Pass
T5	160 - 150	Leg	Pipe 3.5 Std (SCH40)	88	-94933.40	133278.59	71.2	Pass
T6	150 - 140	Leg	3.5SCH40 w/ 4SCH40 Half Sleeve	109	Note 1	Note 1	69.3	Pass
T7	140 - 133.333	Leg	5 STD w/ 6 XH Half Sleeve	130	Note 1	Note 1	50.2	Pass
T8	133.333 - 126.667	Leg	5 STD w/ 6 XH Half Sleeve	139	Note 1	Note 1	50.2	Pass
T9	126.667 - 120	Leg	5 STD w/ 6 XH Half Sleeve	148	Note 1	Note 1	50.2	Pass
T10	120 - 113.333	Leg	Pipe 6 STD	157	-169430.00	282257.84	60.0	Pass
T11	113.333 - 106.667	Leg	Pipe 6 STD	169	-182040.00	282290.39	64.5	Pass
T12	106.667 - 100	Leg	Pipe 6 STD	181	-193837.00	282318.74	68.7	Pass
T13	100 - 80	Leg	6 STD w/ 7 XH Half Sleeve	193	Note 1	Note 1	53.6	Pass
T14	80 - 60	Leg	Pipe 8 STD	223	-265362.00	411193.63	64.5	Pass
T15	60 - 50	Leg	Pipe 8 STD	244	-277500.00	421200.13	65.9	Pass
T16	50 - 40	Leg	Pipe 8 STD	256	-294492.00	421253.68	69.9	Pass
T17	40 - 20	Leg	Pipe 8 EH	268	-327955.00	576516.12	56.9	Pass
T18	20 - 0	Leg	Pipe 8 EH	283	-358564.00	577189.17	62.1 62.5 (b)	Pass
T1	195 - 180	Diagonal	5/8	15	9095.56	10437.21	87.1	Pass
T2	180 - 175	Diagonal	L1 1/2x1 1/2x3/16	48	-4266.38	10303.15	41.4 72.4 (b)	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (lb)	ØP_allow (lb)	% Capacity	Pass / Fail
T3	175 - 170	Diagonal	L2x2x3/16	60	-3454.76	18093.28	19.1 47.8 (b)	Pass
T4	170 - 160	Diagonal	2L1 1/2x1 1/2x3/16x1/4	84	-5235.74	29923.74	17.5 55.0 (b)	Pass
T5	160 - 150	Diagonal	2L2x2x3/16x1/4	93	5758.03	40946.95	14.1 66.4 (b)	Pass
T6	150 - 140	Diagonal	2L2x2x3/16x1/4	114	-5636.79	41431.00	13.6 61.6 (b)	Pass
T7	140 - 133.333	Diagonal	L2 1/2x2 1/2x1/4	133	-5502.36	24503.64	22.5 40.5 (b)	Pass
T8	133.333 - 126.667	Diagonal	L2 1/2x2 1/2x1/4	144	-5713.64	22278.16	25.6 41.2 (b)	Pass
T9	126.667 - 120	Diagonal	L2 1/2x2 1/2x3/16	151	-5483.83	15425.97	35.5 66.6 (b)	Pass
T10	120 - 113.333	Diagonal	L3x3x1/4	162	-7144.74	30888.79	23.1 47.8 (b)	Pass
T11	113.333 - 106.667	Diagonal	L3x3x1/4	174	-7038.20	28895.68	24.4 47.9 (b)	Pass
T12	106.667 - 100	Diagonal	L2 1/2x2 1/2x1/4	186	-7337.59	15373.78	47.7 50.2 (b)	Pass
T13	100 - 80	Diagonal	L3 1/2x3 1/2x1/4	207	-7485.13	36323.59	20.6 28.0 (b)	Pass
T14	80 - 60	Diagonal	L3 1/2x3 1/2x1/4	226	-7084.98	28986.72	24.4 29.4 (b)	Pass
T15	60 - 50	Diagonal	L3x3x5/16	247	-9790.79	18196.81	53.8	Pass
T16	50 - 40	Diagonal	L3x3x5/16	259	-9496.79	16846.72	56.4	Pass
T17	40 - 20	Diagonal	L4x4x3/8	273	-8958.83	38479.45	23.3 30.9 (b)	Pass
T18	20 - 0	Diagonal	L5x5x5/16	286	-10060.30	51837.13	19.4 34.7 (b)	Pass
T1	195 - 180	Horizontal	L1 1/2x1 1/2x3/16	17	-5013.79	9640.76	52.0	Pass
T2	180 - 175	Secondary Horizontal	L2x2x3/16	52	682.74	19675.95	3.5 9.5 (b)	Pass
T3	175 - 170	Secondary Horizontal	L2x2x3/16	64	871.65	19675.95	4.4 12.2 (b)	Pass
T4	170 - 160	Secondary Horizontal	L2x2x3/16	76	-1272.11	19156.30	6.6 17.7 (b)	Pass
T5	160 - 150	Secondary Horizontal	L2x2x3/16	97	-1648.91	17984.61	9.2 23.0 (b)	Pass
T6	150 - 140	Secondary Horizontal	L2x2x3/16	118	-2058.44	16658.04	12.4 28.7 (b)	Pass
T10	120 - 113.333	Secondary Horizontal	L3x3x3/16	166	-2940.31	26358.46	11.2 35.8 (b)	Pass
T11	113.333 - 106.667	Secondary Horizontal	L3x3x3/16	178	-3160.01	25488.01	12.4 38.4 (b)	Pass
T12	106.667 - 100	Secondary Horizontal	L3x3x3/16	190	-3364.17	24590.26	13.7 40.9 (b)	Pass
T13	100 - 80	Secondary Horizontal	L3x3x1/4	202	-3997.14	27498.45	14.5 27.4 (b)	Pass
T15	60 - 50	Secondary Horizontal	L4x4x3/8	253	-4813.16	61409.77	7.8 33.2 (b)	Pass
T16	50 - 40	Secondary Horizontal	L4x4x1/4	265	-5108.08	39562.21	12.9 33.9 (b)	Pass
T1	195 - 180	Top Girt	L1 1/2x1 1/2x3/16	6	-1531.88	9640.76	15.9	Pass
T1	195 - 180	Bottom Girt	L1 1/2x1 1/2x3/16	9	-3042.79	9640.76	31.6	Pass
							Summary	
						Leg (T4)	75.5	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (lb)	ØP_allow (lb)	% Capacity	Pass / Fail
						Diagonal (T1)	87.1	Pass
						Horizontal (T1)	52.0	Pass
						Secondary Horizontal (T12)	40.9	Pass
						Top Girt (T1)	15.9	Pass
						Bottom Girt (T1)	31.6	Pass
						Bolt Checks	72.4	Pass
						RATING =	**87.1**	**Pass**

Table 5 - Component Stresses vs. Capacity

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Anchor Rods	-	94.2	Pass
1,2	Base Foundation - Soil Interaction	-	22.3	Pass
1,2	Base Foundation - Structural	-	53.0	Pass

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

Structure Rating (max from all components) =	**94.2%**

Table 6 - Dish Twist/Sway Results for 60 mph Service Wind Speed

Elevation (ft)	Dish Model	Beam Deflection		
		Deflection (in)	Tilt (deg)	Twist (deg)
-	-	-	-	-

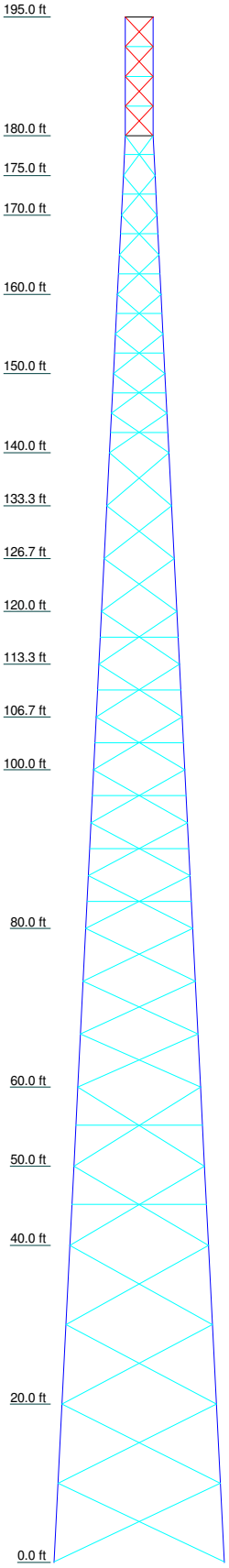
4.1) Recommendations

1) If the load differs from that described in Table 1 of this report, “Appendix B – Coax Configuration” or the provisions of this analysis are found to be invalid, another structural analysis should be performed.
2) The tower and its foundation have sufficient capacity to carry the existing, proposed, and future loads. No modifications are required at this time.

APPENDIX A

TNXTOWER OUTPUT

Section	T18	T17	T16	T15	T14	T13	T12	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs	Pipe 8 EH			Pipe 8 STD		E		Pipe 6 STD			D		C	B	A		PIPE 2.5 STD (SCH 40)	
Leg Grade		A572-55				A53-B-42		A572-55			A500-46		A500-50	A572-55	A53-B-35		A572-55	
Diagonals	L5x5x5/16	L4x4x3/8	L3x3x5/16		L3 1/2x3 1/2x1/4		J	L3x3x1/4		I	L2 1/2x2 1/2x1/4		2L2x2x3/16x1/4		H	G	F	SR 5/8
Diagonal Grade						A36												
Top Girts						N.A.							L2x2x3/16					L1 1/2x1 1/2x3/16
Bottom Girts						N.A.												L1 1/2x1 1/2x3/16
Horizontals						N.A.												L1 1/2x1 1/2x3/16
Sec. Horizontals	N.A.		L4x4x1/4	L4x4x3/8	N.A.	L3x3x1/4		L3x3x3/16			N.A.							N.A.
Face Width (ft) 21.5	19.5	17.5	16.5	15.5	13.5	11.5	10.8333	10.1667	9.5	8.83333	8.16667	7.5	6.5	5.5	4.5	4		3.5
# Panels @ (ft)	2 @ 9.95833		4 @ 10			12 @ 6.66667								8 @ 5				4 @ 3.75
Weight (lb) 30525.2	5429.7	5066.4	1912.1	2011.3	3370.0	4304.0	820.6	862.9	839.1	788.4	842.1	829.5	1040.7	817.6	710.7	214.0	181.8	484.2



SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	2-1/2SCH40 w/ 3SCH80 Half Sleeve	F	L1 1/2x1 1/2x3/16
B	Pipe 3.5 Std (SCH40)	G	L2x2x3/16
C	3.5SCH40 w/ 4SCH40 Half Sleeve	H	2L1 1/2x1 1/2x3/16x1/4
D	5 STD w/ 6 XH Half Sleeve	I	L2 1/2x2 1/2x3/16
E	6 STD w/ 7 XH Half Sleeve	J	L2 1/2x2 1/2x1/4

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-55	55 ksi	70 ksi	A500-50	50 ksi	62 ksi
A36	36 ksi	58 ksi	A500-46	46 ksi	62 ksi
A53-B-35	35 ksi	60 ksi	A53-B-42	42 ksi	63 ksi

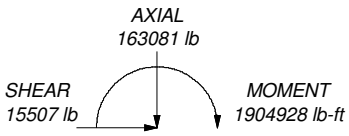
TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 120 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 0.00 ft

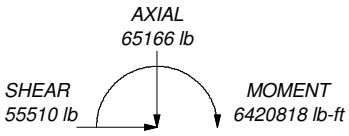
ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 366564 lb
SHEAR: 35756 lb

UPLIFT: -319808 lb
SHEAR: 31422 lb



TORQUE 11053 lb-ft
50 mph WIND - 1.5000 in ICE



TORQUE 37261 lb-ft
REACTIONS - 120 mph WIND

Tower Engineering Professionals,

Tower Engineering Professionals, Inc
326 Tryon Rd
Raleigh, NC 27603
Phone: (919) 661- 6351
FAX: (919) 661- 6350

Job:	***US-CT-1003 - Straits Turnpike***		
Project:	***TEP No. 25628.295644, Rev. 1***		
Client: Phoenix Tower International		Drawn by: MMW	App'd:
Code: TIA-222-H		Date: 11/19/19	Scale: NTS
Path: T:\25628\P-198515_L-295644_US-CT-1003_Straits Turnpike_Structural Analysis\Rev 1\tnx\US-CT-1003.eri			Dwg No. E-1

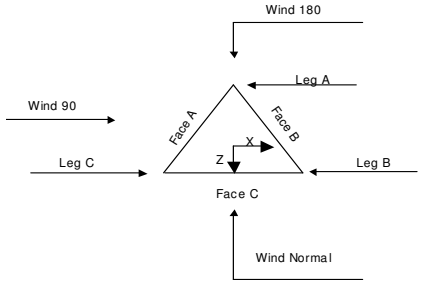
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 195.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 3.50 ft at the top and 21.50 ft at the base.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

Tower is located in New Haven County, Connecticut.
Tower base elevation above sea level: 432.77 ft.
Basic wind speed of 120 mph.
Risk Category II.
Exposure Category B.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.00 ft.
Nominal ice thickness of 1.5000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Tower analysis based on target reliabilities in accordance with Annex S.
Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
Stress ratio used in tower member design is 1.05.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	195.00-180.00			3.50	1	15.00
T2	180.00-175.00			3.50	1	5.00
T3	175.00-170.00			4.00	1	5.00
T4	170.00-160.00			4.50	1	10.00
T5	160.00-150.00			5.50	1	10.00
T6	150.00-140.00			6.50	1	10.00
T7	140.00-133.33			7.50	1	6.67
T8	133.33-126.67			8.17	1	6.67
T9	126.67-120.00			8.83	1	6.67
T10	120.00-113.33			9.50	1	6.67
T11	113.33-106.67			10.17	1	6.67
T12	106.67-100.00			10.83	1	6.67
T13	100.00-80.00			11.50	1	20.00
T14	80.00-60.00			13.50	1	20.00
T15	60.00-50.00			15.50	1	10.00
T16	50.00-40.00			16.50	1	10.00
T17	40.00-20.00			17.50	1	20.00
T18	20.00-0.00			19.50	1	20.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	195.00-180.00	3.75	TX Brace	No	Yes	0.0000	0.0000
T2	180.00-175.00	5.00	X Brace	No	Yes	0.0000	0.0000
T3	175.00-170.00	5.00	X Brace	No	Yes	0.0000	0.0000
T4	170.00-160.00	5.00	X Brace	No	Yes	0.0000	0.0000
T5	160.00-150.00	5.00	X Brace	No	Yes	0.0000	0.0000
T6	150.00-140.00	5.00	X Brace	No	Yes	0.0000	0.0000
T7	140.00-133.33	6.67	X Brace	No	No	0.0000	0.0000
T8	133.33-126.67	6.67	X Brace	No	No	0.0000	0.0000
T9	126.67-120.00	6.67	X Brace	No	No	0.0000	0.0000
T10	120.00-113.33	6.67	X Brace	No	Yes	0.0000	0.0000
T11	113.33-106.67	6.67	X Brace	No	Yes	0.0000	0.0000
T12	106.67-100.00	6.67	X Brace	No	Yes	0.0000	0.0000
T13	100.00-80.00	6.67	X Brace	No	Yes	0.0000	0.0000
T14	80.00-60.00	6.67	X Brace	No	No	0.0000	0.0000
T15	60.00-50.00	10.00	X Brace	No	Yes	0.0000	0.0000
T16	50.00-40.00	10.00	X Brace	No	Yes	0.0000	0.0000
T17	40.00-20.00	10.00	X Brace	No	No	0.0000	0.0000
T18	20.00-0.00	9.96	X Brace	No	No	0.0000	1.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 195.00-180.00	Pipe	PIPE 2.5 STD (SCH 40)	A572-55 (55 ksi)	Solid Round	5/8	A36 (36 ksi)
T2 180.00-175.00	Pipe	PIPE 2.5 STD (SCH 40)	A572-55 (55 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T3 175.00-170.00	Pipe	PIPE 2.5 STD (SCH 40)	A572-55 (55 ksi)	Equal Angle	L2x2x3/16	A36 (36 ksi)
T4 170.00-160.00	Arbitrary Shape	2-1/2SCH40 w/ 3SCH80 Half Sleeve	A53-B-35 (35 ksi)	Double Equal Angle	2L1 1/2x1 1/2x3/16x1/4	A36 (36 ksi)
T5 160.00-150.00	Pipe	Pipe 3.5 Std (SCH40)	A572-55 (55 ksi)	Double Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T6 150.00-140.00	Arbitrary Shape	3.5SCH40 w/ 4SCH40 Half Sleeve	A500-50 (50 ksi)	Double Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T7 140.00-133.33	Arbitrary Shape	5 STD w/ 6 XH Half Sleeve	A500-46 (46 ksi)	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T8 133.33-126.67	Arbitrary Shape	5 STD w/ 6 XH Half Sleeve	A500-46 (46 ksi)	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T9 126.67-120.00	Arbitrary Shape	5 STD w/ 6 XH Half Sleeve	A500-46 (46 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T10 120.00-113.33	Pipe	Pipe 6 STD	A572-55 (55 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T11 113.33-106.67	Pipe	Pipe 6 STD	A572-55 (55 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T12 106.67-100.00	Pipe	Pipe 6 STD	A572-55 (55 ksi)	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T13 100.00-80.00	Arbitrary Shape	6 STD w/ 7 XH Half Sleeve	A53-B-42 (42 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A36 (36 ksi)
T14 80.00-60.00	Pipe	Pipe 8 STD	A572-55 (55 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A36 (36 ksi)
T15 60.00-50.00	Pipe	Pipe 8 STD	A572-55 (55 ksi)	Equal Angle	L3x3x5/16	A36 (36 ksi)
T16 50.00-40.00	Pipe	Pipe 8 STD	A572-55 (55 ksi)	Equal Angle	L3x3x5/16	A36 (36 ksi)
T17 40.00-20.00	Pipe	Pipe 8 EH	A572-55	Equal Angle	L4x4x3/8	A36

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T18 20.00-0.00	Pipe	Pipe 8 EH	(55 ksi) A572-55 (55 ksi)	Equal Angle	L5x5x5/16	(36 ksi) A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 195.00-180.00	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1 195.00-180.00	None	Flat Bar		A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T2 180.00-175.00	Equal Angle	L2x2x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T3 175.00-170.00	Equal Angle	L2x2x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T4 170.00-160.00	Equal Angle	L2x2x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T5 160.00-150.00	Equal Angle	L2x2x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T6 150.00-140.00	Equal Angle	L2x2x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T10 120.00-113.33	Equal Angle	L3x3x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T11 113.33-106.67	Equal Angle	L3x3x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T12 106.67-100.00	Equal Angle	L3x3x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T13 100.00-80.00	Equal Angle	L3x3x1/4	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T15 60.00-50.00	Equal Angle	L4x4x3/8	A36 (36 ksi)	Solid Round		A36 (36 ksi)

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T16 50.00-40.00	Equal Angle	L4x4x1/4	A36 (36 ksi)	Solid Round		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft²	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
T1 195.00-180.00	0.00	0.0000	A36 (36 ksi)	1	1	1	0.0000	0.0000	36.0000
T2 180.00-175.00	0.00	0.2500	A36 (36 ksi)	1	1	1	0.0000	0.0000	36.0000
T3 175.00-170.00	0.00	0.2500	A36 (36 ksi)	1	1	1	0.0000	0.0000	36.0000
T4 170.00-160.00	0.00	0.2500	A36 (36 ksi)	1	1	1	Mid-Pt	0.0000	36.0000
T5 160.00-150.00	0.00	0.2500	A36 (36 ksi)	1	1	1	Mid-Pt	0.0000	36.0000
T6 150.00-140.00	0.00	0.2500	A36 (36 ksi)	1	1	1	Mid-Pt	0.0000	36.0000
T7 140.00-133.33	0.00	0.3750	A36 (36 ksi)	1	1	1	0.0000	0.0000	36.0000
T8 133.33-126.67	0.00	0.3750	A36 (36 ksi)	1	1	1	0.0000	0.0000	36.0000
T9 126.67-120.00	0.00	0.3750	A36 (36 ksi)	1	1	1	0.0000	0.0000	36.0000
T10 120.00-113.33	0.00	0.3750	A36 (36 ksi)	1	1	1	0.0000	0.0000	36.0000
T11 113.33-106.67	0.00	0.3750	A36 (36 ksi)	1	1	1	0.0000	0.0000	36.0000
T12 106.67-100.00	0.00	0.3750	A36 (36 ksi)	1	1	1	0.0000	0.0000	36.0000
T13 100.00-80.00	0.00	0.3750	A36 (36 ksi)	1	1	1	0.0000	0.0000	36.0000
T14 80.00-60.00	0.00	0.3750	A36 (36 ksi)	1	1	1	0.0000	0.0000	36.0000
T15 60.00-50.00	0.00	0.3750	A36 (36 ksi)	1	1	1	0.0000	0.0000	36.0000
T16 50.00-40.00	0.00	0.3750	A36 (36 ksi)	1	1	1	0.0000	0.0000	36.0000
T17 40.00-20.00	0.00	0.4375	A36 (36 ksi)	1	1	1	0.0000	0.0000	36.0000
T18 20.00-0.00	0.00	0.4375	A36 (36 ksi)	1	1	1	0.0000	0.0000	36.0000

Tower Section Geometry *(cont'd)*

K Factors[1]

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1 195.00-180.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 180.00-175.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 175.00-170.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 0.5	1 1
T4 170.00-160.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 0.5	1 1
T5 160.00-150.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T6 150.00-140.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 0.5	1 1
T7 140.00-133.33	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T8 133.33-126.67	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T9 126.67-120.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T10 120.00-113.33	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 0.5	1 1
T11 113.33-106.67	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 0.5	1 1
T12 106.67-100.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T13 100.00-80.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 0.5	1 1
T14 80.00-60.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T15 60.00-50.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T16 50.00-40.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 0.5	1 1
T17 40.00-20.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T18 20.00-0.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Net Width Deduct in	Leg U	Diagonal Net Width Deduct in	Diagonal U	Top Girt Net Width Deduct in	Top Girt U	Bottom Girt Net Width Deduct in	Bottom Girt U	Mid Girt Net Width Deduct in	Mid Girt U	Long Horizontal Net Width Deduct in	Long Horizontal U	Short Horizontal Net Width Deduct in	Short Horizontal U
T1 195.00-180.00	0.0000	1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 180.00-175.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 175.00-170.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T4	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
170.00-160.00														
T5	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
160.00-150.00														
T6	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
150.00-140.00														
T7	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
140.00-133.33														
T8	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
133.33-126.67														
T9	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
126.67-120.00														
T10	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
120.00-113.33														
T11	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
113.33-106.67														
T12	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
106.67-100.00														
T13	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
100.00-80.00														
T14	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
80.00-60.00														
T15	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
60.00-50.00														
T16	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
50.00-40.00														
T17	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
40.00-20.00														
T18 20.00-0.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1	Flange	0.7500	4	0.0000	0	0.0000	0	0.0000	0	0.6250	0	0.0000	0	0.6250	0
195.00-180.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T2	Flange	0.7500	0	0.5000	1	0.0000	0	0.0000	0	0.6250	0	0.0000	0	0.6250	1
180.00-175.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T3	Flange	0.7500	0	0.5000	1	0.0000	0	0.0000	0	0.6250	0	0.0000	0	0.6250	1
175.00-170.00		A325N		A325X		A325N		A325N		A325N		A325N		A325N	
T4	Flange	0.7500	6	0.5000	1	0.0000	0	0.0000	0	0.6250	0	0.0000	0	0.6250	1
170.00-160.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T5	Flange	1.0000	0	0.5000	1	0.0000	0	0.0000	0	0.6250	0	0.0000	0	0.6250	1
160.00-150.00		A325N		A325X		A325N		A325N		A325N		A325N		A325N	
T6	Flange	1.0000	6	0.5000	1	0.0000	0	0.0000	0	0.6250	0	0.0000	0	0.6250	1
150.00-140.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T7	Flange	1.0000	0	0.6250	1	0.0000	0	0.0000	0	0.6250	0	0.0000	0	0.6250	0
140.00-133.33		A325N		A325X		A325N		A325N		A325N		A325N		A325N	

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T8	Flange	1.0000	0	0.6250	1	0.0000	0	0.0000	0	0.6250	0	0.0000	0	0.6250	0
133.33-126.67		A325N		A325X		A325N		A325N		A325N		A325N		A325N	
T9	Flange	1.0000	8	0.6250	1	0.0000	0	0.0000	0	0.6250	0	0.0000	0	0.6250	0
126.67-120.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T10	Flange	1.0000	0	0.6250	1	0.0000	0	0.0000	0	0.6250	0	0.0000	0	0.6250	1
120.00-113.33		A325N		A325X		A325N		A325N		A325N		A325N		A325N	
T11	Flange	1.0000	0	0.6250	1	0.0000	0	0.0000	0	0.6250	0	0.0000	0	0.6250	1
113.33-106.67		A325N		A325X		A325N		A325N		A325N		A325N		A325N	
T12	Flange	1.0000	8	0.6250	1	0.0000	0	0.0000	0	0.6250	0	0.0000	0	0.6250	1
106.67-100.00		A325N		A325X		A325N		A325N		A325N		A325N		A325N	
T13	Flange	1.2500	8	0.6250	2	0.0000	0	0.0000	0	0.6250	0	0.0000	0	0.7500	1
100.00-80.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T14	Flange	1.2500	8	0.6250	2	0.0000	0	0.0000	0	0.6250	0	0.0000	0	0.7500	0
80.00-60.00		A325N		A325N		A325N		A325N		A325N		A325N		A325X	
T15	Flange	1.2500	0	0.6250	2	0.0000	0	0.0000	0	0.6250	0	0.0000	0	0.6250	1
60.00-50.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T16	Flange	1.2500	8	0.6250	2	0.0000	0	0.0000	0	0.6250	0	0.0000	0	0.7500	1
50.00-40.00		A325N		A325N		A325N		A325N		A325N		A325N		A325X	
T17	Flange	1.2500	8	0.6250	2	0.0000	0	0.0000	0	0.6250	0	0.0000	0	0.6250	0
40.00-20.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T18 20.00-0.00	Flange	1.5000	8	0.6250	2	0.0000	0	0.0000	0	0.6250	0	0.0000	0	0.6250	0
		A36		A325N		A325N		A325N		A325N		A325N		A325N	

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
LDF7-50A (1-5/8 FOAM)	B	No	No	Ar (CaAa)	169.00 - 8.00	-2.0000	0.35	12	12	0.5000	1.9800		0.82
HB158-1-08U8-S8J18(1-5/8)	B	No	No	Ar (CaAa)	169.00 - 8.00	-4.0000	0.29	1	1	0.5000	0.0001		1.30
WG Rail 1.5x1.5x1/4 ****	B	No	No	Af (CaAa)	170.00 - 8.00	-2.0000	0.35	2	2	36.5000	1.5000		2.40
1 5/8" Hybrid	B	No	No	Ar (CaAa)	195.00 - 8.00	0.0000	0	3	3	0.5000	1.6250		0.75
LDF7-50A (1-5/8 FOAM)	B	No	No	Ar (CaAa)	195.00 - 8.00	0.0000	0	21	9	0.5000	1.9800		0.82
WG Rail 1.5x1.5x3/16 ****	B	No	No	Af (CaAa)	195.00 - 0.00	0.0000	0	2	2	36.0000	1.5000		1.81
5/8" dia. coax	C	No	No	Ar (CaAa)	75.50 - 10.00	0.0000	0	1	1	0.5000	0.6250		0.15
1 1/4 Hybriflex Cable	C	No	No	Ar (CaAa)	153.00 - 10.00	0.0000	0.04	4	4	0.5000	1.2500		1.44
WG Rail 1.5x1.5x3/16 ****	C	No	No	Af (CaAa)	160.00 - 0.00	0.0000	0.1	2	2	35.0000	1.5000		1.81
LDF7-50A (1-5/8 FOAM)	A	No	No	Ar (CaAa)	185.00 - 8.00	0.0000	0.3	12	6	0.5000	1.9800		0.82

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
7/16" Fiber Cable (24 fibers Max)	A	No	No	Ar (CaAa)	185.00 - 8.00	0.0000	0.375	2	2	0.5000	0.4375		0.03
LDF5-50A (7/8 FOAM)	A	No	No	Ar (CaAa)	185.00 - 8.00	0.0000	0.3	6	3	0.5000	1.0900		0.33
WG Rail 1.5x1.5x1/8 ***	A	No	No	Af (CaAa)	185.00 - 2.00	0.0000	0.3	2	2	34.0000	1.5000		1.23
Safety Line 3/8	A	No	No	Ar (CaAa)	195.00 - 0.00	0.0000	0.5	1	1	0.3750	0.3750		0.22
Step Pegs (5/8" SR) 7-in. w/30" step	A	No	No	Ar (CaAa)	195.00 - 0.00	0.0000	0.5	1	1	0.3500	0.3500		0.49
Step Pegs (5/8" SR) 7-in. w/30" step	B	No	No	Ar (CaAa)	60.00 - 0.00	0.0000	0.5	1	1	0.3500	0.3500		0.49
Step Pegs (5/8" SR) 7-in. w/30" step *****	C	No	No	Ar (CaAa)	60.00 - 0.00	0.0000	0.5	1	1	0.3500	0.3500		0.49
Rung L1.5x1.5x1/8 (36.25"w, 34"s)	B	No	No	Af (CaAa)	170.00 - 8.00	-2.0000	0.35	1	1	0.5000	0.0001		1.31
Rung L1.5x1.5x1/8 (36"w, 34"s)	B	No	No	Af (CaAa)	181.00 - 0.00	0.0000	0	1	1	0.5000	0.0001		1.29
Rung L2x1.5x1/8 (35"w, 48"s)	C	No	No	Af (CaAa)	160.00 - 0.00	0.0000	0.1	1	1	0.5000	0.0001		1.05
Rung L1.5x1.5x1/8 (36"w, 34"s) *****	A	No	No	Af (CaAa)	180.00 - 2.00	0.0000	0.3	1	1	0.5000	0.0001		1.29

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
****								
****								
****								
****								
***								
*****								

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 lb
T1	195.00-180.00	A	0.000	0.000	19.175	0.000	82.31
		B	0.000	0.000	77.183	0.000	347.64
		C	0.000	0.000	0.000	0.000	0.00
T2	180.00-175.00	A	0.000	0.000	18.450	0.000	81.71
		B	0.000	0.000	25.728	0.000	121.93
		C	0.000	0.000	0.000	0.000	0.00
T3	175.00-170.00	A	0.000	0.000	18.450	0.000	81.71
		B	0.000	0.000	25.728	0.000	121.93
		C	0.000	0.000	0.000	0.000	0.00
T4	170.00-160.00	A	0.000	0.000	36.900	0.000	163.42
		B	0.000	0.000	77.839	0.000	405.24
		C	0.000	0.000	0.000	0.000	0.00
T5	160.00-150.00	A	0.000	0.000	36.900	0.000	163.42
		B	0.000	0.000	80.215	0.000	416.38
		C	0.000	0.000	6.500	0.000	63.90
T6	150.00-140.00	A	0.000	0.000	36.900	0.000	163.42
		B	0.000	0.000	80.215	0.000	416.38
		C	0.000	0.000	10.000	0.000	104.11
T7	140.00-133.33	A	0.000	0.000	24.600	0.000	108.95
		B	0.000	0.000	53.477	0.000	277.59
		C	0.000	0.000	6.667	0.000	69.41
T8	133.33-126.67	A	0.000	0.000	24.600	0.000	108.95
		B	0.000	0.000	53.477	0.000	277.59
		C	0.000	0.000	6.667	0.000	69.41
T9	126.67-120.00	A	0.000	0.000	24.600	0.000	108.95
		B	0.000	0.000	53.477	0.000	277.59
		C	0.000	0.000	6.667	0.000	69.41
T10	120.00-113.33	A	0.000	0.000	24.600	0.000	108.95
		B	0.000	0.000	53.477	0.000	277.59
		C	0.000	0.000	6.667	0.000	69.41
T11	113.33-106.67	A	0.000	0.000	24.600	0.000	108.95
		B	0.000	0.000	53.477	0.000	277.59
		C	0.000	0.000	6.667	0.000	69.41
T12	106.67-100.00	A	0.000	0.000	24.600	0.000	108.95
		B	0.000	0.000	53.477	0.000	277.59
		C	0.000	0.000	6.667	0.000	69.41
T13	100.00-80.00	A	0.000	0.000	73.800	0.000	326.84
		B	0.000	0.000	160.431	0.000	832.76
		C	0.000	0.000	20.000	0.000	208.22
T14	80.00-60.00	A	0.000	0.000	73.800	0.000	326.84
		B	0.000	0.000	160.431	0.000	832.76
		C	0.000	0.000	20.969	0.000	210.54
T15	60.00-50.00	A	0.000	0.000	36.900	0.000	163.42
		B	0.000	0.000	80.565	0.000	421.25
		C	0.000	0.000	10.975	0.000	110.48
T16	50.00-40.00	A	0.000	0.000	36.900	0.000	163.42
		B	0.000	0.000	80.565	0.000	421.25
		C	0.000	0.000	10.975	0.000	110.48
T17	40.00-20.00	A	0.000	0.000	73.800	0.000	326.84
		B	0.000	0.000	161.131	0.000	842.50
		C	0.000	0.000	21.950	0.000	220.96
T18	20.00-0.00	A	0.000	0.000	47.860	0.000	224.29
		B	0.000	0.000	100.959	0.000	548.72
		C	0.000	0.000	16.325	0.000	162.02

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 lb
T1	195.00-180.00	A	1.517	0.000	0.000	36.874	0.000	514.78
		B		0.000	0.000	85.968	0.000	1554.65
		C		0.000	0.000	0.000	0.000	0.00
T2	180.00-175.00	A	1.509	0.000	0.000	31.514	0.000	473.74
		B		0.000	0.000	30.020	0.000	551.60
		C		0.000	0.000	0.000	0.000	0.00
T3	175.00-170.00	A	1.504	0.000	0.000	31.471	0.000	472.46
		B		0.000	0.000	29.992	0.000	550.44
		C		0.000	0.000	0.000	0.000	0.00
T4	170.00-160.00	A	1.498	0.000	0.000	62.806	0.000	940.95
		B		0.000	0.000	113.299	0.000	1895.52
		C		0.000	0.000	0.000	0.000	0.00
T5	160.00-150.00	A	1.488	0.000	0.000	62.617	0.000	935.42
		B		0.000	0.000	117.459	0.000	1945.62
		C		0.000	0.000	17.821	0.000	294.33
T6	150.00-140.00	A	1.478	0.000	0.000	62.416	0.000	929.58
		B		0.000	0.000	117.227	0.000	1935.32
		C		0.000	0.000	26.809	0.000	416.93
T7	140.00-133.33	A	1.470	0.000	0.000	41.492	0.000	616.30
		B		0.000	0.000	78.015	0.000	1284.17
		C		0.000	0.000	17.818	0.000	276.28
T8	133.33-126.67	A	1.462	0.000	0.000	41.393	0.000	613.43
		B		0.000	0.000	77.900	0.000	1279.10
		C		0.000	0.000	17.773	0.000	274.89
T9	126.67-120.00	A	1.455	0.000	0.000	41.289	0.000	610.44
		B		0.000	0.000	77.780	0.000	1273.80
		C		0.000	0.000	17.725	0.000	273.43
T10	120.00-113.33	A	1.447	0.000	0.000	41.180	0.000	607.30
		B		0.000	0.000	77.654	0.000	1268.25
		C		0.000	0.000	17.675	0.000	271.90
T11	113.33-106.67	A	1.438	0.000	0.000	41.065	0.000	604.01
		B		0.000	0.000	77.521	0.000	1262.42
		C		0.000	0.000	17.623	0.000	270.30
T12	106.67-100.00	A	1.429	0.000	0.000	40.944	0.000	600.55
		B		0.000	0.000	77.381	0.000	1256.28
		C		0.000	0.000	17.567	0.000	268.61
T13	100.00-80.00	A	1.410	0.000	0.000	122.037	0.000	1779.03
		B		0.000	0.000	231.223	0.000	3728.66
		C		0.000	0.000	52.337	0.000	794.82
T14	80.00-60.00	A	1.375	0.000	0.000	120.617	0.000	1739.08
		B		0.000	0.000	229.582	0.000	3657.52
		C		0.000	0.000	56.917	0.000	829.77
T15	60.00-50.00	A	1.342	0.000	0.000	59.644	0.000	851.07
		B		0.000	0.000	117.057	0.000	1828.36
		C		0.000	0.000	31.882	0.000	445.08
T16	50.00-40.00	A	1.315	0.000	0.000	59.103	0.000	836.21
		B		0.000	0.000	116.379	0.000	1800.74
		C		0.000	0.000	31.528	0.000	435.82
T17	40.00-20.00	A	1.263	0.000	0.000	116.087	0.000	1615.01
		B		0.000	0.000	230.102	0.000	3494.41
		C		0.000	0.000	61.668	0.000	836.01
T18	20.00-0.00	A	1.132	0.000	0.000	77.732	0.000	1025.49
		B		0.000	0.000	145.579	0.000	2104.09
		C		0.000	0.000	43.494	0.000	576.77

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	195.00-180.00	4.8305	-6.6255	3.1624	-5.8189
T2	180.00-175.00	2.6368	-8.9625	1.9589	-8.8978
T3	175.00-170.00	2.7313	-9.5300	2.1256	-9.7447
T4	170.00-160.00	6.3825	-5.9770	5.9101	-6.6544
T5	160.00-150.00	6.3632	-5.1713	5.8493	-5.4646
T6	150.00-140.00	6.7903	-5.5652	6.3286	-5.7845
T7	140.00-133.33	7.7237	-6.2393	7.2918	-6.5948
T8	133.33-126.67	8.2622	-6.6821	7.8326	-7.0760
T9	126.67-120.00	8.7716	-7.1078	8.3506	-7.5401
T10	120.00-113.33	8.0539	-6.7941	8.1121	-7.4514
T11	113.33-106.67	8.4093	-7.1200	8.5218	-7.8337
T12	106.67-100.00	9.0882	-7.6494	9.0759	-8.3152
T13	100.00-80.00	8.9692	-7.7493	9.3706	-8.6824
T14	80.00-60.00	10.8596	-9.0898	11.0345	-9.6521
T15	60.00-50.00	11.5900	-9.4916	11.5315	-8.8348
T16	50.00-40.00	11.9885	-9.8646	12.0111	-9.2265
T17	40.00-20.00	13.3372	-10.8917	13.4141	-10.2643
T18	20.00-0.00	8.9885	-8.4199	9.6895	-9.0823

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	6	1 5/8" Hybrid	180.00 - 195.00	0.6000	0.4557
T1	7	LDF7-50A (1-5/8 FOAM)	180.00 - 195.00	0.6000	0.4557
T1	8	WG Rail 1.5x1.5x3/16	180.00 - 195.00	0.6000	0.4557
T1	18	LDF7-50A (1-5/8 FOAM)	180.00 - 185.00	0.6000	0.4557
T1	19	7/16" Fiber Cable (24 fibers Max)	180.00 - 185.00	0.6000	0.4557
T1	21	LDF5-50A (7/8 FOAM)	180.00 - 185.00	0.6000	0.4557
T1	22	WG Rail 1.5x1.5x1/8	180.00 - 185.00	0.6000	0.4557
T1	29	Safety Line 3/8	180.00 - 195.00	0.6000	0.4557
T1	30	Step Pegs (5/8" SR) 7-in. w/30" step	180.00 - 195.00	0.6000	0.4557
T1	41	Rung L1.5x1.5x1/8 (36"w, 34"s)	180.00 - 181.00	0.6000	0.4557
T2	6	1 5/8" Hybrid	175.00 - 180.00	0.6000	0.4913
T2	7	LDF7-50A (1-5/8 FOAM)	175.00 - 180.00	0.6000	0.4913
T2	8	WG Rail 1.5x1.5x3/16	175.00 - 180.00	0.6000	0.4913
T2	18	LDF7-50A (1-5/8 FOAM)	175.00 - 180.00	0.6000	0.4913
T2	19	7/16" Fiber Cable (24 fibers Max)	175.00 - 180.00	0.6000	0.4913
T2	21	LDF5-50A (7/8 FOAM)	175.00 - 180.00	0.6000	0.4913

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T2	22	WG Rail 1.5x1.5x1/8	175.00 - 180.00	0.6000	0.4913
T2	29	Safety Line 3/8	175.00 - 180.00	0.6000	0.4913
T2	30	Step Pegs (5/8" SR) 7-in. w/30" step	175.00 - 180.00	0.6000	0.4913
T2	41	Rung L1.5x1.5x1/8 (36"w, 34"s)	175.00 - 180.00	0.6000	0.4913
T2	44	Rung L1.5x1.5x1/8 (36"w, 34"s)	175.00 - 180.00	0.6000	0.4913
T3	6	1 5/8" Hybrid	170.00 - 175.00	0.6000	0.5042
T3	7	LDF7-50A (1-5/8 FOAM)	170.00 - 175.00	0.6000	0.5042
T3	8	WG Rail 1.5x1.5x3/16	170.00 - 175.00	0.6000	0.5042
T3	18	LDF7-50A (1-5/8 FOAM)	170.00 - 175.00	0.6000	0.5042
T3	19	7/16" Fiber Cable (24 fibers Max)	170.00 - 175.00	0.6000	0.5042
T3	21	LDF5-50A (7/8 FOAM)	170.00 - 175.00	0.6000	0.5042
T3	22	WG Rail 1.5x1.5x1/8	170.00 - 175.00	0.6000	0.5042
T3	29	Safety Line 3/8	170.00 - 175.00	0.6000	0.5042
T3	30	Step Pegs (5/8" SR) 7-in. w/30" step	170.00 - 175.00	0.6000	0.5042
T3	41	Rung L1.5x1.5x1/8 (36"w, 34"s)	170.00 - 175.00	0.6000	0.5042
T3	44	Rung L1.5x1.5x1/8 (36"w, 34"s)	170.00 - 175.00	0.6000	0.5042
T4	1	LDF7-50A (1-5/8 FOAM)	160.00 - 169.00	0.6000	0.5443
T4	2	HB158-1-08U8-S8J18(1-5/8)	160.00 - 169.00	0.6000	0.5443
T4	3	WG Rail 1.5x1.5x1/4	160.00 - 170.00	0.6000	0.5443
T4	6	1 5/8" Hybrid	160.00 - 170.00	0.6000	0.5443
T4	7	LDF7-50A (1-5/8 FOAM)	160.00 - 170.00	0.6000	0.5443
T4	8	WG Rail 1.5x1.5x3/16	160.00 - 170.00	0.6000	0.5443
T4	18	LDF7-50A (1-5/8 FOAM)	160.00 - 170.00	0.6000	0.5443
T4	19	7/16" Fiber Cable (24 fibers Max)	160.00 - 170.00	0.6000	0.5443
T4	21	LDF5-50A (7/8 FOAM)	160.00 - 170.00	0.6000	0.5443
T4	22	WG Rail 1.5x1.5x1/8	160.00 - 170.00	0.6000	0.5443
T4	29	Safety Line 3/8	160.00 - 170.00	0.6000	0.5443
T4	30	Step Pegs (5/8" SR) 7-in. w/30" step	160.00 - 170.00	0.6000	0.5443
T4	39	Rung L1.5x1.5x1/8 (36.25"w, 34"s)	160.00 - 170.00	0.6000	0.5443
T4	41	Rung L1.5x1.5x1/8 (36"w, 34"s)	160.00 - 170.00	0.6000	0.5443
T4	44	Rung L1.5x1.5x1/8 (36"w, 34"s)	160.00 - 170.00	0.6000	0.5443

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T5	1	LDF7-50A (1-5/8 FOAM)	150.00 - 160.00	0.6000	0.5650
T5	2	HB158-1-08U8-S8J18(1-5/8)	150.00 - 160.00	0.6000	0.5650
T5	3	WG Rail 1.5x1.5x1/4	150.00 - 160.00	0.6000	0.5650
T5	6	1 5/8" Hybrid	150.00 - 160.00	0.6000	0.5650
T5	7	LDF7-50A (1-5/8 FOAM)	150.00 - 160.00	0.6000	0.5650
T5	8	WG Rail 1.5x1.5x3/16	150.00 - 160.00	0.6000	0.5650
T5	11	1 1/4 Hybriflex Cable	150.00 - 153.00	0.6000	0.5650
T5	12	WG Rail 1.5x1.5x3/16	150.00 - 160.00	0.6000	0.5650
T5	18	LDF7-50A (1-5/8 FOAM)	150.00 - 160.00	0.6000	0.5650
T5	19	7/16" Fiber Cable (24 fibers Max)	150.00 - 160.00	0.6000	0.5650
T5	21	LDF5-50A (7/8 FOAM)	150.00 - 160.00	0.6000	0.5650
T5	22	WG Rail 1.5x1.5x1/8	150.00 - 160.00	0.6000	0.5650
T5	29	Safety Line 3/8	150.00 - 160.00	0.6000	0.5650
T5	30	Step Pegs (5/8" SR) 7-in. w/30" step	150.00 - 160.00	0.6000	0.5650
T5	39	Rung L1.5x1.5x1/8 (36.25"w, 34"s)	150.00 - 160.00	0.6000	0.5650
T5	41	Rung L1.5x1.5x1/8 (36"w, 34"s)	150.00 - 160.00	0.6000	0.5650
T5	42	Rung L2x1.5x1/8 (35"w, 48"s)	150.00 - 160.00	0.6000	0.5650
T5	44	Rung L1.5x1.5x1/8 (36"w, 34"s)	150.00 - 160.00	0.6000	0.5650
T6	1	LDF7-50A (1-5/8 FOAM)	140.00 - 150.00	0.6000	0.5870
T6	2	HB158-1-08U8-S8J18(1-5/8)	140.00 - 150.00	0.6000	0.5870
T6	3	WG Rail 1.5x1.5x1/4	140.00 - 150.00	0.6000	0.5870
T6	6	1 5/8" Hybrid	140.00 - 150.00	0.6000	0.5870
T6	7	LDF7-50A (1-5/8 FOAM)	140.00 - 150.00	0.6000	0.5870
T6	8	WG Rail 1.5x1.5x3/16	140.00 - 150.00	0.6000	0.5870
T6	11	1 1/4 Hybriflex Cable	140.00 - 150.00	0.6000	0.5870
T6	12	WG Rail 1.5x1.5x3/16	140.00 - 150.00	0.6000	0.5870
T6	18	LDF7-50A (1-5/8 FOAM)	140.00 - 150.00	0.6000	0.5870
T6	19	7/16" Fiber Cable (24 fibers Max)	140.00 - 150.00	0.6000	0.5870
T6	21	LDF5-50A (7/8 FOAM)	140.00 - 150.00	0.6000	0.5870
T6	22	WG Rail 1.5x1.5x1/8	140.00 - 150.00	0.6000	0.5870
T6	29	Safety Line 3/8	140.00 - 150.00	0.6000	0.5870

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T6	30	Step Pegs (5/8" SR) 7-in. w/30" step	140.00 - 150.00	0.6000	0.5870
T6	39	Rung L1.5x1.5x1/8 (36.25"w, 34"s)	140.00 - 150.00	0.6000	0.5870
T6	41	Rung L1.5x1.5x1/8 (36"w, 34"s)	140.00 - 150.00	0.6000	0.5870
T6	42	Rung L2x1.5x1/8 (35"w, 48"s)	140.00 - 150.00	0.6000	0.5870
T6	44	Rung L1.5x1.5x1/8 (36"w, 34"s)	140.00 - 150.00	0.6000	0.5870
T7	1	LDF7-50A (1-5/8 FOAM)	133.33 - 140.00	0.6000	0.6000
T7	2	HB158-1-08U8-S8J18(1-5/8)	133.33 - 140.00	0.6000	0.6000
T7	3	WG Rail 1.5x1.5x1/4	133.33 - 140.00	0.6000	0.6000
T7	6	1 5/8" Hybrid	133.33 - 140.00	0.6000	0.6000
T7	7	LDF7-50A (1-5/8 FOAM)	133.33 - 140.00	0.6000	0.6000
T7	8	WG Rail 1.5x1.5x3/16	133.33 - 140.00	0.6000	0.6000
T7	11	1 1/4 Hybriflex Cable	133.33 - 140.00	0.6000	0.6000
T7	12	WG Rail 1.5x1.5x3/16	133.33 - 140.00	0.6000	0.6000
T7	18	LDF7-50A (1-5/8 FOAM)	133.33 - 140.00	0.6000	0.6000
T7	19	7/16" Fiber Cable (24 fibers Max)	133.33 - 140.00	0.6000	0.6000
T7	21	LDF5-50A (7/8 FOAM)	133.33 - 140.00	0.6000	0.6000
T7	22	WG Rail 1.5x1.5x1/8	133.33 - 140.00	0.6000	0.6000
T7	29	Safety Line 3/8	133.33 - 140.00	0.6000	0.6000
T7	30	Step Pegs (5/8" SR) 7-in. w/30" step	133.33 - 140.00	0.6000	0.6000
T7	39	Rung L1.5x1.5x1/8 (36.25"w, 34"s)	133.33 - 140.00	0.6000	0.6000
T7	41	Rung L1.5x1.5x1/8 (36"w, 34"s)	133.33 - 140.00	0.6000	0.6000
T7	42	Rung L2x1.5x1/8 (35"w, 48"s)	133.33 - 140.00	0.6000	0.6000
T7	44	Rung L1.5x1.5x1/8 (36"w, 34"s)	133.33 - 140.00	0.6000	0.6000
T8	1	LDF7-50A (1-5/8 FOAM)	126.67 - 133.33	0.6000	0.6000
T8	2	HB158-1-08U8-S8J18(1-5/8)	126.67 - 133.33	0.6000	0.6000
T8	3	WG Rail 1.5x1.5x1/4	126.67 - 133.33	0.6000	0.6000
T8	6	1 5/8" Hybrid	126.67 - 133.33	0.6000	0.6000
T8	7	LDF7-50A (1-5/8 FOAM)	126.67 - 133.33	0.6000	0.6000
T8	8	WG Rail 1.5x1.5x3/16	126.67 - 133.33	0.6000	0.6000
T8	11	1 1/4 Hybriflex Cable	126.67 - 133.33	0.6000	0.6000
T8	12	WG Rail 1.5x1.5x3/16	126.67 - 133.33	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T8	18	LDF7-50A (1-5/8 FOAM)	126.67 - 133.33	0.6000	0.6000
T8	19	7/16" Fiber Cable (24 fibers Max)	126.67 - 133.33	0.6000	0.6000
T8	21	LDF5-50A (7/8 FOAM)	126.67 - 133.33	0.6000	0.6000
T8	22	WG Rail 1.5x1.5x1/8	126.67 - 133.33	0.6000	0.6000
T8	29	Safety Line 3/8	126.67 - 133.33	0.6000	0.6000
T8	30	Step Pegs (5/8" SR) 7-in. w/30" step	126.67 - 133.33	0.6000	0.6000
T8	39	Rung L1.5x1.5x1/8 (36.25"w, 34"s)	126.67 - 133.33	0.6000	0.6000
T8	41	Rung L1.5x1.5x1/8 (36"w, 34"s)	126.67 - 133.33	0.6000	0.6000
T8	42	Rung L2x1.5x1/8 (35"w, 48"s)	126.67 - 133.33	0.6000	0.6000
T8	44	Rung L1.5x1.5x1/8 (36"w, 34"s)	126.67 - 133.33	0.6000	0.6000
T9	1	LDF7-50A (1-5/8 FOAM)	120.00 - 126.67	0.6000	0.6000
T9	2	HB158-1-08U8-S8J18(1-5/8)	120.00 - 126.67	0.6000	0.6000
T9	3	WG Rail 1.5x1.5x1/4	120.00 - 126.67	0.6000	0.6000
T9	6	1 5/8" Hybrid	120.00 - 126.67	0.6000	0.6000
T9	7	LDF7-50A (1-5/8 FOAM)	120.00 - 126.67	0.6000	0.6000
T9	8	WG Rail 1.5x1.5x3/16	120.00 - 126.67	0.6000	0.6000
T9	11	1 1/4 Hybriflex Cable	120.00 - 126.67	0.6000	0.6000
T9	12	WG Rail 1.5x1.5x3/16	120.00 - 126.67	0.6000	0.6000
T9	18	LDF7-50A (1-5/8 FOAM)	120.00 - 126.67	0.6000	0.6000
T9	19	7/16" Fiber Cable (24 fibers Max)	120.00 - 126.67	0.6000	0.6000
T9	21	LDF5-50A (7/8 FOAM)	120.00 - 126.67	0.6000	0.6000
T9	22	WG Rail 1.5x1.5x1/8	120.00 - 126.67	0.6000	0.6000
T9	29	Safety Line 3/8	120.00 - 126.67	0.6000	0.6000
T9	30	Step Pegs (5/8" SR) 7-in. w/30" step	120.00 - 126.67	0.6000	0.6000
T9	39	Rung L1.5x1.5x1/8 (36.25"w, 34"s)	120.00 - 126.67	0.6000	0.6000
T9	41	Rung L1.5x1.5x1/8 (36"w, 34"s)	120.00 - 126.67	0.6000	0.6000
T9	42	Rung L2x1.5x1/8 (35"w, 48"s)	120.00 - 126.67	0.6000	0.6000
T9	44	Rung L1.5x1.5x1/8 (36"w, 34"s)	120.00 - 126.67	0.6000	0.6000
T10	1	LDF7-50A (1-5/8 FOAM)	113.33 - 120.00	0.6000	0.6000
T10	2	HB158-1-08U8-S8J18(1-5/8)	113.33 - 120.00	0.6000	0.6000
T10	3	WG Rail 1.5x1.5x1/4	113.33 - 120.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T10	6	1 5/8" Hybrid	113.33 - 120.00	0.6000	0.6000
T10	7	LDF7-50A (1-5/8 FOAM)	113.33 - 120.00	0.6000	0.6000
T10	8	WG Rail 1.5x1.5x3/16	113.33 - 120.00	0.6000	0.6000
T10	11	1 1/4 Hybriflex Cable	113.33 - 120.00	0.6000	0.6000
T10	12	WG Rail 1.5x1.5x3/16	113.33 - 120.00	0.6000	0.6000
T10	18	LDF7-50A (1-5/8 FOAM)	113.33 - 120.00	0.6000	0.6000
T10	19	7/16" Fiber Cable (24 fibers Max)	113.33 - 120.00	0.6000	0.6000
T10	21	LDF5-50A (7/8 FOAM)	113.33 - 120.00	0.6000	0.6000
T10	22	WG Rail 1.5x1.5x1/8	113.33 - 120.00	0.6000	0.6000
T10	29	Safety Line 3/8	113.33 - 120.00	0.6000	0.6000
T10	30	Step Pegs (5/8" SR) 7-in. w/30" step	113.33 - 120.00	0.6000	0.6000
T10	39	Rung L1.5x1.5x1/8 (36.25"w, 34"s)	113.33 - 120.00	0.6000	0.6000
T10	41	Rung L1.5x1.5x1/8 (36"w, 34"s)	113.33 - 120.00	0.6000	0.6000
T10	42	Rung L2x1.5x1/8 (35"w, 48"s)	113.33 - 120.00	0.6000	0.6000
T10	44	Rung L1.5x1.5x1/8 (36"w, 34"s)	113.33 - 120.00	0.6000	0.6000
T11	1	LDF7-50A (1-5/8 FOAM)	106.67 - 113.33	0.6000	0.6000
T11	2	HB158-1-08U8-S8J18(1-5/8)	106.67 - 113.33	0.6000	0.6000
T11	3	WG Rail 1.5x1.5x1/4	106.67 - 113.33	0.6000	0.6000
T11	6	1 5/8" Hybrid	106.67 - 113.33	0.6000	0.6000
T11	7	LDF7-50A (1-5/8 FOAM)	106.67 - 113.33	0.6000	0.6000
T11	8	WG Rail 1.5x1.5x3/16	106.67 - 113.33	0.6000	0.6000
T11	11	1 1/4 Hybriflex Cable	106.67 - 113.33	0.6000	0.6000
T11	12	WG Rail 1.5x1.5x3/16	106.67 - 113.33	0.6000	0.6000
T11	18	LDF7-50A (1-5/8 FOAM)	106.67 - 113.33	0.6000	0.6000
T11	19	7/16" Fiber Cable (24 fibers Max)	106.67 - 113.33	0.6000	0.6000
T11	21	LDF5-50A (7/8 FOAM)	106.67 - 113.33	0.6000	0.6000
T11	22	WG Rail 1.5x1.5x1/8	106.67 - 113.33	0.6000	0.6000
T11	29	Safety Line 3/8	106.67 - 113.33	0.6000	0.6000
T11	30	Step Pegs (5/8" SR) 7-in. w/30" step	106.67 - 113.33	0.6000	0.6000
T11	39	Rung L1.5x1.5x1/8 (36.25"w, 34"s)	106.67 - 113.33	0.6000	0.6000
T11	41	Rung L1.5x1.5x1/8 (36"w, 34"s)	106.67 - 113.33	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T11	42	Rung L2x1.5x1/8 (35"w, 48"s)	106.67 - 113.33	0.6000	0.6000
T11	44	Rung L1.5x1.5x1/8 (36"w, 34"s)	106.67 - 113.33	0.6000	0.6000
T12	1	LDF7-50A (1-5/8 FOAM)	100.00 - 106.67	0.6000	0.6000
T12	2	HB158-1-08U8-S8J18(1-5/8)	100.00 - 106.67	0.6000	0.6000
T12	3	WG Rail 1.5x1.5x1/4	100.00 - 106.67	0.6000	0.6000
T12	6	1 5/8" Hybrid	100.00 - 106.67	0.6000	0.6000
T12	7	LDF7-50A (1-5/8 FOAM)	100.00 - 106.67	0.6000	0.6000
T12	8	WG Rail 1.5x1.5x3/16	100.00 - 106.67	0.6000	0.6000
T12	11	1 1/4 Hybriflex Cable	100.00 - 106.67	0.6000	0.6000
T12	12	WG Rail 1.5x1.5x3/16	100.00 - 106.67	0.6000	0.6000
T12	18	LDF7-50A (1-5/8 FOAM)	100.00 - 106.67	0.6000	0.6000
T12	19	7/16" Fiber Cable (24 fibers Max)	100.00 - 106.67	0.6000	0.6000
T12	21	LDF5-50A (7/8 FOAM)	100.00 - 106.67	0.6000	0.6000
T12	22	WG Rail 1.5x1.5x1/8	100.00 - 106.67	0.6000	0.6000
T12	29	Safety Line 3/8	100.00 - 106.67	0.6000	0.6000
T12	30	Step Pegs (5/8" SR) 7-in. w/30" step	100.00 - 106.67	0.6000	0.6000
T12	39	Rung L1.5x1.5x1/8 (36.25"w, 34"s)	100.00 - 106.67	0.6000	0.6000
T12	41	Rung L1.5x1.5x1/8 (36"w, 34"s)	100.00 - 106.67	0.6000	0.6000
T12	42	Rung L2x1.5x1/8 (35"w, 48"s)	100.00 - 106.67	0.6000	0.6000
T12	44	Rung L1.5x1.5x1/8 (36"w, 34"s)	100.00 - 106.67	0.6000	0.6000
T13	1	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T13	2	HB158-1-08U8-S8J18(1-5/8)	80.00 - 100.00	0.6000	0.6000
T13	3	WG Rail 1.5x1.5x1/4	80.00 - 100.00	0.6000	0.6000
T13	6	1 5/8" Hybrid	80.00 - 100.00	0.6000	0.6000
T13	7	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T13	8	WG Rail 1.5x1.5x3/16	80.00 - 100.00	0.6000	0.6000
T13	11	1 1/4 Hybriflex Cable	80.00 - 100.00	0.6000	0.6000
T13	12	WG Rail 1.5x1.5x3/16	80.00 - 100.00	0.6000	0.6000
T13	18	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T13	19	7/16" Fiber Cable (24 fibers Max)	80.00 - 100.00	0.6000	0.6000
T13	21	LDF5-50A (7/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T13	22	WG Rail 1.5x1.5x1/8	80.00 - 100.00	0.6000	0.6000
T13	29	Safety Line 3/8	80.00 - 100.00	0.6000	0.6000
T13	30	Step Pegs (5/8" SR) 7-in. w/30" step	80.00 - 100.00	0.6000	0.6000
T13	39	Rung L1.5x1.5x1/8 (36.25"w, 34"s)	80.00 - 100.00	0.6000	0.6000
T13	41	Rung L1.5x1.5x1/8 (36"w, 34"s)	80.00 - 100.00	0.6000	0.6000
T13	42	Rung L2x1.5x1/8 (35"w, 48"s)	80.00 - 100.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T13	44	Rung L1.5x1.5x1/8 (36"w, 34"s)	80.00 - 100.00	0.6000	0.6000
T14	1	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T14	2	HB158-1-08U8-S8J18(1-5/8)	60.00 - 80.00	0.6000	0.6000
T14	3	WG Rail 1.5x1.5x1/4	60.00 - 80.00	0.6000	0.6000
T14	6	1 5/8" Hybrid	60.00 - 80.00	0.6000	0.6000
T14	7	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T14	8	WG Rail 1.5x1.5x3/16	60.00 - 80.00	0.6000	0.6000
T14	10	5/8" dia. coax	60.00 - 75.50	0.6000	0.6000
T14	11	1 1/4 Hybriflex Cable	60.00 - 80.00	0.6000	0.6000
T14	12	WG Rail 1.5x1.5x3/16	60.00 - 80.00	0.6000	0.6000
T14	18	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T14	19	7/16" Fiber Cable (24 fibers Max)	60.00 - 80.00	0.6000	0.6000
T14	21	LDF5-50A (7/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T14	22	WG Rail 1.5x1.5x1/8	60.00 - 80.00	0.6000	0.6000
T14	29	Safety Line 3/8	60.00 - 80.00	0.6000	0.6000
T14	30	Step Pegs (5/8" SR) 7-in. w/30" step	60.00 - 80.00	0.6000	0.6000
T14	39	Rung L1.5x1.5x1/8 (36.25"w, 34"s)	60.00 - 80.00	0.6000	0.6000
T14	41	Rung L1.5x1.5x1/8 (36"w, 34"s)	60.00 - 80.00	0.6000	0.6000
T14	42	Rung L2x1.5x1/8 (35"w, 48"s)	60.00 - 80.00	0.6000	0.6000
T14	44	Rung L1.5x1.5x1/8 (36"w, 34"s)	60.00 - 80.00	0.6000	0.6000
T15	1	LDF7-50A (1-5/8 FOAM)	50.00 - 60.00	0.6000	0.6000
T15	2	HB158-1-08U8-S8J18(1-5/8)	50.00 - 60.00	0.6000	0.6000
T15	3	WG Rail 1.5x1.5x1/4	50.00 - 60.00	0.6000	0.6000
T15	6	1 5/8" Hybrid	50.00 - 60.00	0.6000	0.6000
T15	7	LDF7-50A (1-5/8 FOAM)	50.00 - 60.00	0.6000	0.6000
T15	8	WG Rail 1.5x1.5x3/16	50.00 - 60.00	0.6000	0.6000
T15	10	5/8" dia. coax	50.00 - 60.00	0.6000	0.6000
T15	11	1 1/4 Hybriflex Cable	50.00 - 60.00	0.6000	0.6000
T15	12	WG Rail 1.5x1.5x3/16	50.00 - 60.00	0.6000	0.6000
T15	18	LDF7-50A (1-5/8 FOAM)	50.00 - 60.00	0.6000	0.6000
T15	19	7/16" Fiber Cable (24 fibers Max)	50.00 - 60.00	0.6000	0.6000
T15	21	LDF5-50A (7/8 FOAM)	50.00 - 60.00	0.6000	0.6000
T15	22	WG Rail 1.5x1.5x1/8	50.00 - 60.00	0.6000	0.6000
T15	29	Safety Line 3/8	50.00 - 60.00	0.6000	0.6000
T15	30	Step Pegs (5/8" SR) 7-in. w/30" step	50.00 - 60.00	0.6000	0.6000
T15	31	Step Pegs (5/8" SR) 7-in. w/30" step	50.00 - 60.00	0.6000	0.6000
T15	32	Step Pegs (5/8" SR) 7-in. w/30" step	50.00 - 60.00	0.6000	0.6000
T15	39	Rung L1.5x1.5x1/8 (36.25"w, 34"s)	50.00 - 60.00	0.6000	0.6000
T15	41	Rung L1.5x1.5x1/8 (36"w, 34"s)	50.00 - 60.00	0.6000	0.6000
T15	42	Rung L2x1.5x1/8 (35"w, 48"s)	50.00 - 60.00	0.6000	0.6000
T15	44	Rung L1.5x1.5x1/8 (36"w, 34"s)	50.00 - 60.00	0.6000	0.6000
T16	1	LDF7-50A (1-5/8 FOAM)	40.00 - 50.00	0.6000	0.6000
T16	2	HB158-1-08U8-S8J18(1-5/8)	40.00 - 50.00	0.6000	0.6000
T16	3	WG Rail 1.5x1.5x1/4	40.00 - 50.00	0.6000	0.6000
T16	6	1 5/8" Hybrid	40.00 - 50.00	0.6000	0.6000
T16	7	LDF7-50A (1-5/8 FOAM)	40.00 - 50.00	0.6000	0.6000
T16	8	WG Rail 1.5x1.5x3/16	40.00 - 50.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T16	10	5/8" dia. coax	40.00 - 50.00	0.6000	0.6000
T16	11	1 1/4 Hybriflex Cable	40.00 - 50.00	0.6000	0.6000
T16	12	WG Rail 1.5x1.5x3/16	40.00 - 50.00	0.6000	0.6000
T16	18	LDF7-50A (1-5/8 FOAM)	40.00 - 50.00	0.6000	0.6000
T16	19	7/16" Fiber Cable (24 fibers Max)	40.00 - 50.00	0.6000	0.6000
T16	21	LDF5-50A (7/8 FOAM)	40.00 - 50.00	0.6000	0.6000
T16	22	WG Rail 1.5x1.5x1/8	40.00 - 50.00	0.6000	0.6000
T16	29	Safety Line 3/8	40.00 - 50.00	0.6000	0.6000
T16	30	Step Pegs (5/8" SR) 7-in. w/30" step	40.00 - 50.00	0.6000	0.6000
T16	31	Step Pegs (5/8" SR) 7-in. w/30" step	40.00 - 50.00	0.6000	0.6000
T16	32	Step Pegs (5/8" SR) 7-in. w/30" step	40.00 - 50.00	0.6000	0.6000
T16	39	Rung L1.5x1.5x1/8 (36.25"w, 34"s)	40.00 - 50.00	0.6000	0.6000
T16	41	Rung L1.5x1.5x1/8 (36"w, 34"s)	40.00 - 50.00	0.6000	0.6000
T16	42	Rung L2x1.5x1/8 (35"w, 48"s)	40.00 - 50.00	0.6000	0.6000
T16	44	Rung L1.5x1.5x1/8 (36"w, 34"s)	40.00 - 50.00	0.6000	0.6000
T17	1	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T17	2	HB158-1-08U8-S8J18(1-5/8)	20.00 - 40.00	0.6000	0.6000
T17	3	WG Rail 1.5x1.5x1/4	20.00 - 40.00	0.6000	0.6000
T17	6	1 5/8" Hybrid	20.00 - 40.00	0.6000	0.6000
T17	7	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T17	8	WG Rail 1.5x1.5x3/16	20.00 - 40.00	0.6000	0.6000
T17	10	5/8" dia. coax	20.00 - 40.00	0.6000	0.6000
T17	11	1 1/4 Hybriflex Cable	20.00 - 40.00	0.6000	0.6000
T17	12	WG Rail 1.5x1.5x3/16	20.00 - 40.00	0.6000	0.6000
T17	18	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T17	19	7/16" Fiber Cable (24 fibers Max)	20.00 - 40.00	0.6000	0.6000
T17	21	LDF5-50A (7/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T17	22	WG Rail 1.5x1.5x1/8	20.00 - 40.00	0.6000	0.6000
T17	29	Safety Line 3/8	20.00 - 40.00	0.6000	0.6000
T17	30	Step Pegs (5/8" SR) 7-in. w/30" step	20.00 - 40.00	0.6000	0.6000
T17	31	Step Pegs (5/8" SR) 7-in. w/30" step	20.00 - 40.00	0.6000	0.6000
T17	32	Step Pegs (5/8" SR) 7-in. w/30" step	20.00 - 40.00	0.6000	0.6000
T17	39	Rung L1.5x1.5x1/8 (36.25"w, 34"s)	20.00 - 40.00	0.6000	0.6000
T17	41	Rung L1.5x1.5x1/8 (36"w, 34"s)	20.00 - 40.00	0.6000	0.6000
T17	42	Rung L2x1.5x1/8 (35"w, 48"s)	20.00 - 40.00	0.6000	0.6000
T17	44	Rung L1.5x1.5x1/8 (36"w, 34"s)	20.00 - 40.00	0.6000	0.6000
T18	1	LDF7-50A (1-5/8 FOAM)	8.00 - 20.00	0.6000	0.6000
T18	2	HB158-1-08U8-S8J18(1-5/8)	8.00 - 20.00	0.6000	0.6000
T18	3	WG Rail 1.5x1.5x1/4	8.00 - 20.00	0.6000	0.6000
T18	6	1 5/8" Hybrid	8.00 - 20.00	0.6000	0.6000
T18	7	LDF7-50A (1-5/8 FOAM)	8.00 - 20.00	0.6000	0.6000
T18	8	WG Rail 1.5x1.5x3/16	0.00 - 20.00	0.6000	0.6000
T18	10	5/8" dia. coax	10.00 - 20.00	0.6000	0.6000
T18	11	1 1/4 Hybriflex Cable	10.00 - 20.00	0.6000	0.6000
T18	12	WG Rail 1.5x1.5x3/16	0.00 - 20.00	0.6000	0.6000
T18	18	LDF7-50A (1-5/8 FOAM)	8.00 - 20.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T18	19	7/16" Fiber Cable (24 fibers Max)	8.00 - 20.00	0.6000	0.6000
T18	21	LDF5-50A (7/8 FOAM)	8.00 - 20.00	0.6000	0.6000
T18	22	WG Rail 1.5x1.5x1/8	2.00 - 20.00	0.6000	0.6000
T18	29	Safety Line 3/8	0.00 - 20.00	0.6000	0.6000
T18	30	Step Pegs (5/8" SR) 7-in. w/30" step	0.00 - 20.00	0.6000	0.6000
T18	31	Step Pegs (5/8" SR) 7-in. w/30" step	0.00 - 20.00	0.6000	0.6000
T18	32	Step Pegs (5/8" SR) 7-in. w/30" step	0.00 - 20.00	0.6000	0.6000
T18	39	Rung L1.5x1.5x1/8 (36.25"w, 34"s)	8.00 - 20.00	0.6000	0.6000
T18	41	Rung L1.5x1.5x1/8 (36"w, 34"s)	0.00 - 20.00	0.6000	0.6000
T18	42	Rung L2x1.5x1/8 (35"w, 48"s)	0.00 - 20.00	0.6000	0.6000
T18	44	Rung L1.5x1.5x1/8 (36"w, 34"s)	2.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
1.75" Dia x 5-ft Pipe	C	From Leg	2.25		0.0000	75.50	No Ice	0.88	0.88	12.00
			0.00				1/2" Ice	1.32	1.32	19.06
			0.00				1" Ice	1.63	1.63	29.51
							2" Ice	2.28	2.28	61.18
GPS0015	C	From Leg	4.50		0.0000	75.50	No Ice	0.08	0.08	0.50
			0.00				1/2" Ice	0.13	0.13	2.29
			0.75				1" Ice	0.19	0.19	4.89
							2" Ice	0.33	0.33	13.15
****										
****										
Sector Mount [SM 502-3]	C	None			0.0000	153.00	No Ice	33.02	33.02	1673.10
							1/2" Ice	47.36	47.36	2223.90
							1" Ice	61.70	61.70	2774.70
							2" Ice	90.38	90.38	3876.30
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	5.00		0.0000	153.00	No Ice	8.02	6.71	78.90
			0.00				1/2" Ice	8.48	7.66	144.31
			0.00				1" Ice	8.94	8.49	217.47
							2" Ice	9.89	10.20	390.34
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	5.00		0.0000	153.00	No Ice	8.02	6.71	78.90
			0.00				1/2" Ice	8.48	7.66	144.31
			0.00				1" Ice	8.94	8.49	217.47
							2" Ice	9.89	10.20	390.34
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	5.00		0.0000	153.00	No Ice	8.02	6.71	78.90
			0.00				1/2" Ice	8.48	7.66	144.31
			0.00				1" Ice	8.94	8.49	217.47
							2" Ice	9.89	10.20	390.34

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
DT465B-2XR w/ Mount Pipe	A	From Leg	5.00		0.0000	153.00	No Ice	9.34	7.63	83.52
			0.00				1/2" Ice	9.91	8.82	160.00
			0.00				1" Ice	10.44	9.72	244.63
							2" Ice	11.53	11.54	442.00
DT465B-2XR w/ Mount Pipe	B	From Leg	5.00		0.0000	153.00	No Ice	9.34	7.63	83.52
			0.00				1/2" Ice	9.91	8.82	160.00
			0.00				1" Ice	10.44	9.72	244.63
							2" Ice	11.53	11.54	442.00
DT465B-2XR w/ Mount Pipe	C	From Leg	5.00		0.0000	153.00	No Ice	9.34	7.63	83.52
			0.00				1/2" Ice	9.91	8.82	160.00
			0.00				1" Ice	10.44	9.72	244.63
							2" Ice	11.53	11.54	442.00
RRH2x50-08	A	From Leg	5.00		0.0000	153.00	No Ice	1.70	1.28	52.90
			0.00				1/2" Ice	1.86	1.43	69.91
			0.00				1" Ice	2.03	1.58	89.61
							2" Ice	2.40	1.91	137.85
RRH2x50-08	B	From Leg	5.00		0.0000	153.00	No Ice	1.70	1.28	52.90
			0.00				1/2" Ice	1.86	1.43	69.91
			0.00				1" Ice	2.03	1.58	89.61
							2" Ice	2.40	1.91	137.85
RRH2x50-08	C	From Leg	5.00		0.0000	153.00	No Ice	1.70	1.28	52.90
			0.00				1/2" Ice	1.86	1.43	69.91
			0.00				1" Ice	2.03	1.58	89.61
							2" Ice	2.40	1.91	137.85
800MHZ 2X50W RRH	A	From Leg	5.00		0.0000	153.00	No Ice	2.13	1.77	53.00
			0.00				1/2" Ice	2.32	1.95	74.19
			0.00				1" Ice	2.51	2.13	98.39
							2" Ice	2.92	2.51	156.61
800MHZ 2X50W RRH	B	From Leg	5.00		0.0000	153.00	No Ice	2.13	1.77	53.00
			0.00				1/2" Ice	2.32	1.95	74.19
			0.00				1" Ice	2.51	2.13	98.39
							2" Ice	2.92	2.51	156.61
800MHZ 2X50W RRH	C	From Leg	5.00		0.0000	153.00	No Ice	2.13	1.77	53.00
			0.00				1/2" Ice	2.32	1.95	74.19
			0.00				1" Ice	2.51	2.13	98.39
							2" Ice	2.92	2.51	156.61
PCS 1900MHz 4x45W-65MHz	A	From Leg	5.00		0.0000	153.00	No Ice	2.32	2.24	60.00
			0.00				1/2" Ice	2.53	2.44	83.13
			0.00				1" Ice	2.74	2.65	109.50
							2" Ice	3.19	3.09	172.72
PCS 1900MHz 4x45W-65MHz	B	From Leg	5.00		0.0000	153.00	No Ice	2.32	2.24	60.00
			0.00				1/2" Ice	2.53	2.44	83.13
			0.00				1" Ice	2.74	2.65	109.50
							2" Ice	3.19	3.09	172.72
PCS 1900MHz 4x45W-65MHz	C	From Leg	5.00		0.0000	153.00	No Ice	2.32	2.24	60.00
			0.00				1/2" Ice	2.53	2.44	83.13
			0.00				1" Ice	2.74	2.65	109.50
							2" Ice	3.19	3.09	172.72
TD-RRH8x20-25	A	From Leg	5.00		0.0000	153.00	No Ice	3.70	1.29	66.00
			0.00				1/2" Ice	3.95	1.46	89.94
			0.00				1" Ice	4.20	1.64	117.22
							2" Ice	4.72	2.02	182.59
TD-RRH8x20-25	B	From Leg	5.00		0.0000	153.00	No Ice	3.70	1.29	66.00
			0.00				1/2" Ice	3.95	1.46	89.94
			0.00				1" Ice	4.20	1.64	117.22
							2" Ice	4.72	2.02	182.59
TD-RRH8x20-25	C	From Leg	5.00		0.0000	153.00	No Ice	3.70	1.29	66.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			0.00			1/2" Ice	3.95	1.46	89.94
			0.00			1" Ice	4.20	1.64	117.22
						2" Ice	4.72	2.02	182.59
****									
(3) Sector Mounts 169-ft	C	None		0.0000	169.00	No Ice	21.56	21.56	1395.40
						1/2" Ice	29.77	29.77	2140.10
						1" Ice	37.98	37.98	2884.80
						2" Ice	54.40	54.40	4374.20
(2) BXA-70063/6CF w/ Mount Pipe	A	From Leg	5.00	0.0000	169.00	No Ice	7.59	5.18	38.90
			0.00			1/2" Ice	8.04	6.11	95.39
			0.00			1" Ice	8.50	6.92	159.37
						2" Ice	9.44	8.59	313.07
(2) DB844G65ZAXY w/Mount Pipe	B	From Leg	5.00	0.0000	169.00	No Ice	5.05	5.28	41.55
			0.00			1/2" Ice	5.68	6.31	92.81
			0.00			1" Ice	6.19	7.06	150.42
						2" Ice	7.23	8.58	288.32
(2) DB844G65ZAXY w/Mount Pipe	C	From Leg	5.00	0.0000	169.00	No Ice	5.05	5.28	41.55
			0.00			1/2" Ice	5.68	6.31	92.81
			0.00			1" Ice	6.19	7.06	150.42
						2" Ice	7.23	8.58	288.32
DB-B1/T1 w/ Mount Pipe	C	From Leg	5.00	0.0000	169.00	No Ice	4.88	4.18	57.55
			0.00			1/2" Ice	5.61	5.12	107.53
			0.00			1" Ice	6.16	5.77	163.14
						2" Ice	7.27	7.12	294.91
(2) HBXX-6517DS-A2M w/ Mount Pipe	A	From Leg	5.00	0.0000	169.00	No Ice	8.77	6.96	67.23
			0.00			1/2" Ice	9.34	8.18	136.85
			0.00			1" Ice	9.89	9.14	214.64
						2" Ice	10.99	11.02	398.47
(2) HBXX-6517DS-A2M w/ Mount Pipe	B	From Leg	5.00	0.0000	169.00	No Ice	8.77	6.96	67.23
			0.00			1/2" Ice	9.34	8.18	136.85
			0.00			1" Ice	9.89	9.14	214.64
						2" Ice	10.99	11.02	398.47
(2) HBXX-6517DS-A2M w/ Mount Pipe	C	From Leg	5.00	0.0000	169.00	No Ice	8.77	6.96	67.23
			0.00			1/2" Ice	9.34	8.18	136.85
			0.00			1" Ice	9.89	9.14	214.64
						2" Ice	10.99	11.02	398.47
RRH2x60-AWS	A	From Leg	5.00	0.0000	169.00	No Ice	3.50	1.82	60.00
			0.00			1/2" Ice	3.76	2.05	82.72
			0.00			1" Ice	4.03	2.29	109.06
						2" Ice	4.58	2.79	173.43
RRH2x60-AWS	B	From Leg	5.00	0.0000	169.00	No Ice	3.50	1.82	60.00
			0.00			1/2" Ice	3.76	2.05	82.72
			0.00			1" Ice	4.03	2.29	109.06
						2" Ice	4.58	2.79	173.43
RRH2x60-AWS	C	From Leg	5.00	0.0000	169.00	No Ice	3.50	1.82	60.00
			0.00			1/2" Ice	3.76	2.05	82.72
			0.00			1" Ice	4.03	2.29	109.06
						2" Ice	4.58	2.79	173.43
RRH2X60-PCS	A	From Leg	5.00	0.0000	169.00	No Ice	2.20	1.72	55.00
			0.00			1/2" Ice	2.39	1.90	75.35
			0.00			1" Ice	2.59	2.09	98.71
						2" Ice	3.01	2.48	155.23
RRH2X60-PCS	B	From Leg	5.00	0.0000	169.00	No Ice	2.20	1.72	55.00
			0.00			1/2" Ice	2.39	1.90	75.35
			0.00			1" Ice	2.59	2.09	98.71
						2" Ice	3.01	2.48	155.23
RRH2X60-PCS	C	From Leg	5.00	0.0000	169.00	No Ice	2.20	1.72	55.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			0.00			1/2" Ice	2.39	1.90	75.35
			0.00			1" Ice	2.59	2.09	98.71
						2" Ice	3.01	2.48	155.23
BXA-70080/6CF w/ Mount Pipe	A	From Leg	5.00	0.0000	169.00	No Ice	7.59	5.54	42.90
			0.00			1/2" Ice	8.04	6.48	100.79
			0.00			1" Ice	8.50	7.30	166.25
						2" Ice	9.44	8.99	323.17
DB846F65ZAXY w/Mount Pipe	B	From Leg	5.00	0.0000	169.00	No Ice	7.27	7.82	46.55
			0.00			1/2" Ice	7.83	9.01	113.93
			0.00			1" Ice	8.35	9.91	189.25
						2" Ice	9.40	11.73	367.34
DB846F65ZAXY w/Mount Pipe	C	From Leg	5.00	0.0000	169.00	No Ice	7.27	7.82	46.55
			0.00			1/2" Ice	7.83	9.01	113.93
			0.00			1" Ice	8.35	9.91	189.25
						2" Ice	9.40	11.73	367.34
(2) FD9R6004	A	From Leg	5.00	0.0000	169.00	No Ice	0.37	0.08	3.10
			0.00			1/2" Ice	0.45	0.14	5.40
			0.00			1" Ice	0.54	0.20	8.79
						2" Ice	0.75	0.34	19.61
(2) FD9R6004	B	From Leg	5.00	0.0000	169.00	No Ice	0.37	0.08	3.10
			0.00			1/2" Ice	0.45	0.14	5.40
			0.00			1" Ice	0.54	0.20	8.79
						2" Ice	0.75	0.34	19.61
(2) FD9R6004	C	From Leg	5.00	0.0000	169.00	No Ice	0.37	0.08	3.10
			0.00			1/2" Ice	0.45	0.14	5.40
			0.00			1" Ice	0.54	0.20	8.79
						2" Ice	0.75	0.34	19.61
****									
(3) Sector Mounts 185-ft	C	None		0.0000	185.00	No Ice	21.56	21.56	1395.40
						1/2" Ice	29.77	29.77	2140.10
						1" Ice	37.98	37.98	2884.80
						2" Ice	54.40	54.40	4374.20
Miscellaneous [NA 510-1]	C	None		0.0000	185.00	No Ice	6.00	6.00	255.70
						1/2" Ice	8.50	8.50	339.50
						1" Ice	11.00	11.00	409.12
						2" Ice	16.00	16.00	562.54
7770.00 w/ Mount Pipe	A	From Leg	5.00	0.0000	185.00	No Ice	5.84	4.35	56.90
			0.00			1/2" Ice	6.32	5.20	105.42
			3.00			1" Ice	6.77	5.92	160.42
						2" Ice	7.71	7.41	293.10
7770.00 w/ Mount Pipe	B	From Leg	5.00	0.0000	185.00	No Ice	5.84	4.35	56.90
			0.00			1/2" Ice	6.32	5.20	105.42
			3.00			1" Ice	6.77	5.92	160.42
						2" Ice	7.71	7.41	293.10
7770.00 w/ Mount Pipe	C	From Leg	5.00	0.0000	185.00	No Ice	5.84	4.35	56.90
			0.00			1/2" Ice	6.32	5.20	105.42
			3.00			1" Ice	6.77	5.92	160.42
						2" Ice	7.71	7.41	293.10
(2) LGP13519	A	From Leg	5.00	0.0000	185.00	No Ice	0.30	0.29	8.04
			0.00			1/2" Ice	0.38	0.41	12.97
			3.00			1" Ice	0.47	0.54	19.68
						2" Ice	0.67	0.88	39.83
(2) LGP13519	B	From Leg	5.00	0.0000	185.00	No Ice	0.30	0.29	8.04
			0.00			1/2" Ice	0.38	0.41	12.97
			3.00			1" Ice	0.47	0.54	19.68
						2" Ice	0.67	0.88	39.83
(2) LGP13519	C	From Leg	5.00	0.0000	185.00	No Ice	0.30	0.29	8.04

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			0.00				1/2" Ice	0.38	0.41	12.97
			3.00				1" Ice	0.47	0.54	19.68
							2" Ice	0.67	0.88	39.83
DC6-48-60-18-8F	A	From Leg	0.50		0.0000	185.00	No Ice	1.21	1.21	32.80
			0.00				1/2" Ice	1.89	1.89	54.76
			3.00				1" Ice	2.11	2.11	79.58
							2" Ice	2.57	2.57	138.43
DC6-48-60-18-8F	B	From Leg	0.50		0.0000	185.00	No Ice	1.21	1.21	32.80
			0.00				1/2" Ice	1.89	1.89	54.76
			3.00				1" Ice	2.11	2.11	79.58
							2" Ice	2.57	2.57	138.43
DC6-48-60-0-8C-EV	C	From Leg	0.50		0.0000	185.00	No Ice	2.74	4.78	26.20
			0.00				1/2" Ice	2.96	5.06	63.26
			3.00				1" Ice	3.20	5.35	104.40
							2" Ice	3.68	5.95	199.70
SBNHH-1D65A w/ Mount Pipe	A	From Leg	5.00		0.0000	185.00	No Ice	6.29	5.59	68.24
			0.00				1/2" Ice	6.74	6.31	126.00
			3.00				1" Ice	7.20	7.03	191.24
							2" Ice	8.14	8.51	342.55
SBNHH-1D65A w/ Mount Pipe	B	From Leg	5.00		0.0000	185.00	No Ice	6.29	5.59	68.24
			0.00				1/2" Ice	6.74	6.31	126.00
			3.00				1" Ice	7.20	7.03	191.24
							2" Ice	8.14	8.51	342.55
SBNHH-1D65A w/ Mount Pipe	C	From Leg	5.00		0.0000	185.00	No Ice	6.29	5.59	68.24
			0.00				1/2" Ice	6.74	6.31	126.00
			3.00				1" Ice	7.20	7.03	191.24
							2" Ice	8.14	8.51	342.55
(2) DMP65R-BU8D w/ Mount Pipe	A	From Leg	5.00		0.0000	185.00	No Ice	18.11	10.26	128.55
			0.00				1/2" Ice	18.84	11.78	249.84
			3.00				1" Ice	19.59	13.33	381.67
							2" Ice	21.01	15.67	681.31
(2) DMP65R-BU8D w/ Mount Pipe	B	From Leg	5.00		0.0000	185.00	No Ice	18.11	10.26	128.55
			0.00				1/2" Ice	18.84	11.78	249.84
			3.00				1" Ice	19.59	13.33	381.67
							2" Ice	21.01	15.67	681.31
(2) DMP65R-BU8D w/ Mount Pipe	C	From Leg	5.00		0.0000	185.00	No Ice	18.11	10.26	128.55
			0.00				1/2" Ice	18.84	11.78	249.84
			3.00				1" Ice	19.59	13.33	381.67
							2" Ice	21.01	15.67	681.31
RRUS 4449 B5/B12	A	From Leg	5.00		0.0000	185.00	No Ice	1.97	1.41	71.00
			0.00				1/2" Ice	2.14	1.56	89.51
			3.00				1" Ice	2.33	1.73	110.84
							2" Ice	2.72	2.07	162.74
RRUS 4449 B5/B12	B	From Leg	5.00		0.0000	185.00	No Ice	1.97	1.41	71.00
			0.00				1/2" Ice	2.14	1.56	89.51
			3.00				1" Ice	2.33	1.73	110.84
							2" Ice	2.72	2.07	162.74
RRUS 4449 B5/B12	C	From Leg	5.00		0.0000	185.00	No Ice	1.97	1.41	71.00
			0.00				1/2" Ice	2.14	1.56	89.51
			3.00				1" Ice	2.33	1.73	110.84
							2" Ice	2.72	2.07	162.74
RRUS 4478 B14	A	From Leg	5.00		0.0000	185.00	No Ice	1.84	1.06	59.90
			0.00				1/2" Ice	2.01	1.20	75.78
			3.00				1" Ice	2.19	1.34	94.29
							2" Ice	2.57	1.66	139.98
RRUS 4478 B14	B	From Leg	5.00		0.0000	185.00	No Ice	1.84	1.06	59.90
			0.00				1/2" Ice	2.01	1.20	75.78

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			3.00				1" Ice	2.19	1.34	94.29
							2" Ice	2.57	1.66	139.98
RRUS 4478 B14	C	From Leg	5.00		0.0000	185.00	No Ice	1.84	1.06	59.90
			0.00				1/2" Ice	2.01	1.20	75.78
			3.00				1" Ice	2.19	1.34	94.29
							2" Ice	2.57	1.66	139.98
RRUS 8843 B2/B66A	A	From Leg	5.00		0.0000	185.00	No Ice	1.64	1.35	72.00
			0.00				1/2" Ice	1.80	1.50	89.60
			3.00				1" Ice	1.97	1.65	109.91
							2" Ice	2.32	1.99	159.50
RRUS 8843 B2/B66A	B	From Leg	5.00		0.0000	185.00	No Ice	1.64	1.35	72.00
			0.00				1/2" Ice	1.80	1.50	89.60
			3.00				1" Ice	1.97	1.65	109.91
							2" Ice	2.32	1.99	159.50
RRUS 8843 B2/B66A	C	From Leg	5.00		0.0000	185.00	No Ice	1.64	1.35	72.00
			0.00				1/2" Ice	1.80	1.50	89.60
			3.00				1" Ice	1.97	1.65	109.91
							2" Ice	2.32	1.99	159.50
****										
Sector Mount [SM 802-3]	C	None			0.0000	195.00	No Ice	24.41	24.41	930.00
							1/2" Ice	31.39	31.39	1362.00
							1" Ice	38.37	38.37	1794.00
							2" Ice	52.33	52.33	2658.00
HSS Top Mount	C	None			0.0000	195.00	No Ice	8.08	8.08	328.90
							1/2" Ice	9.70	9.70	415.20
							1" Ice	11.32	11.32	501.50
							2" Ice	14.56	14.56	674.10
APXVAARR24_43-U-NA20 w/ MP	A	From Leg	3.00		0.0000	195.00	No Ice	20.24	10.79	157.20
			0.00				1/2" Ice	20.89	12.21	290.89
			0.00				1" Ice	21.55	13.49	435.20
							2" Ice	22.88	15.72	759.63
APXVAARR24_43-U-NA20 w/ MP	B	From Leg	3.00		0.0000	195.00	No Ice	20.24	10.79	157.20
			0.00				1/2" Ice	20.89	12.21	290.89
			0.00				1" Ice	21.55	13.49	435.20
							2" Ice	22.88	15.72	759.63
APXVAARR24_43-U-NA20 w/ MP	C	From Leg	3.00		0.0000	195.00	No Ice	20.24	10.79	157.20
			0.00				1/2" Ice	20.89	12.21	290.89
			0.00				1" Ice	21.55	13.49	435.20
							2" Ice	22.88	15.72	759.63
APX16DWV-16DWV-S-E-A 20 w/ Mount Pipe	A	From Leg	3.00		0.0000	195.00	No Ice	6.91	3.57	62.60
			0.00				1/2" Ice	7.39	4.41	112.02
			0.00				1" Ice	7.86	5.13	168.01
							2" Ice	8.81	6.61	302.93
APX16DWV-16DWV-S-E-A 20 w/ Mount Pipe	B	From Leg	3.00		0.0000	195.00	No Ice	6.91	3.57	62.60
			0.00				1/2" Ice	7.39	4.41	112.02
			0.00				1" Ice	7.86	5.13	168.01
							2" Ice	8.81	6.61	302.93
APX16DWV-16DWV-S-E-A 20 w/ Mount Pipe	C	From Leg	3.00		0.0000	195.00	No Ice	6.91	3.57	62.60
			0.00				1/2" Ice	7.39	4.41	112.02
			0.00				1" Ice	7.86	5.13	168.01
							2" Ice	8.81	6.61	302.93
(2) KRY 112 71	A	From Leg	3.00		0.0000	195.00	No Ice	0.63	0.61	18.07
			0.00				1/2" Ice	0.75	0.79	26.97
			0.00				1" Ice	0.89	0.99	38.22
							2" Ice	1.18	1.44	69.33
(2) KRY 112 71	B	From Leg	3.00		0.0000	195.00	No Ice	0.63	0.61	18.07
			0.00				1/2" Ice	0.75	0.79	26.97

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			0.00			1" Ice	0.89	0.99	38.22
						2" Ice	1.18	1.44	69.33
(2) KRY 112 71	C	From Leg	3.00	0.0000	195.00	No Ice	0.63	0.61	18.07
			0.00			1/2" Ice	0.75	0.79	26.97
			0.00			1" Ice	0.89	0.99	38.22
						2" Ice	1.18	1.44	69.33
RADIO 4449 B12/B71	A	From Leg	3.00	0.0000	195.00	No Ice	1.64	1.15	74.00
			0.00			1/2" Ice	1.80	1.29	90.07
			0.00			1" Ice	1.97	1.44	108.76
						2" Ice	2.33	1.75	154.77
RADIO 4449 B12/B71	B	From Leg	3.00	0.0000	195.00	No Ice	1.64	1.15	74.00
			0.00			1/2" Ice	1.80	1.29	90.07
			0.00			1" Ice	1.97	1.44	108.76
						2" Ice	2.33	1.75	154.77
RADIO 4449 B12/B71	C	From Leg	3.00	0.0000	195.00	No Ice	1.64	1.15	74.00
			0.00			1/2" Ice	1.80	1.29	90.07
			0.00			1" Ice	1.97	1.44	108.76
						2" Ice	2.33	1.75	154.77
AIR -32 B2A/B66AA	A	From Leg	3.00	0.0000	195.00	No Ice	6.51	4.71	132.20
			0.00			1/2" Ice	6.89	5.07	178.02
			0.00			1" Ice	7.27	5.43	229.11
						2" Ice	8.06	6.18	347.85
AIR -32 B2A/B66AA	B	From Leg	3.00	0.0000	195.00	No Ice	6.51	4.71	132.20
			0.00			1/2" Ice	6.89	5.07	178.02
			0.00			1" Ice	7.27	5.43	229.11
						2" Ice	8.06	6.18	347.85
AIR -32 B2A/B66AA	C	From Leg	3.00	0.0000	195.00	No Ice	6.51	4.71	132.20
			0.00			1/2" Ice	6.89	5.07	178.02
			0.00			1" Ice	7.27	5.43	229.11
						2" Ice	8.06	6.18	347.85
****									
TMO Future Loading	C	None		0.0000	195.00	No Ice	10.58	10.58	196.91
						1/2" Ice	11.65	11.65	294.20
						1" Ice	12.72	12.72	391.49
						2" Ice	14.86	14.86	586.06
******									

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

tnxTower	Job: US-CT-1003 - Straits Turnpike	Page: 28 of 37
Tower Engineering Professionals, Inc 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661- 6351 FAX: (919) 661- 6350	Project: TEP No. 25628.295644, Rev. 1	Date: 09:47:46 11/19/19
	Client: Phoenix Tower International	Designed by: MMW

Comb. No.	Description
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	195 - 180	7.072	42	0.4225	0.0662
T2	180 - 175	5.690	42	0.3932	0.0313
T3	175 - 170	5.281	42	0.3673	0.0287
T4	170 - 160	4.909	42	0.3387	0.0268
T5	160 - 150	4.225	42	0.3049	0.0251
T6	150 - 140	3.629	42	0.2582	0.0235
T7	140 - 133.333	3.112	42	0.2265	0.0219
T8	133.333 - 126.667	2.797	42	0.2156	0.0204
T9	126.667 - 120	2.496	42	0.2045	0.0189
T10	120 - 113.333	2.209	42	0.1933	0.0171
T11	113.333 - 106.667	1.945	42	0.1759	0.0158
T12	106.667 - 100	1.704	42	0.1584	0.0146
T13	100 - 80	1.488	42	0.1409	0.0131

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T14	80 - 60	0.933	42	0.1148	0.0097
T15	60 - 50	0.501	42	0.0798	0.0063
T16	50 - 40	0.340	42	0.0624	0.0049
T17	40 - 20	0.217	47	0.0451	0.0035
T18	20 - 0	0.062	47	0.0224	0.0017

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
195.00	Sector Mount [SM 802-3]	42	7.072	0.4225	0.0662	26772
185.00	(3) Sector Mounts 185-ft	42	6.132	0.4093	0.0391	13386
169.00	(3) Sector Mounts 169-ft	42	4.838	0.3342	0.0265	16461
153.00	Sector Mount [SM 502-3]	42	3.798	0.2725	0.0240	13493
75.50	1.75" Dia x 5-ft Pipe	42	0.824	0.1082	0.0090	39452

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	195 - 180	26.833	18	1.6070	0.2283
T2	180 - 175	21.593	18	1.4876	0.1187
T3	175 - 170	20.042	18	1.3905	0.1093
T4	170 - 160	18.636	18	1.2827	0.1019
T5	160 - 150	16.045	18	1.1543	0.0954
T6	150 - 140	13.785	18	0.9777	0.0896
T7	140 - 133.333	11.831	18	0.8577	0.0832
T8	133.333 - 126.667	10.636	18	0.8166	0.0778
T9	126.667 - 120	9.496	18	0.7747	0.0721
T10	120 - 113.333	8.405	18	0.7325	0.0650
T11	113.333 - 106.667	7.403	18	0.6667	0.0602
T12	106.667 - 100	6.492	18	0.6003	0.0554
T13	100 - 80	5.671	18	0.5342	0.0498
T14	80 - 60	3.560	18	0.4355	0.0370
T15	60 - 50	1.916	18	0.3031	0.0241
T16	50 - 40	1.302	18	0.2371	0.0186
T17	40 - 20	0.833	18	0.1715	0.0131
T18	20 - 0	0.237	18	0.0852	0.0063

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
195.00	Sector Mount [SM 802-3]	18	26.833	1.6070	0.2283	7200
185.00	(3) Sector Mounts 185-ft	18	23.270	1.5498	0.1439	3600
169.00	(3) Sector Mounts 169-ft	18	18.365	1.2656	0.1009	4378

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
153.00	Sector Mount [SM 502-3]	18	14.427	1.0316	0.0914	3572
75.50	1.75" Dia x 5-ft Pipe	18	3.147	0.4108	0.0342	10467

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load per Bolt lb	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	195	Leg	A325N	0.7500	4	4689.04	30101.40	0.156	1.05	Bolt Tension
T2	180	Diagonal	A325N	0.5000	1	3564.85	4689.84	0.760	1.05	Member Block Shear
		Secondary Horizontal	A325N	0.6250	1	682.74	6830.86	0.100	1.05	Member Block Shear
T3	175	Diagonal	A325X	0.5000	1	3634.92	7245.70	0.502	1.05	Member Block Shear
		Secondary Horizontal	A325N	0.6250	1	871.65	6830.86	0.128	1.05	Member Block Shear
T4	170	Leg	A325N	0.7500	6	10808.20	30101.40	0.359	1.05	Bolt Tension
		Diagonal	A325N	0.5000	1	4775.53	8265.00	0.578	1.05	Gusset Bearing
		Secondary Horizontal	A325N	0.6250	1	1272.11	6830.86	0.186	1.05	Member Block Shear
T5	160	Diagonal	A325X	0.5000	1	5758.03	8265.00	0.697	1.05	Gusset Bearing
		Secondary Horizontal	A325N	0.6250	1	1648.91	6830.86	0.241	1.05	Member Block Shear
T6	150	Leg	A325N	1.0000	6	17648.00	54517.00	0.324	1.05	Bolt Tension
		Diagonal	A325N	0.5000	1	5349.92	8265.00	0.647	1.05	Gusset Bearing
		Secondary Horizontal	A325N	0.6250	1	2058.44	6830.86	0.301	1.05	Member Block Shear
T7	140	Diagonal	A325X	0.6250	1	5401.58	12712.50	0.425	1.05	Member Block Shear
T8	133.333	Diagonal	A325X	0.6250	1	5498.78	12712.50	0.433	1.05	Member Block Shear
T9	126.667	Leg	A325N	1.0000	8	17829.80	54517.00	0.327	1.05	Bolt Tension
		Diagonal	A325N	0.6250	1	5478.65	7830.00	0.700	1.05	Member Bearing
T10	120	Diagonal	A325X	0.6250	1	6554.01	13050.00	0.502	1.05	Member Bearing
		Secondary Horizontal	A325N	0.6250	1	2940.31	7830.00	0.376	1.05	Member Bearing
T11	113.333	Diagonal	A325X	0.6250	1	6564.26	13050.00	0.503	1.05	Member Bearing
		Secondary Horizontal	A325N	0.6250	1	3160.01	7830.00	0.404	1.05	Member Bearing
T12	106.667	Leg	A325N	1.0000	8	21825.80	54517.00	0.400	1.05	Bolt Tension
		Diagonal	A325X	0.6250	1	6697.90	12712.50	0.527	1.05	Member Block Shear
		Secondary Horizontal	A325N	0.6250	1	3364.17	7830.00	0.430	1.05	Member Bearing
T13	100	Leg	A325N	1.2500	8	25769.10	87219.80	0.295	1.05	Bolt Tension
		Diagonal	A325N	0.6250	2	3414.13	11622.70	0.294	1.05	Member Block Shear
		Secondary Horizontal	A325N	0.7500	1	3997.14	13898.40	0.288	1.05	Member Block Shear
T14	80	Leg	A325N	1.2500	8	29551.80	87219.80	0.339	1.05	Bolt Tension
		Diagonal	A325N	0.6250	2	3593.02	11622.70	0.309	1.05	Member Block Shear
T15	60	Diagonal	A325N	0.6250	2	4895.40	13805.80	0.355	1.05	Bolt Shear
		Secondary	A325N	0.6250	1	4813.16	13805.80	0.349	1.05	Bolt Shear

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load per Bolt lb	Ratio Load / Allowable	Allowable Ratio	Criteria
		Horizontal								
T16	50	Leg	A325N	1.2500	8	32633.70	87219.80	0.374	1.05	Bolt Tension
		Diagonal	A325N	0.6250	2	4748.39	13805.80	0.344	1.05	Bolt Shear
		Secondary	A325X	0.7500	1	5108.08	14355.00	0.356	1.05	Member Bearing
		Horizontal								
T17	40	Leg	A325N	1.2500	8	36113.60	87219.80	0.414	1.05	Bolt Tension
		Diagonal	A325N	0.6250	2	4479.42	13805.80	0.324	1.05	Bolt Shear
T18	20	Leg	A36	1.5000	8	40137.30	61128.30	0.657	1.05	Bolt Tension
		Diagonal	A325N	0.6250	2	5030.17	13805.80	0.364	1.05	Bolt Shear

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $P_u / \phi P_n$
T1	195 - 180	PIPE 2.5 STD (SCH 40)	15.00	3.75	47.4 K=1.00	1.7072	-35268.20	70532.50	0.500 [1]
T2	180 - 175	PIPE 2.5 STD (SCH 40)	5.01	2.67	33.8 K=1.00	1.7072	-39368.90	77102.10	0.511 [1]
T3	175 - 170	PIPE 2.5 STD (SCH 40)	5.01	2.65	33.5 K=1.00	1.7072	-50194.90	77205.80	0.650 [1]
T4	170 - 160	2-1/2SCH40 w/ 3SCH80 Half Sleeve	10.02	2.62	34.2 K=1.00	3.2590	-73287.50	96687.00	0.758 [1]
T5	160 - 150	Pipe 3.5 Std (SCH40)	10.02	2.60	23.4 K=1.00	2.6795	-94933.40	126932.00	0.748 [1]
T6	150 - 140	3.5SCH40 w/ 4SCH40 Half Sleeve	10.02	2.59	23.8 K=1.00	4.2666	-118619.00	184209.00	0.644 [1]
T7	140 - 133.333	5 STD w/ 6 XH Half Sleeve	6.68	6.68	45.4 K=1.00	8.5023	-131807.00	306442.00	0.430 [1]
T8	133.333 - 126.667	5 STD w/ 6 XH Half Sleeve	6.68	6.68	45.4 K=1.00	8.5023	-145281.00	306442.00	0.474 [1]
T9	126.667 - 120	5 STD w/ 6 XH Half Sleeve	6.68	6.68	45.4 K=1.00	8.5023	-158606.00	306442.00	0.518 [1]
T10	120 - 113.333	Pipe 6 STD	6.68	3.45	18.4 K=1.00	5.5813	-169430.00	268817.00	0.630 [1]
T11	113.333 - 106.667	Pipe 6 STD	6.68	3.44	18.4 K=1.00	5.5813	-182040.00	268848.00	0.677 [1]
T12	106.667 - 100	Pipe 6 STD	6.68	3.44	18.4 K=1.00	5.5813	-193837.00	268875.00	0.721 [1]
T13	100 - 80	6 STD w/ 7 XH Half Sleeve	20.03	3.42	19.5 K=1.00	11.1800	-230487.00	412800.00	0.558 [1]
T14	80 - 60	Pipe 8 STD	20.03	6.68	27.3 K=1.00	8.3993	-265362.00	391613.00	0.678 [1]
T15	60 - 50	Pipe 8 STD	10.02	5.16	21.1 K=1.00	8.3993	-277500.00	401143.00	0.692 [1]
T16	50 - 40	Pipe 8 STD	10.02	5.16	21.1 K=1.00	8.3993	-294492.00	401194.00	0.734 [1]
T17	40 - 20	Pipe 8 EH	20.03	10.02	41.8 K=1.00	12.7627	-327955.00	549063.00	0.597 [1]
T18	20 - 0	Pipe 8 EH	20.03	9.97	41.6	12.7627	-358564.00	549704.00	0.652 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $P_u / \phi P_n$
					K=1.00				

[1] $P_u / \phi P_n$ controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $P_u / \phi P_n$
T2	180 - 175	L1 1/2x1 1/2x3/16	6.25	3.03	124.0 K=1.00	0.5273	-4266.38	9812.52	0.435 [1]
T3	175 - 170	L2x2x3/16	6.56	3.18	102.5 K=1.06	0.7150	-3454.76	17231.70	0.200 [1]
T4	170 - 160	2L1 1/2x1 1/2x3/16x1/4	6.90	3.36	88.3 K=1.00	1.0547	-5235.74	28498.80	0.184 [1]
T5	160 - 150	2L 'a' > 19.4307 in - 84 2L2x2x3/16x1/4	8.01	3.83	76.6 K=1.00	1.4297	-6018.22	41461.30	0.145 [1]
T6	150 - 140	2L 'a' > 22.0154 in - 93 2L2x2x3/16x1/4	8.81	4.22	84.4 K=1.00	1.4297	-5636.79	39458.10	0.143 [1]
T7	140 - 133.333	2L 'a' > 24.2504 in - 114 L2 1/2x2 1/2x1/4	10.29	4.92	120.3 K=1.00	1.1900	-5502.36	23336.80	0.236 [1]
T8	133.333 - 126.667	L2 1/2x2 1/2x1/4	10.80	5.18	126.7 K=1.00	1.1900	-5713.64	21217.30	0.269 [1]
T9	126.667 - 120	L2 1/2x2 1/2x3/16	11.34	5.47	132.6 K=1.00	0.9023	-5483.83	14691.40	0.373 [1]
T10	120 - 113.333	L3x3x1/4	11.88	5.67	117.3 K=1.01	1.4400	-7144.74	29417.90	0.243 [1]
T11	113.333 - 106.667	L3x3x1/4	12.44	5.95	122.1 K=1.00	1.4400	-7038.20	27519.70	0.256 [1]
T12	106.667 - 100	L2 1/2x2 1/2x1/4	13.01	6.24	152.5 K=1.00	1.1900	-7337.59	14641.70	0.501 [1]
T13	100 - 80	L3 1/2x3 1/2x1/4	14.17	6.72	117.1 K=1.01	1.6900	-7485.13	34593.90	0.216 [1]
T14	80 - 60	L3 1/2x3 1/2x1/4	16.57	7.88	132.4 K=0.97	1.6900	-7084.98	27606.40	0.257 [1]
T15	60 - 50	L3x3x5/16	18.87	9.11	171.5 K=0.91	1.7800	-9790.79	17330.30	0.565 [1]
T16	50 - 40	L3x3x5/16	19.73	9.54	178.2 K=0.91	1.7800	-9496.79	16044.50	0.592 [1]
T17	40 - 20	L4x4x3/8	21.47	10.41	149.5 K=0.94	2.8600	-8958.83	36647.10	0.244 [1]
T18	20 - 0	L5x5x5/16	23.24	11.30	132.5 K=0.97	3.0300	-10060.30	49368.70	0.204 [1]

[1] $P_u / \phi P_n$ controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	195 - 180	L1 1/2x1 1/2x3/16	3.50	3.26	128.2 K=0.96	0.5273	-5013.79	9181.68	0.546 [1]

[1] P_u / ϕP_n controls

Secondary Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T2	180 - 175	L2x2x3/16	3.73	1.63	84.8 K=1.71	0.7150	-682.74	19923.20	0.034 [1]
T3	175 - 170	L2x2x3/16	4.24	1.88	88.6 K=1.55	0.7150	-871.65	19386.80	0.045 [1]
T4	170 - 160	L2x2x3/16	5.24	2.38	96.2 K=1.33	0.7150	-1272.11	18244.10	0.070 [1]
T5	160 - 150	L2x2x3/16	6.24	2.83	103.2 K=1.20	0.7150	-1648.91	17128.20	0.096 [1]
T6	150 - 140	L2x2x3/16	7.24	3.31	110.5 K=1.09	0.7150	-2058.44	15864.80	0.130 [1]
T10	120 - 113.333	L3x3x3/16	9.82	4.52	105.5 K=1.16	1.0900	-2940.31	25103.30	0.117 [1]
T11	113.333 - 106.667	L3x3x3/16	10.49	4.85	108.8 K=1.11	1.0900	-3160.01	24274.30	0.130 [1]
T12	106.667 - 100	L3x3x3/16	11.16	5.18	112.2 K=1.08	1.0900	-3364.17	23419.30	0.144 [1]
T13	100 - 80	L3x3x1/4	13.16	6.12	125.4 K=1.00	1.4400	-3997.14	26189.00	0.153 [1]
T15	60 - 50	L4x4x3/8	15.98	7.51	117.2 K=1.02	2.8600	-4813.16	58485.50	0.082 [1]
T16	50 - 40	L4x4x1/4	16.99	7.99	120.6 K=1.00	1.9400	-5108.08	37678.30	0.136 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	195 - 180	L1 1/2x1 1/2x3/16	3.50	3.26	128.2 K=0.96	0.5273	-1531.88	9181.68	0.167 [1]

[1] P_u / ϕP_n controls

Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	195 - 180	L1 1/2x1 1/2x3/16	3.50	3.26	128.2 K=0.96	0.5273	-3042.79	9181.68	0.331 [1]

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	195 - 180	PIPE 2.5 STD (SCH 40)	15.00	3.75	47.4	1.7072	18756.20	84508.30	0.222 [1]
T2	180 - 175	PIPE 2.5 STD (SCH 40)	5.01	2.34	29.5	1.7072	35354.60	84508.30	0.418 [1]
T3	175 - 170	PIPE 2.5 STD (SCH 40)	5.01	2.36	29.8	1.7072	44481.80	84508.30	0.526 [1]
T4	170 - 160	2-1/2SCH40 w/ 3SCH80 Half Sleeve	10.02	2.38	31.1	3.2590	64894.60	102659.00	0.632 [1]
T5	160 - 150	Pipe 3.5 Std (SCH40)	10.02	2.40	21.6	2.6795	84585.70	132637.00	0.638 [1]
T6	150 - 140	3.5SCH40 w/ 4SCH40 Half Sleeve	10.02	2.42	22.2	4.2666	105980.00	191997.00	0.552 [1]
T7	140 - 133.333	5 STD w/ 6 XH Half Sleeve	6.68	6.68	45.4	8.5023	118090.00	351995.00	0.335 [1]
T8	133.333 - 126.667	5 STD w/ 6 XH Half Sleeve	6.68	6.68	45.4	8.5023	130506.00	351995.00	0.371 [1]
T9	126.667 - 120	5 STD w/ 6 XH Half Sleeve	6.68	6.68	45.4	8.5023	142638.00	351995.00	0.405 [1]
T10	120 - 113.333	Pipe 6 STD	6.68	3.23	17.2	5.5813	152816.00	276277.00	0.553 [1]
T11	113.333 - 106.667	Pipe 6 STD	6.68	3.23	17.3	5.5813	164129.00	276277.00	0.594 [1]
T12	106.667 - 100	Pipe 6 STD	6.68	3.24	17.3	5.5813	174818.00	276277.00	0.633 [1]
T13	100 - 80	6 STD w/ 7 XH Half Sleeve	20.03	3.25	18.6	11.1800	206351.00	422604.00	0.488 [1]
T14	80 - 60	Pipe 8 STD	20.03	6.68	27.3	8.3993	236414.00	415763.00	0.569 [1]
T15	60 - 50	Pipe 8 STD	10.02	4.85	19.8	8.3993	246976.00	415763.00	0.594 [1]
T16	50 - 40	Pipe 8 STD	10.02	4.86	19.9	8.3993	261372.00	415763.00	0.629 [1]
T17	40 - 20	Pipe 8 EH	20.03	10.02	41.8	12.7627	288909.00	631755.00	0.457 [1]
T18	20 - 0	Pipe 8 EH	20.03	0.08	0.3	12.7627	321099.00	631755.00	0.508 [1]

[1] P_u / ϕP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	195 - 180	5/8	5.13	4.78	366.9	0.3068	9095.56	9940.20	0.915 [1]
T2	180 - 175	L1 1/2x1 1/2x3/16	6.25	3.03	82.4	0.3076	3564.85	13381.30	0.266 [1]
T3	175 - 170	L2x2x3/16	6.56	3.18	64.0	0.4484	3634.92	19503.60	0.186 [1]
T4	170 - 160	2L1 1/2x1 1/2x3/16x1/4 2L 'a' > 19.4307 in - 84	6.90	3.36	91.1	0.6152	4775.53	26762.70	0.178 [1]
T5	160 - 150	2L2x2x3/16x1/4 2L 'a' > 22.0154 in - 93	8.01	3.83	76.8	0.8965	5758.03	38997.10	0.148 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T6	150 - 140	2L2x2x3/16x1/4 2L 'a' > 24.2504 in - 114	8.81	4.22	84.1	0.8965	5349.92	38997.10	0.137 [1]
T7	140 - 133.333	L2 1/2x2 1/2x1/4	10.29	4.92	78.9	0.7519	5401.58	32706.60	0.165 [1]
T8	133.333 - 126.667	L2 1/2x2 1/2x1/4	10.80	5.18	83.0	0.7519	5498.78	32706.60	0.168 [1]
T9	126.667 - 120	L2 1/2x2 1/2x3/16	11.34	5.47	86.2	0.5713	5478.65	24851.10	0.220 [1]
T10	120 - 113.333	L3x3x1/4	11.88	5.67	75.3	0.9394	6554.01	40862.80	0.160 [1]
T11	113.333 - 106.667	L3x3x1/4	12.44	5.95	78.9	0.9394	6564.26	40862.80	0.161 [1]
T12	106.667 - 100	L2 1/2x2 1/2x1/4	13.01	6.24	99.5	0.7519	6697.90	32706.60	0.205 [1]
T13	100 - 80	L3 1/2x3 1/2x1/4	14.17	6.72	76.1	1.1269	6828.25	49019.10	0.139 [1]
T14	80 - 60	L3 1/2x3 1/2x1/4	16.57	7.88	88.9	1.1269	7186.05	49019.10	0.147 [1]
T15	60 - 50	L3x3x5/16	18.87	9.11	121.6	1.1592	8787.92	50426.00	0.174 [1]
T16	50 - 40	L3x3x5/16	19.73	9.54	127.3	1.1592	8503.85	50426.00	0.169 [1]
T17	40 - 20	L4x4x3/8	20.59	9.98	99.3	1.9341	8227.99	84131.70	0.098 [1]
T18	20 - 0	L5x5x5/16	23.24	11.30	87.9	2.0967	9042.77	91207.30	0.099 [1]

[1] P_u / ϕP_n controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	195 - 180	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	610.86	17085.90	0.036 [1]

[1] P_u / ϕP_n controls

Secondary Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T2	180 - 175	L2x2x3/16	3.73	1.63	67.9	0.4308	682.74	18739.00	0.036 [1]
T3	175 - 170	L2x2x3/16	4.24	1.88	77.7	0.4308	871.65	18739.00	0.047 [1]
T4	170 - 160	L2x2x3/16	5.24	2.38	97.2	0.4308	1272.11	18739.00	0.068 [1]
T5	160 - 150	L2x2x3/16	6.24	2.83	114.9	0.4308	1648.91	18739.00	0.088 [1]
T6	150 - 140	L2x2x3/16	7.24	3.31	133.5	0.4308	2058.44	18739.00	0.110 [1]
T10	120 - 113.333	L3x3x3/16	9.82	4.52	118.5	0.7120	2940.31	30973.40	0.095 [1]
T11	113.333 - 106.667	L3x3x3/16	10.49	4.85	127.0	0.7120	3160.01	30973.40	0.102 [1]
T12	106.667 - 100	L3x3x3/16	11.16	5.18	135.5	0.7120	3364.17	30973.40	0.109 [1]
T13	100 - 80	L3x3x1/4	13.16	6.12	162.3	0.9159	3997.14	39843.30	0.100 [1]
T15	60 - 50	L4x4x3/8	15.98	7.51	148.9	1.9341	4813.16	84131.70	0.057 [1]
T16	50 - 40	L4x4x1/4	16.99	7.99	156.2	1.2909	5108.08	56155.80	0.091 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	195 - 180	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	764.03	17085.90	0.045 [1]

[1] P_u / ϕP_n controls

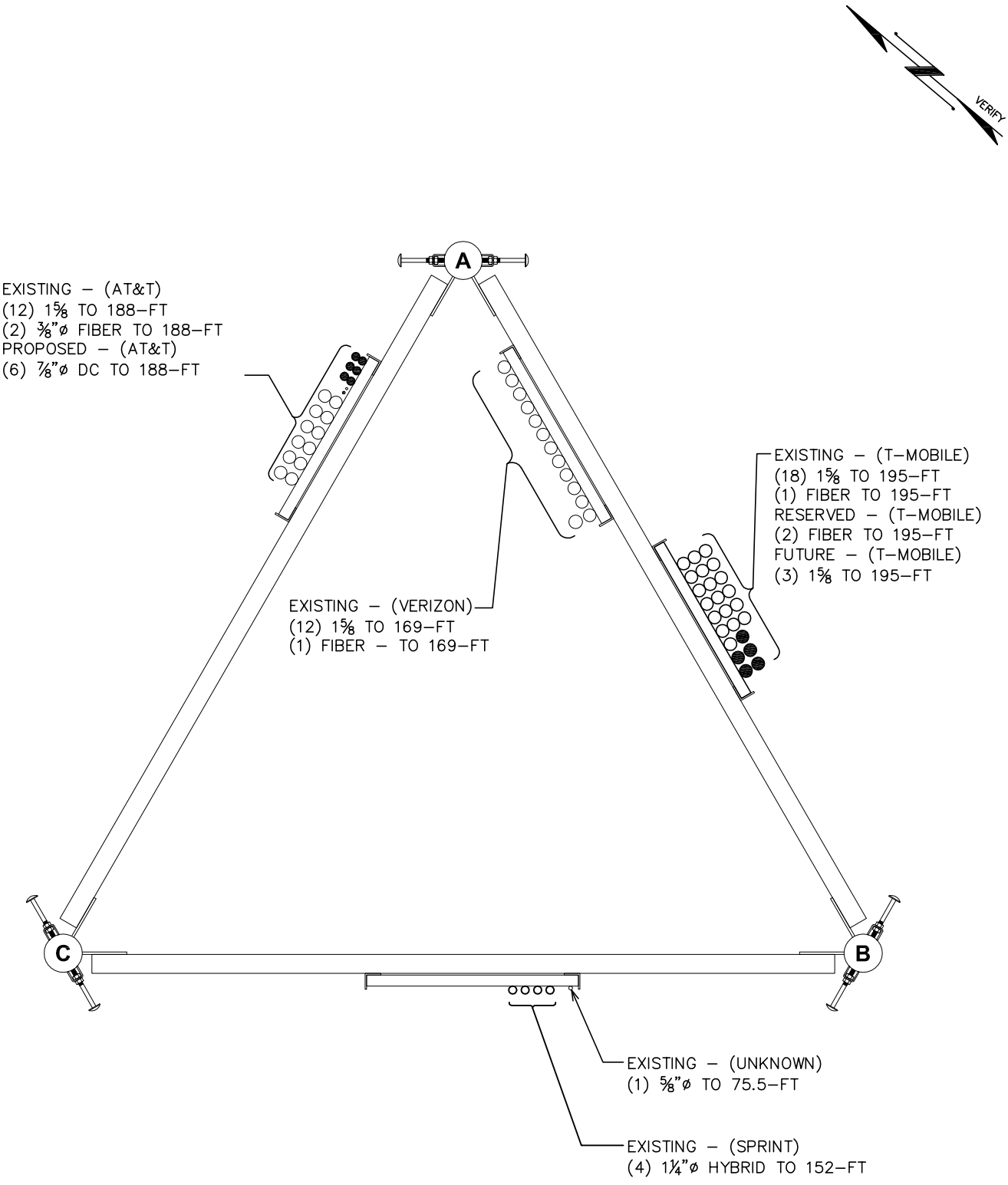
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T1	195 - 180	Leg	PIPE 2.5 STD (SCH 40)	1	-35268.20	74059.12	47.6	Pass
T2	180 - 175	Leg	PIPE 2.5 STD (SCH 40)	43	-39368.90	80957.20	48.6	Pass
T3	175 - 170	Leg	PIPE 2.5 STD (SCH 40)	55	-50194.90	81066.08	61.9	Pass
T4	170 - 160	Leg	2-1/2SCH40 w/ 3SCH80 Half Sleeve	67	Note 1	Note 1	75.5	Pass
T5	160 - 150	Leg	Pipe 3.5 Std (SCH40)	88	-94933.40	133278.59	71.2	Pass
T6	150 - 140	Leg	3.5SCH40 w/ 4SCH40 Half Sleeve	109	Note 1	Note 1	69.3	Pass
T7	140 - 133.333	Leg	5 STD w/ 6 XH Half Sleeve	130	Note 1	Note 1	50.2	Pass
T8	133.333 - 126.667	Leg	5 STD w/ 6 XH Half Sleeve	139	Note 1	Note 1	50.2	Pass
T9	126.667 - 120	Leg	5 STD w/ 6 XH Half Sleeve	148	Note 1	Note 1	50.2	Pass
T10	120 - 113.333	Leg	Pipe 6 STD	157	-169430.00	282257.84	60.0	Pass
T11	113.333 - 106.667	Leg	Pipe 6 STD	169	-182040.00	282290.39	64.5	Pass
T12	106.667 - 100	Leg	Pipe 6 STD	181	-193837.00	282318.74	68.7	Pass
T13	100 - 80	Leg	6 STD w/ 7 XH Half Sleeve	193	Note 1	Note 1	53.6	Pass
T14	80 - 60	Leg	Pipe 8 STD	223	-265362.00	411193.63	64.5	Pass
T15	60 - 50	Leg	Pipe 8 STD	244	-277500.00	421200.13	65.9	Pass
T16	50 - 40	Leg	Pipe 8 STD	256	-294492.00	421253.68	69.9	Pass
T17	40 - 20	Leg	Pipe 8 EH	268	-327955.00	576516.12	56.9	Pass
T18	20 - 0	Leg	Pipe 8 EH	283	-358564.00	577189.17	62.1 62.5 (b)	Pass
T1	195 - 180	Diagonal	5/8	15	9095.56	10437.21	87.1	Pass
T2	180 - 175	Diagonal	L1 1/2x1 1/2x3/16	48	-4266.38	10303.15	41.4 72.4 (b)	Pass
T3	175 - 170	Diagonal	L2x2x3/16	60	-3454.76	18093.28	19.1 47.8 (b)	Pass
T4	170 - 160	Diagonal	2L1 1/2x1 1/2x3/16x1/4	84	-5235.74	29923.74	17.5 55.0 (b)	Pass
T5	160 - 150	Diagonal	2L2x2x3/16x1/4	93	5758.03	40946.95	14.1 66.4 (b)	Pass
T6	150 - 140	Diagonal	2L2x2x3/16x1/4	114	-5636.79	41431.00	13.6 61.6 (b)	Pass
T7	140 - 133.333	Diagonal	L2 1/2x2 1/2x1/4	133	-5502.36	24503.64	22.5 40.5 (b)	Pass
T8	133.333 - 126.667	Diagonal	L2 1/2x2 1/2x1/4	144	-5713.64	22278.16	25.6 41.2 (b)	Pass
T9	126.667 - 120	Diagonal	L2 1/2x2 1/2x3/16	151	-5483.83	15425.97	35.5 66.6 (b)	Pass
T10	120 - 113.333	Diagonal	L3x3x1/4	162	-7144.74	30888.79	23.1 47.8 (b)	Pass
T11	113.333 - 106.667	Diagonal	L3x3x1/4	174	-7038.20	28895.68	24.4 47.9 (b)	Pass
T12	106.667 - 100	Diagonal	L2 1/2x2 1/2x1/4	186	-7337.59	15373.78	47.7	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
							50.2 (b)	
T13	100 - 80	Diagonal	L3 1/2x3 1/2x1/4	207	-7485.13	36323.59	20.6	Pass
							28.0 (b)	
T14	80 - 60	Diagonal	L3 1/2x3 1/2x1/4	226	-7084.98	28986.72	24.4	Pass
							29.4 (b)	
T15	60 - 50	Diagonal	L3x3x5/16	247	-9790.79	18196.81	53.8	Pass
T16	50 - 40	Diagonal	L3x3x5/16	259	-9496.79	16846.72	56.4	Pass
T17	40 - 20	Diagonal	L4x4x3/8	273	-8958.83	38479.45	23.3	Pass
							30.9 (b)	
T18	20 - 0	Diagonal	L5x5x5/16	286	-10060.30	51837.13	19.4	Pass
							34.7 (b)	
T1	195 - 180	Horizontal	L1 1/2x1 1/2x3/16	17	-5013.79	9640.76	52.0	Pass
T2	180 - 175	Secondary Horizontal	L2x2x3/16	52	682.74	19675.95	3.5	Pass
							9.5 (b)	
T3	175 - 170	Secondary Horizontal	L2x2x3/16	64	871.65	19675.95	4.4	Pass
							12.2 (b)	
T4	170 - 160	Secondary Horizontal	L2x2x3/16	76	-1272.11	19156.30	6.6	Pass
							17.7 (b)	
T5	160 - 150	Secondary Horizontal	L2x2x3/16	97	-1648.91	17984.61	9.2	Pass
							23.0 (b)	
T6	150 - 140	Secondary Horizontal	L2x2x3/16	118	-2058.44	16658.04	12.4	Pass
							28.7 (b)	
T10	120 - 113.333	Secondary Horizontal	L3x3x3/16	166	-2940.31	26358.46	11.2	Pass
							35.8 (b)	
T11	113.333 - 106.667	Secondary Horizontal	L3x3x3/16	178	-3160.01	25488.01	12.4	Pass
							38.4 (b)	
T12	106.667 - 100	Secondary Horizontal	L3x3x3/16	190	-3364.17	24590.26	13.7	Pass
							40.9 (b)	
T13	100 - 80	Secondary Horizontal	L3x3x1/4	202	-3997.14	27498.45	14.5	Pass
							27.4 (b)	
T15	60 - 50	Secondary Horizontal	L4x4x3/8	253	-4813.16	61409.77	7.8	Pass
							33.2 (b)	
T16	50 - 40	Secondary Horizontal	L4x4x1/4	265	-5108.08	39562.21	12.9	Pass
							33.9 (b)	
T1	195 - 180	Top Girt	L1 1/2x1 1/2x3/16	6	-1531.88	9640.76	15.9	Pass
T1	195 - 180	Bottom Girt	L1 1/2x1 1/2x3/16	9	-3042.79	9640.76	31.6	Pass
							Summary	
							Leg (T4) 75.5	Pass
							Diagonal (T1) 87.1	Pass
							Horizontal (T1) 52.0	Pass
							Secondary Horizontal (T12) 40.9	Pass
							Top Girt (T1) 15.9	Pass
							Bottom Girt (T1) 31.6	Pass
							Bolt Checks 72.4	Pass
							RATING = **87.1**	**Pass**

APPENDIX B

COAX CONFIGUARTION



COAX CONFIGURATION - N.T.S.

PREPARED BY:
TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351
www.tepgroup.net

PREPARED FOR:
PHOENIX TOWER INTERNATIONAL
999 YAMATO ROAD, SUITE 100
BOCA RATON, FL 33431

PROJECT INFORMATION:
STRAITS TURNPIKE
SITE #: US-CT-1003
1021 STRAITS TURNPIKE
MIDDLEBURY, CT 06762
(NEW HAVEN COUNTY)

REVISION: 1
TEP JOB #:25628.295644
SHEET NUMBER:
C-1

APPENDIX C

ADDITIONAL CALCULATIONS

Project Name:	Straits Turnpike	**Engineer:**	MMW
Project Number:	TEP No. 25628.295644, Rev. 1	**Check:**	-
Client Site Number:	US-CT-1003	**Date:**	11/19/2019
Elevation:	80 - 100ft	**CODE:**	TIA-H

Grouted/Un-Grouted Pipe Leg + Half Sleeve R/F

Φc_L =	0.90	- LRFD strength reduction factor (leg, compression)	Mast St.: 1.00 - from tnxTower
ΦT_L =	0.90	- LRFD strength reduction factor (leg, tension)	
Φc_S =	0.90	- LRFD strength reduction factor (sleeve, compression)	
ΦT_S =	0.90	- LRFD strength reduction factor (sleeve, tension)	
Φw =	0.75	- LRFD strength reduction factor (weld shear)	
Φv =	0.75	- LRFD strength reduction factor (shear)	

Input - Loads

$P_{initial}$:	12.90	kips - force from initial load (no wind)
P_{wind}:	230.49	kips - force due to final loading including reinforcement
T_u:	206.35	kips - maximum load on leg

Quick Check

Weld Size:	OK
Weld Connection:	35.5%
Crushing Check:	41.9%
Leg Comp. Check:	42.0%
Sleeve Check:	49.4%
Built-up Check:	53.6%
Slenderness Check:	OK
Leg Tension Check:	46.5%

*TIA-222-H Section 15.5 applied

Input - Tower Leg

6 STD

K:	1.00	- effective length factor for leg
L_u:	3.43	ft - unbraced length of tower leg
F_{y_leg}:	55.00	ksi - minimum specified yield strength of tower leg
F_{u_leg}:	70.00	ksi - minimum specified ultimate strength of tower leg
r:	2.25	in - minimum radius of gyration of tower leg
A_{leg}:	5.58	in^2 - area of tower leg
DI:	6.07	in - inside diameter of tower leg
t_{leg}:	0.280	in - thickness of tower leg
$f`_c$:	0.00	ksi - minimum specified compressive strength of grout (If ungrouted enter 0)

Input - Sleeve R/F

7 XH Gap Check: OK

F_{y_sleeve}:	42.00	ksi - minimum specified yield strength of sleeve r/f
F_{u_sleeve}:	63.00	ksi - minimum specified ultimate strength of sleeve r/f
r_{x_sleeve}:	1.10	in - minimum radius of gyration of sleeve r/f about the x-axis
r_{y_sleeve}:	2.53	in - minimum radius of gyration of sleeve r/f about the y-axis
A_{sleeve}:	5.60	in^2 - area of sleeve r/f
t_{sleeve}:	0.500	in - thickness of sleeve r/f

Termination: Connected to Flange

Input - Sleeve Connection to Leg

a:	12.00	in - spacing of connectors connecting the sleeve to the leg
D:	5.00	- weld size for the weld connecting the sleeve to the leg (unit = # of 16ths)
Length //:	12.00	in - length of weld on each side of the leg at the termination
Length ⊥:	11.98	in - length of weld at the bottom/top of the leg sleeve at termination (πD/2)
No:	2.00	- number of longitudinal welds per end of the leg (typically near side & far side, so 2)
F_{EXX}:	70.00	ksi - weld electrode classification
Width:	7.63	in - maximum width of the built-up leg
Gap:	0.00	in - length of leg considered for crushing

Input - Built-up Leg Section

6 STD w/7 XH Half Sleeve

r_{x_bu}:	2.10	in - minimum radius of gyration of the built-up section about the x-axis
r_{y_bu}:	2.39	in - minimum radius of gyration of the built-up section about the y-axis

Input - Grouted Leg

Ec:	0	ksi - Modulus of Elasticity of Grout
E_leg:	29,000	ksi - Modulus of Elasticity of Leg
E_sleeve:	29,000	ksi - Modulus of Elasticity of Sleeve

Project Name:	Straits Turnpike	**Engineer:**	MMW
Project Number:	TEP No. 25628.295644, Rev. 1	**Check:**	-
Client Site Number:	US-CT-1003	**Date:**	11/19/2019
Elevation:	120 - 140ft	**CODE:**	TIA-H

Grouted/Un-Grouted Pipe Leg + Half Sleeve R/F

Φc_L =	0.90	- LRFD strength reduction factor (leg, compression)	Mast St.: 1.00 - from tnxTower
ΦT_L =	0.90	- LRFD strength reduction factor (leg, tension)	
Φc_S =	0.90	- LRFD strength reduction factor (sleeve, compression)	
ΦT_S =	0.90	- LRFD strength reduction factor (sleeve, tension)	
Φw =	0.75	- LRFD strength reduction factor (weld shear)	
Φv =	0.75	- LRFD strength reduction factor (shear)	

Input - Loads

$P_{initial}$:	8.90	kips - force from initial load (no wind)
P_{wind}:	158.61	kips - force due to final loading including reinforcement
T_u:	142.64	kips - maximum load on leg

Quick Check

Weld Size:	OK
Weld Connection:	25.6%
Crushing Check:	37.9%
Leg Comp. Check:	38.1%
Sleeve Check:	41.2%
Built-up Check:	50.2%
Slenderness Check:	OK
Leg Tension Check:	38.6%

*TIA-222-H Section 15.5 applied

Input - Tower Leg

5 STD

K:	1.00	- effective length factor for leg
L_u:	6.68	ft - unbraced length of tower leg
F_{y_leg}:	55.00	ksi - minimum specified yield strength of tower leg
F_{u_leg}:	70.00	ksi - minimum specified ultimate strength of tower leg
r:	1.88	in - minimum radius of gyration of tower leg
A_{leg}:	4.30	in^2 - area of tower leg
DI:	5.05	in - inside diameter of tower leg
t_{leg}:	0.258	in - thickness of tower leg
$f`_c$:	0.00	ksi - minimum specified compressive strength of grout (If ungrouted enter 0)

Input - Sleeve R/F

6 XH Gap Check: OK

F_{y_sleeve}:	46.00	ksi - minimum specified yield strength of sleeve r/f
F_{u_sleeve}:	62.00	ksi - minimum specified ultimate strength of sleeve r/f
r_{x_sleeve}:	0.96	in - minimum radius of gyration of sleeve r/f about the x-axis
r_{y_sleeve}:	2.19	in - minimum radius of gyration of sleeve r/f about the y-axis
A_{sleeve}:	4.20	in^2 - area of sleeve r/f
t_{sleeve}:	0.432	in - thickness of sleeve r/f

Termination: Connected to Flange

Input - Sleeve Connection to Leg

a:	15.50	in - spacing of connectors connecting the sleeve to the leg
D:	5.00	- weld size for the weld connecting the sleeve to the leg (unit = # of 16ths)
Length //:	12.00	in - length of weld on each side of the leg at the termination
Length ⊥:	10.41	in - length of weld at the bottom/top of the leg sleeve at termination (πD/2)
No:	2.00	- number of longitudinal welds per end of the leg (typically near side & far side, so 2)
F_{EXX}:	70.00	ksi - weld electrode classification
Width:	6.63	in - maximum width of the built-up leg
Gap:	0.00	in - length of leg considered for crushing

Input - Built-up Leg Section

5 STD w/6 XH Half Sleeve

r_{x_bu}:	1.77	in - minimum radius of gyration of the built-up section about the x-axis
r_{y_bu}:	2.04	in - minimum radius of gyration of the built-up section about the y-axis

Input - Grouted Leg

Ec:	0	ksi - Modulus of Elasticity of Grout
E_leg:	29,000	ksi - Modulus of Elasticity of Leg
E_sleeve:	29,000	ksi - Modulus of Elasticity of Sleeve

Project Name:	Straits Turnpike	**Engineer:**	MMW
Project Number:	TEP No. 25628.295644, Rev. 1	**Check:**	-
Client Site Number:	US-CT-1003	**Date:**	11/19/2019
Elevation:	140 - 150ft	**CODE:**	TIA-H

Grouted/Un-Grouted Pipe Leg + Half Sleeve R/F

Φc_L =	0.90	- LRFD strength reduction factor (leg, compression)	Mast St.: 1.00 - from tnxTower
ΦT_L =	0.90	- LRFD strength reduction factor (leg, tension)	
Φc_S =	0.90	- LRFD strength reduction factor (sleeve, compression)	
ΦT_S =	0.90	- LRFD strength reduction factor (sleeve, tension)	
Φw =	0.75	- LRFD strength reduction factor (weld shear)	
Φv =	0.75	- LRFD strength reduction factor (shear)	

Input - Loads

$P_{initial}$:	7.20	kips - force from initial load (no wind)
P_{wind}:	118.62	kips - force due to final loading including reinforcement
T_u:	105.98	kips - maximum load on leg

Quick Check

Weld Size:	OK
Weld Connection:	27.3%
Crushing Check:	55.4%
Leg Comp. Check:	55.8%
Sleeve Check:	56.6%
Built-up Check:	69.3%
Slenderness Check:	Decrease Connector Spacing
Leg Tension Check:	52.6%

*TIA-222-H Section 15.5 applied

Input - Tower Leg

3.5 STD

K:	1.00	- effective length factor for leg
L_u:	2.60	ft - unbraced length of tower leg
F_{y_leg}:	55.00	ksi - minimum specified yield strength of tower leg
F_{u_leg}:	70.00	ksi - minimum specified ultimate strength of tower leg
r:	1.34	in - minimum radius of gyration of tower leg
A_{leg}:	2.68	in^2 - area of tower leg
DI:	3.55	in - inside diameter of tower leg
t_{leg}:	0.226	in - thickness of tower leg
$f`_c$:	0.00	ksi - minimum specified compressive strength of grout (If ungrouted enter 0)

Input - Sleeve R/F

4 STD Gap Check: OK

F_{y_sleeve}:	50.00	ksi - minimum specified yield strength of sleeve r/f
F_{u_sleeve}:	62.00	ksi - minimum specified ultimate strength of sleeve r/f
r_{x_sleeve}:	0.66	in - minimum radius of gyration of sleeve r/f about the x-axis
r_{y_sleeve}:	1.51	in - minimum radius of gyration of sleeve r/f about the y-axis
A_{sleeve}:	1.59	in^2 - area of sleeve r/f
t_{sleeve}:	0.237	in - thickness of sleeve r/f

Termination: Connected to Flange

Input - Sleeve Connection to Leg

a:	12.00	in - spacing of connectors connecting the sleeve to the leg
D:	3.00	- weld size for the weld connecting the sleeve to the leg (unit = # of 16ths)
Length //:	12.00	in - length of weld on each side of the leg at the termination
Length ⊥:	7.07	in - length of weld at the bottom/top of the leg sleeve at termination (πD/2)
No:	2.00	- number of longitudinal welds per end of the leg (typically near side & far side, so 2)
F_{EXX}:	70.00	ksi - weld electrode classification
Width:	4.50	in - maximum width of the built-up leg
Gap:	0.00	in - length of leg considered for crushing

Input - Built-up Leg Section

3.5 STD w/4 STD Half Sleeve

r_{x_bu}:	1.31	in - minimum radius of gyration of the built-up section about the x-axis
r_{y_bu}:	1.40	in - minimum radius of gyration of the built-up section about the y-axis

Input - Grouted Leg

Ec:	0	ksi - Modulus of Elasticity of Grout
E_leg:	29,000	ksi - Modulus of Elasticity of Leg
E_sleeve:	29,000	ksi - Modulus of Elasticity of Sleeve

Project Name:	Straits Turnpike	**Engineer:**	MMW
Project Number:	TEP No. 25628.295644, Rev. 1	**Check:**	-
Client Site Number:	US-CT-1003	**Date:**	11/19/2019
Elevation:	160 - 170ft	**CODE:**	TIA-H

Grouted/Un-Grouted Pipe Leg + Half Sleeve R/F

Φc_L =	0.90	- LRFD strength reduction factor (leg, compression)	Mast St.: 1.00 - from tnxTower
ΦT_L =	0.90	- LRFD strength reduction factor (leg, tension)	
Φc_S =	0.90	- LRFD strength reduction factor (sleeve, compression)	
ΦT_S =	0.90	- LRFD strength reduction factor (sleeve, tension)	
Φw =	0.75	- LRFD strength reduction factor (weld shear)	
Φv =	0.75	- LRFD strength reduction factor (shear)	

Input - Loads

$P_{initial}$:	4.90	kips - force from initial load (no wind)
P_{wind}:	73.29	kips - force due to final loading including reinforcement
T_u:	64.89	kips - maximum load on leg

Quick Check

Weld Size:	OK
Weld Connection:	22.7%
Crushing Check:	46.5%
Leg Comp. Check:	47.1%
Sleeve Check:	66.3%
Built-up Check:	75.5%
Slenderness Check:	OK
Leg Tension Check:	61.1%

*TIA-222-H Section 15.5 applied

Input - Tower Leg

2.5 STD

K:	1.00	- effective length factor for leg
L_u:	2.64	ft - unbraced length of tower leg
F_{y_leg}:	55.00	ksi - minimum specified yield strength of tower leg
F_{u_leg}:	70.00	ksi - minimum specified ultimate strength of tower leg
r:	0.95	in - minimum radius of gyration of tower leg
A_{leg}:	1.70	in^2 - area of tower leg
DI:	2.47	in - inside diameter of tower leg
t_{leg}:	0.203	in - thickness of tower leg
$f`_c$:	0.00	ksi - minimum specified compressive strength of grout (If ungrouted enter 0)

Input - Sleeve R/F

3 XS Gap Check: OK

F_{y_sleeve}:	35.00	ksi - minimum specified yield strength of sleeve r/f
F_{u_sleeve}:	60.00	ksi - minimum specified ultimate strength of sleeve r/f
r_{x_sleeve}:	0.50	in - minimum radius of gyration of sleeve r/f about the x-axis
r_{y_sleeve}:	1.14	in - minimum radius of gyration of sleeve r/f about the y-axis
A_{sleeve}:	1.51	in^2 - area of sleeve r/f
t_{sleeve}:	0.300	in - thickness of sleeve r/f

Termination: Connected to Flange

Input - Sleeve Connection to Leg

a:	12.00	in - spacing of connectors connecting the sleeve to the leg
D:	3.00	- weld size for the weld connecting the sleeve to the leg (unit = # of 16ths)
Length //:	12.00	in - length of weld on each side of the leg at the termination
Length ⊥:	5.50	in - length of weld at the bottom/top of the leg sleeve at termination (πD/2)
No:	2.00	- number of longitudinal welds per end of the leg (typically near side & far side, so 2)
F_{EXX}:	70.00	ksi - weld electrode classification
Width:	3.50	in - maximum width of the built-up leg
Gap:	0.00	in - length of leg considered for crushing

Input - Built-up Leg Section

2.5 STD w/3 XS Half Sleeve

r_{x_bu}:	0.92	in - minimum radius of gyration of the built-up section about the x-axis
r_{y_bu}:	1.04	in - minimum radius of gyration of the built-up section about the y-axis

Input - Grouted Leg

Ec:	0	ksi - Modulus of Elasticity of Grout
E_leg:	29,000	ksi - Modulus of Elasticity of Leg
E_sleeve:	29,000	ksi - Modulus of Elasticity of Sleeve

Project Information

Site #	US-CT-1003
Site Name	Straits Turnpike
TEP #	25628.295644, Rev. 1

Tower Information

Tower Type	Self Support
TIA-222 Rev	H

☑ Apply TIA-222-H Section 15.5

Applied Loads

	Comp.	Uplift
Axial (k)	366.56	319.81
Shear (k)	35.76	31.42

Anchor Rod Data

Quantity:	8
Diameter (in):	1.5
Material Grade:	A36
Grout Considered:	
l_{ar} (in):	0
Eta Factor, η:	0.55
Thread Type:	N-Included
Configuration:	Symmetrical

Fy=36 ksi Fu=58 ksi

Not Considered, lar<=1(d)

Anchor Rod Results

Axial, Pu_c (kips)	45.82
Shear, Vu (kips)	4.47
Moment, Mu (kip-in)	-
Axial Cap., φPn_c (kips)	50.76
Shear Cap., ϕVn (kips)	15.23
Moment Cap., ϕMn (kip-in)	-
Stress Rating	94.2%

Pass

Pier and Pad Foundation

Site # :	US-CT-1003
Site Name:	Straits Turnpike
TEP Number:	25628.295644, Rev. 1

TIA-222 Revision:	H
Tower Type:	Self Support

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

Superstructure Analysis Reactions

Compression, P_{comp}:	366.564	kips
Compression Shear, Vu_comp:	35.756	kips
Uplift, P_{uplift}:	319.808	kips
Uplift Shear, V_{u_uplift}:	31.422	kips
Tower Height, **H**:	195	ft
Base Face Width, **BW**:	21.5	ft
BP Dist. Above Fdn, bp_{dist}:	0	in

Pier Properties

Pier Shape:	Square	
Pier Diameter, **dpier**:	4	ft
Ext. Above Grade, **E**:	0.25	ft
Pier Rebar Size, **Sc**:	8	
Pier Rebar Quantity, **mc**:	11	
Pier Tie/Spiral Size, **St**:	4	
Pier Tie/Spiral Quantity, **mt**:	4	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties

Bottom of Pad Depth, **D**:	9.416	ft
Pad Width, **W**:	33	ft
Pad Thickness, **T**:	4	ft
Pad Rebar Size (Bottom), **Sp**:	8	
Pad Rebar Quantity (Bottom), **mp**:	34	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties

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

Soil Properties

Total Soil Unit Weight, γ:	125	pcf
Ultimate Net Bearing, Qnet:	12.000	ksf
Cohesion, **Cu**:		ksf
Friction Angle, φ:	30	degrees
SPT Blow Count, N_{blows}:		
Base Friction, μ:		
Neglected Depth, **N**:	3.33	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	13	ft

<--Toggle between Gross and Net

Foundation Analysis Checks

	Capacity	Demand	Rating*	Check
Uplift (kips)	1365.49	319.81	**22.3%**	**Pass**
Lateral (Sliding) (kips)	540.62	31.42	**5.5%**	**Pass**
Bearing Pressure (ksf)	9.88	1.87	**18.0%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	1198.08	202.59	**16.1%**	**Pass**
*Pier Flexure (Tension) (kip*ft)*	319.66	178.04	**53.0%**	**Pass**
Pier Compression (kip)	7637.76	382.88	**4.8%**	**Pass**
*Pad Flexure (kip*ft)*	5161.39	1178.30	**21.7%**	**Pass**
Pad Shear - 1-way (kips)	1415.26	121.89	**8.2%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.164	0.023	**13.4%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	4946.30	121.56	**2.3%**	**Pass**
Pad Shear - 2-way (Uplift) (ksi)	0.164	0.024	**14.0%**	**Pass**
*Flexural 2-way (Tension) (kip*ft)*	4946.30	106.82	**2.1%**	**Pass**

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

Soil Rating*:	**22.3%**
Structural Rating*:	**53.0%**

INFINIGY

THE SOLUTIONS ARE ENDLESS

Non-Ionizing Radiation Report

Compiled For: Smartlink on behalf of AT&T

Site Name: Chaplin Palmer Road

Site FA: 10035253

Site ID: CTL01129

1021 Straits Turnpike, Middlebury, CT 06762

Latitude: 41.53577 Longitude: -73.0892489

Structure Type: Monopole

Report Date: October 8, 2019

Status: AT&T will be compliant with FCC rules on RF Exposure with the signage recommendation in section 4 of this report.

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1. Executive Summary:

Smartlink on behalf of AT&T has contracted Infinigy Solutions, LLC to determine whether the site Middlebury Straits Turnpike located at 10 Straits Turnpike in Middlebury, CT Will Be Compliant with all Federal Communications Commission (FCC) rules and regulations for radio frequency (RF) exposure as indicated in **47CFR§1.1310**.

The report incorporates a theoretical RF field analysis in accordance with the FCC Rules and Regulations for all individuals classified as "Occupational or Controlled" and "General Public or Uncontrolled" (see Appendix A and B).

This document and the conclusions herein are based on information provided by Smartlink on behalf of AT&T.

As a result of the analysis, **AT&T Will Be Compliant with FCC rules with the installation of signage recommended in section 4.**

Engineering assumptions were made regarding the collation operator(s). The assumptions were made based upon typical deployment configurations and practices of the operator(s).

All Carriers, All Bands Cumulative Exposure %		
Uncontrolled / General Population	Exposure values at the site (mW/cm^2)	0.0081
	% Exposure	1.13%
Controlled / Occupational	Exposure values at the site (mW/cm^2)	0.0081
	% Exposure	0.24%

2. Site Summary:

Site Information	
Site Name: Middlebury Straits Turnpike	
Site Address: 1021 Straits Turnpike Middlebury, CT 06762	
Site Type: Monopole	
Compliance Status	Will Be Compliant
Mitigation Required	No
Signage Required	Yes
Barriers Required	No
Access Locked	No
Area Controlled or Uncontrolled	Uncontrolled

3. Site Compliance

This report also incorporates overview of the site information:

- Antenna Inventory Table
- Calculation Tables showing exposure for each carrier transmit frequency
- Total exposure for all carriers existing and proposed at ground level considering the centerline of all antennas and horizontal distance from the tower.
- Maximum Effective Radiated Power Assumed as Worst Case for Calculations used in this study
- Calculations based on flat ground around base of the structure

4. Site Compliance Recommendations

Infinigy recommends the following upon the installation of antennas at the site:

Base of tower

Caution 2 sign.

Note: The above signage recommendation is moot if there is an existing caution 2 sign at the base of the tower.

5. Antenna Inventory Table

Ant ID	Sector	Operator	Antenna manufacturer	Antenna Model	Operating Frequency	Rad Ctr (Ft)	Total ERP Power (Watts)
1	Alpha	AT&T	Powerwave	7770	850	185	237
2a	Alpha	AT&T	CCI	DMP65R-BU6DA	700	185	1475
2b	Alpha	AT&T	CCI	DMP65R-BU6DA	850	185	1000
2c	Alpha	AT&T	CCI	DMP65R-BU6DA	2100	185	3837
2d	Alpha	AT&T	CCI	DMP65R-BU6DA	850	185	1000
3a	Alpha	AT&T	CCI	DMP65R-BU6DA	700	185	2961
3b	Alpha	AT&T	CCI	DMP65R-BU6DA	1900	185	3664
4	Alpha	AT&T	Commscope	SBNHH-1D65A	2300	185	1285
5	Beta	AT&T	Powerwave	7770	850	185	237
6a	Beta	AT&T	CCI	DMP65R-BU6DA	700	185	1475
6b	Beta	AT&T	CCI	DMP65R-BU6DA	850	185	1000
6c	Beta	AT&T	CCI	DMP65R-BU6DA	2100	185	3837
6d	Beta	AT&T	CCI	DMP65R-BU6DA	850	185	1000
7a	Beta	AT&T	CCI	DMP65R-BU6DA	700	185	2961
7b	Beta	AT&T	CCI	DMP65R-BU6DA	1900	185	3664
8	Beta	AT&T	Commscope	SBNHH-1D65A	2300	185	1285
9	Gamma	AT&T	Powerwave	7770	850	185	237
10a	Gamma	AT&T	CCI	DMP65R-BU6DA	700	185	1475
10b	Gamma	AT&T	CCI	DMP65R-BU6DA	850	185	1000
10c	Gamma	AT&T	CCI	DMP65R-BU6DA	2100	185	3837
10d	Gamma	AT&T	CCI	DMP65R-BU6DA	850	185	1000
11a	Gamma	AT&T	CCI	DMP65R-BU6DA	700	185	2961
11b	Gamma	AT&T	CCI	DMP65R-BU6DA	1900	185	3664
12	Gamma	AT&T	Commscope	SBNHH-1D65A	2300	128	1285
13	Alpha	T-Mobile	Commscope	LNX-6515DS-VTM	700	195	1674

Ant ID	Sector	Operator	Antenna manufacturer	Antenna Model	Operating Frequency	Rad Ctr (Ft)	Total ERP Power (Watts)
14a	Alpha	T-Mobile	RFS	APX16DW-16DWS	1900	195	1932
14b	Alpha	T-Mobile	RFS	APX16DW-16DWS	2100	195	1849
15	Beta	T-Mobile	Commscope	LNX-6515DS-VTM	700	195	1674
16a	Beta	T-Mobile	RFS	APX16DW-16DWS	1900	195	1932
16b	Beta	T-Mobile	RFS	APX16DW-16DWS	2100	195	1849
17	Gamma	T-Mobile	Commscope	LNX-6515DS-VTM	700	195	1674
18a	Gamma	T-Mobile	RFS	APX16DW-16DWS	1900	195	1932
18b	Gamma	T-Mobile	RFS	APX16DW-16DWS	2100	195	1849

6. RF Guidelines

To ensure safety of company workers, the following points need to be taken into consideration and implemented at wireless sites in accordance with the Carriers policies:

a) Worksite: Any employee at the site should avoid working directly in front of the antenna or in areas predicted to exceed general population exposure limits by 100%. Workers should insist that the transmitters be switched off during the work period.

b) RF Safety Training and Awareness: All employees working in areas exceeding the general population limits should have a basic awareness of RF safety measures. Videos, classroom lectures and online courses are all appropriate training methods on these topics.

c) Site Access: Restricting access to transmitting antenna locations is one of the most important elements of RF safety. This can be done with:
   - Locked doors/gates/ladder access
   - Alarmed doors
   - Restrictive barriers

d) Three-foot Buffer: There is an inverse relationship between the strength of the field and the distance from the antenna. The RF field diminishes with distance from the antenna. Workers should maintain a three-foot distance from the antennas.

e) Antennas: Workers should always assume that the antenna is transmitting and should never stop right in front of the antenna. If someone must pass by an antenna, he/she should move quickly, thus reducing RF exposure.

Attachment 1: AT&T Exposure Analysis

AT&T 700 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**0.5**
	Exposure values at the site (mW/cm^2)	**0.0022**
	% Exposure	**0.43%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**2.3**
	Exposure values at the site (mW/cm^2)	**0.0022**
	% Exposure	**0.09%**

AT&T 850 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**0.6**
	Exposure values at the site (mW/cm^2)	**0.0005**
	% Exposure	**0.08%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**2.8**
	Exposure values at the site (mW/cm^2)	**0.0005**
	% Exposure	**0.02%**

AT&T 850 MHz UMTS		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**0.6**
	Exposure values at the site (mW/cm^2)	**0.0001**
	% Exposure	**0.02%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**2.8**
	Exposure values at the site (mW/cm^2)	**0.0001**
	% Exposure	**0.00%**

AT&T 850 MHz 5G		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**0.6**
	Exposure values at the site (mW/cm^2)	**0.0005**
	% Exposure	**0.08%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**2.8**
	Exposure values at the site (mW/cm^2)	**0.0005**
	% Exposure	**0.02%**

AT&T 1900 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**1.0**
	Exposure values at the site (mW/cm^2)	**0.0018**
	% Exposure	**0.18%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**5.0**
	Exposure values at the site (mW/cm^2)	**0.0018**
	% Exposure	**0.04%**

AT&T 2100 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**1.0**
	Exposure values at the site (mW/cm^2)	**0.0019**
	% Exposure	**0.19%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**5.0**
	Exposure values at the site (mW/cm^2)	**0.0019**
	% Exposure	**0.04%**

AT&T 2300 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**1.0**
	Exposure values at the site (mW/cm^2)	**0.0004**
	% Exposure	**0.04%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**5.0**
	Exposure values at the site (mW/cm^2)	**0.0004**
	% Exposure	**0.01%**

Attachment 2: T-Mobile Exposure Analysis

T-Mobile 700 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**0.5**
	Exposure values at the site (mW/cm^2)	**0.000739**
	% Exposure	**0.15%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**2.3**
	Exposure values at the site (mW/cm^2)	**0.000739**
	% Exposure	**0.0321%**

T-Mobile 1900 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**1.0**
	Exposure values at the site (mW/cm^2)	**0.000852**
	% Exposure	**0.09%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**5.0**
	Exposure values at the site (mW/cm^2)	**0.000852**
	% Exposure	**0.0170%**

T-Mobile 2100 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**1.0**
	Exposure values at the site (mW/cm^2)	**0.000816**
	% Exposure	**0.08%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**5.0**
	Exposure values at the site (mW/cm^2)	**0.000816**
	% Exposure	**0.0163%**

Attachment 3: Combined Exposure Analysis for each Carrier

AT&T All Bands		
Uncontrolled / General Population	Exposure values at the site (mW/cm^2)	0.0148
	% Exposure	2.12%
Controlled / Occupational	Exposure values at the site (mW/cm^2)	0.0148
	% Exposure	0.45%

T-Mobile All Bands		
Uncontrolled / General Population	Exposure values at the site (mW/cm^2)	0.001704
	% Exposure	0.43%
Controlled / Occupational	Exposure values at the site (mW/cm^2)	0.001704
	% Exposure	0.09%

7. Appendix A: FCC Guidelines

FCC Policies

The Federal Communications Commission (FCC) in 1996 implemented regulations and policies for analysis of RF propagation to evaluate RF emissions. All the analysis and results of this report are compared with FCC's (Federal Communications Commission) rules to determine whether a site is compliant for Occupational/Controlled or General Public/Uncontrolled exposure. All the analysis of RF propagation is done in terms of a percentage. The limits primarily indicate the power density and are generally expressed in terms of milliwatts per centimeter square, mW/cm^2.

FCC guidelines incorporate two separate tiers of exposure limits that are dependent on the scenario/ situation in which that exposure takes place or the status of the individuals who are subjected to that exposure. The decision as to which tier is applied to a scenario is based on the following definitions:

Occupational / Controlled

These limits apply in situations when someone is exposed to RF energy through his/her occupation, is fully aware of the harmful effects of the RF exposure and has an ability to exercise control over this exposure. Occupational / controlled exposure limits also apply when 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. limits for Occupational/Controlled exposure can be found on Table 1(A).

General Population / Uncontrolled

These limits apply to situations in which the general public may be exposed or in which persons who are exposed because of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure to RF. Therefore, members of the general public would always be considered under this category, for example, in the case of a telecommunications tower that exposes people in a nearby residential area. Exposure limits for General Population/Uncontrolled can be found on Table 1(B).

Table 1. LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

(A) Limits for Occupational/Controlled Exposure

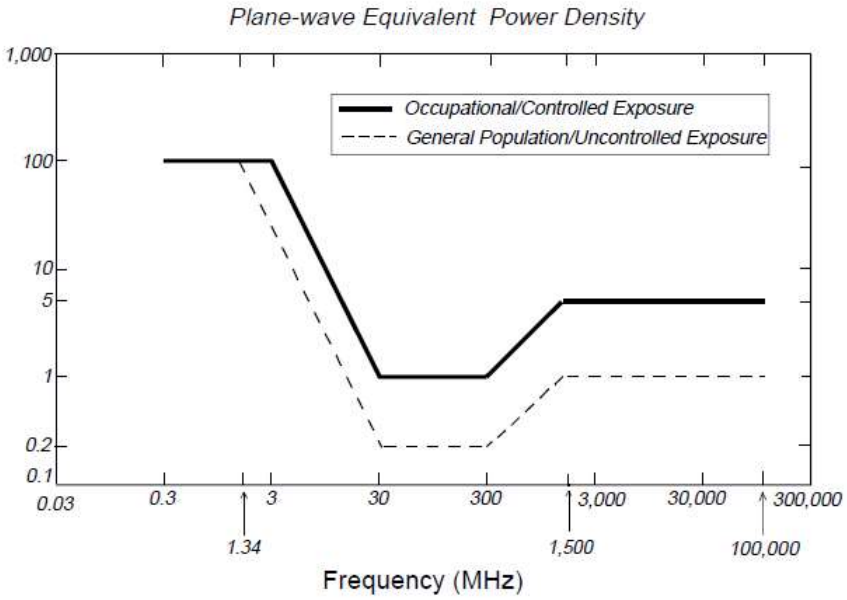
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $|E|^2$, $|H|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

(B) Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $|E|^2$, $|H|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz *Plane-wave equivalent power density

Figure 1. *FCC Limits for Maximum Permissible Exposure (MPE)*



OSHA Statement:

The objective of the OSHA Act is to ensure the safety and health of the working men and women by enforcing certain standards. The act also assists and encourages the states in their efforts to ensure safe and healthy working conditions through means of research, information, education and training in the field of occupational safety and health and for other purposes.

According to OSHA Act section 5, important duties to be considered are:

(a) Each employer

1) Shall furnish to each of his employees' employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious harm to his employees
2) Shall comply with occupational safety and health standards promulgated under this act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

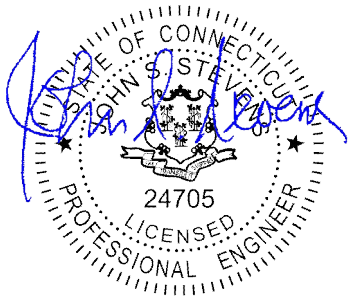
8. Appendix B: Preparer Certification

I, Tim Harris, preparer of this report, certify that I am fully trained and aware of the rules and regulations of both the Federal Communications Commission and the Occupational Safety and Heath Administration regarding Human Exposure to Radio Frequency Radiation. In addition, I have been trained in 1) RF safety and 2) RF modeling using RoofView modeling software.

I certify that the information contained in this report is true and correct to the best of my knowledge.

Timothy A. Harris *10/8/2019*

Signature Date



10/08/2019

Town of Middlebury, CT

Property Listing Report | Map Block Lot 4-06/425 | Account M0336100

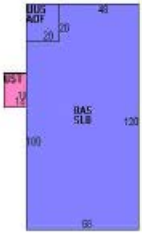
Property Information

Property Location	1 SERVICE ROAD
Owner	MIDDLEBURY TOWN OF
Co-Owner	(TOWN GARAGE/DOG POUND/TRANSFER/PUBLIC W
Mailing Address	1 SERVICE RD MIDDLEBURY CT 06762
Land Use	331 Mun Garage
Land Class	E
Zoning Code	CA40
Census Tract	3441

Neighborhood	C100
Acreage	4
Utilities	Electric
Lot Setting/Desc	Level
Additional Info	

Photo

Sketch



Primary Construction Details

Year Built	1981	Bedrooms		Exterior Walls	Pre-finish Metl
Stories	1	Full Bathrooms		Interior Walls	Minimum
Building Style	Pre-Eng Garage	Half Bathrooms		Heating Type	Hot Air-No Duc
Building Use	Comm/Ind	Bath Style		Heating Fuel	Gas
Building Condition	C	Kitchen Style		AC Type	Partial
Floors	Concrete	Roof Style	Gable	Gross Bldg Area	18672
Total Rooms		Roof Cover	Enam Metal	Total Living Area	8160

Report Created On 11/21/2019

Town of Middlebury, CT

Property Listing Report | Map Block Lot 4-06/425 | Account M0336100

Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	936900	655200
Extras	48800	34100
Improvements	1450900	1015300
Outbuildings	466800	326000
Land	592000	414400
Total	2042300	1429700

Outbuilding and Extra Items

Type	Description
Implement Shed	286.00 S.F.
Implement Shed	360.00 S.F.
Paving-Asphalt	20000.00 S.F.
Cell Tower	1.00 Units
Sprinklers- Wet	8160.00 S.F.
4' Chain Fence	6000.00 L.F.
Sprinklers- Wet	952.00 S.F.
Partial AC	3242.00 S.F.
Sprinklers- Wet	17621.00 S.F.
Implement Shed	200.00 S.F.

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Unfinished Upper Story	400	0
First Floor	7760	7760
Slab	7760	0
Office	400	400
Utility Storage	252	0
Total Area	16572	8160

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
MIDDLEBURY TOWN OF	40/ 13	7/21/1944	0

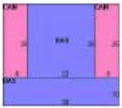
Report Created On 11/21/2019

Town of Middlebury, CT

Property Listing Report | Map Block Lot **4-09/425** | Account **M0336100**

Photo

Sketch



Primary Construction Details

Year Built	1991
Stories	1
Building Style	Vetc Office
Building Use	Commercial
Building Condition	D+
Floors	Concrete
Total Rooms	
Bedrooms	
Bathrooms	
Bath Style	
Half Bath	

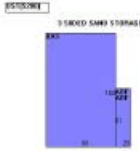
Kitchen Style	
Roof Style	Gable
Roof Cover	Enam Metal
Exterior Walls	Pre-finch Meti
Interior Walls	Minimum
Heating Type	Hot Air-No Duc
Heating Fuel	Gac
AC Type	Central
Gross Bldg Area	1368
Total Living Area	952

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	952	952
Canopy	416	0
Total Area	1368	952

Photo

Sketch



Primary Construction Details

Year Built	1991
Stories	1
Building Style	Pre-Eng Warehs
Building Use	Commercial
Building Condition	B
Floors	Concrete
Total Rooms	
Bedrooms	
Bathrooms	
Bath Style	
Half Bath	

Kitchen Style	
Roof Style	Gable
Roof Cover	Enam Metal
Exterior Walls	Pre-finch Meti
Interior Walls	Drywall
Heating Type	Hot Air-No Duc
Heating Fuel	Gas
AC Type	None
Gross Bldg Area	22920
Total Living Area	17640

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Office	3240	3240
First Floor	14400	14400
Utility Storage	5280	0
Total Area	22920	17640

Report Created On **11/21/2019**