NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Northeast Site Solutions
Denise Sabo
199 Brickyard Rd Farmington, CT 06032
860-209-4690
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February 14, 2017

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

RE: Notice of Exempt Modification
1 Charles Marshall Drive, Norwalk CT 06357
Latitude: 41.11520000
Longitude: -73.44339000
T-Mobile Site#: CT11885B_L700

Dear Ms. Bachman:

T-Mobile currently maintains three (3) antennas at the 114-foot level of the existing 95-foot transmission pole located at 1 Charles Marshall Drive, Norwalk CT. The electric transmission pole is owned by CL&P d/b/a Eversource. The property which holds the utility easment is owned by City of Norwalk, c/o Park Hills Oak Golf Course. T-Mobile now intends to install three (3) new 700/1900/2100 MHz antenna. The new antennas would be installed at the 114-foot level of the tower. T-Mobile also intends to make the following modifications.

Planned Modifications:
Remove: NONE

Remove and Replace:
(3) APX16DWV-16DWV-SE-A20 (Remove) - (3) Commscope SBNHH-1D65A (Replace)

Install New:
(3) Smart Bias-T
(6) 1-5/8" Coax

Existing to Remain: (12) 1-5/8" Coax

This facility was approved by the CT Siting Council. Petition No. 974 – Dated November 29, 2010. The petition was approved for T-Mobile to install antenna on the existing CL&P transmission structure. Please see attached. Also attached is Sprints approval, petition no. 459. Sprints approval references the City of Norwalk and Oak Hills Golf Course as the property owner with CL&P having a utility easement.

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Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies§ 16- SOj-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.SA. § 16-SOj-73, a copy of this letter is being sent to Mayor Harry Rilling, Elected Official and Steven Kleppin, Zoning Official for the City of Norwalk, as well as the property owner and the tower owner.

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

1. The proposed modifications will not result in an increase in the height of the existing structure.

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading.

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

Sincerely,

Denise Sabo
Mobile: 860-209-4690
Fax: 413-521-0558
Office: 199 Brickyard Rd, Farmington, CT 06032
Email: denise@northeastsitesolutions.com

Attachments
cc: Harry Rilling- Mayor - as elected official
Steven Kleppin- Zoning Official
CL&P d/b/a Eversource - as tower owner
City of Norwalk C/o Park-Oak Hills Golf Course - property owner- **Utility Easement**

Exhibit A

Petition No. 974
T-Mobile Northeast, LLC
Norwalk, Connecticut
Staff Report
November 29, 2010

On October 25, 2010, the Connecticut Siting Council (Council) received a petition from T-Mobile Northeast, LLC (T-Mobile) for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the modification of an existing transmission line tower located on the Oak Hills Golf Course owned by the City of Norwalk, Connecticut. Council member Dr. Barbara Bell and staff member David Martin visited the site on November 24, 2010 to review the proposal. Jennifer Gaudet represented T-Mobile at the field review.

The Oak Hills Golf Course is located in the west central area of Norwalk and is bisected by a CL&P transmission line. The towers for this transmission line are H-type lattice towers. One of these towers is located at the end of a paved area used to stage maintenance equipment and materials off of Charles Marshall Drive. Under Petition 459, Sprint received approval to install three antennas at centerline height of 103.5 feet on a pipe mast extension at the top of one side of this 95-foot tall tower. This approval was granted on May 17, 2000. T-Mobile now seeks to install antennas at a centerline height of 113.5 feet on a pipe mast extension to be installed on the other side of the same tower.

Sprint's ground equipment was installed within a 17-foot by 30-foot compound that is enclosed by a wooden slat fence. T-Mobile would install a concrete pad next to Sprint's existing compound and would enclose its own 18-foot by 14-foot compound area with a matching wooden slat fence. Cables from T-Mobile's equipment cabinets would be extended underground to the base of the tower on which its antennas would be located and then up the side of the tower.

The Oak Hills Golf Course is surrounded by residences. But topography and mature vegetation make the tower on which T-Mobile's antennas would be located difficult to see except for short distances on Fillow Street, which passes the golf course to the north, and from the nearest residential properties on Chipping Lane. The addition of the proposed antennas on the pipe mast extension is unlikely to increase the visibility of the transmission line tower beyond those areas that currently have views of it.

A structural engineer, duly licensed in the State of Connecticut, has certified that the existing lattice transmission line tower and foundation are structurally capable of accommodating T-Mobile's proposed antennas.

Council staff calculates that the proposed antennas, when added to the other antennas in place, would result in a power density equal to approximately 18.3% of the FCC's applicable limit.

The proposed antenna installation on the transmission line tower is not expected to have any substantial adverse environmental effects.

View of existing lattice transmission line tower; Sprint antennas on right

View of Sprint compound at base of transmission line tower

View of tower with Sprint antennas from nearest residence on Chipping Lane

Petition No. 459
Sprint Spectrum, L.P.
Norwalk, Connecticut
Staff Report
May 10, 2000

On May 8, 2000, Connecticut Siting Council (Council) member Edward S. Wilensky and Fred Cunliffe of Council staff met Andrew Sabetta of Pinnacle Site Development and Julie Cashin, Esq. Of Hurwitz and Sagarin, LLC for Sprint Spectrum, L.P. (Sprint) for inspection of a Connecticut Light & Power Company (CL&P) electric transmission line structure (no. 1109) located off Charles Marshall Drive, Norwalk. Sprint, with the agreement of CL&P, proposes to modify the transmission structure for telecommunications use and is petitioning the Council for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need (Certificate) is required for the modification.

Sprint proposes to attach a 3.5-inch diameter pipe extending the existing structure height of 95 feet by 10 feet 8 inches for a total height of approximately 106 feet. A structural analysis concludes no additional reinforcement is necessary for this proposal. Sprint proposes a low profile antenna cluster mount at the top of the pipe and placing associated equipment cabinets on an 8-foot by 20-foot concrete foundation within the existing structure's footprint and within CL&P's right-of-way. This foundation is sized to accept future equipment cabinets. Also, Sprint proposes to place a GPS antenna on a 20-foot high fence post located in the south corner of the site.

The proposed site is within the Oak Hills Golf Course Park owned by the City of Norwalk and adjacent to a golf course maintenance building.

An existing paved access from Charles Marshall Drive, used for golf course maintenance, would be used by Sprint to access the structure. A 17 ft. by 30 ft., 8-foot high architecturally-treated chain link fence with wood shadow box design would surround the equipment and two leg supports located on the east side of the structure. Utilities would be routed underground on the western edge of the CL&P right-of-way approximately 500 feet from an existing utility pole on Charles Marshall Drive to the site.

An inland wetland and watercourse is located approximately 10 feet east of the existing structure. The City of Norwalk has used areas adjacent to the inland wetland boundary for laydown of gravel, wood poles, and sand Sprint proposes to install erosion and sediment controls prior to construction.

The worst case power density for the telecommunications operations at the site has been calculated to be less than 10% of the applicable standard for uncontrolled environments. Sprint contends that the proposed installation will not cause a substantial adverse environmental effect, and for this reason would not require a Certificate.

Exhibit B

1 CHARLES MARSHALL DR

Location	1 CHARLES MARSHALL DR	Mblu	5/ 64/ 162/ 0/
Acct#	21421	Owner	NORWALK CITY OF
Assessment	$15,166,760	Appraisal	$21,666,800
PID	21421	Building Count	9

Assessing Distr...

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2015	$3,209,680	$18,457,120	$21,666,800
Assessment			
Valuation Year	Improvements	Land	Total
2015	$2,246,780	$12,919,980	$15,166,760

Owner of Record

Owner	NORWALK CITY OF	Sale Price	$0
Co-Owner	(PARK-OAK HILLS GOLF COURSE)	Certificate	
Address	165 FILLOW ST NORWALK, CT 06850-0000	Book & Page	665/492
		Sale Date	12/31/1940

Ownership History

Ownership History				
Owner	Sale Price	Certificate	Book & Page	Sale Date
NORWALK CITY OF	$0		665/492	12/31/1940

Building Information

Building 1 : Section 1

Year Built:	1930
Living Area:	1,400
Replacement Cost:	$158,578
Building Percent Good:	61
Replacement Cost Less Depreciation:	$96,730

Building Attributes

Field	Description
STYLE	Retail
MODEL	Commercial
Stories:	1.00
Occupancy	2.00
Exterior Wall 1	Vinyl Siding
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt Shingl
Interior Wall 1	Drywall
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	
Heating Fuel	Oil
Heating Type	Hot Water
AC Percent	0
Heat Percent	100
Bldg Use	Mun Bldg Com
Total Rooms	3
Bedrooms	0
FBM Area	
Heat/AC	None
Frame	Wood
Plumbing	Average
Foundation	Slab
Partitions	Average
Wall Height	8.00
% Sprinkler	0.00

Building Photo

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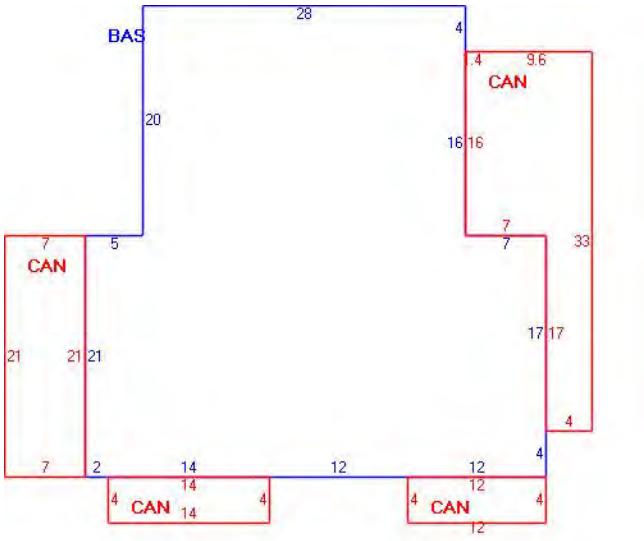
Building Layout



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	1,400	1,400
CAN	Canopy	495	0
		1,895	1,400

Building 2 : Section 1

Year Built:	1991
Living Area:	3,400
Replacement Cost:	$141,338
Building Percent Good:	75
Replacement Cost Less Depreciation:	$106,000

Building Attributes : Bldg 2 of 9

Field	Description
STYLE	Warehouse
MODEL	Commercial
Stories:	1.00
Occupancy	1.00
Exterior Wall 1	Aluminum Sidng
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Metal/Tin
Interior Wall 1	Minimum
Interior Wall 2	
Interior Floor 1	Concrete
Interior Floor 2	
Heating Fuel	None
Heating Type	None
AC Percent	0
Heat Percent	100
Bldg Use	Mun Bldg Com
Total Rooms	1
Bedrooms	0
FBM Area	
Heat/AC	None
Frame	Steel
Plumbing	Average
Foundation	Slab
Partitions	Average
Wall Height	12.00
% Sprinkler	0.00

Building Photo

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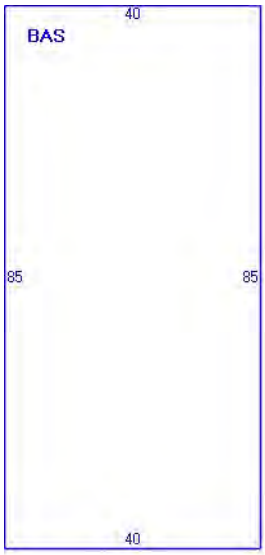
Building Layout



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	3,400	3,400
		3,400	3,400

Building 3 : Section 1

Year Built:	1930
Living Area:	2,536
Replacement Cost:	$422,983
Building Percent Good:	69
Replacement Cost Less Depreciation:	$291,860

Building Attributes : Bldg 3 of 9	
Field	Description

STYLE	Cape Cod
MODEL	Commercial
Stories:	1.75
Occupancy	1.00
Exterior Wall 1	Stone/Masonry
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt Shingl
Interior Wall 1	Plastered
Interior Wall 2	
Interior Floor 1	Hardwood
Interior Floor 2	
Heating Fuel	Oil
Heating Type	Hot Water
AC Percent	0
Heat Percent	100
Bldg Use	Mun Bldg Com
Total Rooms	8
Bedrooms	4
FBM Area	
Heat/AC	None
Frame	Masonry
Plumbing	Average
Foundation	Stone
Partitions	Average
Wall Height	8.00
% Sprinkler	0.00

Building Photo

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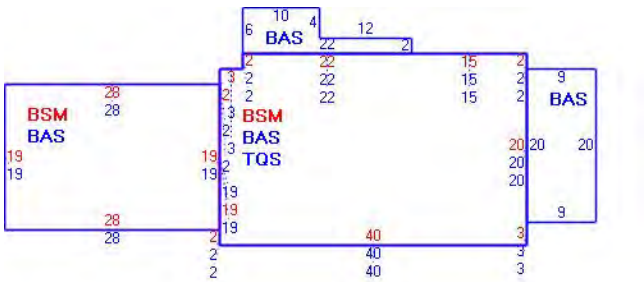
Building Layout



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	1,790	1,790
TQS	Three Quarter Story	994	746
BSM	Basement	1,526	0
		4,310	2,536

Building 4 : Section 1

Year Built:	1967
Living Area:	572
Replacement Cost:	$50,901
Building Percent Good:	67
Replacement Cost Less Depreciation:	$34,100

Building Attributes : Bldg 4 of 9	
Field	Description
STYLE	Outbuildings
MODEL	Commercial
Stories:	1.00
Occupancy	1.00
Exterior Wall 1	Concrete
Exterior Wall 2	
Roof Structure	Hip
Roof Cover	Asphalt Shingl
Interior Wall 1	Drywall
Interior Wall 2	
Interior Floor 1	Concrete
Interior Floor 2	
Heating Fuel	None
Heating Type	None
AC Percent	0
Heat Percent	100
Bldg Use	Mun Bldg Com
Total Rooms	2
Bedrooms	0
FBM Area	
Heat/AC	None
Frame	Masonry
Plumbing	Average
Foundation	Slab
Partitions	Average
Wall Height	8.00
% Sprinkler	0.00

Building Photo

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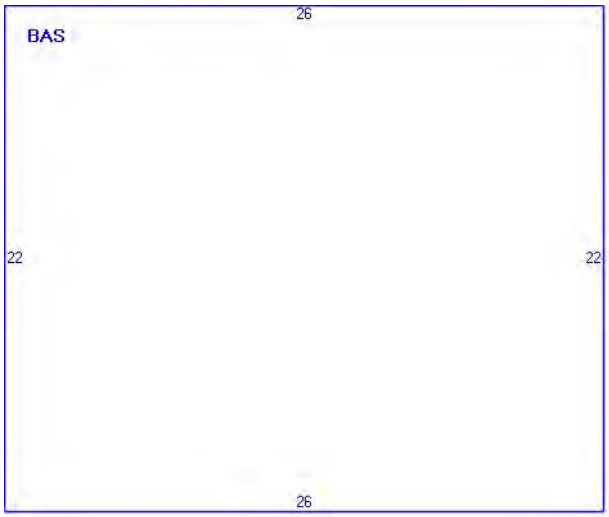
Building Layout



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	572	572
		572	572

Building 5 : Section 1

Year Built:	1968
Living Area:	5,296
Replacement Cost:	$249,389
Building Percent Good:	67
Replacement Cost Less Depreciation:	$167,090

Building Attributes : Bldg 5 of 9	
Field	Description

STYLE	Warehouse
MODEL	Commercial
Stories:	1.00
Occupancy	1.00
Exterior Wall 1	Aluminum Sidng
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt Shingl
Interior Wall 1	Minimum
Interior Wall 2	
Interior Floor 1	Concrete
Interior Floor 2	
Heating Fuel	Oil
Heating Type	Forced Air
AC Percent	0
Heat Percent	100
Bldg Use	Mun Bldg Com
Total Rooms	3
Bedrooms	0
FBM Area	
Heat/AC	Heat/AC Split
Frame	Steel
Plumbing	Average
Foundation	Slab
Partitions	Average
Wall Height	12.00
% Sprinkler	0.00

Building Photo

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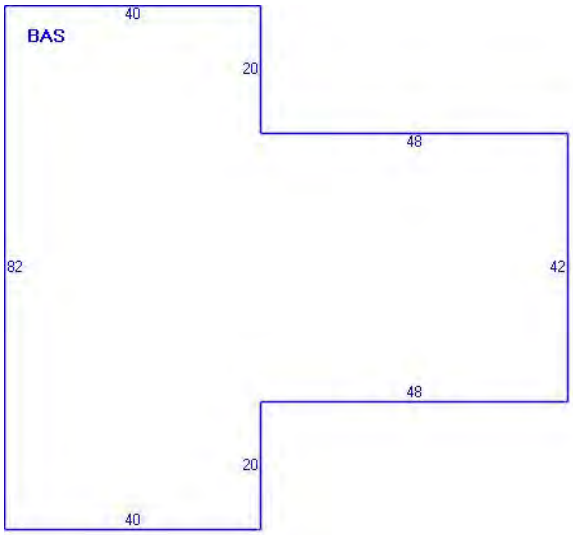
Building Layout



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	5,296	5,296
		5,296	5,296

Building 6 : Section 1

Year Built:	1930
Living Area:	1,446
Replacement Cost:	$234,901
Building Percent Good:	69
Replacement Cost Less Depreciation:	$162,080

Building Attributes : Bldg 6 of 9	
Field	Description

STYLE	Cape Cod
MODEL	Commercial
Stories:	2.00
Occupancy	2.00
Exterior Wall 1	Vinyl Siding
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt Shingl
Interior Wall 1	Plastered
Interior Wall 2	Drywall
Interior Floor 1	Hardwood
Interior Floor 2	
Heating Fuel	Oil
Heating Type	Hot Water
AC Percent	0
Heat Percent	100
Bldg Use	Mun Bldg Com
Total Rooms	10
Bedrooms	4
FBM Area	
Heat/AC	None
Frame	Wood
Plumbing	Average
Foundation	Poured Conc
Partitions	Average
Wall Height	8.00
% Sprinkler	0.00

Building Photo

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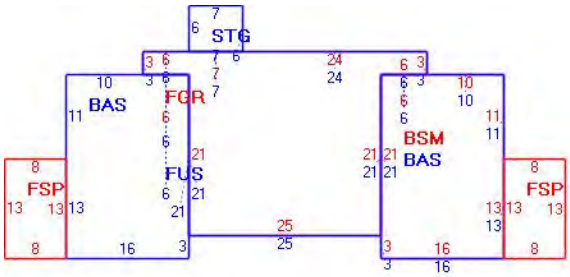
Building Layout



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	768	768
FUS	Finished Upper Story	636	636
STG	Storage	42	42
BSM	Basement	384	0
FGR	Garage	636	0
FSP	Screened Porch	208	0
		2,674	1,446

Building 7 : Section 1

Year Built:	1991
Living Area:	288
Replacement Cost:	$13,539

Building Percent Good:	75
Replacement Cost Less Depreciation:	$10,150

Building Attributes : Bldg 7 of 9	
Field	Description
STYLE	Warehouse
MODEL	Commercial
Stories:	1.00
Occupancy	1.00
Exterior Wall 1	Vinyl Siding
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt Shingl
Interior Wall 1	Minimum
Interior Wall 2	
Interior Floor 1	Concrete
Interior Floor 2	
Heating Fuel	None
Heating Type	None
AC Percent	0
Heat Percent	100
Bldg Use	Mun Bldg Com
Total Rooms	1
Bedrooms	0
FBM Area	
Heat/AC	None
Frame	Wood
Plumbing	Average
Foundation	Slab
Partitions	Average
Wall Height	10.00
% Sprinkler	0.00

Building Photo

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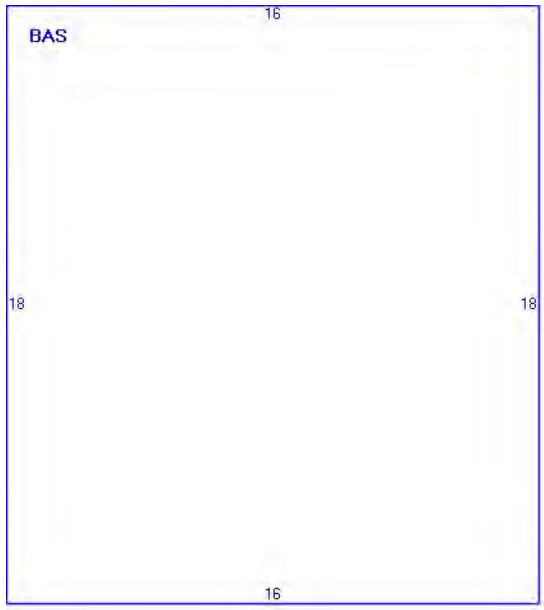
Building Layout



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	288	288
		288	288

Building 8 : Section 1

Year Built:	1973
Living Area:	500
Replacement Cost:	$39,456
Building Percent Good:	67
Replacement Cost Less Depreciation:	$26,440

Building Attributes : Bldg 8 of 9	
Field	Description

STYLE	Light Indust
MODEL	Commercial
Stories:	1.00
Occupancy	1.00
Exterior Wall 1	Concrete
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt Shingl
Interior Wall 1	Minimum
Interior Wall 2	
Interior Floor 1	Vinyl
Interior Floor 2	
Heating Fuel	None
Heating Type	None
AC Percent	0
Heat Percent	100
Bldg Use	Mun Bldg Com
Total Rooms	1
Bedrooms	0
FBM Area	
Heat/AC	None
Frame	Masonry
Plumbing	Average
Foundation	Slab
Partitions	Average
Wall Height	9.00
% Sprinkler	0.00

Building Photo

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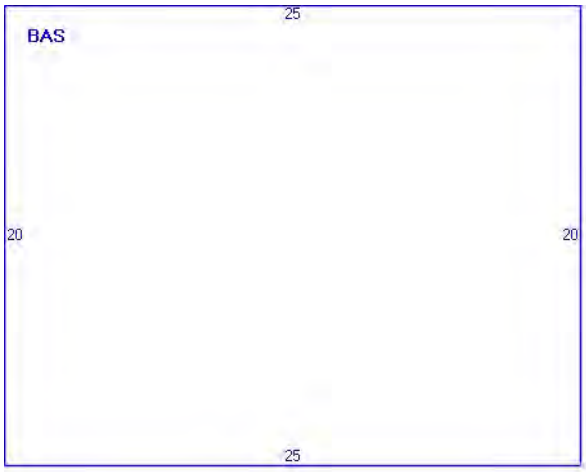
Building Layout



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	500	500
		500	500

Building 9 : Section 1

Year Built:	2005
Living Area:	6,165
Replacement Cost:	$1,289,238
Building Percent Good:	93
Replacement Cost Less Depreciation:	$1,198,990

Building Attributes : Bldg 9 of 9	
Field	Description

STYLE	Restaurant
MODEL	Commercial
Stories:	1.00
Occupancy	1.00
Exterior Wall 1	Wood Shingle
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt Shingl
Interior Wall 1	Drywall
Interior Wall 2	
Interior Floor 1	Hardwood
Interior Floor 2	Ceram Clay Til
Heating Fuel	Gas
Heating Type	Forced Air
AC Percent	100
Heat Percent	100
Bldg Use	Mun Bldg Com
Total Rooms	0
Bedrooms	0
FBM Area	
Heat/AC	Heat/AC Split
Frame	Wood
Plumbing	Average
Foundation	Poured Conc
Partitions	Average
Wall Height	9.00
% Sprinkler	0.00

Building Photo

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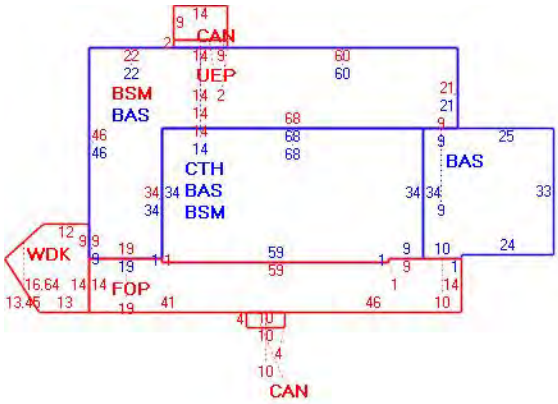
Building Layout



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	6,165	6,165
BSM	Basement	5,033	0
CAN	Canopy	166	0
CTH	Cathedral	2,371	0
FOP	Framed Open Porch	1,299	0
UEP	Utility Enclosed Porch	28	0
WDK	Wood Deck	398	0
		15,460	6,165

Extra Features

Extra Features	Legend

Code	Description	Size	Value	Bldg #
FPL	Fireplace	2.00 UNITS	$0	3

Land

Land Use

Use Code	922V
Description	Mun Bldg Com
Zone	A3
Neighborhood	C220

Land Line Valuation

Size (Acres)	143.70
Frontage	
Depth	
Assessed Value	$12,919,980
Appraised Value	$18,457,120

Outbuildings

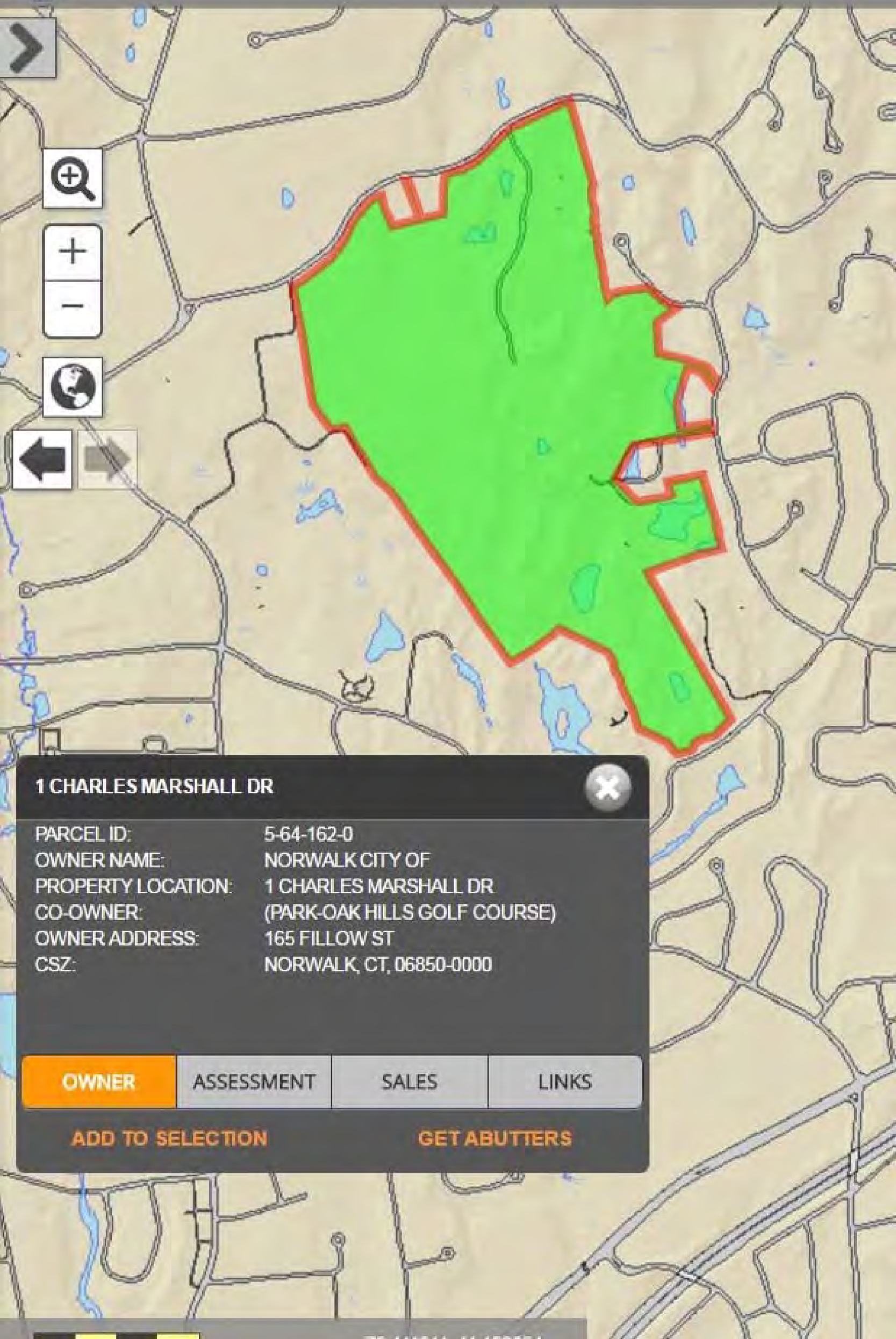
Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
FN6	Fence 6'			60.00 L.F.	$420	7
PAT1	Patio	CR	Concrete	440.00 S.F.	$550	4
PAV1	Paving Asph.			54000.00 S.F.	$56,700	1
SHD1	Shed	FR	Frame	90.00 S.F.	$900	3
FN6	Fence 6'			140.00 L.F.	$980	1
PAT1	Patio	CR	Concrete	250.00 S.F.	$310	3
GAR1	Garage	FR	Frame	840.00 S.F.	$2,520	1
PAT1	Patio	ST	Stone	120.00 S.F.	$270	3
TEN	Tennis Court			3.00 UNITS	$30,000	1
PAT1	Patio	CR	Concrete	96.00 S.F.	$120	3
SHD1	Shed	FR	Frame	80.00 S.F.	$800	1
SHD1	Shed	FR	Frame	156.00 S.F.	$1,560	1
SHD1	Shed	FR	Frame	140.00 S.F.	$1,400	1
GOLF	Golf Per Hole			18.00 UNITS	$1,125,000	1
LT1	Light 1			17.00 UNITS	$8,500	1
CNCP	Concrete Pad		Concrete	288.00 S.F.	$11,880	5
PWRW	Power Wash Eqpt		Equipment	1.00 UNITS	$11,250	5

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2014	$3,209,770	$18,457,120	$21,666,890
2013	$3,209,770	$18,457,120	$21,666,890
2012	$2,323,500	$19,170,900	$21,494,400

Assessment			
Valuation Year	Improvements	Land	Total

2014	$2,246,840	$12,919,980	$15,166,820
2013	$2,246,840	$12,919,980	$15,166,820
2012	$1,626,450	$13,419,630	$15,046,080



1 CHARLES MARSHALL DR

PARCEL ID:	5-64-162-0
OWNER NAME:	NORWALK CITY OF
PROPERTY LOCATION:	1 CHARLES MARSHALL DR
CO-OWNER:	(PARK-OAK HILLS GOLF COURSE)
OWNER ADDRESS:	165 FILLOW ST
CSZ:	NORWALK, CT, 06850-0000

OWNER | ASSESSMENT | SALES | LINKS

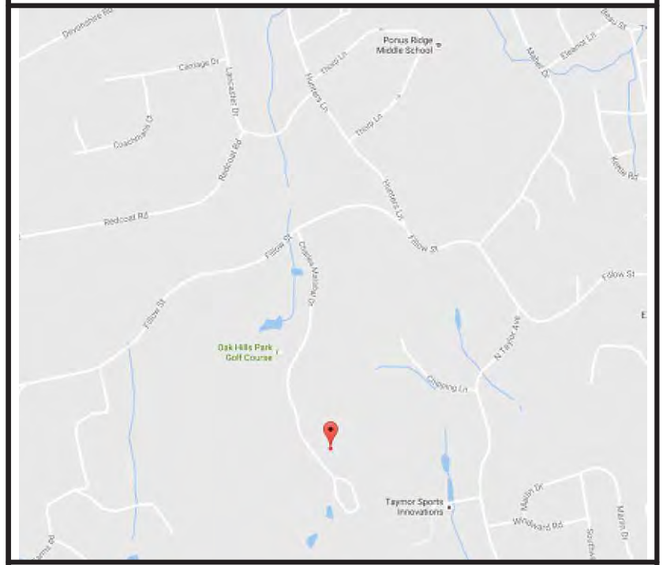
ADD TO SELECTION | GET ABUTTERS

Exhibit C

GENERAL NOTES

1. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTORS SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.
2. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
3. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
4. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
5. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
6. THE SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
7. THE SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
8. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWING MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
9. ALL SAFETY PRECAUTIONS MUCH BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

LOCATION MAP



DIRECTIONS

DIRECTIONS FROM BLOOMFIELD, CT:
GET ON I–91 S IN WINDSOR FROM CT–218 E, FOLLOW I–91 S AND CT–15 S TO CT–123 S/NEW CANAAN AVE IN NORWALK. TAKE EXIT 38 FROM CT–15 S, TAKE PONUS AVE AND HUNTERS LN TO CHARLES MARSHAL DR, TURN RIGHT ONTO CT–123 S/NEW CANAAN AVE, TURN RIGHT ONTO NURSERY ST, TURN LEFT ONTO PONUS AVE, TURN RIGHT ONTO HUNTERS LN, SHARP RIGHT ONTO FILLOW ST, TURN LEFT ONTO CHARLES MARSHAL DR

T··Mobile·

2016 L700

T-MOBILE SITE NUMBER

CT11885B

95' UTILITY TOWER

SITE ADDRESS
1 CHARLES MARSHALL DR (EVERSOURCE POLE #1109)
NORWALK, CT 06854

RF CONFIG TYPE
1HP_704Bu

SITE SUMMARY

SITE TYPE:	EXISTING SITE OVERLAY
SITE ADDRESS:	1 CHARLES MARSHALL DR (EVERSOURCE POLE #1109) NORWALK, CT 06854
SITE LATITUDE: SITE LONGITUDE:	41° 07' 00.3" –73° 26' 35.2"
JURISDICTION:	CITY OF NORWALK
POWER COMPANY: TELEPHONE COMPANY:	EVERSOURCE LIGHT TOWER
TOWER OWNER/MANAGER:	CONNECTICUT LIGHT AND POWER 107 SELDEN ST BERLIN, CT 06037 1–860–947–2121
WIRELESS CARRIER:	T–MOBILE 35 GRIFFIN RD S BLOOMFIELD, CT 06002 OFFICE: 860–692–7100 FAX: 860–692–7159
ENGINEER:	SMW ENGINEERING GROUP N.C., PLLC 158 BUSINESS CENTER DRIVE BIRMINGHAM, AL 35244 CONTACT: V.G. DUVALL, JR., PE PHONE: 205–252–6985

APPROVALS

DEPARTMENT	NAME/SIGNATURE	DATE
DEVELOPMENT MANAGER		
PROPERTY/TOWER OWNER		
SITE ACQUISITION MANAGER		
CONSTRUCTION MANAGER		
RF ENGINEER		
OPERATIONS MANAGER		

SHEET INDEX

BUILDING CODES

ALL CONSTRUCTION SHALL COMPLY WITH THE LATEST EDITION OF THE (AS ADOPTED BY LOCAL JURISDICTION):

- 2016 CONNECTICUT BUILDING CODE
- 2012 INTERNATIONAL BUILDING CODE W/AMENDMENTS
- 2009 ICC/ANSI A117.1 W/AMENDMENTS
- 2012 INTERNATIONAL EXISTING BUILDING CODE W/AMENDMENTS
- 2012 INTERNATIONAL PLUMBING CODE WITH AMENDMENTS
- 2012 INTERNATIONAL MECHANICAL CODE W/AMENDMENTS
- 2012 INTERNATIONAL ENERGY CONSERVATION CODE W/AMENDMENTS
- 2014 NFPA 70, NATIONAL ELECTRICAL CODE W/AMENDMENTS
- 2012 INTERNATIONAL RESIDENTIAL CODE W/AMENDMENTS

HANDICAP REQUIREMENTS

FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAP ACCESS IS NOT REQUIRED.

PLUMBING REQUIREMENTS

FACILITY HAS NO SANITARY OR POTABLE WATER

CALL BEFORE YOU DIG

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

CONNECTICUT CALL BEFORE YOU DIG
STATE WIDE
1–800–922–4455 OR 811
HTTP://WWW.CBYD.COM/#

T··Mobile·
35 GRIFFIN RD S
BLOOMFIELD, CT 06002
OFFICE: 860–692–7100
FAX: 860–692–7159

PLANS PREPARED BY:
NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development
199 BRICKYARD RD
FARMINGTON, CT 06032

SMW ENGINEERING GROUP, INC.
TOGETHER PLANNING A BETTER TOMORROW

02/13/17

SITE INFORMATION:
CT11885B
1 CHARLES MARSHALL DR
EVERSOURCE POLE #1109
NORWALK, CT 06854

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3	02/13/17	REISSUED FOR CONSTRUCTION

T-MOBILE SITE ID: CT11885B

SHEET NAME: TITLE SHEET

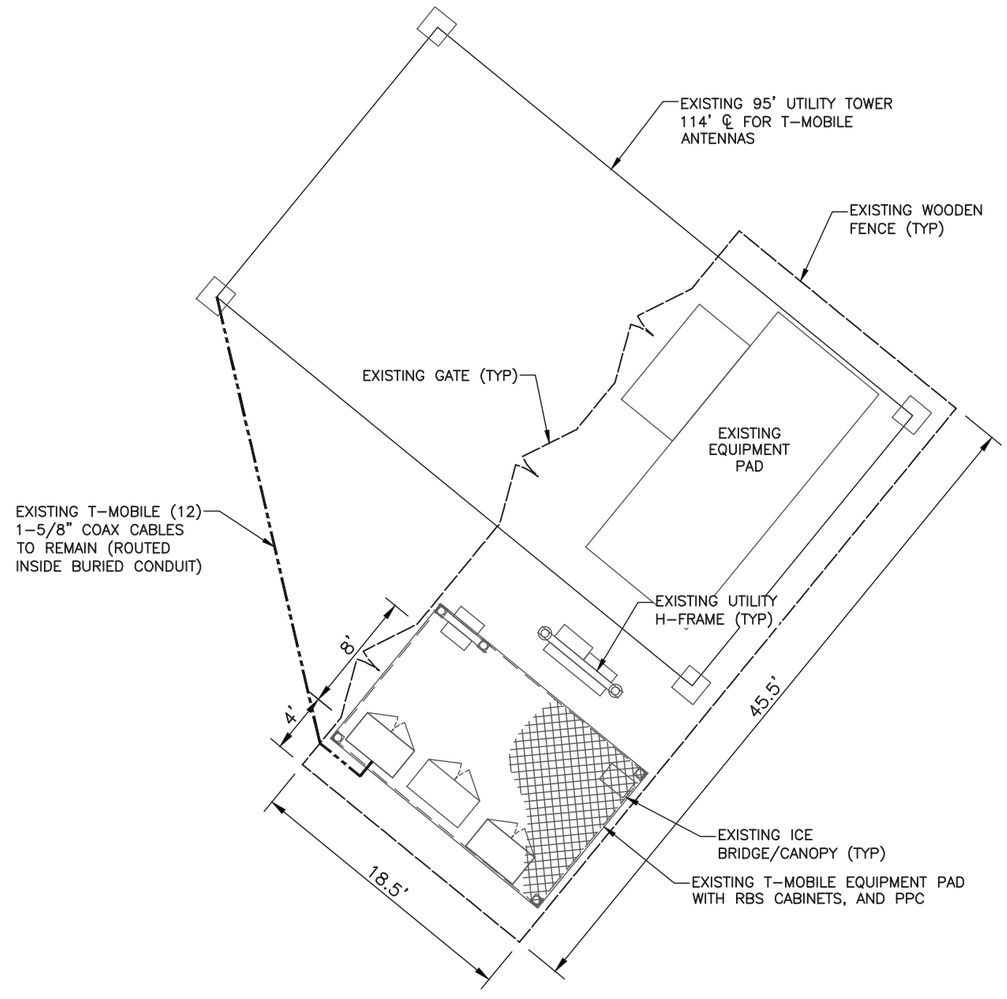
SMW #: 16–2091

DESIGNER:	ACR
CHECKED BY:	RTB
ENGINEER:	VGD

SHEET NUMBER: T-1

SITE NOTES:

1. DIGGING AND/OR TRENCHING INSIDE COMPOUND, MUST BE DONE BY HAND.
2. EXISTING SITE INFORMATION AND LAYOUT SHOWN REPRESENT INFORMATION OBTAINED FROM NSS & T–MOBILE.
3. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY THE EXACT LOCATIONS OF EXISTING UTILITIES WHICH MAY CONFLICT WITH PROPOSED IMPROVEMENTS.
4. LOCATION OF UNDERGROUND UTILITIES WAS NOT PERFORMED.
5. THE ADEQUACY OF EXISTING SITE UTILITIES TO ACCOMMODATE NEW CO–LOCATION LOAD(S) WAS NOT VERIFIED.
6. ALL EXISTING VEGETATION AND IMPROVEMENTS SHOWN ARE TO REMAIN UNLESS OTHERWISE SHOWN IN THESE DRAWINGS.



N

0' 10' 20' 30'

1" = 10' (11"x17")

0' 5' 10' 15'

1" = 5' (24"x36")

1 / C-1 EXISTING OVERALL SITE PLAN

T-Mobile
35 GRIFFIN RD S
BLOOMFIELD, CT 06002
OFFICE: 860–692–7100
FAX: 860–692–7159

PLANS PREPARED BY:
NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development
199 BRICKYARD RD
FARMINGTON, CT 06032

SMW ENGINEERING GROUP, INC.
TOGETHER PLANNING A BETTER TOMORROW

STATE OF CONNECTICUT
KEVIN A. KRAFT
No. 20787
LICENSED PROFESSIONAL ENGINEER

02/13/17

SITE INFORMATION:

CT11885B
1 CHARLES MARSHALL DR
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NORWALK, CT 06854

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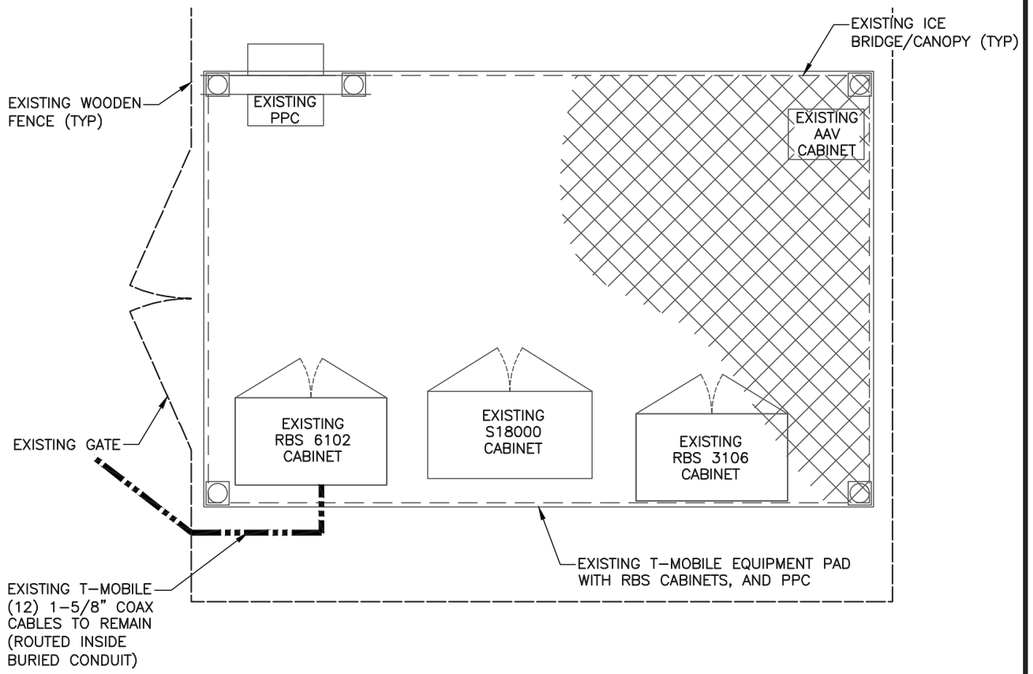
T-MOBILE SITE ID: CT11885B

SHEET NAME: OVERALL SITE PLAN

SMW #: 16–2091

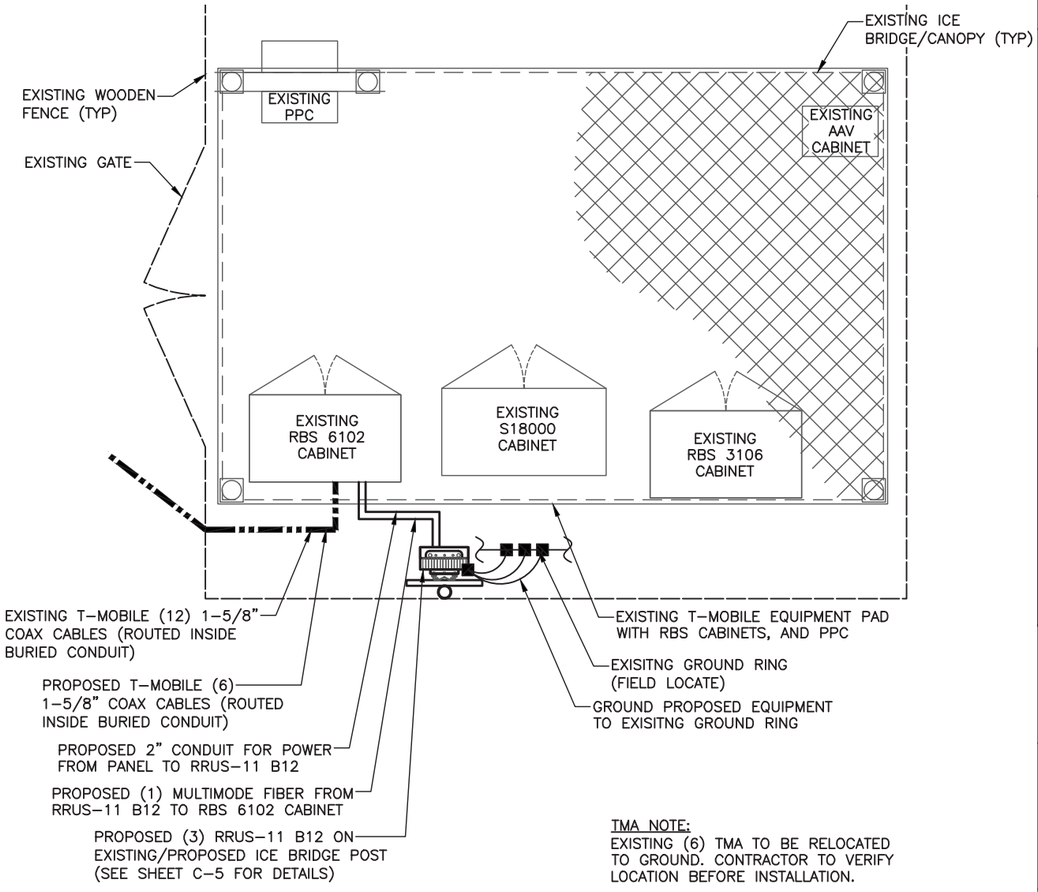
DESIGNER:	ACR
CHECKED BY:	RTB
ENGINEER:	VGD

SHEET NUMBER: C-1



0' 4' 8' 12'
1" = 4' (11"x17")
0' 2' 4' 6'
1" = 2' (24"x36")

1 C-2 EXISTING EQUIPMENT PLAN



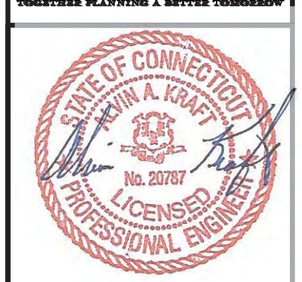
0' 4' 8' 12'
1" = 4' (11"x17")
0' 2' 4' 6'
1" = 2' (24"x36")

2 C-2 PROPOSED EQUIPMENT PLAN

T-Mobile
35 GRIFFIN RD S
BLOOMFIELD, CT 06002
OFFICE: 860-692-7100
FAX: 860-692-7159

PLANS PREPARED BY:
NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development
199 BRICKYARD RD
FARMINGTON, CT 06032

SMW ENGINEERING GROUP, INC.
TOGETHER PLANNING A BETTER TOMORROW



02/13/17

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EVERSOURCE POLE #1109
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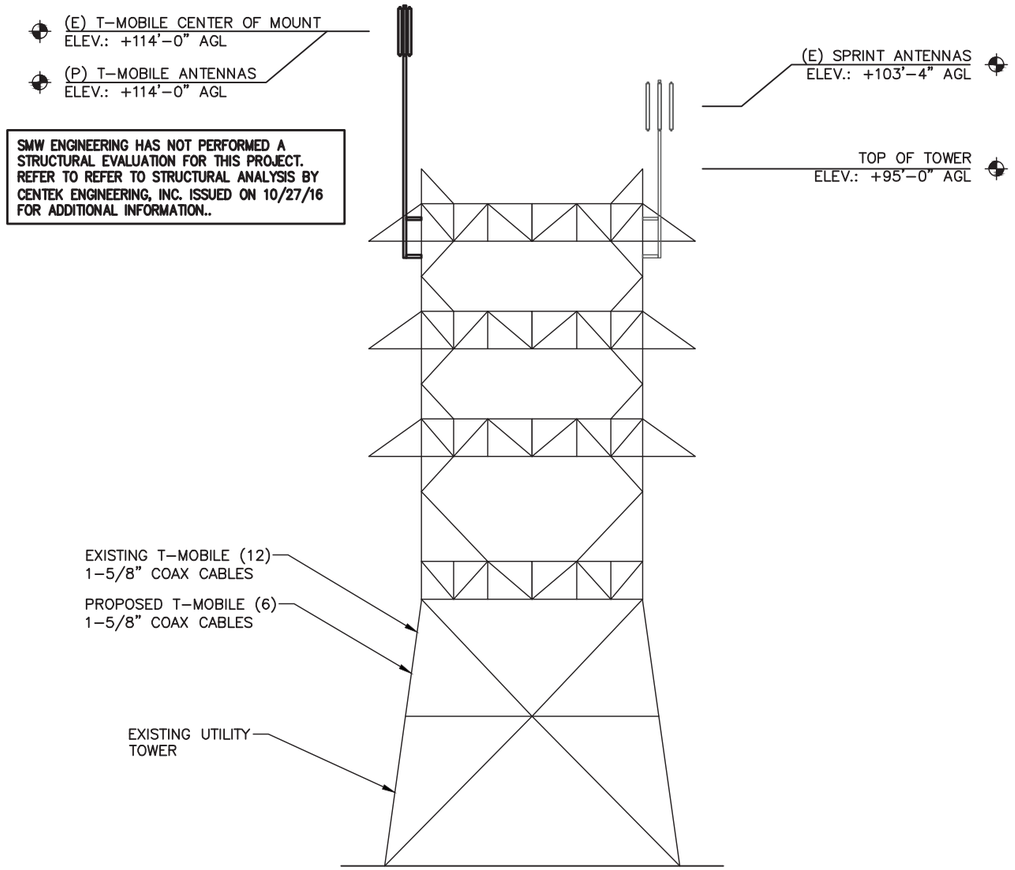
T-MOBILE SITE ID: CT11885B

SHEET NAME:
EQUIPMENT PLAN

SMW #: 16-2091

DESIGNER:	ACR
CHECKED BY:	RTB
ENGINEER:	VGD

SHEET NUMBER: C-2



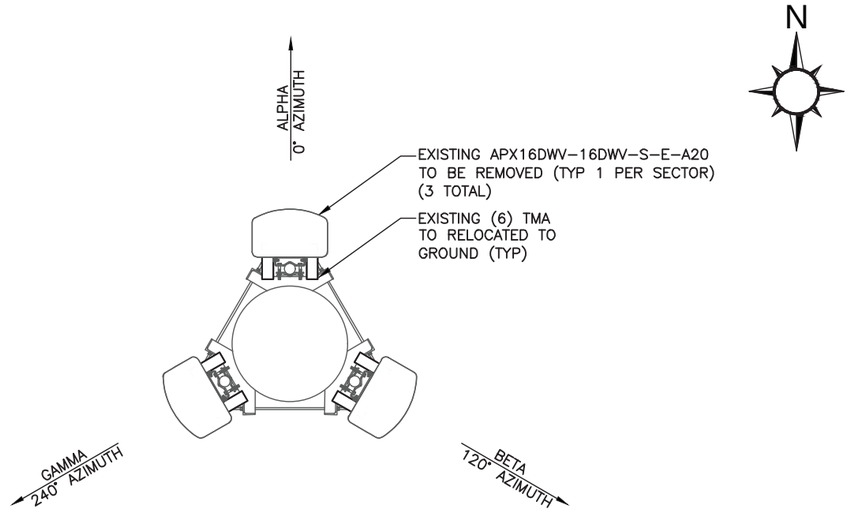
STRUCTURAL NOTES:

1. SMW HAS NOT PERFORMED A STRUCTURAL ANALYSIS OF THE EXISTING TOWER OR PROPOSED ANTENNA MOUNT. REFER TO STRUCTURAL ANALYSIS BY CENTEK ENGINEERING, INC. ISSUED ON 10/27/16 FOR ADDITIONAL INFORMATION.
2. IF THE TOWER STRUCTURAL ANALYSIS SHOWS THE NEED FOR TOWER REINFORCEMENT REFER TO TOWER REINFORCEMENT DESIGN PRIOR TO THE INSTALLATION OF ANY PROPOSED EQUIPMENT.
3. REFER TO TOWER STRUCTURAL ANALYSIS FOR PROPOSED CABLE ROUTING AND ATTACHMENT DETAILS.
4. TOWER ELEVATION SHOWN IS NOT DRAWN TO SCALE AND IS INTENDED ONLY FOR REFERENCE PURPOSES. REFER TO ORIGINAL TOWER DESIGN FOR ADDITIONAL INFORMATION.

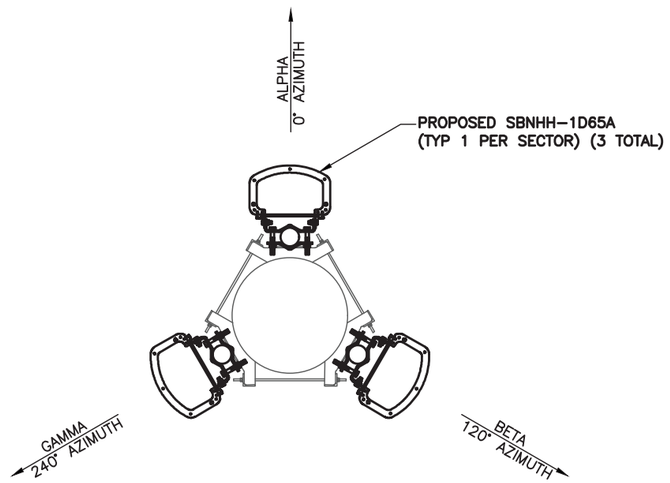
ANTENNA NOTES:

1. THE PRE-APPLICATION & LEASE DIRECTION OF THE ANTENNA SHALL BE ADJUSTED TO MEET SYSTEM REQUIREMENTS.
2. CONTRACTOR SHALL VERIFY HEIGHT OF ANTENNA WITH T-MOBILE PCS PM.
3. CONTRACTOR SHALL VERIFY HEIGHT AND DIRECTION OF MICROWAVE DISHES WITH T-MOBILE PROJECT MANAGER (WHEN APPLICABLE).
4. ALL ANTENNA AZIMUTHS TO BE FROM MAGNETIC NORTH.
5. CONTRACTOR TO USE EXISTING ANTENNA TOP HAT.

1 / C-3 TOWER ELEVATION
NOT TO SCALE



2 / C-3 EXISTING ANTENNA ORIENTATION PLAN
NOT TO SCALE



3 / C-3 PROPOSED ANTENNA ORIENTATION PLAN
NOT TO SCALE

T-Mobile
35 GRIFFIN RD S
BLOOMFIELD, CT 06002
OFFICE: 860-692-7100
FAX: 860-692-7159

PLANS PREPARED BY:
NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development
199 BRICKYARD RD
FARMINGTON, CT 06032

SMW ENGINEERING GROUP, INC.
TOGETHER PLANNING A BETTER TOMORROW

02/13/17

SITE INFORMATION:

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T-MOBILE SITE ID: CT11885B

SHEET NAME:
TOWER ELEVATION
& ANTENNA PLAN

SMW #: 16-2091

DESIGNER:	ACR
CHECKED BY:	RTB
ENGINEER:	VGD

SHEET NUMBER: C-3

TOWER EQUIPMENT SCHEDULE										
ANTENNA MARK	SECTOR	ANTENNA MODEL	ANTENNA ORIENTATION	RAD CENTER	RADIO	TMA MODEL	EQUIPMENT	SURGE PROTECTION	COAX/CABLE	TECHNOLOGY
A1	ALPHA	(1) COMMSCOPE – SBNHH–1D65A (P)	0°	114'		(2) GENERIC STYLE 1B – TWIN AWS (E)	(1) ANDREW SMART BIAS T (P)		(4) 1–5/8" COAX (E) (2) 1–5/8" COAX (P)	U1900/G1900/U1200/ L2100/L700
B1	BETA	(1) COMMSCOPE – SBNHH–1D65A (P)	120°	114'		(2) GENERIC STYLE 1B – TWIN AWS (E)	(1) ANDREW SMART BIAS T (P)		(4) 1–5/8" COAX (E) (2) 1–5/8" COAX (P)	U1900/G1900/U1200/ L2100/L700
C1	GAMMA	(1) COMMSCOPE – SBNHH–1D65A (P)	240°	114'		(2) GENERIC STYLE 1B – TWIN AWS (E)	(1) ANDREW SMART BIAS T (P)		(4) 1–5/8" COAX (E) (2) 1–5/8" COAX (P)	U1900/G1900/U1200/ L2100/L700

TABLE NOTE:
(P) DENOTES PROPOSED EQUIPMENT
(E) DENOTES EXISTING EQUIPMENT

EQUIPMENT NOTES:
1. THE HYBRID CABLE LENGTH SHOWN IS ONLY AN ESTIMATE & SHOULD NOT BE USED FOR ORDERING MATERIALS. CONFIRM THE REQUIRED HYBRID CABLE LENGTH W/T–MOBILE PRIOR TO ORDERING OR INSTALLATION.
2. THE CONTRACTOR SHALL TEST THE OPTICAL FIBER AFTER INSTALLATION IN ACCORDANCE W/T–MOBILE STANDARDS & SUPPLY THE RESULTS TO T–MOBILE.
3. THE CONTRACTOR SHALL CONFIRM THE TOWER TOP EQUIPMENT LIST ABOVE W/THE FINAL T–MOBILE RFDS PRIOR TO INSTALLATION.
4. ALL EXISTING & PROPOSED ANTENNA CABLES SHALL BE COLOR CODED PER T–MOBILE STANDARDS.
5. REFER TO NOKIA SIEMENS NETWORKS EQUIPMENT INSTALLATION STANDARDS FOR ADDITIONAL INFORMATION.
6. REFER TO EQUIPMENT MANUFACTURER'S SPECIFICATION SHEETS FOR ADDITIONAL INFORMATION NOT LISTED ABOVE.

TOWER LOADING SUMMARY				
EXISTING QUANTITY	REMOVE QUANTITY	EQUIPMENT TYPE	ADD QUANTITY	TOTAL QUANTITY
3	3	PANEL ANTENNA	3	3
12	0	COAX CABLE	6	18
6	6	TMA	0	0
0	0	DIPLEXER	0	0
0	0	RRUS–11 B12 GROUND MOUNTED	3	3
0	0	SMART BIAS T	3	3

RFDS REFERENCE:
CT11885B–L700–rfds.eng.t–mobile 9–26–2016

TMA NOTE:
EXISTING (6) TMA TO BE RELOCATED TO GROUND

T-Mobile
35 GRIFFIN RD S
BLOOMFIELD, CT 06002
OFFICE: 860–692–7100
FAX: 860–692–7159

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Turnkey Wireless Development
199 BRICKYARD RD
FARMINGTON, CT 06032

SMW ENGINEERING GROUP, INC.
TOGETHER PLANNING A BETTER TOMORROW

02/13/17

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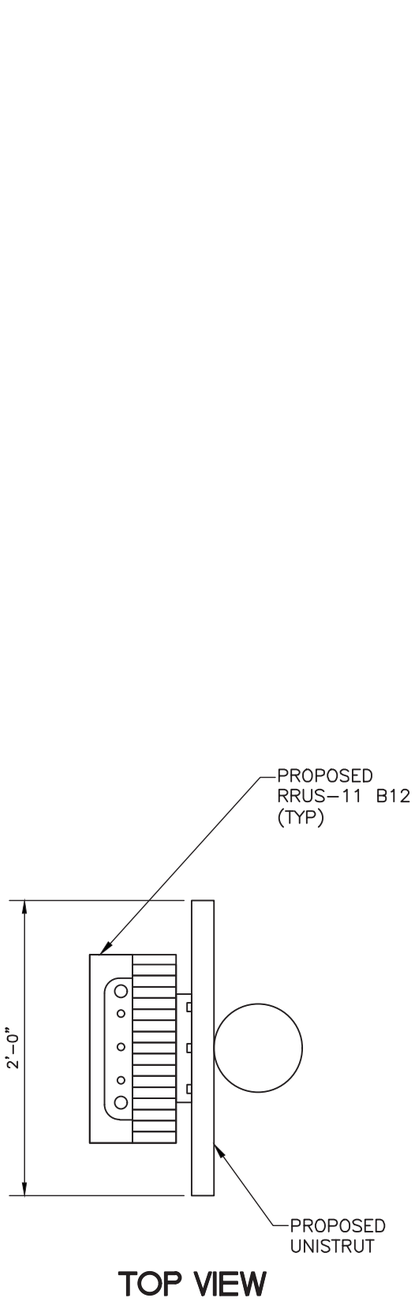
T-MOBILE SITE ID:
CT11885B

SHEET NAME:
TOWER EQUIPMENT SCHEDULE

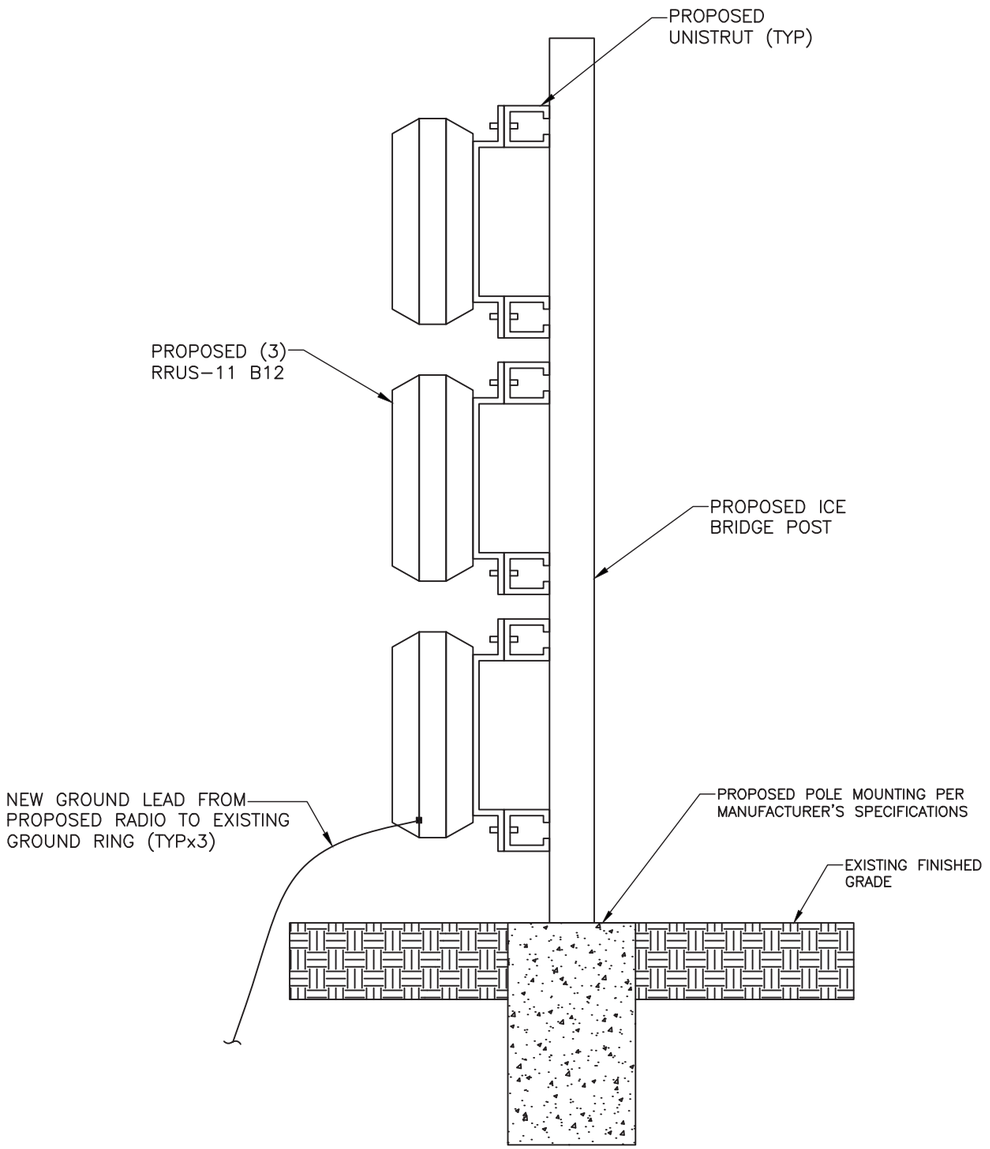
SMW #:
16–2091

DESIGNER:	ACR
CHECKED BY:	RTB
ENGINEER:	VGD

SHEET NUMBER:
C-4



TOP VIEW



SIDE VIEW

T-Mobile
35 GRIFFIN RD S
BLOOMFIELD, CT 06002
OFFICE: 860–692–7100
FAX: 860–692–7159

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T-MOBILE SITE ID:
CT11885B

SHEET NAME:
EQUIPMENT DETAIL

SMW #:
16–2091

DESIGNER:	ACR
CHECKED BY:	RTB
ENGINEER:	VGD

SHEET NUMBER:
C-5

GENERAL ELECTRICAL NOTES:

1. ALL WORK IS TO COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE (NEC) AND ANY LOCAL ORDINANCES, CODES, AND ALL OTHER ADMINISTRATIVE AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL FURNISH AND PAY FOR ALL PERMITS AND RELATED FEES.

2. ALL EQUIPMENT AND MATERIAL FURNISHED AND INSTALLED UNDER THIS CONTRACT SHALL BE UNDERWRITERS LABORATORIES (U.L.) LISTED, NEW, FREE FROM DEFECTS, AND SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE BY OWNER OR HIS REPRESENTATIVE. SHOULD ANY TROUBLE DEVELOP DURING THIS PERIOD DUE TO FAULTY WORKMANSHIP, MATERIAL, OR EQUIPMENT, THE CONTRACTOR SHALL FURNISH ALL NECESSARY MATERIALS AND LABOR TO CORRECT THE TROUBLE WITHOUT COST TO THE OWNER.

3. ALL WORK SHALL BE EXECUTED IN A WORKMAN LIKE MANNER AND SHALL PRESENT A NEAT MECHANICAL APPEARANCE WHEN COMPLETED. CONTRACTOR SHOULD AVOID DAMAGE TO EXISTING UTILITIES WHEREVER POSSIBLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING RELATED TO ELECTRICAL WORK, AND SHALL RESTORE ALL EXISTING LANDSCAPING, SPRINKLER SYSTEMS, CONDUITS, WIRING, PIPING, ETC. DAMAGED BY THE ELECTRICAL WORK TO MATCH EXISTING CONDITIONS.

4. ELECTRICAL WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED TO COMPLETE ELECTRICAL POWER AND LIGHTING SYSTEMS, TELEPHONE AND COMMUNICATION SYSTEMS, PANELBOARDS, CONDUIT, CONTROL WIRING, GROUNDING, ETC. AS INDICATED ON ELECTRICAL DRAWINGS AND/OR AS REQUIRED BY GOVERNING CODES.

5. PRIOR TO INSTALLING ANY ELECTRICAL WORK, THE CONTRACTOR SHALL VISIT THE JOB SITE AND VERIFY EXISTING SITE LOCATIONS AND CONDITIONS AND UTILITY SERVICE REQUIREMENTS OF THE JOB, AND BY REFERENCE TO ENGINEERING AND EQUIPMENT SUPPLIERS' DRAWINGS. SHOULD THERE BE ANY QUESTION OR PROBLEM CONCERNING THE NECESSARY PROVISIONS TO BE MADE. PROPER DIRECTIONS SHALL BE OBTAINED BEFORE PROCEEDING WITH ANY WORK.

6. PROVIDE POWER AND TELEPHONE TO SERVICE POINTS PER UTILITY COMPANY REQUIREMENTS. CONTRACTOR SHALL CONTACT UTILITY SERVICE PLANNERS AND OBTAIN ALL SERVICE REQUIREMENTS AND INCLUDE COSTS FOR SUCH IN THEIR BID.

7. SERVICE EQUIPMENT SHALL HAVE A SHORT CIRCUIT WITHSTAND RATING EXCEEDING THE MAXIMUM AVAILABLE FAULT CURRENT AT THE SUPPLY TERMINAL ON THE UTILITY TRANSFORMER SECONDARY, THE INSULATION SHALL BE FREE FROM ANY SHORT CIRCUITS AND GROUNDS. CONTRACTOR TO OBTAIN THE AVAILABLE SHORT CIRCUIT CURRENT FROM THE ELECTRICAL SERVICE PROVIDER.

8. ALL WIRES SHALL BE STRANDED COPPER WITH THHN/THWN AND 600 VOLTS INSULATION. ALL GROUND CONDUCTORS TO BE PROPERLY SIZED COPPER. (STRANDED OR SOLID)

9. IN THE EVENT OF ANY CONFLICT OR INCONSISTENCY BETWEEN ITEMS SHOWN ON THE PLANS AND/OR SPECIFICATIONS, THE NOTE, SPECIFICATION OR CODE WHICH PRESCRIBES AND ESTABLISHES THE HIGHEST STANDARD OF PERFORMANCE SHALL PREVAIL.

10. SERVICE CONDUITS SHALL HAVE NO MORE THAN (4) –50° BENDS IN ANY SINGLE RUN. THE CONTRACTOR SHALL PROVIDE PULL BOXES AS NEEDED WHERE CONDUIT REQUIREMENTS EXCEED THESE CONDITIONS. PULL WIRES AND CAPS SHALL BE PROVIDED AT ALL SPARE CONDUITS FOR FUTURE USE.

11. ALL ELECTRICAL EQUIPMENT SHALL BE ANCHORED TO WITHSTAND LOCAL WIND SPEED REQUIREMENTS AND DESIGNED FOR OUTDOOR EXPOSURE.

12. ALL COAX, POWER AND TELEPHONE SYSTEM CONDUITS SHALL HAVE A MINIMUM 24" SCH. 80 PVC RADIUS SWEEPS TO EQUIPMENT, PULLBOXES, GUY, ETC., UNLESS OTHERWISE NOTED, OR AS REQUIRED BY UTILITY COMPANIES.

13. FUSE TYPE SHALL BE BUSSMAN RKI LOW PEAK FUSE (LPN–RK–140).

14. UPON COMPLETION OF THE JOB, THE CONTRACTOR SHALL FURNISH AS–BUILT DRAWINGS TO THE OWNER.

15. GENERAL GROUNDING CRITERIA
    1ST STEP: GROUND TO EXISTING BUILDING STRUCTURAL STEEL AND TO THE EXISTING COLD WATER METAL PIPE LINE. (WHERE APPLICABLE) THEN TEST GROUNDING RESISTANCE FOR 5 OHMS OR LESS OVERALL GROUND RESISTANCE. WHERE THE EFFECTIVE RESISTANCE DOES NOT MEET THIS CRITERIA, PROVIDE SUPPLEMENTAL GROUNDING AND RE–TEST UNTIL GROUND RESISTANCE FALLS BELOW THIS LEVEL.

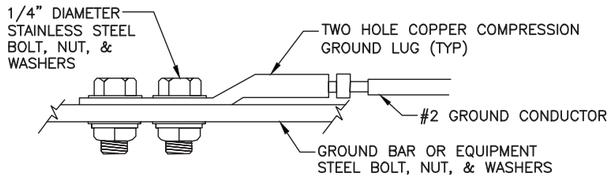
16. SUPPLEMENTAL GROUND MAY CONSIST OF ONE OR MORE OF THE FOLLOWING:
    COUNTERPOISE, USER GROUND, GROUND ROD AND/OR GROUND WELL IN EXTREMELY ADVERSE SOIL CONDITIONS. WHERE THE EXISTING BUILDING STEEL DOES NOT PROVIDE AN EFFECTIVE GROUND RESISTANCE, THEN THE CONTRACTOR SHALL PROVIDE A SEPARATE GROUND CONDUCTOR FROM ROOF MOUNTED BTS EQUIPMENT LOCATIONS EITHER DOWN THROUGH THE INSIDE OF THE BUILDING OR DOWN THE OUTSIDE OF THE BUILDING, DEPENDING UPON OWNER PREFERENCE. WHERE THE GROUND CONDUCTOR FROM THE ROOF MOUNTED EQUIPMENT IS ROUTED IN CONDUIT, THE CONDUIT SHALL BE EFFECTIVELY GROUNDED TO THE GROUND CONDUCTOR AT BOTH ENDS OF THE CONDUIT. (GUY INSTALLATIONS):

    FOR INSTALLATIONS WHERE WOODEN STRUCTURES, TOWERS, CONCRETE SILOS ETC. ARE ENCOUNTERED A PARATE DOWNLEAD SHALL BE PROVIDED FROM THE 3 ANTENNAS SEPARATED BY A MINIMUM OF 12 INCHES FROM THE COAXIAL CABLES. THE GROUND CONDUCTOR SHALL BE SECURELY FASTENED TO THE EXTERIOR OF OUTSIDE STRUCTURES WITH NONMETALLIC GROUND STRAPS EVERY 10 FEET. AGAIN, AS FOR TENANT IMPROVEMENT PROJECTS, TEST THE GROUND RESISTANCE FOR GUY INSTALLATIONS AND PROCEED PER THE ABOVE STEPS.

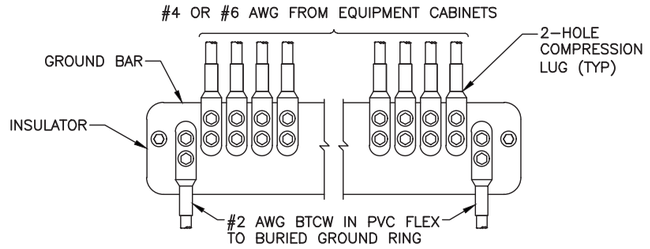
17. CONTRACTOR TO COLOR PHASE CONDUCTORS BLACK (B PHASE), RED (A PHASE), WHITE (NEUTRAL), AND GREEN (GROUND).

18. CONTRACTOR TO PROVIDE GUTTER TAP.

19. THERE SHALL BE A MINIMUM CLEARANCE OF 48" BETWEEN FRONT OF ELECTRICAL EQUIPMENT AND ANY WALL OR OBSTRUCTION.



1 / E-1 TWO HOLE LUG CONNECTION DETAIL
NOT TO SCALE



2 / E-1 GROUND BAR DETAIL
NOT TO SCALE

T-Mobile
35 GRIFFIN RD S
BLOOMFIELD, CT 06002
OFFICE: 860–692–7100
FAX: 860–692–7159

PLANS PREPARED BY:
NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development
199 BRICKYARD RD
FARMINGTON, CT 06032

SMW ENGINEERING GROUP, INC.
TOGETHER PLANNING A BETTER TOMORROW

02/13/17

SITE INFORMATION:

CT11885B
1 CHARLES MARSHALL DR
EVERSOURCE POLE #1109
NORWALK, CT 06854

#	DATE	DESCRIPTION:
0	10/18/16	ISSUED FOR CLIENT REV.
1	10/25/16	REVISED PER CLIENT COMMENT
2	02/01/17	ISSUED FOR CONSTRUCTION
3	02/13/17	REISSUED FOR CONSTRUCTION

T-MOBILE SITE ID: CT11885B

SHEET NAME:
ELECTRICAL & GROUNDING DETAILS

SMW #: 16–2091

DESIGNER:	ACR
CHECKED BY:	RTB
ENGINEER:	VGD

SHEET NUMBER: E-1

Exhibit D

CENTEK engineering

Centered on Solutions℠

Structural Analysis of Antenna Mast and Tower

T-Mobile Site Ref: CT11885B

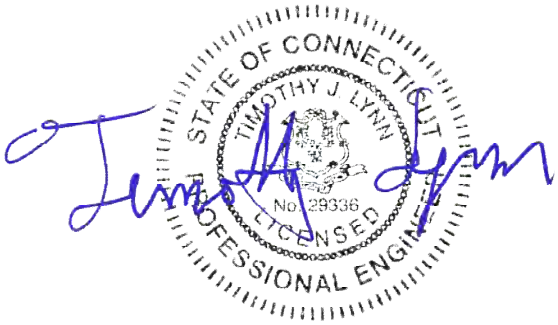
Eversource Structure No. 1109

95' Electric Transmission Lattice Tower

1 Charles Marshal Drive
Norwalk, CT

CENTEK Project No. 16162.06

Date: October 27, 2016



Prepared for:
T-Mobile USA
35 Griffin Road
Bloomfield, CT 06002

63-2 North Branford Road, Branford, CT 06405 203.488.0580 Fax 203.488.8587 www.CentekEng.com

Table of Contents

Introduction

The purpose of this report is to analyze the existing antenna mast and 95' utility tower located at 1 Charles Marshal Drive in Norwalk, CT for the proposed antenna and equipment upgrade by T-Mobile.

The existing and proposed loads consist of the following:

- SPRINT (Existing to Remain):
  Antennas: Three (3) RFS APXVSPP18-C panel antennas flush mounted on an existing mast with RAD center elevation of 103-ft 4-in above tower base.
  Coax Cables: Eighteen (28) 1-5/8" ∅ coax cables running on the outside of the existing tower as indicated in section 4 of this report.
  Mast: 10-in Sch. 40 pipe mast.
- T-MOBILE (Existing to Remain):
  Coax Cables: Twelve (12) 1-5/8" ∅ coax cables running on the outside of the tower as indicated in section 4 of this report
  Mast: 12-in Sch. 40 pipe mast.
- T-MOBILE (Existing to Remove):
  Antennas: Three (3) RFS APX16DWV-16DWVS-E-A20 panel antennas flush mounted on a pipe mast with a RAD center elevation of 114-ft above tower base.
- **T-MOBILE (Proposed):**
  Antennas: Three (3) Andrew SBNHH-1D65A panel antennas and three (3) Andrew ATSBT-TOP-FM-4G Smart Bias Tees flush mounted on a pipe mast with a RAD center elevation of 114-ft above tower base.
  Coax Cables: Six (6) 1-5/8" ∅ coax cables running on the outside of the tower as indicated in section 4 of this report

Primary assumptions used in the analysis

- ASCE Manual No. 10-97, "Design of Latticed Steel Transmission Structures", defines steel stresses for evaluation of the utility tower.
- All utility tower members are adequately protected to prevent corrosion of steel members.
- All proposed antenna mounts are modeled as listed above.
- All coaxial cable will be installed within the antenna mast unless specified otherwise.
- Antenna mast will be properly installed and maintained.
- No residual stresses exist due to incorrect tower erection.
- All bolts are appropriately tightened providing the necessary connection continuity.
- All welds conform to the requirements of AWS D1.1.
- Antenna mast and utility tower will be in plumb condition.
- Utility tower was properly installed and maintained and all members were properly designed, detailed, fabricated, and installed and have been properly maintained since erection.
- Any deviation from the analyzed loading will require a new analysis for verification of structural adequacy.

Analysis

Structural analysis of the existing antenna mast was independently completed using the current version of RISA-3D computer program licensed to CENTEK Engineering, Inc. The RISA-3D program contains a library of all AISC shapes and corresponding section properties are computed and applied directly within the program. The program's Steel Code Check option was also utilized.

The existing T-Mobile antenna mast consisting of a 12" std. pipe conforming to ASTM A53 Grade B (Fy = 35ksi) connected at two points to the existing tower was analyzed for its ability to resist loads prescribed by the TIA-222-G standard. Section 5 of this report details these gravity and lateral wind loads. Load cases and combinations used in RISA-3D for TIA/EIA loading are listed in report Section 6.

Structural analysis of the existing utility tower structure was completed using the current version of PLS-Tower computer program licensed to CENTEK Engineering, Inc. The NESC program contains a library of all AISC angle shapes and corresponding section properties are computed and applied directly within the program. The program's Steel Code Check option was also utilized.

The existing 95-ft tall lattice tower was analyzed for its ability to resist loads prescribed by the NESC standard. Maximum usage for the tower was calculated considering the additional forces from the antenna mast and associated appurtenances. Section 7 of this report details these gravity and lateral wind loads.

Design Basis

Our analysis was performed in accordance with TIA-222-G, ASCE Manual No. 10-97, "Design of Latticed Steel Transmission Structures", NESC C2-2007 and Northeast Utilities Design Criteria.

- UTILITY TOWER ANALYSIS

  The purpose of this analysis is to determine the adequacy of the existing utility structure to support the proposed antenna loads. The loading and design requirements were analyzed in accordance with the NU Design Criteria Table, NESC C2-2007 ~ Construction Grade B, and ASCE Manual No. 10-97, "Design of Latticed Steel Transmission Structures".

  Load cases considered:

  Load Case 1: NESC Heavy

Wind Pressure……..	4.0 psf
Radial Ice Thickness……..	0.5"
Vertical Overload Capacity Factor…….	1.50
Wind Overload Capacity Factor……	2.50
Wire Tension Overload Capacity Factor……	1.65

  Load Case 2: NESC Extreme

Wind Speed……..	110 mph [(1)]
Radial Ice Thickness……..	0"

  Note 1: NESC C2-2007, Section25, Rule 250C: Extreme Wind Loading, 1.25 x Gust Response Factor (wind speed: 3-second gust)

- MAST ASSEMBLY ANALYSIS

  Mast, appurtenances and connections to the utility tower were analyzed and designed in accordance with the NU Design Criteria Table, TIA/EIA-222-G and AISC standards.

  Load cases considered:

  Load Case 1:
  Wind Speed……..... 93 mph (2016 CSBC Appendix-N)
  Radial Ice Thickness…….. 0”

  Load Case 2:
  Wind Pressure…….. 50 mph wind pressure
  Radial Ice Thickness…….. 0.75”

R e s u l t s

- ANTENNA MAST

  The existing antenna mast was determined to be structurally **adequate**.

Component	Design Limit	Stress Ratio (percentage of capacity)	Result
12” Std. Pipe	Bending	52.8%	**PASS**
HSS6x6x1/4 Brace	Bending	43.7%	**PASS**
Connection	Shear	32.3%	**PASS**

- UTILITY TOWER

  This analysis finds that the subject utility structure is adequate to support the proposed antenna mast and related appurtenances. The tower stresses meet the requirements set forth by the ASCE Manual No. 10-97, “Design of Latticed Steel Transmission Structures”, for the applied NESC Heavy and Hi-Wind load cases. The detailed analysis results are provided in Section 8 of this report. The analysis results are summarized as follows:

  A maximum usage of **97.72%** occurs in the utility tower under the **NESC Extreme** loading condition.

  TOWER SECTION:

  The utility structure was found to be within allowable limits.

Tower Member	Stress Ratio (% of capacity)	Result
Angle g125Y	97.72%	**PASS**

- FOUNDATION

  The existing foundation consists of four (4) 2-ft square tapering to 4-ft square x 6-ft long reinforced concrete piers with four (4) 8-ft square x 3-ft thick reinforced concrete pads. The base of the tower is connected to the foundation by one (1) anchor stub per leg. Foundation information was obtained from NUSCO drawings # 01035-60003.

BASE REACTIONS:

From PLS-Tower analysis of utility tower based on NESC/NU prescribed loads.

Load Case	Shear	Uplift	Compression
NESC Heavy Wind	8.7 kips	6.0 kips	38.6 kips
NESC Extreme Wind	27.0 kips	52.3 kips	60.2 kips

Note 1 – 10% increase to be applied to the above tower base reactions for foundation verification per OTRM 051

FOUNDATION:

The foundation was found to be within allowable limits.

Foundation	Design Limit	Required FS (1)	Proposed Loading FS (2)	Result
Reinf. Conc. Pad & Pier	Uplift	1.0	1.78	**PASS**
	Bearing Pressure	4 ksf	2.61 ksf	**PASS**

Note 1: FS denotes Factor of Safety
Note 2: 10% increase to PLS base reactions used in foundation analysis per OTRM 051.

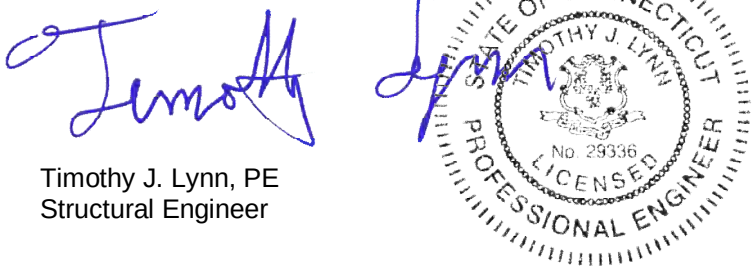
Conclusion

This analysis shows that the subject utility tower **is adequate** to support the proposed T-Mobile equipment upgrade.

The analysis is based, in part on the information provided to this office by Eversource and T-Mobile. If the existing conditions are different than the information in this report, CENTEK engineering, Inc. must be contacted for resolution of any potential issues.

Please feel free to call with any questions or comments.

Respectfully Submitted by:



Timothy J. Lynn, PE
Structural Engineer

STANDARD CONDITIONS FOR FURNISHING OF PROFESSIONAL ENGINEERING SERVICES ON EXISTING STRUCTURES

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

- Information supplied by the client regarding the structure itself, its foundations, the soil conditions, the antenna and feed line loading on the structure and its components, or other relevant information.

- Information from the field and/or drawings in the possession of CENTEK engineering, Inc. or generated by field inspections or measurements of the structure.

- It is the responsibility of the client to ensure that the information provided to CENTEK engineering, Inc. and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and are in an un-corroded condition and have not deteriorated. It is therefore assumed that its capacity has not significantly changed from the “as new” condition.

- All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest revision of ANSI/ASCE10 & ANSI/EIA-222.

- All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. CENTEK engineering, Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

GENERAL DESCRIPTION OF STRUCTURAL ANALYSIS PROGRAM ~ RISA-3D

RISA-3D Structural Analysis Program is an integrated structural analysis and design software package for buildings, bridges, tower structures, etc.

Modeling Features:

- Comprehensive CAD-like graphic drawing/editing capabilities that let you draw, modify and load elements as well as snap, move, rotate, copy, mirror, scale, split, merge, mesh, delete, apply, etc.
- Versatile drawing grids (orthogonal, radial, skewed)
- Universal snaps and object snaps allow drawing without grids
- Versatile general truss generator
- Powerful graphic select/unselect tools including box, line, polygon, invert, criteria, spreadsheet selection, with locking
- Saved selections to quickly recall desired selections
- Modification tools that modify single items or entire selections
- Real spreadsheets with cut, paste, fill, math, sort, find, etc.
- Dynamic synchronization between spreadsheets and views so you can edit or view any data in the plotted views or in the spreadsheets
- Simultaneous view of multiple spreadsheets
- Constant in-stream error checking and data validation
- Unlimited undo/redo capability
- Generation templates for grids, disks, cylinders, cones, arcs, trusses, tanks, hydrostatic loads, etc.
- Support for all units systems & conversions at any time
- Automatic interaction with RISASection libraries
- Import DXF, RISA-2D, STAAD and ProSteel 3D files
- Export DXF, SDNF and ProSteel 3D files

Analysis Features:

- Static analysis and P-Delta effects
- Multiple simultaneous dynamic and response spectra analysis using Gupta, CQC or SRSS mode combinations
- Automatic inclusion of mass offset (5% or user defined) for dynamic analysis
- Physical member modeling that does not require members to be broken up at intermediate joints
- State of the art 3 or 4 node plate/shell elements
- High-end automatic mesh generation — draw a polygon with any number of sides to create a mesh of well-formed quadrilateral (NOT triangular) elements.
- Accurate analysis of tapered wide flanges - web, top and bottom flanges may all taper independently
- Automatic rigid diaphragm modeling
- Area loads with one-way or two-way distributions
- Multiple simultaneous moving loads with standard AASHTO loads and custom moving loads for bridges, cranes, etc.
- Torsional warping calculations for stiffness, stress and design
- Automatic Top of Member offset modeling
- Member end releases & rigid end offsets
- Joint master-slave assignments
- Joints detachable from diaphragms
- Enforced joint displacements
- 1-Way members, for tension only bracing, slipping, etc.

- 1-Way springs, for modeling soils and other effects
- Euler members that take compression up to their buckling load, then turn off.
- Stress calculations on any arbitrary shape
- Inactive members, plates, and diaphragms allows you to quickly remove parts of structures from consideration
- Story drift calculations provide relative drift and ratio to height
- Automatic self-weight calculations for members and plates
- Automatic subgrade soil spring generator

Graphics Features:

- Unlimited simultaneous model view windows
- Extraordinary “true to scale” rendering, even when drawing
- High-speed redraw algorithm for instant refreshing
- Dynamic scrolling stops right where you want
- Plot & print virtually everything with color coding & labeling
- Rotate, zoom, pan, scroll and snap views
- Saved views to quickly restore frequent or desired views
- Full render or wire-frame animations of deflected model and dynamic mode shapes with frame and speed control
- Animation of moving loads with speed control
- High quality customizable graphics printing

Design Features:

- Designs concrete, hot rolled steel, cold formed steel and wood
- ACI 1999/2002, BS 8110-97, CSA A23.3-94, IS456:2000,EC 2-1992 with consistent bar sizes through adjacent spans
- Exact integration of concrete stress distributions using parabolic or rectangular stress blocks
- Concrete beam detailing (Rectangular, T and L)
- Concrete column interaction diagrams
- Steel Design Codes: AISC ASD 9th, LRFD 2nd & 3rd, HSS Specification, CAN/CSA-S16.1-1994 & 2004, BS 5950-1-2000, IS 800-1984, Euro 3-1993 including local shape databases
- AISI 1999 cold formed steel design
- NDS 1991/1997/2001 wood design, including Structural Composite Lumber, multi-ply, full sawn
- Automatic spectra generation for UBC 1997, IBC 2000/2003
- Generation of load combinations: ASCE, UBC, IBC, BOCA, SBC, ACI
- Unbraced lengths for physical members that recognize connecting elements and full lengths of members
- Automatic approximation of K factors
- Tapered wide flange design with either ASD or LRFD codes
- Optimization of member sizes for all materials and all design codes, controlled by standard or user-defined lists of available sizes and criteria such as maximum depths
- Automatic calculation of custom shape properties
- Steel Shapes: AISC, HSS, CAN, ARBED, British, Euro, Indian, Chilean
- Light Gage Shapes: AISI, SSMA, Dale / Incor, Dietrich, Marino\WARE
- Wood Shapes: Complete NDS species/grade database
- Full seamless integration with RISAFoot (Ver 2 or better) for advanced footing design and detailing
- Plate force summation tool

Results Features:

- Graphic presentation of color-coded results and plotted designs
- Color contours of plate stresses and forces with quadratic smoothing, the contours may also be animated
- Spreadsheet results with sorting and filtering of: reactions, member & joint deflections, beam & plate forces/stresses, optimized sizes, code designs, concrete reinforcing, material takeoffs, frequencies and mode shapes
- Standard and user-defined reports
- Graphic member detail reports with force/stress/deflection diagrams and detailed design calculations and expanded diagrams that display magnitudes at any dialed location
- Saved solutions quickly restore analysis and design results.

GENERAL DESCRIPTION OF STRUCTURAL ANALYSIS PROGRAM ~ PLS-TOWER

PLS-TOWER is a Microsoft Windows program for the analysis and design of steel latticed towers used in electric power lines or communication facilities. Both self-supporting and guyed towers can be modeled. The program performs design checks of structures under user specified loads. For electric power structures it can also calculate maximum allowable wind and weight spans and interaction diagrams between different ratios of allowable wind and weight spans.

Modeling Features:

- Powerful graphics module (stress usages shown in different colors)
- Graphical selection of joints and members allows graphical editing and checking
- Towers can be shown as lines, wire frames or can be rendered as 3-d polygon surfaces
- Can extract geometry and connectivity information from a DXF CAD drawing
- CAD design drawings, title blocks, drawing borders or photos can be tied to structure model
- XML based post processor interface
- Steel Detailing Neutral File (SDNF) export to link with detailing packages
- Can link directly to line design program PLS-CADD
- Automatic generation of structure files for PLS-CADD
- Databases of steel angles, rounds, bolts, guys, etc.
- Automatic generation of joints and members by symmetries and interpolations
- Automated mast generation (quickly builds model for towers that have regular repeating sections) via graphical copy/paste
- Steel angles and rounds modeled either as truss, beam or tension-only elements
- Guys are easily handled (can be modeled as exact cable elements)

Analysis Features:

- Automatic handling of tension-only members
- Automatic distribution of loads in 2-part suspension insulators (v-strings, horizontal vees, etc.)
- Automatic calculation of tower dead, ice, and wind loads as well as drag coefficients according to:
    - ASCE 74-1991
    - NESC 2002
    - NESC 2007
    - IEC 60826:2003
    - EN50341-1:2001 (CENELEC)
    - EN50341-3-9:2001 (UK NNA)
    - EN50341-3-17:2001 (Portugal NNA)
    - ESAA C(b)1-2003 (Australia)
    - TPNZ (New Zealand)
    - REE (Spain)
    - EIA/TIA 222-F
    - ANSI/TIA 222-G
    - CSA S37-01
- Automated microwave antenna loading as per EIA/TIA 222-F and ANSI/TIA 222-G
- Minimization of problems caused by unstable joints and mechanisms
- Automatic bandwidth minimization and ability to solve large problems
- Design checks according to (other standards can be added easily):
    - ASCE Standard 10-90

- AS 3995 (Australian Standard 3995)
- BS 8100 (British Standard 8100)
- EN50341-1 (CENELEC, both empirical and analytical methods are available)
- ECCS 1985
- NGT-ECCS
- PN-90/B-03200
- EIA/TIA 222-F
- ANSI/TIA 222-G
- CSA S37-01
- EDF/RTE Resal
- IS 802 (India Standard 802)

Results Features:

- Design summaries printed for each group of members
- Easy to interpret text, spreadsheet and graphics design summaries
- Automatic determination of allowable wind and weight spans
- Automatic determination of interaction diagrams between allowable wind and weight spans
- Capability to batch run multiple tower configurations and consolidate the results
- Automated optimum angle member size selection and bolt quantity determination

Tool for interactive angle member sizing and bolt quantity determination.

Criteria for Design of PCS Facilities On or Extending Above Metal Electric Transmission Towers & Analysis of Transmission Towers Supporting PCS Masts (1)

Introduction

This criteria is the result from an evaluation of the methods and loadings specified by the separate standards, which are used in designing telecommunications towers and electric transmission towers. That evaluation is detailed elsewhere, but in summary; the methods and loadings are significantly different. This criteria specifies the manner in which the appropriate standard is used to design PCS facilities including masts and brackets (hereafter referred to as "masts"), and to evaluate the electric transmission towers to support PCS masts. The intent is to achieve an equivalent level of safety and security under the extreme design conditions expected in Connecticut and Massachusetts.

ANSI Standard TIA-222 covering the design of telecommunications structures specifies a working strength/allowable stress design approach. This approach applies the loads from extreme weather loading conditions, and designs the structure so that it does not exceed some defined percentage of failure strength (allowable stress).

ANSI Standard C2-2007 (National Electrical Safety Code) covering the design of electric transmission metal structures is based upon an ultimate strength/yield stress design approach. This approach applies a multiplier (overload capacity factor) to the loads possible from extreme weather loading conditions, and designs the structure so that it does not exceed its ultimate strength (yield stress).

Each standard defines the details of how loads are to be calculated differently. Most of the NU effort in "unifying" both codes was to establish what level of strength each approach would provide, and then increasing the appropriate elements of each to achieve a similar level of security under extreme weather loadings.

Two extreme weather conditions are considered. The first is an extreme wind condition (hurricane) based upon a 50-year recurrence (2% annual probability). The second is a winter condition combining wind and ice loadings.

The following sections describe the design criteria for any PCS mast extending above the top of an electric transmission tower, and the analysis criteria for evaluating the loads on the transmission tower from such a mast from the lower portions of such a mast, and loads on the pre-existing electric lower portions of such a mast, and loads on the pre-existing electric transmission tower and the conductors it supports.

Note 1: Prepared from documentation provide from Northeast Utilities.

P C S M a s t

The PCS facility (mast, external cable/trays, including the initial and any planned future support platforms, antennas, etc. extending the full height above the top level of the electric transmission structure) shall be designed in accordance with the provisions of TIA 222-G:

E L E C T R I C T R A N S M I S S I O N T O W E R

The electric transmission tower shall be analyzed using yield stress theory in accordance with the attached table titled “NU Design Criteria”. This specifies uniform loadings (different from the TIA loadings) on the each of the following components of the installed facility:

- PCS mast for its total height above ground level, including the initial and planned future support platforms, antennas, etc. above the top of an electric transmission structure.
- Conductors are related devices and hardware.
- Electric transmission structure. The loads from the PCS facility and from the electric conductors shall be applied to the structure at conductor and PCS mast attachment points, where those load transfer to the tower.

The uniform loadings and factors specified for the above components in the table are based upon the National Electrical Safety Code 2007 Edition Extreme Wind (Rule 250C) and Combined Ice and Wind (Rule 250B-Heavy) Loadings. These provide equivalent loadings compared to TIA and its loads and factors with the exceptions noted above. (Note that the NESC does not require the projected wind surfaces of structures and equipment to be increased by the ice covering.)

In the event that the electric transmission tower is not sufficient to support the additional loadings of the PCS mast, reinforcement will be necessary to upgrade the strength of the overstressed members.

Attachment A

NU Design Criteria

			Basic Wind Speed	Pressure	Height Factor	Gust Factor	Load or Stress Factor	Force Coef - Shape Factor
			V (MPH)	Q (PSF)	Kz	Gh		
Ice Condition	TIA/EIA	Antenna Mount	TIA	TIA (.75Wi)	TIA	TIA	TIA, Section 3.1.1.1 disallowed for connection design	TIA
	NESC Heavy	Tower/Pole Analysis with antennas extending above top of Tower/Pole (Yield Stress)	------	4	1.00	1.00	2.50	1.6 Flat Surfaces 1.3 Round Surfaces
		Tower/Pole Analysis with Antennas below top of Tower/Pole (on two faces)	-----	4	1.00	1.00	2.50	1.6 Flat Surfaces 1.3 Round Surfaces
		Conductors:	Conductor loads provided by NU					
High Wind Condtion	TIA/EIA	Antenna Mount	85	TIA	TIA	TIA	TIA, Section 3.1.1.1 disallowed for connection design	TIA
	NESC Extreme Wind	Tower/Pole Analysis with antennas extending above top of Tower/Pole	Use NESC C2-2007, Section 25, Rule 250C: Extreme Wind Loading 1.25 x Gust Response Factor Height above ground level based on top of Mast/Antenna					1.6 Flat Surfaces 1.3 Round Surfaces
		Tower/Pole Analysis with Antennas below top of Tower/Pole	Use NESC C2-2007, Section 25, Rule 250C: Extreme Wind Loading Height above ground level based on top of Tower/Pole					1.6 Flat Surfaces 1.3 Round Surfaces
		Conductors:	Conductor loads provided by NU					
NESC Extreme Ice with Wind Conditon*		Tower/Pole Analysis with antennas extending above top of Tower/Pole	Use NESC C2-2007, Section 25, Rule 250D: Extreme Ice with Wind Loading 4PSF Wind Load 1.25 x Gust Response Factor Height above ground level based on top of Mast/Antenna					1.6 Flat Surfaces 1.3 Round Surfaces
		Tower/Pole Analysis with Antennas below top of Tower/Pole	Use NESC C2-2007, Section 25, Rule 250D: Extreme Ice with Wind Loading 4PSF Wind Load Height above ground level based on top of Tower/Pole					1.6 Flat Surfaces 1.3 Round Surfaces
		Conductors:	Conductor loads provided by NU					
		* Only for Structures Installed after 2007						

Shape Factor Criteria shall be per TIA Shape Factors.

2) STEP 2 - The electric transmission structure analysis and evaluation shall be performed in accordance with NESC requirements and shall include the mast and antenna loads determined from NESC applied loading conditions (not TIA/EIA Loads) on the structure and mount as specified below, and shall include the wireless communication mast and antenna loads per NESC criteria)

The structure shall be analyzed using yield stress theory in accordance with Attachment A, "NU Design Criteria." This specifies uniform loadings (different from the TIA loadings) on each of the following components of the installed facility:

a) Wireless communication mast for its total height above ground level, including the initial and any planned future equipment (Support Platforms, Antennas, TMA's etc.) above the top of an electric transmission structure.

b) Conductors and related devices and hardware (wire loads will be provided by NU).

c) Electric Transmission Structure

i) The loads from the wireless communication equipment components based on NESC and NU Criteria in Attachment A, and from the electric conductors shall be applied to the structure at conductor and wireless communication mast attachment points, where those loads transfer to the tower.

ii) Shape Factor Multiplier:

NESC Structure Shape	Cd
Polyround (for polygonal steel poles)	1.3
Flat	1.6
Open Lattice	3.2

iii) When Coaxial Cables are mounted along side the pole structure, the shape multiplier shall be:

Mount Type	Cable Cd	Pole Cd
Coaxial Cables on outside periphery (One layer)	1.45	1.45
Coaxial Cables mounted on stand offs	1.6	1.3

d) The uniform loadings and factors specified for the above components in Attachment A, "NU Design Criteria" are based upon the National Electric Safety Code 2007 Edition Extreme Wind (Rule 250C) and Combined Ice and Wind (Rule 250B-Heavy) Loadings. These provide equivalent loadings compared to the TIA and its loads and factors with the exceptions noted above.

Note: The NESC does not require ice load be included in the supporting structure. (Ice on conductors and shield wire only, and NU will provide these loads).

e) Mast reaction loads shall be evaluated for local effects on the transmission structure members at the attachment points.

Northeast Utilities System

Job :		Page	of
Description:	Spec. Number	Sheet	of
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	Checked by	Date	

INPUT DATA

TOWER ID: 1109

Structure Height (ft) : 95

Wind Zone : Central CT (green)

Wind Speed : 110 mph

Tower Type : ○ Suspension ◉ Strain

Extreme Wind Model : PCS Addition

Shield Wire Properties:

	BACK	AHEAD
NAME =	*OPGW-120*	*OPGW-120*
DESCRIPTION =	6-Groove	6-Groove
STRANDING =	10/9 FOCAS	10/9 FOCAS
DIAMETER =	0.738 in	0.738 in
WEIGHT =	0.518 lb/ft	0.518 lb/ft

Conductor Properties:

	BACK	AHEAD	
NAME =	*TERN*	*TERN*	
Number of Conductors per phase: 1	795.000 45/7 ACSR	795.000 45/7 ACSR	1 Number of Conductors per phase
DIAMETER =	1.063 in	1.063 in	
WEIGHT =	0.895 lb/ft	0.895 lb/ft	

Insulator Weight = 0 lbs

Broken Wire Side = AHEAD SPAN

Horizontal Line Tensions:

	BACK		AHEAD	
	Shield	Conductor	Shield	Conductor
NESC HEAVY =	6,000	7,000	6,000	7,000
EXTREME WIND =	5,948	7,151	5,948	7,793
LONG. WIND =	na	na	na	na
250D COMBINED =	na	na	na	na
NESC W/O OLF =	na	na	na	na
60 DEG F NO WIND =	2,074	2,732	2,074	2,735

Line Geometry:

					SUM
LINE ANGLE (deg) =	BACK:	0	AHEAD:	0	**0**
WIND SPAN (ft) =	BACK:	324	AHEAD:	324	**648**
WEIGHT SPAN (ft) =	BACK:	213	AHEAD:	213	**426**

Northeast Utilities System

Job :		Page	of
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WIRE LOADING AT ATTACHMENTS

TOWER ID: 1109

Wind Span =	648 ft	Broken Wire Span =	AHEAD SPAN
Weight Span =	426 ft	Type of Insulator Attachment =	STRAIN
Total Angle =	0 degrees		

1. NESC RULE 250B Heavy Loading:

	INTACT CONDITION			BROKEN WIRE CONDITION		
	Horizontal	Longitudinal	Vertical	Horizontal	Longitudinal	Vertical
Shield Wire =	939 lb	0 lb	823 lb	469 lb	9,900 lb	411 lb
Conductor =	1,114 lb	0 lb	1,193 lb	557 lb	11,550 lb	596 lb

2. NESC RULE 250C Transverse Extreme Wind Loading:

	Horizontal	Longitudinal	Vertical
Shield Wire =	1,342 lb	0 lb	254 lb
Conductor =	1,933 lb	738 lb	438 lb

3. NESC RULE 250C Longitudinal Extreme Wind Loading:

	Horizontal	Longitudinal	Vertical
Shield Wire =	#VALUE!	#VALUE!	254 lb
Conductor =	#VALUE!	#VALUE!	438 lb

4. NESC RULE 250D Extreme Ice & Wind Loading:

	Horizontal	Longitudinal	Vertical
Shield Wire =	#VALUE!	#VALUE!	1,141 lb
Conductor =	#VALUE!	#VALUE!	1,474 lb

5. NESC RULE 250B w/o OLF's

	Horizontal	Longitudinal	Vertical
Shield Wire =	#VALUE!	#VALUE!	549 lb
Conductor =	#VALUE!	#VALUE!	795 lb

6. 60 Deg. F, No Wind

	Horizontal	Longitudinal	Vertical
Shield Wire =	0 lb	0 lb	221 lb
Conductor =	0 lb	3 lb	381 lb

7. Construction

	Horizontal	Longitudinal	Vertical
Shield Wire =	0 lb	0 lb	331 lb
Conductor =	0 lb	5 lb	572 lb

LC 1		HORIZONTAL	LONGITUDINAL	VERTICAL
NESC Heavy	shield - back	469.26	9900	411.4379302
	shield - ahead	469.26	-9900	411.4379302
	SHIELD - SUM	**938.52**	**0**	**822.8758603**
	conductor - back	557.01	11550	596.4528408
	conductor - ahead	557.01	-11550	596.4528408
	CONDUCTOR - SUM	**1114.02**	**0**	**1192.905682**
LC 2		**HORIZONTAL**	**LONGITUDINAL**	**VERTICAL**
Extreme Wind	shield - back	671.1189366	6840.2	126.8841
	shield - ahead	671.1189366	-6840.2	126.8841
	SHIELD - SUM	**1342.237873**	**0**	**253.7682**
	conductor - back	966.6658938	8223.65	219.23025
	conductor - ahead	966.6658938	-8961.95	219.23025
	CONDUCTOR - SUM	**1933.331788**	**-738.3**	**438.4605**
LC 3		**HORIZONTAL**	**LONGITUDINAL**	**VERTICAL**
Long. Wind	shield - back	#VALUE!	#VALUE!	126.8841
	shield - ahead	#VALUE!	#VALUE!	126.8841
	SHIELD - SUM	**#VALUE!**	**#VALUE!**	**253.7682**
	conductor - back	#VALUE!	#VALUE!	219.23025
	conductor - ahead	#VALUE!	#VALUE!	219.23025
	CONDUCTOR - SUM	**#VALUE!**	**#VALUE!**	**438.4605**
LC 4		**HORIZONTAL**	**LONGITUDINAL**	**VERTICAL**
RULE 250D	shield - back	#VALUE!	#VALUE!	570.6876722
	shield - ahead	#VALUE!	#VALUE!	570.6876722
	SHIELD - SUM	**#VALUE!**	**#VALUE!**	**1141.375344**
	conductor - back	#VALUE!	#VALUE!	737.0732196
	conductor - ahead	#VALUE!	#VALUE!	737.0732196
	CONDUCTOR - SUM	**#VALUE!**	**#VALUE!**	**1474.146439**
LC 5		**HORIZONTAL**	**LONGITUDINAL**	**VERTICAL**
NESC w/o OLF's	shield - back	#VALUE!	#VALUE!	274.2919534
	shield - ahead	#VALUE!	#VALUE!	274.2919534
	SHIELD - SUM	**#VALUE!**	**#VALUE!**	**548.5839069**
	conductor - back	#VALUE!	#VALUE!	397.6352272
	conductor - ahead	#VALUE!	#VALUE!	397.6352272
	CONDUCTOR - SUM	**#VALUE!**	**#VALUE!**	**795.2704543**
LC 6		**HORIZONTAL**	**LONGITUDINAL**	**VERTICAL**
Raking	shield - back	0	2074	110.334
	shield - ahead	0	-2074	110.334
	SHIELD - SUM	**0**	**0**	**220.668**
	conductor - back	0	2732	190.635
	conductor - ahead	0	-2735	190.635
	CONDUCTOR - SUM	**0**	**-3**	**381.27**
LC 6		**HORIZONTAL**	**LONGITUDINAL**	**VERTICAL**
60 DEG F NO WIND	shield - back	0	3111	165.501
	shield - ahead	0	-3111	165.501
	SHIELD - SUM	**0**	**0**	**331.002**
	conductor - back	0	4098	285.9525
	conductor - ahead	0	-4102.5	285.9525
	CONDUCTOR - SUM	**0**	**-4.5**	**571.905**

Northeast Utilities System

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Description:	Spec. Number	Sheet	of
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	Checked by	Date	

INPUT DATA

TOWER ID: 1109

Structure Height (ft) : 95

Wind Zone : Central CT (green)

Wind Speed : 110 mph

Tower Type : (●) Suspension ( ) Strain

Extreme Wind Model : PCS Addition

Shield Wire Properties:

	BACK	AHEAD
NAME =	*0.438 COMP*	*0.438 COMP*
DESCRIPTION =	0.438	0.438
STRANDING =	9/3 Cu/Cal Brz	9/3 Cu/Cal Brz
DIAMETER =	0.438 in	0.438 in
WEIGHT =	0.408 lb/ft	0.408 lb/ft

Conductor Properties:

	BACK	AHEAD	
NAME =	*TERN*	*TERN*	
Number of Conductors per phase: 1	795.000 45/7 ACSR	795.000 45/7 ACSR	1 Number of Conductors per phase
DIAMETER =	1.063 in	1.063 in	
WEIGHT =	0.895 lb/ft	0.895 lb/ft	

Insulator Weight = 0 lbs

Broken Wire Side = AHEAD SPAN

Horizontal Line Tensions:

	BACK		AHEAD	
	Shield	Conductor	Shield	Conductor
NESC HEAVY =	3,800	7,000	3,800	7,000
EXTREME WIND =	3,136	7,793	3,136	7,793
LONG. WIND =	na	na	na	na
250D COMBINED =	na	na	na	na
NESC W/O OLF =	na	na	na	na
60 DEG F NO WIND =	1,417	2,735	1,417	2,735

Line Geometry:

					SUM
LINE ANGLE (deg) =	BACK:	0	AHEAD:	0	**0**
WIND SPAN (ft) =	BACK:	324	AHEAD:	324	**648**
WEIGHT SPAN (ft) =	BACK:	213	AHEAD:	213	**426**

Northeast Utilities System

Job :		Page	of
Description:	Spec. Number	Sheet	of
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	Checked by	Date	

WIRE LOADING AT ATTACHMENTS

TOWER ID: 1109

Wind Span =	648	ft	
Weight Span =	426	ft	
Total Angle =	0	degrees	

Broken Wire Span =	AHEAD SPAN
Type of Insulator Attachment =	SUSPENSION

1. NESC RULE 250B Heavy Loading:

	INTACT CONDITION			BROKEN WIRE CONDITION		
	Horizontal	Longitudinal	Vertical	Horizontal	Longitudinal	Vertical
Shield Wire =	777 lb	0 lb	633 lb	388 lb	6,270 lb	317 lb
Conductor =	1,114 lb	0 lb	1,193 lb	557 lb	11,550 lb	596 lb

2. NESC RULE 250C Transverse Extreme Wind Loading:

	Horizontal	Longitudinal	Vertical
Shield Wire =	797 lb	0 lb	200 lb
Conductor =	1,933 lb	0 lb	438 lb

3. NESC RULE 250C Longitudinal Extreme Wind Loading:

	Horizontal	Longitudinal	Vertical
Shield Wire =	#VALUE!	#VALUE!	200 lb
Conductor =	#VALUE!	#VALUE!	438 lb

4. NESC RULE 250D Extreme Ice & Wind Loading:

	Horizontal	Longitudinal	Vertical
Shield Wire =	#VALUE!	#VALUE!	936 lb
Conductor =	#VALUE!	#VALUE!	1,474 lb

5. NESC RULE 250B w/o OLF's

	Horizontal	Longitudinal	Vertical
Shield Wire =	#VALUE!	#VALUE!	422 lb
Conductor =	#VALUE!	#VALUE!	795 lb

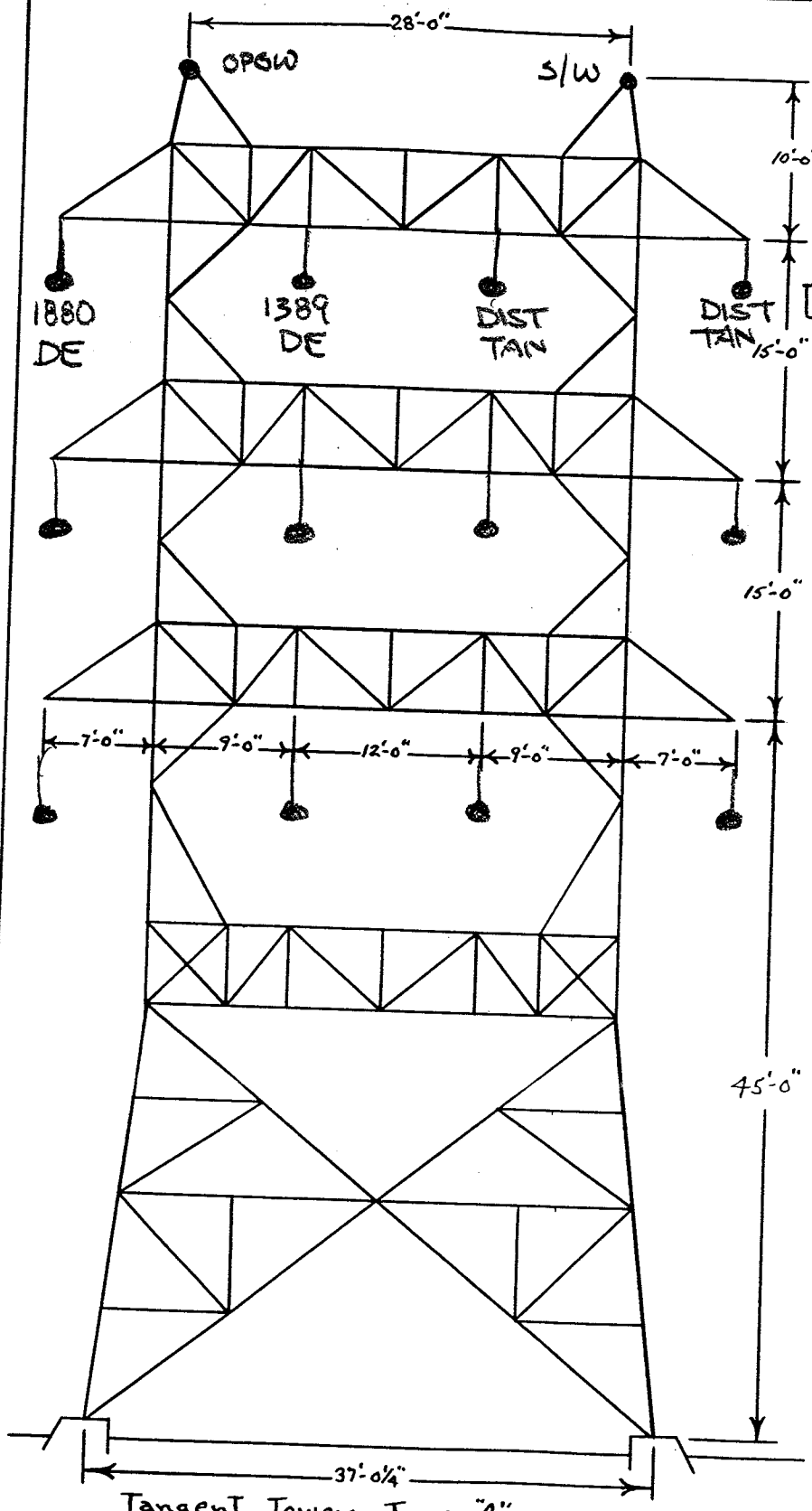
6. 60 Deg. F, No Wind

	Horizontal	Longitudinal	Vertical
Shield Wire =	0 lb	0 lb	174 lb
Conductor =	0 lb	0 lb	381 lb

7. Construction

	Horizontal	Longitudinal	Vertical
Shield Wire =	0 lb	0 lb	261 lb
Conductor =	0 lb	0 lb	572 lb

LC 1		HORIZONTAL	LONGITUDINAL	VERTICAL
NESC Heavy	shield - back	388.26	6270	316.6959358
	shield - ahead	388.26	-6270	316.6959358
	SHIELD - SUM	**776.52**	**0**	**633.3918716**
	conductor - back	557.01	11550	596.4528408
	conductor - ahead	557.01	-11550	596.4528408
	CONDUCTOR - SUM	**1114.02**	**0**	**1192.905682**
LC 2		**HORIZONTAL**	**LONGITUDINAL**	**VERTICAL**
Extreme Wind	shield - back	398.3063608	3606.4	99.9396
	shield - ahead	398.3063608	-3606.4	99.9396
	SHIELD - SUM	**796.6127215**	**0**	**199.8792**
	conductor - back	966.6658938	8961.95	219.23025
	conductor - ahead	966.6658938	-8961.95	219.23025
	CONDUCTOR - SUM	**1933.331788**	**0**	**438.4605**
LC 3		**HORIZONTAL**	**LONGITUDINAL**	**VERTICAL**
Long. Wind	shield - back	#VALUE!	#VALUE!	99.9396
	shield - ahead	#VALUE!	#VALUE!	99.9396
	SHIELD - SUM	**#VALUE!**	**#VALUE!**	**199.8792**
	conductor - back	#VALUE!	#VALUE!	219.23025
	conductor - ahead	#VALUE!	#VALUE!	219.23025
	CONDUCTOR - SUM	**#VALUE!**	**#VALUE!**	**438.4605**
LC 4		**HORIZONTAL**	**LONGITUDINAL**	**VERTICAL**
RULE 250D	shield - back	#VALUE!	#VALUE!	467.795013
	shield - ahead	#VALUE!	#VALUE!	467.795013
	SHIELD - SUM	**#VALUE!**	**#VALUE!**	**935.590026**
	conductor - back	#VALUE!	#VALUE!	737.0732196
	conductor - ahead	#VALUE!	#VALUE!	737.0732196
	CONDUCTOR - SUM	**#VALUE!**	**#VALUE!**	**1474.146439**
LC 5		**HORIZONTAL**	**LONGITUDINAL**	**VERTICAL**
NESC w/o OLF's	shield - back	#VALUE!	#VALUE!	211.1306239
	shield - ahead	#VALUE!	#VALUE!	211.1306239
	SHIELD - SUM	**#VALUE!**	**#VALUE!**	**422.2612477**
	conductor - back	#VALUE!	#VALUE!	397.6352272
	conductor - ahead	#VALUE!	#VALUE!	397.6352272
	CONDUCTOR - SUM	**#VALUE!**	**#VALUE!**	**795.2704543**
LC 6		**HORIZONTAL**	**LONGITUDINAL**	**VERTICAL**
Raking	shield - back	0	1417	86.904
	shield - ahead	0	-1417	86.904
	SHIELD - SUM	**0**	**0**	**173.808**
	conductor - back	0	2735	190.635
	conductor - ahead	0	-2735	190.635
	CONDUCTOR - SUM	**0**	**0**	**381.27**
LC 6		**HORIZONTAL**	**LONGITUDINAL**	**VERTICAL**
60 DEG F NO WIND	shield - back	0	2125.5	130.356
	shield - ahead	0	-2125.5	130.356
	SHIELD - SUM	**0**	**0**	**260.712**
	conductor - back	0	4102.5	285.9525
	conductor - ahead	0	-4102.5	285.9525
	CONDUCTOR - SUM	**0**	**0**	**571.905**



Norwalk To Roway Ton Junction 115 K.V.

Nos.

1103 A+20' S.H.
1105
1107
1108 A+10 - 20' S.H.
→ 1109 A+10
1110
1111
1112
1113 A+10
1116 A+10
1117 A+5' S.H.
1119
1120
1122 A+10
1124 A+10
1125
1126 A+10
1127 A+10

Wts.
85'-0" – 21,300#
95'-0" – 23,300#
95'+10' ext. – 24,600#

Anchors
900#

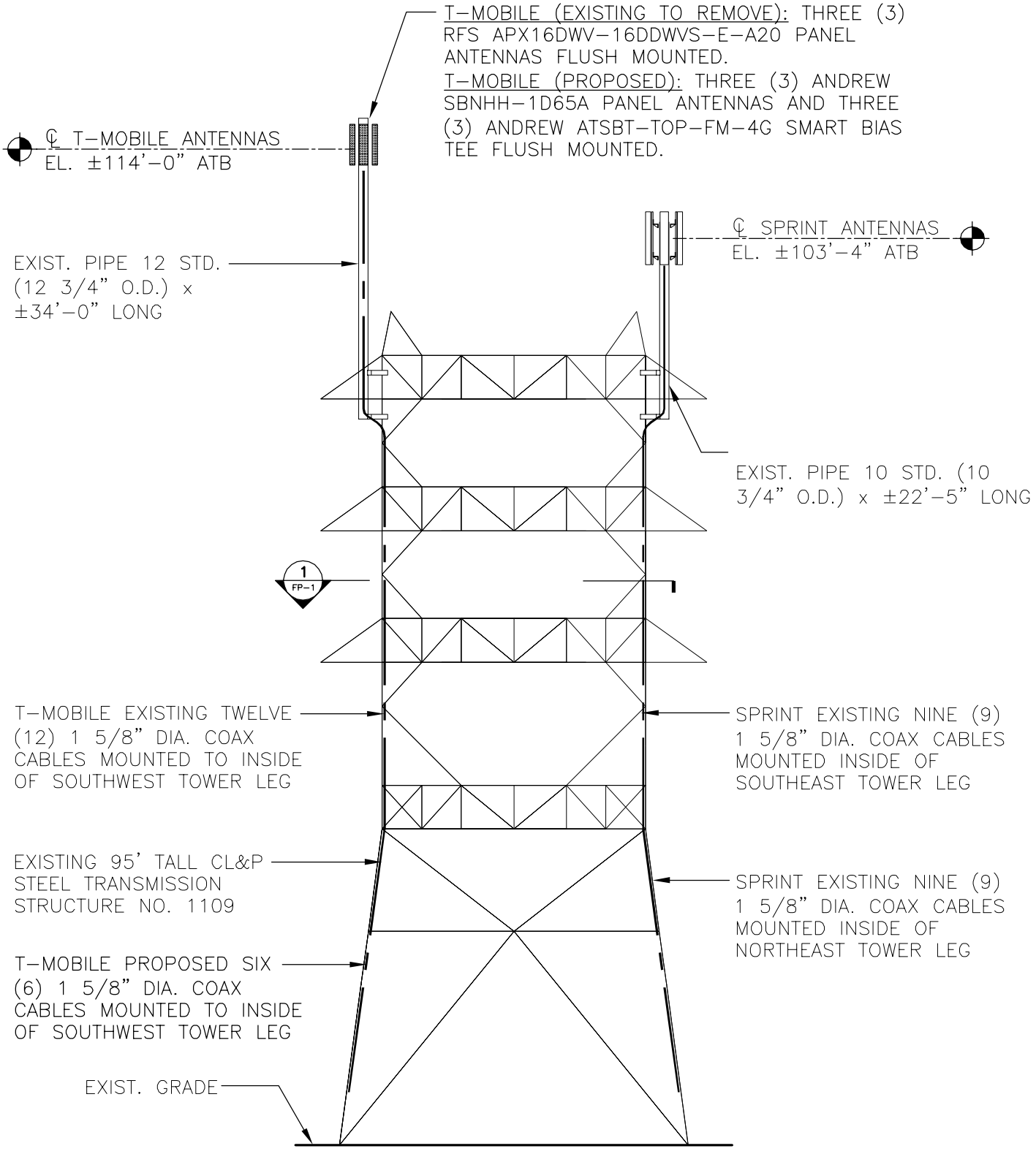
LOOKING DOWN STREAM

1108
1109
1110

Tangent Tower Type "A"

Bethlehem Steel Co. Contract - CE 4324-A
Erection Dwgs. Nos. E1, E2
Detail Dwgs. Nos. 1 Thru 8 incl.
C. L. & P. Dwg. No. 13883.

12570 (77)



1 / EL-1 **TOWER & MAST ELEVATION**

SCALE: NOT TO SCALE

REVISIONS		
0	10/27/16	ISSUED FOR REVIEW

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CT11885B
EVERSOURCE 1109

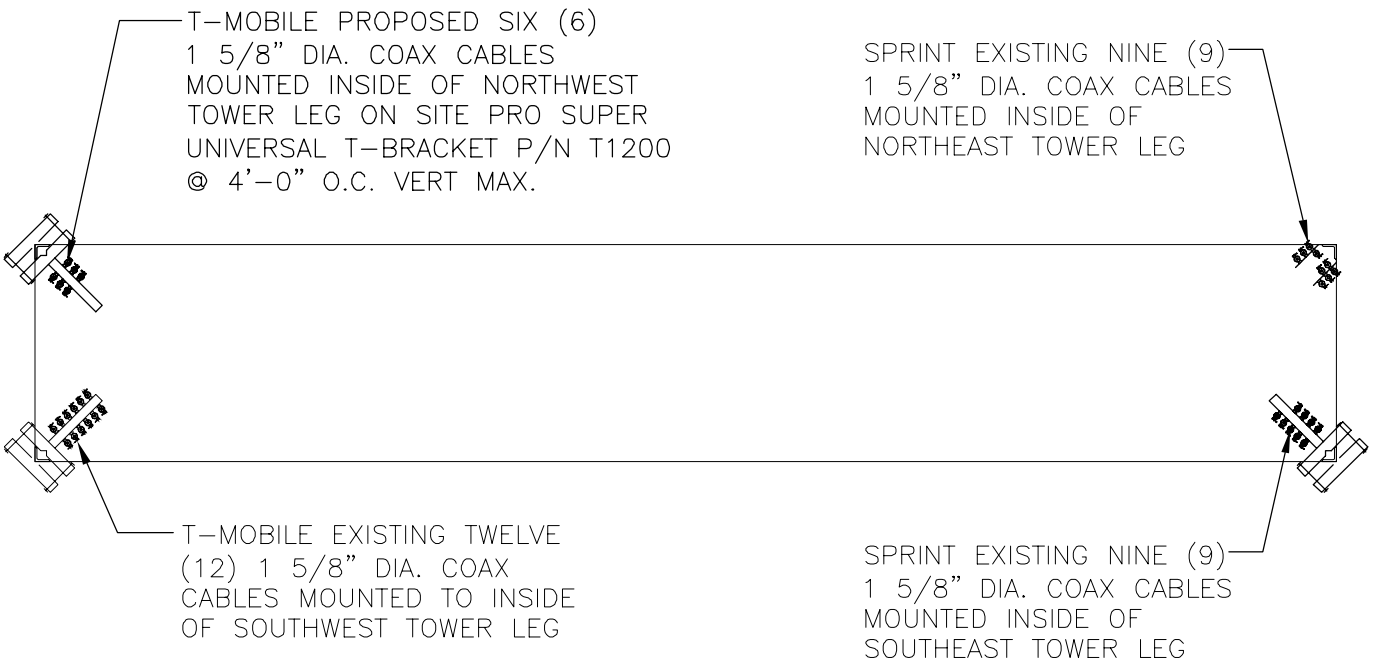
1 CHARLES MARSHALL DRIVE
NORWALK, CT 06850

PROJECT NO:	16162.06
DRAWN BY:	TJL
CHECKED BY:	CFC
SCALE:	AS NOTED
DATE:	10/27/16

TOWER AND MAST ELEVATION

EL-1

DWG. 1 OF 2



1 / FP-1 **FEEDLINE PLAN**

SCALE: NOT TO SCALE

REVISIONS		
0	10/27/16	ISSUED FOR REVIEW

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CT11885B
EVERSOURCE 1109

1 CHARLES MARSHALL DRIVE
NORWALK, CT 06850

PROJECT NO:	16162.06
DRAWN BY:	
CHECKED BY:	
SCALE:	
DATE:	10/27/16

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Subject:	Loads on T-Mobile Equipmnet Structure # 1109
Location:	Norwalk, CT
Rev. 0: 10/27/16	Prepared by: T.J.L. Checked by: C.F.C. Job No. 16162.06

Development of Design Heights, Exposure Coefficients, and Velocity Pressures Per TIA-222-G

Wind Speeds

Basic Wind Speed $V := 93$ mph (User Input - 2016 CSBC Appendix N)

Basic Wind Speed with Ice $V_i := 50$ mph (User Input per Annex B of TIA-222-G)

Input

Structure Type = $Structure\_Type := Lattice$ (User Input)

Structure Category = $SC := III$ (User Input)

Exposure Category = $Exp := C$ (User Input)

Structure Height = $h := 95$ ft (User Input)

Height to Center of Antennas = $z_{ant} := 114$ ft (User Input)

Radial Ice Thickness = $Ir := 0.75$ in (User Input per Annex B of TIA-222-G)

Radial Ice Density = $Id := 56.00$ pcf (User Input)

$K_a := 1$ (User Input)

Output

Wind Direction Probability Factor = $K_d := \begin{cases} 0.95 & \text{if } Structure\_Type = Pole \\ 0.85 & \text{if } Structure\_Type = Lattice \end{cases} = 0.85$ (Per Table 2-2 of TIA-222-G)

Importance Factor = $I := \begin{cases} 0.87 & \text{if } SC = 1 \\ 1.00 & \text{if } SC = 2 \\ 1.15 & \text{if } SC = 3 \end{cases} = 1.15$ (Per Table 2-2 of TIA-222-G)

Velocity Pressure Coefficient = $Kz_{ant} := 2.01\left(\left(\frac{z_{ant}}{zg}\right)\right)^{\frac{2}{\alpha}} = 1.301$

Velocity Pressure w/o Ice = $qz_{ant} := 0.00256 \cdot K_d \cdot Kz_{ant} \cdot V^2 \cdot I = 28.158$

Velocity Pressure with Ice = $qz_{ice.ant} := 0.00256 \cdot K_d \cdot Kz_{ant} \cdot V_i^2 \cdot I = 8.139$

Gust Response Factor = $G_H := 1.35$

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Subject:	Loads on T-Mobile Equipmnet Structure # 1109
Location:	Norwalk, CT
Rev. 0: 10/27/16	Prepared by: T.J.L. Checked by: C.F.C. Job No. 16162.06

Development of Wind & Ice Load on Mast

Mast Data: (Pipe 12" SCH. 40) (User Input)

Mast Shape = Round (User Input)

Mast Diameter = $D_{mast} := 12.75$ in (User Input)

Mast Length = $L_{mast} := 34$ ft (User Input)

Mast Thickness = $t_{mast} := 0.375$ in (User Input)

Mast Aspect Ratio = $Ar_{mast} := \frac{12 L_{mast}}{D_{mast}} = 32.0$

Mast Force Coefficient = $Ca_{mast} = 1.2$

Wind Load (without ice)

Mast Projected Surface Area = $A_{mast} := \frac{D_{mast}}{12} = 1.063$ sf/ft

Total Mast Wind Force = $qz_{ant} \cdot G_H \cdot Ca_{mast} \cdot A_{mast} = 48$ plf **BLC 5,7**

Wind Load (with ice)

Mast Projected Surface Area w/ Ice = $AICE_{mast} := \frac{(D_{mast} + 2 \cdot Ir)}{12} = 1.188$ sf/ft

Total Mast Wind Force w/ Ice = $qz_{ice.ant} \cdot G_H \cdot Ca_{mast} \cdot AICE_{mast} = 16$ plf **BLC 4,6**

Gravity Loads (without ice)

Weight of the mast = Self Weight **(Computed internally by Risa-3D)** plf **BLC 1**

Gravity Loads (ice only)

Ice Area per Linear Foot = $Ai_{mast} := \frac{\pi}{4}\left[(D_{mast} + Ir \cdot 2)^2 - D_{mast}^2\right] = 31.8$ sq in

Weight of Ice on Mast = $W_{ICEmast} := Id \cdot \frac{Ai_{mast}}{144} = 12$ plf **BLC 3**

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Subject:	Loads on T-Mobile Equipmnet Structure # 1109
Location:	Norwalk, CT
Rev. 0: 10/27/16	Prepared by: T.J.L. Checked by: C.F.C. Job No. 16162.06

Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	Andrew SBNHH-1D65A			
Antenna Shape =	Flat		(User Input)	
Antenna Height =	$L_{ant} := 55.5$	in	(User Input)	
Antenna Width =	$W_{ant} := 11.9$	in	(User Input)	
Antenna Thickness =	$T_{ant} := 7.1$	in	(User Input)	
Antenna Weight =	$WT_{ant} := 33.5$	lbs	(User Input)	
Number of Antennas =	$N_{ant} := 3$		(User Input)	
Antenna Aspect Ratio =	$Ar_{ant} := \frac{L_{ant}}{W_{ant}} = 4.7$			
Antenna Force Coefficient =	$Ca_{ant} = 1.3$			

Wind Load (without ice)

Surface Area for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot W_{ant}}{144} = 4.6$	sf	
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 13.8$	sf	
Total Antenna Wind Force =	$F_{ant} := qz_{ant} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot A_{ant} = 678$	lbs	**BLC 5,7**

Wind Load (with ice)

Surface Area for One Antenna w/ Ice =	$SA_{ICEant} := \frac{(L_{ant} + 2 \cdot Ir) \cdot (W_{ant} + 2 \cdot Ir)}{144} = 5.3$	sf	
Antenna Projected Surface Area w/ Ice =	$A_{ICEant} := SA_{ICEant} \cdot N_{ant} = 15.9$	sf	
Total Antenna Wind Force w/ Ice =	$Fi_{ant} := qz_{ice.ant} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot A_{ICEant} = 227$	lbs	**BLC 4,6**

Gravity Load (without ice)

Weight of All Antennas =	$WT_{ant} \cdot N_{ant} = 101$	lbs	**BLC 2**

Gravity Loads (ice only)

Volume of Each Antenna =	$V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 4689$	cu in	
Volume of Ice on Each Antenna =	$V_{ice} := (L_{ant} + 2 \cdot Ir)(W_{ant} + 2 \cdot Ir) \cdot (T_{ant} + 2 \cdot Ir) - V_{ant} = 1879$	cu in	
Weight of Ice on Each Antenna =	$W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 61$	lbs	
Weight of Ice on All Antennas =	$W_{ICEant} \cdot N_{ant} = 183$	lbs	**BLC 3**

Development of Wind & Ice Load on Coax Cables

Coax Cable Data:

Coax Type =	HELIAX 1-5/8"		
Shape =	Round		(User Input)
Coax Outside Diameter =	$D_{coax} := 1.98$	in	(User Input)
Coax Cable Length =	$L_{coax} := 11$	ft	(User Input)
Weight of Coax per foot =	$Wt_{coax} := 1.04$	plf	(User Input)
Total Number of Coax =	$N_{coax} := 18$		(User Input)
No. of Coax Projecting Outside Face of PCS Mast =	$NP_{coax} := 4$		(User Input)

Coax aspect ratio, $Ar_{coax} := \frac{(L_{coax} \cdot 12)}{D_{coax}} = 66.7$

Coax Cable Force Factor Coefficient = $Ca_{coax} = 1.2$

Wind Load (without ice)

Coax projected surface area = $A_{coax} := \frac{(NP_{coax} D_{coax})}{12} = 0.7$ sf/ft

Total Coax Wind Force = $F_{coax} := Ca_{coax} \cdot qz_{ant} \cdot G_H \cdot A_{coax} = 30$ plf **BLC 5,7**

Wind Load (with ice)

Coax projected surface area w/ Ice = $AICE_{coax} := \frac{(NP_{coax} \cdot D_{coax} + 2 \cdot Ir)}{12} = 0.8$ sf/ft

Total Coax Wind Force w/ Ice = $Fi_{coax} := Ca_{coax} \cdot qz_{ice.ant} \cdot G_H \cdot AICE_{coax} = 10$ plf **BLC 4,6**

Gravity Loads (without ice)

Weight of all cables w/o ice = $WT_{coax} := Wt_{coax} \cdot N_{coax} = 19$ plf **BLC 2**

Gravity Loads (ice only)

Ice Area per Linear Foot = $Ai_{coax} := \frac{\pi}{4}\left[(D_{coax} + 2 \cdot Ir)^2 - D_{coax}^2\right] = 6.4$ sq in

Ice Weight All Coax per foot = $WTi_{coax} := N_{coax} \cdot Id \cdot \frac{Ai_{coax}}{144} = 45$ plf **BLC 3**

CENTEK engineering
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Subject:	Loads on T-Mobile Equipmnet Structure # 1109
Location:	Norwalk, CT
Rev. 0: 10/27/16	Prepared by: T.J.L. Checked by: C.F.C. Job No. 16162.06

Development of Wind & Ice Load on Brace Member

Member Data: HSS 6x6x1/4

Antenna Shape = Flat (User Input)

Height = $H_{mem} := 6$ in (User Input)

Width = $W_{mem} := 6$ in (User Input)

Length = $L_{mem} := 60$ in (User Input)

Member Aspect Ratio = $Ar_{mem} := \frac{L_{mem}}{W_{mem}} = 10.0$

Member Force Coefficient = $Ca_{mem} = 1.5$

Wind Load (without ice)

Member Projected Surface Area = $A_{mem} := \frac{H_{mem}}{12} = 0.5$ plf

Total Member Wind Force = $F_{mem} := qz_{ant} \cdot G_H \cdot Ca_{mem} \cdot A_{mem} = 29$ lbs **BLC 5,7**

Wind Load (with ice)

Member Projected Surface Area w/ Ice = $A_{ICEmem} := \frac{\left(H_{mem} + 2 \cdot Ir\right)}{12} = 0.6$ plf

Total Member Wind Force w/ Ice = $Fi_{mem} := qz_{ice.ant} \cdot G_H \cdot Ca_{mem} \cdot A_{ICEmem} = 10$ lbs **BLC 4,6**

Gravity Load (without ice)

Weight of Member = Self Weight lbs **BLC 1**

Gravity Loads (ice only)

Ice Area per Linear foot = $Ai_{mem} := \left(W_{mem} + 2 \cdot Ir\right) \cdot \left(H_{mem} + 2 \cdot Ir\right) - W_{mem} \cdot H_{mem} = 20$ sq in

Weight of Ice on Member = $W_{ICE.mem} := Id \cdot \frac{Ai_{mem}}{144} = 8$ lbs **BLC 3**

CENTEK engineering, INC.
Consulting Engineers
63-2 North Branford Road
Branford, CT 06405
Ph. 203-488-0580 / Fax. 203-488-8587

Subject: **Analysis of TIA/EIA Wind and Ice Loads for Analysis of Mast Only**
Tabulated Load Cases
Location: **Norwalk, CT**
Date: 10/27/16 Prepared by: T.J.L. Checked by: C.F.C. Job No. 16162.06

Load Case	Description
1	Self Weight (Mast)
2	Weight of Appurtenances
3	Weight of Ice Only
4	TIA Wind with Ice X-direction
5	TIA Wind X-direction
6	TIA Wind with Ice Z-direction
7	TIA Wind Z-direction

Footnotes:

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Branford, CT 06405
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Subject: **Analysis of TIA/EIA Wind and Ice Loads for Analysis of Mast Only**
Load Combinations Table

Location: **Norwalk, CT**

Date: 10/27/16 Prepared by: T.J.L. Checked by: C.F.C. Job No. 16162.06

Load Combination	Description	Envelope Soultion	Wind Factor	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.2D + 1.6W (X-direction)		1		1	1.2	2	1.2	5	1.6				
2	0.9D + 1.6W (X-direction)		1		1	0.9	2	0.9	5	1.6				
3	1.2D + 1.0Di + 1.0Wi (X-direction)		1		1	1.2	2	1.2	3	1.0	4	1.0		
4	1.2D + 1.6W (Z-direction)		1		1	1.2	2	1.2	7	1.6				
5	0.9D + 1.6W (Z-direction)		1		1	0.9	2	0.9	7	1.6				
6	1.2D + 1.0Di + 1.0Wi (Z-direction)		1		1	1.2	2	1.2	3	1.0	6	1.0		

Footnotes:
BLC = Basic Load Case
D = Dead Load
Di = Dead Load of Ice
W = Wind Load
W = Wind Load w/ Ice

Global

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Increase Nailing Capacity for Wind?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automaticly Iterate Stiffness for Walls?	No
Maximum Iteration Number for Wall Stiffness	3
Gravity Acceleration (ft/sec^2)	32.2
Wall Mesh Size (in)	12
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 14th(360-10): LRFD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 14th(360-10): ASD
Cold Formed Steel Code	AISI 1999: ASD
Wood Code	AF&PA NDS-97: ASD
Wood Temperature	< 100F
Concrete Code	ACI 318-02
Masonry Code	ACI 530-05: ASD
Aluminum Code	AA ADM1-05: ASD - Building

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

Global, Continued

Seismic Code	UBC 1997
Seismic Base Elevation (ft)	Not Entered
Add Base Weight?	No
Ct Z	.035
Ct X	.035
T Z (sec)	Not Entered
T X (sec)	Not Entered
R Z	8.5
R X	8.5
Ca	.36
Cv	.54
Nv	1
Occupancy Category	4
Seismic Zone	3
Seismic Detailing Code	ASCE 7-05
Om Z	1
Om X	1
Rho Z	1
Rho X	1

Footing Overturning Safety Factor	1.5
Check Concrete Bearing	No
Footing Concrete Weight (k/ft^3)	0
Footing Concrete f'c (ksi)	3
Footing Concrete Ec (ksi)	4000
Lamda	1
Footing Steel fy (ksi)	60
Minimum Steel	0.0018
Maximum Steel	0.0075
Footing Top Bar	#3
Footing Top Bar Cover (in)	3.5
Footing Bottom Bar	#3
Footing Bottom Bar Cover (in)	3.5
Pedestal Bar	#3
Pedestal Bar Cover (in)	1.5
Pedestal Ties	#3

Hot Rolled Steel Properties

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

Hot Rolled Steel Design Parameters

	Label	Shape	Lengt...	Lbyy[ft]	Lbzz[ft]	Lcomp t...	Lcomp b...	L-torqu...	Kyy	Kzz	Cb	Function
1	M1	Mast	34									Lateral
2	M2	Brace	1									Lateral
3	M3	Brace	5									Lateral
4	M4	Brace	1									Lateral
5	M5	Brace	1									Lateral
6	M6	Brace	5									Lateral
7	M7	Brace	1									Lateral

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Mast	PIPE 12.0	Beam	Pipe	A53 Gr. B	Typical	13.7	262	262	523
2	Brace	HSS6x6x4	Beam	Tube	A500 Gr.46	Typical	5.24	28.6	28.6	45.6

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design R...
1	M1	N1	N4			Mast	Beam	Pipe	A53 Gr. B	Typical
2	M2	N8	N12			Brace	Beam	Tube	A500 Gr.46	Typical
3	M3	N12	N11			Brace	Beam	Tube	A500 Gr.46	Typical
4	M4	N11	N7			Brace	Beam	Tube	A500 Gr.46	Typical
5	M5	N6	N10			Brace	Beam	Tube	A500 Gr.46	Typical
6	M6	N10	N9			Brace	Beam	Tube	A500 Gr.46	Typical
7	M7	N9	N5			Brace	Beam	Tube	A500 Gr.46	Typical

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From ...
1	N1	0	0	0	0	
2	N2	0	1	0	0	
3	N3	0	6	0	0	
4	N4	0	34	0	0	
5	N5	2.5	1	-1	0	
6	N6	-2.5	1	-1	0	
7	N7	2.5	6	-1	0	
8	N8	-2.5	6	-1	0	
9	N9	2.5	1	0	0	
10	N10	-2.5	1	0	0	
11	N11	2.5	6	0	0	
12	N12	-2.5	6	0	0	

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]	Footing
1	N8	Reaction	Reaction	Reaction				
2	N7	Reaction	Reaction	Reaction				
3	N5	Reaction	Reaction	Reaction				
4	N6	Reaction	Reaction	Reaction				

Member Point Loads (BLC 2 : Weight of Appurtenances)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M1	Y	-.101	31.5

Member Point Loads (BLC 3 : Weight of Ice Only)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M1	Y	-.183	31.5

Member Point Loads (BLC 4 : x-dir TIA Wind with Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M1	X	.227	31.5

Member Point Loads (BLC 5 : x-dir TIA Wind)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M1	X	.678	31.5

Member Point Loads (BLC 6 : z-dir TIA Wind with Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M1	Z	.227	31.5

Member Point Loads (BLC 7 : z-dir TIA Wind)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M1	Z	.678	31.5

Joint Loads and Enforced Displacements

Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft, k*s^2*ft)]
No Data to Print ...			

Member Distributed Loads (BLC 2 : Weight of Appurtenances)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	Y	-.019	-.019	0	31.5

Member Distributed Loads (BLC 3 : Weight of Ice Only)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	Y	-.012	-.012	0	0
2	M1	Y	-.045	-.045	0	31.5
3	M2	Y	-.008	-.008	0	0
4	M3	Y	-.008	-.008	0	0
5	M4	Y	-.008	-.008	0	0
6	M5	Y	-.008	-.008	0	0
7	M6	Y	-.008	-.008	0	0
8	M7	Y	-.008	-.008	0	0

Member Distributed Loads (BLC 4 : x-dir TIA Wind with Ice)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	X	.016	.016	0	0

Member Distributed Loads (BLC 4 : x-dir TIA Wind with Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
2	M1	X	.01	.01	0	31.5
3	M2	X	.01	.01	0	0
4	M5	X	.01	.01	0	0

Member Distributed Loads (BLC 5 : x-dir TIA Wind)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	X	.048	.048	0	0
2	M1	X	.03	.03	0	31.5
3	M2	X	.029	.029	0	0
4	M5	X	.029	.029	0	0

Member Distributed Loads (BLC 6 : z-dir TIA Wind with Ice)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	Z	.016	.016	0	0
2	M1	Z	.01	.01	0	31.5
3	M3	Z	.01	.01	0	0
4	M6	Z	.01	.01	0	0

Member Distributed Loads (BLC 7 : z-dir TIA Wind)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	Z	.048	.048	0	0
2	M1	Z	.03	.03	0	31.5
3	M3	Z	.029	.029	0	0
4	M6	Z	.029	.029	0	0

Basic Load Cases

	BLC Description	Category	X Gra...	Y Gravity	Z Gra...	Joint	Point	Distrib..	Area(...	Surfa...
1	Self Weight	None		-1						
2	Weight of Appurtenances	None					1	1		
3	Weight of Ice Only	None					1	8		
4	x-dir TIA Wind with Ice	None					1	4		
5	x-dir TIA Wind	None					1	4		
6	z-dir TIA Wind with Ice	None					1	4		
7	z-dir TIA Wind	None					1	4		

Load Combinations

	Description	Sol...	PDelta	SR..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact...
1	1.2D + 1.6W (X-direction)	Yes	Y		1	1.2	2	1.2	5	1.6										
2	0.9D + 1.6W (X-direction)	Yes	Y		1	.9	2	.9	5	1.6										
3	1.2D + 1.0Di + 1.0Wi (X-di...	Yes	Y		1	1.2	2	1.2	3	1	4	1								
4	1.2D + 1.6W (X-direction)	Yes	Y		1	1.2	2	1.2	7	1.6										
5	0.9D + 1.6W (X-direction)	Yes	Y		1	.9	2	.9	7	1.6										
6	1.2D + 1.0Di + 1.0Wi (X-di...	Yes	Y		1	1.2	2	1.2	3	1	6	1								

Envelope Member Section Forces

	Member	Sec		Axial[k]	LC	y Shear...	LC	z Shear...	LC	Torque[...	LC	y-y Mo...	LC	z-z Mo...	LC
1	M1	1	max	0	1	0	1	0	4	0	1	0	1	0	1
2			min	0	1	0	4	0	2	0	1	0	1	0	1
3		2	max	3.596	3	4.166	1	0	2	0	1	63.147	4	63.094	1
4			min	1.554	5	0	4	-4.168	4	0	1	.002	2	0	4
5		3	max	2.442	3	3.105	1	0	2	0	1	32.227	4	32.192	1
6			min	1.052	5	0	4	-3.107	4	0	1	.001	2	0	4
7		4	max	1.289	3	2.044	1	0	2	0	1	10.324	4	10.307	1
8			min	.55	5	0	4	-2.046	4	0	1	0	2	0	4
9		5	max	0	1	.019	1	0	2	0	1	0	1	0	1
10			min	0	1	0	4	-.021	4	0	1	0	1	0	1
11	M2	1	max	-1.307	3	1.083	6	10.272	4	0	1	0	1	0	1
12			min	-10.187	4	-3.195	2	2.188	3	0	1	0	1	0	1
13		2	max	-1.307	3	1.075	6	10.272	4	0	1	2.568	4	.799	2
14			min	-10.187	4	-3.199	2	2.186	3	0	1	.547	3	-.27	6
15		3	max	-1.307	3	1.068	6	10.272	4	0	1	5.136	4	1.6	2
16			min	-10.187	4	-3.203	2	2.183	3	0	1	1.093	3	-.538	6
17		4	max	-1.307	3	1.061	6	10.272	4	0	1	7.704	4	2.401	2
18			min	-10.187	4	-3.207	2	2.181	3	0	1	1.638	3	-.804	6
19		5	max	-1.307	3	1.053	6	10.272	4	0	1	10.272	4	3.203	2
20			min	-10.187	4	-3.211	2	2.178	3	0	1	2.183	3	-1.068	6
21	M3	1	max	-2.179	3	1.057	6	-1.307	3	1.068	6	10.272	4	0	1
22			min	-10.27	4	-3.234	2	-10.165	4	-3.203	2	2.183	3	0	1
23		2	max	-2.179	3	1.021	6	-1.307	3	1.068	6	3.145	2	4.055	2
24			min	-10.27	4	-3.254	2	-10.107	4	-3.203	2	-2.398	4	-1.299	6
25		3	max	-2.179	3	.984	6	9.96	5	1.068	6	-1.083	3	1.119	5
26			min	-10.27	4	-4.466	1	-10.049	4	-4.551	1	-14.996	4	-11.233	1
27		4	max	7.699	2	.448	5	10.107	4	.467	5	-.609	6	.547	5
28			min	-10.27	4	-4.493	1	-3.564	2	-4.551	1	-3.274	1	-5.633	1
29		5	max	7.699	2	.428	5	10.165	4	.467	5	10.272	4	0	1
30			min	-10.27	4	-4.52	1	-3.564	2	-4.551	1	-7.708	2	0	1
31	M4	1	max	3.565	2	.475	5	7.708	2	0	1	10.272	4	.467	5
32			min	-10.187	4	-4.54	1	-10.272	4	0	1	-7.708	2	-4.551	1
33		2	max	3.565	2	.471	5	7.708	2	0	1	7.704	4	.349	5
34			min	-10.187	4	-4.545	1	-10.272	4	0	1	-5.781	2	-3.415	1
35		3	max	3.565	2	.467	5	7.708	2	0	1	5.136	4	.232	5
36			min	-10.187	4	-4.551	1	-10.272	4	0	1	-3.854	2	-2.278	1
37		4	max	3.565	2	.463	5	7.708	2	0	1	2.568	4	.115	5
38			min	-10.187	4	-4.556	1	-10.272	4	0	1	-1.927	2	-1.14	1
39		5	max	3.565	2	.459	5	7.708	2	0	1	0	1	0	1
40			min	-10.187	4	-4.561	1	-10.272	4	0	1	0	1	0	1
41	M5	1	max	7.351	4	1.76	4	-1.631	3	0	1	0	1	0	1
42			min	1.088	3	.69	2	-7.508	4	0	1	0	1	0	1
43		2	max	7.351	4	1.755	4	-1.633	3	0	1	-.408	3	-.172	2
44			min	1.088	3	.686	2	-7.508	4	0	1	-1.877	4	-.439	4
45		3	max	7.351	4	1.75	4	-1.636	3	0	1	-.817	3	-.343	2
46			min	1.088	3	.682	2	-7.508	4	0	1	-3.754	4	-.878	4
47		4	max	7.351	4	1.744	4	-1.638	3	0	1	-1.226	3	-.513	2
48			min	1.088	3	.678	2	-7.508	4	0	1	-5.631	4	-1.314	4
49		5	max	7.351	4	1.739	4	-1.641	3	0	1	-1.636	3	-.682	2
50			min	1.088	3	.674	2	-7.508	4	0	1	-7.508	4	-1.75	4
51	M6	1	max	7.509	4	1.729	4	7.363	4	1.75	4	-1.636	3	0	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear...	LC	z Shear...	LC	Torque[...	LC	y-y Mo...	LC	z-z Mo...	LC
52			min	1.641	3	.674	2	1.088	3	.682	2	-7.508	4	0	1
53		2	max	7.509	4	1.702	4	7.421	4	1.75	4	1.732	4	-.83	2
54			min	1.641	3	.654	2	1.088	3	.682	2	-1.832	2	-2.144	4
55		3	max	7.509	4	1.675	4	7.479	4	1.75	4	11.045	4	-1.634	2
56			min	1.641	3	-1.391	6	-2.018	6	.682	2	1.083	3	-4.255	4
57		4	max	7.509	4	-.409	2	2.514	2	-.437	2	1.961	1	-.524	2
58			min	-5.085	2	-1.702	4	-7.421	4	-1.75	4	.469	6	-2.144	4
59		5	max	7.509	4	-.429	2	2.514	2	-.437	2	5.081	2	0	1
60			min	-5.085	2	-1.729	4	-7.363	4	-1.75	4	-7.508	4	0	1
61	M7	1	max	7.351	4	-.429	2	7.508	4	0	1	5.081	2	-.437	2
62			min	-2.513	2	-1.739	4	-5.081	2	0	1	-7.508	4	-1.75	4
63		2	max	7.351	4	-.433	2	7.508	4	0	1	3.811	2	-.33	2
64			min	-2.513	2	-1.744	4	-5.081	2	0	1	-5.631	4	-1.314	4
65		3	max	7.351	4	-.437	2	7.508	4	0	1	2.54	2	-.221	2
66			min	-2.513	2	-1.75	4	-5.081	2	0	1	-3.754	4	-.878	4
67		4	max	7.351	4	-.441	2	7.508	4	0	1	1.27	2	-.111	2
68			min	-2.513	2	-1.755	4	-5.081	2	0	1	-1.877	4	-.439	4
69		5	max	7.351	4	-.445	2	7.508	4	0	1	0	1	0	1
70			min	-2.513	2	-1.76	4	-5.081	2	0	1	0	1	0	1

Envelope Member Section Stresses

	Member	Sec		Axial[ksi]	LC	y Shear[...	LC	z Shear[...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
1	M1	1	max	0	1	0	1	0	4	0	1	0	1	0	1	0	1
2			min	0	1	0	4	0	2	0	1	0	1	0	1	0	1
3		2	max	.262	3	.608	1	0	2	0	4	18.495	1	18.51	4	0	2
4			min	.113	5	0	4	-.608	4	-18.495	1	0	4	0	2	-18.51	4
5		3	max	.178	3	.453	1	0	2	0	4	9.436	1	9.447	4	0	2
6			min	.077	5	0	4	-.454	4	-9.436	1	0	4	0	2	-9.447	4
7		4	max	.094	3	.298	1	0	2	0	4	3.021	1	3.026	4	0	2
8			min	.04	5	0	4	-.299	4	-3.021	1	0	4	0	2	-3.026	4
9		5	max	0	1	.003	1	0	2	0	1	0	1	0	1	0	1
10			min	0	1	0	4	-.003	4	0	1	0	1	0	1	0	1
11	M2	1	max	-.249	3	.438	6	4.158	4	0	1	0	1	0	1	0	1
12			min	-1.944	4	-1.294	2	.886	3	0	1	0	1	0	1	0	1
13		2	max	-.249	3	.435	6	4.158	4	.34	6	1.006	2	3.232	4	-.688	3
14			min	-1.944	4	-1.295	2	.885	3	-1.006	2	-.34	6	.688	3	-3.232	4
15		3	max	-.249	3	.432	6	4.158	4	.677	6	2.014	2	6.465	4	-1.376	3
16			min	-1.944	4	-1.297	2	.884	3	-2.014	2	-.677	6	1.376	3	-6.465	4
17		4	max	-.249	3	.429	6	4.158	4	1.012	6	3.022	2	9.697	4	-2.062	3
18			min	-1.944	4	-1.298	2	.883	3	-3.022	2	-1.012	6	2.062	3	-9.697	4
19		5	max	-.249	3	.426	6	4.158	4	1.344	6	4.032	2	12.93	4	-2.748	3
20			min	-1.944	4	-1.3	2	.882	3	-4.032	2	-1.344	6	2.748	3	-12.93	4
21	M3	1	max	-.416	3	.428	6	-.529	3	0	1	0	1	12.93	4	-2.748	3
22			min	-1.96	4	-1.309	2	-4.115	4	0	1	0	1	2.748	3	-12.93	4
23		2	max	-.416	3	.413	6	-.529	3	1.635	6	5.104	2	3.958	2	3.018	4
24			min	-1.96	4	-1.317	2	-4.092	4	-5.104	2	-1.635	6	-3.018	4	-3.958	2
25		3	max	-.416	3	.398	6	4.032	5	14.139	1	1.409	5	-1.364	3	18.876	4
26			min	-1.96	4	-1.808	1	-4.068	4	-1.409	5	-14.139	1	-18.876	4	1.364	3
27		4	max	1.469	2	.181	5	4.092	4	7.091	1	.688	5	-.767	6	4.121	1
28			min	-1.96	4	-1.819	1	-1.443	2	-.688	5	-7.091	1	-4.121	1	.767	6

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[...	LC	z Shear[...	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
29		5	max	1.469	2	.173	5	4.115	4	0	1	0	1	12.93	4	9.702	2
30			min	-1.96	4	-1.83	1	-1.443	2	0	1	0	1	-9.702	2	-12.93	4
31	M4	1	max	.68	2	.192	5	3.12	2	5.728	1	.588	5	12.93	4	9.702	2
32			min	-1.944	4	-1.838	1	-4.158	4	-.588	5	-5.728	1	-9.702	2	-12.93	4
33		2	max	.68	2	.191	5	3.12	2	4.299	1	.439	5	9.697	4	7.276	2
34			min	-1.944	4	-1.84	1	-4.158	4	-.439	5	-4.299	1	-7.276	2	-9.697	4
35		3	max	.68	2	.189	5	3.12	2	2.867	1	.291	5	6.465	4	4.851	2
36			min	-1.944	4	-1.842	1	-4.158	4	-.291	5	-2.867	1	-4.851	2	-6.465	4
37		4	max	.68	2	.187	5	3.12	2	1.435	1	.145	5	3.232	4	2.425	2
38			min	-1.944	4	-1.844	1	-4.158	4	-.145	5	-1.435	1	-2.425	2	-3.232	4
39		5	max	.68	2	.186	5	3.12	2	0	1	0	1	0	1	0	1
40			min	-1.944	4	-1.847	1	-4.158	4	0	1	0	1	0	1	0	1
41	M5	1	max	1.403	4	.713	4	-.66	3	0	1	0	1	0	1	0	1
42			min	.208	3	.279	2	-3.04	4	0	1	0	1	0	1	0	1
43		2	max	1.403	4	.71	4	-.661	3	.553	4	-.217	2	-.514	3	2.363	4
44			min	.208	3	.278	2	-3.04	4	.217	2	-.553	4	-2.363	4	.514	3
45		3	max	1.403	4	.708	4	-.662	3	1.105	4	-.432	2	-1.028	3	4.726	4
46			min	.208	3	.276	2	-3.04	4	.432	2	-1.105	4	-4.726	4	1.028	3
47		4	max	1.403	4	.706	4	-.663	3	1.654	4	-.646	2	-1.543	3	7.088	4
48			min	.208	3	.275	2	-3.04	4	.646	2	-1.654	4	-7.088	4	1.543	3
49		5	max	1.403	4	.704	4	-.664	3	2.202	4	-.859	2	-2.059	3	9.451	4
50			min	.208	3	.273	2	-3.04	4	.859	2	-2.202	4	-9.451	4	2.059	3
51	M6	1	max	1.433	4	.7	4	2.981	4	0	1	0	1	-2.059	3	9.451	4
52			min	.313	3	.273	2	.44	3	0	1	0	1	-9.451	4	2.059	3
53		2	max	1.433	4	.689	4	3.004	4	2.699	4	-1.044	2	2.18	4	2.306	2
54			min	.313	3	.265	2	.44	3	1.044	2	-2.699	4	-2.306	2	-2.18	4
55		3	max	1.433	4	.678	4	3.028	4	5.357	4	-2.057	2	13.903	4	-1.364	3
56			min	.313	3	-.563	6	-.817	6	2.057	2	-5.357	4	1.364	3	-13.903	4
57		4	max	1.433	4	-.166	2	1.018	2	2.699	4	-.659	2	2.468	1	-.59	6
58			min	-.97	2	-.689	4	-3.004	4	.659	2	-2.699	4	.59	6	-2.468	1
59		5	max	1.433	4	-.174	2	1.018	2	0	1	0	1	6.396	2	9.451	4
60			min	-.97	2	-.7	4	-2.981	4	0	1	0	1	-9.451	4	-6.396	2
61	M7	1	max	1.403	4	-.174	2	3.04	4	2.202	4	-.551	2	6.396	2	9.451	4
62			min	-.48	2	-.704	4	-2.057	2	.551	2	-2.202	4	-9.451	4	-6.396	2
63		2	max	1.403	4	-.175	2	3.04	4	1.654	4	-.415	2	4.797	2	7.088	4
64			min	-.48	2	-.706	4	-2.057	2	.415	2	-1.654	4	-7.088	4	-4.797	2
65		3	max	1.403	4	-.177	2	3.04	4	1.105	4	-.278	2	3.198	2	4.726	4
66			min	-.48	2	-.708	4	-2.057	2	.278	2	-1.105	4	-4.726	4	-3.198	2
67		4	max	1.403	4	-.179	2	3.04	4	.553	4	-.14	2	1.599	2	2.363	4
68			min	-.48	2	-.71	4	-2.057	2	.14	2	-.553	4	-2.363	4	-1.599	2
69		5	max	1.403	4	-.18	2	3.04	4	0	1	0	1	0	1	0	1
70			min	-.48	2	-.713	4	-2.057	2	0	1	0	1	0	1	0	1

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N8	max	-2.189	3	1.088	6	-1.307	3	0	1	0	1	0	1
2		min	-10.27	4	-3.206	2	-10.187	4	0	1	0	1	0	1
3	N7	max	10.27	4	4.548	1	3.565	2	0	1	0	1	0	1
4		min	-7.699	2	-.414	5	-10.187	4	0	1	0	1	0	1
5	N5	max	5.085	2	1.744	4	7.351	4	0	1	0	1	0	1

Envelope Joint Reactions (Continued)

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
6		min	-7.509	4	.447	2	-2.513	2	0	1	0	1	0	1
7	N6	max	7.509	4	1.744	4	7.351	4	0	1	0	1	0	1
8		min	1.631	3	.688	2	1.088	3	0	1	0	1	0	1
9	Totals:	max	0	4	5.161	6	0	2						
10		min	-5.301	1	2.281	2	-5.672	4						

Envelope Joint Displacements

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation...	LC	Y Rotation...	LC	Z Rotation...	LC
1	N1	max	0	5	-.014	2	-.002	2	7.912e-4	4	9.268e-5	1	1.008e-4	1
2		min	-.018	1	-.052	4	-.058	4	7.636e-5	2	0	6	0	4
3	N2	max	0	5	-.014	2	-.001	2	7.917e-4	4	9.268e-5	1	1.003e-4	1
4		min	-.019	1	-.052	4	-.048	4	7.636e-5	2	0	6	0	4
5	N3	max	.029	1	-.014	2	.066	4	4.904e-3	4	0	6	0	5
6		min	0	5	-.052	4	.001	2	7.843e-5	2	-2.883e-4	1	-3.091e-3	1
7	N4	max	5.566	1	-.015	2	6.216	4	2.325e-2	4	0	6	0	5
8		min	0	5	-.053	4	.028	2	7.905e-5	2	-2.883e-4	1	-2.142e-2	1
9	N5	max	0	4	0	2	0	2	2.22e-3	4	-3.555e-5	6	1.16e-3	4
10		min	0	2	0	4	0	4	4.337e-4	2	-1.515e-3	1	3.818e-4	2
11	N6	max	0	3	0	2	0	3	2.22e-3	4	1.315e-4	4	-3.479e-4	2
12		min	0	4	0	4	0	4	6.336e-4	2	-1.504e-3	1	-1.16e-3	4
13	N7	max	0	2	0	5	0	4	4.674e-3	4	2.317e-3	1	7.325e-4	3
14		min	0	4	0	1	0	2	1.87e-3	3	4.574e-5	6	-2.99e-4	5
15	N8	max	0	4	0	2	0	4	4.674e-3	4	2.307e-3	1	2.99e-4	5
16		min	0	3	0	6	0	3	-2.536e-3	2	-1.799e-4	4	-1.007e-3	1
17	N9	max	0	6	-.005	2	0	2	2.03e-3	4	-2.558e-4	6	1.16e-3	4
18		min	-.018	1	-.027	4	0	4	3.86e-4	2	-9.71e-4	1	3.818e-4	2
19	N10	max	.001	4	-.008	2	0	3	2.03e-3	4	9.463e-4	4	-3.479e-4	2
20		min	-.018	1	-.027	4	0	4	5.593e-4	2	-9.016e-4	2	-1.16e-3	4
21	N11	max	.028	1	-.022	3	0	4	4.705e-3	4	1.488e-3	1	7.325e-4	3
22		min	0	6	-.056	4	0	2	1.644e-3	3	3.292e-4	6	-2.99e-4	5
23	N12	max	.028	1	.03	2	0	4	4.705e-3	4	1.418e-3	2	2.99e-4	5
24		min	-.002	4	-.056	4	0	3	-2.189e-3	2	-1.295e-3	4	-1.007e-3	1

Envelope AISC 14th(360-10): LRFD Steel Code Checks

	Member	Shape	Code Check	Loc...	LC	Sh...	Loc[ft]	Dir	LC	phi*Pn...	phi*...	phi*...	phi*...	...	Eqn
1	M1	PIPE_12.0	.528	6.021	4	.121	5.667		4	276.407	431...	140...	140...	1	H1...
2	M2	HSS6x6x4	.304	1	2	.167	0	z	4	216.551	216...	38.64	38.64	...	H1...
3	M3	HSS6x6x4	.437	2.5	5	.216	5	y	1	207.521	216...	38.64	38.64	...	H1...
4	M4	HSS6x6x4	.324	0	1	.167	0	z	4	216.551	216...	38.64	38.64	...	H1...
5	M5	HSS6x6x4	.257	1	4	.122	0	z	4	216.551	216...	38.64	38.64	...	H1...
6	M6	HSS6x6x4	.414	2.5	4	.176	2.5	z	4	207.521	216...	38.64	38.64	...	H1...
7	M7	HSS6x6x4	.257	0	4	.122	0	z	4	216.551	216...	38.64	38.64	...	H1...

Joint Reactions

	LC	Joint Label	X [k]	Y [k]	Z [k]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
1	1	N8	-8.288	-3.021	-4.1	0	0	0
2	1	N7	-7.633	4.548	3.494	0	0	0
3	1	N5	5.019	.636	-2.443	0	0	0
4	1	N6	5.601	.878	3.048	0	0	0
5	1	Totals:	-5.301	3.041	0			
6	1	COG (ft):	X: 0	Y: 15.953	Z: -.014			

Joint Reactions

	LC	Joint Label	X [k]	Y [k]	Z [k]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
1	2	N8	-8.201	-3.206	-4.019	0	0	0
2	2	N7	-7.699	4.351	3.565	0	0	0
3	2	N5	5.085	.447	-2.513	0	0	0
4	2	N6	5.515	.688	2.968	0	0	0
5	2	Totals:	-5.301	2.281	0			
6	2	COG (ft):	X: 0	Y: 15.953	Z: -.014			

Joint Reactions

	LC	Joint Label	X [k]	Y [k]	Z [k]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
1	3	N8	-2.189	.503	-1.307	0	0	0
2	3	N7	-1.146	2.09	.284	0	0	0
3	3	N5	.598	1.259	-.065	0	0	0
4	3	N6	1.631	1.31	1.088	0	0	0
5	3	Totals:	-1.106	5.161	0			
6	3	COG (ft):	X: 0	Y: 16.261	Z: -.011			

Joint Reactions

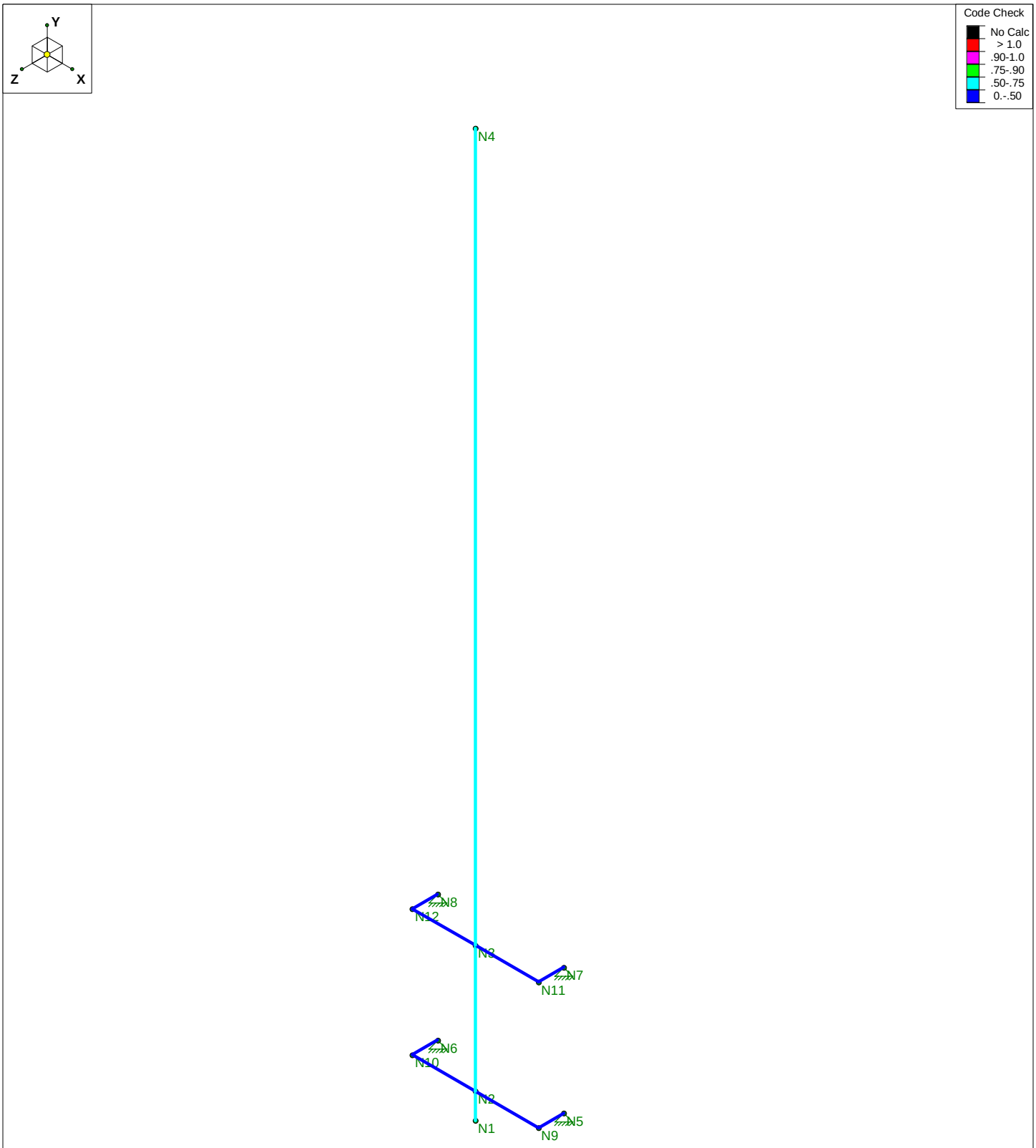
	LC	Joint Label	X [k]	Y [k]	Z [k]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
1	4	N8	-10.27	-.224	-10.187	0	0	0
2	4	N7	10.27	-.224	-10.187	0	0	0
3	4	N5	-7.509	1.744	7.351	0	0	0
4	4	N6	7.509	1.744	7.351	0	0	0
5	4	Totals:	0	3.041	-5.672			
6	4	COG (ft):	X: 0	Y: 15.953	Z: -.014			

Joint Reactions

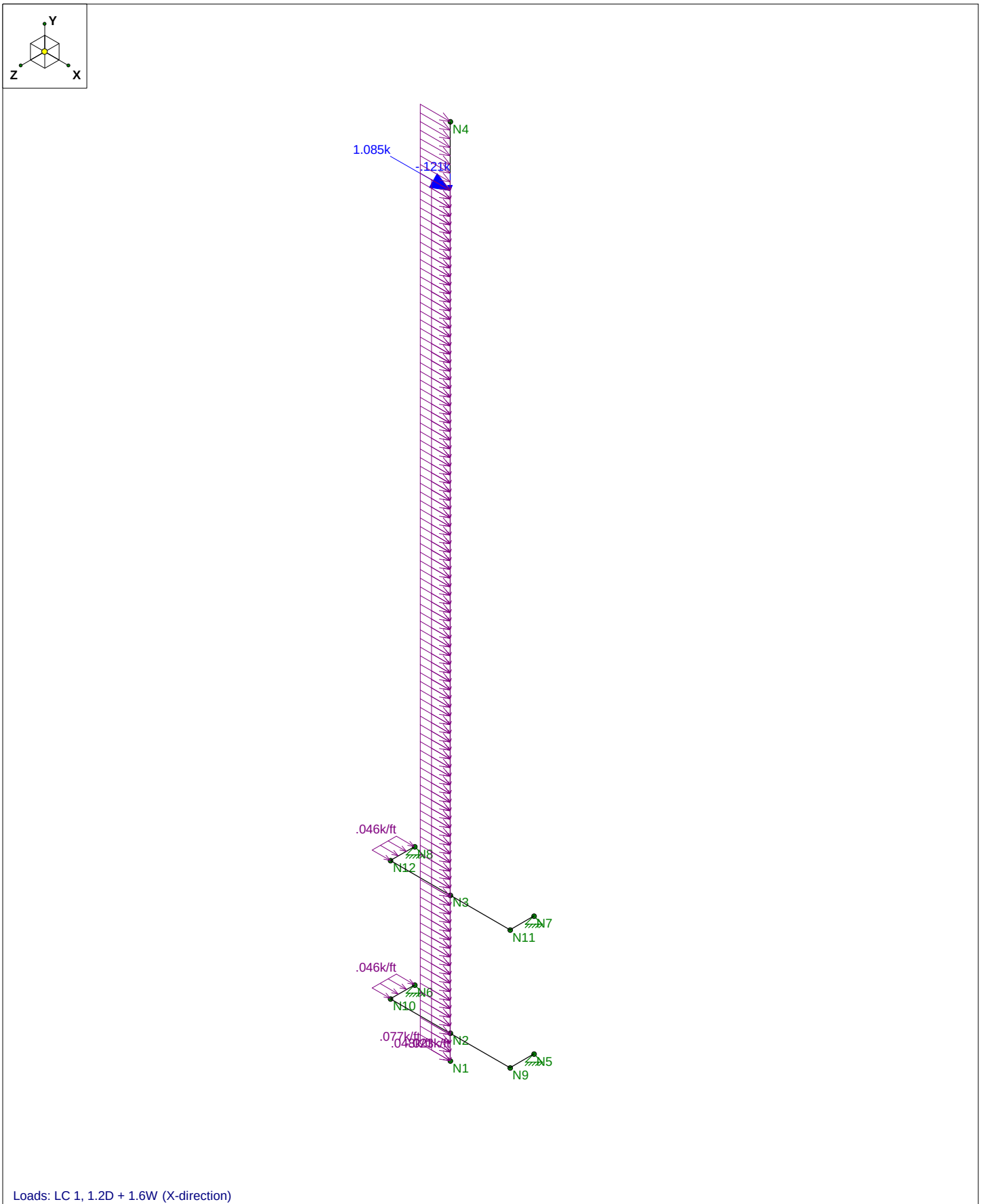
	LC	Joint Label	X [k]	Y [k]	Z [k]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
1	5	N8	-10.18	-.414	-10.098	0	0	0
2	5	N7	10.18	-.414	-10.098	0	0	0
3	5	N5	-7.418	1.554	7.262	0	0	0
4	5	N6	7.418	1.554	7.262	0	0	0
5	5	Totals:	0	2.281	-5.672			
6	5	COG (ft):	X: 0	Y: 15.953	Z: -.014			

Joint Reactions

	LC	Joint Label	X [k]	Y [k]	Z [k]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
1	6	N8	-2.612	1.088	-2.585	0	0	0
2	6	N7	2.612	1.088	-2.585	0	0	0
3	6	N5	-2.03	1.493	1.992	0	0	0
4	6	N6	2.03	1.493	1.992	0	0	0
5	6	Totals:	0	5.161	-1.186			
6	6	COG (ft):	X: 0	Y: 16.261	Z: -.011			

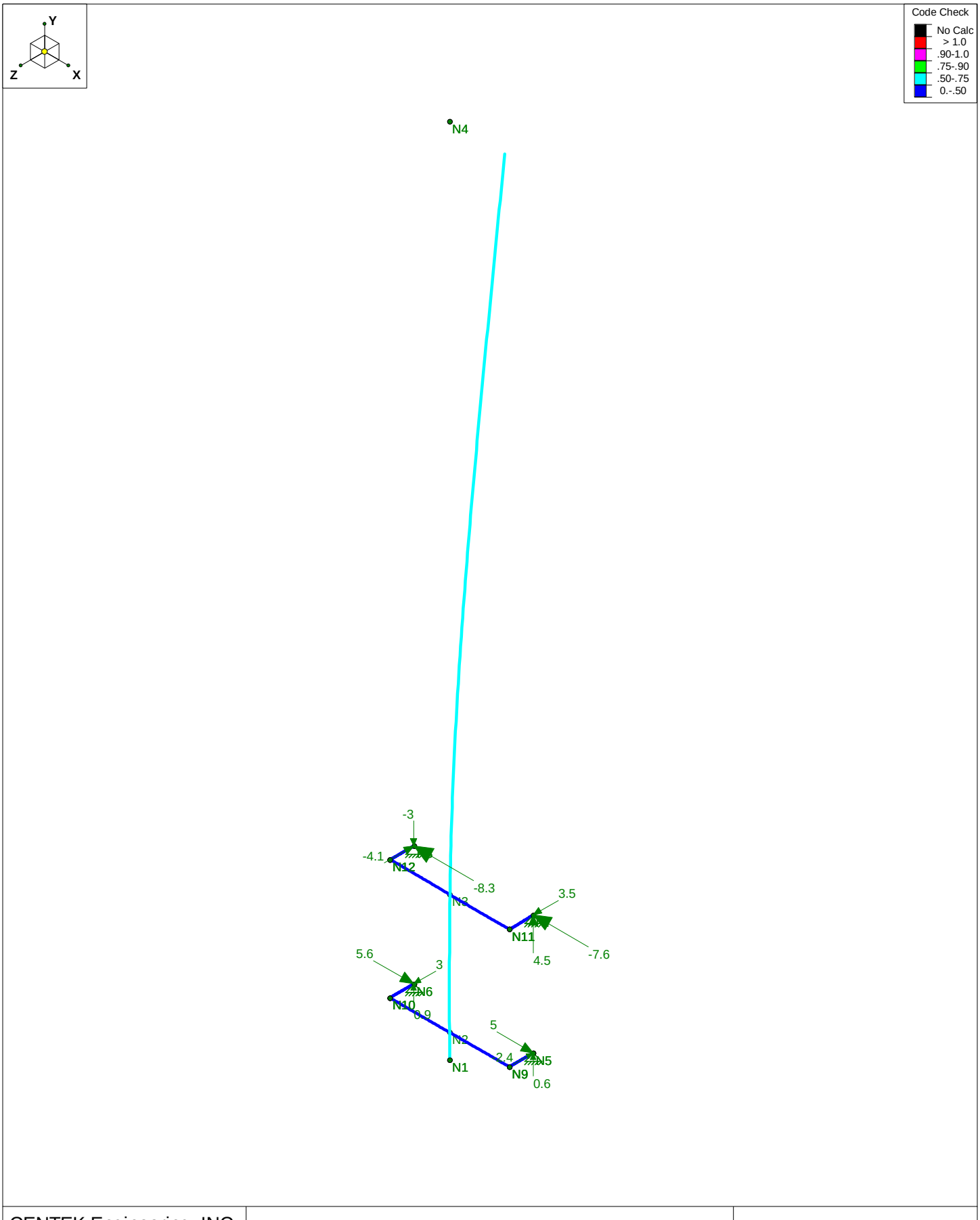


CENTEK Engineering, INC.		
tjl, cfc	Tower # 1109 - T-Mobile Mast	Oct 27, 2016 at 11:56 AM
16162.06 / CT11885B	Unity Check	TIA.r3d

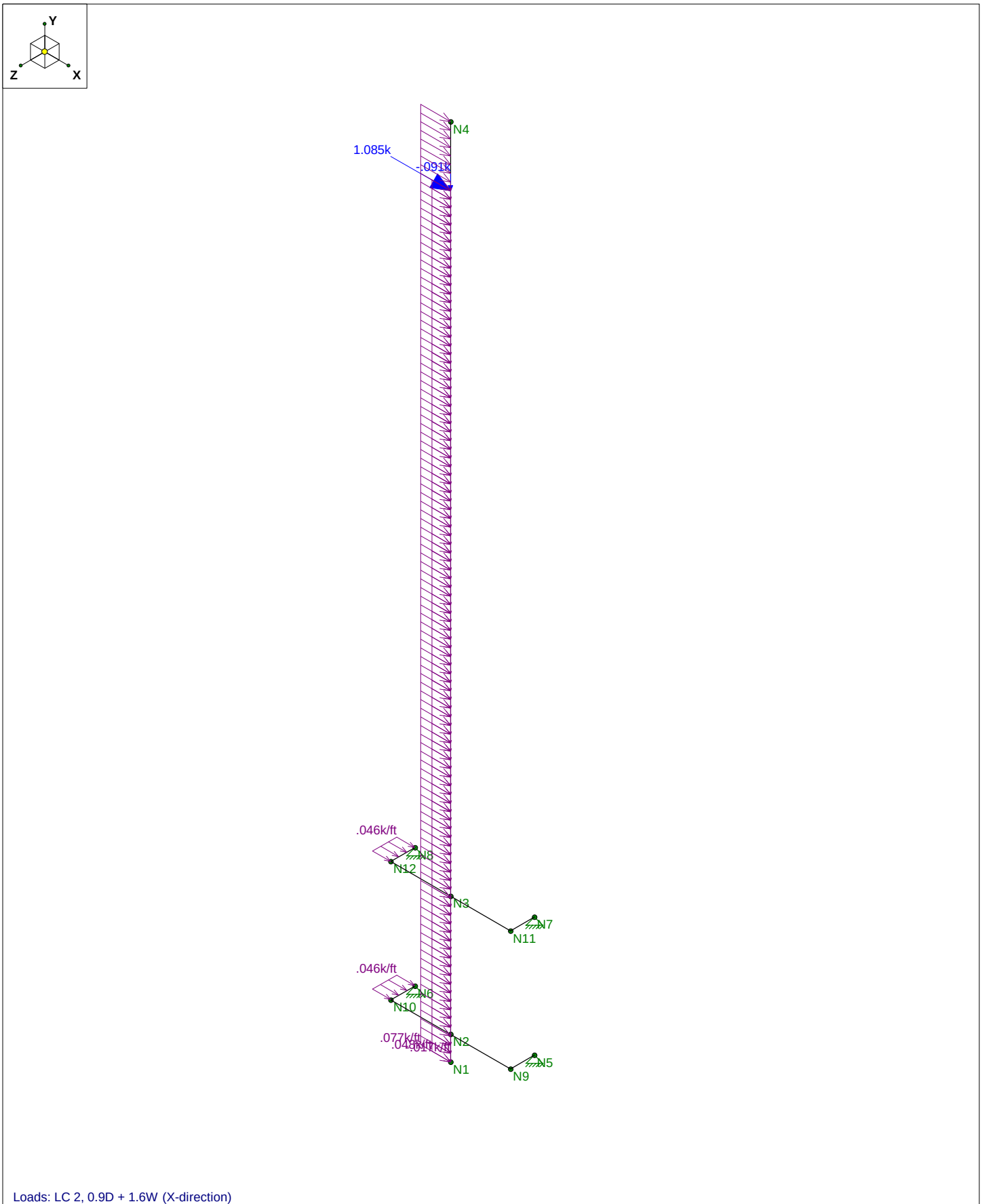


Loads: LC 1, 1.2D + 1.6W (X-direction)

CENTEK Engineering, INC.		
tjl, cfc	Tower # 1109 - T-Mobile Mast	Oct 27, 2016 at 11:54 AM
16162.06 / CT11885B	LC #1 Loads	TIA.r3d

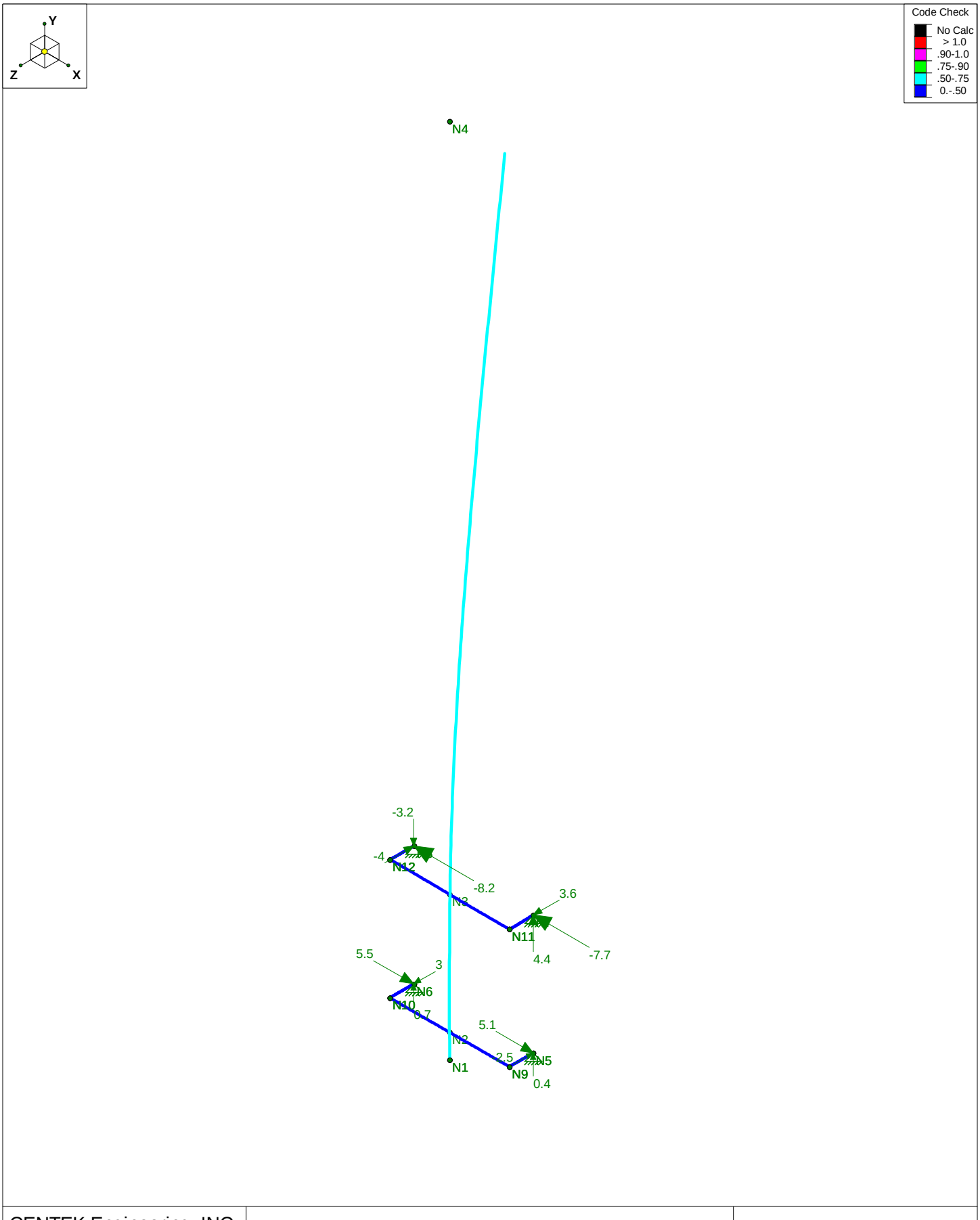


CENTEK Engineering, INC.		
tjl, cfc	Tower # 1109 - T-Mobile Mast	Oct 27, 2016 at 11:56 AM
16162.06 / CT11885B	LC #1 Reactions and Deflected Shape	TIA.r3d

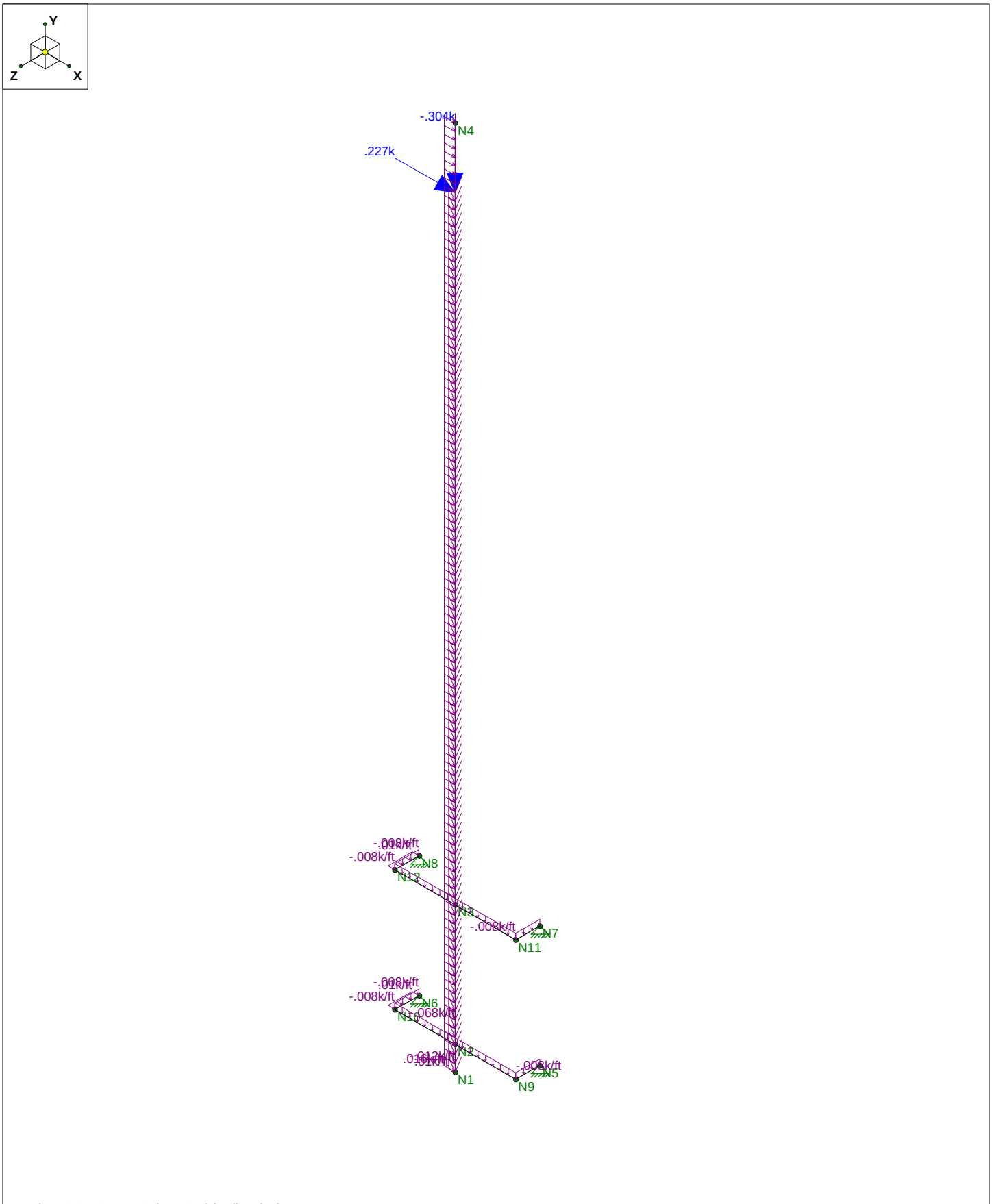


Loads: LC 2, 0.9D + 1.6W (X-direction)

CENTEK Engineering, INC.		
tjl, cfc	Tower # 1109 - T-Mobile Mast	Oct 27, 2016 at 11:54 AM
16162.06 / CT11885B	LC #2 Loads	TIA.r3d

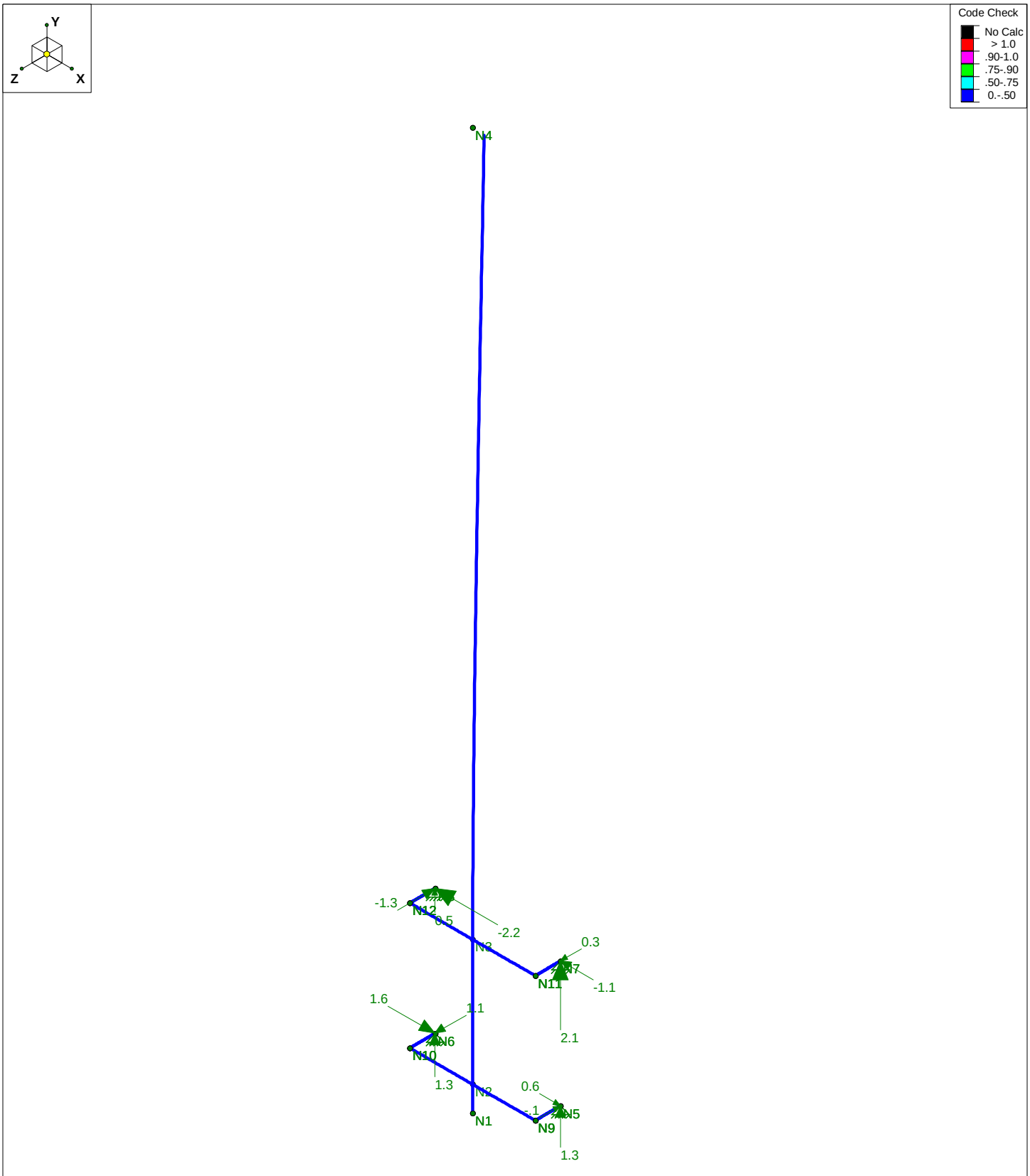


CENTEK Engineering, INC.		
tjl, cfc	Tower # 1109 - T-Mobile Mast	Oct 27, 2016 at 11:57 AM
16162.06 / CT11885B	LC #2 Reactions and Deflected Shape	TIA.r3d

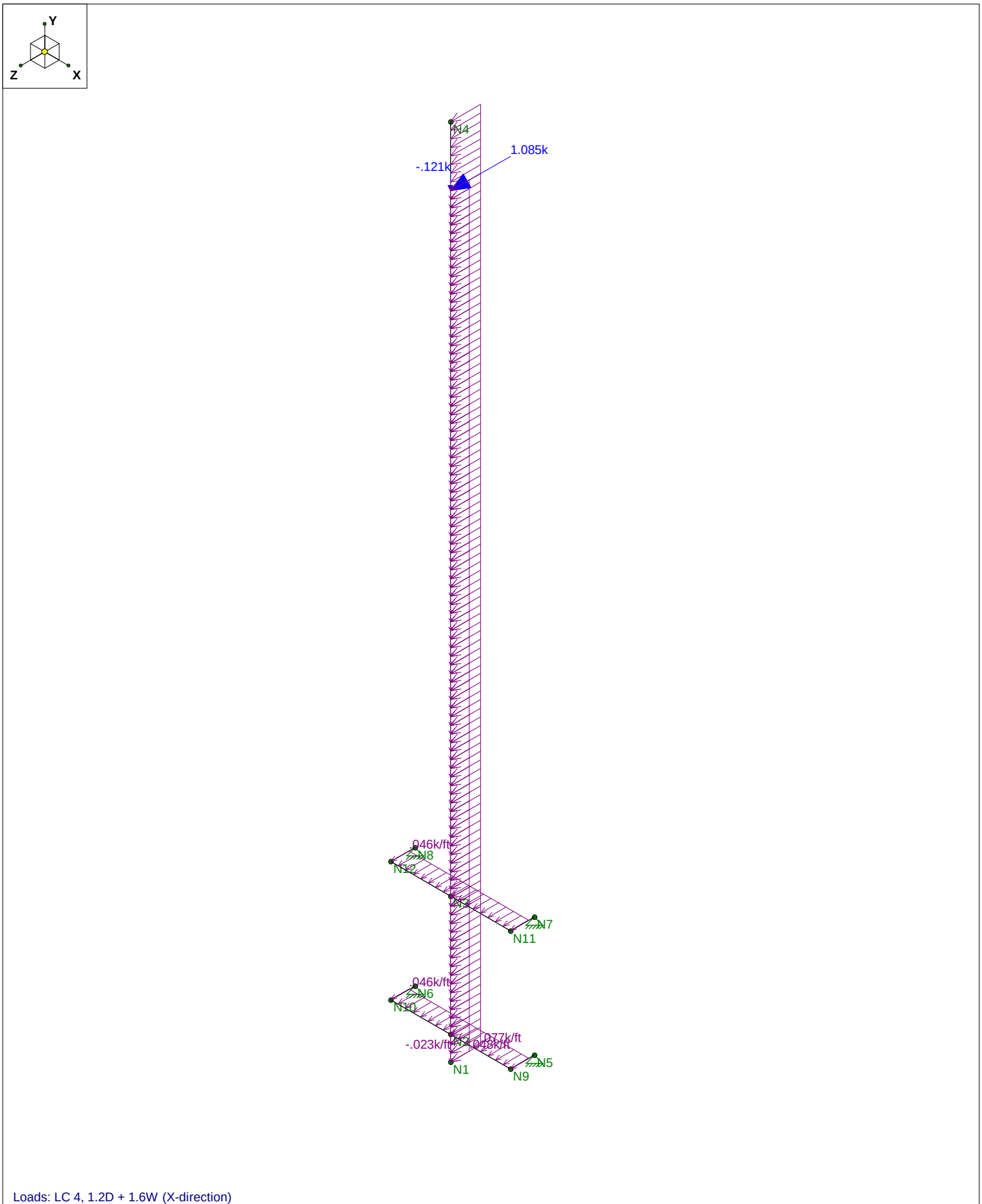


Loads: LC 3, 1.2D + 1.0Di + 1.0Wi (X-direction)

CENTEK Engineering, INC.		
tjl, cfc	Tower # 1109 - T-Mobile Mast	Oct 27, 2016 at 11:54 AM
16162.06 / CT11885B	LC #3 Loads	TIA.r3d

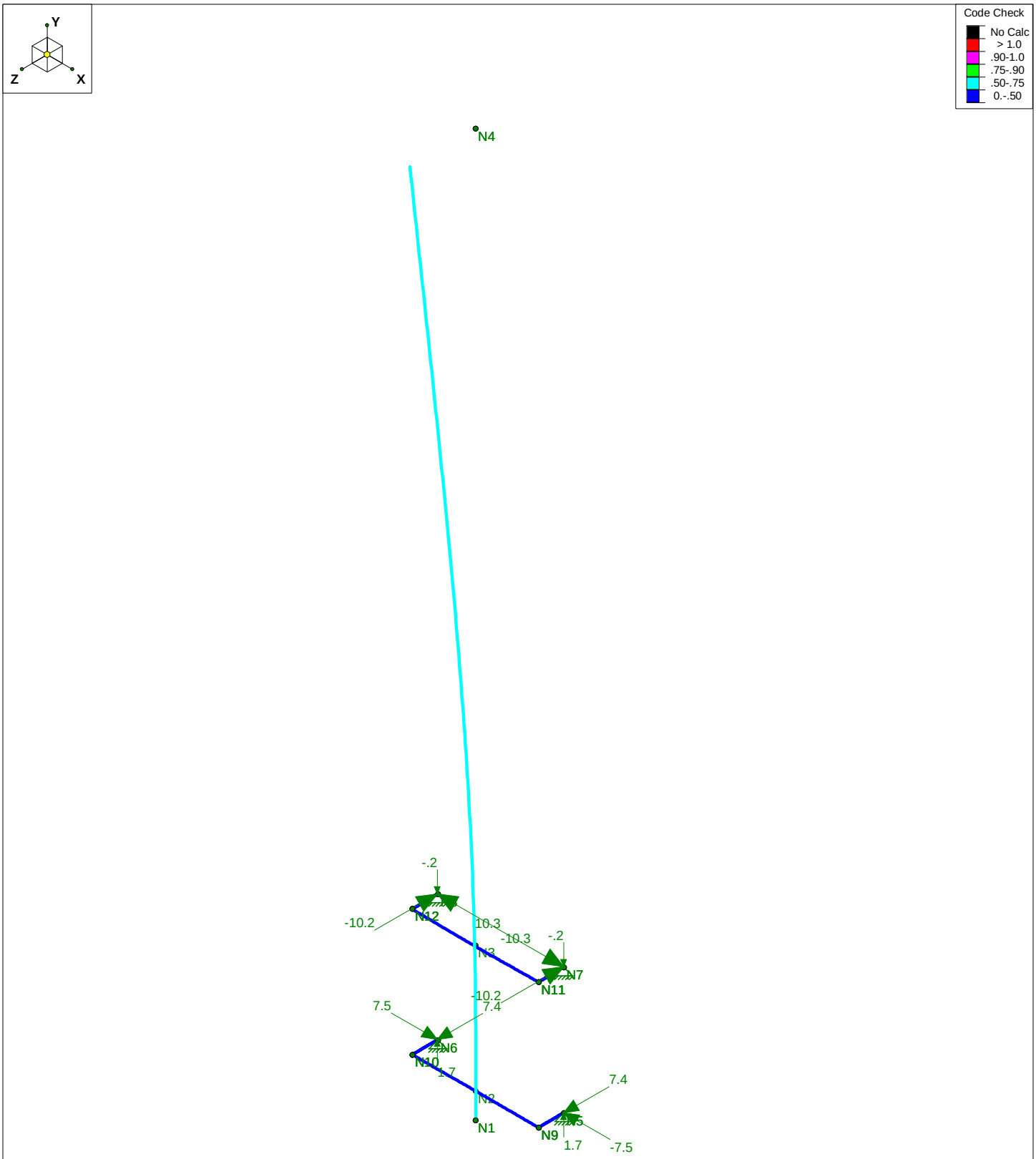


CENTEK Engineering, INC.		
tjl, cfc	Tower # 1109 - T-Mobile Mast	Oct 27, 2016 at 11:57 AM
16162.06 / CT11885B	LC #3 Reactions and Deflected Shape	TIA.r3d

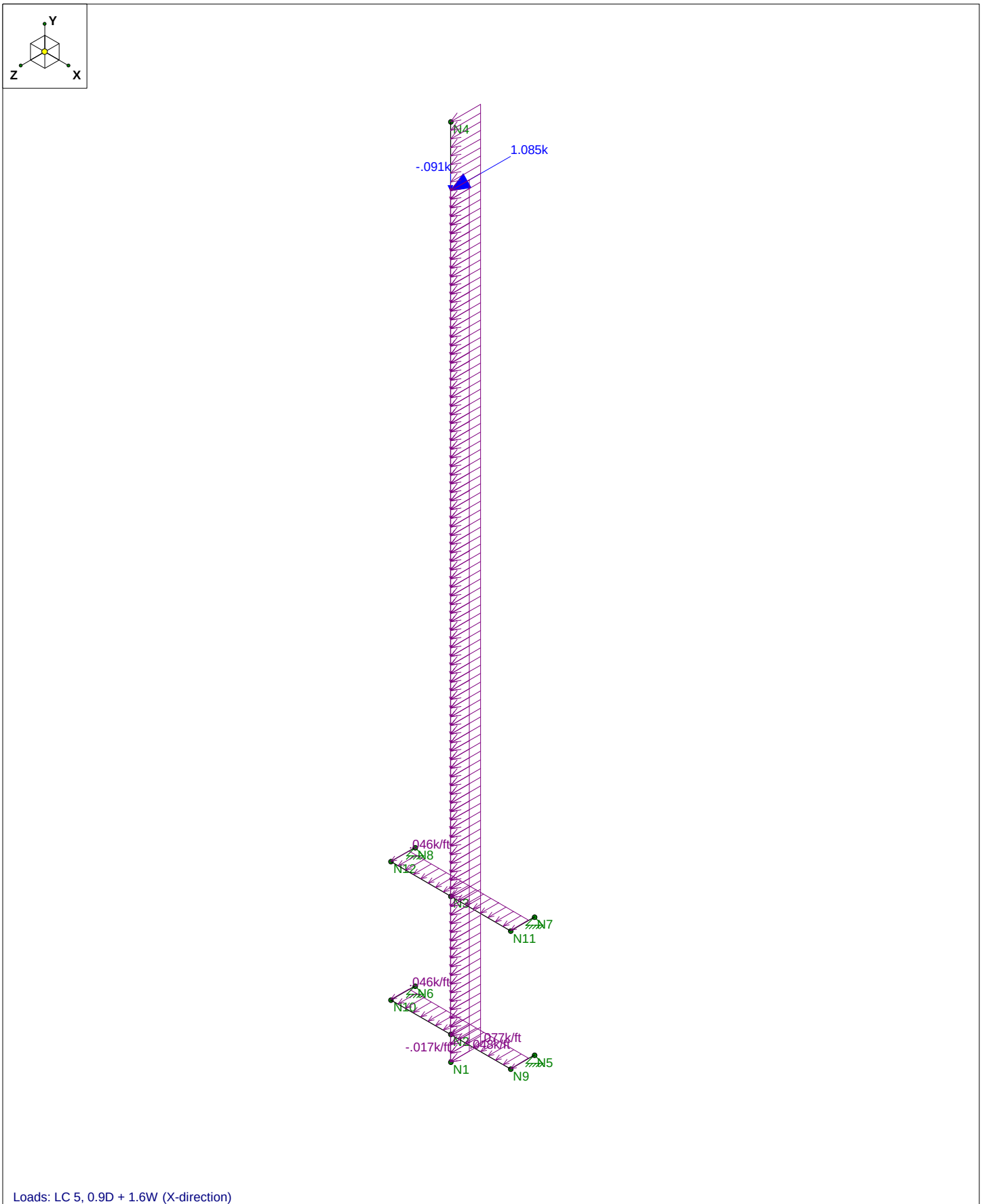


Loads: LC 4, 1.2D + 1.6W (X-direction)

CENTEK Engineering, INC.		
tjl, cfc	Tower # 1109 - T-Mobile Mast	Oct 27, 2016 at 11:55 AM
16162.06 / CT11885B	LC #4 Loads	TIA.r3d

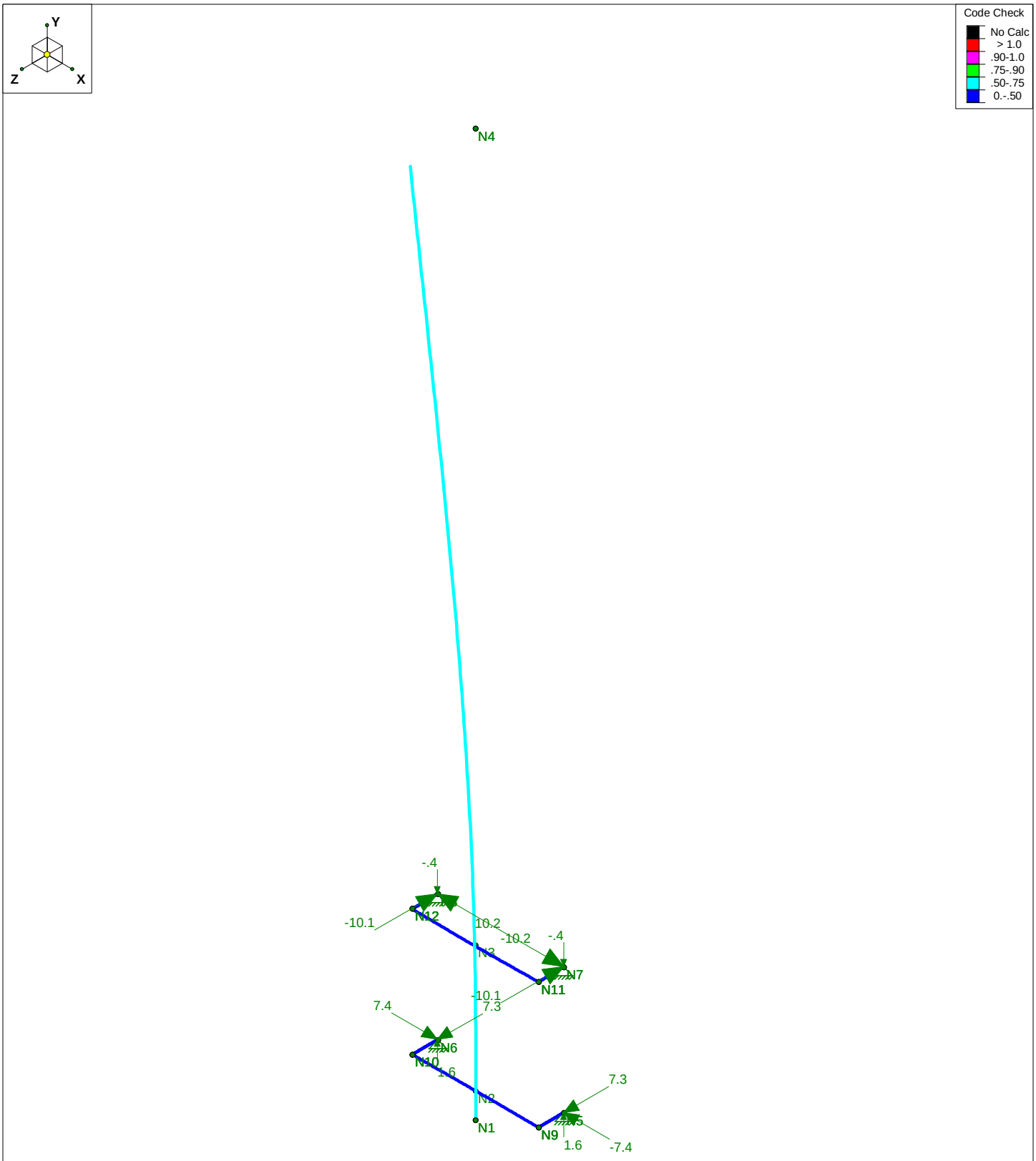


CENTEK Engineering, INC.		
tjl, cfc	Tower # 1109 - T-Mobile Mast	Oct 27, 2016 at 11:58 AM
16162.06 / CT11885B	LC #4 Reactions and Deflected Shape	TIA.r3d

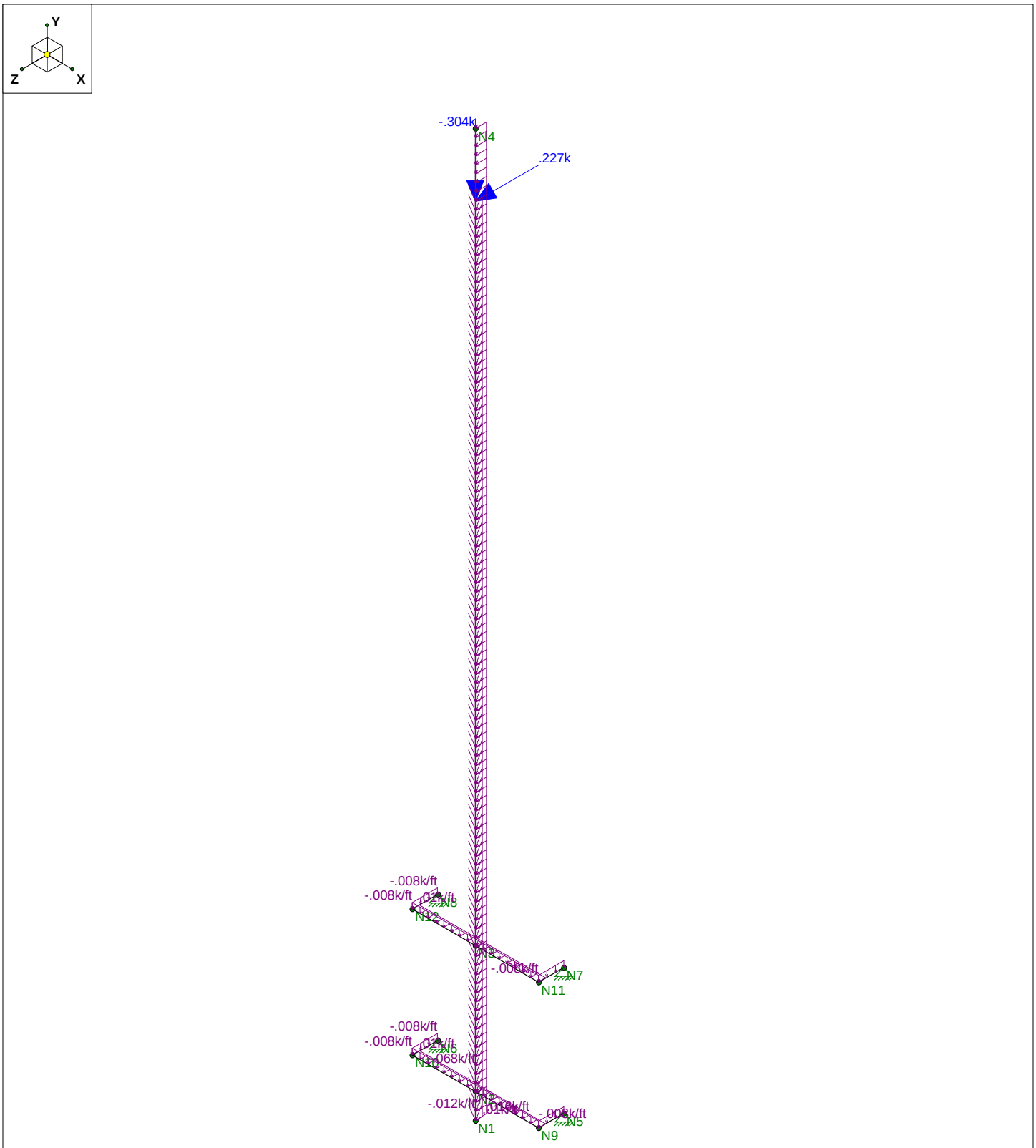


Loads: LC 5, 0.9D + 1.6W (X-direction)

CENTEK Engineering, INC.		
tjl, cfc	Tower # 1109 - T-Mobile Mast	Oct 27, 2016 at 11:55 AM
16162.06 / CT11885B	LC #5 Loads	TIA.r3d

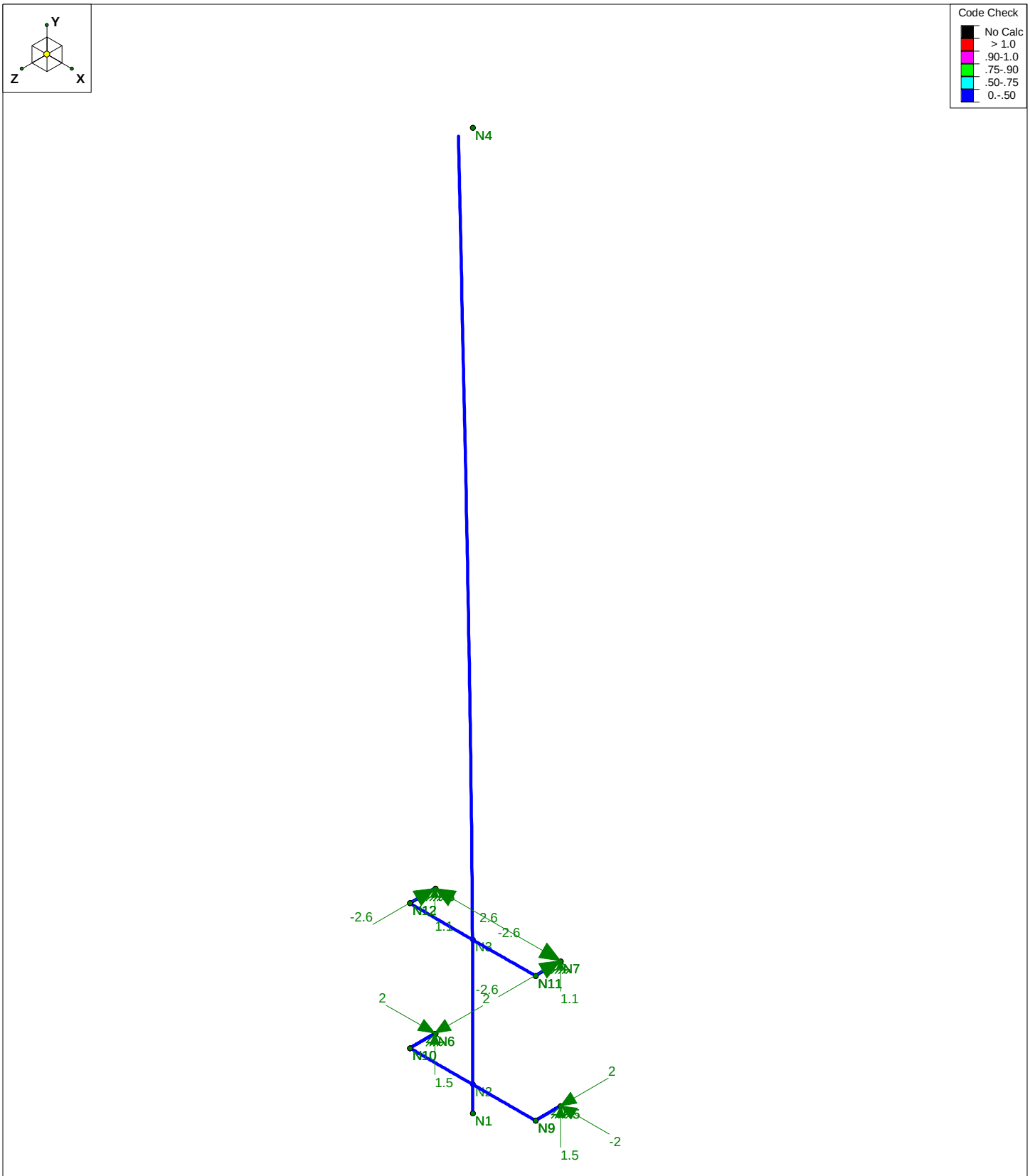


CENTEK Engineering, INC.		
tjl, cfc	Tower # 1109 - T-Mobile Mast	Oct 27, 2016 at 11:58 AM
16162.06 / CT11885B	LC #5 Reactions and Deflected Shape	TIA.r3d



Loads: LC 6, 1.2D + 1.0Di + 1.0Wi (X-direction)

CENTEK Engineering, INC.		
tjl, cfc	Tower # 1109 - T-Mobile Mast	Oct 27, 2016 at 11:55 AM
16162.06 / CT11885B	LC #6 Loads	TIA.r3d



CENTEK Engineering, INC.		
tjl, cfc	Tower # 1109 - T-Mobile Mast	Oct 27, 2016 at 11:59 AM
16162.06 / CT11885B	LC #6 Reactions and Deflected Shape	TIA.r3d

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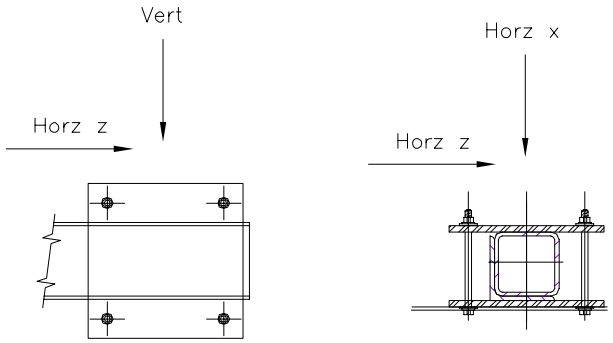
Subject: Connection of Mast to Tower # 1109

Location: Norwalk, CT

Rev. 0: 10/27/16

Prepared by: T.J.L. Checked by: C.F.C.
Job No. 16162.06

Mast Connection to Tower:



Reactions:

Moment = $Moment := 0 \cdot kips$ (Input From Risa-3D)

Vertical = $Vertical := 0.3 \cdot kips$ (Input From Risa-3D)

Horizontal x-dir = $Horizontal_x := 10.3 \cdot kips$ (Input From Risa-3D)

Horizontal z-dir = $Horizontal_z := 10.2 \cdot kips$ (Input From Risa-3D)

Bolt Data:

Bolt Type = ASTM A325 (User Input)

Bolt Diameter = $D := 0.5 \cdot in$ (User Input)

Number of Bolts = $N_b := 4$ (User Input)

Allowable Tensile Strength = $F_t := 13.2 \cdot kips$ (User Input)

Allowable Shear Strength = $F_v := 7.9 \cdot kips$ (User Input)

Shear Force = $f_v := \frac{\sqrt{Horizontal_z^2 + Vertical^2}}{N_b} = 2.6 \cdot kips$

Bolt Shear % of Capacity = $\frac{f_v}{F_v} = 32.29 \cdot \%$

Check Bolt Shear = $Bolt\_Shear := if\left(\frac{f_v}{F_v} \le 1.00, "OK", "Overstressed"\right)$

$Bolt\_Shear = "OK"$

Tension Force = $f_t := \frac{Horizontal_x}{N_b} = 2.6 \cdot kips$

Bolt Tenison % of Capacity = $\frac{f_t}{F_t} = 19.51 \cdot \%$

Check Bolt Tension = $Bolt\_Tension := if\left(\frac{f_t}{F_t} \le 1.00, "OK", "Overstressed"\right)$

$Bolt\_Tension = "OK"$

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Subject:	Load Analysis of Pipe Mast and T-Mobile Equipment on Structure #1109
Location:	Norwalk, CT
Rev. 0: 10/27/16	Prepared by: T.J.L Checked by: C.F.C. Job No. 16162.06

Basic Components

Heavy Wind Pressure =	p := 4.00	psf	(User Input NESC 2007 Figure 250-1 & Table 250-1)
Basic Windspeed =	V := 110	mph	(User Input NESC 2007 Figure 250-2(e))
Radial Ice Thickness =	Ir := 0.50	in	(User Input)
Radial Ice Density =	Id := 56.0	pcf	(User Input)

Factors for Extreme Wind Calculation

Elevation of Top of Mast Above Grade =	TME := 116	ft	(User Input)
Multiplier Gust Response Factor =	m := 1.25		(User Input - Only for NESC Extreme wind case)
NESC Factor =	kv := 1.43		(User Input from NESC 2007 Table 250-3 equation)
Importance Factor =	I := 1.0		(User Input from NESC 2007 Section 250.C.2)
Velocity Pressure Coefficient =	$Kz := 2.01\cdot\left(\frac{TME}{900}\right)^{\frac{2}{9.5}} = 1.306$		(NESC 2007 Table 250-2)
Exposure Factor =	$Es := 0.346\left[\frac{33}{(0.67\cdot TME)}\right]^{\frac{1}{7}} = 0.306$		(NESC 2007 Table 250-3)
Response Term =	$Bs := \frac{1}{\left(1 + 0.375\cdot\frac{TME}{220}\right)} = 0.835$		(NESC 2007 Table 250-3)
Gust Response Factor =	$Grf := \frac{\left[1 + \left(2.7\cdot Es\cdot Bs^{\frac{1}{2}}\right)\right]}{kv^2} = 0.858$		(NESC 2007 Table 250-3)
Wind Pressure =	$qz := 0.00256\cdot Kz\cdot V^2\cdot Grf\cdot I = 34.7$	psf	(NESC 2007 Section 250.C.2)

Shape Factors

NUS Design Criteria Issued April 12, 2007

Shape Factor for Round Members =	$Cd_R := 1.3$	(User Input)
Shape Factor for Flat Members =	$Cd_F := 1.6$	(User Input)
Shape Factor for Coax Cables Attached to Outside of Pole =	$Cd_{coax} := 1.45$	(User Input)

Overload Factors

NU Design Criteria Table

Overload Factors for Wind Loads:

NESC Heavy Loading =	**2.5**	(User Input)	Apply in Risa-3D Analysis
NESC Extreme Loading =	**1.0**	(User Input)	Apply in Risa-3D Analysis

Overload Factors for Vertical Loads:

NESC Heavy Loading =	**1.5**	(User Input)	Apply in Risa-3D Analysis
NESC Extreme Loading =	**1.0**	(User Input)	Apply in Risa-3D Analysis

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Subject:	Load Analysis of Pipe Mast and T-Mobile Equipment on Structure #1109
Location:	Norwalk, CT
Rev. 0: 10/27/16	Prepared by: T.J.L Checked by: C.F.C. Job No. 16162.06

Development of Wind & Ice Load on PCS Mast

PCS Mast Data: (Pipe 12.0" SCH. 40)

Mast Shape =	Round		(User Input)
Mast Diameter =	$D_{mast} := 12.8$	in	(User Input)
Mast Length =	$L_{mast} := 34$	ft	(User Input)
Mast Thickness =	$t_{mast} := 0.375$	in	(User Input)

Wind Load (NESC Extreme)

Mast Projected Surface Area = $A_{mast} := \frac{D_{mast}}{12} = 1.067$ sf/ft

Total Mast Wind Force (Above NU Structure) =	$qz \cdot Cd_R \cdot A_{mast} \cdot m = 60$	plf	**BLC 5,7**
Total Mast Wind Force (Below NU Structure) =	$qz \cdot Cd_R \cdot A_{mast} = 48$	plf	**BLC 5,7**

Wind Load (NESE Heavy)

Mast Projected Surface Area w/ Ice = $AICE_{mast} := \frac{(D_{mast} + 2 \cdot Ir)}{12} = 1.15$ sf/ft

Total Mast Wind Force w/ Ice =	$p \cdot Cd_R \cdot AICE_{mast} = 6$	plf	**BLC 4,6**

Gravity Loads (without ice)

Weight of the Mast =	Self Weight	**(Computed internally by Risa-3D)**	plf	**BLC 1**

Gravity Loads (ice only)

Ice Area per Linear Foot = $Ai_{mast} := \frac{\pi}{4}\left[(D_{mast} + Ir \cdot 2)^2 - D_{mast}^2\right] = 20.9$ sq in

Weight of Ice on Mast =	$W_{ICEmast} := Id \cdot \frac{Ai_{mast}}{144} = 8$	plf	**BLC 3**

Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	Andrew SBNHH-1D65A		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 55.5$	in	(User Input)
Antenna Width =	$W_{ant} := 11.9$	in	(User Input)
Antenna Thickness =	$T_{ant} := 7.1$	in	(User Input)
Antenna Weight =	$WT_{ant} := 33.5$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 3$		(User Input)

Wind Load (NESC Extreme)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot W_{ant}}{144} = 4.6$	sf	
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 13.8$	sf	
Total Antenna Wind Force =	$F_{ant} := qz \cdot Cd_F \cdot A_{ant} \cdot m = 955$	lbs	**BLC 5,7**

Wind Load (NESC Heavy)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna w/ Ice =	$SA_{ICEant} := \frac{(L_{ant} + 1) \cdot (W_{ant} + 1)}{144} = 5.1$	sf	
Antenna Projected Surface Area w/ Ice =	$A_{ICEant} := SA_{ICEant} \cdot N_{ant} = 15.2$	sf	
Total Antenna Wind Force w/ Ice =	$Fi_{ant} := p \cdot Cd_F \cdot A_{ICEant} = 97$	lbs	**BLC 4,6**

Gravity Load (without ice)

Weight of All Antennas =	$WT_{ant} \cdot N_{ant} = 101$	lbs	**BLC 2**

Gravity Load (ice only)

Volume of Each Antenna =	$V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 4689$	cu in	
Volume of Ice on Each Antenna =	$V_{ice} := (L_{ant} + 1)(W_{ant} + 1) \cdot (T_{ant} + 1) - V_{ant} = 1214$	cu in	
Weight of Ice on Each Antenna =	$W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 39$	lbs	
Weight of Ice on All Antennas =	$W_{ICEant} \cdot N_{ant} = 118$	lbs	**BLC 3**

Development of Wind & Ice Load on Coax Cables

Coax Cable Data:

Coax Type =	HELIAX 1-5/8"		
Shape =	Round		(User Input)
Coax Outside Diameter =	$D_{coax} := 1.98$	in	(User Input)
Coax Cable Length =	$L_{coax} := 34$	ft	(User Input)
Weight of Coax per foot =	$Wt_{coax} := 1.04$	plf	(User Input)
Total Number of Coax =	$N_{coax} := 18$		(User Input)
No. of Coax Projecting Outside Face of Mast =	$NP_{coax} := 4$		(User Input)

Wind Load (NESC Extreme)

Coax projected surface area = $A_{coax} := \frac{(NP_{coax} D_{coax})}{12} = 0.7$ sf/ft

Total Coax Wind Force (Above NU Structure) = $F_{coax} := qz \cdot Cd_{coax} \cdot A_{coax} \cdot m = 42$ plf **BLC 5,7**

Total Coax Wind Force (Below NU Structure) = $F_{coax} := qz \cdot Cd_{coax} \cdot A_{coax} = 33$ plf **BLC 5,7**

Wind Load (NESC Heavy)

Coax projected surface area w/ Ice = $AICE_{coax} := \frac{NP_{coax} \cdot (D_{coax} + 2 \cdot Ir)}{12} = 1$ sf/ft

Total Coax Wind Force w/ Ice = $Fi_{coax} := p \cdot Cd_{coax} \cdot AICE_{coax} = 6$ plf **BLC 4,6**

Gravity Loads (without ice)

Weight of all cables w/o ice = $WT_{coax} := Wt_{coax} \cdot N_{coax} = 19$ plf **BLC 2**

Gravity Load (ice only)

Ice Area per Linear Foot = $Ai_{coax} := \frac{\pi}{4}\left[(D_{coax} + 2 \cdot Ir)^2 - D_{coax}^2\right] = 3.9$ sq in

Ice Weight All Coax per foot = $WTi_{coax} := N_{coax} \cdot Id \cdot \frac{Ai_{coax}}{144} = 27$ plf **BLC 3**

Development of Wind & Ice Load on Brace Member

Member Data: HSS6x6x1/4

Shape =	Flat		(User Input)
Width =	$W_{mem} := 6$	in	(User Input)
Length =	$L_{mem} := 5$	ft	(User Input)
Height =	$H_{mem} := 6$	in	(User Input)

Wind Load (NESC Extreme)

Member Projected Surface Area = $A_{mem} := \frac{W_{mem}}{12} = 0.5$

Total Member Wind Force = $qz \cdot Cd_F \cdot A_{mem} = 28$ plf **BLC 5,7**

Wind Load (NESE Heavy)

Member Projected Surface Area w/ Ice = $AICE_{mem} := \frac{(W_{mem} + 2 \cdot Ir)}{12} = 0.583$

Total Member Wind Force w/ Ice = $p \cdot Cd_F \cdot AICE_{mem} = 4$ plf **BLC 4,6**

Gravity Loads (without ice)

Weight of the Member = Self Weight **(Computed internally by Risa-3D)** plf **BLC 1**

Gravity Loads (ice only)

Ice Area per Linear Foot = $Ai_{mem} := (W_{mem} + 2 \cdot Ir) \cdot (H_{mem} + 2 \cdot Ir) - W_{mem} \cdot H_{mem} = 13$ sq in

Weight of Ice on Member = $W_{ICEmem} := Id \cdot \frac{Ai_{mem}}{144} = 5$ plf **BLC 3**

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Subject:	Load Analysis of Pipe Mast and Sprint Equipment on Structure #1109
Location:	Norwalk, CT
Rev. 0: 10/27/16	Prepared by: T.J.L Checked by: C.F.C. Job No. 16162.06

Basic Components

Heavy Wind Pressure =	p := 4.00	psf	(User Input NESC 2007 Figure 250-1 & Table 250-1)
Basic Windspeed =	V := 110	mph	(User Input NESC 2007 Figure 250-2(e))
Radial Ice Thickness =	Ir := 0.50	in	(User Input)
Radial Ice Density =	Id := 56.0	pcf	(User Input)

Factors for Extreme Wind Calculation

Elevation of Top of Mast Above Grade =	TME := 106	ft	(User Input)
Multiplier Gust Response Factor =	m := 1.25		(User Input - Only for NESC Extreme wind case)
NESC Factor =	kv := 1.43		(User Input from NESC 2007 Table 250-3 equation)
Importance Factor =	I := 1.0		(User Input from NESC 2007 Section 250.C.2)

Velocity Pressure Coefficient = $Kz := 2.01 \cdot \left(\frac{TME}{900}\right)^{\frac{2}{9.5}} = 1.281$ (NESC 2007 Table 250-2)

Exposure Factor = $Es := 0.346 \left[\frac{33}{(0.67 \cdot TME)}\right]^{\frac{1}{7}} = 0.31$ (NESC 2007 Table 250-3)

Response Term = $Bs := \frac{1}{\left(1 + 0.375 \cdot \frac{TME}{220}\right)} = 0.847$ (NESC 2007 Table 250-3)

Gust Response Factor = $Grf := \frac{\left[1 + \left(2.7 \cdot Es \cdot Bs^{\frac{1}{2}}\right)\right]}{kv^2} = 0.866$ (NESC 2007 Table 250-3)

Wind Pressure = $qz := 0.00256 \cdot Kz \cdot V^2 \cdot Grf \cdot I = 34.4$ psf (NESC 2007 Section 250.C.2)

Shape Factors

NUS Design Criteria Issued April 12, 2007

Shape Factor for Round Members =	$Cd_R := 1.3$	(User Input)
Shape Factor for Flat Members =	$Cd_F := 1.6$	(User Input)
Shape Factor for Coax Cables Attached to Outside of Pole =	$Cd_{coax} := 1.45$	(User Input)

Overload Factors

NU Design Criteria Table

Overload Factors for Wind Loads:

NESC Heavy Loading =	**2.5**	(User Input)	Apply in Risa-3D Analysis
NESC Extreme Loading =	**1.0**	(User Input)	Apply in Risa-3D Analysis

Overload Factors for Vertical Loads:

NESC Heavy Loading =	**1.5**	(User Input)	Apply in Risa-3D Analysis
NESC Extreme Loading =	**1.0**	(User Input)	Apply in Risa-3D Analysis

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Subject:	Load Analysis of Pipe Mast and Sprint Equipment on Structure #1109
Location:	Norwalk, CT
Rev. 0: 10/27/16	Prepared by: T.J.L Checked by: C.F.C. Job No. 16162.06

Development of Wind & Ice Load on PCS Mast

PCS Mast Data: (Pipe 10.0" SCH. 40)

Mast Shape =	Round		(User Input)
Mast Diameter =	$D_{mast} := 10.8$	in	(User Input)
Mast Length =	$L_{mast} := 22.5$	ft	(User Input)
Mast Thickness =	$t_{mast} := 0.365$	in	(User Input)

Wind Load (NESC Extreme)

Mast Projected Surface Area = $A_{mast} := \frac{D_{mast}}{12} = 0.9$ sf/ft

Total Mast Wind Force (Above NU Structure) =	$qz \cdot Cd_R \cdot A_{mast} \cdot m = 50$	plf	**BLC 5,7**
Total Mast Wind Force (Below NU Structure) =	$qz \cdot Cd_R \cdot A_{mast} = 40$	plf	**BLC 5,7**

Wind Load (NESE Heavy)

Mast Projected Surface Area w/ Ice = $AICE_{mast} := \frac{(D_{mast} + 2 \cdot Ir)}{12} = 0.983$ sf/ft

Total Mast Wind Force w/ Ice =	$p \cdot Cd_R \cdot AICE_{mast} = 5$	plf	**BLC 4,6**

Gravity Loads (without ice)

Weight of the Mast =	Self Weight	**(Computed internally by Risa-3D)**	plf	**BLC 1**

Gravity Loads (ice only)

Ice Area per Linear Foot = $Ai_{mast} := \frac{\pi}{4}\left[(D_{mast} + Ir \cdot 2)^2 - D_{mast}^2\right] = 17.7$ sq in

Weight of Ice on Mast =	$W_{ICEmast} := Id \cdot \frac{Ai_{mast}}{144} = 7$	plf	**BLC 3**

Development of Wind & Ice Load on Antennas

Antenna Data: (Sprint)

Antenna Model =	RFS APXVSPP18-C		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 72$	in	(User Input)
Antenna Width =	$W_{ant} := 11.8$	in	(User Input)
Antenna Thickness =	$T_{ant} := 7$	in	(User Input)
Antenna Weight =	$WT_{ant} := 57$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 3$		(User Input)

Wind Load (NESC Extreme)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot W_{ant}}{144} = 5.9$	sf	
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 17.7$	sf	
Total Antenna Wind Force =	$F_{ant} := qz \cdot Cd_F \cdot A_{ant} \cdot m = 1216$	lbs	**BLC 5,7**

Wind Load (NESC Heavy)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna w/ Ice =	$SA_{ICEant} := \frac{(L_{ant} + 1) \cdot (W_{ant} + 1)}{144} = 6.5$	sf	
Antenna Projected Surface Area w/ Ice =	$A_{ICEant} := SA_{ICEant} \cdot N_{ant} = 19.5$	sf	
Total Antenna Wind Force w/ Ice =	$Fi_{ant} := p \cdot Cd_F \cdot A_{ICEant} = 125$	lbs	**BLC 4,6**

Gravity Load (without ice)

Weight of All Antennas =	$WT_{ant} \cdot N_{ant} = 171$	lbs	**BLC 2**

Gravity Load (ice only)

Volume of Each Antenna =	$V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 5947$	cu in	
Volume of Ice on Each Antenna =	$V_{ice} := (L_{ant} + 1)(W_{ant} + 1) \cdot (T_{ant} + 1) - V_{ant} = 1528$	cu in	
Weight of Ice on Each Antenna =	$W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 50$	lbs	
Weight of Ice on All Antennas =	$W_{ICEant} \cdot N_{ant} = 149$	lbs	**BLC 3**

Development of Wind & Ice Load on Mounts

Mount Data: (Sprint)

Mount Type =	Tri-Sector Chain Mount		
Platform Shape =	Flat		(User Input)
Mount Weight =	$WT_{mnt} := 160$	lbs	(User Input)
Mount Weight w/ Ice =	$WT_{mnt.ice} := 200$	lbs	(User Input)

Wind Load (NESC Extreme)

Total Platform Wind Force = $F_{plt} := 0$ (Mount Shielded by Antennas) lbs **BLC 5,7**

Wind Load (NESC Heavy)

Total Platform Wind Force w/ Ice = $Fi_{plt} := 0$ (Mount Shielded by Antennas) lbs **BLC 4,6**

Gravity Load (without ice)

Weight of Platform = $WT_{mnt} = 160$ lbs **BLC 2**

Gravity Loads (ice only)

Weight of Ice on Platform = $WT_{mnt.ice} - WT_{mnt} = 40$ lbs **BLC 3**

Development of Wind & Ice Load on Coax Cables

Coax Cable Data:

Coax Type =	HELIAX 1-5/8"		
Shape =	Round		(User Input)
Coax Outside Diameter =	$D_{coax} := 1.98$	in	(User Input)
Coax Cable Length =	$L_{coax} := 20$	ft	(User Input)
Weight of Coax per foot =	$Wt_{coax} := 1.04$	plf	(User Input)
Total Number of Coax =	$N_{coax} := 18$		(User Input)
No. of Coax Projecting Outside Face of PCS Mast =	$NP_{coax} := 6$		(User Input)

Wind Load (NESC Extreme)

Coax projected surface area = $A_{coax} := \frac{(NP_{coax} D_{coax})}{12} = 1$ sf/ft

Total Coax Wind Force (Above NU Structure) = $F_{coax} := qz \cdot Cd_{coax} \cdot A_{coax} \cdot m = 62$ plf **BLC 5,7**

Total Coax Wind Force (Below NU Structure) = $F_{coax} := qz \cdot Cd_{coax} \cdot A_{coax} = 49$ plf **BLC 5,7**

Wind Load (NESC Heavy)

Coax projected surface area w/ Ice = $AICE_{coax} := \frac{NP_{coax} \cdot (D_{coax} + 2 \cdot Ir)}{12} = 1.5$ sf/ft

Total Coax Wind Force w/ Ice = $Fi_{coax} := p \cdot Cd_{coax} \cdot AICE_{coax} = 9$ plf **BLC 4,6**

Gravity Loads (without ice)

Weight of all cables w/o ice = $WT_{coax} := Wt_{coax} \cdot N_{coax} = 19$ plf **BLC 2**

Gravity Load (ice only)

Ice Area per Linear Foot = $Ai_{coax} := \frac{\pi}{4}\left[(D_{coax} + 2 \cdot Ir)^2 - D_{coax}^2\right] = 3.9$ sq in

Ice Weight All Coax per foot = $WTi_{coax} := N_{coax} \cdot Id \cdot \frac{Ai_{coax}}{144} = 27$ plf **BLC 3**

CENTEK engineering
Centered on Solutions
63-2 North Branford Road
Branford, CT 06405
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P: (203) 488-0580
F: (203) 488-8587

Subject:	Load Analysis of Pipe Mast and Sprint Equipment on Structure #1109
Location:	Norwalk, CT
Rev. 0: 10/27/16	Prepared by: T.J.L Checked by: C.F.C. Job No. 16162.06

Development of Wind & Ice Load on Brace Member

Member Data: HSS4x4x1/4

Shape =	Flat		(User Input)
Width =	$W_{mem} := 4$	in	(User Input)
Length =	$L_{mem} := 5.67$	ft	(User Input)
Height =	$H_{mem} := 4$	in	(User Input)

Wind Load (NESC Extreme)

Member Projected Surface Area = $A_{mem} := \frac{W_{mem}}{12} = 0.333$

Total Member Wind Force = $qz \cdot Cd_F \cdot A_{mem} = 18$ plf **BLC 5,7**

Wind Load (NESE Heavy)

Member Projected Surface Area w/ Ice = $AICE_{mem} := \frac{(W_{mem} + 2 \cdot Ir)}{12} = 0.417$

Total Member Wind Force w/ Ice = $p \cdot Cd_F \cdot AICE_{mem} = 3$ plf **BLC 4,6**

Gravity Loads (without ice)

Weight of the Member = Self Weight **(Computed internally by Risa-3D)** plf **BLC 1**

Gravity Loads (ice only)

Ice Area per Linear Foot = $Ai_{mem} := (W_{mem} + 2 \cdot Ir) \cdot (H_{mem} + 2 \cdot Ir) - W_{mem} \cdot H_{mem} = 9$ sq in

Weight of Ice on Member = $W_{ICEmem} := Id \cdot \frac{Ai_{mem}}{144} = 4$ plf **BLC 3**

CENTEK engineering, INC.
Consulting Engineers
63-2 North Branford Road
Branford, CT 06405
Ph. 203-488-0580 / Fax. 203-488-8587

Subject: **Analysis of NESC Heavy Wind and NESC Extreme Wind for Obtaining Reactions Applied to Utility Pole Tabulated Load Cases**

Location: **Norwalk, CT**

Date: 10/27/16 Prepared by: T.J.L. Checked by: C.F.C. Job No. 16162.06

Load Case	Description
1	Self Weight (Mast)
2	Weight of Appurtenances
3	Weight of Ice Only
4	NESC Heavy Wind
5	NESC Extreme Wind

Footnotes:

CENTEK engineering, INC.
Consulting Engineers
63-2 North Branford Road
Branford, CT 06405
Ph. 203-488-0580 / Fax. 203-488-8587

Subject: **Analysis of NESC Heavy Wind and NESC Extreme Wind for Obtaining Reactions Applied to Utility Pole Load Combinations Table**

Location: **Norwalk, CT**

Date: 10/27/16 Prepared by: T.J.L. Checked by: C.F.C. Job No. 16162.06

Load Combination	Description	Envelope Soultion	Wind Factor	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	NESC Heavy Wind		1		1	1.5	2	1.5	3	1.5	4	2.5		
2	NESC Extreme Wind		1		1	1	2	1	5	1				

Footnotes:
(1) BLC = Basic Load Case

Global

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Increase Nailing Capacity for Wind?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automaticly Iterate Stiffness for Walls?	No
Maximum Iteration Number for Wall Stiffness	3
Gravity Acceleration (ft/sec^2)	32.2
Wall Mesh Size (in)	12
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 9th: ASD
RISAConnection Code	AISC 14th(360-10): ASD
Cold Formed Steel Code	AISI 1999: ASD
Wood Code	AF&PA NDS-97: ASD
Wood Temperature	< 100F
Concrete Code	ACI 318-02
Masonry Code	ACI 530-05: ASD
Aluminum Code	AA ADM1-05: ASD - Building

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

Global, Continued

Seismic Code	UBC 1997
Seismic Base Elevation (ft)	Not Entered
Add Base Weight?	No
Ct Z	.035
Ct X	.035
T Z (sec)	Not Entered
T X (sec)	Not Entered
R Z	8.5
R X	8.5
Ca	.36
Cv	.54
Nv	1
Occupancy Category	4
Seismic Zone	3
Seismic Detailing Code	ASCE 7-05
Om Z	1
Om X	1
Rho Z	1
Rho X	1

Footing Overturning Safety Factor	1.5
Check Concrete Bearing	No
Footing Concrete Weight (k/ft^3)	0
Footing Concrete f'c (ksi)	3
Footing Concrete Ec (ksi)	4000
Lamda	1
Footing Steel fy (ksi)	60
Minimum Steel	0.0018
Maximum Steel	0.0075
Footing Top Bar	#3
Footing Top Bar Cover (in)	3.5
Footing Bottom Bar	#3
Footing Bottom Bar Cover (in)	3.5
Pedestal Bar	#3
Pedestal Bar Cover (in)	1.5
Pedestal Ties	#3

Hot Rolled Steel Properties

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

Hot Rolled Steel Design Parameters

	Label	Shape	Leng...	Lbyy[ft]	Lbzz[ft]	Lcomp ...	Lcomp ...	Kyy	Kzz	Cm...	Cm...	Cb	y s...	z s...	Functi...
1	M1	Mast	34												Lateral
2	M2	Brace	1												Lateral
3	M3	Brace	5												Lateral
4	M4	Brace	1												Lateral
5	M5	Brace	1												Lateral
6	M6	Brace	5												Lateral
7	M7	Brace	1												Lateral

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Mast	PIPE 12.0	Beam	Pipe	A53 Gr. B	Typical	13.7	262	262	523
2	Brace	HSS6x6x4	Beam	Tube	A500 Gr.46	Typical	5.24	28.6	28.6	45.6

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design R...
1	M1	N1	N4			Mast	Beam	Pipe	A53 Gr. B	Typical
2	M2	N8	N12			Brace	Beam	Tube	A500 Gr.46	Typical
3	M3	N12	N11			Brace	Beam	Tube	A500 Gr.46	Typical
4	M4	N11	N7			Brace	Beam	Tube	A500 Gr.46	Typical
5	M5	N6	N10			Brace	Beam	Tube	A500 Gr.46	Typical
6	M6	N10	N9			Brace	Beam	Tube	A500 Gr.46	Typical
7	M7	N9	N5			Brace	Beam	Tube	A500 Gr.46	Typical

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From ...
1	N1	0	0	0	0	
2	N2	0	1	0	0	
3	N3	0	6	0	0	
4	N4	0	34	0	0	
5	N5	2.5	1	-1	0	
6	N6	-2.5	1	-1	0	
7	N7	2.5	6	-1	0	
8	N8	-2.5	6	-1	0	
9	N9	2.5	1	0	0	
10	N10	-2.5	1	0	0	
11	N11	2.5	6	0	0	
12	N12	-2.5	6	0	0	

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]	Footing
1	N8	Reaction	Reaction	Reaction				
2	N7	Reaction	Reaction	Reaction				
3	N5	Reaction	Reaction	Reaction				
4	N6	Reaction	Reaction	Reaction				

Member Point Loads (BLC 2 : Weight of Appurtenances)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M1	Y	-.101	31.5

Member Point Loads (BLC 3 : Weight of Ice Only)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M1	Y	-.118	31.5

Member Point Loads (BLC 4 : NESC Heavy Wind)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M1	Z	.097	31.5

Member Point Loads (BLC 5 : NESC Extreme Wind)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M1	Z	.955	31.5

Joint Loads and Enforced Displacements

Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft, k*s^2*ft)]
No Data to Print ...			

Member Distributed Loads (BLC 2 : Weight of Appurtenances)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	Y	-.019	-.019	0	31.5

Member Distributed Loads (BLC 3 : Weight of Ice Only)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	Y	-.008	-.008	0	0
2	M1	Y	-.027	-.027	0	31.5
3	M2	Y	-.005	-.005	0	0
4	M3	Y	-.005	-.005	0	0
5	M4	Y	-.005	-.005	0	0
6	M6	Y	-.005	-.005	0	0
7	M5	Y	-.005	-.005	0	0
8	M7	Y	-.005	-.005	0	0

Member Distributed Loads (BLC 4 : NESC Heavy Wind)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	Z	.006	.006	0	0
2	M1	Z	.006	.006	0	31.5
3	M3	Z	.004	.004	0	0
4	M6	Z	.004	.004	0	0

Member Distributed Loads (BLC 5 : NESC Extreme Wind)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	Z	.048	.048	0	13
2	M1	Z	.06	.06	13	0
3	M1	Z	.033	.033	0	13

Member Distributed Loads (BLC 5 : NESC Extreme Wind) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
4	M1	Z	.042	.042	13	31.5
5	M3	Z	.028	.028	0	0
6	M6	Z	.028	.028	0	0

Basic Load Cases

	BLC Description	Category	X Gra...	Y Gravity	Z Gra...	Joint	Point	Distrib..	Area(...	Surfa...
1	Self Weight	None		-1						
2	Weight of Appurtenances	None					1	1		
3	Weight of Ice Only	None					1	8		
4	NESC Heavy Wind	None					1	4		
5	NESC Extreme Wind	None					1	6		

Load Combinations

	Description	Sol...	PDelta	SR..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact...
1	NESC Heavy Wind	Yes			1	1.5	2	1.5	3	1.5	4	-2.5								
2	NESC Extreme Wind	Yes			1	1	2	1	5	-1										
3	Self Weight				1	1														

Envelope Joint Reactions

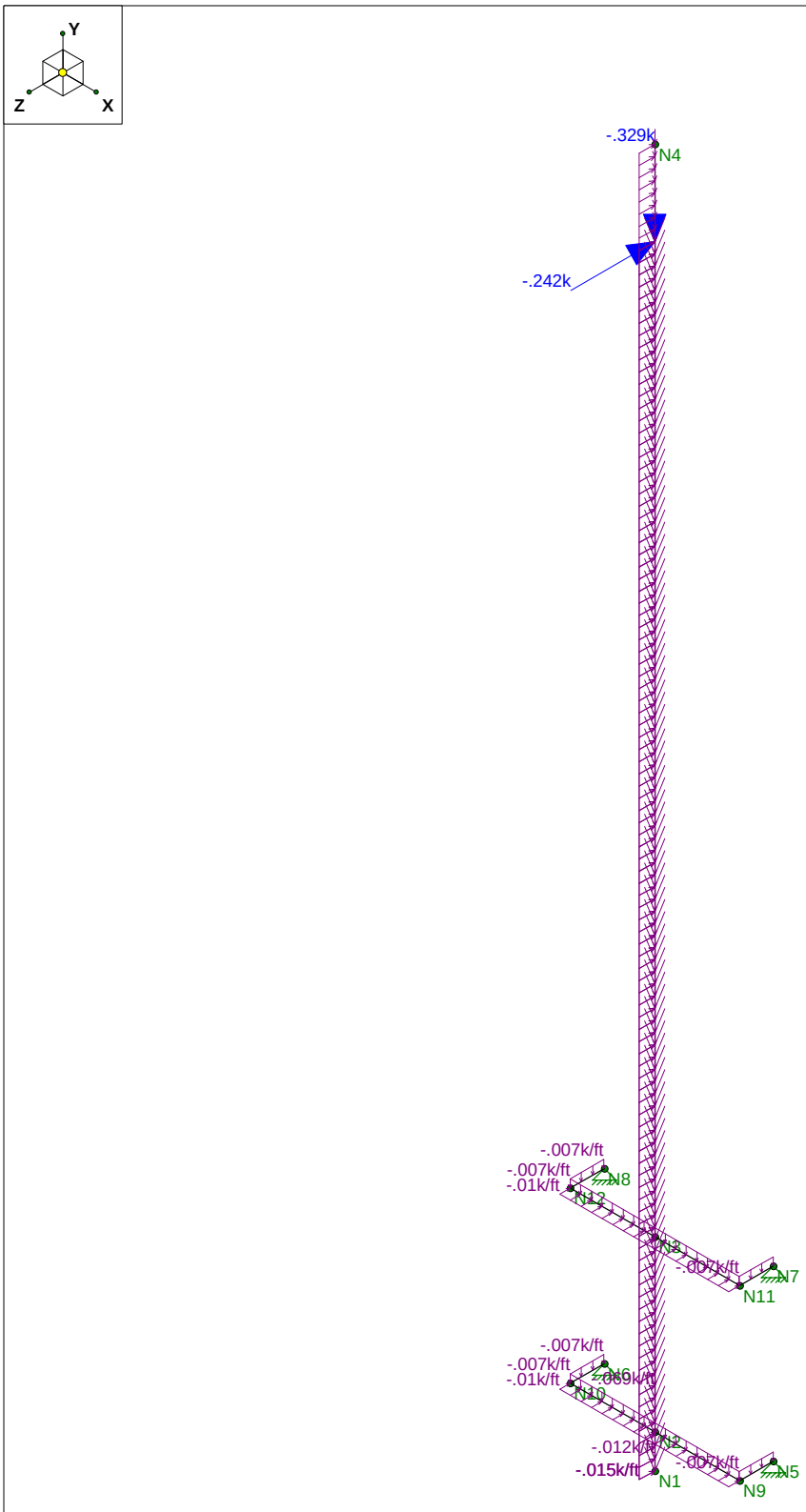
	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N8	max	7.731	2	1.658	1	7.798	2	0	1	0	1	0	1
2		min	1.69	1	1.391	2	1.708	1	0	1	0	1	0	1
3	N7	max	-1.69	1	1.658	1	7.798	2	0	1	0	1	0	1
4		min	-7.731	2	1.391	2	1.708	1	0	1	0	1	0	1
5	N5	max	5.627	2	1.226	1	-1.045	1	0	1	0	1	0	1
6		min	1.048	1	-.124	2	-5.636	2	0	1	0	1	0	1
7	N6	max	-1.048	1	1.226	1	-1.045	1	0	1	0	1	0	1
8		min	-5.627	2	-.124	2	-5.636	2	0	1	0	1	0	1
9	Totals:	max	0	1	5.767	1	4.325	2						
10		min	0	1	2.534	2	1.325	1						

Joint Reactions

	LC	Joint Label	X [k]	Y [k]	Z [k]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
1	1	N8	1.69	1.658	1.708	0	0	0
2	1	N7	-1.69	1.658	1.708	0	0	0
3	1	N5	1.048	1.226	-1.045	0	0	0
4	1	N6	-1.048	1.226	-1.045	0	0	0
5	1	Totals:	0	5.767	1.325			
6	1	COG (ft):	X: 0	Y: 16.233	Z: -.012			

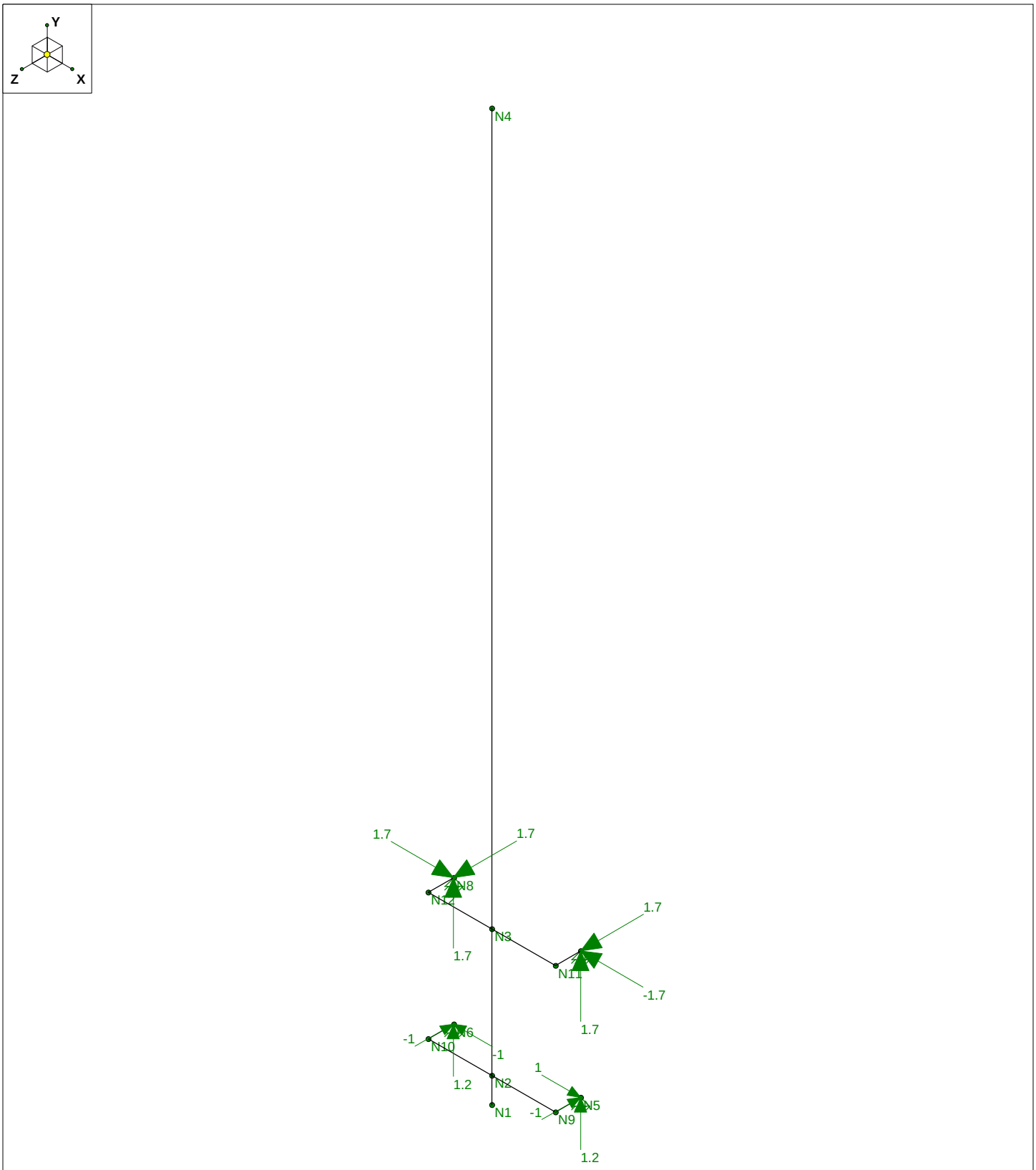
Joint Reactions

	LC	Joint Label	X [k]	Y [k]	Z [k]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
1	2	N8	7.731	1.391	7.798	0	0	0
2	2	N7	-7.731	1.391	7.798	0	0	0
3	2	N5	5.627	-.124	-5.636	0	0	0
4	2	N6	-5.627	-.124	-5.636	0	0	0
5	2	Totals:	0	2.534	4.325			
6	2	COG (ft):	X: 0	Y: 15.953	Z: -.014			



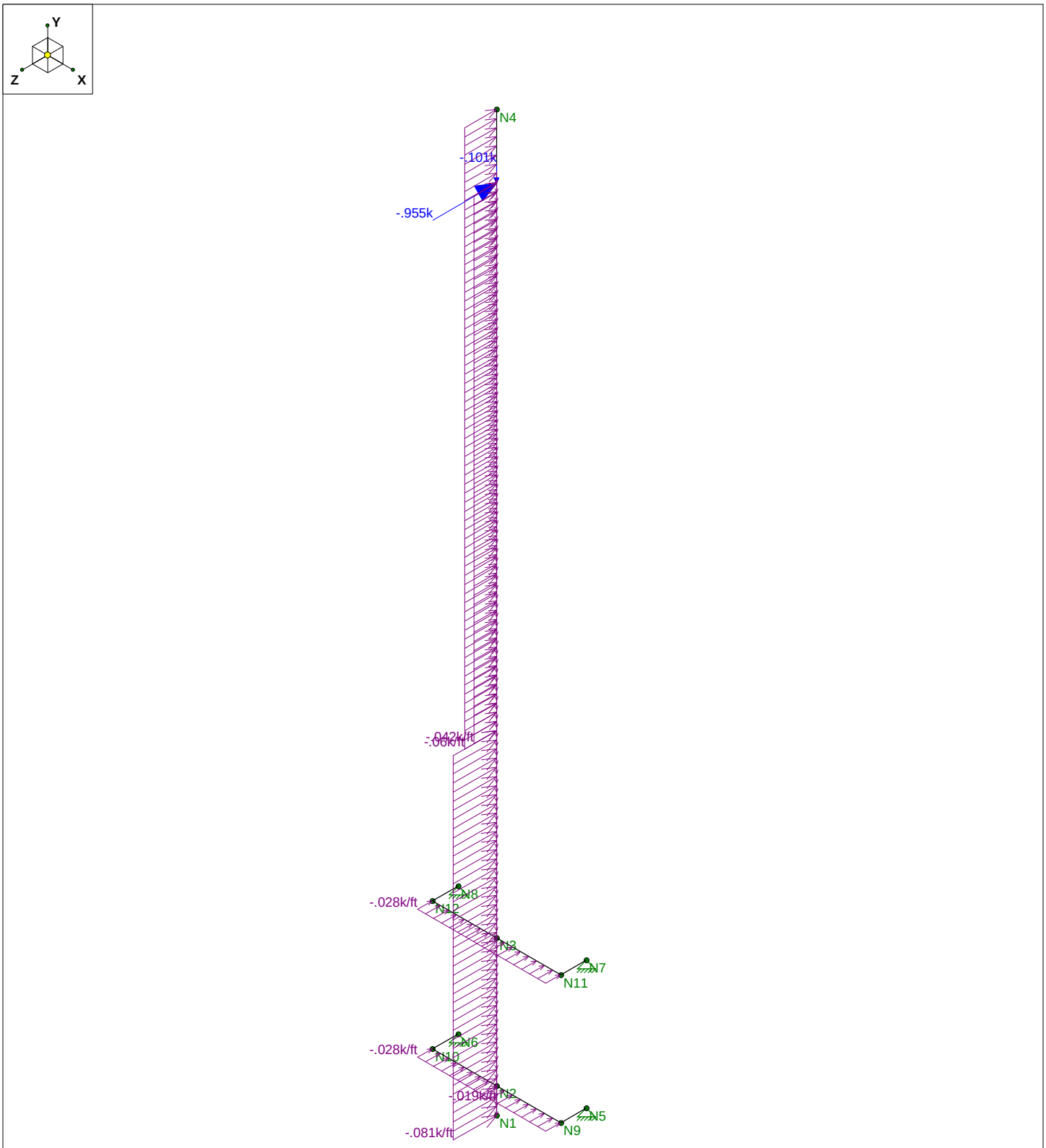
Loads: LC 1, NESC Heavy Wind

CENTEK Engineering, Inc.		
tjl, cfc	Tower # 1109 - T-Mobile Mast	Oct 27, 2016 at 11:27 AM
16162.06 - CT11885B	LC #1 Loads	NESC - T-Mobile.r3d



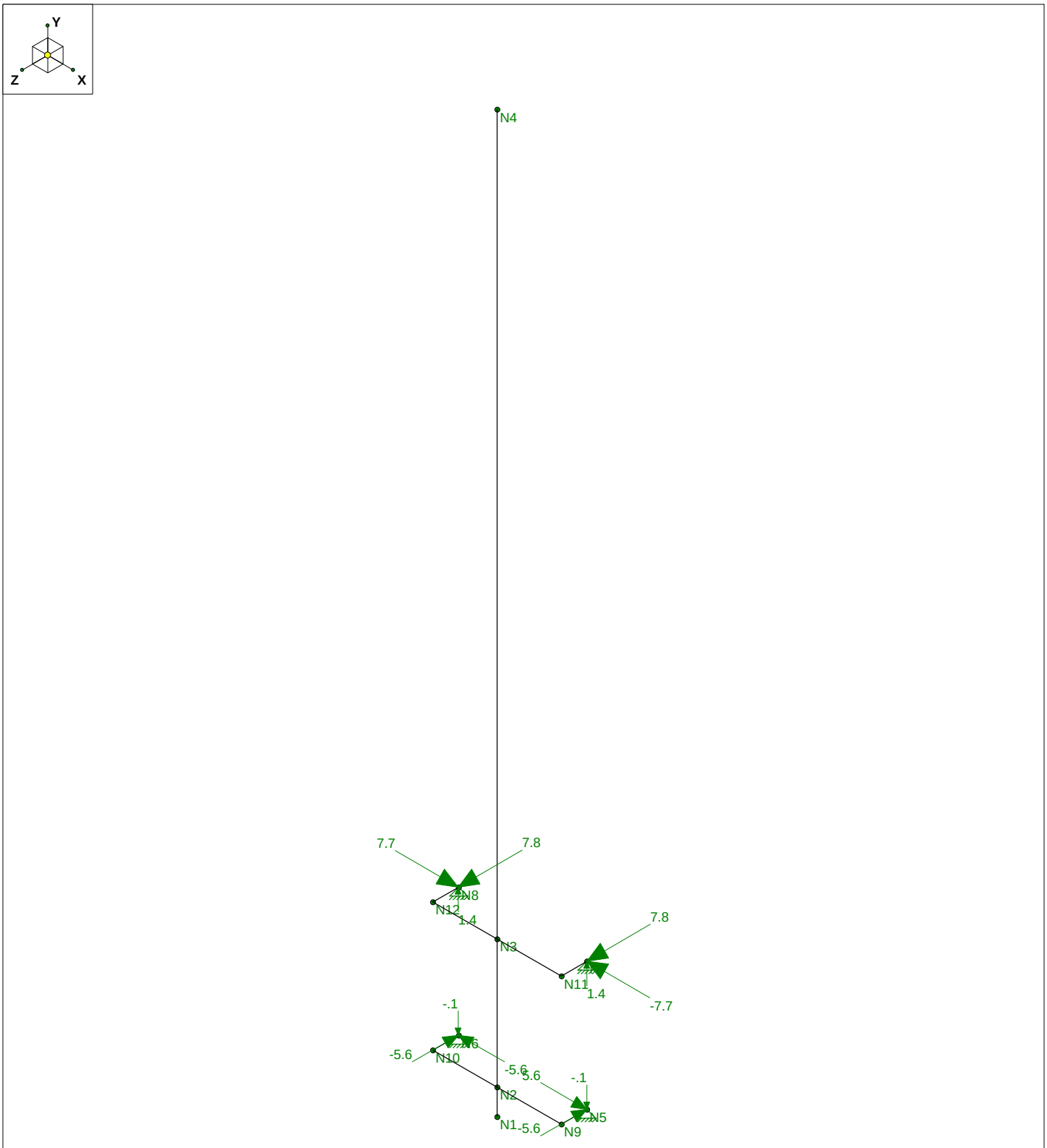
Results for LC 1, NESC Heavy Wind
Z-direction Reaction Units are k and k-ft

CENTEK Engineering, Inc.		
tjl, cfc	Tower # 1109 - T-Mobile Mast	Oct 27, 2016 at 11:27 AM
16162.06 - CT11885B	LC #1 Reactions	NESC - T-Mobile.r3d



Loads: LC 2, NESC Extreme Wind

CENTEK Engineering, Inc.		
tjl, cfc	Tower # 1109 - T-Mobile Mast	Oct 27, 2016 at 11:27 AM
16162.06 - CT11885B	LC #2 Loads	NESC - T-Mobile.r3d



Results for LC 2, NESC Extreme Wind
Z-direction Reaction Units are k and k-ft

CENTEK Engineering, Inc.		
tjl, cfc	Tower # 1109 - T-Mobile Mast	Oct 27, 2016 at 11:28 AM
16162.06 - CT11885B	LC #2 Reactions	NESC - T-Mobile.r3d

Global

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Increase Nailing Capacity for Wind?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automaticly Iterate Stiffness for Walls?	No
Maximum Iteration Number for Wall Stiffness	3
Gravity Acceleration (ft/sec^2)	32.2
Wall Mesh Size (in)	12
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 9th: ASD
RISAConnection Code	AISC 14th(360-10): ASD
Cold Formed Steel Code	AISI 1999: ASD
Wood Code	AF&PA NDS-97: ASD
Wood Temperature	< 100F
Concrete Code	ACI 318-02
Masonry Code	ACI 530-05: ASD
Aluminum Code	AA ADM1-05: ASD - Building

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

Global, Continued

Seismic Code	UBC 1997
Seismic Base Elevation (ft)	Not Entered
Add Base Weight?	No
Ct Z	.035
Ct X	.035
T Z (sec)	Not Entered
T X (sec)	Not Entered
R Z	8.5
R X	8.5
Ca	.36
Cv	.54
Nv	1
Occupancy Category	4
Seismic Zone	3
Seismic Detailing Code	ASCE 7-05
Om Z	1
Om X	1
Rho Z	1
Rho X	1

Footing Overturning Safety Factor	1.5
Check Concrete Bearing	No
Footing Concrete Weight (k/ft^3)	0
Footing Concrete f'c (ksi)	3
Footing Concrete Ec (ksi)	4000
Lamda	1
Footing Steel fy (ksi)	60
Minimum Steel	0.0018
Maximum Steel	0.0075
Footing Top Bar	#3
Footing Top Bar Cover (in)	3.5
Footing Bottom Bar	#3
Footing Bottom Bar Cover (in)	3.5
Pedestal Bar	#3
Pedestal Bar Cover (in)	1.5
Pedestal Ties	#3

Hot Rolled Steel Properties

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

Hot Rolled Steel Design Parameters

	Label	Shape	Leng...	Lbyy[ft]	Lbzz[ft]	Lcomp ...	Lcomp ...	Kyy	Kzz	Cm...	Cm...	Cb	y s...	z s...	Functi...
1	M1	Mast	22.42												Lateral
2	M2	Brace	1												Lateral
3	M3	Brace	5												Lateral
4	M4	Brace	1												Lateral
5	M5	Brace	1												Lateral
6	M6	Brace	5												Lateral
7	M7	Brace	1												Lateral

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Mast	PIPE 10.0	Beam	Pipe	A53 Gr. B	Typical	11.5	151	151	302
2	Brace	HSS4x4x4	Beam	Tube	A500 Gr.46	Typical	3.37	7.8	7.8	12.8

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design R...
1	M1	N1	N4			Mast	Beam	Pipe	A53 Gr. B	Typical
2	M2	N8	N12			Brace	Beam	Tube	A500 Gr.46	Typical
3	M3	N12	N11			Brace	Beam	Tube	A500 Gr.46	Typical
4	M4	N11	N7			Brace	Beam	Tube	A500 Gr.46	Typical
5	M5	N6	N10			Brace	Beam	Tube	A500 Gr.46	Typical
6	M6	N10	N9			Brace	Beam	Tube	A500 Gr.46	Typical
7	M7	N9	N5			Brace	Beam	Tube	A500 Gr.46	Typical

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From ...
1	N1	0	0	0	0	
2	N2	0	.5	0	0	
3	N3	0	5.83	0	0	
4	N4	0	22.42	0	0	
5	N5	2.5	.5	-1	0	
6	N6	-2.5	.5	-1	0	
7	N7	2.5	5.83	-1	0	
8	N8	-2.5	5.83	-1	0	
9	N9	2.5	.5	0	0	
10	N10	-2.5	.5	0	0	
11	N11	2.5	5.83	0	0	
12	N12	-2.5	5.83	0	0	

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]	Footing
1	N8	Reaction	Reaction	Reaction				
2	N7	Reaction	Reaction	Reaction				
3	N5	Reaction	Reaction	Reaction				
4	N6	Reaction	Reaction	Reaction				

Member Point Loads (BLC 2 : Weight of Appurtenances)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M1	Y	-.171	19.77
2	M1	Y	-.16	19.77

Member Point Loads (BLC 3 : Weight of Ice Only)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M1	Y	-.149	19.77
2	M1	Y	-.04	19.77

Member Point Loads (BLC 4 : NESC Heavy Wind)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M1	Z	.125	19.77

Member Point Loads (BLC 5 : NESC Extreme Wind)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M1	Z	1.216	19.77

Joint Loads and Enforced Displacements

Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft, k*s^2*ft)]
No Data to Print ...			

Member Distributed Loads (BLC 2 : Weight of Appurtenances)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	Y	-.019	-.019	0	19.77

Member Distributed Loads (BLC 3 : Weight of Ice Only)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	Y	-.007	-.007	0	0
2	M1	Y	-.027	-.027	0	19.77
3	M2	Y	-.004	-.004	0	0
4	M3	Y	-.004	-.004	0	0
5	M4	Y	-.004	-.004	0	0
6	M6	Y	-.004	-.004	0	0
7	M5	Y	-.004	-.004	0	0
8	M7	Y	-.004	-.004	0	0

Member Distributed Loads (BLC 4 : NESC Heavy Wind)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	Z	.005	.005	0	0
2	M1	Z	.009	.009	0	19.77
3	M3	Z	.003	.003	0	0
4	M6	Z	.003	.003	0	0

Member Distributed Loads (BLC 5 : NESC Extreme Wind)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
1	M1	Z	.04	.04	0	11

Member Distributed Loads (BLC 5 : NESC Extreme Wind) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F]	End Magnitude[k/ft,F]	Start Location[ft,%]	End Location[ft,%]
2	M1	Z	.05	.05	11	0
3	M1	Z	.049	.049	0	11
4	M1	Z	.062	.062	11	19.77
5	M3	Z	.018	.018	0	0
6	M6	Z	.018	.018	0	0

Basic Load Cases

	BLC Description	Category	X Gra...	Y Gravity	Z Gra...	Joint	Point	Distrib..	Area(...	Surfa...
1	Self Weight	None		-1						
2	Weight of Appurtenances	None					2	1		
3	Weight of Ice Only	None					2	8		
4	NESC Heavy Wind	None					1	4		
5	NESC Extreme Wind	None					1	6		

Load Combinations

	Description	Sol...	PDelta	SR..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact...
1	NESC Heavy Wind	Yes			1	1.5	2	1.5	3	1.5	4	2.5								
2	NESC Extreme Wind	Yes			1	1	2	1	5	1										
3	Self Weight				1	1														

Envelope Joint Reactions

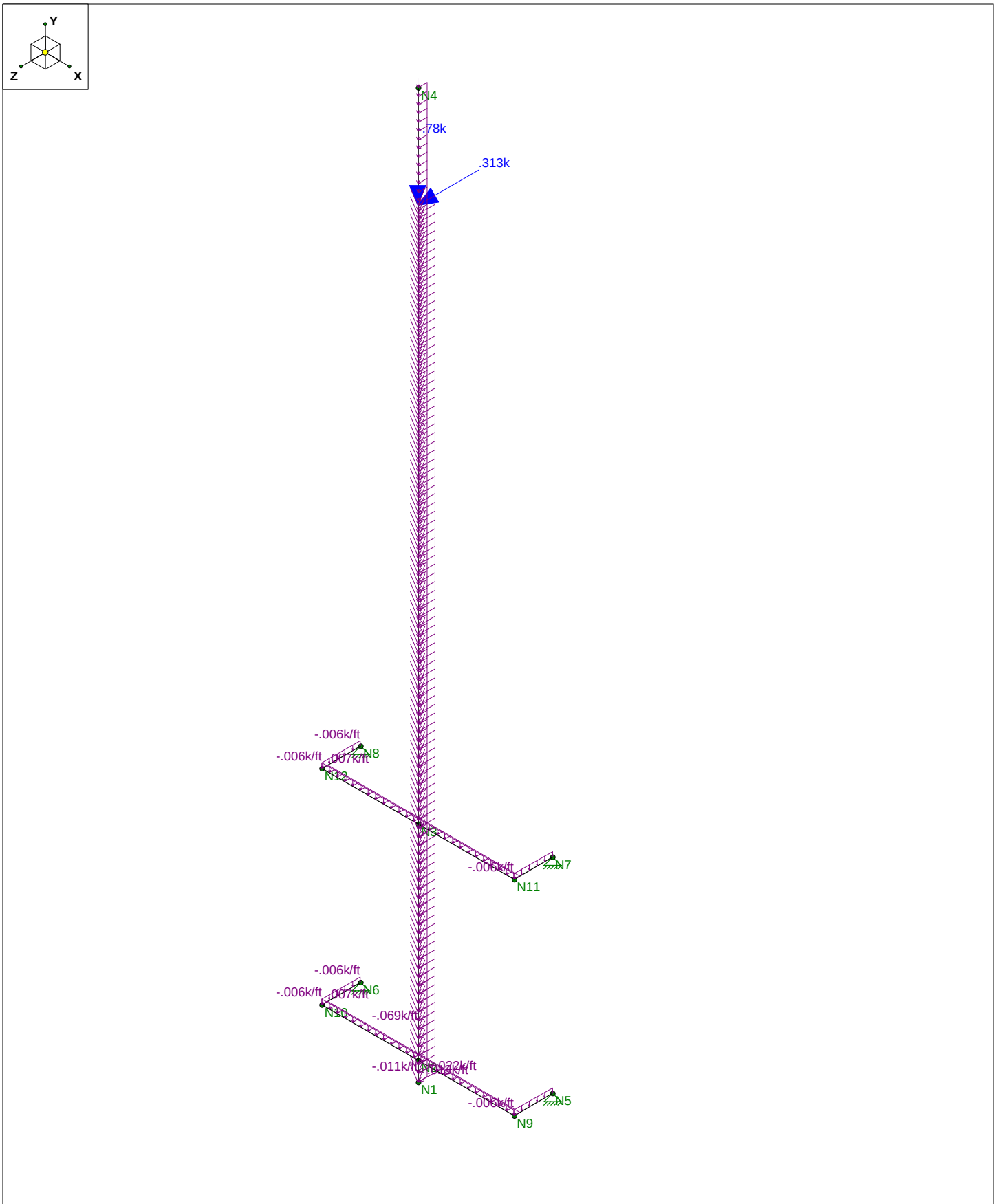
	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N8	max	-1.713	1	.952	1	-1.63	1	0	1	0	1	0	1
2		min	-4.723	2	.239	2	-4.491	2	0	1	0	1	0	1
3	N7	max	4.723	2	.952	1	-1.63	1	0	1	0	1	0	1
4		min	1.713	1	.239	2	-4.491	2	0	1	0	1	0	1
5	N5	max	-1.139	1	1.058	1	2.747	2	0	1	0	1	0	1
6		min	-2.913	2	.634	2	1.073	1	0	1	0	1	0	1
7	N6	max	2.913	2	1.058	1	2.747	2	0	1	0	1	0	1
8		min	1.139	1	.634	2	1.073	1	0	1	0	1	0	1
9	Totals:	max	0	2	4.02	1	-1.113	1						
10		min	0	1	1.745	2	-3.49	2						

Joint Reactions

	LC	Joint Label	X [k]	Y [k]	Z [k]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
1	1	N8	-1.713	.952	-1.63	0	0	0
2	1	N7	1.713	.952	-1.63	0	0	0
3	1	N5	-1.139	1.058	1.073	0	0	0
4	1	N6	1.139	1.058	1.073	0	0	0
5	1	Totals:	0	4.02	-1.113			
6	1	COG (ft):	X: 0	Y: 11.771	Z: -.012			

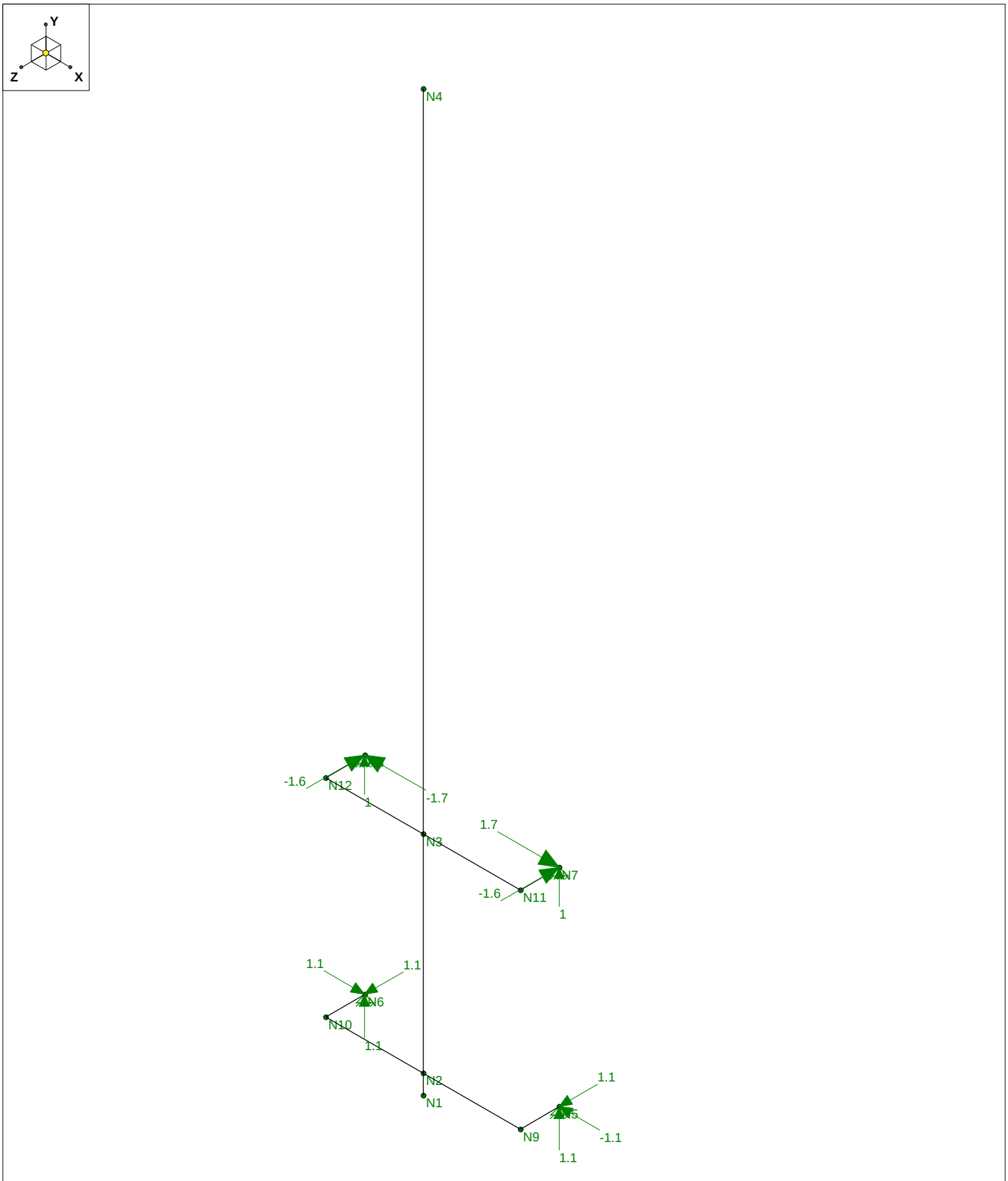
Joint Reactions

	LC	Joint Label	X [k]	Y [k]	Z [k]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
1	2	N8	-4.723	.239	-4.491	0	0	0
2	2	N7	4.723	.239	-4.491	0	0	0
3	2	N5	-2.913	.634	2.747	0	0	0
4	2	N6	2.913	.634	2.747	0	0	0
5	2	Totals:	0	1.745	-3.49			
6	2	COG (ft):	X: 0	Y: 11.808	Z: -.013			



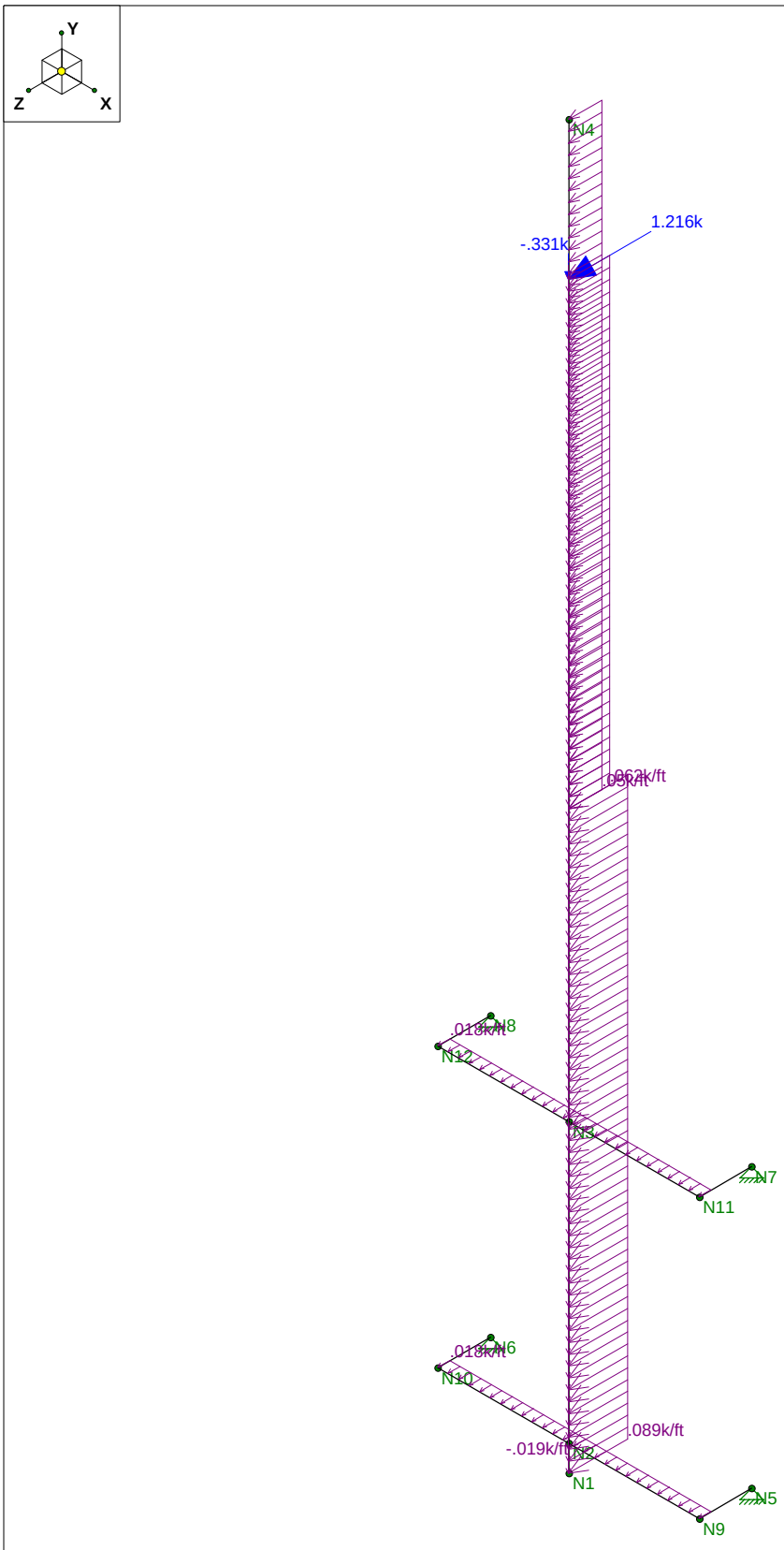
Loads: LC 1, x-dir NESC Heavy Wind on PCS Structure

CENTEK Engineering, Inc.		
tjl, cfc	Tower # 1109 - Sprint Mast	Oct 27, 2016 at 11:33 AM
16162.06 - CT33XC802	LC #1 Loads	NESC - Sprint.r3d



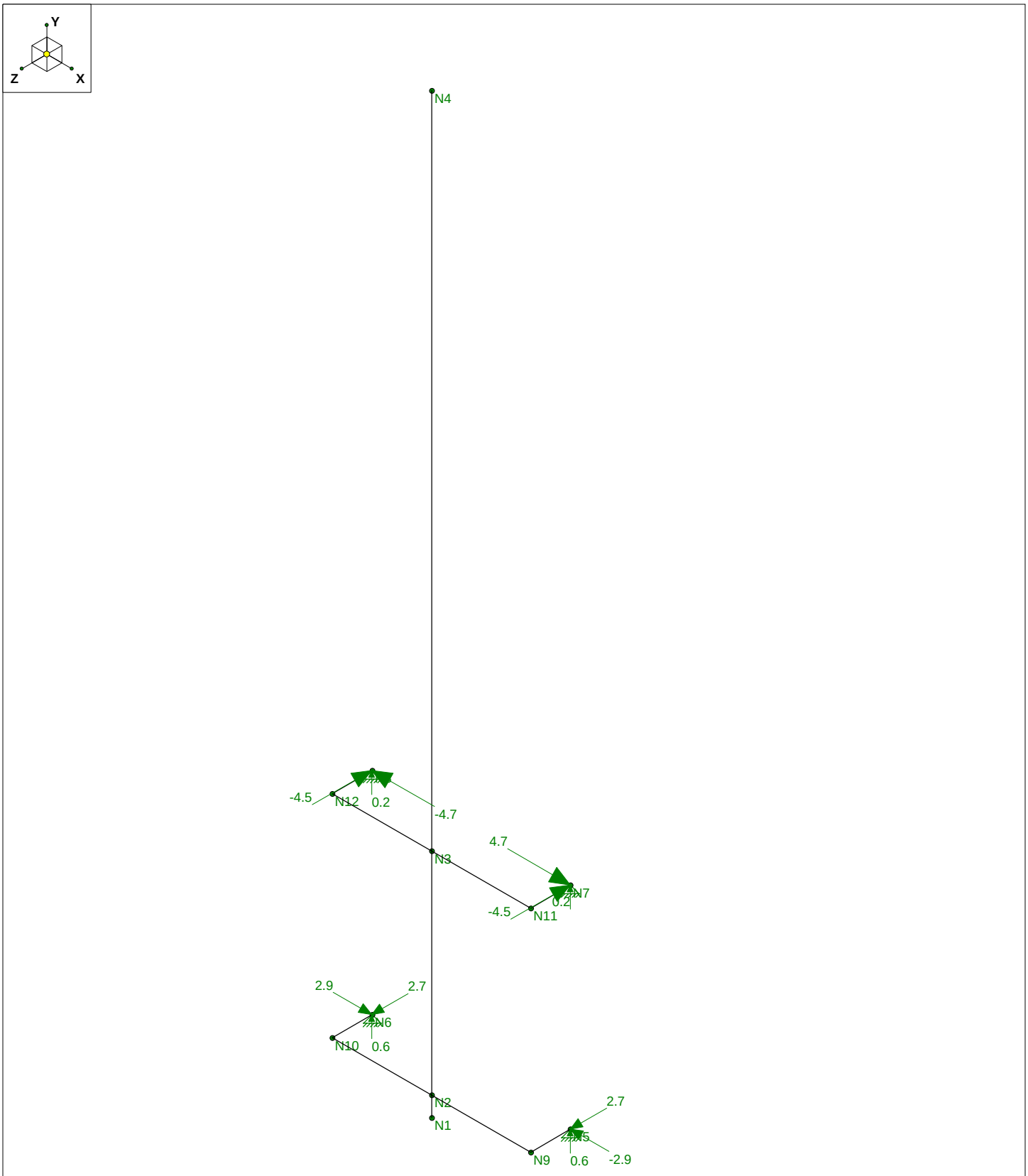
Results for LC 1, NESC Heavy Wind
Z-direction Reaction Units are k and k-ft

CENTEK Engineering, Inc.		
tjl, cfc	Tower # 1109 - Sprint Mast	Oct 27, 2016 at 11:35 AM
16162.06 - CT33XC802	LC #1 Reactions	NESC - Sprint.r3d



Loads: LC 2, NESC Extreme Wind

CENTEK Engineering, Inc.		
tjl, cfc	Tower # 1109 - Sprint Mast	Oct 27, 2016 at 11:34 AM
16162.06 - CT33XC802	LC #2 Loads	NESC - Sprint.r3d



Results for LC 2, NESC Extreme Wind
Z-direction Reaction Units are k and k-ft

CENTEK Engineering, Inc.		
tjl, cfc	Tower # 1109 - Sprint Mast	Oct 27, 2016 at 11:35 AM
16162.06 - CT33XC802	LC #2 Reactions	NESC - Sprint.r3d

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Subject:	Sprint Coax Cable on CL&P Tower # 1109
Location:	Norwalk, CT
Rev. 0: 10/27/16	Prepared by: T.J.L Checked by: C.F.C. Job No. 16162.06

Coax Cable on CL&P Tower

(Sprint SE Leg)

Distance Between Coax Cable Attach Points =

Coax Cable Span = $Coax_{Span} := \begin{pmatrix} 12.5 \\ 15 \\ 14.8 \\ 12.8 \\ 30.2 \end{pmatrix} \cdot ft$ *(User Input)*

Diameter of Coax Cable = $D_{coax} := 1.98 \cdot in$ *(User Input)*

Weight of Coax Cable = $W_{coax} := 1.04 \cdot plf$ *(User Input)*

Number of Coax Cables = $N_{coax} := 9$ *(User Input)*

Number of Projected Coax Cables Transverse = $NP_{Tcoax} := 5$ *(User Input)*

Extreme Wind Pressure = $qz := 34.4 \cdot psf$ *(User Input)*

Heavy Wind Pressure = $p := 4 \cdot psf$ *(User Input)*

Radial Ice Thickness = $Ir := 0.5 \cdot in$ *(User Input)*

Radial Ice Density = $Id := 56 \cdot pcf$ *(User Input)*

Shape Factor = $Cd_{coax} := 1.6$ *(User Input)*

Overload Factor for NESC Heavy Wind Load = $OF_{HW} := 2.5$ *(User Input)*

Overload Factor for NESC Extreme Wind Load = $OF_{EW} := 1.0$ *(User Input)*

Overload Factor for NESC Heavy Vertical Load = $OF_{HV} := 1.5$ *(User Input)*

Overload Factor for NESC Extreme Vertical Load = $OF_{EV} := 1.0$ *(User Input)*

Wind Area with Ice Transverse = $A_{Tice} := \left(NP_{Tcoax} \cdot D_{coax} + 2 \cdot Ir\right) = 10.9 \cdot in$

Wind Area without Ice Transverse = $A_T := \left(NP_{Tcoax} \cdot D_{coax}\right) = 9.9 \cdot in$

Ice Area per Liner Ft = $Ai_{coax} := \frac{\pi}{4} \cdot \left[\left(D_{coax} + 2 \cdot Ir\right)^2 - D_{coax}^{\ 2}\right] = 0.027\,ft^2$

Weight of Ice on All Coax Cables = $W_{ice} := Ai_{coax} \cdot Id \cdot N_{coax} = 13.635 \cdot plf$

Heavy Vertical Load =

$$Heavy_{Vert} := \overrightarrow{\left[\left(N_{coax} \cdot W_{coax} + W_{ice}\right) \cdot Coax_{Span} \cdot OF_{HV}\right]}$$

Heavy Transverse Load =

$$Heavy_{Trans} := \overrightarrow{\left(p \cdot A_{Tice} \cdot Cd_{coax} \cdot Coax_{Span} \cdot OF_{HW}\right)}$$

$$Heavy_{Vert} = \begin{pmatrix} 431 \\ 517 \\ 510 \\ 441 \\ 1042 \end{pmatrix} lb \qquad Heavy_{Trans} = \begin{pmatrix} 182 \\ 218 \\ 215 \\ 186 \\ 439 \end{pmatrix} lb$$

Extreme Vertical Load =

$$Extreme_{Vert} := \overrightarrow{\left[\left(N_{coax} \cdot W_{coax}\right) \cdot Coax_{Span} \cdot OF_{EV}\right]}$$

Extreme Transverse Load =

$$Extreme_{Trans} := \overrightarrow{\left[\left(qz \cdot A_T \cdot Cd_{coax}\right) \cdot Coax_{Span} \cdot OF_{EW}\right]}$$

$$Extreme_{Vert} = \begin{pmatrix} 117 \\ 140 \\ 139 \\ 120 \\ 283 \end{pmatrix} lb \qquad Extreme_{Trans} = \begin{pmatrix} 568 \\ 681 \\ 672 \\ 581 \\ 1371 \end{pmatrix} lb$$

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Subject:	Sprint Coax Cable on CL&P Tower # 1109
Location:	Norwalk, CT
Rev. 0: 10/27/16	Prepared by: T.J.L Checked by: C.F.C. Job No. 16162.06

Coax Cable on CL&P Tower

(Sprint NE Leg)

Distance Between Coax Cable Attach Points =

Coax Cable Span = $Coax_{Span} := \begin{pmatrix} 12.5 \\ 15 \\ 14.8 \\ 12.8 \\ 30.2 \end{pmatrix} \cdot ft$ *(User Input)*

Diameter of Coax Cable = $D_{coax} := 1.98 \cdot in$ *(User Input)*

Weight of Coax Cable = $W_{coax} := 1.04 \cdot plf$ *(User Input)*

Number of Coax Cables = $N_{coax} := 9$ *(User Input)*

Number of Projected Coax Cables Transverse = $NP_{Tcoax} := 4$ *(User Input)*

Extreme Wind Pressure = $qz := 34.4 \cdot psf$ *(User Input)*

Heavy Wind Pressure = $p := 4 \cdot psf$ *(User Input)*

Radial Ice Thickness = $Ir := 0.5 \cdot in$ *(User Input)*

Radial Ice Density = $Id := 56 \cdot pcf$ *(User Input)*

Shape Factor = $Cd_{coax} := 1.6$ *(User Input)*

Overload Factor for NESC Heavy Wind Load = $OF_{HW} := 2.5$ *(User Input)*

Overload Factor for NESC Extreme Wind Load = $OF_{EW} := 1.0$ *(User Input)*

Overload Factor for NESC Heavy Vertical Load = $OF_{HV} := 1.5$ *(User Input)*

Overload Factor for NESC Extreme Vertical Load = $OF_{EV} := 1.0$ *(User Input)*

Wind Area with Ice Transverse = $A_{Tice} := \left(NP_{Tcoax} \cdot D_{coax} + 2 \cdot Ir\right) = 8.92 \cdot in$

Wind Area without Ice Transverse = $A_T := \left(NP_{Tcoax} \cdot D_{coax}\right) = 7.92 \cdot in$

Ice Area per Liner Ft = $Ai_{coax} := \frac{\pi}{4} \cdot \left[\left(D_{coax} + 2 \cdot Ir\right)^2 - D_{coax}^2\right] = 0.027\,ft^2$

Weight of Ice on All Coax Cables = $W_{ice} := Ai_{coax} \cdot Id \cdot N_{coax} = 13.635 \cdot plf$

Heavy Vertical Load =

$$Heavy_{Vert} := \overrightarrow{\left[\left(N_{coax} \cdot W_{coax} + W_{ice}\right) \cdot Coax_{Span} \cdot OF_{HV}\right]}$$

Heavy Transverse Load =

$$Heavy_{Trans} := \overrightarrow{\left(p \cdot A_{Tice} \cdot Cd_{coax} \cdot Coax_{Span} \cdot OF_{HW}\right)}$$

$$Heavy_{Vert} = \begin{pmatrix} 431 \\ 517 \\ 510 \\ 441 \\ 1042 \end{pmatrix} lb \qquad Heavy_{Trans} = \begin{pmatrix} 149 \\ 178 \\ 176 \\ 152 \\ 359 \end{pmatrix} lb$$

Extreme Vertical Load =

$$Extreme_{Vert} := \overrightarrow{\left[\left(N_{coax} \cdot W_{coax}\right) \cdot Coax_{Span} \cdot OF_{EV}\right]}$$

Extreme Transverse Load =

$$Extreme_{Trans} := \overrightarrow{\left[\left(qz \cdot A_T \cdot Cd_{coax}\right) \cdot Coax_{Span} \cdot OF_{EW}\right]}$$

$$Extreme_{Vert} = \begin{pmatrix} 117 \\ 140 \\ 139 \\ 120 \\ 283 \end{pmatrix} lb \qquad Extreme_{Trans} = \begin{pmatrix} 454 \\ 545 \\ 538 \\ 465 \\ 1097 \end{pmatrix} lb$$

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Subject:	T-Mobile Coax Cable on CL&P Tower # 1109
Location:	Norwalk, CT
Rev. 0: 10/27/16	Prepared by: T.J.L Checked by: C.F.C. Job No. 16162.06

Coax Cable on CL&P Tower

(T-Mobile SW Leg)

Distance Between Coax Cable Attach Points =

Coax Cable Span = $Coax_{Span} := \begin{pmatrix} 12.5 \\ 15 \\ 14.8 \\ 12.8 \\ 30.2 \end{pmatrix} \cdot ft$ *(User Input)*

Diameter of Coax Cable = $D_{coax} := 1.98 \cdot in$ *(User Input)*

Weight of Coax Cable = $W_{coax} := 1.04 \cdot plf$ *(User Input)*

Number of Coax Cables = $N_{coax} := 12$ *(User Input)*

Number of Projected Coax Cables Transverse = $NP_{Tcoax} := 6$ *(User Input)*

Extreme Wind Pressure = $qz := 34.7 \cdot psf$ *(User Input)*

Heavy Wind Pressure = $p := 4 \cdot psf$ *(User Input)*

Radial Ice Thickness = $Ir := 0.5 \cdot in$ *(User Input)*

Radial Ice Density = $Id := 56 \cdot pcf$ *(User Input)*

Shape Factor = $Cd_{coax} := 1.6$ *(User Input)*

Overload Factor for NESC Heavy Wind Load = $OF_{HW} := 2.5$ *(User Input)*

Overload Factor for NESC Extreme Wind Load = $OF_{EW} := 1.0$ *(User Input)*

Overload Factor for NESC Heavy Vertical Load = $OF_{HV} := 1.5$ *(User Input)*

Overload Factor for NESC Extreme Vertical Load = $OF_{EV} := 1.0$ *(User Input)*

Wind Area with Ice Transverse = $A_{Tice} := \left(NP_{Tcoax} \cdot D_{coax} + 2 \cdot Ir\right) = 12.88 \cdot in$

Wind Area without Ice Transverse = $A_T := \left(NP_{Tcoax} \cdot D_{coax}\right) = 11.88 \cdot in$

Ice Area per Liner Ft = $Ai_{coax} := \frac{\pi}{4} \cdot \left[\left(D_{coax} + 2 \cdot Ir\right)^2 - D_{coax}^2\right] = 0.027\,ft^2$

Weight of Ice on All Coax Cables = $W_{ice} := Ai_{coax} \cdot Id \cdot N_{coax} = 18.179 \cdot plf$

Heavy Vertical Load =

$$Heavy_{Vert} := \overrightarrow{\left[\left(N_{coax} \cdot W_{coax} + W_{ice}\right) \cdot Coax_{Span} \cdot OF_{HV}\right]}$$

Heavy Transverse Load =

$$Heavy_{Trans} := \overrightarrow{\left(p \cdot A_{Tice} \cdot Cd_{coax} \cdot Coax_{Span} \cdot OF_{HW}\right)}$$

$$Heavy_{Vert} = \begin{pmatrix} 575 \\ 690 \\ 681 \\ 589 \\ 1389 \end{pmatrix} lb \qquad Heavy_{Trans} = \begin{pmatrix} 215 \\ 258 \\ 254 \\ 220 \\ 519 \end{pmatrix} lb$$

Extreme Vertical Load =

$$Extreme_{Vert} := \overrightarrow{\left[\left(N_{coax} \cdot W_{coax}\right) \cdot Coax_{Span} \cdot OF_{EV}\right]}$$

Extreme Transverse Load =

$$Extreme_{Trans} := \overrightarrow{\left[\left(qz \cdot A_T \cdot Cd_{coax}\right) \cdot Coax_{Span} \cdot OF_{EW}\right]}$$

$$Extreme_{Vert} = \begin{pmatrix} 156 \\ 187 \\ 185 \\ 160 \\ 377 \end{pmatrix} lb \qquad Extreme_{Trans} = \begin{pmatrix} 687 \\ 824 \\ 813 \\ 704 \\ 1660 \end{pmatrix} lb$$

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Subject:	T-Mobile Coax Cable on CL&P Tower # 1109
Location:	Norwalk, CT
Rev. 0: 10/27/16	Prepared by: T.J.L Checked by: C.F.C. Job No. 16162.06

Coax Cable on CL&P Tower

(T-Mobile NW Leg)

Distance Between Coax Cable Attach Points =

Coax Cable Span = $Coax_{Span} := \begin{pmatrix} 12.5 \\ 15 \\ 14.8 \\ 12.8 \\ 30.2 \end{pmatrix} \cdot ft$ *(User Input)*

Diameter of Coax Cable = $D_{coax} := 1.98 \cdot in$ *(User Input)*

Weight of Coax Cable = $W_{coax} := 1.04 \cdot plf$ *(User Input)*

Number of Coax Cables = $N_{coax} := 6$ *(User Input)*

Number of Projected Coax Cables Transverse = $NP_{Tcoax} := 3$ *(User Input)*

Extreme Wind Pressure = $qz := 34.7 \cdot psf$ *(User Input)*

Heavy Wind Pressure = $p := 4 \cdot psf$ *(User Input)*

Radial Ice Thickness = $Ir := 0.5 \cdot in$ *(User Input)*

Radial Ice Density = $Id := 56 \cdot pcf$ *(User Input)*

Shape Factor = $Cd_{coax} := 1.6$ *(User Input)*

Overload Factor for NESC Heavy Wind Load = $OF_{HW} := 2.5$ *(User Input)*

Overload Factor for NESC Extreme Wind Load = $OF_{EW} := 1.0$ *(User Input)*

Overload Factor for NESC Heavy Vertical Load = $OF_{HV} := 1.5$ *(User Input)*

Overload Factor for NESC Extreme Vertical Load = $OF_{EV} := 1.0$ *(User Input)*

Wind Area with Ice Transverse = $A_{Tice} := \left(NP_{Tcoax} \cdot D_{coax} + 2 \cdot Ir\right) = 6.94 \cdot in$

Wind Area without Ice Transverse = $A_T := \left(NP_{Tcoax} \cdot D_{coax}\right) = 5.94 \cdot in$

Ice Area per Liner Ft = $Ai_{coax} := \frac{\pi}{4} \cdot \left[\left(D_{coax} + 2 \cdot Ir\right)^2 - D_{coax}^2\right] = 0.027\,ft^2$

Weight of Ice on All Coax Cables = $W_{ice} := Ai_{coax} \cdot Id \cdot N_{coax} = 9.09 \cdot plf$

Heavy Vertical Load =

$$Heavy_{Vert} := \overrightarrow{\left[\left(N_{coax} \cdot W_{coax} + W_{ice}\right) \cdot Coax_{Span} \cdot OF_{HV}\right]}$$

Heavy Transverse Load =

$$Heavy_{Trans} := \overrightarrow{\left(p \cdot A_{Tice} \cdot Cd_{coax} \cdot Coax_{Span} \cdot OF_{HW}\right)}$$

$$Heavy_{Vert} = \begin{pmatrix} 287 \\ 345 \\ 340 \\ 294 \\ 694 \end{pmatrix} lb \qquad Heavy_{Trans} = \begin{pmatrix} 116 \\ 139 \\ 137 \\ 118 \\ 279 \end{pmatrix} lb$$

Extreme Vertical Load =

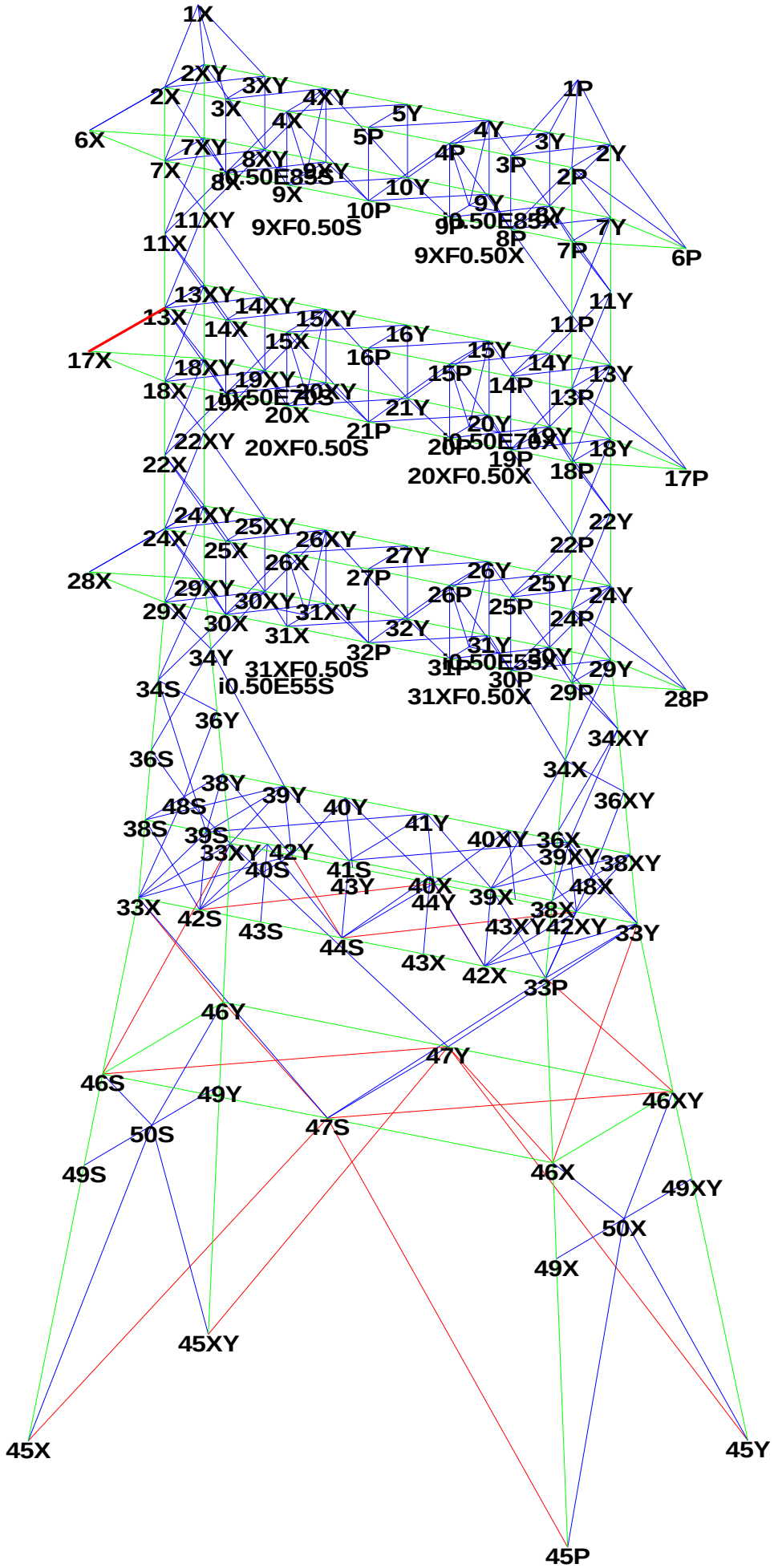
$$Extreme_{Vert} := \overrightarrow{\left[\left(N_{coax} \cdot W_{coax}\right) \cdot Coax_{Span} \cdot OF_{EV}\right]}$$

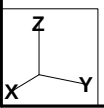
Extreme Transverse Load =

$$Extreme_{Trans} := \overrightarrow{\left[\left(qz \cdot A_T \cdot Cd_{coax}\right) \cdot Coax_{Span} \cdot OF_{EW}\right]}$$

$$Extreme_{Vert} = \begin{pmatrix} 78 \\ 94 \\ 92 \\ 80 \\ 188 \end{pmatrix} lb \qquad Extreme_{Trans} = \begin{pmatrix} 344 \\ 412 \\ 407 \\ 352 \\ 830 \end{pmatrix} lb$$

Centek Engineering Inc, Project: "cl&p tower #1109"
Tower Version 12.50, 1:17:14 PM Thursday, October 27, 2016
Undeformed geometry displayed





Project Name : 16162.06 - Norwalk, CT
Project Notes: Structure # 1109/ T-Mobile CT11885B
Project File : J:\Jobs\1616200.WI\06_CT11885B\04_Structural\Backup Documentation\Calcs\PLS Tower\cl&p tower #1109.tow
Date run : 1:16:21 PM Thursday, October 27, 2016
by : Tower Version 12.50
Licensed to : Centek Engineering Inc

Successfully performed nonlinear analysis

Member "g7P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g7X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g7XY" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g7Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g8P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g8X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g8XY" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g8Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g10P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g10X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g10XY" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g10Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g11P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g11X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g11XY" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g11Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g12P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g12X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g12XY" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g12Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g14P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g14X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g14XY" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g14Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
KL/R value of 239.44 exceeds maximum of 200.00 for member "g30P" ??

KL/R value of 239.44 exceeds maximum of 200.00 for member "g30X" ??
KL/R value of 239.44 exceeds maximum of 200.00 for member "g30XY" ??
KL/R value of 239.44 exceeds maximum of 200.00 for member "g30Y" ??
KL/R value of 250.28 exceeds maximum of 200.00 for member "g31P" ??
KL/R value of 250.28 exceeds maximum of 200.00 for member "g31X" ??
KL/R value of 250.28 exceeds maximum of 200.00 for member "g31XY" ??
KL/R value of 250.28 exceeds maximum of 200.00 for member "g31Y" ??
Member "g50P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g50X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g50XY" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g50Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
KL/R value of 221.51 exceeds maximum of 200.00 for member "g51P" ??
KL/R value of 221.51 exceeds maximum of 200.00 for member "g51X" ??
KL/R value of 221.51 exceeds maximum of 200.00 for member "g51XY" ??
KL/R value of 221.51 exceeds maximum of 200.00 for member "g51Y" ??
KL/R value of 250.69 exceeds maximum of 200.00 for member "g62P" ??
KL/R value of 250.69 exceeds maximum of 200.00 for member "g63P" ??
KL/R value of 250.69 exceeds maximum of 200.00 for member "g64P" ??
KL/R value of 250.69 exceeds maximum of 200.00 for member "g65P" ??
KL/R value of 237.88 exceeds maximum of 200.00 for member "g66P" ??
KL/R value of 237.88 exceeds maximum of 200.00 for member "g67P" ??
KL/R value of 250.69 exceeds maximum of 200.00 for member "g68P" ??
KL/R value of 250.69 exceeds maximum of 200.00 for member "g69P" ??
KL/R value of 250.69 exceeds maximum of 200.00 for member "g70P" ??
KL/R value of 250.69 exceeds maximum of 200.00 for member "g71P" ??
KL/R value of 237.88 exceeds maximum of 200.00 for member "g72P" ??
KL/R value of 237.88 exceeds maximum of 200.00 for member "g73P" ??
KL/R value of 250.69 exceeds maximum of 200.00 for member "g74P" ??
KL/R value of 250.69 exceeds maximum of 200.00 for member "g75P" ??
KL/R value of 250.69 exceeds maximum of 200.00 for member "g76P" ??
KL/R value of 250.69 exceeds maximum of 200.00 for member "g77P" ??
KL/R value of 237.88 exceeds maximum of 200.00 for member "g78P" ??
KL/R value of 237.88 exceeds maximum of 200.00 for member "g79P" ??
KL/R value of 200.81 exceeds maximum of 200.00 for member "g128P" ??
KL/R value of 200.81 exceeds maximum of 200.00 for member "g128X" ??
KL/R value of 236.58 exceeds maximum of 200.00 for member "g129P" ??
KL/R value of 236.58 exceeds maximum of 200.00 for member "g129X" ??
KL/R value of 200.81 exceeds maximum of 200.00 for member "g130P" ??
KL/R value of 236.58 exceeds maximum of 200.00 for member "g131P" ??
KL/R value of 203.89 exceeds maximum of 200.00 for member "g132P" ??
KL/R value of 203.89 exceeds maximum of 200.00 for member "g132X" ??
KL/R value of 203.89 exceeds maximum of 200.00 for member "g132XY" ??
KL/R value of 203.89 exceeds maximum of 200.00 for member "g132Y" ??
KL/R value of 269.85 exceeds maximum of 200.00 for member "g133P" ??
KL/R value of 269.85 exceeds maximum of 200.00 for member "g133X" ??
KL/R value of 269.85 exceeds maximum of 200.00 for member "g133XY" ??
KL/R value of 269.85 exceeds maximum of 200.00 for member "g133Y" ??
KL/R value of 234.45 exceeds maximum of 200.00 for member "g134P" ??
KL/R value of 234.45 exceeds maximum of 200.00 for member "g134X" ??
KL/R value of 234.45 exceeds maximum of 200.00 for member "g134XY" ??
KL/R value of 234.45 exceeds maximum of 200.00 for member "g134Y" ??
Member "g142P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g142X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge

and spacing distances will be checked. ??
Member "g142XY" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g142Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g143P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g143X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g143XY" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g143Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
KL/R value of 266.23 exceeds maximum of 200.00 for member "g156P" ??
KL/R value of 208.33 exceeds maximum of 200.00 for member "g161P" ??
KL/R value of 208.33 exceeds maximum of 200.00 for member "g161X" ??
KL/R value of 208.33 exceeds maximum of 200.00 for member "g161XY" ??
KL/R value of 208.33 exceeds maximum of 200.00 for member "g161Y" ??
KL/R value of 208.33 exceeds maximum of 200.00 for member "g162P" ??
KL/R value of 208.33 exceeds maximum of 200.00 for member "g162X" ??
KL/R value of 208.33 exceeds maximum of 200.00 for member "g162XY" ??
KL/R value of 208.33 exceeds maximum of 200.00 for member "g162Y" ??
KL/R value of 208.33 exceeds maximum of 200.00 for member "g163P" ??
KL/R value of 208.33 exceeds maximum of 200.00 for member "g163X" ??
KL/R value of 208.33 exceeds maximum of 200.00 for member "g163XY" ??
KL/R value of 208.33 exceeds maximum of 200.00 for member "g163Y" ??
The model has 97 warnings. ??

Member check option: ASCE 10
Connection rupture check: ASCE 10
Crossing diagonal check: ASCE 10 [Alternate Unsupported RLOUT = 1]
Included angle check: None
Climbing load check: None
Redundant members checked with: Actual Force

Loads from file: j:\jobs\1616200.wi\06_ct11885b\04_structural\backup documentation\calcs\pls tower\cl&p # 1109.lca

*** Analysis Results:

Maximum element usage is 97.72% for Angle "g125Y" in load case "NESC Extreme"
Maximum insulator usage is 23.17% for Clamp "38" in load case "NESC Heavy"

Summary of Joint Support Reactions For All Load Cases:

Load Case	Joint Label	Long. Force (kips)	Tran. Force (kips)	Vert. Force (kips)	Shear Force (kips)	Tran. Moment (ft-k)	Long. Moment (ft-k)	Bending Moment (ft-k)	Vert. Moment (ft-k)	Found. Usage %
NESC Heavy	45P	-5.77	-5.11	-38.17	7.71	0.79	0.40	0.89	0.17	0.00
NESC Heavy	45X	2.10	-8.44	4.68	8.70	1.41	0.45	1.48	0.16	0.00
NESC Heavy	45XY	-2.24	-8.46	5.96	8.75	1.37	-0.43	1.43	-0.16	0.00
NESC Heavy	45Y	5.90	-5.17	-38.59	7.85	0.76	-0.39	0.86	-0.17	0.00
NESC Extreme	45P	-7.95	-7.87	-55.15	11.19	2.49	0.68	2.58	0.49	0.00
NESC Extreme	45X	10.19	-24.99	52.34	26.99	2.20	0.37	2.23	0.31	0.00
NESC Extreme	45XY	-6.08	-21.81	30.59	22.64	2.35	-0.33	2.37	-0.30	0.00
NESC Extreme	45Y	8.27	-8.56	-60.16	11.90	2.63	-0.81	2.76	-0.49	0.00

Summary of Joint Support Reactions For All Load Cases in Direction of Leg:

Load Case	Support Joint	Origin Joint	Leg Member	Force In Leg Dir. (kips)	Residual Shear Perpendicular To Leg (kips)	Residual Shear Horizontal To Leg - Res. (kips)	Residual Shear Horizontal To Leg - Long. (kips)	Residual Shear Horizontal To Leg - Tran. (kips)	Total Long. Force (kips)	Total Tran. Force (kips)	Total Vert. Force (kips)
NESC Heavy	45P	49X	g14X	38.942	0.201	0.205	-0.197	-0.057	-5.77	-5.11	-38.17
NESC Heavy	45X	49S	g14P	-6.025	7.824	7.923	-1.369	7.804	2.10	-8.44	4.68
NESC Heavy	45XY	49Y	g14Y	-7.302	7.665	7.761	1.305	7.650	-2.24	-8.46	5.96
NESC Heavy	45Y	49XY	g14XY	39.381	0.135	0.138	0.126	-0.056	5.90	-5.17	-38.59
NESC Extreme	45P	49X	g14X	56.267	0.776	0.777	-0.664	0.404	-7.95	-7.87	-55.15
NESC Extreme	45X	49S	g14P	-56.126	17.819	18.020	-2.016	17.907	10.19	-24.99	52.34
NESC Extreme	45XY	49Y	g14Y	-33.783	17.531	17.714	1.299	17.666	-6.08	-21.81	30.59
NESC Extreme	45Y	49XY	g14XY	61.318	1.201	1.207	1.135	0.411	8.27	-8.56	-60.16

Overturning Moment Summary For All Load Cases:

Load Case	Transverse Moment (ft-k)	Longitudinal Moment (ft-k)	Resultant Moment (ft-k)
NESC Heavy	1737.211	9.893	1737.239
NESC Extreme	3940.086	-307.717	3952.084

Sections Information:

Section Label	Top Z (ft)	Bottom Z (ft)	Joint Count	Member Count	Tran. Face Top Width (ft)	Tran. Face Bot Width (ft)	Tran. Face Gross Area (ft^2)	Long. Face Top Width (ft)	Long. Face Bot Width (ft)	Long. Face Gross Area (ft^2)
1	95.000	65.000	78	252	0.00	5.00	137.500	28.00	30.00	965.000
2	65.000	36.000	76	235	5.00	11.75	209.125	30.00	30.00	905.000
3	36.000	0.000	20	47	11.75	23.00	625.500	30.00	39.75	1255.500

*** Overall summary for all load cases - Usage = Maximum Stress / Allowable Stress
Printed capacities do not include the strength factor entered for each load case.
The Group Summary reports on the member and load case that resulted in maximum usage
which may not necessarily be the same as that which produces maximum force.

Group Summary (Compression Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage %	Max Use In Comp. %	Comp. Control Member	Comp. Force (kips)	Comp. Control Load Case	L/R Capacity (kips)	Comp. Connect. Shear Capacity (kips)	Comp. Connect. Bearing Capacity (kips)	RLX	RLY	RLZ	L/R	KL/R	Length (ft)	Curve Comp.	No. Member	No. Of Bolts
Leg1	L4x4x5/16	SAE	4X4X0.3125	33.0	20.54	Comp 20.54	g3XY	-13.568	NESC Ext	66.065	0.000	0.000	1.000	1.000	1.000	75.85	75.85	5.000	1	0	
Leg2	L5x5x7/16	SAE	5X5X0.4375	33.0	21.87	Comp 21.87	g6Y	-26.951	NESC Ext	123.217	0.000	0.000	1.000	1.000	1.000	60.85	60.85	5.000	1	0	

Leg3	L6x6x7/16	SAE	6X6X0.4375	33.0	35.96	Tens	32.21	g9XY	-50.488	NESC	Ext	156.756	0.000	0.000	1.000	1.000	1.000	46.09	46.09	4.570	1	0
Leg4	L6x6x7/16	SAE	6X6X0.4375	33.0	39.43	Comp	39.43	g12XY	-58.987	NESC	Ext	149.604	190.400	413.437	0.500	0.500	0.500	60.08	60.08	11.917	1	14
Leg5	L6x6x7/16	SAE	6X6X0.4375	33.0	42.66	Comp	42.66	g14XY	-63.344	NESC	Ext	148.474	190.400	413.437	0.330	0.330	0.330	62.01	62.01	18.633	1	14
M1	L2.5x2.5x3/16	SAE	2.5X2.5X0.1875	33.0	96.00	Comp	96.00	g123Y	-6.913	NESC	Ext	7.201	13.600	12.656	1.000	1.000	1.000	189.34	189.34	7.810	4	1
M2	L3x3x1/4	SAE	3X3X0.25	33.0	74.96	Comp	74.96	g94P	-20.390	NESC	Ext	32.243	27.200	33.750	1.000	1.000	1.000	91.22	105.61	4.500	3	2
Diag1	L2.5x2x3/16	SAU	2.5X2X0.1875	33.0	5.89	Comp	5.89	g18P	-0.346	NESC	Ext	5.871	13.600	12.656	1.000	1.000	1.000	198.72	198.72	7.071	4	1
Diag2	L2x2x1/4	SAE	2X2X0.25	33.0	19.54	Tens	16.23	g19P	-2.207	NESC	Ext	13.859	13.600	16.875	0.750	1.000	0.500	139.33	139.33	7.071	4	1
Diag3	L2x2x3/16	SAE	2X2X0.1875	33.0	15.09	Comp	15.09	g22P	-2.285	NESC	Ext	15.145	27.200	25.312	0.750	0.500	0.500	107.68	110.76	7.071	2	2
Diag4	L2x2x3/16	SAE	2X2X0.1875	33.0	11.69	Tens	4.61	g27X	-0.320	NESC	Hea	6.929	27.200	25.312	1.000	1.000	1.000	187.22	171.26	6.147	5	2
Diag5	L2.5x2.5x3/16	SAE	2.5X2.5X0.1875	33.0	9.83	Tens	4.98	g28XY	-0.439	NESC	Hea	8.818	27.200	25.312	1.000	1.000	1.000	187.02	171.11	7.715	5	2
Diag6	L2.5x2x3/16	SAU	2.5X2X0.1875	33.0	27.61	Comp	27.61	g42XY	-2.147	NESC	Ext	7.778	27.200	25.312	1.000	1.000	1.000	189.04	172.65	6.727	5	2
Horz1	L2x2x3/16	SAE	2X2X0.1875	33.0	90.14	Tens	49.77	g32X	-4.361	NESC	Ext	8.763	13.600	12.656	1.000	1.000	1.000	152.28	152.28	5.000	4	1
Horz2	L2.5x2x3/16	SAU	2.5X2X0.1875	33.0	33.01	Comp	33.01	g33P	-3.876	NESC	Ext	11.742	13.600	12.656	1.000	1.000	1.000	140.52	140.52	5.000	4	1
Horz3	L3x3x3/16	SAE	3X3X0.1875	33.0	14.83	Tens	9.47	g39P	-1.444	NESC	Ext	15.252	27.200	25.312	0.500	1.000	0.500	150.16	143.02	11.750	5	2
Horz4	L3x3x1/4	SAE	3X3X0.25	33.0	42.44	Comp	42.44	g40P	-5.399	NESC	Ext	12.723	27.200	33.750	0.500	1.000	0.500	198.67	179.99	15.397	5	2
Diag7	L3x3x1/4	SAE	3X3X0.25	33.0	88.74	Comp	88.74	g45XY	-12.068	NESC	Ext	22.168	13.600	16.875	1.000	1.000	1.000	136.35	136.35	6.727	4	1
Diag8	L3.5x3x1/4	SAU	3.5X3X0.25	33.0	50.60	Comp	50.60	g48XY	-14.113	NESC	Ext	27.892	40.800	50.625	1.000	1.000	1.000	127.93	126.08	6.727	5	3
Diag9	L3.5x3.5x1/4	SAE	3.5X3.5X0.25	33.0	51.65	Tens	47.12	g49XY	-15.734	NESC	Ext	33.390	40.800	50.625	1.000	1.000	1.000	117.32	117.99	6.785	2	3
Diag10	L5x3.5x5/16	SAU	5X3.5X0.3125	33.0	60.58	Comp	60.58	g50Y	-30.278	NESC	Ext	49.982	54.400	84.375	0.500	1.000	0.500	118.70	119.03	10.189	2	4
Diag11	L3.5x3x5/16	SAU	3.5X3X0.3125	33.0	64.85	Tens	0.00	g51Y	0.000			11.259	54.400	84.375	0.500	1.000	0.500	253.16	221.51	19.092	5	4
Diag12	L3x2.5x5/16	SAU	3X2.5X0.3125	33.0	81.81	Tens	0.00	g52Y	0.000			9.319	40.800	63.281	0.250	0.500	0.250	255.20	223.06	31.645	5	3
M3	L2.5x2x3/16	SAU	2.5X2X0.1875	33.0	6.66	Tens	3.54	g60X	-0.415	NESC	Hea	11.742	13.600	12.656	1.000	1.000	1.000	140.52	140.52	5.000	4	1
M4	L2x2x3/16	SAE	2X2X0.1875	33.0	26.52	Comp	26.52	g102X	-2.324	NESC	Ext	8.763	13.600	12.656	1.000	1.000	1.000	152.28	152.28	5.000	4	1
M5	L2x1.5x3/16	SAU	2X1.5X0.1875	33.0	55.36	Tens	26.19	g75P	-0.739	NESC	Ext	2.824	13.600	12.656	1.000	1.000	1.000	250.69	250.69	6.727	4	1
M6	L2x1.5x3/16	SAU	2X1.5X0.1875	33.0	83.07	Cross	83.07	g133Y	-0.945	NESC	Ext	1.138	13.600	12.656	0.500	1.000	0.500	394.96	394.96	14.482	4	1
M7	L3x3x3/16	SAE	3X3X0.1875	33.0	82.16	Comp	82.16	g124XY	-10.399	NESC	Ext	17.007	13.600	12.656	1.000	1.000	1.000	135.44	135.44	6.727	4	1
M8	L2.5x2.5x1/4	SAE	2.5X2.5X0.25	33.0	97.72	Comp	97.72	g125Y	-10.505	NESC	Ext	9.348	13.600	16.875	1.000	1.000	1.000	190.88	190.88	7.810	4	1
M9	L3x2.5x1/4	SAU	3X2.5X0.25	33.0	48.86	Tens	42.60	g120Y	-5.793	NESC	Ext	26.686	13.600	16.875	1.000	1.000	1.000	113.64	115.23	5.000	2	1
M10	L4x3.5x5/16	SAU	4X3.5X0.3125	33.0	74.53	Tens	61.69	g146P	-16.781	NESC	Ext	55.895	27.200	42.187	1.000	1.000	1.000	83.48	92.61	5.078	2	2
M11	L3.5x3.5x1/4	SAE	3.5X3.5X0.25	33.0	65.01	Comp	65.01	g145P	-18.001	NESC	Ext	27.690	40.800	50.625	1.000	1.000	1.000	135.92				

																	132.17	7.861	5	3	
M12	L6x4x5/16	SAU	6X4X0.3125	33.0	16.85	Cross	16.85	g142XY	-11.353	NESC Ext	67.389	81.600	126.562	0.500	1.000	0.500	69.59	94.80	6.785	3	6
M13	L5x5x5/16	SAE	5X5X0.3125	33.0	0.00		0.00		0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.000	0	0
M14	L6x6x3/8	SAE	6X6X0.375	33.0	23.40	Comp	23.40	g138Y	-27.033	NESC Ext	115.523	0.000	0.000	1.000	1.000	1.000	45.38	82.69	4.500	3	0
Hanger	Bar 2x3/16	Bar	2x3/16	33.0	18.80	Tens	0.00	g154Y	0.000		8.010	27.200	25.312	1.000	1.000	1.000	107.50	110.62	8.958	2	2
M15	L3x3x1/4	SAE	3X3X0.25	33.0	83.38	Comp	83.38	g127Y	-15.431	NESC Ext	18.506	27.200	33.750	1.000	1.000	1.000	158.32	149.24	7.810	5	2
Diag13	L2.5x2x3/16	SAU	2.5X2X0.1875	33.0	31.88	Tens	0.00	g31Y	0.000		3.701	27.200	25.312	0.330	0.670	0.330	290.91	250.28	21.710	5	2
Diag14	L2x2x3/16	SAE	2X2X0.1875	33.0	88.78	Comp	88.78	g29XY	-3.187	NESC Ext	3.590	27.200	25.312	0.786	0.500	0.500	274.71	237.93	17.970	5	2
M16	L3x3x3/16	SAE	3X3X0.1875	33.0	22.05	Comp	22.05	g155P	-2.834	NESC Ext	12.854	27.200	25.312	0.500	0.500	0.500	166.92	155.79	16.580	5	2
M17	L2x1.5x3/16	SAU	2X1.5X0.1875	33.0	51.40	Comp	51.40	g135XY	-1.058	NESC Hea	2.058	13.600	12.656	0.500	0.500	0.500	293.63	293.63	15.758	4	1
M18	L2x2x3/16	SAE	2X2X0.1875	33.0	94.92	Tens	7.73	Fg99157X	-0.978	NESC Ext	16.935	13.600	12.656	1.000	1.000	1.000	76.14	98.07	2.500	3	1
M19	L5x5x5/16	SAE	5X5X0.3125	33.0	48.42	Comp	48.42	g137XY	-32.926	NESC Ext	78.093	68.000	105.469	1.000	1.000	1.000	54.33	87.16	4.500	3	5

Group Summary (Tension Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage %	Usage Cont-rol	Max Use In Tens. %	Tension Control Member	Tension Force (kips)	Tension Control Load Case	Net Section Capacity (kips)	Tension Connect. Shear Capacity (kips)	Tension Connect. Bearing Capacity (kips)	Tension Connect. Rupture Capacity (kips)	Length Tens. Member (ft)	No. Of Bolts Tens.	No. Of Holes	Hole Diameter (in)
Leg1	L4x4x5/16	SAE	4X4X0.3125	33.0	20.54	Comp	9.71	g3P	6.817	NESC Ext	70.176	0.000	0.000	0.000	5.000	0	1.000	0.875
Leg2	L5x5x7/16	SAE	5X5X0.4375	33.0	21.87	Comp	18.23	g6X	20.536	NESC Ext	112.674	0.000	0.000	0.000	5.000	0	2.000	0.875
Leg3	L6x6x7/16	SAE	6X6X0.4375	33.0	35.96	Tens	35.96	g10P	48.146	NESC Ext	133.882	190.400	413.437	382.812	4.570	14	2.620	0.875
Leg4	L6x6x7/16	SAE	6X6X0.4375	33.0	39.43	Comp	30.48	g11P	40.808	NESC Ext	133.882	190.400	413.437	401.952	5.078	14	2.620	0.875
Leg5	L6x6x7/16	SAE	6X6X0.4375	33.0	42.66	Comp	17.08	g13P	24.210	NESC Ext	141.714	0.000	0.000	0.000	6.211	0	2.000	0.875
M1	L2.5x2.5x3/16	SAE	2.5X2.5X0.1875	33.0	96.00	Comp	67.80	g123XY	7.126	NESC Ext	21.917	13.600	12.656	10.512	7.810	1	1.000	0.875
M2	L3x3x1/4	SAE	3X3X0.25	33.0	74.96	Comp	73.74	g94X	20.058	NESC Ext	36.271	27.200	33.750	31.250	4.500	2	1.000	0.875
Diag1	L2.5x2x3/16	SAU	2.5X2X0.1875	33.0	5.89	Comp	0.00	g18P	0.000		19.184	13.600	12.656	10.934	7.071	1	1.000	0.875
Diag2	L2x2x1/4	SAE	2X2X0.25	33.0	19.54	Tens	19.54	g20Y	2.134	NESC Ext	21.421	13.600	16.875	10.922	7.071	1	1.000	0.875
Diag3	L2x2x3/16	SAE	2X2X0.1875	33.0	15.09	Comp	14.91	g23Y	2.418	NESC Ext	16.214	27.200	25.312	17.473	7.071	2	1.000	0.875
Diag4	L2x2x3/16	SAE	2X2X0.1875	33.0	11.69	Tens	11.69	g27Y	1.896	NESC Ext	16.214	27.200	25.312	19.301	6.147	2	1.000	0.875

Diag5	L2.5x2.5x3/16	SAE	2.5X2.5X0.1875	33.0	9.83	Tens	9.83	g28P	2.153NESC	Ext	21.917	27.200	25.312	23.437	7.715	2	1.000	0.875
Diag6	L2.5x2x3/16	SAU	2.5X2X0.1875	33.0	27.61	Comp	16.04	g42P	3.077NESC	Ext	19.184	27.200	25.312	24.609	6.727	2	1.000	0.875
Horz1	L2x2x3/16	SAE	2X2X0.1875	33.0	90.14	Tens	90.14	g32P	7.383NESC	Ext	16.214	13.600	12.656	8.191	5.000	1	1.000	0.875
Horz2	L2.5x2x3/16	SAU	2.5X2X0.1875	33.0	33.01	Comp	20.89	g33X	2.016NESC	Ext	19.184	13.600	12.656	9.651	5.000	1	1.000	0.875
Horz3	L3x3x3/16	SAE	3X3X0.1875	33.0	14.83	Tens	14.83	g39X	3.195NESC	Ext	27.500	27.200	25.312	21.551	11.750	2	1.000	0.875
Horz4	L3x3x1/4	SAE	3X3X0.25	33.0	42.44	Comp	1.63	g40X	0.443NESC	Hea	36.271	27.200	33.750	28.734	15.397	2	1.000	0.875
Diag7	L3x3x1/4	SAE	3X3X0.25	33.0	88.74	Comp	78.37	g45P	10.659NESC	Ext	36.271	13.600	16.875	15.625	6.727	1	1.000	0.875
Diag8	L3.5x3x1/4	SAU	3.5X3X0.25	33.0	50.60	Comp	45.59	g48Y	17.415NESC	Ext	39.835	40.800	50.625	38.203	6.727	3	1.000	0.875
Diag9	L3.5x3.5x1/4	SAE	3.5X3.5X0.25	33.0	51.65	Tens	51.65	g49Y	18.764NESC	Ext	43.696	40.800	50.625	36.328	6.785	3	1.000	0.875
Diag10	L5x3.5x5/16	SAU	5X3.5X0.3125	33.0	60.58	Comp	45.35	g50XY	24.264NESC	Ext	53.502	54.400	84.375	73.529	10.189	4	1.060	0.875
Diag11	L3.5x3x5/16	SAU	3.5X3X0.3125	33.0	64.85	Tens	64.85	g51XY	31.908NESC	Ext	49.200	54.400	84.375	60.644	19.092	4	1.000	0.875
Diag12	L3x2.5x5/16	SAU	3X2.5X0.3125	33.0	81.81	Tens	81.81	g52P	32.717NESC	Ext	39.993	40.800	63.281	47.988	31.645	3	1.000	0.875
M3	L2.5x2x3/16	SAU	2.5X2X0.1875	33.0	6.66	Tens	6.66	g61P	0.489NESC	Ext	19.184	13.600	12.656	7.348	5.000	1	1.000	0.875
M4	L2x2x3/16	SAE	2X2X0.1875	33.0	26.52	Comp	4.62	g119XY	0.379NESC	Ext	16.214	13.600	12.656	8.191	5.000	1	1.000	0.875
M5	L2x1.5x3/16	SAU	2X1.5X0.1875	33.0	55.36	Tens	55.36	g111P	4.535NESC	Ext	13.541	13.600	12.656	8.191	3.363	1	1.000	0.875
M6	L2x1.5x3/16	SAU	2X1.5X0.1875	33.0	83.07	Cross	36.54	g112P	2.993NESC	Ext	13.541	13.600	12.656	8.191	7.810	1	1.000	0.875
M7	L3x3x3/16	SAE	3X3X0.1875	33.0	82.16	Comp	71.52	g124Y	8.381NESC	Ext	27.500	13.600	12.656	11.719	6.727	1	1.000	0.875
M8	L2.5x2.5x1/4	SAE	2.5X2.5X0.25	33.0	97.72	Comp	78.90	g125XY	10.731NESC	Ext	28.846	13.600	16.875	14.016	7.810	1	1.000	0.875
M9	L3x2.5x1/4	SAU	3X2.5X0.25	33.0	48.86	Tens	48.86	g120XY	6.645NESC	Ext	32.410	13.600	16.875	15.625	5.000	1	1.000	0.875
M10	L4x3.5x5/16	SAU	4X3.5X0.3125	33.0	74.53	Tens	74.53	g146XY	20.271NESC	Ext	58.704	27.200	42.187	41.016	5.078	2	1.000	0.875
M11	L3.5x3.5x1/4	SAE	3.5X3.5X0.25	33.0	65.01	Comp	46.61	g145X	17.895NESC	Ext	40.448	40.800	50.625	38.391	7.861	3	1.500	0.875
M12	L6x4x5/16	SAU	6X4X0.3125	33.0	16.85	Cross	11.53	g142P	8.974NESC	Ext	77.809	81.600	126.562	117.187	6.785	6	1.500	0.875
M13	L5x5x5/16	SAE	5X5X0.3125	33.0	0.00		0.00		0.000		0.000	0.000	0.000	0.000	0.000	0	0.000	0
M14	L6x6x3/8	SAE	6X6X0.375	33.0	23.40	Comp	13.17	g138XY	18.955NESC	Ext	143.880	0.000	0.000	0.000	4.500	0	0.000	0.875
Hanger	Bar 2x3/16	Bar	2x3/16	33.0	18.80	Tens	18.80	g154XY	1.178NESC	Hea	6.265	27.200	25.312	16.559	8.958	2	1.000	0.875
M15	L3x3x1/4	SAE	3X3X0.25	33.0	83.38	Comp	75.46	g121XY	10.262NESC	Ext	36.271	13.600	16.875	15.625	5.000	1	1.000	0.875
Diag13	L2.5x2x3/16	SAU	2.5X2X0.1875	33.0	31.88	Tens	31.88	g30Y	6.116NESC	Ext	19.184	27.200	25.312	21.094	9.846	2	1.000	0.875
Diag14	L2x2x3/16	SAE	2X2X0.1875	33.0	88.78	Comp	3.32	g29Y	0.538NESC	Ext	16.214	27.200	25.312	19.301	17.970	2	1.000	0.875
M16	L3x3x3/16	SAE	3X3X0.1875	33.0	22.05	Comp	9.05	g155X	1.931NESC	Ext	27.500	27.200	25.312	21.340	16.580	2	1.000	0.875
M17	L2x1.5x3/16	SAU	2X1.5X0.1875	33.0	51.40	Comp	8.20	g157P	0.672NESC	Ext	13.541	13.600	12.656	8.191	22.627	1	1.000	

0.875
M18 L2x2x3/16 SAE 2X2X0.1875 33.0 94.92 Tens 94.92 g99P 9.150NESC Hea 16.214 13.600 12.656 9.640 2.500 1 1.000
0.875
M19 L5x5x5/16 SAE 5X5X0.3125 33.0 48.42 Comp 3.40 g137Y 2.233NESC Ext 65.628 68.000 105.469 73.160 4.500 5 3.000
0.875

*** Maximum Stress Summary for Each Load Case

Summary of Maximum Usages by Load Case:

Load Case	Maximum Usage %	Element Label	Element Type
NESC Heavy	94.92	g99P	Angle
NESC Extreme	97.72	g125Y	Angle

Summary of Insulator Usages:

Insulator Label	Insulator Type	Maximum Usage %	Load Case	Weight (lbs)
1	Clamp	2.86	NESC Extreme	0.0
2	Clamp	2.10	NESC Heavy	0.0
3	Clamp	4.35	NESC Extreme	0.0
4	Clamp	4.09	NESC Extreme	0.0
5	Clamp	4.35	NESC Extreme	0.0
6	Clamp	4.09	NESC Extreme	0.0
7	Clamp	4.41	NESC Extreme	0.0
8	Clamp	4.15	NESC Extreme	0.0
9	Clamp	0.17	NESC Extreme	0.0
10	Clamp	4.09	NESC Extreme	0.0
11	Clamp	0.17	NESC Extreme	0.0
12	Clamp	4.09	NESC Extreme	0.0
13	Clamp	0.26	NESC Extreme	0.0
14	Clamp	4.15	NESC Extreme	0.0
15	Clamp	13.12	NESC Extreme	0.0
16	Clamp	22.22	NESC Extreme	0.0
17	Clamp	22.22	NESC Extreme	0.0
18	Clamp	13.12	NESC Extreme	0.0
19	Clamp	8.06	NESC Extreme	0.0
20	Clamp	15.86	NESC Extreme	0.0
21	Clamp	15.86	NESC Extreme	0.0
22	Clamp	8.06	NESC Extreme	0.0
23	Clamp	1.56	NESC Heavy	0.0
24	Clamp	1.19	NESC Heavy	0.0
25	Clamp	2.02	NESC Extreme	0.0
26	Clamp	1.47	NESC Extreme	0.0
27	Clamp	2.01	NESC Heavy	0.0
28	Clamp	1.56	NESC Heavy	0.0
29	Clamp	2.50	NESC Extreme	0.0
30	Clamp	2.04	NESC Extreme	0.0
31	Clamp	4.23	NESC Extreme	0.0
32	Clamp	3.10	NESC Heavy	0.0
33	Clamp	1.29	NESC Extreme	0.0

34	Clamp	1.72	NESC Extreme	0.0
35	Clamp	1.58	NESC Heavy	0.0
36	Clamp	2.24	NESC Extreme	0.0
37	Clamp	3.62	NESC Extreme	0.0
38	Clamp	23.17	NESC Heavy	0.0
39	Clamp	23.17	NESC Heavy	0.0
40	Clamp	23.17	NESC Heavy	0.0
41	Clamp	23.17	NESC Heavy	0.0
42	Clamp	23.17	NESC Heavy	0.0
43	Clamp	23.17	NESC Heavy	0.0
44	Clamp	0.96	NESC Heavy	0.0
45	Clamp	1.19	NESC Extreme	0.0
46	Clamp	1.29	NESC Heavy	0.0
47	Clamp	1.82	NESC Heavy	0.0
48	Clamp	2.61	NESC Heavy	0.0

*** Weight of structure (lbs):

Weight of Angles*Section DLF:	19198.2
Total:	19198.2

*** End of Report

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*                                                                           *
* TOWER - Analysis and Design -  Copyright Power Line Systems, Inc. 1986-2011 *
*                                                                           *
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Project Name : 16162.06 - Norwalk, CT
Project Notes: Structure # 1109/ T-Mobile CT11885B
Project File : J:\Jobs\1616200.WI\06_CT11885B\04_Structural\Backup Documentation\Calcs\PLS Tower\cl&p tower #1109.tow
Date run     : 1:16:21 PM Thursday, October 27, 2016
by           : Tower Version 12.50
Licensed to  : Centek Engineering Inc

Successfully performed nonlinear analysis

Member "g7P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g7X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g7XY" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g7Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g8P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g8X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g8XY" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g8Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g10P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g10X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g10XY" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g10Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g11P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g11X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g11XY" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g11Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g12P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g12X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g12XY" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g12Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g14P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g14X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
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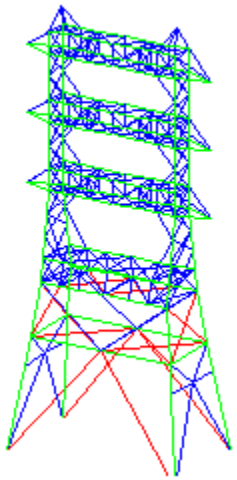
and spacing distances will be checked. ??
Member "g14XY" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g14Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
KL/R value of 239.44 exceeds maximum of 200.00 for member "g30P" ??
KL/R value of 239.44 exceeds maximum of 200.00 for member "g30X" ??
KL/R value of 239.44 exceeds maximum of 200.00 for member "g30XY" ??
KL/R value of 239.44 exceeds maximum of 200.00 for member "g30Y" ??
KL/R value of 250.28 exceeds maximum of 200.00 for member "g31P" ??
KL/R value of 250.28 exceeds maximum of 200.00 for member "g31X" ??
KL/R value of 250.28 exceeds maximum of 200.00 for member "g31XY" ??
KL/R value of 250.28 exceeds maximum of 200.00 for member "g31Y" ??
Member "g50P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g50X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g50XY" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g50Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
KL/R value of 221.51 exceeds maximum of 200.00 for member "g51P" ??
KL/R value of 221.51 exceeds maximum of 200.00 for member "g51X" ??
KL/R value of 221.51 exceeds maximum of 200.00 for member "g51XY" ??
KL/R value of 221.51 exceeds maximum of 200.00 for member "g51Y" ??
KL/R value of 250.69 exceeds maximum of 200.00 for member "g62P" ??
KL/R value of 250.69 exceeds maximum of 200.00 for member "g63P" ??
KL/R value of 250.69 exceeds maximum of 200.00 for member "g64P" ??
KL/R value of 250.69 exceeds maximum of 200.00 for member "g65P" ??
KL/R value of 237.88 exceeds maximum of 200.00 for member "g66P" ??
KL/R value of 237.88 exceeds maximum of 200.00 for member "g67P" ??
KL/R value of 250.69 exceeds maximum of 200.00 for member "g68P" ??
KL/R value of 250.69 exceeds maximum of 200.00 for member "g69P" ??
KL/R value of 250.69 exceeds maximum of 200.00 for member "g70P" ??
KL/R value of 250.69 exceeds maximum of 200.00 for member "g71P" ??
KL/R value of 237.88 exceeds maximum of 200.00 for member "g72P" ??
KL/R value of 237.88 exceeds maximum of 200.00 for member "g73P" ??
KL/R value of 250.69 exceeds maximum of 200.00 for member "g74P" ??
KL/R value of 250.69 exceeds maximum of 200.00 for member "g75P" ??
KL/R value of 250.69 exceeds maximum of 200.00 for member "g76P" ??
KL/R value of 250.69 exceeds maximum of 200.00 for member "g77P" ??
KL/R value of 237.88 exceeds maximum of 200.00 for member "g78P" ??
KL/R value of 237.88 exceeds maximum of 200.00 for member "g79P" ??
KL/R value of 200.81 exceeds maximum of 200.00 for member "g128P" ??
KL/R value of 200.81 exceeds maximum of 200.00 for member "g128X" ??
KL/R value of 236.58 exceeds maximum of 200.00 for member "g129P" ??
KL/R value of 236.58 exceeds maximum of 200.00 for member "g129X" ??
KL/R value of 200.81 exceeds maximum of 200.00 for member "g130P" ??
KL/R value of 236.58 exceeds maximum of 200.00 for member "g131P" ??
KL/R value of 203.89 exceeds maximum of 200.00 for member "g132P" ??
KL/R value of 203.89 exceeds maximum of 200.00 for member "g132X" ??
KL/R value of 203.89 exceeds maximum of 200.00 for member "g132XY" ??
KL/R value of 203.89 exceeds maximum of 200.00 for member "g132Y" ??
KL/R value of 269.85 exceeds maximum of 200.00 for member "g133P" ??
KL/R value of 269.85 exceeds maximum of 200.00 for member "g133X" ??
KL/R value of 269.85 exceeds maximum of 200.00 for member "g133XY" ??
KL/R value of 269.85 exceeds maximum of 200.00 for member "g133Y" ??
KL/R value of 234.45 exceeds maximum of 200.00 for member "g134P" ??

KL/R value of 234.45 exceeds maximum of 200.00 for member "g134X" ??
KL/R value of 234.45 exceeds maximum of 200.00 for member "g134XY" ??
KL/R value of 234.45 exceeds maximum of 200.00 for member "g134Y" ??
Member "g142P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g142X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g142XY" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g142Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g143P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g143X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g143XY" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g143Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
KL/R value of 266.23 exceeds maximum of 200.00 for member "g156P" ??
KL/R value of 208.33 exceeds maximum of 200.00 for member "g161P" ??
KL/R value of 208.33 exceeds maximum of 200.00 for member "g161X" ??
KL/R value of 208.33 exceeds maximum of 200.00 for member "g161XY" ??
KL/R value of 208.33 exceeds maximum of 200.00 for member "g161Y" ??
KL/R value of 208.33 exceeds maximum of 200.00 for member "g162P" ??
KL/R value of 208.33 exceeds maximum of 200.00 for member "g162X" ??
KL/R value of 208.33 exceeds maximum of 200.00 for member "g162XY" ??
KL/R value of 208.33 exceeds maximum of 200.00 for member "g162Y" ??
KL/R value of 208.33 exceeds maximum of 200.00 for member "g163P" ??
KL/R value of 208.33 exceeds maximum of 200.00 for member "g163X" ??
KL/R value of 208.33 exceeds maximum of 200.00 for member "g163XY" ??
KL/R value of 208.33 exceeds maximum of 200.00 for member "g163Y" ??
The model has 97 warnings. ??



Nonlinear convergence parameters: Use Standard Parameters
Tension only member maximum compression load as a percent of compression capacity: 100%

Member check option: ASCE 10
Connection rupture check: ASCE 10
Crossing diagonal check: ASCE 10 [Alternate Unsupported RLOUT = 1]
Included angle check: None
Climbing load check: None
Redundant members checked with: Actual Force

Joints Geometry:

Joint Label	Symmetry Code	X Coord. (ft)	Y Coord. (ft)	Z Coord. (ft)	X Disp. Rest.	Y Disp. Rest.	Z Disp. Rest.	X Rot. Rest.	Y Rot. Rest.	Z Rot. Rest.
1P	X-Symmetry	0	14	95	Free	Free	Free	Free	Free	Free
2P	XY-Symmetry	2.5	15	90	Free	Free	Free	Free	Free	Free
3P	XY-Symmetry	2.5	10.5	90	Free	Free	Free	Free	Free	Free
4P	XY-Symmetry	2.5	6	90	Free	Free	Free	Free	Free	Free
5P	Y-Symmetry	2.5	0	90	Free	Free	Free	Free	Free	Free
6P	X-Symmetry	0	22	85	Free	Free	Free	Free	Free	Free
7P	XY-Symmetry	2.5	15	85	Free	Free	Free	Free	Free	Free
8P	XY-Symmetry	2.5	10.5	85	Free	Free	Free	Free	Free	Free
9P	XY-Symmetry	2.5	6	85	Free	Free	Free	Free	Free	Free
10P	Y-Symmetry	2.5	0	85	Free	Free	Free	Free	Free	Free
11P	XY-Symmetry	2.5	15	80	Free	Free	Free	Free	Free	Free
13P	XY-Symmetry	2.5	15	75	Free	Free	Free	Free	Free	Free
14P	XY-Symmetry	2.5	10.5	75	Free	Free	Free	Free	Free	Free
15P	XY-Symmetry	2.5	6	75	Free	Free	Free	Free	Free	Free
16P	Y-Symmetry	2.5	0	75	Free	Free	Free	Free	Free	Free
17P	X-Symmetry	0	22	70	Free	Free	Free	Free	Free	Free
18P	XY-Symmetry	2.5	15	70	Free	Free	Free	Free	Free	Free
19P	XY-Symmetry	2.5	10.5	70	Free	Free	Free	Free	Free	Free
20P	XY-Symmetry	2.5	6	70	Free	Free	Free	Free	Free	Free
21P	Y-Symmetry	2.5	0	70	Free	Free	Free	Free	Free	Free
22P	XY-Symmetry	2.5	15	65	Free	Free	Free	Free	Free	Free
24P	XY-Symmetry	2.5	15	60	Free	Free	Free	Free	Free	Free
25P	XY-Symmetry	2.5	10.5	60	Free	Free	Free	Free	Free	Free
26P	XY-Symmetry	2.5	6	60	Free	Free	Free	Free	Free	Free
27P	Y-Symmetry	2.5	0	60	Free	Free	Free	Free	Free	Free
28P	X-Symmetry	0	22	55	Free	Free	Free	Free	Free	Free
29P	XY-Symmetry	2.5	15	55	Free	Free	Free	Free	Free	Free
30P	XY-Symmetry	2.5	10.5	55	Free	Free	Free	Free	Free	Free
31P	XY-Symmetry	2.5	6	55	Free	Free	Free	Free	Free	Free
32P	Y-Symmetry	2.5	0	55	Free	Free	Free	Free	Free	Free
33P	XY-Symmetry	5.875	15	36	Free	Free	Free	Free	Free	Free
45P	XY-Symmetry	11.5	19.88	0	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
1X	X-Gen	0	-14	95	Free	Free	Free	Free	Free	Free
2X	X-GenXY	2.5	-15	90	Free	Free	Free	Free	Free	Free
2XY	XY-GenXY	-2.5	-15	90	Free	Free	Free	Free	Free	Free
2Y	Y-GenXY	-2.5	15	90	Free	Free	Free	Free	Free	Free
3X	X-GenXY	2.5	-10.5	90	Free	Free	Free	Free	Free	Free
3XY	XY-GenXY	-2.5	-10.5	90	Free	Free	Free	Free	Free	Free
3Y	Y-GenXY	-2.5	10.5	90	Free	Free	Free	Free	Free	Free
4X	X-GenXY	2.5	-6	90	Free	Free	Free	Free	Free	Free
4XY	XY-GenXY	-2.5	-6	90	Free	Free	Free	Free	Free	Free
4Y	Y-GenXY	-2.5	6	90	Free	Free	Free	Free	Free	Free
5Y	Y-Gen	-2.5	0	90	Free	Free	Free	Free	Free	Free
6X	X-Gen	0	-22	85	Free	Free	Free	Free	Free	Free
7X	X-GenXY	2.5	-15	85	Free	Free	Free	Free	Free	Free
7XY	XY-GenXY	-2.5	-15	85	Free	Free	Free	Free	Free	Free

7Y	Y-GenXY	-2.5	15	85	Free	Free	Free	Free	Free	Free
8X	X-GenXY	2.5	-10.5	85	Free	Free	Free	Free	Free	Free
8XY	XY-GenXY	-2.5	-10.5	85	Free	Free	Free	Free	Free	Free
8Y	Y-GenXY	-2.5	10.5	85	Free	Free	Free	Free	Free	Free
9X	X-GenXY	2.5	-6	85	Free	Free	Free	Free	Free	Free
9XY	XY-GenXY	-2.5	-6	85	Free	Free	Free	Free	Free	Free
9Y	Y-GenXY	-2.5	6	85	Free	Free	Free	Free	Free	Free
10Y	Y-Gen	-2.5	0	85	Free	Free	Free	Free	Free	Free
11X	X-GenXY	2.5	-15	80	Free	Free	Free	Free	Free	Free
11XY	XY-GenXY	-2.5	-15	80	Free	Free	Free	Free	Free	Free
11Y	Y-GenXY	-2.5	15	80	Free	Free	Free	Free	Free	Free
13X	X-GenXY	2.5	-15	75	Free	Free	Free	Free	Free	Free
13XY	XY-GenXY	-2.5	-15	75	Free	Free	Free	Free	Free	Free
13Y	Y-GenXY	-2.5	15	75	Free	Free	Free	Free	Free	Free
14X	X-GenXY	2.5	-10.5	75	Free	Free	Free	Free	Free	Free
14XY	XY-GenXY	-2.5	-10.5	75	Free	Free	Free	Free	Free	Free
14Y	Y-GenXY	-2.5	10.5	75	Free	Free	Free	Free	Free	Free
15X	X-GenXY	2.5	-6	75	Free	Free	Free	Free	Free	Free
15XY	XY-GenXY	-2.5	-6	75	Free	Free	Free	Free	Free	Free
15Y	Y-GenXY	-2.5	6	75	Free	Free	Free	Free	Free	Free
16Y	Y-Gen	-2.5	0	75	Free	Free	Free	Free	Free	Free
17X	X-Gen	0	-22	70	Free	Free	Free	Free	Free	Free
18X	X-GenXY	2.5	-15	70	Free	Free	Free	Free	Free	Free
18XY	XY-GenXY	-2.5	-15	70	Free	Free	Free	Free	Free	Free
18Y	Y-GenXY	-2.5	15	70	Free	Free	Free	Free	Free	Free
19X	X-GenXY	2.5	-10.5	70	Free	Free	Free	Free	Free	Free
19XY	XY-GenXY	-2.5	-10.5	70	Free	Free	Free	Free	Free	Free
19Y	Y-GenXY	-2.5	10.5	70	Free	Free	Free	Free	Free	Free
20X	X-GenXY	2.5	-6	70	Free	Free	Free	Free	Free	Free
20XY	XY-GenXY	-2.5	-6	70	Free	Free	Free	Free	Free	Free
20Y	Y-GenXY	-2.5	6	70	Free	Free	Free	Free	Free	Free
21Y	Y-Gen	-2.5	0	70	Free	Free	Free	Free	Free	Free
22X	X-GenXY	2.5	-15	65	Free	Free	Free	Free	Free	Free
22XY	XY-GenXY	-2.5	-15	65	Free	Free	Free	Free	Free	Free
22Y	Y-GenXY	-2.5	15	65	Free	Free	Free	Free	Free	Free
24X	X-GenXY	2.5	-15	60	Free	Free	Free	Free	Free	Free
24XY	XY-GenXY	-2.5	-15	60	Free	Free	Free	Free	Free	Free
24Y	Y-GenXY	-2.5	15	60	Free	Free	Free	Free	Free	Free
25X	X-GenXY	2.5	-10.5	60	Free	Free	Free	Free	Free	Free
25XY	XY-GenXY	-2.5	-10.5	60	Free	Free	Free	Free	Free	Free
25Y	Y-GenXY	-2.5	10.5	60	Free	Free	Free	Free	Free	Free
26X	X-GenXY	2.5	-6	60	Free	Free	Free	Free	Free	Free
26XY	XY-GenXY	-2.5	-6	60	Free	Free	Free	Free	Free	Free
26Y	Y-GenXY	-2.5	6	60	Free	Free	Free	Free	Free	Free
27Y	Y-Gen	-2.5	0	60	Free	Free	Free	Free	Free	Free
28X	X-Gen	0	-22	55	Free	Free	Free	Free	Free	Free
29X	X-GenXY	2.5	-15	55	Free	Free	Free	Free	Free	Free
29XY	XY-GenXY	-2.5	-15	55	Free	Free	Free	Free	Free	Free
29Y	Y-GenXY	-2.5	15	55	Free	Free	Free	Free	Free	Free
30X	X-GenXY	2.5	-10.5	55	Free	Free	Free	Free	Free	Free
30XY	XY-GenXY	-2.5	-10.5	55	Free	Free	Free	Free	Free	Free
30Y	Y-GenXY	-2.5	10.5	55	Free	Free	Free	Free	Free	Free
31X	X-GenXY	2.5	-6	55	Free	Free	Free	Free	Free	Free
31XY	XY-GenXY	-2.5	-6	55	Free	Free	Free	Free	Free	Free
31Y	Y-GenXY	-2.5	6	55	Free	Free	Free	Free	Free	Free
32Y	Y-Gen	-2.5	0	55	Free	Free	Free	Free	Free	Free
33X	X-GenXY	5.875	-15	36	Free	Free	Free	Free	Free	Free
33XY	XY-GenXY	-5.875	-15	36	Free	Free	Free	Free	Free	Free
33Y	Y-GenXY	-5.875	15	36	Free	Free	Free	Free	Free	Free

45X	X-GenXY	11.5	-19.88	0	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
45XY	XY-GenXY	-11.5	-19.88	0	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
45Y	Y-GenXY	-11.5	19.88	0	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed

Secondary Joints:

Joint Label	Symmetry Code	Origin Joint	End Joint	Fraction	Elevation (ft)	X Disp. Rest.	Y Disp. Rest.	Z Disp. Rest.	X Rot. Rest.	Y Rot. Rest.	Z Rot. Rest.
34S	XY-Symmetry	29X	33X	0	50	Free	Free	Free	Free	Free	Free
36S	XY-Symmetry	34S	33X	0	45.5	Free	Free	Free	Free	Free	Free
38S	XY-Symmetry	36S	33X	0	41	Free	Free	Free	Free	Free	Free
39S	XY-Symmetry	38S	38X	0.15	0	Free	Free	Free	Free	Free	Free
40S	XY-Symmetry	38S	38X	0.3	0	Free	Free	Free	Free	Free	Free
41S	Y-Symmetry	38S	38X	0.5	0	Free	Free	Free	Free	Free	Free
42S	XY-Symmetry	33X	33P	0.15	0	Free	Free	Free	Free	Free	Free
43S	XY-Symmetry	33X	33P	0.3	0	Free	Free	Free	Free	Free	Free
44S	Y-Symmetry	33X	33P	0.5	0	Free	Free	Free	Free	Free	Free
46S	XY-Symmetry	33X	45X	0	24.33	Free	Free	Free	Free	Free	Free
47S	Y-Symmetry	46S	46X	0.5	0	Free	Free	Free	Free	Free	Free
48S	X-Symmetry	38S	38Y	0.5	0	Free	Free	Free	Free	Free	Free
49S	XY-Symmetry	46S	45X	0.25	0	Free	Free	Free	Free	Free	Free
50S	X-Symmetry	49S	49Y	0.5	0	Free	Free	Free	Free	Free	Free
9XF0.50S	X-Symmetry	9X	9XY	0.5	0	Free	Free	Free	Free	Free	Free
20XF0.50S	X-Symmetry	20X	20XY	0.5	0	Free	Free	Free	Free	Free	Free
31XF0.50S	X-Symmetry	31X	31XY	0.5	0	Free	Free	Free	Free	Free	Free
i0.50E85S	X-Symmetry	8X	9XY	0.5	0	Free	Free	Free	Free	Free	Free
i0.50E70S	X-Symmetry	19X	20XY	0.5	0	Free	Free	Free	Free	Free	Free
i0.50E55S	X-Symmetry	30X	31XY	0.5	0	Free	Free	Free	Free	Free	Free
34X	X-GenXY	29X	33X	0	50	Free	Free	Free	Free	Free	Free
34XY	XY-GenXY	29X	33X	0	50	Free	Free	Free	Free	Free	Free
34Y	Y-GenXY	29X	33X	0	50	Free	Free	Free	Free	Free	Free
36X	X-GenXY	34S	33X	0	45.5	Free	Free	Free	Free	Free	Free
36XY	XY-GenXY	34S	33X	0	45.5	Free	Free	Free	Free	Free	Free
36Y	Y-GenXY	34S	33X	0	45.5	Free	Free	Free	Free	Free	Free
38X	X-GenXY	36S	33X	0	41	Free	Free	Free	Free	Free	Free
38XY	XY-GenXY	36S	33X	0	41	Free	Free	Free	Free	Free	Free
38Y	Y-GenXY	36S	33X	0	41	Free	Free	Free	Free	Free	Free
39X	X-GenXY	38S	38X	0.15	0	Free	Free	Free	Free	Free	Free
39XY	XY-GenXY	38S	38X	0.15	0	Free	Free	Free	Free	Free	Free
39Y	Y-GenXY	38S	38X	0.15	0	Free	Free	Free	Free	Free	Free
40X	X-GenXY	38S	38X	0.3	0	Free	Free	Free	Free	Free	Free
40XY	XY-GenXY	38S	38X	0.3	0	Free	Free	Free	Free	Free	Free
40Y	Y-GenXY	38S	38X	0.3	0	Free	Free	Free	Free	Free	Free
41Y	Y-Gen	38S	38X	0.5	0	Free	Free	Free	Free	Free	Free
42X	X-GenXY	33X	33P	0.15	0	Free	Free	Free	Free	Free	Free
42XY	XY-GenXY	33X	33P	0.15	0	Free	Free	Free	Free	Free	Free
42Y	Y-GenXY	33X	33P	0.15	0	Free	Free	Free	Free	Free	Free
43X	X-GenXY	33X	33P	0.3	0	Free	Free	Free	Free	Free	Free
43XY	XY-GenXY	33X	33P	0.3	0	Free	Free	Free	Free	Free	Free
43Y	Y-GenXY	33X	33P	0.3	0	Free	Free	Free	Free	Free	Free
44Y	Y-Gen	33X	33P	0.5	0	Free	Free	Free	Free	Free	Free
46X	X-GenXY	33X	45X	0	24.33	Free	Free	Free	Free	Free	Free
46XY	XY-GenXY	33X	45X	0	24.33	Free	Free	Free	Free	Free	Free
46Y	Y-GenXY	33X	45X	0	24.33	Free	Free	Free	Free	Free	Free
47Y	Y-Gen	46S	46X	0.5	0	Free	Free	Free	Free	Free	Free
48X	X-Gen	38S	38Y	0.5	0	Free	Free	Free	Free	Free	Free
49X	X-GenXY	46S	45X	0.25	0	Free	Free	Free	Free	Free	Free

49XY	XY-GenXY	46S	45X	0.25	0	Free	Free	Free	Free	Free	Free
49Y	Y-GenXY	46S	45X	0.25	0	Free	Free	Free	Free	Free	Free
50X	X-Gen	49S	49Y	0.5	0	Free	Free	Free	Free	Free	Free
9XF0.50X	X-Gen	9X	9XY	0.5	0	Free	Free	Free	Free	Free	Free
20XF0.50X	X-Gen	20X	20XY	0.5	0	Free	Free	Free	Free	Free	Free
31XF0.50X	X-Gen	31X	31XY	0.5	0	Free	Free	Free	Free	Free	Free
i0.50E85X	X-Gen	8X	9XY	0.5	0	Free	Free	Free	Free	Free	Free
i0.50E70X	X-Gen	19X	20XY	0.5	0	Free	Free	Free	Free	Free	Free
i0.50E55X	X-Gen	30X	31XY	0.5	0	Free	Free	Free	Free	Free	Free

The model contains 108 primary and 58 secondary joints for a total of 166 joints.

Steel Material Properties:

Steel Material Label	Modulus of Elasticity (ksi)	Yield Stress Fy (ksi)	Ultimate Stress Fu (ksi)	Member Stress All. Hyp. 1 (ksi)	Member Stress All. Hyp. 2 (ksi)	Member Rupture Hyp. 1 (ksi)	Member Rupture Hyp. 2 (ksi)	Member Bearing Hyp. 1 (ksi)	Member Bearing Hyp. 2 (ksi)
A7	2.9e+004	33	60	0	0	0	0	0	0

Bolt Properties:

Bolt Label	Bolt Diameter (in)	Hole Diameter (in)	Ultimate Shear Capacity (kips)	Default End Distance (in)	Default Bolt Spacing (in)	Shear Capacity Hyp. 1 (kips)	Shear Capacity Hyp. 2 (kips)
3/4 A394	0.75	0.875	13.6	1.35	1.8	0	0

Number Bolts Used By Type:

Bolt Type	Number Bolts
3/4 A394	1124

Angle Properties:

Angle Type	Angle Size	Long Leg (in)	Short Leg (in)	Thick. (in)	Unit Weight (lbs/ft)	Gross Area (in^2)	w/t Ratio	Radius of Gyration Rx (in)	Radius of Gyration Ry (in)	Radius of Gyration Rz (in)	Number of Angles	Wind Width (in)	Short Edge Dist. (in)	Long Edge Dist. (in)	Optimize Cost Factor	Section Modulus (in^3)
SAE	6X6X0.4375	6	6	0.4375	17.2	5.06	11.57	1.87	1.87	1.19	1	6	3	0	1.0000	0
SAE	6X6X0.375	6	6	0.375	14.9	4.36	13.67	1.88	1.88	1.19	1	6	3	0	1.0000	0
SAE	5X5X0.4375	5	5	0.4375	14.3	4.18	9.29	1.55	1.55	0.986	1	5	2.5	0	1.0000	0
SAE	5X5X0.3125	5	5	0.3125	10.3	3.03	13.4	1.57	1.57	0.994	1	5	2.5	0	1.0000	0
SAE	4X4X0.3125	4	4	0.3125	8.2	2.4	10.6	1.24	1.24	0.791	1	4	2	0	1.0000	0
SAE	3.5X3.5X0.25	3.5	3.5	0.25	5.8	1.69	11.5	1.09	1.09	0.694	1	3.5	1.75	0	1.0000	0
SAE	3X3X0.25	3	3	0.25	4.9	1.44	9.75	0.93	0.93	0.592	1	3	1.5	0	1.0000	0
SAE	3X3X0.1875	3	3	0.1875	3.71	1.09	13.33	0.939	0.939	0.596	1	3	1.5	0	1.0000	0
SAE	2.5X2.5X0.25	2.5	2.5	0.25	4.1	1.19	7.75	0.769	0.769	0.491	1	2.5	1.25	0	1.0000	0
SAE	2.5X2.5X0.1875	2.5	2.5	0.1875	3.07	0.902	10.67	0.778	0.778	0.495	1	2.5	1.25	0	1.0000	0
SAE	2X2X0.25	2	2	0.25	3.19	0.94	5	0.609	0.609	0.391	1	2	1	0	1.0000	0
SAE	2X2X0.1875	2	2	0.1875	2.44	0.71	8	0.617	0.617	0.394	1	2	1	0	1.0000	0
SAU	6X4X0.3125	6	4	0.3125	10.3	3.03	16.6	1.94	1.17	0.882	1	6	2	0	1.0000	0
SAU	5X3.5X0.3125	5	3.5	0.3125	8.7	2.56	13.4	1.61	1.03	0.766	1	5	1.75	0	1.0000	0
SAU	4X3.5X0.3125	4	3.5	0.3125	7.7	2.25	10.4	1.26	1.07	0.73	1	4	1.75	0	1.0000	0

SAU	3.5X3X0.3125	3.5	3	0.3125	6.6	1.93	8.8	1.1	0.905	0.627	1	3.5	1.5	0	1.0000	0
SAU	3.5X3X0.25	3.5	3	0.25	5.4	1.56	11.25	1.11	0.914	0.631	1	3.5	1.5	0	1.0000	0
SAU	3X2.5X0.3125	3	2.5	0.3125	5.6	1.62	7.4	0.937	0.744	0.525	1	3	1.25	0	1.0000	0
SAU	3X2.5X0.25	3	2.5	0.25	4.5	1.31	9.5	0.945	0.753	0.528	1	3	1.25	0	1.0000	0
SAU	2.5X2X0.1875	2.5	2	0.1875	2.75	0.81	10.67	0.793	0.6	0.427	1	2.5	1	0	1.0000	0
SAU	2X1.5X0.1875	2	1.5	0.1875	2.12	0.62	8.33	0.632	0.44	0.322	1	2	0.75	0	1.0000	0
Bar	2x3/16	2	0	0.1875	1.28	0.375	10.67	1	1	1	1	2	0	0	0.0000	0

Angle Groups:

Group Label	Group Description	Angle Type	Angle Size	Material Type	Element Type	Group Type	Optimize Group	Allow. Add. Angle Width For Optimize (in)
Leg1	L4x4x5/16	SAE	4X4X0.3125	A7	Beam	Leg	None	0.000
Leg2	L5x5x7/16	SAE	5X5X0.4375	A7	Beam	Leg	None	0.000
Leg3	L6x6x7/16	SAE	6X6X0.4375	A7	Beam	Leg	None	0.000
Leg4	L6x6x7/16	SAE	6X6X0.4375	A7	Beam	Leg	None	0.000
Leg5	L6x6x7/16	SAE	6X6X0.4375	A7	Beam	Leg	None	0.000
M1	L2.5x2.5x3/16	SAE	2.5X2.5X0.1875	A7	Truss	Other	None	0.000
M2	L3x3x1/4	SAE	3X3X0.25	A7	Beam	Other	None	0.000
Diag1	L2.5x2x3/16	SAU	2.5X2X0.1875	A7	Truss	Other	None	0.000
Diag2	L2x2x1/4	SAE	2X2X0.25	A7	Truss	Crossing Diagonal	None	0.000
Diag3	L2x2x3/16	SAE	2X2X0.1875	A7	Truss	Crossing Diagonal	None	0.000
Diag4	L2x2x3/16	SAE	2X2X0.1875	A7	Truss	Other	None	0.000
Diag5	L2.5x2.5x3/16	SAE	2.5X2.5X0.1875	A7	Truss	Other	None	0.000
Diag6	L2.5x2x3/16	SAU	2.5X2X0.1875	A7	Truss	Other	None	0.000
Horz1	L2x2x3/16	SAE	2X2X0.1875	A7	Truss	Other	None	0.000
Horz2	L2.5x2x3/16	SAU	2.5X2X0.1875	A7	Truss	Other	None	0.000
Horz3	L3x3x3/16	SAE	3X3X0.1875	A7	Truss	Other	None	0.000
Horz4	L3x3x1/4	SAE	3X3X0.25	A7	Beam	Other	None	0.000
Diag7	L3x3x1/4	SAE	3X3X0.25	A7	Truss	Other	None	0.000
Diag8	L3.5x3x1/4	SAU	3.5X3X0.25	A7	Truss	Other	None	0.000
Diag9	L3.5x3.5x1/4	SAE	3.5X3.5X0.25	A7	Truss	Other	None	0.000
Diag10	L5x3.5x5/16	SAU	5X3.5X0.3125	A7	Truss	Other	None	0.000
Diag11	L3.5x3x5/16	SAU	3.5X3X0.3125	A7	Truss	Other	None	0.000
Diag12	L3x2.5x5/16	SAU	3X2.5X0.3125	A7	T-Only	Other	None	0.000
M3	L2.5x2x3/16	SAU	2.5X2X0.1875	A7	Truss	Other	None	0.000
M4	L2x2x3/16	SAE	2X2X0.1875	A7	Truss	Other	None	0.000
M5	L2x1.5x3/16	SAU	2X1.5X0.1875	A7	Truss	Other	None	0.000
M6	L2x1.5x3/16	SAU	2X1.5X0.1875	A7	Truss	Crossing Diagonal	None	0.000
M7	L3x3x3/16	SAE	3X3X0.1875	A7	Truss	Other	None	0.000
M8	L2.5x2.5x1/4	SAE	2.5X2.5X0.25	A7	Truss	Other	None	0.000
M9	L3x2.5x1/4	SAU	3X2.5X0.25	A7	Truss	Other	None	0.000
M10	L4x3.5x5/16	SAU	4X3.5X0.3125	A7	Truss	Other	None	0.000
M11	L3.5x3.5x1/4	SAE	3.5X3.5X0.25	A7	Truss	Other	None	0.000
M12	L6x4x5/16	SAU	6X4X0.3125	A7	Truss	Crossing Diagonal	None	0.000
M13	L5x5x5/16	SAE	5X5X0.3125	A7	Truss	Other	None	0.000
M14	L6x6x3/8	SAE	6X6X0.375	A7	Beam	Other	None	0.000
Hanger	Bar 2x3/16	Bar	2x3/16	A7	Truss	Other	None	0.000
M15	L3x3x1/4	SAE	3X3X0.25	A7	Truss	Other	None	0.000
Diag13	L2.5x2x3/16	SAU	2.5X2X0.1875	A7	Truss	Other	None	0.000
Diag14	L2x2x3/16	SAE	2X2X0.1875	A7	T-Only	Other	None	0.000
M16	L3x3x3/16	SAE	3X3X0.1875	A7	Beam	Other	None	0.000
M17	L2x1.5x3/16	SAU	2X1.5X0.1875	A7	T-Only	Other	None	0.000
M18	L2x2x3/16	SAE	2X2X0.1875	A7	Truss	Other	None	0.000
M19	L5x5x5/16	SAE	5X5X0.3125	A7	Beam	Other	None	0.000

Aggregate Angle Information:

Note: Estimate of surface area reported for painting purposes, not wind loading.

Angle Type	Angle Size	Material Type	Total Length (ft)	Total Surface Area (ft^2)	Total Weight (lbs)
SAE	4X4X0.3125	A7	80.00	106.67	656.00
SAE	5X5X0.4375	A7	60.00	100.00	858.00
SAE	6X6X0.4375	A7	224.24	448.47	3856.85
SAE	2.5X2.5X0.1875	A7	111.72	93.10	342.99
SAE	3X3X0.25	A7	576.05	576.05	2822.62
SAU	2.5X2X0.1875	A7	227.27	170.45	625.00
SAE	2X2X0.25	A7	84.85	56.57	270.68
SAE	2X2X0.1875	A7	434.80	289.86	1060.90
SAE	3X3X0.1875	A7	325.64	325.64	1208.12
SAU	3.5X3X0.25	A7	80.72	87.45	435.90
SAE	3.5X3.5X0.25	A7	101.12	117.97	586.50
SAU	5X3.5X0.3125	A7	40.75	57.73	354.56
SAU	3.5X3X0.3125	A7	76.37	82.73	504.04
SAU	3X2.5X0.3125	A7	126.58	116.03	708.85
SAU	2X1.5X0.1875	A7	857.03	499.94	1816.91
SAU	3X2.5X0.25	A7	20.00	18.33	90.00
SAE	2.5X2.5X0.25	A7	31.24	26.03	128.09
SAE	6X6X0.375	A7	60.00	120.00	894.00
SAE	5X5X0.3125	A7	60.00	100.00	618.00
SAU	6X4X0.3125	A7	54.28	90.47	559.10
SAU	4X3.5X0.3125	A7	20.31	25.39	156.41
Bar	2x3/16	A7	107.50	35.83	137.60

Sections:
The adjustment factors below only apply to dead load and wind areas that are calculated for members in the model.
They do not apply to equipment or to manually input dead load and drag areas.

Section Label	Joint Defining Section Bottom	Dead Load Adjust. Factor	Transverse Drag x Area Factor For Face	Longitudinal Drag x Area Factor For Face	Transverse Area Factor (CD From Code)	Longitudinal Area Factor (CD From Code)	Af Flat Factor For Face EIA Only	Ar Round Factor For Face EIA Only	Transverse Drag x Area Factor For All	Longitudinal Drag x Area Factor For All	SAPS Angle Drag x Area Factor	SAPS Round Force Drag x Area Factor	Solid Face
1	22X	1.000	3.200	3.200	1.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	None
2	33X	1.000	3.200	3.200	1.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	None
3	45X	1.100	3.500	3.500	1.100	1.100	0.000	0.000	0.000	0.000	0.000	0.000	None

Angle Member Connectivity:

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ	Bolt Type	# Bolts	# Bolt Holes	# Shear Planes	Connect Leg	Short Edge Dist. (in)	Long Edge Dist. (in)	End Bolt Spacing (in)	Shear Path Length (in)	Tension Path Length (in)	Rest. Path Coef.
g1P	Leg1		XY-Symmetry	2X	7X	1	4	1	1	1 3/4	A394	0	1	0		0	0	0	0	0	0

	g1X	Leg1		X-GenXY	2P	7P	1	4	1	1	1 3/4	A394	0	1	0		0	0			
0	0	0	0	0																	
	g1XY	Leg1		XY-GenXY	2Y	7Y	1	4	1	1	1 3/4	A394	0	1	0		0	0			
0	0	0	0	0																	
	g1Y	Leg1		Y-GenXY	2XY	7XY	1	4	1	1	1 3/4	A394	0	1	0		0	0			
0	0	0	0	0																	
	g2P	Leg1		XY-Symmetry	7X	11X	1	4	1	1	1 3/4	A394	0	1	0		0	0			
0	0	0	0	0																	
	g2X	Leg1		X-GenXY	7P	11P	1	4	1	1	1 3/4	A394	0	1	0		0	0			
0	0	0	0	0																	
	g2XY	Leg1		XY-GenXY	7Y	11Y	1	4	1	1	1 3/4	A394	0	1	0		0	0			
0	0	0	0	0																	
	g2Y	Leg1		Y-GenXY	7XY	11XY	1	4	1	1	1 3/4	A394	0	1	0		0	0			
0	0	0	0	0																	
	g3P	Leg1		XY-Symmetry	11X	13X	1	4	1	1	1 3/4	A394	0	1	0		0	0			
0	0	0	0	0																	
	g3X	Leg1		X-GenXY	11P	13P	1	4	1	1	1 3/4	A394	0	1	0		0	0			
0	0	0	0	0																	
	g3XY	Leg1		XY-GenXY	11Y	13Y	1	4	1	1	1 3/4	A394	0	1	0		0	0			
0	0	0	0	0																	
	g3Y	Leg1		Y-GenXY	11XY	13XY	1	4	1	1	1 3/4	A394	0	1	0		0	0			
0	0	0	0	0																	
	g4P	Leg1		XY-Symmetry	13X	18X	1	4	1	1	1 3/4	A394	6	1	1	Both	1.75	0			
1.25	4.5	0	0	0																	
	g4X	Leg1		X-GenXY	13P	18P	1	4	1	1	1 3/4	A394	6	1	1	Both	1.75	0			
1.25	4.5	0	0	0																	
	g4XY	Leg1		XY-GenXY	13Y	18Y	1	4	1	1	1 3/4	A394	6	1	1	Both	1.75	0			
1.25	4.5	0	0	0																	
	g4Y	Leg1		Y-GenXY	13XY	18XY	1	4	1	1	1 3/4	A394	6	1	1	Both	1.75	0			
1.25	4.5	0	0	0																	
	g5P	Leg2		XY-Symmetry	18P	22P	1	4	1	1	1 3/4	A394	6	1	1	Both	2.75	0			
1.25	4.5	0	0	0																	
	g5X	Leg2		X-GenXY	18X	22X	1	4	1	1	1 3/4	A394	6	1	1	Both	2.75	0			
1.25	4.5	0	0	0																	
	g5XY	Leg2		XY-GenXY	18XY	22XY	1	4	1	1	1 3/4	A394	6	1	1	Both	2.75	0			
1.25	4.5	0	0	0																	
	g5Y	Leg2		Y-GenXY	18Y	22Y	1	4	1	1	1 3/4	A394	6	1	1	Both	2.75	0			
1.25	4.5	0	0	0																	
	g6P	Leg2		XY-Symmetry	22P	24P	1	4	1	1	1 3/4	A394	0	2	0		0	0			
0	0	0	0	0																	
	g6X	Leg2		X-GenXY	22X	24X	1	4	1	1	1 3/4	A394	0	2	0		0	0			
0	0	0	0	0																	
	g6XY	Leg2		XY-GenXY	22XY	24XY	1	4	1	1	1 3/4	A394	0	2	0		0	0			
0	0	0	0	0																	
	g6Y	Leg2		Y-GenXY	22Y	24Y	1	4	1	1	1 3/4	A394	0	2	0		0	0			
0	0	0	0	0																	
	g7P	Leg2		XY-Symmetry	24P	29P	1	4	1	1	1 3/4	A394	6	2	1	Both	1	2.75			
1.25	5.5	0	0	0																	
	g7X	Leg2		X-GenXY	24X	29X	1	4	1	1	1 3/4	A394	6	2	1	Both	1	2.75			
1.25	5.5	0	0	0																	
	g7XY	Leg2		XY-GenXY	24XY	29XY	1	4	1	1	1 3/4	A394	6	2	1	Both	1	2.75			
1.25	5.5	0	0	0																	
	g7Y	Leg2		Y-GenXY	24Y	29Y	1	4	1	1	1 3/4	A394	6	2	1	Both	1	2.75			
1.25	5.5	0	0	0																	
	g8P	Leg3		XY-Symmetry	29X	34S	1	4	1	1	1 3/4	A394	6	2	1	Both	2	3.75			
1.25	5.5	0	0	0																	
	g8X	Leg3		X-GenXY	29P	34X	1	4	1	1	1 3/4	A394	6	2	1	Both	2	3.75			
1.25	5.5	0	0	0																	
	g8XY	Leg3		XY-GenXY	29Y	34XY	1	4	1	1	1 3/4	A394	6	2	1	Both	2	3.75			

1.25	5.5	0	0	0																			
	g8Y	Leg3		Y-GenXY	29XY	34Y	1	4	1	1	1	3/4	A394	6	2	1	Both	2	3.75				
1.25	5.5	0	0	0																			
	g9P	Leg3		XY-Symmetry	34S	36S	1	4	1	1	1	3/4	A394	0	2	0		0	0				
0	0	0	0	0																			
	g9X	Leg3		X-GenXY	34X	36X	1	4	1	1	1	3/4	A394	0	2	0		0	0				
0	0	0	0	0																			
	g9XY	Leg3		XY-GenXY	34XY	36XY	1	4	1	1	1	3/4	A394	0	2	0		0	0				
0	0	0	0	0																			
	g9Y	Leg3		Y-GenXY	34Y	36Y	1	4	1	1	1	3/4	A394	0	2	0		0	0				
0	0	0	0	0																			
	g10P	Leg3		XY-Symmetry	36S	38S	1	4	1	1	1	3/4	A394	14	2.62	1	Both	1.25	3.5				
1.25	2.25	0	0	0																			
	g10X	Leg3		X-GenXY	36X	38X	1	4	1	1	1	3/4	A394	14	2.62	1	Both	1.25	3.5				
1.25	2.25	0	0	0																			
	g10XY	Leg3		XY-GenXY	36XY	38XY	1	4	1	1	1	3/4	A394	14	2.62	1	Both	1.25	3.5				
1.25	2.25	0	0	0																			
	g10Y	Leg3		Y-GenXY	36Y	38Y	1	4	1	1	1	3/4	A394	14	2.62	1	Both	1.25	3.5				
1.25	2.25	0	0	0																			
	g11P	Leg4		XY-Symmetry	38S	33X	1	4	1	1	1	3/4	A394	14	2.62	1	Both	1.71875	3.96875				
1.3125	2.25	0	0	0																			
	g11X	Leg4		X-GenXY	38X	33P	1	4	1	1	1	3/4	A394	14	2.62	1	Both	1.71875	3.96875				
1.3125	2.25	0	0	0																			
	g11XY	Leg4		XY-GenXY	38XY	33Y	1	4	1	1	1	3/4	A394	14	2.62	1	Both	1.71875	3.96875				
1.3125	2.25	0	0	0																			
	g11Y	Leg4		Y-GenXY	38Y	33XY	1	4	1	1	1	3/4	A394	14	2.62	1	Both	1.71875	3.96875				
1.3125	2.25	0	0	0																			
	g12P	Leg4		XY-Symmetry	33X	46S	1	4	0.5	0.5	0.5	3/4	A394	14	2.62	1	Both	1.71875	3.96875				
1.25	2.25	0	0	0																			
	g12X	Leg4		X-GenXY	33P	46X	1	4	0.5	0.5	0.5	3/4	A394	14	2.62	1	Both	1.71875	3.96875				
1.25	2.25	0	0	0																			
	g12XY	Leg4		XY-GenXY	33Y	46XY	1	4	0.5	0.5	0.5	3/4	A394	14	2.62	1	Both	1.71875	3.96875				
1.25	2.25	0	0	0																			
	g12Y	Leg4		Y-GenXY	33XY	46Y	1	4	0.5	0.5	0.5	3/4	A394	14	2.62	1	Both	1.71875	3.96875				
1.25	2.25	0	0	0																			
	g13P	Leg5		XY-Symmetry	46S	49S	1	4	1	1	1	3/4	A394	0	2	0		0	0				
0	0	0	0	0																			
	g13X	Leg5		X-GenXY	46X	49X	1	4	1	1	1	3/4	A394	0	2	0		0	0				
0	0	0	0	0																			
	g13XY	Leg5		XY-GenXY	46XY	49XY	1	4	1	1	1	3/4	A394	0	2	0		0	0				
0	0	0	0	0																			
	g13Y	Leg5		Y-GenXY	46Y	49Y	1	4	1	1	1	3/4	A394	0	2	0		0	0				
0	0	0	0	0																			
	g14P	Leg5		XY-Symmetry	49S	45X	1	4	0.33	0.33	0.33	3/4	A394	14	2	1	Both	2.25	3.25				
1.3125	2.25	0	0	0																			
	g14X	Leg5		X-GenXY	49X	45P	1	4	0.33	0.33	0.33	3/4	A394	14	2	1	Both	2.25	3.25				
1.3125	2.25	0	0	0																			
	g14XY	Leg5		XY-GenXY	49XY	45Y	1	4	0.33	0.33	0.33	3/4	A394	14	2	1	Both	2.25	3.25				
1.3125	2.25	0	0	0																			
	g14Y	Leg5		Y-GenXY	49Y	45XY	1	4	0.33	0.33	0.33	3/4	A394	14	2	1	Both	2.25	3.25				
1.3125	2.25	0	0	0																			
	g15P	M1		XY-Symmetry	2X	1X	2	4	1	1	1	3/4	A394	2	1	1	Long only	1.25	0				
1.3125	2.25	0	0	0																			
	g15X	M1		X-GenXY	2P	1P	2	4	1	1	1	3/4	A394	2	1	1	Long only	1.25	0				
1.3125	2.25	0	0	0																			
	g15XY	M1		XY-GenXY	2Y	1P	2	4	1	1	1	3/4	A394	2	1	1	Long only	1.25	0				
1.3125	2.25	0	0	0																			
	g15Y	M1		Y-GenXY	2XY	1X	2	4	1	1	1	3/4	A394	2	1	1	Long only	1.25	0				
1.3125	2.25	0	0	0																			

g16P	M15		XY-Symmetry	1X	3X	2	4	1	1	1 3/4	A394	2	1	1	Long only	1.5	0	1.25	2
0	0	0	0																
g16X	M15		X-GenXY	1P	3P	2	4	1	1	1 3/4	A394	2	1	1	Long only	1.5	0	1.25	2
0	0	0	0																
g16XY	M15		XY-GenXY	1P	3Y	2	4	1	1	1 3/4	A394	2	1	1	Long only	1.5	0	1.25	2
0	0	0	0																
g16Y	M15		Y-GenXY	1X	3XY	2	4	1	1	1 3/4	A394	2	1	1	Long only	1.5	0	1.25	2
0	0	0	0																
g17P	Diag1		None	2XY	7X	2	4	1	1	1 3/4	A394	1	1	1	Long only	1.25	0	1.3125	0
0	0	0	0																
g18P	Diag1		None	2P	7Y	2	4	1	1	1 3/4	A394	1	1	1	Long only	1.25	0	1.3125	0
0	0	0	0																
g19P	Diag2		XY-Symmetry	7X	11XY	2	4	0.75	0.5	0.5 3/4	A394	1	1	1	Long only	0.875	0	1.25	0
0	0	0	0																
g19X	Diag2		X-GenXY	7P	11Y	2	4	0.75	0.5	0.5 3/4	A394	1	1	1	Long only	0.875	0	1.25	0
0	0	0	0																
g19XY	Diag2		XY-GenXY	7Y	11P	2	4	0.75	0.5	0.5 3/4	A394	1	1	1	Long only	0.875	0	1.25	0
0	0	0	0																
g19Y	Diag2		Y-GenXY	7XY	11X	2	4	0.75	0.5	0.5 3/4	A394	1	1	1	Long only	0.875	0	1.25	0
0	0	0	0																
g20P	Diag2		XY-Symmetry	11X	13XY	2	4	0.75	0.5	0.5 3/4	A394	1	1	1	Long only	0.875	0	1.25	0
0	0	0	0																
g20X	Diag2		X-GenXY	11P	13Y	2	4	0.75	0.5	0.5 3/4	A394	1	1	1	Long only	0.875	0	1.25	0
0	0	0	0																
g20XY	Diag2		XY-GenXY	11Y	13P	2	4	0.75	0.5	0.5 3/4	A394	1	1	1	Long only	0.875	0	1.25	0
0	0	0	0																
g20Y	Diag2		Y-GenXY	11XY	13X	2	4	0.75	0.5	0.5 3/4	A394	1	1	1	Long only	0.875	0	1.25	0
0	0	0	0																
g21P	Diag2		XY-Symmetry	13X	18XY	2	4	0.75	0.5	0.5 3/4	A394	1	1	1	Long only	0.875	0	1.28125	0
0	0	0	0																
g21X	Diag2		X-GenXY	13P	18Y	2	4	0.75	0.5	0.5 3/4	A394	1	1	1	Long only	0.875	0	1.28125	0
0	0	0	0																
g21XY	Diag2		XY-GenXY	13Y	18P	2	4	0.75	0.5	0.5 3/4	A394	1	1	1	Long only	0.875	0	1.28125	0
0	0	0	0																
g21Y	Diag2		Y-GenXY	13XY	18X	2	4	0.75	0.5	0.5 3/4	A394	1	1	1	Long only	0.875	0	1.28125	0
0	0	0	0																
g22P	Diag3		XY-Symmetry	18X	22XY	2	5	0.75	0.5	0.5 3/4	A394	2	1	1	Long only	0.875	0	1.25	2.25
0	0	0	0																
g22X	Diag3		X-GenXY	18P	22Y	2	5	0.75	0.5	0.5 3/4	A394	2	1	1	Long only	0.875	0	1.25	2.25
0	0	0	0																
g22XY	Diag3		XY-GenXY	18Y	22P	2	5	0.75	0.5	0.5 3/4	A394	2	1	1	Long only	0.875	0	1.25	2.25
0	0	0	0																
g22Y	Diag3		Y-GenXY	18XY	22X	2	5	0.75	0.5	0.5 3/4	A394	2	1	1	Long only	0.875	0	1.25	2.25
0	0	0	0																
g23P	Diag3		XY-Symmetry	22X	24XY	2	5	0.75	0.5	0.5 3/4	A394	2	1	1	Long only	0.875	0	1.25	2.25
0	0	0	0																
g23X	Diag3		X-GenXY	22P	24Y	2	5	0.75	0.5	0.5 3/4	A394	2	1	1	Long only	0.875	0	1.25	2.25
0	0	0	0																
g23XY	Diag3		XY-GenXY	22Y	24P	2	5	0.75	0.5	0.5 3/4	A394	2	1	1	Long only	0.875	0	1.25	2.25
0	0	0	0																
g23Y	Diag3		Y-GenXY	22XY	24X	2	5	0.75	0.5	0.5 3/4	A394	2	1	1	Long only	0.875	0	1.25	2.25
0	0	0	0																
g24P	Diag3		XY-Symmetry	24X	29XY	2	5	0.75	0.5	0.5 3/4	A394	2	1	1	Long only	0.875	0	1.28125	2.375
0	0	0	0																
g24X	Diag3		X-GenXY	24P	29Y	2	5	0.75	0.5	0.5 3/4	A394	2	1	1	Long only	0.875	0	1.28125	2.375
0	0	0	0																
g24XY	Diag3		XY-GenXY	24Y	29P	2	5	0.75	0.5	0.5 3/4	A394	2	1	1	Long only	0.875	0	1.28125	2.375
0	0	0	0																
g24Y	Diag3		Y-GenXY	24XY	29X	2	5	0.75	0.5	0.5 3/4	A394	2	1	1	Long only	0.875	0		

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1.28125   2.375      0       0     0
        g25P  Diag3          XY-Symmetry       29X       34Y    2     5 0.787 0.573 0.573 3/4 A394     2      1       1  Long only   0.875       0
1.25  2.6875      0       0     0
        g25X  Diag3           X-GenXY          29P      34XY    2     5 0.787 0.573 0.573 3/4 A394     2      1       1  Long only   0.875       0
1.25  2.6875      0       0     0
       g25XY  Diag3          XY-GenXY          29Y       34X    2     5 0.787 0.573 0.573 3/4 A394     2      1       1  Long only   0.875       0
1.25  2.6875      0       0     0
        g25Y  Diag3           Y-GenXY         29XY       34S    2     5 0.787 0.573 0.573 3/4 A394     2      1       1  Long only   0.875       0
1.25  2.6875      0       0     0
        g26P  Diag3          XY-Symmetry       34S       36Y    2     5 0.777 0.554 0.554 3/4 A394     2      1       1  Long only   0.875       0
1.25  2.4375      0       0     0
        g26X  Diag3           X-GenXY          34X      36XY    2     5 0.777 0.554 0.554 3/4 A394     2      1       1  Long only   0.875       0
1.25  2.4375      0       0     0
       g26XY  Diag3          XY-GenXY         34XY       36X    2     5 0.777 0.554 0.554 3/4 A394     2      1       1  Long only   0.875       0
1.25  2.4375      0       0     0
        g26Y  Diag3           Y-GenXY          34Y       36S    2     5 0.777 0.554 0.554 3/4 A394     2      1       1  Long only   0.875       0
1.25  2.4375      0       0     0
        g27P  Diag4          XY-Symmetry       36S       48S    2     5     1     1     1 3/4 A394     2      1       1  Long only   0.875       0
1.25  2.9375      0       0     0
        g27X  Diag4           X-GenXY          36X       48X    2     5     1     1     1 3/4 A394     2      1       1  Long only   0.875       0
1.25  2.9375      0       0     0
       g27XY  Diag4          XY-GenXY         36XY       48X    2     5     1     1     1 3/4 A394     2      1       1  Long only   0.875       0
1.25  2.9375      0       0     0
        g27Y  Diag4           Y-GenXY          36Y       48S    2     5     1     1     1 3/4 A394     2      1       1  Long only   0.875       0
1.25  2.9375      0       0     0
        g28P  Diag5          XY-Symmetry       48S       33X    2     5     1     1     1 3/4 A394     2      1       1  Long only    1.25       0
1.25   4.375      0       0     0
        g28X  Diag5           X-GenXY          48X       33P    2     5     1     1     1 3/4 A394     2      1       1  Long only    1.25       0
1.25   4.375      0       0     0
       g28XY  Diag5          XY-GenXY          48X       33Y    2     5     1     1     1 3/4 A394     2      1       1  Long only    1.25       0
1.25   4.375      0       0     0
        g28Y  Diag5           Y-GenXY          48S      33XY    2     5     1     1     1 3/4 A394     2      1       1  Long only    1.25       0
1.25   4.375      0       0     0
        g29P Diag14          XY-Symmetry       33X       46Y    2     5 0.786   0.5   0.5 3/4 A394     2      1       1  Long only   0.875       0
1.25     3.5      0       0     0
        g29X Diag14           X-GenXY          33P      46XY    2     5 0.786   0.5   0.5 3/4 A394     2      1       1  Long only   0.875       0
1.25     3.5      0       0     0
       g29XY Diag14          XY-GenXY          33Y       46X    2     5 0.786   0.5   0.5 3/4 A394     2      1       1  Long only   0.875       0
1.25     3.5      0       0     0
        g29Y Diag14           Y-GenXY         33XY       46S    2     5 0.786   0.5   0.5 3/4 A394     2      1       1  Long only   0.875       0
1.25     3.5      0       0     0
        g30P Diag13          XY-Symmetry       46S       50S    2     5     1     1     1 3/4 A394     2      1       1  Long only    1.25       0
1.125   2.625      0       0     0
        g30X Diag13           X-GenXY          46X       50X    2     5     1     1     1 3/4 A394     2      1       1  Long only    1.25       0
1.125   2.625      0       0     0
       g30XY Diag13          XY-GenXY         46XY       50X    2     5     1     1     1 3/4 A394     2      1       1  Long only    1.25       0
1.125   2.625      0       0     0
        g30Y Diag13           Y-GenXY          46Y       50S    2     5     1     1     1 3/4 A394     2      1       1  Long only    1.25       0
1.125   2.625      0       0     0
        g31P Diag13          XY-Symmetry       50S       45X    2     5  0.33  0.67  0.33 3/4 A394     2      1       1  Long only    1.25       0
1.25       2      0       0     0
        g31X Diag13           X-GenXY          50X       45P    2     5  0.33  0.67  0.33 3/4 A394     2      1       1  Long only    1.25       0
1.25       2      0       0     0
       g31XY Diag13          XY-GenXY          50X       45Y    2     5  0.33  0.67  0.33 3/4 A394     2      1       1  Long only    1.25       0
1.25       2      0       0     0
        g31Y Diag13           Y-GenXY          50S      45XY    2     5  0.33  0.67  0.33 3/4 A394     2      1       1  Long only    1.25       0
1.25       2      0       0     0
        g32P  Horz1          X-Symmetry        2X        2XY    3     4     1     1     1 3/4 A394     1      1       1  Long only   0.875       0
1.25       0      0       0     0
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g32X	Horz1		X-Gen	2P	2Y	3	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0
g33P	Horz2		X-Symmetry	7X	7XY	3	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	2.25	0	0
g33X	Horz2		X-Gen	7P	7Y	3	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	2.25	0	0
g34P	Horz1		X-Symmetry	13X	13XY	3	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0
g34X	Horz1		X-Gen	13P	13Y	3	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0
g35P	Horz2		X-Symmetry	18X	18XY	3	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	2.25	0	0
g35X	Horz2		X-Gen	18P	18Y	3	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	2.25	0	0
g36P	Horz1		X-Symmetry	24X	24XY	3	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0
g36X	Horz1		X-Gen	24P	24Y	3	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0
g37P	Horz2		X-Symmetry	29X	29XY	3	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	2.25	0	0
g37X	Horz2		X-Gen	29P	29Y	3	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	2.25	0	0
g38P	Horz3		XY-Symmetry	38S	48S	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.875	0	1.28125	2	0
g38X	Horz3		X-GenXY	38X	48X	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.875	0	1.28125	2	0
g38XY	Horz3		XY-GenXY	38XY	48X	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.875	0	1.28125	2	0
g38Y	Horz3		Y-GenXY	38Y	48S	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.875	0	1.28125	2	0
g39P	Horz3		X-Symmetry	33X	33XY	3	5	0.5	1	0.5 3/4	A394	2	1	1	Long only	1.5	0	1.28125	2.25	0
g39X	Horz3		X-Gen	33P	33Y	3	5	0.5	1	0.5 3/4	A394	2	1	1	Long only	1.5	0	1.28125	2.25	0
g40P	Horz4		X-Symmetry	46S	46Y	3	5	0.5	1	0.5 3/4	A394	2	1	1	Long only	1.5	0	1.28125	2.25	0
g40X	Horz4		X-Gen	46X	46XY	3	5	0.5	1	0.5 3/4	A394	2	1	1	Long only	1.5	0	1.28125	2.25	0
g41P	Horz3		XY-Symmetry	49S	50S	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.5	0	1.28125	2.25	0
g41X	Horz3		X-GenXY	49X	50X	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.5	0	1.28125	2.25	0
g41XY	Horz3		XY-GenXY	49XY	50X	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.5	0	1.28125	2.25	0
g41Y	Horz3		Y-GenXY	49Y	50S	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.5	0	1.28125	2.25	0
g42P	Diag6		XY-Symmetry	2X	8X	2	5	1	1	1 3/4	A394	2	1	1	Long only	1.25	0	1.3125	4.5	0
g42X	Diag6		X-GenXY	2P	8P	2	5	1	1	1 3/4	A394	2	1	1	Long only	1.25	0	1.3125	4.5	0
g42XY	Diag6		XY-GenXY	2Y	8Y	2	5	1	1	1 3/4	A394	2	1	1	Long only	1.25	0	1.3125	4.5	0
g42Y	Diag6		Y-GenXY	2XY	8XY	2	5	1	1	1 3/4	A394	2	1	1	Long only	1.25	0	1.3125	4.5	0
g43P	Diag7		XY-Symmetry	8X	11X	2	5	1	1	1 3/4	A394	2	1	1	Long only	1.25	0	1.25	2	0
g43X	Diag7		X-GenXY	8P	11P	2	5	1	1	1 3/4	A394	2	1	1	Long only	1.25	0	1.25	2	0
g43XY	Diag7		XY-GenXY	8Y	11Y	2	5	1	1	1 3/4	A394	2	1	1	Long only	1.25	0			

1.25	2	0	0	0															
	g43Y	Diag7		Y-GenXY	8XY	11XY	2	5	1	1	1	3/4	A394	2	1	1	Long only	1.25	0
1.25	2	0	0	0															
	g44P	Diag7		XY-Symmetry	11X	14X	2	5	1	1	1	3/4	A394	2	1	1	Long only	1.5	0
1.25	2	0	0	0															
	g44X	Diag7		X-GenXY	11P	14P	2	5	1	1	1	3/4	A394	2	1	1	Long only	1.5	0
1.25	2	0	0	0															
	g44XY	Diag7		XY-GenXY	11Y	14Y	2	5	1	1	1	3/4	A394	2	1	1	Long only	1.5	0
1.25	2	0	0	0															
	g44Y	Diag7		Y-GenXY	11XY	14XY	2	5	1	1	1	3/4	A394	2	1	1	Long only	1.5	0
1.25	2	0	0	0															
	g45P	Diag7		XY-Symmetry	13X	19X	2	4	1	1	1	3/4	A394	1	1	1	Long only	1.5	0
1.25	0	0	0	0															
	g45X	Diag7		X-GenXY	13P	19P	2	4	1	1	1	3/4	A394	1	1	1	Long only	1.5	0
1.25	0	0	0	0															
	g45XY	Diag7		XY-GenXY	13Y	19Y	2	4	1	1	1	3/4	A394	1	1	1	Long only	1.5	0
1.25	0	0	0	0															
	g45Y	Diag7		Y-GenXY	13XY	19XY	2	4	1	1	1	3/4	A394	1	1	1	Long only	1.5	0
1.25	0	0	0	0															
	g46P	Diag8		XY-Symmetry	19X	22X	2	5	1	1	1	3/4	A394	2	1	1	Long only	1.75	0
1.25	2	0	0	0															
	g46X	Diag8		X-GenXY	19P	22P	2	5	1	1	1	3/4	A394	2	1	1	Long only	1.75	0
1.25	2	0	0	0															
	g46XY	Diag8		XY-GenXY	19Y	22Y	2	5	1	1	1	3/4	A394	2	1	1	Long only	1.75	0
1.25	2	0	0	0															
	g46Y	Diag8		Y-GenXY	19XY	22XY	2	5	1	1	1	3/4	A394	2	1	1	Long only	1.75	0
1.25	2	0	0	0															
	g47P	Diag8		XY-Symmetry	22X	25X	2	5	1	1	1	3/4	A394	3	1	1	Long only	2	0
1.25	1.875	0	0	0															
	g47X	Diag8		X-GenXY	22P	25P	2	5	1	1	1	3/4	A394	3	1	1	Long only	2	0
1.25	1.875	0	0	0															
	g47XY	Diag8		XY-GenXY	22Y	25Y	2	5	1	1	1	3/4	A394	3	1	1	Long only	2	0
1.25	1.875	0	0	0															
	g47Y	Diag8		Y-GenXY	22XY	25XY	2	5	1	1	1	3/4	A394	3	1	1	Long only	2	0
1.25	1.875	0	0	0															
	g48P	Diag8		XY-Symmetry	24X	30X	2	5	1	1	1	3/4	A394	3	1	1	Long only	2	0
1.25	1.875	0	0	0															
	g48X	Diag8		X-GenXY	24P	30P	2	5	1	1	1	3/4	A394	3	1	1	Long only	2	0
1.25	1.875	0	0	0															
	g48XY	Diag8		XY-GenXY	24Y	30Y	2	5	1	1	1	3/4	A394	3	1	1	Long only	2	0
1.25	1.875	0	0	0															
	g48Y	Diag8		Y-GenXY	24XY	30XY	2	5	1	1	1	3/4	A394	3	1	1	Long only	2	0
1.25	1.875	0	0	0															
	g49P	Diag9		XY-Symmetry	30X	34S	2	5	1	1	1	3/4	A394	3	1	1	Long only	1.5	0
1.25	2	0	0	0															
	g49X	Diag9		X-GenXY	30P	34X	2	5	1	1	1	3/4	A394	3	1	1	Long only	1.5	0
1.25	2	0	0	0															
	g49XY	Diag9		XY-GenXY	30Y	34XY	2	5	1	1	1	3/4	A394	3	1	1	Long only	1.5	0
1.25	2	0	0	0															
	g49Y	Diag9		Y-GenXY	30XY	34Y	2	5	1	1	1	3/4	A394	3	1	1	Long only	1.5	0
1.25	2	0	0	0															
	g50P	Diag10		XY-Symmetry	34S	39S	2	5	0.5	1	0.5	3/4	A394	4	1.06	1	Short only	1	2
1.25	1.75	0	0	0															
	g50X	Diag10		X-GenXY	34X	39X	2	5	0.5	1	0.5	3/4	A394	4	1.06	1	Short only	1	2
1.25	1.75	0	0	0															
	g50XY	Diag10		XY-GenXY	34XY	39XY	2	5	0.5	1	0.5	3/4	A394	4	1.06	1	Short only	1	2
1.25	1.75	0	0	0															
	g50Y	Diag10		Y-GenXY	34Y	39Y	2	5	0.5	1	0.5	3/4	A394	4	1.06	1	Short only	1	2
1.25	1.75	0	0	0															

g51P	Diag11		XY-Symmetry	33X	47S	2	5	0.5	1	0.5	3/4	A394	4	1	1	Long only	1.75	0	1.25
2	0	0	0																
g51X	Diag11		X-GenXY	33P	47S	2	5	0.5	1	0.5	3/4	A394	4	1	1	Long only	1.75	0	1.25
2	0	0	0																
g51XY	Diag11		XY-GenXY	33Y	47Y	2	5	0.5	1	0.5	3/4	A394	4	1	1	Long only	1.75	0	1.25
2	0	0	0																
g51Y	Diag11		Y-GenXY	33XY	47Y	2	5	0.5	1	0.5	3/4	A394	4	1	1	Long only	1.75	0	1.25
2	0	0	0																
g52P	Diag12		XY-Symmetry	47S	45X	2	5	0.25	0.5	0.25	3/4	A394	3	1	1	Long only	1.75	0	1.25
2	0	0	0																
g52X	Diag12		X-GenXY	47S	45P	2	5	0.25	0.5	0.25	3/4	A394	3	1	1	Long only	1.75	0	1.25
2	0	0	0																
g52XY	Diag12		XY-GenXY	47Y	45Y	2	5	0.25	0.5	0.25	3/4	A394	3	1	1	Long only	1.75	0	1.25
2	0	0	0																
g52Y	Diag12		Y-GenXY	47Y	45XY	2	5	0.25	0.5	0.25	3/4	A394	3	1	1	Long only	1.75	0	1.25
2	0	0	0																
g53P	M5		X-Symmetry	3XY	3X	3	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	1.125
0	0	0	0																
g53X	M5		X-Gen	3Y	3P	3	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	1.125
0	0	0	0																
g54P	M5		X-Symmetry	14XY	14X	3	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	1.125
0	0	0	0																
g54X	M5		X-Gen	14Y	14P	3	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	1.125
0	0	0	0																
g55P	M5		X-Symmetry	25XY	25X	3	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	1.125
0	0	0	0																
g55X	M5		X-Gen	25Y	25P	3	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	1.125
0	0	0	0																
g56P	M5		None	5Y	5P	3	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	1.125
0	0	0	0																
g57P	M5		None	16Y	16P	3	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	1.125
0	0	0	0																
g58P	M5		None	27Y	27P	3	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	1.125
0	0	0	0																
g59P	M3		X-Symmetry	4XY	4X	3	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	1.125
0	0	0	0																
g59X	M3		X-Gen	4Y	4P	3	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	1.125
0	0	0	0																
g60P	M3		X-Symmetry	15XY	15X	3	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	1.125
0	0	0	0																
g60X	M3		X-Gen	15Y	15P	3	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	1.125
0	0	0	0																
g61P	M3		X-Symmetry	26XY	26X	3	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	1.125
0	0	0	0																
g61X	M3		X-Gen	26Y	26P	3	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	1.125
0	0	0	0																
g62P	M5		None	2X	3XY	2	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	1.125
0	0	0	0																
g63P	M5		None	3X	4XY	2	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	1.125
0	0	0	0																
g64P	M5		None	4P	3Y	2	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	1.125
0	0	0	0																
g65P	M5		None	3P	2Y	2	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	1.125
0	0	0	0																
g66P	M4		None	4X	5Y	2	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	1.125
0	0	0	0																
g67P	M4		None	5P	4Y	2	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	1.125
0	0	0	0																
g68P	M5		None	13X	14XY	2	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	

1.125	0	0	0	0															
	g69P	M5		None	14X	15XY	2	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	
1.125	0	0	0	0															
	g70P	M5		None	15P	14Y	2	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	
1.125	0	0	0	0															
	g71P	M5		None	14P	13Y	2	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	
1.125	0	0	0	0															
	g72P	M4		None	15X	16Y	2	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	
1.125	0	0	0	0															
	g73P	M4		None	16P	15Y	2	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	
1.125	0	0	0	0															
	g74P	M5		None	24X	25XY	2	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	
1.125	0	0	0	0															
	g75P	M5		None	25X	26XY	2	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	
1.125	0	0	0	0															
	g76P	M5		None	26P	25Y	2	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	
1.125	0	0	0	0															
	g77P	M5		None	25P	24Y	2	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	
1.125	0	0	0	0															
	g78P	M4		None	26X	27Y	2	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	
1.125	0	0	0	0															
	g79P	M4		None	27P	26Y	2	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	
1.125	0	0	0	0															
	g80P	M2		XY-Symmetry	2X	3X	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	3	0	0	0															
	g80X	M2		X-GenXY	2P	3P	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	3	0	0	0															
	g80XY	M2		XY-GenXY	2Y	3Y	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	3	0	0	0															
	g80Y	M2		Y-GenXY	2XY	3XY	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	3	0	0	0															
	g81P	M2		XY-Symmetry	7X	8X	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	2	0	0	0															
	g81X	M2		X-GenXY	7P	8P	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	2	0	0	0															
	g81XY	M2		XY-GenXY	7Y	8Y	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	2	0	0	0															
	g81Y	M2		Y-GenXY	7XY	8XY	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	2	0	0	0															
	g82P	M2		XY-Symmetry	3X	4X	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g82X	M2		X-GenXY	3P	4P	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g82XY	M2		XY-GenXY	3Y	4Y	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g82Y	M2		Y-GenXY	3XY	4XY	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g83P	M2		XY-Symmetry	8X	9X	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g83X	M2		X-GenXY	8P	9P	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g83XY	M2		XY-GenXY	8Y	9Y	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g83Y	M2		Y-GenXY	8XY	9XY	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g84P	M2		XY-Symmetry	9X	10P	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g84X	M2		X-GenXY	9P	10P	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															

g84XY	M2		XY-GenXY	9Y	10Y	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25
6	0	0	0															
g84Y	M2		Y-GenXY	9XY	10Y	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25
6	0	0	0															
g85P	M2		XY-Symmetry	4X	5P	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25
6	0	0	0															
g85X	M2		X-GenXY	4P	5P	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25
6	0	0	0															
g85XY	M2		XY-GenXY	4Y	5Y	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25
6	0	0	0															
g85Y	M2		Y-GenXY	4XY	5Y	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25
6	0	0	0															
g86P	M2		XY-Symmetry	13X	14X	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25
2	0	0	0															
g86X	M2		X-GenXY	13P	14P	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25
2	0	0	0															
g86XY	M2		XY-GenXY	13Y	14Y	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25
2	0	0	0															
g86Y	M2		Y-GenXY	13XY	14XY	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25
2	0	0	0															
g87P	M2		XY-Symmetry	18X	19X	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25
2	0	0	0															
g87X	M2		X-GenXY	18P	19P	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25
2	0	0	0															
g87XY	M2		XY-GenXY	18Y	19Y	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25
2	0	0	0															
g87Y	M2		Y-GenXY	18XY	19XY	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25
2	0	0	0															
g88P	M2		XY-Symmetry	24X	25X	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25
2	0	0	0															
g88X	M2		X-GenXY	24P	25P	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25
2	0	0	0															
g88XY	M2		XY-GenXY	24Y	25Y	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25
2	0	0	0															
g88Y	M2		Y-GenXY	24XY	25XY	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25
2	0	0	0															
g89P	M2		XY-Symmetry	29X	30X	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25
2	0	0	0															
g89X	M2		X-GenXY	29P	30P	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25
2	0	0	0															
g89XY	M2		XY-GenXY	29Y	30Y	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25
2	0	0	0															
g89Y	M2		Y-GenXY	29XY	30XY	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25
2	0	0	0															
g90P	M2		XY-Symmetry	14X	15X	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25
6	0	0	0															
g90X	M2		X-GenXY	14P	15P	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25
6	0	0	0															
g90XY	M2		XY-GenXY	14Y	15Y	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25
6	0	0	0															
g90Y	M2		Y-GenXY	14XY	15XY	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25
6	0	0	0															
g91P	M2		XY-Symmetry	15X	16P	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25
6	0	0	0															
g91X	M2		X-GenXY	15P	16P	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25
6	0	0	0															
g91XY	M2		XY-GenXY	15Y	16Y	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25
6	0	0	0															
g91Y	M2		Y-GenXY	15XY	16Y	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	1.25

1.25	6	0	0	0															
	g92P	M2		XY-Symmetry	19X	20X	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g92X	M2		X-GenXY	19P	20P	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g92XY	M2		XY-GenXY	19Y	20Y	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g92Y	M2		Y-GenXY	19XY	20XY	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g93P	M2		XY-Symmetry	20X	21P	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g93X	M2		X-GenXY	20P	21P	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g93XY	M2		XY-GenXY	20Y	21Y	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g93Y	M2		Y-GenXY	20XY	21Y	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g94P	M2		XY-Symmetry	25XY	26XY	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g94X	M2		X-GenXY	25Y	26Y	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g94XY	M2		XY-GenXY	25P	26P	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g94Y	M2		Y-GenXY	25X	26X	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g95P	M2		XY-Symmetry	26X	27P	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g95X	M2		X-GenXY	26P	27P	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g95XY	M2		XY-GenXY	26Y	27Y	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g95Y	M2		Y-GenXY	26XY	27Y	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g96P	M2		XY-Symmetry	30X	31X	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g96X	M2		X-GenXY	30P	31P	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g96XY	M2		XY-GenXY	30Y	31Y	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g96Y	M2		Y-GenXY	30XY	31XY	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g97P	M2		XY-Symmetry	31X	32P	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g97X	M2		X-GenXY	31P	32P	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g97XY	M2		XY-GenXY	31Y	32Y	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g97Y	M2		Y-GenXY	31XY	32Y	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.75	0	
1.25	6	0	0	0															
	g98P	M4		X-Symmetry	8X	8XY	3	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0															
	g98X	M4		X-Gen	8P	8Y	3	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0															
	g99P	M18		X-Symmetry	9X	9XF0.50S	3	4	1	1	1 3/4	A394	1	1	1	Long only	0	0	
0	0	0	0	0															
	g99X	M18		X-Gen	9P	9XF0.50X	3	4	1	1	1 3/4	A394	1	1	1	Long only	0	0	
0	0	0	0	0															
	Fg99157P	M18		X-Symmetry	9XF0.50S	9XY	3	4	1	1	1 3/4	A394	1	1	1	Long only	0	0	
0	0	0	0	0															

Fg99157X	M18		X-Gen	9XF0.50X	9Y	3	4	1	1	1 3/4	A394	1	1	1	Long only	0	0	0	0	0	0	0	0
g100P	M4		X-Symmetry	19X	19XY	3	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0	0	0
g100X	M4		X-Gen	19P	19Y	3	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0	0	0
g101P	M18		X-Symmetry	20X	20XF0.50S	3	4	1	1	1 3/4	A394	1	1	1	Long only	0	0	0	0	0	0	0	0
g101X	M18		X-Gen	20P	20XF0.50X	3	4	1	1	1 3/4	A394	1	1	1	Long only	0	0	0	0	0	0	0	0
Fg101158P	M18		X-Symmetry	20XF0.50S	20XY	3	4	1	1	1 3/4	A394	1	1	1	Long only	0	0	0	0	0	0	0	0
Fg101158X	M18		X-Gen	20XF0.50X	20Y	3	4	1	1	1 3/4	A394	1	1	1	Long only	0	0	0	0	0	0	0	0
g102P	M4		X-Symmetry	30X	30XY	3	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0	0	0
g102X	M4		X-Gen	30P	30Y	3	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0	0	0
g103P	M18		X-Symmetry	31X	31XF0.50S	3	4	1	1	1 3/4	A394	1	1	1	Long only	0	0	0	0	0	0	0	0
g103X	M18		X-Gen	31P	31XF0.50X	3	4	1	1	1 3/4	A394	1	1	1	Long only	0	0	0	0	0	0	0	0
Fg103159P	M18		X-Symmetry	31XF0.50S	31XY	3	4	1	1	1 3/4	A394	1	1	1	Long only	0	0	0	0	0	0	0	0
Fg103159X	M18		X-Gen	31XF0.50X	31Y	3	4	1	1	1 3/4	A394	1	1	1	Long only	0	0	0	0	0	0	0	0
g104P	M6		XY-Symmetry	7X	8XY	2	4	0.5	0.5	0.5 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0	0	0
g104X	M6		X-GenXY	7P	8Y	2	4	0.5	0.5	0.5 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0	0	0
g104XY	M6		XY-GenXY	7Y	8P	2	4	0.5	0.5	0.5 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0	0	0
g104Y	M6		Y-GenXY	7XY	8X	2	4	0.5	0.5	0.5 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0	0	0
g105P	M5		XY-Symmetry	8X	i0.50E85S	2	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0	0	0
g105X	M5		X-GenXY	8P	i0.50E85X	2	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0	0	0
g105XY	M5		XY-GenXY	8Y	i0.50E85X	2	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0	0	0
g105Y	M5		Y-GenXY	8XY	i0.50E85S	2	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0	0	0
g106P	M6		XY-Symmetry	9X	10Y	2	4	0.5	0.5	0.5 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0	0	0
g106X	M6		X-GenXY	9P	10Y	2	4	0.5	0.5	0.5 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0	0	0
g106XY	M6		XY-GenXY	9Y	10P	2	4	0.5	0.5	0.5 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0	0	0
g106Y	M6		Y-GenXY	9XY	10P	2	4	0.5	0.5	0.5 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0	0	0
g107P	M6		XY-Symmetry	18X	19XY	2	4	0.5	0.5	0.5 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0	0	0
g107X	M6		X-GenXY	18P	19Y	2	4	0.5	0.5	0.5 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0	0	0
g107XY	M6		XY-GenXY	18Y	19P	2	4	0.5	0.5	0.5 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0	0	0
g107Y	M6		Y-GenXY	18XY	19X	2	4	0.5	0.5	0.5 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0	0	0
g108P	M5		XY-Symmetry	19X	i0.50E70S	2	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0						

1.25	0	0	0	0																
	g108X	M5		X-GenXY	19P	i0.50E70X	2	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0																
	g108XY	M5		XY-GenXY	19Y	i0.50E70X	2	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0																
	g108Y	M5		Y-GenXY	19XY	i0.50E70S	2	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0																
	g109P	M6		XY-Symmetry	20X	21Y	2	4	0.5	0.5	0.5	3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0																
	g109X	M6		X-GenXY	20P	21Y	2	4	0.5	0.5	0.5	3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0																
	g109XY	M6		XY-GenXY	20Y	21P	2	4	0.5	0.5	0.5	3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0																
	g109Y	M6		Y-GenXY	20XY	21P	2	4	0.5	0.5	0.5	3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0																
	g110P	M6		XY-Symmetry	29X	30XY	2	4	0.5	0.5	0.5	3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0																
	g110X	M6		X-GenXY	29P	30Y	2	4	0.5	0.5	0.5	3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0																
	g110XY	M6		XY-GenXY	29Y	30P	2	4	0.5	0.5	0.5	3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0																
	g110Y	M6		Y-GenXY	29XY	30X	2	4	0.5	0.5	0.5	3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0																
	g111P	M5		XY-Symmetry	30X	i0.50E55S	2	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0																
	g111X	M5		X-GenXY	30P	i0.50E55X	2	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0																
	g111XY	M5		XY-GenXY	30Y	i0.50E55X	2	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0																
	g111Y	M5		Y-GenXY	30XY	i0.50E55S	2	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0																
	g112P	M6		XY-Symmetry	31X	32Y	2	4	0.5	0.5	0.5	3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0																
	g112X	M6		X-GenXY	31P	32Y	2	4	0.5	0.5	0.5	3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0																
	g112XY	M6		XY-GenXY	31Y	32P	2	4	0.5	0.5	0.5	3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0																
	g112Y	M6		Y-GenXY	31XY	32P	2	4	0.5	0.5	0.5	3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0																
	g113P	M5		XY-Symmetry	4X	9X	2	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0																
	g113X	M5		X-GenXY	4P	9P	2	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0																
	g113XY	M5		XY-GenXY	4Y	9Y	2	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0																
	g113Y	M5		Y-GenXY	4XY	9XY	2	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0																
	g114P	M5		XY-Symmetry	15X	20X	2	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0																
	g114X	M5		X-GenXY	15P	20P	2	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0																
	g114XY	M5		XY-GenXY	15Y	20Y	2	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0																
	g114Y	M5		Y-GenXY	15XY	20XY	2	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0																
	g115P	M5		XY-Symmetry	26X	31X	2	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0																
	g115X	M5		X-GenXY	26P	31P	2	4	1	1	1	3/4	A394	1	1	1	Long only	0.875	0	
1.25	0	0	0	0																

g115XY	M5	XY-GenXY	26Y	31Y	2	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0
g115Y	M5	Y-GenXY	26XY	31XY	2	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0
g116P	M5	Y-Symmetry	5P	10P	2	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0
g116Y	M5	Y-Gen	5Y	10Y	2	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0
g117P	M5	Y-Symmetry	16P	21P	2	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0
g117Y	M5	Y-Gen	16Y	21Y	2	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0
g118P	M5	Y-Symmetry	27P	32P	2	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0
g118Y	M5	Y-Gen	27Y	32Y	2	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0
g119P	M4	XY-Symmetry	3X	8X	2	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0
g119X	M4	X-GenXY	3P	8P	2	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0
g119XY	M4	XY-GenXY	3Y	8Y	2	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0
g119Y	M4	Y-GenXY	3XY	8XY	2	4	1	1	1 3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0
g120P	M9	XY-Symmetry	14X	19X	2	4	1	1	1 3/4	A394	1	1	1	Long only	1.5	0	1.25	0	0	0
g120X	M9	X-GenXY	14P	19P	2	4	1	1	1 3/4	A394	1	1	1	Long only	1.5	0	1.25	0	0	0
g120XY	M9	XY-GenXY	14Y	19Y	2	4	1	1	1 3/4	A394	1	1	1	Long only	1.5	0	1.25	0	0	0
g120Y	M9	Y-GenXY	14XY	19XY	2	4	1	1	1 3/4	A394	1	1	1	Long only	1.5	0	1.25	0	0	0
g121P	M15	XY-Symmetry	25X	30X	2	4	1	1	1 3/4	A394	1	1	1	Long only	1.5	0	1.25	0	0	0
g121X	M15	X-GenXY	25P	30P	2	4	1	1	1 3/4	A394	1	1	1	Long only	1.5	0	1.25	0	0	0
g121XY	M15	XY-GenXY	25Y	30Y	2	4	1	1	1 3/4	A394	1	1	1	Long only	1.5	0	1.25	0	0	0
g121Y	M15	Y-GenXY	25XY	30XY	2	4	1	1	1 3/4	A394	1	1	1	Long only	1.5	0	1.25	0	0	0
g122P	M1	XY-Symmetry	8X	4X	2	5	1	1	1 3/4	A394	2	1	1	Long only	1.25	0	1.25	2	0	0
g122X	M1	X-GenXY	8P	4P	2	5	1	1	1 3/4	A394	2	1	1	Long only	1.25	0	1.25	2	0	0
g122XY	M1	XY-GenXY	8Y	4Y	2	5	1	1	1 3/4	A394	2	1	1	Long only	1.25	0	1.25	2	0	0
g122Y	M1	Y-GenXY	8XY	4XY	2	5	1	1	1 3/4	A394	2	1	1	Long only	1.25	0	1.25	2	0	0
g123P	M1	XY-Symmetry	4X	10P	2	4	1	1	1 3/4	A394	1	1	1	Long only	1.25	0	1.25	0	0	0
g123X	M1	X-GenXY	4P	10P	2	4	1	1	1 3/4	A394	1	1	1	Long only	1.25	0	1.25	0	0	0
g123XY	M1	XY-GenXY	4Y	10Y	2	4	1	1	1 3/4	A394	1	1	1	Long only	1.25	0	1.25	0	0	0
g123Y	M1	Y-GenXY	4XY	10Y	2	4	1	1	1 3/4	A394	1	1	1	Long only	1.25	0	1.25	0	0	0
g124P	M7	XY-Symmetry	19X	15X	2	4	1	1	1 3/4	A394	1	1	1	Long only	1.5	0	1.25	0	0	0
g124X	M7	X-GenXY	19P	15P	2	4	1	1	1 3/4	A394	1	1	1	Long only	1.5	0				

1.25	0	0	0	0														
	g124XY	M7		XY-GenXY	19Y	15Y	2	4	1	1	1 3/4	A394	1	1	1	Long only	1.5	0
1.25	0	0	0	0														
	g124Y	M7		Y-GenXY	19XY	15XY	2	4	1	1	1 3/4	A394	1	1	1	Long only	1.5	0
1.25	0	0	0	0														
	g125P	M8		XY-Symmetry	15X	21P	2	4	1	1	1 3/4	A394	1	1	1	Long only	1.25	0
1.25	0	0	0	0														
	g125X	M8		X-GenXY	15P	21P	2	4	1	1	1 3/4	A394	1	1	1	Long only	1.25	0
1.25	0	0	0	0														
	g125XY	M8		XY-GenXY	15Y	21Y	2	4	1	1	1 3/4	A394	1	1	1	Long only	1.25	0
1.25	0	0	0	0														
	g125Y	M8		Y-GenXY	15XY	21Y	2	4	1	1	1 3/4	A394	1	1	1	Long only	1.25	0
1.25	0	0	0	0														
	g126P	M15		XY-Symmetry	30X	26X	2	5	1	1	1 3/4	A394	2	1	1	Long only	1.5	0
1.25	3.75	0	0	0														
	g126X	M15		X-GenXY	30P	26P	2	5	1	1	1 3/4	A394	2	1	1	Long only	1.5	0
1.25	3.75	0	0	0														
	g126XY	M15		XY-GenXY	30Y	26Y	2	5	1	1	1 3/4	A394	2	1	1	Long only	1.5	0
1.25	3.75	0	0	0														
	g126Y	M15		Y-GenXY	30XY	26XY	2	5	1	1	1 3/4	A394	2	1	1	Long only	1.5	0
1.25	3.75	0	0	0														
	g127P	M15		XY-Symmetry	26X	32P	2	5	1	1	1 3/4	A394	2	1	1	Long only	1.5	0
1.25	3.75	0	0	0														
	g127X	M15		X-GenXY	26P	32P	2	5	1	1	1 3/4	A394	2	1	1	Long only	1.5	0
1.25	3.75	0	0	0														
	g127XY	M15		XY-GenXY	26Y	32Y	2	5	1	1	1 3/4	A394	2	1	1	Long only	1.5	0
1.25	3.75	0	0	0														
	g127Y	M15		Y-GenXY	26XY	32Y	2	5	1	1	1 3/4	A394	2	1	1	Long only	1.5	0
1.25	3.75	0	0	0														
	g128P	M7		X-Symmetry	39Y	39S	3	4	1	1	1 3/4	A394	1	1	1	Long only	1.5	0
1.25	0	0	0	0														
	g128X	M7		X-Gen	39XY	39X	3	4	1	1	1 3/4	A394	1	1	1	Long only	1.5	0
1.25	0	0	0	0														
	g129P	M7		X-Symmetry	42Y	42S	3	4	1	1	1 3/4	A394	1	1	1	Long only	1.5	0
1.25	0	0	0	0														
	g129X	M7		X-Gen	42XY	42X	3	4	1	1	1 3/4	A394	1	1	1	Long only	1.5	0
1.25	0	0	0	0														
	g130P	M7		None	41Y	41S	3	4	1	1	1 3/4	A394	1	1	1	Long only	1.5	0
1.25	0	0	0	0														
	g131P	M7		None	44Y	44S	3	4	1	1	1 3/4	A394	1	1	1	Long only	1.5	0
1.25	0	0	0	0														
	g132P	M6		XY-Symmetry	38S	39Y	2	4	0.5	0.5	0.5	3/4 A394	1	1	1	Long only	0.875	0
1.25	0	0	0	0														
	g132X	M6		X-GenXY	38X	39XY	2	4	0.5	0.5	0.5	3/4 A394	1	1	1	Long only	0.875	0
1.25	0	0	0	0														
	g132XY	M6		XY-GenXY	38XY	39X	2	4	0.5	0.5	0.5	3/4 A394	1	1	1	Long only	0.875	0
1.25	0	0	0	0														
	g132Y	M6		Y-GenXY	38Y	39S	2	4	0.5	0.5	0.5	3/4 A394	1	1	1	Long only	0.875	0
1.25	0	0	0	0														
	g133P	M6		XY-Symmetry	39S	41Y	2	4	0.5	0.5	0.5	3/4 A394	1	1	1	Long only	0.875	0
1.25	0	0	0	0														
	g133X	M6		X-GenXY	39X	41Y	2	4	0.5	0.5	0.5	3/4 A394	1	1	1	Long only	0.875	0
1.25	0	0	0	0														
	g133XY	M6		XY-GenXY	39XY	41S	2	4	0.5	0.5	0.5	3/4 A394	1	1	1	Long only	0.875	0
1.25	0	0	0	0														
	g133Y	M6		Y-GenXY	39Y	41S	2	4	0.5	0.5	0.5	3/4 A394	1	1	1	Long only	0.875	0
1.25	0	0	0	0														
	g134P	M6		XY-Symmetry	33X	42Y	2	4	0.5	0.5	0.5	3/4 A394	1	1	1	Long only	0.875	0
1.25	0	0	0	0														

g134X	M6		X-GenXY	33P	42XY	2	4	0.5	0.5	0.5	3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0	0
g134XY	M6		XY-GenXY	33Y	42X	2	4	0.5	0.5	0.5	3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0	0
g134Y	M6		Y-GenXY	33XY	42S	2	4	0.5	0.5	0.5	3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0	0
g135P	M17		XY-Symmetry	42S	44Y	2	4	0.5	0.5	0.5	3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0	0
g135X	M17		X-GenXY	42X	44Y	2	4	0.5	0.5	0.5	3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0	0
g135XY	M17		XY-GenXY	42XY	44S	2	4	0.5	0.5	0.5	3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0	0
g135Y	M17		Y-GenXY	42Y	44S	2	4	0.5	0.5	0.5	3/4	A394	1	1	1	Long only	0.875	0	1.25	0	0	0	0
g136P	M14		XY-Symmetry	38S	39S	3	5	1	1	1	3/4	A394	5	3	1	Long only	0	0	0	0	0	0	0
g136X	M14		X-GenXY	38X	39X	3	5	1	1	1	3/4	A394	5	3	1	Long only	0	0	0	0	0	0	0
g136XY	M14		XY-GenXY	38XY	39XY	3	5	1	1	1	3/4	A394	5	3	1	Long only	0	0	0	0	0	0	0
g136Y	M14		Y-GenXY	38Y	39Y	3	5	1	1	1	3/4	A394	5	3	1	Long only	0	0	0	0	0	0	0
g137P	M19		XY-Symmetry	33X	42S	3	5	1	1	1	3/4	A394	5	3	1	Long only	0	0	0	0	0	0	0
g137X	M19		X-GenXY	33P	42X	3	5	1	1	1	3/4	A394	5	3	1	Long only	0	0	0	0	0	0	0
g137XY	M19		XY-GenXY	33Y	42XY	3	5	1	1	1	3/4	A394	5	3	1	Long only	0	0	0	0	0	0	0
g137Y	M19		Y-GenXY	33XY	42Y	3	5	1	1	1	3/4	A394	5	3	1	Long only	0	0	0	0	0	0	0
g138P	M14		XY-Symmetry	39S	40S	3	6	1	1	1	3/4	A394	0	0	1		0	0	0	0	0	0	0
g138X	M14		X-GenXY	39X	40X	3	6	1	1	1	3/4	A394	0	0	1		0	0	0	0	0	0	0
g138XY	M14		XY-GenXY	39XY	40XY	3	6	1	1	1	3/4	A394	0	0	1		0	0	0	0	0	0	0
g138Y	M14		Y-GenXY	39Y	40Y	3	6	1	1	1	3/4	A394	0	0	1		0	0	0	0	0	0	0
g139P	M14		XY-Symmetry	40S	41S	3	6	1	1	1	3/4	A394	0	0	1		0	0	0	0	0	0	0
g139X	M14		X-GenXY	40X	41S	3	6	1	1	1	3/4	A394	0	0	1		0	0	0	0	0	0	0
g139XY	M14		XY-GenXY	40XY	41Y	3	6	1	1	1	3/4	A394	0	0	1		0	0	0	0	0	0	0
g139Y	M14		Y-GenXY	40Y	41Y	3	6	1	1	1	3/4	A394	0	0	1		0	0	0	0	0	0	0
g140P	M19		XY-Symmetry	42S	43S	3	6	1	1	1	3/4	A394	0	0	1		0	0	0	0	0	0	0
g140X	M19		X-GenXY	42X	43X	3	6	1	1	1	3/4	A394	0	0	1		0	0	0	0	0	0	0
g140XY	M19		XY-GenXY	42XY	43XY	3	6	1	1	1	3/4	A394	0	0	1		0	0	0	0	0	0	0
g140Y	M19		Y-GenXY	42Y	43Y	3	6	1	1	1	3/4	A394	0	0	1		0	0	0	0	0	0	0
g141P	M19		XY-Symmetry	43S	44S	3	6	1	1	1	3/4	A394	0	0	1		0	0	0	0	0	0	0
g141X	M19		X-GenXY	43X	44S	3	6	1	1	1	3/4	A394	0	0	1		0	0	0	0	0	0	0
g141XY	M19		XY-GenXY	43XY	44Y	3	6	1	1	1	3/4	A394	0	0	1		0	0					

0	0	0	0	0																		
	g141Y	M19		Y-GenXY	43Y	44Y	3	6	1	1	1	3/4	A394	0	0	1			0	0		
0	0	0	0	0																		
	g142P	M12		XY-Symmetry	38S	42S	2	5	0.5	0.5	0.5	3/4	A394	6	1.5	1	Long only		1.75	3.75		
1.25	1.875	0	0	0																		
	g142X	M12		X-GenXY	38X	42X	2	5	0.5	0.5	0.5	3/4	A394	6	1.5	1	Long only		1.75	3.75		
1.25	1.875	0	0	0																		
	g142XY	M12		XY-GenXY	38XY	42XY	2	5	0.5	0.5	0.5	3/4	A394	6	1.5	1	Long only		1.75	3.75		
1.25	1.875	0	0	0																		
	g142Y	M12		Y-GenXY	38Y	42Y	2	5	0.5	0.5	0.5	3/4	A394	6	1.5	1	Long only		1.75	3.75		
1.25	1.875	0	0	0																		
	g143P	M12		XY-Symmetry	33X	39S	2	5	0.5	0.5	0.5	3/4	A394	6	1.5	1	Long only		1.75	3.75		
1.25	1.875	0	0	0																		
	g143X	M12		X-GenXY	33P	39X	2	5	0.5	0.5	0.5	3/4	A394	6	1.5	1	Long only		1.75	3.75		
1.25	1.875	0	0	0																		
	g143XY	M12		XY-GenXY	33Y	39XY	2	5	0.5	0.5	0.5	3/4	A394	6	1.5	1	Long only		1.75	3.75		
1.25	1.875	0	0	0																		
	g143Y	M12		Y-GenXY	33XY	39Y	2	5	0.5	0.5	0.5	3/4	A394	6	1.5	1	Long only		1.75	3.75		
1.25	1.875	0	0	0																		
	g144P	M11		XY-Symmetry	42S	40S	2	5	1	1	1	3/4	A394	3	1.5	1	Long only		1.75	0		
1.25	2	0	0	0																		
	g144X	M11		X-GenXY	42X	40X	2	5	1	1	1	3/4	A394	3	1.5	1	Long only		1.75	0		
1.25	2	0	0	0																		
	g144XY	M11		XY-GenXY	42XY	40XY	2	5	1	1	1	3/4	A394	3	1.5	1	Long only		1.75	0		
1.25	2	0	0	0																		
	g144Y	M11		Y-GenXY	42Y	40Y	2	5	1	1	1	3/4	A394	3	1.5	1	Long only		1.75	0		
1.25	2	0	0	0																		
	g145P	M11		XY-Symmetry	40Y	44Y	2	5	1	1	1	3/4	A394	3	1.5	1	Long only		1.75	0		
1.25	2	0	0	0																		
	g145X	M11		X-GenXY	40XY	44Y	2	5	1	1	1	3/4	A394	3	1.5	1	Long only		1.75	0		
1.25	2	0	0	0																		
	g145XY	M11		XY-GenXY	40X	44S	2	5	1	1	1	3/4	A394	3	1.5	1	Long only		1.75	0		
1.25	2	0	0	0																		
	g145Y	M11		Y-GenXY	40S	44S	2	5	1	1	1	3/4	A394	3	1.5	1	Long only		1.75	0		
1.25	2	0	0	0																		
	g146P	M10		XY-Symmetry	39S	42S	2	5	1	1	1	3/4	A394	2	1	1	Long only		2	0		
1.3125	2.75	0	0	0																		
	g146X	M10		X-GenXY	39X	42X	2	5	1	1	1	3/4	A394	2	1	1	Long only		2	0		
1.3125	2.75	0	0	0																		
	g146XY	M10		XY-GenXY	39XY	42XY	2	5	1	1	1	3/4	A394	2	1	1	Long only		2	0		
1.3125	2.75	0	0	0																		
	g146Y	M10		Y-GenXY	39Y	42Y	2	5	1	1	1	3/4	A394	2	1	1	Long only		2	0		
1.3125	2.75	0	0	0																		
	g147P	M4		XY-Symmetry	40S	43S	2	5	1	1	1	3/4	A394	2	1	1	Long only		0.875	0		
1.3125	2.75	0	0	0																		
	g147X	M4		X-GenXY	40X	43X	2	5	1	1	1	3/4	A394	2	1	1	Long only		0.875	0		
1.3125	2.75	0	0	0																		
	g147XY	M4		XY-GenXY	40XY	43XY	2	5	1	1	1	3/4	A394	2	1	1	Long only		0.875	0		
1.3125	2.75	0	0	0																		
	g147Y	M4		Y-GenXY	40Y	43Y	2	5	1	1	1	3/4	A394	2	1	1	Long only		0.875	0		
1.3125	2.75	0	0	0																		
	g148P	M4		Y-Symmetry	41S	44S	2	5	1	1	1	3/4	A394	2	1	1	Long only		0.875	0		
1.3125	2.75	0	0	0																		
	g148Y	M4		Y-Gen	41Y	44Y	2	5	1	1	1	3/4	A394	2	1	1	Long only		0.875	0		
1.3125	2.75	0	0	0																		
	g149P	M16		XY-Symmetry	6X	7X	3	5	1	1	1	3/4	A394	2	1	1	Long only		1.5	0		
1.25	2	0	0	0																		
	g149X	M16		X-GenXY	6P	7P	3	5	1	1	1	3/4	A394	2	1	1	Long only		1.5	0		
1.25	2	0	0	0																		

g149XY	M16		XY-GenXY	6P	7Y	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.5	0	1.25
2	0	0	0															
g149Y	M16		Y-GenXY	6X	7XY	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.5	0	1.25
2	0	0	0															
g150P	M16		XY-Symmetry	17X	18X	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.5	0	1.25
2	0	0	0															
g150X	M16		X-GenXY	17P	18P	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.5	0	1.25
2	0	0	0															
g150XY	M16		XY-GenXY	17P	18Y	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.5	0	1.25
2	0	0	0															
g150Y	M16		Y-GenXY	17X	18XY	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.5	0	1.25
2	0	0	0															
g151P	M16		XY-Symmetry	28X	29X	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.5	0	1.25
2	0	0	0															
g151X	M16		X-GenXY	28P	29P	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.5	0	1.25
2	0	0	0															
g151XY	M16		XY-GenXY	28P	29Y	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.5	0	1.25
2	0	0	0															
g151Y	M16		Y-GenXY	28X	29XY	3	5	1	1	1 3/4	A394	2	1	1	Long only	1.5	0	1.25
2	0	0	0															
g152P	Hanger		XY-Symmetry	6X	2X	2	5	1	1	1 3/4	A394	2	1	1	Long only	1	0	1.25
2	0	0	0															
g152X	Hanger		X-GenXY	6P	2P	2	5	1	1	1 3/4	A394	2	1	1	Long only	1	0	1.25
2	0	0	0															
g152XY	Hanger		XY-GenXY	6P	2Y	2	5	1	1	1 3/4	A394	2	1	1	Long only	1	0	1.25
2	0	0	0															
g152Y	Hanger		Y-GenXY	6X	2XY	2	5	1	1	1 3/4	A394	2	1	1	Long only	1	0	1.25
2	0	0	0															
g153P	Hanger		XY-Symmetry	17X	13X	2	5	1	1	1 3/4	A394	2	1	1	Long only	1	0	1.25
2	0	0	0															
g153X	Hanger		X-GenXY	17P	13P	2	5	1	1	1 3/4	A394	2	1	1	Long only	1	0	1.25
2	0	0	0															
g153XY	Hanger		XY-GenXY	17P	13Y	2	5	1	1	1 3/4	A394	2	1	1	Long only	1	0	1.25
2	0	0	0															
g153Y	Hanger		Y-GenXY	17X	13XY	2	5	1	1	1 3/4	A394	2	1	1	Long only	1	0	1.25
2	0	0	0															
g154P	Hanger		XY-Symmetry	28X	24X	2	5	1	1	1 3/4	A394	2	1	1	Long only	1	0	1.25
2	0	0	0															
g154X	Hanger		X-GenXY	28P	24P	2	5	1	1	1 3/4	A394	2	1	1	Long only	1	0	1.25
2	0	0	0															
g154XY	Hanger		XY-GenXY	28P	24Y	2	5	1	1	1 3/4	A394	2	1	1	Long only	1	0	1.25
2	0	0	0															
g154Y	Hanger		Y-GenXY	28X	24XY	2	5	1	1	1 3/4	A394	2	1	1	Long only	1	0	1.25
2	0	0	0															
g155P	M16		XY-Symmetry	46S	47S	3	5	0.5	0.5	0.5 3/4	A394	2	1	1	Long only	1.5	0	1.25
2.25	0	0	0															
g155X	M16		X-GenXY	46X	47S	3	5	0.5	0.5	0.5 3/4	A394	2	1	1	Long only	1.5	0	1.25
2.25	0	0	0															
g155XY	M16		XY-GenXY	46XY	47Y	3	5	0.5	0.5	0.5 3/4	A394	2	1	1	Long only	1.5	0	1.25
2.25	0	0	0															
g155Y	M16		Y-GenXY	46Y	47Y	3	5	0.5	0.5	0.5 3/4	A394	2	1	1	Long only	1.5	0	1.25
2.25	0	0	0															
g156P	M11		None	47S	47Y	3	4	1	1	1 3/4	A394	1	1	1	Long only	1.75	0	1.25
0	0	0	0															
g157P	M17		XY-Symmetry	46S	47Y	2	4	0.5	0.5	0.5 3/4	A394	1	1	1	Long only	0.875	0	1.25
0	0	0	0															
g157X	M17		X-GenXY	46X	47Y	2	4	0.5	0.5	0.5 3/4	A394	1	1	1	Long only	0.875	0	1.25
0	0	0	0															
g157XY	M17		XY-GenXY	46XY	47S	2	4	0.5	0.5	0.5 3/4	A394	1	1	1	Long only	0.875	0	

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1.25       0      0       0     0
       g157Y    M17              Y-GenXY       46Y       47S    2     4   0.5   0.5   0.5 3/4 A394     1      1       1  Long only   0.875       0
1.25       0      0       0     0
       g161P     M5          XY-Symmetry        4X  9XF0.50S    2     4     1     1     1 3/4 A394     1      1       1  Long only       0       0
0       0      0       0     0
       g161X     M5               X-GenXY        4P  9XF0.50X    2     4     1     1     1 3/4 A394     1      1       1  Long only       0       0
0       0      0       0     0
      g161XY     M5              XY-GenXY        4Y  9XF0.50X    2     4     1     1     1 3/4 A394     1      1       1  Long only       0       0
0       0      0       0     0
       g161Y     M5               Y-GenXY       4XY  9XF0.50S    2     4     1     1     1 3/4 A394     1      1       1  Long only       0       0
0       0      0       0     0
       g162P     M5          XY-Symmetry       15X 20XF0.50S    2     4     1     1     1 3/4 A394     1      1       1  Long only       0       0
0       0      0       0     0
       g162X     M5               X-GenXY       15P 20XF0.50X    2     4     1     1     1 3/4 A394     1      1       1  Long only       0       0
0       0      0       0     0
      g162XY     M5              XY-GenXY       15Y 20XF0.50X    2     4     1     1     1 3/4 A394     1      1       1  Long only       0       0
0       0      0       0     0
       g162Y     M5               Y-GenXY      15XY 20XF0.50S    2     4     1     1     1 3/4 A394     1      1       1  Long only       0       0
0       0      0       0     0
       g163P     M5          XY-Symmetry       26X 31XF0.50S    2     4     1     1     1 3/4 A394     1      1       1  Long only       0       0
0       0      0       0     0
       g163X     M5               X-GenXY       26P 31XF0.50X    2     4     1     1     1 3/4 A394     1      1       1  Long only       0       0
0       0      0       0     0
      g163XY     M5              XY-GenXY       26Y 31XF0.50X    2     4     1     1     1 3/4 A394     1      1       1  Long only       0       0
0       0      0       0     0
       g163Y     M5               Y-GenXY      26XY 31XF0.50S    2     4     1     1     1 3/4 A394     1      1       1  Long only       0       0
0       0      0       0     0
  ig105P163P     M5          XY-Symmetry i0.50E85S       9XY    2     4     1     1     1 3/4 A394     1      1       1  Long only   0.875       0
1.25       0      0       0     0
  ig105P163X     M5               X-GenXY i0.50E85X        9Y    2     4     1     1     1 3/4 A394     1      1       1  Long only   0.875       0
1.25       0      0       0     0
 ig105P163XY     M5              XY-GenXY i0.50E85X        9P    2     4     1     1     1 3/4 A394     1      1       1  Long only   0.875       0
1.25       0      0       0     0
  ig105P163Y     M5               Y-GenXY i0.50E85S        9X    2     4     1     1     1 3/4 A394     1      1       1  Long only   0.875       0
1.25       0      0       0     0
  ig108P164P     M5          XY-Symmetry i0.50E70S      20XY    2     4     1     1     1 3/4 A394     1      1       1  Long only   0.875       0
1.25       0      0       0     0
  ig108P164X     M5               X-GenXY i0.50E70X       20Y    2     4     1     1     1 3/4 A394     1      1       1  Long only   0.875       0
1.25       0      0       0     0
 ig108P164XY     M5              XY-GenXY i0.50E70X       20P    2     4     1     1     1 3/4 A394     1      1       1  Long only   0.875       0
1.25       0      0       0     0
  ig108P164Y     M5               Y-GenXY i0.50E70S       20X    2     4     1     1     1 3/4 A394     1      1       1  Long only   0.875       0
1.25       0      0       0     0
  ig111P165P     M5          XY-Symmetry i0.50E55S      31XY    2     4     1     1     1 3/4 A394     1      1       1  Long only   0.875       0
1.25       0      0       0     0
  ig111P165X     M5               X-GenXY i0.50E55X       31Y    2     4     1     1     1 3/4 A394     1      1       1  Long only   0.875       0
1.25       0      0       0     0
 ig111P165XY     M5              XY-GenXY i0.50E55X       31P    2     4     1     1     1 3/4 A394     1      1       1  Long only   0.875       0
1.25       0      0       0     0
  ig111P165Y     M5               Y-GenXY i0.50E55S       31X    2     4     1     1     1 3/4 A394     1      1       1  Long only   0.875       0
1.25       0      0       0     0
       g167P     M5           X-Symmetry i0.50E85S  9XF0.50S    2     4     1     1     1 3/4 A394     1      1       1  Long only       0       0
0       0      0       0     0
       g167X     M5                X-Gen i0.50E85X  9XF0.50X    2     4     1     1     1 3/4 A394     1      1       1  Long only       0       0
0       0      0       0     0
       g168P     M5           X-Symmetry i0.50E70S 20XF0.50S    2     4     1     1     1 3/4 A394     1      1       1  Long only       0       0
0       0      0       0     0
       g168X     M5                X-Gen i0.50E70X 20XF0.50X    2     4     1     1     1 3/4 A394     1      1       1  Long only       0       0
0       0      0       0     0
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g169P	M5	X-Symmetry i0.50E55S 31XF0.50S	2	4	1	1	1	3/4 A394	1	1	1	Long only	0	0	0	0	0	0	0
g169X	M5	X-Gen i0.50E55X 31XF0.50X	2	4	1	1	1	3/4 A394	1	1	1	Long only	0	0	0	0	0	0	0

Member Capacities and Overrides:

Member Label	Group Label	Design Comp. Capacity (kips)	Comp. Control Criterion	Design Tension Capacity (kips)	Tension Control Criterion	L/r	Length (ft)	L/r Comp. Capacity (kips)	Connection Shear Capacity (kips)	Connection Bearing Capacity (kips)	Net Section Tension Capacity (kips)	Rupture Tension Capacity (kips)	RTE End Dist. Tension Capacity (kips)	RTE Edge Dist. Tension Capacity (kips)	Override Comp. Capacity (kips)	Override Comp. Capacity Unsup. (kips)	Override Comp. Control Criterion	Override Tension Capacity (kips)	Override Tension Control Criterion	Override Face Member ship	Warnings or Errors
g1P	Leg1	66.065	L/r	70.176	Net Sect	76	5.00	66.065	0.000	0.000	70.176	0.000	0.000	0.000	0.000	0.000		0.000		Automatic	
g1X	Leg1	66.065	L/r	70.176	Net Sect	76	5.00	66.065	0.000	0.000	70.176	0.000	0.000	0.000	0.000	0.000		0.000		Automatic	
g1XY	Leg1	66.065	L/r	70.176	Net Sect	76	5.00	66.065	0.000	0.000	70.176	0.000	0.000	0.000	0.000	0.000		0.000		Automatic	
g1Y	Leg1	66.065	L/r	70.176	Net Sect	76	5.00	66.065	0.000	0.000	70.176	0.000	0.000	0.000	0.000	0.000		0.000		Automatic	
g2P	Leg1	66.065	L/r	70.176	Net Sect	76	5.00	66.065	0.000	0.000	70.176	0.000	0.000	0.000	0.000	0.000		0.000		Automatic	
g2X	Leg1	66.065	L/r	70.176	Net Sect	76	5.00	66.065	0.000	0.000	70.176	0.000	0.000	0.000	0.000	0.000		0.000		Automatic	
g2XY	Leg1	66.065	L/r	70.176	Net Sect	76	5.00	66.065	0.000	0.000	70.176	0.000	0.000	0.000	0.000	0.000		0.000		Automatic	
g2Y	Leg1	66.065	L/r	70.176	Net Sect	76	5.00	66.065	0.000	0.000	70.176	0.000	0.000	0.000	0.000	0.000		0.000		Automatic	
g3P	Leg1	66.065	L/r	70.176	Net Sect	76	5.00	66.065	0.000	0.000	70.176	0.000	0.000	0.000	0.000	0.000		0.000		Automatic	
g3X	Leg1	66.065	L/r	70.176	Net Sect	76	5.00	66.065	0.000	0.000	70.176	0.000	0.000	0.000	0.000	0.000		0.000		Automatic	
g3XY	Leg1	66.065	L/r	70.176	Net Sect	76	5.00	66.065	0.000	0.000	70.176	0.000	0.000	0.000	0.000	0.000		0.000		Automatic	
g3Y	Leg1	66.065	L/r	70.176	Net Sect	76	5.00	66.065	0.000	0.000	70.176	0.000	0.000	0.000	0.000	0.000		0.000		Automatic	
g4P	Leg1	66.065	L/r	70.176	Net Sect	76	5.00	66.065	81.600	126.562	70.176	117.187	0.000	0.000	0.000	0.000		0.000		Automatic	
g4X	Leg1	66.065	L/r	70.176	Net Sect	76	5.00	66.065	81.600	126.562	70.176	117.187	0.000	0.000	0.000	0.000		0.000		Automatic	
g4XY	Leg1	66.065	L/r	70.176	Net Sect	76	5.00	66.065	81.600	126.562	70.176	117.187	0.000	0.000	0.000	0.000		0.000		Automatic	
g4Y	Leg1	66.065	L/r	70.176	Net Sect	76	5.00	66.065	81.600	126.562	70.176	117.187	0.000	0.000	0.000	0.000		0.000		Automatic	
g5P	Leg2	81.600	Shear	81.600	Shear	61	5.00	123.217	81.600	177.187	125.307	164.062	0.000	0.000	0.000	0.000		0.000		Automatic	
g5X	Leg2	81.600	Shear	81.600	Shear	61	5.00	123.217	81.600	177.187	125.307	164.062	0.000	0.000	0.000	0.000		0.000		Automatic	
g5XY	Leg2	81.600	Shear	81.600	Shear	61	5.00	123.217	81.600	177.187	125.307	164.062	0.000	0.000	0.000						

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0.000              0.000           Automatic
         g5Y   Leg2   81.600     Shear   81.600     Shear   61   5.00  123.217     81.600    177.187  125.307  164.062    0.000    0.000    0.000
0.000              0.000           Automatic
         g6P   Leg2  123.217       L/r  112.674  Net Sect   61   5.00  123.217      0.000      0.000  112.674    0.000    0.000    0.000    0.000
0.000              0.000           Automatic
         g6X   Leg2  123.217       L/r  112.674  Net Sect   61   5.00  123.217      0.000      0.000  112.674    0.000    0.000    0.000    0.000
0.000              0.000           Automatic
        g6XY   Leg2  123.217       L/r  112.674  Net Sect   61   5.00  123.217      0.000      0.000  112.674    0.000    0.000    0.000    0.000
0.000              0.000           Automatic
         g6Y   Leg2  123.217       L/r  112.674  Net Sect   61   5.00  123.217      0.000      0.000  112.674    0.000    0.000    0.000    0.000
0.000              0.000           Automatic
         g7P   Leg2   81.600     Shear   81.600     Shear   61   5.00  123.217     81.600    177.187  112.674  154.412    0.000    0.000    0.000
0.000              0.000           Automatic    Member "g7P" will not be checked for block shear since more than one gage line exists (long edge
distance (g) greater than zero); however, end, edge and spacing distances will be checked.  ??
         g7X   Leg2   81.600     Shear   81.600     Shear   61   5.00  123.217     81.600    177.187  112.674  154.412    0.000    0.000    0.000
0.000              0.000           Automatic    Member "g7X" will not be checked for block shear since more than one gage line exists (long edge
distance (g) greater than zero); however, end, edge and spacing distances will be checked.  ??
        g7XY   Leg2   81.600     Shear   81.600     Shear   61   5.00  123.217     81.600    177.187  112.674  154.412    0.000    0.000    0.000
0.000              0.000           Automatic   Member "g7XY" will not be checked for block shear since more than one gage line exists (long edge
distance (g) greater than zero); however, end, edge and spacing distances will be checked.  ??
         g7Y   Leg2   81.600     Shear   81.600     Shear   61   5.00  123.217     81.600    177.187  112.674  154.412    0.000    0.000    0.000
0.000              0.000           Automatic    Member "g7Y" will not be checked for block shear since more than one gage line exists (long edge
distance (g) greater than zero); however, end, edge and spacing distances will be checked.  ??
         g8P   Leg3   81.600     Shear   81.600     Shear   51   5.08  154.358     81.600    177.187  141.714  164.062    0.000    0.000    0.000
0.000              0.000           Automatic    Member "g8P" will not be checked for block shear since more than one gage line exists (long edge
distance (g) greater than zero); however, end, edge and spacing distances will be checked.  ??
         g8X   Leg3   81.600     Shear   81.600     Shear   51   5.08  154.358     81.600    177.187  141.714  164.062    0.000    0.000    0.000
0.000              0.000           Automatic    Member "g8X" will not be checked for block shear since more than one gage line exists (long edge
distance (g) greater than zero); however, end, edge and spacing distances will be checked.  ??
        g8XY   Leg3   81.600     Shear   81.600     Shear   51   5.08  154.358     81.600    177.187  141.714  164.062    0.000    0.000    0.000
0.000              0.000           Automatic   Member "g8XY" will not be checked for block shear since more than one gage line exists (long edge
distance (g) greater than zero); however, end, edge and spacing distances will be checked.  ??
         g8Y   Leg3   81.600     Shear   81.600     Shear   51   5.08  154.358     81.600    177.187  141.714  164.062    0.000    0.000    0.000
0.000              0.000           Automatic    Member "g8Y" will not be checked for block shear since more than one gage line exists (long edge
distance (g) greater than zero); however, end, edge and spacing distances will be checked.  ??
         g9P   Leg3  156.756       L/r  141.714  Net Sect   46   4.57  156.756      0.000      0.000  141.714    0.000    0.000    0.000    0.000
0.000              0.000           Automatic
         g9X   Leg3  156.756       L/r  141.714  Net Sect   46   4.57  156.756      0.000      0.000  141.714    0.000    0.000    0.000    0.000
0.000              0.000           Automatic
        g9XY   Leg3  156.756       L/r  141.714  Net Sect   46   4.57  156.756      0.000      0.000  141.714    0.000    0.000    0.000    0.000
0.000              0.000           Automatic
         g9Y   Leg3  156.756       L/r  141.714  Net Sect   46   4.57  156.756      0.000      0.000  141.714    0.000    0.000    0.000    0.000
0.000              0.000           Automatic
        g10P   Leg3  156.756       L/r  133.882  Net Sect   46   4.57  156.756    190.400    413.437  133.882  382.812    0.000    0.000    0.000
0.000              0.000           Automatic   Member "g10P" will not be checked for block shear since more than one gage line exists (long edge
distance (g) greater than zero); however, end, edge and spacing distances will be checked.  ??
        g10X   Leg3  156.756       L/r  133.882  Net Sect   46   4.57  156.756    190.400    413.437  133.882  382.812    0.000    0.000    0.000
0.000              0.000           Automatic   Member "g10X" will not be checked for block shear since more than one gage line exists (long edge
distance (g) greater than zero); however, end, edge and spacing distances will be checked.  ??
       g10XY   Leg3  156.756       L/r  133.882  Net Sect   46   4.57  156.756    190.400    413.437  133.882  382.812    0.000    0.000    0.000
0.000              0.000           Automatic  Member "g10XY" will not be checked for block shear since more than one gage line exists (long edge
distance (g) greater than zero); however, end, edge and spacing distances will be checked.  ??
        g10Y   Leg3  156.756       L/r  133.882  Net Sect   46   4.57  156.756    190.400    413.437  133.882  382.812    0.000    0.000    0.000
0.000              0.000           Automatic   Member "g10Y" will not be checked for block shear since more than one gage line exists (long edge
distance (g) greater than zero); however, end, edge and spacing distances will be checked.  ??
        g11P   Leg4  154.358       L/r  133.882  Net Sect   51   5.08  154.358    190.400    413.437  133.882  401.952    0.000    0.000    0.000
0.000              0.000           Automatic   Member "g11P" will not be checked for block shear since more than one gage line exists (long edge
distance (g) greater than zero); however, end, edge and spacing distances will be checked.  ??
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       g11X   Leg4  154.358      L/r  133.882  Net Sect   51   5.08  154.358    190.400    413.437  133.882  401.952    0.000    0.000    0.000
0.000             0.000          Automatic   Member "g11X" will not be checked for block shear since more than one gage line exists (long edge
distance (g) greater than zero); however, end, edge and spacing distances will be checked.  ??
      g11XY   Leg4  154.358      L/r  133.882  Net Sect   51   5.08  154.358    190.400    413.437  133.882  401.952    0.000    0.000    0.000
0.000             0.000          Automatic  Member "g11XY" will not be checked for block shear since more than one gage line exists (long edge
distance (g) greater than zero); however, end, edge and spacing distances will be checked.  ??
       g11Y   Leg4  154.358      L/r  133.882  Net Sect   51   5.08  154.358    190.400    413.437  133.882  401.952    0.000    0.000    0.000
0.000             0.000          Automatic   Member "g11Y" will not be checked for block shear since more than one gage line exists (long edge
distance (g) greater than zero); however, end, edge and spacing distances will be checked.  ??
       g12P   Leg4  149.604      L/r  133.882  Net Sect   60  11.92  149.604    190.400    413.437  133.882  382.812    0.000    0.000    0.000
0.000             0.000          Automatic   Member "g12P" will not be checked for block shear since more than one gage line exists (long edge
distance (g) greater than zero); however, end, edge and spacing distances will be checked.  ??
       g12X   Leg4  149.604      L/r  133.882  Net Sect   60  11.92  149.604    190.400    413.437  133.882  382.812    0.000    0.000    0.000
0.000             0.000          Automatic   Member "g12X" will not be checked for block shear since more than one gage line exists (long edge
distance (g) greater than zero); however, end, edge and spacing distances will be checked.  ??
      g12XY   Leg4  149.604      L/r  133.882  Net Sect   60  11.92  149.604    190.400    413.437  133.882  382.812    0.000    0.000    0.000
0.000             0.000          Automatic  Member "g12XY" will not be checked for block shear since more than one gage line exists (long edge
distance (g) greater than zero); however, end, edge and spacing distances will be checked.  ??
       g12Y   Leg4  149.604      L/r  133.882  Net Sect   60  11.92  149.604    190.400    413.437  133.882  382.812    0.000    0.000    0.000
0.000             0.000          Automatic   Member "g12Y" will not be checked for block shear since more than one gage line exists (long edge
distance (g) greater than zero); however, end, edge and spacing distances will be checked.  ??
       g13P   Leg5  148.098      L/r  141.714  Net Sect   63   6.21  148.098      0.000      0.000  141.714    0.000    0.000    0.000    0.000
0.000             0.000          Automatic
       g13X   Leg5  148.098      L/r  141.714  Net Sect   63   6.21  148.098      0.000      0.000  141.714    0.000    0.000    0.000    0.000
0.000             0.000          Automatic
      g13XY   Leg5  148.098      L/r  141.714  Net Sect   63   6.21  148.098      0.000      0.000  141.714    0.000    0.000    0.000    0.000
0.000             0.000          Automatic
       g13Y   Leg5  148.098      L/r  141.714  Net Sect   63   6.21  148.098      0.000      0.000  141.714    0.000    0.000    0.000    0.000
0.000             0.000          Automatic
       g14P   Leg5  148.474      L/r  141.714  Net Sect   62  18.63  148.474    190.400    413.437  141.714  401.952    0.000    0.000    0.000
0.000             0.000          Automatic   Member "g14P" will not be checked for block shear since more than one gage line exists (long edge
distance (g) greater than zero); however, end, edge and spacing distances will be checked.  ??
       g14X   Leg5  148.474      L/r  141.714  Net Sect   62  18.63  148.474    190.400    413.437  141.714  401.952    0.000    0.000    0.000
0.000             0.000          Automatic   Member "g14X" will not be checked for block shear since more than one gage line exists (long edge
distance (g) greater than zero); however, end, edge and spacing distances will be checked.  ??
      g14XY   Leg5  148.474      L/r  141.714  Net Sect   62  18.63  148.474    190.400    413.437  141.714  401.952    0.000    0.000    0.000
0.000             0.000          Automatic  Member "g14XY" will not be checked for block shear since more than one gage line exists (long edge
distance (g) greater than zero); however, end, edge and spacing distances will be checked.  ??
       g14Y   Leg5  148.474      L/r  141.714  Net Sect   62  18.63  148.474    190.400    413.437  141.714  401.952    0.000    0.000    0.000
0.000             0.000          Automatic   Member "g14Y" will not be checked for block shear since more than one gage line exists (long edge
distance (g) greater than zero); however, end, edge and spacing distances will be checked.  ??
       g15P     M1   13.621      L/r   20.215   Rupture  138   5.68   13.621     27.200     25.312   21.917   20.215    0.000    0.000    0.000
0.000             0.000          Automatic
       g15X     M1   13.621      L/r   20.215   Rupture  138   5.68   13.621     27.200     25.312   21.917   20.215    0.000    0.000    0.000
0.000             0.000          Automatic
      g15XY     M1   13.621      L/r   20.215   Rupture  138   5.68   13.621     27.200     25.312   21.917   20.215    0.000    0.000    0.000
0.000             0.000          Automatic
       g15Y     M1   13.621      L/r   20.215   Rupture  138   5.68   13.621     27.200     25.312   21.917   20.215    0.000    0.000    0.000
0.000             0.000          Automatic
       g16P    M15   23.060      L/r   26.203   Rupture  134   6.60   23.060     27.200     33.750   36.271   26.203    0.000    0.000    0.000
0.000             0.000          Automatic
       g16X    M15   23.060      L/r   26.203   Rupture  134   6.60   23.060     27.200     33.750   36.271   26.203    0.000    0.000    0.000
0.000             0.000          Automatic
      g16XY    M15   23.060      L/r   26.203   Rupture  134   6.60   23.060     27.200     33.750   36.271   26.203    0.000    0.000    0.000
0.000             0.000          Automatic
       g16Y    M15   23.060      L/r   26.203   Rupture  134   6.60   23.060     27.200     33.750   36.271   26.203    0.000    0.000    0.000
0.000             0.000          Automatic
       g17P  Diag1    5.871      L/r   10.934   Rupture  199   7.07    5.871     13.600     12.656   19.184   10.934    0.000    0.000    0.000
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0.000		0.000		Automatic											
	g18P	Diag1	5.871	L/r	10.934	Rupture	199	7.07	5.871	13.600	12.656	19.184	10.934	0.000	0.000	0.000
0.000		0.000		Automatic											
	g19P	Diag2	13.600	Shear	10.922	Rupture	109	7.07	19.928	13.600	16.875	21.421	10.922	0.000	0.000	0.000
0.000		0.000		Automatic											
	g19X	Diag2	13.600	Shear	10.922	Rupture	109	7.07	19.928	13.600	16.875	21.421	10.922	0.000	0.000	0.000
0.000		0.000		Automatic											
	g19XY	Diag2	13.600	Shear	10.922	Rupture	109	7.07	19.928	13.600	16.875	21.421	10.922	0.000	0.000	0.000
0.000		0.000		Automatic											
	g19Y	Diag2	13.600	Shear	10.922	Rupture	109	7.07	19.928	13.600	16.875	21.421	10.922	0.000	0.000	0.000
0.000		0.000		Automatic											
	g20P	Diag2	13.600	Shear	10.922	Rupture	109	7.07	19.928	13.600	16.875	21.421	10.922	0.000	0.000	0.000
0.000		0.000		Automatic											
	g20X	Diag2	13.600	Shear	10.922	Rupture	109	7.07	19.928	13.600	16.875	21.421	10.922	0.000	0.000	0.000
0.000		0.000		Automatic											
	g20XY	Diag2	13.600	Shear	10.922	Rupture	109	7.07	19.928	13.600	16.875	21.421	10.922	0.000	0.000	0.000
0.000		0.000		Automatic											
	g20Y	Diag2	13.600	Shear	10.922	Rupture	109	7.07	19.928	13.600	16.875	21.421	10.922	0.000	0.000	0.000
0.000		0.000		Automatic											
	g21P	Diag2	13.600	Shear	11.203	Rupture	109	7.07	19.928	13.600	16.875	21.421	11.203	0.000	0.000	0.000
0.000		0.000		Automatic											
	g21X	Diag2	13.600	Shear	11.203	Rupture	109	7.07	19.928	13.600	16.875	21.421	11.203	0.000	0.000	0.000
0.000		0.000		Automatic											
	g21XY	Diag2	13.600	Shear	11.203	Rupture	109	7.07	19.928	13.600	16.875	21.421	11.203	0.000	0.000	0.000
0.000		0.000		Automatic											
	g21Y	Diag2	13.600	Shear	11.203	Rupture	109	7.07	19.928	13.600	16.875	21.421	11.203	0.000	0.000	0.000
0.000		0.000		Automatic											
	g22P	Diag3	15.145	L/r	16.214	Net Sect	108	7.07	15.145	27.200	25.312	16.214	17.473	0.000	0.000	0.000
0.000		0.000		Automatic											
	g22X	Diag3	15.145	L/r	16.214	Net Sect	108	7.07	15.145	27.200	25.312	16.214	17.473	0.000	0.000	0.000
0.000		0.000		Automatic											
	g22XY	Diag3	15.145	L/r	16.214	Net Sect	108	7.07	15.145	27.200	25.312	16.214	17.473	0.000	0.000	0.000
0.000		0.000		Automatic											
	g22Y	Diag3	15.145	L/r	16.214	Net Sect	108	7.07	15.145	27.200	25.312	16.214	17.473	0.000	0.000	0.000
0.000		0.000		Automatic											
	g23P	Diag3	15.145	L/r	16.214	Net Sect	108	7.07	15.145	27.200	25.312	16.214	17.473	0.000	0.000	0.000
0.000		0.000		Automatic											
	g23X	Diag3	15.145	L/r	16.214	Net Sect	108	7.07	15.145	27.200	25.312	16.214	17.473	0.000	0.000	0.000
0.000		0.000		Automatic											
	g23XY	Diag3	15.145	L/r	16.214	Net Sect	108	7.07	15.145	27.200	25.312	16.214	17.473	0.000	0.000	0.000
0.000		0.000		Automatic											
	g23Y	Diag3	15.145	L/r	16.214	Net Sect	108	7.07	15.145	27.200	25.312	16.214	17.473	0.000	0.000	0.000
0.000		0.000		Automatic											
	g24P	Diag3	15.145	L/r	16.214	Net Sect	108	7.07	15.145	27.200	25.312	16.214	18.527	0.000	0.000	0.000
0.000		0.000		Automatic											
	g24X	Diag3	15.145	L/r	16.214	Net Sect	108	7.07	15.145	27.200	25.312	16.214	18.527	0.000	0.000	0.000
0.000		0.000		Automatic											
	g24XY	Diag3	15.145	L/r	16.214	Net Sect	108	7.07	15.145	27.200	25.312	16.214	18.527	0.000	0.000	0.000
0.000		0.000		Automatic											
	g24Y	Diag3	15.145	L/r	16.214	Net Sect	108	7.07	15.145	27.200	25.312	16.214	18.527	0.000	0.000	0.000
0.000		0.000		Automatic											
	g25P	Diag3	11.783	L/r	16.214	Net Sect	135	7.72	11.783	27.200	25.312	16.214	19.301	0.000	0.000	0.000
0.000		0.000		Automatic											
	g25X	Diag3	11.783	L/r	16.214	Net Sect	135	7.72	11.783	27.200	25.312	16.214	19.301	0.000	0.000	0.000
0.000		0.000		Automatic											
	g25XY	Diag3	11.783	L/r	16.214	Net Sect	135	7.72	11.783	27.200	25.312	16.214	19.301	0.000	0.000	0.000
0.000		0.000		Automatic											
	g25Y	Diag3	11.783	L/r	16.214	Net Sect	135	7.72	11.783	27.200	25.312	16.214	19.301	0.000	0.000	0.000
0.000		0.000		Automatic											

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       g26P  Diag3   10.094       L/r   16.214  Net Sect  149   8.81   10.094     27.200     25.312   16.214   18.738    0.000    0.000    0.000
0.000              0.000          Automatic
       g26X  Diag3   10.094       L/r   16.214  Net Sect  149   8.81   10.094     27.200     25.312   16.214   18.738    0.000    0.000    0.000
0.000              0.000          Automatic
      g26XY  Diag3   10.094       L/r   16.214  Net Sect  149   8.81   10.094     27.200     25.312   16.214   18.738    0.000    0.000    0.000
0.000              0.000          Automatic
       g26Y  Diag3   10.094       L/r   16.214  Net Sect  149   8.81   10.094     27.200     25.312   16.214   18.738    0.000    0.000    0.000
0.000              0.000          Automatic
       g27P  Diag4    6.929       L/r   16.214  Net Sect  187   6.15    6.929     27.200     25.312   16.214   19.301    0.000    0.000    0.000
0.000              0.000          Automatic
       g27X  Diag4    6.929       L/r   16.214  Net Sect  187   6.15    6.929     27.200     25.312   16.214   19.301    0.000    0.000    0.000
0.000              0.000          Automatic
      g27XY  Diag4    6.929       L/r   16.214  Net Sect  187   6.15    6.929     27.200     25.312   16.214   19.301    0.000    0.000    0.000
0.000              0.000          Automatic
       g27Y  Diag4    6.929       L/r   16.214  Net Sect  187   6.15    6.929     27.200     25.312   16.214   19.301    0.000    0.000    0.000
0.000              0.000          Automatic
       g28P  Diag5    8.818       L/r   21.917  Net Sect  187   7.71    8.818     27.200     25.312   21.917   23.437    0.000    0.000    0.000
0.000              0.000          Automatic
       g28X  Diag5    8.818       L/r   21.917  Net Sect  187   7.71    8.818     27.200     25.312   21.917   23.437    0.000    0.000    0.000
0.000              0.000          Automatic
      g28XY  Diag5    8.818       L/r   21.917  Net Sect  187   7.71    8.818     27.200     25.312   21.917   23.437    0.000    0.000    0.000
0.000              0.000          Automatic
       g28Y  Diag5    8.818       L/r   21.917  Net Sect  187   7.71    8.818     27.200     25.312   21.917   23.437    0.000    0.000    0.000
0.000              0.000          Automatic
       g29P Diag14    3.590       L/r   16.214  Net Sect  275  17.97    3.590     27.200     25.312   16.214   19.301    0.000    0.000    0.000
0.000              0.000          Automatic
       g29X Diag14    3.590       L/r   16.214  Net Sect  275  17.97    3.590     27.200     25.312   16.214   19.301    0.000    0.000    0.000
0.000              0.000          Automatic
      g29XY Diag14    3.590       L/r   16.214  Net Sect  275  17.97    3.590     27.200     25.312   16.214   19.301    0.000    0.000    0.000
0.000              0.000          Automatic
       g29Y Diag14    3.590       L/r   16.214  Net Sect  275  17.97    3.590     27.200     25.312   16.214   19.301    0.000    0.000    0.000
0.000              0.000          Automatic
       g30P Diag13    4.044       L/r   19.184  Net Sect  277   9.85    4.044     27.200     25.312   19.184   21.094    0.000    0.000    0.000
0.000              0.000          Automatic
KL/R value of 239.44 exceeds maximum of 200.00 for member "g30P"  ??
       g30X Diag13    4.044       L/r   19.184  Net Sect  277   9.85    4.044     27.200     25.312   19.184   21.094    0.000    0.000    0.000
0.000              0.000          Automatic
KL/R value of 239.44 exceeds maximum of 200.00 for member "g30X"  ??
      g30XY Diag13    4.044       L/r   19.184  Net Sect  277   9.85    4.044     27.200     25.312   19.184   21.094    0.000    0.000    0.000
0.000              0.000          Automatic
KL/R value of 239.44 exceeds maximum of 200.00 for member "g30XY"  ??
       g30Y Diag13    4.044       L/r   19.184  Net Sect  277   9.85    4.044     27.200     25.312   19.184   21.094    0.000    0.000    0.000
0.000              0.000          Automatic
KL/R value of 239.44 exceeds maximum of 200.00 for member "g30Y"  ??
       g31P Diag13    3.701       L/r   18.105   Rupture  291  21.71    3.701     27.200     25.312   19.184   18.105    0.000    0.000    0.000
0.000              0.000          Automatic
KL/R value of 250.28 exceeds maximum of 200.00 for member "g31P"  ??
       g31X Diag13    3.701       L/r   18.105   Rupture  291  21.71    3.701     27.200     25.312   19.184   18.105    0.000    0.000    0.000
0.000              0.000          Automatic
KL/R value of 250.28 exceeds maximum of 200.00 for member "g31X"  ??
      g31XY Diag13    3.701       L/r   18.105   Rupture  291  21.71    3.701     27.200     25.312   19.184   18.105    0.000    0.000    0.000
0.000              0.000          Automatic
KL/R value of 250.28 exceeds maximum of 200.00 for member "g31XY"  ??
       g31Y Diag13    3.701       L/r   18.105   Rupture  291  21.71    3.701     27.200     25.312   19.184   18.105    0.000    0.000    0.000
0.000              0.000          Automatic
KL/R value of 250.28 exceeds maximum of 200.00 for member "g31Y"  ??
       g32P  Horz1    8.763       L/r    8.191   Rupture  152   5.00    8.763     13.600     12.656   16.214    8.191    0.000    0.000    0.000
0.000              0.000          Automatic
       g32X  Horz1    8.763       L/r    8.191   Rupture  152   5.00    8.763     13.600     12.656   16.214    8.191    0.000    0.000    0.000
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0.000		0.000	Automatic												
	g33P	Horz2	11.742	L/r	9.651	Rupture	141	5.00	11.742	13.600	12.656	19.184	9.651	0.000	0.000	0.000
0.000		0.000	Automatic												
	g33X	Horz2	11.742	L/r	9.651	Rupture	141	5.00	11.742	13.600	12.656	19.184	9.651	0.000	0.000	0.000
0.000		0.000	Automatic												
	g34P	Horz1	8.763	L/r	8.191	Rupture	152	5.00	8.763	13.600	12.656	16.214	8.191	0.000	0.000	0.000
0.000		0.000	Automatic												
	g34X	Horz1	8.763	L/r	8.191	Rupture	152	5.00	8.763	13.600	12.656	16.214	8.191	0.000	0.000	0.000
0.000		0.000	Automatic												
	g35P	Horz2	11.742	L/r	9.651	Rupture	141	5.00	11.742	13.600	12.656	19.184	9.651	0.000	0.000	0.000
0.000		0.000	Automatic												
	g35X	Horz2	11.742	L/r	9.651	Rupture	141	5.00	11.742	13.600	12.656	19.184	9.651	0.000	0.000	0.000
0.000		0.000	Automatic												
	g36P	Horz1	8.763	L/r	8.191	Rupture	152	5.00	8.763	13.600	12.656	16.214	8.191	0.000	0.000	0.000
0.000		0.000	Automatic												
	g36X	Horz1	8.763	L/r	8.191	Rupture	152	5.00	8.763	13.600	12.656	16.214	8.191	0.000	0.000	0.000
0.000		0.000	Automatic												
	g37P	Horz2	11.742	L/r	9.651	Rupture	141	5.00	11.742	13.600	12.656	19.184	9.651	0.000	0.000	0.000
0.000		0.000	Automatic												
	g37X	Horz2	11.742	L/r	9.651	Rupture	141	5.00	11.742	13.600	12.656	19.184	9.651	0.000	0.000	0.000
0.000		0.000	Automatic												
	g38P	Horz3	23.378	L/r	22.184	Rupture	100	4.99	23.378	27.200	25.312	27.500	22.184	0.000	0.000	0.000
0.000		0.000	Automatic												
	g38X	Horz3	23.378	L/r	22.184	Rupture	100	4.99	23.378	27.200	25.312	27.500	22.184	0.000	0.000	0.000
0.000		0.000	Automatic												
	g38XY	Horz3	23.378	L/r	22.184	Rupture	100	4.99	23.378	27.200	25.312	27.500	22.184	0.000	0.000	0.000
0.000		0.000	Automatic												
	g38Y	Horz3	23.378	L/r	22.184	Rupture	100	4.99	23.378	27.200	25.312	27.500	22.184	0.000	0.000	0.000
0.000		0.000	Automatic												
	g39P	Horz3	15.252	L/r	21.551	Rupture	150	11.75	15.252	27.200	25.312	27.500	21.551	0.000	0.000	0.000
0.000		0.000	Automatic												
	g39X	Horz3	15.252	L/r	21.551	Rupture	150	11.75	15.252	27.200	25.312	27.500	21.551	0.000	0.000	0.000
0.000		0.000	Automatic												
	g40P	Horz4	12.723	L/r	27.200	Shear	199	15.40	12.723	27.200	33.750	36.271	28.734	0.000	0.000	0.000
0.000		0.000	Automatic												
	g40X	Horz4	12.723	L/r	27.200	Shear	199	15.40	12.723	27.200	33.750	36.271	28.734	0.000	0.000	0.000
0.000		0.000	Automatic												
	g41P	Horz3	11.992	L/r	21.551	Rupture	174	8.65	11.992	27.200	25.312	27.500	21.551	0.000	0.000	0.000
0.000		0.000	Automatic												
	g41X	Horz3	11.992	L/r	21.551	Rupture	174	8.65	11.992	27.200	25.312	27.500	21.551	0.000	0.000	0.000
0.000		0.000	Automatic												
	g41XY	Horz3	11.992	L/r	21.551	Rupture	174	8.65	11.992	27.200	25.312	27.500	21.551	0.000	0.000	0.000
0.000		0.000	Automatic												
	g41Y	Horz3	11.992	L/r	21.551	Rupture	174	8.65	11.992	27.200	25.312	27.500	21.551	0.000	0.000	0.000
0.000		0.000	Automatic												
	g42P	Diag6	7.778	L/r	19.184	Net Sect	189	6.73	7.778	27.200	25.312	19.184	24.609	0.000	0.000	0.000
0.000		0.000	Automatic												
	g42X	Diag6	7.778	L/r	19.184	Net Sect	189	6.73	7.778	27.200	25.312	19.184	24.609	0.000	0.000	0.000
0.000		0.000	Automatic												
	g42XY	Diag6	7.778	L/r	19.184	Net Sect	189	6.73	7.778	27.200	25.312	19.184	24.609	0.000	0.000	0.000
0.000		0.000	Automatic												
	g42Y	Diag6	7.778	L/r	19.184	Net Sect	189	6.73	7.778	27.200	25.312	19.184	24.609	0.000	0.000	0.000
0.000		0.000	Automatic												
	g43P	Diag7	23.476	L/r	24.141	Rupture	136	6.73	23.476	27.200	33.750	36.271	24.141	0.000	0.000	0.000
0.000		0.000	Automatic												
	g43X	Diag7	23.476	L/r	24.141	Rupture	136	6.73	23.476	27.200	33.750	36.271	24.141	0.000	0.000	0.000
0.000		0.000	Automatic												
	g43XY	Diag7	23.476	L/r	24.141	Rupture	136	6.73	23.476	27.200	33.750	36.271	24.141	0.000	0.000	0.000
0.000		0.000	Automatic												

g43Y	Diag7	23.476	L/r	24.141	Rupture	136	6.73	23.476	27.200	33.750	36.271	24.141	0.000	0.000	0.000
0.000	0.000	Automatic													
g44P	Diag7	23.476	L/r	26.203	Rupture	136	6.73	23.476	27.200	33.750	36.271	26.203	0.000	0.000	0.000
0.000	0.000	Automatic													
g44X	Diag7	23.476	L/r	26.203	Rupture	136	6.73	23.476	27.200	33.750	36.271	26.203	0.000	0.000	0.000
0.000	0.000	Automatic													
g44XY	Diag7	23.476	L/r	26.203	Rupture	136	6.73	23.476	27.200	33.750	36.271	26.203	0.000	0.000	0.000
0.000	0.000	Automatic													
g44Y	Diag7	23.476	L/r	26.203	Rupture	136	6.73	23.476	27.200	33.750	36.271	26.203	0.000	0.000	0.000
0.000	0.000	Automatic													
g45P	Diag7	13.600	Shear	13.600	Shear	136	6.73	22.168	13.600	16.875	36.271	15.625	0.000	0.000	0.000
0.000	0.000	Automatic													
g45X	Diag7	13.600	Shear	13.600	Shear	136	6.73	22.168	13.600	16.875	36.271	15.625	0.000	0.000	0.000
0.000	0.000	Automatic													
g45XY	Diag7	13.600	Shear	13.600	Shear	136	6.73	22.168	13.600	16.875	36.271	15.625	0.000	0.000	0.000
0.000	0.000	Automatic													
g45Y	Diag7	13.600	Shear	13.600	Shear	136	6.73	22.168	13.600	16.875	36.271	15.625	0.000	0.000	0.000
0.000	0.000	Automatic													
g46P	Diag8	27.200	Shear	27.200	Shear	128	6.73	27.892	27.200	33.750	39.835	28.266	0.000	0.000	0.000
0.000	0.000	Automatic													
g46X	Diag8	27.200	Shear	27.200	Shear	128	6.73	27.892	27.200	33.750	39.835	28.266	0.000	0.000	0.000
0.000	0.000	Automatic													
g46XY	Diag8	27.200	Shear	27.200	Shear	128	6.73	27.892	27.200	33.750	39.835	28.266	0.000	0.000	0.000
0.000	0.000	Automatic													
g46Y	Diag8	27.200	Shear	27.200	Shear	128	6.73	27.892	27.200	33.750	39.835	28.266	0.000	0.000	0.000
0.000	0.000	Automatic													
g47P	Diag8	27.892	L/r	38.203	Rupture	128	6.73	27.892	40.800	50.625	39.835	38.203	0.000	0.000	0.000
0.000	0.000	Automatic													
g47X	Diag8	27.892	L/r	38.203	Rupture	128	6.73	27.892	40.800	50.625	39.835	38.203	0.000	0.000	0.000
0.000	0.000	Automatic													
g47XY	Diag8	27.892	L/r	38.203	Rupture	128	6.73	27.892	40.800	50.625	39.835	38.203	0.000	0.000	0.000
0.000	0.000	Automatic													
g47Y	Diag8	27.892	L/r	38.203	Rupture	128	6.73	27.892	40.800	50.625	39.835	38.203	0.000	0.000	0.000
0.000	0.000	Automatic													
g48P	Diag8	27.892	L/r	38.203	Rupture	128	6.73	27.892	40.800	50.625	39.835	38.203	0.000	0.000	0.000
0.000	0.000	Automatic													
g48X	Diag8	27.892	L/r	38.203	Rupture	128	6.73	27.892	40.800	50.625	39.835	38.203	0.000	0.000	0.000
0.000	0.000	Automatic													
g48XY	Diag8	27.892	L/r	38.203	Rupture	128	6.73	27.892	40.800	50.625	39.835	38.203	0.000	0.000	0.000
0.000	0.000	Automatic													
g48Y	Diag8	27.892	L/r	38.203	Rupture	128	6.73	27.892	40.800	50.625	39.835	38.203	0.000	0.000	0.000
0.000	0.000	Automatic													
g49P	Diag9	33.390	L/r	36.328	Rupture	117	6.79	33.390	40.800	50.625	43.696	36.328	0.000	0.000	0.000
0.000	0.000	Automatic													
g49X	Diag9	33.390	L/r	36.328	Rupture	117	6.79	33.390	40.800	50.625	43.696	36.328	0.000	0.000	0.000
0.000	0.000	Automatic													
g49XY	Diag9	33.390	L/r	36.328	Rupture	117	6.79	33.390	40.800	50.625	43.696	36.328	0.000	0.000	0.000
0.000	0.000	Automatic													
g49Y	Diag9	33.390	L/r	36.328	Rupture	117	6.79	33.390	40.800	50.625	43.696	36.328	0.000	0.000	0.000
0.000	0.000	Automatic													
g50P	**Diag10**	**49.982**	**L/r**	**53.502**	**Net Sect**	**119**	**10.19**	**49.982**	**54.400**	**84.375**	**53.502**	**73.529**	**0.000**	**0.000**	**0.000**
0.000	**0.000**	**Automatic**	**Member "g50P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??**												
g50X	**Diag10**	**49.982**	**L/r**	**53.502**	**Net Sect**	**119**	**10.19**	**49.982**	**54.400**	**84.375**	**53.502**	**73.529**	**0.000**	**0.000**	**0.000**
0.000	**0.000**	**Automatic**	**Member "g50X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??**												
g50XY	**Diag10**	**49.982**	**L/r**	**53.502**	**Net Sect**	**119**	**10.19**	**49.982**	**54.400**	**84.375**	**53.502**	**73.529**	**0.000**	**0.000**	**0.000**
0.000	**0.000**	**Automatic**	**Member "g50XY" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??**												

g50Y	**Diag10**	**49.982**		**L/r**	**53.502**	**Net Sect**	**119**	**10.19**	**49.982**	**54.400**	**84.375**	**53.502**	**73.529**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**												
Member "g50Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??																
g51P	**Diag11**	**11.259**		**L/r**	**49.200**	**Net Sect**	**253**	**19.09**	**11.259**	**54.400**	**84.375**	**49.200**	**60.644**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**												
KL/R value of 221.51 exceeds maximum of 200.00 for member "g51P" ??																
g51X	**Diag11**	**11.259**		**L/r**	**49.200**	**Net Sect**	**253**	**19.09**	**11.259**	**54.400**	**84.375**	**49.200**	**60.644**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**												
KL/R value of 221.51 exceeds maximum of 200.00 for member "g51X" ??																
g51XY	**Diag11**	**11.259**		**L/r**	**49.200**	**Net Sect**	**253**	**19.09**	**11.259**	**54.400**	**84.375**	**49.200**	**60.644**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**												
KL/R value of 221.51 exceeds maximum of 200.00 for member "g51XY" ??																
g51Y	**Diag11**	**11.259**		**L/r**	**49.200**	**Net Sect**	**253**	**19.09**	**11.259**	**54.400**	**84.375**	**49.200**	**60.644**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**												
KL/R value of 221.51 exceeds maximum of 200.00 for member "g51Y" ??																
g52P	Diag12	9.319		L/r	39.993	Net Sect	255	31.65	9.319	40.800	63.281	39.993	47.988	0.000	0.000	0.000
0.000		0.000		Automatic												
g52X	Diag12	9.319		L/r	39.993	Net Sect	255	31.65	9.319	40.800	63.281	39.993	47.988	0.000	0.000	0.000
0.000		0.000		Automatic												
g52XY	Diag12	9.319		L/r	39.993	Net Sect	255	31.65	9.319	40.800	63.281	39.993	47.988	0.000	0.000	0.000
0.000		0.000		Automatic												
g52Y	Diag12	9.319		L/r	39.993	Net Sect	255	31.65	9.319	40.800	63.281	39.993	47.988	0.000	0.000	0.000
0.000		0.000		Automatic												
g53P	M5	5.111		L/r	7.348	Rupture	186	5.00	5.111	13.600	12.656	13.541	7.348	0.000	0.000	0.000
0.000		0.000		Automatic												
g53X	M5	5.111		L/r	7.348	Rupture	186	5.00	5.111	13.600	12.656	13.541	7.348	0.000	0.000	0.000
0.000		0.000		Automatic												
g54P	M5	5.111		L/r	7.348	Rupture	186	5.00	5.111	13.600	12.656	13.541	7.348	0.000	0.000	0.000
0.000		0.000		Automatic												
g54X	M5	5.111		L/r	7.348	Rupture	186	5.00	5.111	13.600	12.656	13.541	7.348	0.000	0.000	0.000
0.000		0.000		Automatic												
g55P	M5	5.111		L/r	7.348	Rupture	186	5.00	5.111	13.600	12.656	13.541	7.348	0.000	0.000	0.000
0.000		0.000		Automatic												
g55X	M5	5.111		L/r	7.348	Rupture	186	5.00	5.111	13.600	12.656	13.541	7.348	0.000	0.000	0.000
0.000		0.000		Automatic												
g56P	M5	5.111		L/r	7.348	Rupture	186	5.00	5.111	13.600	12.656	13.541	7.348	0.000	0.000	0.000
0.000		0.000		Automatic												
g57P	M5	5.111		L/r	7.348	Rupture	186	5.00	5.111	13.600	12.656	13.541	7.348	0.000	0.000	0.000
0.000		0.000		Automatic												
g58P	M5	5.111		L/r	7.348	Rupture	186	5.00	5.111	13.600	12.656	13.541	7.348	0.000	0.000	0.000
0.000		0.000		Automatic												
g59P	M3	11.742		L/r	7.348	Rupture	141	5.00	11.742	13.600	12.656	19.184	7.348	0.000	0.000	0.000
0.000		0.000		Automatic												
g59X	M3	11.742		L/r	7.348	Rupture	141	5.00	11.742	13.600	12.656	19.184	7.348	0.000	0.000	0.000
0.000		0.000		Automatic												
g60P	M3	11.742		L/r	7.348	Rupture	141	5.00	11.742	13.600	12.656	19.184	7.348	0.000	0.000	0.000
0.000		0.000		Automatic												
g60X	M3	11.742		L/r	7.348	Rupture	141	5.00	11.742	13.600	12.656	19.184	7.348	0.000	0.000	0.000
0.000		0.000		Automatic												
g61P	M3	11.742		L/r	7.348	Rupture	141	5.00	11.742	13.600	12.656	19.184	7.348	0.000	0.000	0.000
0.000		0.000		Automatic												
g61X	M3	11.742		L/r	7.348	Rupture	141	5.00	11.742	13.600	12.656	19.184	7.348	0.000	0.000	0.000
0.000		0.000		Automatic												
g62P	**M5**	**2.824**		**L/r**	**7.348**	**Rupture**	**251**	**6.73**	**2.824**	**13.600**	**12.656**	**13.541**	**7.348**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**												
KL/R value of 250.69 exceeds maximum of 200.00 for member "g62P" ??																
g63P	**M5**	**2.824**		**L/r**	**7.348**	**Rupture**	**251**	**6.73**	**2.824**	**13.600**	**12.656**	**13.541**	**7.348**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**												
KL/R value of 250.69 exceeds maximum of 200.00 for member "g63P" ??																

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        g64P     M5    2.824       L/r    7.348   Rupture  251   6.73    2.824     13.600     12.656   13.541    7.348    0.000    0.000    0.000
0.000               0.000           Automatic
KL/R value of 250.69 exceeds maximum of 200.00 for member "g64P"  ??
        g65P     M5    2.824       L/r    7.348   Rupture  251   6.73    2.824     13.600     12.656   13.541    7.348    0.000    0.000    0.000
0.000               0.000           Automatic
KL/R value of 250.69 exceeds maximum of 200.00 for member "g65P"  ??
        g66P     M4    3.591       L/r    7.348   Rupture  238   7.81    3.591     13.600     12.656   16.214    7.348    0.000    0.000    0.000
0.000               0.000           Automatic
KL/R value of 237.88 exceeds maximum of 200.00 for member "g66P"  ??
        g67P     M4    3.591       L/r    7.348   Rupture  238   7.81    3.591     13.600     12.656   16.214    7.348    0.000    0.000    0.000
0.000               0.000           Automatic
KL/R value of 237.88 exceeds maximum of 200.00 for member "g67P"  ??
        g68P     M5    2.824       L/r    7.348   Rupture  251   6.73    2.824     13.600     12.656   13.541    7.348    0.000    0.000    0.000
0.000               0.000           Automatic
KL/R value of 250.69 exceeds maximum of 200.00 for member "g68P"  ??
        g69P     M5    2.824       L/r    7.348   Rupture  251   6.73    2.824     13.600     12.656   13.541    7.348    0.000    0.000    0.000
0.000               0.000           Automatic
KL/R value of 250.69 exceeds maximum of 200.00 for member "g69P"  ??
        g70P     M5    2.824       L/r    7.348   Rupture  251   6.73    2.824     13.600     12.656   13.541    7.348    0.000    0.000    0.000
0.000               0.000           Automatic
KL/R value of 250.69 exceeds maximum of 200.00 for member "g70P"  ??
        g71P     M5    2.824       L/r    7.348   Rupture  251   6.73    2.824     13.600     12.656   13.541    7.348    0.000    0.000    0.000
0.000               0.000           Automatic
KL/R value of 250.69 exceeds maximum of 200.00 for member "g71P"  ??
        g72P     M4    3.591       L/r    7.348   Rupture  238   7.81    3.591     13.600     12.656   16.214    7.348    0.000    0.000    0.000
0.000               0.000           Automatic
KL/R value of 237.88 exceeds maximum of 200.00 for member "g72P"  ??
        g73P     M4    3.591       L/r    7.348   Rupture  238   7.81    3.591     13.600     12.656   16.214    7.348    0.000    0.000    0.000
0.000               0.000           Automatic
KL/R value of 237.88 exceeds maximum of 200.00 for member "g73P"  ??
        g74P     M5    2.824       L/r    7.348   Rupture  251   6.73    2.824     13.600     12.656   13.541    7.348    0.000    0.000    0.000
0.000               0.000           Automatic
KL/R value of 250.69 exceeds maximum of 200.00 for member "g74P"  ??
        g75P     M5    2.824       L/r    7.348   Rupture  251   6.73    2.824     13.600     12.656   13.541    7.348    0.000    0.000    0.000
0.000               0.000           Automatic
KL/R value of 250.69 exceeds maximum of 200.00 for member "g75P"  ??
        g76P     M5    2.824       L/r    7.348   Rupture  251   6.73    2.824     13.600     12.656   13.541    7.348    0.000    0.000    0.000
0.000               0.000           Automatic
KL/R value of 250.69 exceeds maximum of 200.00 for member "g76P"  ??
        g77P     M5    2.824       L/r    7.348   Rupture  251   6.73    2.824     13.600     12.656   13.541    7.348    0.000    0.000    0.000
0.000               0.000           Automatic
KL/R value of 250.69 exceeds maximum of 200.00 for member "g77P"  ??
        g78P     M4    3.591       L/r    7.348   Rupture  238   7.81    3.591     13.600     12.656   16.214    7.348    0.000    0.000    0.000
0.000               0.000           Automatic
KL/R value of 237.88 exceeds maximum of 200.00 for member "g78P"  ??
        g79P     M4    3.591       L/r    7.348   Rupture  238   7.81    3.591     13.600     12.656   16.214    7.348    0.000    0.000    0.000
0.000               0.000           Automatic
KL/R value of 237.88 exceeds maximum of 200.00 for member "g79P"  ??
        g80P     M2   27.200     Shear   27.200     Shear   91   4.50   32.243     27.200     33.750   36.271   31.250    0.000    0.000    0.000
0.000               0.000           Automatic
        g80X     M2   27.200     Shear   27.200     Shear   91   4.50   32.243     27.200     33.750   36.271   31.250    0.000    0.000    0.000
0.000               0.000           Automatic
       g80XY     M2   27.200     Shear   27.200     Shear   91   4.50   32.243     27.200     33.750   36.271   31.250    0.000    0.000    0.000
0.000               0.000           Automatic
        g80Y     M2   27.200     Shear   27.200     Shear   91   4.50   32.243     27.200     33.750   36.271   31.250    0.000    0.000    0.000
0.000               0.000           Automatic
        g81P     M2   27.200     Shear   27.200     Shear   91   4.50   32.243     27.200     33.750   36.271   28.266    0.000    0.000    0.000
0.000               0.000           Automatic
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g81X	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	28.266	0.000	0.000	0.000	0.000
	0.000		Automatic													
g81XY	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	28.266	0.000	0.000	0.000	0.000
	0.000		Automatic													
g81Y	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	28.266	0.000	0.000	0.000	0.000
	0.000		Automatic													
g82P	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	31.250	0.000	0.000	0.000	0.000
	0.000		Automatic													
g82X	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	31.250	0.000	0.000	0.000	0.000
	0.000		Automatic													
g82XY	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	31.250	0.000	0.000	0.000	0.000
	0.000		Automatic													
g82Y	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	31.250	0.000	0.000	0.000	0.000
	0.000		Automatic													
g83P	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	31.250	0.000	0.000	0.000	0.000
	0.000		Automatic													
g83X	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	31.250	0.000	0.000	0.000	0.000
	0.000		Automatic													
g83XY	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	31.250	0.000	0.000	0.000	0.000
	0.000		Automatic													
g83Y	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	31.250	0.000	0.000	0.000	0.000
	0.000		Automatic													
g84P	M2	27.200	Shear	27.200	Shear	122	6.00	27.374	27.200	33.750	36.271	31.250	0.000	0.000	0.000	0.000
	0.000		Automatic													
g84X	M2	27.200	Shear	27.200	Shear	122	6.00	27.374	27.200	33.750	36.271	31.250	0.000	0.000	0.000	0.000
	0.000		Automatic													
g84XY	M2	27.200	Shear	27.200	Shear	122	6.00	27.374	27.200	33.750	36.271	31.250	0.000	0.000	0.000	0.000
	0.000		Automatic													
g84Y	M2	27.200	Shear	27.200	Shear	122	6.00	27.374	27.200	33.750	36.271	31.250	0.000	0.000	0.000	0.000
	0.000		Automatic													
g85P	M2	27.200	Shear	27.200	Shear	122	6.00	27.374	27.200	33.750	36.271	31.250	0.000	0.000	0.000	0.000
	0.000		Automatic													
g85X	M2	27.200	Shear	27.200	Shear	122	6.00	27.374	27.200	33.750	36.271	31.250	0.000	0.000	0.000	0.000
	0.000		Automatic													
g85XY	M2	27.200	Shear	27.200	Shear	122	6.00	27.374	27.200	33.750	36.271	31.250	0.000	0.000	0.000	0.000
	0.000		Automatic													
g85Y	M2	27.200	Shear	27.200	Shear	122	6.00	27.374	27.200	33.750	36.271	31.250	0.000	0.000	0.000	0.000
	0.000		Automatic													
g86P	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	28.266	0.000	0.000	0.000	0.000
	0.000		Automatic													
g86X	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	28.266	0.000	0.000	0.000	0.000
	0.000		Automatic													
g86XY	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	28.266	0.000	0.000	0.000	0.000
	0.000		Automatic													
g86Y	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	28.266	0.000	0.000	0.000	0.000
	0.000		Automatic													
g87P	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	28.266	0.000	0.000	0.000	0.000
	0.000		Automatic													
g87X	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	28.266	0.000	0.000	0.000	0.000
	0.000		Automatic													
g87XY	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	28.266	0.000	0.000	0.000	0.000
	0.000		Automatic													
g87Y	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	28.266	0.000	0.000	0.000	0.000
	0.000		Automatic													
g88P	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	28.266	0.000	0.000	0.000	0.000
	0.000		Automatic													
g88X	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	28.266	0.000	0.000	0.000	0.000
	0.000		Automatic													
g88XY	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	28.266	0.000	0.000	0.000	0.000

0.000		0.000		Automatic												
	g88Y	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	28.266	0.000	0.000	0.000
0.000		0.000		Automatic												
	g89P	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	28.266	0.000	0.000	0.000
0.000		0.000		Automatic												
	g89X	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	28.266	0.000	0.000	0.000
0.000		0.000		Automatic												
	g89XY	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	28.266	0.000	0.000	0.000
0.000		0.000		Automatic												
	g89Y	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	28.266	0.000	0.000	0.000
0.000		0.000		Automatic												
	g90P	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g90X	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g90XY	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g90Y	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g91P	M2	27.200	Shear	27.200	Shear	122	6.00	27.374	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g91X	M2	27.200	Shear	27.200	Shear	122	6.00	27.374	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g91XY	M2	27.200	Shear	27.200	Shear	122	6.00	27.374	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g91Y	M2	27.200	Shear	27.200	Shear	122	6.00	27.374	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g92P	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g92X	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g92XY	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g92Y	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g93P	M2	27.200	Shear	27.200	Shear	122	6.00	27.374	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g93X	M2	27.200	Shear	27.200	Shear	122	6.00	27.374	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g93XY	M2	27.200	Shear	27.200	Shear	122	6.00	27.374	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g93Y	M2	27.200	Shear	27.200	Shear	122	6.00	27.374	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g94P	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g94X	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g94XY	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g94Y	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g95P	M2	27.200	Shear	27.200	Shear	122	6.00	27.374	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g95X	M2	27.200	Shear	27.200	Shear	122	6.00	27.374	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g95XY	M2	27.200	Shear	27.200	Shear	122	6.00	27.374	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g95Y	M2	27.200	Shear	27.200	Shear	122	6.00	27.374	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												

g96P	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	31.250	0.000	0.000	0.000	0.000	0.000
g96X	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	31.250	0.000	0.000	0.000	0.000	0.000
g96XY	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	31.250	0.000	0.000	0.000	0.000	0.000
g96Y	M2	27.200	Shear	27.200	Shear	91	4.50	32.243	27.200	33.750	36.271	31.250	0.000	0.000	0.000	0.000	0.000
g97P	M2	27.200	Shear	27.200	Shear	122	6.00	27.374	27.200	33.750	36.271	31.250	0.000	0.000	0.000	0.000	0.000
g97X	M2	27.200	Shear	27.200	Shear	122	6.00	27.374	27.200	33.750	36.271	31.250	0.000	0.000	0.000	0.000	0.000
g97XY	M2	27.200	Shear	27.200	Shear	122	6.00	27.374	27.200	33.750	36.271	31.250	0.000	0.000	0.000	0.000	0.000
g97Y	M2	27.200	Shear	27.200	Shear	122	6.00	27.374	27.200	33.750	36.271	31.250	0.000	0.000	0.000	0.000	0.000
g98P	M4	8.763	L/r	8.191	Rupture	152	5.00	8.763	13.600	12.656	16.214	8.191	0.000	0.000	0.000	0.000	0.000
g98X	M4	8.763	L/r	8.191	Rupture	152	5.00	8.763	13.600	12.656	16.214	8.191	0.000	0.000	0.000	0.000	0.000
g99P	M18	12.656	Bearing	9.640	Rupture	76	2.50	16.935	13.600	12.656	16.214	9.640	0.000	0.000	0.000	0.000	0.000
g99X	M18	12.656	Bearing	9.640	Rupture	76	2.50	16.935	13.600	12.656	16.214	9.640	0.000	0.000	0.000	0.000	0.000
Fg99157P	M18	12.656	Bearing	9.640	Rupture	76	2.50	16.935	13.600	12.656	16.214	9.640	0.000	0.000	0.000	0.000	0.000
Fg99157X	M18	12.656	Bearing	9.640	Rupture	76	2.50	16.935	13.600	12.656	16.214	9.640	0.000	0.000	0.000	0.000	0.000
g100P	M4	8.763	L/r	8.191	Rupture	152	5.00	8.763	13.600	12.656	16.214	8.191	0.000	0.000	0.000	0.000	0.000
g100X	M4	8.763	L/r	8.191	Rupture	152	5.00	8.763	13.600	12.656	16.214	8.191	0.000	0.000	0.000	0.000	0.000
g101P	M18	12.656	Bearing	9.640	Rupture	76	2.50	16.935	13.600	12.656	16.214	9.640	0.000	0.000	0.000	0.000	0.000
g101X	M18	12.656	Bearing	9.640	Rupture	76	2.50	16.935	13.600	12.656	16.214	9.640	0.000	0.000	0.000	0.000	0.000
Fg101158P	M18	12.656	Bearing	9.640	Rupture	76	2.50	16.935	13.600	12.656	16.214	9.640	0.000	0.000	0.000	0.000	0.000
Fg101158X	M18	12.656	Bearing	9.640	Rupture	76	2.50	16.935	13.600	12.656	16.214	9.640	0.000	0.000	0.000	0.000	0.000
g102P	M4	8.763	L/r	8.191	Rupture	152	5.00	8.763	13.600	12.656	16.214	8.191	0.000	0.000	0.000	0.000	0.000
g102X	M4	8.763	L/r	8.191	Rupture	152	5.00	8.763	13.600	12.656	16.214	8.191	0.000	0.000	0.000	0.000	0.000
g103P	M18	12.656	Bearing	9.640	Rupture	76	2.50	16.935	13.600	12.656	16.214	9.640	0.000	0.000	0.000	0.000	0.000
g103X	M18	12.656	Bearing	9.640	Rupture	76	2.50	16.935	13.600	12.656	16.214	9.640	0.000	0.000	0.000	0.000	0.000
Fg103159P	M18	12.656	Bearing	9.640	Rupture	76	2.50	16.935	13.600	12.656	16.214	9.640	0.000	0.000	0.000	0.000	0.000
Fg103159X	M18	12.656	Bearing	9.640	Rupture	76	2.50	16.935	13.600	12.656	16.214	9.640	0.000	0.000	0.000	0.000	0.000
g104P	M6	11.194	L/r	8.191	Rupture	125	6.73	11.194	13.600	12.656	13.541	8.191	0.000	0.000	0.000	0.000	0.000
g104X	M6	11.194	L/r	8.191	Rupture	125	6.73	11.194	13.600	12.656	13.541	8.191	0.000	0.000	0.000	0.000	0.000
g104XY	M6	11.194	L/r	8.191	Rupture	125	6.73	11.194	13.600	12.656	13.541	8.191	0.000	0.000	0.000	0.000	0.000
g104Y	M6	11.194	L/r	8.191	Rupture	125	6.73	11.194	13.600	12.656	13.541	8.191	0.000	0.000	0.000	0.000	0.000

0.000		0.000		Automatic											
	g105P	M5	11.194	L/r	8.191	Rupture	125	3.36	11.194	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
	g105X	M5	11.194	L/r	8.191	Rupture	125	3.36	11.194	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
	g105XY	M5	11.194	L/r	8.191	Rupture	125	3.36	11.194	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
	g105Y	M5	11.194	L/r	8.191	Rupture	125	3.36	11.194	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
	g106P	M6	8.379	L/r	8.191	Rupture	146	7.81	8.379	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
	g106X	M6	8.379	L/r	8.191	Rupture	146	7.81	8.379	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
	g106XY	M6	8.379	L/r	8.191	Rupture	146	7.81	8.379	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
	g106Y	M6	8.379	L/r	8.191	Rupture	146	7.81	8.379	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
	g107P	M6	11.194	L/r	8.191	Rupture	125	6.73	11.194	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
	g107X	M6	11.194	L/r	8.191	Rupture	125	6.73	11.194	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
	g107XY	M6	11.194	L/r	8.191	Rupture	125	6.73	11.194	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
	g107Y	M6	11.194	L/r	8.191	Rupture	125	6.73	11.194	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
	g108P	M5	11.194	L/r	8.191	Rupture	125	3.36	11.194	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
	g108X	M5	11.194	L/r	8.191	Rupture	125	3.36	11.194	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
	g108XY	M5	11.194	L/r	8.191	Rupture	125	3.36	11.194	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
	g108Y	M5	11.194	L/r	8.191	Rupture	125	3.36	11.194	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
	g109P	M6	8.379	L/r	8.191	Rupture	146	7.81	8.379	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
	g109X	M6	8.379	L/r	8.191	Rupture	146	7.81	8.379	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
	g109XY	M6	8.379	L/r	8.191	Rupture	146	7.81	8.379	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
	g109Y	M6	8.379	L/r	8.191	Rupture	146	7.81	8.379	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
	g110P	M6	11.194	L/r	8.191	Rupture	125	6.73	11.194	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
	g110X	M6	11.194	L/r	8.191	Rupture	125	6.73	11.194	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
	g110XY	M6	11.194	L/r	8.191	Rupture	125	6.73	11.194	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
	g110Y	M6	11.194	L/r	8.191	Rupture	125	6.73	11.194	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
	g111P	M5	11.194	L/r	8.191	Rupture	125	3.36	11.194	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
	g111X	M5	11.194	L/r	8.191	Rupture	125	3.36	11.194	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
	g111XY	M5	11.194	L/r	8.191	Rupture	125	3.36	11.194	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
	g111Y	M5	11.194	L/r	8.191	Rupture	125	3.36	11.194	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
	g112P	M6	8.379	L/r	8.191	Rupture	146	7.81	8.379	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											

g112X	M6	8.379	L/r	8.191	Rupture	146	7.81	8.379	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
g112XY	M6	8.379	L/r	8.191	Rupture	146	7.81	8.379	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
g112Y	M6	8.379	L/r	8.191	Rupture	146	7.81	8.379	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
g113P	M5	5.111	L/r	8.191	Rupture	186	5.00	5.111	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
g113X	M5	5.111	L/r	8.191	Rupture	186	5.00	5.111	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
g113XY	M5	5.111	L/r	8.191	Rupture	186	5.00	5.111	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
g113Y	M5	5.111	L/r	8.191	Rupture	186	5.00	5.111	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
g114P	M5	5.111	L/r	8.191	Rupture	186	5.00	5.111	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
g114X	M5	5.111	L/r	8.191	Rupture	186	5.00	5.111	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
g114XY	M5	5.111	L/r	8.191	Rupture	186	5.00	5.111	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
g114Y	M5	5.111	L/r	8.191	Rupture	186	5.00	5.111	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
g115P	M5	5.111	L/r	8.191	Rupture	186	5.00	5.111	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
g115X	M5	5.111	L/r	8.191	Rupture	186	5.00	5.111	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
g115XY	M5	5.111	L/r	8.191	Rupture	186	5.00	5.111	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
g115Y	M5	5.111	L/r	8.191	Rupture	186	5.00	5.111	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
g116P	M5	5.111	L/r	8.191	Rupture	186	5.00	5.111	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
g116Y	M5	5.111	L/r	8.191	Rupture	186	5.00	5.111	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
g117P	M5	5.111	L/r	8.191	Rupture	186	5.00	5.111	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
g117Y	M5	5.111	L/r	8.191	Rupture	186	5.00	5.111	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
g118P	M5	5.111	L/r	8.191	Rupture	186	5.00	5.111	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
g118Y	M5	5.111	L/r	8.191	Rupture	186	5.00	5.111	13.600	12.656	13.541	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
g119P	M4	8.763	L/r	8.191	Rupture	152	5.00	8.763	13.600	12.656	16.214	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
g119X	M4	8.763	L/r	8.191	Rupture	152	5.00	8.763	13.600	12.656	16.214	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
g119XY	M4	8.763	L/r	8.191	Rupture	152	5.00	8.763	13.600	12.656	16.214	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
g119Y	M4	8.763	L/r	8.191	Rupture	152	5.00	8.763	13.600	12.656	16.214	8.191	0.000	0.000	0.000
0.000		0.000		Automatic											
g120P	M9	13.600	Shear	13.600	Shear	114	5.00	26.686	13.600	16.875	32.410	15.625	0.000	0.000	0.000
0.000		0.000		Automatic											
g120X	M9	13.600	Shear	13.600	Shear	114	5.00	26.686	13.600	16.875	32.410	15.625	0.000	0.000	0.000
0.000		0.000		Automatic											
g120XY	M9	13.600	Shear	13.600	Shear	114	5.00	26.686	13.600	16.875	32.410	15.625	0.000	0.000	0.000
0.000		0.000		Automatic											
g120Y	M9	13.600	Shear	13.600	Shear	114	5.00	26.686	13.600	16.875	32.410	15.625	0.000	0.000	0.000
0.000		0.000		Automatic											
g121P	M15	13.600	Shear	13.600	Shear	101	5.00	32.126	13.600	16.875	36.271	15.625	0.000	0.000	0.000

0.000		0.000		Automatic												
	g121X	M15	13.600	Shear	13.600	Shear	101	5.00	32.126	13.600	16.875	36.271	15.625	0.000	0.000	0.000
0.000		0.000		Automatic												
	g121XY	M15	13.600	Shear	13.600	Shear	101	5.00	32.126	13.600	16.875	36.271	15.625	0.000	0.000	0.000
0.000		0.000		Automatic												
	g121Y	M15	13.600	Shear	13.600	Shear	101	5.00	32.126	13.600	16.875	36.271	15.625	0.000	0.000	0.000
0.000		0.000		Automatic												
	g122P	M1	11.048	L/r	18.105	Rupture	163	6.73	11.048	27.200	25.312	21.917	18.105	0.000	0.000	0.000
0.000		0.000		Automatic												
	g122X	M1	11.048	L/r	18.105	Rupture	163	6.73	11.048	27.200	25.312	21.917	18.105	0.000	0.000	0.000
0.000		0.000		Automatic												
	g122XY	M1	11.048	L/r	18.105	Rupture	163	6.73	11.048	27.200	25.312	21.917	18.105	0.000	0.000	0.000
0.000		0.000		Automatic												
	g122Y	M1	11.048	L/r	18.105	Rupture	163	6.73	11.048	27.200	25.312	21.917	18.105	0.000	0.000	0.000
0.000		0.000		Automatic												
	g123P	M1	7.201	L/r	10.512	Rupture	189	7.81	7.201	13.600	12.656	21.917	10.512	0.000	0.000	0.000
0.000		0.000		Automatic												
	g123X	M1	7.201	L/r	10.512	Rupture	189	7.81	7.201	13.600	12.656	21.917	10.512	0.000	0.000	0.000
0.000		0.000		Automatic												
	g123XY	M1	7.201	L/r	10.512	Rupture	189	7.81	7.201	13.600	12.656	21.917	10.512	0.000	0.000	0.000
0.000		0.000		Automatic												
	g123Y	M1	7.201	L/r	10.512	Rupture	189	7.81	7.201	13.600	12.656	21.917	10.512	0.000	0.000	0.000
0.000		0.000		Automatic												
	g124P	M7	12.656	Bearing	11.719	Rupture	135	6.73	17.007	13.600	12.656	27.500	11.719	0.000	0.000	0.000
0.000		0.000		Automatic												
	g124X	M7	12.656	Bearing	11.719	Rupture	135	6.73	17.007	13.600	12.656	27.500	11.719	0.000	0.000	0.000
0.000		0.000		Automatic												
	g124XY	M7	12.656	Bearing	11.719	Rupture	135	6.73	17.007	13.600	12.656	27.500	11.719	0.000	0.000	0.000
0.000		0.000		Automatic												
	g124Y	M7	12.656	Bearing	11.719	Rupture	135	6.73	17.007	13.600	12.656	27.500	11.719	0.000	0.000	0.000
0.000		0.000		Automatic												
	g125P	M8	9.348	L/r	13.600	Shear	191	7.81	9.348	13.600	16.875	28.846	14.016	0.000	0.000	10.750
0.000		0.000		Automatic												
	g125X	M8	9.348	L/r	13.600	Shear	191	7.81	9.348	13.600	16.875	28.846	14.016	0.000	0.000	10.750
0.000		0.000		Automatic												
	g125XY	M8	9.348	L/r	13.600	Shear	191	7.81	9.348	13.600	16.875	28.846	14.016	0.000	0.000	10.750
0.000		0.000		Automatic												
	g125Y	M8	9.348	L/r	13.600	Shear	191	7.81	9.348	13.600	16.875	28.846	14.016	0.000	0.000	10.750
0.000		0.000		Automatic												
	g126P	M15	23.476	L/r	27.200	Shear	136	6.73	23.476	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g126X	M15	23.476	L/r	27.200	Shear	136	6.73	23.476	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g126XY	M15	23.476	L/r	27.200	Shear	136	6.73	23.476	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g126Y	M15	23.476	L/r	27.200	Shear	136	6.73	23.476	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g127P	M15	18.506	L/r	27.200	Shear	158	7.81	18.506	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g127X	M15	18.506	L/r	27.200	Shear	158	7.81	18.506	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g127XY	M15	18.506	L/r	27.200	Shear	158	7.81	18.506	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g127Y	M15	18.506	L/r	27.200	Shear	158	7.81	18.506	27.200	33.750	36.271	31.250	0.000	0.000	0.000
0.000		0.000		Automatic												
	g128P	**M7**	**7.736**	**L/r**	**11.719**	**Rupture**	**201**	**9.97**	**7.736**	**13.600**	**12.656**	**27.500**	**11.719**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**												
KL/R value of 200.81 exceeds maximum of 200.00 for member "g128P" ??																
	g128X	**M7**	**7.736**	**L/r**	**11.719**	**Rupture**	**201**	**9.97**	**7.736**	**13.600**	**12.656**	**27.500**	**11.719**	**0.000**	**0.000**	**0.000**

0.000 0.000 Automatic
KL/R value of 200.81 exceeds maximum of 200.00 for member "g128X" ??
g129P M7 5.574 L/r 11.719 Rupture 237 11.75 5.574 13.600 12.656 27.500 11.719 0.000 0.000 0.000
0.000 0.000 Automatic
KL/R value of 236.58 exceeds maximum of 200.00 for member "g129P" ??
g129X M7 5.574 L/r 11.719 Rupture 237 11.75 5.574 13.600 12.656 27.500 11.719 0.000 0.000 0.000
0.000 0.000 Automatic
KL/R value of 236.58 exceeds maximum of 200.00 for member "g129X" ??
g130P M7 7.736 L/r 11.719 Rupture 201 9.97 7.736 13.600 12.656 27.500 11.719 0.000 0.000 0.000
0.000 0.000 Automatic
KL/R value of 200.81 exceeds maximum of 200.00 for member "g130P" ??
g131P M7 5.574 L/r 11.719 Rupture 237 11.75 5.574 13.600 12.656 27.500 11.719 0.000 0.000 0.000
0.000 0.000 Automatic
KL/R value of 236.58 exceeds maximum of 200.00 for member "g131P" ??
g132P M6 4.269 L/r 8.191 Rupture 204 10.94 4.269 13.600 12.656 13.541 8.191 0.000 0.000 0.000
0.000 0.000 Automatic
KL/R value of 203.89 exceeds maximum of 200.00 for member "g132P" ??
g132X M6 4.269 L/r 8.191 Rupture 204 10.94 4.269 13.600 12.656 13.541 8.191 0.000 0.000 0.000
0.000 0.000 Automatic
KL/R value of 203.89 exceeds maximum of 200.00 for member "g132X" ??
g132XY M6 4.269 L/r 8.191 Rupture 204 10.94 4.269 13.600 12.656 13.541 8.191 0.000 0.000 0.000
0.000 0.000 Automatic
KL/R value of 203.89 exceeds maximum of 200.00 for member "g132XY" ??
g132Y M6 4.269 L/r 8.191 Rupture 204 10.94 4.269 13.600 12.656 13.541 8.191 0.000 0.000 0.000
0.000 0.000 Automatic
KL/R value of 203.89 exceeds maximum of 200.00 for member "g132Y" ??
g133P M6 2.437 L/r 8.191 Rupture 270 14.48 2.437 13.600 12.656 13.541 8.191 0.000 0.000 0.000
0.000 0.000 Automatic
KL/R value of 269.85 exceeds maximum of 200.00 for member "g133P" ??
g133X M6 2.437 L/r 8.191 Rupture 270 14.48 2.437 13.600 12.656 13.541 8.191 0.000 0.000 0.000
0.000 0.000 Automatic
KL/R value of 269.85 exceeds maximum of 200.00 for member "g133X" ??
g133XY M6 2.437 L/r 8.191 Rupture 270 14.48 2.437 13.600 12.656 13.541 8.191 0.000 0.000 0.000
0.000 0.000 Automatic
KL/R value of 269.85 exceeds maximum of 200.00 for member "g133XY" ??
g133Y M6 2.437 L/r 8.191 Rupture 270 14.48 2.437 13.600 12.656 13.541 8.191 0.000 0.000 0.000
0.000 0.000 Automatic
KL/R value of 269.85 exceeds maximum of 200.00 for member "g133Y" ??
g134P M6 3.228 L/r 8.191 Rupture 234 12.58 3.228 13.600 12.656 13.541 8.191 0.000 0.000 0.000
0.000 0.000 Automatic
KL/R value of 234.45 exceeds maximum of 200.00 for member "g134P" ??
g134X M6 3.228 L/r 8.191 Rupture 234 12.58 3.228 13.600 12.656 13.541 8.191 0.000 0.000 0.000
0.000 0.000 Automatic
KL/R value of 234.45 exceeds maximum of 200.00 for member "g134X" ??
g134XY M6 3.228 L/r 8.191 Rupture 234 12.58 3.228 13.600 12.656 13.541 8.191 0.000 0.000 0.000
0.000 0.000 Automatic
KL/R value of 234.45 exceeds maximum of 200.00 for member "g134XY" ??
g134Y M6 3.228 L/r 8.191 Rupture 234 12.58 3.228 13.600 12.656 13.541 8.191 0.000 0.000 0.000
0.000 0.000 Automatic
KL/R value of 234.45 exceeds maximum of 200.00 for member "g134Y" ??
g135P M17 2.058 L/r 8.191 Rupture 294 15.76 2.058 13.600 12.656 13.541 8.191 0.000 0.000 0.000
0.000 0.000 Automatic
g135X M17 2.058 L/r 8.191 Rupture 294 15.76 2.058 13.600 12.656 13.541 8.191 0.000 0.000 0.000
0.000 0.000 Automatic
g135XY M17 2.058 L/r 8.191 Rupture 294 15.76 2.058 13.600 12.656 13.541 8.191 0.000 0.000 0.000
0.000 0.000 Automatic
g135Y M17 2.058 L/r 8.191 Rupture 294 15.76 2.058 13.600 12.656 13.541 8.191 0.000 0.000 0.000
0.000 0.000 Automatic

g136P	M14	68.000	Shear	68.000	Shear	45	4.50	115.523	68.000	126.562	100.256	93.980	0.000	0.000	0.000	0.000	0.000
g136X	M14	68.000	Shear	68.000	Shear	45	4.50	115.523	68.000	126.562	100.256	93.980	0.000	0.000	0.000	0.000	0.000
g136XY	M14	68.000	Shear	68.000	Shear	45	4.50	115.523	68.000	126.562	100.256	93.980	0.000	0.000	0.000	0.000	0.000
g136Y	M14	68.000	Shear	68.000	Shear	45	4.50	115.523	68.000	126.562	100.256	93.980	0.000	0.000	0.000	0.000	0.000
g137P	M19	68.000	Shear	65.628	Net Sect	54	4.50	78.093	68.000	105.469	65.628	73.160	0.000	0.000	0.000	0.000	0.000
g137X	M19	68.000	Shear	65.628	Net Sect	54	4.50	78.093	68.000	105.469	65.628	73.160	0.000	0.000	0.000	0.000	0.000
g137XY	M19	68.000	Shear	65.628	Net Sect	54	4.50	78.093	68.000	105.469	65.628	73.160	0.000	0.000	0.000	0.000	0.000
g137Y	M19	68.000	Shear	65.628	Net Sect	54	4.50	78.093	68.000	105.469	65.628	73.160	0.000	0.000	0.000	0.000	0.000
g138P	M14	115.523	L/r	143.880	Net Sect	45	4.50	115.523	0.000	0.000	143.880	0.000	0.000	0.000	0.000	0.000	0.000
g138X	M14	115.523	L/r	143.880	Net Sect	45	4.50	115.523	0.000	0.000	143.880	0.000	0.000	0.000	0.000	0.000	0.000
g138XY	M14	115.523	L/r	143.880	Net Sect	45	4.50	115.523	0.000	0.000	143.880	0.000	0.000	0.000	0.000	0.000	0.000
g138Y	M14	115.523	L/r	143.880	Net Sect	45	4.50	115.523	0.000	0.000	143.880	0.000	0.000	0.000	0.000	0.000	0.000
g139P	M14	110.099	L/r	143.880	Net Sect	61	6.00	110.099	0.000	0.000	143.880	0.000	0.000	0.000	0.000	0.000	0.000
g139X	M14	110.099	L/r	143.880	Net Sect	61	6.00	110.099	0.000	0.000	143.880	0.000	0.000	0.000	0.000	0.000	0.000
g139XY	M14	110.099	L/r	143.880	Net Sect	61	6.00	110.099	0.000	0.000	143.880	0.000	0.000	0.000	0.000	0.000	0.000
g139Y	M14	110.099	L/r	143.880	Net Sect	61	6.00	110.099	0.000	0.000	143.880	0.000	0.000	0.000	0.000	0.000	0.000
g140P	M19	78.093	L/r	99.990	Net Sect	54	4.50	78.093	0.000	0.000	99.990	0.000	0.000	0.000	0.000	0.000	0.000
g140X	M19	78.093	L/r	99.990	Net Sect	54	4.50	78.093	0.000	0.000	99.990	0.000	0.000	0.000	0.000	0.000	0.000
g140XY	M19	78.093	L/r	99.990	Net Sect	54	4.50	78.093	0.000	0.000	99.990	0.000	0.000	0.000	0.000	0.000	0.000
g140Y	M19	78.093	L/r	99.990	Net Sect	54	4.50	78.093	0.000	0.000	99.990	0.000	0.000	0.000	0.000	0.000	0.000
g141P	M19	73.308	L/r	99.990	Net Sect	72	6.00	73.308	0.000	0.000	99.990	0.000	0.000	0.000	0.000	0.000	0.000
g141X	M19	73.308	L/r	99.990	Net Sect	72	6.00	73.308	0.000	0.000	99.990	0.000	0.000	0.000	0.000	0.000	0.000
g141XY	M19	73.308	L/r	99.990	Net Sect	72	6.00	73.308	0.000	0.000	99.990	0.000	0.000	0.000	0.000	0.000	0.000
g141Y	M19	73.308	L/r	99.990	Net Sect	72	6.00	73.308	0.000	0.000	99.990	0.000	0.000	0.000	0.000	0.000	0.000
g142P	**M12**	**77.884**	**L/r**	**77.809**	**Net Sect**	**46**	**6.79**	**77.884**	**81.600**	**126.562**	**77.809**	**117.187**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
g142X	**M12**	**77.884**	**L/r**	**77.809**	**Net Sect**	**46**	**6.79**	**77.884**	**81.600**	**126.562**	**77.809**	**117.187**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
g142XY	**M12**	**77.884**	**L/r**	**77.809**	**Net Sect**	**46**	**6.79**	**77.884**	**81.600**	**126.562**	**77.809**	**117.187**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
g142Y	**M12**	**77.884**	**L/r**	**77.809**	**Net Sect**	**46**	**6.79**	**77.884**	**81.600**	**126.562**	**77.809**	**117.187**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

Automatic Member "g142P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??

Automatic Member "g142X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??

Automatic Member "g142XY" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??

Automatic Member "g142Y" will not be checked for block shear since more than one gage line exists (long edge

distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
g143P M12 77.884 L/r 77.809 Net Sect 46 6.79 77.884 81.600 126.562 77.809 117.187 0.000 0.000 0.000
0.000 0.000 Automatic Member "g143P" will not be checked for block shear since more than one gage line exists (long edge
distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
g143X M12 77.884 L/r 77.809 Net Sect 46 6.79 77.884 81.600 126.562 77.809 117.187 0.000 0.000 0.000
0.000 0.000 Automatic Member "g143X" will not be checked for block shear since more than one gage line exists (long edge
distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
g143XY M12 77.884 L/r 77.809 Net Sect 46 6.79 77.884 81.600 126.562 77.809 117.187 0.000 0.000 0.000
0.000 0.000 Automatic Member "g143XY" will not be checked for block shear since more than one gage line exists (long edge
distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
g143Y M12 77.884 L/r 77.809 Net Sect 46 6.79 77.884 81.600 126.562 77.809 117.187 0.000 0.000 0.000
0.000 0.000 Automatic Member "g143Y" will not be checked for block shear since more than one gage line exists (long edge
distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
g144P M11 33.390 L/r 38.391 Rupture 117 6.79 33.390 40.800 50.625 40.448 38.391 0.000 0.000 0.000
0.000 0.000 Automatic
g144X M11 33.390 L/r 38.391 Rupture 117 6.79 33.390 40.800 50.625 40.448 38.391 0.000 0.000 0.000
0.000 0.000 Automatic
g144XY M11 33.390 L/r 38.391 Rupture 117 6.79 33.390 40.800 50.625 40.448 38.391 0.000 0.000 0.000
0.000 0.000 Automatic
g144Y M11 33.390 L/r 38.391 Rupture 117 6.79 33.390 40.800 50.625 40.448 38.391 0.000 0.000 0.000
0.000 0.000 Automatic
g145P M11 27.690 L/r 38.391 Rupture 136 7.86 27.690 40.800 50.625 40.448 38.391 0.000 0.000 0.000
0.000 0.000 Automatic
g145X M11 27.690 L/r 38.391 Rupture 136 7.86 27.690 40.800 50.625 40.448 38.391 0.000 0.000 0.000
0.000 0.000 Automatic
g145XY M11 27.690 L/r 38.391 Rupture 136 7.86 27.690 40.800 50.625 40.448 38.391 0.000 0.000 0.000
0.000 0.000 Automatic
g145Y M11 27.690 L/r 38.391 Rupture 136 7.86 27.690 40.800 50.625 40.448 38.391 0.000 0.000 0.000
0.000 0.000 Automatic
g146P M10 27.200 Shear 27.200 Shear 83 5.08 55.895 27.200 42.187 58.704 41.016 0.000 0.000 0.000
0.000 0.000 Automatic
g146X M10 27.200 Shear 27.200 Shear 83 5.08 55.895 27.200 42.187 58.704 41.016 0.000 0.000 0.000
0.000 0.000 Automatic
g146XY M10 27.200 Shear 27.200 Shear 83 5.08 55.895 27.200 42.187 58.704 41.016 0.000 0.000 0.000
0.000 0.000 Automatic
g146Y M10 27.200 Shear 27.200 Shear 83 5.08 55.895 27.200 42.187 58.704 41.016 0.000 0.000 0.000
0.000 0.000 Automatic
g147P M4 9.474 L/r 16.214 Net Sect 155 5.08 9.474 27.200 25.312 16.214 19.301 0.000 0.000 0.000
0.000 0.000 Automatic
g147X M4 9.474 L/r 16.214 Net Sect 155 5.08 9.474 27.200 25.312 16.214 19.301 0.000 0.000 0.000
0.000 0.000 Automatic
g147XY M4 9.474 L/r 16.214 Net Sect 155 5.08 9.474 27.200 25.312 16.214 19.301 0.000 0.000 0.000
0.000 0.000 Automatic
g147Y M4 9.474 L/r 16.214 Net Sect 155 5.08 9.474 27.200 25.312 16.214 19.301 0.000 0.000 0.000
0.000 0.000 Automatic
g148P M4 9.474 L/r 16.214 Net Sect 155 5.08 9.474 27.200 25.312 16.214 19.301 0.000 0.000 0.000
0.000 0.000 Automatic
g148Y M4 9.474 L/r 16.214 Net Sect 155 5.08 9.474 27.200 25.312 16.214 19.301 0.000 0.000 0.000
0.000 0.000 Automatic
g149P M16 15.334 L/r 19.652 Rupture 150 7.43 15.334 27.200 25.312 27.500 19.652 0.000 0.000 0.000
0.000 0.000 Automatic
g149X M16 15.334 L/r 19.652 Rupture 150 7.43 15.334 27.200 25.312 27.500 19.652 0.000 0.000 0.000
0.000 0.000 Automatic
g149XY M16 15.334 L/r 19.652 Rupture 150 7.43 15.334 27.200 25.312 27.500 19.652 0.000 0.000 0.000
0.000 0.000 Automatic
g149Y M16 15.334 L/r 19.652 Rupture 150 7.43 15.334 27.200 25.312 27.500 19.652 0.000 0.000 0.000
0.000 0.000 Automatic
g150P M16 15.334 L/r 19.652 Rupture 150 7.43 15.334 27.200 25.312 27.500 19.652 0.000 0.000 0.000
0.000 0.000 Automatic

g150X	M16	15.334	L/r	19.652	Rupture	150	7.43	15.334	27.200	25.312	27.500	19.652	0.000	0.000	0.000	0.000
	0.000		Automatic													
g150XY	M16	15.334	L/r	19.652	Rupture	150	7.43	15.334	27.200	25.312	27.500	19.652	0.000	0.000	0.000	0.000
	0.000		Automatic													
g150Y	M16	15.334	L/r	19.652	Rupture	150	7.43	15.334	27.200	25.312	27.500	19.652	0.000	0.000	0.000	0.000
	0.000		Automatic													
g151P	M16	15.334	L/r	19.652	Rupture	150	7.43	15.334	27.200	25.312	27.500	19.652	0.000	0.000	0.000	0.000
	0.000		Automatic													
g151X	M16	15.334	L/r	19.652	Rupture	150	7.43	15.334	27.200	25.312	27.500	19.652	0.000	0.000	0.000	0.000
	0.000		Automatic													
g151XY	M16	15.334	L/r	19.652	Rupture	150	7.43	15.334	27.200	25.312	27.500	19.652	0.000	0.000	0.000	0.000
	0.000		Automatic													
g151Y	M16	15.334	L/r	19.652	Rupture	150	7.43	15.334	27.200	25.312	27.500	19.652	0.000	0.000	0.000	0.000
	0.000		Automatic													
g152P	Hanger	8.010	L/r	6.265	Net Sect	107	8.96	8.010	27.200	25.312	6.265	16.559	0.000	0.000	0.000	0.000
	0.000		Automatic													
g152X	Hanger	8.010	L/r	6.265	Net Sect	107	8.96	8.010	27.200	25.312	6.265	16.559	0.000	0.000	0.000	0.000
	0.000		Automatic													
g152XY	Hanger	8.010	L/r	6.265	Net Sect	107	8.96	8.010	27.200	25.312	6.265	16.559	0.000	0.000	0.000	0.000
	0.000		Automatic													
g152Y	Hanger	8.010	L/r	6.265	Net Sect	107	8.96	8.010	27.200	25.312	6.265	16.559	0.000	0.000	0.000	0.000
	0.000		Automatic													
g153P	Hanger	8.010	L/r	6.265	Net Sect	107	8.96	8.010	27.200	25.312	6.265	16.559	0.000	0.000	0.000	0.000
	0.000		Automatic													
g153X	Hanger	8.010	L/r	6.265	Net Sect	107	8.96	8.010	27.200	25.312	6.265	16.559	0.000	0.000	0.000	0.000
	0.000		Automatic													
g153XY	Hanger	8.010	L/r	6.265	Net Sect	107	8.96	8.010	27.200	25.312	6.265	16.559	0.000	0.000	0.000	0.000
	0.000		Automatic													
g153Y	Hanger	8.010	L/r	6.265	Net Sect	107	8.96	8.010	27.200	25.312	6.265	16.559	0.000	0.000	0.000	0.000
	0.000		Automatic													
g154P	Hanger	8.010	L/r	6.265	Net Sect	107	8.96	8.010	27.200	25.312	6.265	16.559	0.000	0.000	0.000	0.000
	0.000		Automatic													
g154X	Hanger	8.010	L/r	6.265	Net Sect	107	8.96	8.010	27.200	25.312	6.265	16.559	0.000	0.000	0.000	0.000
	0.000		Automatic													
g154XY	Hanger	8.010	L/r	6.265	Net Sect	107	8.96	8.010	27.200	25.312	6.265	16.559	0.000	0.000	0.000	0.000
	0.000		Automatic													
g154Y	Hanger	8.010	L/r	6.265	Net Sect	107	8.96	8.010	27.200	25.312	6.265	16.559	0.000	0.000	0.000	0.000
	0.000		Automatic													
g155P	M16	12.854	L/r	21.340	Rupture	167	16.58	12.854	27.200	25.312	27.500	21.340	0.000	0.000	0.000	0.000
	0.000		Automatic													
g155X	M16	12.854	L/r	21.340	Rupture	167	16.58	12.854	27.200	25.312	27.500	21.340	0.000	0.000	0.000	0.000
	0.000		Automatic													
g155XY	M16	12.854	L/r	21.340	Rupture	167	16.58	12.854	27.200	25.312	27.500	21.340	0.000	0.000	0.000	0.000
	0.000		Automatic													
g155Y	M16	12.854	L/r	21.340	Rupture	167	16.58	12.854	27.200	25.312	27.500	21.340	0.000	0.000	0.000	0.000
	0.000		Automatic													
g156P	**M11**	**6.825**	**L/r**	**13.600**	**Shear**	**266**	**15.40**	**6.825**	**13.600**	**16.875**	**43.696**	**15.625**	**0.000**	**0.000**	**0.000**	**0.000**
0.000		**0.000**	**Automatic**													
KL/R value of 266.23 exceeds maximum of 200.00 for member "g156P" ??																
g157P	M17	0.998	L/r	8.191	Rupture	422	22.63	0.998	13.600	12.656	13.541	8.191	0.000	0.000	0.000	0.000
	0.000		Automatic													
g157X	M17	0.998	L/r	8.191	Rupture	422	22.63	0.998	13.600	12.656	13.541	8.191	0.000	0.000	0.000	0.000
	0.000		Automatic													
g157XY	M17	0.998	L/r	8.191	Rupture	422	22.63	0.998	13.600	12.656	13.541	8.191	0.000	0.000	0.000	0.000
	0.000		Automatic													
g157Y	M17	0.998	L/r	8.191	Rupture	422	22.63	0.998	13.600	12.656	13.541	8.191	0.000	0.000	0.000	0.000
	0.000		Automatic													
g161P	**M5**	**4.089**	**L/r**	**8.093**	**Rupture**	**208**	**5.59**	**4.089**	**13.600**	**12.656**	**13.541**	**8.093**	**0.000**	**0.000**	**0.000**	**0.000**
0.000		**0.000**	**Automatic**													

KL/R value of 208.33 exceeds maximum of 200.00 for member "g161P" ??
g161X M5 4.089 L/r 8.093 Rupture 208 5.59 4.089 13.600 12.656 13.541 8.093 0.000 0.000 0.000
0.000 0.000 Automatic
KL/R value of 208.33 exceeds maximum of 200.00 for member "g161X" ??
g161XY M5 4.089 L/r 8.093 Rupture 208 5.59 4.089 13.600 12.656 13.541 8.093 0.000 0.000 0.000
0.000 0.000 Automatic
KL/R value of 208.33 exceeds maximum of 200.00 for member "g161XY" ??
g161Y M5 4.089 L/r 8.093 Rupture 208 5.59 4.089 13.600 12.656 13.541 8.093 0.000 0.000 0.000
0.000 0.000 Automatic
KL/R value of 208.33 exceeds maximum of 200.00 for member "g161Y" ??
g162P M5 4.089 L/r 8.093 Rupture 208 5.59 4.089 13.600 12.656 13.541 8.093 0.000 0.000 0.000
0.000 0.000 Automatic
KL/R value of 208.33 exceeds maximum of 200.00 for member "g162P" ??
g162X M5 4.089 L/r 8.093 Rupture 208 5.59 4.089 13.600 12.656 13.541 8.093 0.000 0.000 0.000
0.000 0.000 Automatic
KL/R value of 208.33 exceeds maximum of 200.00 for member "g162X" ??
g162XY M5 4.089 L/r 8.093 Rupture 208 5.59 4.089 13.600 12.656 13.541 8.093 0.000 0.000 0.000
0.000 0.000 Automatic
KL/R value of 208.33 exceeds maximum of 200.00 for member "g162XY" ??
g162Y M5 4.089 L/r 8.093 Rupture 208 5.59 4.089 13.600 12.656 13.541 8.093 0.000 0.000 0.000
0.000 0.000 Automatic
KL/R value of 208.33 exceeds maximum of 200.00 for member "g162Y" ??
g163P M5 4.089 L/r 8.093 Rupture 208 5.59 4.089 13.600 12.656 13.541 8.093 0.000 0.000 0.000
0.000 0.000 Automatic
KL/R value of 208.33 exceeds maximum of 200.00 for member "g163P" ??
g163X M5 4.089 L/r 8.093 Rupture 208 5.59 4.089 13.600 12.656 13.541 8.093 0.000 0.000 0.000
0.000 0.000 Automatic
KL/R value of 208.33 exceeds maximum of 200.00 for member "g163X" ??
g163XY M5 4.089 L/r 8.093 Rupture 208 5.59 4.089 13.600 12.656 13.541 8.093 0.000 0.000 0.000
0.000 0.000 Automatic
KL/R value of 208.33 exceeds maximum of 200.00 for member "g163XY" ??
g163Y M5 4.089 L/r 8.093 Rupture 208 5.59 4.089 13.600 12.656 13.541 8.093 0.000 0.000 0.000
0.000 0.000 Automatic
KL/R value of 208.33 exceeds maximum of 200.00 for member "g163Y" ??
ig105P163P M5 11.194 L/r 8.191 Rupture 125 3.36 11.194 13.600 12.656 13.541 8.191 0.000 0.000 0.000
0.000 0.000 Automatic
ig105P163X M5 11.194 L/r 8.191 Rupture 125 3.36 11.194 13.600 12.656 13.541 8.191 0.000 0.000 0.000
0.000 0.000 Automatic
ig105P163XY M5 11.194 L/r 8.191 Rupture 125 3.36 11.194 13.600 12.656 13.541 8.191 0.000 0.000 0.000
0.000 0.000 Automatic
ig105P163Y M5 11.194 L/r 8.191 Rupture 125 3.36 11.194 13.600 12.656 13.541 8.191 0.000 0.000 0.000
0.000 0.000 Automatic
ig108P164P M5 11.194 L/r 8.191 Rupture 125 3.36 11.194 13.600 12.656 13.541 8.191 0.000 0.000 0.000
0.000 0.000 Automatic
ig108P164X M5 11.194 L/r 8.191 Rupture 125 3.36 11.194 13.600 12.656 13.541 8.191 0.000 0.000 0.000
0.000 0.000 Automatic
ig108P164XY M5 11.194 L/r 8.191 Rupture 125 3.36 11.194 13.600 12.656 13.541 8.191 0.000 0.000 0.000
0.000 0.000 Automatic
ig108P164Y M5 11.194 L/r 8.191 Rupture 125 3.36 11.194 13.600 12.656 13.541 8.191 0.000 0.000 0.000
0.000 0.000 Automatic
ig111P165P M5 11.194 L/r 8.191 Rupture 125 3.36 11.194 13.600 12.656 13.541 8.191 0.000 0.000 0.000
0.000 0.000 Automatic
ig111P165X M5 11.194 L/r 8.191 Rupture 125 3.36 11.194 13.600 12.656 13.541 8.191 0.000 0.000 0.000
0.000 0.000 Automatic
ig111P165XY M5 11.194 L/r 8.191 Rupture 125 3.36 11.194 13.600 12.656 13.541 8.191 0.000 0.000 0.000
0.000 0.000 Automatic
ig111P165Y M5 11.194 L/r 8.191 Rupture 125 3.36 11.194 13.600 12.656 13.541 8.191 0.000 0.000 0.000
0.000 0.000 Automatic

g167P	M5	12.656	Bearing	8.093	Rupture	84	2.25	15.372	13.600	12.656	13.541	8.093	0.000	0.000	0.000
0.000		0.000		Automatic											
g167X	M5	12.656	Bearing	8.093	Rupture	84	2.25	15.372	13.600	12.656	13.541	8.093	0.000	0.000	0.000
0.000		0.000		Automatic											
g168P	M5	12.656	Bearing	8.093	Rupture	84	2.25	15.372	13.600	12.656	13.541	8.093	0.000	0.000	0.000
0.000		0.000		Automatic											
g168X	M5	12.656	Bearing	8.093	Rupture	84	2.25	15.372	13.600	12.656	13.541	8.093	0.000	0.000	0.000
0.000		0.000		Automatic											
g169P	M5	12.656	Bearing	8.093	Rupture	84	2.25	15.372	13.600	12.656	13.541	8.093	0.000	0.000	0.000
0.000		0.000		Automatic											
g169X	M5	12.656	Bearing	8.093	Rupture	84	2.25	15.372	13.600	12.656	13.541	8.093	0.000	0.000	0.000
0.000		0.000		Automatic											

The model contains 534 angle members.

Sum of Unfactored Dead Load and Drag Areas From Equipment, Input and Calculated:

Joint Label	Dead Load (kips)	X-Drag Area (ft^2)	Y-Drag Area (ft^2)
1P	0.0498	2.588	2.562
2P	0.071	3.865	3.556
3P	0.0567	2.680	1.949
4P	0.0733	4.035	2.862
5P	0.0495	2.417	1.250
6P	0.039	3.184	1.557
7P	0.0911	3.896	3.506
8P	0.081	4.346	3.125
9P	0.0459	2.417	1.250
10P	0.0752	4.544	2.292
11P	0.0965	4.182	4.095
13P	0.103	4.620	4.353
14P	0.0622	2.966	2.083
15P	0.0794	4.175	2.966
16P	0.0495	2.417	1.250
17P	0.039	3.184	1.557
18P	0.115	4.521	4.304
19P	0.0972	4.975	3.646
20P	0.0459	2.417	1.250
21P	0.0833	4.544	2.292
22P	0.125	4.879	4.720
24P	0.13	5.177	4.874
25P	0.0649	3.106	2.188
26P	0.0866	4.338	3.070
27P	0.0495	2.417	1.250
28P	0.039	3.184	1.557
29P	0.136	4.938	4.794
30P	0.105	5.115	3.761
31P	0.0459	2.417	1.250
32P	0.0895	4.869	2.500
33P	0.336	11.462	11.958
45P	0.279	10.449	9.942
1X	0.0498	2.588	2.562
2X	0.0685	3.720	3.236
2XY	0.071	3.865	3.556
2Y	0.0685	3.720	3.236
3X	0.0567	2.680	1.949
3XY	0.0567	2.680	1.949

3Y	0.0567	2.680	1.949
4X	0.0757	4.160	2.862
4XY	0.0733	4.035	2.862
4Y	0.0757	4.160	2.862
5Y	0.0495	2.417	1.250
6X	0.039	3.184	1.557
7X	0.101	4.417	4.242
7XY	0.0911	3.896	3.506
7Y	0.101	4.417	4.242
8X	0.081	4.346	3.125
8XY	0.081	4.346	3.125
8Y	0.081	4.346	3.125
9X	0.0459	2.417	1.250
9XY	0.0459	2.417	1.250
9Y	0.0459	2.417	1.250
10Y	0.0752	4.544	2.292
11X	0.0965	4.182	4.095
11XY	0.0965	4.182	4.095
11Y	0.0965	4.182	4.095
13X	0.11	4.995	4.769
13XY	0.103	4.620	4.353
13Y	0.11	4.995	4.769
14X	0.0622	2.966	2.083
14XY	0.0622	2.966	2.083
14Y	0.0622	2.966	2.083
15X	0.0818	4.300	2.966
15XY	0.0794	4.175	2.966
15Y	0.0818	4.300	2.966
16Y	0.0495	2.417	1.250
17X	0.039	3.184	1.557
18X	0.115	4.521	4.304
18XY	0.115	4.521	4.304
18Y	0.115	4.521	4.304
19X	0.0972	4.975	3.646
19XY	0.0972	4.975	3.646
19Y	0.0972	4.975	3.646
20X	0.0459	2.417	1.250
20XY	0.0459	2.417	1.250
20Y	0.0459	2.417	1.250
21Y	0.0833	4.544	2.292
22X	0.125	4.879	4.720
22XY	0.125	4.879	4.720
22Y	0.125	4.879	4.720
24X	0.137	5.552	5.290
24XY	0.13	5.177	4.874
24Y	0.137	5.552	5.290
25X	0.0649	3.106	2.188
25XY	0.0649	3.106	2.188
25Y	0.0649	3.106	2.188
26X	0.089	4.463	3.070
26XY	0.0866	4.338	3.070
26Y	0.089	4.463	3.070
27Y	0.0495	2.417	1.250
28X	0.039	3.184	1.557
29X	0.136	4.938	4.794
29XY	0.136	4.938	4.794
29Y	0.136	4.938	4.794
30X	0.105	5.115	3.761
30XY	0.105	5.115	3.761

30Y	0.105	5.115	3.761
31X	0.0459	2.417	1.250
31XY	0.0459	2.417	1.250
31Y	0.0459	2.417	1.250
32Y	0.0895	4.869	2.500
33X	0.336	11.462	11.958
33XY	0.336	11.462	11.958
33Y	0.336	11.462	11.958
45X	0.279	10.449	9.942
45XY	0.279	10.449	9.942
45Y	0.279	10.449	9.942
34S	0.167	6.244	6.435
36S	0.0969	3.000	3.532
38S	0.172	5.557	5.136
39S	0.211	8.111	6.929
40S	0.127	5.162	1.904
41S	0.145	5.167	3.332
42S	0.172	6.621	6.284
43S	0.0603	2.604	0.423
44S	0.169	6.945	5.331
46S	0.284	9.554	10.213
47S	0.457	20.306	14.413
48S	0.0572	1.792	3.878
49S	0.23	6.138	7.237
50S	0.119	5.115	8.700
9XF0.50S	0.0203	1.021	1.348
20XF0.50S	0.0203	1.021	1.348
31XF0.50S	0.0203	1.021	1.348
i0.50E85S	0.0166	0.938	0.833
i0.50E70S	0.0166	0.938	0.833
i0.50E55S	0.0166	0.938	0.833
34X	0.167	6.244	6.435
34XY	0.167	6.244	6.435
34Y	0.167	6.244	6.435
36X	0.0969	3.000	3.532
36XY	0.0969	3.000	3.532
36Y	0.0969	3.000	3.532
38X	0.172	5.557	5.136
38XY	0.172	5.557	5.136
38Y	0.172	5.557	5.136
39X	0.211	8.111	6.929
39XY	0.211	8.111	6.929
39Y	0.211	8.111	6.929
40X	0.127	5.162	1.904
40XY	0.127	5.162	1.904
40Y	0.127	5.162	1.904
41Y	0.145	5.167	3.332
42X	0.172	6.621	6.284
42XY	0.172	6.621	6.284
42Y	0.172	6.621	6.284
43X	0.0603	2.604	0.423
43XY	0.0603	2.604	0.423
43Y	0.0603	2.604	0.423
44Y	0.169	6.945	5.331
46X	0.284	9.554	10.213
46XY	0.284	9.554	10.213
46Y	0.284	9.554	10.213
47Y	0.457	20.306	14.413
48X	0.0572	1.792	3.878

49X	0.23	6.138	7.237
49XY	0.23	6.138	7.237
49Y	0.23	6.138	7.237
50X	0.119	5.115	8.700
9XF0.50X	0.0203	1.021	1.348
20XF0.50X	0.0203	1.021	1.348
31XF0.50X	0.0203	1.021	1.348
i0.50E85X	0.0166	0.938	0.833
i0.50E70X	0.0166	0.938	0.833
i0.50E55X	0.0166	0.938	0.833
Total	18.7	775.950	657.408

Unadjusted Dead Load and Drag Areas by Section:

Section Label	Unfactored Dead Load (kips)	X-Drag Area All (ft^2)	Y-Drag Area All (ft^2)	X-Drag Area Face (ft^2)	Y-Drag Area Face (ft^2)
1	5.280	261.723	201.125	104.070	38.624
2	8.340	332.037	275.818	136.393	52.498
3	5.071	182.191	180.466	71.413	63.652
Total	18.691	775.950	657.408	311.876	154.774

Angle Member Weights and Surface Areas by Section:

Section Label	Unfactored Weight (kips)	Factored Weight (kips)	Unfactored Surface Area (ft^2)	Factored Surface Area (ft^2)
1	5.280	5.280	1163.100	1163.100
2	8.340	8.340	1543.717	1543.717
3	5.071	5.578	837.914	921.706
Total	18.691	19.198	3544.732	3628.523

Section Joint Information:

Section Label	Joint Label	Joint Elevation (ft)
1	2X	90.000
1	7X	85.000
1	2P	90.000
1	7P	85.000
1	2Y	90.000
1	7Y	85.000
1	2XY	90.000
1	7XY	85.000
1	11X	80.000
1	11P	80.000
1	11Y	80.000
1	11XY	80.000
1	13X	75.000
1	13P	75.000
1	13Y	75.000
1	13XY	75.000
1	18X	70.000
1	18P	70.000
1	18Y	70.000

1	18XY	70.000
1	22P	65.000
1	22X	65.000
1	22XY	65.000
1	22Y	65.000
1	1X	95.000
1	1P	95.000
1	3X	90.000
1	3P	90.000
1	3Y	90.000
1	3XY	90.000
1	8X	85.000
1	8P	85.000
1	8Y	85.000
1	8XY	85.000
1	14X	75.000
1	14P	75.000
1	14Y	75.000
1	14XY	75.000
1	19X	70.000
1	19P	70.000
1	19Y	70.000
1	19XY	70.000
1	5Y	90.000
1	5P	90.000
1	16Y	75.000
1	16P	75.000
1	4XY	90.000
1	4X	90.000
1	4Y	90.000
1	4P	90.000
1	15XY	75.000
1	15X	75.000
1	15Y	75.000
1	15P	75.000
1	9X	85.000
1	9P	85.000
1	9Y	85.000
1	9XY	85.000
1	10P	85.000
1	10Y	85.000
1	20X	70.000
1	20P	70.000
1	20Y	70.000
1	20XY	70.000
1	21P	70.000
1	21Y	70.000
1	9XF0.50S	85.000
1	9XF0.50X	85.000
1	20XF0.50S	70.000
1	20XF0.50X	70.000
1	i0.50E85S	85.000
1	i0.50E85X	85.000
1	i0.50E70S	70.000
1	i0.50E70X	70.000
1	6X	85.000
1	6P	85.000
1	17X	70.000
1	17P	70.000

2	22P	65.000
2	24P	60.000
2	22X	65.000
2	24X	60.000
2	22XY	65.000
2	24XY	60.000
2	22Y	65.000
2	24Y	60.000
2	29P	55.000
2	29X	55.000
2	29XY	55.000
2	29Y	55.000
2	34S	50.000
2	34X	50.000
2	34XY	50.000
2	34Y	50.000
2	36S	45.500
2	36X	45.500
2	36XY	45.500
2	36Y	45.500
2	38S	41.000
2	38X	41.000
2	38XY	41.000
2	38Y	41.000
2	33X	36.000
2	33P	36.000
2	33Y	36.000
2	33XY	36.000
2	48S	41.000
2	48X	41.000
2	25X	60.000
2	25P	60.000
2	25Y	60.000
2	25XY	60.000
2	30X	55.000
2	30P	55.000
2	30Y	55.000
2	30XY	55.000
2	39S	41.000
2	39X	41.000
2	39XY	41.000
2	39Y	41.000
2	27Y	60.000
2	27P	60.000
2	26XY	60.000
2	26X	60.000
2	26Y	60.000
2	26P	60.000
2	31X	55.000
2	31P	55.000
2	31Y	55.000
2	31XY	55.000
2	32P	55.000
2	32Y	55.000
2	31XF0.50S	55.000
2	31XF0.50X	55.000
2	i0.50E55S	55.000
2	i0.50E55X	55.000
2	42Y	36.000

2	42S	36.000
2	42XY	36.000
2	42X	36.000
2	41Y	41.000
2	41S	41.000
2	44Y	36.000
2	44S	36.000
2	40S	41.000
2	40X	41.000
2	40XY	41.000
2	40Y	41.000
2	43S	36.000
2	43X	36.000
2	43XY	36.000
2	43Y	36.000
2	28X	55.000
2	28P	55.000
3	33X	36.000
3	46S	24.330
3	33P	36.000
3	46X	24.330
3	33Y	36.000
3	46XY	24.330
3	33XY	36.000
3	46Y	24.330
3	49S	18.247
3	49X	18.247
3	49XY	18.247
3	49Y	18.247
3	45X	0.000
3	45P	0.000
3	45Y	0.000
3	45XY	0.000
3	50S	18.247
3	50X	18.247
3	47S	24.330
3	47Y	24.330

Sections Information:

Section Label	Top Z (ft)	Bottom Z (ft)	Joint Count	Member Count	Tran. Face Top Width (ft)	Tran. Face Bot Width (ft)	Tran. Face Gross Area (ft^2)	Long. Face Top Width (ft)	Long. Face Bot Width (ft)	Long. Face Gross Area (ft^2)
1	95.000	65.000	78	252	0.00	5.00	137.500	28.00	30.00	965.000
2	65.000	36.000	76	235	5.00	11.75	209.125	30.00	30.00	905.000
3	36.000	0.000	20	47	11.75	23.00	625.500	30.00	39.75	1255.500

*** Insulator Data

Clamp Properties:

Label	Stock Number	Holding Capacity (lbs)
C-EX1		5e+004

Clamp Insulator Connectivity:

Clamp Label	Structure And Tip Attach	Property Set	Min. Required Vertical Load (uplift) (lbs)
1	1X	C-EX1	No Limit
2	1P	C-EX1	No Limit
3	6X	C-EX1	No Limit
4	6P	C-EX1	No Limit
5	17X	C-EX1	No Limit
6	17P	C-EX1	No Limit
7	28X	C-EX1	No Limit
8	28P	C-EX1	No Limit
9	9XF0.50S	C-EX1	No Limit
10	9XF0.50X	C-EX1	No Limit
11	20XF0.50S	C-EX1	No Limit
12	20XF0.50X	C-EX1	No Limit
13	31XF0.50S	C-EX1	No Limit
14	31XF0.50X	C-EX1	No Limit
15	2P	C-EX1	No Limit
16	2X	C-EX1	No Limit
17	2XY	C-EX1	No Limit
18	2Y	C-EX1	No Limit
19	7P	C-EX1	No Limit
20	7X	C-EX1	No Limit
21	7XY	C-EX1	No Limit
22	7Y	C-EX1	No Limit
23	11X	C-EX1	No Limit
24	11Y	C-EX1	No Limit
25	22X	C-EX1	No Limit
26	22Y	C-EX1	No Limit
27	34S	C-EX1	No Limit
28	34XY	C-EX1	No Limit
29	33X	C-EX1	No Limit
30	33Y	C-EX1	No Limit
31	46S	C-EX1	No Limit
32	46XY	C-EX1	No Limit
33	11P	C-EX1	No Limit
34	22P	C-EX1	No Limit
35	34X	C-EX1	No Limit
36	33P	C-EX1	No Limit
37	46X	C-EX1	No Limit
38	9X	C-EX1	No Limit
39	9XY	C-EX1	No Limit
40	20X	C-EX1	No Limit
41	20XY	C-EX1	No Limit
42	31X	C-EX1	No Limit
43	31XY	C-EX1	No Limit
44	11XY	C-EX1	No Limit
45	22XY	C-EX1	No Limit
46	34Y	C-EX1	No Limit
47	33XY	C-EX1	No Limit
48	46Y	C-EX1	No Limit

*** Loads Data

Loads from file: j:\jobs\1616200.wi\06_ct11885b\04_structural\backup documentation\calcs\pls tower\cl&p # 1109.lca

Insulator dead and wind loads are already included in the point loads printed below.

Loading Method Parameters:

Structure Height Summary (used for calculating wind/ice adjust with height):

Z of ground for wind height adjust	0.00 (ft)	and structure Z coordinate that will be put on the centerline ground profile in PLS-CADD.
Ground elevation shift	0.00 (ft)	
Z of ground with shift	0.00 (ft)	
Z of structure top (highest joint)	95.00 (ft)	
Structure height	95.00 (ft)	
Structure height above ground	95.00 (ft)	
Tower Shape	Rectangular	

Load distributed evenly among joints in section for section based load cases

Vector Load Cases:

Load Case Description	Dead Load Factor	Wind Area Factor	SF for Steel Poles and Tubular Arms and Towers	SF for Guys and Cables	SF for Insuls.	SF For Found.	Point Loads	Wind/Ice Model	Trans. Wind Pressure (psf)	Longit. Wind Pressure (psf)	Ice Thick. (in)	Ice Density (lbs/ft^3)	Temperature (deg F)	Joint Displ.
NESC Heavy	1.5000	2.5000	1.00000	1.0000	1.0000	1.0000	45 loads	Wind on Face	4	0	0.000	56.000	0.0	
NESC Extreme	1.0000	1.0000	1.00000	1.0000	1.0000	1.0000	45 loads	NESC 2012	31	0	0.000	0.000	0.0	

Point Loads for Load Case "NESC Heavy":

Joint Label	Vertical Load (lbs)	Transverse Load (lbs)	Longitudinal Load (lbs)	Load Comment
1X	823	939	0	OPGW-120
1P	633	777	0	0.438 Comp
6X	1193	1114	0	TERN
6P	1193	1114	0	TERN
17X	1193	1114	0	TERN
17P	1193	1114	0	TERN
28X	1193	1114	0	TERN
28P	1193	1114	0	TERN
9XF0.50X	1193	1114	0	TERN
20XF0.50X	1193	1114	0	TERN
31XF0.50X	1193	1114	0	TERN
9X	596	557	11550	TERN
9XY	596	557	-11550	TERN
20X	596	557	11550	TERN
20XY	596	557	-11550	TERN
31X	596	557	11550	TERN
31XY	596	557	-11550	TERN
2X	1658	1708	1690	T-Mobile Top Connection
2XY	1658	1708	-1690	T-Mobile Top Connection
7X	1226	-1045	-1048	T-Mobile Bottom Connection

7XY	1226	-1045	1048	T-Mobile Bottom Connection
2P	952	1630	-1713	Sprint Top Connection
2Y	952	1630	1713	Sprint Top Connection
7P	1058	-1073	1139	Sprint Bottom Connection
7Y	1058	-1073	-1139	Sprint Bottom Connection
11X	575	215	0	T-Mobile Coax (SW Leg)
22X	690	258	0	T-Mobile Coax (SW Leg)
34S	681	254	0	T-Mobile Coax (SW Leg)
33X	589	220	0	T-Mobile Coax (SW Leg)
46S	1389	519	0	T-Mobile Coax (SW Leg)
11XY	287	116	0	T-Mobile Coax (NW Leg)
22XY	345	139	0	T-Mobile Coax (NW Leg)
34Y	340	137	0	T-Mobile Coax (NW Leg)
33XY	294	118	0	T-Mobile Coax (NW Leg)
46Y	694	279	0	T-Mobile Coax (NW Leg)
11Y	431	149	0	Sprint Coax (NE Leg)
22Y	517	178	0	Sprint Coax (NE Leg)
34XY	510	176	0	Sprint Coax (NE Leg)
33Y	441	152	0	Sprint Coax (NE Leg)
46XY	1042	359	0	Sprint Coax (NE Leg)
11P	431	182	0	Sprint Coax (SE Leg)
22P	517	218	0	Sprint Coax (SE Leg)
34X	510	215	0	Sprint Coax (SE Leg)
33P	441	186	0	Sprint Coax (SE Leg)
46X	1042	439	0	Sprint Coax (SE Leg)

Section Load Case Information (Standard) for "NESC Heavy":

Section Label	Z of Top (ft)	Z of Bottom (ft)	Ave. Elev. Above Ground (ft)	Res. Adj. Wind Pres. (psf)	Tran Adj. Wind Pres. (psf)	Tran Drag Coef	Tran Wind Load (lbs)	Long Adj. Wind Pres. (psf)	Long Drag Coef	Long Wind Load (lbs)	Ice Weight (lbs)	Total Weight (lbs)
1	95.00	65.00	80.00	10.00	10.00	3.200	1236.0	0.00	3.200	0.0	0	7920
2	65.00	36.00	50.50	10.00	10.00	3.200	1679.9	0.00	3.200	0.0	0	12510
3	36.00	0.00	18.00	10.00	10.00	3.500	2227.8	0.00	3.500	0.0	0	8367

Point Loads for Load Case "NESC Extreme":

Joint Label	Vertical Load (lbs)	Transverse Load (lbs)	Longitudinal Load (lbs)	Load Comment
1X	254	1342	0	OPGW-120
1P	200	797	0	0.438 Comp
6X	438	1933	-738	TERN
6P	438	1933	0	TERN
17X	438	1933	-738	TERN
17P	438	1933	0	TERN
28X	438	1933	-738	TERN
28P	438	1933	0	TERN
9XF0.50X	438	1933	0	TERN
20XF0.50X	438	1933	0	TERN
31XF0.50X	438	1933	0	TERN
9X	219	967	8224	TERN
9XY	219	967	-8962	TERN
20X	219	967	8224	TERN
20XY	219	967	-8962	TERN

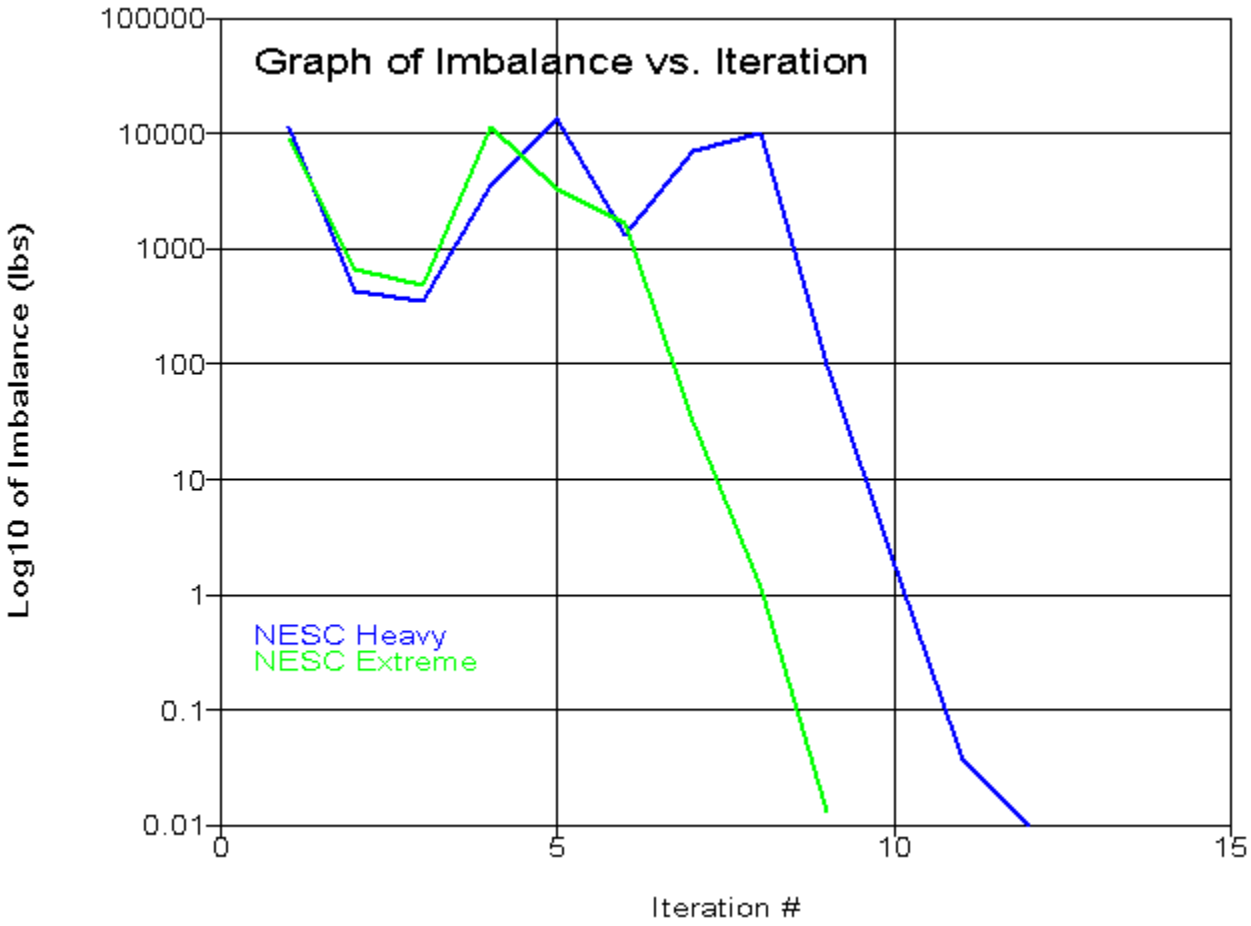
31X	219	967	8224	TERN
31XY	219	967	-8962	TERN
2X	1391	7798	7731	T-Mobile Top Connection
2XY	1391	7798	-7731	T-Mobile Top Connection
7X	-124	-5636	-5627	T-Mobile Bottom Connection
7XY	-124	-5636	5627	T-Mobile Bottom Connection
2P	239	4491	-4723	Sprint Top Connection
2Y	239	4491	4723	Sprint Top Connection
7P	634	-2747	2913	Sprint Bottom Connection
7Y	634	-2747	-2913	Sprint Bottom Connection
11X	156	687	0	T-Mobile Coax (SW Leg)
22X	187	824	0	T-Mobile Coax (SW Leg)
34S	185	813	0	T-Mobile Coax (SW Leg)
33X	160	704	0	T-Mobile Coax (SW Leg)
46S	377	1660	0	T-Mobile Coax (SW Leg)
11XY	78	344	0	T-Mobile Coax (NW Leg)
22XY	94	412	0	T-Mobile Coax (NW Leg)
34Y	92	407	0	T-Mobile Coax (NW Leg)
33XY	80	352	0	T-Mobile Coax (NW Leg)
46Y	188	830	0	T-Mobile Coax (NW Leg)
11Y	117	454	0	Sprint Coax (NE Leg)
22Y	140	545	0	Sprint Coax (NE Leg)
34XY	139	538	0	Sprint Coax (NE Leg)
33Y	120	465	0	Sprint Coax (NE Leg)
46XY	283	1097	0	Sprint Coax (NE Leg)
11P	117	568	0	Sprint Coax (SE Leg)
22P	140	681	0	Sprint Coax (SE Leg)
34X	139	672	0	Sprint Coax (SE Leg)
33P	120	581	0	Sprint Coax (SE Leg)
46X	283	1371	0	Sprint Coax (SE Leg)

Section Load Case Information (Code) for "NESC Extreme":

Section Label	Z of Top (ft)	Z of Bottom (ft)	Ave. Elev. Above Ground (ft)	Res. Adj. Wind Pres. (psf)	Tran Adj. Wind Pres. (psf)	Tran Angle Face Area (ft^2)	Tran Gross Area (ft^2)	Tran Soli- dity Ratio	Tran Angle Drag Coef	Tran Wind Load (lbs)	Long Adj. Wind Pres. (psf)	Long Angle Face Area (ft^2)	Long Gross Area (ft^2)	Long Soli- dity Ratio	Long Angle Drag Coef	Long Wind Load (lbs)	Ice Weight (lbs)	Total Weight (lbs)
1	95.00	65.00	80.00	31.18	31.18	38.62	137.50	0.281	3.200	3854.0	0.00	104.07	965.00	0.108	3.200	0.0	0	5280
2	65.00	36.00	50.50	31.18	31.18	52.50	209.13	0.251	3.200	5238.4	0.00	136.39	905.00	0.151	3.200	0.0	0	8340
3	36.00	0.00	18.00	31.18	31.18	70.02	625.50	0.112	3.200	6986.6	0.00	78.55	1255.50	0.063	3.200	0.0	0	5578

*** Analysis Results:

Maximum element usage is 97.72% for Angle "g125Y" in load case "NESC Extreme"
Maximum insulator usage is 23.17% for Clamp "38" in load case "NESC Heavy"



Angle Forces For All Load Cases:
Positive for tension - negative for compression

Group Label	Angle Label	Max. Usage For All LC %	Max. Tens. For All LC (kips)	Max. Comp. For All LC (kips)	LC 1 (kips)	LC 2 (kips)
Leg1	g1P	6.65	0.000	-4.391	-4.391	-3.556
Leg1	g1X	2.82	0.721	-1.865	-1.865	0.721
Leg1	g1XY	2.73	0.452	-1.801	-1.801	0.452
Leg1	g1Y	6.52	0.000	-4.310	-4.310	-2.944

Leg1	g2P	8.51	0.000	-5.624	-5.624	-2.051
Leg1	g2X	5.24	0.000	-3.461	-3.461	-0.684
Leg1	g2XY	5.18	0.000	-3.419	-3.419	-1.414
Leg1	g2Y	8.23	0.000	-5.439	-5.439	-2.632
Leg1	g3P	9.71	6.817	-2.129	-2.129	6.817
Leg1	g3X	15.20	0.000	-10.040	-9.042	-10.040
Leg1	g3XY	20.54	0.000	-13.568	-9.170	-13.568
Leg1	g3Y	7.75	5.440	-2.006	-2.006	5.440
Leg1	g4P	9.56	0.547	-6.313	-6.313	0.547
Leg1	g4X	9.25	0.000	-6.114	-6.114	-2.584
Leg1	g4XY	8.89	0.000	-5.876	-5.876	-5.455
Leg1	g4Y	8.99	0.000	-5.942	-5.942	-2.836
Leg2	g5P	8.83	0.000	-7.208	-7.208	-3.208
Leg2	g5X	8.65	2.411	-7.054	-7.054	2.411
Leg2	g5XY	8.04	0.000	-6.562	-6.562	-4.520
Leg2	g5Y	8.29	0.000	-6.762	-6.762	-6.429
Leg2	g6P	15.73	0.000	-19.381	-16.758	-19.381
Leg2	g6X	18.23	20.536	-0.634	-0.634	20.536
Leg2	g6XY	7.59	8.550	-0.590	-0.590	8.550
Leg2	g6Y	21.87	0.000	-26.951	-16.891	-26.951
Leg2	g7P	15.61	0.000	-12.734	-12.734	-9.166
Leg2	g7X	12.11	9.881	-7.605	-7.605	9.881
Leg2	g7XY	8.82	0.000	-7.195	-7.195	-6.970
Leg2	g7Y	20.45	0.000	-16.685	-12.644	-16.685
Leg3	g8P	13.57	11.074	-8.629	-8.629	11.074
Leg3	g8X	16.80	0.000	-13.706	-13.706	-10.512
Leg3	g8XY	21.39	0.000	-17.456	-13.430	-17.456
Leg3	g8Y	10.68	0.000	-8.717	-8.043	-8.717
Leg3	g9P	34.86	49.405	0.000	10.121	49.405
Leg3	g9X	26.71	0.000	-41.876	-29.512	-41.876
Leg3	g9XY	32.21	0.000	-50.488	-29.538	-50.488
Leg3	g9Y	22.85	32.378	0.000	10.254	32.378
Leg3	g10P	35.96	48.146	0.000	8.659	48.146
Leg3	g10X	27.28	0.000	-42.759	-29.371	-42.759
Leg3	g10XY	32.10	0.000	-50.323	-29.449	-50.323
Leg3	g10Y	22.67	30.352	0.000	8.657	30.352
Leg4	g11P	30.48	40.808	0.000	5.459	40.808
Leg4	g11X	22.69	0.000	-35.019	-25.592	-35.019
Leg4	g11XY	26.91	0.000	-41.538	-25.580	-41.538
Leg4	g11Y	17.84	23.884	0.000	5.574	23.884
Leg4	g12P	20.68	27.690	-2.920	-2.920	27.690
Leg4	g12X	34.84	0.000	-52.126	-35.456	-52.126
Leg4	g12XY	39.43	0.000	-58.987	-35.529	-58.987
Leg4	g12Y	6.28	8.413	-1.928	-1.928	8.413
Leg5	g13P	17.08	24.210	-8.046	-8.046	24.210
Leg5	g13X	38.45	0.000	-56.940	-38.328	-56.940
Leg5	g13XY	42.58	0.000	-63.067	-38.605	-63.067
Leg5	g13Y	4.31	3.789	-6.381	-6.381	3.789
Leg5	g14P	16.94	24.003	-8.360	-8.360	24.003
Leg5	g14X	38.54	0.000	-57.218	-38.679	-57.218
Leg5	g14XY	42.66	0.000	-63.344	-38.957	-63.344
Leg5	g14Y	4.51	3.584	-6.695	-6.695	3.584
M1	g15P	3.42	0.692	0.000	0.244	0.692
M1	g15X	5.75	0.000	-0.784	-0.784	-0.563
M1	g15XY	6.03	0.000	-0.822	-0.822	-0.741
M1	g15Y	3.87	0.783	0.000	0.197	0.783
M15	g16P	4.39	0.000	-1.012	-0.875	-1.012
M15	g16X	1.83	0.479	0.000	0.444	0.479
M15	g16XY	2.61	0.684	0.000	0.488	0.684

M15	g16Y	4.87	0.000	-1.122	-0.820	-1.122
Diag1	g17P	2.19	0.000	-0.129	-0.129	-0.103
Diag1	g18P	5.89	0.000	-0.346	-0.020	-0.346
Diag2	g19P	16.23	0.000	-2.207	-0.368	-2.207
Diag2	g19X	9.45	1.032	0.000	0.585	1.032
Diag2	g19XY	12.36	1.350	0.000	0.576	1.350
Diag2	g19Y	3.21	0.000	-0.436	-0.364	-0.436
Diag2	g20P	3.22	0.352	0.000	0.332	0.352
Diag2	g20X	9.87	0.000	-1.342	-0.598	-1.342
Diag2	g20XY	7.49	0.000	-1.019	-0.600	-1.019
Diag2	g20Y	19.54	2.134	0.000	0.330	2.134
Diag2	g21P	5.80	0.000	-0.789	-0.708	-0.789
Diag2	g21X	4.99	0.000	-0.678	-0.678	-0.552
Diag2	g21XY	7.22	0.000	-0.981	-0.981	-0.484
Diag2	g21Y	6.36	0.521	-0.864	-0.864	0.521
Diag3	g22P	15.09	0.000	-2.285	-0.100	-2.285
Diag3	g22X	2.30	0.373	0.000	0.353	0.373
Diag3	g22XY	4.99	0.810	0.000	0.362	0.810
Diag3	g22Y	8.73	1.416	-0.112	-0.112	1.416
Diag3	g23P	8.76	0.154	-1.327	0.154	-1.327
Diag3	g23X	7.56	0.000	-0.898	-0.423	-0.898
Diag3	g23XY	3.76	0.000	-0.447	-0.421	-0.447
Diag3	g23Y	14.91	2.418	0.000	0.132	2.418
Diag3	g24P	8.53	0.000	-1.291	-0.506	-1.291
Diag3	g24X	9.96	0.000	-1.183	-0.939	-1.183
Diag3	g24XY	10.44	0.000	-1.240	-1.240	-1.043
Diag3	g24Y	9.59	1.555	-0.795	-0.795	1.555
Diag3	g25P	1.18	0.191	-0.121	0.191	-0.121
Diag3	g25X	4.14	0.649	-0.438	-0.438	0.649
Diag3	g25XY	4.55	0.000	-0.537	-0.391	-0.537
Diag3	g25Y	5.21	0.845	0.000	0.249	0.845
Diag3	g26P	13.43	0.000	-1.188	-0.902	-1.188
Diag3	g26X	0.88	0.143	0.000	0.097	0.143
Diag3	g26XY	6.79	0.140	-0.685	0.140	-0.685
Diag3	g26Y	8.95	0.000	-0.792	-0.792	-0.524
Diag4	g27P	8.28	1.343	0.000	1.332	1.343
Diag4	g27X	4.61	0.544	-0.320	-0.320	0.544
Diag4	g27XY	4.30	0.000	-0.298	-0.280	-0.298
Diag4	g27Y	11.69	1.896	0.000	1.438	1.896
Diag5	g28P	9.83	2.153	0.000	1.531	2.153
Diag5	g28X	4.58	0.000	-0.404	-0.371	-0.404
Diag5	g28XY	4.98	0.513	-0.439	-0.439	0.513
Diag5	g28Y	6.69	1.467	0.000	1.467	1.337
Diag14	g29P	19.70	0.000	-0.707	-0.707	-0.328
Diag14	g29X	79.09	0.000	-2.839	-1.866	-2.839
Diag14	g29XY	88.78	0.000	-3.187	-1.675	-3.187
Diag14	g29Y	21.17	0.538	-0.760	-0.760	0.538
Diag13	g30P	25.68	4.926	0.000	4.203	4.926
Diag13	g30X	17.43	3.343	0.000	0.253	3.343
Diag13	g30XY	13.23	2.538	0.000	0.377	2.538
Diag13	g30Y	31.88	6.116	0.000	4.314	6.116
Diag13	g31P	26.57	4.811	0.000	3.116	4.811
Diag13	g31X	7.64	1.383	0.000	0.204	1.383
Diag13	g31XY	14.10	2.553	0.000	0.029	2.553
Diag13	g31Y	16.75	3.033	0.000	2.960	3.033
Horz1	g32P	90.14	7.383	0.000	1.361	7.383
Horz1	g32X	49.77	0.000	-4.361	-1.680	-4.361
Horz2	g33P	33.01	0.036	-3.876	0.036	-3.876
Horz2	g33X	20.89	2.016	0.000	0.933	2.016

Horz1	g34P	7.54	0.086	-0.660	0.086	-0.660
Horz1	g34X	11.79	0.965	0.000	0.606	0.965
Horz2	g35P	13.75	1.327	0.000	1.327	1.065
Horz2	g35X	5.14	0.496	-0.174	0.496	-0.174
Horz1	g36P	5.08	0.055	-0.445	0.055	-0.445
Horz1	g36X	12.50	1.024	0.000	0.659	1.024
Horz2	g37P	5.64	0.545	-0.163	-0.163	0.545
Horz2	g37X	10.55	0.000	-1.239	-0.806	-1.239
Horz3	g38P	4.16	0.923	-0.007	0.923	-0.007
Horz3	g38X	6.79	1.507	0.000	0.505	1.507
Horz3	g38XY	6.23	1.382	0.000	0.531	1.382
Horz3	g38Y	4.06	0.900	0.000	0.900	0.238
Horz3	g39P	9.47	0.000	-1.444	-0.413	-1.444
Horz3	g39X	14.83	3.195	0.000	1.963	3.195
Horz4	g40P	42.44	0.000	-5.399	-3.683	-5.399
Horz4	g40X	9.57	0.443	-1.218	0.443	-1.218
Horz3	g41P	0.72	0.155	0.000	0.155	0.125
Horz3	g41X	1.23	0.265	0.000	0.128	0.265
Horz3	g41XY	1.27	0.274	0.000	0.124	0.274
Horz3	g41Y	0.70	0.152	0.000	0.152	0.135
Diag6	g42P	16.04	3.077	0.000	2.992	3.077
Diag6	g42X	26.22	0.000	-2.040	-0.683	-2.040
Diag6	g42XY	27.61	0.000	-2.147	-0.741	-2.147
Diag6	g42Y	14.93	2.864	0.000	2.864	2.834
Diag7	g43P	24.83	5.995	0.000	2.916	5.995
Diag7	g43X	30.37	0.000	-7.128	-3.883	-7.128
Diag7	g43XY	37.52	0.000	-8.808	-4.026	-8.808
Diag7	g43Y	30.45	7.350	0.000	2.754	7.350
Diag7	g44P	29.75	0.000	-6.984	-3.417	-6.984
Diag7	g44X	29.69	7.780	0.000	3.970	7.780
Diag7	g44XY	35.33	9.256	0.000	4.067	9.256
Diag7	g44Y	33.36	0.000	-7.832	-3.109	-7.832
Diag7	g45P	78.37	10.659	0.000	5.532	10.659
Diag7	g45X	79.46	0.000	-10.807	-4.837	-10.807
Diag7	g45XY	88.74	0.000	-12.068	-5.118	-12.068
Diag7	g45Y	77.29	10.512	0.000	5.326	10.512
Diag8	g46P	39.74	10.808	0.000	4.857	10.808
Diag8	g46X	40.73	0.000	-11.078	-6.314	-11.078
Diag8	g46XY	50.45	0.000	-13.722	-6.722	-13.722
Diag8	g46Y	40.90	11.125	0.000	4.396	11.125
Diag8	g47P	41.03	0.000	-11.443	-5.213	-11.443
Diag8	g47X	31.11	11.886	0.000	6.336	11.886
Diag8	g47XY	37.30	14.251	0.000	6.695	14.251
Diag8	g47Y	40.47	0.000	-11.287	-4.574	-11.287
Diag8	g48P	45.36	17.329	0.000	8.849	17.329
Diag8	g48X	47.97	0.000	-13.379	-5.919	-13.379
Diag8	g48XY	50.60	0.000	-14.113	-6.041	-14.113
Diag8	g48Y	45.59	17.415	0.000	8.590	17.415
Diag9	g49P	46.84	17.017	0.000	8.461	17.017
Diag9	g49X	42.14	0.000	-14.070	-7.064	-14.070
Diag9	g49XY	47.12	0.000	-15.734	-7.238	-15.734
Diag9	g49Y	51.65	18.764	0.000	8.224	18.764
Diag10	g50P	55.33	0.000	-27.655	-14.297	-27.655
Diag10	g50X	41.95	22.443	0.000	10.520	22.443
Diag10	g50XY	45.35	24.264	0.000	10.655	24.264
Diag10	g50Y	60.58	0.000	-30.278	-13.710	-30.278
Diag11	g51P	22.76	11.198	0.000	4.742	11.198
Diag11	g51X	61.58	30.295	0.000	14.039	30.295
Diag11	g51XY	64.85	31.908	0.000	14.059	31.908

Diag11	g51Y	18.61	9.155	0.000	4.362	9.155
Diag12	g52P	81.81	32.717	0.000	13.980	32.717
Diag12	g52X	0.00	0.000	0.000	0.000	0.000
Diag12	g52XY	0.00	0.000	0.000	0.000	0.000
Diag12	g52Y	80.96	32.380	0.000	13.693	32.380
M5	g53P	8.59	0.631	0.000	0.389	0.631
M5	g53X	4.14	0.000	-0.212	-0.212	-0.070
M5	g54P	5.48	0.403	0.000	0.099	0.403
M5	g54X	3.79	0.000	-0.194	-0.194	-0.185
M5	g55P	7.50	0.551	0.000	0.190	0.551
M5	g55X	3.99	0.000	-0.204	-0.204	-0.159
M5	g56P	6.57	0.483	0.000	0.022	0.483
M5	g57P	5.18	0.381	-0.037	-0.037	0.381
M5	g58P	6.84	0.503	-0.000	-0.000	0.503
M3	g59P	4.66	0.343	0.000	0.034	0.343
M3	g59X	3.14	0.231	-0.300	-0.300	0.231
M3	g60P	5.13	0.377	0.000	0.024	0.377
M3	g60X	3.54	0.000	-0.415	-0.415	-0.013
M3	g61P	6.66	0.489	0.000	0.080	0.489
M3	g61X	3.43	0.054	-0.402	-0.402	0.054
M5	g62P	8.59	0.000	-0.243	-0.102	-0.243
M5	g63P	12.14	0.000	-0.343	-0.084	-0.343
M5	g64P	8.95	0.038	-0.253	0.038	-0.253
M5	g65P	6.27	0.047	-0.177	0.047	-0.177
M4	g66P	20.60	0.000	-0.740	-0.031	-0.740
M4	g67P	21.42	0.000	-0.769	-0.040	-0.769
M5	g68P	18.83	0.000	-0.532	-0.129	-0.532
M5	g69P	19.77	0.000	-0.558	-0.140	-0.558
M5	g70P	3.64	0.267	0.000	0.267	0.262
M5	g71P	3.48	0.256	0.000	0.256	0.241
M4	g72P	16.10	0.065	-0.578	0.065	-0.578
M4	g73P	17.07	0.049	-0.613	0.049	-0.613
M5	g74P	24.94	0.000	-0.704	-0.236	-0.704
M5	g75P	26.19	0.000	-0.739	-0.250	-0.739
M5	g76P	3.88	0.285	0.000	0.285	0.231
M5	g77P	3.61	0.265	0.000	0.265	0.190
M4	g78P	21.11	0.013	-0.758	0.013	-0.758
M4	g79P	22.63	0.000	-0.813	-0.012	-0.813
M2	g80P	34.47	0.000	-9.376	-2.980	-9.376
M2	g80X	23.57	6.412	0.000	3.146	6.412
M2	g80XY	24.18	6.577	0.000	3.073	6.577
M2	g80Y	35.88	0.000	-9.760	-2.891	-9.760
M2	g81P	18.46	5.021	-0.175	-0.175	5.021
M2	g81X	7.35	0.000	-1.999	-1.322	-1.999
M2	g81XY	7.08	0.000	-1.926	-1.218	-1.926
M2	g81Y	14.74	4.008	-0.186	-0.186	4.008
M2	g82P	35.78	0.000	-9.733	-3.388	-9.733
M2	g82X	24.26	6.598	0.000	3.413	6.598
M2	g82XY	26.32	7.159	0.000	3.307	7.159
M2	g82Y	38.85	0.000	-10.567	-3.395	-10.567
M2	g83P	21.20	5.765	0.000	1.347	5.765
M2	g83X	19.34	0.000	-5.262	-2.585	-5.262
M2	g83XY	19.03	0.000	-5.177	-2.494	-5.177
M2	g83Y	21.05	5.727	0.000	1.305	5.727
M2	g84P	17.25	4.693	0.000	1.348	4.693
M2	g84X	8.33	0.000	-2.267	-0.860	-2.267
M2	g84XY	9.11	0.000	-2.479	-0.779	-2.479
M2	g84Y	20.82	5.664	0.000	1.385	5.664
M2	g85P	7.84	0.000	-2.133	-0.859	-2.133

M2	g85X	5.85	0.000	-1.591	-0.828	-1.591
M2	g85XY	8.64	0.000	-2.350	-1.020	-2.350
M2	g85Y	6.37	0.000	-1.732	-0.997	-1.732
M2	g86P	24.48	0.000	-6.658	-2.992	-6.658
M2	g86X	29.16	7.932	0.000	4.227	7.932
M2	g86XY	31.90	8.678	0.000	4.321	8.678
M2	g86Y	25.91	0.000	-7.048	-2.892	-7.048
M2	g87P	4.64	0.000	-1.262	-1.262	-0.577
M2	g87X	1.57	0.428	-0.391	-0.391	0.428
M2	g87XY	2.28	0.621	-0.293	-0.293	0.621
M2	g87Y	5.55	0.000	-1.510	-1.232	-1.510
M2	g88P	43.85	0.000	-11.928	-5.550	-11.928
M2	g88X	36.96	10.053	0.000	5.131	10.053
M2	g88XY	38.94	10.592	0.000	5.138	10.592
M2	g88Y	45.27	0.000	-12.313	-5.432	-12.313
M2	g89P	2.77	0.000	-0.754	-0.754	-0.056
M2	g89X	2.52	0.684	-0.160	-0.160	0.684
M2	g89XY	2.73	0.741	-0.087	-0.087	0.741
M2	g89Y	2.93	0.000	-0.796	-0.723	-0.796
M2	g90P	40.44	0.000	-11.000	-5.183	-11.000
M2	g90X	49.10	13.354	0.000	7.056	13.354
M2	g90XY	54.24	14.754	0.000	6.865	14.754
M2	g90Y	46.64	0.000	-12.686	-5.057	-12.686
M2	g91P	3.80	1.032	0.000	0.216	1.032
M2	g91X	5.35	1.454	0.000	0.179	1.454
M2	g91XY	0.74	0.078	-0.201	-0.201	0.078
M2	g91Y	2.10	0.571	-0.251	-0.251	0.571
M2	g92P	22.43	6.101	0.000	1.928	6.101
M2	g92X	36.44	0.000	-9.911	-5.001	-9.911
M2	g92XY	36.64	0.000	-9.967	-4.856	-9.967
M2	g92Y	23.20	6.310	0.000	2.042	6.310
M2	g93P	16.57	4.508	0.000	1.765	4.508
M2	g93X	24.57	0.000	-6.682	-3.201	-6.682
M2	g93XY	25.17	0.000	-6.846	-2.820	-6.846
M2	g93Y	22.12	6.018	0.000	1.902	6.018
M2	g94P	74.96	0.000	-20.390	-8.647	-20.390
M2	g94X	73.74	20.058	0.000	9.430	20.058
M2	g94XY	66.96	18.214	0.000	9.551	18.214
M2	g94Y	70.38	0.000	-19.143	-8.867	-19.143
M2	g95P	2.81	0.000	-0.765	-0.358	-0.765
M2	g95X	1.28	0.000	-0.349	-0.349	-0.210
M2	g95XY	5.22	0.000	-1.420	-0.807	-1.420
M2	g95Y	3.00	0.000	-0.817	-0.817	-0.769
M2	g96P	43.20	11.751	0.000	5.182	11.751
M2	g96X	40.79	0.000	-11.096	-4.932	-11.096
M2	g96XY	36.99	0.000	-10.062	-4.427	-10.062
M2	g96Y	49.24	13.394	0.000	5.553	13.394
M2	g97P	38.32	10.422	0.000	5.139	10.422
M2	g97X	26.04	0.000	-7.082	-2.884	-7.082
M2	g97XY	22.45	0.000	-6.106	-2.175	-6.106
M2	g97Y	49.22	13.389	0.000	5.644	13.389
M4	g98P	18.44	0.000	-1.616	-1.339	-1.616
M4	g98X	6.74	0.000	-0.591	-0.263	-0.591
M18	g99P	94.92	9.150	0.000	9.150	5.606
M18	g99X	5.49	0.000	-0.695	-0.267	-0.695
M18	Fg99157P	94.55	9.114	0.000	9.114	5.853
M18	Fg99157X	7.73	0.000	-0.978	-0.311	-0.978
M4	g100P	18.18	0.000	-1.593	-1.410	-1.593
M4	g100X	6.32	0.000	-0.553	-0.289	-0.553

M18	g101P	93.08	8.973	0.000	8.973	5.410
M18	g101X	1.22	0.018	-0.155	0.018	-0.155
M18	Fg101158P	91.67	8.837	0.000	8.837	5.392
M18	Fg101158X	5.65	0.000	-0.716	-0.136	-0.716
M4	g102P	8.31	0.000	-0.728	-0.728	-0.392
M4	g102X	26.52	0.000	-2.324	-0.932	-2.324
M18	g103P	86.30	8.319	0.000	8.319	4.042
M18	g103X	2.45	0.236	0.000	0.236	0.017
M18	Fg103159P	84.44	8.140	0.000	8.140	4.012
M18	Fg103159X	4.95	0.039	-0.626	0.039	-0.626
M6	g104P	5.90	0.166	-0.311	-0.311	0.166
M6	g104X	1.84	0.000	-0.097	-0.097	-0.083
M6	g104XY	2.37	0.000	-0.125	-0.125	-0.106
M6	g104Y	16.01	0.000	-0.844	-0.390	-0.844
M5	g105P	37.19	3.046	0.000	2.245	3.046
M5	g105X	11.21	0.918	0.000	0.492	0.918
M5	g105XY	10.89	0.892	0.000	0.465	0.892
M5	g105Y	26.43	2.165	0.000	2.165	2.033
M6	g106P	21.60	1.769	0.000	1.161	1.769
M6	g106X	44.36	0.000	-1.735	-1.116	-1.735
M6	g106XY	33.90	0.000	-1.326	-1.080	-1.326
M6	g106Y	16.58	1.358	0.000	1.125	1.358
M6	g107P	4.54	0.347	-0.240	-0.240	0.347
M6	g107X	1.32	0.108	0.000	0.104	0.108
M6	g107XY	2.20	0.000	-0.246	-0.166	-0.246
M6	g107Y	9.53	0.000	-1.067	-0.360	-1.067
M5	g108P	39.71	3.253	0.000	2.317	3.253
M5	g108X	12.13	0.993	0.000	0.564	0.993
M5	g108XY	7.72	0.633	0.000	0.296	0.633
M5	g108Y	26.83	2.198	0.000	2.198	1.850
M6	g109P	27.96	2.291	0.000	1.402	2.291
M6	g109X	57.92	0.000	-2.265	-1.360	-2.265
M6	g109XY	46.31	0.000	-1.811	-1.433	-1.811
M6	g109Y	22.38	1.834	0.000	1.474	1.834
M6	g110P	9.93	0.813	-0.262	-0.262	0.813
M6	g110X	11.54	0.000	-0.608	-0.294	-0.608
M6	g110XY	14.45	0.000	-0.762	-0.544	-0.762
M6	g110Y	8.39	0.000	-0.936	-0.443	-0.936
M5	g111P	55.36	4.535	0.000	2.996	4.535
M5	g111X	17.23	1.412	0.000	0.565	1.412
M5	g111XY	11.67	0.956	0.000	0.283	0.956
M5	g111Y	37.93	3.107	0.000	2.773	3.107
M6	g112P	36.54	2.993	0.000	1.746	2.993
M6	g112X	75.53	0.000	-2.954	-1.694	-2.954
M6	g112XY	63.51	0.000	-2.484	-1.715	-2.484
M6	g112Y	30.78	2.521	0.000	1.765	2.521
M5	g113P	8.26	0.677	0.000	0.677	0.322
M5	g113X	1.12	0.092	0.000	0.073	0.092
M5	g113XY	1.06	0.087	0.000	0.072	0.087
M5	g113Y	8.26	0.677	0.000	0.677	0.318
M5	g114P	8.32	0.681	0.000	0.681	0.332
M5	g114X	0.95	0.077	0.000	0.067	0.077
M5	g114XY	0.94	0.077	0.000	0.069	0.077
M5	g114Y	8.29	0.679	0.000	0.679	0.327
M5	g115P	8.32	0.682	0.000	0.682	0.382
M5	g115X	1.52	0.125	0.000	0.063	0.125
M5	g115XY	1.54	0.126	0.000	0.065	0.126
M5	g115Y	8.27	0.677	0.000	0.677	0.373
M5	g116P	1.43	0.000	-0.073	-0.073	-0.065

M5	g116Y	1.44	0.000	-0.073	-0.073	-0.066
M5	g117P	1.45	0.000	-0.074	-0.074	-0.067
M5	g117Y	1.48	0.000	-0.076	-0.076	-0.070
M5	g118P	2.14	0.000	-0.109	-0.076	-0.109
M5	g118Y	2.26	0.000	-0.116	-0.078	-0.116
M4	g119P	8.90	0.000	-0.780	-0.701	-0.780
M4	g119X	2.90	0.237	0.000	0.222	0.237
M4	g119XY	4.62	0.379	0.000	0.254	0.379
M4	g119Y	9.76	0.000	-0.856	-0.662	-0.856
M9	g120P	38.01	0.000	-5.170	-2.577	-5.170
M9	g120X	41.03	5.580	0.000	2.797	5.580
M9	g120XY	48.86	6.645	0.000	2.865	6.645
M9	g120Y	42.60	0.000	-5.793	-2.352	-5.793
M15	g121P	62.57	0.000	-8.510	-3.899	-8.510
M15	g121X	62.79	8.539	0.000	4.531	8.539
M15	g121XY	75.46	10.262	0.000	4.794	10.262
M15	g121Y	61.64	0.000	-8.382	-3.429	-8.382
M1	g122P	22.09	3.999	0.000	0.999	3.999
M1	g122X	47.39	0.000	-5.236	-3.293	-5.236
M1	g122XY	63.26	0.000	-6.989	-3.420	-6.989
M1	g122Y	31.38	5.681	0.000	0.914	5.681
M1	g123P	79.63	0.000	-5.734	-2.391	-5.734
M1	g123X	56.56	5.945	0.000	2.687	5.945
M1	g123XY	67.80	7.126	0.000	2.695	7.126
M1	g123Y	96.00	0.000	-6.913	-2.398	-6.913
M7	g124P	60.59	7.100	0.000	2.946	7.100
M7	g124X	59.94	0.000	-7.586	-4.987	-7.586
M7	g124XY	82.16	0.000	-10.399	-5.207	-10.399
M7	g124Y	71.52	8.381	0.000	2.393	8.381
M8	g125P	83.38	0.000	-8.964	-4.527	-8.964
M8	g125X	67.51	9.182	0.000	4.844	9.182
M8	g125XY	78.90	10.731	0.000	4.615	10.731
M8	g125Y	97.72	0.000	-10.505	-4.294	-10.505
M15	g126P	40.42	10.994	0.000	4.931	10.994
M15	g126X	50.15	0.000	-11.772	-6.896	-11.772
M15	g126XY	63.90	0.000	-15.001	-7.300	-15.001
M15	g126Y	45.74	12.440	0.000	4.331	12.440
M15	g127P	73.89	0.000	-13.673	-6.793	-13.673
M15	g127X	51.58	14.029	0.000	7.130	14.029
M15	g127XY	58.11	15.805	0.000	6.982	15.805
M15	g127Y	83.38	0.000	-15.431	-6.638	-15.431
M7	g128P	10.21	1.196	0.000	1.196	1.088
M7	g128X	3.99	0.468	0.000	0.075	0.468
M7	g129P	2.51	0.294	0.000	0.027	0.294
M7	g129X	4.12	0.482	0.000	0.482	0.127
M7	g130P	2.11	0.247	0.000	0.182	0.247
M7	g131P	5.50	0.645	0.000	0.645	0.172
M6	g132P	60.02	0.000	-1.196	-1.196	-0.520
M6	g132X	62.43	0.000	-1.244	-0.344	-1.244
M6	g132XY	52.98	0.000	-1.056	-0.371	-1.056
M6	g132Y	58.65	0.000	-1.169	-1.169	-0.708
M6	g133P	60.06	0.000	-0.683	-0.416	-0.683
M6	g133X	4.24	0.347	0.000	0.122	0.347
M6	g133XY	7.46	0.611	0.000	0.086	0.611
M6	g133Y	83.07	0.000	-0.945	-0.381	-0.945
M6	g134P	23.77	0.000	-0.358	-0.143	-0.358
M6	g134X	3.45	0.283	0.000	0.283	0.071
M6	g134XY	2.77	0.151	-0.089	0.151	-0.089
M6	g134Y	9.04	0.000	-0.136	-0.012	-0.136

M17	g135P	12.11	0.000	-0.249	-0.062	-0.249
M17	g135X	43.33	0.000	-0.892	-0.892	0.000
M17	g135XY	51.40	0.000	-1.058	-1.058	-0.318
M17	g135Y	1.27	0.104	0.000	0.104	0.000
M14	g136P	9.73	0.000	-6.617	-2.311	-6.617
M14	g136X	11.18	7.604	0.000	3.774	7.604
M14	g136XY	12.55	8.532	0.000	3.880	8.532
M14	g136Y	8.11	0.000	-5.512	-2.208	-5.512
M19	g137P	1.04	0.680	0.000	0.589	0.680
M19	g137X	45.21	0.000	-30.746	-14.843	-30.746
M19	g137XY	48.42	0.000	-32.926	-14.936	-32.926
M19	g137Y	3.40	2.233	0.000	0.777	2.233
M14	g138P	21.70	0.000	-25.063	-13.805	-25.063
M14	g138X	12.24	17.610	0.000	7.265	17.610
M14	g138XY	13.17	18.955	0.000	7.556	18.955
M14	g138Y	23.40	0.000	-27.033	-13.186	-27.033
M14	g139P	3.45	0.000	-3.802	-3.802	-3.494
M14	g139X	4.26	0.000	-4.691	-4.140	-4.691
M14	g139XY	4.36	0.000	-4.800	-3.710	-4.800
M14	g139Y	3.62	0.000	-3.984	-3.319	-3.984
M19	g140P	2.67	0.000	-2.082	-0.930	-2.082
M19	g140X	35.55	0.000	-27.764	-12.654	-27.764
M19	g140XY	38.38	0.000	-29.972	-12.731	-29.972
M19	g140Y	2.82	0.000	-2.200	-0.948	-2.200
M19	g141P	2.93	0.000	-2.151	-0.930	-2.151
M19	g141X	37.78	0.000	-27.695	-12.654	-27.695
M19	g141XY	40.79	0.000	-29.903	-12.731	-29.903
M19	g141Y	3.10	0.000	-2.269	-0.948	-2.269
M12	g142P	11.53	8.974	0.000	3.606	8.974
M12	g142X	14.82	0.000	-9.984	-5.162	-9.984
M12	g142XY	16.85	0.000	-11.353	-5.283	-11.353
M12	g142Y	9.96	7.746	0.000	3.453	7.746
M12	g143P	12.42	0.000	-9.673	-7.555	-9.673
M12	g143X	2.07	1.017	-1.393	-1.393	1.017
M12	g143XY	1.87	0.826	-1.260	-1.260	0.826
M12	g143Y	16.64	0.000	-12.962	-7.109	-12.962
M11	g144P	34.43	13.216	0.000	5.953	13.216
M11	g144X	43.18	0.000	-14.419	-7.484	-14.419
M11	g144XY	45.95	0.000	-15.341	-7.392	-15.341
M11	g144Y	36.83	14.139	0.000	5.874	14.139
M11	g145P	65.01	0.000	-18.001	-7.822	-18.001
M11	g145X	46.61	17.895	0.000	8.339	17.895
M11	g145XY	43.73	16.790	0.000	8.441	16.790
M11	g145Y	60.90	0.000	-16.864	-7.933	-16.864
M10	g146P	61.69	0.000	-16.781	-7.066	-16.781
M10	g146X	68.17	18.542	0.000	9.818	18.542
M10	g146XY	74.53	20.271	0.000	9.840	20.271
M10	g146Y	61.02	0.000	-16.599	-6.881	-16.599
M4	g147P	1.51	0.244	0.000	0.174	0.244
M4	g147X	0.73	0.119	0.000	0.106	0.119
M4	g147XY	0.77	0.125	0.000	0.105	0.125
M4	g147Y	1.68	0.272	0.000	0.169	0.272
M4	g148P	1.23	0.087	-0.117	-0.117	0.087
M4	g148Y	1.28	0.089	-0.121	-0.121	0.089
M16	g149P	9.74	0.000	-1.493	-1.493	-0.524
M16	g149X	3.28	0.645	-0.380	-0.380	0.645
M16	g149XY	3.63	0.713	-0.286	-0.286	0.713
M16	g149Y	15.12	0.000	-2.319	-1.583	-2.319
M16	g150P	9.88	0.000	-1.515	-1.515	-0.380

M16	g150X	3.50	0.688	-0.298	-0.298	0.688
M16	g150XY	3.34	0.657	-0.372	-0.372	0.657
M16	g150Y	15.99	0.000	-2.451	-1.557	-2.451
M16	g151P	9.74	0.000	-1.494	-1.494	-0.269
M16	g151X	3.67	0.722	-0.282	-0.282	0.722
M16	g151XY	3.00	0.589	-0.385	-0.385	0.589
M16	g151Y	17.26	0.000	-2.647	-1.582	-2.647
Hanger	g152P	16.85	1.056	0.000	1.056	0.686
Hanger	g152X	18.70	1.172	0.000	1.172	0.497
Hanger	g152XY	16.90	1.059	0.000	1.059	0.406
Hanger	g152Y	18.59	1.165	0.000	1.165	0.203
Hanger	g153P	17.26	1.081	0.000	1.081	0.509
Hanger	g153X	17.11	1.072	0.000	1.072	0.444
Hanger	g153XY	18.56	1.163	0.000	1.163	0.474
Hanger	g153Y	18.09	1.133	0.000	1.133	0.368
Hanger	g154P	16.80	1.052	0.000	1.052	0.356
Hanger	g154X	16.81	1.053	0.000	1.053	0.415
Hanger	g154XY	18.80	1.178	0.000	1.178	0.570
Hanger	g154Y	18.51	1.159	0.000	1.159	0.587
M16	g155P	22.05	0.000	-2.834	-1.397	-2.834
M16	g155X	9.05	1.931	0.000	0.034	1.931
M16	g155XY	5.34	1.139	-0.066	-0.066	1.139
M16	g155Y	12.04	0.000	-1.548	-1.049	-1.548
M11	g156P	6.87	0.000	-0.469	-0.122	-0.469
M17	g157P	8.20	0.672	0.000	0.000	0.672
M17	g157X	3.72	0.014	-0.037	0.014	-0.037
M17	g157XY	7.96	0.652	0.000	0.044	0.652
M17	g157Y	3.37	0.000	-0.034	-0.034	0.000
M5	g161P	3.89	0.315	-0.023	-0.023	0.315
M5	g161X	7.70	0.623	-0.061	0.623	-0.061
M5	g161XY	8.90	0.721	0.000	0.721	0.565
M5	g161Y	5.82	0.058	-0.238	0.058	-0.238
M5	g162P	3.27	0.018	-0.134	-0.134	0.018
M5	g162X	9.20	0.498	-0.376	0.498	-0.376
M5	g162XY	10.80	0.874	0.000	0.843	0.874
M5	g162Y	2.09	0.169	0.000	0.169	0.059
M5	g163P	4.47	0.029	-0.183	-0.183	0.029
M5	g163X	10.98	0.450	-0.449	0.450	-0.449
M5	g163XY	12.18	0.986	0.000	0.891	0.986
M5	g163Y	2.70	0.218	0.000	0.218	0.095
M5	ig105P163P	36.30	2.973	0.000	2.250	2.973
M5	ig105P163X	29.76	2.438	0.000	1.325	2.438
M5	ig105P163XY	29.44	2.412	0.000	1.298	2.412
M5	ig105P163Y	26.49	2.170	0.000	2.170	1.961
M5	ig108P164P	38.82	3.180	0.000	2.322	3.180
M5	ig108P164X	30.68	2.513	0.000	1.397	2.513
M5	ig108P164XY	26.27	2.152	0.000	1.128	2.152
M5	ig108P164Y	26.88	2.202	0.000	2.202	1.778
M5	ig111P165P	54.10	4.431	0.000	2.999	4.431
M5	ig111P165X	36.14	2.960	0.000	1.398	2.960
M5	ig111P165XY	30.58	2.505	0.000	1.115	2.505
M5	ig111P165Y	36.67	3.004	0.000	2.776	3.004
M5	g167P	0.61	0.049	-0.004	-0.004	0.049
M5	g167X	15.68	0.000	-1.984	-1.114	-1.984
M5	g168P	0.61	0.049	-0.004	-0.004	0.049
M5	g168X	15.67	0.000	-1.984	-1.114	-1.984
M5	g169P	0.87	0.071	-0.002	-0.002	0.071
M5	g169X	15.83	0.000	-2.003	-1.114	-2.003

*** Analysis Results for Load Case No. 1 "NESC Heavy" - Number of iterations in SAPS 12

Equilibrium Joint Positions and Rotations for Load Case "NESC Heavy":

Joint Label	X-Displ (ft)	Y-Displ (ft)	Z-Displ (ft)	X-Rot (deg)	Y-Rot (deg)	Z-Rot (deg)	X-Pos (ft)	Y-Pos (ft)	Z-Pos (ft)
1P	0.0003393	0.07862	-0.01145	0.0000	0.0000	0.0000	0.0003393	14.08	94.99
2P	2.825e-005	0.0768	-0.01177	-0.0234	0.0008	0.0057	2.5	15.08	89.99
3P	0.0004803	0.07646	-0.00996	-0.0108	0.0016	0.0029	2.5	10.58	89.99
4P	0.0005455	0.0761	-0.01029	0.0099	0.0023	0.0023	2.501	6.076	89.99
5P	0.001139	0.07622	-0.0109	0.0021	0.0032	0.0058	2.501	0.07622	89.99
6P	-0.0004853	0.07471	-0.01618	-0.0444	0.0008	0.0037	-0.0004853	22.07	84.98
7P	6.187e-005	0.075	-0.01164	-0.0196	-0.0026	0.0030	2.5	15.07	84.99
8P	0.0002378	0.07514	-0.01001	-0.0099	-0.0022	0.0043	2.5	10.58	84.99
9P	0.0005511	0.07542	-0.01031	0.0086	-0.0017	-0.0014	2.501	6.075	84.99
10P	0.0004741	0.07554	-0.01088	0.0044	-0.0011	0.0147	2.5	0.07554	84.99
11P	0.0002837	0.07267	-0.01139	-0.0496	0.0004	0.0016	2.5	15.07	79.99
13P	-4.481e-005	0.06716	-0.01074	-0.0512	0.0047	0.0002	2.5	15.07	74.99
14P	-0.0001315	0.06671	-0.006873	-0.0241	0.0046	-0.0026	2.5	10.57	74.99
15P	-0.0002768	0.06595	-0.007314	0.0170	0.0045	0.0014	2.5	6.066	74.99
16P	0.0002525	0.06592	-0.008441	0.0074	0.0044	0.0046	2.5	0.06592	74.99
17P	-0.0005614	0.06418	-0.01623	-0.0524	0.0003	0.0035	-0.0005614	22.06	69.98
18P	-0.0001583	0.0644	-0.0103	-0.0381	-0.0042	-0.0000	2.5	15.06	69.99
19P	-0.0001008	0.06444	-0.007241	-0.0216	-0.0032	0.0029	2.5	10.56	69.99
20P	8.29e-005	0.06498	-0.007333	0.0114	-0.0023	-0.0022	2.5	6.065	69.99
21P	-1.337e-005	0.06544	-0.00842	0.0113	-0.0010	0.0133	2.5	0.06544	69.99
22P	0.0001809	0.05997	-0.009999	-0.0679	-0.0004	-0.0010	2.5	15.06	64.99
24P	-0.0001603	0.05392	-0.009304	-0.0502	0.0061	-0.0020	2.5	15.05	59.99
25P	-0.0004597	0.05337	-0.005317	-0.0212	0.0061	-0.0067	2.5	10.55	59.99
26P	-0.0009602	0.05234	-0.006518	0.0287	0.0061	-0.0018	2.499	6.052	59.99
27P	-0.0005364	0.05239	-0.008642	0.0159	0.0061	0.0039	2.499	0.05239	59.99
28P	-0.0004211	0.05132	-0.01437	-0.0524	0.0012	0.0009	-0.0004211	22.05	54.99
29P	-0.0004129	0.05139	-0.008778	-0.0305	-0.0036	-0.0028	2.5	15.05	54.99
30P	-0.0004626	0.05141	-0.00586	-0.0190	-0.0042	0.0027	2.5	10.55	54.99
31P	-0.0003376	0.05194	-0.006535	0.0211	-0.0047	-0.0054	2.5	6.052	54.99
32P	-0.000913	0.05236	-0.008621	0.0208	-0.0055	0.0112	2.499	0.05236	54.99
33P	8.248e-005	0.03091	-0.005433	-0.0135	-0.0145	0.0019	5.875	15.03	35.99
45P	0	0	0	0.0000	0.0000	0.0000	11.5	19.88	0
1X	0.002619	0.08012	-0.008111	0.0000	0.0000	0.0000	0.002619	-13.92	94.99
2X	0.00258	0.07703	-0.007572	-0.0213	0.0056	0.0058	2.503	-14.92	89.99
2XY	0.00225	0.07672	-0.007295	-0.0221	-0.0019	0.0007	-2.498	-14.92	89.99
2Y	0.0004363	0.07644	-0.01173	-0.0232	0.0067	0.0027	-2.5	15.08	89.99
3X	0.002186	0.0767	-0.01053	-0.0285	0.0049	0.0060	2.502	-10.42	89.99
3XY	0.002077	0.07641	-0.01026	-0.0291	-0.0006	0.0043	-2.498	-10.42	89.99
3Y	0.0005392	0.07611	-0.009892	-0.0108	0.0054	0.0003	-2.499	10.58	89.99
4X	0.001641	0.07634	-0.01104	0.0030	0.0042	0.0061	2.502	-5.924	89.99
4XY	0.001634	0.07604	-0.01088	0.0015	0.0007	0.0056	-2.498	-5.924	89.99
4Y	0.0006093	0.07575	-0.01026	0.0103	0.0041	0.0028	-2.499	6.076	89.99
5Y	0.001133	0.0759	-0.01084	0.0015	0.0024	0.0052	-2.499	0.0759	89.99
6X	0.002724	0.07542	-0.006955	0.0140	0.0030	0.0041	0.002724	-21.92	84.99
7X	0.002233	0.07522	-0.007256	-0.0353	0.0004	0.0083	2.502	-14.92	84.99
7XY	0.002226	0.07485	-0.006985	-0.0355	0.0049	-0.0001	-2.498	-14.93	84.99
7Y	-0.0001367	0.07465	-0.0116	-0.0199	0.0060	0.0043	-2.5	15.07	84.99
8X	0.001708	0.0752	-0.01036	-0.0291	-0.0001	-0.0062	2.502	-10.42	84.99
8XY	0.002034	0.07483	-0.0101	-0.0298	0.0050	0.0156	-2.498	-10.43	84.99
8Y	0.0003017	0.07479	-0.009954	-0.0098	0.0058	0.0037	-2.5	10.57	84.99

9X	0.002618	0.07535	-0.01123	0.0000	-0.0005	0.0019	2.503	-5.925	84.99
9XY	0.0004008	0.07497	-0.01107	-0.0013	0.0052	0.0071	-2.5	-5.925	84.99
9Y	0.0006215	0.07505	-0.01028	0.0088	0.0057	0.0097	-2.499	6.075	84.99
10Y	0.001611	0.07517	-0.01082	0.0037	0.0055	-0.0058	-2.498	0.07517	84.99
11X	0.002226	0.0706	-0.00685	-0.0571	0.0033	0.0068	2.502	-14.93	79.99
11XY	0.001707	0.07027	-0.006592	-0.0560	0.0028	0.0017	-2.498	-14.93	79.99
11Y	-0.0004378	0.07226	-0.01135	-0.0502	-0.0003	0.0036	-2.5	15.07	79.99
13X	0.001723	0.06677	-0.006695	-0.0267	0.0041	0.0053	2.502	-14.93	74.99
13XY	0.001702	0.0665	-0.006446	-0.0270	0.0019	0.0034	-2.498	-14.93	74.99
13Y	-0.0001919	0.06678	-0.01069	-0.0496	-0.0027	0.0030	-2.5	15.07	74.99
14X	0.001291	0.06645	-0.009845	-0.0238	0.0042	0.0074	2.501	-10.43	74.99
14XY	0.001263	0.06619	-0.009588	-0.0254	0.0012	0.0078	-2.499	-10.43	74.99
14Y	-7.77e-005	0.06632	-0.006881	-0.0226	-0.0020	-0.0009	-2.5	10.57	74.99
15X	0.0006414	0.06589	-0.009482	0.0155	0.0043	0.0064	2.501	-5.934	74.99
15XY	0.0006362	0.06564	-0.0095	0.0122	0.0005	0.0060	-2.499	-5.934	74.99
15Y	-0.0001885	0.06558	-0.007508	0.0187	-0.0013	0.0009	-2.5	6.066	74.99
16Y	0.0002628	0.06561	-0.008621	0.0066	-0.0004	0.0042	-2.5	0.06561	74.99
17X	0.001921	0.06538	-0.006436	0.0226	0.0023	0.0037	0.001921	-21.93	69.99
18X	0.00159	0.06512	-0.006241	-0.0414	0.0021	0.0052	2.502	-14.93	69.99
18XY	0.001308	0.06477	-0.006019	-0.0406	0.0032	0.0031	-2.499	-14.94	69.99
18Y	-0.0002638	0.06417	-0.01027	-0.0383	0.0053	0.0030	-2.5	15.06	69.99
19X	0.0009355	0.06498	-0.009506	-0.0250	0.0012	-0.0037	2.501	-10.44	69.99
19XY	0.001278	0.06463	-0.009278	-0.0268	0.0035	0.0126	-2.499	-10.44	69.99
19Y	-3.058e-005	0.0642	-0.007258	-0.0198	0.0050	0.0009	-2.5	10.56	69.99
20X	0.001852	0.06519	-0.009671	0.0106	0.0002	-0.0003	2.502	-5.935	69.99
20XY	-0.00031	0.06485	-0.009689	0.0076	0.0039	0.0081	-2.5	-5.935	69.99
20Y	9.745e-005	0.06472	-0.007527	0.0129	0.0047	0.0071	-2.5	6.065	69.99
21Y	0.0008293	0.06513	-0.0086	0.0104	0.0043	-0.0067	-2.499	0.06513	69.99
22X	0.001322	0.05995	-0.005948	-0.0740	0.0028	0.0002	2.501	-14.94	64.99
22XY	0.001146	0.05974	-0.005746	-0.0722	0.0017	0.0080	-2.499	-14.94	64.99
22Y	-0.0006372	0.05967	-0.009988	-0.0684	0.0003	0.0028	-2.501	15.06	64.99
24X	0.001035	0.054	-0.005918	-0.0442	0.0061	-0.0049	2.501	-14.95	59.99
24XY	0.001021	0.05385	-0.005718	-0.0451	-0.0004	0.0128	-2.499	-14.95	59.99
24Y	-0.0003204	0.05367	-0.009288	-0.0485	-0.0046	0.0026	-2.5	15.05	59.99
25X	0.0005512	0.0534	-0.0108	-0.0382	0.0062	0.0120	2.501	-10.45	59.99
25XY	0.0004983	0.05327	-0.01065	-0.0410	-0.0010	0.0074	-2.5	-10.45	59.99
25Y	-0.0004029	0.05312	-0.005427	-0.0183	-0.0039	-0.0054	-2.5	10.55	59.99
26X	-0.0002609	0.05244	-0.0105	0.0220	0.0062	0.0063	2.5	-5.948	59.99
26XY	-0.0002779	0.05233	-0.01073	0.0179	-0.0016	0.0073	-2.5	-5.948	59.99
26Y	-0.0008746	0.0521	-0.006916	0.0312	-0.0033	-0.0022	-2.501	6.052	59.99
27Y	-0.0005363	0.05222	-0.009035	0.0151	-0.0025	0.0030	-2.501	0.05222	59.99
28X	0.001185	0.05136	-0.003855	0.0064	0.0029	0.0035	0.001185	-21.95	55
29X	0.0007492	0.05114	-0.005604	-0.0606	-0.0073	-0.0157	2.501	-14.95	54.99
29XY	0.0007838	0.05082	-0.00542	-0.0624	0.0120	0.0224	-2.499	-14.95	54.99
29Y	-0.0002414	0.05135	-0.008766	-0.0281	0.0045	0.0035	-2.5	15.05	54.99
30X	0.0003448	0.05106	-0.01033	-0.0371	-0.0067	0.0001	2.5	-10.45	54.99
30XY	0.0005216	0.05074	-0.01024	-0.0397	0.0109	0.0091	-2.499	-10.45	54.99
30Y	-0.0002363	0.05136	-0.006	-0.0162	0.0056	-0.0038	-2.5	10.55	54.99
31X	0.001107	0.05162	-0.01069	0.0148	-0.0062	0.0017	2.501	-5.948	54.99
31XY	-0.000891	0.05134	-0.01092	0.0113	0.0098	0.0053	-2.501	-5.949	54.99
31Y	-0.0003708	0.05184	-0.006934	0.0233	0.0067	0.0068	-2.5	6.052	54.99
32Y	0.0005614	0.05215	-0.009014	0.0199	0.0082	-0.0067	-2.499	0.05215	54.99
33X	0.0001758	0.03327	-0.006177	-0.0093	-0.0080	-0.0023	5.875	-14.97	35.99
33XY	0.0003292	0.03294	-0.00584	-0.0100	0.0112	0.0046	-5.875	-14.97	35.99
33Y	-0.0006472	0.03058	-0.005444	-0.0147	0.0137	0.0002	-5.876	15.03	35.99
45X	0	0	0	0.0000	0.0000	0.0000	11.5	-19.88	0
45XY	0	0	0	0.0000	0.0000	0.0000	-11.5	-19.88	0
45Y	0	0	0	0.0000	0.0000	0.0000	-11.5	19.88	0
34S	0.001055	0.04379	-0.005241	-0.0813	0.0133	-0.0208	3.389	-14.96	49.99

36S	-0.0007352	0.03819	-0.005875	-0.0576	0.0151	-0.0178	4.187	-14.96	45.49
38S	-0.0005562	0.03439	-0.006115	-0.0283	-0.0089	-0.0138	4.986	-14.97	40.99
39S	0.0004522	0.03431	-0.00786	-0.0029	-0.0077	-0.0058	4.987	-10.47	40.99
40S	0.0002858	0.03382	-0.006683	0.0180	-0.0065	0.0048	4.987	-5.966	40.99
41S	3.274e-005	0.03364	-0.005518	0.0122	-0.0049	0.0008	4.987	0.03364	40.99
42S	0.0001825	0.0333	-0.007349	-0.0065	-0.0090	0.0021	5.875	-10.47	35.99
43S	2.583e-006	0.03325	-0.006777	0.0126	-0.0100	0.0005	5.875	-5.967	35.99
44S	0.0001089	0.03318	-0.005476	0.0161	-0.0113	0.0010	5.875	0.03318	35.99
46S	-0.0007115	0.0311	-0.00578	-0.0079	0.0289	-0.0050	7.698	-16.55	24.32
47S	0.0005102	0.03036	-0.0125	0.0187	0.0275	-0.0007	7.699	0.03036	24.32
48S	0.0003806	0.1383	-0.006343	0.0000	0.0000	0.0000	0.0003806	-14.86	40.99
49S	-0.004387	0.02869	-0.005678	-0.0551	0.0203	-0.0113	8.644	-17.38	18.24
50S	-0.0001361	0.299	-0.03965	0.0000	0.0000	0.0000	-0.0001361	-17.1	18.21
9XF0.50S	0.001507	0.07577	-0.01096	0.0000	0.0000	0.0000	0.001507	-5.924	84.99
20XF0.50S	0.0007629	0.06559	-0.009496	0.0000	0.0000	0.0000	0.0007629	-5.934	69.99
31XF0.50S	9.735e-005	0.05178	-0.01062	0.0000	0.0000	0.0000	9.735e-005	-5.948	54.99
i0.50E85S	0.001691	0.07579	-0.02021	0.0000	0.0000	0.0000	0.001691	-8.174	84.98
i0.50E70S	0.0009359	0.06561	-0.01884	0.0000	0.0000	0.0000	0.0009359	-8.184	69.98
i0.50E55S	0.0002618	0.05179	-0.01782	0.0000	0.0000	0.0000	0.0002618	-8.198	54.98
34X	3.234e-005	0.04722	-0.008215	-0.0703	-0.0053	-0.0063	3.388	15.05	49.99
34XY	-0.0006738	0.0473	-0.008216	-0.0701	0.0048	0.0076	-3.389	15.05	49.99
34Y	0.0001669	0.04331	-0.005022	-0.0806	-0.0103	0.0259	-3.388	-14.96	49.99
36X	-5.929e-005	0.04027	-0.007293	-0.0938	0.0045	-0.0072	4.187	15.04	45.49
36XY	-0.0005587	0.04024	-0.007296	-0.0958	-0.0047	0.0092	-4.188	15.04	45.49
36Y	0.001732	0.03779	-0.005621	-0.0552	-0.0123	0.0216	-4.186	-14.96	45.49
38X	-0.0006136	0.03383	-0.006457	-0.0587	-0.0009	0.0023	4.986	15.03	40.99
38XY	1.033e-005	0.03362	-0.006461	-0.0601	0.0007	-0.0001	-4.987	15.03	40.99
38Y	0.001327	0.0341	-0.005822	-0.0273	0.0118	0.0169	-4.986	-14.97	40.99
39X	-0.0002037	0.0337	-0.003122	-0.0167	-0.0021	0.0049	4.987	10.53	41
39XY	-0.0002274	0.03349	-0.003032	-0.0178	0.0023	-0.0027	-4.987	10.53	41
39Y	7.485e-005	0.03402	-0.007516	-0.0028	0.0101	0.0089	-4.987	-10.47	40.99
40X	-1.351e-005	0.03344	-0.003678	0.0193	-0.0033	0.0008	4.987	6.033	41
40XY	-0.000237	0.03322	-0.003508	0.0183	0.0040	0.0016	-4.987	6.033	41
40Y	3.434e-006	0.03355	-0.006373	0.0175	0.0085	-0.0019	-4.987	-5.966	40.99
41Y	-2.465e-005	0.03339	-0.005253	0.0116	0.0062	0.0018	-4.987	0.03339	40.99
42X	-0.0001148	0.03167	-0.003882	-0.0152	-0.0135	-0.0037	5.875	10.53	36
42XY	-0.0002941	0.03134	-0.003798	-0.0163	0.0133	0.0057	-5.875	10.53	36
42Y	0.0001725	0.03298	-0.006989	-0.0063	0.0116	-0.0003	-5.875	-10.47	35.99
43X	-0.0002169	0.03232	-0.00374	0.0099	-0.0125	0.0017	5.875	6.032	36
43XY	-3.08e-005	0.03199	-0.003571	0.0089	0.0130	0.0004	-5.875	6.032	36
43Y	0.0001956	0.03293	-0.00645	0.0120	0.0119	0.0016	-5.875	-5.967	35.99
44Y	-0.0001308	0.03286	-0.005204	0.0154	0.0124	0.0011	-5.875	0.03286	35.99
46X	-0.0001109	0.03038	-0.002595	-0.0339	0.0262	0.0015	7.698	16.61	24.33
46XY	-0.0002742	0.02971	-0.002673	-0.0340	-0.0272	0.0010	-7.699	16.61	24.33
46Y	0.0006465	0.0303	-0.005372	-0.0088	-0.0263	0.0069	-7.698	-16.55	24.32
47Y	0.0005486	0.02975	-0.01241	0.0177	-0.0267	0.0004	-7.698	0.02975	24.32
48X	-0.0002983	-0.02893	-0.006408	0.0000	0.0000	0.0000	-0.0002983	14.97	40.99
49X	-0.003784	0.02309	-0.002494	-0.0874	0.0220	-0.0082	8.645	17.43	18.25
49XY	0.003462	0.02249	-0.002561	-0.0855	-0.0230	0.0098	-8.645	17.43	18.24
49Y	0.004141	0.02791	-0.005318	-0.0532	-0.0195	0.0124	-8.645	-17.38	18.24
50X	-0.0001531	-0.227	-0.03205	0.0000	0.0000	0.0000	-0.0001531	17.18	18.22
9XF0.50X	0.0005836	0.07578	-0.01053	0.0000	0.0000	0.0000	0.0005836	6.076	84.99
20XF0.50X	8.08e-005	0.06535	-0.007666	0.0000	0.0000	0.0000	8.08e-005	6.065	69.99
31XF0.50X	-0.0003662	0.05236	-0.006971	0.0000	0.0000	0.0000	-0.0003662	6.052	54.99
i0.50E85X	0.0004254	0.07522	-0.05384	0.0000	0.0000	0.0000	0.0004254	8.325	84.95
i0.50E70X	9.731e-006	0.06469	-0.05598	0.0000	0.0000	0.0000	9.731e-006	8.315	69.94
i0.50E55X	-0.0003614	0.05169	-0.05566	0.0000	0.0000	0.0000	-0.0003614	8.302	54.94

Joint Support Reactions for Load Case "NESC Heavy":

Joint Label	X Force (kips)	X Usage %(kips)	Y Force	Y Usage %	H-Shear Usage %	Z Force (kips)	Comp. Usage %	Uplift Usage %	Result. Force (kips)	Result. Usage %	X Moment (ft-k)	X-M. Usage %	Y Moment (ft-k)	Y-M. Usage %	H-Bend-M Usage %	Z Moment (ft-k)	Z-M. Usage %	Max. Usage %
45P	-5.77	0.0	-5.11	0.0	0.0	-38.17	0.0	0.0	38.94	0.0	0.79	0.0	0.4	0.0	0.0	0.17	0.0	0.0
45X	2.10	0.0	-8.44	0.0	0.0	4.68	0.0	0.0	9.88	0.0	1.41	0.0	0.5	0.0	0.0	0.16	0.0	0.0
45XY	-2.24	0.0	-8.46	0.0	0.0	5.96	0.0	0.0	10.59	0.0	1.37	0.0	-0.4	0.0	0.0	-0.16	0.0	0.0
45Y	5.90	0.0	-5.17	0.0	0.0	-38.59	0.0	0.0	39.38	0.0	0.76	0.0	-0.4	0.0	0.0	-0.17	0.0	0.0

Joint Displacements, Loads and Member Forces on Joints for Load Case "NESC Heavy":

Joint Label	X External Load (kips)	Y External Load (kips)	Z External Load (kips)	X Member Force (kips)	Y Member Force (kips)	Z Member Force (kips)	X Disp. (ft)	Y Disp. (ft)	Z Disp. (ft)
1P	0.0000	0.7770	-0.7076	-0.0000	-0.7770	0.7076	0.0003	0.0786	-0.0114
2P	-1.7130	1.6300	-1.0586	1.7130	-1.6300	1.0586	0.0000	0.0768	-0.0118
3P	0.0000	0.0000	-0.0851	-0.0000	0.0000	0.0851	0.0005	0.0765	-0.0100
4P	0.0000	0.0000	-0.1099	-0.0000	0.0000	0.1099	0.0005	0.0761	-0.0103
5P	0.0000	0.0000	-0.0743	-0.0000	0.0000	0.0743	0.0011	0.0762	-0.0109
6P	0.0000	1.1140	-1.2516	-0.0000	-1.1140	1.2516	-0.0005	0.0747	-0.0162
7P	1.1390	-1.0730	-1.1946	-1.1390	1.0730	1.1946	0.0001	0.0750	-0.0116
8P	0.0000	0.0000	-0.1215	-0.0000	0.0000	0.1215	0.0002	0.0751	-0.0100
9P	0.0000	0.0000	-0.0689	-0.0000	0.0000	0.0689	0.0006	0.0754	-0.0103
10P	0.0000	0.0000	-0.1129	-0.0000	0.0000	0.1129	0.0005	0.0755	-0.0109
11P	0.0000	0.1820	-0.5758	-0.0000	-0.1820	0.5758	0.0003	0.0727	-0.0114
13P	0.0000	0.0000	-0.1543	-0.0000	0.0000	0.1543	-0.0000	0.0672	-0.0107
14P	0.0000	0.0000	-0.0933	-0.0000	0.0000	0.0933	-0.0001	0.0667	-0.0069
15P	0.0000	0.0000	-0.1192	-0.0000	0.0000	0.1192	-0.0003	0.0659	-0.0073
16P	0.0000	0.0000	-0.0743	-0.0000	0.0000	0.0743	0.0003	0.0659	-0.0084
17P	0.0000	1.1140	-1.2516	-0.0000	-1.1140	1.2516	-0.0006	0.0642	-0.0162
18P	0.0000	0.0000	-0.1725	-0.0000	0.0000	0.1725	-0.0002	0.0644	-0.0103
19P	0.0000	0.0000	-0.1458	-0.0000	0.0000	0.1458	-0.0001	0.0644	-0.0072
20P	0.0000	0.0000	-0.0689	-0.0000	0.0000	0.0689	0.0001	0.0650	-0.0073
21P	0.0000	0.0000	-0.1249	-0.0000	0.0000	0.1249	-0.0000	0.0654	-0.0084
22P	0.0000	0.2180	-0.7046	-0.0000	-0.2180	0.7046	0.0002	0.0600	-0.0100
24P	0.0000	0.0000	-0.1947	-0.0000	0.0000	0.1947	-0.0002	0.0539	-0.0093
25P	0.0000	0.0000	-0.0973	-0.0000	0.0000	0.0973	-0.0005	0.0534	-0.0053
26P	0.0000	0.0000	-0.1299	-0.0000	0.0000	0.1299	-0.0010	0.0523	-0.0065
27P	0.0000	0.0000	-0.0743	-0.0000	0.0000	0.0743	-0.0005	0.0524	-0.0086
28P	0.0000	1.1140	-1.2516	-0.0000	-1.1140	1.2516	-0.0004	0.0513	-0.0144
29P	0.0000	0.0000	-0.2044	-0.0000	0.0000	0.2044	-0.0004	0.0514	-0.0088
30P	0.0000	0.0000	-0.1581	-0.0000	0.0000	0.1581	-0.0005	0.0514	-0.0059
31P	0.0000	0.0000	-0.0689	-0.0000	0.0000	0.0689	-0.0003	0.0519	-0.0065
32P	0.0000	0.0000	-0.1343	-0.0000	0.0000	0.1343	-0.0009	0.0524	-0.0086
33P	0.0000	0.1860	-0.9734	-0.0000	-0.1860	0.9734	0.0001	0.0309	-0.0054
45P	0.0000	0.0000	-0.4599	5.7678	5.1123	-37.7122	0.0000	0.0000	0.0000
1X	0.0000	0.9763	-0.8976	-0.0000	-0.9763	0.8976	0.0026	0.0801	-0.0081
2X	1.6900	1.7815	-1.7607	-1.6900	-1.7815	1.7607	0.0026	0.0770	-0.0076
2XY	-1.6900	1.8051	-1.7646	1.6900	-1.8051	1.7646	0.0022	0.0767	-0.0073
2Y	1.7130	1.6300	-1.0547	-1.7130	-1.6300	1.0547	0.0004	0.0764	-0.0117
3X	0.0000	0.0000	-0.0851	-0.0000	0.0000	0.0851	0.0022	0.0767	-0.0105
3XY	0.0000	0.0000	-0.0851	-0.0000	0.0000	0.0851	0.0021	0.0764	-0.0103
3Y	0.0000	0.0000	-0.0851	-0.0000	0.0000	0.0851	0.0005	0.0761	-0.0099
4X	0.0000	0.0000	-0.1135	-0.0000	0.0000	0.1135	0.0016	0.0763	-0.0110
4XY	0.0000	0.0000	-0.1099	-0.0000	0.0000	0.1099	0.0016	0.0760	-0.0109
4Y	0.0000	0.0000	-0.1135	-0.0000	0.0000	0.1135	0.0006	0.0758	-0.0103

5Y	0.0000	0.0000	-0.0743	-0.0000	0.0000	0.0743	0.0011	0.0759	-0.0108
6X	0.0000	1.1638	-1.2516	-0.0000	-1.1638	1.2516	0.0027	0.0754	-0.0070
7X	-1.0480	-0.9392	-1.3772	1.0480	0.9392	1.3772	0.0022	0.0752	-0.0073
7XY	1.0480	-0.9628	-1.3626	-1.0480	0.9628	1.3626	0.0022	0.0748	-0.0070
7Y	-1.1390	-1.0730	-1.2092	1.1390	1.0730	1.2092	-0.0001	0.0747	-0.0116
8X	0.0000	0.0000	-0.1215	-0.0000	0.0000	0.1215	0.0017	0.0752	-0.0104
8XY	0.0000	0.0000	-0.1215	-0.0000	0.0000	0.1215	0.0020	0.0748	-0.0101
8Y	0.0000	0.0000	-0.1215	-0.0000	0.0000	0.1215	0.0003	0.0748	-0.0100
9X	11.5500	0.5570	-0.6649	-11.5500	-0.5570	0.6649	0.0026	0.0753	-0.0112
9XY	-11.5500	0.5570	-0.6649	11.5500	-0.5570	0.6649	0.0004	0.0750	-0.0111
9Y	0.0000	0.0000	-0.0689	-0.0000	0.0000	0.0689	0.0006	0.0751	-0.0103
10Y	0.0000	0.0000	-0.1129	-0.0000	0.0000	0.1129	0.0016	0.0752	-0.0108
11X	0.0000	0.3060	-0.7198	-0.0000	-0.3060	0.7198	0.0022	0.0706	-0.0068
11XY	0.0000	0.2070	-0.4318	-0.0000	-0.2070	0.4318	0.0017	0.0703	-0.0066
11Y	0.0000	0.1490	-0.5758	-0.0000	-0.1490	0.5758	-0.0004	0.0723	-0.0114
13X	0.0000	0.1193	-0.1650	-0.0000	-0.1193	0.1650	0.0017	0.0668	-0.0067
13XY	0.0000	0.1193	-0.1543	-0.0000	-0.1193	0.1543	0.0017	0.0665	-0.0064
13Y	0.0000	0.0000	-0.1650	-0.0000	0.0000	0.1650	-0.0002	0.0668	-0.0107
14X	0.0000	0.0000	-0.0933	-0.0000	0.0000	0.0933	0.0013	0.0664	-0.0098
14XY	0.0000	0.0000	-0.0933	-0.0000	0.0000	0.0933	0.0013	0.0662	-0.0096
14Y	0.0000	0.0000	-0.0933	-0.0000	0.0000	0.0933	-0.0001	0.0663	-0.0069
15X	0.0000	0.0000	-0.1228	-0.0000	0.0000	0.1228	0.0006	0.0659	-0.0095
15XY	0.0000	0.0000	-0.1192	-0.0000	0.0000	0.1192	0.0006	0.0656	-0.0095
15Y	0.0000	0.0000	-0.1228	-0.0000	0.0000	0.1228	-0.0002	0.0656	-0.0075
16Y	0.0000	0.0000	-0.0743	-0.0000	0.0000	0.0743	0.0003	0.0656	-0.0086
17X	0.0000	1.1638	-1.2516	-0.0000	-1.1638	1.2516	0.0019	0.0654	-0.0064
18X	0.0000	0.1077	-0.1725	-0.0000	-0.1077	0.1725	0.0016	0.0651	-0.0062
18XY	0.0000	0.1077	-0.1725	-0.0000	-0.1077	0.1725	0.0013	0.0648	-0.0060
18Y	0.0000	0.0000	-0.1725	-0.0000	0.0000	0.1725	-0.0003	0.0642	-0.0103
19X	0.0000	0.0000	-0.1458	-0.0000	0.0000	0.1458	0.0009	0.0650	-0.0095
19XY	0.0000	0.0000	-0.1458	-0.0000	0.0000	0.1458	0.0013	0.0646	-0.0093
19Y	0.0000	0.0000	-0.1458	-0.0000	0.0000	0.1458	-0.0000	0.0642	-0.0073
20X	11.5500	0.5570	-0.6649	-11.5500	-0.5570	0.6649	0.0019	0.0652	-0.0097
20XY	-11.5500	0.5570	-0.6649	11.5500	-0.5570	0.6649	-0.0003	0.0649	-0.0097
20Y	0.0000	0.0000	-0.0689	-0.0000	0.0000	0.0689	0.0001	0.0647	-0.0075
21Y	0.0000	0.0000	-0.1249	-0.0000	0.0000	0.1249	0.0008	0.0651	-0.0086
22X	0.0000	0.3624	-0.8776	-0.0000	-0.3624	0.8776	0.0013	0.0599	-0.0059
22XY	0.0000	0.2434	-0.5326	-0.0000	-0.2434	0.5326	0.0011	0.0597	-0.0057
22Y	0.0000	0.1780	-0.7046	-0.0000	-0.1780	0.7046	-0.0006	0.0597	-0.0100
24X	0.0000	0.1326	-0.2054	-0.0000	-0.1326	0.2054	0.0010	0.0540	-0.0059
24XY	0.0000	0.1326	-0.1947	-0.0000	-0.1326	0.1947	0.0010	0.0539	-0.0057
24Y	0.0000	0.0000	-0.2054	0.0000	0.0000	0.2054	-0.0003	0.0537	-0.0093
25X	0.0000	0.0000	-0.0973	-0.0000	0.0000	0.0973	0.0006	0.0534	-0.0108
25XY	0.0000	0.0000	-0.0973	-0.0000	0.0000	0.0973	0.0005	0.0533	-0.0106
25Y	0.0000	0.0000	-0.0973	-0.0000	0.0000	0.0973	-0.0004	0.0531	-0.0054
26X	0.0000	0.0000	-0.1335	-0.0000	0.0000	0.1335	-0.0003	0.0524	-0.0105
26XY	0.0000	0.0000	-0.1299	-0.0000	0.0000	0.1299	-0.0003	0.0523	-0.0107
26Y	0.0000	0.0000	-0.1335	-0.0000	0.0000	0.1335	-0.0009	0.0521	-0.0069
27Y	0.0000	0.0000	-0.0743	-0.0000	0.0000	0.0743	-0.0005	0.0522	-0.0090
28X	0.0000	1.1638	-1.2516	-0.0000	-1.1638	1.2516	0.0012	0.0514	-0.0039
29X	0.0000	0.1234	-0.2044	-0.0000	-0.1234	0.2044	0.0007	0.0511	-0.0056
29XY	0.0000	0.1234	-0.2044	-0.0000	-0.1234	0.2044	0.0008	0.0508	-0.0054
29Y	0.0000	0.0000	-0.2044	0.0000	0.0000	0.2044	-0.0002	0.0513	-0.0088
30X	0.0000	0.0000	-0.1581	-0.0000	0.0000	0.1581	0.0003	0.0511	-0.0103
30XY	0.0000	0.0000	-0.1581	-0.0000	0.0000	0.1581	0.0005	0.0507	-0.0102
30Y	0.0000	0.0000	-0.1581	-0.0000	0.0000	0.1581	-0.0002	0.0514	-0.0060
31X	11.5500	0.5570	-0.6649	-11.5500	-0.5570	0.6649	0.0011	0.0516	-0.0107
31XY	-11.5500	0.5570	-0.6649	11.5500	-0.5570	0.6649	-0.0009	0.0513	-0.0109
31Y	0.0000	0.0000	-0.0689	-0.0000	0.0000	0.0689	-0.0004	0.0518	-0.0069

32Y	0.0000	0.0000	-0.1343	-0.0000	0.0000	0.1343	0.0006	0.0521	-0.0090
33X	0.0000	0.4889	-1.1214	-0.0000	-0.4889	1.1214	0.0002	0.0333	-0.0062
33XY	0.0000	0.3869	-0.8264	-0.0000	-0.3869	0.8264	0.0003	0.0329	-0.0058
33Y	0.0000	0.1520	-0.9734	0.0000	-0.1520	0.9734	-0.0006	0.0306	-0.0054
45X	0.0000	0.2402	-0.4599	-2.1007	8.1973	5.1416	0.0000	0.0000	0.0000
45XY	0.0000	0.2402	-0.4599	2.2369	8.2171	6.4214	0.0000	0.0000	0.0000
45Y	0.0000	0.0000	-0.4599	-5.9040	5.1696	-38.1317	0.0000	0.0000	0.0000
34S	0.0000	0.3753	-0.9317	0.0000	-0.3753	0.9317	0.0011	0.0438	-0.0052
36S	0.0000	0.1130	-0.1453	-0.0000	-0.1130	0.1453	-0.0007	0.0382	-0.0059
38S	0.0000	0.0971	-0.2584	0.0000	-0.0971	0.2584	-0.0006	0.0344	-0.0061
39S	0.0000	0.0000	-0.3170	-0.0000	0.0000	0.3170	0.0005	0.0343	-0.0079
40S	0.0000	0.0000	-0.1903	-0.0000	0.0000	0.1903	0.0003	0.0338	-0.0067
41S	0.0000	0.0000	-0.2172	-0.0000	0.0000	0.2172	0.0000	0.0336	-0.0055
42S	0.0000	0.0000	-0.2585	-0.0000	0.0000	0.2585	0.0002	0.0333	-0.0073
43S	0.0000	0.0000	-0.0904	-0.0000	0.0000	0.0904	0.0000	0.0332	-0.0068
44S	0.0000	0.0000	-0.2532	-0.0000	0.0000	0.2532	0.0001	0.0332	-0.0055
46S	0.0000	0.8316	-1.8573	0.0000	-0.8316	1.8573	-0.0007	0.0311	-0.0058
47S	0.0000	0.0000	-0.7546	-0.0000	0.0000	0.7546	0.0005	0.0304	-0.0125
48S	0.0000	0.1241	-0.0858	-0.0000	-0.1241	0.0858	0.0004	0.1383	-0.0063
49S	0.0000	0.2533	-0.3790	-0.0000	-0.2533	0.3790	-0.0044	0.0287	-0.0057
50S	0.0000	0.3045	-0.1961	-0.0000	-0.3045	0.1961	-0.0001	0.2990	-0.0396
9XF0.50S	0.0000	0.0000	-0.0305	-0.0000	0.0000	0.0305	0.0015	0.0758	-0.0110
20XF0.50S	0.0000	0.0000	-0.0305	-0.0000	0.0000	0.0305	0.0008	0.0656	-0.0095
31XF0.50S	0.0000	0.0000	-0.0305	-0.0000	0.0000	0.0305	0.0001	0.0518	-0.0106
i0.50E85S	0.0000	0.0000	-0.0250	-0.0000	0.0000	0.0250	0.0017	0.0758	-0.0202
i0.50E70S	0.0000	0.0000	-0.0250	-0.0000	0.0000	0.0250	0.0009	0.0656	-0.0188
i0.50E55S	0.0000	0.0000	-0.0250	-0.0000	0.0000	0.0250	0.0003	0.0518	-0.0178
34X	0.0000	0.2150	-0.7607	0.0000	-0.2150	0.7607	0.0000	0.0472	-0.0082
34XY	0.0000	0.1760	-0.7607	-0.0000	-0.1760	0.7607	-0.0007	0.0473	-0.0082
34Y	0.0000	0.2583	-0.5907	-0.0000	-0.2583	0.5907	0.0002	0.0433	-0.0050
36X	0.0000	0.0000	-0.1453	-0.0000	0.0000	0.1453	-0.0001	0.0403	-0.0073
36XY	0.0000	0.0000	-0.1453	0.0000	0.0000	0.1453	-0.0006	0.0402	-0.0073
36Y	0.0000	0.1130	-0.1453	-0.0000	-0.1130	0.1453	0.0017	0.0378	-0.0056
38X	0.0000	0.0000	-0.2584	0.0000	0.0000	0.2584	-0.0006	0.0338	-0.0065
38XY	0.0000	0.0000	-0.2584	-0.0000	0.0000	0.2584	0.0000	0.0336	-0.0065
38Y	0.0000	0.0971	-0.2584	-0.0000	-0.0971	0.2584	0.0013	0.0341	-0.0058
39X	0.0000	0.0000	-0.3170	-0.0000	0.0000	0.3170	-0.0002	0.0337	-0.0031
39XY	0.0000	0.0000	-0.3170	-0.0000	0.0000	0.3170	-0.0002	0.0335	-0.0030
39Y	0.0000	0.0000	-0.3170	-0.0000	0.0000	0.3170	0.0001	0.0340	-0.0075
40X	0.0000	0.0000	-0.1903	-0.0000	0.0000	0.1903	-0.0000	0.0334	-0.0037
40XY	0.0000	0.0000	-0.1903	0.0000	0.0000	0.1903	-0.0002	0.0332	-0.0035
40Y	0.0000	0.0000	-0.1903	0.0000	0.0000	0.1903	0.0000	0.0336	-0.0064
41Y	0.0000	0.0000	-0.2172	-0.0000	0.0000	0.2172	-0.0000	0.0334	-0.0053
42X	0.0000	0.0000	-0.2585	-0.0000	0.0000	0.2585	-0.0001	0.0317	-0.0039
42XY	0.0000	0.0000	-0.2585	-0.0000	0.0000	0.2585	-0.0003	0.0313	-0.0038
42Y	0.0000	0.0000	-0.2585	-0.0000	0.0000	0.2585	0.0002	0.0330	-0.0070
43X	0.0000	0.0000	-0.0904	-0.0000	0.0000	0.0904	-0.0002	0.0323	-0.0037
43XY	0.0000	0.0000	-0.0904	-0.0000	0.0000	0.0904	-0.0000	0.0320	-0.0036
43Y	0.0000	0.0000	-0.0904	-0.0000	0.0000	0.0904	0.0002	0.0329	-0.0064
44Y	0.0000	0.0000	-0.2532	-0.0000	0.0000	0.2532	-0.0001	0.0329	-0.0052
46X	0.0000	0.4390	-1.5103	0.0000	-0.4390	1.5103	-0.0001	0.0304	-0.0026
46XY	0.0000	0.3590	-1.5103	-0.0000	-0.3590	1.5103	-0.0003	0.0297	-0.0027
46Y	0.0000	0.5916	-1.1623	-0.0000	-0.5916	1.1623	0.0006	0.0303	-0.0054
47Y	0.0000	0.0000	-0.7546	-0.0000	0.0000	0.7546	0.0005	0.0297	-0.0124
48X	0.0000	0.0000	-0.0858	-0.0000	0.0000	0.0858	-0.0003	-0.0289	-0.0064
49X	0.0000	0.0000	-0.3790	-0.0000	0.0000	0.3790	-0.0038	0.0231	-0.0025
49XY	0.0000	0.0000	-0.3790	0.0000	0.0000	0.3790	0.0035	0.0225	-0.0026
49Y	0.0000	0.2533	-0.3790	-0.0000	-0.2533	0.3790	0.0041	0.0279	-0.0053
50X	0.0000	0.0000	-0.1961	0.0000	-0.0000	0.1961	-0.0002	-0.2270	-0.0320

9XF0.50X	0.0000	1.1140	-1.2235	-0.0000	-1.1140	1.2235	0.0006	0.0758	-0.0105
20XF0.50X	0.0000	1.1140	-1.2235	-0.0000	-1.1140	1.2235	0.0001	0.0653	-0.0077
31XF0.50X	0.0000	1.1140	-1.2235	-0.0000	-1.1140	1.2235	-0.0004	0.0524	-0.0070
i0.50E85X	0.0000	0.0000	-0.0250	-0.0000	0.0000	0.0250	0.0004	0.0752	-0.0538
i0.50E70X	0.0000	0.0000	-0.0250	-0.0000	0.0000	0.0250	0.0000	0.0647	-0.0560
i0.50E55X	0.0000	0.0000	-0.0250	-0.0000	0.0000	0.0250	-0.0004	0.0517	-0.0557

Crossing Diagonal Check for Load Case "NESC Heavy" (RLOUT controls):

Comp. Member Label	Tens. Member Label	Connect Leg for Comp. Member	Force In Comp. Member (kips)	Force In Tens. Member (kips)	Original Supported L/R Cap. (kips)	RLX	RLY	RLZ	L/R	KL/R	Curve No.	Alternate Unsupported L/R Cap. (kips)	RLOUT	L/R	KL/R	Curve No.
g19P	g19Y	Long only	-0.37	-0.36	19.93	0.750	0.500	0.500	108.51	111.38	2	13.86	1.000	139.33	139.33	4
g19Y	g19P	Long only	-0.36	-0.37	19.93	0.750	0.500	0.500	108.51	111.38	2	13.86	1.000	139.33	139.33	4
g20X	g20XY	Long only	-0.60	-0.60	19.93	0.750	0.500	0.500	108.51	111.38	2	13.86	1.000	139.33	139.33	4
g20XY	g20X	Long only	-0.60	-0.60	19.93	0.750	0.500	0.500	108.51	111.38	2	13.86	1.000	139.33	139.33	4
g21P	g21Y	Long only	-0.71	-0.86	19.93	0.750	0.500	0.500	108.51	111.38	2	13.86	1.000	139.33	139.33	4
g21X	g21XY	Long only	-0.68	-0.98	19.93	0.750	0.500	0.500	108.51	111.38	2	13.86	1.000	139.33	139.33	4
g21XY	g21X	Long only	-0.98	-0.68	19.93	0.750	0.500	0.500	108.51	111.38	2	13.86	1.000	139.33	139.33	4
g21Y	g21P	Long only	-0.86	-0.71	19.93	0.750	0.500	0.500	108.51	111.38	2	13.86	1.000	139.33	139.33	4
g22P	g22Y	Long only	-0.10	-0.11	15.14	0.750	0.500	0.500	107.68	110.76	2	11.88	1.000	137.52	130.78	6
g22Y	g22P	Long only	-0.11	-0.10	15.14	0.750	0.500	0.500	107.68	110.76	2	11.88	1.000	137.52	130.78	6
g23X	g23XY	Long only	-0.42	-0.42	15.14	0.750	0.500	0.500	107.68	110.76	2	11.88	1.000	137.52	130.78	6
g23XY	g23X	Long only	-0.42	-0.42	15.14	0.750	0.500	0.500	107.68	110.76	2	11.88	1.000	137.52	130.78	6
g24P	g24Y	Long only	-0.51	-0.79	15.14	0.750	0.500	0.500	107.68	110.76	2	11.88	1.000	137.52	130.78	6
g24X	g24XY	Long only	-0.94	-1.24	15.14	0.750	0.500	0.500	107.68	110.76	2	11.88	1.000	137.52	130.78	6
g24XY	g24X	Long only	-1.24	-0.94	15.14	0.750	0.500	0.500	107.68	110.76	2	11.88	1.000	137.52	130.78	6
g24Y	g24P	Long only	-0.79	-0.51	15.14	0.750	0.500	0.500	107.68	110.76	2	11.88	1.000	137.52	130.78	6
g25X	g25XY	Long only	-0.44	-0.39	11.78	0.787	0.573	0.573	134.81	131.32	5	10.58	1.000	150.24	138.60	6
g25XY	g25X	Long only	-0.39	-0.44	11.78	0.787	0.573	0.573	134.81	131.32	5	10.58	1.000	150.24	138.60	6
g26P	g26Y	Long only	-0.90	-0.79	10.09	0.777	0.554	0.554	148.68	141.89	5	8.84	1.000	171.37	151.59	6
g26Y	g26P	Long only	-0.79	-0.90	10.09	0.777	0.554	0.554	148.68	141.89	5	8.84	1.000	171.37	151.59	6
g104P	g104Y	Long only	-0.31	-0.39	11.19	0.500	0.500	0.500	125.34	125.34	4	5.27	1.000	183.46	183.46	4
g104X	g104XY	Long only	-0.10	-0.12	11.19	0.500	0.500	0.500	125.34	125.34	4	5.27	1.000	183.46	183.46	4
g104XY	g104X	Long only	-0.12	-0.10	11.19	0.500	0.500	0.500	125.34	125.34	4	5.27	1.000	183.46	183.46	4
g104Y	g104P	Long only	-0.39	-0.31	11.19	0.500	0.500	0.500	125.34	125.34	4	5.27	1.000	183.46	183.46	4
g106X	g106XY	Long only	-1.12	-1.08	8.38	0.500	0.500	0.500	145.53	145.53	4	3.91	1.000	213.01	213.01	4
g106XY	g106X	Long only	-1.08	-1.12	8.38	0.500	0.500	0.500	145.53	145.53	4	3.91	1.000	213.01	213.01	4
g107P	g107Y	Long only	-0.24	-0.36	11.19	0.500	0.500	0.500	125.34	125.34	4	5.27	1.000	183.46	183.46	4
g107Y	g107P	Long only	-0.36	-0.24	11.19	0.500	0.500	0.500	125.34	125.34	4	5.27	1.000	183.46	183.46	4
g109X	g109XY	Long only	-1.36	-1.43	8.38	0.500	0.500	0.500	145.53	145.53	4	3.91	1.000	213.01	213.01	4
g109XY	g109X	Long only	-1.43	-1.36	8.38	0.500	0.500	0.500	145.53	145.53	4	3.91	1.000	213.01	213.01	4
g110P	g110Y	Long only	-0.26	-0.44	11.19	0.500	0.500	0.500	125.34	125.34	4	5.27	1.000	183.46	183.46	4
g110X	g110XY	Long only	-0.29	-0.54	11.19	0.500	0.500	0.500	125.34	125.34	4	5.27	1.000	183.46	183.46	4
g110XY	g110X	Long only	-0.54	-0.29	11.19	0.500	0.500	0.500	125.34	125.34	4	5.27	1.000	183.46	183.46	4
g110Y	g110P	Long only	-0.44	-0.26	11.19	0.500	0.500	0.500	125.34	125.34	4	5.27	1.000	183.46	183.46	4
g112X	g112XY	Long only	-1.69	-1.72	8.38	0.500	0.500	0.500	145.53	145.53	4	3.91	1.000	213.01	213.01	4
g112XY	g112X	Long only	-1.72	-1.69	8.38	0.500	0.500	0.500	145.53	145.53	4	3.91	1.000	213.01	213.01	4
g132P	g132Y	Long only	-1.20	-1.17	4.27	0.500	0.500	0.500	203.89	203.89	4	1.99	1.000	298.41	298.41	4
g132X	g132XY	Long only	-0.34	-0.37	4.27	0.500	0.500	0.500	203.89	203.89	4	1.99	1.000	298.41	298.41	4
g132XY	g132X	Long only	-0.37	-0.34	4.27	0.500	0.500	0.500	203.89	203.89	4	1.99	1.000	298.41	298.41	4
g132Y	g132P	Long only	-1.17	-1.20	4.27	0.500	0.500	0.500	203.89	203.89	4	1.99	1.000	298.41	298.41	4
g133P	g133Y	Long only	-0.42	-0.38	2.44	0.500	0.500	0.500	269.85	269.85	4	1.14	1.000	394.96	394.96	4
g133Y	g133P	Long only	-0.38	-0.42	2.44	0.500	0.500	0.500	269.85	269.85	4	1.14	1.000	394.96	394.96	4
g134P	g134Y	Long only	-0.14	-0.01	3.23	0.500	0.500	0.500	234.45	234.45	4	1.51	1.000	343.15	343.15	4
g134Y	g134P	Long only	-0.01	-0.14	3.23	0.500	0.500	0.500	234.45	234.45	4	1.51	1.000	343.15	343.15	4

g142X	g143X	Long only	-5.16	-1.39	77.88	0.500	0.500	0.500	46.16	64.62	2	67.39	1.000	69.59	94.80	3
g142XY	g143XY	Long only	-5.28	-1.26	77.88	0.500	0.500	0.500	46.16	64.62	2	67.39	1.000	69.59	94.80	3
g143X	g142X	Long only	-1.39	-5.16	77.88	0.500	0.500	0.500	46.16	64.62	2	67.39	1.000	69.59	94.80	3
g143XY	g142XY	Long only	-1.26	-5.28	77.88	0.500	0.500	0.500	46.16	64.62	2	67.39	1.000	69.59	94.80	3

Summary of Clamp Capacities and Usages for Load Case "NESC Heavy":

Clamp Label	Force (kips)	Input Holding Capacity (kips)	Factored Holding Capacity (kips)	Usage %
1	1.326	50.00	50.00	2.65
2	1.051	50.00	50.00	2.10
3	1.709	50.00	50.00	3.42
4	1.676	50.00	50.00	3.35
5	1.709	50.00	50.00	3.42
6	1.676	50.00	50.00	3.35
7	1.709	50.00	50.00	3.42
8	1.676	50.00	50.00	3.35
9	0.031	50.00	50.00	0.06
10	1.655	50.00	50.00	3.31
11	0.031	50.00	50.00	0.06
12	1.655	50.00	50.00	3.31
13	0.031	50.00	50.00	0.06
14	1.655	50.00	50.00	3.31
15	2.591	50.00	50.00	5.18
16	3.022	50.00	50.00	6.04
17	3.038	50.00	50.00	6.08
18	2.589	50.00	50.00	5.18
19	1.969	50.00	50.00	3.94
20	1.969	50.00	50.00	3.94
21	1.970	50.00	50.00	3.94
22	1.978	50.00	50.00	3.96
23	0.782	50.00	50.00	1.56
24	0.595	50.00	50.00	1.19
25	0.949	50.00	50.00	1.90
26	0.727	50.00	50.00	1.45
27	1.004	50.00	50.00	2.01
28	0.781	50.00	50.00	1.56
29	1.223	50.00	50.00	2.45
30	0.985	50.00	50.00	1.97
31	2.035	50.00	50.00	4.07
32	1.552	50.00	50.00	3.10
33	0.604	50.00	50.00	1.21
34	0.738	50.00	50.00	1.48
35	0.791	50.00	50.00	1.58
36	0.991	50.00	50.00	1.98
37	1.573	50.00	50.00	3.15
38	11.583	50.00	50.00	23.17
39	11.583	50.00	50.00	23.17
40	11.583	50.00	50.00	23.17
41	11.583	50.00	50.00	23.17
42	11.583	50.00	50.00	23.17
43	11.583	50.00	50.00	23.17
44	0.479	50.00	50.00	0.96
45	0.586	50.00	50.00	1.17

46	0.645	50.00	50.00	1.29
47	0.912	50.00	50.00	1.82
48	1.304	50.00	50.00	2.61

*** Analysis Results for Load Case No. 2 "NESC Extreme" - Number of iterations in SAPS 9

Equilibrium Joint Positions and Rotations for Load Case "NESC Extreme":

Joint Label	X-Displ (ft)	Y-Displ (ft)	Z-Displ (ft)	X-Rot (deg)	Y-Rot (deg)	Z-Rot (deg)	X-Pos (ft)	Y-Pos (ft)	Z-Pos (ft)
1P	-0.02151	0.1724	-0.01333	0.0000	0.0000	0.0000	-0.02151	14.17	94.99
2P	-0.01841	0.1651	-0.01309	-0.0555	-0.0379	-0.0506	2.482	15.17	89.99
3P	-0.02248	0.1644	-0.008338	-0.0401	-0.0365	-0.0595	2.478	10.66	89.99
4P	-0.02763	0.1637	-0.007566	0.0051	-0.0351	-0.0638	2.472	6.164	89.99
5P	-0.03366	0.164	-0.007907	-0.0005	-0.0332	-0.0581	2.466	0.164	89.99
6P	-0.008524	0.1631	-0.02157	-0.0578	-0.0301	-0.0570	-0.008524	22.16	84.98
7P	-0.01519	0.1606	-0.01313	-0.0568	-0.0343	-0.0555	2.485	15.16	84.99
8P	-0.01988	0.1608	-0.008394	-0.0398	-0.0371	-0.0585	2.48	10.66	84.99
9P	-0.02432	0.1614	-0.00759	0.0041	-0.0399	-0.0593	2.476	6.161	84.99
10P	-0.03048	0.1617	-0.007887	0.0007	-0.0437	-0.0479	2.47	0.1617	84.99
11P	-0.01249	0.1539	-0.01308	-0.1154	-0.0288	-0.0524	2.488	15.15	79.99
13P	-0.01021	0.1425	-0.01235	-0.1019	-0.0230	-0.0493	2.49	15.14	74.99
14P	-0.0143	0.1417	-0.003775	-0.0659	-0.0278	-0.0549	2.486	10.64	75
15P	-0.01854	0.1402	-0.003249	0.0182	-0.0327	-0.0490	2.481	6.14	75
16P	-0.02314	0.14	-0.004374	0.0076	-0.0391	-0.0461	2.477	0.14	75
17P	-0.003011	0.1385	-0.02227	-0.0623	-0.0246	-0.0424	-0.003011	22.14	69.98
18P	-0.008151	0.1365	-0.01216	-0.0970	-0.0304	-0.0438	2.492	15.14	69.99
19P	-0.01158	0.1364	-0.004506	-0.0627	-0.0341	-0.0430	2.488	10.64	70
20P	-0.01495	0.1375	-0.003269	0.0082	-0.0378	-0.0440	2.485	6.137	70
21P	-0.0193	0.1385	-0.004354	0.0128	-0.0427	-0.0335	2.481	0.1385	70
22P	-0.005518	0.1256	-0.01201	-0.1501	-0.0251	-0.0421	2.494	15.13	64.99
24P	-0.004008	0.1133	-0.0112	-0.0987	-0.0125	-0.0404	2.496	15.11	59.99
25P	-0.007193	0.1122	-0.002302	-0.0608	-0.0186	-0.0453	2.493	10.61	60
26P	-0.0108	0.1102	-0.003418	0.0452	-0.0247	-0.0380	2.489	6.11	60
27P	-0.01369	0.1103	-0.006929	0.0267	-0.0328	-0.0290	2.486	0.1103	59.99
28P	0.0009233	0.1091	-0.02016	-0.0640	-0.0106	-0.0295	0.0009233	22.11	54.98
29P	-0.002757	0.1076	-0.01081	-0.0864	-0.0211	-0.0402	2.497	15.11	54.99
30P	-0.005255	0.1075	-0.003321	-0.0565	-0.0243	-0.0262	2.495	10.61	55
31P	-0.007395	0.1087	-0.003451	0.0312	-0.0276	-0.0321	2.493	6.109	55
32P	-0.01072	0.1097	-0.006898	0.0342	-0.0321	-0.0195	2.489	0.1097	54.99
33P	0.0002459	0.06136	-0.005942	-0.0501	-0.0298	-0.0143	5.875	15.06	35.99
45P	0	0	0	0.0000	0.0000	0.0000	11.5	19.88	0
1X	-0.052	0.1756	-0.002858	0.0000	0.0000	0.0000	-0.052	-13.82	95
2X	-0.04736	0.1663	0.001154	-0.0772	-0.0286	-0.0507	2.453	-14.83	90
2XY	-0.04915	0.1714	-0.003628	-0.0785	-0.0711	-0.0692	-2.549	-14.83	90
2Y	-0.01735	0.17	-0.0157	-0.0563	-0.0182	-0.0604	-2.517	15.17	89.98
3X	-0.04349	0.1653	-0.005559	-0.0616	-0.0300	-0.0465	2.457	-10.33	89.99
3XY	-0.04366	0.1703	-0.01048	-0.0599	-0.0631	-0.0590	-2.544	-10.33	89.99
3Y	-0.02246	0.1693	-0.01085	-0.0367	-0.0261	-0.0680	-2.522	10.67	89.99
4X	-0.0398	0.1643	-0.007471	-0.0059	-0.0314	-0.0523	2.46	-5.836	89.99
4XY	-0.03986	0.1692	-0.0119	0.0015	-0.0552	-0.0492	-2.54	-5.831	89.99
4Y	-0.02768	0.1686	-0.01077	0.0146	-0.0341	-0.0624	-2.528	6.169	89.99
5Y	-0.03379	0.1689	-0.01175	0.0039	-0.0446	-0.0594	-2.534	0.1689	89.99
6X	-0.05122	0.1625	0.007425	-0.0609	-0.0541	-0.0636	-0.05122	-21.84	85.01
7X	-0.04417	0.1599	0.001415	-0.0835	-0.0531	-0.0508	2.456	-14.84	85
7XY	-0.04334	0.1648	-0.003409	-0.0869	-0.0577	-0.0577	-2.543	-14.84	85
7Y	-0.01562	0.1655	-0.01573	-0.0580	-0.0250	-0.0540	-2.516	15.17	84.98
8X	-0.03986	0.1604	-0.005366	-0.0628	-0.0503	-0.0622	2.46	-10.34	84.99
8XY	-0.03946	0.1652	-0.01027	-0.0599	-0.0528	-0.0396	-2.539	-10.33	84.99
8Y	-0.01974	0.1657	-0.01094	-0.0359	-0.0299	-0.0548	-2.52	10.67	84.99

9X	-0.03492	0.161	-0.007557	-0.0083	-0.0475	-0.0531	2.465	-5.839	84.99
9XY	-0.03631	0.1658	-0.01198	-0.0014	-0.0479	-0.0522	-2.536	-5.834	84.99
9Y	-0.02412	0.1662	-0.01079	0.0131	-0.0348	-0.0516	-2.524	6.166	84.99
10Y	-0.02942	0.1666	-0.01173	0.0055	-0.0413	-0.0614	-2.529	0.1666	84.99
11X	-0.03854	0.1513	0.001573	-0.1145	-0.0635	-0.0463	2.461	-14.85	80
11XY	-0.03873	0.1556	-0.00321	-0.1220	-0.0569	-0.0485	-2.539	-14.84	80
11Y	-0.01308	0.1584	-0.01562	-0.1252	-0.0310	-0.0494	-2.513	15.16	79.98
13X	-0.03367	0.1418	0.001094	-0.0791	-0.0553	-0.0418	2.466	-14.86	75
13XY	-0.0335	0.1456	-0.003588	-0.0819	-0.0551	-0.0393	-2.534	-14.85	75
13Y	-0.01044	0.1461	-0.01463	-0.1070	-0.0306	-0.0447	-2.51	15.15	74.99
14X	-0.03053	0.1411	-0.006068	-0.0524	-0.0504	-0.0342	2.469	-10.36	74.99
14XY	-0.03064	0.1448	-0.01115	-0.0542	-0.0514	-0.0323	-2.531	-10.36	74.99
14Y	-0.01424	0.1452	-0.005721	-0.0603	-0.0343	-0.0534	-2.514	10.65	74.99
15X	-0.028	0.1399	-0.005812	0.0248	-0.0456	-0.0378	2.472	-5.86	74.99
15XY	-0.02808	0.1435	-0.01059	0.0313	-0.0477	-0.0385	-2.528	-5.857	74.99
15Y	-0.01854	0.1436	-0.006423	0.0346	-0.0380	-0.0506	-2.519	6.144	74.99
16Y	-0.02325	0.1436	-0.008508	0.0133	-0.0428	-0.0461	-2.523	0.1436	74.99
17X	-0.03446	0.1394	0.004119	-0.0248	-0.0499	-0.0517	-0.03446	-21.86	70
18X	-0.02867	0.1372	0.00106	-0.0754	-0.0551	-0.0357	2.471	-14.86	70
18XY	-0.0289	0.1408	-0.00338	-0.0866	-0.0621	-0.0320	-2.529	-14.86	70
18Y	-0.008112	0.1401	-0.01423	-0.0981	-0.0195	-0.0378	-2.508	15.14	69.99
19X	-0.0262	0.1372	-0.005384	-0.0516	-0.0514	-0.0387	2.474	-10.36	69.99
19XY	-0.02581	0.1406	-0.01038	-0.0534	-0.0557	-0.0316	-2.526	-10.36	69.99
19Y	-0.01144	0.1401	-0.006592	-0.0555	-0.0259	-0.0449	-2.511	10.64	69.99
20X	-0.0226	0.1378	-0.005901	0.0157	-0.0477	-0.0413	2.477	-5.862	69.99
20XY	-0.02391	0.1413	-0.01067	0.0211	-0.0493	-0.0320	-2.524	-5.859	69.99
20Y	-0.01484	0.1411	-0.006442	0.0225	-0.0323	-0.0395	-2.515	6.141	69.99
21Y	-0.01897	0.1421	-0.008487	0.0193	-0.0408	-0.0471	-2.519	0.1421	69.99
22X	-0.02388	0.1277	0.0009716	-0.1535	-0.0575	-0.0358	2.476	-14.87	65
22XY	-0.02332	0.1301	-0.003179	-0.1612	-0.0597	-0.0188	-2.523	-14.87	65
22Y	-0.006525	0.1288	-0.01396	-0.1603	-0.0215	-0.0320	-2.507	15.13	64.99
24X	-0.01885	0.1137	0.0001465	-0.1161	-0.0533	-0.0358	2.481	-14.89	60
24XY	-0.01874	0.1161	-0.00351	-0.1135	-0.0505	-0.0055	-2.519	-14.88	60
24Y	-0.004256	0.1156	-0.01283	-0.1040	-0.0286	-0.0261	-2.504	15.12	59.99
25X	-0.01739	0.1124	-0.01043	-0.0788	-0.0471	-0.0063	2.483	-10.39	59.99
25XY	-0.01754	0.1148	-0.01469	-0.0875	-0.0473	-0.0122	-2.518	-10.39	59.99
25Y	-0.007148	0.1144	-0.003828	-0.0514	-0.0319	-0.0463	-2.507	10.61	60
26X	-0.01678	0.1104	-0.01011	0.0396	-0.0409	-0.0176	2.483	-5.89	59.99
26XY	-0.01689	0.1126	-0.01452	0.0432	-0.0440	-0.0161	-2.517	-5.887	59.99
26Y	-0.01081	0.1123	-0.006331	0.0616	-0.0353	-0.0389	-2.511	6.112	59.99
27Y	-0.01383	0.1125	-0.0107	0.0324	-0.0396	-0.0298	-2.514	0.1125	59.99
28X	-0.01813	0.1083	0.006946	-0.0489	-0.0250	-0.0328	-0.01813	-21.89	55.01
29X	-0.01474	0.107	-0.0002548	-0.1078	-0.0432	-0.0438	2.485	-14.89	55
29XY	-0.01485	0.1088	-0.003215	-0.1351	-0.0313	0.0157	-2.515	-14.89	55
29Y	-0.002493	0.1101	-0.01213	-0.0774	-0.0040	-0.0161	-2.502	15.11	54.99
30X	-0.01371	0.107	-0.009408	-0.0744	-0.0397	-0.0111	2.486	-10.39	54.99
30XY	-0.01361	0.1087	-0.01369	-0.0823	-0.0274	-0.0181	-2.514	-10.39	54.99
30Y	-0.00469	0.1101	-0.005055	-0.0470	-0.0081	-0.0358	-2.505	10.61	54.99
31X	-0.01191	0.1082	-0.01021	0.0254	-0.0365	-0.0195	2.488	-5.892	54.99
31XY	-0.01289	0.1101	-0.01462	0.0287	-0.0233	-0.0180	-2.513	-5.89	54.99
31Y	-0.00732	0.1112	-0.006365	0.0453	-0.0123	-0.0249	-2.507	6.111	54.99
32Y	-0.009377	0.112	-0.01067	0.0406	-0.0178	-0.0292	-2.509	0.112	54.99
33X	-0.006257	0.06647	-0.003604	-0.0147	-0.0158	-0.0159	5.869	-14.93	36
33XY	-0.00572	0.06963	-0.007301	-0.0176	-0.0194	-0.0128	-5.881	-14.93	35.99
33Y	-0.0009413	0.06421	-0.007086	-0.0497	0.0247	-0.0189	-5.876	15.06	35.99
45X	0	0	0	0.0000	0.0000	0.0000	11.5	-19.88	0
45XY	0	0	0	0.0000	0.0000	0.0000	-11.5	-19.88	0
45Y	0	0	0	0.0000	0.0000	0.0000	-11.5	19.88	0
34S	-0.01182	0.09348	-0.0001064	-0.1687	-0.0124	-0.0506	3.376	-14.91	50

36S	-0.01117	0.07965	-0.001532	-0.1576	-0.0184	-0.0448	4.176	-14.92	45.5
38S	-0.008222	0.06933	-0.00252	-0.0763	-0.0320	-0.0265	4.979	-14.93	41
39S	-0.006485	0.06909	-0.00702	-0.0107	-0.0287	-0.0135	4.98	-10.43	40.99
40S	-0.005878	0.0682	-0.004627	0.0383	-0.0255	-0.0091	4.981	-5.932	41
41S	-0.004136	0.06803	-0.002382	0.0196	-0.0211	-0.0210	4.983	0.06803	41
42S	-0.004623	0.0665	-0.005361	-0.0077	-0.0179	-0.0212	5.87	-10.43	35.99
43S	-0.003128	0.06639	-0.004199	0.0232	-0.0200	-0.0188	5.872	-5.934	36
44S	-0.001608	0.06625	-0.001954	0.0251	-0.0228	-0.0037	5.873	0.06625	36
46S	-0.003955	0.05995	-0.004656	-0.0509	0.0054	-0.0169	7.694	-16.52	24.33
47S	-0.002748	0.05846	-0.01959	0.0207	0.0273	-0.0072	7.696	0.05846	24.31
48S	-0.0077	0.1414	-0.00488	0.0000	0.0000	0.0000	-0.0077	-14.86	41
49S	-0.005125	0.05068	-0.004623	-0.1318	0.0019	-0.0270	8.644	-17.35	18.24
50S	-0.001551	0.2982	-0.03854	0.0000	0.0000	0.0000	-0.001551	-17.11	18.21
9XF0.50S	-0.0356	0.1635	-0.009675	0.0000	0.0000	0.0000	-0.0356	-5.837	84.99
20XF0.50S	-0.02325	0.1396	-0.00819	0.0000	0.0000	0.0000	-0.02325	-5.86	69.99
31XF0.50S	-0.0124	0.1087	-0.0123	0.0000	0.0000	0.0000	-0.0124	-5.891	54.99
i0.50E85S	-0.03761	0.1636	-0.03134	0.0000	0.0000	0.0000	-0.03761	-8.086	84.97
i0.50E70S	-0.02461	0.1397	-0.03054	0.0000	0.0000	0.0000	-0.02461	-8.11	69.97
i0.50E55S	-0.01305	0.1088	-0.0363	0.0000	0.0000	0.0000	-0.01305	-8.141	54.96
34X	-0.001074	0.09616	-0.01013	-0.1591	-0.0119	-0.0392	3.387	15.1	49.99
34XY	-0.002478	0.1	-0.01151	-0.1633	-0.0037	-0.0063	-3.391	15.1	49.99
34Y	-0.012	0.09303	-0.00339	-0.1838	-0.0454	0.0221	-3.4	-14.91	50
36X	-0.001238	0.08173	-0.008814	-0.1833	0.0058	-0.0309	4.186	15.08	45.49
36XY	-0.001139	0.08503	-0.01013	-0.2026	-0.0203	-0.0043	-4.189	15.09	45.49
36Y	-0.008273	0.08018	-0.005056	-0.1368	-0.0341	0.0118	-4.196	-14.92	45.49
38X	-0.001618	0.0687	-0.00751	-0.1250	-0.0102	-0.0079	4.985	15.07	40.99
38XY	0.0003248	0.07123	-0.008776	-0.1327	-0.0004	-0.0217	-4.987	15.07	40.99
38Y	-0.007253	0.07184	-0.00619	-0.0660	-0.0120	-0.0029	-4.994	-14.93	40.99
39X	-0.001646	0.06843	0.0001891	-0.0496	-0.0135	0.0000	4.985	10.57	41
39XY	-0.001793	0.07093	-0.0008055	-0.0482	-0.0022	-0.0262	-4.989	10.57	41
39Y	-0.006828	0.07164	-0.01027	-0.0064	-0.0103	-0.0132	-4.994	-10.43	40.99
40X	-0.002161	0.06781	0.0003099	0.0248	-0.0167	-0.0132	4.985	6.068	41
40XY	-0.003347	0.07026	-0.001089	0.0317	-0.0040	-0.0135	-4.99	6.07	41
40Y	-0.005323	0.07068	-0.007409	0.0450	-0.0086	-0.0180	-4.992	-5.929	40.99
41Y	-0.004213	0.07049	-0.004486	0.0262	-0.0063	-0.0063	-4.991	0.07049	41
42X	-0.001499	0.06293	-0.001247	-0.0483	-0.0277	-0.0190	5.874	10.56	36
42XY	-0.001546	0.0659	-0.002449	-0.0450	0.0181	0.0004	-5.877	10.57	36
42Y	-0.004732	0.06975	-0.009331	-0.0082	-0.0128	-0.0173	-5.88	-10.43	35.99
43X	-0.002062	0.06436	0.0002989	0.0053	-0.0256	0.0028	5.873	6.064	36
43XY	-0.001346	0.06743	-0.001475	0.0161	0.0115	0.0017	-5.876	6.067	36
43Y	-0.003045	0.06963	-0.007881	0.0285	-0.0062	-0.0203	-5.878	-5.93	35.99
44Y	-0.001671	0.06948	-0.004959	0.0347	0.0026	-0.0075	-5.877	0.06948	36
46X	0.0004322	0.05946	-0.001847	-0.0028	0.0492	0.0001	7.699	16.64	24.33
46XY	0.0008817	0.06294	-0.002651	-0.0060	-0.0545	-0.0235	-7.698	16.64	24.33
46Y	-0.001964	0.06317	-0.007708	-0.0561	-0.0341	-0.0003	-7.7	-16.52	24.32
47Y	-0.0026	0.06235	-0.02224	0.0286	-0.0443	-0.0014	-7.701	0.06235	24.31
48X	-0.0006284	0.1793	-0.008545	0.0000	0.0000	0.0000	-0.0006284	15.18	40.99
49X	-0.006426	0.05408	-0.001181	-0.1128	0.0433	-0.0164	8.642	17.46	18.25
49XY	0.008341	0.05721	-0.001859	-0.1222	-0.0417	0.0006	-8.64	17.46	18.25
49Y	0.001929	0.05353	-0.007165	-0.1417	-0.0244	0.0152	-8.647	-17.35	18.24
50X	0.001021	0.4106	0.05306	0.0000	0.0000	0.0000	0.001021	17.81	18.3
9XF0.50X	-0.02424	0.1648	-0.009242	0.0000	0.0000	0.0000	-0.02424	6.165	84.99
20XF0.50X	-0.01493	0.1403	-0.004922	0.0000	0.0000	0.0000	-0.01493	6.14	70
31XF0.50X	-0.007396	0.111	-0.004964	0.0000	0.0000	0.0000	-0.007396	6.111	55
i0.50E85X	-0.02198	0.1637	-0.07103	0.0000	0.0000	0.0000	-0.02198	8.414	84.93
i0.50E70X	-0.01317	0.139	-0.07368	0.0000	0.0000	0.0000	-0.01317	8.389	69.93
i0.50E55X	-0.006154	0.1095	-0.08089	0.0000	0.0000	0.0000	-0.006154	8.359	54.92

Joint Support Reactions for Load Case "NESC Extreme":

Joint Label	X Force (kips)	X Usage %	Y Force (kips)	Y Usage %	H-Shear Usage %	Z Force (kips)	Comp. Usage %	Uplift Usage %	Result. Force (kips)	Result. Usage %	X Moment (ft-k)	X-M. Usage %	Y Moment (ft-k)	Y-M. Usage %	H-Bend-M Usage %	Z Moment (ft-k)	Z-M. Usage %	Max. Usage %
45P	-7.95	0.0	-7.87	0.0	0.0	-55.15	0.0	0.0	56.27	0.0	2.49	0.0	0.7	0.0	0.0	0.49	0.0	0.0
45X	10.19	0.0	-24.99	0.0	0.0	52.34	0.0	0.0	58.89	0.0	2.20	0.0	0.4	0.0	0.0	0.31	0.0	0.0
45XY	-6.08	0.0	-21.81	0.0	0.0	30.59	0.0	0.0	38.06	0.0	2.35	0.0	-0.3	0.0	0.0	-0.30	0.0	0.0
45Y	8.27	0.0	-8.56	0.0	0.0	-60.16	0.0	0.0	61.33	0.0	2.63	0.0	-0.8	0.0	0.0	-0.49	0.0	0.0

Joint Displacements, Loads and Member Forces on Joints for Load Case "NESC Extreme":

Joint Label	X External Load (kips)	Y External Load (kips)	Z External Load (kips)	X Member Force (kips)	Y Member Force (kips)	Z Member Force (kips)	X Disp. (ft)	Y Disp. (ft)	Z Disp. (ft)
1P	0.0000	0.8464	-0.2677	-0.0000	-0.8464	0.2677	-0.0215	0.1724	-0.0133
2P	-4.7230	4.5404	-0.3067	4.7230	-4.5404	0.3067	-0.0184	0.1651	-0.0131
3P	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0225	0.1644	-0.0083
4P	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0276	0.1637	-0.0076
5P	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0337	0.1640	-0.0079
6P	0.0000	1.9824	-0.5057	-0.0000	-1.9824	0.5057	-0.0085	0.1631	-0.0216
7P	2.9130	-2.6976	-0.7017	-2.9130	2.6976	0.7017	-0.0152	0.1606	-0.0131
8P	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0199	0.1608	-0.0084
9P	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0243	0.1614	-0.0076
10P	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0305	0.1617	-0.0079
11P	0.0000	0.6174	-0.1847	-0.0000	-0.6174	0.1847	-0.0125	0.1539	-0.0131
13P	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0102	0.1425	-0.0123
14P	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0143	0.1417	-0.0038
15P	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0185	0.1402	-0.0032
16P	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0231	0.1400	-0.0044
17P	0.0000	1.9824	-0.5057	-0.0000	-1.9824	0.5057	-0.0030	0.1385	-0.0223
18P	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0082	0.1365	-0.0122
19P	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0116	0.1364	-0.0045
20P	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0150	0.1375	-0.0033
21P	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0193	0.1385	-0.0044
22P	0.0000	0.7993	-0.3174	-0.0000	-0.7993	0.3174	-0.0055	0.1256	-0.0120
24P	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0040	0.1133	-0.0112
25P	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0072	0.1122	-0.0023
26P	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0108	0.1102	-0.0034
27P	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0137	0.1103	-0.0069
28P	0.0000	2.0019	-0.5477	-0.0000	-2.0019	0.5477	0.0009	0.1091	-0.0202
29P	0.0000	0.0689	-0.1097	0.0000	-0.0689	0.1097	-0.0028	0.1076	-0.0108
30P	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0053	0.1075	-0.0033
31P	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0074	0.1087	-0.0035
32P	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0107	0.1097	-0.0069
33P	0.0000	0.9993	-0.5086	0.0000	-0.9993	0.5086	0.0002	0.0614	-0.0059
45P	0.0000	0.3493	-0.2789	7.9530	7.5228	-54.8699	0.0000	0.0000	0.0000
1X	0.0000	1.3914	-0.3217	-0.0000	-1.3914	0.3217	-0.0520	0.1756	-0.0029
2X	7.7310	7.8474	-1.4587	-7.7310	-7.8474	1.4587	-0.0474	0.1663	0.0012
2XY	-7.7310	7.8474	-1.4587	7.7310	-7.8474	1.4587	-0.0492	0.1714	-0.0036
2Y	4.7230	4.5404	-0.3067	-4.7230	-4.5404	0.3067	-0.0173	0.1700	-0.0157
3X	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0435	0.1653	-0.0056
3XY	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0437	0.1703	-0.0105
3Y	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0225	0.1693	-0.0109
4X	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0398	0.1643	-0.0075
4XY	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0399	0.1692	-0.0119
4Y	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0277	0.1686	-0.0108

5Y	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0338	0.1689	-0.0118
6X	-0.7380	1.9824	-0.5057	0.7380	-1.9824	0.5057	-0.0512	0.1625	0.0074
7X	-5.6270	-5.5866	0.0563	5.6270	5.5866	-0.0563	-0.0442	0.1599	0.0014
7XY	5.6270	-5.5866	0.0563	-5.6270	5.5866	-0.0563	-0.0433	0.1648	-0.0034
7Y	-2.9130	-2.6976	-0.7017	2.9130	2.6976	0.7017	-0.0156	0.1655	-0.0157
8X	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0399	0.1604	-0.0054
8XY	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0395	0.1652	-0.0103
8Y	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0197	0.1657	-0.0109
9X	8.2240	1.0164	-0.2867	-8.2240	-1.0164	0.2867	-0.0349	0.1610	-0.0076
9XY	-8.9620	1.0164	-0.2867	8.9620	-1.0164	0.2867	-0.0363	0.1658	-0.0120
9Y	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0241	0.1662	-0.0108
10Y	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0294	0.1666	-0.0117
11X	0.0000	0.7364	-0.2237	-0.0000	-0.7364	0.2237	-0.0385	0.1513	0.0016
11XY	0.0000	0.3934	-0.1457	-0.0000	-0.3934	0.1457	-0.0387	0.1556	-0.0032
11Y	0.0000	0.5034	-0.1847	-0.0000	-0.5034	0.1847	-0.0131	0.1584	-0.0156
13X	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0337	0.1418	0.0011
13XY	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0335	0.1456	-0.0036
13Y	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0104	0.1461	-0.0146
14X	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0305	0.1411	-0.0061
14XY	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0306	0.1448	-0.0111
14Y	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0142	0.1452	-0.0057
15X	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0280	0.1399	-0.0058
15XY	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0281	0.1435	-0.0106
15Y	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0185	0.1436	-0.0064
16Y	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0232	0.1436	-0.0085
17X	-0.7380	1.9824	-0.5057	0.7380	-1.9824	0.5057	-0.0345	0.1394	0.0041
18X	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0287	0.1372	0.0011
18XY	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0289	0.1408	-0.0034
18Y	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0081	0.1401	-0.0142
19X	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0262	0.1372	-0.0054
19XY	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0258	0.1406	-0.0104
19Y	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0114	0.1401	-0.0066
20X	8.2240	1.0164	-0.2867	-8.2240	-1.0164	0.2867	-0.0226	0.1378	-0.0059
20XY	-8.9620	1.0164	-0.2867	8.9620	-1.0164	0.2867	-0.0239	0.1413	-0.0107
20Y	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0148	0.1411	-0.0064
21Y	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0190	0.1421	-0.0085
22X	0.0000	0.9423	-0.3644	-0.0000	-0.9423	0.3644	-0.0239	0.1277	0.0010
22XY	0.0000	0.5303	-0.2714	-0.0000	-0.5303	0.2714	-0.0233	0.1301	-0.0032
22Y	0.0000	0.6633	-0.3174	-0.0000	-0.6633	0.3174	-0.0065	0.1288	-0.0140
24X	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0188	0.1137	0.0001
24XY	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0187	0.1161	-0.0035
24Y	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0043	0.1156	-0.0128
25X	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0174	0.1124	-0.0104
25XY	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0175	0.1148	-0.0147
25Y	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0071	0.1144	-0.0038
26X	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0168	0.1104	-0.0101
26XY	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0169	0.1126	-0.0145
26Y	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0108	0.1123	-0.0063
27Y	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0138	0.1125	-0.0107
28X	-0.7380	2.0019	-0.5477	0.7380	-2.0019	0.5477	-0.0181	0.1083	0.0069
29X	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0147	0.1070	-0.0003
29XY	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0149	0.1088	-0.0032
29Y	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0025	0.1101	-0.0121
30X	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0137	0.1070	-0.0094
30XY	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0136	0.1087	-0.0137
30Y	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0047	0.1101	-0.0051
31X	8.2240	1.0359	-0.3287	-8.2240	-1.0359	0.3287	-0.0119	0.1082	-0.0102
31XY	-8.9620	1.0359	-0.3287	8.9620	-1.0359	0.3287	-0.0129	0.1101	-0.0146
31Y	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0073	0.1112	-0.0064

32Y	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0094	0.1120	-0.0107
33X	0.0000	1.1223	-0.5486	-0.0000	-1.1223	0.5486	-0.0063	0.0665	-0.0036
33XY	0.0000	0.7703	-0.4686	0.0000	-0.7703	0.4686	-0.0057	0.0696	-0.0073
33Y	0.0000	0.8833	-0.5086	-0.0000	-0.8833	0.5086	-0.0009	0.0642	-0.0071
45X	0.0000	0.3493	-0.2789	-10.1940	24.6446	52.6151	0.0000	0.0000	0.0000
45XY	0.0000	0.3493	-0.2789	6.0795	21.4599	30.8727	0.0000	0.0000	0.0000
45Y	0.0000	0.3493	-0.2789	-8.2660	8.2091	-59.8855	0.0000	0.0000	0.0000
34S	0.0000	0.8819	-0.2947	-0.0000	-0.8819	0.2947	-0.0118	0.0935	-0.0001
36S	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0112	0.0796	-0.0015
38S	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0082	0.0693	-0.0025
39S	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0065	0.0691	-0.0070
40S	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0059	0.0682	-0.0046
41S	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0041	0.0680	-0.0024
42S	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0046	0.0665	-0.0054
43S	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0031	0.0664	-0.0042
44S	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0016	0.0662	-0.0020
46S	0.0000	2.0093	-0.6559	0.0000	-2.0093	0.6559	-0.0040	0.0600	-0.0047
47S	0.0000	0.3493	-0.2789	-0.0000	-0.3493	0.2789	-0.0027	0.0585	-0.0196
48S	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0077	0.1414	-0.0049
49S	0.0000	0.3493	-0.2789	-0.0000	-0.3493	0.2789	-0.0051	0.0507	-0.0046
50S	0.0000	0.3493	-0.2789	-0.0000	-0.3493	0.2789	-0.0016	0.2982	-0.0385
9XF0.50S	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0356	0.1635	-0.0097
20XF0.50S	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0233	0.1396	-0.0082
31XF0.50S	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0124	0.1087	-0.0123
i0.50E85S	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0376	0.1636	-0.0313
i0.50E70S	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0246	0.1397	-0.0305
i0.50E55S	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0130	0.1088	-0.0363
34X	0.0000	0.7409	-0.2487	-0.0000	-0.7409	0.2487	-0.0011	0.0962	-0.0101
34XY	0.0000	0.6069	-0.2487	0.0000	-0.6069	0.2487	-0.0025	0.1000	-0.0115
34Y	0.0000	0.4759	-0.2017	-0.0000	-0.4759	0.2017	-0.0120	0.0930	-0.0034
36X	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0012	0.0817	-0.0088
36XY	0.0000	0.0689	-0.1097	0.0000	-0.0689	0.1097	-0.0011	0.0850	-0.0101
36Y	0.0000	0.0689	-0.1097	0.0000	-0.0689	0.1097	-0.0083	0.0802	-0.0051
38X	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0016	0.0687	-0.0075
38XY	0.0000	0.0689	-0.1097	0.0000	-0.0689	0.1097	0.0003	0.0712	-0.0088
38Y	0.0000	0.0689	-0.1097	0.0000	-0.0689	0.1097	-0.0073	0.0718	-0.0062
39X	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0016	0.0684	0.0002
39XY	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0018	0.0709	-0.0008
39Y	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0068	0.0716	-0.0103
40X	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0022	0.0678	0.0003
40XY	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0033	0.0703	-0.0011
40Y	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0053	0.0707	-0.0074
41Y	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0042	0.0705	-0.0045
42X	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0015	0.0629	-0.0012
42XY	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0015	0.0659	-0.0024
42Y	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0047	0.0697	-0.0093
43X	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0021	0.0644	0.0003
43XY	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0013	0.0674	-0.0015
43Y	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0030	0.0696	-0.0079
44Y	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0017	0.0695	-0.0050
46X	0.0000	1.7203	-0.5619	-0.0000	-1.7203	0.5619	0.0004	0.0595	-0.0018
46XY	0.0000	1.4463	-0.5619	0.0000	-1.4463	0.5619	0.0009	0.0629	-0.0027
46Y	0.0000	1.1793	-0.4669	-0.0000	-1.1793	0.4669	-0.0020	0.0632	-0.0077
47Y	0.0000	0.3493	-0.2789	-0.0000	-0.3493	0.2789	-0.0026	0.0624	-0.0222
48X	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0006	0.1793	-0.0085
49X	0.0000	0.3493	-0.2789	-0.0000	-0.3493	0.2789	-0.0064	0.0541	-0.0012
49XY	0.0000	0.3493	-0.2789	-0.0000	-0.3493	0.2789	0.0083	0.0572	-0.0019
49Y	0.0000	0.3493	-0.2789	-0.0000	-0.3493	0.2789	0.0019	0.0535	-0.0072
50X	0.0000	0.3493	-0.2789	0.0000	-0.3493	0.2789	0.0010	0.4106	0.0531

9XF0.50X	0.0000	1.9824	-0.5057	-0.0000	-1.9824	0.5057	-0.0242	0.1648	-0.0092
20XF0.50X	0.0000	1.9824	-0.5057	-0.0000	-1.9824	0.5057	-0.0149	0.1403	-0.0049
31XF0.50X	0.0000	2.0019	-0.5477	-0.0000	-2.0019	0.5477	-0.0074	0.1110	-0.0050
i0.50E85X	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0220	0.1637	-0.0710
i0.50E70X	0.0000	0.0494	-0.0677	-0.0000	-0.0494	0.0677	-0.0132	0.1390	-0.0737
i0.50E55X	0.0000	0.0689	-0.1097	-0.0000	-0.0689	0.1097	-0.0062	0.1095	-0.0809

Crossing Diagonal Check for Load Case "NESC Extreme" (RLOUT controls):

Comp. Member Label	Tens. Member Label	Connect Leg for Comp. Member	Force In Comp. Member (kips)	Force In Tens. Member (kips)	Original Supported L/R Cap. (kips)	RLX	RLY	RLZ	L/R	KL/R	Curve No.	Alternate Unsupported L/R Cap. (kips)	RLOUT	L/R	KL/R	Curve No.
g19P	g19Y	Long only	-2.21	-0.44	19.93	0.750	0.500	0.500	108.51	111.38	2	13.86	1.000	139.33	139.33	4
g19Y	g19P	Long only	-0.44	-2.21	19.93	0.750	0.500	0.500	108.51	111.38	2	13.86	1.000	139.33	139.33	4
g20X	g20XY	Long only	-1.34	-1.02	19.93	0.750	0.500	0.500	108.51	111.38	2	13.86	1.000	139.33	139.33	4
g20XY	g20X	Long only	-1.02	-1.34	19.93	0.750	0.500	0.500	108.51	111.38	2	13.86	1.000	139.33	139.33	4
g21X	g21XY	Long only	-0.55	-0.48	19.93	0.750	0.500	0.500	108.51	111.38	2	13.86	1.000	139.33	139.33	4
g21XY	g21X	Long only	-0.48	-0.55	19.93	0.750	0.500	0.500	108.51	111.38	2	13.86	1.000	139.33	139.33	4
g23X	g23XY	Long only	-0.90	-0.45	15.14	0.750	0.500	0.500	107.68	110.76	2	11.88	1.000	137.52	130.78	6
g23XY	g23X	Long only	-0.45	-0.90	15.14	0.750	0.500	0.500	107.68	110.76	2	11.88	1.000	137.52	130.78	6
g24X	g24XY	Long only	-1.18	-1.04	15.14	0.750	0.500	0.500	107.68	110.76	2	11.88	1.000	137.52	130.78	6
g24XY	g24X	Long only	-1.04	-1.18	15.14	0.750	0.500	0.500	107.68	110.76	2	11.88	1.000	137.52	130.78	6
g26P	g26Y	Long only	-1.19	-0.52	10.09	0.777	0.554	0.554	148.68	141.89	5	8.84	1.000	171.37	151.59	6
g26Y	g26P	Long only	-0.52	-1.19	10.09	0.777	0.554	0.554	148.68	141.89	5	8.84	1.000	171.37	151.59	6
g104X	g104XY	Long only	-0.08	-0.11	11.19	0.500	0.500	0.500	125.34	125.34	4	5.27	1.000	183.46	183.46	4
g104XY	g104X	Long only	-0.11	-0.08	11.19	0.500	0.500	0.500	125.34	125.34	4	5.27	1.000	183.46	183.46	4
g104Y	g104P	Long only	-0.84	0.17	11.19	0.500	0.500	0.500	125.34	125.34	4	5.27	1.000	183.46	183.46	4
g106X	g106XY	Long only	-1.73	-1.33	8.38	0.500	0.500	0.500	145.53	145.53	4	3.91	1.000	213.01	213.01	4
g106XY	g106X	Long only	-1.33	-1.73	8.38	0.500	0.500	0.500	145.53	145.53	4	3.91	1.000	213.01	213.01	4
g109X	g109XY	Long only	-2.27	-1.81	8.38	0.500	0.500	0.500	145.53	145.53	4	3.91	1.000	213.01	213.01	4
g109XY	g109X	Long only	-1.81	-2.27	8.38	0.500	0.500	0.500	145.53	145.53	4	3.91	1.000	213.01	213.01	4
g110X	g110XY	Long only	-0.61	-0.76	11.19	0.500	0.500	0.500	125.34	125.34	4	5.27	1.000	183.46	183.46	4
g110XY	g110X	Long only	-0.76	-0.61	11.19	0.500	0.500	0.500	125.34	125.34	4	5.27	1.000	183.46	183.46	4
g112X	g112XY	Long only	-2.95	-2.48	8.38	0.500	0.500	0.500	145.53	145.53	4	3.91	1.000	213.01	213.01	4
g112XY	g112X	Long only	-2.48	-2.95	8.38	0.500	0.500	0.500	145.53	145.53	4	3.91	1.000	213.01	213.01	4
g132P	g132Y	Long only	-0.52	-0.71	4.27	0.500	0.500	0.500	203.89	203.89	4	1.99	1.000	298.41	298.41	4
g132X	g132XY	Long only	-1.24	-1.06	4.27	0.500	0.500	0.500	203.89	203.89	4	1.99	1.000	298.41	298.41	4
g132XY	g132X	Long only	-1.06	-1.24	4.27	0.500	0.500	0.500	203.89	203.89	4	1.99	1.000	298.41	298.41	4
g132Y	g132P	Long only	-0.71	-0.52	4.27	0.500	0.500	0.500	203.89	203.89	4	1.99	1.000	298.41	298.41	4
g133P	g133Y	Long only	-0.68	-0.95	2.44	0.500	0.500	0.500	269.85	269.85	4	1.14	1.000	394.96	394.96	4
g133Y	g133P	Long only	-0.95	-0.68	2.44	0.500	0.500	0.500	269.85	269.85	4	1.14	1.000	394.96	394.96	4
g134P	g134Y	Long only	-0.36	-0.14	3.23	0.500	0.500	0.500	234.45	234.45	4	1.51	1.000	343.15	343.15	4
g134Y	g134P	Long only	-0.14	-0.36	3.23	0.500	0.500	0.500	234.45	234.45	4	1.51	1.000	343.15	343.15	4
g142X	g143X	Long only	-9.98	1.02	77.88	0.500	0.500	0.500	46.16	64.62	2	67.39	1.000	69.59	94.80	3
g142XY	g143XY	Long only	-11.35	0.83	77.88	0.500	0.500	0.500	46.16	64.62	2	67.39	1.000	69.59	94.80	3

Summary of Clamp Capacities and Usages for Load Case "NESC Extreme":

Clamp Label	Force (kips)	Input Holding Capacity (kips)	Factored Holding Capacity (kips)	Usage %
1	1.428	50.00	50.00	2.86

2	0.888	50.00	50.00	1.78
3	2.175	50.00	50.00	4.35
4	2.046	50.00	50.00	4.09
5	2.175	50.00	50.00	4.35
6	2.046	50.00	50.00	4.09
7	2.203	50.00	50.00	4.41
8	2.076	50.00	50.00	4.15
9	0.084	50.00	50.00	0.17
10	2.046	50.00	50.00	4.09
11	0.084	50.00	50.00	0.17
12	2.046	50.00	50.00	4.09
13	0.130	50.00	50.00	0.26
14	2.076	50.00	50.00	4.15
15	6.559	50.00	50.00	13.12
16	11.112	50.00	50.00	22.22
17	11.112	50.00	50.00	22.22
18	6.559	50.00	50.00	13.12
19	4.032	50.00	50.00	8.06
20	7.929	50.00	50.00	15.86
21	7.929	50.00	50.00	15.86
22	4.032	50.00	50.00	8.06
23	0.770	50.00	50.00	1.54
24	0.536	50.00	50.00	1.07
25	1.010	50.00	50.00	2.02
26	0.735	50.00	50.00	1.47
27	0.930	50.00	50.00	1.86
28	0.656	50.00	50.00	1.31
29	1.249	50.00	50.00	2.50
30	1.019	50.00	50.00	2.04
31	2.114	50.00	50.00	4.23
32	1.552	50.00	50.00	3.10
33	0.644	50.00	50.00	1.29
34	0.860	50.00	50.00	1.72
35	0.782	50.00	50.00	1.56
36	1.121	50.00	50.00	2.24
37	1.810	50.00	50.00	3.62
38	8.292	50.00	50.00	16.58
39	9.024	50.00	50.00	18.05
40	8.292	50.00	50.00	16.58
41	9.024	50.00	50.00	18.05
42	8.296	50.00	50.00	16.59
43	9.028	50.00	50.00	18.06
44	0.420	50.00	50.00	0.84
45	0.596	50.00	50.00	1.19
46	0.517	50.00	50.00	1.03
47	0.902	50.00	50.00	1.80
48	1.268	50.00	50.00	2.54

*** Overall summary for all load cases - Usage = Maximum Stress / Allowable Stress
Printed capacities do not include the strength factor entered for each load case.
The Group Summary reports on the member and load case that resulted in maximum usage
which may not necessarily be the same as that which produces maximum force.

Group Summary (Compression Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage Cont-rol %	Max Use In Comp. %	Comp. Control Member	Comp. Force (kips)	Comp. Control Load Case	L/R Capacity (kips)	Comp. Connect. Shear Capacity (kips)	Comp. Connect. Bearing Capacity (kips)	RLX	RLY	RLZ	L/R KL/R Comp.	Length Member (ft)	Curve No.	No. Of Bolts
Leg1	L4x4x5/16	SAE	4X4X0.3125	33.0	20.54	Comp 20.54	g3XY	-13.568	NESC Ext	66.065	0.000	0.000	1.000	1.000	1.000	75.85	75.85	5.000	1 0
Leg2	L5x5x7/16	SAE	5X5X0.4375	33.0	21.87	Comp 21.87	g6Y	-26.951	NESC Ext	123.217	0.000	0.000	1.000	1.000	1.000	60.85	60.85	5.000	1 0
Leg3	L6x6x7/16	SAE	6X6X0.4375	33.0	35.96	Tens 32.21	g9XY	-50.488	NESC Ext	156.756	0.000	0.000	1.000	1.000	1.000	46.09	46.09	4.570	1 0
Leg4	L6x6x7/16	SAE	6X6X0.4375	33.0	39.43	Comp 39.43	g12XY	-58.987	NESC Ext	149.604	190.400	413.437	0.500	0.500	0.500	60.08	60.08	11.917	1 14
Leg5	L6x6x7/16	SAE	6X6X0.4375	33.0	42.66	Comp 42.66	g14XY	-63.344	NESC Ext	148.474	190.400	413.437	0.330	0.330	0.330	62.01	62.01	18.633	1 14
M1	L2.5x2.5x3/16	SAE	2.5X2.5X0.1875	33.0	96.00	Comp 96.00	g123Y	-6.913	NESC Ext	7.201	13.600	12.656	1.000	1.000	1.000	189.34	189.34	7.810	4 1
M2	L3x3x1/4	SAE	3X3X0.25	33.0	74.96	Comp 74.96	g94P	-20.390	NESC Ext	32.243	27.200	33.750	1.000	1.000	1.000	91.22	105.61	4.500	3 2
Diag1	L2.5x2x3/16	SAU	2.5X2X0.1875	33.0	5.89	Comp 5.89	g18P	-0.346	NESC Ext	5.871	13.600	12.656	1.000	1.000	1.000	198.72	198.72	7.071	4 1
Diag2	L2x2x1/4	SAE	2X2X0.25	33.0	19.54	Tens 16.23	g19P	-2.207	NESC Ext	13.859	13.600	16.875	0.750	1.000	0.500	139.33	139.33	7.071	4 1
Diag3	L2x2x3/16	SAE	2X2X0.1875	33.0	15.09	Comp 15.09	g22P	-2.285	NESC Ext	15.145	27.200	25.312	0.750	0.500	0.500	107.68	110.76	7.071	2 2
Diag4	L2x2x3/16	SAE	2X2X0.1875	33.0	11.69	Tens 4.61	g27X	-0.320	NESC Hea	6.929	27.200	25.312	1.000	1.000	1.000	187.22	171.26	6.147	5 2
Diag5	L2.5x2.5x3/16	SAE	2.5X2.5X0.1875	33.0	9.83	Tens 4.98	g28XY	-0.439	NESC Hea	8.818	27.200	25.312	1.000	1.000	1.000	187.02	171.11	7.715	5 2
Diag6	L2.5x2x3/16	SAU	2.5X2X0.1875	33.0	27.61	Comp 27.61	g42XY	-2.147	NESC Ext	7.778	27.200	25.312	1.000	1.000	1.000	189.04	172.65	6.727	5 2
Horz1	L2x2x3/16	SAE	2X2X0.1875	33.0	90.14	Tens 49.77	g32X	-4.361	NESC Ext	8.763	13.600	12.656	1.000	1.000	1.000	152.28	152.28	5.000	4 1
Horz2	L2.5x2x3/16	SAU	2.5X2X0.1875	33.0	33.01	Comp 33.01	g33P	-3.876	NESC Ext	11.742	13.600	12.656	1.000	1.000	1.000	140.52	140.52	5.000	4 1
Horz3	L3x3x3/16	SAE	3X3X0.1875	33.0	14.83	Tens 9.47	g39P	-1.444	NESC Ext	15.252	27.200	25.312	0.500	1.000	0.500	150.16	143.02	11.750	5 2
Horz4	L3x3x1/4	SAE	3X3X0.25	33.0	42.44	Comp 42.44	g40P	-5.399	NESC Ext	12.723	27.200	33.750	0.500	1.000	0.500	198.67	179.99	15.397	5 2
Diag7	L3x3x1/4	SAE	3X3X0.25	33.0	88.74	Comp 88.74	g45XY	-12.068	NESC Ext	22.168	13.600	16.875	1.000	1.000	1.000	136.35	136.35	6.727	4 1
Diag8	L3.5x3x1/4	SAU	3.5X3X0.25	33.0	50.60	Comp 50.60	g48XY	-14.113	NESC Ext	27.892	40.800	50.625	1.000	1.000	1.000	127.93			

126.08 6.727 5 3
Diag9 L3.5x3.5x1/4 SAE 3.5X3.5X0.25 33.0 51.65 Tens 47.12 g49XY -15.734NESC Ext 33.390 40.800 50.625 1.000 1.000 1.000 117.32
117.99 6.785 2 3
Diag10 L5x3.5x5/16 SAU 5X3.5X0.3125 33.0 60.58 Comp 60.58 g50Y -30.278NESC Ext 49.982 54.400 84.375 0.500 1.000 0.500 118.70
119.03 10.189 2 4
Diag11 L3.5x3x5/16 SAU 3.5X3X0.3125 33.0 64.85 Tens 0.00 g51Y 0.000 11.259 54.400 84.375 0.500 1.000 0.500 253.16
221.51 19.092 5 4
Diag12 L3x2.5x5/16 SAU 3X2.5X0.3125 33.0 81.81 Tens 0.00 g52Y 0.000 9.319 40.800 63.281 0.250 0.500 0.250 255.20
223.06 31.645 5 3
M3 L2.5x2x3/16 SAU 2.5X2X0.1875 33.0 6.66 Tens 3.54 g60X -0.415NESC Hea 11.742 13.600 12.656 1.000 1.000 1.000 140.52
140.52 5.000 4 1
M4 L2x2x3/16 SAE 2X2X0.1875 33.0 26.52 Comp 26.52 g102X -2.324NESC Ext 8.763 13.600 12.656 1.000 1.000 1.000 152.28
152.28 5.000 4 1
M5 L2x1.5x3/16 SAU 2X1.5X0.1875 33.0 55.36 Tens 26.19 g75P -0.739NESC Ext 2.824 13.600 12.656 1.000 1.000 1.000 250.69
250.69 6.727 4 1
M6 L2x1.5x3/16 SAU 2X1.5X0.1875 33.0 83.07 Cross 83.07 g133Y -0.945NESC Ext 1.138 13.600 12.656 0.500 1.000 0.500 394.96
394.96 14.482 4 1
M7 L3x3x3/16 SAE 3X3X0.1875 33.0 82.16 Comp 82.16 g124XY -10.399NESC Ext 17.007 13.600 12.656 1.000 1.000 1.000 135.44
135.44 6.727 4 1
M8 L2.5x2.5x1/4 SAE 2.5X2.5X0.25 33.0 97.72 Comp 97.72 g125Y -10.505NESC Ext 9.348 13.600 16.875 1.000 1.000 1.000 190.88
190.88 7.810 4 1
M9 L3x2.5x1/4 SAU 3X2.5X0.25 33.0 48.86 Tens 42.60 g120Y -5.793NESC Ext 26.686 13.600 16.875 1.000 1.000 1.000 113.64
115.23 5.000 2 1
M10 L4x3.5x5/16 SAU 4X3.5X0.3125 33.0 74.53 Tens 61.69 g146P -16.781NESC Ext 55.895 27.200 42.187 1.000 1.000 1.000 83.48
92.61 5.078 2 2
M11 L3.5x3.5x1/4 SAE 3.5X3.5X0.25 33.0 65.01 Comp 65.01 g145P -18.001NESC Ext 27.690 40.800 50.625 1.000 1.000 1.000 135.92
132.17 7.861 5 3
M12 L6x4x5/16 SAU 6X4X0.3125 33.0 16.85 Cross 16.85 g142XY -11.353NESC Ext 67.389 81.600 126.562 0.500 1.000 0.500 69.59
94.80 6.785 3 6
M13 L5x5x5/16 SAE 5X5X0.3125 33.0 0.00 0.00 0.000 0.000 0.000 0.000 0.000 0.000 0.00
0.00 0.000 0 0
M14 L6x6x3/8 SAE 6X6X0.375 33.0 23.40 Comp 23.40 g138Y -27.033NESC Ext 115.523 0.000 0.000 1.000 1.000 1.000 45.38
82.69 4.500 3 0
Hanger Bar 2x3/16 Bar 2x3/16 33.0 18.80 Tens 0.00 g154Y 0.000 8.010 27.200 25.312 1.000 1.000 1.000 107.50
110.62 8.958 2 2
M15 L3x3x1/4 SAE 3X3X0.25 33.0 83.38 Comp 83.38 g127Y -15.431NESC Ext 18.506 27.200 33.750 1.000 1.000 1.000 158.32
149.24 7.810 5 2
Diag13 L2.5x2x3/16 SAU 2.5X2X0.1875 33.0 31.88 Tens 0.00 g31Y 0.000 3.701 27.200 25.312 0.330 0.670 0.330 290.91
250.28 21.710 5 2
Diag14 L2x2x3/16 SAE 2X2X0.1875 33.0 88.78 Comp 88.78 g29XY -3.187NESC Ext 3.590 27.200 25.312 0.786 0.500 0.500 274.71
237.93 17.970 5 2
M16 L3x3x3/16 SAE 3X3X0.1875 33.0 22.05 Comp 22.05 g155P -2.834NESC Ext 12.854 27.200 25.312 0.500 0.500 0.500 166.92
155.79 16.580 5 2
M17 L2x1.5x3/16 SAU 2X1.5X0.1875 33.0 51.40 Comp 51.40 g135XY -1.058NESC Hea 2.058 13.600 12.656 0.500 0.500 0.500 293.63
293.63 15.758 4 1
M18 L2x2x3/16 SAE 2X2X0.1875 33.0 94.92 Tens 7.73 Fg99157X -0.978NESC Ext 16.935 13.600 12.656 1.000 1.000 1.000 76.14
98.07 2.500 3 1
M19 L5x5x5/16 SAE 5X5X0.3125 33.0 48.42 Comp 48.42 g137XY -32.926NESC Ext 78.093 68.000 105.469 1.000 1.000 1.000 54.33
87.16 4.500 3 5

Group Summary (Tension Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength	Max Usage Cont-rol	Max Tension Use In Tens.	Tension Control Member	Tension Force Case	Net Section	Tension Connect. Shear Capacity	Tension Connect. Bearing Capacity	Tension Connect. Rupture Capacity	Length Tens.	No. Of Member	No. Of Bolts	No. Hole Diameter Holes

				(ksi)	%		%		(kips)		(kips)	(kips)	(kips)	(kips)	(ft)		(in)
Leg1	L4x4x5/16	SAE	4X4X0.3125	33.0	20.54	Comp	9.71	g3P	6.817	NESC Ext	70.176	0.000	0.000	0.000	5.000	0	1.000 0.875
Leg2	L5x5x7/16	SAE	5X5X0.4375	33.0	21.87	Comp	18.23	g6X	20.536	NESC Ext	112.674	0.000	0.000	0.000	5.000	0	2.000 0.875
Leg3	L6x6x7/16	SAE	6X6X0.4375	33.0	35.96	Tens	35.96	g10P	48.146	NESC Ext	133.882	190.400	413.437	382.812	4.570	14	2.620 0.875
Leg4	L6x6x7/16	SAE	6X6X0.4375	33.0	39.43	Comp	30.48	g11P	40.808	NESC Ext	133.882	190.400	413.437	401.952	5.078	14	2.620 0.875
Leg5	L6x6x7/16	SAE	6X6X0.4375	33.0	42.66	Comp	17.08	g13P	24.210	NESC Ext	141.714	0.000	0.000	0.000	6.211	0	2.000 0.875
M1	L2.5x2.5x3/16	SAE	2.5X2.5X0.1875	33.0	96.00	Comp	67.80	g123XY	7.126	NESC Ext	21.917	13.600	12.656	10.512	7.810	1	1.000 0.875
M2	L3x3x1/4	SAE	3X3X0.25	33.0	74.96	Comp	73.74	g94X	20.058	NESC Ext	36.271	27.200	33.750	31.250	4.500	2	1.000 0.875
Diag1	L2.5x2x3/16	SAU	2.5X2X0.1875	33.0	5.89	Comp	0.00	g18P	0.000		19.184	13.600	12.656	10.934	7.071	1	1.000 0.875
Diag2	L2x2x1/4	SAE	2X2X0.25	33.0	19.54	Tens	19.54	g20Y	2.134	NESC Ext	21.421	13.600	16.875	10.922	7.071	1	1.000 0.875
Diag3	L2x2x3/16	SAE	2X2X0.1875	33.0	15.09	Comp	14.91	g23Y	2.418	NESC Ext	16.214	27.200	25.312	17.473	7.071	2	1.000 0.875
Diag4	L2x2x3/16	SAE	2X2X0.1875	33.0	11.69	Tens	11.69	g27Y	1.896	NESC Ext	16.214	27.200	25.312	19.301	6.147	2	1.000 0.875
Diag5	L2.5x2.5x3/16	SAE	2.5X2.5X0.1875	33.0	9.83	Tens	9.83	g28P	2.153	NESC Ext	21.917	27.200	25.312	23.437	7.715	2	1.000 0.875
Diag6	L2.5x2x3/16	SAU	2.5X2X0.1875	33.0	27.61	Comp	16.04	g42P	3.077	NESC Ext	19.184	27.200	25.312	24.609	6.727	2	1.000 0.875
Horz1	L2x2x3/16	SAE	2X2X0.1875	33.0	90.14	Tens	90.14	g32P	7.383	NESC Ext	16.214	13.600	12.656	8.191	5.000	1	1.000 0.875
Horz2	L2.5x2x3/16	SAU	2.5X2X0.1875	33.0	33.01	Comp	20.89	g33X	2.016	NESC Ext	19.184	13.600	12.656	9.651	5.000	1	1.000 0.875
Horz3	L3x3x3/16	SAE	3X3X0.1875	33.0	14.83	Tens	14.83	g39X	3.195	NESC Ext	27.500	27.200	25.312	21.551	11.750	2	1.000 0.875
Horz4	L3x3x1/4	SAE	3X3X0.25	33.0	42.44	Comp	1.63	g40X	0.443	NESC Hea	36.271	27.200	33.750	28.734	15.397	2	1.000 0.875
Diag7	L3x3x1/4	SAE	3X3X0.25	33.0	88.74	Comp	78.37	g45P	10.659	NESC Ext	36.271	13.600	16.875	15.625	6.727	1	1.000 0.875
Diag8	L3.5x3x1/4	SAU	3.5X3X0.25	33.0	50.60	Comp	45.59	g48Y	17.415	NESC Ext	39.835	40.800	50.625	38.203	6.727	3	1.000 0.875
Diag9	L3.5x3.5x1/4	SAE	3.5X3.5X0.25	33.0	51.65	Tens	51.65	g49Y	18.764	NESC Ext	43.696	40.800	50.625	36.328	6.785	3	1.000 0.875
Diag10	L5x3.5x5/16	SAU	5X3.5X0.3125	33.0	60.58	Comp	45.35	g50XY	24.264	NESC Ext	53.502	54.400	84.375	73.529	10.189	4	1.060 0.875
Diag11	L3.5x3x5/16	SAU	3.5X3X0.3125	33.0	64.85	Tens	64.85	g51XY	31.908	NESC Ext	49.200	54.400	84.375	60.644	19.092	4	1.000 0.875
Diag12	L3x2.5x5/16	SAU	3X2.5X0.3125	33.0	81.81	Tens	81.81	g52P	32.717	NESC Ext	39.993	40.800	63.281	47.988	31.645	3	1.000 0.875
M3	L2.5x2x3/16	SAU	2.5X2X0.1875	33.0	6.66	Tens	6.66	g61P	0.489	NESC Ext	19.184	13.600	12.656	7.348	5.000	1	1.000 0.875
M4	L2x2x3/16	SAE	2X2X0.1875	33.0	26.52	Comp	4.62	g119XY	0.379	NESC Ext	16.214	13.600	12.656	8.191	5.000	1	1.000 0.875
M5	L2x1.5x3/16	SAU	2X1.5X0.1875	33.0	55.36	Tens	55.36	g111P	4.535	NESC Ext	13.541	13.600	12.656	8.191	3.363	1	1.000 0.875
M6	L2x1.5x3/16	SAU	2X1.5X0.1875	33.0	83.07	Cross	36.54	g112P	2.993	NESC Ext	13.541	13.600	12.656	8.191	7.810	1	1.000 0.875
M7	L3x3x3/16	SAE	3X3X0.1875	33.0	82.16	Comp	71.52	g124Y	8.381	NESC Ext	27.500	13.600	12.656	11.719	6.727	1	1.000

M8	L2.5x2.5x1/4	SAE	2.5X2.5X0.25	33.0	97.72	Comp	78.90	g125XY	10.731	NESC Ext	28.846	13.600	16.875	14.016	7.810	1	1.000
0.875																	
M9	L3x2.5x1/4	SAU	3X2.5X0.25	33.0	48.86	Tens	48.86	g120XY	6.645	NESC Ext	32.410	13.600	16.875	15.625	5.000	1	1.000
0.875																	
M10	L4x3.5x5/16	SAU	4X3.5X0.3125	33.0	74.53	Tens	74.53	g146XY	20.271	NESC Ext	58.704	27.200	42.187	41.016	5.078	2	1.000
0.875																	
M11	L3.5x3.5x1/4	SAE	3.5X3.5X0.25	33.0	65.01	Comp	46.61	g145X	17.895	NESC Ext	40.448	40.800	50.625	38.391	7.861	3	1.500
0.875																	
M12	L6x4x5/16	SAU	6X4X0.3125	33.0	16.85	Cross	11.53	g142P	8.974	NESC Ext	77.809	81.600	126.562	117.187	6.785	6	1.500
0.875																	
M13	L5x5x5/16	SAE	5X5X0.3125	33.0	0.00		0.00		0.000		0.000	0.000	0.000	0.000	0.000	0	0.000
0																	
M14	L6x6x3/8	SAE	6X6X0.375	33.0	23.40	Comp	13.17	g138XY	18.955	NESC Ext	143.880	0.000	0.000	0.000	4.500	0	0.000
0.875																	
Hanger	Bar 2x3/16	Bar	2x3/16	33.0	18.80	Tens	18.80	g154XY	1.178	NESC Hea	6.265	27.200	25.312	16.559	8.958	2	1.000
0.875																	
M15	L3x3x1/4	SAE	3X3X0.25	33.0	83.38	Comp	75.46	g121XY	10.262	NESC Ext	36.271	13.600	16.875	15.625	5.000	1	1.000
0.875																	
Diag13	L2.5x2x3/16	SAU	2.5X2X0.1875	33.0	31.88	Tens	31.88	g30Y	6.116	NESC Ext	19.184	27.200	25.312	21.094	9.846	2	1.000
0.875																	
Diag14	L2x2x3/16	SAE	2X2X0.1875	33.0	88.78	Comp	3.32	g29Y	0.538	NESC Ext	16.214	27.200	25.312	19.301	17.970	2	1.000
0.875																	
M16	L3x3x3/16	SAE	3X3X0.1875	33.0	22.05	Comp	9.05	g155X	1.931	NESC Ext	27.500	27.200	25.312	21.340	16.580	2	1.000
0.875																	
M17	L2x1.5x3/16	SAU	2X1.5X0.1875	33.0	51.40	Comp	8.20	g157P	0.672	NESC Ext	13.541	13.600	12.656	8.191	22.627	1	1.000
0.875																	
M18	L2x2x3/16	SAE	2X2X0.1875	33.0	94.92	Tens	94.92	g99P	9.150	NESC Hea	16.214	13.600	12.656	9.640	2.500	1	1.000
0.875																	
M19	L5x5x5/16	SAE	5X5X0.3125	33.0	48.42	Comp	3.40	g137Y	2.233	NESC Ext	65.628	68.000	105.469	73.160	4.500	5	3.000
0.875																	

*** Maximum Stress Summary for Each Load Case

Summary of Maximum Usages by Load Case:

Load Case	Maximum Usage %	Element Label	Element Type
NESC Heavy	94.92	g99P	Angle
NESC Extreme	97.72	g125Y	Angle

Summary of Insulator Usages:

Insulator Label	Insulator Type	Maximum Usage %	Load Case	Weight (lbs)
1	Clamp	2.86	NESC Extreme	0.0
2	Clamp	2.10	NESC Heavy	0.0
3	Clamp	4.35	NESC Extreme	0.0
4	Clamp	4.09	NESC Extreme	0.0
5	Clamp	4.35	NESC Extreme	0.0
6	Clamp	4.09	NESC Extreme	0.0
7	Clamp	4.41	NESC Extreme	0.0

8	Clamp	4.15	NESC Extreme	0.0
9	Clamp	0.17	NESC Extreme	0.0
10	Clamp	4.09	NESC Extreme	0.0
11	Clamp	0.17	NESC Extreme	0.0
12	Clamp	4.09	NESC Extreme	0.0
13	Clamp	0.26	NESC Extreme	0.0
14	Clamp	4.15	NESC Extreme	0.0
15	Clamp	13.12	NESC Extreme	0.0
16	Clamp	22.22	NESC Extreme	0.0
17	Clamp	22.22	NESC Extreme	0.0
18	Clamp	13.12	NESC Extreme	0.0
19	Clamp	8.06	NESC Extreme	0.0
20	Clamp	15.86	NESC Extreme	0.0
21	Clamp	15.86	NESC Extreme	0.0
22	Clamp	8.06	NESC Extreme	0.0
23	Clamp	1.56	NESC Heavy	0.0
24	Clamp	1.19	NESC Heavy	0.0
25	Clamp	2.02	NESC Extreme	0.0
26	Clamp	1.47	NESC Extreme	0.0
27	Clamp	2.01	NESC Heavy	0.0
28	Clamp	1.56	NESC Heavy	0.0
29	Clamp	2.50	NESC Extreme	0.0
30	Clamp	2.04	NESC Extreme	0.0
31	Clamp	4.23	NESC Extreme	0.0
32	Clamp	3.10	NESC Heavy	0.0
33	Clamp	1.29	NESC Extreme	0.0
34	Clamp	1.72	NESC Extreme	0.0
35	Clamp	1.58	NESC Heavy	0.0
36	Clamp	2.24	NESC Extreme	0.0
37	Clamp	3.62	NESC Extreme	0.0
38	Clamp	23.17	NESC Heavy	0.0
39	Clamp	23.17	NESC Heavy	0.0
40	Clamp	23.17	NESC Heavy	0.0
41	Clamp	23.17	NESC Heavy	0.0
42	Clamp	23.17	NESC Heavy	0.0
43	Clamp	23.17	NESC Heavy	0.0
44	Clamp	0.96	NESC Heavy	0.0
45	Clamp	1.19	NESC Extreme	0.0
46	Clamp	1.29	NESC Heavy	0.0
47	Clamp	1.82	NESC Heavy	0.0
48	Clamp	2.61	NESC Heavy	0.0

Loads At Insulator Attachments For All Load Cases:

Load Case	Insulator Label	Insulator Type	Structure Attach Label	Structure Attach Load X (kips)	Structure Attach Load Y (kips)	Structure Attach Load Z (kips)	Structure Attach Load Res. (kips)
NESC Heavy	1	Clamp	1X	0.000	0.976	0.898	1.326
NESC Heavy	2	Clamp	1P	0.000	0.777	0.708	1.051
NESC Heavy	3	Clamp	6X	0.000	1.164	1.252	1.709
NESC Heavy	4	Clamp	6P	0.000	1.114	1.252	1.676
NESC Heavy	5	Clamp	17X	0.000	1.164	1.252	1.709
NESC Heavy	6	Clamp	17P	0.000	1.114	1.252	1.676
NESC Heavy	7	Clamp	28X	0.000	1.164	1.252	1.709
NESC Heavy	8	Clamp	28P	0.000	1.114	1.252	1.676
NESC Heavy	9	Clamp	9XF0.50S	0.000	0.000	0.031	0.031
NESC Heavy	10	Clamp	9XF0.50X	0.000	1.114	1.224	1.655

NESC Heavy	11	Clamp	20XF0.50S	0.000	0.000	0.031	0.031
NESC Heavy	12	Clamp	20XF0.50X	0.000	1.114	1.224	1.655
NESC Heavy	13	Clamp	31XF0.50S	0.000	0.000	0.031	0.031
NESC Heavy	14	Clamp	31XF0.50X	0.000	1.114	1.224	1.655
NESC Heavy	15	Clamp	2P	-1.713	1.630	1.059	2.591
NESC Heavy	16	Clamp	2X	1.690	1.782	1.761	3.022
NESC Heavy	17	Clamp	2XY	-1.690	1.805	1.765	3.038
NESC Heavy	18	Clamp	2Y	1.713	1.630	1.055	2.589
NESC Heavy	19	Clamp	7P	1.139	-1.073	1.195	1.969
NESC Heavy	20	Clamp	7X	-1.048	-0.939	1.377	1.969
NESC Heavy	21	Clamp	7XY	1.048	-0.963	1.363	1.970
NESC Heavy	22	Clamp	7Y	-1.139	-1.073	1.209	1.978
NESC Heavy	23	Clamp	11X	0.000	0.306	0.720	0.782
NESC Heavy	24	Clamp	11Y	0.000	0.149	0.576	0.595
NESC Heavy	25	Clamp	22X	0.000	0.362	0.878	0.949
NESC Heavy	26	Clamp	22Y	0.000	0.178	0.705	0.727
NESC Heavy	27	Clamp	34S	0.000	0.375	0.932	1.004
NESC Heavy	28	Clamp	34XY	0.000	0.176	0.761	0.781
NESC Heavy	29	Clamp	33X	0.000	0.489	1.121	1.223
NESC Heavy	30	Clamp	33Y	0.000	0.152	0.973	0.985
NESC Heavy	31	Clamp	46S	0.000	0.832	1.857	2.035
NESC Heavy	32	Clamp	46XY	0.000	0.359	1.510	1.552
NESC Heavy	33	Clamp	11P	0.000	0.182	0.576	0.604
NESC Heavy	34	Clamp	22P	0.000	0.218	0.705	0.738
NESC Heavy	35	Clamp	34X	0.000	0.215	0.761	0.791
NESC Heavy	36	Clamp	33P	0.000	0.186	0.973	0.991
NESC Heavy	37	Clamp	46X	0.000	0.439	1.510	1.573
NESC Heavy	38	Clamp	9X	11.550	0.557	0.665	11.583
NESC Heavy	39	Clamp	9XY	-11.550	0.557	0.665	11.583
NESC Heavy	40	Clamp	20X	11.550	0.557	0.665	11.583
NESC Heavy	41	Clamp	20XY	-11.550	0.557	0.665	11.583
NESC Heavy	42	Clamp	31X	11.550	0.557	0.665	11.583
NESC Heavy	43	Clamp	31XY	-11.550	0.557	0.665	11.583
NESC Heavy	44	Clamp	11XY	0.000	0.207	0.432	0.479
NESC Heavy	45	Clamp	22XY	0.000	0.243	0.533	0.586
NESC Heavy	46	Clamp	34Y	0.000	0.258	0.591	0.645
NESC Heavy	47	Clamp	33XY	0.000	0.387	0.826	0.912
NESC Heavy	48	Clamp	46Y	0.000	0.592	1.162	1.304
NESC Extreme	1	Clamp	1X	0.000	1.391	0.322	1.428
NESC Extreme	2	Clamp	1P	0.000	0.846	0.268	0.888
NESC Extreme	3	Clamp	6X	-0.738	1.982	0.506	2.175
NESC Extreme	4	Clamp	6P	0.000	1.982	0.506	2.046
NESC Extreme	5	Clamp	17X	-0.738	1.982	0.506	2.175
NESC Extreme	6	Clamp	17P	0.000	1.982	0.506	2.046
NESC Extreme	7	Clamp	28X	-0.738	2.002	0.548	2.203
NESC Extreme	8	Clamp	28P	0.000	2.002	0.548	2.076
NESC Extreme	9	Clamp	9XF0.50S	0.000	0.049	0.068	0.084
NESC Extreme	10	Clamp	9XF0.50X	0.000	1.982	0.506	2.046
NESC Extreme	11	Clamp	20XF0.50S	0.000	0.049	0.068	0.084
NESC Extreme	12	Clamp	20XF0.50X	0.000	1.982	0.506	2.046
NESC Extreme	13	Clamp	31XF0.50S	0.000	0.069	0.110	0.130
NESC Extreme	14	Clamp	31XF0.50X	0.000	2.002	0.548	2.076
NESC Extreme	15	Clamp	2P	-4.723	4.540	0.307	6.559
NESC Extreme	16	Clamp	2X	7.731	7.847	1.459	11.112
NESC Extreme	17	Clamp	2XY	-7.731	7.847	1.459	11.112
NESC Extreme	18	Clamp	2Y	4.723	4.540	0.307	6.559
NESC Extreme	19	Clamp	7P	2.913	-2.698	0.702	4.032
NESC Extreme	20	Clamp	7X	-5.627	-5.587	-0.056	7.929
NESC Extreme	21	Clamp	7XY	5.627	-5.587	-0.056	7.929

NESC Extreme	22	Clamp	7Y	-2.913	-2.698	0.702	4.032
NESC Extreme	23	Clamp	11X	0.000	0.736	0.224	0.770
NESC Extreme	24	Clamp	11Y	0.000	0.503	0.185	0.536
NESC Extreme	25	Clamp	22X	0.000	0.942	0.364	1.010
NESC Extreme	26	Clamp	22Y	0.000	0.663	0.317	0.735
NESC Extreme	27	Clamp	34S	0.000	0.882	0.295	0.930
NESC Extreme	28	Clamp	34XY	0.000	0.607	0.249	0.656
NESC Extreme	29	Clamp	33X	0.000	1.122	0.549	1.249
NESC Extreme	30	Clamp	33Y	0.000	0.883	0.509	1.019
NESC Extreme	31	Clamp	46S	0.000	2.009	0.656	2.114
NESC Extreme	32	Clamp	46XY	0.000	1.446	0.562	1.552
NESC Extreme	33	Clamp	11P	0.000	0.617	0.185	0.644
NESC Extreme	34	Clamp	22P	0.000	0.799	0.317	0.860
NESC Extreme	35	Clamp	34X	0.000	0.741	0.249	0.782
NESC Extreme	36	Clamp	33P	0.000	0.999	0.509	1.121
NESC Extreme	37	Clamp	46X	0.000	1.720	0.562	1.810
NESC Extreme	38	Clamp	9X	8.224	1.016	0.287	8.292
NESC Extreme	39	Clamp	9XY	-8.962	1.016	0.287	9.024
NESC Extreme	40	Clamp	20X	8.224	1.016	0.287	8.292
NESC Extreme	41	Clamp	20XY	-8.962	1.016	0.287	9.024
NESC Extreme	42	Clamp	31X	8.224	1.036	0.329	8.296
NESC Extreme	43	Clamp	31XY	-8.962	1.036	0.329	9.028
NESC Extreme	44	Clamp	11XY	0.000	0.393	0.146	0.420
NESC Extreme	45	Clamp	22XY	0.000	0.530	0.271	0.596
NESC Extreme	46	Clamp	34Y	0.000	0.476	0.202	0.517
NESC Extreme	47	Clamp	33XY	0.000	0.770	0.469	0.902
NESC Extreme	48	Clamp	46Y	0.000	1.179	0.467	1.268

Overturning Moments For User Input Concentrated Loads:

Moments are static equivalents based on central axis of 0,0 (i.e. a single pole).

Load Case	Total Tran. Load (kips)	Total Long. Load (kips)	Total Vert. Load (kips)	Transverse Overturning Moment (ft-k)	Longitudinal Overturning Moment (ft-k)	Torsional Moment (ft-k)
NESC Heavy	22.033	0.000	37.323	1517.441	9.821	4.519
NESC Extreme	47.155	-4.428	13.185	3243.556	-307.292	-46.401

*** Weight of structure (lbs):
Weight of Angles*Section DLF: 19198.2
Total: 19198.2

*** End of Report

CENTEK engineering
Centered on Solutions
63-2 North Branford Road
Branford, CT 06405
www.centekeng.com
P: (203) 488-0580
F: (203) 488-8587

Subject:	Foundation Analysis Tower # 1109
Location:	Norwalk, CT
Rev. 0: 10/27/16	Prepared by: T.J.L. Checked by: C.F.C. Job No. 16162.06

Foundation Analysis

Input Data:

Max. Reactions at Tower Leg:

Shear (Compression Leg) =	$Shear_{comp} := 11.9 \cdot 1.1 \cdot kips = 13.1 \cdot kips$	(User Input)
Shear (Uplift Leg) =	$Shear_{up} := 27.0 \cdot 1.1 \cdot kips = 29.7 \cdot kips$	(User Input)
Compression =	$Comp := 60.2 \cdot 1.1 \cdot kips = 66.2 \cdot kips$	(User Input)
Uplift =	$Uplift := 52.3 \cdot 1.1 \cdot kips = 57.5 \cdot kips$	(User Input)

Tower Properties:

Tower Height =	$H_t := 95 \cdot ft$	(User Input)

Foundation Properties: (Refer to NUSCO drawing 01035-60003)

Pier Height =	$P_H := 6 \cdot ft$	(User Input)
Pier Width Top =	$P_{w1} := 2 \cdot ft$	(User Input)
Pier Width Botttom =	$P_{w2} := 4 \cdot ft$	(User Input)
Pier Projection Above Grade =	$P_P := 0.5 \cdot ft$	(User Input)
Pad Width =	$Pd_w := 8 \cdot ft$	(User Input)
Pad Thickness =	$Pd_t := 3 \cdot ft$	(User Input)

Subgrade Properties:

Concrete Unit Weight =	$\gamma c := 150 \cdot pcf$	(User Input)
Water Unit Weight =	$\gamma w := 62.4 \cdot pcf$	(User Input)
Soil Unit Weight =	$\gamma s := 100 \cdot pcf$	(User Input)
Uplift Angle =	$\phi := 30.0 \cdot deg$	(User Input)
Soil Bearing Capacity =	$BC_{soil} := 4000 \cdot psf$	(User Input)
Coefficient of Friction =	$\mu := 0.45$	(User Input)
Coefficient of Lateral Soil Pressure =	$K_p := \frac{1 + \sin(\phi)}{1 - \sin(\phi)} = 3$	

Calculated Data:

Volume of the Concrete Pad = $V_{pad} := Pd_w^2 \cdot Pd_t = 192 \cdot ft^3$

Volume of the Concrete Pier = $V_{pier} := \frac{(P_H)}{3} \cdot \left(P_{w1}^2 + P_{w2}^2 + \sqrt{P_{w1}^2 \cdot P_{w2}^2}\right) = 56 \cdot ft^3$

Resisting Pyramid Base 1 = $B_1 := Pd_w^2 = 64 ft^2$

Resisting Pyramid Base 2 = $B_2 := \left[2 \cdot \tan(\phi) \cdot (P_H - P_P) + Pd_w\right]^2 = 206 ft^2$

Volume of Soil = $V_{soil} := \left[\frac{(P_H - P_P)}{3} \cdot \left(B_1 + B_2 + \sqrt{B_1 \cdot B_2}\right)\right] - V_{pier} = 649 \cdot ft^3$

Total Volume of Concrete = $V_{Conc} := V_{pad} + V_{pier} = 248 \cdot ft^3$

Mass of Concrete = $Mass_{Conc} := V_{Conc} \cdot \gamma c = 37.2 \cdot kips$

Mass of Soil = $Mass_{Soil} := V_{soil} \cdot \gamma s = 65 \cdot kips$

Total Mass = $Mass_{tot} := Mass_{Conc} + Mass_{Soil} = 102 \cdot kips$

Check Uplift:

Required Factor of Safety = $F_S := 1.0$

$ActualFS := \frac{Mass_{tot}}{Uplift} = 1.78$

$Uplift\_Check := if\left(\frac{Mass_{tot}}{Uplift} \geq F_S, "OK", "Overstressed"\right)$

Uplift_Check = "OK"

Check Bearing:

Cross Sectional Area of Pad = $A_{pad} := Pd_w^2 = 64 ft^2$

Section Modulus of Pad = $S_{pad} := \frac{(Pd_w)^3}{6} = 85 \cdot ft^3$

Residual Mass of Concrete = $Mass_{Concr} := V_{Conc} \cdot (\gamma c - \gamma s) = 12.4 \cdot kips$

$Bearing := \frac{Comp + Mass_{Concr}}{A_{pad}} + \frac{\left[Shear_{comp} \cdot (P_H + Pd_t)\right]}{S_{pad}} = 2.61 \cdot ksf$

$Bearing\_Check := if\left(Bearing \leq BC_{soil}, "OK", "No Good"\right)$

Bearing_Check = "OK"

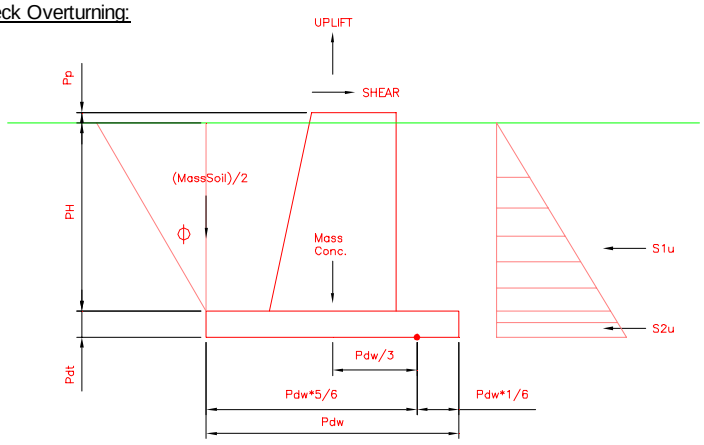
Check Sliding:

Sliding Resistance = $S_R := \mu \cdot \left(Mass_{Conc} + Comp\right) = 46.539 \cdot kips$

$Sliding\_Check := if\left(Shear_{comp} \leq S_R, "OK", "No Good"\right)$

Sliding_Check = "OK"

Check Overturning:



Passive Pressure (on pier) =

$P1_{top} := K_p \cdot \gamma s \cdot 0 = 0 \cdot ksf$

$P1_{bot} := K_p \cdot \gamma s \cdot (P_H - P_P) = 1.65 \cdot ksf$

$P1_{ave} := \frac{P1_{top} + P1_{bot}}{2} = 0.825 \cdot ksf$

$A_1 := P_H \cdot \left[\frac{(P_{w1} + P_{w2})}{2} \right] = 18\,ft^2$

Ultimate Shear =

$S1_u := P1_{ave} \cdot A_1 = 14.85 \cdot kip$

Passive Pressure (on pad) =

$P2_{top} := K_p \cdot \gamma s \cdot (P_H - P_P) = 1.65 \cdot ksf$

$P2_{bot} := K_p \cdot \gamma s \cdot (P_H + Pd_t - P_P) = 2.55 \cdot ksf$

$P2_{ave} := \frac{P2_{top} + P2_{bot}}{2} = 2.1 \cdot ksf$

$A_2 := Pd_t \cdot Pd_w = 24\,ft^2$

Ultimate Shear =

$S2_u := P2_{ave} \cdot A_2 = 50.4 \cdot kip$

Overturning Moment =

$OM := Uplift \cdot \frac{Pd_w}{3} + Shear_{up} \cdot (P_H + Pd_t) = 420.7 \cdot k \cdot ft$

Resisting Moment =

$RM := Mass_{Conc} \cdot \left(\frac{Pd_w}{3} \right) + \frac{Mass_{Soil}}{2} \cdot \left(\frac{5 \cdot Pd_w}{6} \right) + S1_u \cdot \left[Pd_t + \frac{1}{3} \cdot (P_H - P_P) \right] + S2_u \cdot \left(\frac{1}{3} \cdot Pd_t \right) = 437.8 \cdot k \cdot ft$

$ActualFS := \frac{RM}{OM} = 1.04$

$Overturning\_Check := if\left(\frac{RM}{OM} \geq F_S, "OK", "No Good" \right)$

Overturning_Check = "OK"

RAN Template: 704Bu Outdoor	A&L Template: 1HP_704Bu

CT11885B_1.1_L700

Section 1 - Site Information

Site ID: CT11885B
Status: Draft
Version: 1.1
Project Type: L700
Approved: Not Approved
Approved By: Not Approved
Last Modified: 9/26/2016 5:59:30 AM
Last Modified By: GSM1900\AMurill9

Site Name: Oak Hills Golf Club
Site Class: Utility Lattice Tower
Site Type: Structure Non Building
Solution Type:
Plan Year:
Market: CONNECTICUT
Vendor: Ericsson
Landlord: Connecticut Light and Power Co.

Latitude: 41.11520000
Longitude: -73.44339000
Address: 1 Charles Marshall Drive/CL&P pole # 1110
City, State: Norwalk, CT
Region: NORTHEAST

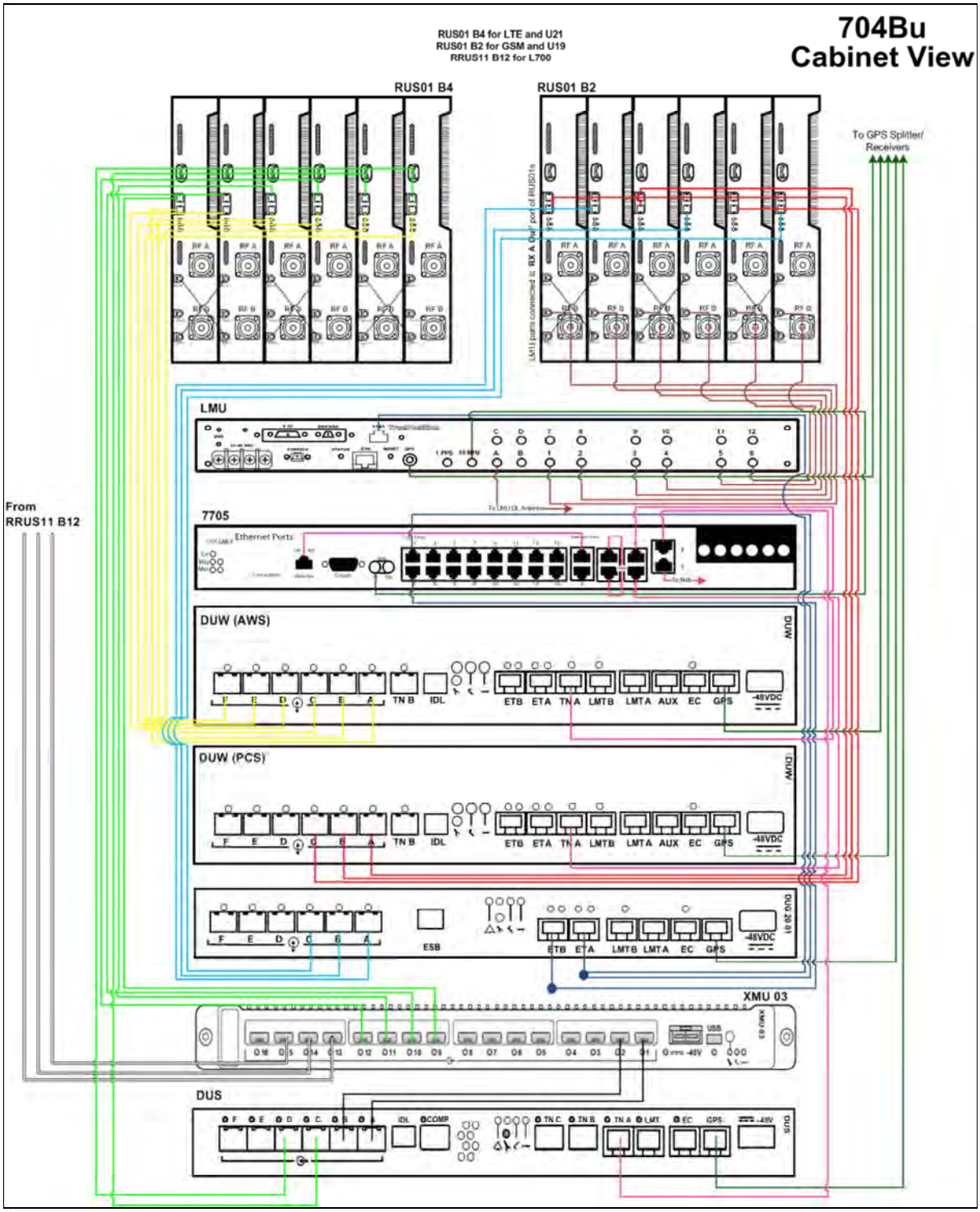
RAN Template: 704Bu Outdoor			AL Template: 1HP_704Bu	
Sector Count: 3	Antenna Count: 3	Coax Line Count: 18	TMA Count: 6	RRU Count: 3

Section 2 - Existing Template Images

— This section is intentionally blank. —

Section 3 - Proposed Template Images

704Bu.png



Notes:

Section 4 - Siteplan Images

— This section is intentionally blank. —

RAN Template: 704Bu Outdoor	A&L Template: 1HP_704Bu

CT11885B_1.1_L700

Section 5 - RAN Equipment

Existing RAN Equipment			
Template: 4B			
Enclosure	1	2	3
Enclosure Type	RBS 3106	RBS 6102	S18000 Outdoor
Baseband		DUW30 DUG20 DUL20	
Radio		RUS01 B4 (x6) RUS01 B2 (x6)	

Proposed RAN Equipment		
Template: 704Bu Outdoor		
Enclosure	1	2
Enclosure Type	RBS 6102	Ground Mount
Baseband	DUG20 G1900; DUW30 U1900; DUW30 U2100; DUS41 L2100 L700	
Multiplexer	XMU L2100 L700	
Radio	RUS01 B2 (x3) G1900; RUS01 B2 (x3) U1900; RUS01 B4 (x6) U2100 L2100	RRUS11 B12 (x3) L700

RAN Scope of Work:

RAN Template: 704Bu Outdoor	A&L Template: 1HP_704Bu

CT11885B_1.1_L700

Section 6 - A&L Equipment

Existing Template: 4B
Proposed Template: 1HP_704Bu

Sector 1 (Existing) view from behind		
Coverage Type	A - Outdoor Macro	
Antenna	1	
Antenna Model	APX16DWV-16DWV-S-E-A20 (Quad)	
Azimuth	0	
M. Tilt	0	
Height	114	
Ports	P1	P2
Active Tech.	U1900, G1900	U2100, L2100
Dark Tech.		
Restricted Tech.		
Decomm. Tech.		
E. Tilt	2	2
Cables	1-5/8" Coax - 148 ft., 1-5/8" Coax - 148 ft.	1-5/8" Coax - 148 ft., 1-5/8" Coax - 148 ft.
TMAs	Generic Style 1A - Twin PCS	Generic Style 1B - Twin AWS
Diplexers / Combiners		
Radio		
Sector Equipment		

Unconnected Equipment:

Scope of Work:

RAN Template: 704Bu Outdoor	A&L Template: 1HP_704Bu

CT11885B_1.1_L700

Sector 1 (Proposed) view from behind			
Coverage Type	A - Outdoor Macro		
Antenna	1		
Antenna Model	SBNHH-1D65A (Hex)		
Azimuth	0		
M. Tilt	0		
Height	114		
Ports	P1	P2	P3
Active Tech.	U1900 G1900	U2100 L2100	L700
Dark Tech.			
Restricted Tech.			
Decomm. Tech.			
E. Tilt	2	2	2
Cables	1-5/8" Coax - 148 ft. 1-5/8" Coax - 148 ft.	1-5/8" Coax - 148 ft. 1-5/8" Coax - 148 ft.	1-5/8" Coax - 148 ft. 1-5/8" Coax - 148 ft.
TMAs	Generic Style 1A - Twin PCS	Generic Style 1B - Twin AWS	
Diplexers / Combiners			
Radio			
Sector Equipment			Andrew Smart Bias T

Unconnected Equipment:

Scope of Work:

Intall GMA's on the ground.

RAN Template: 704Bu Outdoor	A&L Template: 1HP_704Bu

CT11885B_1.1_L700

Sector 2 (Existing) view from behind		
Coverage Type	A - Outdoor Macro	
Antenna	1	
Antenna Model	APX16DWV-16DWV-S-E-A20 (Quad)	
Azimuth	120	
M. Tilt	0	
Height	114	
Ports	P1	P2
Active Tech.	U1900 G1900	U2100 L2100
Dark Tech.		
Restricted Tech.		
Decomm. Tech.		
E. Tilt	4	4
Cables	1-5/8" Coax - 148 ft. 1-5/8" Coax - 148 ft.	1-5/8" Coax - 148 ft. 1-5/8" Coax - 148 ft.
TMAs	Generic Style 1A - Twin PCS	Generic Style 1B - Twin AWS
Diplexers / Combiners		
Radio		
Sector Equipment		

Unconnected Equipment:

Scope of Work:

RAN Template: 704Bu Outdoor	A&L Template: 1HP_704Bu

CT11885B_1.1_L700

Sector 2 (Proposed) view from behind			
Coverage Type	A - Outdoor Macro		
Antenna	1		
Antenna Model	SBNHH-1D65A (Hex)		
Azimuth	120		
M. Tilt	0		
Height	114		
Ports	P1	P2	P3
Active Tech.	U1900 G1900	U2100 L2100	L700
Dark Tech.			
Restricted Tech.			
Decomm. Tech.			
E. Tilt	2	2	2
Cables	1-5/8" Coax - 148 ft. 1-5/8" Coax - 148 ft.	1-5/8" Coax - 148 ft. 1-5/8" Coax - 148 ft.	1-5/8" Coax - 148 ft. 1-5/8" Coax - 148 ft.
TMAs	Generic Style 1A - Twin PCS	Generic Style 1B - Twin AWS	
Diplexers / Combiners			
Radio			
Sector Equipment			Andrew Smart Bias T

Unconnected Equipment:

Scope of Work:

Intall GMA's on the ground.

RAN Template: 704Bu Outdoor	A&L Template: 1HP_704Bu

CT11885B_1.1_L700

Sector 3 (Existing) view from behind		
Coverage Type	A - Outdoor Macro	
Antenna	1	
Antenna Model	APX16DWV-16DWV-S-E-A20 (Quad)	
Azimuth	240	
M. Tilt	0	
Height	114	
Ports	P1	P2
Active Tech.	U1900 G1900	U2100 L2100
Dark Tech.		
Restricted Tech.		
Decomm. Tech.		
E. Tilt	3	3
Cables	1-5/8" Coax - 148 ft. 1-5/8" Coax - 148 ft.	1-5/8" Coax - 148 ft. 1-5/8" Coax - 148 ft.
TMAs	Generic Style 1A - Twin PCS	Generic Style 1B - Twin AWS
Diplexers / Combiners		
Radio		
Sector Equipment		

Unconnected Equipment:

Scope of Work:

RAN Template: 704Bu Outdoor	A&L Template: 1HP_704Bu

CT11885B_1.1_L700

Sector 3 (Proposed) view from behind			
Coverage Type	A - Outdoor Macro		
Antenna	1		
Antenna Model	SBNHH-1D65A (Hex)		
Azimuth	240		
M. Tilt	0		
Height	114		
Ports	P1	P2	P3
Active Tech.	U1900 G1900	U2100 L2100	L700
Dark Tech.			
Restricted Tech.			
Decomm. Tech.			
E. Tilt	2	2	2
Cables	1-5/8" Coax - 148 ft. 1-5/8" Coax - 148 ft.	1-5/8" Coax - 148 ft. 1-5/8" Coax - 148 ft.	1-5/8" Coax - 148 ft. Coax Feeder - 148 ft.
TMAs	Generic Style 1A - Twin PCS	Generic Style 1B - Twin AWS	
Diplexers / Combiners			
Radio			
Sector Equipment			Andrew Smart Bias T

Unconnected Equipment:

Scope of Work:

Intall GMA's on the ground.

Product Specifications

SBNHH-1D65A

Andrew® Tri-band Antenna, 698–896 and 2x 1695–2360 MHz, 65° horizontal beamwidth, internal RET. Both high bands share the same electrical tilt.

- Interleaved dipole technology providing for attractive, low wind load mechanical package

Electrical Specifications

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2180	2300–2360
Gain, dBi	13.6	13.7	16.5	16.9	17.1	17.6
Beamwidth, Horizontal, degrees	66	61	70	65	62	61
Beamwidth, Vertical, degrees	17.6	15.9	7.1	6.6	6.2	5.5
Beam Tilt, degrees	0–18	0–18	0–10	0–10	0–10	0–10
USLS, dB	16	13	13	13	12	12
Front-to-Back Ratio at 180°, dB	25	27	28	28	27	29
CPR at Boresight, dB	20	16	20	23	17	20
CPR at Sector, dB	10	5	11	6	1	4
Isolation, dB	25	25	25	25	25	25
Isolation, Intersystem, dB	30	30	30	30	30	30
VSWR | Return Loss, dB	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153	-153
Input Power per Port, maximum, watts	350	350	350	350	350	300
Polarization	±45°	±45°	±45°	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm

Electrical Specifications, BASTA*

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2180	2300–2360
Gain by all Beam Tilts, average, dBi	13.1	13.1	16.1	16.5	16.7	17.2
Gain by all Beam Tilts Tolerance, dB	±0.5	±0.5	±0.5	±0.3	±0.5	±0.4
	0 ° | 13.4	0 ° | 13.4	0 ° | 16.0	0 ° | 16.3	0 ° | 16.5	0 ° | 17.0
Gain by Beam Tilt, average, dBi	9 ° | 13.1	9 ° | 13.1	5 ° | 16.2	5 ° | 16.5	5 ° | 16.8	5 ° | 17.3
	18 ° | 12.7	18 ° | 12.7	10 ° | 16.1	10 ° | 16.5	10 ° | 16.6	10 ° | 16.9
Beamwidth, Horizontal Tolerance, degrees	±3.1	±5.4	±2.8	±4	±6.6	±4.6
Beamwidth, Vertical Tolerance, degrees	±1.8	±1.4	±0.3	±0.4	±0.5	±0.3
USLS, dB	15	14	15	15	15	14
Front-to-Back Total Power at 180° ± 30°, dB	22	21	26	26	24	25
CPR at Boresight, dB	22	16	22	25	21	22
CPR at Sector, dB	10	6	12	8	5	4

* CommScope® supports NGMN recommendations on Base Station Antenna Standards (BASTA). To learn more about the benefits of BASTA, download the whitepaper Time to Raise the Bar on BSAs.

General Specifications

Antenna Brand	Andrew®
Antenna Type	DualPol® multiband with internal RET
Band	Multiband
Brand	DualPol® | Teletilt®
Operating Frequency Band	1695 – 2360 MHz | 698 – 896 MHz

Product Specifications

SBNHH-1D65A

Mechanical Specifications

Color	Light gray
Lightning Protection	dc Ground
Radiator Material	Aluminum | Low loss circuit board
Radome Material	Fiberglass, UV resistant
RF Connector Interface	7-16 DIN Female
RF Connector Location	Bottom
RF Connector Quantity, total	6
Wind Loading, maximum	445.0 N @ 150 km/h 100.0 lbf @ 150 km/h
Wind Speed, maximum	241.4 km/h | 150.0 mph

Dimensions

Depth	180.0 mm | 7.1 in
Length	1409.0 mm | 55.5 in
Width	301.0 mm | 11.9 in
Net Weight	15.2 kg | 33.5 lb

Remote Electrical Tilt (RET) Information

Input Voltage	10–30 Vdc
Power Consumption, idle state, maximum	2.0 W
Power Consumption, normal conditions, maximum	13.0 W
Protocol	3GPP/AISG 2.0 (Multi-RET)
RET Interface	8-pin DIN Female | 8-pin DIN Male
RET Interface, quantity	1 female | 1 male
RET System	Teletilt®

Regulatory Compliance/Certifications

Agency	Classification
RoHS 2011/65/EU	Compliant by Exemption
China RoHS SJ/T 11364-2006	Above Maximum Concentration Value (MCV)
ISO 9001:2008	Designed, manufactured and/or distributed under this quality management system

Included Products

BSAMNT-1 — Wide Profile Antenna Downtilt Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members. Kit contains one scissor top bracket set and one bottom bracket set.

Product Specifications

ATSBT-TOP-FM-4G

Teletilt® Top Smart Bias Tee

- Injects AISG power and control signals onto a coaxial cable line
- Reduces cable and site lease costs by eliminating the need for AISG home run cables
- AISG 1.1 and 2.0 compliant
- Operates at 10-30 Vdc
- Weatherproof AISG connectors
- Intuitive schematics simplify and ensure proper installation
- Enhanced lightning protection plus grounding stud for additional surge protection
- 7-16 DIN female connector (BTS)
- 7-16 DIN male connector (ANT)

General Specifications

Smart Bias Tee Type	10–30 V Top
Brand	Teletilt®
Operating Frequency Band	694 – 2690 MHz

Electrical Specifications

EU Certification	CE
Protocol	AISG 1.1 | AISG 2.0
Antenna Interface Signal	dc Blocked | RF
BTS Interface Signal	AISG data | dc | RF
Interface Protocol Signal	Data | dc
Voltage Range	10–30 Vdc
VSWR | Return Loss	1.17:1 | 22 dB, typical
Power Consumption, maximum	0.6 W
RF Power, maximum	250 W @ 1850 MHz 500 W @ 850 MHz
Impedance	50 ohm
Insertion Loss, typical	0.1 dB
3rd Order IMD	-158.0 dBc (relative to carrier)
3rd Order IMD Test Method	Two +43 dBm carriers
Electromagnetic Compatibility (EMC)	CFR 47 Part 15, Subpart B, Class B | EN 55022, Class B | ICES-003 Issue 4 CAN/CSA-CEI/IEC CISPR 22:02

Mechanical Specifications

Antenna Interface	7-16 DIN Male
BTS Interface	7-16 DIN Female
AISG Input Connector	8-pin DIN Female
Color	Silver
Grounding Lug Thread Size	M8
Material Type	Aluminum
Lightning Surge Capability	5 times @ -3 kA 5 times @ 3 kA

Product Specifications

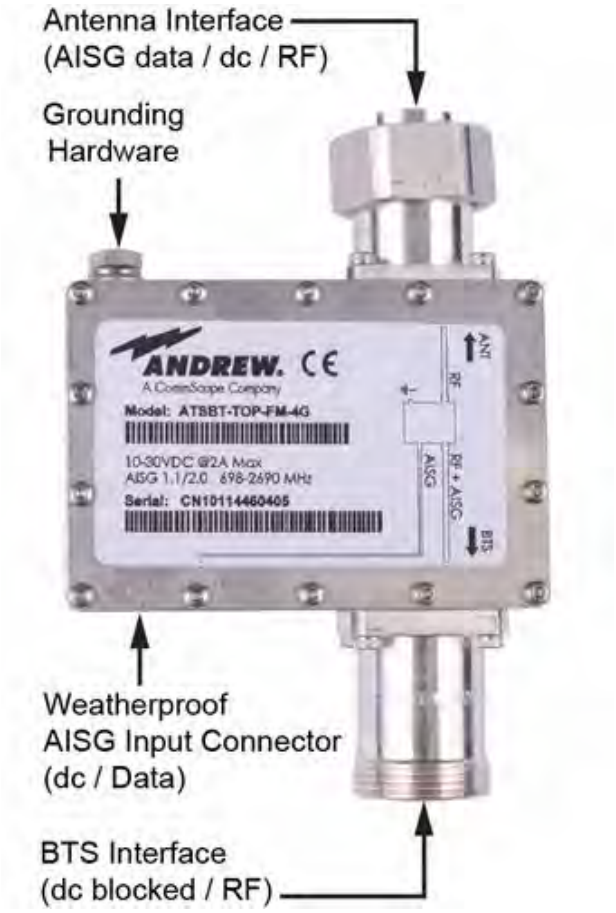
ATSBT-TOP-FM-4G

Lightning Surge Capability Test Method	IEC 61000-4-5, Level X
Lightning Surge Capability Waveform	1.2/50 voltage and 8/20 current combination waveform

Environmental Specifications

Ingress Protection Test Method	IEC 60529:2001, IP66
Operating Temperature	-40 °C to +70 °C (-40 °F to +158 °F)

Interface Port Drawing



Dimensions

Width	94.0 mm | 3.7 in
Depth	50.0 mm | 2.0 in
Height	143.00 mm | 5.63 in
Net Weight	0.8 kg | 1.8 lb

Regulatory Compliance/Certifications

Agency	Classification
RoHS 2011/65/EU	Compliant by Exemption

Exhibit E

EBI Consulting
environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CT11885B

Oak Hills Golf Club
1 Charles Marshall Dr/CL&P Pole # 1110
Norwalk, CT 06854

January 27, 2017

EBI Project Number: 6217000351

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	3.16 %

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

EBI Consulting
environmental | engineering | due diligence

January 27, 2017

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

Emissions Analysis for Site: **CT11885B – Oak Hills Golf Club**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **1 Charles Marshall Dr/CL&P Pole, Norwalk, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (µW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

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

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **1 Charles Marshall Dr/CL&P Pol, Norwalk, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

1) 2 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 2 UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

3) 2 UMTS channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

4) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel

5) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.

6) Since all radios are ground mounted there are additional cabling losses accounted for. For each ground mounted RF path the following losses were calculated. 0.83 dB of additional cable loss for all ground mounted 700 MHz Channels, 1.52 dB of additional cable loss for all ground mounted 1900 MHz channels and 1.57 dB of additional cable loss for all ground mounted 2100 MHz channels was factored into the calculations for each RF path. This is based on manufacturers Specifications for 148 feet of 1-5/8" coax cable on each path.

7) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

8) For the following calculations the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

9) The antennas used in this modeling are the **Commscope SBNHH-1D65A** for 700 MHz, 1900 MHz (PCS) and 2100 MHz (AWS) channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **Commscope SBNHH-1D65A** has a maximum gain of **14.7 dBd** at its main lobe at 1900 MHz and 2100 MHz and a maximum gain of **10.9 dBd** at its main lobe at 700 MHz. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

10) The antenna mounting height centerline of the proposed antennas is **114 feet** above ground level (AGL).

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

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	Commscope SBNHH-1D65A	Make / Model:	Commscope SBNHH-1D65A	Make / Model:	Commscope SBNHH-1D65A
Gain:	14.7 dBd / 10.9 dBd	Gain:	14.7 dBd / 10.9 dBd	Gain:	14.7 dBd / 10.9 dBd
Height (AGL):	114	Height (AGL):	114	Height (AGL):	114
Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS) / 700 MHz	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS) / 700 MHz	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS) / 700 MHz
Channel Count	9	Channel Count	2	Channel Count	2
Total TX Power(W):	330	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	6,501.11	ERP (W):	6,501.11	ERP (W):	6,501.11
Antenna A1 MPE%	2.11	Antenna B1 MPE%	2.11	Antenna C1 MPE%	2.11

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile (Per Sector Max)	**2.11 %**
Sprint	1.05 %
Site Total MPE %:	**3.16 %**

T-Mobile Sector A Total:	2.11 %
T-Mobile Sector B Total:	2.11 %
T-Mobile Sector C Total:	2.11 %
Site Total:	3.16 %

T-Mobile _Max Values per sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile AWS - 2100 MHz LTE	2	1,233.53	114	7.60	AWS - 2100 MHz	1000	0.76%
T-Mobile AWS - 2100 MHz UMTS	2	616.77	114	3.80	AWS - 2100 MHz	1000	0.38%
T-Mobile PCS - 1950 MHz UMTS	2	623.91	114	3.85	PCS - 1950 MHz	1000	0.38%
T-Mobile PCS - 1950 MHz GSM	2	623.91	114	3.85	PCS - 1950 MHz	1000	0.38%
T-Mobile 700 MHz LTE	1	304.87	114	0.94	700 MHz	467	0.20%
						Total*:	**2.11%**

*NOTE: Totals may vary by 0.01% due to summing of remainders

Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	2.11 %
Sector B:	2.11 %
Sector C:	2.11 %
T-Mobile Per Sector Maximum:	2.11 %
Site Total:	3.16 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **3.16%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

Exhibit F

EVERSOURCE ENERGY

56 Prospect Street,
Hartford, CT 06103

P.O. Box 270
Hartford, CT 06141-0270
(860) 665-5000

February 2, 2017

Mr. Mark Richard
T-Mobile
35 Griffin Rd.
Bloomfield, CT 06002

RE: T-Mobile Antenna Site, CT11885B, 1 Charles Marshall Dr, Norwalk CT, structure 1109.

Dear Mr. Richard:

Based on our reviews of the site drawings, the structural analysis and foundation review provided by Centek Engineering, along with a third party review performed by Commonwealth Associates we have reviewed for acceptance this modification.

Since there are no outstanding structural or site related issues to resolve at this time, please contact Hank O'Brien (860-665-6987) to complete the lease amendment issues

Sincerely,

Robert Gray
Transmission Line Engineering

Ref: CT11885B-L700-CD-V2 S&S.pdf

16162.06 - CT11885B Structural Analysis Rev0 16.10.27.pdf