



STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

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VIA ELECTRONIC MAIL

November 7, 2022

Denise Sabo
Northeast Site Solutions
4 Angela's Way
Burlington, CT 06013
denise@northeastsitesolutions.com

RE: **EM-VER-089-220622** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 115 North Mountain Road, New Britain, Connecticut.

Dear Denise Sabo:

The Connecticut Siting Council (Council) is in receipt of your correspondence of October 12, 2022 and October 25, 2022 submitted in response to the Council's July 25, 2022 notification of an incomplete request for exempt modification with regard to the above-referenced matter.

The submission renders the request for exempt modification complete and the Council will process the request in accordance with the Federal Communications Commission 60-day timeframe.

Thank you for your attention and cooperation.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Melanie A. Bachman'.

Melanie A. Bachman
Executive Director

MAB/MP/laf

From: Denise Sabo <denise@northeastsitesolutions.com>
Sent: Tuesday, October 25, 2022 10:29 AM
To: Robidoux, Evan <Evan.Robidoux@ct.gov>
Cc: CSC-DL Siting Council <Siting.Council@ct.gov>; Deborah Chase <deborah@northeastsitesolutions.com>
Subject: RE: 876331 Crown VZW - RE: Council 2nd Extension Letter for EM-VER-089-220622 (North Mountain Road, New Britain)

Good morning Evan,

Attached is the revised structural for EM-VER-089-220622 (North Mountain Road, New Britain)

Thank you

From: Denise Sabo <denise@northeastsitesolutions.com>
Sent: Wednesday, October 12, 2022 11:24 AM
To: Robidoux, Evan <Evan.Robidoux@ct.gov>
Cc: CSC-DL Siting Council <Siting.Council@ct.gov>; Deborah Chase <deborah@northeastsitesolutions.com>
Subject: 876331 Crown VZW - RE: Council 2nd Extension Letter for EM-VER-089-220622 (North Mountain Road, New Britain)

Good morning, Evan

Please see attached revised EME for 115 North Mountain Rd, New Britain - EM-VER-089-220622

Thank you



Date: **May 11, 2022**

MTS Engineering, P.L.L.C.
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

Subject: **Structural Analysis Report**

Carrier Designation: **Verizon Wireless Co-Locate**
Site Number: 535831
Site Name: New Britain NW CT

Crown Castle Designation: **BU Number:** 876331
Site Name: New Britain Gravel Pit
JDE Job Number: 716934
Work Order Number: 2113029
Order Number: 616729 Rev. 0

Engineering Firm Designation: **Project Number:** 151136.007.01

Site Data: **115 North Mountain Rd, New Britain, Hartford County, CT**
Latitude 41° 40' 35.72", Longitude -72° 49' 17.09"
118 Foot - Monopole Tower

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

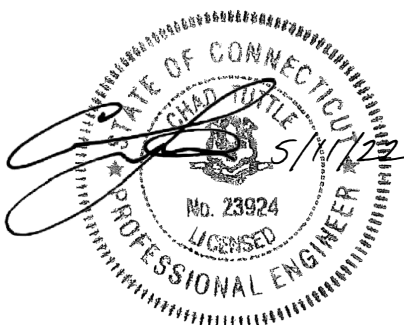
The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration **Sufficient Capacity – 99.7%**

This analysis utilizes an ultimate 3-second gust wind speed of 117 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 – Analysis Criteria.

Structural analysis prepared by: Daniel Hast, E.I.

Respectfully submitted by: MTS Engineering, P.L.L.C.
COA: BER.2386985; Expires: 3/31/2023



Chad E. Tuttle, P.E.

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1) INTRODUCTION

This is a 118 ft. Monopole designed by Rohn in October 1996.

The tower has been modified multiple times to accommodate additional loading.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	117 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
85.0	90.0	1	Antel	BXA-70040-6CF-EDIN-2	7 1	1-5/8 1-1/2
		2	Antel	BXA-70063-6CF-2		
		6	Commscope	NHH-65B-R2B		
		1	Raycap	RVZDC-6627-PF-48		
		3	Samsung Telecom.	MT6407-77A		
		3	Samsung Telecom.	RFV01U-D1A		
		3	Samsung Telecom.	RFV01U-D2A		
	85.0	1	--	36" Long P2STD Mount Pipe		
		3	--	72" Long P2.5 STD Mount Pipe		
		1	VZWSMART	PLK5 Kicker Kit		
		1	VZWSMART	PLK1 Support Rail Kit		
		1	--	Platform Mount [LP 303-1]		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
116.0	117.0	3	Alcatel Lucent	800MHZ 2X50W RRH W/Filter	--	--
	116.0	1	--	Pipe Mount [PM 601-3]		
	113.0	3	Alcatel Lucent	PCS 1900MHZ 4X45W-65MHZ		
114.0	116.0	1	Andrew	VHLP1-23	4 1	1-1/4 1/2
		3	Alcatel Lucent	TD-RRH8X20-25		
		1	RFS Celwave	APXV9ERR18-C-A20		
		2	RFS Celwave	APXVSP18-C-A20		
		3	RFS Celwave	APXVTM14-C-120		
	1	Samsung Telecom.	WIMAX DAP HEAD			
114.0	1	--	Platform Mount [LP 502-1]			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
108.0	108.0	1	Site Pro 1	RMQP-496-HK Platform Mount	3 6	1-5/8 7/8
		3	Commscope	SDX1926Q-43		
		3	Ericsson	AIR 32 B2A/B66AA		
		3	Ericsson	AIR6449 B41_T-MOBILE		
		3	Ericsson	KRY 112 144/1		
		3	Ericsson	Radio 4449 B71 B85A_T-Mobile		
		3	Ericsson	RRUS 4415 B25		
		3	RFS Celwave	APXVAARR24_43-U-NA20		
98.0	102.0	1	Site Pro 1	HRK12 Support Rail Kit	9 2 2	7/8 13/16 3/8
	100.0	2	CCI Antennas	DMP65R-BU6D		
		1	CCI Antennas	DMP65R-BU8D		
		2	CCI Antennas	TPA65R-BU6D_CCIV2		
		1	CCI Antennas	TPA65R-BU8D_CCIV2		
		3	Ericsson	AIR 6419 B77G		
		3	Ericsson	AIR 6449 B77D		
		3	Ericsson	RRUS 4449 B5/B12		
		3	Ericsson	RRUS 4478 B14_CCIV2		
		3	Ericsson	RRUS 8843 B2/B66A_CCIV2		
		1	Raycap	DC9-48-60-24-8C-EV		
	98.0	1	Raycap	DC6-48-60-18-8F		
	1	--	Platform Mount [LP 712-1]			
80.0	81.0	1	Lucent	KS24019-L112A	1	1/2
	80.0	1	--	Side Arm Mount [SO 701-1]		
62.0	62.0	1	--	Commscope MC-PK8-DSH	1	1-1/2
		3	Fujitsu	TA08025-B604		
		3	Fujitsu	TA08025-B605		
		3	JMA Wireless	MX08FRO665-21		
		1	Raycap	RDIDC-9181-PF-48		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
Tower Manufacturer Drawing	5875885	CCI Sites
Tower Modification Drawing	2268906	CCI Sites
Tower Modification Drawing	3259703	CCI Sites
Post Modification Inspection	3684848	CCI Sites
Tower Modification Drawing	4858411	CCI Sites
Post Modification Inspection	5407775	CCI Sites
Tower Modification Drawing	5371260	CCI Sites
Post Modification Inspection	5596857	CCI Sites
Tower Modification Drawing	5907683	CCI Sites
Post Modification Inspection	6131239	CCI Sites
Foundation Drawing	1947809	CCI Sites
Geotech Report	2192549	CCI Sites
Crown CAD Package	Date: 05/05/2022	CCI Sites

3.1) Analysis Method

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

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

3.2) Assumptions

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

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	118 - 113	Pole	P24x0.25	1	-3.060	--	2.3	Pass
L2	113 - 108	Pole	P24x0.25	2	-3.451	--	6.6	Pass
L3	108 - 103	Pole	P24x0.25	3	-8.472	--	16.8	Pass
L4	103 - 98	Pole	P24x0.25	4	-9.198	--	26.8	Pass
L5	98 - 93	Pole	P24x0.25	5	-13.331	--	45.9	Pass
L6	93 - 90	Pole	P24x0.25	6	-13.655	--	55.9	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L7	90 - 85	Pole	P24x0.375	7	-14.458	--	46.6	Pass
L8	85 - 80	Pole	P24x0.375	8	-18.966	--	63.1	Pass
L9	80 - 76.5	Pole	P24x0.375	9	-19.631	--	73.2	Pass
L10	76.5 - 76.25	Pole + Reinf.	P24x0.5875	10	-19.697	--	53.2	Pass
L11	76.25 - 74	Pole + Reinf.	P24x0.5875	11	-20.177	--	58.0	Pass
L12	74 - 73.75	Pole + Reinf.	P24x0.9	12	-20.259	--	58.0	Pass
L13	73.75 - 68.75	Pole + Reinf.	P24x0.9	13	-21.734	--	68.8	Pass
L14	68.75 - 68.5	Pole + Reinf.	P24x0.8	14	-21.807	--	53.3	Pass
L15	68.5 - 68.25	Pole + Reinf.	P24x0.575	15	-21.862	--	70.8	Pass
L16	68.25 - 64.5	Pole + Reinf.	P24x0.575	16	-22.688	--	79.2	Pass
L17	64.5 - 64.25	Pole + Reinf.	P24x1.05	17	-22.785	--	69.2	Pass
L18	64.25 - 63	Pole + Reinf.	P24x1.05	18	-23.197	--	71.7	Pass
L19	63 - 62.75	Pole + Reinf.	P24x1	19	-23.286	--	74.5	Pass
L20	62.75 - 60	Pole + Reinf.	P24x1	20	-27.300	--	80.8	Pass
L21	60 - 59.75	Pole + Reinf.	P30x0.675	21	-27.554	--	50.8	Pass
L22	59.75 - 54.75	Pole + Reinf.	P30x0.675	22	-29.130	--	58.4	Pass
L23	54.75 - 49.75	Pole + Reinf.	P30x0.675	23	-30.715	--	66.3	Pass
L24	49.75 - 49.08	Pole + Reinf.	P30x0.675	24	-30.933	--	67.4	Pass
L25	49.08 - 48.83	Pole + Reinf.	P30x0.875	25	-31.023	--	62.3	Pass
L26	48.83 - 43.83	Pole + Reinf.	P30x0.875	26	-32.735	--	69.7	Pass
L27	43.83 - 42	Pole + Reinf.	P30x0.875	27	-33.360	--	72.5	Pass
L28	42 - 41.75	Pole + Reinf.	P30x1	28	-33.471	--	64.1	Pass
L29	41.75 - 36.75	Pole + Reinf.	P30x1	29	-35.374	--	70.8	Pass
L30	36.75 - 34.5	Pole + Reinf.	P30x1	30	-36.237	--	73.9	Pass
L31	34.5 - 34.25	Pole + Reinf.	P30x1.05	31	-36.351	--	65.9	Pass
L32	34.25 - 34	Pole + Reinf.	P30x1.05	32	-36.456	--	66.2	Pass
L33	34 - 33.75	Pole + Reinf.	P30x0.95	33	-36.553	--	74.6	Pass
L34	33.75 - 30	Pole + Reinf.	P30x0.95	34	-37.994	--	79.7	Pass
L35	30 - 29.75	Pole + Reinf.	P36x0.5875	35	-38.312	--	75.7	Pass
L36	29.75 - 28.5	Pole + Reinf.	P36x0.5875	36	-38.744	--	77.4	Pass
L37	28.5 - 28.25	Pole + Reinf.	P36x0.6125	37	-38.853	--	77.5	Pass
L38	28.25 - 27.94	Pole + Reinf.	P36x0.8375	38	-38.988	--	61.6	Pass
L39	27.94 - 27.69	Pole + Reinf.	P36x0.8375	39	-39.098	--	61.8	Pass
L40	27.69 - 23	Pole + Reinf.	P36x0.8375	40	-41.153	--	67.0	Pass
L41	23 - 22.75	Pole + Reinf.	P36x0.9625	41	-41.277	--	62.8	Pass
L42	22.75 - 21.5	Pole + Reinf.	P36x0.9625	42	-41.848	--	64.1	Pass
L43	21.5 - 21.25	Pole + Reinf.	P36x0.875	43	-41.964	--	69.3	Pass
L44	21.25 - 21	Pole + Reinf.	P36x0.875	44	-42.071	--	69.6	Pass
L45	21 - 20.75	Pole + Reinf.	P36x0.8	45	-42.173	--	77.6	Pass
L46	20.75 - 19	Pole + Reinf.	P36x0.8	46	-42.880	--	79.8	Pass
L47	19 - 18.75	Pole + Reinf.	P36x0.925	47	-43.012	--	70.5	Pass
L48	18.75 - 18.5	Pole + Reinf.	P36x0.925	48	-43.128	--	70.8	Pass
L49	18.5 - 18.25	Pole + Reinf.	P36x0.9	49	-43.242	--	72.8	Pass
L50	18.25 - 13.25	Pole + Reinf.	P36x0.9	50	-45.521	--	78.5	Pass
L51	13.25 - 12.7	Pole + Reinf.	P36x0.9	51	-45.778	--	79.1	Pass
L52	12.7 - 12.35	Pole + Reinf.	P36x0.8875	52	-45.953	--	72.1	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L53	12.35 - 12.13	Pole + Reinf.	P36x0.8875	53	-46.065	--	72.4	Pass
L54	12.13 - 12	Pole + Reinf.	P36x0.8875	54	-46.128	--	72.5	Pass
L55	12 - 11.75	Pole + Reinf.	P36x1.075	55	-46.254	--	63.5	Pass
L56	11.75 - 8.38	Pole + Reinf.	P36x1.075	56	-47.963	--	66.6	Pass
L57	8.38 - 8.13	Pole + Reinf.	P36x1.175	57	-48.095	--	71.3	Pass
L58	8.13 - 7.75	Pole + Reinf.	P36x1.175	58	-48.281	--	71.7	Pass
L59	7.75 - 7.5	Pole + Reinf.	P36x1.075	59	-48.407	--	67.9	Pass
L60	7.5 - 7.25	Pole + Reinf.	P36x1.1	60	-48.537	--	67.5	Pass
L61	7.25 - 4	Pole + Reinf.	P36x1.1	61	-50.224	--	70.5	Pass
L62	4 - 3.73	Pole + Reinf.	P36x1.475	62	-50.377	--	54.4	Pass
L63	3.73 - 3.58	Pole + Reinf.	P36x1.475	63	-50.460	--	54.5	Pass
L64	3.58 - 3	Pole + Reinf.	P36x1.475	64	-50.773	--	54.9	Pass
L65	3 - 2.75	Pole + Reinf.	P36x1.475	65	-50.912	--	55.1	Pass
L66	2.75 - 1.9	Pole + Reinf.	P36x1.1	66	-51.303	--	72.3	Pass
L67	1.9 - 1.65	Pole + Reinf.	P36x1.1	67	-51.427	--	72.6	Pass
L68	1.65 - 0	Pole + Reinf.	P36x1.1	68	-52.186	--	74.1	Pass
							Summary	
						Pole	77.5	Pass
						Reinforcement	80.8	Pass
						Overall	80.8	Pass

Table 5 - Tower Component Stresses vs. Capacity

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Flange Connection	90	10.0	Pass
1	Bridge Stiffeners		20.0	Pass
1	Flange Connection	60	36.0	Pass
1	Bridge Stiffeners		38.9	Pass
1	Flange Connection	30	52.7	Pass
1	Bridge Stiffeners		51.8	Pass
1	Anchor Rods	Base	87.6	Pass
1	Anchor Rod Bracket	Base	86.6	Pass
1	Base Plate	Base	57.5	Pass
1	Base Foundation (Structure)	Base	71.2	Pass
1	Base Foundation (Soil Interaction)	Base	99.7	Pass

Structure Rating (max from all components) =	99.7%
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Notes:

- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.
- 2) Rating per TIA-222-H Section 15.5.

4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

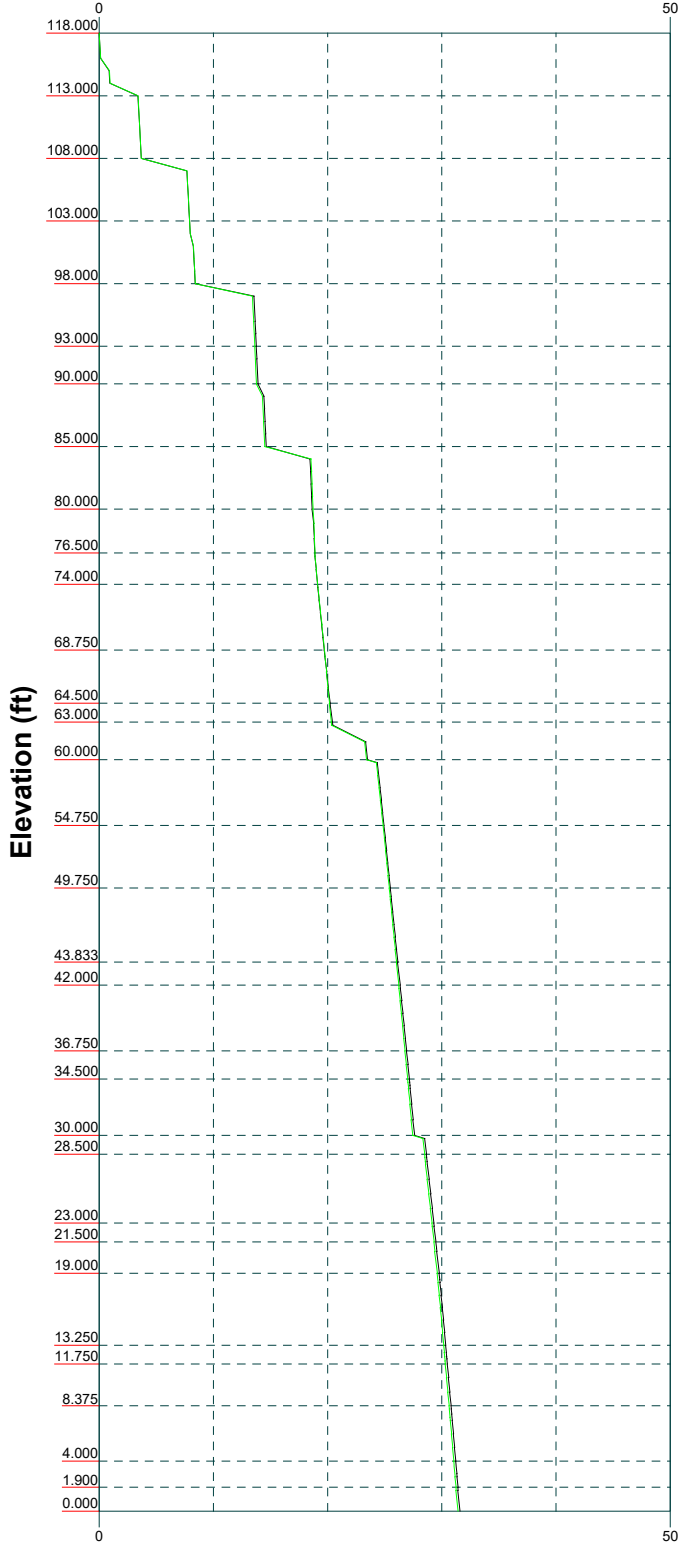
Vx

Vz

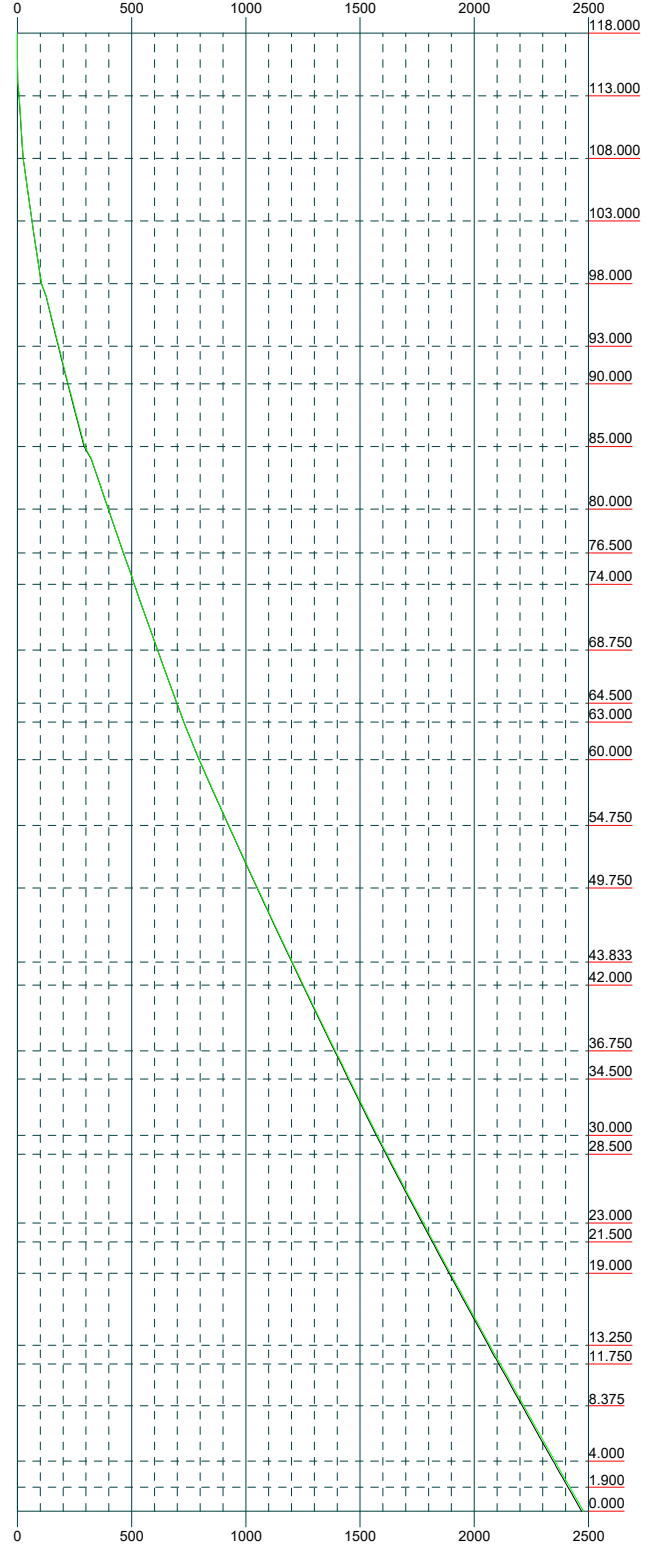
Mx

Mz

Global Mast Shear (K)

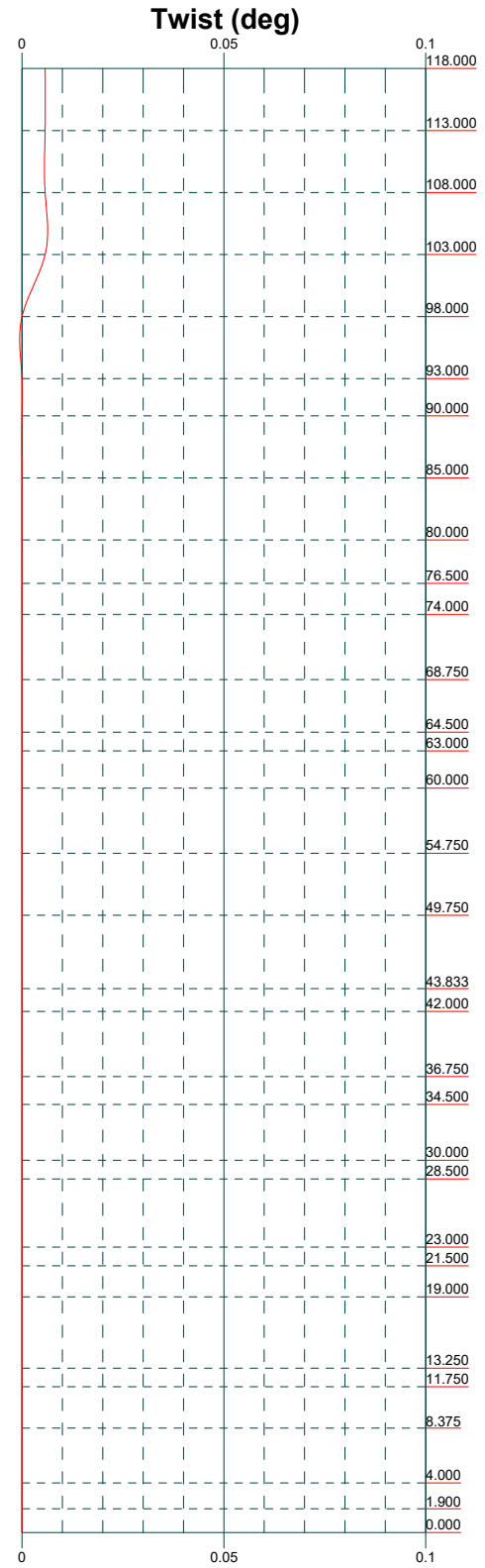
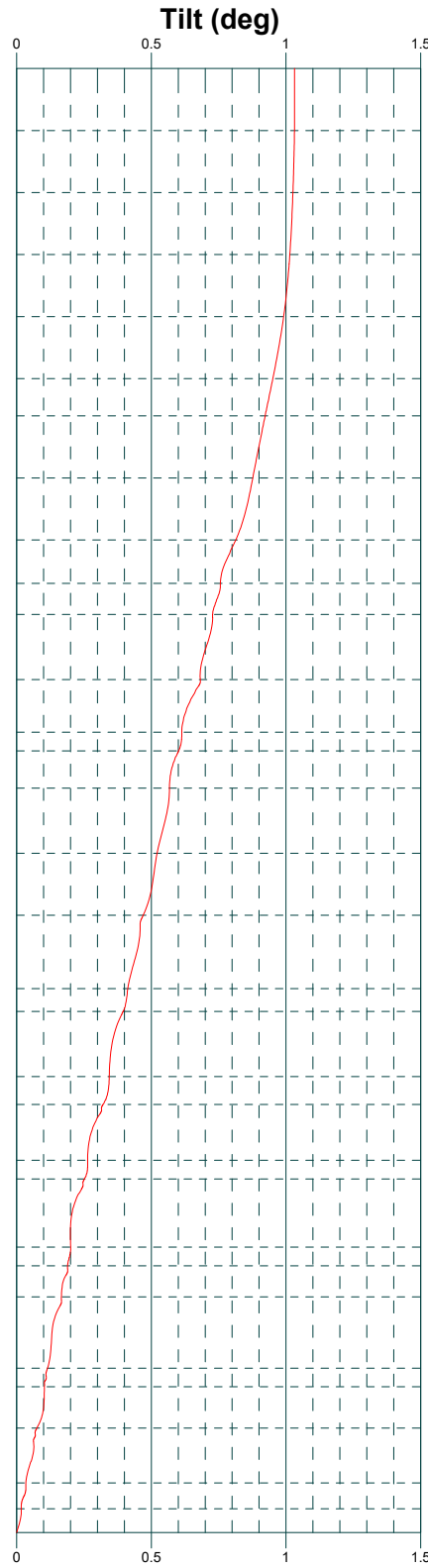
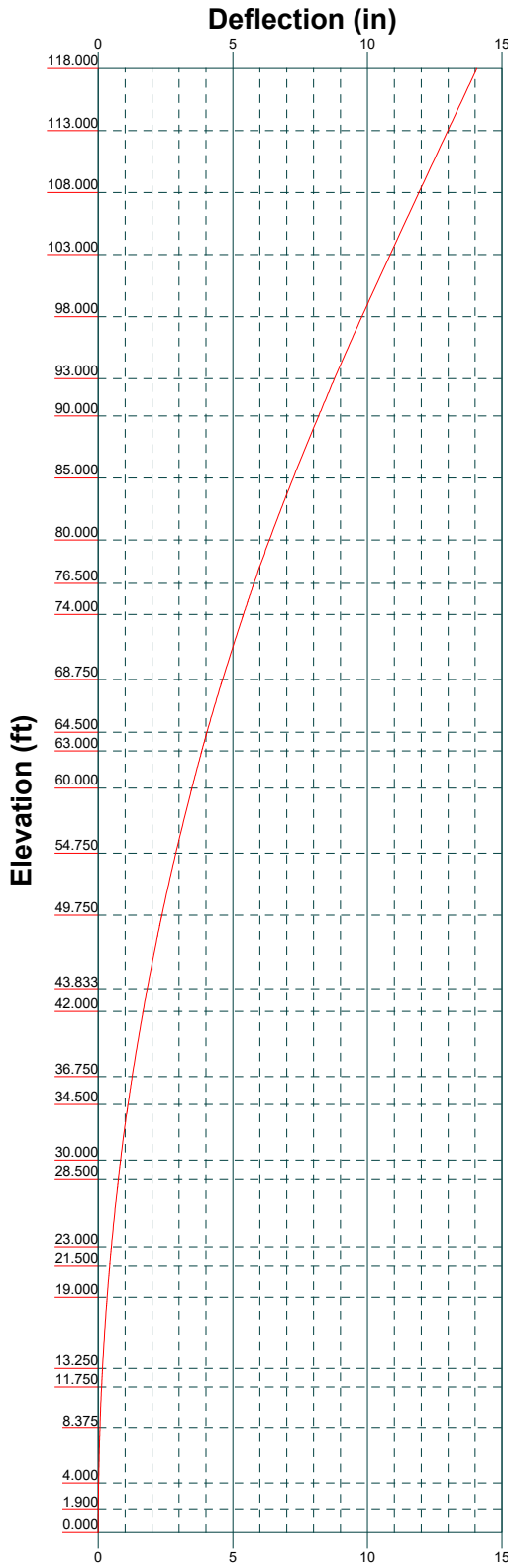



Global Mast Moment (kip-ft)



MTS Engineering, P.L.L.C.
 1717 S. Boulder, Suite 300
 Tulsa, OK 74119
 Phone: (918) 587-4630
 FAX: (918) 295-0265

Job: 151136.007.01 - NEW BRITAIN GRAVEL PIT, CT (BU# 87633)		
Project:		
Client: Crown Castle	Drawn by: Pavan Upadhya	App'd:
Code: TIA-222-H	Date: 05/10/22	Scale: NTS
Path:		Dwg No: E-4

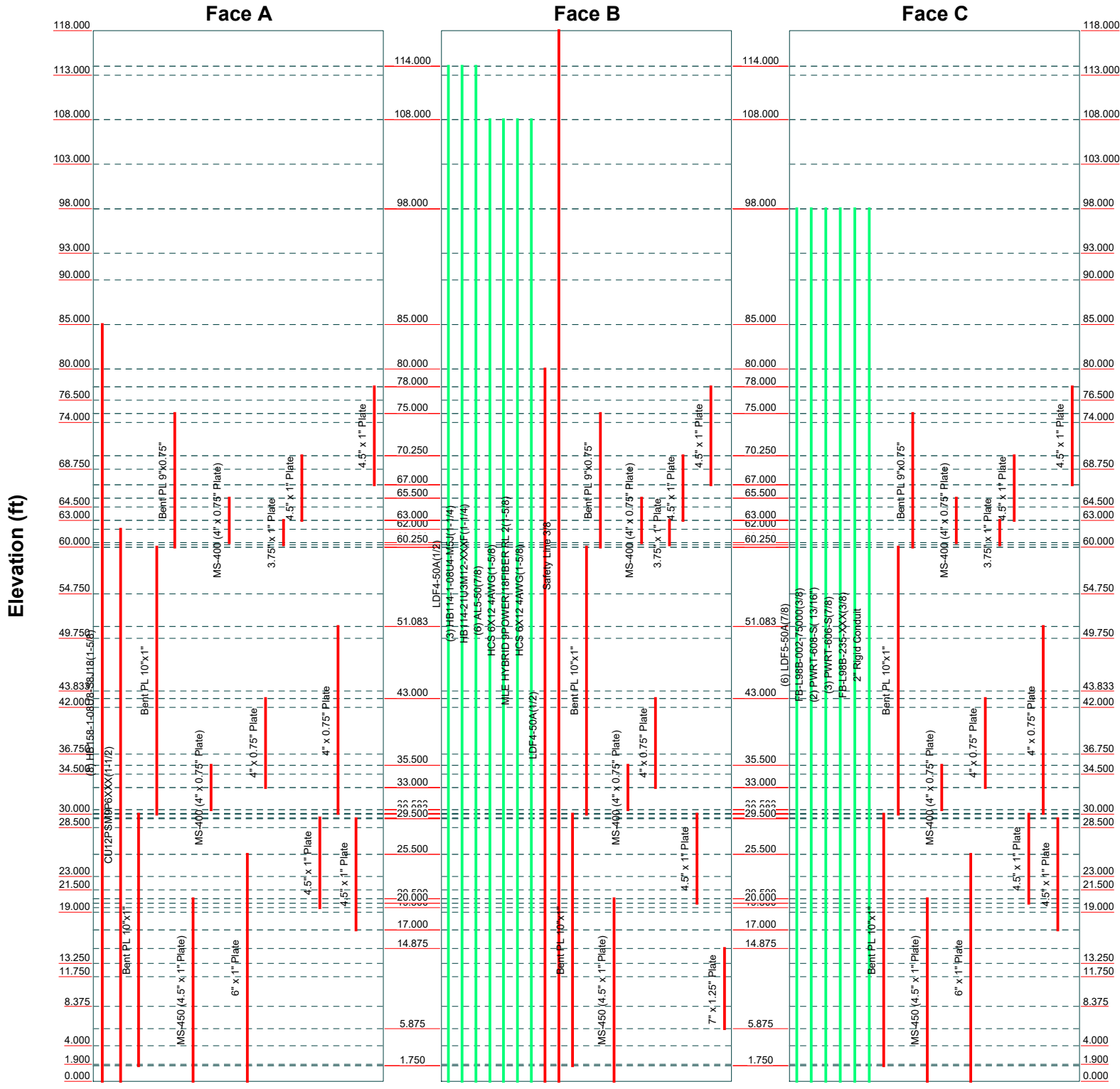



 <p>MTS Engineering, P.L.L.C. 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	Job: 151136.007.01 - NEW BRITAIN GRAVEL PIT, CT (BU# 87633)		
	Project:		
	Client: Crown Castle	Drawn by: Pavan Upadhy	App'd:
	Code: TIA-222-H	Date: 05/10/22	Scale: NTS
	Path:	Dwg No: E-5	

Feed Line Distribution Chart

0' - 118'

— Round
 — Flat
 — App In Face
 — App Out Face
 — Truss Leg



 <p>MTS Engineering, P.L.L.C. 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	Job: 151136.007.01 - NEW BRITAIN GRAVEL PIT, CT (BU# 87633)		
	Project:		
	Client: Crown Castle	Drawn by: Pavan Upadhyha	App'd:
	Code: TIA-222-H	Date: 05/10/22	Scale: NTS
Path:	Dwg No: E-7		

<p>tnxTower</p> <p>MTS Engineering, P.L.L.C. 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	Job 151136.007.01 - NEW BRITAIN GRAVEL PIT, CT (BU# 876331)	Page 1 of 75
	Project	Date 21:54:18 05/10/22
	Client Crown Castle	Designed by Pavan Upadhyia

Tower Input Data

The tower is a monopole.

This tower is designed using the TIA-222-H standard.

The following design criteria apply:

- Tower is located in Hartford County, Connecticut.
- Tower base elevation above sea level: 350.000 ft.
- Basic wind speed of 117 mph.
- Risk Category II.
- Exposure Category C.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.000 ft.
- Nominal ice thickness of 1.500 in.
- Ice thickness is considered to increase with height.
- Ice density of 56.000 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50.000 °F.
- Deflections calculated using a wind speed of 60 mph.
- TIA-222-H Annex S.
- TOWER RATING: 80.8%.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.
- Tower analysis based on target reliabilities in accordance with Annex S.
- Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- Maximum demand-capacity ratio is: 1.05.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification √ Use Code Stress Ratios √ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric | <ul style="list-style-type: none"> Distribute Leg Loads As Uniform Assume Legs Pinned √ Assume Rigid Index Plate √ Use Clear Spans For Wind Area Use Clear Spans For KL/r Retension Guys To Initial Tension √ Bypass Mast Stability Checks √ Use Azimuth Dish Coefficients √ Project Wind Area of Appurt. Autocalc Torque Arm Areas Add IBC .6D+W Combination Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs | <ul style="list-style-type: none"> Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation √ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-H Bracing Resist. Exemption Use TIA-222-H Tension Splice Exemption <li style="background-color: #e0e0e0;">Poles √ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known |
|--|---|--|

<i>tnxTower</i> MTS Engineering, P.L.L.C. 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 151136.007.01 - NEW BRITAIN GRAVEL PIT, CT (BU# 876331)	Page 2 of 75
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Pole Section Geometry

<i>Section</i>	<i>Elevation</i> ft	<i>Section Length</i> ft	<i>Pole Size</i>	<i>Pole Grade</i>	<i>Socket Length</i> ft
L1	118.000-113.000	5.000	P24x0.25	A572-42 (42 ksi)	
L2	113.000-108.000	5.000	P24x0.25	A572-42 (42 ksi)	
L3	108.000-103.000	5.000	P24x0.25	A572-42 (42 ksi)	
L4	103.000-98.000	5.000	P24x0.25	A572-42 (42 ksi)	
L5	98.000-93.000	5.000	P24x0.25	A572-42 (42 ksi)	
L6	93.000-90.000	3.000	P24x0.25	A572-42 (42 ksi)	
L7	90.000-85.000	5.000	P24x0.375	A572-42 (42 ksi)	
L8	85.000-80.000	5.000	P24x0.375	A572-42 (42 ksi)	
L9	80.000-76.500	3.500	P24x0.375	A572-42 (42 ksi)	
L10	76.500-76.250	0.250	P24x0.5875	A572-42 (42 ksi)	
L11	76.250-74.000	2.250	P24x0.5875	A572-42 (42 ksi)	
L12	74.000-73.750	0.250	P24x0.9	A572-42 (42 ksi)	
L13	73.750-68.750	5.000	P24x0.9	A572-42 (42 ksi)	
L14	68.750-68.500	0.250	P24x0.8	A572-42 (42 ksi)	
L15	68.500-68.250	0.250	P24x0.575	A572-42 (42 ksi)	
L16	68.250-64.500	3.750	P24x0.575	A572-42 (42 ksi)	
L17	64.500-64.250	0.250	P24x1.05	A572-42 (42 ksi)	
L18	64.250-63.000	1.250	P24x1.05	A572-42 (42 ksi)	
L19	63.000-62.750	0.250	P24x1	A572-42 (42 ksi)	
L20	62.750-60.000	2.750	P24x1	A572-42 (42 ksi)	
L21	60.000-59.750	0.250	P30x0.675	A572-42 (42 ksi)	
L22	59.750-54.750	5.000	P30x0.675	A572-42 (42 ksi)	
L23	54.750-49.750	5.000	P30x0.675	A572-42 (42 ksi)	
L24	49.750-49.083	0.667	P30x0.675	A572-42 (42 ksi)	
L25	49.083-48.833	0.250	P30x0.875	A572-42 (42 ksi)	
L26	48.833-43.833	5.000	P30x0.875	A572-42 (42 ksi)	
L27	43.833-42.000	1.833	P30x0.875	A572-42 (42 ksi)	
L28	42.000-41.750	0.250	P30x1	A572-42 (42 ksi)	

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Section	Elevation ft	Section Length ft	Pole Size	Pole Grade	Socket Length ft
L29	41.750-36.750	5.000	P30x1	A572-42 (42 ksi)	
L30	36.750-34.500	2.250	P30x1	A572-42 (42 ksi)	
L31	34.500-34.250	0.250	P30x1.05	A572-42 (42 ksi)	
L32	34.250-34.000	0.250	P30x1.05	A572-42 (42 ksi)	
L33	34.000-33.750	0.250	P30x0.95	A572-42 (42 ksi)	
L34	33.750-30.000	3.750	P30x0.95	A572-42 (42 ksi)	
L35	30.000-29.750	0.250	P36x0.5875	A572-42 (42 ksi)	
L36	29.750-28.500	1.250	P36x0.5875	A572-42 (42 ksi)	
L37	28.500-28.250	0.250	P36x0.6125	A572-42 (42 ksi)	
L38	28.250-27.942	0.308	P36x0.8375	A572-42 (42 ksi)	
L39	27.942-27.692	0.250	P36x0.8375	A572-42 (42 ksi)	
L40	27.692-23.000	4.692	P36x0.8375	A572-42 (42 ksi)	
L41	23.000-22.750	0.250	P36x0.9625	A572-42 (42 ksi)	
L42	22.750-21.500	1.250	P36x0.9625	A572-42 (42 ksi)	
L43	21.500-21.250	0.250	P36x0.875	A572-42 (42 ksi)	
L44	21.250-21.000	0.250	P36x0.875	A572-42 (42 ksi)	
L45	21.000-20.750	0.250	P36x0.8	A572-42 (42 ksi)	
L46	20.750-19.000	1.750	P36x0.8	A572-42 (42 ksi)	
L47	19.000-18.750	0.250	P36x0.925	A572-42 (42 ksi)	
L48	18.750-18.500	0.250	P36x0.925	A572-42 (42 ksi)	
L49	18.500-18.250	0.250	P36x0.9	A572-42 (42 ksi)	
L50	18.250-13.250	5.000	P36x0.9	A572-42 (42 ksi)	
L51	13.250-12.700	0.550	P36x0.9	A572-42 (42 ksi)	
L52	12.700-12.350	0.350	P36x0.8875	A572-42 (42 ksi)	
L53	12.350-12.125	0.225	P36x0.8875	A572-42 (42 ksi)	
L54	12.125-12.000	0.125	P36x0.8875	A572-42 (42 ksi)	
L55	12.000-11.750	0.250	P36x1.075	A572-42 (42 ksi)	
L56	11.750-8.375	3.375	P36x1.075	A572-42 (42 ksi)	
L57	8.375-8.125	0.250	P36x1.175	A572-42 (42 ksi)	
L58	8.125-7.750	0.375	P36x1.175	A572-42 (42 ksi)	
L59	7.750-7.500	0.250	P36x1.075	A572-42	

<p style="text-align: center;"><i>tnxTower</i></p> <p>MTS Engineering, P.L.L.C. 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	Job 151136.007.01 - NEW BRITAIN GRAVEL PIT, CT (BU# 876331)	Page 4 of 75
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Section	Elevation ft	Section Length ft	Pole Size	Pole Grade	Socket Length ft
L60	7.500-7.250	0.250	P36x1.1	(42 ksi) A572-42	
L61	7.250-4.000	3.250	P36x1.1	(42 ksi) A572-42	
L62	4.000-3.733	0.267	P36x1.475	(42 ksi) A572-42	
L63	3.733-3.583	0.150	P36x1.475	(42 ksi) A572-42	
L64	3.583-3.000	0.583	P36x1.475	(42 ksi) A572-42	
L65	3.000-2.750	0.250	P36x1.475	(42 ksi) A572-42	
L66	2.750-1.900	0.850	P36x1.1	(42 ksi) A572-42	
L67	1.900-1.650	0.250	P36x1.1	(42 ksi) A572-42	
L68	1.650-0.000	1.650	P36x1.1	(42 ksi) A572-42	

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor A _f	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 118.000-113.000				1	1	1			
L2 113.000-108.000				1	1	1			
L3 108.000-103.000				1	1	1			
L4 103.000-98.000				1	1	1			
L5 98.000-93.000				1	1	1			
L6 93.000-90.000				1	1	1			
L7 90.000-85.000				1	1	1			
L8 85.000-80.000				1	1	1			
L9 80.000-76.500				1	1	1			
L10 76.500-76.250				1	1	0.956504			
L11 76.250-74.000				1	1	0.956504			
L12 74.000-73.750				1	1	0.942873			
L13 73.750-68.750				1	1	0.942873			
L14 68.750-68.500				1	1	0.940396			
L15				1	1	0.976776			

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Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
ft	ft ²	in							
L45				1	1	0.977421			
21.000-20.750									
L46				1	1	0.977421			
20.750-19.000									
L47				1	1	0.980797			
19.000-18.750									
L48				1	1	0.980797			
18.750-18.500									
L49				1	1	0.982133			
18.500-18.250									
L50				1	1	0.982133			
18.250-13.250									
L51				1	1	0.982133			
13.250-12.700									
L52				1	1	1.08499			
12.700-12.350									
L53				1	1	1.08499			
12.350-12.125									
L54				1	1	1.08499			
12.125-12.000									
L55				1	1	0.934468			
12.000-11.750									
L56				1	1	0.934468			
11.750-8.375									
L57				1	1	0.836002			
8.375-8.125									
L58				1	1	0.836002			
8.125-7.750									
L59				1	1	0.920161			
7.750-7.500									
L60				1	1	0.937204			
7.500-7.250									
L61				1	1	0.937204			
7.250-4.000									
L62				1	1	0.74559			
4.000-3.733									
L63				1	1	0.74559			
3.733-3.583									
L64				1	1	0.74559			
3.583-3.000									
L65				1	1	0.74559			
3.000-2.750									
L66				1	1	0.827342			
2.750-1.900									
L67				1	1	0.827342			
1.900-1.650									
L68				1	1	0.827342			
1.650-0.000									

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
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<p style="text-align: center;">tnxTower</p> <p>MTS Engineering, P.L.L.C. 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	Job 151136.007.01 - NEW BRITAIN GRAVEL PIT, CT (BU# 876331)	Page 8 of 75
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Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
4" x 0.75" Plate	A	No	Surface Af (CaAa)	43.000 - 33.000	1	1	-0.200 -0.150	4.000	9.500	0.000
4" x 0.75" Plate	B	No	Surface Af (CaAa)	43.000 - 33.000	1	1	-0.200 -0.150	4.000	9.500	0.000
4" x 0.75" Plate	C	No	Surface Af (CaAa)	43.000 - 33.000	1	1	-0.200 -0.150	4.000	9.500	0.000
*										
3.75" x 1" Plate	A	No	Surface Af (CaAa)	63.000 - 60.250	1	1	0.000 0.050	3.750	9.500	0.000
3.75" x 1" Plate	B	No	Surface Af (CaAa)	63.000 - 60.250	1	1	0.000 0.050	3.750	9.500	0.000
3.75" x 1" Plate	C	No	Surface Af (CaAa)	63.000 - 60.250	1	1	0.000 0.050	3.750	9.500	0.000
*										
4.5" x 1" Plate	A	No	Surface Af (CaAa)	70.250 - 63.000	1	1	0.000 0.050	4.500	11.000	0.000
4.5" x 1" Plate	B	No	Surface Af (CaAa)	70.250 - 63.000	1	1	0.000 0.050	4.500	11.000	0.000
4.5" x 1" Plate	C	No	Surface Af (CaAa)	70.250 - 63.000	1	1	0.000 0.050	4.500	11.000	0.000
*										
4.5" x 1" Plate	A	No	Surface Af (CaAa)	29.542 - 19.500	1	1	-0.200 -0.150	4.500	11.000	0.000
4.5" x 1" Plate	B	No	Surface Af (CaAa)	30.000 - 20.000	1	1	-0.200 -0.150	4.500	11.000	0.000
4.5" x 1" Plate	C	No	Surface Af (CaAa)	30.000 - 20.000	1	1	-0.200 -0.150	4.500	11.000	0.000
*										
4" x 0.75" Plate	A	No	Surface Af (CaAa)	51.083 - 30.083	1	1	-0.500 -0.450	4.000	9.500	0.000
4" x 0.75" Plate	C	No	Surface Af (CaAa)	51.083 - 30.083	1	1	0.000 0.050	4.000	9.500	0.000
*										
4.5" x 1" Plate	A	No	Surface Af (CaAa)	29.500 - 17.000	1	1	0.000 0.050	4.500	11.000	0.000
4.5" x 1" Plate	C	No	Surface Af (CaAa)	29.500 - 17.000	1	1	0.000 0.050	4.500	11.000	0.000
*										
4.5" x 1" Plate	A	No	Surface Af (CaAa)	78.000 - 67.000	1	1	-0.200 -0.150	4.500	11.000	0.000
4.5" x 1" Plate	B	No	Surface Af (CaAa)	78.000 - 67.000	1	1	-0.200 -0.150	4.500	11.000	0.000
4.5" x 1" Plate	C	No	Surface Af (CaAa)	78.000 - 67.000	1	1	-0.200 -0.150	4.500	11.000	0.000
*										
7" x 1.25" Plate	B	No	Surface Af (CaAa)	14.875 - 5.875	1	1	-0.500 -0.450	7.000	16.500	0.000
*										
**										
**										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C _{AA} ft ² /ft	Weight klf
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Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L1	118.000-113.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.188	0.000	0.006
		C	0.000	0.000	0.000	0.000	0.000
L2	113.000-108.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.188	0.000	0.024
		C	0.000	0.000	0.000	0.000	0.000
L3	108.000-103.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.188	0.000	0.061
		C	0.000	0.000	0.000	0.000	0.000
L4	103.000-98.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.188	0.000	0.061
		C	0.000	0.000	0.000	0.000	0.000
L5	98.000-93.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.188	0.000	0.061
		C	0.000	0.000	0.000	0.000	0.044
L6	93.000-90.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.112	0.000	0.037
		C	0.000	0.000	0.000	0.000	0.026
L7	90.000-85.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.188	0.000	0.061
		C	0.000	0.000	0.000	0.000	0.044
L8	85.000-80.000	A	0.000	0.000	6.930	0.000	0.052
		B	0.000	0.000	0.188	0.000	0.061
		C	0.000	0.000	0.000	0.000	0.044
L9	80.000-76.500	A	0.000	0.000	5.976	0.000	0.036
		B	0.000	0.000	1.477	0.000	0.043
		C	0.000	0.000	1.125	0.000	0.031
L10	76.500-76.250	A	0.000	0.000	0.534	0.000	0.003
		B	0.000	0.000	0.213	0.000	0.003
		C	0.000	0.000	0.188	0.000	0.002
L11	76.250-74.000	A	0.000	0.000	6.179	0.000	0.023
		B	0.000	0.000	3.287	0.000	0.028
		C	0.000	0.000	3.061	0.000	0.020
L12	74.000-73.750	A	0.000	0.000	0.877	0.000	0.003
		B	0.000	0.000	0.556	0.000	0.003
		C	0.000	0.000	0.531	0.000	0.002
L13	73.750-68.750	A	0.000	0.000	18.556	0.000	0.052
		B	0.000	0.000	12.129	0.000	0.062
		C	0.000	0.000	11.626	0.000	0.044
L14	68.750-68.500	A	0.000	0.000	1.046	0.000	0.003
		B	0.000	0.000	0.724	0.000	0.003
		C	0.000	0.000	0.699	0.000	0.002
L15	68.500-68.250	A	0.000	0.000	1.046	0.000	0.003
		B	0.000	0.000	0.724	0.000	0.003
		C	0.000	0.000	0.699	0.000	0.002
L16	68.250-64.500	A	0.000	0.000	14.363	0.000	0.039
		B	0.000	0.000	9.542	0.000	0.047
		C	0.000	0.000	9.165	0.000	0.033
L17	64.500-64.250	A	0.000	0.000	0.996	0.000	0.003
		B	0.000	0.000	0.675	0.000	0.003
		C	0.000	0.000	0.650	0.000	0.002
L18	64.250-63.000	A	0.000	0.000	4.982	0.000	0.013
		B	0.000	0.000	3.375	0.000	0.016
		C	0.000	0.000	3.249	0.000	0.011
L19	63.000-62.750	A	0.000	0.000	0.941	0.000	0.003

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Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
		B	0.000	0.000	0.620	0.000	0.003
		C	0.000	0.000	0.595	0.000	0.002
L20	62.750-60.000	A	0.000	0.000	10.284	0.000	0.033
		B	0.000	0.000	6.429	0.000	0.034
		C	0.000	0.000	6.153	0.000	0.024
L21	60.000-59.750	A	0.000	0.000	0.803	0.000	0.003
		B	0.000	0.000	0.442	0.000	0.003
		C	0.000	0.000	0.417	0.000	0.002
L22	59.750-54.750	A	0.000	0.000	16.063	0.000	0.064
		B	0.000	0.000	8.836	0.000	0.062
		C	0.000	0.000	8.333	0.000	0.044
L23	54.750-49.750	A	0.000	0.000	16.952	0.000	0.064
		B	0.000	0.000	8.836	0.000	0.062
		C	0.000	0.000	9.222	0.000	0.044
L24	49.750-49.083	A	0.000	0.000	2.588	0.000	0.009
		B	0.000	0.000	1.179	0.000	0.008
		C	0.000	0.000	1.556	0.000	0.006
L25	49.083-48.833	A	0.000	0.000	0.970	0.000	0.003
		B	0.000	0.000	0.442	0.000	0.003
		C	0.000	0.000	0.583	0.000	0.002
L26	48.833-43.833	A	0.000	0.000	19.397	0.000	0.064
		B	0.000	0.000	8.836	0.000	0.062
		C	0.000	0.000	11.667	0.000	0.044
L27	43.833-42.000	A	0.000	0.000	7.777	0.000	0.023
		B	0.000	0.000	3.906	0.000	0.023
		C	0.000	0.000	4.944	0.000	0.016
L28	42.000-41.750	A	0.000	0.000	1.137	0.000	0.003
		B	0.000	0.000	0.608	0.000	0.003
		C	0.000	0.000	0.750	0.000	0.002
L29	41.750-36.750	A	0.000	0.000	22.730	0.000	0.064
		B	0.000	0.000	12.169	0.000	0.062
		C	0.000	0.000	15.000	0.000	0.044
L30	36.750-34.500	A	0.000	0.000	10.781	0.000	0.029
		B	0.000	0.000	6.029	0.000	0.028
		C	0.000	0.000	7.303	0.000	0.020
L31	34.500-34.250	A	0.000	0.000	1.275	0.000	0.003
		B	0.000	0.000	0.747	0.000	0.003
		C	0.000	0.000	0.888	0.000	0.002
L32	34.250-34.000	A	0.000	0.000	1.275	0.000	0.003
		B	0.000	0.000	0.747	0.000	0.003
		C	0.000	0.000	0.888	0.000	0.002
L33	34.000-33.750	A	0.000	0.000	1.275	0.000	0.003
		B	0.000	0.000	0.747	0.000	0.003
		C	0.000	0.000	0.888	0.000	0.002
L34	33.750-30.000	A	0.000	0.000	16.788	0.000	0.048
		B	0.000	0.000	8.923	0.000	0.047
		C	0.000	0.000	10.991	0.000	0.033
L35	30.000-29.750	A	0.000	0.000	0.803	0.000	0.003
		B	0.000	0.000	0.629	0.000	0.003
		C	0.000	0.000	0.604	0.000	0.002
L36	29.750-28.500	A	0.000	0.000	5.547	0.000	0.016
		B	0.000	0.000	3.146	0.000	0.016
		C	0.000	0.000	3.771	0.000	0.011
L37	28.500-28.250	A	0.000	0.000	1.178	0.000	0.003
		B	0.000	0.000	0.629	0.000	0.003
		C	0.000	0.000	0.792	0.000	0.002
L38	28.250-27.942	A	0.000	0.000	1.452	0.000	0.004
		B	0.000	0.000	0.775	0.000	0.004
		C	0.000	0.000	0.975	0.000	0.003
L39	27.942-27.692	A	0.000	0.000	1.178	0.000	0.003
		B	0.000	0.000	0.629	0.000	0.003

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	<p>Project</p>	<p>Date</p> <p style="text-align: center;">21:54:18 05/10/22</p>
	<p>Client</p> <p style="text-align: center;">Crown Castle</p>	<p>Designed by</p> <p style="text-align: center;">Pavan Upadhy</p>

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L40	27.692-23.000	C	0.000	0.000	0.792	0.000	0.002
		A	0.000	0.000	24.612	0.000	0.060
		B	0.000	0.000	11.811	0.000	0.058
L41	23.000-22.750	C	0.000	0.000	17.358	0.000	0.041
		A	0.000	0.000	1.428	0.000	0.003
		B	0.000	0.000	0.629	0.000	0.003
L42	22.750-21.500	C	0.000	0.000	1.042	0.000	0.002
		A	0.000	0.000	7.141	0.000	0.016
		B	0.000	0.000	3.146	0.000	0.016
L43	21.500-21.250	C	0.000	0.000	5.208	0.000	0.011
		A	0.000	0.000	1.428	0.000	0.003
		B	0.000	0.000	0.629	0.000	0.003
L44	21.250-21.000	C	0.000	0.000	1.042	0.000	0.002
		A	0.000	0.000	1.428	0.000	0.003
		B	0.000	0.000	0.629	0.000	0.003
L45	21.000-20.750	C	0.000	0.000	1.042	0.000	0.002
		A	0.000	0.000	1.428	0.000	0.003
		B	0.000	0.000	0.629	0.000	0.003
L46	20.750-19.000	C	0.000	0.000	1.042	0.000	0.002
		A	0.000	0.000	10.747	0.000	0.022
		B	0.000	0.000	4.780	0.000	0.022
L47	19.000-18.750	C	0.000	0.000	7.667	0.000	0.015
		A	0.000	0.000	1.428	0.000	0.003
		B	0.000	0.000	0.629	0.000	0.003
L48	18.750-18.500	C	0.000	0.000	1.042	0.000	0.002
		A	0.000	0.000	1.428	0.000	0.003
		B	0.000	0.000	0.629	0.000	0.003
L49	18.500-18.250	C	0.000	0.000	1.042	0.000	0.002
		A	0.000	0.000	1.428	0.000	0.003
		B	0.000	0.000	0.629	0.000	0.003
L50	18.250-13.250	C	0.000	0.000	1.042	0.000	0.002
		A	0.000	0.000	25.751	0.000	0.064
		B	0.000	0.000	14.172	0.000	0.062
L51	13.250-12.700	C	0.000	0.000	18.021	0.000	0.044
		A	0.000	0.000	2.729	0.000	0.007
		B	0.000	0.000	1.921	0.000	0.007
L52	12.700-12.350	C	0.000	0.000	1.879	0.000	0.005
		A	0.000	0.000	1.737	0.000	0.004
		B	0.000	0.000	1.223	0.000	0.004
L53	12.350-12.125	C	0.000	0.000	1.196	0.000	0.003
		A	0.000	0.000	1.117	0.000	0.003
		B	0.000	0.000	0.786	0.000	0.003
L54	12.125-12.000	C	0.000	0.000	0.769	0.000	0.002
		A	0.000	0.000	0.620	0.000	0.002
		B	0.000	0.000	0.437	0.000	0.002
L55	12.000-11.750	C	0.000	0.000	0.427	0.000	0.001
		A	0.000	0.000	1.241	0.000	0.003
		B	0.000	0.000	0.873	0.000	0.003
L56	11.750-8.375	C	0.000	0.000	0.854	0.000	0.002
		A	0.000	0.000	16.749	0.000	0.043
		B	0.000	0.000	11.789	0.000	0.042
L57	8.375-8.125	C	0.000	0.000	11.531	0.000	0.030
		A	0.000	0.000	1.241	0.000	0.003
		B	0.000	0.000	0.873	0.000	0.003
L58	8.125-7.750	C	0.000	0.000	0.854	0.000	0.002
		A	0.000	0.000	1.861	0.000	0.005
		B	0.000	0.000	1.310	0.000	0.005
L59	7.750-7.500	C	0.000	0.000	1.281	0.000	0.003
		A	0.000	0.000	1.241	0.000	0.003
		B	0.000	0.000	0.873	0.000	0.003
		C	0.000	0.000	0.854	0.000	0.002

<p style="text-align: center;">tnxTower</p> <p style="text-align: center;">MTS Engineering, P.L.L.C. 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	Job 151136.007.01 - NEW BRITAIN GRAVEL PIT, CT (BU# 876331)	Page 13 of 75
	Project	Date 21:54:18 05/10/22
	Client Crown Castle	Designed by Pavan Upadhyia

Tower Section	Tower Elevation ft	Face	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
L60	7.500-7.250	A	0.000	0.000	1.241	0.000	0.003
		B	0.000	0.000	0.873	0.000	0.003
		C	0.000	0.000	0.854	0.000	0.002
L61	7.250-4.000	A	0.000	0.000	16.129	0.000	0.041
		B	0.000	0.000	9.523	0.000	0.040
		C	0.000	0.000	11.104	0.000	0.029
L62	4.000-3.733	A	0.000	0.000	1.325	0.000	0.003
		B	0.000	0.000	0.672	0.000	0.003
		C	0.000	0.000	0.912	0.000	0.002
L63	3.733-3.583	A	0.000	0.000	0.744	0.000	0.002
		B	0.000	0.000	0.378	0.000	0.002
		C	0.000	0.000	0.512	0.000	0.001
L64	3.583-3.000	A	0.000	0.000	2.893	0.000	0.007
		B	0.000	0.000	1.468	0.000	0.007
		C	0.000	0.000	1.992	0.000	0.005
L65	3.000-2.750	A	0.000	0.000	1.241	0.000	0.003
		B	0.000	0.000	0.629	0.000	0.003
		C	0.000	0.000	0.854	0.000	0.002
L66	2.750-1.900	A	0.000	0.000	4.218	0.000	0.011
		B	0.000	0.000	2.140	0.000	0.011
		C	0.000	0.000	2.904	0.000	0.007
L67	1.900-1.650	A	0.000	0.000	1.074	0.000	0.003
		B	0.000	0.000	0.463	0.000	0.003
		C	0.000	0.000	0.688	0.000	0.002
L68	1.650-0.000	A	0.000	0.000	5.438	0.000	0.021
		B	0.000	0.000	1.403	0.000	0.020
		C	0.000	0.000	2.888	0.000	0.015

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
L1	118.000-113.000	A	1.445	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	1.633	0.000	0.022
		C		0.000	0.000	0.000	0.000	0.000
L2	113.000-108.000	A	1.439	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	1.626	0.000	0.040
		C		0.000	0.000	0.000	0.000	0.000
L3	108.000-103.000	A	1.432	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	1.620	0.000	0.077
		C		0.000	0.000	0.000	0.000	0.000
L4	103.000-98.000	A	1.425	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	1.613	0.000	0.077
		C		0.000	0.000	0.000	0.000	0.000
L5	98.000-93.000	A	1.418	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	1.605	0.000	0.077
		C		0.000	0.000	0.000	0.000	0.044
L6	93.000-90.000	A	1.412	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.960	0.000	0.046
		C		0.000	0.000	0.000	0.000	0.026
L7	90.000-85.000	A	1.406	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	1.593	0.000	0.077
		C		0.000	0.000	0.000	0.000	0.044
L8	85.000-80.000	A	1.397	0.000	0.000	10.409	0.000	0.165
		B		0.000	0.000	1.585	0.000	0.076
		C		0.000	0.000	0.000	0.000	0.044
L9	80.000-76.500	A	1.390	0.000	0.000	8.689	0.000	0.128

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	Project	Date 21:54:18 05/10/22
	Client Crown Castle	Designed by Pavan Upadhyia

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
		B		0.000	0.000	3.707	0.000	0.079
		C		0.000	0.000	1.409	0.000	0.044
L10	76.500-76.250	A	1.387	0.000	0.000	0.755	0.000	0.010
		B		0.000	0.000	0.399	0.000	0.007
		C		0.000	0.000	0.235	0.000	0.004
L11	76.250-74.000	A	1.384	0.000	0.000	8.311	0.000	0.107
		B		0.000	0.000	5.106	0.000	0.075
		C		0.000	0.000	3.634	0.000	0.053
L12	74.000-73.750	A	1.382	0.000	0.000	1.134	0.000	0.014
		B		0.000	0.000	0.778	0.000	0.010
		C		0.000	0.000	0.615	0.000	0.008
L13	73.750-68.750	A	1.377	0.000	0.000	23.906	0.000	0.286
		B		0.000	0.000	16.779	0.000	0.216
		C		0.000	0.000	13.523	0.000	0.167
L14	68.750-68.500	A	1.372	0.000	0.000	1.338	0.000	0.016
		B		0.000	0.000	0.982	0.000	0.012
		C		0.000	0.000	0.819	0.000	0.010
L15	68.500-68.250	A	1.371	0.000	0.000	1.338	0.000	0.016
		B		0.000	0.000	0.981	0.000	0.012
		C		0.000	0.000	0.819	0.000	0.010
L16	68.250-64.500	A	1.367	0.000	0.000	18.417	0.000	0.222
		B		0.000	0.000	13.066	0.000	0.170
		C		0.000	0.000	10.639	0.000	0.133
L17	64.500-64.250	A	1.363	0.000	0.000	1.277	0.000	0.015
		B		0.000	0.000	0.920	0.000	0.012
		C		0.000	0.000	0.759	0.000	0.010
L18	64.250-63.000	A	1.362	0.000	0.000	6.385	0.000	0.077
		B		0.000	0.000	4.601	0.000	0.060
		C		0.000	0.000	3.794	0.000	0.048
L19	63.000-62.750	A	1.360	0.000	0.000	1.222	0.000	0.015
		B		0.000	0.000	0.865	0.000	0.012
		C		0.000	0.000	0.704	0.000	0.009
L20	62.750-60.000	A	1.357	0.000	0.000	13.800	0.000	0.176
		B		0.000	0.000	9.009	0.000	0.123
		C		0.000	0.000	7.241	0.000	0.097
L21	60.000-59.750	A	1.353	0.000	0.000	1.110	0.000	0.013
		B		0.000	0.000	0.645	0.000	0.008
		C		0.000	0.000	0.484	0.000	0.006
L22	59.750-54.750	A	1.347	0.000	0.000	22.174	0.000	0.268
		B		0.000	0.000	12.877	0.000	0.163
		C		0.000	0.000	9.681	0.000	0.115
L23	54.750-49.750	A	1.335	0.000	0.000	23.379	0.000	0.276
		B		0.000	0.000	12.841	0.000	0.162
		C		0.000	0.000	10.913	0.000	0.124
L24	49.750-49.083	A	1.328	0.000	0.000	3.571	0.000	0.040
		B		0.000	0.000	1.710	0.000	0.022
		C		0.000	0.000	1.911	0.000	0.020
L25	49.083-48.833	A	1.326	0.000	0.000	1.338	0.000	0.015
		B		0.000	0.000	0.641	0.000	0.008
		C		0.000	0.000	0.716	0.000	0.008
L26	48.833-43.833	A	1.319	0.000	0.000	26.735	0.000	0.301
		B		0.000	0.000	12.793	0.000	0.161
		C		0.000	0.000	14.305	0.000	0.150
L27	43.833-42.000	A	1.309	0.000	0.000	10.636	0.000	0.117
		B		0.000	0.000	5.530	0.000	0.066
		C		0.000	0.000	6.088	0.000	0.062
L28	42.000-41.750	A	1.306	0.000	0.000	1.547	0.000	0.017
		B		0.000	0.000	0.850	0.000	0.010
		C		0.000	0.000	0.927	0.000	0.009
L29	41.750-36.750	A	1.297	0.000	0.000	30.892	0.000	0.332
		B		0.000	0.000	16.977	0.000	0.195

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	<p>Project</p>	<p>Date</p> <p style="text-align: center;">21:54:18 05/10/22</p>
	<p>Client</p> <p style="text-align: center;">Crown Castle</p>	<p>Designed by</p> <p style="text-align: center;">Pavan Upadhyia</p>

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L30	36.750-34.500	C		0.000	0.000	18.510	0.000	0.185
		A	1.285	0.000	0.000	14.565	0.000	0.155
		B		0.000	0.000	8.310	0.000	0.094
		C		0.000	0.000	9.006	0.000	0.089
L31	34.500-34.250	A	1.280	0.000	0.000	1.713	0.000	0.018
		B		0.000	0.000	1.018	0.000	0.011
		C		0.000	0.000	1.096	0.000	0.011
L32	34.250-34.000	A	1.279	0.000	0.000	1.713	0.000	0.018
		B		0.000	0.000	1.018	0.000	0.011
		C		0.000	0.000	1.096	0.000	0.011
L33	34.000-33.750	A	1.278	0.000	0.000	1.713	0.000	0.018
		B		0.000	0.000	1.018	0.000	0.011
		C		0.000	0.000	1.096	0.000	0.011
L34	33.750-30.000	A	1.271	0.000	0.000	22.694	0.000	0.246
		B		0.000	0.000	12.360	0.000	0.145
		C		0.000	0.000	13.453	0.000	0.137
L35	30.000-29.750	A	1.262	0.000	0.000	1.095	0.000	0.013
		B		0.000	0.000	0.855	0.000	0.010
		C		0.000	0.000	0.704	0.000	0.007
L36	29.750-28.500	A	1.259	0.000	0.000	7.380	0.000	0.079
		B		0.000	0.000	4.272	0.000	0.048
		C		0.000	0.000	4.491	0.000	0.045
L37	28.500-28.250	A	1.256	0.000	0.000	1.561	0.000	0.016
		B		0.000	0.000	0.854	0.000	0.010
		C		0.000	0.000	0.946	0.000	0.009
L38	28.250-27.942	A	1.255	0.000	0.000	1.923	0.000	0.020
		B		0.000	0.000	1.052	0.000	0.012
		C		0.000	0.000	1.166	0.000	0.011
L39	27.942-27.692	A	1.253	0.000	0.000	1.561	0.000	0.016
		B		0.000	0.000	0.853	0.000	0.010
		C		0.000	0.000	0.946	0.000	0.009
L40	27.692-23.000	A	1.242	0.000	0.000	32.366	0.000	0.329
		B		0.000	0.000	15.977	0.000	0.179
		C		0.000	0.000	20.858	0.000	0.196
L41	23.000-22.750	A	1.229	0.000	0.000	1.867	0.000	0.018
		B		0.000	0.000	0.849	0.000	0.009
		C		0.000	0.000	1.255	0.000	0.011
L42	22.750-21.500	A	1.225	0.000	0.000	9.330	0.000	0.092
		B		0.000	0.000	4.242	0.000	0.047
		C		0.000	0.000	6.273	0.000	0.057
L43	21.500-21.250	A	1.221	0.000	0.000	1.865	0.000	0.018
		B		0.000	0.000	0.848	0.000	0.009
		C		0.000	0.000	1.254	0.000	0.011
L44	21.250-21.000	A	1.219	0.000	0.000	1.864	0.000	0.018
		B		0.000	0.000	0.847	0.000	0.009
		C		0.000	0.000	1.254	0.000	0.011
L45	21.000-20.750	A	1.218	0.000	0.000	1.864	0.000	0.018
		B		0.000	0.000	0.847	0.000	0.009
		C		0.000	0.000	1.254	0.000	0.011
L46	20.750-19.000	A	1.212	0.000	0.000	14.080	0.000	0.134
		B		0.000	0.000	6.521	0.000	0.069
		C		0.000	0.000	9.368	0.000	0.082
L47	19.000-18.750	A	1.206	0.000	0.000	1.886	0.000	0.018
		B		0.000	0.000	0.870	0.000	0.009
		C		0.000	0.000	1.277	0.000	0.011
L48	18.750-18.500	A	1.204	0.000	0.000	1.886	0.000	0.018
		B		0.000	0.000	0.870	0.000	0.009
		C		0.000	0.000	1.277	0.000	0.011
L49	18.500-18.250	A	1.202	0.000	0.000	1.885	0.000	0.018
		B		0.000	0.000	0.870	0.000	0.009
		C		0.000	0.000	1.277	0.000	0.011

<p style="text-align: center;"><i>tnxTower</i></p> <p style="text-align: center;">MTS Engineering, P.L.L.C. 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	Job 151136.007.01 - NEW BRITAIN GRAVEL PIT, CT (BU# 876331)	Page 16 of 75
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Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L50	18.250-13.250	A	1.184	0.000	0.000	33.971	0.000	0.328
		B		0.000	0.000	19.116	0.000	0.199
		C		0.000	0.000	21.844	0.000	0.192
L51	13.250-12.700	A	1.161	0.000	0.000	3.591	0.000	0.035
		B		0.000	0.000	2.501	0.000	0.025
		C		0.000	0.000	2.262	0.000	0.020
L52	12.700-12.350	A	1.157	0.000	0.000	2.284	0.000	0.022
		B		0.000	0.000	1.590	0.000	0.016
		C		0.000	0.000	1.439	0.000	0.013
L53	12.350-12.125	A	1.155	0.000	0.000	1.467	0.000	0.014
		B		0.000	0.000	1.022	0.000	0.010
		C		0.000	0.000	0.925	0.000	0.008
L54	12.125-12.000	A	1.153	0.000	0.000	0.815	0.000	0.008
		B		0.000	0.000	0.568	0.000	0.006
		C		0.000	0.000	0.514	0.000	0.004
L55	12.000-11.750	A	1.151	0.000	0.000	1.629	0.000	0.016
		B		0.000	0.000	1.135	0.000	0.011
		C		0.000	0.000	1.027	0.000	0.009
L56	11.750-8.375	A	1.132	0.000	0.000	21.931	0.000	0.207
		B		0.000	0.000	15.260	0.000	0.150
		C		0.000	0.000	13.824	0.000	0.119
L57	8.375-8.125	A	1.110	0.000	0.000	1.619	0.000	0.015
		B		0.000	0.000	1.125	0.000	0.011
		C		0.000	0.000	1.021	0.000	0.009
L58	8.125-7.750	A	1.106	0.000	0.000	2.426	0.000	0.023
		B		0.000	0.000	1.687	0.000	0.016
		C		0.000	0.000	1.530	0.000	0.013
L59	7.750-7.500	A	1.101	0.000	0.000	1.616	0.000	0.015
		B		0.000	0.000	1.123	0.000	0.011
		C		0.000	0.000	1.019	0.000	0.009
L60	7.500-7.250	A	1.098	0.000	0.000	1.615	0.000	0.015
		B		0.000	0.000	1.123	0.000	0.011
		C		0.000	0.000	1.019	0.000	0.009
L61	7.250-4.000	A	1.068	0.000	0.000	20.900	0.000	0.189
		B		0.000	0.000	12.459	0.000	0.121
		C		0.000	0.000	13.187	0.000	0.108
L62	4.000-3.733	A	1.029	0.000	0.000	1.706	0.000	0.015
		B		0.000	0.000	0.892	0.000	0.009
		C		0.000	0.000	1.077	0.000	0.009
L63	3.733-3.583	A	1.023	0.000	0.000	0.958	0.000	0.008
		B		0.000	0.000	0.500	0.000	0.005
		C		0.000	0.000	0.605	0.000	0.005
L64	3.583-3.000	A	1.013	0.000	0.000	3.715	0.000	0.032
		B		0.000	0.000	1.940	0.000	0.019
		C		0.000	0.000	2.346	0.000	0.019
L65	3.000-2.750	A	0.999	0.000	0.000	1.590	0.000	0.014
		B		0.000	0.000	0.829	0.000	0.008
		C		0.000	0.000	1.004	0.000	0.008
L66	2.750-1.900	A	0.978	0.000	0.000	5.386	0.000	0.046
		B		0.000	0.000	2.805	0.000	0.027
		C		0.000	0.000	3.403	0.000	0.026
L67	1.900-1.650	A	0.952	0.000	0.000	1.391	0.000	0.012
		B		0.000	0.000	0.634	0.000	0.007
		C		0.000	0.000	0.811	0.000	0.007
L68	1.650-0.000	A	0.882	0.000	0.000	7.247	0.000	0.067
		B		0.000	0.000	2.276	0.000	0.034
		C		0.000	0.000	3.469	0.000	0.032

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	<p>Project</p>	<p>Date</p> <p>21:54:18 05/10/22</p>
	<p>Client</p> <p>Crown Castle</p>	<p>Designed by</p> <p>Pavan Upadhya</p>

Feed Line Center of Pressure

Section	Elevation ft	CP _x	CP _z	CP _x Ice	CP _z Ice
		in	in	in	in
L1	118.000-113.000	0.369	0.004	1.320	0.014
L2	113.000-108.000	0.369	0.004	1.316	0.014
L3	108.000-103.000	0.369	0.004	1.311	0.014
L4	103.000-98.000	0.369	0.004	1.307	0.014
L5	98.000-93.000	0.369	0.004	1.302	0.014
L6	93.000-90.000	0.369	0.004	1.298	0.014
L7	90.000-85.000	0.369	0.004	1.294	0.014
L8	85.000-80.000	-4.167	-5.973	-2.334	-4.142
L9	80.000-76.500	-2.790	-4.235	-1.275	-3.097
L10	76.500-76.250	-2.063	-3.132	-1.044	-2.533
L11	76.250-74.000	-1.354	-2.075	-0.916	-2.168
L12	74.000-73.750	-1.130	-1.750	-0.813	-1.872
L13	73.750-68.750	-1.064	-1.648	-0.770	-1.771
L14	68.750-68.500	-0.937	-1.452	-0.685	-1.572
L15	68.500-68.250	-0.937	-1.452	-0.685	-1.572
L16	68.250-64.500	-1.027	-1.592	-0.749	-1.718
L17	64.500-64.250	-0.983	-1.522	-0.718	-1.644
L18	64.250-63.000	-0.983	-1.522	-0.718	-1.644
L19	63.000-62.750	-1.041	-1.613	-0.752	-1.720
L20	62.750-60.000	-1.201	-1.618	-1.026	-1.659
L21	60.000-59.750	-1.772	-2.295	-1.583	-2.313
L22	59.750-54.750	-1.772	-2.295	-1.584	-2.315
L23	54.750-49.750	-1.854	-1.592	-1.684	-1.575
L24	49.750-49.083	-2.050	0.080	-1.915	0.181
L25	49.083-48.833	-2.050	0.080	-1.915	0.181
L26	48.833-43.833	-2.050	0.080	-1.917	0.179
L27	43.833-42.000	-1.859	0.073	-1.747	0.160
L28	42.000-41.750	-1.725	0.067	-1.626	0.148
L29	41.750-36.750	-1.725	0.067	-1.628	0.146
L30	36.750-34.500	-1.737	0.086	-1.647	0.156
L31	34.500-34.250	-1.749	0.106	-1.666	0.170
L32	34.250-34.000	-1.749	0.106	-1.666	0.170
L33	34.000-33.750	-1.749	0.106	-1.666	0.170
L34	33.750-30.000	-1.965	0.076	-1.864	0.144
L35	30.000-29.750	-0.499	-2.417	-0.449	-2.491
L36	29.750-28.500	-2.024	-1.604	-1.945	-1.675
L37	28.500-28.250	-2.303	-1.445	-2.222	-1.515
L38	28.250-27.942	-2.303	-1.445	-2.222	-1.515
L39	27.942-27.692	-2.303	-1.445	-2.223	-1.515
L40	27.692-23.000	-2.485	0.106	-2.414	0.017
L41	23.000-22.750	-2.622	1.279	-2.559	1.181
L42	22.750-21.500	-2.622	1.279	-2.560	1.180
L43	21.500-21.250	-2.622	1.279	-2.560	1.179
L44	21.250-21.000	-2.622	1.279	-2.561	1.179
L45	21.000-20.750	-2.622	1.279	-2.561	1.179
L46	20.750-19.000	-2.718	1.252	-2.625	1.144
L47	19.000-18.750	-2.617	1.276	-2.521	1.158
L48	18.750-18.500	-2.617	1.276	-2.521	1.158
L49	18.500-18.250	-2.617	1.276	-2.521	1.157
L50	18.250-13.250	-2.489	0.687	-2.354	0.599
L51	13.250-12.700	-2.915	-0.213	-2.725	-0.222
L52	12.700-12.350	-2.915	-0.213	-2.725	-0.223
L53	12.350-12.125	-2.915	-0.213	-2.726	-0.224
L54	12.125-12.000	-2.915	-0.213	-2.727	-0.224
L55	12.000-11.750	-2.915	-0.213	-2.727	-0.224
L56	11.750-8.375	-2.915	-0.213	-2.731	-0.229
L57	8.375-8.125	-2.915	-0.213	-2.737	-0.234
L58	8.125-7.750	-2.915	-0.213	-2.738	-0.235

tnxTower MTS Engineering, P.L.L.C. 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 151136.007.01 - NEW BRITAIN GRAVEL PIT, CT (BU# 876331)	Page 18 of 75
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	Client Crown Castle	Designed by Pavan Upadhya

Section	Elevation	CP _x	CP _z	CP _x	CP _z
	ft	in	in	Ice in	Ice in
L59	7.750-7.500	-2.915	-0.213	-2.739	-0.236
L60	7.500-7.250	-2.915	-0.213	-2.740	-0.237
L61	7.250-4.000	-2.435	0.489	-2.310	0.386
L62	4.000-3.733	-2.060	1.037	-1.979	0.868
L63	3.733-3.583	-2.060	1.037	-1.980	0.867
L64	3.583-3.000	-2.060	1.037	-1.982	0.865
L65	3.000-2.750	-2.060	1.037	-1.985	0.862
L66	2.750-1.900	-2.060	1.037	-1.990	0.858
L67	1.900-1.650	-2.302	1.374	-2.202	1.128
L68	1.650-0.000	-2.864	2.155	-2.685	1.719

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

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L1	27	Safety Line 3/8	113.00 - 118.00	1.0000	1.0000
L2	27	Safety Line 3/8	108.00 - 113.00	1.0000	1.0000
L3	27	Safety Line 3/8	103.00 - 108.00	1.0000	1.0000
L4	27	Safety Line 3/8	98.00 - 103.00	1.0000	1.0000
L5	27	Safety Line 3/8	93.00 - 98.00	1.0000	1.0000
L6	27	Safety Line 3/8	90.00 - 93.00	1.0000	1.0000
L7	27	Safety Line 3/8	85.00 - 90.00	1.0000	1.0000
L8	20	HB158-1-08U8-S8J18(1-5/8)	80.00 - 85.00	1.0000	1.0000
L8	27	Safety Line 3/8	80.00 - 85.00	1.0000	1.0000
L9	20	HB158-1-08U8-S8J18(1-5/8)	76.50 - 80.00	1.0000	1.0000
L9	23	LDF4-50A(1/2)	76.50 - 80.00	1.0000	1.0000
L9	27	Safety Line 3/8	76.50 - 80.00	1.0000	1.0000
L9	78	4.5" x 1" Plate	76.50 - 78.00	1.0000	1.0000
L9	79	4.5" x 1" Plate	76.50 - 78.00	1.0000	1.0000
L9	80	4.5" x 1" Plate	76.50 - 78.00	1.0000	1.0000
L10	20	HB158-1-08U8-S8J18(1-5/8)	76.25 - 76.50	1.0000	1.0000
L10	23	LDF4-50A(1/2)	76.25 - 76.50	1.0000	1.0000
L10	27	Safety Line 3/8	76.25 - 76.50	1.0000	1.0000
L10	78	4.5" x 1" Plate	76.25 - 76.50	1.0000	1.0000
L10	79	4.5" x 1" Plate	76.25 - 76.50	1.0000	1.0000
L10	80	4.5" x 1" Plate	76.25 - 76.50	1.0000	1.0000
L11	20	HB158-1-08U8-S8J18(1-5/8)	74.00 - 76.25	1.0000	1.0000
L11	23	LDF4-50A(1/2)	74.00 - 76.25	1.0000	1.0000
L11	27	Safety Line 3/8	74.00 - 76.25	1.0000	1.0000
L11	37	Bent PL 9"x0.75"	74.00 - 75.00	1.0000	1.0000
L11	38	Bent PL 9"x0.75"	74.00 - 75.00	1.0000	1.0000
L11	39	Bent PL 9"x0.75"	74.00 - 75.00	1.0000	1.0000
L11	78	4.5" x 1" Plate	74.00 - 76.25	1.0000	1.0000
L11	79	4.5" x 1" Plate	74.00 - 76.25	1.0000	1.0000
L11	80	4.5" x 1" Plate	74.00 - 76.25	1.0000	1.0000
L12	20	HB158-1-08U8-S8J18(1-5/8)	73.75 - 74.00	1.0000	1.0000
L12	23	LDF4-50A(1/2)	73.75 - 74.00	1.0000	1.0000
L12	27	Safety Line 3/8	73.75 - 74.00	1.0000	1.0000
L12	37	Bent PL 9"x0.75"	73.75 - 74.00	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L12	38	Bent PL 9"x0.75"	73.75 - 74.00	1.0000	1.0000
L12	39	Bent PL 9"x0.75"	73.75 - 74.00	1.0000	1.0000
L12	78	4.5" x 1" Plate	73.75 - 74.00	1.0000	1.0000
L12	79	4.5" x 1" Plate	73.75 - 74.00	1.0000	1.0000
L12	80	4.5" x 1" Plate	73.75 - 74.00	1.0000	1.0000
L13	20	HB158-1-08U8-S8J18(1-5/8)	68.75 - 73.75	1.0000	1.0000
L13	23	LDF4-50A(1/2)	68.75 - 73.75	1.0000	1.0000
L13	27	Safety Line 3/8	68.75 - 73.75	1.0000	1.0000
L13	37	Bent PL 9"x0.75"	68.75 - 73.75	1.0000	1.0000
L13	38	Bent PL 9"x0.75"	68.75 - 73.75	1.0000	1.0000
L13	39	Bent PL 9"x0.75"	68.75 - 73.75	1.0000	1.0000
L13	64	4.5" x 1" Plate	68.75 - 70.25	1.0000	1.0000
L13	65	4.5" x 1" Plate	68.75 - 70.25	1.0000	1.0000
L13	66	4.5" x 1" Plate	68.75 - 70.25	1.0000	1.0000
L13	78	4.5" x 1" Plate	68.75 - 73.75	1.0000	1.0000
L13	79	4.5" x 1" Plate	68.75 - 73.75	1.0000	1.0000
L13	80	4.5" x 1" Plate	68.75 - 73.75	1.0000	1.0000
L14	20	HB158-1-08U8-S8J18(1-5/8)	68.50 - 68.75	1.0000	1.0000
L14	23	LDF4-50A(1/2)	68.50 - 68.75	1.0000	1.0000
L14	27	Safety Line 3/8	68.50 - 68.75	1.0000	1.0000
L14	37	Bent PL 9"x0.75"	68.50 - 68.75	1.0000	1.0000
L14	38	Bent PL 9"x0.75"	68.50 - 68.75	1.0000	1.0000
L14	39	Bent PL 9"x0.75"	68.50 - 68.75	1.0000	1.0000
L14	64	4.5" x 1" Plate	68.50 - 68.75	1.0000	1.0000
L14	65	4.5" x 1" Plate	68.50 - 68.75	1.0000	1.0000
L14	66	4.5" x 1" Plate	68.50 - 68.75	1.0000	1.0000
L14	78	4.5" x 1" Plate	68.50 - 68.75	1.0000	1.0000
L14	79	4.5" x 1" Plate	68.50 - 68.75	1.0000	1.0000
L14	80	4.5" x 1" Plate	68.50 - 68.75	1.0000	1.0000
L15	20	HB158-1-08U8-S8J18(1-5/8)	68.25 - 68.50	1.0000	1.0000
L15	23	LDF4-50A(1/2)	68.25 - 68.50	1.0000	1.0000
L15	27	Safety Line 3/8	68.25 - 68.50	1.0000	1.0000
L15	37	Bent PL 9"x0.75"	68.25 - 68.50	1.0000	1.0000
L15	38	Bent PL 9"x0.75"	68.25 - 68.50	1.0000	1.0000
L15	39	Bent PL 9"x0.75"	68.25 - 68.50	1.0000	1.0000
L15	64	4.5" x 1" Plate	68.25 - 68.50	1.0000	1.0000
L15	65	4.5" x 1" Plate	68.25 - 68.50	1.0000	1.0000
L15	66	4.5" x 1" Plate	68.25 - 68.50	1.0000	1.0000
L15	78	4.5" x 1" Plate	68.25 - 68.50	1.0000	1.0000
L15	79	4.5" x 1" Plate	68.25 - 68.50	1.0000	1.0000
L15	80	4.5" x 1" Plate	68.25 - 68.50	1.0000	1.0000
L16	20	HB158-1-08U8-S8J18(1-5/8)	64.50 - 68.25	1.0000	1.0000
L16	23	LDF4-50A(1/2)	64.50 - 68.25	1.0000	1.0000
L16	27	Safety Line 3/8	64.50 - 68.25	1.0000	1.0000
L16	37	Bent PL 9"x0.75"	64.50 - 68.25	1.0000	1.0000
L16	38	Bent PL 9"x0.75"	64.50 - 68.25	1.0000	1.0000
L16	39	Bent PL 9"x0.75"	64.50 - 68.25	1.0000	1.0000
L16	49	MS-400 (4" x 0.75" Plate)	64.50 - 65.50	1.0000	1.0000
L16	50	MS-400 (4" x 0.75" Plate)	64.50 - 65.50	1.0000	1.0000
L16	51	MS-400 (4" x 0.75" Plate)	64.50 - 65.50	1.0000	1.0000
L16	64	4.5" x 1" Plate	64.50 - 68.25	1.0000	1.0000
L16	65	4.5" x 1" Plate	64.50 - 68.25	1.0000	1.0000
L16	66	4.5" x 1" Plate	64.50 - 68.25	1.0000	1.0000
L16	78	4.5" x 1" Plate	67.00 - 68.25	1.0000	1.0000
L16	79	4.5" x 1" Plate	67.00 - 68.25	1.0000	1.0000
L16	80	4.5" x 1" Plate	67.00 - 68.25	1.0000	1.0000
L17	20	HB158-1-08U8-S8J18(1-5/8)	64.25 - 64.50	1.0000	1.0000
L17	23	LDF4-50A(1/2)	64.25 - 64.50	1.0000	1.0000
L17	27	Safety Line 3/8	64.25 - 64.50	1.0000	1.0000
L17	37	Bent PL 9"x0.75"	64.25 - 64.50	1.0000	1.0000
L17	38	Bent PL 9"x0.75"	64.25 - 64.50	1.0000	1.0000
L17	39	Bent PL 9"x0.75"	64.25 - 64.50	1.0000	1.0000

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Client	Crown Castle	Designed by	Pavan Upadhya

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L17	49	MS-400 (4" x 0.75" Plate)	64.25 - 64.50	1.0000	1.0000
L17	50	MS-400 (4" x 0.75" Plate)	64.25 - 64.50	1.0000	1.0000
L17	51	MS-400 (4" x 0.75" Plate)	64.25 - 64.50	1.0000	1.0000
L17	64	4.5" x 1" Plate	64.25 - 64.50	1.0000	1.0000
L17	65	4.5" x 1" Plate	64.25 - 64.50	1.0000	1.0000
L17	66	4.5" x 1" Plate	64.25 - 64.50	1.0000	1.0000
L18	20	HB158-1-08U8-S8J18(1-5/8)	63.00 - 64.25	1.0000	1.0000
L18	23	LDF4-50A(1/2)	63.00 - 64.25	1.0000	1.0000
L18	27	Safety Line 3/8	63.00 - 64.25	1.0000	1.0000
L18	37	Bent PL 9"x0.75"	63.00 - 64.25	1.0000	1.0000
L18	38	Bent PL 9"x0.75"	63.00 - 64.25	1.0000	1.0000
L18	39	Bent PL 9"x0.75"	63.00 - 64.25	1.0000	1.0000
L18	49	MS-400 (4" x 0.75" Plate)	63.00 - 64.25	1.0000	1.0000
L18	50	MS-400 (4" x 0.75" Plate)	63.00 - 64.25	1.0000	1.0000
L18	51	MS-400 (4" x 0.75" Plate)	63.00 - 64.25	1.0000	1.0000
L18	64	4.5" x 1" Plate	63.00 - 64.25	1.0000	1.0000
L18	65	4.5" x 1" Plate	63.00 - 64.25	1.0000	1.0000
L18	66	4.5" x 1" Plate	63.00 - 64.25	1.0000	1.0000
L19	20	HB158-1-08U8-S8J18(1-5/8)	62.75 - 63.00	1.0000	1.0000
L19	23	LDF4-50A(1/2)	62.75 - 63.00	1.0000	1.0000
L19	27	Safety Line 3/8	62.75 - 63.00	1.0000	1.0000
L19	37	Bent PL 9"x0.75"	62.75 - 63.00	1.0000	1.0000
L19	38	Bent PL 9"x0.75"	62.75 - 63.00	1.0000	1.0000
L19	39	Bent PL 9"x0.75"	62.75 - 63.00	1.0000	1.0000
L19	49	MS-400 (4" x 0.75" Plate)	62.75 - 63.00	1.0000	1.0000
L19	50	MS-400 (4" x 0.75" Plate)	62.75 - 63.00	1.0000	1.0000
L19	51	MS-400 (4" x 0.75" Plate)	62.75 - 63.00	1.0000	1.0000
L19	60	3.75" x 1" Plate	62.75 - 63.00	1.0000	1.0000
L19	61	3.75" x 1" Plate	62.75 - 63.00	1.0000	1.0000
L19	62	3.75" x 1" Plate	62.75 - 63.00	1.0000	1.0000
L20	20	HB158-1-08U8-S8J18(1-5/8)	60.00 - 62.75	1.0000	1.0000
L20	23	LDF4-50A(1/2)	60.00 - 62.75	1.0000	1.0000
L20	25	CU12PSM9P6XXX(1-1/2)	60.00 - 62.00	1.0000	1.0000
L20	27	Safety Line 3/8	60.00 - 62.75	1.0000	1.0000
L20	37	Bent PL 9"x0.75"	60.00 - 62.75	1.0000	1.0000
L20	38	Bent PL 9"x0.75"	60.00 - 62.75	1.0000	1.0000
L20	39	Bent PL 9"x0.75"	60.00 - 62.75	1.0000	1.0000
L20	49	MS-400 (4" x 0.75" Plate)	60.50 - 62.75	1.0000	1.0000
L20	50	MS-400 (4" x 0.75" Plate)	60.50 - 62.75	1.0000	1.0000
L20	51	MS-400 (4" x 0.75" Plate)	60.50 - 62.75	1.0000	1.0000
L20	60	3.75" x 1" Plate	60.25 - 62.75	1.0000	1.0000
L20	61	3.75" x 1" Plate	60.25 - 62.75	1.0000	1.0000
L20	62	3.75" x 1" Plate	60.25 - 62.75	1.0000	1.0000
L21	20	HB158-1-08U8-S8J18(1-5/8)	59.75 - 60.00	1.0000	1.0000
L21	23	LDF4-50A(1/2)	59.75 - 60.00	1.0000	1.0000
L21	25	CU12PSM9P6XXX(1-1/2)	59.75 - 60.00	1.0000	1.0000
L21	27	Safety Line 3/8	59.75 - 60.00	1.0000	1.0000
L21	33	Bent PL 10"x1"	59.75 - 60.00	1.0000	1.0000
L21	34	Bent PL 10"x1"	59.75 - 60.00	1.0000	1.0000
L21	35	Bent PL 10"x1"	59.75 - 60.00	1.0000	1.0000
L22	20	HB158-1-08U8-S8J18(1-5/8)	54.75 - 59.75	1.0000	1.0000
L22	23	LDF4-50A(1/2)	54.75 - 59.75	1.0000	1.0000
L22	25	CU12PSM9P6XXX(1-1/2)	54.75 - 59.75	1.0000	1.0000
L22	27	Safety Line 3/8	54.75 - 59.75	1.0000	1.0000
L22	33	Bent PL 10"x1"	54.75 - 59.75	1.0000	1.0000
L22	34	Bent PL 10"x1"	54.75 - 59.75	1.0000	1.0000
L22	35	Bent PL 10"x1"	54.75 - 59.75	1.0000	1.0000
L23	20	HB158-1-08U8-S8J18(1-5/8)	49.75 - 54.75	1.0000	1.0000
L23	23	LDF4-50A(1/2)	49.75 - 54.75	1.0000	1.0000
L23	25	CU12PSM9P6XXX(1-1/2)	49.75 - 54.75	1.0000	1.0000
L23	27	Safety Line 3/8	49.75 - 54.75	1.0000	1.0000
L23	33	Bent PL 10"x1"	49.75 - 54.75	1.0000	1.0000

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Client	Crown Castle	Designed by	Pavan Upadhya

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L23	34	Bent PL 10"x1"	49.75 - 54.75	1.0000	1.0000
L23	35	Bent PL 10"x1"	49.75 - 54.75	1.0000	1.0000
L23	72	4" x 0.75" Plate	49.75 - 51.08	1.0000	1.0000
L23	73	4" x 0.75" Plate	49.75 - 51.08	1.0000	1.0000
L24	20	HB158-1-08U8-S8J18(1-5/8)	49.08 - 49.75	1.0000	1.0000
L24	23	LDF4-50A(1/2)	49.08 - 49.75	1.0000	1.0000
L24	25	CU12PSM9P6XXX(1-1/2)	49.08 - 49.75	1.0000	1.0000
L24	27	Safety Line 3/8	49.08 - 49.75	1.0000	1.0000
L24	33	Bent PL 10"x1"	49.08 - 49.75	1.0000	1.0000
L24	34	Bent PL 10"x1"	49.08 - 49.75	1.0000	1.0000
L24	35	Bent PL 10"x1"	49.08 - 49.75	1.0000	1.0000
L24	72	4" x 0.75" Plate	49.08 - 49.75	1.0000	1.0000
L24	73	4" x 0.75" Plate	49.08 - 49.75	1.0000	1.0000
L25	20	HB158-1-08U8-S8J18(1-5/8)	48.83 - 49.08	1.0000	1.0000
L25	23	LDF4-50A(1/2)	48.83 - 49.08	1.0000	1.0000
L25	25	CU12PSM9P6XXX(1-1/2)	48.83 - 49.08	1.0000	1.0000
L25	27	Safety Line 3/8	48.83 - 49.08	1.0000	1.0000
L25	33	Bent PL 10"x1"	48.83 - 49.08	1.0000	1.0000
L25	34	Bent PL 10"x1"	48.83 - 49.08	1.0000	1.0000
L25	35	Bent PL 10"x1"	48.83 - 49.08	1.0000	1.0000
L25	72	4" x 0.75" Plate	48.83 - 49.08	1.0000	1.0000
L25	73	4" x 0.75" Plate	48.83 - 49.08	1.0000	1.0000
L26	20	HB158-1-08U8-S8J18(1-5/8)	43.83 - 48.83	1.0000	1.0000
L26	23	LDF4-50A(1/2)	43.83 - 48.83	1.0000	1.0000
L26	25	CU12PSM9P6XXX(1-1/2)	43.83 - 48.83	1.0000	1.0000
L26	27	Safety Line 3/8	43.83 - 48.83	1.0000	1.0000
L26	33	Bent PL 10"x1"	43.83 - 48.83	1.0000	1.0000
L26	34	Bent PL 10"x1"	43.83 - 48.83	1.0000	1.0000
L26	35	Bent PL 10"x1"	43.83 - 48.83	1.0000	1.0000
L26	72	4" x 0.75" Plate	43.83 - 48.83	1.0000	1.0000
L26	73	4" x 0.75" Plate	43.83 - 48.83	1.0000	1.0000
L27	20	HB158-1-08U8-S8J18(1-5/8)	42.00 - 43.83	1.0000	1.0000
L27	23	LDF4-50A(1/2)	42.00 - 43.83	1.0000	1.0000
L27	25	CU12PSM9P6XXX(1-1/2)	42.00 - 43.83	1.0000	1.0000
L27	27	Safety Line 3/8	42.00 - 43.83	1.0000	1.0000
L27	33	Bent PL 10"x1"	42.00 - 43.83	1.0000	1.0000
L27	34	Bent PL 10"x1"	42.00 - 43.83	1.0000	1.0000
L27	35	Bent PL 10"x1"	42.00 - 43.83	1.0000	1.0000
L27	56	4" x 0.75" Plate	42.00 - 43.00	1.0000	1.0000
L27	57	4" x 0.75" Plate	42.00 - 43.00	1.0000	1.0000
L27	58	4" x 0.75" Plate	42.00 - 43.00	1.0000	1.0000
L27	72	4" x 0.75" Plate	42.00 - 43.83	1.0000	1.0000
L27	73	4" x 0.75" Plate	42.00 - 43.83	1.0000	1.0000
L28	20	HB158-1-08U8-S8J18(1-5/8)	41.75 - 42.00	1.0000	1.0000
L28	23	LDF4-50A(1/2)	41.75 - 42.00	1.0000	1.0000
L28	25	CU12PSM9P6XXX(1-1/2)	41.75 - 42.00	1.0000	1.0000
L28	27	Safety Line 3/8	41.75 - 42.00	1.0000	1.0000
L28	33	Bent PL 10"x1"	41.75 - 42.00	1.0000	1.0000
L28	34	Bent PL 10"x1"	41.75 - 42.00	1.0000	1.0000
L28	35	Bent PL 10"x1"	41.75 - 42.00	1.0000	1.0000
L28	56	4" x 0.75" Plate	41.75 - 42.00	1.0000	1.0000
L28	57	4" x 0.75" Plate	41.75 - 42.00	1.0000	1.0000
L28	58	4" x 0.75" Plate	41.75 - 42.00	1.0000	1.0000
L28	72	4" x 0.75" Plate	41.75 - 42.00	1.0000	1.0000
L28	73	4" x 0.75" Plate	41.75 - 42.00	1.0000	1.0000
L29	20	HB158-1-08U8-S8J18(1-5/8)	36.75 - 41.75	1.0000	1.0000
L29	23	LDF4-50A(1/2)	36.75 - 41.75	1.0000	1.0000
L29	25	CU12PSM9P6XXX(1-1/2)	36.75 - 41.75	1.0000	1.0000
L29	27	Safety Line 3/8	36.75 - 41.75	1.0000	1.0000
L29	33	Bent PL 10"x1"	36.75 - 41.75	1.0000	1.0000
L29	34	Bent PL 10"x1"	36.75 - 41.75	1.0000	1.0000
L29	35	Bent PL 10"x1"	36.75 - 41.75	1.0000	1.0000

tnxTower

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Client	Crown Castle	Designed by	Pavan Upadhya

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L29	56	4" x 0.75" Plate	36.75 - 41.75	1.0000	1.0000
L29	57	4" x 0.75" Plate	36.75 - 41.75	1.0000	1.0000
L29	58	4" x 0.75" Plate	36.75 - 41.75	1.0000	1.0000
L29	72	4" x 0.75" Plate	36.75 - 41.75	1.0000	1.0000
L29	73	4" x 0.75" Plate	36.75 - 41.75	1.0000	1.0000
L30	20	HB158-1-08U8-S8J18(1-5/8)	34.50 - 36.75	1.0000	1.0000
L30	23	LDF4-50A(1/2)	34.50 - 36.75	1.0000	1.0000
L30	25	CU12PSM9P6XXX(1-1/2)	34.50 - 36.75	1.0000	1.0000
L30	27	Safety Line 3/8	34.50 - 36.75	1.0000	1.0000
L30	33	Bent PL 10"x1"	34.50 - 36.75	1.0000	1.0000
L30	34	Bent PL 10"x1"	34.50 - 36.75	1.0000	1.0000
L30	35	Bent PL 10"x1"	34.50 - 36.75	1.0000	1.0000
L30	45	MS-400 (4" x 0.75" Plate)	34.50 - 35.50	1.0000	1.0000
L30	46	MS-400 (4" x 0.75" Plate)	34.50 - 35.50	1.0000	1.0000
L30	47	MS-400 (4" x 0.75" Plate)	34.50 - 35.50	1.0000	1.0000
L30	56	4" x 0.75" Plate	34.50 - 36.75	1.0000	1.0000
L30	57	4" x 0.75" Plate	34.50 - 36.75	1.0000	1.0000
L30	58	4" x 0.75" Plate	34.50 - 36.75	1.0000	1.0000
L30	72	4" x 0.75" Plate	34.50 - 36.75	1.0000	1.0000
L30	73	4" x 0.75" Plate	34.50 - 36.75	1.0000	1.0000
L31	20	HB158-1-08U8-S8J18(1-5/8)	34.25 - 34.50	1.0000	1.0000
L31	23	LDF4-50A(1/2)	34.25 - 34.50	1.0000	1.0000
L31	25	CU12PSM9P6XXX(1-1/2)	34.25 - 34.50	1.0000	1.0000
L31	27	Safety Line 3/8	34.25 - 34.50	1.0000	1.0000
L31	33	Bent PL 10"x1"	34.25 - 34.50	1.0000	1.0000
L31	34	Bent PL 10"x1"	34.25 - 34.50	1.0000	1.0000
L31	35	Bent PL 10"x1"	34.25 - 34.50	1.0000	1.0000
L31	45	MS-400 (4" x 0.75" Plate)	34.25 - 34.50	1.0000	1.0000
L31	46	MS-400 (4" x 0.75" Plate)	34.25 - 34.50	1.0000	1.0000
L31	47	MS-400 (4" x 0.75" Plate)	34.25 - 34.50	1.0000	1.0000
L31	56	4" x 0.75" Plate	34.25 - 34.50	1.0000	1.0000
L31	57	4" x 0.75" Plate	34.25 - 34.50	1.0000	1.0000
L31	58	4" x 0.75" Plate	34.25 - 34.50	1.0000	1.0000
L31	72	4" x 0.75" Plate	34.25 - 34.50	1.0000	1.0000
L31	73	4" x 0.75" Plate	34.25 - 34.50	1.0000	1.0000
L32	20	HB158-1-08U8-S8J18(1-5/8)	34.00 - 34.25	1.0000	1.0000
L32	23	LDF4-50A(1/2)	34.00 - 34.25	1.0000	1.0000
L32	25	CU12PSM9P6XXX(1-1/2)	34.00 - 34.25	1.0000	1.0000
L32	27	Safety Line 3/8	34.00 - 34.25	1.0000	1.0000
L32	33	Bent PL 10"x1"	34.00 - 34.25	1.0000	1.0000
L32	34	Bent PL 10"x1"	34.00 - 34.25	1.0000	1.0000
L32	35	Bent PL 10"x1"	34.00 - 34.25	1.0000	1.0000
L32	45	MS-400 (4" x 0.75" Plate)	34.00 - 34.25	1.0000	1.0000
L32	46	MS-400 (4" x 0.75" Plate)	34.00 - 34.25	1.0000	1.0000
L32	47	MS-400 (4" x 0.75" Plate)	34.00 - 34.25	1.0000	1.0000
L32	56	4" x 0.75" Plate	34.00 - 34.25	1.0000	1.0000
L32	57	4" x 0.75" Plate	34.00 - 34.25	1.0000	1.0000
L32	58	4" x 0.75" Plate	34.00 - 34.25	1.0000	1.0000
L32	72	4" x 0.75" Plate	34.00 - 34.25	1.0000	1.0000
L32	73	4" x 0.75" Plate	34.00 - 34.25	1.0000	1.0000
L33	20	HB158-1-08U8-S8J18(1-5/8)	33.75 - 34.00	1.0000	1.0000
L33	23	LDF4-50A(1/2)	33.75 - 34.00	1.0000	1.0000
L33	25	CU12PSM9P6XXX(1-1/2)	33.75 - 34.00	1.0000	1.0000
L33	27	Safety Line 3/8	33.75 - 34.00	1.0000	1.0000
L33	33	Bent PL 10"x1"	33.75 - 34.00	1.0000	1.0000
L33	34	Bent PL 10"x1"	33.75 - 34.00	1.0000	1.0000
L33	35	Bent PL 10"x1"	33.75 - 34.00	1.0000	1.0000
L33	45	MS-400 (4" x 0.75" Plate)	33.75 - 34.00	1.0000	1.0000
L33	46	MS-400 (4" x 0.75" Plate)	33.75 - 34.00	1.0000	1.0000
L33	47	MS-400 (4" x 0.75" Plate)	33.75 - 34.00	1.0000	1.0000
L33	56	4" x 0.75" Plate	33.75 - 34.00	1.0000	1.0000
L33	57	4" x 0.75" Plate	33.75 - 34.00	1.0000	1.0000

tnxTower

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Job

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Project**Date**

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Client

Crown Castle

Designed by

Pavan Upadhy

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L33	58	4" x 0.75" Plate	33.75 - 34.00	1.0000	1.0000
L33	72	4" x 0.75" Plate	33.75 - 34.00	1.0000	1.0000
L33	73	4" x 0.75" Plate	33.75 - 34.00	1.0000	1.0000
L34	20	HB158-1-08U8-S8J18(1-5/8)	30.00 - 33.75	1.0000	1.0000
L34	23	LDF4-50A(1/2)	30.00 - 33.75	1.0000	1.0000
L34	25	CU12PSM9P6XXX(1-1/2)	30.00 - 33.75	1.0000	1.0000
L34	27	Safety Line 3/8	30.00 - 33.75	1.0000	1.0000
L34	33	Bent PL 10"x1"	30.00 - 33.75	1.0000	1.0000
L34	34	Bent PL 10"x1"	30.00 - 33.75	1.0000	1.0000
L34	35	Bent PL 10"x1"	30.00 - 33.75	1.0000	1.0000
L34	45	MS-400 (4" x 0.75" Plate)	30.50 - 33.75	1.0000	1.0000
L34	46	MS-400 (4" x 0.75" Plate)	30.50 - 33.75	1.0000	1.0000
L34	47	MS-400 (4" x 0.75" Plate)	30.50 - 33.75	1.0000	1.0000
L34	56	4" x 0.75" Plate	33.00 - 33.75	1.0000	1.0000
L34	57	4" x 0.75" Plate	33.00 - 33.75	1.0000	1.0000
L34	58	4" x 0.75" Plate	33.00 - 33.75	1.0000	1.0000
L34	72	4" x 0.75" Plate	30.08 - 33.75	1.0000	1.0000
L34	73	4" x 0.75" Plate	30.08 - 33.75	1.0000	1.0000
L35	20	HB158-1-08U8-S8J18(1-5/8)	29.75 - 30.00	1.0000	1.0000
L35	23	LDF4-50A(1/2)	29.75 - 30.00	1.0000	1.0000
L35	25	CU12PSM9P6XXX(1-1/2)	29.75 - 30.00	1.0000	1.0000
L35	27	Safety Line 3/8	29.75 - 30.00	1.0000	1.0000
L35	29	Bent PL 10"x1"	29.75 - 30.00	1.0000	1.0000
L35	30	Bent PL 10"x1"	29.75 - 30.00	1.0000	1.0000
L35	31	Bent PL 10"x1"	29.75 - 30.00	1.0000	1.0000
L35	69	4.5" x 1" Plate	29.75 - 30.00	1.0000	1.0000
L35	70	4.5" x 1" Plate	29.75 - 30.00	1.0000	1.0000
L36	20	HB158-1-08U8-S8J18(1-5/8)	28.50 - 29.75	1.0000	1.0000
L36	23	LDF4-50A(1/2)	28.50 - 29.75	1.0000	1.0000
L36	25	CU12PSM9P6XXX(1-1/2)	28.50 - 29.75	1.0000	1.0000
L36	27	Safety Line 3/8	28.50 - 29.75	1.0000	1.0000
L36	29	Bent PL 10"x1"	28.50 - 29.75	1.0000	1.0000
L36	30	Bent PL 10"x1"	28.50 - 29.75	1.0000	1.0000
L36	31	Bent PL 10"x1"	28.50 - 29.75	1.0000	1.0000
L36	68	4.5" x 1" Plate	28.50 - 29.54	1.0000	1.0000
L36	69	4.5" x 1" Plate	28.50 - 29.75	1.0000	1.0000
L36	70	4.5" x 1" Plate	28.50 - 29.75	1.0000	1.0000
L36	75	4.5" x 1" Plate	28.50 - 29.50	1.0000	1.0000
L36	76	4.5" x 1" Plate	28.50 - 29.50	1.0000	1.0000
L37	20	HB158-1-08U8-S8J18(1-5/8)	28.25 - 28.50	1.0000	1.0000
L37	23	LDF4-50A(1/2)	28.25 - 28.50	1.0000	1.0000
L37	25	CU12PSM9P6XXX(1-1/2)	28.25 - 28.50	1.0000	1.0000
L37	27	Safety Line 3/8	28.25 - 28.50	1.0000	1.0000
L37	29	Bent PL 10"x1"	28.25 - 28.50	1.0000	1.0000
L37	30	Bent PL 10"x1"	28.25 - 28.50	1.0000	1.0000
L37	31	Bent PL 10"x1"	28.25 - 28.50	1.0000	1.0000
L37	68	4.5" x 1" Plate	28.25 - 28.50	1.0000	1.0000
L37	69	4.5" x 1" Plate	28.25 - 28.50	1.0000	1.0000
L37	70	4.5" x 1" Plate	28.25 - 28.50	1.0000	1.0000
L37	75	4.5" x 1" Plate	28.25 - 28.50	1.0000	1.0000
L37	76	4.5" x 1" Plate	28.25 - 28.50	1.0000	1.0000
L38	20	HB158-1-08U8-S8J18(1-5/8)	27.94 - 28.25	1.0000	1.0000
L38	23	LDF4-50A(1/2)	27.94 - 28.25	1.0000	1.0000
L38	25	CU12PSM9P6XXX(1-1/2)	27.94 - 28.25	1.0000	1.0000
L38	27	Safety Line 3/8	27.94 - 28.25	1.0000	1.0000
L38	29	Bent PL 10"x1"	27.94 - 28.25	1.0000	1.0000
L38	30	Bent PL 10"x1"	27.94 - 28.25	1.0000	1.0000
L38	31	Bent PL 10"x1"	27.94 - 28.25	1.0000	1.0000
L38	68	4.5" x 1" Plate	27.94 - 28.25	1.0000	1.0000
L38	69	4.5" x 1" Plate	27.94 - 28.25	1.0000	1.0000
L38	70	4.5" x 1" Plate	27.94 - 28.25	1.0000	1.0000
L38	75	4.5" x 1" Plate	27.94 - 28.25	1.0000	1.0000

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Client	Crown Castle	Designed by	Pavan Upadhy

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L38	76	4.5" x 1" Plate	27.94 - 28.25	1.0000	1.0000
L39	20	HB158-1-08U8-S8J18(1-5/8)	27.69 - 27.94	1.0000	1.0000
L39	23	LDF4-50A(1/2)	27.69 - 27.94	1.0000	1.0000
L39	25	CU12PSM9P6XXX(1-1/2)	27.69 - 27.94	1.0000	1.0000
L39	27	Safety Line 3/8	27.69 - 27.94	1.0000	1.0000
L39	29	Bent PL 10"x1"	27.69 - 27.94	1.0000	1.0000
L39	30	Bent PL 10"x1"	27.69 - 27.94	1.0000	1.0000
L39	31	Bent PL 10"x1"	27.69 - 27.94	1.0000	1.0000
L39	68	4.5" x 1" Plate	27.69 - 27.94	1.0000	1.0000
L39	69	4.5" x 1" Plate	27.69 - 27.94	1.0000	1.0000
L39	70	4.5" x 1" Plate	27.69 - 27.94	1.0000	1.0000
L39	75	4.5" x 1" Plate	27.69 - 27.94	1.0000	1.0000
L39	76	4.5" x 1" Plate	27.69 - 27.94	1.0000	1.0000
L40	20	HB158-1-08U8-S8J18(1-5/8)	23.00 - 27.69	1.0000	1.0000
L40	23	LDF4-50A(1/2)	23.00 - 27.69	1.0000	1.0000
L40	25	CU12PSM9P6XXX(1-1/2)	23.00 - 27.69	1.0000	1.0000
L40	27	Safety Line 3/8	23.00 - 27.69	1.0000	1.0000
L40	29	Bent PL 10"x1"	23.00 - 27.69	1.0000	1.0000
L40	30	Bent PL 10"x1"	23.00 - 27.69	1.0000	1.0000
L40	31	Bent PL 10"x1"	23.00 - 27.69	1.0000	1.0000
L40	53	6" x 1" Plate	23.00 - 25.50	1.0000	1.0000
L40	54	6" x 1" Plate	23.00 - 25.50	1.0000	1.0000
L40	68	4.5" x 1" Plate	23.00 - 27.69	1.0000	1.0000
L40	69	4.5" x 1" Plate	23.00 - 27.69	1.0000	1.0000
L40	70	4.5" x 1" Plate	23.00 - 27.69	1.0000	1.0000
L40	75	4.5" x 1" Plate	23.00 - 27.69	1.0000	1.0000
L40	76	4.5" x 1" Plate	23.00 - 27.69	1.0000	1.0000
L41	20	HB158-1-08U8-S8J18(1-5/8)	22.75 - 23.00	1.0000	1.0000
L41	23	LDF4-50A(1/2)	22.75 - 23.00	1.0000	1.0000
L41	25	CU12PSM9P6XXX(1-1/2)	22.75 - 23.00	1.0000	1.0000
L41	27	Safety Line 3/8	22.75 - 23.00	1.0000	1.0000
L41	29	Bent PL 10"x1"	22.75 - 23.00	1.0000	1.0000
L41	30	Bent PL 10"x1"	22.75 - 23.00	1.0000	1.0000
L41	31	Bent PL 10"x1"	22.75 - 23.00	1.0000	1.0000
L41	53	6" x 1" Plate	22.75 - 23.00	1.0000	1.0000
L41	54	6" x 1" Plate	22.75 - 23.00	1.0000	1.0000
L41	68	4.5" x 1" Plate	22.75 - 23.00	1.0000	1.0000
L41	69	4.5" x 1" Plate	22.75 - 23.00	1.0000	1.0000
L41	70	4.5" x 1" Plate	22.75 - 23.00	1.0000	1.0000
L41	75	4.5" x 1" Plate	22.75 - 23.00	1.0000	1.0000
L41	76	4.5" x 1" Plate	22.75 - 23.00	1.0000	1.0000
L42	20	HB158-1-08U8-S8J18(1-5/8)	21.50 - 22.75	1.0000	1.0000
L42	23	LDF4-50A(1/2)	21.50 - 22.75	1.0000	1.0000
L42	25	CU12PSM9P6XXX(1-1/2)	21.50 - 22.75	1.0000	1.0000
L42	27	Safety Line 3/8	21.50 - 22.75	1.0000	1.0000
L42	29	Bent PL 10"x1"	21.50 - 22.75	1.0000	1.0000
L42	30	Bent PL 10"x1"	21.50 - 22.75	1.0000	1.0000
L42	31	Bent PL 10"x1"	21.50 - 22.75	1.0000	1.0000
L42	53	6" x 1" Plate	21.50 - 22.75	1.0000	1.0000
L42	54	6" x 1" Plate	21.50 - 22.75	1.0000	1.0000
L42	68	4.5" x 1" Plate	21.50 - 22.75	1.0000	1.0000
L42	69	4.5" x 1" Plate	21.50 - 22.75	1.0000	1.0000
L42	70	4.5" x 1" Plate	21.50 - 22.75	1.0000	1.0000
L42	75	4.5" x 1" Plate	21.50 - 22.75	1.0000	1.0000
L42	76	4.5" x 1" Plate	21.50 - 22.75	1.0000	1.0000
L43	20	HB158-1-08U8-S8J18(1-5/8)	21.25 - 21.50	1.0000	1.0000
L43	23	LDF4-50A(1/2)	21.25 - 21.50	1.0000	1.0000
L43	25	CU12PSM9P6XXX(1-1/2)	21.25 - 21.50	1.0000	1.0000
L43	27	Safety Line 3/8	21.25 - 21.50	1.0000	1.0000
L43	29	Bent PL 10"x1"	21.25 - 21.50	1.0000	1.0000
L43	30	Bent PL 10"x1"	21.25 - 21.50	1.0000	1.0000
L43	31	Bent PL 10"x1"	21.25 - 21.50	1.0000	1.0000

tnxTower

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Job

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Project**Date**

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Client

Crown Castle

Designed by

Pavan Upadhy

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L43	53	6" x 1" Plate	21.25 - 21.50	1.0000	1.0000
L43	54	6" x 1" Plate	21.25 - 21.50	1.0000	1.0000
L43	68	4.5" x 1" Plate	21.25 - 21.50	1.0000	1.0000
L43	69	4.5" x 1" Plate	21.25 - 21.50	1.0000	1.0000
L43	70	4.5" x 1" Plate	21.25 - 21.50	1.0000	1.0000
L43	75	4.5" x 1" Plate	21.25 - 21.50	1.0000	1.0000
L43	76	4.5" x 1" Plate	21.25 - 21.50	1.0000	1.0000
L44	20	HB158-1-08U8-S8J18(1-5/8)	21.00 - 21.25	1.0000	1.0000
L44	23	LDF4-50A(1/2)	21.00 - 21.25	1.0000	1.0000
L44	25	CU12PSM9P6XXX(1-1/2)	21.00 - 21.25	1.0000	1.0000
L44	27	Safety Line 3/8	21.00 - 21.25	1.0000	1.0000
L44	29	Bent PL 10"x1"	21.00 - 21.25	1.0000	1.0000
L44	30	Bent PL 10"x1"	21.00 - 21.25	1.0000	1.0000
L44	31	Bent PL 10"x1"	21.00 - 21.25	1.0000	1.0000
L44	53	6" x 1" Plate	21.00 - 21.25	1.0000	1.0000
L44	54	6" x 1" Plate	21.00 - 21.25	1.0000	1.0000
L44	68	4.5" x 1" Plate	21.00 - 21.25	1.0000	1.0000
L44	69	4.5" x 1" Plate	21.00 - 21.25	1.0000	1.0000
L44	70	4.5" x 1" Plate	21.00 - 21.25	1.0000	1.0000
L44	75	4.5" x 1" Plate	21.00 - 21.25	1.0000	1.0000
L44	76	4.5" x 1" Plate	21.00 - 21.25	1.0000	1.0000
L45	20	HB158-1-08U8-S8J18(1-5/8)	20.75 - 21.00	1.0000	1.0000
L45	23	LDF4-50A(1/2)	20.75 - 21.00	1.0000	1.0000
L45	25	CU12PSM9P6XXX(1-1/2)	20.75 - 21.00	1.0000	1.0000
L45	27	Safety Line 3/8	20.75 - 21.00	1.0000	1.0000
L45	29	Bent PL 10"x1"	20.75 - 21.00	1.0000	1.0000
L45	30	Bent PL 10"x1"	20.75 - 21.00	1.0000	1.0000
L45	31	Bent PL 10"x1"	20.75 - 21.00	1.0000	1.0000
L45	53	6" x 1" Plate	20.75 - 21.00	1.0000	1.0000
L45	54	6" x 1" Plate	20.75 - 21.00	1.0000	1.0000
L45	68	4.5" x 1" Plate	20.75 - 21.00	1.0000	1.0000
L45	69	4.5" x 1" Plate	20.75 - 21.00	1.0000	1.0000
L45	70	4.5" x 1" Plate	20.75 - 21.00	1.0000	1.0000
L45	75	4.5" x 1" Plate	20.75 - 21.00	1.0000	1.0000
L45	76	4.5" x 1" Plate	20.75 - 21.00	1.0000	1.0000
L46	20	HB158-1-08U8-S8J18(1-5/8)	19.00 - 20.75	1.0000	1.0000
L46	23	LDF4-50A(1/2)	19.00 - 20.75	1.0000	1.0000
L46	25	CU12PSM9P6XXX(1-1/2)	19.00 - 20.75	1.0000	1.0000
L46	27	Safety Line 3/8	19.00 - 20.75	1.0000	1.0000
L46	29	Bent PL 10"x1"	19.00 - 20.75	1.0000	1.0000
L46	30	Bent PL 10"x1"	19.00 - 20.75	1.0000	1.0000
L46	31	Bent PL 10"x1"	19.00 - 20.75	1.0000	1.0000
L46	41	MS-450 (4.5" x 1" Plate)	19.00 - 20.50	1.0000	1.0000
L46	42	MS-450 (4.5" x 1" Plate)	19.00 - 20.50	1.0000	1.0000
L46	43	MS-450 (4.5" x 1" Plate)	19.00 - 20.50	1.0000	1.0000
L46	53	6" x 1" Plate	19.00 - 20.75	1.0000	1.0000
L46	54	6" x 1" Plate	19.00 - 20.75	1.0000	1.0000
L46	68	4.5" x 1" Plate	19.50 - 20.75	1.0000	1.0000
L46	69	4.5" x 1" Plate	20.00 - 20.75	1.0000	1.0000
L46	70	4.5" x 1" Plate	20.00 - 20.75	1.0000	1.0000
L46	75	4.5" x 1" Plate	19.00 - 20.75	1.0000	1.0000
L46	76	4.5" x 1" Plate	19.00 - 20.75	1.0000	1.0000
L47	20	HB158-1-08U8-S8J18(1-5/8)	18.75 - 19.00	1.0000	1.0000
L47	23	LDF4-50A(1/2)	18.75 - 19.00	1.0000	1.0000
L47	25	CU12PSM9P6XXX(1-1/2)	18.75 - 19.00	1.0000	1.0000
L47	27	Safety Line 3/8	18.75 - 19.00	1.0000	1.0000
L47	29	Bent PL 10"x1"	18.75 - 19.00	1.0000	1.0000
L47	30	Bent PL 10"x1"	18.75 - 19.00	1.0000	1.0000
L47	31	Bent PL 10"x1"	18.75 - 19.00	1.0000	1.0000
L47	41	MS-450 (4.5" x 1" Plate)	18.75 - 19.00	1.0000	1.0000
L47	42	MS-450 (4.5" x 1" Plate)	18.75 - 19.00	1.0000	1.0000
L47	43	MS-450 (4.5" x 1" Plate)	18.75 - 19.00	1.0000	1.0000

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Client	Crown Castle	Designed by	Pavan Upadhya

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L47	53	6" x 1" Plate	18.75 - 19.00	1.0000	1.0000
L47	54	6" x 1" Plate	18.75 - 19.00	1.0000	1.0000
L47	75	4.5" x 1" Plate	18.75 - 19.00	1.0000	1.0000
L47	76	4.5" x 1" Plate	18.75 - 19.00	1.0000	1.0000
L48	20	HB158-1-08U8-S8J18(1-5/8)	18.50 - 18.75	1.0000	1.0000
L48	23	LDF4-50A(1/2)	18.50 - 18.75	1.0000	1.0000
L48	25	CU12PSM9P6XXX(1-1/2)	18.50 - 18.75	1.0000	1.0000
L48	27	Safety Line 3/8	18.50 - 18.75	1.0000	1.0000
L48	29	Bent PL 10"x1"	18.50 - 18.75	1.0000	1.0000
L48	30	Bent PL 10"x1"	18.50 - 18.75	1.0000	1.0000
L48	31	Bent PL 10"x1"	18.50 - 18.75	1.0000	1.0000
L48	41	MS-450 (4.5" x 1" Plate)	18.50 - 18.75	1.0000	1.0000
L48	42	MS-450 (4.5" x 1" Plate)	18.50 - 18.75	1.0000	1.0000
L48	43	MS-450 (4.5" x 1" Plate)	18.50 - 18.75	1.0000	1.0000
L48	53	6" x 1" Plate	18.50 - 18.75	1.0000	1.0000
L48	54	6" x 1" Plate	18.50 - 18.75	1.0000	1.0000
L48	75	4.5" x 1" Plate	18.50 - 18.75	1.0000	1.0000
L48	76	4.5" x 1" Plate	18.50 - 18.75	1.0000	1.0000
L49	20	HB158-1-08U8-S8J18(1-5/8)	18.25 - 18.50	1.0000	1.0000
L49	23	LDF4-50A(1/2)	18.25 - 18.50	1.0000	1.0000
L49	25	CU12PSM9P6XXX(1-1/2)	18.25 - 18.50	1.0000	1.0000
L49	27	Safety Line 3/8	18.25 - 18.50	1.0000	1.0000
L49	29	Bent PL 10"x1"	18.25 - 18.50	1.0000	1.0000
L49	30	Bent PL 10"x1"	18.25 - 18.50	1.0000	1.0000
L49	31	Bent PL 10"x1"	18.25 - 18.50	1.0000	1.0000
L49	41	MS-450 (4.5" x 1" Plate)	18.25 - 18.50	1.0000	1.0000
L49	42	MS-450 (4.5" x 1" Plate)	18.25 - 18.50	1.0000	1.0000
L49	43	MS-450 (4.5" x 1" Plate)	18.25 - 18.50	1.0000	1.0000
L49	53	6" x 1" Plate	18.25 - 18.50	1.0000	1.0000
L49	54	6" x 1" Plate	18.25 - 18.50	1.0000	1.0000
L49	75	4.5" x 1" Plate	18.25 - 18.50	1.0000	1.0000
L49	76	4.5" x 1" Plate	18.25 - 18.50	1.0000	1.0000
L50	20	HB158-1-08U8-S8J18(1-5/8)	13.25 - 18.25	1.0000	1.0000
L50	23	LDF4-50A(1/2)	13.25 - 18.25	1.0000	1.0000
L50	25	CU12PSM9P6XXX(1-1/2)	13.25 - 18.25	1.0000	1.0000
L50	27	Safety Line 3/8	13.25 - 18.25	1.0000	1.0000
L50	29	Bent PL 10"x1"	13.25 - 18.25	1.0000	1.0000
L50	30	Bent PL 10"x1"	13.25 - 18.25	1.0000	1.0000
L50	31	Bent PL 10"x1"	13.25 - 18.25	1.0000	1.0000
L50	41	MS-450 (4.5" x 1" Plate)	13.25 - 18.25	1.0000	1.0000
L50	42	MS-450 (4.5" x 1" Plate)	13.25 - 18.25	1.0000	1.0000
L50	43	MS-450 (4.5" x 1" Plate)	13.25 - 18.25	1.0000	1.0000
L50	53	6" x 1" Plate	13.25 - 18.25	1.0000	1.0000
L50	54	6" x 1" Plate	13.25 - 18.25	1.0000	1.0000
L50	75	4.5" x 1" Plate	17.00 - 18.25	1.0000	1.0000
L50	76	4.5" x 1" Plate	17.00 - 18.25	1.0000	1.0000
L50	82	7" x 1.25" Plate	13.25 - 14.88	1.0000	1.0000
L51	20	HB158-1-08U8-S8J18(1-5/8)	12.70 - 13.25	1.0000	1.0000
L51	23	LDF4-50A(1/2)	12.70 - 13.25	1.0000	1.0000
L51	25	CU12PSM9P6XXX(1-1/2)	12.70 - 13.25	1.0000	1.0000
L51	27	Safety Line 3/8	12.70 - 13.25	1.0000	1.0000
L51	29	Bent PL 10"x1"	12.70 - 13.25	1.0000	1.0000
L51	30	Bent PL 10"x1"	12.70 - 13.25	1.0000	1.0000
L51	31	Bent PL 10"x1"	12.70 - 13.25	1.0000	1.0000
L51	41	MS-450 (4.5" x 1" Plate)	12.70 - 13.25	1.0000	1.0000
L51	42	MS-450 (4.5" x 1" Plate)	12.70 - 13.25	1.0000	1.0000
L51	43	MS-450 (4.5" x 1" Plate)	12.70 - 13.25	1.0000	1.0000
L51	53	6" x 1" Plate	12.70 - 13.25	1.0000	1.0000
L51	54	6" x 1" Plate	12.70 - 13.25	1.0000	1.0000
L51	82	7" x 1.25" Plate	12.70 - 13.25	1.0000	1.0000
L52	20	HB158-1-08U8-S8J18(1-5/8)	12.35 - 12.70	1.0000	1.0000
L52	23	LDF4-50A(1/2)	12.35 - 12.70	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L52	25	CU12PSM9P6XXX(1-1/2)	12.35 - 12.70	1.0000	1.0000
L52	27	Safety Line 3/8	12.35 - 12.70	1.0000	1.0000
L52	29	Bent PL 10"x1"	12.35 - 12.70	1.0000	1.0000
L52	30	Bent PL 10"x1"	12.35 - 12.70	1.0000	1.0000
L52	31	Bent PL 10"x1"	12.35 - 12.70	1.0000	1.0000
L52	41	MS-450 (4.5" x 1" Plate)	12.35 - 12.70	1.0000	1.0000
L52	42	MS-450 (4.5" x 1" Plate)	12.35 - 12.70	1.0000	1.0000
L52	43	MS-450 (4.5" x 1" Plate)	12.35 - 12.70	1.0000	1.0000
L52	53	6" x 1" Plate	12.35 - 12.70	1.0000	1.0000
L52	54	6" x 1" Plate	12.35 - 12.70	1.0000	1.0000
L52	82	7" x 1.25" Plate	12.35 - 12.70	1.0000	1.0000
L53	20	HB158-1-08U8-S8J18(1-5/8)	12.13 - 12.35	1.0000	1.0000
L53	23	LDF4-50A(1/2)	12.13 - 12.35	1.0000	1.0000
L53	25	CU12PSM9P6XXX(1-1/2)	12.13 - 12.35	1.0000	1.0000
L53	27	Safety Line 3/8	12.13 - 12.35	1.0000	1.0000
L53	29	Bent PL 10"x1"	12.13 - 12.35	1.0000	1.0000
L53	30	Bent PL 10"x1"	12.13 - 12.35	1.0000	1.0000
L53	31	Bent PL 10"x1"	12.13 - 12.35	1.0000	1.0000
L53	41	MS-450 (4.5" x 1" Plate)	12.13 - 12.35	1.0000	1.0000
L53	42	MS-450 (4.5" x 1" Plate)	12.13 - 12.35	1.0000	1.0000
L53	43	MS-450 (4.5" x 1" Plate)	12.13 - 12.35	1.0000	1.0000
L53	53	6" x 1" Plate	12.13 - 12.35	1.0000	1.0000
L53	54	6" x 1" Plate	12.13 - 12.35	1.0000	1.0000
L53	82	7" x 1.25" Plate	12.13 - 12.35	1.0000	1.0000
L54	20	HB158-1-08U8-S8J18(1-5/8)	12.00 - 12.13	1.0000	1.0000
L54	23	LDF4-50A(1/2)	12.00 - 12.13	1.0000	1.0000
L54	25	CU12PSM9P6XXX(1-1/2)	12.00 - 12.13	1.0000	1.0000
L54	27	Safety Line 3/8	12.00 - 12.13	1.0000	1.0000
L54	29	Bent PL 10"x1"	12.00 - 12.13	1.0000	1.0000
L54	30	Bent PL 10"x1"	12.00 - 12.13	1.0000	1.0000
L54	31	Bent PL 10"x1"	12.00 - 12.13	1.0000	1.0000
L54	41	MS-450 (4.5" x 1" Plate)	12.00 - 12.13	1.0000	1.0000
L54	42	MS-450 (4.5" x 1" Plate)	12.00 - 12.13	1.0000	1.0000
L54	43	MS-450 (4.5" x 1" Plate)	12.00 - 12.13	1.0000	1.0000
L54	53	6" x 1" Plate	12.00 - 12.13	1.0000	1.0000
L54	54	6" x 1" Plate	12.00 - 12.13	1.0000	1.0000
L54	82	7" x 1.25" Plate	12.00 - 12.13	1.0000	1.0000
L55	20	HB158-1-08U8-S8J18(1-5/8)	11.75 - 12.00	1.0000	1.0000
L55	23	LDF4-50A(1/2)	11.75 - 12.00	1.0000	1.0000
L55	25	CU12PSM9P6XXX(1-1/2)	11.75 - 12.00	1.0000	1.0000
L55	27	Safety Line 3/8	11.75 - 12.00	1.0000	1.0000
L55	29	Bent PL 10"x1"	11.75 - 12.00	1.0000	1.0000
L55	30	Bent PL 10"x1"	11.75 - 12.00	1.0000	1.0000
L55	31	Bent PL 10"x1"	11.75 - 12.00	1.0000	1.0000
L55	41	MS-450 (4.5" x 1" Plate)	11.75 - 12.00	1.0000	1.0000
L55	42	MS-450 (4.5" x 1" Plate)	11.75 - 12.00	1.0000	1.0000
L55	43	MS-450 (4.5" x 1" Plate)	11.75 - 12.00	1.0000	1.0000
L55	53	6" x 1" Plate	11.75 - 12.00	1.0000	1.0000
L55	54	6" x 1" Plate	11.75 - 12.00	1.0000	1.0000
L55	82	7" x 1.25" Plate	11.75 - 12.00	1.0000	1.0000
L56	20	HB158-1-08U8-S8J18(1-5/8)	8.38 - 11.75	1.0000	1.0000
L56	23	LDF4-50A(1/2)	8.38 - 11.75	1.0000	1.0000
L56	25	CU12PSM9P6XXX(1-1/2)	8.38 - 11.75	1.0000	1.0000
L56	27	Safety Line 3/8	8.38 - 11.75	1.0000	1.0000
L56	29	Bent PL 10"x1"	8.38 - 11.75	1.0000	1.0000
L56	30	Bent PL 10"x1"	8.38 - 11.75	1.0000	1.0000
L56	31	Bent PL 10"x1"	8.38 - 11.75	1.0000	1.0000
L56	41	MS-450 (4.5" x 1" Plate)	8.38 - 11.75	1.0000	1.0000
L56	42	MS-450 (4.5" x 1" Plate)	8.38 - 11.75	1.0000	1.0000
L56	43	MS-450 (4.5" x 1" Plate)	8.38 - 11.75	1.0000	1.0000
L56	53	6" x 1" Plate	8.38 - 11.75	1.0000	1.0000
L56	54	6" x 1" Plate	8.38 - 11.75	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L56	82	7" x 1.25" Plate	8.38 - 11.75	1.0000	1.0000
L57	20	HB158-1-08U8-S8J18(1-5/8)	8.13 - 8.38	1.0000	1.0000
L57	23	LDF4-50A(1/2)	8.13 - 8.38	1.0000	1.0000
L57	25	CU12PSM9P6XXX(1-1/2)	8.13 - 8.38	1.0000	1.0000
L57	27	Safety Line 3/8	8.13 - 8.38	1.0000	1.0000
L57	29	Bent PL 10"x1"	8.13 - 8.38	1.0000	1.0000
L57	30	Bent PL 10"x1"	8.13 - 8.38	1.0000	1.0000
L57	31	Bent PL 10"x1"	8.13 - 8.38	1.0000	1.0000
L57	41	MS-450 (4.5" x 1" Plate)	8.13 - 8.38	1.0000	1.0000
L57	42	MS-450 (4.5" x 1" Plate)	8.13 - 8.38	1.0000	1.0000
L57	43	MS-450 (4.5" x 1" Plate)	8.13 - 8.38	1.0000	1.0000
L57	53	6" x 1" Plate	8.13 - 8.38	1.0000	1.0000
L57	54	6" x 1" Plate	8.13 - 8.38	1.0000	1.0000
L57	82	7" x 1.25" Plate	8.13 - 8.38	1.0000	1.0000
L58	20	HB158-1-08U8-S8J18(1-5/8)	7.75 - 8.13	1.0000	1.0000
L58	23	LDF4-50A(1/2)	7.75 - 8.13	1.0000	1.0000
L58	25	CU12PSM9P6XXX(1-1/2)	7.75 - 8.13	1.0000	1.0000
L58	27	Safety Line 3/8	7.75 - 8.13	1.0000	1.0000
L58	29	Bent PL 10"x1"	7.75 - 8.13	1.0000	1.0000
L58	30	Bent PL 10"x1"	7.75 - 8.13	1.0000	1.0000
L58	31	Bent PL 10"x1"	7.75 - 8.13	1.0000	1.0000
L58	41	MS-450 (4.5" x 1" Plate)	7.75 - 8.13	1.0000	1.0000
L58	42	MS-450 (4.5" x 1" Plate)	7.75 - 8.13	1.0000	1.0000
L58	43	MS-450 (4.5" x 1" Plate)	7.75 - 8.13	1.0000	1.0000
L58	53	6" x 1" Plate	7.75 - 8.13	1.0000	1.0000
L58	54	6" x 1" Plate	7.75 - 8.13	1.0000	1.0000
L58	82	7" x 1.25" Plate	7.75 - 8.13	1.0000	1.0000
L59	20	HB158-1-08U8-S8J18(1-5/8)	7.50 - 7.75	1.0000	1.0000
L59	23	LDF4-50A(1/2)	7.50 - 7.75	1.0000	1.0000
L59	25	CU12PSM9P6XXX(1-1/2)	7.50 - 7.75	1.0000	1.0000
L59	27	Safety Line 3/8	7.50 - 7.75	1.0000	1.0000
L59	29	Bent PL 10"x1"	7.50 - 7.75	1.0000	1.0000
L59	30	Bent PL 10"x1"	7.50 - 7.75	1.0000	1.0000
L59	31	Bent PL 10"x1"	7.50 - 7.75	1.0000	1.0000
L59	41	MS-450 (4.5" x 1" Plate)	7.50 - 7.75	1.0000	1.0000
L59	42	MS-450 (4.5" x 1" Plate)	7.50 - 7.75	1.0000	1.0000
L59	43	MS-450 (4.5" x 1" Plate)	7.50 - 7.75	1.0000	1.0000
L59	53	6" x 1" Plate	7.50 - 7.75	1.0000	1.0000
L59	54	6" x 1" Plate	7.50 - 7.75	1.0000	1.0000
L59	82	7" x 1.25" Plate	7.50 - 7.75	1.0000	1.0000
L60	20	HB158-1-08U8-S8J18(1-5/8)	7.25 - 7.50	1.0000	1.0000
L60	23	LDF4-50A(1/2)	7.25 - 7.50	1.0000	1.0000
L60	25	CU12PSM9P6XXX(1-1/2)	7.25 - 7.50	1.0000	1.0000
L60	27	Safety Line 3/8	7.25 - 7.50	1.0000	1.0000
L60	29	Bent PL 10"x1"	7.25 - 7.50	1.0000	1.0000
L60	30	Bent PL 10"x1"	7.25 - 7.50	1.0000	1.0000
L60	31	Bent PL 10"x1"	7.25 - 7.50	1.0000	1.0000
L60	41	MS-450 (4.5" x 1" Plate)	7.25 - 7.50	1.0000	1.0000
L60	42	MS-450 (4.5" x 1" Plate)	7.25 - 7.50	1.0000	1.0000
L60	43	MS-450 (4.5" x 1" Plate)	7.25 - 7.50	1.0000	1.0000
L60	53	6" x 1" Plate	7.25 - 7.50	1.0000	1.0000
L60	54	6" x 1" Plate	7.25 - 7.50	1.0000	1.0000
L60	82	7" x 1.25" Plate	7.25 - 7.50	1.0000	1.0000
L61	20	HB158-1-08U8-S8J18(1-5/8)	4.00 - 7.25	1.0000	1.0000
L61	23	LDF4-50A(1/2)	4.00 - 7.25	1.0000	1.0000
L61	25	CU12PSM9P6XXX(1-1/2)	4.00 - 7.25	1.0000	1.0000
L61	27	Safety Line 3/8	4.00 - 7.25	1.0000	1.0000
L61	29	Bent PL 10"x1"	4.00 - 7.25	1.0000	1.0000
L61	30	Bent PL 10"x1"	4.00 - 7.25	1.0000	1.0000
L61	31	Bent PL 10"x1"	4.00 - 7.25	1.0000	1.0000
L61	41	MS-450 (4.5" x 1" Plate)	4.00 - 7.25	1.0000	1.0000
L61	42	MS-450 (4.5" x 1" Plate)	4.00 - 7.25	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L61	43	MS-450 (4.5" x 1" Plate)	4.00 - 7.25	1.0000	1.0000
L61	53	6" x 1" Plate	4.00 - 7.25	1.0000	1.0000
L61	54	6" x 1" Plate	4.00 - 7.25	1.0000	1.0000
L61	82	7" x 1.25" Plate	5.88 - 7.25	1.0000	1.0000
L62	20	HB158-1-08U8-S8J18(1-5/8)	3.73 - 4.00	1.0000	1.0000
L62	23	LDF4-50A(1/2)	3.73 - 4.00	1.0000	1.0000
L62	25	CU12PSM9P6XXX(1-1/2)	3.73 - 4.00	1.0000	1.0000
L62	27	Safety Line 3/8	3.73 - 4.00	1.0000	1.0000
L62	29	Bent PL 10"x1"	3.73 - 4.00	1.0000	1.0000
L62	30	Bent PL 10"x1"	3.73 - 4.00	1.0000	1.0000
L62	31	Bent PL 10"x1"	3.73 - 4.00	1.0000	1.0000
L62	41	MS-450 (4.5" x 1" Plate)	3.73 - 4.00	1.0000	1.0000
L62	42	MS-450 (4.5" x 1" Plate)	3.73 - 4.00	1.0000	1.0000
L62	43	MS-450 (4.5" x 1" Plate)	3.73 - 4.00	1.0000	1.0000
L62	53	6" x 1" Plate	3.73 - 4.00	1.0000	1.0000
L62	54	6" x 1" Plate	3.73 - 4.00	1.0000	1.0000
L63	20	HB158-1-08U8-S8J18(1-5/8)	3.58 - 3.73	1.0000	1.0000
L63	23	LDF4-50A(1/2)	3.58 - 3.73	1.0000	1.0000
L63	25	CU12PSM9P6XXX(1-1/2)	3.58 - 3.73	1.0000	1.0000
L63	27	Safety Line 3/8	3.58 - 3.73	1.0000	1.0000
L63	29	Bent PL 10"x1"	3.58 - 3.73	1.0000	1.0000
L63	30	Bent PL 10"x1"	3.58 - 3.73	1.0000	1.0000
L63	31	Bent PL 10"x1"	3.58 - 3.73	1.0000	1.0000
L63	41	MS-450 (4.5" x 1" Plate)	3.58 - 3.73	1.0000	1.0000
L63	42	MS-450 (4.5" x 1" Plate)	3.58 - 3.73	1.0000	1.0000
L63	43	MS-450 (4.5" x 1" Plate)	3.58 - 3.73	1.0000	1.0000
L63	53	6" x 1" Plate	3.58 - 3.73	1.0000	1.0000
L63	54	6" x 1" Plate	3.58 - 3.73	1.0000	1.0000
L64	20	HB158-1-08U8-S8J18(1-5/8)	3.00 - 3.58	1.0000	1.0000
L64	23	LDF4-50A(1/2)	3.00 - 3.58	1.0000	1.0000
L64	25	CU12PSM9P6XXX(1-1/2)	3.00 - 3.58	1.0000	1.0000
L64	27	Safety Line 3/8	3.00 - 3.58	1.0000	1.0000
L64	29	Bent PL 10"x1"	3.00 - 3.58	1.0000	1.0000
L64	30	Bent PL 10"x1"	3.00 - 3.58	1.0000	1.0000
L64	31	Bent PL 10"x1"	3.00 - 3.58	1.0000	1.0000
L64	41	MS-450 (4.5" x 1" Plate)	3.00 - 3.58	1.0000	1.0000
L64	42	MS-450 (4.5" x 1" Plate)	3.00 - 3.58	1.0000	1.0000
L64	43	MS-450 (4.5" x 1" Plate)	3.00 - 3.58	1.0000	1.0000
L64	53	6" x 1" Plate	3.00 - 3.58	1.0000	1.0000
L64	54	6" x 1" Plate	3.00 - 3.58	1.0000	1.0000
L65	20	HB158-1-08U8-S8J18(1-5/8)	2.75 - 3.00	1.0000	1.0000
L65	23	LDF4-50A(1/2)	2.75 - 3.00	1.0000	1.0000
L65	25	CU12PSM9P6XXX(1-1/2)	2.75 - 3.00	1.0000	1.0000
L65	27	Safety Line 3/8	2.75 - 3.00	1.0000	1.0000
L65	29	Bent PL 10"x1"	2.75 - 3.00	1.0000	1.0000
L65	30	Bent PL 10"x1"	2.75 - 3.00	1.0000	1.0000
L65	31	Bent PL 10"x1"	2.75 - 3.00	1.0000	1.0000
L65	41	MS-450 (4.5" x 1" Plate)	2.75 - 3.00	1.0000	1.0000
L65	42	MS-450 (4.5" x 1" Plate)	2.75 - 3.00	1.0000	1.0000
L65	43	MS-450 (4.5" x 1" Plate)	2.75 - 3.00	1.0000	1.0000
L65	53	6" x 1" Plate	2.75 - 3.00	1.0000	1.0000
L65	54	6" x 1" Plate	2.75 - 3.00	1.0000	1.0000
L66	20	HB158-1-08U8-S8J18(1-5/8)	1.90 - 2.75	1.0000	1.0000
L66	23	LDF4-50A(1/2)	1.90 - 2.75	1.0000	1.0000
L66	25	CU12PSM9P6XXX(1-1/2)	1.90 - 2.75	1.0000	1.0000
L66	27	Safety Line 3/8	1.90 - 2.75	1.0000	1.0000
L66	29	Bent PL 10"x1"	1.90 - 2.75	1.0000	1.0000
L66	30	Bent PL 10"x1"	1.90 - 2.75	1.0000	1.0000
L66	31	Bent PL 10"x1"	1.90 - 2.75	1.0000	1.0000
L66	41	MS-450 (4.5" x 1" Plate)	1.90 - 2.75	1.0000	1.0000
L66	42	MS-450 (4.5" x 1" Plate)	1.90 - 2.75	1.0000	1.0000
L66	43	MS-450 (4.5" x 1" Plate)	1.90 - 2.75	1.0000	1.0000

<p style="text-align: center;">tnxTower</p> <p>MTS Engineering, P.L.L.C. 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	Job 151136.007.01 - NEW BRITAIN GRAVEL PIT, CT (BU# 876331)	Page 30 of 75
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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L66	53	6" x 1" Plate	1.90 - 2.75	1.0000	1.0000
L66	54	6" x 1" Plate	1.90 - 2.75	1.0000	1.0000
L67	20	HB158-1-08U8-S8J18(1-5/8)	1.65 - 1.90	1.0000	1.0000
L67	23	LDF4-50A(1/2)	1.65 - 1.90	1.0000	1.0000
L67	25	CU12PSM9P6XXX(1-1/2)	1.65 - 1.90	1.0000	1.0000
L67	27	Safety Line 3/8	1.65 - 1.90	1.0000	1.0000
L67	29	Bent PL 10"x1"	1.75 - 1.90	1.0000	1.0000
L67	30	Bent PL 10"x1"	1.75 - 1.90	1.0000	1.0000
L67	31	Bent PL 10"x1"	1.75 - 1.90	1.0000	1.0000
L67	41	MS-450 (4.5" x 1" Plate)	1.65 - 1.90	1.0000	1.0000
L67	42	MS-450 (4.5" x 1" Plate)	1.65 - 1.90	1.0000	1.0000
L67	43	MS-450 (4.5" x 1" Plate)	1.65 - 1.90	1.0000	1.0000
L67	53	6" x 1" Plate	1.65 - 1.90	1.0000	1.0000
L67	54	6" x 1" Plate	1.65 - 1.90	1.0000	1.0000
L68	20	HB158-1-08U8-S8J18(1-5/8)	0.00 - 1.65	1.0000	1.0000
L68	23	LDF4-50A(1/2)	0.00 - 1.65	1.0000	1.0000
L68	25	CU12PSM9P6XXX(1-1/2)	0.00 - 1.65	1.0000	1.0000
L68	27	Safety Line 3/8	0.00 - 1.65	1.0000	1.0000
L68	41	MS-450 (4.5" x 1" Plate)	0.00 - 1.65	1.0000	1.0000
L68	42	MS-450 (4.5" x 1" Plate)	0.00 - 1.65	1.0000	1.0000
L68	43	MS-450 (4.5" x 1" Plate)	0.00 - 1.65	1.0000	1.0000
L68	53	6" x 1" Plate	0.00 - 1.65	1.0000	1.0000
L68	54	6" x 1" Plate	0.00 - 1.65	1.0000	1.0000

Effective Width of Flat Linear Attachments / Feed Lines

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L9	78	4.5" x 1" Plate	76.50 - 78.00	Auto	1.0000
L9	79	4.5" x 1" Plate	76.50 - 78.00	Auto	1.0000
L9	80	4.5" x 1" Plate	76.50 - 78.00	Auto	1.0000
L10	78	4.5" x 1" Plate	76.25 - 76.50	Auto	1.0000
L10	79	4.5" x 1" Plate	76.25 - 76.50	Auto	1.0000
L10	80	4.5" x 1" Plate	76.25 - 76.50	Auto	1.0000
L11	37	Bent PL 9"x0.75"	74.00 - 75.00	Auto	1.0000
L11	38	Bent PL 9"x0.75"	74.00 - 75.00	Auto	1.0000
L11	39	Bent PL 9"x0.75"	74.00 - 75.00	Auto	1.0000
L11	78	4.5" x 1" Plate	74.00 - 76.25	Auto	1.0000
L11	79	4.5" x 1" Plate	74.00 - 76.25	Auto	1.0000
L11	80	4.5" x 1" Plate	74.00 - 76.25	Auto	1.0000
L12	37	Bent PL 9"x0.75"	73.75 - 74.00	Auto	1.0000
L12	38	Bent PL 9"x0.75"	73.75 - 74.00	Auto	1.0000
L12	39	Bent PL 9"x0.75"	73.75 - 74.00	Auto	1.0000
L12	78	4.5" x 1" Plate	73.75 - 74.00	Auto	1.0000
L12	79	4.5" x 1" Plate	73.75 - 74.00	Auto	1.0000
L12	80	4.5" x 1" Plate	73.75 - 74.00	Auto	1.0000
L13	37	Bent PL 9"x0.75"	68.75 - 73.75	Auto	1.0000
L13	38	Bent PL 9"x0.75"	68.75 - 73.75	Auto	1.0000
L13	39	Bent PL 9"x0.75"	68.75 - 73.75	Auto	1.0000
L13	64	4.5" x 1" Plate	68.75 - 70.25	Auto	1.0000
L13	65	4.5" x 1" Plate	68.75 - 70.25	Auto	1.0000
L13	66	4.5" x 1" Plate	68.75 - 70.25	Auto	1.0000
L13	78	4.5" x 1" Plate	68.75 - 73.75	Auto	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L13	79	4.5" x 1" Plate	68.75 - 73.75	Auto	1.0000
L13	80	4.5" x 1" Plate	68.75 - 73.75	Auto	1.0000
L14	37	Bent PL 9"x0.75"	68.50 - 68.75	Auto	1.0000
L14	38	Bent PL 9"x0.75"	68.50 - 68.75	Auto	1.0000
L14	39	Bent PL 9"x0.75"	68.50 - 68.75	Auto	1.0000
L14	64	4.5" x 1" Plate	68.50 - 68.75	Auto	1.0000
L14	65	4.5" x 1" Plate	68.50 - 68.75	Auto	1.0000
L14	66	4.5" x 1" Plate	68.50 - 68.75	Auto	1.0000
L14	78	4.5" x 1" Plate	68.50 - 68.75	Auto	1.0000
L14	79	4.5" x 1" Plate	68.50 - 68.75	Auto	1.0000
L14	80	4.5" x 1" Plate	68.50 - 68.75	Auto	1.0000
L15	37	Bent PL 9"x0.75"	68.25 - 68.50	Auto	1.0000
L15	38	Bent PL 9"x0.75"	68.25 - 68.50	Auto	1.0000
L15	39	Bent PL 9"x0.75"	68.25 - 68.50	Auto	1.0000
L15	64	4.5" x 1" Plate	68.25 - 68.50	Auto	1.0000
L15	65	4.5" x 1" Plate	68.25 - 68.50	Auto	1.0000
L15	66	4.5" x 1" Plate	68.25 - 68.50	Auto	1.0000
L15	78	4.5" x 1" Plate	68.25 - 68.50	Auto	1.0000
L15	79	4.5" x 1" Plate	68.25 - 68.50	Auto	1.0000
L15	80	4.5" x 1" Plate	68.25 - 68.50	Auto	1.0000
L16	37	Bent PL 9"x0.75"	64.50 - 68.25	Auto	1.0000
L16	38	Bent PL 9"x0.75"	64.50 - 68.25	Auto	1.0000
L16	39	Bent PL 9"x0.75"	64.50 - 68.25	Auto	1.0000
L16	49	MS-400 (4" x 0.75" Plate)	64.50 - 65.50	Auto	1.0000
L16	50	MS-400 (4" x 0.75" Plate)	64.50 - 65.50	Auto	1.0000
L16	51	MS-400 (4" x 0.75" Plate)	64.50 - 65.50	Auto	1.0000
L16	64	4.5" x 1" Plate	64.50 - 68.25	Auto	1.0000
L16	65	4.5" x 1" Plate	64.50 - 68.25	Auto	1.0000
L16	66	4.5" x 1" Plate	64.50 - 68.25	Auto	1.0000
L16	78	4.5" x 1" Plate	67.00 - 68.25	Auto	1.0000
L16	79	4.5" x 1" Plate	67.00 - 68.25	Auto	1.0000
L16	80	4.5" x 1" Plate	67.00 - 68.25	Auto	1.0000
L17	37	Bent PL 9"x0.75"	64.25 - 64.50	Auto	1.0000
L17	38	Bent PL 9"x0.75"	64.25 - 64.50	Auto	1.0000
L17	39	Bent PL 9"x0.75"	64.25 - 64.50	Auto	1.0000
L17	49	MS-400 (4" x 0.75" Plate)	64.25 - 64.50	Auto	1.0000
L17	50	MS-400 (4" x 0.75" Plate)	64.25 - 64.50	Auto	1.0000
L17	51	MS-400 (4" x 0.75" Plate)	64.25 - 64.50	Auto	1.0000
L17	64	4.5" x 1" Plate	64.25 - 64.50	Auto	1.0000
L17	65	4.5" x 1" Plate	64.25 - 64.50	Auto	1.0000
L17	66	4.5" x 1" Plate	64.25 - 64.50	Auto	1.0000
L18	37	Bent PL 9"x0.75"	63.00 - 64.25	Auto	1.0000
L18	38	Bent PL 9"x0.75"	63.00 - 64.25	Auto	1.0000
L18	39	Bent PL 9"x0.75"	63.00 - 64.25	Auto	1.0000
L18	49	MS-400 (4" x 0.75" Plate)	63.00 - 64.25	Auto	1.0000
L18	50	MS-400 (4" x 0.75" Plate)	63.00 - 64.25	Auto	1.0000
L18	51	MS-400 (4" x 0.75" Plate)	63.00 - 64.25	Auto	1.0000
L18	64	4.5" x 1" Plate	63.00 - 64.25	Auto	1.0000
L18	65	4.5" x 1" Plate	63.00 - 64.25	Auto	1.0000
L18	66	4.5" x 1" Plate	63.00 - 64.25	Auto	1.0000
L19	37	Bent PL 9"x0.75"	62.75 - 63.00	Auto	1.0000
L19	38	Bent PL 9"x0.75"	62.75 - 63.00	Auto	1.0000
L19	39	Bent PL 9"x0.75"	62.75 - 63.00	Auto	1.0000
L19	49	MS-400 (4" x 0.75" Plate)	62.75 - 63.00	Auto	1.0000
L19	50	MS-400 (4" x 0.75" Plate)	62.75 - 63.00	Auto	1.0000
L19	51	MS-400 (4" x 0.75" Plate)	62.75 - 63.00	Auto	1.0000
L19	60	3.75" x 1" Plate	62.75 - 63.00	Auto	1.0000
L19	61	3.75" x 1" Plate	62.75 - 63.00	Auto	1.0000
L19	62	3.75" x 1" Plate	62.75 - 63.00	Auto	1.0000
L20	37	Bent PL 9"x0.75"	60.00 - 62.75	Auto	1.0000
L20	38	Bent PL 9"x0.75"	60.00 - 62.75	Auto	1.0000

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Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L20	39	Bent PL 9"x0.75"	60.00 - 62.75	Auto	1.0000
L20	49	MS-400 (4" x 0.75" Plate)	60.50 - 62.75	Auto	1.0000
L20	50	MS-400 (4" x 0.75" Plate)	60.50 - 62.75	Auto	1.0000
L20	51	MS-400 (4" x 0.75" Plate)	60.50 - 62.75	Auto	1.0000
L20	60	3.75" x 1" Plate	60.25 - 62.75	Auto	1.0000
L20	61	3.75" x 1" Plate	60.25 - 62.75	Auto	1.0000
L20	62	3.75" x 1" Plate	60.25 - 62.75	Auto	1.0000
L21	33	Bent PL 10"x1"	59.75 - 60.00	Auto	1.0000
L21	34	Bent PL 10"x1"	59.75 - 60.00	Auto	1.0000
L21	35	Bent PL 10"x1"	59.75 - 60.00	Auto	1.0000
L22	33	Bent PL 10"x1"	54.75 - 59.75	Auto	1.0000
L22	34	Bent PL 10"x1"	54.75 - 59.75	Auto	1.0000
L22	35	Bent PL 10"x1"	54.75 - 59.75	Auto	1.0000
L23	33	Bent PL 10"x1"	49.75 - 54.75	Auto	1.0000
L23	34	Bent PL 10"x1"	49.75 - 54.75	Auto	1.0000
L23	35	Bent PL 10"x1"	49.75 - 54.75	Auto	1.0000
L23	72	4" x 0.75" Plate	49.75 - 51.08	Auto	1.0000
L23	73	4" x 0.75" Plate	49.75 - 51.08	Auto	1.0000
L24	33	Bent PL 10"x1"	49.08 - 49.75	Auto	1.0000
L24	34	Bent PL 10"x1"	49.08 - 49.75	Auto	1.0000
L24	35	Bent PL 10"x1"	49.08 - 49.75	Auto	1.0000
L24	72	4" x 0.75" Plate	49.08 - 49.75	Auto	1.0000
L24	73	4" x 0.75" Plate	49.08 - 49.75	Auto	1.0000
L25	33	Bent PL 10"x1"	48.83 - 49.08	Auto	1.0000
L25	34	Bent PL 10"x1"	48.83 - 49.08	Auto	1.0000
L25	35	Bent PL 10"x1"	48.83 - 49.08	Auto	1.0000
L25	72	4" x 0.75" Plate	48.83 - 49.08	Auto	1.0000
L25	73	4" x 0.75" Plate	48.83 - 49.08	Auto	1.0000
L26	33	Bent PL 10"x1"	43.83 - 48.83	Auto	1.0000
L26	34	Bent PL 10"x1"	43.83 - 48.83	Auto	1.0000
L26	35	Bent PL 10"x1"	43.83 - 48.83	Auto	1.0000
L26	72	4" x 0.75" Plate	43.83 - 48.83	Auto	1.0000
L26	73	4" x 0.75" Plate	43.83 - 48.83	Auto	1.0000
L27	33	Bent PL 10"x1"	42.00 - 43.83	Auto	1.0000
L27	34	Bent PL 10"x1"	42.00 - 43.83	Auto	1.0000
L27	35	Bent PL 10"x1"	42.00 - 43.83	Auto	1.0000
L27	56	4" x 0.75" Plate	42.00 - 43.00	Auto	1.0000
L27	57	4" x 0.75" Plate	42.00 - 43.00	Auto	1.0000
L27	58	4" x 0.75" Plate	42.00 - 43.00	Auto	1.0000
L27	72	4" x 0.75" Plate	42.00 - 43.83	Auto	1.0000
L27	73	4" x 0.75" Plate	42.00 - 43.83	Auto	1.0000
L28	33	Bent PL 10"x1"	41.75 - 42.00	Auto	1.0000
L28	34	Bent PL 10"x1"	41.75 - 42.00	Auto	1.0000
L28	35	Bent PL 10"x1"	41.75 - 42.00	Auto	1.0000
L28	56	4" x 0.75" Plate	41.75 - 42.00	Auto	1.0000
L28	57	4" x 0.75" Plate	41.75 - 42.00	Auto	1.0000
L28	58	4" x 0.75" Plate	41.75 - 42.00	Auto	1.0000
L28	72	4" x 0.75" Plate	41.75 - 42.00	Auto	1.0000
L28	73	4" x 0.75" Plate	41.75 - 42.00	Auto	1.0000
L29	33	Bent PL 10"x1"	36.75 - 41.75	Auto	1.0000
L29	34	Bent PL 10"x1"	36.75 - 41.75	Auto	1.0000
L29	35	Bent PL 10"x1"	36.75 - 41.75	Auto	1.0000
L29	56	4" x 0.75" Plate	36.75 - 41.75	Auto	1.0000
L29	57	4" x 0.75" Plate	36.75 - 41.75	Auto	1.0000
L29	58	4" x 0.75" Plate	36.75 - 41.75	Auto	1.0000
L29	72	4" x 0.75" Plate	36.75 - 41.75	Auto	1.0000
L29	73	4" x 0.75" Plate	36.75 - 41.75	Auto	1.0000
L30	33	Bent PL 10"x1"	34.50 - 36.75	Auto	1.0000
L30	34	Bent PL 10"x1"	34.50 - 36.75	Auto	1.0000
L30	35	Bent PL 10"x1"	34.50 - 36.75	Auto	1.0000
L30	45	MS-400 (4" x 0.75" Plate)	34.50 - 35.50	Auto	1.0000

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Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L30	46	MS-400 (4" x 0.75" Plate)	34.50 - 35.50	Auto	1.0000
L30	47	MS-400 (4" x 0.75" Plate)	34.50 - 35.50	Auto	1.0000
L30	56	4" x 0.75" Plate	34.50 - 36.75	Auto	1.0000
L30	57	4" x 0.75" Plate	34.50 - 36.75	Auto	1.0000
L30	58	4" x 0.75" Plate	34.50 - 36.75	Auto	1.0000
L30	72	4" x 0.75" Plate	34.50 - 36.75	Auto	1.0000
L30	73	4" x 0.75" Plate	34.50 - 36.75	Auto	1.0000
L31	33	Bent PL 10"x1"	34.25 - 34.50	Auto	1.0000
L31	34	Bent PL 10"x1"	34.25 - 34.50	Auto	1.0000
L31	35	Bent PL 10"x1"	34.25 - 34.50	Auto	1.0000
L31	45	MS-400 (4" x 0.75" Plate)	34.25 - 34.50	Auto	1.0000
L31	46	MS-400 (4" x 0.75" Plate)	34.25 - 34.50	Auto	1.0000
L31	47	MS-400 (4" x 0.75" Plate)	34.25 - 34.50	Auto	1.0000
L31	56	4" x 0.75" Plate	34.25 - 34.50	Auto	1.0000
L31	57	4" x 0.75" Plate	34.25 - 34.50	Auto	1.0000
L31	58	4" x 0.75" Plate	34.25 - 34.50	Auto	1.0000
L31	72	4" x 0.75" Plate	34.25 - 34.50	Auto	1.0000
L31	73	4" x 0.75" Plate	34.25 - 34.50	Auto	1.0000
L32	33	Bent PL 10"x1"	34.00 - 34.25	Auto	1.0000
L32	34	Bent PL 10"x1"	34.00 - 34.25	Auto	1.0000
L32	35	Bent PL 10"x1"	34.00 - 34.25	Auto	1.0000
L32	45	MS-400 (4" x 0.75" Plate)	34.00 - 34.25	Auto	1.0000
L32	46	MS-400 (4" x 0.75" Plate)	34.00 - 34.25	Auto	1.0000
L32	47	MS-400 (4" x 0.75" Plate)	34.00 - 34.25	Auto	1.0000
L32	56	4" x 0.75" Plate	34.00 - 34.25	Auto	1.0000
L32	57	4" x 0.75" Plate	34.00 - 34.25	Auto	1.0000
L32	58	4" x 0.75" Plate	34.00 - 34.25	Auto	1.0000
L32	72	4" x 0.75" Plate	34.00 - 34.25	Auto	1.0000
L32	73	4" x 0.75" Plate	34.00 - 34.25	Auto	1.0000
L33	33	Bent PL 10"x1"	33.75 - 34.00	Auto	1.0000
L33	34	Bent PL 10"x1"	33.75 - 34.00	Auto	1.0000
L33	35	Bent PL 10"x1"	33.75 - 34.00	Auto	1.0000
L33	45	MS-400 (4" x 0.75" Plate)	33.75 - 34.00	Auto	1.0000
L33	46	MS-400 (4" x 0.75" Plate)	33.75 - 34.00	Auto	1.0000
L33	47	MS-400 (4" x 0.75" Plate)	33.75 - 34.00	Auto	1.0000
L33	56	4" x 0.75" Plate	33.75 - 34.00	Auto	1.0000
L33	57	4" x 0.75" Plate	33.75 - 34.00	Auto	1.0000
L33	58	4" x 0.75" Plate	33.75 - 34.00	Auto	1.0000
L33	72	4" x 0.75" Plate	33.75 - 34.00	Auto	1.0000
L33	73	4" x 0.75" Plate	33.75 - 34.00	Auto	1.0000
L34	33	Bent PL 10"x1"	30.00 - 33.75	Auto	1.0000
L34	34	Bent PL 10"x1"	30.00 - 33.75	Auto	1.0000
L34	35	Bent PL 10"x1"	30.00 - 33.75	Auto	1.0000
L34	45	MS-400 (4" x 0.75" Plate)	30.50 - 33.75	Auto	1.0000
L34	46	MS-400 (4" x 0.75" Plate)	30.50 - 33.75	Auto	1.0000
L34	47	MS-400 (4" x 0.75" Plate)	30.50 - 33.75	Auto	1.0000
L34	56	4" x 0.75" Plate	33.00 - 33.75	Auto	1.0000
L34	57	4" x 0.75" Plate	33.00 - 33.75	Auto	1.0000
L34	58	4" x 0.75" Plate	33.00 - 33.75	Auto	1.0000
L34	72	4" x 0.75" Plate	30.08 - 33.75	Auto	1.0000
L34	73	4" x 0.75" Plate	30.08 - 33.75	Auto	1.0000
L35	29	Bent PL 10"x1"	29.75 - 30.00	Auto	1.0000
L35	30	Bent PL 10"x1"	29.75 - 30.00	Auto	1.0000
L35	31	Bent PL 10"x1"	29.75 - 30.00	Auto	1.0000
L35	69	4.5" x 1" Plate	29.75 - 30.00	Auto	1.0000
L35	70	4.5" x 1" Plate	29.75 - 30.00	Auto	1.0000
L36	29	Bent PL 10"x1"	28.50 - 29.75	Auto	1.0000
L36	30	Bent PL 10"x1"	28.50 - 29.75	Auto	1.0000
L36	31	Bent PL 10"x1"	28.50 - 29.75	Auto	1.0000
L36	68	4.5" x 1" Plate	28.50 - 29.54	Auto	1.0000
L36	69	4.5" x 1" Plate	28.50 - 29.75	Auto	1.0000

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Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L36	70	4.5" x 1" Plate	28.50 - 29.75	Auto	1.0000
L36	75	4.5" x 1" Plate	28.50 - 29.50	Auto	1.0000
L36	76	4.5" x 1" Plate	28.50 - 29.50	Auto	1.0000
L37	29	Bent PL 10"x1"	28.25 - 28.50	Auto	1.0000
L37	30	Bent PL 10"x1"	28.25 - 28.50	Auto	1.0000
L37	31	Bent PL 10"x1"	28.25 - 28.50	Auto	1.0000
L37	68	4.5" x 1" Plate	28.25 - 28.50	Auto	1.0000
L37	69	4.5" x 1" Plate	28.25 - 28.50	Auto	1.0000
L37	70	4.5" x 1" Plate	28.25 - 28.50	Auto	1.0000
L37	75	4.5" x 1" Plate	28.25 - 28.50	Auto	1.0000
L37	76	4.5" x 1" Plate	28.25 - 28.50	Auto	1.0000
L38	29	Bent PL 10"x1"	27.94 - 28.25	Auto	1.0000
L38	30	Bent PL 10"x1"	27.94 - 28.25	Auto	1.0000
L38	31	Bent PL 10"x1"	27.94 - 28.25	Auto	1.0000
L38	68	4.5" x 1" Plate	27.94 - 28.25	Auto	1.0000
L38	69	4.5" x 1" Plate	27.94 - 28.25	Auto	1.0000
L38	70	4.5" x 1" Plate	27.94 - 28.25	Auto	1.0000
L38	75	4.5" x 1" Plate	27.94 - 28.25	Auto	1.0000
L38	76	4.5" x 1" Plate	27.94 - 28.25	Auto	1.0000
L39	29	Bent PL 10"x1"	27.69 - 27.94	Auto	1.0000
L39	30	Bent PL 10"x1"	27.69 - 27.94	Auto	1.0000
L39	31	Bent PL 10"x1"	27.69 - 27.94	Auto	1.0000
L39	68	4.5" x 1" Plate	27.69 - 27.94	Auto	1.0000
L39	69	4.5" x 1" Plate	27.69 - 27.94	Auto	1.0000
L39	70	4.5" x 1" Plate	27.69 - 27.94	Auto	1.0000
L39	75	4.5" x 1" Plate	27.69 - 27.94	Auto	1.0000
L39	76	4.5" x 1" Plate	27.69 - 27.94	Auto	1.0000
L40	29	Bent PL 10"x1"	23.00 - 27.69	Auto	1.0000
L40	30	Bent PL 10"x1"	23.00 - 27.69	Auto	1.0000
L40	31	Bent PL 10"x1"	23.00 - 27.69	Auto	1.0000
L40	53	6" x 1" Plate	23.00 - 25.50	Auto	1.0000
L40	54	6" x 1" Plate	23.00 - 25.50	Auto	1.0000
L40	68	4.5" x 1" Plate	23.00 - 27.69	Auto	1.0000
L40	69	4.5" x 1" Plate	23.00 - 27.69	Auto	1.0000
L40	70	4.5" x 1" Plate	23.00 - 27.69	Auto	1.0000
L40	75	4.5" x 1" Plate	23.00 - 27.69	Auto	1.0000
L40	76	4.5" x 1" Plate	23.00 - 27.69	Auto	1.0000
L41	29	Bent PL 10"x1"	22.75 - 23.00	Auto	1.0000
L41	30	Bent PL 10"x1"	22.75 - 23.00	Auto	1.0000
L41	31	Bent PL 10"x1"	22.75 - 23.00	Auto	1.0000
L41	53	6" x 1" Plate	22.75 - 23.00	Auto	1.0000
L41	54	6" x 1" Plate	22.75 - 23.00	Auto	1.0000
L41	68	4.5" x 1" Plate	22.75 - 23.00	Auto	1.0000
L41	69	4.5" x 1" Plate	22.75 - 23.00	Auto	1.0000
L41	70	4.5" x 1" Plate	22.75 - 23.00	Auto	1.0000
L41	75	4.5" x 1" Plate	22.75 - 23.00	Auto	1.0000
L41	76	4.5" x 1" Plate	22.75 - 23.00	Auto	1.0000
L42	29	Bent PL 10"x1"	21.50 - 22.75	Auto	1.0000
L42	30	Bent PL 10"x1"	21.50 - 22.75	Auto	1.0000
L42	31	Bent PL 10"x1"	21.50 - 22.75	Auto	1.0000
L42	53	6" x 1" Plate	21.50 - 22.75	Auto	1.0000
L42	54	6" x 1" Plate	21.50 - 22.75	Auto	1.0000
L42	68	4.5" x 1" Plate	21.50 - 22.75	Auto	1.0000
L42	69	4.5" x 1" Plate	21.50 - 22.75	Auto	1.0000
L42	70	4.5" x 1" Plate	21.50 - 22.75	Auto	1.0000
L42	75	4.5" x 1" Plate	21.50 - 22.75	Auto	1.0000
L42	76	4.5" x 1" Plate	21.50 - 22.75	Auto	1.0000
L43	29	Bent PL 10"x1"	21.25 - 21.50	Auto	1.0000
L43	30	Bent PL 10"x1"	21.25 - 21.50	Auto	1.0000
L43	31	Bent PL 10"x1"	21.25 - 21.50	Auto	1.0000
L43	53	6" x 1" Plate	21.25 - 21.50	Auto	1.0000

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Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L43	54	6" x 1" Plate	21.25 - 21.50	Auto	1.0000
L43	68	4.5" x 1" Plate	21.25 - 21.50	Auto	1.0000
L43	69	4.5" x 1" Plate	21.25 - 21.50	Auto	1.0000
L43	70	4.5" x 1" Plate	21.25 - 21.50	Auto	1.0000
L43	75	4.5" x 1" Plate	21.25 - 21.50	Auto	1.0000
L43	76	4.5" x 1" Plate	21.25 - 21.50	Auto	1.0000
L44	29	Bent PL 10"x1"	21.00 - 21.25	Auto	1.0000
L44	30	Bent PL 10"x1"	21.00 - 21.25	Auto	1.0000
L44	31	Bent PL 10"x1"	21.00 - 21.25	Auto	1.0000
L44	53	6" x 1" Plate	21.00 - 21.25	Auto	1.0000
L44	54	6" x 1" Plate	21.00 - 21.25	Auto	1.0000
L44	68	4.5" x 1" Plate	21.00 - 21.25	Auto	1.0000
L44	69	4.5" x 1" Plate	21.00 - 21.25	Auto	1.0000
L44	70	4.5" x 1" Plate	21.00 - 21.25	Auto	1.0000
L44	75	4.5" x 1" Plate	21.00 - 21.25	Auto	1.0000
L44	76	4.5" x 1" Plate	21.00 - 21.25	Auto	1.0000
L45	29	Bent PL 10"x1"	20.75 - 21.00	Auto	1.0000
L45	30	Bent PL 10"x1"	20.75 - 21.00	Auto	1.0000
L45	31	Bent PL 10"x1"	20.75 - 21.00	Auto	1.0000
L45	53	6" x 1" Plate	20.75 - 21.00	Auto	1.0000
L45	54	6" x 1" Plate	20.75 - 21.00	Auto	1.0000
L45	68	4.5" x 1" Plate	20.75 - 21.00	Auto	1.0000
L45	69	4.5" x 1" Plate	20.75 - 21.00	Auto	1.0000
L45	70	4.5" x 1" Plate	20.75 - 21.00	Auto	1.0000
L45	75	4.5" x 1" Plate	20.75 - 21.00	Auto	1.0000
L45	76	4.5" x 1" Plate	20.75 - 21.00	Auto	1.0000
L46	29	Bent PL 10"x1"	19.00 - 20.75	Auto	1.0000
L46	30	Bent PL 10"x1"	19.00 - 20.75	Auto	1.0000
L46	31	Bent PL 10"x1"	19.00 - 20.75	Auto	1.0000
L46	41	MS-450 (4.5" x 1" Plate)	19.00 - 20.50	Auto	1.0000
L46	42	MS-450 (4.5" x 1" Plate)	19.00 - 20.50	Auto	1.0000
L46	43	MS-450 (4.5" x 1" Plate)	19.00 - 20.50	Auto	1.0000
L46	53	6" x 1" Plate	19.00 - 20.75	Auto	1.0000
L46	54	6" x 1" Plate	19.00 - 20.75	Auto	1.0000
L46	68	4.5" x 1" Plate	19.50 - 20.75	Auto	1.0000
L46	69	4.5" x 1" Plate	20.00 - 20.75	Auto	1.0000
L46	70	4.5" x 1" Plate	20.00 - 20.75	Auto	1.0000
L46	75	4.5" x 1" Plate	19.00 - 20.75	Auto	1.0000
L46	76	4.5" x 1" Plate	19.00 - 20.75	Auto	1.0000
L47	29	Bent PL 10"x1"	18.75 - 19.00	Auto	1.0000
L47	30	Bent PL 10"x1"	18.75 - 19.00	Auto	1.0000
L47	31	Bent PL 10"x1"	18.75 - 19.00	Auto	1.0000
L47	41	MS-450 (4.5" x 1" Plate)	18.75 - 19.00	Auto	1.0000
L47	42	MS-450 (4.5" x 1" Plate)	18.75 - 19.00	Auto	1.0000
L47	43	MS-450 (4.5" x 1" Plate)	18.75 - 19.00	Auto	1.0000
L47	53	6" x 1" Plate	18.75 - 19.00	Auto	1.0000
L47	54	6" x 1" Plate	18.75 - 19.00	Auto	1.0000
L47	75	4.5" x 1" Plate	18.75 - 19.00	Auto	1.0000
L47	76	4.5" x 1" Plate	18.75 - 19.00	Auto	1.0000
L48	29	Bent PL 10"x1"	18.50 - 18.75	Auto	1.0000
L48	30	Bent PL 10"x1"	18.50 - 18.75	Auto	1.0000
L48	31	Bent PL 10"x1"	18.50 - 18.75	Auto	1.0000
L48	41	MS-450 (4.5" x 1" Plate)	18.50 - 18.75	Auto	1.0000
L48	42	MS-450 (4.5" x 1" Plate)	18.50 - 18.75	Auto	1.0000
L48	43	MS-450 (4.5" x 1" Plate)	18.50 - 18.75	Auto	1.0000
L48	53	6" x 1" Plate	18.50 - 18.75	Auto	1.0000
L48	54	6" x 1" Plate	18.50 - 18.75	Auto	1.0000
L48	75	4.5" x 1" Plate	18.50 - 18.75	Auto	1.0000
L48	76	4.5" x 1" Plate	18.50 - 18.75	Auto	1.0000
L49	29	Bent PL 10"x1"	18.25 - 18.50	Auto	1.0000
L49	30	Bent PL 10"x1"	18.25 - 18.50	Auto	1.0000

Job	151136.007.01 - NEW BRITAIN GRAVEL PIT, CT (BU# 876331)	Page	36 of 75
Project		Date	21:54:18 05/10/22
Client	Crown Castle	Designed by	Pavan Upadhy

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L49	31	Bent PL 10"x1"	18.25 - 18.50	Auto	1.0000
L49	41	MS-450 (4.5" x 1" Plate)	18.25 - 18.50	Auto	1.0000
L49	42	MS-450 (4.5" x 1" Plate)	18.25 - 18.50	Auto	1.0000
L49	43	MS-450 (4.5" x 1" Plate)	18.25 - 18.50	Auto	1.0000
L49	53	6" x 1" Plate	18.25 - 18.50	Auto	1.0000
L49	54	6" x 1" Plate	18.25 - 18.50	Auto	1.0000
L49	75	4.5" x 1" Plate	18.25 - 18.50	Auto	1.0000
L49	76	4.5" x 1" Plate	18.25 - 18.50	Auto	1.0000
L50	29	Bent PL 10"x1"	13.25 - 18.25	Auto	1.0000
L50	30	Bent PL 10"x1"	13.25 - 18.25	Auto	1.0000
L50	31	Bent PL 10"x1"	13.25 - 18.25	Auto	1.0000
L50	41	MS-450 (4.5" x 1" Plate)	13.25 - 18.25	Auto	1.0000
L50	42	MS-450 (4.5" x 1" Plate)	13.25 - 18.25	Auto	1.0000
L50	43	MS-450 (4.5" x 1" Plate)	13.25 - 18.25	Auto	1.0000
L50	53	6" x 1" Plate	13.25 - 18.25	Auto	1.0000
L50	54	6" x 1" Plate	13.25 - 18.25	Auto	1.0000
L50	75	4.5" x 1" Plate	17.00 - 18.25	Auto	1.0000
L50	76	4.5" x 1" Plate	17.00 - 18.25	Auto	1.0000
L50	82	7" x 1.25" Plate	13.25 - 14.88	Auto	1.0000
L51	29	Bent PL 10"x1"	12.70 - 13.25	Auto	1.0000
L51	30	Bent PL 10"x1"	12.70 - 13.25	Auto	1.0000
L51	31	Bent PL 10"x1"	12.70 - 13.25	Auto	1.0000
L51	41	MS-450 (4.5" x 1" Plate)	12.70 - 13.25	Auto	1.0000
L51	42	MS-450 (4.5" x 1" Plate)	12.70 - 13.25	Auto	1.0000
L51	43	MS-450 (4.5" x 1" Plate)	12.70 - 13.25	Auto	1.0000
L51	53	6" x 1" Plate	12.70 - 13.25	Auto	1.0000
L51	54	6" x 1" Plate	12.70 - 13.25	Auto	1.0000
L51	82	7" x 1.25" Plate	12.70 - 13.25	Auto	1.0000
L52	29	Bent PL 10"x1"	12.35 - 12.70	Auto	1.0000
L52	30	Bent PL 10"x1"	12.35 - 12.70	Auto	1.0000
L52	31	Bent PL 10"x1"	12.35 - 12.70	Auto	1.0000
L52	41	MS-450 (4.5" x 1" Plate)	12.35 - 12.70	Auto	1.0000
L52	42	MS-450 (4.5" x 1" Plate)	12.35 - 12.70	Auto	1.0000
L52	43	MS-450 (4.5" x 1" Plate)	12.35 - 12.70	Auto	1.0000
L52	53	6" x 1" Plate	12.35 - 12.70	Auto	1.0000
L52	54	6" x 1" Plate	12.35 - 12.70	Auto	1.0000
L52	82	7" x 1.25" Plate	12.35 - 12.70	Auto	1.0000
L53	29	Bent PL 10"x1"	12.13 - 12.35	Auto	1.0000
L53	30	Bent PL 10"x1"	12.13 - 12.35	Auto	1.0000
L53	31	Bent PL 10"x1"	12.13 - 12.35	Auto	1.0000
L53	41	MS-450 (4.5" x 1" Plate)	12.13 - 12.35	Auto	1.0000
L53	42	MS-450 (4.5" x 1" Plate)	12.13 - 12.35	Auto	1.0000
L53	43	MS-450 (4.5" x 1" Plate)	12.13 - 12.35	Auto	1.0000
L53	53	6" x 1" Plate	12.13 - 12.35	Auto	1.0000
L53	54	6" x 1" Plate	12.13 - 12.35	Auto	1.0000
L53	82	7" x 1.25" Plate	12.13 - 12.35	Auto	1.0000
L54	29	Bent PL 10"x1"	12.00 - 12.13	Auto	1.0000
L54	30	Bent PL 10"x1"	12.00 - 12.13	Auto	1.0000
L54	31	Bent PL 10"x1"	12.00 - 12.13	Auto	1.0000
L54	41	MS-450 (4.5" x 1" Plate)	12.00 - 12.13	Auto	1.0000
L54	42	MS-450 (4.5" x 1" Plate)	12.00 - 12.13	Auto	1.0000
L54	43	MS-450 (4.5" x 1" Plate)	12.00 - 12.13	Auto	1.0000
L54	53	6" x 1" Plate	12.00 - 12.13	Auto	1.0000
L54	54	6" x 1" Plate	12.00 - 12.13	Auto	1.0000
L54	82	7" x 1.25" Plate	12.00 - 12.13	Auto	1.0000
L55	29	Bent PL 10"x1"	11.75 - 12.00	Auto	1.0000
L55	30	Bent PL 10"x1"	11.75 - 12.00	Auto	1.0000
L55	31	Bent PL 10"x1"	11.75 - 12.00	Auto	1.0000
L55	41	MS-450 (4.5" x 1" Plate)	11.75 - 12.00	Auto	1.0000
L55	42	MS-450 (4.5" x 1" Plate)	11.75 - 12.00	Auto	1.0000
L55	43	MS-450 (4.5" x 1" Plate)	11.75 - 12.00	Auto	1.0000

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Project		Date	21:54:18 05/10/22
Client	Crown Castle	Designed by	Pavan Upadhy

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L55	53	6" x 1" Plate	11.75 - 12.00	Auto	1.0000
L55	54	6" x 1" Plate	11.75 - 12.00	Auto	1.0000
L55	82	7" x 1.25" Plate	11.75 - 12.00	Auto	1.0000
L56	29	Bent PL 10"x1"	8.38 - 11.75	Auto	1.0000
L56	30	Bent PL 10"x1"	8.38 - 11.75	Auto	1.0000
L56	31	Bent PL 10"x1"	8.38 - 11.75	Auto	1.0000
L56	41	MS-450 (4.5" x 1" Plate)	8.38 - 11.75	Auto	1.0000
L56	42	MS-450 (4.5" x 1" Plate)	8.38 - 11.75	Auto	1.0000
L56	43	MS-450 (4.5" x 1" Plate)	8.38 - 11.75	Auto	1.0000
L56	53	6" x 1" Plate	8.38 - 11.75	Auto	1.0000
L56	54	6" x 1" Plate	8.38 - 11.75	Auto	1.0000
L56	82	7" x 1.25" Plate	8.38 - 11.75	Auto	1.0000
L57	29	Bent PL 10"x1"	8.13 - 8.38	Auto	1.0000
L57	30	Bent PL 10"x1"	8.13 - 8.38	Auto	1.0000
L57	31	Bent PL 10"x1"	8.13 - 8.38	Auto	1.0000
L57	41	MS-450 (4.5" x 1" Plate)	8.13 - 8.38	Auto	1.0000
L57	42	MS-450 (4.5" x 1" Plate)	8.13 - 8.38	Auto	1.0000
L57	43	MS-450 (4.5" x 1" Plate)	8.13 - 8.38	Auto	1.0000
L57	53	6" x 1" Plate	8.13 - 8.38	Auto	1.0000
L57	54	6" x 1" Plate	8.13 - 8.38	Auto	1.0000
L57	82	7" x 1.25" Plate	8.13 - 8.38	Auto	1.0000
L58	29	Bent PL 10"x1"	7.75 - 8.13	Auto	1.0000
L58	30	Bent PL 10"x1"	7.75 - 8.13	Auto	1.0000
L58	31	Bent PL 10"x1"	7.75 - 8.13	Auto	1.0000
L58	41	MS-450 (4.5" x 1" Plate)	7.75 - 8.13	Auto	1.0000
L58	42	MS-450 (4.5" x 1" Plate)	7.75 - 8.13	Auto	1.0000
L58	43	MS-450 (4.5" x 1" Plate)	7.75 - 8.13	Auto	1.0000
L58	53	6" x 1" Plate	7.75 - 8.13	Auto	1.0000
L58	54	6" x 1" Plate	7.75 - 8.13	Auto	1.0000
L58	82	7" x 1.25" Plate	7.75 - 8.13	Auto	1.0000
L59	29	Bent PL 10"x1"	7.50 - 7.75	Auto	1.0000
L59	30	Bent PL 10"x1"	7.50 - 7.75	Auto	1.0000
L59	31	Bent PL 10"x1"	7.50 - 7.75	Auto	1.0000
L59	41	MS-450 (4.5" x 1" Plate)	7.50 - 7.75	Auto	1.0000
L59	42	MS-450 (4.5" x 1" Plate)	7.50 - 7.75	Auto	1.0000
L59	43	MS-450 (4.5" x 1" Plate)	7.50 - 7.75	Auto	1.0000
L59	53	6" x 1" Plate	7.50 - 7.75	Auto	1.0000
L59	54	6" x 1" Plate	7.50 - 7.75	Auto	1.0000
L59	82	7" x 1.25" Plate	7.50 - 7.75	Auto	1.0000
L60	29	Bent PL 10"x1"	7.25 - 7.50	Auto	1.0000
L60	30	Bent PL 10"x1"	7.25 - 7.50	Auto	1.0000
L60	31	Bent PL 10"x1"	7.25 - 7.50	Auto	1.0000
L60	41	MS-450 (4.5" x 1" Plate)	7.25 - 7.50	Auto	1.0000
L60	42	MS-450 (4.5" x 1" Plate)	7.25 - 7.50	Auto	1.0000
L60	43	MS-450 (4.5" x 1" Plate)	7.25 - 7.50	Auto	1.0000
L60	53	6" x 1" Plate	7.25 - 7.50	Auto	1.0000
L60	54	6" x 1" Plate	7.25 - 7.50	Auto	1.0000
L60	82	7" x 1.25" Plate	7.25 - 7.50	Auto	1.0000
L61	29	Bent PL 10"x1"	4.00 - 7.25	Auto	1.0000
L61	30	Bent PL 10"x1"	4.00 - 7.25	Auto	1.0000
L61	31	Bent PL 10"x1"	4.00 - 7.25	Auto	1.0000
L61	41	MS-450 (4.5" x 1" Plate)	4.00 - 7.25	Auto	1.0000
L61	42	MS-450 (4.5" x 1" Plate)	4.00 - 7.25	Auto	1.0000
L61	43	MS-450 (4.5" x 1" Plate)	4.00 - 7.25	Auto	1.0000
L61	53	6" x 1" Plate	4.00 - 7.25	Auto	1.0000
L61	54	6" x 1" Plate	4.00 - 7.25	Auto	1.0000
L61	82	7" x 1.25" Plate	5.88 - 7.25	Auto	1.0000
L62	29	Bent PL 10"x1"	3.73 - 4.00	Auto	1.0000
L62	30	Bent PL 10"x1"	3.73 - 4.00	Auto	1.0000
L62	31	Bent PL 10"x1"	3.73 - 4.00	Auto	1.0000
L62	41	MS-450 (4.5" x 1" Plate)	3.73 - 4.00	Auto	1.0000

<p style="text-align: center;">tnxTower</p> <p>MTS Engineering, P.L.L.C. 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	<p>Job</p> <p style="text-align: center;">151136.007.01 - NEW BRITAIN GRAVEL PIT, CT (BU# 876331)</p>	<p>Page</p> <p style="text-align: center;">38 of 75</p>
	<p>Project</p>	<p>Date</p> <p style="text-align: center;">21:54:18 05/10/22</p>
	<p>Client</p> <p style="text-align: center;">Crown Castle</p>	<p>Designed by</p> <p style="text-align: center;">Pavan Upadhya</p>

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L62	42	MS-450 (4.5" x 1" Plate)	3.73 - 4.00	Auto	1.0000
L62	43	MS-450 (4.5" x 1" Plate)	3.73 - 4.00	Auto	1.0000
L62	53	6" x 1" Plate	3.73 - 4.00	Auto	1.0000
L62	54	6" x 1" Plate	3.73 - 4.00	Auto	1.0000
L63	29	Bent PL 10"x1"	3.58 - 3.73	Auto	1.0000
L63	30	Bent PL 10"x1"	3.58 - 3.73	Auto	1.0000
L63	31	Bent PL 10"x1"	3.58 - 3.73	Auto	1.0000
L63	41	MS-450 (4.5" x 1" Plate)	3.58 - 3.73	Auto	1.0000
L63	42	MS-450 (4.5" x 1" Plate)	3.58 - 3.73	Auto	1.0000
L63	43	MS-450 (4.5" x 1" Plate)	3.58 - 3.73	Auto	1.0000
L63	53	6" x 1" Plate	3.58 - 3.73	Auto	1.0000
L63	54	6" x 1" Plate	3.58 - 3.73	Auto	1.0000
L64	29	Bent PL 10"x1"	3.00 - 3.58	Auto	1.0000
L64	30	Bent PL 10"x1"	3.00 - 3.58	Auto	1.0000
L64	31	Bent PL 10"x1"	3.00 - 3.58	Auto	1.0000
L64	41	MS-450 (4.5" x 1" Plate)	3.00 - 3.58	Auto	1.0000
L64	42	MS-450 (4.5" x 1" Plate)	3.00 - 3.58	Auto	1.0000
L64	43	MS-450 (4.5" x 1" Plate)	3.00 - 3.58	Auto	1.0000
L64	53	6" x 1" Plate	3.00 - 3.58	Auto	1.0000
L64	54	6" x 1" Plate	3.00 - 3.58	Auto	1.0000
L65	29	Bent PL 10"x1"	2.75 - 3.00	Auto	1.0000
L65	30	Bent PL 10"x1"	2.75 - 3.00	Auto	1.0000
L65	31	Bent PL 10"x1"	2.75 - 3.00	Auto	1.0000
L65	41	MS-450 (4.5" x 1" Plate)	2.75 - 3.00	Auto	1.0000
L65	42	MS-450 (4.5" x 1" Plate)	2.75 - 3.00	Auto	1.0000
L65	43	MS-450 (4.5" x 1" Plate)	2.75 - 3.00	Auto	1.0000
L65	53	6" x 1" Plate	2.75 - 3.00	Auto	1.0000
L65	54	6" x 1" Plate	2.75 - 3.00	Auto	1.0000
L66	29	Bent PL 10"x1"	1.90 - 2.75	Auto	1.0000
L66	30	Bent PL 10"x1"	1.90 - 2.75	Auto	1.0000
L66	31	Bent PL 10"x1"	1.90 - 2.75	Auto	1.0000
L66	41	MS-450 (4.5" x 1" Plate)	1.90 - 2.75	Auto	1.0000
L66	42	MS-450 (4.5" x 1" Plate)	1.90 - 2.75	Auto	1.0000
L66	43	MS-450 (4.5" x 1" Plate)	1.90 - 2.75	Auto	1.0000
L66	53	6" x 1" Plate	1.90 - 2.75	Auto	1.0000
L66	54	6" x 1" Plate	1.90 - 2.75	Auto	1.0000
L67	29	Bent PL 10"x1"	1.75 - 1.90	Auto	1.0000
L67	30	Bent PL 10"x1"	1.75 - 1.90	Auto	1.0000
L67	31	Bent PL 10"x1"	1.75 - 1.90	Auto	1.0000
L67	41	MS-450 (4.5" x 1" Plate)	1.65 - 1.90	Auto	1.0000
L67	42	MS-450 (4.5" x 1" Plate)	1.65 - 1.90	Auto	1.0000
L67	43	MS-450 (4.5" x 1" Plate)	1.65 - 1.90	Auto	1.0000
L67	53	6" x 1" Plate	1.65 - 1.90	Auto	1.0000
L67	54	6" x 1" Plate	1.65 - 1.90	Auto	1.0000
L68	41	MS-450 (4.5" x 1" Plate)	0.00 - 1.65	Auto	1.0000
L68	42	MS-450 (4.5" x 1" Plate)	0.00 - 1.65	Auto	1.0000
L68	43	MS-450 (4.5" x 1" Plate)	0.00 - 1.65	Auto	1.0000
L68	53	6" x 1" Plate	0.00 - 1.65	Auto	1.0000
L68	54	6" x 1" Plate	0.00 - 1.65	Auto	1.0000

Discrete Tower Loads

tnxTower MTS Engineering, P.L.L.C. 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 151136.007.01 - NEW BRITAIN GRAVEL PIT, CT (BU# 876331)	Page 39 of 75
	Project	Date 21:54:18 05/10/22
	Client Crown Castle	Designed by Pavan Upadhyha

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K	
			Horz Lateral ft	Vert ft						
PCS 1900MHZ 4X45W-65MHZ	A	From Leg	1.000	0.000	0.000	116.000	No Ice	2.322	2.238	0.060
			0.000				1/2" Ice	2.527	2.441	0.083
			-3.000				1" Ice	2.739	2.651	0.110
							2" Ice	3.185	3.093	0.173
PCS 1900MHZ 4X45W-65MHZ	B	From Leg	1.000	0.000	0.000	116.000	No Ice	2.322	2.238	0.060
			0.000				1/2" Ice	2.527	2.441	0.083
			-3.000				1" Ice	2.739	2.651	0.110
							2" Ice	3.185	3.093	0.173
PCS 1900MHZ 4X45W-65MHZ	C	From Leg	1.000	0.000	0.000	116.000	No Ice	2.322	2.238	0.060
			0.000				1/2" Ice	2.527	2.441	0.083
			-3.000				1" Ice	2.739	2.651	0.110
							2" Ice	3.185	3.093	0.173
800MHZ 2X50W RRH W/FILTER	A	From Leg	1.000	0.000	0.000	116.000	No Ice	2.058	1.932	0.064
			0.000				1/2" Ice	2.240	2.109	0.086
			1.000				1" Ice	2.429	2.293	0.111
							2" Ice	2.829	2.684	0.172
800MHZ 2X50W RRH W/FILTER	B	From Leg	1.000	0.000	0.000	116.000	No Ice	2.058	1.932	0.064
			0.000				1/2" Ice	2.240	2.109	0.086
			1.000				1" Ice	2.429	2.293	0.111
							2" Ice	2.829	2.684	0.172
800MHZ 2X50W RRH W/FILTER	C	From Leg	1.000	0.000	0.000	116.000	No Ice	2.058	1.932	0.064
			0.000				1/2" Ice	2.240	2.109	0.086
			1.000				1" Ice	2.429	2.293	0.111
							2" Ice	2.829	2.684	0.172
Pipe Mount [PM 601-3]	C	None		0.000	0.000	116.000	No Ice	3.170	3.170	0.195
							1/2" Ice	3.790	3.790	0.232
							1" Ice	4.420	4.420	0.279
							2" Ice	5.760	5.760	0.401
* APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	114.000	No Ice	4.600	4.010	0.095
			0.000				1/2" Ice	5.050	4.450	0.160
			2.000				1" Ice	5.500	4.890	0.235
							2" Ice	6.440	5.820	0.419
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.000	0.000	0.000	114.000	No Ice	4.600	4.010	0.095
			0.000				1/2" Ice	5.050	4.450	0.160
			2.000				1" Ice	5.500	4.890	0.235
							2" Ice	6.440	5.820	0.419
APXV9ERR18-C-A20 w/ Mount Pipe	C	From Leg	4.000	0.000	0.000	114.000	No Ice	4.600	4.010	0.095
			0.000				1/2" Ice	5.050	4.450	0.160
			2.000				1" Ice	5.500	4.890	0.235
							2" Ice	6.440	5.820	0.419
APXVTM14-C-120 w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	114.000	No Ice	4.090	2.860	0.077
			0.000				1/2" Ice	4.480	3.230	0.127
			2.000				1" Ice	4.880	3.610	0.185
							2" Ice	5.710	4.400	0.331
APXVTM14-C-120 w/ Mount Pipe	B	From Leg	4.000	0.000	0.000	114.000	No Ice	4.090	2.860	0.077
			0.000				1/2" Ice	4.480	3.230	0.127
			2.000				1" Ice	4.880	3.610	0.185
							2" Ice	5.710	4.400	0.331
APXVTM14-C-120 w/ Mount Pipe	C	From Leg	4.000	0.000	0.000	114.000	No Ice	4.090	2.860	0.077
			0.000				1/2" Ice	4.480	3.230	0.127
			2.000				1" Ice	4.880	3.610	0.185
							2" Ice	5.710	4.400	0.331
TD-RRH8X20-25	A	From Leg	4.000	0.000	0.000	114.000	No Ice	3.704	1.294	0.066
			0.000				1/2" Ice	3.946	1.465	0.090
			2.000				1" Ice	4.196	1.642	0.117
							2" Ice	4.717	2.019	0.183

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	Client Crown Castle	Designed by Pavan Upadhyia

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Vert						
			ft	ft	°	ft	ft ²	ft ²	K	
TD-RRH8X20-25	B	From Leg	4.000	0.000	0.000	114.000	No Ice	3.704	1.294	0.066
			0.000				1/2" Ice	3.946	1.465	0.090
			2.000				1" Ice	4.196	1.642	0.117
							2" Ice	4.717	2.019	0.183
TD-RRH8X20-25	C	From Leg	4.000	0.000	0.000	114.000	No Ice	3.704	1.294	0.066
			0.000				1/2" Ice	3.946	1.465	0.090
			2.000				1" Ice	4.196	1.642	0.117
							2" Ice	4.717	2.019	0.183
WIMAX DAP HEAD	B	From Leg	4.000	0.000	0.000	114.000	No Ice	1.547	0.684	0.033
			0.000				1/2" Ice	1.704	0.800	0.045
			2.000				1" Ice	1.868	0.923	0.058
							2" Ice	2.219	1.193	0.094
(2) 4' x 2" Pipe Mount	A	From Leg	4.000	0.000	0.000	114.000	No Ice	0.785	0.785	0.029
			0.000				1/2" Ice	1.028	1.028	0.035
			0.000				1" Ice	1.281	1.281	0.044
							2" Ice	1.814	1.814	0.072
(2) 4' x 2" Pipe Mount	B	From Leg	4.000	0.000	0.000	114.000	No Ice	0.785	0.785	0.029
			0.000				1/2" Ice	1.028	1.028	0.035
			0.000				1" Ice	1.281	1.281	0.044
							2" Ice	1.814	1.814	0.072
(2) 4' x 2" Pipe Mount	C	From Leg	4.000	0.000	0.000	114.000	No Ice	0.785	0.785	0.029
			0.000				1/2" Ice	1.028	1.028	0.035
			0.000				1" Ice	1.281	1.281	0.044
							2" Ice	1.814	1.814	0.072
Platform Mount [LP 502-1]	C	None			0.000	114.000	No Ice	18.280	18.280	0.925
							1/2" Ice	23.540	23.540	1.435
							1" Ice	28.530	28.530	2.070
							2" Ice	38.850	38.850	3.714
* AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	108.000	No Ice	5.190	2.710	0.128
			0.000				1/2" Ice	5.590	3.040	0.174
			0.000				1" Ice	6.020	3.380	0.227
							2" Ice	6.900	4.120	0.354
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Leg	4.000	0.000	0.000	108.000	No Ice	5.190	2.710	0.128
			0.000				1/2" Ice	5.590	3.040	0.174
			0.000				1" Ice	6.020	3.380	0.227
							2" Ice	6.900	4.120	0.354
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Leg	4.000	0.000	0.000	108.000	No Ice	5.190	2.710	0.128
			0.000				1/2" Ice	5.590	3.040	0.174
			0.000				1" Ice	6.020	3.380	0.227
							2" Ice	6.900	4.120	0.354
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	108.000	No Ice	14.690	6.870	0.186
			0.000				1/2" Ice	15.460	7.550	0.315
			0.000				1" Ice	16.230	8.250	0.458
							2" Ice	17.820	9.670	0.788
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.000	0.000	0.000	108.000	No Ice	14.690	6.870	0.186
			0.000				1/2" Ice	15.460	7.550	0.315
			0.000				1" Ice	16.230	8.250	0.458
							2" Ice	17.820	9.670	0.788
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.000	0.000	0.000	108.000	No Ice	14.690	6.870	0.186
			0.000				1/2" Ice	15.460	7.550	0.315
			0.000				1" Ice	16.230	8.250	0.458
							2" Ice	17.820	9.670	0.788
AIR 32 B2A/B66AA w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	108.000	No Ice	3.760	3.150	0.194
			0.000				1/2" Ice	4.120	3.490	0.252
			0.000				1" Ice	4.480	3.840	0.320
							2" Ice	5.240	4.580	0.485

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	CAAA Front ft ²	CAAA Side ft ²	Weight K	
AIR 32 B2A/B66AA w/ Mount Pipe	B	From Leg	4.000	0.000	108.000	No Ice	3.760	3.150	0.194
			0.000			1/2" Ice	4.120	3.490	0.252
			0.000			1" Ice	4.480	3.840	0.320
						2" Ice	5.240	4.580	0.485
AIR 32 B2A/B66AA w/ Mount Pipe	C	From Leg	4.000	0.000	108.000	No Ice	3.760	3.150	0.194
			0.000			1/2" Ice	4.120	3.490	0.252
			0.000			1" Ice	4.480	3.840	0.320
						2" Ice	5.240	4.580	0.485
SDX1926Q-43	A	From Leg	4.000	0.000	108.000	No Ice	0.241	0.101	0.006
			0.000			1/2" Ice	0.306	0.144	0.009
			0.000			1" Ice	0.379	0.195	0.012
						2" Ice	0.547	0.318	0.023
SDX1926Q-43	B	From Leg	4.000	0.000	108.000	No Ice	0.241	0.101	0.006
			0.000			1/2" Ice	0.306	0.144	0.009
			0.000			1" Ice	0.379	0.195	0.012
						2" Ice	0.547	0.318	0.023
SDX1926Q-43	C	From Leg	4.000	0.000	108.000	No Ice	0.241	0.101	0.006
			0.000			1/2" Ice	0.306	0.144	0.009
			0.000			1" Ice	0.379	0.195	0.012
						2" Ice	0.547	0.318	0.023
RADIO 4449 B71 B85A_T-MOBILE	A	From Leg	4.000	0.000	108.000	No Ice	1.970	1.587	0.073
			0.000			1/2" Ice	2.147	1.749	0.093
			0.000			1" Ice	2.331	1.918	0.116
						2" Ice	2.721	2.280	0.170
RADIO 4449 B71 B85A_T-MOBILE	B	From Leg	4.000	0.000	108.000	No Ice	1.970	1.587	0.073
			0.000			1/2" Ice	2.147	1.749	0.093
			0.000			1" Ice	2.331	1.918	0.116
						2" Ice	2.721	2.280	0.170
RADIO 4449 B71 B85A_T-MOBILE	C	From Leg	4.000	0.000	108.000	No Ice	1.970	1.587	0.073
			0.000			1/2" Ice	2.147	1.749	0.093
			0.000			1" Ice	2.331	1.918	0.116
						2" Ice	2.721	2.280	0.170
RRUS 4415 B25	A	From Leg	4.000	0.000	108.000	No Ice	1.644	0.679	0.044
			0.000			1/2" Ice	1.804	0.791	0.056
			0.000			1" Ice	1.972	0.913	0.071
						2" Ice	2.329	1.183	0.109
RRUS 4415 B25	B	From Leg	4.000	0.000	108.000	No Ice	1.644	0.679	0.044
			0.000			1/2" Ice	1.804	0.791	0.056
			0.000			1" Ice	1.972	0.913	0.071
						2" Ice	2.329	1.183	0.109
RRUS 4415 B25	C	From Leg	4.000	0.000	108.000	No Ice	1.644	0.679	0.044
			0.000			1/2" Ice	1.804	0.791	0.056
			0.000			1" Ice	1.972	0.913	0.071
						2" Ice	2.329	1.183	0.109
KRY 112 144/1	A	From Leg	4.000	0.000	108.000	No Ice	0.350	0.175	0.011
			0.000			1/2" Ice	0.426	0.234	0.014
			0.000			1" Ice	0.509	0.301	0.019
						2" Ice	0.698	0.456	0.032
KRY 112 144/1	B	From Leg	4.000	0.000	108.000	No Ice	0.350	0.175	0.011
			0.000			1/2" Ice	0.426	0.234	0.014
			0.000			1" Ice	0.509	0.301	0.019
						2" Ice	0.698	0.456	0.032
KRY 112 144/1	C	From Leg	4.000	0.000	108.000	No Ice	0.350	0.175	0.011
			0.000			1/2" Ice	0.426	0.234	0.014
			0.000			1" Ice	0.509	0.301	0.019
						2" Ice	0.698	0.456	0.032
4' x 2" Pipe Mount	A	From Leg	4.000	0.000	108.000	No Ice	0.785	0.785	0.029

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft ²	ft ²	K
			0.000			1/2" Ice	1.028	1.028	0.035
			0.000			1" Ice	1.281	1.281	0.044
						2" Ice	1.814	1.814	0.072
4' x 2" Pipe Mount	B	From Leg	4.000	0.000	108.000	No Ice	0.785	0.785	0.029
			0.000			1/2" Ice	1.028	1.028	0.035
			0.000			1" Ice	1.281	1.281	0.044
						2" Ice	1.814	1.814	0.072
4' x 2" Pipe Mount	C	From Leg	4.000	0.000	108.000	No Ice	0.785	0.785	0.029
			0.000			1/2" Ice	1.028	1.028	0.035
			0.000			1" Ice	1.281	1.281	0.044
						2" Ice	1.814	1.814	0.072
8' x 2" Mount Pipe	A	From Leg	4.000	0.000	108.000	No Ice	1.900	1.900	0.029
			0.000			1/2" Ice	2.728	2.728	0.044
			0.000			1" Ice	3.401	3.401	0.063
						2" Ice	4.396	4.396	0.119
8' x 2" Mount Pipe	B	From Leg	4.000	0.000	108.000	No Ice	1.900	1.900	0.029
			0.000			1/2" Ice	2.728	2.728	0.044
			0.000			1" Ice	3.401	3.401	0.063
						2" Ice	4.396	4.396	0.119
8' x 2" Mount Pipe	C	From Leg	4.000	0.000	108.000	No Ice	1.900	1.900	0.029
			0.000			1/2" Ice	2.728	2.728	0.044
			0.000			1" Ice	3.401	3.401	0.063
						2" Ice	4.396	4.396	0.119
SitePro 1 RMQP-496-HK	C	None		0.000	108.000	No Ice	23.140	23.140	1.945
						1/2" Ice	28.170	28.170	2.335
						1" Ice	33.230	33.230	2.845
						2" Ice	43.350	43.350	3.865
*									
DC6-48-60-18-8F	B	From Leg	4.000	0.000	98.000	No Ice	1.212	1.212	0.033
			0.000			1/2" Ice	1.892	1.892	0.055
			0.000			1" Ice	2.105	2.105	0.080
						2" Ice	2.570	2.570	0.138
AIR 6419 B77G w/ Mount Pipe	A	From Leg	4.000	0.000	98.000	No Ice	4.320	2.490	0.078
			0.000			1/2" Ice	4.740	2.840	0.110
			2.000			1" Ice	5.170	3.210	0.147
						2" Ice	6.090	4.000	0.241
AIR 6419 B77G w/ Mount Pipe	B	From Leg	4.000	0.000	98.000	No Ice	4.320	2.490	0.078
			0.000			1/2" Ice	4.740	2.840	0.110
			2.000			1" Ice	5.170	3.210	0.147
						2" Ice	6.090	4.000	0.241
AIR 6419 B77G w/ Mount Pipe	C	From Leg	4.000	0.000	98.000	No Ice	4.320	2.490	0.078
			0.000			1/2" Ice	4.740	2.840	0.110
			2.000			1" Ice	5.170	3.210	0.147
						2" Ice	6.090	4.000	0.241
DMP65R-BU6D w/ Mount Pipe	A	From Leg	4.000	0.000	98.000	No Ice	11.960	5.970	0.115
			0.000			1/2" Ice	12.700	6.630	0.201
			2.000			1" Ice	13.460	7.300	0.298
						2" Ice	15.020	8.690	0.529
DMP65R-BU8D w/ Mount Pipe	B	From Leg	4.000	0.000	98.000	No Ice	15.890	7.890	0.139
			0.000			1/2" Ice	16.810	8.740	0.252
			2.000			1" Ice	17.760	9.600	0.380
						2" Ice	19.700	11.370	0.679
DMP65R-BU6D w/ Mount Pipe	C	From Leg	4.000	0.000	98.000	No Ice	11.960	5.970	0.115
			0.000			1/2" Ice	12.700	6.630	0.201
			2.000			1" Ice	13.460	7.300	0.298
						2" Ice	15.020	8.690	0.529
TPA65R-BU6D_CCIV2 w/	A	From Leg	4.000	0.000	98.000	No Ice	11.960	5.970	0.094

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	Project				Date		21:54:18 05/10/22	
	Client		Crown Castle		Designed by		Pavan Upadhy	

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral					
Mount Pipe			0.000			1/2" Ice	12.700	6.630	0.181
			2.000			1" Ice	13.460	7.300	0.278
						2" Ice	15.020	8.690	0.509
TPA65R-BU8D_CCIV2 w/ Mount Pipe	B	From Leg	4.000	0.000	98.000	No Ice	15.890	7.890	0.120
			0.000			1/2" Ice	16.810	8.740	0.234
			2.000			1" Ice	17.760	9.600	0.361
						2" Ice	19.700	11.370	0.660
TPA65R-BU6D_CCIV2 w/ Mount Pipe	C	From Leg	4.000	0.000	98.000	No Ice	11.960	5.970	0.094
			0.000			1/2" Ice	12.700	6.630	0.181
			2.000			1" Ice	13.460	7.300	0.278
						2" Ice	15.020	8.690	0.509
AIR 6449 B77D w/ Mount Pipe	A	From Leg	4.000	0.000	98.000	No Ice	3.580	2.310	0.095
			0.000			1/2" Ice	3.920	2.600	0.130
			2.000			1" Ice	4.270	2.910	0.173
						2" Ice	5.020	3.570	0.277
AIR 6449 B77D w/ Mount Pipe	B	From Leg	4.000	0.000	98.000	No Ice	3.580	2.310	0.095
			0.000			1/2" Ice	3.920	2.600	0.130
			2.000			1" Ice	4.270	2.910	0.173
						2" Ice	5.020	3.570	0.277
AIR 6449 B77D w/ Mount Pipe	C	From Leg	4.000	0.000	98.000	No Ice	3.580	2.310	0.095
			0.000			1/2" Ice	3.920	2.600	0.130
			2.000			1" Ice	4.270	2.910	0.173
						2" Ice	5.020	3.570	0.277
RRUS 4478 B14_CCIV2	A	From Leg	4.000	0.000	98.000	No Ice	2.021	1.246	0.059
			0.000			1/2" Ice	2.200	1.396	0.077
			2.000			1" Ice	2.386	1.554	0.097
						2" Ice	2.780	1.891	0.147
RRUS 4478 B14_CCIV2	B	From Leg	4.000	0.000	98.000	No Ice	2.021	1.246	0.059
			0.000			1/2" Ice	2.200	1.396	0.077
			2.000			1" Ice	2.386	1.554	0.097
						2" Ice	2.780	1.891	0.147
RRUS 4478 B14_CCIV2	C	From Leg	4.000	0.000	98.000	No Ice	2.021	1.246	0.059
			0.000			1/2" Ice	2.200	1.396	0.077
			2.000			1" Ice	2.386	1.554	0.097
						2" Ice	2.780	1.891	0.147
RRUS 8843 B2/B66A_CCIV2	A	From Leg	4.000	0.000	98.000	No Ice	1.980	1.695	0.075
			0.000			1/2" Ice	2.157	1.861	0.096
			2.000			1" Ice	2.341	2.035	0.119
						2" Ice	2.733	2.405	0.176
RRUS 8843 B2/B66A_CCIV2	B	From Leg	4.000	0.000	98.000	No Ice	1.980	1.695	0.075
			0.000			1/2" Ice	2.157	1.861	0.096
			2.000			1" Ice	2.341	2.035	0.119
						2" Ice	2.733	2.405	0.176
RRUS 8843 B2/B66A_CCIV2	C	From Leg	4.000	0.000	98.000	No Ice	1.980	1.695	0.075
			0.000			1/2" Ice	2.157	1.861	0.096
			2.000			1" Ice	2.341	2.035	0.119
						2" Ice	2.733	2.405	0.176
DC9-48-60-24-8C-EV	A	From Leg	4.000	0.000	98.000	No Ice	2.737	4.785	0.026
			0.000			1/2" Ice	2.963	5.065	0.063
			2.000			1" Ice	3.196	5.352	0.104
						2" Ice	3.684	5.948	0.200
RRUS 4449 B5/B12	A	From Leg	4.000	0.000	98.000	No Ice	1.968	1.408	0.071
			0.000			1/2" Ice	2.144	1.564	0.090
			2.000			1" Ice	2.328	1.727	0.111
						2" Ice	2.718	2.075	0.163
RRUS 4449 B5/B12	B	From Leg	4.000	0.000	98.000	No Ice	1.968	1.408	0.071
			0.000			1/2" Ice	2.144	1.564	0.090

tnxTower MTS Engineering, P.L.L.C. 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 151136.007.01 - NEW BRITAIN GRAVEL PIT, CT (BU# 876331)	Page 44 of 75
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	Client Crown Castle	Designed by Pavan Upadhyia

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
			Horz Lateral ft	Vert ft					
			2.000						
						1" Ice	2.328	1.727	0.111
						2" Ice	2.718	2.075	0.163
RRUS 4449 B5/B12	C	From Leg	4.000	0.000	98.000	No Ice	1.968	1.408	0.071
			0.000			1/2" Ice	2.144	1.564	0.090
			2.000			1" Ice	2.328	1.727	0.111
						2" Ice	2.718	2.075	0.163
2' x 2" Pipe Mount	A	From Leg	2.000	0.000	98.000	No Ice	0.023	0.023	0.007
			0.000			1/2" Ice	0.049	0.049	0.008
			1.000			1" Ice	0.085	0.085	0.009
						2" Ice	0.186	0.186	0.013
3' x 2" Pipe Mount	B	From Leg	2.000	0.000	98.000	No Ice	0.583	0.583	0.011
			0.000			1/2" Ice	0.770	0.770	0.017
			1.000			1" Ice	0.967	0.967	0.024
						2" Ice	1.388	1.388	0.047
2' x 2" Pipe Mount	A	From Leg	4.000	0.000	98.000	No Ice	0.023	0.023	0.007
			0.000			1/2" Ice	0.049	0.049	0.008
			2.000			1" Ice	0.085	0.085	0.009
						2" Ice	0.186	0.186	0.013
2' x 2" Pipe Mount	B	From Leg	4.000	0.000	98.000	No Ice	0.023	0.023	0.007
			0.000			1/2" Ice	0.049	0.049	0.008
			2.000			1" Ice	0.085	0.085	0.009
						2" Ice	0.186	0.186	0.013
2' x 2" Pipe Mount	B	From Leg	4.000	0.000	98.000	No Ice	0.023	0.023	0.007
			0.000			1/2" Ice	0.049	0.049	0.008
			2.000			1" Ice	0.085	0.085	0.009
						2" Ice	0.186	0.186	0.013
6' x 2" Mount Pipe	C	From Leg	4.000	0.000	98.000	No Ice	1.425	1.425	0.022
			0.000			1/2" Ice	1.925	1.925	0.033
			2.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
(2) 4.5' x 2" Mount Pipe	A	From Leg	4.000	0.000	98.000	No Ice	0.000	1.024	0.002
			0.000			1/2" Ice	0.000	1.298	0.010
			0.000			1" Ice	0.000	1.580	0.021
						2" Ice	0.000	2.174	0.054
(2) 4.5' x 2" Mount Pipe	B	From Leg	4.000	0.000	98.000	No Ice	0.000	1.024	0.002
			0.000			1/2" Ice	0.000	1.298	0.010
			0.000			1" Ice	0.000	1.580	0.021
						2" Ice	0.000	2.174	0.054
(2) 4.5' x 2" Mount Pipe	C	From Leg	4.000	0.000	98.000	No Ice	0.000	1.024	0.002
			0.000			1/2" Ice	0.000	1.298	0.010
			0.000			1" Ice	0.000	1.580	0.021
						2" Ice	0.000	2.174	0.054
8' x 2" Mount Pipe	A	From Leg	4.000	0.000	98.000	No Ice	1.900	1.900	0.029
			0.000			1/2" Ice	2.728	2.728	0.044
			0.000			1" Ice	3.401	3.401	0.063
						2" Ice	4.396	4.396	0.119
Miscellaneous [NA 507-1]	C	None		0.000	102.000	No Ice	4.560	4.560	0.245
						1/2" Ice	6.390	6.390	0.311
						1" Ice	8.180	8.180	0.402
						2" Ice	11.660	11.660	0.657
Platform Mount [LP 712-1]	C	None		0.000	98.000	No Ice	24.560	24.560	1.335
						1/2" Ice	27.920	27.920	1.915
						1" Ice	31.270	31.270	2.548
						2" Ice	37.980	37.980	3.971
*									
BXA-70040-6CF-EDIN-2 w/ Mount Pipe	A	From Leg	4.000	0.000	85.000	No Ice	12.930	5.680	0.079
			0.000			1/2" Ice	13.650	6.300	0.174
			5.000			1" Ice	14.380	6.930	0.281
						2" Ice	15.900	8.240	0.530
BXA-70063-6CF-2 w/ Mount Pipe	B	From Leg	4.000	0.000	85.000	No Ice	7.340	5.510	0.058
			0.000			1/2" Ice	8.080	6.220	0.115

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	Client		Crown Castle		Designed by		Pavan Upadhy	

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Lateral						Vert
				5.000						
BXA-70063-6CF-2 w/ Mount Pipe	C	From Leg		4.000	0.000	85.000	1" Ice	8.830	6.940	0.183
				0.000			2" Ice	10.380	8.440	0.351
				5.000			No Ice	7.340	5.510	0.058
							1/2" Ice	8.080	6.220	0.115
MT6407-77A	A	From Leg		4.000	0.000	85.000	1" Ice	8.830	6.940	0.183
				0.000			2" Ice	10.380	8.440	0.351
				5.000			No Ice	4.692	1.840	0.082
							1/2" Ice	4.980	2.063	0.111
MT6407-77A	B	From Leg		4.000	0.000	85.000	1" Ice	5.275	2.292	0.144
				0.000			2" Ice	5.887	2.772	0.223
				5.000			No Ice	4.692	1.840	0.082
							1/2" Ice	4.980	2.063	0.111
MT6407-77A	C	From Leg		4.000	0.000	85.000	1" Ice	5.275	2.292	0.144
				0.000			2" Ice	5.887	2.772	0.223
				5.000			No Ice	4.692	1.840	0.082
							1/2" Ice	4.980	2.063	0.111
(2) NHH-65B-R2B w/ Mount Pipe	A	From Leg		4.000	0.000	85.000	1" Ice	5.275	2.292	0.144
				0.000			2" Ice	5.887	2.772	0.223
				5.000			No Ice	4.090	3.290	0.069
							1/2" Ice	4.480	3.670	0.132
(2) NHH-65B-R2B w/ Mount Pipe	B	From Leg		4.000	0.000	85.000	1" Ice	4.880	4.060	0.205
				0.000			2" Ice	5.700	4.860	0.385
				5.000			No Ice	4.090	3.290	0.069
							1/2" Ice	4.480	3.670	0.132
(2) NHH-65B-R2B w/ Mount Pipe	C	From Leg		4.000	0.000	85.000	1" Ice	4.880	4.060	0.205
				0.000			2" Ice	5.700	4.860	0.385
				5.000			No Ice	4.090	3.290	0.069
							1/2" Ice	4.480	3.670	0.132
RFV01U-D2A	A	From Leg		4.000	0.000	85.000	1" Ice	4.880	4.060	0.205
				0.000			2" Ice	5.700	4.860	0.385
				5.000			No Ice	1.875	1.013	0.070
							1/2" Ice	2.045	1.145	0.087
RFV01U-D2A	B	From Leg		4.000	0.000	85.000	1" Ice	2.223	1.284	0.106
				0.000			2" Ice	2.601	1.585	0.153
				5.000			No Ice	1.875	1.013	0.070
							1/2" Ice	2.045	1.145	0.087
RFV01U-D2A	C	From Leg		4.000	0.000	85.000	1" Ice	2.223	1.284	0.106
				0.000			2" Ice	2.601	1.585	0.153
				5.000			No Ice	1.875	1.013	0.070
							1/2" Ice	2.045	1.145	0.087
RVZDC-6627-PF-48	A	From Leg		4.000	0.000	85.000	1" Ice	2.223	1.284	0.106
				0.000			2" Ice	2.601	1.585	0.153
				5.000			No Ice	3.792	2.514	0.032
							1/2" Ice	4.044	2.727	0.063
RFV01U-D1A	A	From Leg		4.000	0.000	85.000	1" Ice	4.303	2.947	0.099
				0.000			2" Ice	4.844	3.417	0.181
				5.000			No Ice	1.875	1.250	0.084
							1/2" Ice	2.045	1.393	0.103
RFV01U-D1A	B	From Leg		4.000	0.000	85.000	1" Ice	2.223	1.543	0.124
				0.000			2" Ice	2.601	1.865	0.175
				5.000			No Ice	1.875	1.250	0.084
							1/2" Ice	2.045	1.393	0.103
RFV01U-D1A	C	From Leg		4.000	0.000	85.000	1" Ice	2.223	1.543	0.124
				0.000			2" Ice	2.601	1.865	0.175
				5.000			No Ice	1.875	1.250	0.084
							1/2" Ice	2.045	1.393	0.103
				1" Ice	2.223	1.543	0.124			

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	Project	Date 21:54:18 05/10/22
	Client Crown Castle	Designed by Pavan Upadhyia

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Vert						
			ft	ft	°	ft	ft ²	ft ²	K	
3' x 2" Pipe Mount	A	From Leg	2.000	0.000	0.000	85.000	2" Ice	2.601	1.865	0.175
			0.000				No Ice	0.583	0.583	0.011
			1.000				1/2" Ice	0.770	0.770	0.017
							1" Ice	0.967	0.967	0.024
4' x 2" Pipe Mount	B	From Leg	2.000	0.000	0.000	85.000	2" Ice	1.388	1.388	0.047
			0.000				No Ice	0.785	0.785	0.029
			1.000				1/2" Ice	1.028	1.028	0.035
							1" Ice	1.281	1.281	0.044
6' x 2.5" Mount Pipe	A	From Leg	4.000	0.000	0.000	85.000	2" Ice	1.814	1.814	0.072
			0.000				No Ice	1.728	1.728	0.035
			2.000				1/2" Ice	2.090	2.090	0.048
							1" Ice	2.461	2.461	0.065
6' x 2.5" Mount Pipe	B	From Leg	4.000	0.000	0.000	85.000	2" Ice	3.231	3.231	0.112
			0.000				No Ice	1.728	1.728	0.035
			2.000				1/2" Ice	2.090	2.090	0.048
							1" Ice	2.461	2.461	0.065
6' x 2.5" Mount Pipe	C	From Leg	4.000	0.000	0.000	85.000	2" Ice	3.231	3.231	0.112
			0.000				No Ice	1.728	1.728	0.035
			2.000				1/2" Ice	2.090	2.090	0.048
							1" Ice	2.461	2.461	0.065
Platform Mount [LP 303-1_KCKR-HR-1]	C	None			0.000	85.000	2" Ice	3.231	3.231	0.112
							No Ice	28.310	28.310	1.770
							1/2" Ice	35.690	35.690	2.297
							1" Ice	43.110	43.110	2.943
* KS24019-L112A	A	From Leg	3.000	0.000	0.000	80.000	2" Ice	58.210	58.210	4.603
			0.000				No Ice	0.141	0.141	0.005
			1.000				1/2" Ice	0.198	0.198	0.007
							1" Ice	0.262	0.262	0.009
Side Arm Mount [SO 701-1]	A	From Leg	1.500	0.000	0.000	80.000	2" Ice	0.415	0.415	0.018
			0.000				No Ice	0.850	1.670	0.065
			0.000				1/2" Ice	1.140	2.340	0.079
							1" Ice	1.430	3.010	0.093
* MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	62.000	2" Ice	2.010	4.350	0.121
			0.000				No Ice	8.010	4.230	0.108
			0.000				1/2" Ice	8.520	4.690	0.194
							1" Ice	9.040	5.160	0.292
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.000	0.000	0.000	62.000	2" Ice	10.110	6.120	0.522
			0.000				No Ice	8.010	4.230	0.108
			0.000				1/2" Ice	8.520	4.690	0.194
							1" Ice	9.040	5.160	0.292
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.000	0.000	0.000	62.000	2" Ice	10.110	6.120	0.522
			0.000				No Ice	8.010	4.230	0.108
			0.000				1/2" Ice	8.520	4.690	0.194
							1" Ice	9.040	5.160	0.292
TA08025-B605	A	From Leg	4.000	0.000	0.000	62.000	2" Ice	10.110	6.120	0.522
			0.000				No Ice	1.964	1.129	0.075
			0.000				1/2" Ice	2.138	1.267	0.093
							1" Ice	2.320	1.411	0.114
TA08025-B605	B	From Leg	4.000	0.000	0.000	62.000	2" Ice	2.705	1.723	0.164
			0.000				No Ice	1.964	1.129	0.075
			0.000				1/2" Ice	2.138	1.267	0.093
							1" Ice	2.320	1.411	0.114
TA08025-B605	C	From Leg	4.000	0.000	0.000	62.000	2" Ice	2.705	1.723	0.164
			0.000				No Ice	1.964	1.129	0.075
						1/2" Ice	2.138	1.267	0.093	

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	Project	Date 21:54:18 05/10/22
	Client Crown Castle	Designed by Pavan Upadhyha

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
			Horz ft	Lateral ft					
			0.000						
TA08025-B604	A	From Leg	4.000	0.000	62.000	1" Ice	2.320	1.411	0.114
			0.000			2" Ice	2.705	1.723	0.164
			0.000			No Ice	1.964	0.981	0.064
			0.000			1/2" Ice	2.138	1.112	0.081
TA08025-B604	B	From Leg	4.000	0.000	62.000	1" Ice	2.320	1.250	0.100
			0.000			2" Ice	2.705	1.548	0.148
			0.000			No Ice	1.964	0.981	0.064
			0.000			1/2" Ice	2.138	1.112	0.081
TA08025-B604	C	From Leg	4.000	0.000	62.000	1" Ice	2.320	1.250	0.100
			0.000			2" Ice	2.705	1.548	0.148
			0.000			No Ice	1.964	0.981	0.064
			0.000			1/2" Ice	2.138	1.112	0.081
RDIDC-9181-PF-48	A	From Leg	4.000	0.000	62.000	1" Ice	2.320	1.250	0.100
			0.000			2" Ice	2.705	1.548	0.148
			0.000			No Ice	2.012	1.168	0.022
			0.000			1/2" Ice	2.189	1.311	0.040
(2) 8' x 2" Mount Pipe	A	From Leg	4.000	0.000	62.000	1" Ice	2.373	1.461	0.060
			0.000			2" Ice	2.763	1.784	0.110
			0.000			No Ice	1.900	1.900	0.029
			0.000			1/2" Ice	2.728	2.728	0.044
(2) 8' x 2" Mount Pipe	B	From Leg	4.000	0.000	62.000	1" Ice	3.401	3.401	0.063
			0.000			2" Ice	4.396	4.396	0.119
			0.000			No Ice	1.900	1.900	0.029
			0.000			1/2" Ice	2.728	2.728	0.044
(2) 8' x 2" Mount Pipe	C	From Leg	4.000	0.000	62.000	1" Ice	3.401	3.401	0.063
			0.000			2" Ice	4.396	4.396	0.119
			0.000			No Ice	1.900	1.900	0.029
			0.000			1/2" Ice	2.728	2.728	0.044
Commscope MC-PK8-DSH	C	None		0.000	62.000	1" Ice	3.401	3.401	0.063
						2" Ice	4.396	4.396	0.119
						No Ice	34.240	34.240	1.749
						1/2" Ice	62.950	62.950	2.099
					1" Ice	91.660	91.660	2.450	
					2" Ice	149.080	149.080	3.151	
*									
*									
*									
*									
*									
*****IMG									
MODEL**									
Bridge Stiffener (84" x 9" x 1.25")	A	From Leg	1.000	0.000	90.000	No Ice	1.458	7.758	0.030
			0.000			1/2" Ice	2.254	8.290	0.061
			0.000			1" Ice	3.062	8.830	0.099
Bridge Stiffener (84" x 9" x 1.25")	B	From Leg	1.000	0.000	90.000	2" Ice	4.489	9.931	0.194
			0.000			No Ice	1.458	7.758	0.030
			0.000			1/2" Ice	2.254	8.290	0.061
			0.000			1" Ice	3.062	8.830	0.099
Bridge Stiffener (84" x 9" x 1.25")	C	From Leg	1.000	0.000	90.000	2" Ice	4.489	9.931	0.194
			0.000			No Ice	1.458	7.758	0.030
			0.000			1/2" Ice	2.254	8.290	0.061
			0.000			1" Ice	3.062	8.830	0.099
					2" Ice	4.489	9.931	0.194	
*									
Bridge Stiffener (84" x 13.5" x 1.25")	A	From Leg	1.000	0.000	60.000	No Ice	1.458	10.753	0.040
			0.000			1/2" Ice	2.254	11.282	0.084
			0.000			1" Ice	3.062	11.819	0.134

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	Project	Date 21:54:18 05/10/22
	Client Crown Castle	Designed by Pavan Upadhyia

Description	Face or Leg	Offset Type	Offsets:			Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
			Horz ft	Vert ft	Lateral ft					
Bridge Stiffener (84" x 13.5" x 1.25")	B	From Leg	1.000	0.000	60.000	2" Ice	4.489	12.913	0.256	
			0.000	0.000	60.000	No Ice	1.458	10.753	0.040	
			0.000	0.000	60.000	1/2" Ice	2.254	11.282	0.084	
			0.000	0.000	60.000	1" Ice	3.062	11.819	0.134	
Bridge Stiffener (84" x 13.5" x 1.25")	C	From Leg	1.000	0.000	60.000	2" Ice	4.489	12.913	0.256	
			0.000	0.000	60.000	No Ice	1.458	10.753	0.040	
			0.000	0.000	60.000	1/2" Ice	2.254	11.282	0.084	
			0.000	0.000	60.000	1" Ice	3.062	11.819	0.134	
* Bridge Stiffener (84" x 13.5" x 1.25")	A	From Leg	1.000	0.000	30.000	2" Ice	4.489	12.913	0.256	
			0.000	0.000	30.000	No Ice	1.458	10.753	0.040	
			0.000	0.000	30.000	1/2" Ice	2.254	11.282	0.084	
			0.000	0.000	30.000	1" Ice	3.062	11.819	0.134	
Bridge Stiffener (84" x 13.5" x 1.25")	B	From Leg	1.000	0.000	30.000	2" Ice	4.489	12.913	0.256	
			0.000	0.000	30.000	No Ice	1.458	10.753	0.040	
			0.000	0.000	30.000	1/2" Ice	2.254	11.282	0.084	
			0.000	0.000	30.000	1" Ice	3.062	11.819	0.134	
Bridge Stiffener (84" x 13.5" x 1.25")	C	From Leg	1.000	0.000	30.000	2" Ice	4.489	12.913	0.256	
			0.000	0.000	30.000	No Ice	1.458	10.753	0.040	
			0.000	0.000	30.000	1/2" Ice	2.254	11.282	0.084	
			0.000	0.000	30.000	1" Ice	3.062	11.819	0.134	
* Bridge Stiffener (48.875" x 12" x 1")	A	From Leg	1.000	0.000	60.000	2" Ice	2.146	6.536	0.133	
			0.000	0.000	60.000	No Ice	0.679	5.172	0.015	
			0.000	0.000	60.000	1/2" Ice	1.147	5.503	0.038	
			0.000	0.000	60.000	1" Ice	1.533	5.840	0.065	
Bridge Stiffener (48.875" x 12" x 1")	B	From Leg	1.000	0.000	60.000	2" Ice	2.146	6.536	0.133	
			0.000	0.000	60.000	No Ice	0.679	5.172	0.015	
			0.000	0.000	60.000	1/2" Ice	1.147	5.503	0.038	
			0.000	0.000	60.000	1" Ice	1.533	5.840	0.065	
Bridge Stiffener (48.875" x 12" x 1")	C	From Leg	1.000	0.000	60.000	2" Ice	2.146	6.536	0.133	
			0.000	0.000	60.000	No Ice	0.679	5.172	0.015	
			0.000	0.000	60.000	1/2" Ice	1.147	5.503	0.038	
			0.000	0.000	60.000	1" Ice	1.533	5.840	0.065	
* Bridge Stiffener (66.125" x 14.5" x 1")	A	From Leg	1.000	0.000	30.000	2" Ice	3.139	10.390	0.204	
			0.000	0.000	30.000	No Ice	0.918	8.600	0.025	
			0.000	0.000	30.000	1/2" Ice	1.546	9.037	0.061	
			0.000	0.000	30.000	1" Ice	2.186	9.481	0.103	
Bridge Stiffener (66.125" x 14.5" x 1")	B	From Leg	1.000	0.000	30.000	2" Ice	3.139	10.390	0.204	
			0.000	0.000	30.000	No Ice	0.918	8.600	0.025	
			0.000	0.000	30.000	1/2" Ice	1.546	9.037	0.061	
			0.000	0.000	30.000	1" Ice	2.186	9.481	0.103	
Bridge Stiffener (66.125" x 14.5" x 1")	C	From Leg	1.000	0.000	30.000	2" Ice	3.139	10.390	0.204	
			0.000	0.000	30.000	No Ice	0.918	8.600	0.025	
			0.000	0.000	30.000	1/2" Ice	1.546	9.037	0.061	
			0.000	0.000	30.000	1" Ice	2.186	9.481	0.103	
***	**	**	**	**	***	**	**	**	***	

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Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft	Aperture Area ft ²	Weight K
Andrew VHLP1-23	B	Paraboloid w/Shroud (HP)	From Leg	4.000 0.000 2.000	30.000		114.000	1.275	No Ice 1/2" Ice 1" Ice 2" Ice	0.014 0.022 0.029 0.044
	*									
	*									

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service

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Comb. No.	Description
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	118 - 113	Pole	Max Tension	42	0.000	0.000	-0.000
			Max. Compression	26	-7.663	-0.534	-0.287
			Max. Mx	8	-3.062	-7.466	-0.244
			Max. My	14	-3.063	-0.323	-7.344
			Max. Vy	20	-3.392	6.983	0.014
			Max. Vx	2	-3.398	-0.111	7.106
			Max. Torque	4			-0.369
L2	113 - 108	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-8.312	-0.558	-0.272
			Max. Mx	8	-3.452	-25.149	-0.428
			Max. My	14	-3.453	-0.495	-24.995
			Max. Vy	20	-3.686	24.677	0.276
			Max. Vx	2	-3.692	0.074	24.832
			Max. Torque	4			-0.369
L3	108 - 103	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-18.166	-0.590	-0.247
			Max. Mx	8	-8.473	-63.976	-0.619
			Max. My	14	-8.476	-0.682	-63.782
			Max. Vy	20	-7.912	63.509	0.553
			Max. Vx	2	-7.918	0.265	63.696
			Max. Torque	4			-0.369
L4	103 - 98	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-19.417	-0.622	-0.220
			Max. Mx	8	-9.199	-105.101	-0.810
			Max. My	14	-9.202	-0.869	-104.866
			Max. Vy	20	-8.410	104.640	0.832
			Max. Vx	2	-8.416	0.456	104.858
			Max. Torque	4			-0.369
L5	98 - 93	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-29.580	-1.990	0.008
			Max. Mx	8	-13.333	-180.709	-1.425
			Max. My	2	-13.344	0.733	179.172
			Max. Vy	20	-13.761	179.480	1.552
			Max. Vx	2	-13.626	0.733	179.172
			Max. Torque	24			-1.068
L6	93 - 90	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-30.025	-2.010	0.030
			Max. Mx	8	-13.657	-222.193	-1.724
			Max. My	2	-13.667	1.034	220.255
			Max. Vy	20	-13.905	220.966	1.908
			Max. Vx	2	-13.770	1.034	220.255
			Max. Torque	24			-1.068
L7	90 - 85	Pole	Max Tension	1	0.000	0.000	0.000

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L8	85 - 80	Pole	Max. Compression	26	-31.385	-2.040	0.068
			Max. Mx	8	-14.459	-294.702	-2.221
			Max. My	2	-14.469	1.535	292.096
			Max. Vy	20	-14.632	293.479	2.502
			Max. Vx	2	-14.497	1.535	292.096
			Max. Torque	24			-1.067
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-41.121	-2.051	1.603
			Max. Mx	8	-18.969	-398.478	-2.405
			Max. My	2	-18.967	2.018	397.749
L9	80 - 76.5	Pole	Max. Vy	20	-18.654	397.202	3.421
			Max. Vx	2	-18.727	2.018	397.749
			Max. Torque	22			-1.414
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-42.074	-1.956	2.057
			Max. Mx	8	-19.637	-464.230	-2.523
			Max. My	2	-19.637	2.416	463.899
			Max. Vy	20	-18.882	463.043	4.073
			Max. Vx	2	-18.904	2.416	463.899
			Max. Torque	22			-1.595
L10	76.5 - 76.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-42.150	-1.950	2.065
			Max. Mx	8	-19.702	-468.945	-2.546
			Max. My	2	-19.703	2.445	468.625
			Max. Vy	20	-18.896	467.767	4.105
			Max. Vx	2	-18.905	2.445	468.625
			Max. Torque	22			-1.594
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-42.875	-1.887	2.133
			Max. Mx	8	-20.183	-511.648	-2.755
L11	76.25 - 74	Pole	Max. My	2	-20.183	2.701	511.419
			Max. Vy	20	-19.125	510.555	4.389
			Max. Vx	14	19.133	-3.676	-509.770
			Max. Torque	22			-1.594
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-42.982	-1.880	2.142
			Max. Mx	8	-20.264	-516.424	-2.778
			Max. My	2	-20.265	2.729	516.205
			Max. Vy	20	-19.146	515.340	4.421
			Max. Vx	14	19.155	-3.698	-514.552
L12	74 - 73.75	Pole	Max. Torque	22			-1.594
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-45.154	-1.737	2.296
			Max. Mx	8	-21.738	-613.422	-3.242
			Max. My	2	-21.740	3.298	613.382
			Max. Vy	20	-19.709	612.522	5.052
			Max. Vx	14	19.734	-4.131	-611.720
			Max. Torque	22			-1.594
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-45.260	-1.730	2.304
L13	73.75 - 68.75	Pole	Max. Mx	8	-21.811	-618.346	-3.265
			Max. My	2	-21.812	3.327	618.313
			Max. Vy	20	-19.738	617.455	5.084
			Max. Vx	14	19.757	-4.153	-616.653
			Max. Torque	22			-1.593
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-45.352	-1.723	2.311
			Max. Mx	8	-21.865	-623.279	-3.289
			Max. My	2	-21.867	3.355	623.250
			Max. Vy	20	-19.770	622.396	5.115
L14	68.75 - 68.5	Pole	Max. Vx	14	19.784	-4.174	-621.593
			Max. Torque	22			-1.593
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-45.352	-1.723	2.311
			Max. Mx	8	-21.865	-623.279	-3.289
L15	68.5 - 68.25	Pole	Max. My	2	-21.867	3.355	623.250
			Max. Vy	20	-19.770	622.396	5.115
			Max. Vx	14	19.784	-4.174	-621.593
			Max. Torque	22			-1.593
			Max Tension	1	0.000	0.000	0.000

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L16	68.25 - 64.5	Pole	Max. Torque	22			-1.593
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-46.693	-1.614	2.424
			Max. Mx	8	-22.689	-698.184	-3.638
			Max. My	2	-22.695	3.782	698.027
			Max. Vy	8	20.230	-698.184	-3.638
			Max. Vx	14	20.166	-4.497	-696.440
L17	64.5 - 64.25	Pole	Max. Torque	22			-1.593
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-46.814	-1.607	2.433
			Max. Mx	8	-22.785	-703.239	-3.661
			Max. My	2	-22.792	3.811	703.059
			Max. Vy	8	20.251	-703.239	-3.661
			Max. Vx	14	20.180	-4.519	-701.479
L18	64.25 - 63	Pole	Max. Torque	22			-1.593
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-47.420	-1.571	2.469
			Max. Mx	8	-23.196	-728.640	-3.777
			Max. My	2	-23.204	3.953	728.323
			Max. Vy	8	20.429	-728.640	-3.777
			Max. Vx	14	20.328	-4.626	-726.779
L19	63 - 62.75	Pole	Max. Torque	22			-1.593
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-47.538	-1.563	2.477
			Max. Mx	8	-23.285	-733.746	-3.800
			Max. My	2	-23.293	3.981	733.397
			Max. Vy	8	20.455	-733.746	-3.800
			Max. Vx	14	20.347	-4.648	-731.859
L20	62.75 - 60	Pole	Max. Torque	22			-1.593
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-54.521	-1.469	2.979
			Max. Mx	8	-27.299	-795.819	-3.928
			Max. My	2	-27.307	4.300	795.281
			Max. Vy	8	23.488	-795.819	-3.928
			Max. Vx	14	23.405	-4.879	-793.569
L21	60 - 59.75	Pole	Max. Torque	22			-1.749
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-55.462	-1.458	2.990
			Max. Mx	8	-27.553	-801.900	-3.951
			Max. My	2	-27.561	4.330	801.335
			Max. Vy	8	24.359	-801.900	-3.951
			Max. Vx	14	24.276	-4.900	-799.631
L22	59.75 - 54.75	Pole	Max. Torque	22			-1.749
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-57.626	-1.235	3.164
			Max. Mx	8	-29.130	-925.047	-4.399
			Max. My	2	-29.137	4.930	923.927
			Max. Vy	8	24.945	-925.047	-4.399
			Max. Vx	14	24.865	-5.301	-922.408
L23	54.75 - 49.75	Pole	Max. Torque	22			-1.749
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-59.803	-0.996	3.321
			Max. Mx	8	-30.728	-1051.018	-4.846
			Max. My	2	-30.735	5.529	1049.311
			Max. Vy	8	25.497	-1051.018	-4.846
			Max. Vx	14	25.413	-5.701	-1048.005
L24	49.75 - 49.083	Pole	Max. Torque	22			-1.749
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-60.100	-0.958	3.336
			Max. Mx	8	-30.945	-1068.030	-4.906
			Max. My	2	-30.952	5.609	1066.243

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L25	49.083 - 48.833	Pole	Max. Vy	8	25.567	-1068.030	-4.906
			Max. Vx	14	25.479	-5.754	-1064.963
			Max. Torque	22			-1.748
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-60.218	-0.943	3.342
			Max. Mx	8	-31.036	-1074.418	-4.928
			Max. My	2	-31.043	5.638	1072.601
			Max. Vy	8	25.591	-1074.418	-4.928
			Max. Vx	14	25.502	-5.774	-1071.332
			Max. Torque	22			-1.748
L26	48.833 - 43.833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-62.563	-0.658	3.452
			Max. Mx	8	-32.746	-1203.674	-5.374
			Max. My	2	-32.753	6.236	1201.257
			Max. Vy	8	26.158	-1203.674	-5.374
			Max. Vx	14	26.042	-6.171	-1200.110
			Max. Torque	22			-1.748
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-63.443	-0.554	3.492
			Max. Mx	8	-33.371	-1251.751	-5.537
L27	43.833 - 42	Pole	Max. My	2	-33.378	6.455	1249.114
			Max. Vy	8	26.368	-1251.751	-5.537
			Max. Vx	14	26.244	-6.316	-1247.980
			Max. Torque	22			-1.748
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-63.574	-0.540	3.498
			Max. Mx	8	-33.482	-1258.336	-5.560
			Max. My	2	-33.488	6.484	1255.669
			Max. Vy	8	26.378	-1258.336	-5.560
			Max. Vx	14	26.253	-6.336	-1254.536
L28	42 - 41.75	Pole	Max. Torque	22			-1.748
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-66.200	-0.257	3.607
			Max. Mx	8	-35.384	-1391.491	-6.004
			Max. My	2	-35.390	7.080	1388.223
			Max. Vy	8	26.932	-1391.491	-6.004
			Max. Vx	14	26.787	-6.730	-1387.051
			Max. Torque	22			-1.748
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-67.399	-0.130	3.654
L29	41.75 - 36.75	Pole	Max. Mx	8	-36.246	-1452.287	-6.204
			Max. My	2	-36.252	7.348	1448.748
			Max. Vy	8	27.172	-1452.287	-6.204
			Max. Vx	2	-27.022	7.348	1448.748
			Max. Torque	22			-1.747
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-67.544	-0.116	3.659
			Max. Mx	8	-36.361	-1459.076	-6.226
			Max. My	2	-36.366	7.377	1455.506
			Max. Vy	8	27.188	-1459.076	-6.226
L30	36.75 - 34.5	Pole	Max. Vx	2	-27.038	7.377	1455.506
			Max. Torque	22			-1.747
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-67.689	-0.102	3.664
			Max. Mx	8	-36.466	-1465.871	-6.249
			Max. My	2	-36.471	7.407	1462.270
			Max. Vy	8	27.215	-1465.871	-6.249
			Max. Vx	2	-27.064	7.407	1462.270
			Max. Torque	22			-1.747
			Max Tension	1	0.000	0.000	0.000
L31	34.5 - 34.25	Pole	Max. Compression	26	-67.689	-0.102	3.664
			Max. Mx	8	-36.466	-1465.871	-6.249
			Max. My	2	-36.471	7.407	1462.270
			Max. Vy	8	27.215	-1465.871	-6.249
			Max. Vx	2	-27.064	7.407	1462.270
			Max. Torque	22			-1.747
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-67.689	-0.102	3.664
			Max. Mx	8	-36.466	-1465.871	-6.249
			Max. My	2	-36.471	7.407	1462.270
L32	34.25 - 34	Pole	Max. Vy	8	27.215	-1465.871	-6.249
			Max. Vx	2	-27.064	7.407	1462.270
			Max. Torque	22			-1.747
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-67.689	-0.102	3.664
			Max. Mx	8	-36.466	-1465.871	-6.249
			Max. My	2	-36.471	7.407	1462.270
			Max. Vy	8	27.215	-1465.871	-6.249
			Max. Vx	2	-27.064	7.407	1462.270
			Max. Torque	22			-1.747

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L33	34 - 33.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-67.825	-0.088	3.669
			Max. Mx	8	-36.562	-1472.672	-6.271
			Max. My	2	-36.567	7.437	1469.042
			Max. Vy	8	27.242	-1472.672	-6.271
			Max. Vx	2	-27.091	7.437	1469.042
			Max. Torque	22			-1.747
L34	33.75 - 30	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-69.784	0.123	3.746
			Max. Mx	8	-38.002	-1575.429	-6.603
			Max. My	2	-38.006	7.881	1571.333
			Max. Vy	8	27.619	-1575.429	-6.603
			Max. Vx	2	-27.464	7.881	1571.333
			Max. Torque	22			-1.747
L35	30 - 29.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-70.830	0.132	3.756
			Max. Mx	8	-38.320	-1582.547	-6.625
			Max. My	2	-38.324	7.912	1578.421
			Max. Vy	8	28.513	-1582.547	-6.625
			Max. Vx	2	-28.359	7.912	1578.421
			Max. Torque	22			-1.747
L36	29.75 - 28.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-71.450	0.203	3.798
			Max. Mx	8	-38.751	-1618.243	-6.732
			Max. My	2	-38.756	8.064	1613.966
			Max. Vy	8	28.665	-1618.243	-6.732
			Max. Vx	2	-28.509	8.064	1613.966
			Max. Torque	22			-1.747
L37	28.5 - 28.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-71.584	0.219	3.807
			Max. Mx	8	-38.860	-1625.403	-6.754
			Max. My	2	-38.865	8.094	1621.095
			Max. Vy	8	28.679	-1625.403	-6.754
			Max. Vx	2	-28.522	8.094	1621.095
			Max. Torque	22			-1.747
L38	28.25 - 27.942	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-71.766	0.237	3.817
			Max. Mx	8	-38.996	-1634.233	-6.781
			Max. My	2	-39.000	8.132	1629.888
			Max. Vy	8	28.715	-1634.233	-6.781
			Max. Vx	2	-28.558	8.132	1629.888
			Max. Torque	22			-1.747
L39	27.942 - 27.692	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-71.913	0.253	3.826
			Max. Mx	8	-39.106	-1641.410	-6.802
			Max. My	2	-39.110	8.162	1637.033
			Max. Vy	8	28.745	-1641.410	-6.802
			Max. Vx	2	-28.586	8.162	1637.033
			Max. Torque	22			-1.747
L40	27.692 - 23	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-74.714	0.585	3.937
			Max. Mx	8	-41.159	-1777.480	-7.206
			Max. My	2	-41.163	8.730	1772.505
			Max. Vy	8	29.314	-1777.480	-7.206
			Max. Vx	2	-29.148	8.730	1772.505
			Max. Torque	22			-1.747
L41	23 - 22.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-74.871	0.604	3.941
			Max. Mx	8	-41.284	-1784.803	-7.228
			Max. My	2	-41.287	8.761	1779.795

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L42	22.75 - 21.5	Pole	Max. Vy	8	29.332	-1784.803	-7.228
			Max. Vx	2	-29.167	8.761	1779.795
			Max. Torque	22			-1.747
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-75.655	0.703	3.960
			Max. Mx	8	-41.854	-1821.531	-7.335
			Max. My	2	-41.858	8.912	1816.358
			Max. Vy	8	29.492	-1821.531	-7.335
L43	21.5 - 21.25	Pole	Max. Vx	2	-29.326	8.912	1816.358
			Max. Torque	22			-1.747
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-75.802	0.723	3.964
			Max. Mx	8	-41.969	-1828.899	-7.356
			Max. My	2	-41.973	8.942	1823.692
			Max. Vy	8	29.510	-1828.899	-7.356
			Max. Vx	2	-29.343	8.942	1823.692
L44	21.25 - 21	Pole	Max. Torque	22			-1.747
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-75.949	0.742	3.968
			Max. Mx	8	-42.077	-1836.274	-7.378
			Max. My	2	-42.080	8.972	1831.034
			Max. Vy	8	29.539	-1836.274	-7.378
			Max. Vx	2	-29.372	8.972	1831.034
			Max. Torque	22			-1.747
L45	21 - 20.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-76.092	0.762	3.972
			Max. Mx	8	-42.179	-1843.656	-7.399
			Max. My	2	-42.183	9.002	1838.383
			Max. Vy	8	29.567	-1843.656	-7.399
			Max. Vx	2	-29.400	9.002	1838.383
			Max. Torque	22			-1.747
			Max Tension	1	0.000	0.000	0.000
L46	20.75 - 19	Pole	Max. Compression	26	-77.104	0.905	3.999
			Max. Mx	8	-42.885	-1895.526	-7.549
			Max. My	2	-42.889	9.214	1890.017
			Max. Vy	8	29.785	-1895.526	-7.549
			Max. Vx	2	-29.614	9.214	1890.017
			Max. Torque	22			-1.746
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-77.260	0.924	4.004
L47	19 - 18.75	Pole	Max. Mx	8	-43.017	-1902.965	-7.571
			Max. My	2	-43.020	9.244	1897.421
			Max. Vy	8	29.792	-1902.965	-7.571
			Max. Vx	2	-29.620	9.244	1897.421
			Max. Torque	22			-1.746
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-77.416	0.943	4.007
			Max. Mx	8	-43.134	-1910.410	-7.592
L48	18.75 - 18.5	Pole	Max. My	2	-43.137	9.274	1904.832
			Max. Vy	8	29.819	-1910.410	-7.592
			Max. Vx	2	-29.648	9.274	1904.832
			Max. Torque	22			-1.746
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-77.569	0.963	4.011
			Max. Mx	8	-43.247	-1917.862	-7.614
			Max. My	2	-43.250	9.304	1912.250
L49	18.5 - 18.25	Pole	Max. Vy	8	29.847	-1917.862	-7.614
			Max. Vx	2	-29.675	9.304	1912.250
			Max. Torque	22			-1.746
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-80.581	1.300	4.138

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L51	13.25 - 12.7	Pole	Max. Mx	8	-45.525	-2068.223	-8.041
			Max. My	2	-45.527	9.906	2061.920
			Max. Vy	8	30.355	-2068.223	-8.041
			Max. Vx	2	-30.182	9.906	2061.920
			Max. Torque	22			-1.746
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-80.912	1.333	4.160
			Max. Mx	8	-45.781	-2084.912	-8.088
			Max. My	2	-45.783	9.972	2078.533
			Max. Vy	8	30.400	-2084.912	-8.088
L52	12.7 - 12.35	Pole	Max. Vx	2	-30.227	9.972	2078.533
			Max. Torque	22			-1.746
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-81.135	1.354	4.173
			Max. Mx	8	-45.956	-2095.548	-8.117
			Max. My	2	-45.958	10.014	2089.120
			Max. Vy	8	30.430	-2095.548	-8.117
			Max. Vx	2	-30.257	10.014	2089.120
			Max. Torque	22			-1.746
			Max Tension	1	0.000	0.000	0.000
L53	12.35 - 12.125	Pole	Max. Compression	26	-81.278	1.368	4.182
			Max. Mx	8	-46.069	-2102.391	-8.137
			Max. My	2	-46.071	10.041	2095.932
			Max. Vy	8	30.449	-2102.391	-8.137
			Max. Vx	2	-30.276	10.041	2095.932
			Max. Torque	22			-1.746
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-81.357	1.375	4.187
			Max. Mx	8	-46.132	-2106.194	-8.147
			Max. My	2	-46.134	10.056	2099.718
L54	12.125 - 12	Pole	Max. Vy	8	30.460	-2106.194	-8.147
			Max. Vx	2	-30.287	10.056	2099.718
			Max. Torque	22			-1.746
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-81.520	1.390	4.197
			Max. Mx	8	-46.258	-2113.806	-8.169
			Max. My	2	-46.260	10.086	2107.296
			Max. Vy	8	30.485	-2113.806	-8.169
			Max. Vx	2	-30.312	10.086	2107.296
			Max. Torque	22			-1.746
L55	12 - 11.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-83.711	1.590	4.326
			Max. Mx	8	-47.965	-2217.158	-8.455
			Max. My	2	-47.967	10.490	2210.183
			Max. Vy	8	30.822	-2217.158	-8.455
			Max. Vx	2	-30.650	10.490	2210.183
			Max. Torque	22			-1.746
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-83.870	1.604	4.336
			Max. Mx	8	-48.098	-2224.857	-8.476
L56	11.75 - 8.375	Pole	Max. My	2	-48.099	10.520	2217.848
			Max. Vy	8	30.833	-2224.857	-8.476
			Max. Vx	2	-30.662	10.520	2217.848
			Max. Torque	22			-1.746
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-84.107	1.626	4.350
			Max. Mx	8	-48.283	-2236.417	-8.508
			Max. My	2	-48.284	10.564	2229.356
			Max. Vy	8	30.871	-2236.417	-8.508
			Max. Vx	2	-30.699	10.564	2229.356
L57	8.375 - 8.125	Pole	Max. Torque	22			-1.746
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-84.107	1.626	4.350
			Max. Mx	8	-48.283	-2236.417	-8.508
			Max. My	2	-48.284	10.564	2229.356
			Max. Vy	8	30.871	-2236.417	-8.508
L58	8.125 - 7.75	Pole	Max. Vx	2	-30.699	10.564	2229.356
			Max. Torque	22			-1.746

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L59	7.75 - 7.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-84.267	1.641	4.359
			Max. Mx	8	-48.409	-2244.131	-8.529
			Max. My	2	-48.410	10.594	2237.036
			Max. Vy	8	30.893	-2244.131	-8.529
			Max. Vx	2	-30.721	10.594	2237.036
			Max. Torque	22			-1.746
L60	7.5 - 7.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-84.430	1.655	4.369
			Max. Mx	8	-48.539	-2251.851	-8.551
			Max. My	2	-48.541	10.624	2244.721
			Max. Vy	8	30.916	-2251.851	-8.551
			Max. Vx	2	-30.745	10.624	2244.721
			Max. Torque	22			-1.746
L61	7.25 - 4	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-86.528	1.851	4.456
			Max. Mx	8	-50.225	-2352.738	-8.825
			Max. My	2	-50.226	11.011	2345.164
			Max. Vy	8	31.230	-2352.738	-8.825
			Max. Vx	2	-31.059	11.011	2345.164
			Max. Torque	22			-1.746
L62	4 - 3.733	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-86.705	1.867	4.461
			Max. Mx	8	-50.379	-2361.070	-8.848
			Max. My	2	-50.379	11.043	2353.459
			Max. Vy	8	31.242	-2361.070	-8.848
			Max. Vx	2	-31.071	11.043	2353.459
			Max. Torque	22			-1.746
L63	3.733 - 3.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-86.804	1.876	4.464
			Max. Mx	8	-50.461	-2365.753	-8.861
			Max. My	2	-50.462	11.061	2358.122
			Max. Vy	8	31.255	-2365.753	-8.861
			Max. Vx	2	-31.085	11.061	2358.122
			Max. Torque	22			-1.746
L64	3.583 - 3	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-87.188	1.911	4.476
			Max. Mx	8	-50.774	-2383.978	-8.910
			Max. My	2	-50.775	11.130	2376.267
			Max. Vy	8	31.317	-2383.978	-8.910
			Max. Vx	2	-31.147	11.130	2376.267
			Max. Torque	22			-1.746
L65	3 - 2.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-87.353	1.926	4.480
			Max. Mx	8	-50.912	-2391.803	-8.931
			Max. My	2	-50.913	11.160	2384.058
			Max. Vy	8	31.337	-2391.803	-8.931
			Max. Vx	2	-31.167	11.160	2384.058
			Max. Torque	22			-1.746
L66	2.75 - 1.9	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-87.841	1.976	4.497
			Max. Mx	8	-51.304	-2418.451	-9.002
			Max. My	2	-51.304	11.261	2410.591
			Max. Vy	8	31.424	-2418.451	-9.002
			Max. Vx	2	-31.254	11.261	2410.591
			Max. Torque	22			-1.746
L67	1.9 - 1.65	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-87.981	1.991	4.501
			Max. Mx	8	-51.427	-2426.301	-9.023
			Max. My	2	-51.427	11.290	2418.407
			Max. Vy	8	31.435	-2426.301	-9.023

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L68	1.65 - 0	Pole	Max. Vx	2	-31.265	11.290	2418.407
			Max. Torque	22			-1.746
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-88.863	2.081	4.530
			Max. Mx	8	-52.186	-2478.232	-9.162
			Max. My	2	-52.186	11.486	2470.115
			Max. Vy	8	31.586	-2478.232	-9.162
			Max. Vx	2	-31.418	11.486	2470.115
			Max. Torque	22			-1.746

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	28	88.863	-4.213	7.333
	Max. H _x	20	52.204	30.959	0.110
	Max. H _z	2	52.204	0.097	31.390
	Max. M _x	2	2470.115	0.097	31.390
	Max. M _z	8	2478.232	-31.558	-0.097
	Max. Torsion	10	1.673	-27.002	-15.686
	Min. Vert	19	39.153	26.925	-15.541
	Min. H _x	8	52.204	-31.558	-0.097
	Min. H _z	14	52.204	-0.093	-31.133
	Min. M _x	14	-2465.102	-0.093	-31.133
	Min. M _z	20	-2465.502	30.959	0.110
	Min. Torsion	22	-1.746	27.101	15.748

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead Only	43.503	0.000	0.000	-1.229	0.634	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	52.204	-0.097	-31.390	-2470.115	11.486	1.045
0.9 Dead+1.0 Wind 0 deg - No Ice	39.153	-0.097	-31.390	-2446.640	11.181	1.032
1.2 Dead+1.0 Wind 30 deg - No Ice	52.204	15.816	-27.596	-2166.660	-1237.820	0.149
0.9 Dead+1.0 Wind 30 deg - No Ice	39.153	15.816	-27.596	-2146.094	-1226.476	0.141
1.2 Dead+1.0 Wind 60 deg - No Ice	52.204	27.519	-15.870	-1242.885	-2155.699	-0.708
0.9 Dead+1.0 Wind 60 deg - No Ice	39.153	27.519	-15.870	-1230.937	-2135.779	-0.710
1.2 Dead+1.0 Wind 90 deg - No Ice	52.204	31.558	0.097	9.162	-2478.232	-1.389
0.9 Dead+1.0 Wind 90 deg - No Ice	39.153	31.558	0.097	9.439	-2455.268	-1.383
1.2 Dead+1.0 Wind 120 deg - No Ice	52.204	27.002	15.686	1238.480	-2131.446	-1.673
0.9 Dead+1.0 Wind 120 deg - No Ice	39.153	27.002	15.686	1227.257	-2111.658	-1.662

<p style="text-align: center;">tnxTower</p> <p style="text-align: center;">MTS Engineering, P.L.L.C. 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	<p>Job</p> <p style="text-align: center;">151136.007.01 - NEW BRITAIN GRAVEL PIT, CT (BU# 876331)</p>	<p>Page</p> <p style="text-align: center;">59 of 75</p>
	<p>Project</p>	<p>Date</p> <p style="text-align: center;">21:54:18 05/10/22</p>
	<p>Client</p> <p style="text-align: center;">Crown Castle</p>	<p>Designed by</p> <p style="text-align: center;">Pavan Upadhyha</p>

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
No Ice						
1.2 Dead+1.0 Wind 150 deg - No Ice	52.204	15.611	27.021	2138.462	-1237.566	-1.527
0.9 Dead+1.0 Wind 150 deg - No Ice	39.153	15.611	27.021	2118.831	-1226.146	-1.514
1.2 Dead+1.0 Wind 180 deg - No Ice	52.204	0.093	31.133	2465.102	-9.446	-1.008
0.9 Dead+1.0 Wind 180 deg - No Ice	39.153	0.093	31.133	2442.420	-9.520	-0.995
1.2 Dead+1.0 Wind 210 deg - No Ice	52.204	-15.655	27.289	2157.546	1237.747	-0.183
0.9 Dead+1.0 Wind 210 deg - No Ice	39.153	-15.655	27.289	2137.799	1226.024	-0.174
1.2 Dead+1.0 Wind 240 deg - No Ice	52.204	-26.925	15.541	1231.441	2139.644	0.640
0.9 Dead+1.0 Wind 240 deg - No Ice	39.153	-26.925	15.541	1220.311	2119.438	0.642
1.2 Dead+1.0 Wind 270 deg - No Ice	52.204	-30.959	-0.110	-13.879	2465.502	1.452
0.9 Dead+1.0 Wind 270 deg - No Ice	39.153	-30.959	-0.110	-13.346	2442.221	1.447
1.2 Dead+1.0 Wind 300 deg - No Ice	52.204	-27.101	-15.748	-1246.661	2140.765	1.746
0.9 Dead+1.0 Wind 300 deg - No Ice	39.153	-27.101	-15.748	-1234.609	2120.549	1.735
1.2 Dead+1.0 Wind 330 deg - No Ice	52.204	-15.639	-27.069	-2139.707	1238.027	1.600
0.9 Dead+1.0 Wind 330 deg - No Ice	39.153	-15.639	-27.069	-2119.291	1226.238	1.586
1.2 Dead+1.0 Ice+1.0 Temp	88.863	0.000	-0.000	-4.530	2.081	0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	88.863	-0.020	-8.320	-711.138	4.406	0.301
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	88.863	4.213	-7.333	-625.076	-353.783	0.058
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	88.863	7.284	-4.198	-359.459	-614.256	-0.176
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	88.863	8.377	0.020	-2.420	-708.025	-0.374
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	88.863	7.175	4.158	349.695	-608.932	-0.462
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	88.863	4.154	7.186	607.295	-352.103	-0.430
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	88.863	0.019	8.284	701.080	-0.047	-0.290
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	88.863	-4.191	7.288	614.535	357.859	-0.058
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	88.863	-7.180	4.142	348.443	614.888	0.167
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	88.863	-8.274	-0.023	-7.435	709.243	0.390
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	88.863	-7.193	-4.170	-360.147	614.666	0.472
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	88.863	-4.153	-7.183	-616.580	356.247	0.442
Dead+Wind 0 deg - Service	43.503	-0.024	-7.776	-609.397	3.266	0.264
Dead+Wind 30 deg - Service	43.503	3.918	-6.836	-534.655	-304.500	0.046
Dead+Wind 60 deg - Service	43.503	6.817	-3.931	-307.083	-530.616	-0.167
Dead+Wind 90 deg - Service	43.503	7.818	0.024	1.358	-610.066	-0.342
Dead+Wind 120 deg - Service	43.503	6.689	3.886	304.195	-524.629	-0.419
Dead+Wind 150 deg - Service	43.503	3.867	6.694	525.905	-304.427	-0.385
Dead+Wind 180 deg - Service	43.503	0.023	7.713	606.369	-1.884	-0.254

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Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead+Wind 210 deg - Service	43.503	-3.878	6.760	530.615	305.360	-0.047
Dead+Wind 240 deg - Service	43.503	-6.670	3.850	302.465	527.531	0.157
Dead+Wind 270 deg - Service	43.503	-7.669	-0.027	-4.311	607.800	0.357
Dead+Wind 300 deg - Service	43.503	-6.714	-3.901	-308.005	527.809	0.429
Dead+Wind 330 deg - Service	43.503	-3.874	-6.706	-528.002	305.419	0.396

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.000	-43.503	0.000	0.000	43.503	0.000	0.000%
2	-0.097	-52.204	-31.390	0.097	52.204	31.390	0.000%
3	-0.097	-39.153	-31.390	0.097	39.153	31.390	0.000%
4	15.816	-52.204	-27.596	-15.816	52.204	27.596	0.000%
5	15.816	-39.153	-27.596	-15.816	39.153	27.596	0.000%
6	27.519	-52.204	-15.870	-27.519	52.204	15.870	0.000%
7	27.519	-39.153	-15.870	-27.519	39.153	15.870	0.000%
8	31.558	-52.204	0.097	-31.558	52.204	-0.097	0.000%
9	31.558	-39.153	0.097	-31.558	39.153	-0.097	0.000%
10	27.002	-52.204	15.686	-27.002	52.204	-15.686	0.000%
11	27.002	-39.153	15.686	-27.002	39.153	-15.686	0.000%
12	15.611	-52.204	27.021	-15.611	52.204	-27.021	0.000%
13	15.611	-39.153	27.021	-15.611	39.153	-27.021	0.000%
14	0.093	-52.204	31.133	-0.093	52.204	-31.133	0.000%
15	0.093	-39.153	31.133	-0.093	39.153	-31.133	0.000%
16	-15.655	-52.204	27.289	15.655	52.204	-27.289	0.000%
17	-15.655	-39.153	27.289	15.655	39.153	-27.289	0.000%
18	-26.925	-52.204	15.541	26.925	52.204	-15.541	0.000%
19	-26.925	-39.153	15.541	26.925	39.153	-15.541	0.000%
20	-30.959	-52.204	-0.110	30.959	52.204	0.110	0.000%
21	-30.959	-39.153	-0.110	30.959	39.153	0.110	0.000%
22	-27.101	-52.204	-15.748	27.101	52.204	15.748	0.000%
23	-27.101	-39.153	-15.748	27.101	39.153	15.748	0.000%
24	-15.639	-52.204	-27.069	15.639	52.204	27.069	0.000%
25	-15.639	-39.153	-27.069	15.639	39.153	27.069	0.000%
26	0.000	-88.863	0.000	-0.000	88.863	0.000	0.000%
27	-0.020	-88.863	-8.320	0.020	88.863	8.320	0.000%
28	4.213	-88.863	-7.333	-4.213	88.863	7.333	0.000%
29	7.284	-88.863	-4.198	-7.284	88.863	4.198	0.000%
30	8.377	-88.863	0.020	-8.377	88.863	-0.020	0.000%
31	7.175	-88.863	4.158	-7.175	88.863	-4.158	0.000%
32	4.154	-88.863	7.186	-4.154	88.863	-7.186	0.000%
33	0.019	-88.863	8.284	-0.019	88.863	-8.284	0.000%
34	-4.191	-88.863	7.288	4.191	88.863	-7.288	0.000%
35	-7.180	-88.863	4.142	7.180	88.863	-4.142	0.000%
36	-8.274	-88.863	-0.023	8.274	88.863	0.023	0.000%
37	-7.193	-88.863	-4.170	7.193	88.863	4.170	0.000%
38	-4.153	-88.863	-7.183	4.153	88.863	7.183	0.000%
39	-0.024	-43.503	-7.776	0.024	43.503	7.776	0.000%
40	3.918	-43.503	-6.836	-3.918	43.503	6.836	0.000%
41	6.817	-43.503	-3.931	-6.817	43.503	3.931	0.000%
42	7.818	-43.503	0.024	-7.818	43.503	-0.024	0.000%
43	6.689	-43.503	3.886	-6.689	43.503	-3.886	0.000%
44	3.867	-43.503	6.694	-3.867	43.503	-6.694	0.000%
45	0.023	-43.503	7.713	-0.023	43.503	-7.713	0.000%
46	-3.878	-43.503	6.760	3.878	43.503	-6.760	0.000%
47	-6.670	-43.503	3.850	6.670	43.503	-3.850	0.000%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
48	-7.669	-43.503	-0.027	7.669	43.503	0.027	0.000%
49	-6.714	-43.503	-3.901	6.714	43.503	3.901	0.000%
50	-3.874	-43.503	-6.706	3.874	43.503	6.706	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.0000001	0.0000001
2	Yes	5	0.0000001	0.00025655
3	Yes	5	0.0000001	0.00011865
4	Yes	6	0.0000001	0.00023860
5	Yes	6	0.0000001	0.00008234
6	Yes	6	0.0000001	0.00024185
7	Yes	6	0.0000001	0.00008360
8	Yes	5	0.0000001	0.00033500
9	Yes	5	0.0000001	0.00015869
10	Yes	6	0.0000001	0.00022605
11	Yes	6	0.0000001	0.00007791
12	Yes	6	0.0000001	0.00024783
13	Yes	6	0.0000001	0.00008596
14	Yes	5	0.0000001	0.00034427
15	Yes	5	0.0000001	0.00016244
16	Yes	6	0.0000001	0.00023517
17	Yes	6	0.0000001	0.00008123
18	Yes	6	0.0000001	0.00023103
19	Yes	6	0.0000001	0.00007983
20	Yes	5	0.0000001	0.00046361
21	Yes	5	0.0000001	0.00022221
22	Yes	6	0.0000001	0.00025103
23	Yes	6	0.0000001	0.00008702
24	Yes	6	0.0000001	0.00022720
25	Yes	6	0.0000001	0.00007825
26	Yes	4	0.0000001	0.00043802
27	Yes	6	0.0000001	0.00050181
28	Yes	6	0.0000001	0.00055138
29	Yes	6	0.0000001	0.00054919
30	Yes	6	0.0000001	0.00050083
31	Yes	6	0.0000001	0.00053980
32	Yes	6	0.0000001	0.00054084
33	Yes	6	0.0000001	0.00049243
34	Yes	6	0.0000001	0.00053909
35	Yes	6	0.0000001	0.00053604
36	Yes	6	0.0000001	0.00049642
37	Yes	6	0.0000001	0.00054730
38	Yes	6	0.0000001	0.00054545
39	Yes	4	0.0000001	0.00066505
40	Yes	5	0.0000001	0.00008675
41	Yes	5	0.0000001	0.00008959
42	Yes	4	0.0000001	0.00072414
43	Yes	5	0.0000001	0.00007775
44	Yes	5	0.0000001	0.00009594
45	Yes	4	0.0000001	0.00067228
46	Yes	5	0.0000001	0.00008312
47	Yes	5	0.0000001	0.00008041
48	Yes	4	0.0000001	0.00075974

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49	Yes	5	0.00000001	0.00009846
50	Yes	5	0.00000001	0.00007858

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	118 - 113	14.067	40	1.030	0.003
L2	113 - 108	12.988	40	1.029	0.003
L3	108 - 103	11.912	40	1.025	0.003
L4	103 - 98	10.844	40	1.014	0.003
L5	98 - 93	9.793	40	0.991	0.003
L6	93 - 90	8.774	40	0.953	0.003
L7	90 - 85	8.185	40	0.921	0.002
L8	85 - 80	7.243	40	0.875	0.002
L9	80 - 76.5	6.358	40	0.812	0.002
L10	76.5 - 76.25	5.783	40	0.758	0.002
L11	76.25 - 74	5.743	40	0.755	0.002
L12	74 - 73.75	5.393	40	0.729	0.001
L13	73.75 - 68.75	5.355	40	0.727	0.001
L14	68.75 - 68.5	4.617	40	0.682	0.001
L15	68.5 - 68.25	4.581	40	0.679	0.001
L16	68.25 - 64.5	4.546	40	0.675	0.001
L17	64.5 - 64.25	4.038	40	0.616	0.001
L18	64.25 - 63	4.006	40	0.613	0.001
L19	63 - 62.75	3.847	40	0.601	0.001
L20	62.75 - 60	3.816	40	0.598	0.001
L21	60 - 59.75	3.480	40	0.567	0.001
L22	59.75 - 54.75	3.451	40	0.565	0.001
L23	54.75 - 49.75	2.882	40	0.520	0.001
L24	49.75 - 49.083	2.364	40	0.468	0.001
L25	49.083 - 48.833	2.299	40	0.461	0.001
L26	48.833 - 43.833	2.275	40	0.458	0.001
L27	43.833 - 42	1.820	40	0.411	0.001
L28	42 - 41.75	1.665	40	0.393	0.001
L29	41.75 - 36.75	1.645	40	0.390	0.000
L30	36.75 - 34.5	1.261	40	0.342	0.000
L31	34.5 - 34.25	1.106	40	0.318	0.000
L32	34.25 - 34	1.089	40	0.316	0.000
L33	34 - 33.75	1.073	40	0.313	0.000
L34	33.75 - 30	1.056	40	0.310	0.000
L35	30 - 29.75	0.830	40	0.266	0.000
L36	29.75 - 28.5	0.816	40	0.264	0.000
L37	28.5 - 28.25	0.749	40	0.250	0.000
L38	28.25 - 27.942	0.736	40	0.247	0.000
L39	27.942 - 27.692	0.720	40	0.245	0.000
L40	27.692 - 23	0.707	40	0.243	0.000
L41	23 - 22.75	0.488	40	0.203	0.000
L42	22.75 - 21.5	0.477	40	0.201	0.000
L43	21.5 - 21.25	0.426	40	0.191	0.000
L44	21.25 - 21	0.416	40	0.189	0.000
L45	21 - 20.75	0.406	40	0.187	0.000
L46	20.75 - 19	0.396	40	0.185	0.000
L47	19 - 18.75	0.331	40	0.168	0.000
L48	18.75 - 18.5	0.323	40	0.166	0.000
L49	18.5 - 18.25	0.314	40	0.164	0.000
L50	18.25 - 13.25	0.306	40	0.161	0.000
L51	13.25 - 12.7	0.160	40	0.115	0.000
L52	12.7 - 12.35	0.147	40	0.110	0.000

<p>tnxTower</p> <p>MTS Engineering, P.L.L.C. 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	Job 151136.007.01 - NEW BRITAIN GRAVEL PIT, CT (BU# 876331)	Page 63 of 75
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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L53	12.35 - 12.125	0.139	40	0.107	0.000
L54	12.125 - 12	0.134	40	0.105	0.000
L55	12 - 11.75	0.132	40	0.103	0.000
L56	11.75 - 8.375	0.126	40	0.101	0.000
L57	8.375 - 8.125	0.065	40	0.073	0.000
L58	8.125 - 7.75	0.061	40	0.071	0.000
L59	7.75 - 7.5	0.056	40	0.068	0.000
L60	7.5 - 7.25	0.052	40	0.065	0.000
L61	7.25 - 4	0.049	40	0.063	0.000
L62	4 - 3.733	0.015	40	0.034	0.000
L63	3.733 - 3.583	0.013	40	0.033	0.000
L64	3.583 - 3	0.012	40	0.032	0.000
L65	3 - 2.75	0.009	40	0.027	0.000
L66	2.75 - 1.9	0.007	40	0.026	0.000
L67	1.9 - 1.65	0.004	40	0.018	0.000
L68	1.65 - 0	0.003	40	0.016	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
116.000	Andrew VHLP1-23	40	13.635	1.030	0.003	128060
114.000	APXVSP18-C-A20 w/ Mount Pipe	40	13.204	1.030	0.003	128060
108.000	AIR6449 B41_T-MOBILE w/ Mount Pipe	40	11.912	1.025	0.003	36707
102.000	Miscellaneous [NA 507-1]	40	10.632	1.010	0.003	14740
98.000	DC6-48-60-18-8F	40	9.793	0.991	0.003	9437
90.000	Bridge Stiffener (84" x 9" x 1.25")	40	8.185	0.921	0.002	5866
85.000	BXA-70040-6CF-EDIN-2 w/ Mount Pipe	40	7.243	0.875	0.002	5218
80.000	KS24019-L112A	40	6.358	0.812	0.002	4053
62.000	MX08FRO665-21 w/ Mount Pipe	40	3.723	0.589	0.001	5148
60.000	Bridge Stiffener (84" x 13.5" x 1.25")	40	3.480	0.567	0.001	5760
30.000	Bridge Stiffener (84" x 13.5" x 1.25")	40	0.830	0.266	0.000	5329

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	118 - 113	57.073	4	4.188	0.013
L2	113 - 108	52.699	4	4.187	0.013
L3	108 - 103	48.334	4	4.170	0.012
L4	103 - 98	44.000	4	4.122	0.012
L5	98 - 93	39.738	4	4.030	0.012
L6	93 - 90	35.603	4	3.873	0.010
L7	90 - 85	33.214	4	3.742	0.009
L8	85 - 80	29.394	4	3.554	0.009
L9	80 - 76.5	25.805	4	3.297	0.007

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L10	76.5 - 76.25	23.469	4	3.077	0.006
L11	76.25 - 74	23.308	4	3.066	0.006
L12	74 - 73.75	21.889	4	2.961	0.006
L13	73.75 - 68.75	21.734	4	2.952	0.006
L14	68.75 - 68.5	18.738	4	2.769	0.005
L15	68.5 - 68.25	18.594	4	2.758	0.005
L16	68.25 - 64.5	18.450	4	2.742	0.005
L17	64.5 - 64.25	16.390	4	2.500	0.004
L18	64.25 - 63	16.260	4	2.490	0.004
L19	63 - 62.75	15.615	4	2.439	0.004
L20	62.75 - 60	15.488	4	2.428	0.004
L21	60 - 59.75	14.125	4	2.303	0.004
L22	59.75 - 54.75	14.005	4	2.295	0.004
L23	54.75 - 49.75	11.697	4	2.111	0.003
L24	49.75 - 49.083	9.595	4	1.900	0.003
L25	49.083 - 48.833	9.332	4	1.870	0.003
L26	48.833 - 43.833	9.234	4	1.861	0.003
L27	43.833 - 42	7.384	4	1.670	0.002
L28	42 - 41.75	6.758	4	1.594	0.002
L29	41.75 - 36.75	6.675	4	1.585	0.002
L30	36.75 - 34.5	5.117	4	1.387	0.002
L31	34.5 - 34.25	4.486	4	1.292	0.002
L32	34.25 - 34	4.419	4	1.281	0.002
L33	34 - 33.75	4.352	4	1.271	0.002
L34	33.75 - 30	4.286	4	1.259	0.001
L35	30 - 29.75	3.366	4	1.081	0.001
L36	29.75 - 28.5	3.310	4	1.070	0.001
L37	28.5 - 28.25	3.037	4	1.014	0.001
L38	28.25 - 27.942	2.984	4	1.003	0.001
L39	27.942 - 27.692	2.920	4	0.993	0.001
L40	27.692 - 23	2.868	4	0.985	0.001
L41	23 - 22.75	1.978	4	0.824	0.001
L42	22.75 - 21.5	1.935	4	0.817	0.001
L43	21.5 - 21.25	1.727	4	0.777	0.001
L44	21.25 - 21	1.686	4	0.768	0.001
L45	21 - 20.75	1.646	4	0.759	0.001
L46	20.75 - 19	1.607	4	0.750	0.001
L47	19 - 18.75	1.345	4	0.681	0.001
L48	18.75 - 18.5	1.309	4	0.673	0.001
L49	18.5 - 18.25	1.274	4	0.664	0.001
L50	18.25 - 13.25	1.240	4	0.655	0.001
L51	13.25 - 12.7	0.650	4	0.468	0.000
L52	12.7 - 12.35	0.597	4	0.447	0.000
L53	12.35 - 12.125	0.565	4	0.433	0.000
L54	12.125 - 12	0.545	4	0.424	0.000
L55	12 - 11.75	0.534	4	0.419	0.000
L56	11.75 - 8.375	0.512	4	0.411	0.000
L57	8.375 - 8.125	0.262	4	0.295	0.000
L58	8.125 - 7.75	0.247	4	0.286	0.000
L59	7.75 - 7.5	0.225	4	0.274	0.000
L60	7.5 - 7.25	0.211	4	0.265	0.000
L61	7.25 - 4	0.197	4	0.257	0.000
L62	4 - 3.733	0.062	4	0.140	0.000
L63	3.733 - 3.583	0.055	4	0.132	0.000
L64	3.583 - 3	0.051	4	0.128	0.000
L65	3 - 2.75	0.036	4	0.112	0.000
L66	2.75 - 1.9	0.030	4	0.104	0.000
L67	1.9 - 1.65	0.014	4	0.072	0.000
L68	1.65 - 0	0.011	4	0.063	0.000

tnxTower MTS Engineering, P.L.L.C. 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 151136.007.01 - NEW BRITAIN GRAVEL PIT, CT (BU# 876331)	Page 65 of 75
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Critical Deflections and Radius of Curvature - Design Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
116.000	Andrew VHL P1-23	4	55.323	4.188	0.013	33859
114.000	APXVSP18-C-A20 w/ Mount Pipe	4	53.574	4.188	0.013	33859
108.000	AIR6449 B41_T-MOBILE w/ Mount Pipe	4	48.334	4.170	0.012	9323
102.000	Miscellaneous [NA 507-1]	4	43.140	4.107	0.012	3689
98.000	DC6-48-60-18-8F	4	39.738	4.030	0.012	2360
90.000	Bridge Stiffener (84" x 9" x 1.25")	4	33.214	3.742	0.009	1462
85.000	BXA-70040-6CF-EDIN-2 w/ Mount Pipe	4	29.394	3.554	0.009	1296
80.000	KS24019-L112A	4	25.805	3.297	0.007	1004
62.000	MX08FRO665-21 w/ Mount Pipe	4	15.109	2.393	0.004	1270
60.000	Bridge Stiffener (84" x 13.5" x 1.25")	4	14.125	2.303	0.004	1421
30.000	Bridge Stiffener (84" x 13.5" x 1.25")	4	3.366	1.081	0.001	1313

Compression Checks

Pole Design Data

Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	φP _n	Ratio P _u /φP _n
	ft		ft	ft		in ²	K	K	
L1	118 - 113 (1)	P24x0.25	5.000	0.000	0.0	18.653	-3.060	662.265	0.005
L2	113 - 108 (2)	P24x0.25	5.000	0.000	0.0	18.653	-3.451	662.265	0.005
L3	108 - 103 (3)	P24x0.25	5.000	0.000	0.0	18.653	-8.472	662.265	0.013
L4	103 - 98 (4)	P24x0.25	5.000	0.000	0.0	18.653	-9.198	662.265	0.014
L5	98 - 93 (5)	P24x0.25	5.000	0.000	0.0	18.653	-13.331	662.265	0.020
L6	93 - 90 (6)	P24x0.25	3.000	0.000	0.0	18.653	-13.655	662.265	0.021
L7	90 - 85 (7)	P24x0.375	5.000	0.000	0.0	27.833	-14.458	1052.070	0.014
L8	85 - 80 (8)	P24x0.375	5.000	0.000	0.0	27.833	-18.966	1052.070	0.018
L9	80 - 76.5 (9)	P24x0.375	3.500	0.000	0.0	27.833	-19.631	1052.070	0.019
L10	76.5 - 76.25 (10)	P24x0.5875	0.250	0.000	0.0	43.212	-19.697	1633.420	0.012
L11	76.25 - 74 (11)	P24x0.5875	2.250	0.000	0.0	43.212	-20.177	1633.420	0.012
L12	74 - 73.75 (12)	P24x0.9	0.250	0.000	0.0	65.314	-20.259	2468.860	0.008
L13	73.75 - 68.75 (13)	P24x0.9	5.000	0.000	0.0	65.314	-21.734	2468.860	0.009
L14	68.75 - 68.5 (14)	P24x0.8	0.250	0.000	0.0	58.308	-21.807	2204.040	0.010
L15	68.5 - 68.25 (15)	P24x0.575	0.250	0.000	0.0	42.315	-21.862	1599.520	0.014
L16	68.25 - 64.5 (16)	P24x0.575	3.750	0.000	0.0	42.315	-22.688	1599.520	0.014
L17	64.5 - 64.25 (17)	P24x1.05	0.250	0.000	0.0	75.704	-22.785	2861.630	0.008
L18	64.25 - 63 (18)	P24x1.05	1.250	0.000	0.0	75.704	-23.197	2861.630	0.008
L19	63 - 62.75 (19)	P24x1	0.250	0.000	0.0	72.257	-23.286	2731.300	0.009

<p style="text-align: center;">tnxTower</p> <p style="text-align: center;">MTS Engineering, P.L.L.C. 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	<p>Job</p> <p style="text-align: center;">151136.007.01 - NEW BRITAIN GRAVEL PIT, CT (BU# 876331)</p>	<p>Page</p> <p style="text-align: center;">66 of 75</p>
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	<p>Client</p> <p style="text-align: center;">Crown Castle</p>	<p>Designed by</p> <p style="text-align: center;">Pavan Upadhyha</p>

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio P _u / φP _n
L20	62.75 - 60 (20)	P24x1	2.750	0.000	0.0	72.257	-27.300	2731.300	0.010
L21	60 - 59.75 (21)	P30x0.675	0.250	0.000	0.0	62.186	-27.554	2350.630	0.012
L22	59.75 - 54.75 (22)	P30x0.675	5.000	0.000	0.0	62.186	-29.130	2350.630	0.012
L23	54.75 - 49.75 (23)	P30x0.675	5.000	0.000	0.0	62.186	-30.715	2350.630	0.013
L24	49.75 - 49.083 (24)	P30x0.675	0.667	0.000	0.0	62.186	-30.933	2350.630	0.013
L25	49.083 - 48.833 (25)	P30x0.875	0.250	0.000	0.0	80.062	-31.023	3026.330	0.010
L26	48.833 - 43.833 (26)	P30x0.875	5.000	0.000	0.0	80.062	-32.735	3026.330	0.011
L27	43.833 - 42 (27)	P30x0.875	1.833	0.000	0.0	80.062	-33.360	3026.330	0.011
L28	42 - 41.75 (28)	P30x1	0.250	0.000	0.0	91.106	-33.471	3443.810	0.010
L29	41.75 - 36.75 (29)	P30x1	5.000	0.000	0.0	91.106	-35.374	3443.810	0.010
L30	36.75 - 34.5 (30)	P30x1	2.250	0.000	0.0	91.106	-36.237	3443.810	0.011
L31	34.5 - 34.25 (31)	P30x1.05	0.250	0.000	0.0	95.497	-36.351	3609.770	0.010
L32	34.25 - 34 (32)	P30x1.05	0.250	0.000	0.0	95.497	-36.456	3609.770	0.010
L33	34 - 33.75 (33)	P30x0.95	0.250	0.000	0.0	86.700	-36.553	3277.260	0.011
L34	33.75 - 30 (34)	P30x0.95	3.750	0.000	0.0	86.700	-37.994	3277.260	0.012
L35	30 - 29.75 (35)	P36x0.5875	0.250	0.000	0.0	65.360	-38.312	2470.620	0.016
L36	29.75 - 28.5 (36)	P36x0.5875	1.250	0.000	0.0	65.360	-38.744	2470.620	0.016
L37	28.5 - 28.25 (37)	P36x0.6125	0.250	0.000	0.0	68.093	-38.853	2573.940	0.015
L38	28.25 - 27.942 (38)	P36x0.8375	0.308	0.000	0.0	92.516	-38.988	3497.090	0.011
L39	27.942 - 27.692 (39)	P36x0.8375	0.250	0.000	0.0	92.516	-39.098	3497.090	0.011
L40	27.692 - 23 (40)	P36x0.8375	4.692	0.000	0.0	92.516	-41.153	3497.090	0.012
L41	23 - 22.75 (41)	P36x0.9625	0.250	0.000	0.0	105.946	-41.277	4004.750	0.010
L42	22.75 - 21.5 (42)	P36x0.9625	1.250	0.000	0.0	105.946	-41.848	4004.750	0.010
L43	21.5 - 21.25 (43)	P36x0.875	0.250	0.000	0.0	96.555	-41.964	3649.770	0.011
L44	21.25 - 21 (44)	P36x0.875	0.250	0.000	0.0	96.555	-42.071	3649.770	0.012
L45	21 - 20.75 (45)	P36x0.8	0.250	0.000	0.0	88.467	-42.173	3344.060	0.013
L46	20.75 - 19 (46)	P36x0.8	1.750	0.000	0.0	88.467	-42.880	3344.060	0.013
L47	19 - 18.75 (47)	P36x0.925	0.250	0.000	0.0	101.927	-43.012	3852.840	0.011
L48	18.75 - 18.5 (48)	P36x0.925	0.250	0.000	0.0	101.927	-43.128	3852.840	0.011
L49	18.5 - 18.25 (49)	P36x0.9	0.250	0.000	0.0	99.243	-43.242	3751.380	0.012
L50	18.25 - 13.25 (50)	P36x0.9	5.000	0.000	0.0	99.243	-45.521	3751.380	0.012
L51	13.25 - 12.7 (51)	P36x0.9	0.550	0.000	0.0	99.243	-45.778	3751.380	0.012
L52	12.7 - 12.35 (52)	P36x0.8875	0.350	0.000	0.0	97.899	-45.953	3700.600	0.012
L53	12.35 - 12.125 (53)	P36x0.8875	0.225	0.000	0.0	97.899	-46.065	3700.600	0.012
L54	12.125 - 12 (54)	P36x0.8875	0.125	0.000	0.0	97.899	-46.128	3700.600	0.012
L55	12 - 11.75 (55)	P36x1.075	0.250	0.000	0.0	117.949	-46.254	4458.480	0.010
L56	11.75 - 8.375	P36x1.075	3.375	0.000	0.0	117.949	-47.963	4458.480	0.011

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	<p>Client</p> <p style="text-align: center;">Crown Castle</p>	<p>Designed by</p> <p style="text-align: center;">Pavan Upadhyha</p>

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
L57	(56) 8.375 - 8.125	P36x1.175	0.250	0.000	0.0	128.552	-48.095	4859.270	0.010
L58	(57) 8.125 - 7.75	P36x1.175	0.375	0.000	0.0	128.552	-48.281	4859.270	0.010
L59	(58) 7.75 - 7.5 (59)	P36x1.075	0.250	0.000	0.0	117.949	-48.407	4458.480	0.011
L60	7.5 - 7.25 (60)	P36x1.1	0.250	0.000	0.0	120.606	-48.537	4558.900	0.011
L61	7.25 - 4 (61)	P36x1.1	3.250	0.000	0.0	120.606	-50.224	4558.900	0.011
L62	4 - 3.733 (62)	P36x1.475	0.267	0.000	0.0	159.984	-50.377	6047.380	0.008
L63	3.733 - 3.583 (63)	P36x1.475	0.150	0.000	0.0	159.984	-50.460	6047.380	0.008
L64	3.583 - 3 (64)	P36x1.475	0.583	0.000	0.0	159.984	-50.773	6047.380	0.008
L65	3 - 2.75 (65)	P36x1.475	0.250	0.000	0.0	159.984	-50.912	6047.380	0.008
L66	2.75 - 1.9 (66)	P36x1.1	0.850	0.000	0.0	120.606	-51.303	4558.900	0.011
L67	1.9 - 1.65 (67)	P36x1.1	0.250	0.000	0.0	120.606	-51.427	4558.900	0.011
L68	1.65 - 0 (68)	P36x1.1	1.650	0.000	0.0	120.606	-52.186	4558.900	0.011

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{ux} kip-ft	φM _{ux} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	M _{uy} kip-ft	φM _{uy} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{uy}}$
L1	118 - 113 (1)	P24x0.25	7.557	396.683	0.019	0.000	396.683	0.000
L2	113 - 108 (2)	P24x0.25	25.331	396.683	0.064	0.000	396.683	0.000
L3	108 - 103 (3)	P24x0.25	64.248	396.683	0.162	0.000	396.683	0.000
L4	103 - 98 (4)	P24x0.25	105.463	396.683	0.266	0.000	396.683	0.000
L5	98 - 93 (5)	P24x0.25	181.206	396.683	0.457	0.000	396.683	0.000
L6	93 - 90 (6)	P24x0.25	222.793	396.683	0.562	0.000	396.683	0.000
L7	90 - 85 (7)	P24x0.375	295.476	623.717	0.474	0.000	623.717	0.000
L8	85 - 80 (8)	P24x0.375	399.766	623.717	0.641	0.000	623.717	0.000
L9	80 - 76.5 (9)	P24x0.375	465.755	623.717	0.747	0.000	623.717	0.000
L10	76.5 - 76.25 (10)	P24x0.5875	470.498	1014.625	0.464	0.000	1014.625	0.000
L11	76.25 - 74 (11)	P24x0.5875	513.445	1014.625	0.506	0.000	1014.625	0.000
L12	74 - 73.75 (12)	P24x0.9	518.247	1513.550	0.342	0.000	1513.550	0.000
L13	73.75 - 68.75 (13)	P24x0.9	615.752	1513.550	0.407	0.000	1513.550	0.000
L14	68.75 - 68.5 (14)	P24x0.8	620.699	1356.900	0.457	0.000	1356.900	0.000
L15	68.5 - 68.25 (15)	P24x0.575	625.653	994.092	0.629	0.000	994.092	0.000
L16	68.25 - 64.5 (16)	P24x0.575	700.726	994.092	0.705	0.000	994.092	0.000
L17	64.5 - 64.25 (17)	P24x1.05	705.784	1743.283	0.405	0.000	1743.283	0.000
L18	64.25 - 63 (18)	P24x1.05	731.180	1743.283	0.419	0.000	1743.283	0.000
L19	63 - 62.75 (19)	P24x1	736.281	1667.400	0.442	0.000	1667.400	0.000
L20	62.75 - 60 (20)	P24x1	798.372	1667.400	0.479	0.000	1667.400	0.000
L21	60 - 59.75 (21)	P30x0.675	804.451	1828.800	0.440	0.000	1828.800	0.000
L22	59.75 - 54.75 (22)	P30x0.675	927.567	1828.800	0.507	0.000	1828.800	0.000
L23	54.75 - 49.75 (23)	P30x0.675	1054.567	1828.800	0.577	0.000	1828.800	0.000
L24	49.75 - 49.083 (24)	P30x0.675	1071.758	1828.800	0.586	0.000	1828.800	0.000
L25	49.083 -	P30x0.875	1078.208	2338.733	0.461	0.000	2338.733	0.000

<p style="text-align: center;">tnxTower</p> <p style="text-align: center;">MTS Engineering, P.L.L.C. 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	<p>Job</p> <p style="text-align: center;">151136.007.01 - NEW BRITAIN GRAVEL PIT, CT (BU# 876331)</p>	<p>Page</p> <p style="text-align: center;">68 of 75</p>
	<p>Project</p>	<p>Date</p> <p style="text-align: center;">21:54:18 05/10/22</p>
	<p>Client</p> <p style="text-align: center;">Crown Castle</p>	<p>Designed by</p> <p style="text-align: center;">Pavan Upadhyha</p>

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{rx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{rx}}$	M_{uy} kip-ft	ϕM_{ry} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ry}}$
L26	48.833 (25)	P30x0.875	1208.800	2338.733	0.517	0.000	2338.733	0.000
L27	48.833 - 43.833 (26)	P30x0.875	1257.367	2338.733	0.538	0.000	2338.733	0.000
L28	43.833 - 42 (27)	P30x1	1264.025	2650.200	0.477	0.000	2650.200	0.000
L29	41.75 - 36.75 (29)	P30x1	1398.550	2650.200	0.528	0.000	2650.200	0.000
L30	36.75 - 34.5 (30)	P30x1	1459.975	2650.200	0.551	0.000	2650.200	0.000
L31	34.5 - 34.25 (31)	P30x1.05	1466.825	2773.242	0.529	0.000	2773.242	0.000
L32	34.25 - 34 (32)	P30x1.05	1473.692	2773.242	0.531	0.000	2773.242	0.000
L33	34 - 33.75 (33)	P30x0.95	1480.567	2526.275	0.586	0.000	2526.275	0.000
L34	33.75 - 30 (34)	P30x0.95	1584.358	2526.275	0.627	0.000	2526.275	0.000
L35	30 - 29.75 (35)	P36x0.5875	1591.550	2211.808	0.720	0.000	2211.808	0.000
L36	29.75 - 28.5 (36)	P36x0.5875	1627.592	2211.808	0.736	0.000	2211.808	0.000
L37	28.5 - 28.25 (37)	P36x0.6125	1634.817	2319.617	0.705	0.000	2319.617	0.000
L38	28.25 - 27.942 (38)	P36x0.8375	1643.733	3262.400	0.504	0.000	3262.400	0.000
L39	27.942 - 27.692 (39)	P36x0.8375	1650.975	3262.400	0.506	0.000	3262.400	0.000
L40	27.692 - 23 (40)	P36x0.8375	1788.333	3262.400	0.548	0.000	3262.400	0.000
L41	23 - 22.75 (41)	P36x0.9625	1795.725	3722.950	0.482	0.000	3722.950	0.000
L42	22.75 - 21.5 (42)	P36x0.9625	1832.792	3722.950	0.492	0.000	3722.950	0.000
L43	21.5 - 21.25 (43)	P36x0.875	1840.233	3401.267	0.541	0.000	3401.267	0.000
L44	21.25 - 21 (44)	P36x0.875	1847.675	3401.267	0.543	0.000	3401.267	0.000
L45	21 - 20.75 (45)	P36x0.8	1855.125	3122.917	0.594	0.000	3122.917	0.000
L46	20.75 - 19 (46)	P36x0.8	1907.483	3122.917	0.611	0.000	3122.917	0.000
L47	19 - 18.75 (47)	P36x0.925	1914.983	3585.492	0.534	0.000	3585.492	0.000
L48	18.75 - 18.5 (48)	P36x0.925	1922.500	3585.492	0.536	0.000	3585.492	0.000
L49	18.5 - 18.25 (49)	P36x0.9	1930.017	3493.517	0.552	0.000	3493.517	0.000
L50	18.25 - 13.25 (50)	P36x0.9	2081.742	3493.517	0.596	0.000	3493.517	0.000
L51	13.25 - 12.7 (51)	P36x0.9	2098.575	3493.517	0.601	0.000	3493.517	0.000
L52	12.7 - 12.35 (52)	P36x0.8875	2109.308	3447.425	0.612	0.000	3447.425	0.000
L53	12.35 - 12.125 (53)	P36x0.8875	2116.208	3447.425	0.614	0.000	3447.425	0.000
L54	12.125 - 12 (54)	P36x0.8875	2120.050	3447.425	0.615	0.000	3447.425	0.000
L55	12 - 11.75 (55)	P36x1.075	2127.725	4131.700	0.515	0.000	4131.700	0.000
L56	11.75 - 8.375 (56)	P36x1.075	2231.992	4131.700	0.540	0.000	4131.700	0.000
L57	8.375 - 8.125 (57)	P36x1.175	2239.758	4490.508	0.499	0.000	4490.508	0.000
L58	8.125 - 7.75 (58)	P36x1.175	2251.417	4490.508	0.501	0.000	4490.508	0.000
L59	7.75 - 7.5 (59)	P36x1.075	2259.200	4131.700	0.547	0.000	4131.700	0.000
L60	7.5 - 7.25 (60)	P36x1.1	2266.992	4221.800	0.537	0.000	4221.800	0.000
L61	7.25 - 4 (61)	P36x1.1	2368.750	4221.800	0.561	0.000	4221.800	0.000
L62	4 - 3.733 (62)	P36x1.475	2377.150	5541.583	0.429	0.000	5541.583	0.000

<p style="text-align: center;">tnxTower</p> <p style="text-align: center;">MTS Engineering, P.L.L.C. 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	Job 151136.007.01 - NEW BRITAIN GRAVEL PIT, CT (BU# 876331)	Page 69 of 75
	Project	Date 21:54:18 05/10/22
	Client Crown Castle	Designed by Pavan Upadhyha

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{ux} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	M_{uy} kip-ft	ϕM_{uy} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{uy}}$
L63	3.733 - 3.583 (63)	P36x1.475	2381.875	5541.583	0.430	0.000	5541.583	0.000
L64	3.583 - 3 (64)	P36x1.475	2400.258	5541.583	0.433	0.000	5541.583	0.000
L65	3 - 2.75 (65)	P36x1.475	2408.150	5541.583	0.435	0.000	5541.583	0.000
L66	2.75 - 1.9 (66)	P36x1.1	2435.025	4221.800	0.577	0.000	4221.800	0.000
L67	1.9 - 1.65 (67)	P36x1.1	2442.942	4221.800	0.579	0.000	4221.800	0.000
L68	1.65 - 0 (68)	P36x1.1	2495.317	4221.800	0.591	0.000	4221.800	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	118 - 113 (1)	P24x0.25	3.407	201.861	0.017	0.089	324.229	0.000
L2	113 - 108 (2)	P24x0.25	3.702	201.861	0.018	0.089	324.229	0.000
L3	108 - 103 (3)	P24x0.25	7.928	201.861	0.039	0.089	324.229	0.000
L4	103 - 98 (4)	P24x0.25	8.427	201.861	0.042	0.089	324.229	0.000
L5	98 - 93 (5)	P24x0.25	13.795	201.861	0.068	0.905	324.229	0.003
L6	93 - 90 (6)	P24x0.25	13.939	201.861	0.069	0.905	324.229	0.003
L7	90 - 85 (7)	P24x0.375	14.666	315.621	0.046	0.904	655.568	0.001
L8	85 - 80 (8)	P24x0.375	18.724	315.621	0.059	1.340	655.568	0.002
L9	80 - 76.5 (9)	P24x0.375	18.968	315.621	0.060	1.513	655.568	0.002
L10	76.5 - 76.25 (10)	P24x0.5875	18.969	490.025	0.039	1.513	1008.667	0.002
L11	76.25 - 74 (11)	P24x0.5875	19.193	490.025	0.039	1.513	1008.667	0.002
L12	74 - 73.75 (12)	P24x0.9	19.215	740.658	0.026	1.513	1504.208	0.001
L13	73.75 - 68.75 (13)	P24x0.9	19.770	740.658	0.027	1.513	1504.208	0.001
L14	68.75 - 68.5 (14)	P24x0.8	19.793	661.212	0.030	1.513	1348.675	0.001
L15	68.5 - 68.25 (15)	P24x0.575	19.819	479.855	0.041	1.513	988.258	0.002
L16	68.25 - 64.5 (16)	P24x0.575	20.222	479.855	0.042	1.593	988.258	0.002
L17	64.5 - 64.25 (17)	P24x1.05	20.236	858.489	0.024	1.593	1732.200	0.001
L18	64.25 - 63 (18)	P24x1.05	20.383	858.489	0.024	1.593	1732.200	0.001
L19	63 - 62.75 (19)	P24x1	20.403	819.390	0.025	1.593	1656.908	0.001
L20	62.75 - 60 (20)	P24x1	23.442	819.390	0.029	1.749	1656.908	0.001
L21	60 - 59.75 (21)	P30x0.675	24.313	705.188	0.034	1.749	1818.117	0.001
L22	59.75 - 54.75 (22)	P30x0.675	24.901	705.188	0.035	1.749	1818.117	0.001
L23	54.75 - 49.75 (23)	P30x0.675	25.744	705.188	0.037	0.149	1818.117	0.000
L24	49.75 - 49.083 (24)	P30x0.675	25.814	705.188	0.037	0.149	1818.117	0.000
L25	49.083 - 48.833 (25)	P30x0.875	25.839	907.898	0.028	0.149	2324.783	0.000
L26	48.833 - 43.833 (26)	P30x0.875	26.407	907.898	0.029	0.149	2324.783	0.000
L27	43.833 - 42 (27)	P30x0.875	26.619	907.898	0.029	0.149	2324.783	0.000
L28	42 - 41.75 (28)	P30x1	26.629	1033.140	0.026	0.149	2634.142	0.000
L29	41.75 - 36.75 (29)	P30x1	27.191	1033.140	0.026	0.149	2634.142	0.000
L30	36.75 - 34.5	P30x1	27.433	1033.140	0.027	0.149	2634.142	0.000

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	<p>Project</p>	<p>Date</p> <p style="text-align: center;">21:54:18 05/10/22</p>
	<p>Client</p> <p style="text-align: center;">Crown Castle</p>	<p>Designed by</p> <p style="text-align: center;">Pavan Upadhyha</p>

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L31	(30) 34.5 - 34.25	P30x1.05	27.449	1082.930	0.025	0.149	2756.317	0.000
L32	(31) 34.25 - 34 (32)	P30x1.05	27.476	1082.930	0.025	0.149	2756.317	0.000
L33	34 - 33.75 (33)	P30x0.95	27.502	983.179	0.028	0.149	2511.067	0.000
L34	33.75 - 30 (34)	P30x0.95	27.875	983.179	0.028	0.149	2511.067	0.000
L35	30 - 29.75 (35)	P36x0.5875	28.769	741.186	0.039	0.149	2307.617	0.000
L36	29.75 - 28.5 (36)	P36x0.5875	28.919	741.186	0.039	0.149	2307.617	0.000
L37	28.5 - 28.25 (37)	P36x0.6125	28.932	772.181	0.037	0.149	2402.417	0.000
L38	28.25 - 27.942 (38)	P36x0.8375	28.968	1049.130	0.028	0.149	3243.300	0.000
L39	27.942 - 27.692 (39)	P36x0.8375	28.997	1049.130	0.028	0.149	3243.300	0.000
L40	27.692 - 23 (40)	P36x0.8375	29.565	1049.130	0.028	0.149	3243.300	0.000
L41	23 - 22.75 (41)	P36x0.9625	29.584	1201.430	0.025	0.149	3700.917	0.000
L42	22.75 - 21.5 (42)	P36x0.9625	29.746	1201.430	0.025	0.149	3700.917	0.000
L43	21.5 - 21.25 (43)	P36x0.875	29.764	1094.930	0.027	0.149	3381.300	0.000
L44	21.25 - 21 (44)	P36x0.875	29.793	1094.930	0.027	0.149	3381.300	0.000
L45	21 - 20.75 (45)	P36x0.8	29.821	1003.220	0.030	0.149	3104.683	0.000
L46	20.75 - 19 (46)	P36x0.8	30.038	1003.220	0.030	0.149	3104.683	0.000
L47	19 - 18.75 (47)	P36x0.925	30.043	1155.850	0.026	0.149	3564.342	0.000
L48	18.75 - 18.5 (48)	P36x0.925	30.071	1155.850	0.026	0.149	3564.342	0.000
L49	18.5 - 18.25 (49)	P36x0.9	30.098	1125.410	0.027	0.149	3472.958	0.000
L50	18.25 - 13.25 (50)	P36x0.9	30.603	1125.410	0.027	0.149	3472.958	0.000
L51	13.25 - 12.7 (51)	P36x0.9	30.648	1125.410	0.027	0.149	3472.958	0.000
L52	12.7 - 12.35 (52)	P36x0.8875	30.678	1110.180	0.028	0.149	3427.158	0.000
L53	12.35 - 12.125 (53)	P36x0.8875	30.697	1110.180	0.028	0.149	3427.158	0.000
L54	12.125 - 12 (54)	P36x0.8875	30.707	1110.180	0.028	0.149	3427.158	0.000
L55	12 - 11.75 (55)	P36x1.075	30.733	1337.540	0.023	0.149	4106.992	0.000
L56	11.75 - 8.375 (56)	P36x1.075	31.070	1337.540	0.023	0.149	4106.992	0.000
L57	8.375 - 8.125 (57)	P36x1.175	31.081	1457.780	0.021	0.149	4463.367	0.000
L58	8.125 - 7.75 (58)	P36x1.175	31.118	1457.780	0.021	0.149	4463.367	0.000
L59	7.75 - 7.5 (59)	P36x1.075	31.140	1337.540	0.023	0.149	4106.992	0.000
L60	7.5 - 7.25 (60)	P36x1.1	31.164	1367.670	0.023	0.149	4196.492	0.000
L61	7.25 - 4 (61)	P36x1.1	31.476	1367.670	0.023	0.149	4196.492	0.000
L62	4 - 3.733 (62)	P36x1.475	31.488	1814.210	0.017	0.149	5506.833	0.000
L63	3.733 - 3.583 (63)	P36x1.475	31.502	1814.210	0.017	0.149	5506.833	0.000
L64	3.583 - 3 (64)	P36x1.475	31.564	1814.210	0.017	0.149	5506.833	0.000
L65	3 - 2.75 (65)	P36x1.475	31.584	1814.210	0.017	0.149	5506.833	0.000
L66	2.75 - 1.9 (66)	P36x1.1	31.670	1367.670	0.023	0.149	4196.492	0.000
L67	1.9 - 1.65 (67)	P36x1.1	31.681	1367.670	0.023	0.149	4196.492	0.000
L68	1.65 - 0 (68)	P36x1.1	31.836	1367.670	0.023	0.149	4196.492	0.000

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	<p>Project</p>	<p>Date 21:54:18 05/10/22</p>
	<p>Client Crown Castle</p>	<p>Designed by Pavan Upadhy</p>

Pole Interaction Design Data

Section No.	Elevation ft	Ratio	Ratio	Ratio	Ratio	Ratio	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		P_u	M_{ux}	M_{uy}	V_u	T_u			
		ϕP_n	ϕM_{ux}	ϕM_{uy}	ϕV_n	ϕT_n			
L1	118 - 113 (1)	0.005	0.019	0.000	0.017	0.000	0.024	1.050	4.8.2 ✓
L2	113 - 108 (2)	0.005	0.064	0.000	0.018	0.000	0.069	1.050	4.8.2 ✓
L3	108 - 103 (3)	0.013	0.162	0.000	0.039	0.000	0.176	1.050	4.8.2 ✓
L4	103 - 98 (4)	0.014	0.266	0.000	0.042	0.000	0.282	1.050	4.8.2 ✓
L5	98 - 93 (5)	0.020	0.457	0.000	0.068	0.003	0.482	1.050	4.8.2 ✓
L6	93 - 90 (6)	0.021	0.562	0.000	0.069	0.003	0.587	1.050	4.8.2 ✓
L7	90 - 85 (7)	0.014	0.474	0.000	0.046	0.001	0.490	1.050	4.8.2 ✓
L8	85 - 80 (8)	0.018	0.641	0.000	0.059	0.002	0.663	1.050	4.8.2 ✓
L9	80 - 76.5 (9)	0.019	0.747	0.000	0.060	0.002	0.769	1.050	4.8.2 ✓
L10	76.5 - 76.25 (10)	0.012	0.464	0.000	0.039	0.002	0.477	1.050	4.8.2 ✓
L11	76.25 - 74 (11)	0.012	0.506	0.000	0.039	0.002	0.520	1.050	4.8.2 ✓
L12	74 - 73.75 (12)	0.008	0.342	0.000	0.026	0.001	0.351	1.050	4.8.2 ✓
L13	73.75 - 68.75 (13)	0.009	0.407	0.000	0.027	0.001	0.416	1.050	4.8.2 ✓
L14	68.75 - 68.5 (14)	0.010	0.457	0.000	0.030	0.001	0.468	1.050	4.8.2 ✓
L15	68.5 - 68.25 (15)	0.014	0.629	0.000	0.041	0.002	0.645	1.050	4.8.2 ✓
L16	68.25 - 64.5 (16)	0.014	0.705	0.000	0.042	0.002	0.721	1.050	4.8.2 ✓
L17	64.5 - 64.25 (17)	0.008	0.405	0.000	0.024	0.001	0.413	1.050	4.8.2 ✓
L18	64.25 - 63 (18)	0.008	0.419	0.000	0.024	0.001	0.428	1.050	4.8.2 ✓
L19	63 - 62.75 (19)	0.009	0.442	0.000	0.025	0.001	0.451	1.050	4.8.2 ✓
L20	62.75 - 60 (20)	0.010	0.479	0.000	0.029	0.001	0.490	1.050	4.8.2 ✓
L21	60 - 59.75 (21)	0.012	0.440	0.000	0.034	0.001	0.453	1.050	4.8.2 ✓
L22	59.75 - 54.75 (22)	0.012	0.507	0.000	0.035	0.001	0.521	1.050	4.8.2 ✓
L23	54.75 - 49.75 (23)	0.013	0.577	0.000	0.037	0.000	0.591	1.050	4.8.2 ✓
L24	49.75 - 49.083 (24)	0.013	0.586	0.000	0.037	0.000	0.601	1.050	4.8.2 ✓

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	<p>Project</p>	<p>Date 21:54:18 05/10/22</p>
	<p>Client Crown Castle</p>	<p>Designed by Pavan Upadhy</p>

Section No.	Elevation ft	Ratio	Ratio	Ratio	Ratio	Ratio	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		P_u ϕP_n	M_{ux} ϕM_{nx}	M_{uy} ϕM_{ny}	V_u ϕV_n	T_u ϕT_n			
L25	49.083 - 48.833 (25)	0.010	0.461	0.000	0.028	0.000	0.472	1.050	4.8.2 ✓
L26	48.833 - 43.833 (26)	0.011	0.517	0.000	0.029	0.000	0.529	1.050	4.8.2 ✓
L27	43.833 - 42 (27)	0.011	0.538	0.000	0.029	0.000	0.550	1.050	4.8.2 ✓
L28	42 - 41.75 (28)	0.010	0.477	0.000	0.026	0.000	0.487	1.050	4.8.2 ✓
L29	41.75 - 36.75 (29)	0.010	0.528	0.000	0.026	0.000	0.539	1.050	4.8.2 ✓
L30	36.75 - 34.5 (30)	0.011	0.551	0.000	0.027	0.000	0.562	1.050	4.8.2 ✓
L31	34.5 - 34.25 (31)	0.010	0.529	0.000	0.025	0.000	0.540	1.050	4.8.2 ✓
L32	34.25 - 34 (32)	0.010	0.531	0.000	0.025	0.000	0.542	1.050	4.8.2 ✓
L33	34 - 33.75 (33)	0.011	0.586	0.000	0.028	0.000	0.598	1.050	4.8.2 ✓
L34	33.75 - 30 (34)	0.012	0.627	0.000	0.028	0.000	0.640	1.050	4.8.2 ✓
L35	30 - 29.75 (35)	0.016	0.720	0.000	0.039	0.000	0.737	1.050	4.8.2 ✓
L36	29.75 - 28.5 (36)	0.016	0.736	0.000	0.039	0.000	0.753	1.050	4.8.2 ✓
L37	28.5 - 28.25 (37)	0.015	0.705	0.000	0.037	0.000	0.721	1.050	4.8.2 ✓
L38	28.25 - 27.942 (38)	0.011	0.504	0.000	0.028	0.000	0.516	1.050	4.8.2 ✓
L39	27.942 - 27.692 (39)	0.011	0.506	0.000	0.028	0.000	0.518	1.050	4.8.2 ✓
L40	27.692 - 23 (40)	0.012	0.548	0.000	0.028	0.000	0.561	1.050	4.8.2 ✓
L41	23 - 22.75 (41)	0.010	0.482	0.000	0.025	0.000	0.493	1.050	4.8.2 ✓
L42	22.75 - 21.5 (42)	0.010	0.492	0.000	0.025	0.000	0.503	1.050	4.8.2 ✓
L43	21.5 - 21.25 (43)	0.011	0.541	0.000	0.027	0.000	0.553	1.050	4.8.2 ✓
L44	21.25 - 21 (44)	0.012	0.543	0.000	0.027	0.000	0.556	1.050	4.8.2 ✓
L45	21 - 20.75 (45)	0.013	0.594	0.000	0.030	0.000	0.608	1.050	4.8.2 ✓
L46	20.75 - 19 (46)	0.013	0.611	0.000	0.030	0.000	0.625	1.050	4.8.2 ✓
L47	19 - 18.75 (47)	0.011	0.534	0.000	0.026	0.000	0.546	1.050	4.8.2 ✓
L48	18.75 - 18.5 (48)	0.011	0.536	0.000	0.026	0.000	0.548	1.050	4.8.2 ✓
L49	18.5 - 18.25 (49)	0.012	0.552	0.000	0.027	0.000	0.565	1.050	4.8.2 ✓
L50	18.25 - 13.25	0.012	0.596	0.000	0.027	0.000	0.609	1.050	4.8.2 ✓

<p style="text-align: center;">tnxTower</p> <p style="text-align: center;">MTS Engineering, P.L.L.C. 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	Job 151136.007.01 - NEW BRITAIN GRAVEL PIT, CT (BU# 876331)	Page 73 of 75
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Section No.	Elevation ft	Ratio P_u ϕP_n	Ratio M_{ux} ϕM_{nx}	Ratio M_{uy} ϕM_{ny}	Ratio V_u ϕV_n	Ratio T_u ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	(50)						✓		
L51	13.25 - 12.7 (51)	0.012	0.601	0.000	0.027	0.000	0.614	1.050	4.8.2 ✓
L52	12.7 - 12.35 (52)	0.012	0.612	0.000	0.028	0.000	0.625	1.050	4.8.2 ✓
L53	12.35 - 12.125 (53)	0.012	0.614	0.000	0.028	0.000	0.627	1.050	4.8.2 ✓
L54	12.125 - 12 (54)	0.012	0.615	0.000	0.028	0.000	0.628	1.050	4.8.2 ✓
L55	12 - 11.75 (55)	0.010	0.515	0.000	0.023	0.000	0.526	1.050	4.8.2 ✓
L56	11.75 - 8.375 (56)	0.011	0.540	0.000	0.023	0.000	0.552	1.050	4.8.2 ✓
L57	8.375 - 8.125 (57)	0.010	0.499	0.000	0.021	0.000	0.509	1.050	4.8.2 ✓
L58	8.125 - 7.75 (58)	0.010	0.501	0.000	0.021	0.000	0.512	1.050	4.8.2 ✓
L59	7.75 - 7.5 (59)	0.011	0.547	0.000	0.023	0.000	0.558	1.050	4.8.2 ✓
L60	7.5 - 7.25 (60)	0.011	0.537	0.000	0.023	0.000	0.548	1.050	4.8.2 ✓
L61	7.25 - 4 (61)	0.011	0.561	0.000	0.023	0.000	0.573	1.050	4.8.2 ✓
L62	4 - 3.733 (62)	0.008	0.429	0.000	0.017	0.000	0.438	1.050	4.8.2 ✓
L63	3.733 - 3.583 (63)	0.008	0.430	0.000	0.017	0.000	0.438	1.050	4.8.2 ✓
L64	3.583 - 3 (64)	0.008	0.433	0.000	0.017	0.000	0.442	1.050	4.8.2 ✓
L65	3 - 2.75 (65)	0.008	0.435	0.000	0.017	0.000	0.443	1.050	4.8.2 ✓
L66	2.75 - 1.9 (66)	0.011	0.577	0.000	0.023	0.000	0.589	1.050	4.8.2 ✓
L67	1.9 - 1.65 (67)	0.011	0.579	0.000	0.023	0.000	0.590	1.050	4.8.2 ✓
L68	1.65 - 0 (68)	0.011	0.591	0.000	0.023	0.000	0.603	1.050	4.8.2 ✓

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	118 - 113	Pole	P24x0.25	1	-3.060	695.378	2.3	Pass
L2	113 - 108	Pole	P24x0.25	2	-3.451	695.378	6.6	Pass
L3	108 - 103	Pole	P24x0.25	3	-8.472	695.378	16.8	Pass
L4	103 - 98	Pole	P24x0.25	4	-9.198	695.378	26.8	Pass
L5	98 - 93	Pole	P24x0.25	5	-13.331	695.378	45.9	Pass
L6	93 - 90	Pole	P24x0.25	6	-13.655	695.378	55.9	Pass

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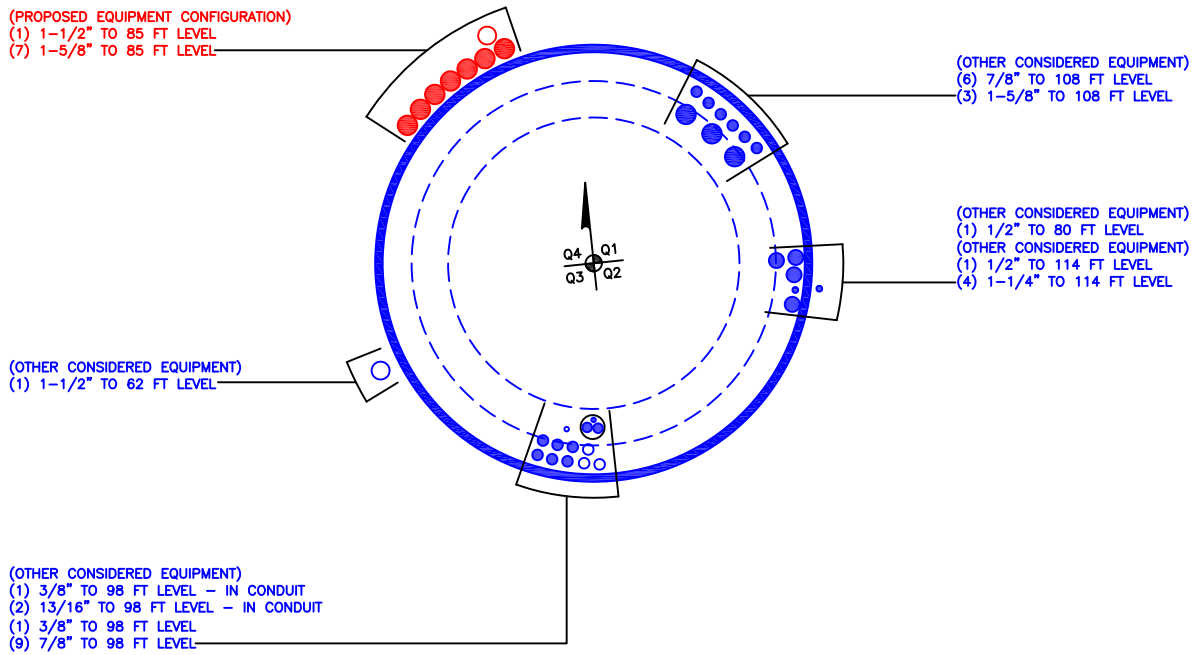
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L7	90 - 85	Pole	P24x0.375	7	-14.458	1104.673	46.6	Pass
L8	85 - 80	Pole	P24x0.375	8	-18.966	1104.673	63.1	Pass
L9	80 - 76.5	Pole	P24x0.375	9	-19.631	1104.673	73.3	Pass
L10	76.5 - 76.25	Pole	P24x0.5875	10	-19.697	1715.091	45.5	Pass
L11	76.25 - 74	Pole	P24x0.5875	11	-20.177	1715.091	49.5	Pass
L12	74 - 73.75	Pole	P24x0.9	12	-20.259	2592.303	33.5	Pass
L13	73.75 - 68.75	Pole	P24x0.9	13	-21.734	2592.303	39.7	Pass
L14	68.75 - 68.5	Pole	P24x0.8	14	-21.807	2314.242	44.6	Pass
L15	68.5 - 68.25	Pole	P24x0.575	15	-21.862	1679.496	61.4	Pass
L16	68.25 - 64.5	Pole	P24x0.575	16	-22.688	1679.496	68.7	Pass
L17	64.5 - 64.25	Pole	P24x1.05	17	-22.785	3004.711	39.4	Pass
L18	64.25 - 63	Pole	P24x1.05	18	-23.197	3004.711	40.8	Pass
L19	63 - 62.75	Pole	P24x1	19	-23.286	2867.865	42.9	Pass
L20	62.75 - 60	Pole	P24x1	20	-27.300	2867.865	46.6	Pass
L21	60 - 59.75	Pole	P30x0.675	21	-27.554	2468.161	43.1	Pass
L22	59.75 - 54.75	Pole	P30x0.675	22	-29.130	2468.161	49.6	Pass
L23	54.75 - 49.75	Pole	P30x0.675	23	-30.715	2468.161	56.3	Pass
L24	49.75 - 49.083	Pole	P30x0.675	24	-30.933	2468.161	57.2	Pass
L25	49.083 - 48.833	Pole	P30x0.875	25	-31.023	3177.646	45.0	Pass
L26	48.833 - 43.833	Pole	P30x0.875	26	-32.735	3177.646	50.3	Pass
L27	43.833 - 42	Pole	P30x0.875	27	-33.360	3177.646	52.3	Pass
L28	42 - 41.75	Pole	P30x1	28	-33.471	3616.000	46.4	Pass
L29	41.75 - 36.75	Pole	P30x1	29	-35.374	3616.000	51.3	Pass
L30	36.75 - 34.5	Pole	P30x1	30	-36.237	3616.000	53.5	Pass
L31	34.5 - 34.25	Pole	P30x1.05	31	-36.351	3790.258	51.4	Pass
L32	34.25 - 34	Pole	P30x1.05	32	-36.456	3790.258	51.6	Pass
L33	34 - 33.75	Pole	P30x0.95	33	-36.553	3441.123	57.0	Pass
L34	33.75 - 30	Pole	P30x0.95	34	-37.994	3441.123	60.9	Pass
L35	30 - 29.75	Pole	P36x0.5875	35	-38.312	2594.151	70.2	Pass
L36	29.75 - 28.5	Pole	P36x0.5875	36	-38.744	2594.151	71.7	Pass
L37	28.5 - 28.25	Pole	P36x0.6125	37	-38.853	2702.637	68.7	Pass
L38	28.25 - 27.942	Pole	P36x0.8375	38	-38.988	3671.944	49.1	Pass
L39	27.942 - 27.692	Pole	P36x0.8375	39	-39.098	3671.944	49.3	Pass
L40	27.692 - 23	Pole	P36x0.8375	40	-41.153	3671.944	53.4	Pass
L41	23 - 22.75	Pole	P36x0.9625	41	-41.277	4204.987	47.0	Pass
L42	22.75 - 21.5	Pole	P36x0.9625	42	-41.848	4204.987	47.9	Pass
L43	21.5 - 21.25	Pole	P36x0.875	43	-41.964	3832.258	52.7	Pass
L44	21.25 - 21	Pole	P36x0.875	44	-42.071	3832.258	52.9	Pass
L45	21 - 20.75	Pole	P36x0.8	45	-42.173	3511.263	57.9	Pass
L46	20.75 - 19	Pole	P36x0.8	46	-42.880	3511.263	59.5	Pass
L47	19 - 18.75	Pole	P36x0.925	47	-43.012	4045.482	52.0	Pass
L48	18.75 - 18.5	Pole	P36x0.925	48	-43.128	4045.482	52.2	Pass
L49	18.5 - 18.25	Pole	P36x0.9	49	-43.242	3938.949	53.8	Pass
L50	18.25 - 13.25	Pole	P36x0.9	50	-45.521	3938.949	58.0	Pass
L51	13.25 - 12.7	Pole	P36x0.9	51	-45.778	3938.949	58.4	Pass
L52	12.7 - 12.35	Pole	P36x0.8875	52	-45.953	3885.630	59.5	Pass
L53	12.35 - 12.125	Pole	P36x0.8875	53	-46.065	3885.630	59.7	Pass
L54	12.125 - 12	Pole	P36x0.8875	54	-46.128	3885.630	59.8	Pass
L55	12 - 11.75	Pole	P36x1.075	55	-46.254	4681.404	50.1	Pass
L56	11.75 - 8.375	Pole	P36x1.075	56	-47.963	4681.404	52.5	Pass
L57	8.375 - 8.125	Pole	P36x1.175	57	-48.095	5102.233	48.5	Pass
L58	8.125 - 7.75	Pole	P36x1.175	58	-48.281	5102.233	48.7	Pass
L59	7.75 - 7.5	Pole	P36x1.075	59	-48.407	4681.404	53.2	Pass
L60	7.5 - 7.25	Pole	P36x1.1	60	-48.537	4786.845	52.2	Pass
L61	7.25 - 4	Pole	P36x1.1	61	-50.224	4786.845	54.5	Pass
L62	4 - 3.733	Pole	P36x1.475	62	-50.377	6349.749	41.7	Pass
L63	3.733 - 3.583	Pole	P36x1.475	63	-50.460	6349.749	41.8	Pass
L64	3.583 - 3	Pole	P36x1.475	64	-50.773	6349.749	42.1	Pass
L65	3 - 2.75	Pole	P36x1.475	65	-50.912	6349.749	42.2	Pass
L66	2.75 - 1.9	Pole	P36x1.1	66	-51.303	4786.845	56.1	Pass
L67	1.9 - 1.65	Pole	P36x1.1	67	-51.427	4786.845	56.2	Pass

<i>tnxTower</i> MTS Engineering, P.L.L.C. 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 151136.007.01 - NEW BRITAIN GRAVEL PIT, CT (BU# 876331)	Page 75 of 75
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Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail	
L68	1.65 - 0	Pole	P36x1.1	68	-52.186	4786.845	57.4	Pass	
							Summary		
							Pole (L9)	73.3	Pass
							RATING =	73.3	Pass

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

APPENDIX B
BASE LEVEL DRAWING



BUSINESS UNIT: 876331

APPENDIX C
ADDITIONAL CALCULATIONS

TNX Geometry Input

Increment (ft): 5 [Export to TNX](#)

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	118 - 113	5		0	24.000	24.000	0.25	A572-42	1.000
2	113 - 108	5		0	24.000	24.000	0.25	A572-42	1.000
3	108 - 103	5		0	24.000	24.000	0.25	A572-42	1.000
4	103 - 98	5		0	24.000	24.000	0.25	A572-42	1.000
5	98 - 93	5		0	24.000	24.000	0.25	A572-42	1.000
6	93 - 90	3	0	0	24.000	24.000	0.25	A572-42	1.000
7	90 - 85	5		0	24.000	24.000	0.375	A572-42	1.000
8	85 - 80	5		0	24.000	24.000	0.375	A572-42	1.000
9	80 - 76.5	3.5		0	24.000	24.000	0.375	A572-42	1.000
10	76.5 - 76.25	0.25		0	24.000	24.000	0.5875	A572-42	0.957
11	76.25 - 74	2.25		0	24.000	24.000	0.5875	A572-42	0.957
12	74 - 73.75	0.25		0	24.000	24.000	0.9	A572-42	0.943
13	73.75 - 68.75	5		0	24.000	24.000	0.9	A572-42	0.943
14	68.75 - 68.5	0.25		0	24.000	24.000	0.8	A572-42	0.940
15	68.5 - 68.25	0.25		0	24.000	24.000	0.575	A572-42	0.977
16	68.25 - 64.5	3.75		0	24.000	24.000	0.575	A572-42	0.977
17	64.5 - 64.25	0.25		0	24.000	24.000	1.05	A572-42	0.932
18	64.25 - 63	1.25		0	24.000	24.000	1.05	A572-42	0.932
19	63 - 62.75	0.25		0	24.000	24.000	1	A572-42	0.946
20	62.75 - 60	2.75	0	0	24.000	24.000	1	A572-42	0.946
21	60 - 59.75	0.25		0	30.000	30.000	0.675	A572-42	1.044
22	59.75 - 54.75	5		0	30.000	30.000	0.675	A572-42	1.044
23	54.75 - 49.75	5		0	30.000	30.000	0.675	A572-42	1.044
24	49.75 - 49.083	0.667		0	30.000	30.000	0.675	A572-42	1.044
25	49.083 - 48.833	0.25		0	30.000	30.000	0.875	A572-42	0.886
26	48.833 - 43.833	5		0	30.000	30.000	0.875	A572-42	0.886
27	43.833 - 42	1.833		0	30.000	30.000	0.875	A572-42	0.886
28	42 - 41.75	0.25		0	30.000	30.000	1	A572-42	0.877
29	41.75 - 36.75	5		0	30.000	30.000	1	A572-42	0.877
30	36.75 - 34.5	2.25		0	30.000	30.000	1	A572-42	0.877
31	34.5 - 34.25	0.25		0	30.000	30.000	1.05	A572-42	0.931
32	34.25 - 34	0.25		0	30.000	30.000	1.05	A572-42	0.931
33	34 - 33.75	0.25		0	30.000	30.000	0.95	A572-42	0.922
34	33.75 - 30	3.75	0	0	30.000	30.000	0.95	A572-42	0.922
35	30 - 29.75	0.25		0	36.000	36.000	0.5875	A572-42	1.101
36	29.75 - 28.5	1.25		0	36.000	36.000	0.5875	A572-42	1.101
37	28.5 - 28.25	0.25		0	36.000	36.000	0.6125	A572-42	1.189
38	28.25 - 27.942	0.308		0	36.000	36.000	0.8375	A572-42	1.016
39	27.942 - 27.692	0.25		0	36.000	36.000	0.8375	A572-42	1.016
40	27.692 - 23	4.692		0	36.000	36.000	0.8375	A572-42	1.016
41	23 - 22.75	0.25		0	36.000	36.000	0.9625	A572-42	0.944
42	22.75 - 21.5	1.25		0	36.000	36.000	0.9625	A572-42	0.944
43	21.5 - 21.25	0.25		0	36.000	36.000	0.875	A572-42	0.942
44	21.25 - 21	0.25		0	36.000	36.000	0.875	A572-42	0.942
45	21 - 20.75	0.25		0	36.000	36.000	0.8	A572-42	0.977
46	20.75 - 19	1.75		0	36.000	36.000	0.8	A572-42	0.977
47	19 - 18.75	0.25		0	36.000	36.000	0.925	A572-42	0.981
48	18.75 - 18.5	0.25		0	36.000	36.000	0.925	A572-42	0.981
49	18.5 - 18.25	0.25		0	36.000	36.000	0.9	A572-42	0.982
50	18.25 - 13.25	5		0	36.000	36.000	0.9	A572-42	0.982
51	13.25 - 12.7	0.55		0	36.000	36.000	0.9	A572-42	0.982
52	12.7 - 12.35	0.35		0	36.000	36.000	0.8875	A572-42	1.085
53	12.35 - 12.125	0.225		0	36.000	36.000	0.8875	A572-42	1.085
54	12.125 - 12	0.125		0	36.000	36.000	0.8875	A572-42	1.085
55	12 - 11.75	0.25		0	36.000	36.000	1.075	A572-42	0.934
56	11.75 - 8.375	3.375		0	36.000	36.000	1.075	A572-42	0.934
57	8.375 - 8.125	0.25		0	36.000	36.000	1.175	A572-42	0.836
58	8.125 - 7.75	0.375		0	36.000	36.000	1.175	A572-42	0.836
59	7.75 - 7.5	0.25		0	36.000	36.000	1.075	A572-42	0.920
60	7.5 - 7.25	0.25		0	36.000	36.000	1.1	A572-42	0.937
61	7.25 - 4	3.25		0	36.000	36.000	1.1	A572-42	0.937
62	4 - 3.733	0.267		0	36.000	36.000	1.475	A572-42	0.746
63	3.733 - 3.583	0.15		0	36.000	36.000	1.475	A572-42	0.746
64	3.583 - 3	0.583		0	36.000	36.000	1.475	A572-42	0.746
65	3 - 2.75	0.25		0	36.000	36.000	1.475	A572-42	0.746
66	2.75 - 1.9	0.85		0	36.000	36.000	1.1	A572-42	0.827
67	1.9 - 1.65	0.25		0	36.000	36.000	1.1	A572-42	0.827
68	1.65 - 0	1.65		0	36.000	36.000	1.1	A572-42	0.827

TNX Section Forces

Increment (ft): 5		TNX Output		
	Section Height (ft)	P _u (K)	M _{ux} (kip-ft)	V _u (K)
1	118 - 113	3.06	7.56	3.41
2	113 - 108	3.45	25.33	3.70
3	108 - 103	8.47	64.25	7.93
4	103 - 98	9.20	105.46	8.43
5	98 - 93	13.33	181.21	13.80
6	93 - 90	13.65	222.79	13.94
7	90 - 85	14.46	295.48	14.67
8	85 - 80	18.97	399.77	18.72
9	80 - 76.5	19.63	465.76	18.97
10	76.5 - 76.25	19.70	470.50	18.97
11	76.25 - 74	20.18	513.44	19.19
12	74 - 73.75	20.26	518.25	19.21
13	73.75 - 68.75	21.73	615.75	19.77
14	68.75 - 68.5	21.81	620.70	19.79
15	68.5 - 68.25	21.86	625.65	19.82
16	68.25 - 64.5	22.69	700.73	20.22
17	64.5 - 64.25	22.78	705.78	20.24
18	64.25 - 63	23.20	731.18	20.38
19	63 - 62.75	23.29	736.28	20.40
20	62.75 - 60	27.30	798.37	23.44
21	60 - 59.75	27.55	804.45	24.31
22	59.75 - 54.75	29.13	927.57	24.90
23	54.75 - 49.75	30.71	1054.57	25.74
24	49.75 - 49.083	30.93	1071.76	25.81
25	49.083 - 48.833	31.02	1078.21	25.84
26	48.833 - 43.833	32.73	1208.80	26.41
27	43.833 - 42	33.36	1257.37	26.62
28	42 - 41.75	33.47	1264.02	26.63
29	41.75 - 36.75	35.37	1398.55	27.19
30	36.75 - 34.5	36.24	1459.97	27.43
31	34.5 - 34.25	36.35	1466.83	27.45
32	34.25 - 34	36.46	1473.69	27.48
33	34 - 33.75	36.55	1480.56	27.50
34	33.75 - 30	37.99	1584.36	27.87
35	30 - 29.75	38.31	1591.55	28.77
36	29.75 - 28.5	38.74	1627.59	28.92
37	28.5 - 28.25	38.85	1634.82	28.93
38	28.25 - 27.942	38.99	1643.73	28.97
39	27.942 - 27.692	39.10	1650.98	29.00
40	27.692 - 23	41.15	1788.33	29.57
41	23 - 22.75	41.28	1795.72	29.58
42	22.75 - 21.5	41.85	1832.80	29.75
43	21.5 - 21.25	41.96	1840.23	29.76
44	21.25 - 21	42.07	1847.68	29.79
45	21 - 20.75	42.17	1855.13	29.82
46	20.75 - 19	42.88	1907.48	30.04
47	19 - 18.75	43.01	1914.99	30.04
48	18.75 - 18.5	43.13	1922.50	30.07
49	18.5 - 18.25	43.24	1930.02	30.10
50	18.25 - 13.25	45.52	2081.74	30.60
51	13.25 - 12.7	45.78	2098.58	30.65
52	12.7 - 12.35	45.95	2109.31	30.68
53	12.35 - 12.125	46.07	2116.21	30.70
54	12.125 - 12	46.13	2120.05	30.71
55	12 - 11.75	46.25	2127.73	30.73
56	11.75 - 8.375	47.96	2231.99	31.07
57	8.375 - 8.125	48.10	2239.76	31.08
58	8.125 - 7.75	48.28	2251.42	31.12
59	7.75 - 7.5	48.41	2259.20	31.14
60	7.5 - 7.25	48.54	2266.99	31.16
61	7.25 - 4	50.22	2368.75	31.48
62	4 - 3.733	50.38	2377.15	31.49
63	3.733 - 3.583	50.46	2381.88	31.50
64	3.583 - 3	50.77	2400.26	31.56
65	3 - 2.75	50.91	2408.15	31.58
66	2.75 - 1.9	51.30	2435.03	31.67
67	1.9 - 1.65	51.43	2442.94	31.68
68	1.65 - 0	52.19	2495.32	31.84

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
118 - 113	Pole	TP24x24x0.25	Pole	2.3%	Pass
113 - 108	Pole	TP24x24x0.25	Pole	6.6%	Pass
108 - 103	Pole	TP24x24x0.25	Pole	16.8%	Pass
103 - 98	Pole	TP24x24x0.25	Pole	26.8%	Pass
98 - 93	Pole	TP24x24x0.25	Pole	45.9%	Pass
93 - 90	Pole	TP24x24x0.25	Pole	55.9%	Pass
90 - 85	Pole	TP24x24x0.375	Pole	46.6%	Pass
85 - 80	Pole	TP24x24x0.375	Pole	63.1%	Pass
80 - 76.5	Pole	TP24x24x0.375	Pole	73.2%	Pass
76.5 - 76.25	Pole + Reinf.	TP24x24x0.5875	Reinf. 21 Tension Rupture	53.2%	Pass
76.25 - 74	Pole + Reinf.	TP24x24x0.5875	Reinf. 21 Tension Rupture	58.0%	Pass
74 - 73.75	Pole + Reinf.	TP24x24x0.9	Reinf. 3 Compression	58.0%	Pass
73.75 - 68.75	Pole + Reinf.	TP24x24x0.9	Reinf. 3 Compression	68.8%	Pass
68.75 - 68.5	Pole + Reinf.	TP24x24x0.8	Reinf. 21 Tension Rupture	53.3%	Pass
68.5 - 68.25	Pole + Reinf.	TP24x24x0.575	Reinf. 14 Tension Rupture	70.8%	Pass
68.25 - 64.5	Pole + Reinf.	TP24x24x0.575	Reinf. 14 Tension Rupture	79.2%	Pass
64.5 - 64.25	Pole + Reinf.	TP24x24x1.05	Reinf. 3 Compression	69.2%	Pass
64.25 - 63	Pole + Reinf.	TP24x24x1.05	Reinf. 3 Compression	71.7%	Pass
63 - 62.75	Pole + Reinf.	TP24x24x1	Reinf. 3 Compression	74.5%	Pass
62.75 - 60	Pole + Reinf.	TP24x24x1	Reinf. 3 Compression	80.8%	Pass
60 - 59.75	Pole + Reinf.	TP30x30x0.675	Reinf. 2 Compression	50.8%	Pass
59.75 - 54.75	Pole + Reinf.	TP30x30x0.675	Reinf. 2 Compression	58.4%	Pass
54.75 - 49.75	Pole + Reinf.	TP30x30x0.675	Reinf. 2 Compression	66.3%	Pass
49.75 - 49.08	Pole + Reinf.	TP30x30x0.675	Reinf. 2 Compression	67.4%	Pass
49.08 - 48.83	Pole + Reinf.	TP30x30x0.875	Reinf. 2 Compression	62.3%	Pass
48.83 - 43.83	Pole + Reinf.	TP30x30x0.875	Reinf. 2 Compression	69.7%	Pass
43.83 - 42	Pole + Reinf.	TP30x30x0.875	Reinf. 2 Compression	72.5%	Pass
42 - 41.75	Pole + Reinf.	TP30x30x1	Reinf. 2 Compression	64.1%	Pass
41.75 - 36.75	Pole + Reinf.	TP30x30x1	Reinf. 2 Compression	70.8%	Pass
36.75 - 34.5	Pole + Reinf.	TP30x30x1	Reinf. 2 Compression	73.9%	Pass
34.5 - 34.25	Pole + Reinf.	TP30x30x1.05	Reinf. 8 Compression	65.9%	Pass
34.25 - 34	Pole + Reinf.	TP30x30x1.05	Reinf. 8 Compression	66.2%	Pass
34 - 33.75	Pole + Reinf.	TP30x30x0.95	Reinf. 8 Compression	74.6%	Pass
33.75 - 30	Pole + Reinf.	TP30x30x0.95	Reinf. 8 Compression	79.7%	Pass
30 - 29.75	Pole + Reinf.	TP36x36x0.5875	Pole	75.7%	Pass
29.75 - 28.5	Pole + Reinf.	TP36x36x0.5875	Pole	77.4%	Pass
28.5 - 28.25	Pole + Reinf.	TP36x36x0.6125	Pole	77.5%	Pass
28.25 - 27.94	Pole + Reinf.	TP36x36x0.8375	Reinf. 1 Compression	61.6%	Pass
27.94 - 27.69	Pole + Reinf.	TP36x36x0.8375	Reinf. 1 Compression	61.8%	Pass
27.69 - 23	Pole + Reinf.	TP36x36x0.8375	Reinf. 1 Compression	67.0%	Pass
23 - 22.75	Pole + Reinf.	TP36x36x0.9625	Reinf. 1 Compression	62.8%	Pass
22.75 - 21.5	Pole + Reinf.	TP36x36x0.9625	Reinf. 1 Compression	64.1%	Pass
21.5 - 21.25	Pole + Reinf.	TP36x36x0.875	Reinf. 1 Compression	69.3%	Pass
21.25 - 21	Pole + Reinf.	TP36x36x0.875	Reinf. 1 Compression	69.6%	Pass
21 - 20.75	Pole + Reinf.	TP36x36x0.8	Reinf. 1 Compression	77.6%	Pass
20.75 - 19	Pole + Reinf.	TP36x36x0.8	Reinf. 1 Compression	79.8%	Pass
19 - 18.75	Pole + Reinf.	TP36x36x0.925	Reinf. 1 Compression	70.5%	Pass
18.75 - 18.5	Pole + Reinf.	TP36x36x0.925	Reinf. 1 Compression	70.8%	Pass
18.5 - 18.25	Pole + Reinf.	TP36x36x0.9	Reinf. 1 Compression	72.8%	Pass
18.25 - 13.25	Pole + Reinf.	TP36x36x0.9	Reinf. 1 Compression	78.5%	Pass
13.25 - 12.7	Pole + Reinf.	TP36x36x0.9	Reinf. 1 Compression	79.1%	Pass
12.7 - 12.35	Pole + Reinf.	TP36x36x0.8875	Reinf. 1 Compression	72.1%	Pass
12.35 - 12.13	Pole + Reinf.	TP36x36x0.8875	Reinf. 1 Compression	72.4%	Pass
12.13 - 12	Pole + Reinf.	TP36x36x0.8875	Reinf. 1 Compression	72.5%	Pass
12 - 11.75	Pole + Reinf.	TP36x36x1.075	Reinf. 4 Compression	63.5%	Pass
11.75 - 8.38	Pole + Reinf.	TP36x36x1.075	Reinf. 4 Compression	66.6%	Pass
8.38 - 8.13	Pole + Reinf.	TP36x36x1.175	Reinf. 1 Compression	71.3%	Pass
8.13 - 7.75	Pole + Reinf.	TP36x36x1.175	Reinf. 1 Compression	71.7%	Pass
7.75 - 7.5	Pole + Reinf.	TP36x36x1.075	Reinf. 4 Compression	67.9%	Pass
7.5 - 7.25	Pole + Reinf.	TP36x36x1.1	Reinf. 4 Compression	67.5%	Pass
7.25 - 4	Pole + Reinf.	TP36x36x1.1	Reinf. 4 Compression	70.5%	Pass
4 - 3.73	Pole + Reinf.	TP36x36x1.475	Reinf. 4 Compression	54.4%	Pass
3.73 - 3.58	Pole + Reinf.	TP36x36x1.475	Reinf. 4 Compression	54.5%	Pass
3.58 - 3	Pole + Reinf.	TP36x36x1.475	Reinf. 4 Compression	54.9%	Pass
3 - 2.75	Pole + Reinf.	TP36x36x1.475	Reinf. 4 Compression	55.1%	Pass
2.75 - 1.9	Pole + Reinf.	TP36x36x1.1	Pole	72.3%	Pass
1.9 - 1.65	Pole + Reinf.	TP36x36x1.1	Pole	72.6%	Pass
1.65 - 0	Pole + Reinf.	TP36x36x1.1	Pole	74.1%	Pass
				Summary	
			Pole	77.5%	Pass
			Reinforcement	80.8%	Pass
			Overall	80.8%	Pass

Monopole Flange Plate Connection

Elevation = 90 ft.



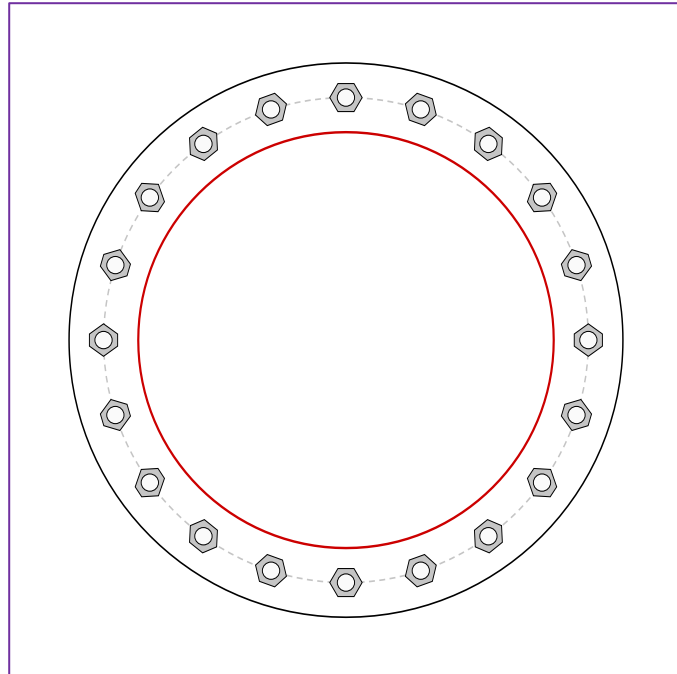
BU #	876331
Site Name	ew Britain Gravel Pit, C
Order #	616729, Rev# 0

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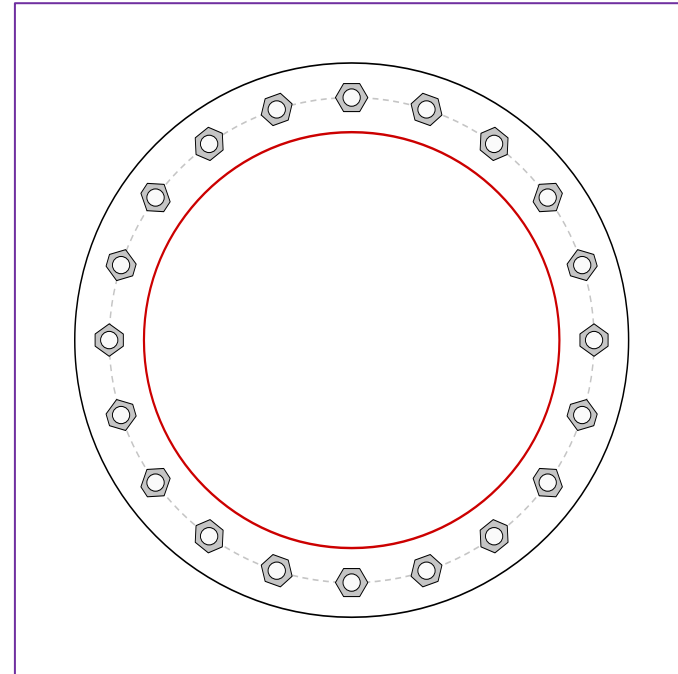
Applied Loads to Flange Connections		Applied Loads to Bridge Stiffeners	
Moment (kip-ft)	63.70	Moment (kip-ft)	159.09
Axial Force (kips)	13.65	Axial Force (kips)	0.00
Shear Force (kips)	13.94	Shear Force (kips)	0.00

*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(20) 1" ϕ bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 28" BC

Top Plate Data

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

Top Stiffener Data

N/A

Top Pole Data

24" x 0.25" round pole (A572-42; Fy=42 ksi, Fu=60 ksi)

Bridge Stiffener Group 1 Data

(3) Welded, 4.5"x1.25", A572-65, Lu=5.125", Upper Plate Width=9", Lower Plate Width=9", Neglect Flange in MOI: No

Bottom Plate Data

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

Bottom Stiffener Data

N/A

Bottom Pole Data

24" x 0.375" round pole (A572-42; Fy=42 ksi, Fu=60 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	4.77
Allowable (kips)	54.53
Stress Rating:	8.3% Pass

Top Plate Capacity

Max Stress (ksi):	3.42	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	10.0%	Pass
Tension Side Stress Rating:	3.6%	Pass

Bottom Plate Capacity

Max Stress (ksi):	3.42	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	10.0%	Pass
Tension Side Stress Rating:	3.6%	Pass

Bridge Stiffener Group 1 Analysis Capacity

Max Compression (kip):	67.88
Max Tension (kip):	67.88
Comp. Capacity (kip):	322.81
Tens. Capacity (kip):	329.06 (Yield)
Comp. Stress Rating:	20.0% Pass
Tens. Stress Rating:	19.6% Pass

Welded Bridge Stiffener Design

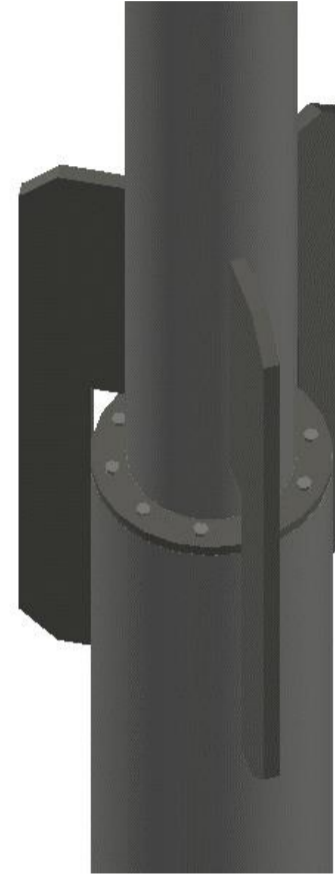
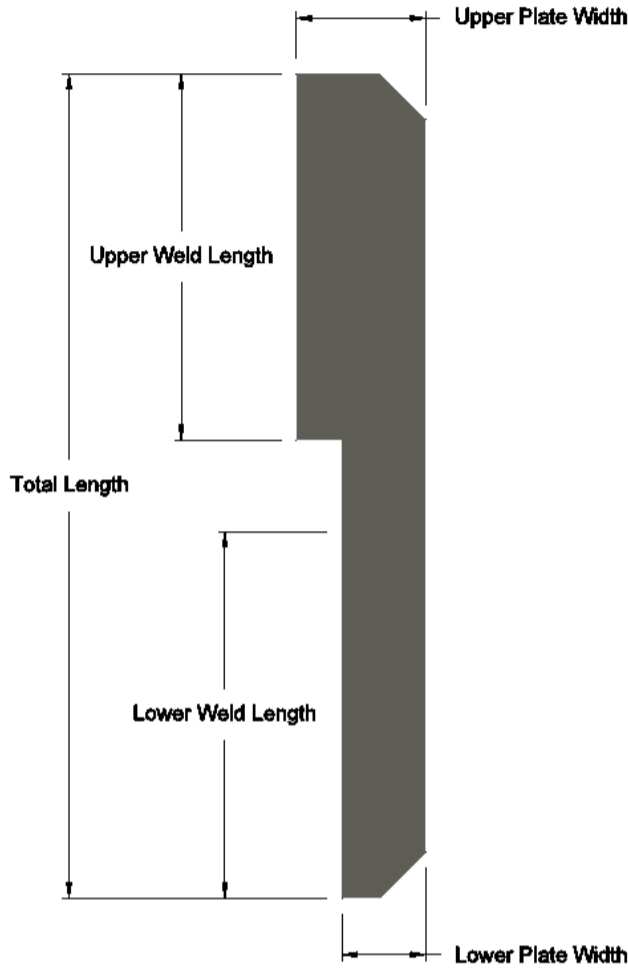
Elevation = 90 ft.



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Applied Loads to Design Groups	
Moment (kip-ft)	159.09
Axial Force (kips)	0.00
Shear Force (kips)	0.00

*TIA-222-H Section 15.5 Applied



Design Properties

Bridge Stiffener Group 1 Data

(3) Welded, 4.5"x1.25", A572-65, Lu=5.125", Upper Plate Width=9", Lower Plate Width=9", Neglect Flange in MOI: No

Total Length:	84 in	Upper Weld Size:	Good
Weld Type:	Fillet (both sides)	Upper Weld Rating:	10.04%
Weld Size:	0.375 in	Lower Weld Size:	Good
Exx:	70 ksi	Lower Weld Rating:	10.04%
Upper Weld Length:	39.6875 in	Top Plate Lateral-Torsional Buckling Rating:	1.65%
Upper Plate Width:	9 in	Top Plate Tension Yield Rating:	3.34%
Lower Weld Length:	39.6875 in	Top Plate Tension Rupture Rating:	3.62%
Lower Plate Width:	9 in	Top Plate Interaction Rating:	1.79%
Stiffener Front EPA (No Ice):	7.10 ft ²	Bottom Plate Lateral-Torsional Buckling Rating:	1.65%
Stiffener Side EPA (No Ice):	1.46 ft ²	Bottom Plate Tension Yield Rating:	3.34%
Stiffener Front EPA (1/2" Ice):	7.55 ft ²	Bottom Plate Tension Rupture Rating:	3.62%
Stiffener Side EPA (1/2" Ice):	2.66 ft ²	Bottom Plate Interaction Rating:	1.79%
Stiffener Weight (No Ice):	0.245 kip	Top Pole Punching Shear Rating:	8.79%
Stiffener Weight (1/2" Ice):	0.271 kip	Bottom Pole Punching Shear Rating:	5.86%

Monopole Flange Plate Connection

Elevation = 60 ft.



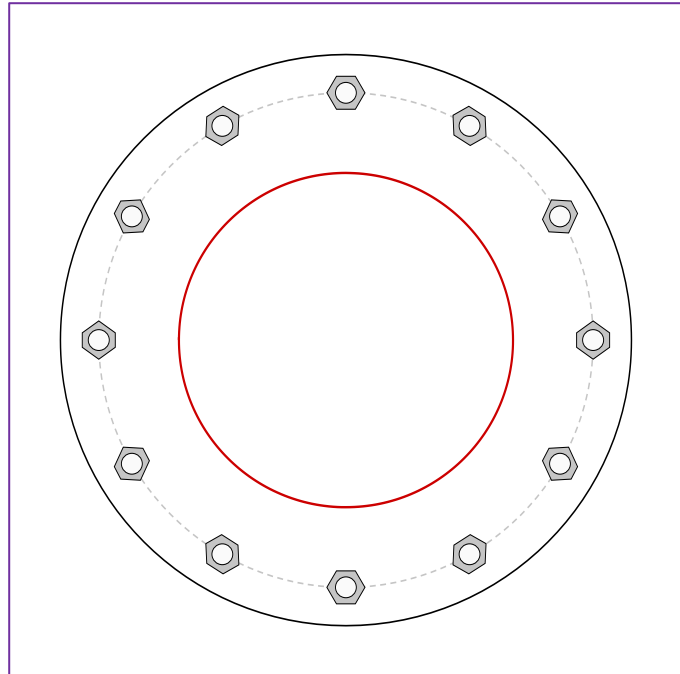
BU #	876331
Site Name	New Britain Gravel Pit, CT
Order #	616729, Rev# 0

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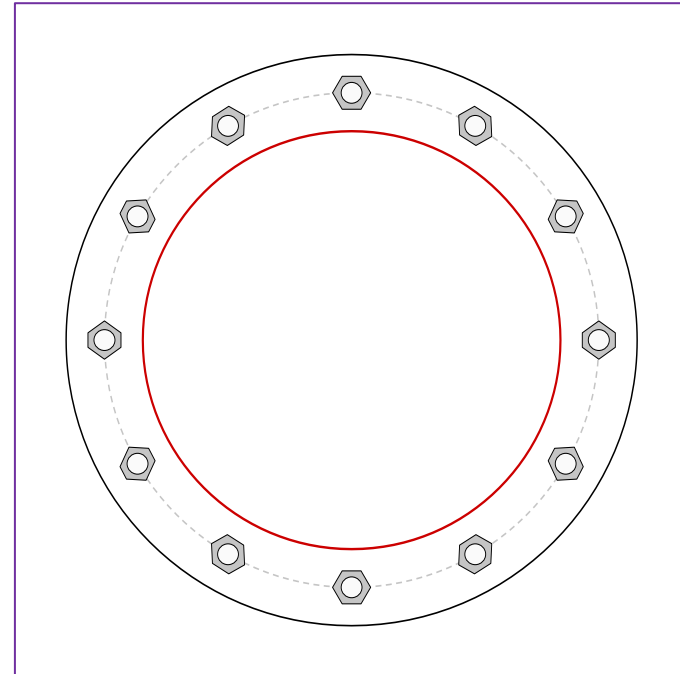
Applied Loads to Flange Connections		Applied Loads to Bridge Stiffeners	
Moment (kip-ft)	223.89	Moment (kip-ft)	574.48
Axial Force (kips)	27.30	Axial Force (kips)	0.00
Shear Force (kips)	23.44	Shear Force (kips)	0.00

*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(12) 1-1/2" ϕ bolts (A325 N; Fy=81 ksi, Fu=120 ksi) on 35.5" BC

Top Plate Data

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

Top Stiffener Data

N/A

Top Pole Data

24" x 0.375" round pole (A572-42; Fy=42 ksi, Fu=60 ksi)

Bridge Stiffener Group 1 Data

(3) Welded, 4.5"x1.25", A572-65, Lu=5.125", Upper Plate Width=13.5", Lower Plate Width=10.5", Neglect Flange in MOI: No

Bottom Plate Data

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

Bottom Stiffener Data

N/A

Bottom Pole Data

30" x 0.375" round pole (A572-42; Fy=42 ksi, Fu=60 ksi)

Bridge Stiffener Group 2 Data

(3) Welded, 3"x1", A572-65, Lu=5.625", Upper Plate Width=12", Lower Plate Width=9", Neglect Flange in MOI: No

Analysis Results

Bolt Capacity

Max Load (kips)	22.93
Allowable (kips)	126.86
Stress Rating:	17.2% Pass

Top Plate Capacity

Max Stress (ksi):	12.26	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	36.0%	Pass
Tension Side Stress Rating:	19.0%	Pass

Bridge Stiffener Group 1 Analysis Capacity

Max Compression (kip):	131.83
Max Tension (kip):	131.83
Comp. Capacity (kip):	322.81
Tens. Capacity (kip):	329.06 (Yield)
Comp. Stress Rating:	38.9% Pass
Tens. Stress Rating:	38.2% Pass

Bottom Plate Capacity

Max Stress (ksi):	6.02	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	17.7%	Pass
Tension Side Stress Rating:	5.9%	Pass

Bridge Stiffener Group 2 Analysis Capacity

Max Compression (kip):	68.04
Max Tension (kip):	68.04
Comp. Capacity (kip):	169.28
Tens. Capacity (kip):	175.50 (Yield)
Comp. Stress Rating:	38.3% Pass
Tens. Stress Rating:	36.9% Pass

Welded Bridge Stiffener Design

Elevation = 60 ft.

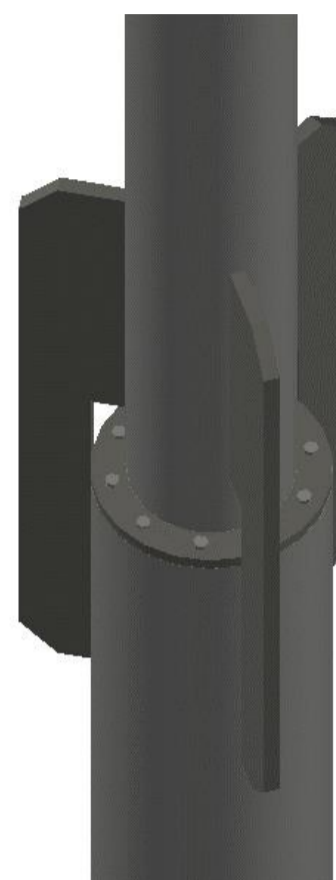
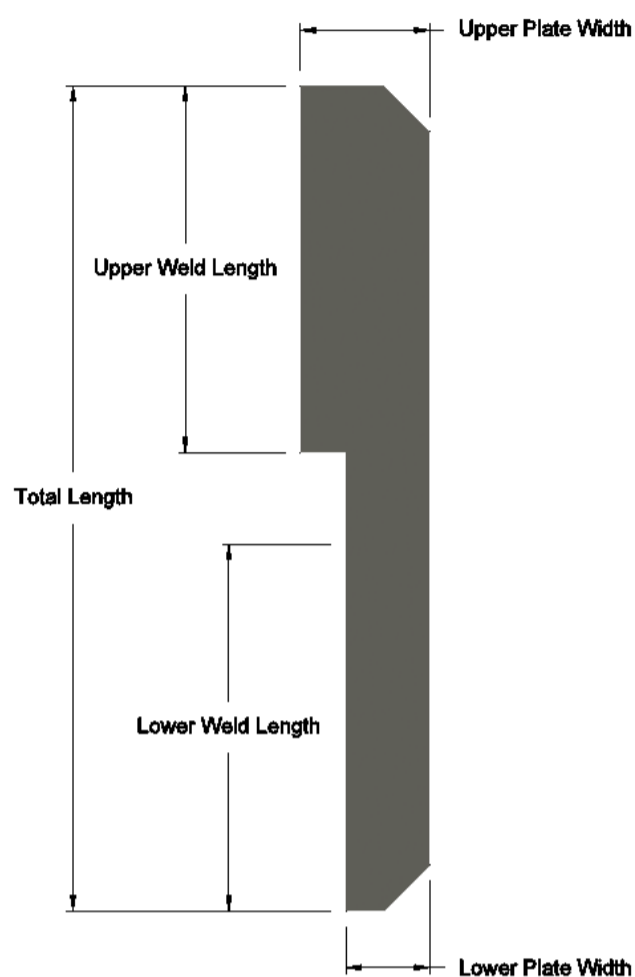


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Applied Loads to Design Groups	
Moment (kip-ft)	574.48
Axial Force (kips)	0.00
Shear Force (kips)	0.00

*TIA-222-H Section 15.5 Applied



Design Properties

Bridge Stiffener Group 1 Data

(3) Welded, 4.5"x1.25", A572-65, Lu=5.125", Upper Plate Width=13.5", Lower Plate Width=10.5", Neglect Flange in MOI: No

Total Length:	84 in	Upper Weld Size:	Good
Weld Type:	Fillet (both sides)	Upper Weld Rating:	22.62%
Weld Size:	0.375 in	Lower Weld Size:	Good
Exx:	70 ksi	Lower Weld Rating:	20.53%
Upper Weld Length:	39.1875 in	Top Plate Lateral-Torsional Buckling Rating:	5.75%
Upper Plate Width:	13.5 in	Top Plate Tension Yield Rating:	6.57%
Lower Weld Length:	39.1875 in	Top Plate Tension Rupture Rating:	7.12%
Lower Plate Width:	10.5 in	Top Plate Interaction Rating:	6.28%
Stiffener Front EPA (No Ice):	9.48 ft ²	Bottom Plate Lateral-Torsional Buckling Rating:	4.07%
Stiffener Side EPA (No Ice):	1.46 ft ²	Bottom Plate Tension Yield Rating:	6.57%
Stiffener Front EPA (1/2" Ice):	9.98 ft ²	Bottom Plate Tension Rupture Rating:	7.12%
Stiffener Side EPA (1/2" Ice):	2.66 ft ²	Bottom Plate Interaction Rating:	4.61%
Stiffener Weight (No Ice):	0.354 kip	Top Pole Punching Shear Rating:	19.47%
Stiffener Weight (1/2" Ice):	0.391 kip	Bottom Pole Punching Shear Rating:	14.27%

Bridge Stiffener Group 2 Data

(3) Welded, 3"x1", A572-65, Lu=5.625", Upper Plate Width=12", Lower Plate Width=9", Neglect Flange in MOI: No

Total Length:	48.875 in	Upper Weld Size:	Good
Weld Type:	Fillet (both sides)	Upper Weld Rating:	25.03%
Weld Size:	0.375 in	Lower Weld Size:	Good
Exx:	70 ksi	Lower Weld Rating:	26.02%
Upper Weld Length:	23.25 in	Top Plate Lateral-Torsional Buckling Rating:	9.57%
Upper Plate Width:	12 in	Top Plate Tension Yield Rating:	7.15%
Lower Weld Length:	20 in	Top Plate Tension Rupture Rating:	7.74%
Lower Plate Width:	9 in	Top Plate Interaction Rating:	10.20%
Stiffener Front EPA (No Ice):	4.49 ft ²	Bottom Plate Lateral-Torsional Buckling Rating:	8.84%
Stiffener Side EPA (No Ice):	0.68 ft ²	Bottom Plate Tension Yield Rating:	8.31%
Stiffener Front EPA (1/2" Ice):	4.83 ft ²	Bottom Plate Tension Rupture Rating:	9.00%
Stiffener Side EPA (1/2" Ice):	1.38 ft ²	Bottom Plate Interaction Rating:	9.69%
Stiffener Weight (No Ice):	0.145 kip	Top Pole Punching Shear Rating:	26.64%
Stiffener Weight (1/2" Ice):	0.164 kip	Bottom Pole Punching Shear Rating:	25.71%

Monopole Flange Plate Connection

Elevation = 30 ft.



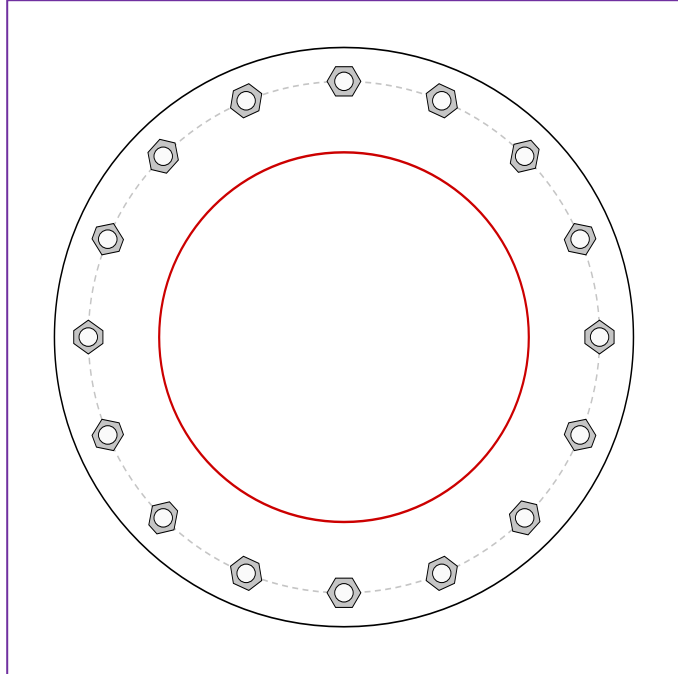
BU #	876331
Site Name	New Britain Gravel Pit, CT
Order #	616729, Rev# 0

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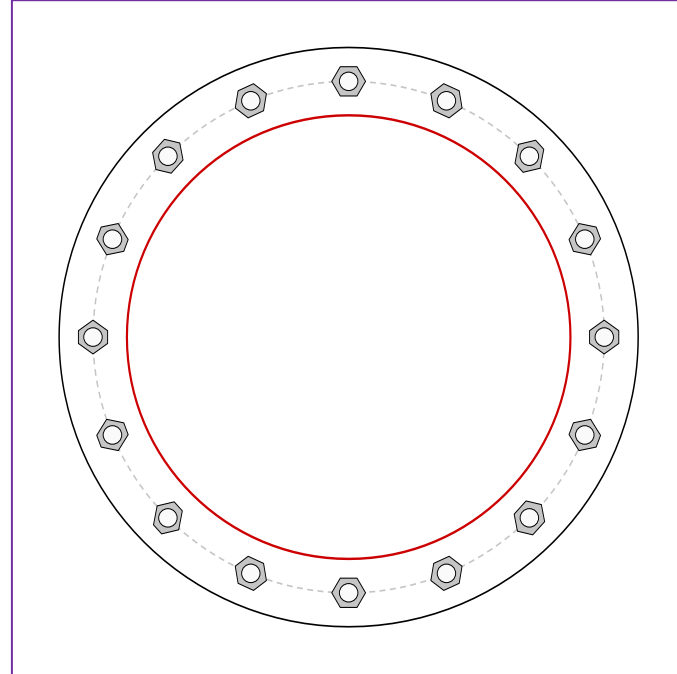
Applied Loads to Flange Connections		Applied Loads to Bridge Stiffeners	
Moment (kip-ft)	464.27	Moment (kip-ft)	1120.09
Axial Force (kips)	37.99	Axial Force (kips)	0.00
Shear Force (kips)	27.87	Shear Force (kips)	0.00

*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(16) 1-1/2" ϕ bolts (A325 N; Fy=81 ksi, Fu=120 ksi) on 41.5" BC

Top Plate Data

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

Top Stiffener Data

N/A

Top Pole Data

30" x 0.375" round pole (A572-42; Fy=42 ksi, Fu=60 ksi)

Bridge Stiffener Group 1 Data

(3) Welded, 4.5"x1.25", A572-65, Lu=6.125", Upper Plate Width=13.5", Lower Plate Width=10.5", Neglect Flange in MOI: No

Bottom Plate Data

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

Bottom Stiffener Data

N/A

Bottom Pole Data

36" x 0.375" round pole (A572-42; Fy=42 ksi, Fu=60 ksi)

Bridge Stiffener Group 2 Data

(3) Welded, 5.5"x1", A572-65, Lu=5.625", Upper Plate Width=14.5", Lower Plate Width=11.5", Neglect Flange in MOI: No

Analysis Results

Bolt Capacity

Max Load (kips)	31.17
Allowable (kips)	126.87
Stress Rating:	23.4% Pass

Top Plate Capacity

Max Stress (ksi):	17.92	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	52.7%	Pass
Tension Side Stress Rating:	27.8%	Pass

Bridge Stiffener Group 1 Analysis Capacity

Max Compression (kip):	169.38
Max Tension (kip):	169.38
Comp. Capacity (kip):	320.17
Tens. Capacity (kip):	329.06 (Yield)
Comp. Stress Rating:	50.4% Pass
Tens. Stress Rating:	49.0% Pass

Bottom Plate Capacity

Max Stress (ksi):	8.57	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	25.2%	Pass
Tension Side Stress Rating:	9.0%	Pass

Bridge Stiffener Group 2 Analysis Capacity

Max Compression (kip):	168.77
Max Tension (kip):	168.77
Comp. Capacity (kip):	310.35
Tens. Capacity (kip):	321.75 (Yield)
Comp. Stress Rating:	51.8% Pass
Tens. Stress Rating:	50.0% Pass

Welded Bridge Stiffener Design

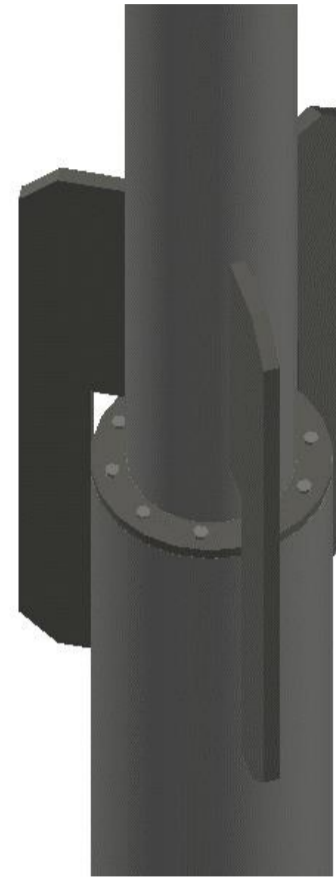
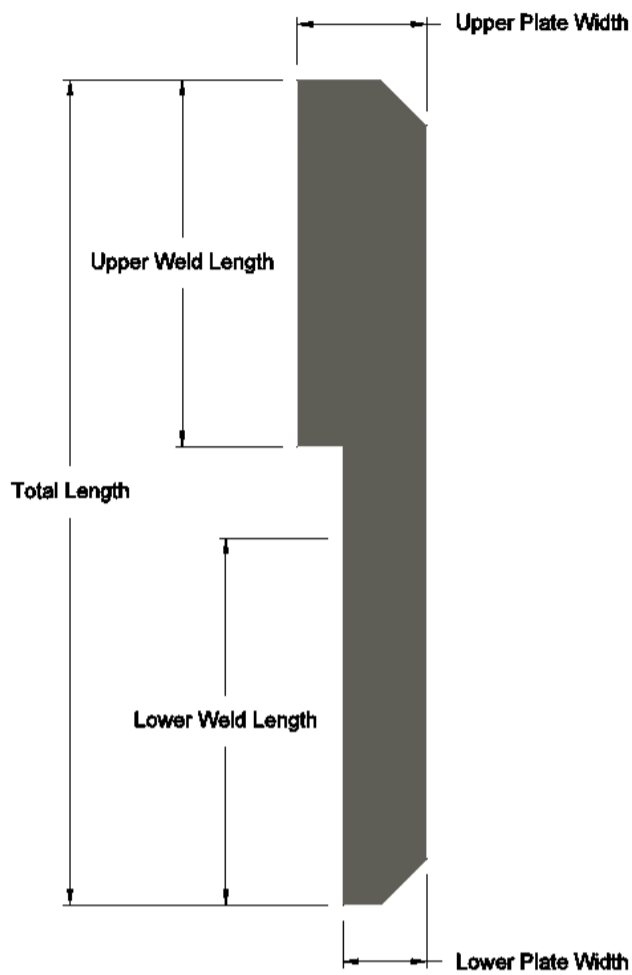
Elevation = 30 ft.



BU #	876331
Site Name	New Britain Gravel Pit, C
Order #	616729, Rev# 0
TIA-222 Revision	H

Applied Loads to Design Groups	
Moment (kip-ft)	1120.09
Axial Force (kips)	0.00
Shear Force (kips)	0.00

*TIA-222-H Section 15.5 Applied



Design Properties

Bridge Stiffener Group 1 Data

(3) Welded, 4.5"x1.25", A572-65, Lu=6.125", Upper Plate Width=13.5", Lower Plate Width=10.5", Neglect Flange in MOI: No

Total Length:	84 in	Upper Weld Size:	Good
Weld Type:	Fillet (both sides)	Upper Weld Rating:	29.07%
Weld Size:	0.375 in	Lower Weld Size:	Good
Exx:	70 ksi	Lower Weld Rating:	26.38%
Upper Weld Length:	39.1875 in	Top Plate Lateral-Torsional Buckling Rating:	7.39%
Upper Plate Width:	13.5 in	Top Plate Tension Yield Rating:	8.44%
Lower Weld Length:	39.1875 in	Top Plate Tension Rupture Rating:	9.15%
Lower Plate Width:	10.5 in	Top Plate Interaction Rating:	8.27%
Stiffener Front EPA (No Ice):	9.48 ft ²	Bottom Plate Lateral-Torsional Buckling Rating:	5.24%
Stiffener Side EPA (No Ice):	1.46 ft ²	Bottom Plate Tension Yield Rating:	8.44%
Stiffener Front EPA (1/2" Ice):	9.98 ft ²	Bottom Plate Tension Rupture Rating:	9.15%
Stiffener Side EPA (1/2" Ice):	2.66 ft ²	Bottom Plate Interaction Rating:	6.11%
Stiffener Weight (No Ice):	0.354 kip	Top Pole Punching Shear Rating:	25.01%
Stiffener Weight (1/2" Ice):	0.391 kip	Bottom Pole Punching Shear Rating:	18.34%

Bridge Stiffener Group 2 Data

(3) Welded, 5.5"x1", A572-65, Lu=5.625", Upper Plate Width=14.5", Lower Plate Width=11.5", Neglect Flange in MOI: No

Total Length:	66.125 in	Upper Weld Size:	Good
Weld Type:	Fillet (both sides)	Upper Weld Rating:	39.37%
Weld Size:	0.375 in	Lower Weld Size:	Good
Exx:	70 ksi	Lower Weld Rating:	41.48%
Upper Weld Length:	32.25 in	Top Plate Lateral-Torsional Buckling Rating:	15.11%
Upper Plate Width:	14.5 in	Top Plate Tension Yield Rating:	12.78%
Lower Weld Length:	28.25 in	Top Plate Tension Rupture Rating:	13.84%
Lower Plate Width:	11.5 in	Top Plate Interaction Rating:	17.12%
Stiffener Front EPA (No Ice):	7.69 ft ²	Bottom Plate Lateral-Torsional Buckling Rating:	13.69%
Stiffener Side EPA (No Ice):	0.92 ft ²	Bottom Plate Tension Yield Rating:	14.59%
Stiffener Front EPA (1/2" Ice):	8.12 ft ²	Bottom Plate Tension Rupture Rating:	15.80%
Stiffener Side EPA (1/2" Ice):	1.86 ft ²	Bottom Plate Interaction Rating:	16.31%
Stiffener Weight (No Ice):	0.243 kip	Top Pole Punching Shear Rating:	38.43%
Stiffener Weight (1/2" Ice):	0.274 kip	Bottom Pole Punching Shear Rating:	37.30%

Monopole Base Plate Connection

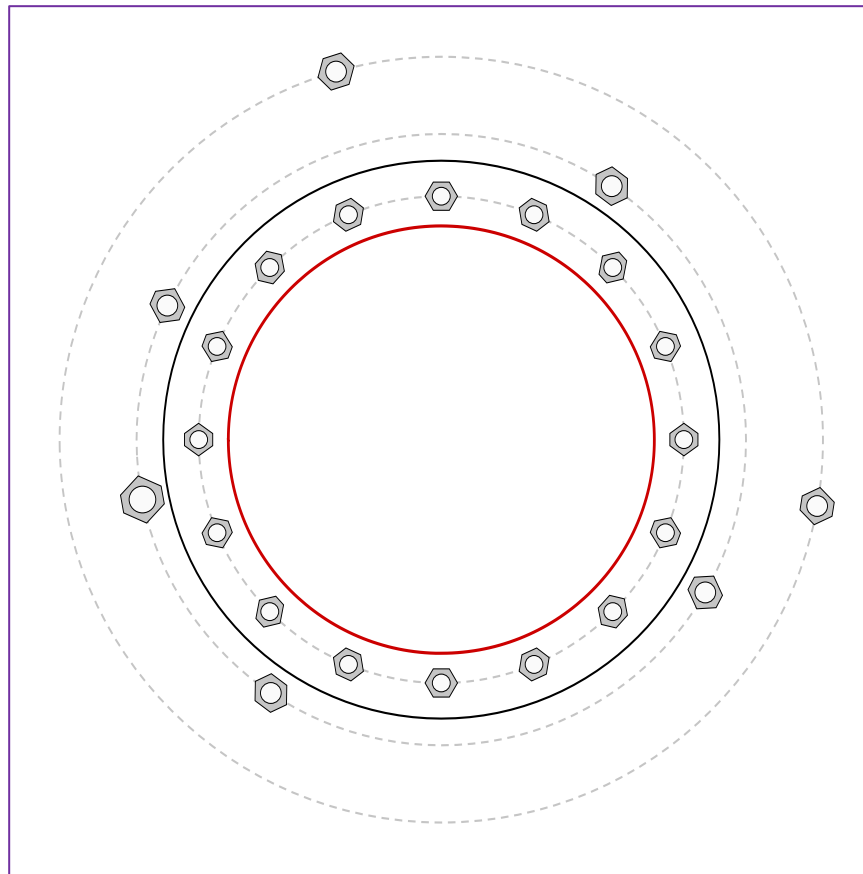


Site Info	
BU #	876331
Site Name	New Britain Gravel Pit, CT
Order #	616729, Rev# 0

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

Applied Loads	
Moment (kip-ft)	2495.32
Axial Force (kips)	52.19
Shear Force (kips)	31.84

*TIA-222-H Section 15.5 Applied



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

Anchor Rod Data
GROUP 1: (16) 1-1/2" ϕ bolts (A354-BC N; $F_y=109$ ksi, $F_u=125$ ksi) on 41" BC
GROUP 2: (4) 1-3/4" ϕ bolts (Dywidag 150 ksi N; $F_y=120$ ksi, $F_u=125$ ksi) on 51.5" BC <i>pos. (deg): 56, 154, 236, 330</i>
GROUP 3: (1) 2-1/4" ϕ bolts (A193 Gr. B7 N; $F_y=105$ ksi, $F_u=125$ ksi) on 51.5" BC <i>pos. (deg): 191.3</i>
GROUP 4: (2) 1-3/4" ϕ bolts (Williams R71 N; $F_y=120$ ksi, $F_u=125$ ksi) on 64.5" BC <i>pos. (deg): 106, 350</i>
Base Plate Data
47" OD x 2" Plate (A36; $F_y=36$ ksi, $F_u=58$ ksi)
Stiffener Data
N/A
Pole Data
36" x 0.375" round pole (A572-42; $F_y=42$ ksi, $F_u=60$ ksi)

Anchor Rod Summary	<i>(units of kips, kip-in)</i>	
GROUP 1:		
$P_{u,t} = 83.96$	$\phi P_{n,t} = 132.19$	Stress Rating
$V_u = 1.99$	$\phi V_n = 82.83$	60.5%
$M_u = n/a$	$\phi M_n = n/a$	Pass
GROUP 2:		
$P_{u,t} = 191.66$	$\phi P_{n,t} = 241.88$	Stress Rating
$V_u = 0$	$\phi V_n = 120.94$	75.5%
$M_u = n/a$	$\phi M_n = n/a$	Pass
GROUP 3:		
$P_{u,t} = 195.58$	$\phi P_{n,t} = 304.69$	Stress Rating
$V_u = 0$	$\phi V_n = 186.38$	61.1%
$M_u = n/a$	$\phi M_n = n/a$	Pass
GROUP 4:		
$P_{u,t} = 224.32$	$\phi P_{n,t} = 243.75$	Stress Rating
$V_u = 0$	$\phi V_n = 121.88$	87.6%
$M_u = n/a$	$\phi M_n = n/a$	Pass
Base Plate Summary		
Max Stress (ksi):	19.57	(Flexural)
Allowable Stress (ksi):	32.4	
Stress Rating:	57.5%	Pass

CCiplate

Elevation (ft) 0 (Base)

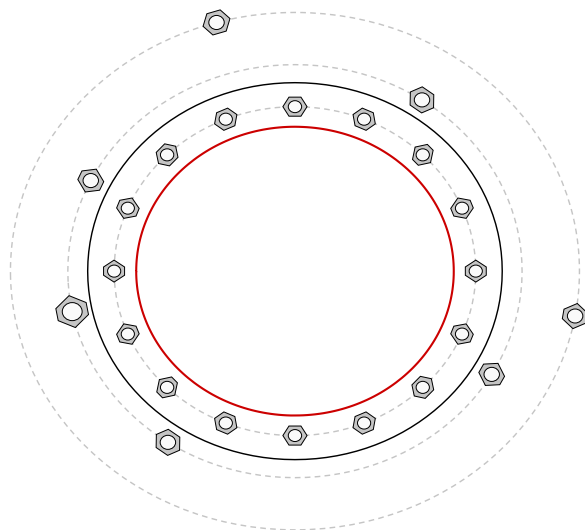
note: Bending interaction not considered when Grout Considered = "Yes"

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

Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η :	I_{ar} (in):	Thread Type	Area Override, in ²	Tension Only
1	1	0	1.5	A354-BC	41	0.55	0	N-Included		No
2	1	22.5	1.5	A354-BC	41	0.55	0	N-Included		No
3	1	45	1.5	A354-BC	41	0.55	0	N-Included		No
4	1	67.5	1.5	A354-BC	41	0.55	0	N-Included		No
5	1	90	1.5	A354-BC	41	0.55	0	N-Included		No
6	1	112.5	1.5	A354-BC	41	0.55	0	N-Included		No
7	1	135	1.5	A354-BC	41	0.55	0	N-Included		No
8	1	157.5	1.5	A354-BC	41	0.55	0	N-Included		No
9	1	180	1.5	A354-BC	41	0.55	0	N-Included		No
10	1	202.5	1.5	A354-BC	41	0.55	0	N-Included		No
11	1	225	1.5	A354-BC	41	0.55	0	N-Included		No
12	1	247.5	1.5	A354-BC	41	0.55	0	N-Included		No
13	1	270	1.5	A354-BC	41	0.55	0	N-Included		No
14	1	292.5	1.5	A354-BC	41	0.55	0	N-Included		No
15	1	315	1.5	A354-BC	41	0.55	0	N-Included		No
16	1	337.5	1.5	A354-BC	41	0.55	0	N-Included		No
17	2	56	1.75	Dywidag 150 ksi	51.5	0.5	0	N-Included	2.58	No
18	2	154	1.75	Dywidag 150 ksi	51.5	0.5	0	N-Included	2.58	No
19	2	236	1.75	Dywidag 150 ksi	51.5	0.5	0	N-Included	2.58	No
20	2	330	1.75	Dywidag 150 ksi	51.5	0.5	0	N-Included	2.58	No
21	3	191.3	2.25	A193 Gr. B7	51.5	0.5	0	N-Included		No
22	4	106	1.75	Williams R71	64.5	0.5	0	N-Included	2.6	No
23	4	350	1.75	Williams R71	64.5	0.5	0	N-Included	2.6	No

Plot Graphic



PROJECT **151136.007.01 - NEW BRITAIN GRAVEL PIT, CT**

SUBJECT **Anchor Rod Bracket Analysis**

DATE **05/10/22**

TIA-222 Rev.

H

v4.6.1

Apply TIA-222-H Section 15.5?

Yes



B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

Analysis Criteria	
Design/Analysis	Analysis
Load Type	Current Load
Current load	191.66 kips
AR Capacity	365.2 kips

Tower Type	Monopole
------------	----------

Manufacturers Tower Prop.	
Pole Thickness	0.375 in
Pole Grade	Custom
Fy	42 42 ksi
Fu	60 60 ksi
Base Plate Gr.	A36
Fy	36 ksi
Fu	58 ksi

Post-Installed Adhesive AR Mod.	
ARB Type	Welded
Size	1 3/4 - 150 in
Grade	A722-150 (Willi)
Fy	120 ksi
Fu	125 ksi

Anchor Rod Bracket Analysis Checks		
Tube Bearing	47.7%	-
Tube Compression	71.5%	-
Gusset Shear	38.6%	-
Gusset Flexure	N/A	-
Welds	Gusset to Tower and BP	47.8% -
	Gusset to Tube	79.8% -
	Geometry	N/A -
Tower Punching	10.3%	-
Tube Punching	79.0%	-
Utilization		79.8%

Bracket Properties		
Gusset	Pipe/Tube	Weld - Gusset to Pipe/Tube
Thickness	1.25 in	FEXX
Width at Tube	5.5 in	70 ksi
Height at Pole	66 in	Weld Type
Height at Tube	10.5 in	PJP - Double Bevel
Grade	A572-65	Fillet Size
Fy	65 ksi	3/8 in
Fu	80 ksi	Bevel Depth
		3/8 in
Weld - Gusset to Tower	Weld - Gusset to Base Plate	
FEXX	70 ksi	FEXX
70 ksi		70 ksi
Weld Type	Double Fillet	Weld Type
Fillet Size	5/8 in	CJP - Double Bevel
		Fillet Size
		5/8 in
		Bevel Depth
		5/8 in
		Gap
		0 in
		Notch (horiz)
		0.75 in
		Notch (vert)
		0.75 in
		Pipe/Tube Welded to
		Base/Footpad?
		Yes
		Fillet Size
		3/8 in

PROJECT **151136.007.01 - NEW BRITAIN GRAVEL PIT, CT**

SUBJECT **Anchor Rod Bracket Analysis**

DATE **05/10/22**

TIA-222 Rev.

H

v4.6.1

Apply TIA-222-H Section 15.5?

Yes



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Analysis Criteria	
Design/Analysis	Analysis
Load Type	Current Load
Current load	191.66 kips
AR Capacity	365.2 kips

Tower Type	Monopole
------------	----------

Manufacturers Tower Prop.	
Pole Thickness	0.375 in
Pole Grade	Custom
Fy	42 42 ksi
Fu	60 60 ksi
Base Plate Gr.	A36
Fy	36 ksi
Fu	58 ksi

Post-Installed Adhesive AR Mod.	
ARB Type	Welded
Size	1 3/4 - 150 in
Grade	A722-150 (Willi)
Fy	120 ksi
Fu	125 ksi

Anchor Rod Bracket Analysis Checks		
Tube Bearing	47.7%	-
Tube Compression	71.5%	-
Gusset Shear	38.6%	-
Gusset Flexure	N/A	-
Welds	Gusset to Tower and BP	57.0% -
	Gusset to Tube	79.8% -
	Geometry	N/A -
Tower Punching	86.6%	-
Tube Punching	79.0%	-
Utilization		86.6%

Bracket Properties		
Gusset	Pipe/Tube	Weld - Gusset to Pipe/Tube
Thickness	1.25 in	FEXX
Width at Tube	5.5 in	70 ksi
Height at Pole	18 in	Weld Type
Height at Tube	10.5 in	PJP - Double Bevel
Grade	A572-65	Fillet Size
Fy	65 ksi	3/8 in
Fu	80 ksi	Bevel Depth
		3/8 in
Weld - Gusset to Tower	Weld - Gusset to Base Plate	
FEXX	70 ksi	FEXX
70 ksi		70 ksi
Weld Type	Double Fillet	Weld Type
Fillet Size	5/8 in	CJP - Double Bevel
		Fillet Size
		5/8 in
		Bevel Depth
		5/8 in
		Gap
		0 in
		Notch (horiz)
		0.75 in
		Notch (vert)
		0.75 in
		Pipe/Tube Welded to
		Base/Footpad?
		Yes
		Fillet Size
		3/8 in

PROJECT **151136.007.01 - NEW BRITAIN GRAVEL PIT, CT**

SUBJECT **Anchor Rod Bracket Analysis**

DATE **05/10/22**

TIA-222 Rev.

H

v4.6.1

Apply TIA-222-H Section 15.5?

Yes



B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

Analysis Criteria	
Design/Analysis	Analysis
Load Type	Current Load
Current load	195.58 kips
AR Capacity	375.7 kips

Tower Type	Monopole
------------	----------

Manufacturers Tower Prop.	
Pole Thickness	0.375 in
Pole Grade	Custom
Fy	42 42 ksi
Fu	60 60 ksi
Base Plate Gr.	A36
Fy	36 ksi
Fu	58 ksi

Post-Installed Adhesive AR Mod.	
ARB Type	Welded
Size	2.25 in
Grade	A193 Gr B7
Fy	105 ksi
Fu	125 ksi

Anchor Rod Bracket Analysis Checks		
Tube Bearing	38.1%	-
Tube Compression	57.1%	-
Gusset Shear	12.5%	-
Gusset Flexure	N/A	-
Welds	Gusset to Tower and BP	39.6% -
	Gusset to Tube	25.4% -
	Geometry	N/A -
Tower Punching	14.2%	-
Tube Punching	9.8%	-
Utilization		57.1%

Bracket Properties		
Gusset	Pipe/Tube	Weld - Gusset to Pipe/Tube
Thickness	1.25 in	FEXX
Width at Tube	4.5 in	70 ksi
Height at Pole	54 in	Weld Type
Height at Tube	33 in	Double Fillet
Grade	A572-65	Fillet Size
Fy	65 ksi	1/2 in
Fu	80 ksi	
Weld - Gusset to Tower		Weld - Gusset to Base Plate
FEXX	70 ksi	FEXX
Weld Type	Double Fillet	70 ksi
Fillet Size	3/8 in	Weld Type
		CJP - Double Bevel
		Fillet Size
		5/8 in
		Bevel Depth
		5/8 in
		Gap
		0 in
		Notch (horiz)
		0.75 in
		Notch (vert)
		0.75 in
		Pipe/Tube Welded to Base/Footpad?
		No

PROJECT **151136.007.01 - NEW BRITAIN GRAVEL PIT, CT**

SUBJECT **Anchor Rod Bracket Analysis**

DATE **05/10/22**

TIA-222 Rev.

H

v4.6.1

Apply TIA-222-H Section 15.5?

Yes



B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

Analysis Criteria	
Design/Analysis	Analysis
Load Type	Current Load
Current load	224.32 kips
AR Capacity	259.8 kips

Tower Type	Monopole
------------	----------

Manufacturers Tower Prop.	
Pole Thickness	0.375 in
Pole Grade	Custom
Fy	42 42 ksi
Fu	60 60 ksi
Base Plate Gr.	A36
Fy	36 ksi
Fu	58 ksi

Post-Installed Adhesive AR Mod.	
ARB Type	Welded
Size	1.75 in
Grade	A722-150 (Willi)
Fy	120 ksi
Fu	125 ksi

Anchor Rod Bracket Analysis Checks		
Tube Bearing	43.7%	-
Tube Compression	65.5%	-
Gusset Shear	4.8%	-
Gusset Flexure	N/A	-
Welds	Gusset to Tower and BP	10.4% -
	Gusset to Tube	9.7% -
	Geometry	N/A -
Tower Punching	3.8%	-
Tube Punching	1.3%	-
Utilization		65.5%

Bracket Properties		
Gusset	Pipe/Tube	Weld - Gusset to Pipe/Tube
Thickness	1.25 in	FEXX
Width at Tube	11 in	70 ksi
Height at Pole	156 in	Weld Type
Height at Tube	99 in	Double Fillet
Grade	A572-65	Fillet Size
Fy	65 ksi	1/2 in
Fu	80 ksi	
Weld - Gusset to Tower		Weld - Gusset to Base Plate
FEXX	70 ksi	FEXX
Weld Type	Double Fillet	70 ksi
Fillet Size	3/8 in	Weld Type
		CJP - Double Bevel
		Fillet Size
		5/8 in
		Bevel Depth
		5/8 in
		Gap
		0 in
		Notch (horiz)
		0.75 in
		Notch (vert)
		0.75 in
		Pipe/Tube Welded to Base/Footpad?
		No

Pier and Pad Foundation



BU #: 876331
Site Name: New Britain Gravel
App. Number: 556502, Rev# 0

TIA-222 Revision: H
Tower Type: Monopole

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

Superstructure Analysis Reactions		
Compression, P_{comp} :	52	kips
Base Shear, Vu_{comp} :	32	kips
Moment, M_u :	1080	ft-kips
Tower Height, H :	118	ft
BP Dist. Above Fdn, bp_{dist} :	1.5	in
Bolt Circle / Bearing Plate Width, BC :	41	in

Foundation Analysis Checks				
	Capacity	Demand	Rating*	Check
<i>Lateral (Sliding) (kips)</i>	220.65	32.00	13.8%	Pass
<i>Bearing Pressure (ksf)</i>	22.50	4.86	21.6%	Pass
<i>Overturning (kip*ft)</i>	1866.52	1276.00	68.4%	Pass
<i>Pad Flexure (kip*ft)</i>	4029.63	610.34	14.4%	Pass
<i>Pad Shear - 1-way (kips)</i>	1064.77	28.65	2.6%	Pass
<i>Pad Shear - 2-way (Comp) (ksi)</i>	0.164	0.002	1.1%	Pass
<i>Flexural 2-way (Comp) (kip*ft)</i>	8059.26	0.00	0.0%	Pass

*Rating per TIA-222-H Section 15.5

Structural Rating*:	14.4%
Soil Rating*:	68.4%

Pad Properties		
Depth, D :	4	ft
Pad Width, W_1 :	16	ft
Pad Thickness, T :	6	ft
Pad Rebar Size (Bottom dir. 2), Sp_2 :	8	
Pad Rebar Quantity (Bottom dir. 2), mp_2 :	17	
Pad Clear Cover, cc_{pad} :	3	in

Material Properties		
Rebar Grade, F_y :	60	ksi
Concrete Compressive Strength, F'_c :	3	ksi
Dry Concrete Density, δ_c :	150	pcf

Soil Properties		
Total Soil Unit Weight, γ :	150	pcf
Ultimate Gross Bearing, Q_{ult} :	30.000	ksf
Cohesion, C_u :	10.000	ksf
Friction Angle, ϕ :	0	degrees
SPT Blow Count, N_{blows} :		
Base Friction, μ :	0.3	
Neglected Depth, N :	3.33	ft
Foundation Bearing on Rock?	Yes	
Groundwater Depth, gw :	N/A	ft

<--Toggle between Gross and Net

Pile Foundation

Checks the capacity of pile foundation configurations for monopoles or self-support towers with individual foundations in Rev. F, G, and H.



BU #: 876331
Site Name: New Britain Gravel Pit, CT
Order: 616729, Rev# 0

Tower Type: Monopole
TIA Revision: H

Top & Bot. Pad Rein. Different?:

Factored Design Reactions At Base		
Moment, M:	1415	ft-kips
Axial, Pu:	0.1	kips
Shear, Sc:	0.1	kips
Load Eccentricity, Ecc:	0	in
Bolt Circle / Bearing Plate Width, BC:	41	in

Pile Properties		
Pile Shape:	Round	
Pile Material:	Steel	
Length of Pile, Lpile:	33	ft
Pile Diameter:	1.375	in
Pile (Soil) Capacity Given?	Yes	
Steel Grade, Fy:	150	ksi

Pile Group		
Group Configuration:	Asymmetric	
Orientation of Neutral Axis, θ:	0	deg
Group Efficiency Given in Geotech?	No	

Program Calculated Group Efficiency, Eg: 1.00

Pile Cap		
Cap Type:	Block	
Depth to Bottom of Block, D:	4.00	ft
Thickness of Block, T:	6.00	ft
Block Width, Wx:	16.00	ft
Block Length, Wy:	16.00	ft
Pad Rebar Size (Bot.), Spad:	8	
Pad Rebar Quantity (X-direction) (Bot.), Mpad:	17	
Pad Rebar Quantity (Y-direction) (Bot.), Mpad _y :	17	

Material Properties		
Rebar Grade, Fy:	60	ksi
Concrete Strength, Fc:	3	ksi
Clear Cover, cc:	3	in

Soil Properties		
Groundwater Depth, GW:	99.00	ft
Soil Unit Weight:	150	pcf
Cohesion, Co:	10	ksf
Friction Angle, φ:	0	deg
Neglected Depth, ND:	1	ft
Negative Friction Force (per pile), Sw:		kips
SPT Blow Count, N _{blows} :		

Design Checks				
	Capacity	Demand	Rating*	Check
PILE CHECKS				
Soil Compression (kips per pile):	127.50	133.48	99.7%	Pass
Soil Uplift (kips per pile):	127.50	133.30	99.6%	Pass
Pile Tensile Strength (kips):	178.19	133.30	71.2%	Pass
PAD CHECKS				
One-Way Shear (kips):	1064.77	6.99	0.6%	Pass
Pad Shear - Comp Two-Way (ksi):	0.164	0.000	0.0%	Pass
Flexural Two-Way (Comp) (kip*ft):	8059.26	0.00	0.0%	Pass
Pad Flexure (kip*ft):	4029.63	318.41	7.5%	Pass

*Rating per TIA-222-H Section 15.5

Structural Rating:	71.2%
Soil Rating:	99.7%

[Click here to enter group information and pile coordinates](#)

Ultimate Pile Capacities		
Ultimate Compression, Cn:	170	kips
Ultimate Tension, Tn:	170	kips

Per CCI sites Doc. # 2268906

Pile Foundation

Checks the capacity of pile foundation configurations for monopoles or self-support towers with individual foundations in Rev. F, G, and H.



BU #: 876331
Site Name: New Britain Gravel Pit, CT
Order: 616729, Rev# 0

Tower Type: Monopole
TIA Revision: H

Top & Bot. Pad Rein. Different?:

Factored Design Reactions At Base		
Moment, M:	2495	ft-kips
Axial, Pu:	52	kips
Shear, Sc:	32	kips
Load Eccentricity, Ecc:	0	in
Bolt Circle / Bearing Plate Width, BC:	41	in

Pile Properties		
Pile Shape:	Round	
Pile Material:	Steel	
Length of Pile, Lpile:	33	ft
Pile Diameter:	1.375	in
Pile (Soil) Capacity Given?	Yes	
Steel Grade, Fy:	150	ksi

Pile Group		
Group Configuration:	Asymmetric	
Orientation of Neutral Axis, θ:	0	deg
Group Efficiency Given in Geotech?	No	

Program Calculated Group Efficiency, Eg: 1.00

Pile Cap		
Cap Type:	Block	
Depth to Bottom of Block, D:	4.00	ft
Thickness of Block, T:	6.00	ft
Block Width, Wx:	16.00	ft
Block Length, Wy:	16.00	ft
Pad Rebar Size (Bot.), Spad:	8	
Pad Rebar Quantity (X-direction) (Bot.), Mpad:	17	
Pad Rebar Quantity (Y-direction) (Bot.), Mpad _y :	17	

Material Properties		
Rebar Grade, Fy:	60	ksi
Concrete Strength, Fc:	3	ksi
Clear Cover, cc:	3	in

Soil Properties		
Groundwater Depth, GW:	99.00	ft
Soil Unit Weight:	150	pcf
Cohesion, Co:	10	ksf
Friction Angle, φ:	0	deg
Neglected Depth, ND:	1	ft
Negative Friction Force (per pile), Sw:		kips
SPT Blow Count, N _{blows} :		

Design Checks				
	Capacity	Demand	Rating*	Check
PILE CHECKS				
PAD CHECKS				
One-Way Shear (kips):	1064.77	297.91	26.6%	Pass
Pad Shear - Comp Two-Way (ksi):	0.164	0.002	1.1%	Pass
Flexural Two-Way (Comp) (kip*ft):	8059.26	0.00	0.0%	Pass
Pad Flexure (kip*ft):	4029.63	2063.95	48.8%	Pass

*Rating per TIA-222-H Section 15.5

Structural Rating:	48.8%
Soil Rating:	0.0%

[Click here to enter group information and pile coordinates](#)

Ultimate Pile Capacities		
Ultimate Compression, Cn:	170	kips
Ultimate Tension, Tn:	170	kips

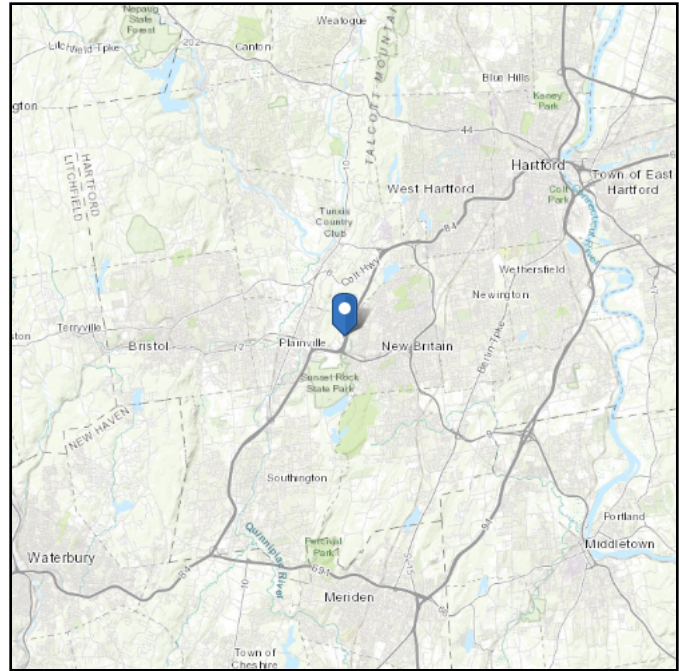
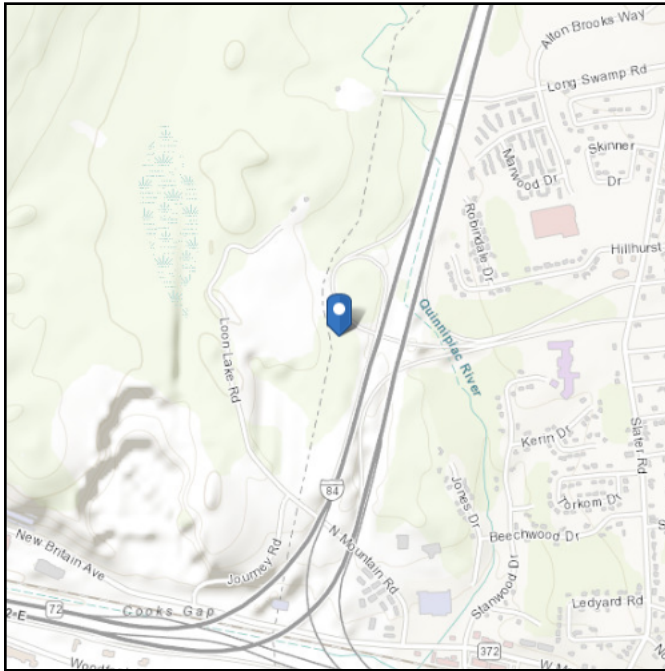
Per CCI sites Doc. # 2268906

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 350.25 ft (NAVD 88)
Latitude: 41.676589
Longitude: -72.821414



Wind

Results:

Wind Speed	117 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	97 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2

Date Accessed: Mon May 09 2022

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

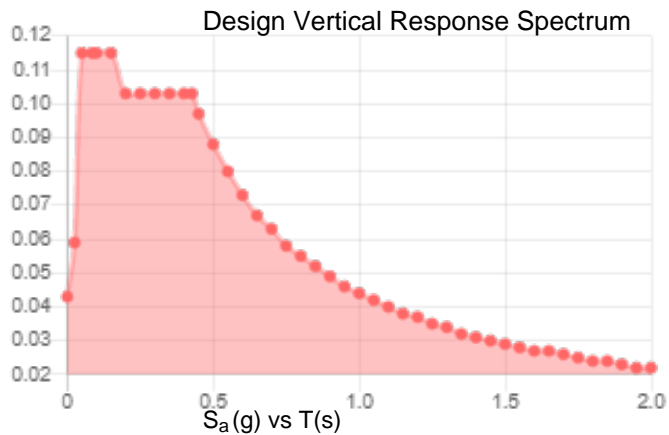
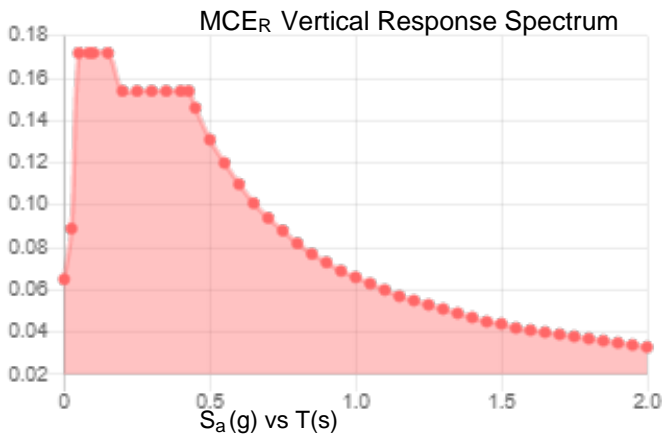
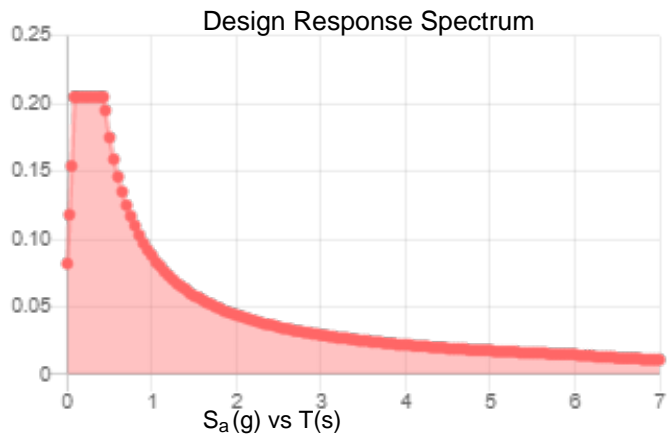
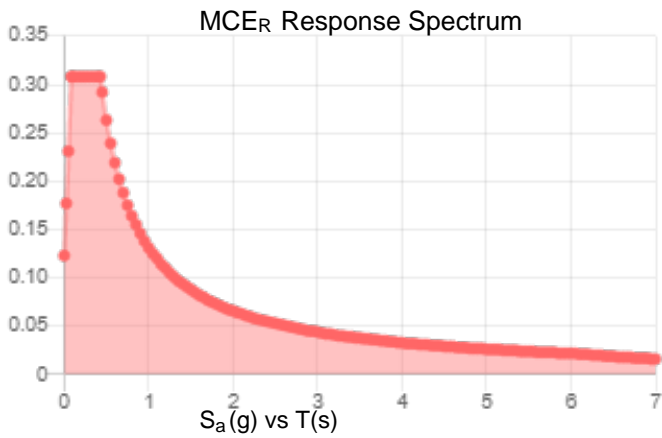
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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

Results:

S_s :	0.192	S_{D1} :	0.088
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.105
F_v :	2.4	PGA _M :	0.166
S_{MS} :	0.308	F_{PGA} :	1.591
S_{M1} :	0.131	I_e :	1
S_{DS} :	0.205	C_v :	0.7

Seismic Design Category B



Data Accessed: Mon May 09 2022

Date Source:

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

Ice

Results:

Ice Thickness: 1.50 in.
Concurrent Temperature: 15 F
Gust Speed 50 mph

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

Date Accessed: Mon May 09 2022

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

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

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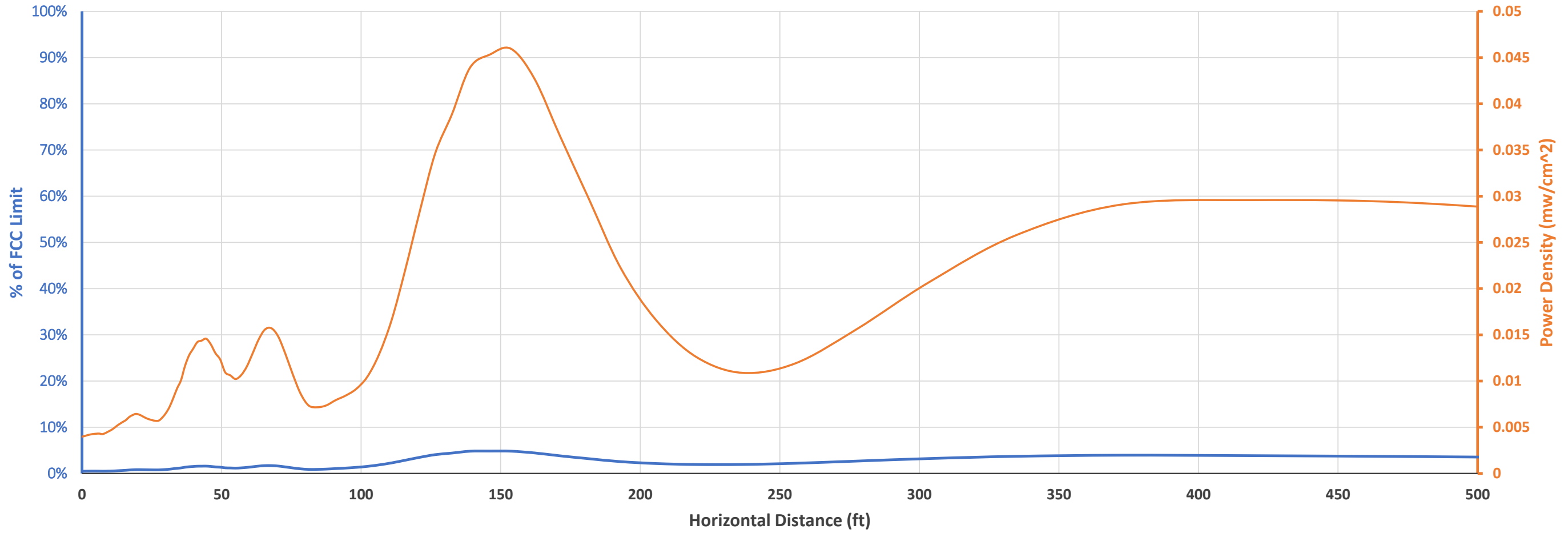
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Location	New Britain NW CT					
Date	9/27/2022					
Band	C-Band	AWS	PCS	850-LTE	850-CDMA	700
Operating Frequency (MHz)	3,700	2,145	1,970	880	869	746
General Population MPE (mW/cm ²)	1	1	1	0.586666667	0.579333333	0.497333333
ERP Per Transmitter (Watts)	13,336	1,691	1,500	700	0	689
Number of Transmitters	2	4	4	4	0	4
Antenna Centerline (feet)	90	90	90	90	90	90
Total ERP (Watts)	26,672	6,764	6,000	2,800	0	2,756
Total ERP (dBm)	74	68	68	64	#N/A	64
Maximum % of General Population Limit	4.8%					

RF Exposure 6ft Above Ground Level Far Field Formula (per FCC OET65)

— Total %
General
Pop MPE

— Total
Pwr Density
(mW/cm²)



32	0.003967939	0.000689784	0.000336249	0.000692895	0	0.002733937	0.00%	0.00%	0.40%	0.00%	0.07%	0.03%	0.12%	0.00%	0.55%	94.41973721	0.008420804	1.17%
31	0.003883659	0.000842149	6.73499E-05	0.001175827	0	0.003165663	0.00%	0.00%	0.39%	0.00%	0.08%	0.01%	0.20%	0.00%	0.64%	98.19248946	0.009134648	1.32%
30	0.004353978	0.000662269	5.67521E-05	0.001862038	0	0.003516493	0.00%	0.00%	0.44%	0.00%	0.07%	0.01%	0.32%	0.00%	0.71%	102.1909976	0.01045153	1.53%
29	0.005853701	0.000361892	0.000280883	0.002657865	0	0.003746745	0.00%	0.00%	0.59%	0.00%	0.04%	0.03%	0.45%	0.00%	0.75%	106.4388176	0.012901087	1.86%
28	0.008605927	0.000292379	0.00049647	0.003434789	0	0.003810845	0.00%	0.00%	0.86%	0.00%	0.03%	0.05%	0.59%	0.00%	0.77%	110.9628615	0.016640411	2.29%
27	0.01321002	0.000571546	0.000483058	0.004064489	0	0.003699364	0.00%	0.00%	1.32%	0.00%	0.06%	0.05%	0.69%	0.00%	0.74%	115.7940198	0.022028478	2.86%
26	0.019304346	0.000928545	0.000258078	0.004423414	0	0.003403131	0.00%	0.00%	1.93%	0.00%	0.09%	0.03%	0.75%	0.00%	0.68%	120.9679267	0.028317515	3.49%
25	0.026239142	0.000957409	6.36862E-05	0.004436618	0	0.002932063	0.00%	0.00%	2.62%	0.00%	0.10%	0.01%	0.76%	0.00%	0.59%	126.5259083	0.034628918	4.07%
24	0.031671782	0.000569929	0.000124385	0.004137852	0	0.002349071	0.00%	0.00%	3.17%	0.00%	0.06%	0.01%	0.71%	0.00%	0.47%	132.5161697	0.038853018	4.41%
23	0.038079881	0.000120183	0.000410952	0.003562854	0	0.001725517	0.00%	0.00%	3.81%	0.00%	0.01%	0.04%	0.61%	0.00%	0.35%	138.9952896	0.043899387	4.82%
22	0.04063262	2.15289E-05	0.000654592	0.002831244	0	0.001172461	0.00%	0.00%	4.06%	0.00%	0.00%	0.07%	0.48%	0.00%	0.24%	146.0301244	0.045312446	4.85%
21	0.042174248	0.00027938	0.000615379	0.00208521	0	0.000792996	0.00%	0.00%	4.22%	0.00%	0.03%	0.06%	0.36%	0.00%	0.16%	153.7002548	0.045947213	4.82%
20	0.039721695	0.000509537	0.000333521	0.001452547	0	0.000685885	0.00%	0.00%	3.97%	0.00%	0.05%	0.03%	0.25%	0.00%	0.14%	162.1011677	0.042703185	4.44%
19	0.033931553	0.000423401	0.000102494	0.001063423	0	0.000915856	0.00%	0.00%	3.39%	0.00%	0.04%	0.01%	0.18%	0.00%	0.18%	171.3484418	0.036436728	3.81%
18	0.026886238	0.00017009	0.000158718	0.000996856	0	0.001498834	0.00%	0.00%	2.69%	0.00%	0.02%	0.02%	0.17%	0.00%	0.30%	181.5833287	0.029710737	3.19%
17	0.018010311	0.000115523	0.000423269	0.001293075	0	0.00239191	0.00%	0.00%	1.80%	0.00%	0.01%	0.04%	0.22%	0.00%	0.48%	192.9803045	0.022234088	2.56%
16	0.010191584	0.000358418	0.000581216	0.001929053	0	0.003503203	0.00%	0.00%	1.02%	0.00%	0.04%	0.06%	0.33%	0.00%	0.70%	205.7574522	0.016563473	2.15%
15	0.004048489	0.000596267	0.000432901	0.00282095	0	0.004682918	0.00%	0.00%	0.40%	0.00%	0.06%	0.04%	0.48%	0.00%	0.94%	220.1909976	0.012581526	1.93%
14	0.000605614	0.000515637	0.000137814	0.003839712	0	0.005786552	0.00%	0.00%	0.06%	0.00%	0.05%	0.01%	0.65%	0.00%	1.16%	236.6360751	0.010885329	1.94%
13	0.00017473	0.00020966	5.43831E-05	0.004824705	0	0.006646484	0.00%	0.00%	0.02%	0.00%	0.02%	0.01%	0.82%	0.00%	1.34%	255.5570766	0.011909963	2.20%
12	0.002438308	6.6717E-05	0.000334337	0.005625888	0	0.007150102	0.00%	0.00%	0.24%	0.00%	0.01%	0.03%	0.96%	0.00%	1.44%	277.5731765	0.015615352	2.68%
11	0.006389259	0.000269525	0.000717045	0.006089098	0	0.007238926	0.00%	0.00%	0.64%	0.00%	0.03%	0.07%	1.04%	0.00%	1.46%	303.5286869	0.020703853	3.23%
10	0.01138389	0.000533874	0.000787746	0.00615734	0	0.006910577	0.00%	0.00%	1.14%	0.00%	0.05%	0.08%	1.05%	0.00%	1.39%	334.6056274	0.025773427	3.71%
9	0.016146569	0.000475585	0.00043972	0.005810088	0	0.006227359	0.00%	0.00%	1.61%	0.00%	0.05%	0.04%	0.99%	0.00%	1.25%	372.5113394	0.02909932	3.95%
8	0.018999918	0.000156279	4.79565E-05	0.005103336	0	0.005272	0.00%	0.00%	1.90%	0.00%	0.02%	0.00%	0.87%	0.00%	1.06%	419.8068136	0.02957949	3.85%
7	0.020673308	0.000109033	0.000118442	0.004164016	0	0.004165178	0.00%	0.00%	2.07%	0.00%	0.01%	0.01%	0.71%	0.00%	0.84%	480.5164393	0.029229977	3.64%
6	0.019670633	0.000698178	0.000763685	0.003125509	0	0.003055216	0.00%	0.00%	1.97%	0.00%	0.07%	0.08%	0.53%	0.00%	0.61%	561.3475028	0.027313222	3.26%
5	0.016121763	0.001594265	0.001543506	0.002125764	0	0.002044731	0.00%	0.00%	1.61%	0.00%	0.16%	0.15%	0.36%	0.00%	0.41%	674.3730859	0.023430028	2.70%
4	0.012167448	0.002052804	0.001854792	0.001274389	0	0.001220178	0.00%	0.00%	1.22%	0.00%	0.21%	0.19%	0.22%	0.00%	0.25%	843.7393091	0.018569611	2.07%
3	0.007187465	0.001689366	0.001488235	0.000642212	0	0.00061631	0.00%	0.00%	0.72%	0.00%	0.17%	0.15%	0.11%	0.00%	0.12%	1125.787065	0.011623588	1.27%
2	0.0032756	0.000850039	0.000754026	0.000243441	0	0.000236328	0.00%	0.00%	0.33%	0.00%	0.09%	0.08%	0.04%	0.00%	0.05%	1689.538944	0.005359433	0.58%
1	0.000839016	0.00019139	0.000175738	4.94166E-05	0	4.88645E-05	0.00%	0.00%	0.08%	0.00%	0.02%	0.02%	0.01%	0.00%	0.01%	3380.107736	0.001304425	0.14%