Crown Castle
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065

September 19, 2019

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

RE: **Notice of Exempt Modification for Verizon Wireless: 800529**
Verizon Site ID:4093
890 Evergreen Avenue, Hamden, CT 06518
Latitude: 41° -24' 23.9"/ Longitude: -72° -54' 16.32"

Dear Ms. Bachman:

Verizon currently maintains twelve (12) antennas at the 95-foot level of the existing 100-foot silo at 890 Evergreen Avenue, Hamden, CT 06518. The silo is owned by Crown Castle and the Connecticut Agricultural Expt Station is the property owner. Verizon now intends to replace three (3) remote radios.

Original zoning documents were obtained from the Town of Hamden on 9/19/2019. A certificate of zoning compliance was issued on March 5, 2002 with no conditions. Also attached to the zoning compliance are minutes from the Town of Hamden Planning & Zoning meeting on September 25, 2001.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j- 73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.S.C.A. § 16-50j-73, a copy of this letter is being sent to the Mayor – Mr. Curt B. Leng, Town of Hamden. Planning & Zoning Department, Town of Hamden, Mr. Daniel W. Kops Jr, Town Planner. The property owner is the Connecticut Agricultural Expt Station and Crown Castle is the silo owner.

1. The proposed modifications will not result in an increase in the height of the existing tower.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modification will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

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

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

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

For the foregoing reasons, Verizon respectfully submits that the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Please send approval/rejection letter to Attn: Jeffrey Barbadora.

Sincerely,

Jeffrey Barbadora
Real Estate Specialist
12 Gill Street, Suite 5800, Woburn, MA 01801
781-729-0053
Jeff.Barbadora@crowncastle.com

Attachments:

Tab 1: Exhibit-1: Compound plan and elevation depicting the planned changes
Tab 2: Exhibit-2: Structural Modification Report
Tab 3: Exhibit-3: General Power Density Table Report (RF Emissions Analysis Report)

Mayor – Mr. Curt B. Leng
Town of Hamden
2750 Dixwell Avenue
Hamden, CT 06518
203-287-7100

Mr. Daniel W. Kops Jr, Town Planner
Town of Hamden
2750 Dixwell Avenue
Hamden, CT 06518
203-287-7070

Connecticut Agricultural Expt Station
890 Evergreen Ave
Hamden, CT 06518

TOWN OF HAMDEN

CONNECTICUT

BOND RELEASE RECOMMENDATION/ACTION

MEMO TO: Planning & Zoning Commission

FROM: Joseph J. Venditto, Zoning Enforcement Officer

DATE: March 7, 2002

RE: Bond Release

ADDRESS: 890 Evergreen Ave

PROJECT: Site Plan 00-1263

TOTAL BOND AMOUNT	Present Amt.	Recommendation Amt. to Retain
Site Work	13,527.	0
Right of Way	0	0
Subtotal	13,527	0
Other 10%	1,473	0
TOTAL	15,000	0

Bond total covers all items listed or not listed. Categories are for estimation purposes only

Comments: All Site Work Complete. Bond Release Can Be Recommended.

$60.00 Fee

Certificate of Zoning Compliance

Zoning Enforcement Officer Findings, based upon inspection of March 5, 2002

X Meets all requirements

Does not meet

Comments:

RECEIVED
TOWN OF HAMDEN
MAR 8 2002
PLANNING AND
ZONING DEPT.

Tel.: 860.633.9367
Fax: 860.633.7078
www.crowncastle.com

[redacted]

[redacted] telecommunications facility
[redacted]

[redacted]

[redacted] two (2) stamped original as built drawings for the referenced
[redacted] facility.

[redacted] copy of a letter dated January 11, 2002 from Mr. Roberts of URS Corporation
[redacted] Board for this project addressing the Bollard issue.

[redacted] that a Certificate of Zoning Compliance be issued for this project.

[redacted] questions or need any additional information please do not hesitate to call. If
[redacted] me on my cell phone (860) 306-0337.

[redacted]

RECEIVED
TOWN OF HADDEN
MAR 15 2002
PLANNING AND
ZONING DEPT.

TOWN OF HAMDEN

CONNECTICUT

Draft Minutes subject to Commission approval

MINUTES: ZONING SECTION, Planning & Zoning Commission, Town of Hamden, Public Hearing and Regular Meeting on Tuesday, September 25, 2001 and the following were reviewed.

Commissioners in Attendance: Mr. Crocco
Mr. Del Vecchio
Mr. Sims
Mr. Cesare (for Mr. Vegliaturo)
Ms. Woodward (for Ms. Benevides)

Staff in Attendance: Mr. O'Brien, Town Planner
Mr. Lee, Town Attorney
Ms. Raccio, Stenographer
Ms. Gatolini, Clerk

Mr. Del Vecchio opened the Regular Meeting at 7:10 p.m. He introduced the Commission and staff and gave an overview of the procedures for the evening.

A. Regular Meeting

1. Site Plan/WS 01-1308
72 Crest Way, Lot #12
Office/Storage
Robert Massaro, Applicant
Deadline: October 13, 2001

Richard Wright, 71 Clarnes Dr., East Haven, CT., Will answer any questions the Commission may have.

Mr. O'Brien stated this had been submitted several months back. There were questions from RWA Engineer, those questions have since been answered & incorporated on plans. Mr. Cesare's letter dated 9/20/01 states the plan is now satisfactory to his office. The comments from December 18th have been addressed. RWA comments dated 9/17/01. The comment on slope stabilization has already been discussed.

TOWN OF HAMDEN, CONNECTICUT
GEOGRAPHIC & PROPERTY INFORMATION NETWORK

2750 DIXWELL AVENUE
HAMDEN, CT 06518
203-287-2500
E-MAIL: GENERAL INFORMATION

» MAIN MENU
- GIS HOME
- GIS PROPERTY MAP SEARCH
- TOWN WIDE MAP GALLERY
- TOWN GRID MAPS
- INTERACTIVE MAPPING
- HELP

PROPERTY INFO DATA UPDATED
Nightly
CURRENT PARCEL COUNT
16,754 +/-

» SUMMARY PARCEL INFORMATION & MAP DOCUMENTS

Detailed Parcel Information

Parcel No
2930-081-01-0000

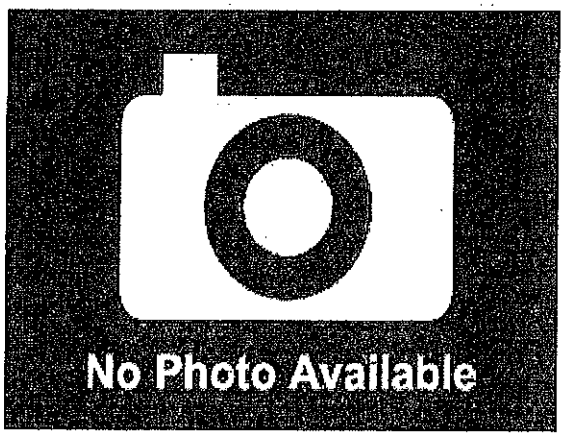
Unique ID
123443

Account

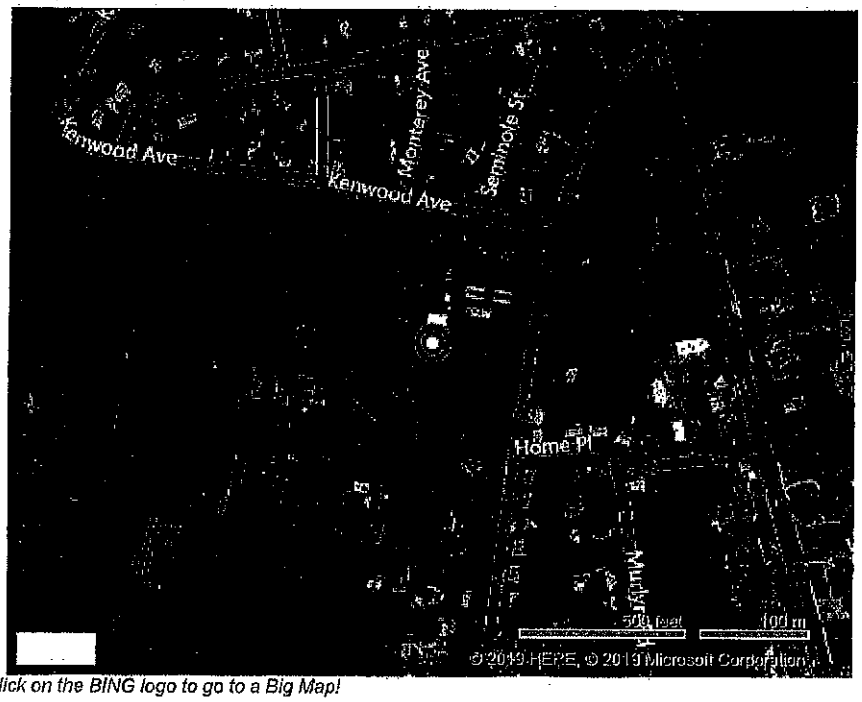
Owner
CONN AGRICULURAL EXPT STATION

Location
890 EVERGREEN AVE

MAILING ADDRESS
890 EVERGREEN AVE
HAMDEN CT 06518



Scroll Down For Complete Property Detail



Click on the BING logo to go to a Big Map!

Parcel Documents

Create Parcel Map | Property Summary Card

Full Size Assessor Maps

Full Assessor Map

Interactive GIS Maps of Property

GO TO VIRTUAL EARTH BIRDS EYE!

GO TO INTERACTIVE MAP!

Once in Interactive Map, Select Parcel and enter Abutters distance.

PARCEL VALUATIONS

	Appraised Value	Assessed Value
Buildings	125600	87920
Outbuildings	0	0
Improvements	125600	87920
Extra Features	0	0
Land	165000	105000
TOTAL:	290600	192920

PROPERTY INFORMATION

Land Acres	0
Land Use	TEL REL TW M96
Land Class	I
Zoning	R4
Neighborhood	110
Lot Description	Above Street
Lot Setting	Suburban
Lot Utilities	All Public
Street Description	Paved

SALE INFORMATION

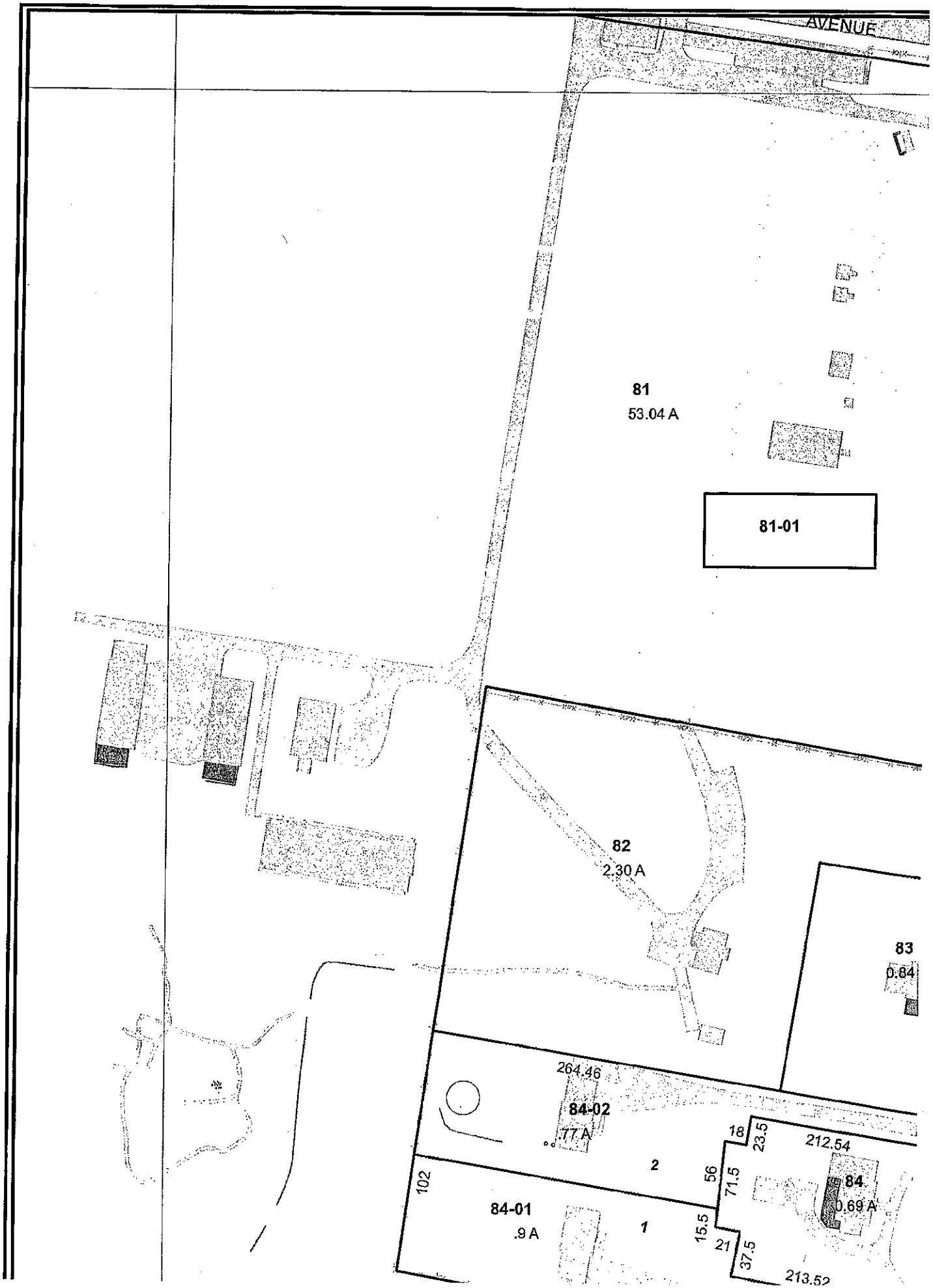
Sale Date	1/4/1911
Sale Price	
Book / Page	64/ 135

BUILDING AREA

Gross Building Area	
Total Living Area	0

CONSTRUCTION DETAILS

Building Style	Telephone Bldg


AVENUE
81
53.04 A
81-01
82
2.30 A
83
0.84
264.46
84-02
.77 A
18
23.5
212.54
2
56
71.5
84
0.69 A
102
84-01
.9 A
1
15.5
21
37.5
213.52

Town of Hamden, CT

Property Listing Report | Map Block Lot 2930-081-01-0000 | Account

Valuation Summary (Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	125600	87920
Extras	0	0
Outbuildings	0	0
Land	165000	105000
Total	290600	192920

Outbuilding and Extra Items

Type	Description

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	1473	1473
Slab	1527	0
Total Area		0

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
CONN AGRICULURAL EXPT STATION	64/ 135	1/4/1911	

Report Created On 9/19/2019

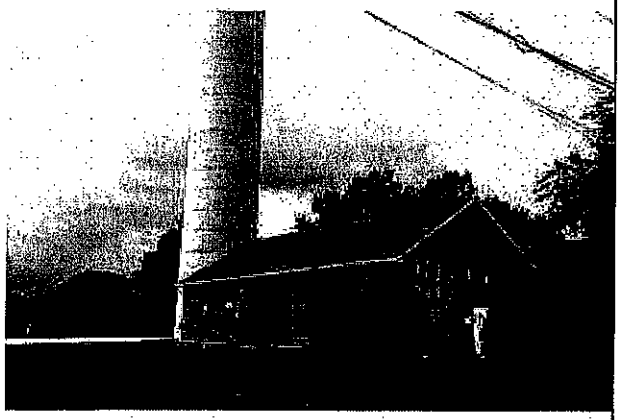
Town of Hamden, CT

Property Listing Report | Map Block Lot 2930-081-01-0000 | Account

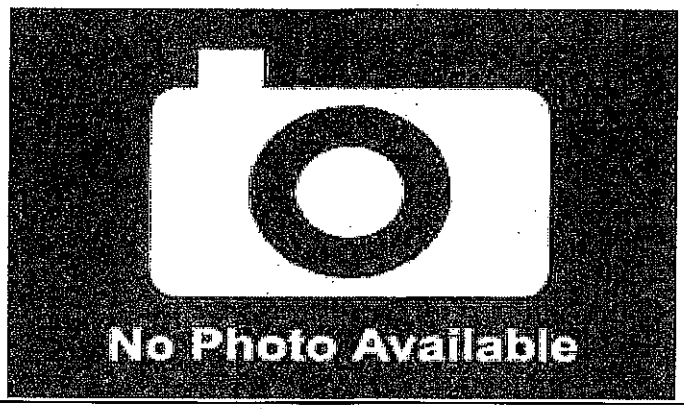
Property Information

Property Location	890 EVERGREEN AVE
Owner	CONN AGRICULURAL EXPT STATION
Co-Owner	
Mailing Address	890 EVERGREEN AVE HAMDEN CT 06518
Land Use	4310 TEL REL TW M96
Land Class	I
Zoning Code	R4
Census Tract	4
Sub Lot	
Neighborhood	110
Acreage	0
Lot Setting/Desc	Suburban Above Street
Survey Map	
Utilities	All Public
Additional Info	

Photo



Sketch



Primary Construction Details

Year Built	0
Stories	
Building Style	
Building Use	
Building Condition	
Floors	Concr-Finished
Total Rooms	

Bedrooms	
Full Bathrooms	0
Half Bathrooms	
Bath Style	
Kitchen Style	
Roof Style	Gable/Hip
Roof Cover	Asphalt

Exterior Walls	Concr/Cinder
Interior Walls	Minim/Masonry
Heating Type	Hot Air-no Duc
Heating Fuel	Oil
AC Type	None
Gross Bldg Area	3000
Total Living Area	1473

Report Created On 9/19/2019

Building Use	Ind/Comm
Number of Rooms	
Number of Bedrooms	
Number of Bathrooms	0
Number of Half Bathrooms	
Kitchen Style	
Stories	1
Roof Style	Gable/Hip
Roof Cover	Asphalt
Primary Exterior Wall Type	Concr/Cinder
Secondary Exterior Wall Type	
Primary Interior Wall Type	Minim/Masonry
Secondary Interior Wall Type	
Primary Floor Type	Concr-Finished
Secondary Floor Type	
Heating Type	Hot Air-no Duc
Heating Fuel	Oil
Air Conditioning Type	None

Back | New Search | Town of Hamden

Site Name: Hamden CT

Cumulative Power Density

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total ERP	Distance to Target*	Calculated Power Density	Maximum Permissible Exposure	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm^2)	(mW/cm^2)	(%)
VZW PCS	1970	4	1157	4627.64	110	0.1375	1.0	13.75%
VZW Cellular	869	2	225	450.86	110	0.0134	0.579333333	2.31%
VZW Cellular	880	4	458	1830.88	110	0.0544	0.586666667	9.28%
VZW AWS	2145	4	1675	6701.28	110	0.1992	1.0	19.92%
VZW 700	746	4	628	2511.04	100	0.0903	0.497333333	18.16%
Total Percentage of Maximum Permissible Exposure								63.42%

*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Section 1.13101 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992

MHz = Megahertz
mW/cm^2 = milliwatts per square centimeter
ERP = Effective Radiated Power

Absolute worst case maximum values used, including the following assumptions:
1. closest accessible point is distance from antenna to base of pole;
2. continuous transmission from all available channels at full power for indefinite time period; and,
3. all RF energy is assumed to be directed solely to the base of the pole.

ORIGIN ID:BEDA (781) 970-0053
JEFF BARBADORA
CROWN CASTLE
12 GILL STREET
SUITE 5800
WOBURN, MA 01801
UNITED STATES US

SHIP DATE: 20SEP19
ACTWGT: 0.50 LB
CAD: 10492491/INET4160

BILL SENDER

TO TOWN PLANNER MR. DANIEL W. KOPS JR.
TOWN OF HAMDEN
2750 DIXWELL AVENUE

HAMDEN CT 06518
(203) 287-7170
INV:
PO: REF: 1766.6680

DEPT:

567J18D04C5A2

FedEx Express

MON - 23 SEP 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7762 9604 9349

SE HVNA

06518
CT-US BDL

ORIGIN ID:BEDA (781) 970-0053
JEFF BARBADORA
CROWN CASTLE
12 GILL STREET
SUITE 5800
WOBURN, MA 01801
UNITED STATES US

SHIP DATE: 20SEP19
ACTWGT: 0.50 LB
CAD: 104924191/INET4160

BILL SENDER

TO CONN AGRICULTURAL EXPT STATION
CONN AGRICULTURAL EXPT STATION
890 EVERGREEN AVE

HAMDEN CT 06518
(781) 970-0054 REF: 1766.6680
INV:
PO: DEPT:

FedEx Express

MON - 23 SEP 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7762 9609 2820

06518
CT-US BDL

SE HVNA

ORIGIN ID:BEDA (781) 970-0053
JEFF BARBADORA
CROWN CASTLE
12 GILL STREET
SUITE 5800
WOBURN, MA 01801
UNITED STATES US

SHIP DATE: 20SEP19
ACTWGT: 0.50 LB
CAD: 104924191/INET4160

BILL SENDER

TO MAYOR-MR. CURT B. LENG
TOWN OF HAMDEN
2750 DIXWELL AVENUE

HAMDEN CT 06518
(203) 287-7100
INV:
PO:
REF: 1766.6680
DEPT:

567J19D0405A2

FedEx Express

TRK# 0201 7762 9602 6142

MON - 23 SEP 10:30A
PRIORITY OVERNIGHT

SE HVNA

06518
CT-US BDL

Date: **July 24, 2019**

GPD Engineering and Architecture Professional Corporation
520 South Main Street Suite 2531
Akron, Ohio 44311
(216) 927-8663

Amanda Brown
Crown Castle
3530 Toringdon Way
Charlotte, NC 28277

Subject:	**Structural Analysis Report**	
Carrier Designation:	**Verizon Wireless Co-Locate**	
	Carrier Site Number:	4093
	Carrier Site Name:	Hamden North CT
Crown Castle Designation:	**Crown Castle BU Number:**	800529
	Crown Castle Site Name:	CT HAMDEN NORTH CAC
	Crown Castle JDE Job Number:	498396
	Crown Castle Work Order Number:	1765328
	Crown Castle Order Number:	498396 Rev. 0
Engineering Firm Designation:	**GPD Project Number:**	2019777.800529.07
Site Data:	**890 EVERGREEN AVENUE, Hamden, New Haven County, CT** **Latitude *41° 24' 23.9"*, Longitude *-72° 54' 16.32"*** **100 Foot – Stealth Self Support Tower**	

Dear Amanda Brown,

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 - 47.7%**

This analysis utilizes an ultimate 3-second gust wind speed of 125 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: Matt Steward

Respectfully submitted by:

STATE OF CONNECTICUT
CHRISTOPHER J. SCHEKS
No. 30026
LICENSED
PROFESSIONAL ENGINEER

Christopher J. Scheks
Connecticut # 0030026

7/24/2019

TABLE OF CONTENTS

1) INTRODUCTION

The existing 100 ft self support tower has seven major sections with no taper and X bracing. The top 40' consists of 4 bays and a 4'10" face width, and the lower 60' consists of 3 bays and a 9'6-5/8" face width. The structure is galvanized.

This tower is a 100 ft Self Support tower designed by STEALTH NETWORK TECHNOLOGIES INC. in December of 2000. The tower was originally designed for a wind speed of 110 mph per ASCE 7-95.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
95.0	98.0	3	Samsung Telecommunications	RFV01U-D2A	2	1-1/4
		3	Amphenol	BXA-70063-6CF-EDIN-X		
		3	Antel	BXA-80080/4CF		
		6	Commscope	JAHH-65B-R3B		
	95.0	3	Alcatel Lucent	B25 RRH4X30-4R		
		3	Alcatel Lucent	B66A RRH4X45-4R		
		2	RFS Celwave	DB-T1-6Z-8AB-0Z		

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)
100.0	104.0	3	Andrew	SBNHH-1D65A	18 1	1-5/8 1/2
		1	Decibel	DB806-XC		
		3	Commscope	ATBT-Bottom-24V		
		6	RFS/Celwave	ATMAA1412D-1A20		
85.0	85.0	3	Kathrein	800 10121	12 2 1	7/8 3/4 3/8
		3	CCI Antennas	HPA-33R-BUU-H6		
		3	KMW Communications	AM-X-CD-16-65-00T-RET		
		6	Kathrein	860 10025		
		6	Communication Components	DTMABP7819VG12A		
		1	Raycap	DC6-48-60-18-8F		
		3	Ericsson	RRUS-11		
		3	Ericsson	RRUS 32 B2		
75.0	75.0	2	CSA Wireless	A-18A24N-U	11	1-1/4
		10	Decibel	DB844H90E-XY		
65.0	65.0	3	Kathrein	742 213	6	1-5/8

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
GEOTECHNICAL REPORTS	GPD Project #: 2016777.800529.04, dated 8/10/2016	6400183	CCISITES
TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Stealth Job #: 00-065, dated 12/5/2000	671923	CCISITES
TOWER MANUFACTURER DRAWINGS	Stealth Job #: 00-065, dated 12/5/2000	605026	CCISITES
TOWER STRUCTURAL ANALYSIS LETTER	GPD Project #: 2016777.800529.03, dated 6/17/2016	6316916	CCISITES
TOWER STRUCTURAL ANALYSIS	GPD Project #: 2016777.800529.05, dated 8/18/2016	6412453	CCISITES

3.1) Analysis Method

tnxTower (version 8.0.5.0) and RISA 3D (Version 17.0.2), commercially available analysis software packages, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

1) Tower and structures were built and maintained in accordance with the manufacturer's specifications.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
3) The base plate grout was considered in this analysis.

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (lb)	SF*P_allow (lb)	% Capacity	Pass / Fail
L1	100 - 90	Leg	HSS6x6x1/4	M1	9.635	181.658	2.5%	Pass
		Diagonal	2L2x2x3/16x1/2	M10	6.651	29.85	15.2%	Pass
		Top Girt	C6x10.5	M5	2.281	59.887	1.2%	Pass
L2	90 - 80	Leg	HSS6x6x1/4	M18	21.091	181.658	6.0%	Pass
		Diagonal	2L2x2x3/16x1/2	M29	9.308	29.85	15.0%	Pass
		Top Girt	C6x10.5	M21	2.586	59.887	4.9%	Pass
L3	80 - 70	Leg	HSS6x6x1/4	M34	41.455	181.658	12.0%	Pass
		Diagonal	2L2x2x3/16x1/2	M43	11.98	29.85	22.5%	Pass
		Top Girt	C6x10.5	M38	3.619	59.887	4.9%	Pass
L4	70 - 60	Leg	HSS6x6x1/4	M50	67.311	181.658	23.3%	Pass
		Diagonal	2L2x2x3/16x1/2	M61	15.21	29.85	30.3%	Pass
		Top Girt	C6x10.5	M54	10.247	59.887	5.2%	Pass
T1	60 - 40	Leg	HSS8x8x1/4	M66	51.25	199.192	15.0%	Pass
		Diagonal	2L4x4x3/8x1/2	M74	27.12	112.46	14.8%	Pass
		Top Girt	W16x45	M69	16.402	426.018	45.0%	Pass
T2	40 - 20	Leg	HSS8x8x1/4	M82	85.856	199.192	26.8%	Pass
		Diagonal	2L4x4x3/8x1/2	M90	39.461	112.46	22.4%	Pass
		Top Girt	W6x12	M86	26.582	59.891	15.8%	Pass
T3	20 - 0	Leg	HSS8x8x1/4	M98	123.18	199.192	37.2%	Pass
		Diagonal	2L4x4x3/8x1/2	M106	57.7	112.46	32.1%	Pass
		Top Girt	W6x12	M102	35.921	59.891	28.6%	Pass
							Summary	
						Leg (T3)	37.2%	Pass
						Diagonal (T3)	32.1%	Pass
						Top Girt (T1)	45.0%	Pass
						Bolt Checks	47.7%	Pass
						Rating =	47.7%	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0.0	11.5	Pass
1	Base Foundation Reinforcement	0.0	12.1	Pass
1	Base Foundation Soil Interaction	0.0	32.7	Pass

Structure Rating (max from all components) =	47.7%

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 existing tower and its foundation are sufficient for the proposed loading and do not require modifications.

5) DISCLAIMER OF WARRANTIES

GPD has not performed a site visit to the tower to verify the member sizes or antenna/coax loading. If the existing conditions are not as represented on the tower elevation contained in this report, we should be contacted immediately to evaluate the significance of the discrepancy. This is not a condition assessment of the tower or foundation. This report does not replace a full tower inspection. The tower and foundations are assumed to have been properly fabricated, erected, maintained, in good condition, twist free, and plumb.

The engineering services rendered by GPD in connection with this Structural Analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. No allowance was made for any damaged, bent, missing, loose, or rusted members (above and below ground). No allowance was made for loose bolts or cracked welds.

This analysis is limited to the designated maximum wind and seismic conditions per the governing tower standards and code. Wind forces resulting in tower vibrations near the structure's resonant frequencies were not considered in this analysis and are outside the scope of this analysis. Lateral loading from any dynamic response was not evaluated under a time-domain based fatigue analysis.

GPD does not analyze the fabrication of the structure (including welding). It is not possible to have all the very detailed information needed to perform a thorough analysis of every structural sub-component and connection of an existing tower. GPD provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc. The purpose of this report is to assess the capability of adding appurtenances usually accompanied by transmission lines to the structure.

It is the owner's responsibility to determine the amount of ice accumulation in excess of the code specified amount, if any, that should be considered in the structural analysis.

The attached sketches are a schematic representation of the analyzed tower. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions, proper fit, and clearance in the field. Any mentions of structural modifications are reasonable estimates and should not be used as a precise construction document. Precise modification drawings are obtainable from GPD, but are beyond the scope of this report.

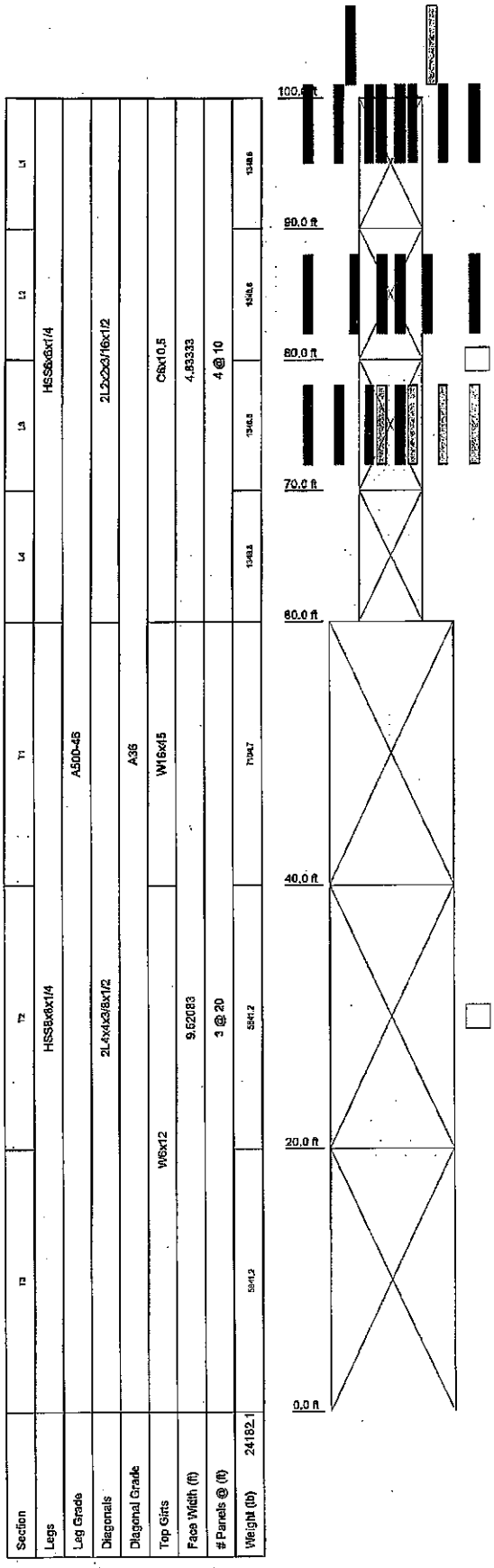
Miscellaneous items such as antenna mounts, etc., have not been designed or detailed as a part of our work. We recommend that material of adequate size and strength be purchased from a reputable tower manufacturer.

Towers are designed to carry gravity, wind, and ice loads. All members, legs, diagonals, struts, and redundant members provide structural stability to the tower with little redundancy. Absence or removal of a member can trigger catastrophic failure unless a substitute is provided before any removal. Legs carry axial loads and derive their strength from shorter unbraced lengths by the presence of redundant members and their connection to the diagonals with bolts or welds. If the bolts or welds are removed without providing any substitute to the frame, the leg is subjected to a higher unbraced length that immediately reduces its load carrying capacity. If a diagonal is also removed in addition to the connection, the unbraced length of the leg is greatly increased, jeopardizing its load carrying capacity. Failure of one leg can result in a tower collapse because there is no redundancy. Redundant members and diagonals are critical to the stability of the tower.

GPD makes no warranties, expressed and/or implied, in connection with this report and disclaims any liability arising from material, fabrication, and erection of this tower. GPD will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of GPD pursuant to this report will be limited to the total fee received for preparation of this report.

APPENDIX A

TNXTOWER OUTPUT



Section	T2	T1	L4	L3	L2	L1
Legs	HSS8x6x1/4					
Leg Grade	A500-46					
Diagonals	2L4x4x3/8x1/2					
Diagonal Grade	A36					
Top Girts	W6x12	W16x15	C8x10.5			
Face Width (ft)	9.62083		4.83333			
# Panels @ (ft)	3 @ 20		4 @ 10			
Weight (lb) 24182.1	5841.2	7104.7	1948.3	1946.8	1946.8	1346.6

TOWER DESIGN NOTES

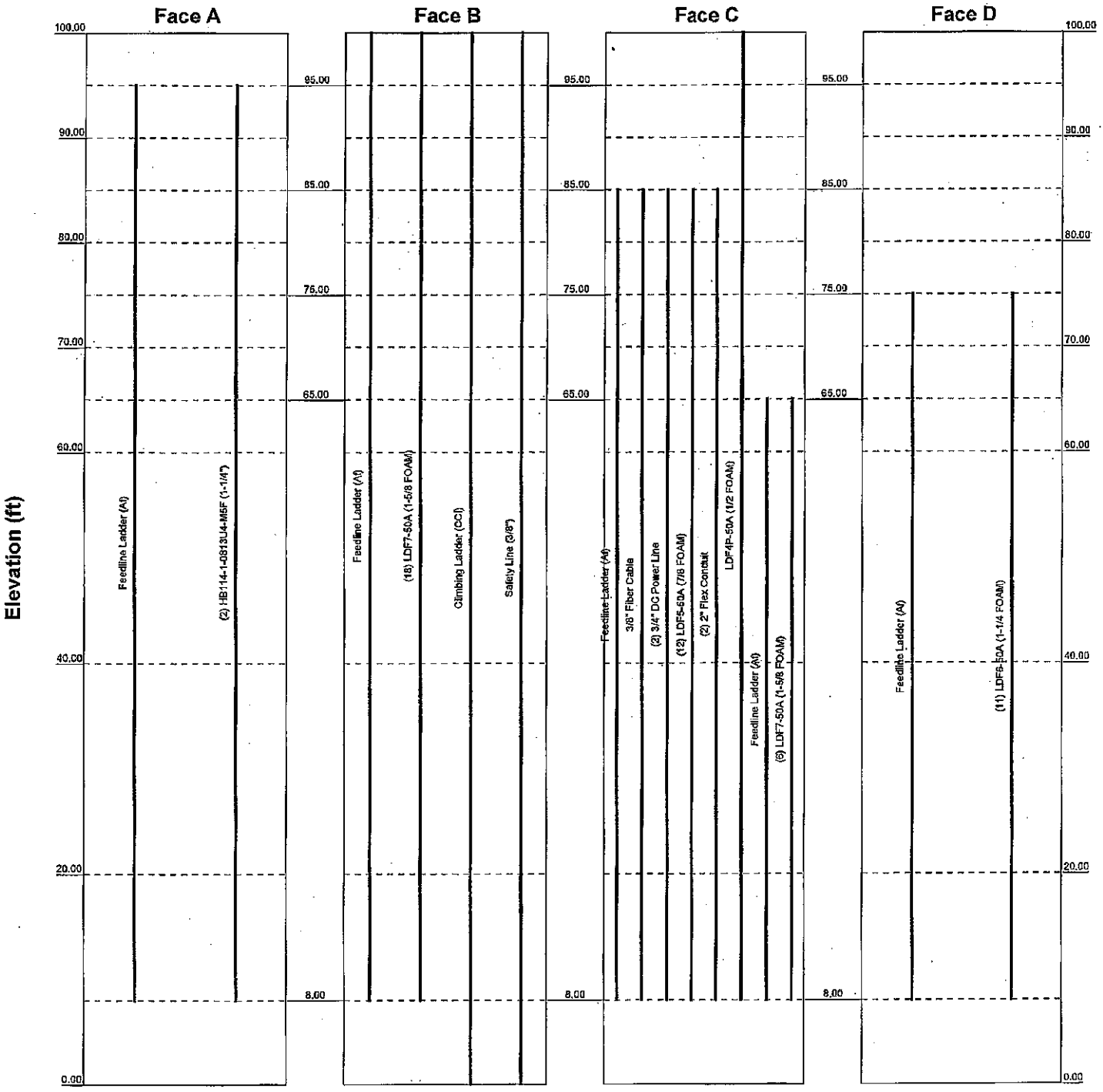
1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 125 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft

GPD
520 South Main Street Suite 2531
Akron, Ohio 44311
Phone: (330) 572-2100
FAX: (330) 572-2101

Job:	800529 CT HAMDEN NORTH CAC		
Project:	2019777.800529.07		
Client:	Crown Castle	Drawn by: msteward	App'd:
Code:	TIA-222-H	Date: 07/24/19	Scale: NTS
Path:	T:\Crown\800529\07\Rev 3\tnxt800529.eri		Dwg No. E-1

Feed Line Distribution Chart
0' - 100'

Round Flat App In Face App Out Face Truss Leg



GPD
520 South Main Street Suite 2531
Akron, Ohio 44311
Phone: (330) 572-2100
FAX: (330) 572-2101

Job: 800529 CT HAMDEN NORTH CAC			
Project: 2019777.800529.07			
Client: Crown Castle	Drawn by: msteward	App'd:	
Code: TIA-222-H	Date: 07/24/19	Scale: NTS	
Path: T:\Crown\800529\07\Rev 0\tnx\800529.ert		Dwg No. E-7	

tnxTower	Job: 800529 CT HAMDEN NORTH CAC	Page: 1 of 12
GPD 520 South Main Street Suite 2531 Akron, Ohio 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	Project: 2019777.800529.07	Date: 07:34:33 07/24/19
	Client: Crown Castle	Designed by: msteward

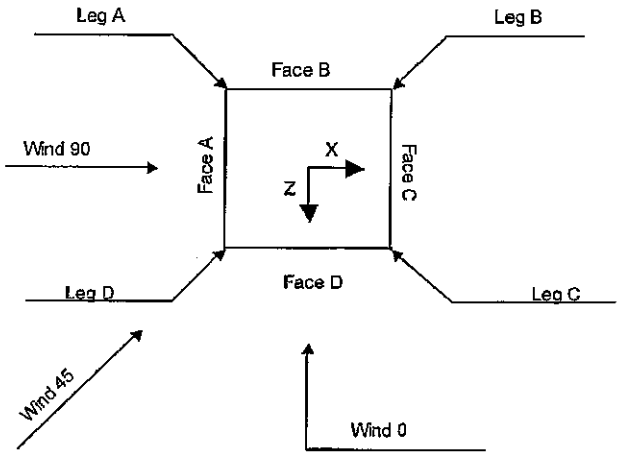
Tower Input Data

The main tower is a 4x free standing tower with an overall height of 100.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 9.52 ft at the top and 9.52 ft at the base.
An index plate is provided at the 4 sided -tower connection.
There is a 4 sided latticed pole with a face width of 4.83 ft.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

Tower is located in New Haven County, Connecticut.
Tower base elevation above sea level: 199.00 ft.
Basic wind speed of 125 mph.
Risk Category II.
Exposure Category C.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.00 ft.
Nominal ice thickness of 1.5000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in latticed pole member design is 1.05.
Tower analysis based on target reliabilities in accordance with Annex S.
Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
Stress ratio used in tower member design is 1.05.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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



Square Tower

4 Sided Latticed Pole Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
L1	100.00-90.00			4.83	1	10.00
L2	90.00-80.00			4.83	1	10.00
L3	80.00-70.00			4.83	1	10.00
L4	70.00-60.00			4.83	1	10.00

4 Sided Latticed Pole Section Geometry *(cont'd)*

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
L1	100.00-90.00	10.00	X Brace	No	Yes	0.0000	0.0000
L2	90.00-80.00	10.00	X Brace	No	Yes	0.0000	0.0000
L3	80.00-70.00	10.00	X Brace	No	Yes	0.0000	0.0000
L4	70.00-60.00	10.00	X Brace	No	Yes	0.0000	0.0000

4 Sided Latticed Pole Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
L1 100.00-90.00	Tube	HSS6x6x1/4	A500-46 (46 ksi)	Double Equal Angle	2L2x2x3/16x1/2	A36 (36 ksi)
L2 90.00-80.00	Tube	HSS6x6x1/4	A500-46 (46 ksi)	Double Equal Angle	2L2x2x3/16x1/2	A36 (36 ksi)
L3 80.00-70.00	Tube	HSS6x6x1/4	A500-46	Double Equal	2L2x2x3/16x1/2	A36

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
L4 70.00-60.00	Tube	HSS6x6x1/4	(46 ksi) A500-46 (46 ksi)	Angle Double Equal Angle	2L2x2x3/16x1/2	(36 ksi) A36 (36 ksi)

4 Sided Latticed Pole Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
L1 100.00-90.00	Channel	C6x10.5	A36 (36 ksi)	Flat Bar		A36 (36 ksi)
L2 90.00-80.00	Channel	C6x10.5	A36 (36 ksi)	Flat Bar		A36 (36 ksi)
L3 80.00-70.00	Channel	C6x10.5	A36 (36 ksi)	Flat Bar		A36 (36 ksi)
L4 70.00-60.00	Channel	C6x10.5	A36 (36 ksi)	Flat Bar		A36 (36 ksi)

4 Sided Latticed Pole Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 100.00-90.00	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	36.0000	36.0000
L2 90.00-80.00	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	36.0000	36.0000
L3 80.00-70.00	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	36.0000	36.0000
L4 70.00-60.00	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	36.0000	36.0000

4 Sided Latticed Pole Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
L1 100.00-90.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
L2 90.00-80.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
L3 80.00-70.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
L4 70.00-60.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1

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

4 Sided Latticed Pole Section Geometry *(cont'd)*

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
L1 100.00-90.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
L2 90.00-80.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
L3 80.00-70.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
L4 70.00-60.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

4 Sided Latticed Pole Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
L1 100.00-90.00	Flange	0.7500 A325N	0	0.8750 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
L2 90.00-80.00	Flange	0.7500 A325N	0	0.8750 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
L3 80.00-70.00	Flange	0.7500 A325N	0	0.8750 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
L4 70.00-60.00	Flange	0.8750 A325N	4	0.8750 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	60.00-40.00			9.52	1	20.00
T2	40.00-20.00			9.52	1	20.00
T3	20.00-0.00			9.52	1	20.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	60.00-40.00	20.00	X Brace	No	Yes	0.0000	0.0000
T2	40.00-20.00	20.00	X Brace	No	Yes	0.0000	0.0000
T3	20.00-0.00	20.00	X Brace	No	Yes	0.0000	0.0000

Tower Section Geometry (cont'd)

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 60.00-40.00	Tube	HSS8x8x1/4	A500-46 (46 ksi)	Double Equal Angle	2L4x4x3/8x1/2	A36 (36 ksi)
T2 40.00-20.00	Tube	HSS8x8x1/4	A500-46 (46 ksi)	Double Equal Angle	2L4x4x3/8x1/2	A36 (36 ksi)
T3 20.00-0.00	Tube	HSS8x8x1/4	A500-46 (46 ksi)	Double Equal Angle	2L4x4x3/8x1/2	A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 60.00-40.00	Wide Flange	W16x45	A36 (36 ksi)	Flat Bar		A36 (36 ksi)
T2 40.00-20.00	Wide Flange	W6x12	A36 (36 ksi)	Flat Bar		A36 (36 ksi)
T3 20.00-0.00	Wide Flange	W6x12	A36 (36 ksi)	Flat Bar		A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 60.00-40.00	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	36.0000	36.0000
T2 40.00-20.00	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	36.0000	36.0000
T3 20.00-0.00	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	36.0000	36.0000

Tower Section Geometry (cont'd)

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X	X Brace Diags Y	K Single Diags X	K Single Diags Y	Girts X	Girts Y	Horiz. X	Horiz. Y	Sec. Horiz. X	Sec. Horiz. Y	Inner Brace X	Inner Brace Y
T1	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
60.00-40.00				1	1	1	1	1	1	1	1	1	1	1	1
T2	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
40.00-20.00				1	1	1	1	1	1	1	1	1	1	1	1
T3 20.00-0.00	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1	1	1	1	1	1

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

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 60.00-40.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 40.00-20.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 20.00-0.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 60.00-40.00	Flange	0.7500 A325N	0	0.8750 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2 40.00-20.00	Flange	0.7500 A325N	0	0.8750 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T3 20.00-0.00	Flange	0.7500 A325N	0	0.8750 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#		C_AA_A ft²/ft	Weight plf
Feedline Ladder (Af)	B	No	No	CaAa (Out Of Face)	100.00 - 8.00	0.0000	0	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00	8.40 13.50 18.60 28.80
LDF7-50A (1-5/8 FOAM)	B	No	No	CaAa (Out Of Face)	100.00 - 8.00	0.0000	0	18	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00	0.82 2.33 4.46 10.54
Feedline Ladder (Af)	A	No	No	CaAa (Out Of Face)	95.00 - 8.00	0.0000	0	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00	8.40 13.50 18.60 28.80
HB114-1-081 3U4-M5F (1-1/4")	A	No	No	CaAa (Out Of Face)	95.00 - 8.00	0.0000	0	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00	1.20 2.45 4.30 9.85

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#		C_AA_A ft^2/ft	Weight plf
Feedline Ladder (Af)	D	No	No	CaAa (Out Of Face)	75.00 - 8.00	0.0000	0	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00	8.40 13.50 18.60 28.80
LDF6-50A (1-1/4 FOAM)	D	No	No	CaAa (Out Of Face)	75.00 - 8.00	0.0000	0	11	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00	0.66 1.91 3.78 9.33
Feedline Ladder (Af)	C	No	No	CaAa (Out Of Face)	85.00 - 8.00	0.0000	0	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00	8.40 13.50 18.60 28.80
3/8" Fiber Cable	C	No	No	CaAa (Out Of Face)	85.00 - 8.00	0.0000	0	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00	0.10 0.63 1.78 5.90
3/4" DC Power Line	C	No	No	CaAa (Out Of Face)	85.00 - 8.00	0.0000	0	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00	0.33 1.09 2.47 7.05
LDF5-50A (7/8 FOAM)	C	No	No	CaAa (Out Of Face)	85.00 - 8.00	0.0000	0	12	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00	0.33 1.30 2.88 7.88
2" Flex Conduit	C	No	No	CaAa (Out Of Face)	85.00 - 8.00	0.0000	0	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00	0.32 1.85 3.98 10.09
LDF4P-50A (1/2 FOAM)	C	No	No	CaAa (Out Of Face)	100.00 - 8.00	0.0000	0.3	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00	0.15 0.84 2.14 6.58
Feedline Ladder (Af)	C	No	No	CaAa (Out Of Face)	65.00 - 8.00	0.0000	0.45	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00	8.40 13.50 18.60 28.80
LDF7-50A (1-5/8 FOAM)	C	No	No	CaAa (Out Of Face)	65.00 - 8.00	0.0000	0.45	6	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00	0.82 2.33 4.46 10.54

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#		C_AA_A ft^2/ft	Weight plf
Climbing Ladder (CCI)	B	No	No	CaAa (Out Of Face)	100.00 - 0.00	0.0000	0.45	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00	4.81 6.97 9.48 15.54
Safety Line (3/8")	B	No	No	CaAa (Out Of Face)	100.00 - 0.00	0.0000	0.45	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00	0.22 0.75 1.28 2.34

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Azimuth Adjustment ° Vert ft	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
SBNHH-1D65A w/ Mount Pipe	A	From Leg	1.00 0.00 4.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	61.30 115.03 175.35 318.84
SBNHH-1D65A w/ Mount Pipe	B	From Leg	1.00 0.00 4.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	61.30 115.03 175.35 318.84
SBNHH-1D65A w/ Mount Pipe	D	From Leg	1.00 0.00 4.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	61.30 115.03 175.35 318.84
DB806-XC	B	From Leg	1.00 0.00 4.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	21.00 29.93 42.71 80.38
ATBT-BOTTOM-24V	A	From Leg	1.00 0.00 4.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	2.87 4.02 5.94 12.91
ATBT-BOTTOM-24V	B	From Leg	1.00 0.00 4.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	2.87 4.02 5.94 12.91
ATBT-BOTTOM-24V	D	From Leg	1.00 0.00 4.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	2.87 4.02 5.94 12.91
(2) ATMAA1412D-1A20	A	From Leg	1.00 0.00 4.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	13.00 20.62 30.11 55.52
(2) ATMAA1412D-1A20	B	From Leg	1.00 0.00 4.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.00 0.00 0.00	13.00 20.62 30.11

tnxTower	Job: 800529 CT HAMDEN NORTH CAC	Page: 9 of 12
GPD 520 South Main Street Suite 2531 Akron, Ohio 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	Project: 2019777.800529.07	Date: 07:34:33 07/24/19
	Client: Crown Castle	Designed by: msteward

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
						2" Ice	0.00	0.00	55.52
(2) ATMAA1412D-1A20	D	From Leg	1.00 0.00 4.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	13.00 20.62 30.11 55.52
BXA-70063-6CF-EDIN-X w/ Mount Pipe	A	From Centroid-Leg	4.00 0.00 3.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	42.25 103.01 171.49 335.23
BXA-70063-6CF-EDIN-X w/ Mount Pipe	C	From Centroid-Leg	4.00 0.00 3.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	42.25 103.01 171.49 335.23
BXA-70063-6CF-EDIN-X w/ Mount Pipe	D	From Centroid-Leg	4.00 0.00 3.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	42.25 103.01 171.49 335.23
BXA-80080/4CF w/Mount Pipe	A	From Centroid-Leg	4.00 0.00 3.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	39.85 89.34 145.14 279.30
BXA-80080/4CF w/Mount Pipe	C	From Centroid-Leg	4.00 0.00 3.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	39.85 89.34 145.14 279.30
BXA-80080/4CF w/Mount Pipe	D	From Centroid-Leg	4.00 0.00 3.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	39.85 89.34 145.14 279.30
(2) JAHH-65B-R3B w/ Mount Pipe	A	From Centroid-Leg	4.00 0.00 3.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	86.15 162.72 247.46 445.07
(2) JAHH-65B-R3B w/ Mount Pipe	C	From Centroid-Leg	4.00 0.00 3.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	86.15 162.72 247.46 445.07
(2) JAHH-65B-R3B w/ Mount Pipe	D	From Centroid-Leg	4.00 0.00 3.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	86.15 162.72 247.46 445.07
B25 RRH4x30-4R	A	From Centroid-Leg	4.00 0.00 0.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	51.00 68.46 88.75 138.59
B25 RRH4x30-4R	C	From Centroid-Leg	4.00 0.00 0.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	51.00 68.46 88.75 138.59
B25 RRH4x30-4R	D	From Centroid-Leg	4.00 0.00 0.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	51.00 68.46 88.75 138.59
B66A RRH4X45-4R	A	From Centroid-Leg	4.00 0.00 0.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	56.80 76.92 100.15 156.66

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
B66A RRH4X45-4R	C	From Centroid-Leg	4.00 0.00 0.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	56.80 76.92 100.15 156.66
B66A RRH4X45-4R	D	From Centroid-Leg	4.00 0.00 0.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	56.80 76.92 100.15 156.66
DB-T1-6Z-8AB-0Z	A	From Centroid-Leg	4.00 0.00 0.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	44.00 80.13 120.22 213.04
DB-T1-6Z-8AB-0Z	C	From Centroid-Leg	4.00 0.00 0.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	44.00 80.13 120.22 213.04
RFV01U-D2A	A	From Centroid-Leg	4.00 0.00 0.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	73.00 89.43 108.53 155.50
RFV01U-D2A	C	From Centroid-Leg	4.00 0.00 0.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	73.00 89.43 108.53 155.50
RFV01U-D2A	D	From Centroid-Leg	4.00 0.00 0.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	73.00 89.43 108.53 155.50
800 10121 w/ Mount Pipe	A	From Centroid-Leg	4.00 0.00 0.00	0.0000	85.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	64.55 110.68 163.06 289.46
800 10121 w/ Mount Pipe	C	From Centroid-Leg	4.00 0.00 0.00	0.0000	85.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	64.55 110.68 163.06 289.46
800 10121 w/ Mount Pipe	D	From Centroid-Leg	4.00 0.00 0.00	0.0000	85.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	64.55 110.68 163.06 289.46
HPA-33R-BUU-H6 w/ Mount Pipe	A	From Centroid-Leg	4.00 0.00 0.00	0.0000	85.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	104.95 209.02 321.92 577.86
HPA-33R-BUU-H6 w/ Mount Pipe	C	From Centroid-Leg	4.00 0.00 0.00	0.0000	85.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	104.95 209.02 321.92 577.86
HPA-33R-BUU-H6 w/ Mount Pipe	D	From Centroid-Leg	4.00 0.00 0.00	0.0000	85.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	104.95 209.02 321.92 577.86
AM-X-CD-16-65-00T-RET w/ Mount Pipe	A	From Centroid-Leg	4.00 0.00 0.00	0.0000	85.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	89.03 157.32 234.42 413.07
AM-X-CD-16-65-00T-RET	A	From	4.00	0.0000	85.00	No Ice	0.00	0.00	89.03

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
w/ Mount Pipe		Centroid-Le	0.00			1/2" Ice	0.00	0.00	157.32
		g	0.00			1" Ice	0.00	0.00	234.42
						2" Ice	0.00	0.00	413.07
AM-X-CD-16-65-00T-RET	A	From	4.00	0.0000	85.00	No Ice	0.00	0.00	89.03
w/ Mount Pipe		Centroid-Le	0.00			1/2" Ice	0.00	0.00	157.32
		g	0.00			1" Ice	0.00	0.00	234.42
						2" Ice	0.00	0.00	413.07
(2) 860 10025	A	From	4.00	0.0000	85.00	No Ice	0.00	0.00	1.16
		Centroid-Le	0.00			1/2" Ice	0.00	0.00	2.65
		g	0.00			1" Ice	0.00	0.00	5.06
						2" Ice	0.00	0.00	13.42
(2) 860 10025	C	From	4.00	0.0000	85.00	No Ice	0.00	0.00	1.16
		Centroid-Le	0.00			1/2" Ice	0.00	0.00	2.65
		g	0.00			1" Ice	0.00	0.00	5.06
						2" Ice	0.00	0.00	13.42
(2) 860 10025	D	From	4.00	0.0000	85.00	No Ice	0.00	0.00	1.16
		Centroid-Le	0.00			1/2" Ice	0.00	0.00	2.65
		g	0.00			1" Ice	0.00	0.00	5.06
						2" Ice	0.00	0.00	13.42
(2) DTMABP7819VG12A	A	From	4.00	0.0000	85.00	No Ice	0.00	0.00	19.18
		Centroid-Le	0.00			1/2" Ice	0.00	0.00	26.48
		g	0.00			1" Ice	0.00	0.00	35.63
						2" Ice	0.00	0.00	60.23
(2) DTMABP7819VG12A	C	From	4.00	0.0000	85.00	No Ice	0.00	0.00	19.18
		Centroid-Le	0.00			1/2" Ice	0.00	0.00	26.48
		g	0.00			1" Ice	0.00	0.00	35.63
						2" Ice	0.00	0.00	60.23
(2) DTMABP7819VG12A	D	From	4.00	0.0000	85.00	No Ice	0.00	0.00	19.18
		Centroid-Le	0.00			1/2" Ice	0.00	0.00	26.48
		g	0.00			1" Ice	0.00	0.00	35.63
						2" Ice	0.00	0.00	60.23
DC6-48-60-18-8F Surge	A	From	4.00	0.0000	85.00	No Ice	0.00	0.00	18.90
Suppression Unit		Centroid-Le	0.00			1/2" Ice	0.00	0.00	36.62
		g	0.00			1" Ice	0.00	0.00	56.82
						2" Ice	0.00	0.00	105.34
RRUS-11	A	From	4.00	0.0000	85.00	No Ice	0.00	0.00	47.62
		Centroid-Le	0.00			1/2" Ice	0.00	0.00	68.42
		g	0.00			1" Ice	0.00	0.00	92.25
						2" Ice	0.00	0.00	149.81
RRUS-11	C	From	4.00	0.0000	85.00	No Ice	0.00	0.00	47.62
		Centroid-Le	0.00			1/2" Ice	0.00	0.00	68.42
		g	0.00			1" Ice	0.00	0.00	92.25
						2" Ice	0.00	0.00	149.81
RRUS-11	D	From	4.00	0.0000	85.00	No Ice	0.00	0.00	47.62
		Centroid-Le	0.00			1/2" Ice	0.00	0.00	68.42
		g	0.00			1" Ice	0.00	0.00	92.25
						2" Ice	0.00	0.00	149.81
RRUS 32 B2	A	From	4.00	0.0000	85.00	No Ice	0.00	0.00	52.90
		Centroid-Le	0.00			1/2" Ice	0.00	0.00	73.96
		g	0.00			1" Ice	0.00	0.00	98.21
						2" Ice	0.00	0.00	157.06
RRUS 32 B2	C	From	4.00	0.0000	85.00	No Ice	0.00	0.00	52.90
		Centroid-Le	0.00			1/2" Ice	0.00	0.00	73.96
		g	0.00			1" Ice	0.00	0.00	98.21
						2" Ice	0.00	0.00	157.06
RRUS 32 B2	D	From	4.00	0.0000	85.00	No Ice	0.00	0.00	52.90
		Centroid-Le	0.00			1/2" Ice	0.00	0.00	73.96

tnxTower	Job: 800529 CT HAMDEN NORTH CAC	Page: 12 of 12
GPD 520 South Main Street Suite 2531 Akron, Ohio 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	Project: 2019777.800529.07	Date: 07:34:33 07/24/19
	Client: Crown Castle	Designed by: msteward

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
		g	0.00			1" Ice	0.00	0.00	98.21
						2" Ice	0.00	0.00	157.06
A-18A24N-U w/ mount pipe	A	From Centroid-Le g	4.00 0.00 0.00	0.0000	75.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	43.55 88.76 139.53 261.39
A-18A24N-U w/ mount pipe	D	From Centroid-Le g	4.00 0.00 0.00	0.0000	75.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	43.55 88.76 139.53 261.39
(3) DB844H90E-XY w/ Mount Pipe	A	From Centroid-Le g	4.00 0.00 0.00	0.0000	75.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	43.20 90.60 144.32 274.74
(4) DB844H90E-XY w/ Mount Pipe	B	From Centroid-Le g	4.00 0.00 0.00	0.0000	75.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	43.20 90.60 144.32 274.74
(3) DB844H90E-XY w/ Mount Pipe	D	From Centroid-Le g	4.00 0.00 0.00	0.0000	75.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	43.20 90.60 144.32 274.74
742 213 w/ Mount Pipe	A	From Leg	1.00 0.00 0.00	0.0000	65.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	51.20 97.45 151.50 287.00
742 213 w/ Mount Pipe	C	From Leg	1.00 0.00 0.00	0.0000	65.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	51.20 97.45 151.50 287.00
742 213 w/ Mount Pipe	D	From Leg	1.00 0.00 0.00	0.0000	65.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	51.20 97.45 151.50 287.00

TIA-222-H: Mount Analysis Wind Loading
CT HAMDEN NORTH CAC
2019777.800529.07

Structure Information		
Structure Type:	Building	
Structure Height:	108	ft
Gh (Mount Gust Effect Factor) =	1.00	
Risk Category:	II	

Code Specifications		
IBC Edition:	2015	
TIA/EIA Code:	H	
Ultimate Wind Speed (No Ice) =	125	mph (3-s gust)
Ultimate Wind Speed (With Ice) =	50	mph (3-s gust)
Ice Thickness	1.5	in
Exposure Category	C	
Building Base Elevation (AMSL)	199	ft

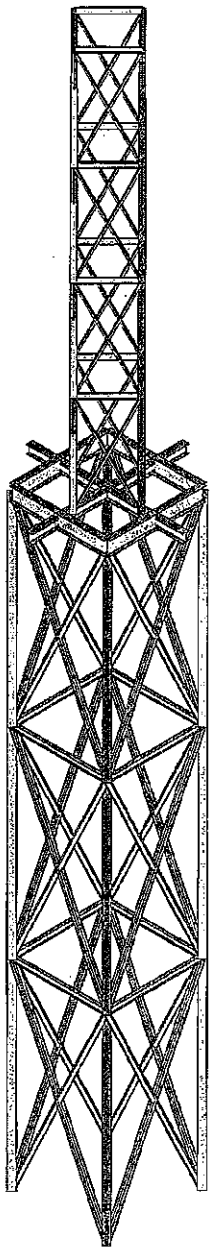
Topographic Inputs	
Topographic Feature:	N/A

Section Sets										No Ice	Ice Output	
Mount Components	Member Type	Length (in)	Side (Longest seeing wind) (in)	Other Side (in)	Calculated Dc, for ice weight (in)	Dc, for Ice weight (in)	Area Type (Round or Flat)	K_a	User's Wind Multiplier	Normal Wind Pressure (lb/ft^2)*	Normal Ice Wind Force (lb/ft^2)*	Ice Weight (lb/ft)*
Top Cap	Pipe	96.000	192	192		192.00	Round	0.90	0.60	28.85	3.29	397.88
Tower from 90'-100'	Pipe	120.000	192	192		192.00	Round	0.90	0.60	28.34	3.23	394.50
Tower from 80'-90'	Pipe	120.000	192	192		192.00	Round	0.90	0.60	27.69	3.15	390.10
Tower from 70'-80'	Pipe	120.000	192	192		192.00	Round	0.90	0.60	26.97	3.07	385.20
Tower from 60'-70'	Pipe	120.000	192	192		192.00	Round	0.90	0.60	26.17	2.98	379.69
Tower from 40'-60'	Pipe	240.000	192	192		192.00	Round	0.90	0.60	24.76	2.82	369.77
Tower from 20'-40'	Pipe	240.000	192	192		192.00	Round	0.90	0.60	22.23	2.53	351.22
Tower from 0'-20'	Pipe	240	192	192		192.00	Round	0.90	0.60	19.24	2.18	314.43

*All forces are unfactored.

Appurtenances							Shielding			No Ice		Ice Output	
Appurtenance Model	Loading Elevation (ft)	Height (in)	Front Width (in)	Side Depth (in)	Wt (lbs)	Type for Area	Front Shielding (%)	Side Shielding (%)	K_a and/or block shielding	Normal Wind Force (lbs)*	Wt (lbs) (no ice)*	Normal Wind Force (lbs) (w/ ice)*	Wt (lbs) (only ice)*
(0)									0.90				
(0)									0.90				
(0)									0.90				
(0)									0.90				
(0)									0.90				
(0)									0.90				
(0)									0.90				
(0)									0.90				
(0)									0.90				
(0)									0.90				

*All forces are unfactored.



GPD	800529 CT HAMDEN NORTH CAC	SK - 1
MKS		July 24, 2019 at 7:41 AM
2019777.800529.07		800529.rt3

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	No
Max Iterations for Wall Stiffness	3
Gravity Acceleration (ft/sec^2)	32.2
Wall Mesh Size (in)	24
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Standard Solver

Hot Rolled Steel Code	AISC 15th(360-16): LRFD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 14th(360-10): ASD
Cold Formed Steel Code	None
Wood Code	None
Wood Temperature	< 100F
Concrete Code	None
Masonry Code	ACI 530-13: ASD
Aluminum Code	AA ADM1-10: ASD - Building
Stainless Steel Code	AISC 14th(360-10): ASD
Adjust Stiffness?	Yes(Iterative)

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

(Global) Model Settings, Continued

Seismic Code	ASCE 7-10
Seismic Base Elevation (ft)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	1
Cd X	1
Rho Z	1
Rho X	1

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E..	Density[k/ft..	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A500-46	29000	11200	.295	.65	.49	46	1.2	58	1.1
2	A36	29000	11200	.295	.65	.49	36	1.5	58	1.2
3	A992-50	29000	11200	.295	.65	.49	50	1.5	65	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Ru...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	TWR_LEG_L1	HSS6x6x1/4	Column	Tube	A500-46	Typical	5.24	28.6	28.6	45.6
2	TWR_TOP_GIRT_L1	C6X10.5	Beam	Channel	A36	Typical	3.07	.86	15.1	.128
3	TWR_DIAG_L1	2L2x2x3/16x1/2	Column	None	A36	Typical	1.43	1.504	.545	.017
4	TWR_LEG_L2	HSS6x6x1/4	Column	Tube	A500-46	Typical	5.24	28.6	28.6	45.6
5	TWR_TOP_GIRT_L2	C6X10.5	Beam	Channel	A36	Typical	3.07	.86	15.1	.128
6	TWR_DIAG_L2	2L2x2x3/16x1/2	Column	None	A36	Typical	1.43	1.504	.545	.017
7	TWR_LEG_L3	HSS6x6x1/4	Column	Tube	A500-46	Typical	5.24	28.6	28.6	45.6
8	TWR_TOP_GIRT_L3	C6X10.5	Beam	Channel	A36	Typical	3.07	.86	15.1	.128
9	TWR_DIAG_L3	2L2x2x3/16x1/2	Column	None	A36	Typical	1.43	1.504	.545	.017
10	TWR_LEG_L4	HSS6x6x1/4	Column	Tube	A500-46	Typical	5.24	28.6	28.6	45.6
11	TWR_TOP_GIRT_L4	C6X10.5	Beam	Channel	A36	Typical	3.07	.86	15.1	.128
12	TWR_DIAG_L4	2L2x2x3/16x1/2	Column	None	A36	Typical	1.43	1.504	.545	.017
13	TWR_LEG_T1	HSS8x8x1/4	Column	Tube	A500-46	Typical	7.1	70.7	70.7	111
14	TWR_TOP_GIRT_T1	W16X45	Beam	Wide Flan..	A992-50	Typical	13.3	32.8	586	1.11
15	TWR_INNER_BRACE_T1	W10X33	Beam	Wide Flan..	A992-50	Typical	9.71	36.6	171	.583
16	TWR_DIAG_T1	2L4x4x3/8x1/2	Column	None	A36	Typical	5.719	19.74	8.717	.268
17	TWR_LEG_T2	HSS8x8x1/4	Column	Tube	A500-46	Typical	7.1	70.7	70.7	111
18	TWR_TOP_GIRT_T2	W6X12	Beam	Wide Flan..	A992-50	Typical	3.55	2.99	22.1	.09
19	TWR_DIAG_T2	2L4x4x3/8x1/2	Column	None	A36	Typical	5.719	19.74	8.717	.268
20	TWR_LEG_T3	HSS8x8x1/4	Column	Tube	A500-46	Typical	7.1	70.7	70.7	111
21	TWR_TOP_GIRT_T3	W6X12	Beam	Wide Flan..	A992-50	Typical	3.55	2.99	22.1	.09
22	TWR_DIAG_T3	2L4x4x3/8x1/2	Column	None	A36	Typical	5.719	19.74	8.717	.268

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Ru...
1	M9	N2	N3			TWR_DIAG_L1	Column	None	A36	Typical
2	M10	N4	N1			TWR_DIAG_L1	Column	None	A36	Typical
3	M11	N4	N5			TWR_DIAG_L1	Column	None	A36	Typical
4	M12	N6	N3			TWR_DIAG_L1	Column	None	A36	Typical
5	M13	N6	N7			TWR_DIAG_L1	Column	None	A36	Typical
6	M14	N8	N5			TWR_DIAG_L1	Column	None	A36	Typical
7	M15	N8	N1			TWR_DIAG_L1	Column	None	A36	Typical
8	M16	N2	N7			TWR_DIAG_L1	Column	None	A36	Typical
9	M25	N13	N4			TWR_DIAG_L2	Column	None	A36	Typical
10	M26	N14	N2			TWR_DIAG_L2	Column	None	A36	Typical
11	M27	N14	N6			TWR_DIAG_L2	Column	None	A36	Typical
12	M28	N15	N4			TWR_DIAG_L2	Column	None	A36	Typical
13	M29	N15	N8			TWR_DIAG_L2	Column	None	A36	Typical
14	M30	N16	N6			TWR_DIAG_L2	Column	None	A36	Typical
15	M31	N16	N2			TWR_DIAG_L2	Column	None	A36	Typical
16	M32	N13	N8			TWR_DIAG_L2	Column	None	A36	Typical
17	M41	N21	N14			TWR_DIAG_L3	Column	None	A36	Typical
18	M42	N22	N13			TWR_DIAG_L3	Column	None	A36	Typical
19	M43	N22	N15			TWR_DIAG_L3	Column	None	A36	Typical
20	M44	N23	N14			TWR_DIAG_L3	Column	None	A36	Typical
21	M45	N23	N16			TWR_DIAG_L3	Column	None	A36	Typical
22	M46	N24	N15			TWR_DIAG_L3	Column	None	A36	Typical
23	M47	N24	N13			TWR_DIAG_L3	Column	None	A36	Typical
24	M48	N21	N16			TWR_DIAG_L3	Column	None	A36	Typical
25	M57	N29	N22			TWR_DIAG_L4	Column	None	A36	Typical
26	M58	N30	N21			TWR_DIAG_L4	Column	None	A36	Typical
27	M59	N30	N23			TWR_DIAG_L4	Column	None	A36	Typical
28	M60	N31	N22			TWR_DIAG_L4	Column	None	A36	Typical
29	M61	N31	N24			TWR_DIAG_L4	Column	None	A36	Typical
30	M62	N32	N23			TWR_DIAG_L4	Column	None	A36	Typical
31	M63	N32	N21			TWR_DIAG_L4	Column	None	A36	Typical
32	M64	N29	N24			TWR_DIAG_L4	Column	None	A36	Typical
33	M73	N38	N39			TWR_DIAG_T1	Column	None	A36	Typical
34	M74	N40	N37			TWR_DIAG_T1	Column	None	A36	Typical
35	M75	N40	N41			TWR_DIAG_T1	Column	None	A36	Typical
36	M76	N42	N39			TWR_DIAG_T1	Column	None	A36	Typical
37	M77	N42	N43			TWR_DIAG_T1	Column	None	A36	Typical
38	M78	N44	N41			TWR_DIAG_T1	Column	None	A36	Typical
39	M79	N44	N37			TWR_DIAG_T1	Column	None	A36	Typical
40	M80	N38	N43			TWR_DIAG_T1	Column	None	A36	Typical
41	M89	N49	N40			TWR_DIAG_T2	Column	None	A36	Typical
42	M90	N50	N38		360	TWR_DIAG_T2	Column	None	A36	Typical
43	M91	N50	N42			TWR_DIAG_T2	Column	None	A36	Typical
44	M92	N51	N40		360	TWR_DIAG_T2	Column	None	A36	Typical
45	M93	N51	N44			TWR_DIAG_T2	Column	None	A36	Typical
46	M94	N52	N42		360	TWR_DIAG_T2	Column	None	A36	Typical
47	M95	N52	N38			TWR_DIAG_T2	Column	None	A36	Typical
48	M96	N49	N44		360	TWR_DIAG_T2	Column	None	A36	Typical
49	M105	N57	N50			TWR_DIAG_T3	Column	None	A36	Typical
50	M106	N58	N49			TWR_DIAG_T3	Column	None	A36	Typical
51	M107	N58	N51			TWR_DIAG_T3	Column	None	A36	Typical
52	M108	N59	N50			TWR_DIAG_T3	Column	None	A36	Typical
53	M109	N59	N52			TWR_DIAG_T3	Column	None	A36	Typical
54	M110	N60	N51			TWR_DIAG_T3	Column	None	A36	Typical
55	M111	N60	N49			TWR_DIAG_T3	Column	None	A36	Typical
56	M112	N57	N52			TWR_DIAG_T3	Column	None	A36	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Ru...
57	M1	N2	N1		45	TWR_LEG_L1	Column	Tube	A500-46	Typical
58	M2	N4	N3		135	TWR_LEG_L1	Column	Tube	A500-46	Typical
59	M3	N6	N5		225	TWR_LEG_L1	Column	Tube	A500-46	Typical
60	M4	N8	N7		315	TWR_LEG_L1	Column	Tube	A500-46	Typical
61	M17	N13	N2		45	TWR_LEG_L2	Column	Tube	A500-46	Typical
62	M18	N14	N4		135	TWR_LEG_L2	Column	Tube	A500-46	Typical
63	M19	N15	N6		225	TWR_LEG_L2	Column	Tube	A500-46	Typical
64	M20	N16	N8		315	TWR_LEG_L2	Column	Tube	A500-46	Typical
65	M33	N21	N13		45	TWR_LEG_L3	Column	Tube	A500-46	Typical
66	M34	N22	N14		135	TWR_LEG_L3	Column	Tube	A500-46	Typical
67	M35	N23	N15		225	TWR_LEG_L3	Column	Tube	A500-46	Typical
68	M36	N24	N16		315	TWR_LEG_L3	Column	Tube	A500-46	Typical
69	M49	N29	N21		45	TWR_LEG_L4	Column	Tube	A500-46	Typical
70	M50	N30	N22		135	TWR_LEG_L4	Column	Tube	A500-46	Typical
71	M51	N31	N23		225	TWR_LEG_L4	Column	Tube	A500-46	Typical
72	M52	N32	N24		315	TWR_LEG_L4	Column	Tube	A500-46	Typical
73	M65	N38	N37		45	TWR_LEG_T1	Column	Tube	A500-46	Typical
74	M66	N40	N39		135	TWR_LEG_T1	Column	Tube	A500-46	Typical
75	M67	N42	N41		225	TWR_LEG_T1	Column	Tube	A500-46	Typical
76	M68	N44	N43		315	TWR_LEG_T1	Column	Tube	A500-46	Typical
77	M81	N49	N38		45	TWR_LEG_T2	Column	Tube	A500-46	Typical
78	M82	N50	N40		135	TWR_LEG_T2	Column	Tube	A500-46	Typical
79	M83	N51	N42		225	TWR_LEG_T2	Column	Tube	A500-46	Typical
80	M84	N52	N44		315	TWR_LEG_T2	Column	Tube	A500-46	Typical
81	M97	N57	N49		45	TWR_LEG_T3	Column	Tube	A500-46	Typical
82	M98	N58	N50		135	TWR_LEG_T3	Column	Tube	A500-46	Typical
83	M99	N59	N51		225	TWR_LEG_T3	Column	Tube	A500-46	Typical
84	M100	N60	N52		315	TWR_LEG_T3	Column	Tube	A500-46	Typical
85	M5	N1	N3		180	TWR_TOP_GIRT_L1	Beam	Channel	A36	Typical
86	M6	N3	N5		180	TWR_TOP_GIRT_L1	Beam	Channel	A36	Typical
87	M7	N5	N7		180	TWR_TOP_GIRT_L1	Beam	Channel	A36	Typical
88	M8	N7	N1		180	TWR_TOP_GIRT_L1	Beam	Channel	A36	Typical
89	M21	N2	N4		180	TWR_TOP_GIRT_L2	Beam	Channel	A36	Typical
90	M22	N4	N6		180	TWR_TOP_GIRT_L2	Beam	Channel	A36	Typical
91	M23	N6	N8		180	TWR_TOP_GIRT_L2	Beam	Channel	A36	Typical
92	M24	N8	N2		180	TWR_TOP_GIRT_L2	Beam	Channel	A36	Typical
93	M37	N13	N14		180	TWR_TOP_GIRT_L3	Beam	Channel	A36	Typical
94	M38	N14	N15		180	TWR_TOP_GIRT_L3	Beam	Channel	A36	Typical
95	M39	N15	N16		180	TWR_TOP_GIRT_L3	Beam	Channel	A36	Typical
96	M40	N16	N13		180	TWR_TOP_GIRT_L3	Beam	Channel	A36	Typical
97	M53	N21	N22		180	TWR_TOP_GIRT_L4	Beam	Channel	A36	Typical
98	M54	N22	N23		180	TWR_TOP_GIRT_L4	Beam	Channel	A36	Typical
99	M55	N23	N24		180	TWR_TOP_GIRT_L4	Beam	Channel	A36	Typical
100	M56	N24	N21		180	TWR_TOP_GIRT_L4	Beam	Channel	A36	Typical
101	M69	N37	N39			TWR_TOP_GIRT_T1	Beam	Wide Flange	A992-50	Typical
102	M70	N39	N41			TWR_TOP_GIRT_T1	Beam	Wide Flange	A992-50	Typical
103	M71	N41	N43			TWR_TOP_GIRT_T1	Beam	Wide Flange	A992-50	Typical
104	M72	N43	N37			TWR_TOP_GIRT_T1	Beam	Wide Flange	A992-50	Typical
105	M85	N38	N40		360	TWR_TOP_GIRT_T2	Beam	Wide Flange	A992-50	Typical
106	M86	N40	N42		360	TWR_TOP_GIRT_T2	Beam	Wide Flange	A992-50	Typical
107	M87	N42	N44		360	TWR_TOP_GIRT_T2	Beam	Wide Flange	A992-50	Typical
108	M88	N44	N38		360	TWR_TOP_GIRT_T2	Beam	Wide Flange	A992-50	Typical
109	M101	N49	N50			TWR_TOP_GIRT_T3	Beam	Wide Flange	A992-50	Typical
110	M102	N50	N51			TWR_TOP_GIRT_T3	Beam	Wide Flange	A992-50	Typical
111	M103	N51	N52			TWR_TOP_GIRT_T3	Beam	Wide Flange	A992-50	Typical
112	M104	N52	N49			TWR_TOP_GIRT_T3	Beam	Wide Flange	A992-50	Typical
113	M113	N67	N65			TWR_INNER_BRACE_T1	Beam	Wide Flange	A992-50	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Ru...
114	M114	N65	N69			TWR_INNER_BRACE_T1	Beam	Wide Flange	A992-50	Typical
115	M115	N66	N65			TWR_INNER_BRACE_T1	Beam	Wide Flange	A992-50	Typical
116	M116	N65	N68			TWR_INNER_BRACE_T1	Beam	Wide Flange	A992-50	Typical

Hot Rolled Steel Design Parameters

	Label	Shape	Length...	Lbyy[ft]	Lbzz[ft]	Lcomp to...	Lcomp bo...	L-tor...	Kyy	Kzz	Cb	Funct...
1	M9	TWR_DIAG_L1	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
2	M10	TWR_DIAG_L1	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
3	M11	TWR_DIAG_L1	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
4	M12	TWR_DIAG_L1	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
5	M13	TWR_DIAG_L1	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
6	M14	TWR_DIAG_L1	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
7	M15	TWR_DIAG_L1	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
8	M16	TWR_DIAG_L1	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
9	M25	TWR_DIAG_L2	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
10	M26	TWR_DIAG_L2	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
11	M27	TWR_DIAG_L2	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
12	M28	TWR_DIAG_L2	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
13	M29	TWR_DIAG_L2	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
14	M30	TWR_DIAG_L2	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
15	M31	TWR_DIAG_L2	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
16	M32	TWR_DIAG_L2	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
17	M41	TWR_DIAG_L3	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
18	M42	TWR_DIAG_L3	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
19	M43	TWR_DIAG_L3	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
20	M44	TWR_DIAG_L3	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
21	M45	TWR_DIAG_L3	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
22	M46	TWR_DIAG_L3	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
23	M47	TWR_DIAG_L3	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
24	M48	TWR_DIAG_L3	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
25	M57	TWR_DIAG_L4	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
26	M58	TWR_DIAG_L4	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
27	M59	TWR_DIAG_L4	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
28	M60	TWR_DIAG_L4	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
29	M61	TWR_DIAG_L4	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
30	M62	TWR_DIAG_L4	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
31	M63	TWR_DIAG_L4	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
32	M64	TWR_DIAG_L4	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
33	M73	TWR_DIAG_T1	22.151	10.02	10.02	10.02	10.02	10.02	1.25	1		Lateral
34	M74	TWR_DIAG_T1	22.151	10.02	10.02	10.02	10.02	10.02	1.25	1		Lateral
35	M75	TWR_DIAG_T1	22.151	10.02	10.02	10.02	10.02	10.02	1.25	1		Lateral
36	M76	TWR_DIAG_T1	22.151	10.02	10.02	10.02	10.02	10.02	1.25	1		Lateral
37	M77	TWR_DIAG_T1	22.151	10.02	10.02	10.02	10.02	10.02	1.25	1		Lateral
38	M78	TWR_DIAG_T1	22.151	10.02	10.02	10.02	10.02	10.02	1.25	1		Lateral
39	M79	TWR_DIAG_T1	22.151	10.02	10.02	10.02	10.02	10.02	1.25	1		Lateral
40	M80	TWR_DIAG_T1	22.151	10.02	10.02	10.02	10.02	10.02	1.25	1		Lateral
41	M89	TWR_DIAG_T2	22.151	10.02	10.02	10.02	10.02	10.02	1.25	1		Lateral
42	M90	TWR_DIAG_T2	22.151	10.02	10.02	10.02	10.02	10.02	1.25	1		Lateral
43	M91	TWR_DIAG_T2	22.151	10.02	10.02	10.02	10.02	10.02	1.25	1		Lateral
44	M92	TWR_DIAG_T2	22.151	10.02	10.02	10.02	10.02	10.02	1.25	1		Lateral
45	M93	TWR_DIAG_T2	22.151	10.02	10.02	10.02	10.02	10.02	1.25	1		Lateral
46	M94	TWR_DIAG_T2	22.151	10.02	10.02	10.02	10.02	10.02	1.25	1		Lateral
47	M95	TWR_DIAG_T2	22.151	10.02	10.02	10.02	10.02	10.02	1.25	1		Lateral
48	M96	TWR_DIAG_T2	22.151	10.02	10.02	10.02	10.02	10.02	1.25	1		Lateral
49	M105	TWR_DIAG_T3	22.151	10.02	10.02	10.02	10.02	10.02	1.25	1		Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length...	Lbyy[ft]	Lbzz[ft]	Lcomp to...	Lcomp bo...	L-tor...	Kyy	Kzz	Cb	Funct...
50	M106	TWR_DIAG_T3	22.151	10.02	10.02	10.02	10.02	10.02	1.25	1		Latera
51	M107	TWR_DIAG_T3	22.151	10.02	10.02	10.02	10.02	10.02	1.25	1		Latera
52	M108	TWR_DIAG_T3	22.151	10.02	10.02	10.02	10.02	10.02	1.25	1		Latera
53	M109	TWR_DIAG_T3	22.151	10.02	10.02	10.02	10.02	10.02	1.25	1		Latera
54	M110	TWR_DIAG_T3	22.151	10.02	10.02	10.02	10.02	10.02	1.25	1		Latera
55	M111	TWR_DIAG_T3	22.151	10.02	10.02	10.02	10.02	10.02	1.25	1		Latera
56	M112	TWR_DIAG_T3	22.151	10.02	10.02	10.02	10.02	10.02	1.25	1		Latera
57	M1	TWR_LEG_L1	10	10	10	10	10	10	1	1		Latera
58	M2	TWR_LEG_L1	10	10	10	10	10	10	1	1		Latera
59	M3	TWR_LEG_L1	10	10	10	10	10	10	1	1		Latera
60	M4	TWR_LEG_L1	10	10	10	10	10	10	1	1		Latera
61	M17	TWR_LEG_L2	10	10	10	10	10	10	1	1		Latera
62	M18	TWR_LEG_L2	10	10	10	10	10	10	1	1		Latera
63	M19	TWR_LEG_L2	10	10	10	10	10	10	1	1		Latera
64	M20	TWR_LEG_L2	10	10	10	10	10	10	1	1		Latera
65	M33	TWR_LEG_L3	10	10	10	10	10	10	1	1		Latera
66	M34	TWR_LEG_L3	10	10	10	10	10	10	1	1		Latera
67	M35	TWR_LEG_L3	10	10	10	10	10	10	1	1		Latera
68	M36	TWR_LEG_L3	10	10	10	10	10	10	1	1		Latera
69	M49	TWR_LEG_L4	10	10	10	10	10	10	1	1		Latera
70	M50	TWR_LEG_L4	10	10	10	10	10	10	1	1		Latera
71	M51	TWR_LEG_L4	10	10	10	10	10	10	1	1		Latera
72	M52	TWR_LEG_L4	10	10	10	10	10	10	1	1		Latera
73	M65	TWR_LEG_T1	20	20	20	20	20	20	1	1		Latera
74	M66	TWR_LEG_T1	20	20	20	20	20	20	1	1		Latera
75	M67	TWR_LEG_T1	20	20	20	20	20	20	1	1		Latera
76	M68	TWR_LEG_T1	20	20	20	20	20	20	1	1		Latera
77	M81	TWR_LEG_T2	20	20	20	20	20	20	1	1		Latera
78	M82	TWR_LEG_T2	20	20	20	20	20	20	1	1		Latera
79	M83	TWR_LEG_T2	20	20	20	20	20	20	1	1		Latera
80	M84	TWR_LEG_T2	20	20	20	20	20	20	1	1		Latera
81	M97	TWR_LEG_T3	20	20	20	20	20	20	1	1		Latera
82	M98	TWR_LEG_T3	20	20	20	20	20	20	1	1		Latera
83	M99	TWR_LEG_T3	20	20	20	20	20	20	1	1		Latera
84	M100	TWR_LEG_T3	20	20	20	20	20	20	1	1		Latera
85	M5	TWR_TOP_GIRT_L1	4.833	4.33	4.33	4.33	4.33	4.33	1	1		Latera
86	M6	TWR_TOP_GIRT_L1	4.833	4.33	4.33	4.33	4.33	4.33	1	1		Latera
87	M7	TWR_TOP_GIRT_L1	4.833	4.33	4.33	4.33	4.33	4.33	1	1		Latera
88	M8	TWR_TOP_GIRT_L1	4.833	4.33	4.33	4.33	4.33	4.33	1	1		Latera
89	M21	TWR_TOP_GIRT_L2	4.833	4.33	4.33	4.33	4.33	4.33	1	1		Latera
90	M22	TWR_TOP_GIRT_L2	4.833	4.33	4.33	4.33	4.33	4.33	1	1		Latera
91	M23	TWR_TOP_GIRT_L2	4.833	4.33	4.33	4.33	4.33	4.33	1	1		Latera
92	M24	TWR_TOP_GIRT_L2	4.833	4.33	4.33	4.33	4.33	4.33	1	1		Latera
93	M37	TWR_TOP_GIRT_L3	4.833	4.33	4.33	4.33	4.33	4.33	1	1		Latera
94	M38	TWR_TOP_GIRT_L3	4.833	4.33	4.33	4.33	4.33	4.33	1	1		Latera
95	M39	TWR_TOP_GIRT_L3	4.833	4.33	4.33	4.33	4.33	4.33	1	1		Latera
96	M40	TWR_TOP_GIRT_L3	4.833	4.33	4.33	4.33	4.33	4.33	1	1		Latera
97	M53	TWR_TOP_GIRT_L4	4.833	4.33	4.33	4.33	4.33	4.33	1	1		Latera
98	M54	TWR_TOP_GIRT_L4	4.833	4.33	4.33	4.33	4.33	4.33	1	1		Latera
99	M55	TWR_TOP_GIRT_L4	4.833	4.33	4.33	4.33	4.33	4.33	1	1		Latera
100	M56	TWR_TOP_GIRT_L4	4.833	4.33	4.33	4.33	4.33	4.33	1	1		Latera
101	M69	TWR_TOP_GIRT_T1	9.521	8.85	8.85	8.85	8.85	8.85	1	1		Latera
102	M70	TWR_TOP_GIRT_T1	9.521	8.85	8.85	8.85	8.85	8.85	1	1		Latera
103	M71	TWR_TOP_GIRT_T1	9.521	8.85	8.85	8.85	8.85	8.85	1	1		Latera
104	M72	TWR_TOP_GIRT_T1	9.521	8.85	8.85	8.85	8.85	8.85	1	1		Latera
105	M85	TWR_TOP_GIRT_T2	9.521	8.85	8.85	8.85	8.85	8.85	1	1		Latera
106	M86	TWR_TOP_GIRT_T2	9.521	8.85	8.85	8.85	8.85	8.85	1	1		Latera

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length...	Lbyy[ft]	Lbzz[ft]	Lcomp to...	Lcomp bo...	L-tor...	Kyy	Kzz	Cb	Funct...
107	M87	TWR_TOP_GIRT_T2	9.521	8.85	8.85	8.85	8.85	8.85	1	1		Lateral
108	M88	TWR_TOP_GIRT_T2	9.521	8.85	8.85	8.85	8.85	8.85	1	1		Lateral
109	M101	TWR_TOP_GIRT_T3	9.521	8.85	8.85	8.85	8.85	8.85	1	1		Lateral
110	M102	TWR_TOP_GIRT_T3	9.521	8.85	8.85	8.85	8.85	8.85	1	1		Lateral
111	M103	TWR_TOP_GIRT_T3	9.521	8.85	8.85	8.85	8.85	8.85	1	1		Lateral
112	M104	TWR_TOP_GIRT_T3	9.521	8.85	8.85	8.85	8.85	8.85	1	1		Lateral
113	M113	TWR_INNER_BRACE_T1	7.813	7.813	7.813	7.813	7.813	7.813	2.1	2.1		Lateral
114	M114	TWR_INNER_BRACE_T1	7.813	7.813	7.813	7.813	7.813	7.813	2.1	2.1		Lateral
115	M115	TWR_INNER_BRACE_T1	7.813	7.813	7.813	7.813	7.813	7.813	2.1	2.1		Lateral
116	M116	TWR_INNER_BRACE_T1	7.813	7.813	7.813	7.813	7.813	7.813	2.1	2.1		Lateral

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Member)	Surface...
1	Dead	None		-1		56	240	60	4	
2	No Ice Wind 0 deg	None				64				
3	No Ice Wind 45 deg	None				128				
4	No Ice Wind 90 deg	None								
5	Ice	None				56	260	172		
6	Temperature Drop	None						117		
7	Ice Wind 0 deg	None				64				
8	Ice Wind 45 deg	None				128				
9	Ice Wind 90 deg	None								
10	Service Wind 0 deg	None								
11	Service Wind 45 deg	None								
12	Service Wind 90 deg	None								
13	Live Load	None							4	
15	BLC 1 Transient Area Loads	None						96		
16	BLC 13 Transient Area Loads	None						96		

Load Combinations

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
1	Dead Only	Yes	Y		1	1.4	13	1	14	1	0		0		0		0		0		0	
2	Dead+Wind 0 deg - No I...	Yes	Y		1	1.2	2	1							0		0		0		0	
3	Dead+Wind 45 deg - No...	Yes	Y		1	1.2	3	1	13	1	14	1	0		0		0		0		0	
4	Dead+Wind 90 deg - No...		Y		1	1	4	1	13	1	14	1	0		0		0		0		0	
5	Dead+Ice+Temp	Yes	Y		1	1	5	1	6	1	13	1	14	1	0		0		0		0	
6	Dead+Wind 0 deg+Ice+...	Yes	Y		1	1.2	7	1	5	1	6	1	13	1	14	1	0		0		0	
7	Dead+Wind 45 deg+Ice...	Yes	Y		1	1.2	8	1	5	1	6	1	13	1	14	1	0		0		0	
8	Dead+Wind 90 deg+Ice...		Y		1	1	9	1	5	1	6	1	13	1	14	1	0		0		0	
9	Dead+Wind 0 deg - Serv...		Y		1	1	10	1	13	1	14	1	0		0		0		0		0	
10	Dead+Wind 45 deg - Se...		Y		1	1	11	1	13	1	14	1	0		0		0		0		0	
11	Dead+Wind 90 deg - Se...		Y		1	1	12	1	13	1	14	1	0		0		0		0		0	

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N57	max	5.511	3	25.235	7	11.173	2	0	7	0	5	0	7
2		min	-5.97	2	-78.019	2	-1.94	1	0	1	0	3	0	1
3	N58	max	-1.791	5	142.846	3	-1.8	5	0	7	0	5	0	7
4		min	-15.84	3	17.609	1	-15.883	3	0	1	0	2	0	1
5	N59	max	1.892	3	103.069	2	14.156	2	0	7	0	3	0	7
6		min	-8.813	2	15.376	3	1.8	5	0	1	0	5	0	1
7	N60	max	1.991	1	23.413	5	1.94	1	0	7	0	2	0	7

Envelope Joint Reactions (Continued)

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
8		min	-12.526	3	-113.778	3	-12.57	3	0	1	0	7	0	1
9	Totals:	max	0	5	101.7	7	0	6						
10		min	-29.647	2	50.099	2	-20.964	3						

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

	Member	Shape	Code C...	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-...	phi*Mn z-...	Cb	Eqn
1	M9	2L2x2x3/16x1...	.145	0	5	.003	5.553	y	2	29.85	46.322	2.888	1.47	1	H1-1b*
2	M10	2L2x2x3/16x1...	.160	0	7	.003	5.553	y	2	29.85	46.322	2.888	1.47	1	H1-1b*
3	M11	2L2x2x3/16x1...	.072	0	2	.003	5.553	y	2	29.85	46.322	2.888	1.47	1	H1-1b*
4	M12	2L2x2x3/16x1...	.023	5.553	6	.003	5.553	y	2	29.85	46.322	2.888	1.47	1	H1-1b
5	M13	2L2x2x3/16x1...	.087	0	3	.003	5.553	y	2	29.85	46.322	2.888	1.47	1	H1-1b*
6	M14	2L2x2x3/16x1...	.032	5.553	3	.003	5.553	y	2	29.85	46.322	2.888	1.47	1	H1-1b
7	M15	2L2x2x3/16x1...	.151	0	5	.003	5.553	y	2	29.85	46.322	2.888	1.47	1	H1-1b*
8	M16	2L2x2x3/16x1...	.153	0	6	.003	5.553	y	2	29.85	46.322	2.888	1.47	1	H1-1b*
9	M25	2L2x2x3/16x1...	.052	5.553	3	.003	5.553	y	2	29.85	46.322	2.888	1.47	1	H1-1b
10	M26	2L2x2x3/16x1...	.157	0	3	.003	5.553	y	2	29.85	46.322	2.888	1.47	1	H1-1b*
11	M27	2L2x2x3/16x1...	.145	0	2	.003	5.553	y	2	29.85	46.322	2.888	1.47	1	H1-1b*
12	M28	2L2x2x3/16x1...	.062	0	3	.003	5.553	y	2	29.85	46.322	2.888	1.47	1	H1-1b*
13	M29	2L2x2x3/16x1...	.158	0	3	.003	5.553	y	2	29.85	46.322	2.888	1.47	1	H1-1b*
14	M30	2L2x2x3/16x1...	.052	5.553	3	.003	5.553	y	2	29.85	46.322	2.888	1.47	1	H1-1b
15	M31	2L2x2x3/16x1...	.049	5.553	2	.003	5.553	y	2	29.85	46.322	2.888	1.47	1	H1-1b
16	M32	2L2x2x3/16x1...	.081	0	2	.003	5.553	y	2	29.85	46.322	2.888	1.47	1	H1-1b*
17	M41	2L2x2x3/16x1...	.073	5.553	3	.003	5.553	y	2	29.85	46.322	2.888	1.47	1	H1-1b
18	M42	2L2x2x3/16x1...	.236	2.777	2	.003	5.553	y	2	29.85	46.322	2.888	1.47	1	H1-1a
19	M43	2L2x2x3/16x1...	.235	2.777	2	.003	5.553	y	2	29.85	46.322	2.888	1.47	1	H1-1a
20	M44	2L2x2x3/16x1...	.124	0	3	.003	5.553	y	2	29.85	46.322	2.888	1.47	1	H1-1b*
21	M45	2L2x2x3/16x1...	.231	2.892	3	.003	5.553	y	2	29.85	46.322	2.888	1.64	1	H1-1a
22	M46	2L2x2x3/16x1...	.077	5.553	2	.003	5.553	y	2	29.85	46.322	2.888	1.47	1	H1-1b
23	M47	2L2x2x3/16x1...	.076	5.553	2	.003	5.553	y	2	29.85	46.322	2.888	1.47	1	H1-1b
24	M48	2L2x2x3/16x1...	.089	0	2	.003	5.553	y	2	29.85	46.322	2.888	1.47	1	H1-1b*
25	M57	2L2x2x3/16x1...	.103	5.553	3	.005	5.553	y	2	29.85	46.322	2.888	1.47	1	H1-1b
26	M58	2L2x2x3/16x1...	.315	5.553	3	.003	0	y	2	29.85	46.322	2.888	1.64	1	H1-1a
27	M59	2L2x2x3/16x1...	.289	5.553	2	.005	0	y	3	29.85	46.322	2.888	1.64	1	H1-1a
28	M60	2L2x2x3/16x1...	.116	0	3	.005	0	y	3	29.85	46.322	2.888	1.47	1	H1-1b*
29	M61	2L2x2x3/16x1...	.318	5.553	3	.004	5.553	y	2	29.85	46.322	2.888	1.64	1	H1-1a
30	M62	2L2x2x3/16x1...	.106	5.553	2	.003	5.553	y	2	29.85	46.322	2.888	1.47	1	H1-1b
31	M63	2L2x2x3/16x1...	.106	5.553	2	.004	5.553	y	3	29.85	46.322	2.888	1.47	1	H1-1b
32	M64	2L2x2x3/16x1...	.151	0	2	.004	5.553	y	3	29.85	46.322	2.888	1.47	1	H1-1b*
33	M73	2L4x4x3/8x1/2	.045	11.075	2	.002	11.075	y	6	112.46	185.287	20.065	11.621	1	H1-1b
34	M74	2L4x4x3/8x1/2	.155	0	3	.002	11.075	y	6	112.46	185.287	20.065	11.621	1	H1-1b*
35	M75	2L4x4x3/8x1/2	.154	0	3	.002	11.075	y	6	112.46	185.287	20.065	11.621	1	H1-1b*
36	M76	2L4x4x3/8x1/2	.111	0	2	.002	11.075	y	7	112.46	185.287	20.065	11.621	1	H1-1b*
37	M77	2L4x4x3/8x1/2	.111	0	2	.002	11.075	y	7	112.46	185.287	20.065	11.621	1	H1-1b*
38	M78	2L4x4x3/8x1/2	.053	11.075	3	.002	11.075	y	6	112.46	185.287	20.065	11.621	1	H1-1b
39	M79	2L4x4x3/8x1/2	.053	11.075	3	.002	11.075	y	7	112.46	185.287	20.065	11.621	1	H1-1b
40	M80	2L4x4x3/8x1/2	.043	0	7	.002	11.075	y	6	112.46	185.287	20.065	11.621	1	H1-1b*
41	M89	2L4x4x3/8x1/2	.058	11.075	2	.002	11.075	y	3	112.46	185.287	20.065	11.621	1	H1-1b
42	M90	2L4x4x3/8x1/2	.234	5.538	3	.002	11.075	y	7	112.46	185.287	20.065	11.621	1	H1-1a
43	M91	2L4x4x3/8x1/2	.235	5.538	3	.002	11.075	y	6	112.46	185.287	20.065	11.621	1	H1-1a
44	M92	2L4x4x3/8x1/2	.179	0	2	.002	11.075	y	3	112.46	185.287	20.065	11.621	1	H1-1b*
45	M93	2L4x4x3/8x1/2	.143	0	2	.002	11.075	y	6	112.46	185.287	20.065	13.044	1	H1-1b*
46	M94	2L4x4x3/8x1/2	.077	11.075	3	.002	11.075	y	3	112.46	185.287	20.065	11.621	1	H1-1b
47	M95	2L4x4x3/8x1/2	.077	11.075	3	.002	11.075	y	3	112.46	185.287	20.065	11.621	1	H1-1b
48	M96	2L4x4x3/8x1/2	.059	11.075	2	.002	11.075	y	6	112.46	185.287	20.065	11.621	1	H1-1b
49	M105	2L4x4x3/8x1/2	.122	0	3	.002	11.075	y	3	112.46	185.287	20.065	11.621	1	H1-1b*

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

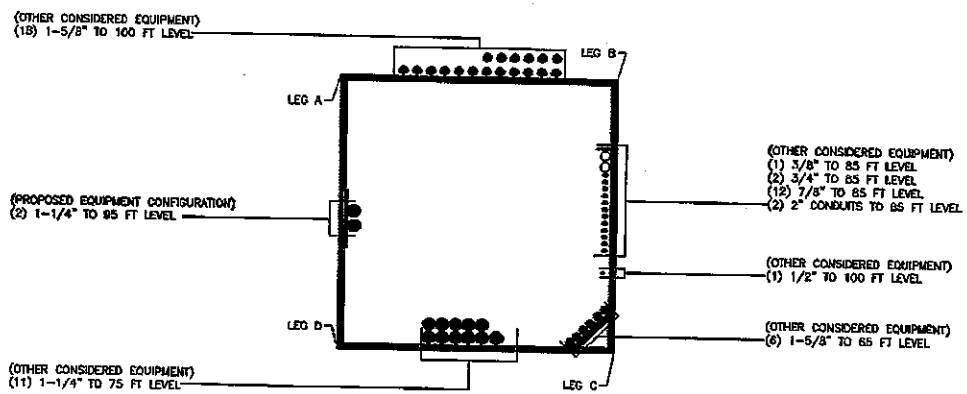
	Member	Shape	Code C...	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-...	phi*Mn z-...	Cb	Eqn
50	M106	2L4x4x3/8x1/2	.337	5.999	3	.002	11.075	y	7	112.46	185.287	20.065	11.621	1	H1-1a
51	M107	2L4x4x3/8x1/2	.337	5.999	3	.002	11.075	y	6	112.46	185.287	20.065	11.621	1	H1-1a
52	M108	2L4x4x3/8x1/2	.311	11.075	2	.002	11.075	y	3	112.46	185.287	20.065	11.621	1	H1-1a
53	M109	2L4x4x3/8x1/2	.175	0	2	.002	11.075	y	6	112.46	185.287	20.065	13.044	1	H1-1b*
54	M110	2L4x4x3/8x1/2	.108	11.075	3	.002	11.075	y	6	112.46	185.287	20.065	11.621	1	H1-1b
55	M111	2L4x4x3/8x1/2	.108	11.075	3	.002	11.075	y	7	112.46	185.287	20.065	11.621	1	H1-1b
56	M112	2L4x4x3/8x1/2	.087	11.075	2	.002	11.075	y	6	112.46	185.287	20.065	11.621	1	H1-1b
57	M1	HSS6x6x1/4	.026	0	7	.000	0	z	6	181.658	216.936	38.64	38.64	1	H1-1b
58	M2	HSS6x6x1/4	.020	0	2	.000	0	y	7	181.658	216.936	38.64	38.64	1	H1-1b*
59	M3	HSS6x6x1/4	.016	0	3	.000	0	z	2	181.658	216.936	38.64	38.64	1	H1-1b*
60	M4	HSS6x6x1/4	.010	0	6	.000	0	z	7	181.658	216.936	38.64	38.64	1	H1-1b
61	M17	HSS6x6x1/4	.027	0	6	.001	0	z	6	181.658	216.936	38.64	38.64	1	H1-1b*
62	M18	HSS6x6x1/4	.063	0	2	.001	0	y	7	181.658	216.936	38.64	38.64	1	H1-1b*
63	M19	HSS6x6x1/4	.051	0	3	.000	0	z	2	181.658	216.936	38.64	38.64	1	H1-1b*
64	M20	HSS6x6x1/4	.029	0	5	.001	0	z	7	181.658	216.936	38.64	38.64	1	H1-1b*
65	M33	HSS6x6x1/4	.040	0	3	.001	0	z	3	181.658	216.936	38.64	38.64	1	H1-1b
66	M34	HSS6x6x1/4	.126	0	2	.001	0	y	2	181.658	216.936	38.64	38.64	1	H1-1b*
67	M35	HSS6x6x1/4	.100	0	3	.001	0	z	3	181.658	216.936	38.64	38.64	1	H1-1b*
68	M36	HSS6x6x1/4	.061	0	2	.001	0	y	2	181.658	216.936	38.64	38.64	1	H1-1b
69	M49	HSS6x6x1/4	.068	10	3	.001	0	z	3	181.658	216.936	38.64	38.64	1	H1-1b
70	M50	HSS6x6x1/4	.245	10	2	.001	0	y	3	181.658	216.936	38.64	38.64	1	H1-1a
71	M51	HSS6x6x1/4	.177	0	3	.001	0	z	3	181.658	216.936	38.64	38.64	1	H1-1b*
72	M52	HSS6x6x1/4	.102	10	2	.001	0	y	3	181.658	216.936	38.64	38.64	1	H1-1b
73	M65	HSS8x8x1/4	.042	0	7	.000	0	z	3	199.192	293.94	66.288	66.288	1	H1-1b*
74	M66	HSS8x8x1/4	.158	0	3	.000	0	y	3	199.192	293.94	66.288	66.288	1	H1-1b*
75	M67	HSS8x8x1/4	.113	0	2	.000	0	z	3	199.192	293.94	66.288	66.288	1	H1-1b*
76	M68	HSS8x8x1/4	.042	0	3	.000	0	y	3	199.192	293.94	66.288	66.288	1	H1-1b
77	M81	HSS8x8x1/4	.065	0	2	.000	0	z	3	199.192	293.94	66.288	66.288	1	H1-1b
78	M82	HSS8x8x1/4	.281	0	3	.000	0	z	2	199.192	293.94	66.288	66.288	1	H1-1a
79	M83	HSS8x8x1/4	.195	0	2	.000	0	z	3	199.192	293.94	66.288	66.288	1	H1-1b*
80	M84	HSS8x8x1/4	.081	0	3	.000	0	y	3	199.192	293.94	66.288	66.288	1	H1-1b
81	M97	HSS8x8x1/4	.092	20	2	.001	0	z	3	199.192	293.94	66.288	66.288	1	H1-1b
82	M98	HSS8x8x1/4	.391	20	3	.000	0	y	3	199.192	293.94	66.288	66.288	1	H1-1a
83	M99	HSS8x8x1/4	.288	20	2	.001	0	z	3	199.192	293.94	66.288	66.288	1	H1-1a
84	M100	HSS8x8x1/4	.226	20	3	.000	0	y	3	199.192	293.94	66.288	66.288	1	H1-1a
85	M5	C6X10.5	.013	2.417	6	.003	4.833	v	6	59.887	99.468	2.428	15.224	1	H1-1b
86	M6	C6X10.5	.004	2.417	6	.003	4.833	v	6	59.887	99.468	2.428	15.224	1	H1-1b
87	M7	C6X10.5	.004	2.417	6	.003	4.833	v	6	59.887	99.468	2.428	15.224	1	H1-1b
88	M8	C6X10.5	.013	2.417	6	.003	0	y	6	59.887	99.468	2.428	15.224	1	H1-1b
89	M21	C6X10.5	.050	2.417	6	.013	4.833	v	6	59.887	99.468	2.428	15.224	1	H1-1b
90	M22	C6X10.5	.044	2.417	3	.014	4.833	v	6	59.887	99.468	2.428	15.224	1	H1-1b
91	M23	C6X10.5	.046	2.417	1	.015	4.833	v	6	59.887	99.468	2.428	15.224	1	H1-1b
92	M24	C6X10.5	.051	2.467	6	.013	4.833	v	7	59.887	99.468	2.428	15.224	1	H1-1b
93	M37	C6X10.5	.043	2.417	6	.013	4.833	v	1	59.887	99.468	2.428	15.224	1	H1-1b
94	M38	C6X10.5	.051	2.417	3	.013	4.833	v	1	59.887	99.468	2.428	15.224	1	H1-1b
95	M39	C6X10.5	.048	2.417	7	.015	4.833	v	1	59.887	99.468	2.428	15.224	1	H1-1b
96	M40	C6X10.5	.050	2.467	3	.013	4.833	v	1	59.887	99.468	2.428	15.224	1	H1-1b
97	M53	C6X10.5	.045	2.417	6	.013	4.833	v	3	59.887	99.468	2.428	15.224	1	H1-1b
98	M54	C6X10.5	.055	2.417	3	.013	4.833	v	1	59.887	99.468	2.428	15.224	1	H1-1b
99	M55	C6X10.5	.051	2.417	7	.015	4.833	v	1	59.887	99.468	2.428	15.224	1	H1-1b
100	M56	C6X10.5	.054	2.467	3	.013	4.833	v	1	59.887	99.468	2.428	15.224	1	H1-1b
101	M69	W16X45	.423	4.76	3	.111	0	v	3	425.775	598.5	54.375	273.12	1	H1-1b
102	M70	W16X45	.473	4.76	2	.135	9.521	v	2	425.775	598.5	54.375	273.12	1	H1-1b
103	M71	W16X45	.288	4.76	3	.062	4.76	v	3	425.775	598.5	54.375	273.12	1	H1-1b
104	M72	W16X45	.378	4.76	2	.097	4.76	v	2	425.775	598.5	54.375	273.12	1	H1-1b
105	M85	W6X12	.041	4.76	3	.003	9.521	v	6	59.891	159.75	8.7	22.79	1	H1-1b
106	M86	W6X12	.050	4.76	2	.003	9.521	v	7	59.891	159.75	8.7	22.79	1	H1-1b

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

	Member	Shape	Code C...	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-...	phi*Mn z-...	Cb	Eqn
107	M87	W6X12	.100	0	3	.003	9.521	y	6	59.891	159.75	8.7	22.79	1	H1-1b*
108	M88	W6X12	.166	0	2	.003	9.521	y	7	59.891	159.75	8.7	22.79	1	H1-1b*
109	M101	W6X12	.061	4.76	3	.003	9.521	y	6	59.891	159.75	8.7	22.79	1	H1-1b
110	M102	W6X12	.078	4.76	2	.003	9.521	y	7	59.891	159.75	8.7	22.79	1	H1-1b
111	M103	W6X12	.187	0	3	.003	9.521	y	6	59.891	159.75	8.7	22.79	1	H1-1b*
112	M104	W6X12	.300	4.76	2	.003	9.521	y	7	59.891	159.75	8.7	22.79	1	H1-1a
113	M113	W10X33	.329	4.395	3	.403	3.092	y	3	205.996	436.95	52.5	142.087	1	H1-1b
114	M114	W10X33	.200	0	2	.239	3.418	y	3	205.996	436.95	52.5	142.087	1	H1-1b
115	M115	W10X33	.398	4.395	2	.496	3.092	y	2	205.996	436.95	52.5	142.087	1	H1-1b
116	M116	W10X33	.306	3.418	2	.379	3.418	y	2	205.996	436.95	52.5	142.087	1	H1-1b

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT 800529 TOWER ID: C_BASELEVEL

CROWN REGION ADDRESS
USA

DRAWN BY: AAM
CHECKED BY:
DRAWING DATE: 19/05/06

SITE NUMBER:
SITE NAME:

SITE NAME
CT HAMDEN NORTH CAC

BUSINESS UNIT NUMBER
800529

SITE ADDRESS
890 EVERGREEN AVENUE
HAMDEN, CT 06514
NEW HAVEN COUNTY
USA

SHEET TITLE
BASE LEVEL DRAWING

SHEET NUMBER
A1-0

N.T.S.

PLOT DATE: 7/20/2016

FILE NAME: 800529_BASELEVEL.dwg

APPENDIX C

ADDITIONAL CALCULATIONS

Project #: 2019777.800529.07

Bolt Checks

Date: 7/24/2019

Section #	Elevation	Component Type	Bolt Grade	Bolt Size (in)	# of Bolts	Maximum Load (k)	Maximum Load per Bolt (k)	Allowable Load per Bolt (k)	Ratio	Allowable Ratio	% Capacity	Criteria
L1	100	Diagonal	A325N	0.875	2	4.771	2.386	15.588	0.153	1.000	14.6%	1.05
L2	90	Diagonal	A325N	0.875	2	4.71	2.355	15.588	0.151	1.000	14.4%	1.05
L3	80	Diagonal	A325N	0.875	2	6.859	3.43	15.588	0.220	1.000	21.0%	1.05
L4	70	Leg	A325N	0.875	4	41.646	20.823	41.556	0.501	1.000	47.7%	1.05
		Diagonal	A325N	0.875	2	8.957	4.478	15.588	0.287	1.000	27.4%	1.05
T1	60	Diagonal	A325N	0.875	2	17.416	8.708	41.372	0.210	1.000	20.0%	1.05
T2	40	Top Girt	A325N	0.875	2	13.76	6.88	24.354	0.283	1.000	26.9%	
		Diagonal	A325N	0.875	2	25.064	12.532	41.372	0.303	1.000	28.8%	1.05
T3	20	Top Girt	A325N	0.875	2	22.581	11.29	24.354	0.464	1.000	44.2%	
		Diagonal	A325N	0.875	2	38.427	18.214	41.372	0.440	1.000	41.9%	1.05
										Maximum Capacity	47.7%	

CCIplate

Project Information	
BU #	800529
Site Name	CT HAMDEN NORTH CAC
Order #	498396 Rev 0

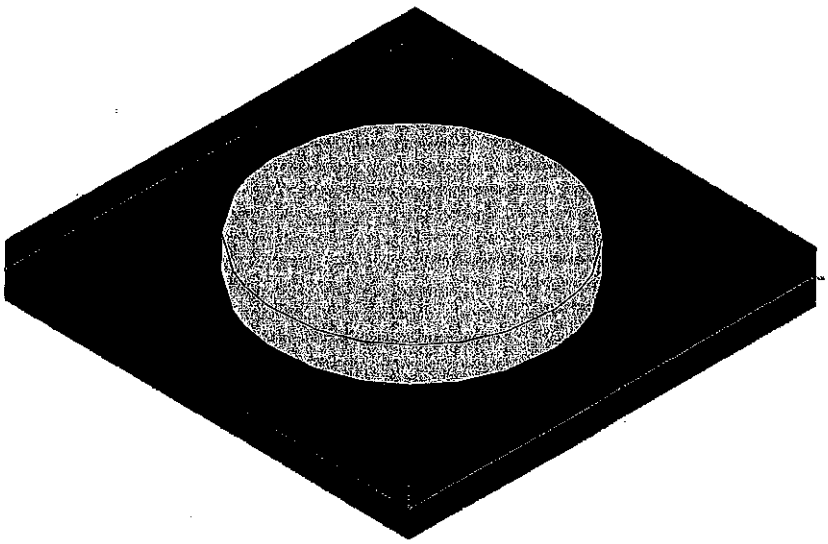
Tower Information	
Tower Type	Self Support
TIA-222 Rev	H

☑ Apply TIA-222-H Section 15.5

Applied Loads		
	Comp.	Uplift
Axial (k)		113.80
Shear (k)	22.40	17.70

Anchor Rod Data		
Quantity:	8	
Diameter (in):	1.25	
Material Grade:	A36	Fy=36 ksi Fu=58 ksi
Grout Considered:		Not Considered, lar<=1(d)
l_{ar} (in):	0	
Eta Factor, η:		
Thread Type:	N-Included	
Configuration:	Symmetrical	

Anchor Rod Results		
Axial, Pu_t (kips)	14.23	
Shear, Vu (kips)	2.21	
Moment, Mu (kip-in)	-	
Axial Cap., φPn_t (kips)	42.15	
Shear Cap., ϕVn (kips)	26.69	
Moment Cap., ϕMn (kip-in)	-	
Stress Rating	11.5%	**Pass**



		SK - 1
MKS	CT HAMDEN NORTH CAC	July 24, 2019 at 7:47 AM
2019777.800529.07		800529.fnd

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	100
Mesh Size (in)	24
Max Iterations	10
Merge Tolerance (in)	.12
Solver	Sparse Accelerated
Coefficient of Friction	.3
No. of Shear Regions	4
Shear Region Spacing Increment (in)	4
Min 1 Bar Dia Spacing for Beams?	No
Optimize footings for OTM / Sliding?	No
Parme Beta Factor	.65
Pile Safety Factor	3
Concrete Stress Block	Rectangular
Concrete Rebar Set	ASTM A615
Concrete Code	ACI 318-14
HR Steel Pile Code	AISC 14th(360-10): ASD
Wood Pile Code	AWC NDS-18: ASD

Concrete Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E...	Density[k/ft...	f'c[ksi]	Lambda	Flex Steel[...	Shear Stee...
1	Conc3000NW	3156	1372	.15	.6	.145	3	1	60	60
2	Conc3500NW	3409	1482	.15	.6	.145	3.5	1	60	60
3	Conc4000NW	3644	1584	.15	.6	.145	4	1	60	60
4	Conc3000LW	2085	907	.15	.6	.11	3	.75	60	60
5	Conc3500LW	2252	979	.15	.6	.11	3.5	.75	60	60
6	Conc4000LW	2408	1047	.15	.6	.11	4	.75	60	60

Slab Rebar Parameters

	Label	Top Bar	Bottom ...	Max Top Ba...	Min Top Bar...	Max Bot Bar...	Min Bot Bar ...	Spacing Increment[in]	Rebar Options
1	Circular	#6	#3	9	9	999	999	2	Force Top and Botto...
2	Square	#5	#8	9	9	9	9	2	Force Top and Botto...

Soil Definitions

	Label	Subgrade Modulus[k/ft^3]	Allowable Bearing[ksf]	Depth Properties	Default?
1	Default	259.2	4.5	None	Yes

Slabs

	Label	Thickness [in]	Material	Local Axis Angle ...	Analysis Offset [in]	Passive Pressur...	Soil Over...
1	S2	36	Conc3000NW	0	0	0	0

Pedestal Properties

	Label	Type	Shape	Height[in]	e/BL	ex[in]	ez[in]	BLx[ft]	BLz[ft]
1	Footing 1	Pedestal	CRECT12X12	24	Use ex,ez	0	0	0	0

Load Combinations

	Label	Solve	Service	A...	SF	C...	Fa...	Cat...	Fa...	Category	Fa...	C...	Fa...	C...	Fa...	C...	Fa...	C...	Fa...	C...	Fa...	C...	Fa...	C...	Fa...
1	1	Yes				DL	1.2	LL	1																
2	2	Yes				DL	1.2	EL	1																
3	3	Yes				DL	1.2	WL	1																
4	4	Yes				DL	1.2	SL	1																
5	5	Yes				DL	1.2	RLL	1																

Load Combinations (Continued)

	Label	Solve	Service	A...	SF	C...	Fa...	Cat...	Fa...	Category	Fa...	C...	Fa...	C...	Fa...	C...	Fa...	C...	Fa...	C...	Fa...	C...	Fa...	C...	Fa...
6	6	Yes				DL	1.2	LLS	1																
7	1s	Yes	Yes			DL	1	LL	1																
8	2s	Yes	Yes			DL	1	EL	1																
9	3s	Yes	Yes			DL	1	WL	1																
10	4s	Yes	Yes			DL	1	SL	1																
11	5s	Yes	Yes			DL	1	RLL	1																
12	6s	Yes	Yes			DL	1	LLS	1																

Design Cuts

Label	Design Rule
No Data to Print ...	

Design Strips

	Label	Rebar Angle from Pl...	No. of Design Cuts	Design Rule
1	DS4	90	50	Square
2	DS2	0	50	Square
3	DS3	90	50	Square

Envelope Slab Soil Pressures

	Label	UC	LC	Soil Pressure[ksf]	Allowable Bearing[ksf]	Point
1	S2	.344	9	1.546	4.5	N34

Slab Overturning Safety Factors

	LC	Slab	Angle[deg]	Mo-xx[k-ft]	Ms-xx[k-ft]	Mo-zz[k-ft]	Ms-zz[k-ft]	Ms-xx/Mo-xx	Ms-zz/Mo-zz
1	7	S2	0	0	4527.205	0	4519.842	9.999+	9.999+
2	8	S2	0	1121.591	3706.416	0	4398.994	3.305	9.999+
3	9	S2	0	449.22	3706.416	568.778	3706.416	8.251	6.516
4	10	S2	0	0	4827.183	0	4824.647	9.999+	9.999+
5	11	S2	0	0	5124.907	0	4935.361	9.999+	9.999+
6	12	S2	0	0	5060.36	0	5071.009	9.999+	9.999+

Strip Reinforcing

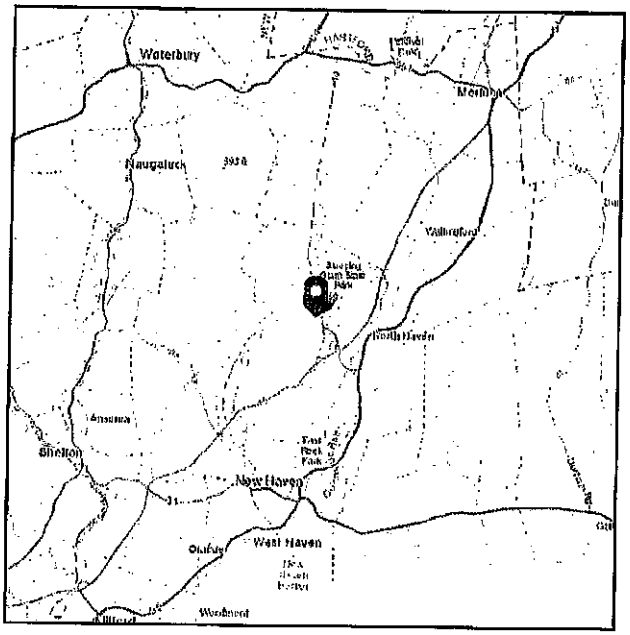
	Label	UC Top	LC	Top Bars	Governing...	UC Bot	LC	Bot Bars/...	Governin...	UC Shear	LC	Governin...
1	DS4	.062	3	#5@9in	DS4-X38	.089	3	#8@9in	DS4-X17	.099	3	DS4-X29
2	DS2	.121	2	#5@9in	DS2-X14	.109	2	#8@9in	DS2-X34	.127	2	DS2-X25
3	DS3	.062	3	#5@9in	DS3-X38	.089	3	#8@9in	DS3-X17	.099	3	DS3-X29

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 205.84 ft (NAVD 88)
Latitude: 41.406639
Longitude: -72.904533



ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

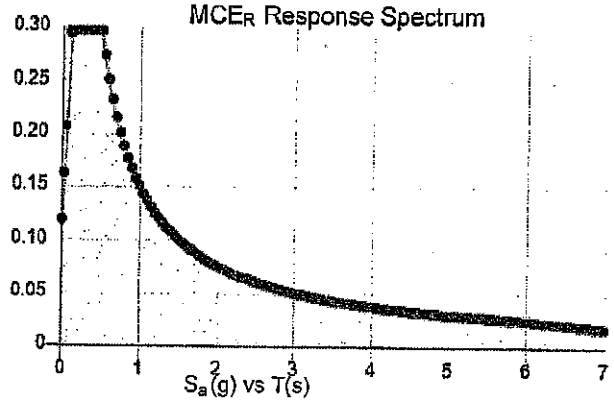
Seismic

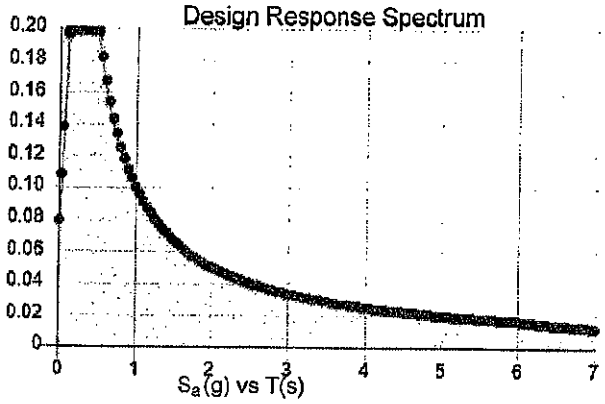
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.185	S_{DS} :	0.198
S_1 :	0.063	S_{D1} :	0.1
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.096
S_{MS} :	0.297	PGA_M :	0.154
S_{M1} :	0.151	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Fri Jul 12 2019

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

ASCE
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Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Fri Jul 12 2019

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

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

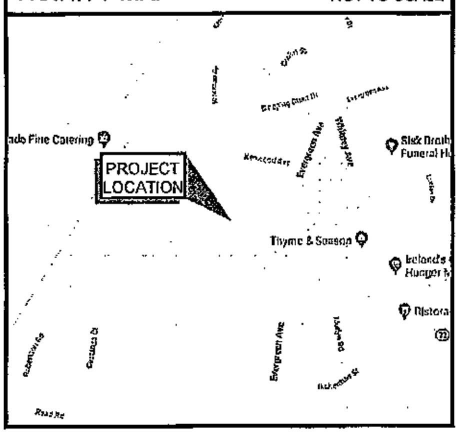
verize

HAMDEN N(

CROWN CASTLE B
890 EVERGREEN
HAMDEN, CT (

VICINITY MAP

NOT TO SCALE



DO NOT SCALE DRAWINGS

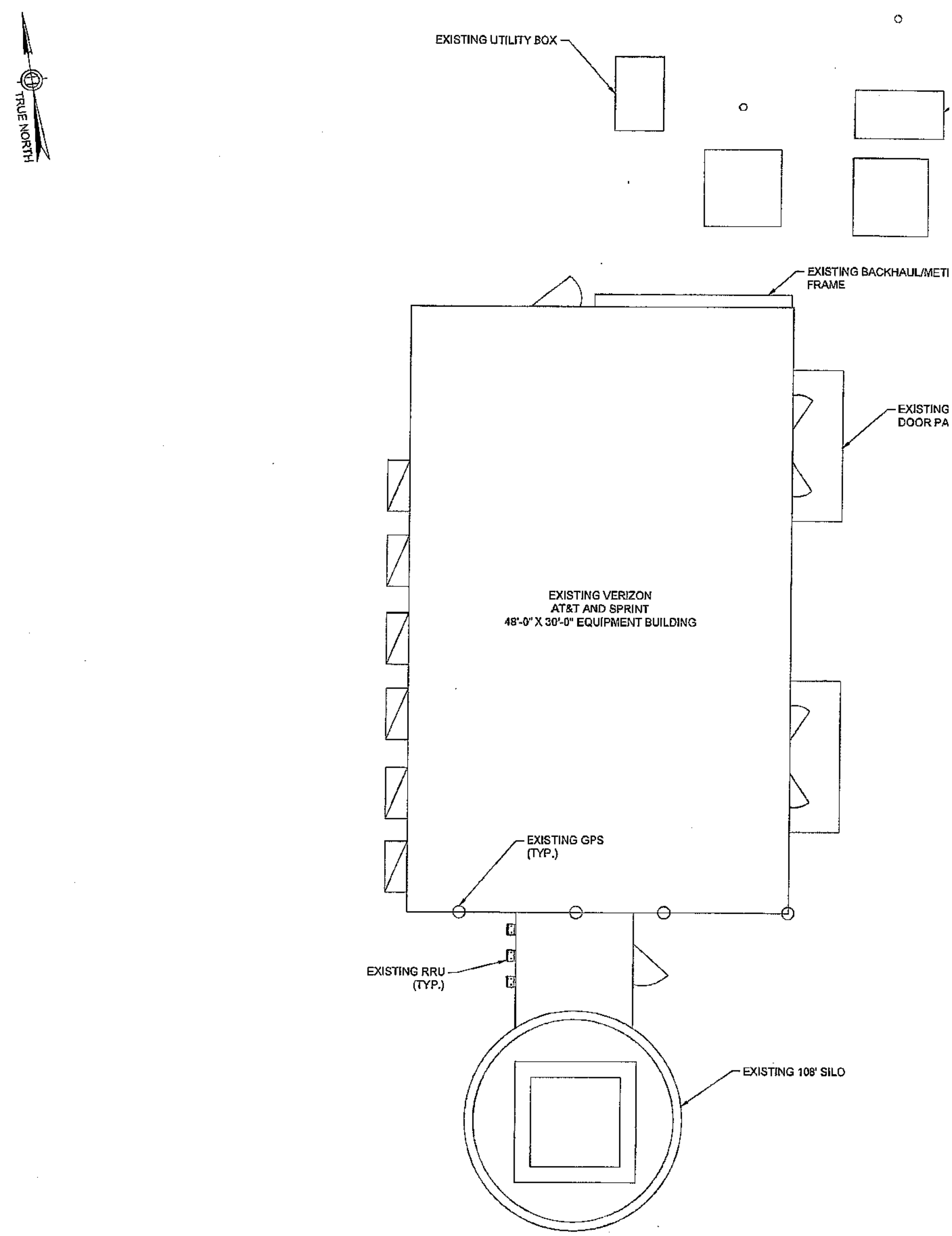
CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE LESSEE/LICENSEE REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

CONSULTANT TEAM

APPLICANT:	VERIZON WIRELESS 20 ALEXANDER DRIVE WALLINGFORD, CT 06492 CONTACT: JAMES O'DONNELL
APPLICANT'S CONTACT:	JAMES O'DONNELL (413) 575-2626
ARCHITECT:	JACOBS ENGINEERING GROUP, INC. 120 SAINT JAMES AVENUE 5TH FLOOR BOSTON, MA 02116
STRUCTURAL ENGINEER:	JACOBS ENGINEERING GROUP, INC. 120 SAINT JAMES AVENUE 5TH FLOOR BOSTON, MA 02116
ELECTRICAL ENGINEER:	JACOBS ENGINEERING GROUP, INC. 120 SAINT JAMES AVENUE 5TH FLOOR BOSTON, MA 02116

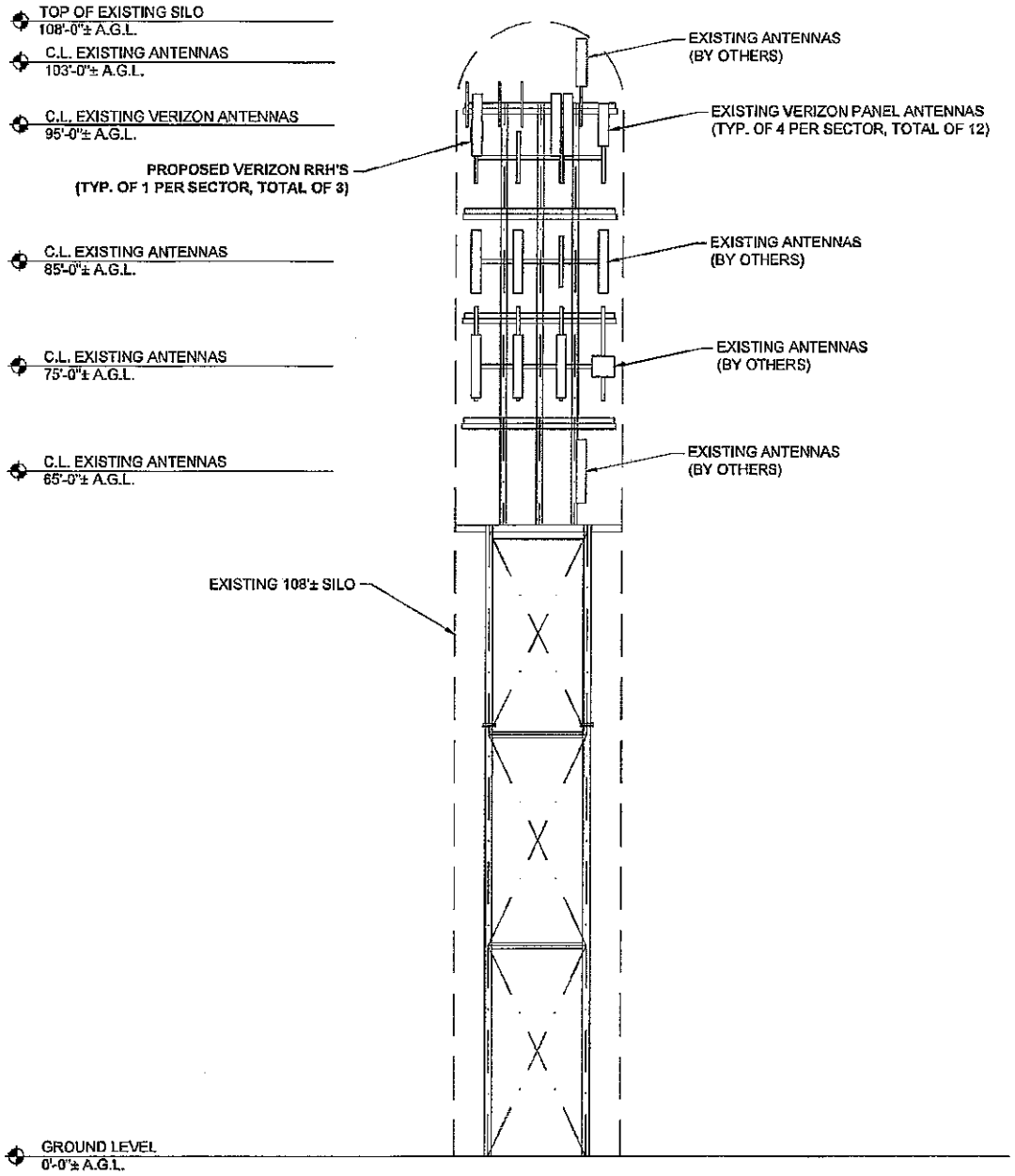
PROJECT SUMMARY

VERIZON SITE NAME:	HAMDEN NORTH CT
CROWN CASTLE SITE NAME:	CT HAMDEN NORTH
TOWER OWNER:	CROWN CASTLE LL 67 SHARP STREET HINGHAM, MA 0204
COORDINATES:	N 41° 24' 23.90" W 72° 54' 16.32"
APPLICANT:	VERIZON WIRELESS 20 ALEXANDER DRI WALLINGFORD, CT



1 SITE PLAN

Jacobs – C:\pwworking\telecommunications\standeeb\d0629707\Hamden North CT_BU800529_Rev 1_09132019.dwg [A-1] September 13, 2019 – 6:16am standeeb



1 SITE ELEVATION

SCALE:1/8" = 1'-0"

TRUE NORTH

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2 EXISTING AN

TRUE NORTH

PROP(
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OF 1 F

3 PROPOSED A

Jacobs - C:\pwworking\telecommunications\Verizon\d0623787\Verizon North CT_SU800529_Rev L_08132019.dwg [A-2] September 13, 2019 - 6:16am ahendreb

GENERAL NOTES:

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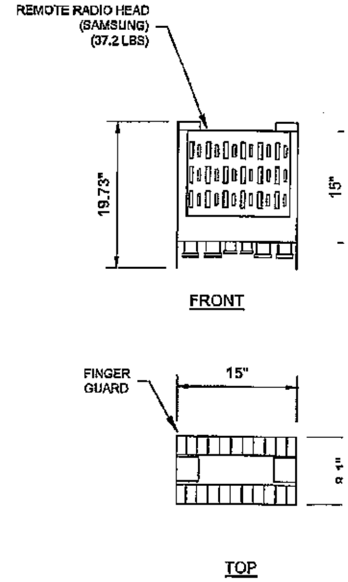
1 GENERAL NOTES SCALE: NTS



2 SAMSUNG 700/850 RRH - RFV01U-

4 DETAIL NOT USED SCALE: NTS

5 DETAIL NOT USED

TOWN OF HAMDEN

CONNECTICUT

BOND RELEASE RECOMMENDATION/ACTION

MEMO TO: Planning & Zoning Commission

FROM: Joseph J. Venditto, Zoning Enforcement Officer

DATE: March 7, 2002

RE: Bond Release

ADDRESS: 890 Evergreen Ave

PROJECT: Site Plan 00-1263

TOTAL BOND AMOUNT:	Present Amt.	Recommendation Amt. to Retain
Site Work	13,527.	0
Right of Way	0.	0
Subtotal	13,527.	0
Other 10%	1,473.	0
TOTAL	15,000.	0

Bond total covers all items listed or not listed. Categories are for estimation purposes only.

Comments: All Site Work Complete. Bond Release Can Be Recommended.

$60.00 FEE

#_____

TOWN OF HAMDEN
APPLICATION FOR CERTIFICATE OF ZONING COMPLIANCE

Property Address 890 EVANGELINE ~~AVE~~ PARK Zoning District R-4 CALL (860) 306-0337

Property Owner CROWN CASTLE NEWCO LLC Phone # (860) 657-1563

Property Owner Address 703 HEBRON AVE, GLASTONBURY, CT 06033

Type of Zoning Permit: CONNECTICUT SITING COUNCIL

I certify that the work required has been completed in accordance with approved plans except as noted on attached asbuilt drawing.

Applicant Signature _____ Owner/Agent Date 8-26-02

PRINTED NAME WILLIAM G WATSON - JR

ADDRESS 703 HEBRON AVE, GLASTONBURY, CT 06033

TELEPHONE # (860) 657-1563 FAX # (860) 633-7078

Certificate #_____

Certificate of Zoning Compliance

Zoning Enforcement Officer Findings, based upon inspection of MARCH 5, 2002

Unconditional [X] Meets all requirements

Conditional [ ] See list below

Following is a list of requirements determined from inspection which while not yet complete do not adversely affect use/occupancy of the premises and for which sufficient security is being held:

Signed _____ Zoning Enforcement Officer Date 3/5/02

This is not a Certificate of Occupancy under the Building Code

RECEIVED
TOWN OF HAMDEN
AUG 26 2002
PLANNING AND ZONING DEPT.

Rev 08/16/01

CROWN INTERNATIONAL

Crown Castle Atlantic LLC
Northeast Region
703 Hebron Avenue, 2nd Floor
Glastonbury, CT 06033

Tel 860 633.9369
Fax 860 633.7078
www.crowncastle.com

February 25, 2002

Mr. Joseph J. Venditto
Town of Hamden
2572 Whitney Avenue
Hamden, CT 06518

Re: Hamden Telecommunications Facility
CT Agricultural Station
Hamden, CT

Dear Mr. Venditto,

Please find enclosed two (2) stamped original as built drawings for the referenced Telecommunications facility.

Also enclosed is a copy of a letter dated January 11, 2002 from Mr. Roberts of URS Corporation the A&E firm of record for this project addressing the Bollard issue.

I am requesting that a Certificate of Zoning Compliance be issued for this project.

If you have any questions and/or need any additional information please do not hesitate to call. If I'm not in the office you can reach me on my cell phone (860) 306-0337.

Sincerely,
Crown Atlantic Company.LLC

William W. Watson
Project Manager

WWW:www

TOWN OF HAMDEN

CONNECTICUT

Draft Minutes subject to Commission approval

MINUTES: ZONING SECTION, Planning & Zoning Commission, Town of Hamden, held a Public Hearing and Regular Meeting on Tuesday, September 25, 2001 and the following were reviewed:

Commissioners in Attendance:

Mr. Crocco
Mr. Del Vecchio
Mr. Sims
Mr. Cesare, (for Mr. Vegliante)
Ms. Woodward, (for Ms. Benevides)

Staff in Attendance:

Mr. O'Brien, Town Planner
Mr. Lee, Town Attorney
Ms. Raccio, Stenographer
Ms. Gaiolini, Clerk

Mr. Del Vecchio opened the Regular Meeting at 7:10 p.m. He introduced the Commission, and staff and gave an overview of the procedures for the evening.

A. Regular Meeting

1. Site Plan/WS 01-1308
   72 Crest Way, Lot #12
   Office/Storage
   Robert Massaro, Applicant
   Deadline: October 18, 2001

Bernard Wright, 71 Charnes Dr., East Haven, CT. Will answer any questions the Commission may have.

Mr. O'Brien stated this had been submitted several months back. There were questions from the Town Engineer, those questions have since been answered & incorporated on the map. Mr. Savarese's letter dated 9/20/01 states the plan is now satisfactory to his department. The comments from December 18th have been addressed. RWA comments dated 9/17/01. The comment on slope stabilization has already been discussed.

Mr. Del Vecchio said item #3 (stabilization) will be taken care of, it has already been discussed with the applicant. Mr. O'Brien noted the parking lot is not paved but crushed stone. Sometimes that is better with respect to drainage. Mr. Del Vecchio read the RWA letter. Mr. Wright said there are 3 dry wells to retain and also take any water coming down the slope. Also provided pipe from dry well to dry well so if 1 fills up it drains into next one. No heavy equipment to speak of. Mr. Crocco questioned location of parking and catch basins. 2 in the crushed stone part and 1 in the black top (the front is black top). Mr. Del Vecchio asked if Mr. Wright had reviewed the Town Planner's recommendations. Mr. Wright answered yes, noting the erosion and sediment control will be in place and iron pins set at a later date. As built site plan to Al Savarese. Will post bond after permit issued. Dumpster to the rear of the building. They don't need it because all they have is office space, but if required by the Town, they will provide. Mr. Crocco questioned the warehouse itself, above the office - you're not asking for storage on top? Mr. Wright answered, not right now. Mr. Crocco also asked Mr. O'Brien for clarification on the placing of corner pins & bond releases.

Mr. Sims motions to approve 01-1308 with the recommendations of the Town Planner:

- Parking location and handicapped parking to be approved by Town Planner
- Dumpster location to be approved by Town Planner
- Submit slope stabilization plan to Town Planner & Town Engineer
- Erosion sediment controls installed prior to beginning of construction
- RWA recommendations of letter dated 9/17/01 to be incorporated
- Iron pins to be set
- No outdoor storage
- Post bond prior to zoning permit

Mr. Cesare seconds. Unanimous. **APPROVED.**

B. Informational

Mr. Del Vecchio noted Item B is Informational. There is actually no action being taken on either of these 2 items. These are administrative bond releases. This Commission has voted and given the Town Planner the authority to release up to $15,000.00. Both released per Roger O'Brien.

1. Site Plan 00-1263
   899 Evergreen Ave./Lockwood Farms
   Administrative Bond Release $15,000.00
   Requested by Crown Castle

2. Site Plan 01-1307
   88 Mulberry Hill Rd.
   Single Family Lot
   Bond Release $2,200.00
   Requested by Joan Wagner

C. Approval of Minutes

1. Approve Minutes of June 26, 2001 Regular Meeting. (Mr. Sims, Mr. Crocco & Mr. Del Vecchio were present at that meeting and can vote). Mr. Crocco motions to approve as written. Mr. Sims seconds. **APPROVED.**

2. Approve Minutes of July 24, 2001 Regular Meeting. Mr. Sims motions to approve as written. Mr. Crocco seconds. **APPROVED.**

Ms. Woodward motions to adjourn. Mr. Cesare seconds. Closed at 7:30 p.m.

Submitted by: Deborah Gaiolini, Clerk

verizon

HAMDEN NORTH CT

CROWN CASTLE BU #:800529
890 EVERGREEN AVENUE
HAMDEN, CT 06518

VICINITY MAP

NOT TO SCALE

DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE LESSEE/LICENSEE REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

CONSULTANT TEAM

APPLICANT:	VERIZON WIRELESS 20 ALEXANDER DRIVE WALLINGFORD, CT 06492 CONTACT: JAMES O'DONNELL
APPLICANT'S CONTACT:	JAMES O'DONNELL (413) 575-2626
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PROJECT SUMMARY

VERIZON SITE NAME:	HAMDEN NORTH CT
CROWN CASTLE SITE NAME:	CT HAMDEN NORTH CAC
TOWER OWNER:	CROWN CASTLE LLC 67 SHARP STREET HINGHAM, MA 02043
COORDINATES:	N 41° 24' 23.90" W 72° 54' 16.32"
APPLICANT:	VERIZON WIRELESS 20 ALEXANDER DRIVE WALLINGFORD, CT 06492

PROJECT DIRECTORY

SITE ADDRESS: 890 EVERGREEN AVENUE
HAMDEN, CT 06518

PROJECT DESCRIPTION

- REPLACE (3) RRH'S.
- REMOVE COAX

THIS DOCUMENT WAS DEVELOPED TO REFLECT A SPECIFIC SITE AND ITS SITE CONDITIONS AND IS NOT TO BE USED FOR ANOTHER SITE OR WHEN CONDITIONS PERTAIN. REUSE OF THIS DOCUMENT IS AT THE SOLE RISK OF THE USER.

A.D.A. COMPLIANCE:
FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION

SHEET INDEX

811

UNDERGROUND SERVICE ALERT

THE LAW REQUIRES
TWO WORKING DAYS NOTICE PRIOR
TO ANY EARTH MOVING ACTIVITIES.
DIAL 811

verizon
20 ALEXANDER DRIVE
WALLINGFORD, CT 06492

CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NEW YORK, 12065

JACOBS
Jacobs Engineering Group, Inc.
120 ST JAMES AVENUE
5TH FLOOR
BOSTON, MA 02116
TEL (617) 242-9222
FAX (617) 242-9824

STATE OF CONNECTICUT
EARL B. STANDE
34052
LICENSED PROFESSIONAL ENGINEER

APPROVALS

LANDLORD_____
LEASING _____
R.F._____
ZONING _____
CONSTRUCTION_____
A & E _____

PROJECT NO: ERCC0004

DRAWN BY: CM

CHECKED BY: DC

SUBMITTALS

1	09/13/19	CONSTRUCTION
0	08/12/19	FOR PERMITTING

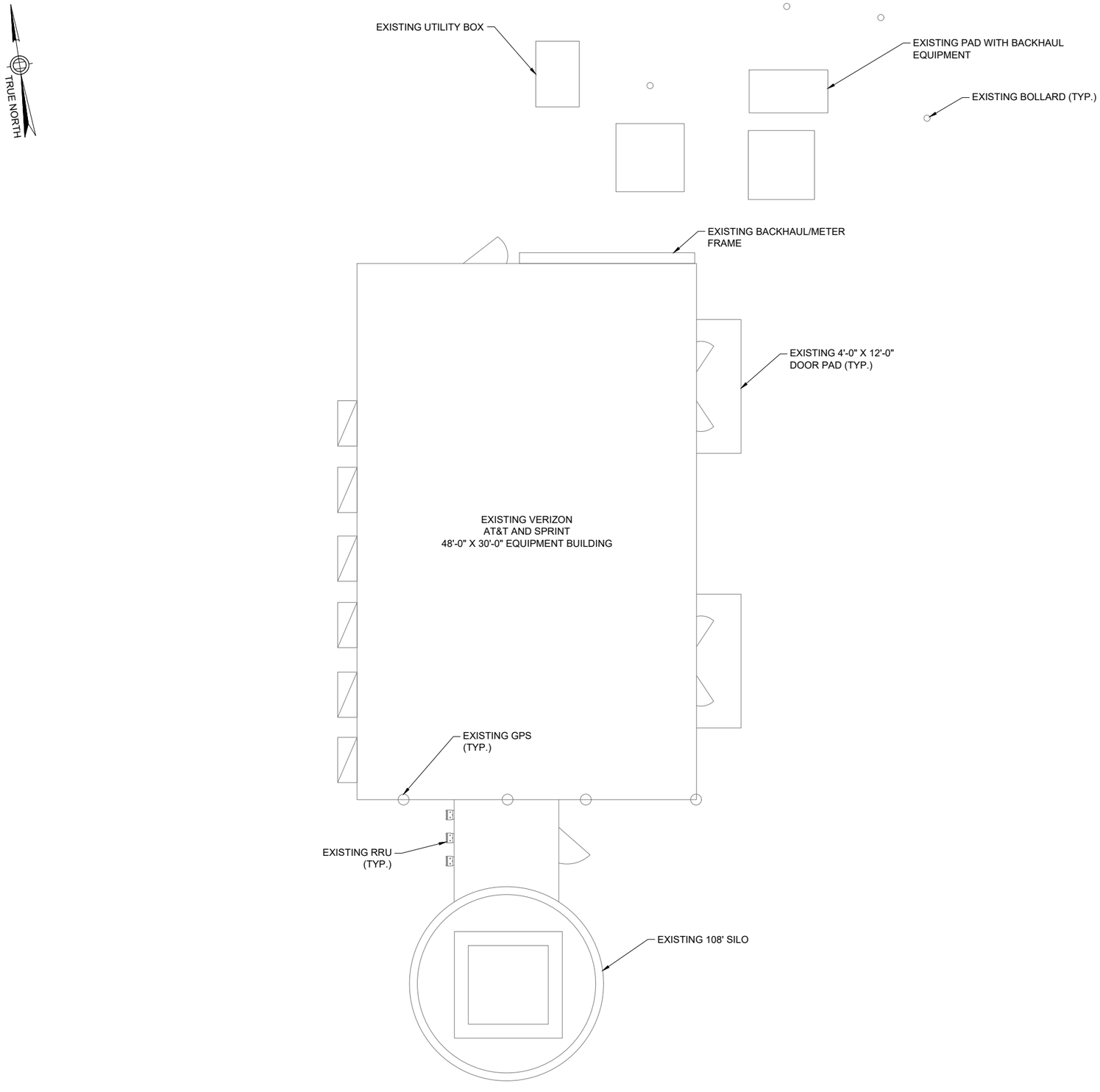
SITE NAME:
HAMDEN NORTH CT
CROWN CASTLE BU#:
800529

890 EVERGREEN AVENUE
HAMDEN, CT 06518

TITLE SHEET

T-1

CONSTRUCTION



GENERAL NOTES:

1. SOME EXISTING AND PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
2. NORTH SHOWN AS APPROXIMATE.
3. EXISTING ANTENNAS SHOWN AS APPROXIMATE. ELEVATION BASED ON EXISTING INFORMATION AND VISUAL INSPECTION AND HAVE NOT BEEN VERIFIED THROUGH AN ANTENNA MAPPING.
4. PLANS BASED ON DRAWINGS FROM CROWN CASTLE AS-BUILT.
5. ANTENNAS TO BE INSTALLED PER TOWER MANUFACTURER RECOMMENDATIONS AND TOWER STRUCTURAL ANALYSIS SPECIFICATIONS.
6. REUSED EXISTING ANTENNA MOUNTS AND COAX. INSPECT FOR DAMAGE OR DECAY AND REPLACE AS NEEDED PER STRUCTURAL ANALYSIS.
7. CONTRACTOR TO VERIFY FINAL ANTENNA DESIGN AND NOTIFY CARRIER AND ENGINEER WITH ANY DISCREPANCIES PRIOR TO THE INSTALLATION.
8. INSTALL ALL EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS.
9. ALL EQUIPMENT SHALL BE GROUNDED PER VERIZON WIRELESS STANDARDS AND MANUFACTURER'S RECOMMENDATIONS.
10. EQUIPMENT MOUNTING DETAIL IS PROVIDED AS SCHEMATIC IN NATURE WITH SUGGESTED PART NUMBERS, ACTUAL PARTS, MOUNTING METHOD, LOCATION AND ORIENTATION MUST BE IN ACCORDANCE WITH THE STRUCTURAL ANALYSIS OR CONFIRMED WITH THE STRUCTURAL ENGINEER THAT COMPLETED THE REPORT IF NOT PROVIDED.
11. ALL PROPOSED EQUIPMENT INCLUDING ANTENNAS, COAX, SURGE ARRESTORS, RRU'S, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH THE STRUCTURAL ANALYSIS (BY OTHERS)
12. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR PRIOR TO ALL FABRICATION. ANY DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO ENGINEER.
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1 **SITE PLAN**

SCALE: 1"=5'b

verizon
20 ALEXANDER DRIVE
WALLINGFORD, CT 06492

CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NEW YORK, 12065

JACOBS
Jacobs Engineering Group, Inc.
120 ST JAMES AVENUE
5TH FLOOR
BOSTON, MA 02116
TEL (617) 242-9222
FAX (617) 242-9824

STATE OF CONNECTICUT
EARL B. STANDE
34052
LICENSED PROFESSIONAL ENGINEER

APPROVALS

LANDLORD _____
LEASING _____
R.F. _____
ZONING _____
CONSTRUCTION _____
A & E _____

PROJECT NO: ERCC0004

DRAWN BY: CM

CHECKED BY: DC

SUBMITTALS

1	09/13/19	CONSTRUCTION
0	08/12/19	FOR PERMITTING

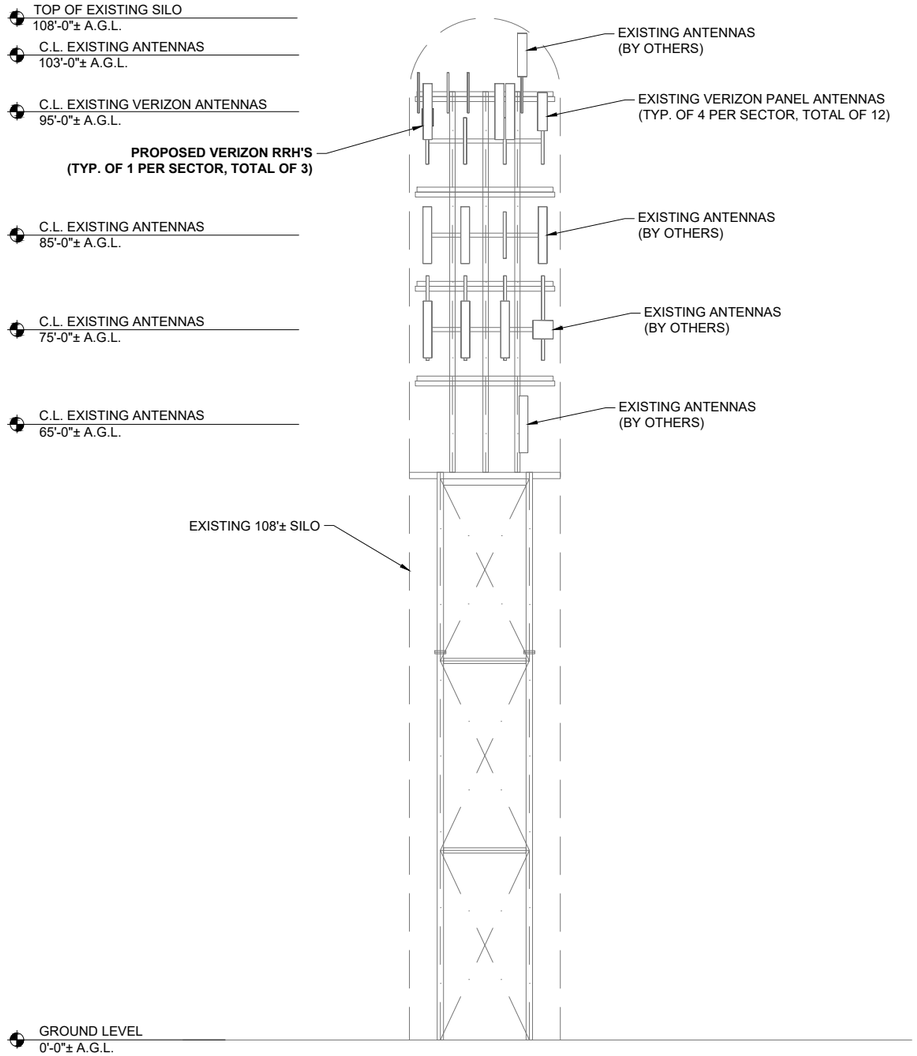
SITE NAME:
HAMDEN NORTH CT
CROWN CASTLE BU#:
800529

890 EVERGREEN AVENUE
HAMDEN, CT 06518

SITE PLAN

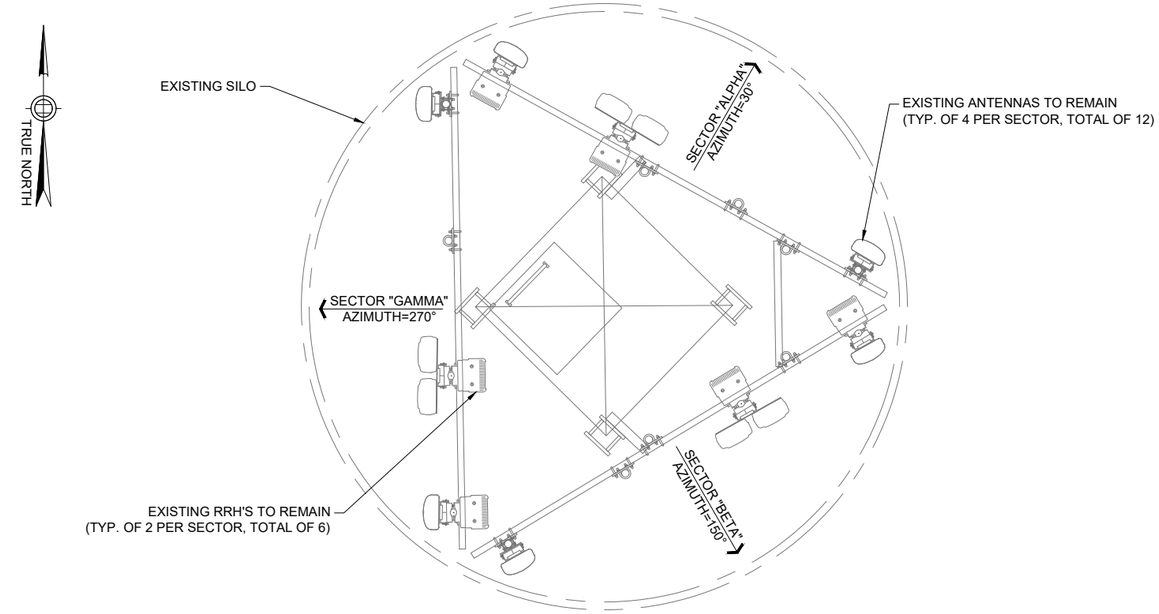
A-1

CONSTRUCTION



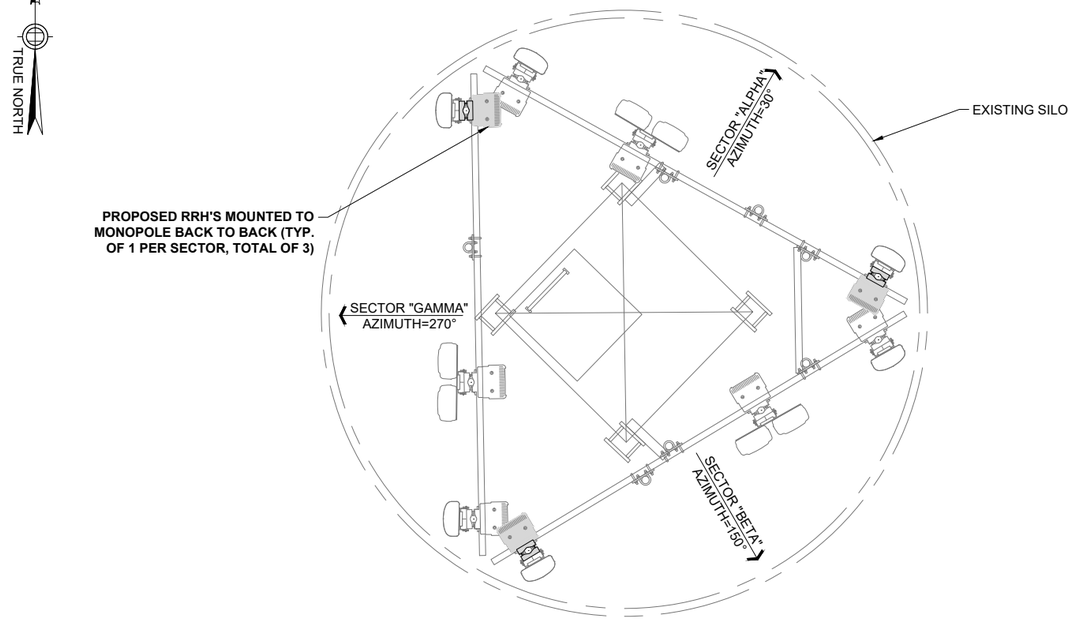
1 SITE ELEVATION

SCALE:1/8" = 1'-0"



2 EXISTING ANTENNA LAYOUT

SCALE:1/2" = 1'-0"



3 PROPOSED ANTENNA LAYOUT

SCALE:1/2" = 1'-0"

verizon
20 ALEXANDER DRIVE
WALLINGFORD, CT 06492

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3 CORPORATE PARK DRIVE, SUITE 101
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APPROVALS

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R.F. _____
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CONSTRUCTION _____
A & E _____

PROJECT NO: ERCC0004

DRAWN BY: CM

CHECKED BY: DC

SUBMITTALS

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0	08/12/19	FOR PERMITTING

SITE NAME:
HAMDEN NORTH CT
CROWN CASTLE BU#:
800529

890 EVERGREEN AVENUE
HAMDEN, CT 06518

SITE ELEVATION AND
ANTENNA LAYOUT

A-2

CONSTRUCTION

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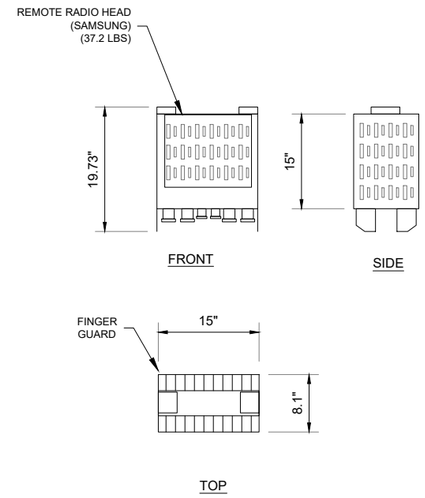

2 **SAMSUNG 700/850 RRH - RFV01U-D2A** SCALE: NTS

3 **DETAIL NOT USED** SCALE: NTS

4 **DETAIL NOT USED** SCALE: NTS

5 **DETAIL NOT USED** SCALE: NTS

6 **DETAIL NOT USED** SCALE: NTS

verizon
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STATE OF CONNECTICUT
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APPROVALS

LANDLORD _____
LEASING _____
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A & E _____

PROJECT NO: ERCC0004

DRAWN BY: CM

CHECKED BY: DC

SUBMITTALS

1	09/13/19	CONSTRUCTION
0	08/12/19	FOR PERMITTING

SITE NAME:
HAMDEN NORTH CT
CROWN CASTLE BU#:
800529

890 EVERGREEN AVENUE
HAMDEN, CT 06518

EQUIPMENT DETAILS

A-3
CONSTRUCTION