



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.

The Foundation for a Wireless World.

CrownCastle.com

- 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.

Sincerelly,

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

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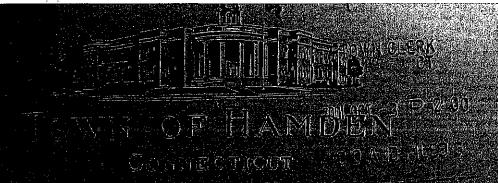
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# TOWN OF HAMDEN, CONNECTICUT GEOGRAPHIC & PROPERTY INFORMATION NETWORK

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

HELL

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

#### SUMMARY PARCEL INFORMATION & MAP DOCUMENTS

## **Detailed Parcel Information**

Parcel No

2930-081-01-0000

Unique ID 123443

Account

Owner

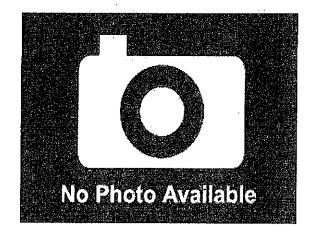
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STATION

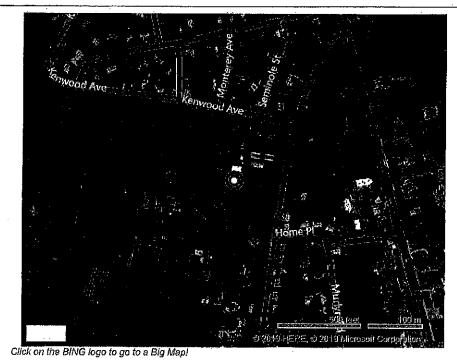
Location 890 EVERGREEN AVE

**MAILING ADDRESS** 

890 EVERGREEN AVE HAMDEN CT 06518



Scroll Down For Complete Property Detail



#### **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**

	<b>Appraised Value</b>	<b>Assessed Value</b>
Buildings	125600	87920
Outbuildings	0	0
Improvements	125600	87920
Extra Features	0	О
Land	165000	105000
TOTAL:	2906 <b>00</b>	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**

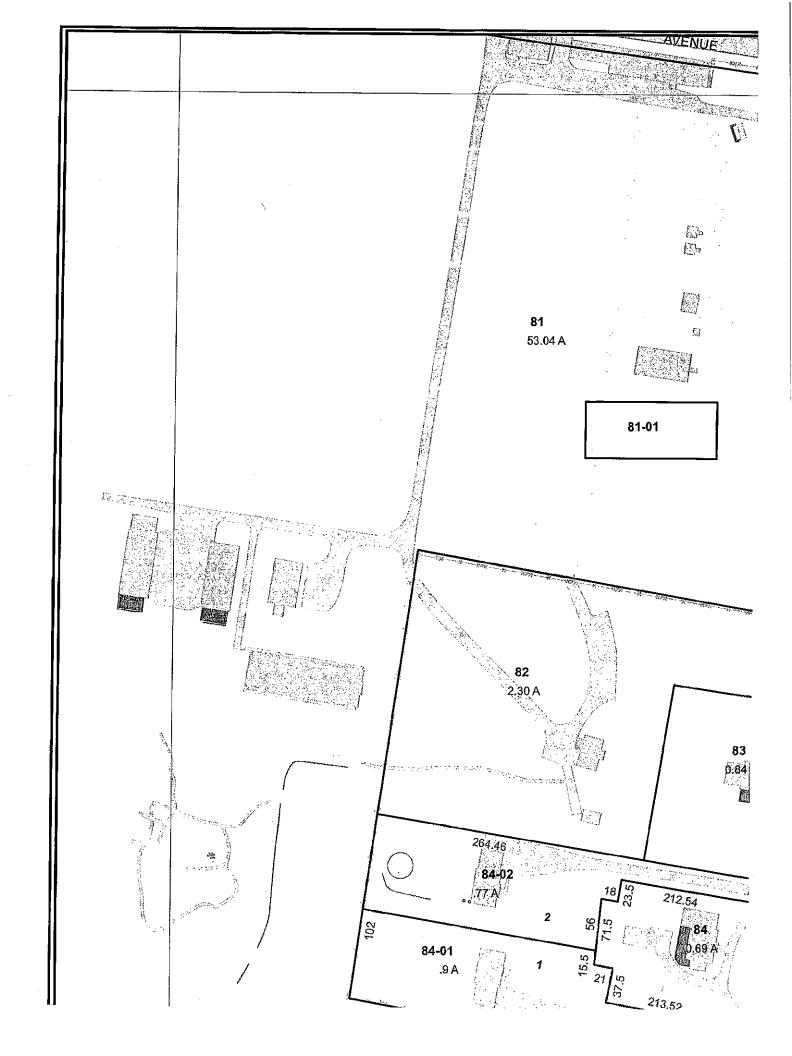
Gross Building Area Total Living Area

0

#### **CONSTRUCTION DETAILS**

**Building Style** 

Telephone Bldg





## 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

### Sub Areas

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

## Outbuilding and Extra Items

Туре	 Description
	 <u> </u>
	 <u> </u>
	 · · · · · · · · · · · · · · · · · · ·
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	11.00

## Sales History

Owner of Record

Book/ Page

Sale Date

Sale Price

CONN AGRICULURAL EXPT STATION

64/135

1/4/1911

## Town of Hamden, CT

Property Listing Report

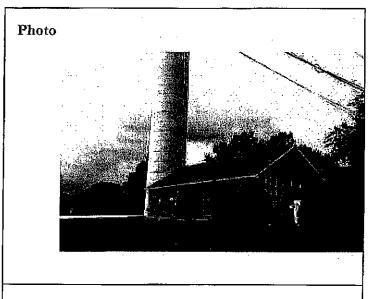
Map Block Lot

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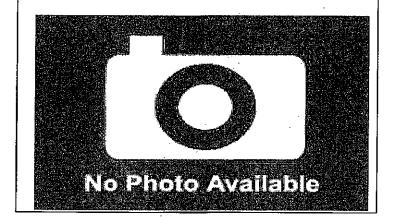
Account

## Property Information

Property Location	890 EVER:	GREEN AVE		
Owner	CONN AGRICULURAL EXPT STATION			
Co-Owner		,		
Mailing Address	890 EVER	GREEN AVE		
Maning Address	HAMDEN		CT	06518
Land Use	4310	TEL REL TW	M96	
Land Class	1			
Zoning Code	R4			
Census Tract	4	_		
Sub Lot		***************************************		
Neighborhood	110			
Acreage	0			
Lot Setting/Desc	Suburban	Abov	e Street	
Survey Map				
Utilities	All Public			
Additional Info			***	



#### 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

### Hamden Geographic & Property Information

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 Fioor 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

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You should promptly consult the specific office or department with any questions. Use of this web site and any information you find through it is subject to the Disclaimer.

Site Name: Hamden CT Cumulative Power Density

Fraction	(%)	13.75%	231%	9866	19 92%	18 16%	20.00
Maximum Permissible Exposure	(mW/cm^2)	1.0	0.579333333	0.58666667	1.0	0.49733333	
Calculated Power	(mW/cm^2)	0.1375	0.0134	0.0544	0.1992	0.0903	
-Distance fo∏arget≄	(feet)	110	110	110	110	100	
Total ERP	(watts)	4627.64	450.86	1830.88	6701.28	2511.04	
ERP Per	(watts)	1157	225	458	1675	628	
Number of Trans		4	2	4	4	4	
Operating Frequency	(MHz)	1970	698	088	2145	746	
Operator		VZW PCS	VZW Cellular	VZW Cellular	VZW AWS	VZW 700	1 - 3 - H

Total Percentage of Maximum Permissible Exposure

\*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

 $mW/cm^{\Lambda}2 = milliwatts per square centimeter$ 

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.

VOBURN, MA 01801
NITED STATES US

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

HAMDEN CT 06518



TRK# 7762 9604 9349

MON - 23 SEP 10:30A PRIORITY OVERNIGHT

06518 ст.us BDL



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

SUITE 5800
WOBURN, MA 01801
UNITED STATES US
CONN AGRICULTURAL EXPT STATION CONN AGRICULTURAL EXPT STATION 890 EVERGREEN AVE

HAMDEN CT 06518



TRK# 7762 9609 2820

MON - 23 SEP 10:30A PRIORITY OVERNIGHT

06518 BDL



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

HAMDEN CT 06518 (203) 287-7100



TRK# 7762 9602 6142

MON - 23 SEP 10:30A PRIORITY OVERNIGHT

06518 crus BDL



Date: July 24, 2019

Amanda Brown Crown Castle 3530 Toringdon Way Charlotte, NC 28277



520 South Main Street Suite 2531 Akron, Ohio 44311 (216) 927-8663

Subject:

Structural Analysis Report

Carrier Designation:

**Verizon Wireless Co-Locate** 

Carrier Site Number: Carrier Site Name:

4093

Hamden North CT

Crown Castle Designation:

**Crown Castle BU Number:** 

800529

498396

**Crown Castle Site Name:** Crown Castle JDE Job Number: CT HAMDEN NORTH CAC

Crown Castle Work Order Number: Crown Castle Order Number:

1765328 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:

Christopher J. Scheks Connecticut # 0030026 7/24/2019

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tnxTower Output

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Base Level Drawing

#### 8) APPENDIX C

Additional Calculations

#### 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:

П

Wind Speed:

125 mph

**Exposure Category:** 

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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)										
<u> </u>		3	Samsung Telecommunications	RFV01U-D2A												
	98.0	98.0	98.0	98.0	98.0	98.0	98.0	98.0	98.0	98.0	98.0	3	Amphenol	BXA-70063-6CF-EDIN-X		
											3	Antel	BXA-80080/4CF	] _		
95.0						6	Commscope	JAHH-65B-R3B	2	1-1/4						
		3	Alcatel Lucent	B25 RRH4X30-4R	-											
	95.0	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)													
		3	Andrew	SBNHH-1D65A															
100.0	404.0	1	Decibel	DB806-XC	18	1-5/8													
100.0	104.0	3	Commscope	ATBT-Bottom-24V	] 1	1/2													
		6	RFS/Celwave	ATMAA1412D-1A20															
	85.0			3	Kathrein	800 10121													
		3	CCI Antennas	HPA-33R-BUU-H6															
		85.0							3	KMW Communications	AM-X-CD-16-65-00T-RET		7/0						
			6	Kathrein	860 10025	12	7/8 3/4												
85.0			85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	05.0	85.0	85.0	85.0	85.0	6	Communication Components	DTMABP7819VG12A
		1	Raycap	DC6-48-60-18-8F															
		3	Ericsson	RRUS-11															
		3	Ericsson	RRUS 32 B2	]														
	75.0	2	CSA Wireless	A-18A24N-U	11	1-1/4													
75.0	75.0	10			] ''	1-1/4													
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
	<u>.                                    </u>	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
	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	HS\$8x8x1/4	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
4.		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
	· <del></del>	Diagonal	2L4x4x3/8x1/2	M106	57.7	112.46	32.1%	Pass
		Top Girt	W6x12	M102	35.921	59.891	28.6%	Pass
			<del>-</del>				Summary	
	-					Leg (T3)	37.2%	Pass
						Diagonal (T3)	32.1%	Pass
						Top Girt (T1)	45.0%	Pass
						Bolt Checks	47.7%	Pass
		<u> </u>				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

		4
Character Dating farms from all desired and All Control of the Con	7.	404
Structure Rating (max from all components) =	-	47.7%
그들이 나는 사람들은 사람들이 가는 것이 되었다. 그 생각이 되었다면 하는 것이 없는 것이 없는 것이 없는 것이 없는 것이다.		

#### Notes:

#### 4.1) Recommendations

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

See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

<sup>2)</sup> Rating per TIA-222-H Section 15.5

#### 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

			,				,		100.4 t
5								1348.6	90.0 2
13	3x1/4		16x1/2		3,5	33	10	+540,6	SOOR SOOR
E)	HSS&AX1/4		2L2x2x3/16x1/2		Chich.5	4,83333	4 @ 10	1346.8	THE STREET
3								1348.5	70.0 ft
H.		A500-45		A36	W16x45			11047	40,0 ft
21	HSSBx8x1/4		2L4x4x3/8x1/2		42	9,62083	3 @ 20	584.2	20.0 ft
C					W6x12			5841.2	0.0 n
Section	regs	Leg Grade	Diagonals	Diagonal Grade	Top Girts	Face Width (ft)	# Panels @ (ft)	Weight (b) 24182.1	<u> </u>

#### **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

b: 800520	CT	HAMDEN NORTH CAC	•

Project: **2019777.800529.07** 

Client: Crown Castle Drawn by: msteward App'd: Code: TIA-222-H Date: 07/24/19

Path: T:iCrown\800829i07\Rev 9ttnxt800529.en

Scale: NTS

#### **Feed Line Distribution Chart** 0' - 100'

Face C Face D Face A Face B 100,00 100.00 95.00 90.00 80,00 76,00 70.00 65.00 60.00 60,00 (18) LDF7-50A (1-5/8 FOAM) (2) HB114-1-0813U4-M5F (1-1/4") Feedline Ladder (At) Climbing Ladder (CCI) Safety Line (3/8") (12) LDF5-60A (718 FOAM) (2) 3/4" DG Power Line (2) 2" Flex Conduit 3/8" Fiber Cable (11) LDFB-50A (1-1/4 FOAM) (6) LDF7-50A (1-5/8 FDAM) 40,00 40,00 20.00 20.00

Elevation (ft)



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° 800529	CT HAMDEN	NORTH CA	ic

Project: 2019777.800529.07

Client: Crown Castle Drawn by: msteward App'd: Code: TIA-222-H Data: 07/24/19 Scale: NTS

Path: T:tCrown\880529187\Rev @tnx\800529.ed

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Client		Designed by
	Crown Castle	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
Consider Moments - Horizontals
Consider Moments - Diagonals
Use Moment Magnification
Use Code Stress Ratios
Use Code Safety Factors - Guys
Escalate Ice
Always Use Max Kz
Leg Special Wind Profile

Always Use Max Kz
Use Special Wind Profile
Include Bolts In Member Capacity
Leg Bolts Are At Top Of Section
Secondary Horizontal Braces Leg
Use Diamond Inner Bracing (4 Sided)
SR Members Have Cut Ends
SR Members Are Concentric

Distribute Leg Loads As Uniform Assume Legs Pinned

- √ Assume Rigid Index Plate
- √ Use Clear Spans For Wind Area
- √ Use Clear Spans For KL/r

  Retension Guys To Initial Tension
- √ Bypass Mast Stability Checks
- ✓ Use Azimuth Dish Coefficients
   ✓ Project Wind Area of Apport.
   Autocalc Torque Arm Areas
   Add IBC .6D+W Combination
   Sort Capacity Reports By Component

Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs Use ASCE 10 X-Brace Ly Rules

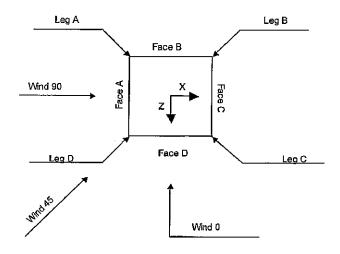
- √ Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression
- √ All Leg Panels Have Same Allowable Offset Girt At Foundation
- √ Consider Feed Line Torque
- Include Angle Block Shear Check
  Use TIA-222-H Bracing Resist. Exemption
  Use TIA-222-H Tension Splice Exemption
  Poles

Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known

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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
LI	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
LA	70.00-60.00			4.83	1	10.00

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

Tower Section	Tower Elevation	Diagonał Spacing	Bracing Type	Has K Brace End	Has Horizontals	Top Girt Offset	Bottom Girt Offset	
	ft	ft		Panels		in	in	
LI	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 fi	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	2L2x2x3/16x1/2	`A36´
L3 80.00-70.00	Tube	HSS6x6x1/4	A500-46	Angle Double Equal	2L2x2x3/16x1/2	(36 ksi) A36

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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
Li 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 Af	Adjust. Factor A,	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1	0.00	0.0000	A36	1	1	1	Mid-Pt	36.0000	36.0000
100.00-90.00			(36 ksi)						0 ( 0 0 0 0
L2 90.00-80.00	0.00	0.0000	A36	1	I	1	Mid-Pt	36.0000	36.0000
* * * * * * * * * * * * * * * * * * * *		0.0000	(36 ksi)		•	1	Mid-Pt	36.0000	36,0000
L3 80.00-70.00	0.00	0.0000	A36	1	Ţ	1	Mid-Pt	30.0000	39.0000
L4 70.00-60.00	0.00	0.0000	(36 ksi) A36 (36 ksi)	1	1	1	Mid-Pt	36.0000	36.0000

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

			K Factors <sup>i</sup>									
Tower Elevation	Calc K Single	Calc K Solid	Legs	X Brace Diags	K Brace Diags	Single Diags	Girts	Horiz.	Sec. Horiz.	Inner Brace		
ft	Angles	Rounds		X Y	X Y	X Y	X Y	X Y	Х У	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		
L3 80.00-70.00	Yes	No	. 1	1 1	1 1	1 I	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		

<sup>&</sup>lt;sup>1</sup>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.

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

Tower Elevation fl	pation A		Leg Diagonal Top Girt		irt	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	<i>U</i>
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 L3 80.00-70.00 L4 70.00-60.00	0.0000	1 1 1	0.0000 0.0000 0.0000	0.75 0.75 0.75	0.0000 0.0000 0.0000	0.75 0.75 0.75	0.0000 0.0000 0.0000	0.75 0.75 0.75	0.0000 0.0000 0.0000	0.75 0.75 0.75	0.0000 0.0000 0.0000	0.75 0.75 0.75	0.000.0 0.000.0 0.000.0	0.75 0.75 0.75

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

Tower Elevation	Leg Connection	Leg		Diagor	ıal	Top G	irt	Bottom	Bottom Girt		Mid Girt		izontal	ntal Short Horizon	
ft	Туре	Bolt Size	No.	Bolt Size	No.	Bolt Size in	No.	Bolt Size	No.	Bolt Size	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	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	60.00-40.00			9.52	1	20.00
T2	40,00-20.00			9.52	Ţ	20.00
T3	20.00-0.00			9.52	1	20.00

## **Tower Section Geometry** (cont'd)

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft		Panels		in	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

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Tower Section Geometry (cont'd)								
Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade		
1 60.00-40.00	Tube	HSS8x8x1/4	A500-46 (46 ksi)	Double Equal Angle	2L4x4x3/8x1/2	A36 (36 ksi)		
2 40.00-20.00	Tube	HSS8x8x1/4	A500-46 (46 ksi)	Double Equal Angle	2L4x4x3/8x1/2	A36 (36 ksi)		
3 20,00-0.00	Tube	H\$\$8x8x1/4	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	Bostom Girt Type	Bottom Girt Size	Bottom Gir Grade				
r1 <b>60.00-4</b> 0.00	Wide Flange	W16x45	A36 (36 ksi)	Flat Bar		A36 (36 ksi)				
2 40.0 <b>0-2</b> 0.00	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	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A <sub>f</sub>	Adjust. Factor A <sub>r</sub>	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft²	in					in	in	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	I	Mid-Pt	36.0000	36.0000

			K Factors <sup>t</sup>								
Tower Elevation	Calc K Single	Calc K Solid	Legs	X Brace Diags	K Brace Diags	Single Diags	Girts	Horiz.	Sec. Horiz.	Inner Brace	
	Angles	Rounds		X	X	X	$\boldsymbol{X}$	$\boldsymbol{X}$	X	$\boldsymbol{X}$	
ft	111.5.02	110 200 2011		Ŷ	Y	Y	Y	Y	Y	Y	
Ťí	Yes	No	1	1	1	1	1	1	1	1	
50.00-40.00				1	1	1	1	I	1	1	
T2	Yes	No	1	1	1	1	1	L	1	1	
10.00-20.00			_	1	1	1	1	i	1	1	
3 20.00-0.00	Yes	No	t.	1	1	1	1	1	ì	1	
3 20.00 0.00	100	210	-	1	1	1	1	1	1	i	

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.

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Tower Section Geometry (cont'd)	<b>Tower</b>	<b>Section</b>	Geometry	1	(cont'd)	)_
---------------------------------	--------------	----------------	----------	---	----------	----

Tower Elevation fl	Leg		Diagor	nal	Top G	irt	Botton	Girt	Mid	Girt	Long Ho	rizontal	Short Ho	rizontal
	Net Width Deduct in	U	Net Widih Deduct in	Ū	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 T2 40.00-20.00 T3 20.00-0.00	0.0000	1 1 1	0.000.0 0.000.0 0.000.0	0.75 0.75 0.75	0.0000 0.0000 0.0000	0.75 0.75 0.75	0.0000 0.0000 0.0000	0.75 0.75 0.75	0.0000 0.0000 0.0000	0.75 0.75 0.75	0.0000 0.0000 0.0000	0.75 0.75 0.75	0.0000 0.0000 0.0000	0.75 0.75 0.75

## Tower Section Geometry (cont'd)

Tower	Leg	Leg		Diagor	al	Top G	irt	Bottom	Girt	Mid G	irt	Long Hori	zontal	Short Hori	izontal
Elevation ft	Connection Type														
3.	-71	Bolt Size	No.	Bolt Size	No.	Bolt Size	No.	Bolt Size	No.						
		in		in		in		in		ın		ın		EII	
T1 60.00-40.00	Flange	0.7500	0	0.8750	2	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
11 00:00 10:00	7 1mipo	A325N		A325N		A325N		A325N		A325N		A325N		A325N	_
T2 40.00-20.00	Flange	0.7500	0	0.8750	2	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
, 12 40.00-20,00	1 1011-00	A325N	•	A325N		A325N		A325N		A325N		A325N		A325N	
T3 20.00-0.00	Flange	0.7500	0	0.8750	2	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
13 20.00-0.00	1 101150	A325N		A325N		A325N		A325N		A325N		A325N		A325N	

## Feed Line/Linear Appurtenances - Entered As Area

Description		Allow Shield	Exclude From	Component	Placement	Face Offset	Lateral Offset	#		$C_AA_A$	Weight
•	or Leg	อนเฮเน	Torque Calculation	Туре	ft	in	(Frac FW)			ft²/ft	plf
Feedline	В	No	No	CaAa (Out	100.00 - 8.00	0.0000	0	1	No	0.00	8.40
Ladder (Af)		110	140	Of Face)					Ice	0.00	13.50
Lauuci (A1)				CITACO					1/2"	0.00	18.60
									Ice	0.00	28.80
									l" Ice		
									2" Ice		
LDF7-50A	В	No	No	CaAa (Out	100.00 - 8.00	0.0000	0	18	No	0.00	0.82
	_	140	140	Of Face)	100,55	4.0000	•		Ice	0.00	2.33
(1-5/8 FOAM)				011200)					1/2"	0.00	4.46
									Ice	0.00	10.54
									1" Ice		
									2" Ice		
Feedline	Α	No	No	CaAa (Out	95.00 - 8.00	0.0000	0	1	No	0.00	8.40
	А	NO	110	Of Face)	22,00 - 0,00	0.000	1		Ice	0.00	13.50
Ladder (Af)				Office					1/2"	0.00	18.60
									Ice	0.00	28.80
									1" Ice		
									2" Ice		
TTD111 1 001		No	No	CaAa (Out	95.00 - 8.00	0.0000	0	2	No	0.00	1.20
HB114-1-081	Α	140	IND	Of Face)	95.00 - 6.00	0.0000	ŭ	-	Ice	0.00	2.45
3U4-M5F				OI FACE)					1/2"	0.00	4.30
(1-1/4")									Ice	0.00	9.85
									I" Ice		3.00
									2" Ice		

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Project	·	Date
	2019777.800529.07	07:34:33 07/24/19
Client		Designed by
	Crown Castle	msteward

Feedline	Description	Face or	Allow Shield	Exclude From	Component Type	Placement	Face Offset	Lateral Offset	#		$C_AA_A$	Weight
Ladder (Af)				Torque	-72-	ft	-				ft²/ft	plf
ILZP   0.00		D	No			75.00 - 8.00	0.0000	0	1			
LDF6-50A   D   No	Ladder (Af)				Of Face)							
LDF6-50A   C   No   No   CaAa (Out   S5.00 - 8.00   0.0000   0   11   No   0.00   0.000   0.0000   0   12   No   0.000   0.00000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.00000   0.0000   0.00000   0.00000   0.00000   0.00000   0.00000   0.00000   0.00000   0.00000   0.00000   0.00000   0.00000   0.00000   0.00000   0.00000   0.000000   0.00000000												
LDF6-50A   D											0.00	28.80
I.DF6-50A   C   No   No   CaAa (Out   Of Face)   Caba (Out   Of Face)   Caba (Out   Of Face)   Caba (Out   Caba												
Clarification   Clarificatio	I DEC SAA	_	37.	37-	0-4-(0-4	75.00 0.00	0.000	0			0.00	0.66
Feedline   C   No   No   CaAa (Out   S5.00 - 8.00   0.0000   0   1   No   No   13.50   1.50   1.20			NO	No		75.00 - 8.00	0.0000	U	Ļi			
Feedline   C	(1-1/4 FOAM)				Of Face)							
Feedline   C												
Peedline   C											0.00	7.33
Feedline   C												
Ladder (Af)	Feedline	C	No	No	Ca Aa (Out	85.00 - 8.00	0.0000	Ω	1		0.00	8.40
1/2"   0.00		~	110	210		0.00	0.0000	·	•			
Second Cable   Color   No	Dadder (211)				OTTUOU							
1												
3/8" Fiber   C   No   No   CaAa (Out   85.00 - 8.00   0.0000   0   1   No   0.00   0.01   Ice   0.00   0.63   Ice   0.00   0.59   Ice   0.00   1.78   Ice   0.00   1.09   Ice   0.00   Ice   Ice   0.00   Ice   Ice   0.00   Ice   Ice   0.00   I											0.00	20.00
3/8" Fiber   Cable												
Cable	3/8" Fiber	С	No	No	CaAa (Out	85.00 - 8.00	0.0000	0	1		0.00	0.10
1/2"   0.00   1.78   1.78   1.79   1.79   1.78   1.79		-										
3/4" DC					,					1/2"	0.00	
Start DC										Ice	0.00	5.90
34" DC   C   No   No   CaAa (Out   S5.00 - 8.00   0.0000   0   2   No   0.00   0.00   1.09										1" Ice		
Fower Line										2" Ice		
Power Line	3/4" DC	C	No	No	CaAa (Out	85.00 - 8.00	0.0000	0	2	No	0.00	0.33
LDF5-50A   C   No   No   CaAa (Out   S5.00 - 8.00   0.0000   0   12   No   0.000   0.33	Power Line									Ice	0.00	1.09
LDF5-50A   C   No   No   CaAa (Out   S5.00 - 8.00   0.0000   0   12   No   0.00   0.33   Icc   0.00   1.30   1/2"   0.00   2.83   Icc   0.00   7.88   1" Icc   2" Icc   0.00   1.85   1/2"   0.00   3.98   Icc   0.00   10.09   1" Icc   2"					,					1/2"	0.00	2.47
LDF5-50A   C   No   No   CaAa (Out   85.00 - 8.00   0.0000   0   12   No   0.00   0.33										Ice	0.00	7.05
LDF5-50A   C   No   No   CaAa (Out   S5.00 - 8.00   0.0000   0   12   No   0.00   0.33				1						1" Ice		
Conduit   Cond										2" Ice		
1/2"   0.00   2.88   1/2"   1/2"   0.00   7.88   1/2"	LDF5-50A	С	No	No	CaAa (Out	85.00 - 8.00	0.0000	0	12	No	0.00	
Tec   0.00   7.88   1"   Icc   2"   Icc   0.00   0.32   Icc   0.00   0.32   Icc   0.00   0.398   Icc   0.00   0.398   Icc   0.00   0.398   Icc   0.00   0.009   Icc   0.00   Icc   Icc   0.00   Icc   0.00   Icc   Icc   0.00   Icc   0.00   Icc   Icc   Icc   Icc   0.00   Icc   Icc   0.00   Icc	(7/8 FOAM)				Of Face)							
Time												
2" Flex C No No No CaAa (Out 85.00 - 8.00 0.0000 0 2 No 0.00 0.32											0.00	7.88
Conduit												
Conduit		_							_			7.00
1/2"   0.00   3.98   1		С	No	No		85.00 - 8.00	0.0000	O	2			
LDF4P-50A   C   No   No   CaAa (Out   100.00 - 8.00   0.0000   0.3   1   No   0.00   0.84	Conduit				Of Face)							
LDF4P-50A   C   No   No   CaAa (Out   100.00 - 8.00   0.0000   0.3   I   No   0.00   0.15												
LDF4P-50A   C   No   No   CaAa (Out   100.00 - 8.00   0.000   0.3   1   No   0.00   0.15											0.00	10.09
LDF4P-50A C No No CaAa (Out 100.00 - 8.00 0.000 0.3 I No 0.00 0.84   1/2" 0.00 0.84   1/2" 0.00 0.84   1/2" 0.00 0.84   1/2" 0.00 0.84   1/2" 0.00 0.84   1/2" 0.00 0.84   1/2" 0.00 0.84   1/2" 0.00 0.84   1/2" 0.00 0.84   1/2" 0.00 0.84   1/2" 0.00 0.84   1/2" 0.00 0.84   1/2" 0.00 0.84   1/2" 0.00 0.84   1/2" 0.00 0.84   1/2" 0.00 0.84   1/2" 0.00 0.84   1/2" 0.00 0.84   1/2" 0.00 0.88   1/2" 0.00 0.88   1/2" 0.00 0.88   1/2" 0.00 0.82   1/2   1/2" 0.00 0.82   1/2" 0.00 0.82   1/2" 0.00 0.82   1/2" 0.00 0.82   1/2" 0.00 0.83   1/2" 0.00 0.84   1/2" 0.00 0.85   1/2" 0.00 0.85   1/2" 0.00 0.85   1/2" 0.00 0.85   1/2" 0.00 0.85   1/2" 0.00 0.85   1/2" 0.00 0.85   1/2" 0.00 0.85   1/2" 0.00 0.85   1/2" 0.00 0.85   1/2" 0.00 0.85   1/2" 0.00 0.00 0.85   1/2" 0.00 0.85   1/2" 0.00 0.00												
(1/2 FOAM)  Of Face)  Ice 0.00 0.84  1/2" 0.00 2.14  Ice 0.00 6.58  1" Ice 2" Ice  Preedline C No No CaAa (Out 65.00 - 8.00 0.0000 0.45 1 No 0.00 8.40  Ladder (Af)  Of Face)  LDF7-50A C No No CaAa (Out 65.00 - 8.00 0.0000 0.45 6 No 0.00 28.80  (1-5/8 FOAM)  Of Face)  Of Face)  LDF7-50A C No No CaAa (Out 65.00 - 8.00 0.0000 0.45 6 No 0.00 0.82  (1-5/8 FOAM)  Of Face)  LDF7-50A C No No CaAa (Out 65.00 - 8.00 0.0000 0.45 6 No 0.00 0.82  (1-5/8 FOAM)  Of Face)  LDF7-50A C No No CaAa (Out 65.00 - 8.00 0.0000 0.45 6 No 0.00 0.82  (1-5/8 FOAM)  Of Face)  LDF7-50A C No No CaAa (Out 65.00 - 8.00 0.0000 0.45 6 No 0.00 0.82  LDF7-50A C No No CaAa (Out 65.00 - 8.00 0.0000 0.45 6 No 0.00 0.82  LDF7-50A C No No CaAa (Out 65.00 - 8.00 0.0000 0.45 6 No 0.00 0.82  LDF7-50A C No No CaAa (Out 65.00 - 8.00 0.0000 0.45 6 No 0.00 0.82  LDF7-50A C No No CaAa (Out 65.00 - 8.00 0.0000 0.45 6 No 0.00 0.82  LDF7-50A C No No No CaAa (Out 65.00 - 8.00 0.0000 0.45 6 No 0.00 0.82  LDF7-50A C No No No CaAa (Out 65.00 - 8.00 0.0000 0.45 6 No 0.00 0.82  LDF7-50A C No No No CaAa (Out 65.00 - 8.00 0.0000 0.45 6 No 0.00 0.82  LDF7-50A C No No No CaAa (Out 65.00 - 8.00 0.0000 0.45 6 No 0.00 0.82  LDF7-50A C No No No CaAa (Out 65.00 - 8.00 0.0000 0.45 6 No 0.00 0.82  LDF7-50A C No No No CaAa (Out 65.00 - 8.00 0.0000 0.45 6 No 0.00 0.82  LDF7-50A C No No No CaAa (Out 65.00 - 8.00 0.0000 0.45 6 No 0.00 0.82  LDF7-50A C No No No CaAa (Out 65.00 - 8.00 0.0000 0.45 6 No 0.00 0.82	I DEAD COA	C	Ma	No	Co to (Out	100.00 8.00	ስ ስስስስ	0.2	ı		0.00	0.15
1/2"   0.00   2.14   1ce   0.00   6.58   1"   1ce   2"   1ce   2.33   2		C	140	190	` .	100.00 - 6.00	0.0000	0.5	1			
Teedline   C   No   No   CaAa (Out   65.00 - 8.00   0.0000   0.45   1   No   0.00   8.40	(I/2 FOAM)				OI race)							
The control of the												
Feedline C No No CaAa (Out 65.00 - 8.00 0.0000 0.45 1 No 0.00 8.40 Ice 0.00 13.50 1/2" 0.00 18.60 Ice 0.00 28.80 1" Ice 10.00 18.60 Ice 0.00 28.80 1" Ice 2" Ice 10.00 18.60 Ice 0.00 28.80 1 Ice 0.00 28.80 Ice 10.00 28.80 Ice 0.00 28.80 Ice 0.00 28.80 Ice 10.00 28.80 Ice 0.00 28.80 Ice 0.00 28.80 Ice 0.00 28.80 Ice 0.00 18.60 Ice 0.00 28.80 Ice 0.00 18.60 Ice 0.00 Ice 0.									0.00	0.50		
Feedline C No No CaAa (Out 65.00 - 8.00 0.0000 0.45 1 No 0.00 8.40 Ladder (Af) Of Face)												
Ladder (Af) Of Face) Icc 0.00 13.50 1/2" 0.00 18.60 Icc 0.00 28.80 Ir Icc 0.00 28.80 Icc 0.00 28.80 Ir Icc 0.00 28.80 Ir Icc 0.00 28.80 Icc 0.00 Icc 0	Feedline	C	No	No	CaAa (Out	65.00 - 8.00	0.0000	0.45	1		0.00	8.40
1/2" 0.00   18.60   1ce   0.00   28.80   1"   Ice   2"   Ice   2"   Ice   2"   Ice   2"   Ice   1.5/8   FOAM   Of Face   Ice   0.00   2.33   1/2"   0.00   10.54   1"   Ice   1.5/4		C	110	140		05.00 - 0.00	0.000	0.13	•			
Ice   0.00   28.80   1" Ice   2" Ice   2.33   2.46   2.	LAUGUOT (711)				011000)							
1"   Ice   2"   Ice   2"   Ice												
2"   Ice   2"   Ice   1.DF7-50A											• 10 0	
LDF7-50A C No No CaAa (Out 65.00 - 8.00 0.0000 0.45 6 No 0.00 0.82 (1-5/8 FOAM)												
(1-5/8 FOAM) Of Face) Ice 0.00 2.33 1/2" 0.00 4.46 Ice 0.00 10.54 1" Ice	LDF7-50A	C	No	No	CaAa (Out	65.00 - 8.00	0.0000	0.45	6		0.00	0.82
1/2" 0.00 4.46 Ice 0.00 10.54 1" Ice		-							•			
Ice 0.00 10.54 1" Ice	(///////////											
l" Ice												
2 NG										2" Ice		

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Client	Crown Castle	Designed by msteward

Description	Face or	Allow Shield	Exclude From	Component Type	Placement	Face Offset	Lateral Offset	#		$C_AA_A$	Weight
	Leg	Distord	Torque Calculation	1)][0	ft	in	(Frac FW)			ft²/ft	plf
Climbing	В	No	No	CaAa (Out	100.00 - 0.00	0.0000	0.45	1	No	0.00	4.81
Ladder (CCI)				Of Face)					Ice	0.00	6.97
				,					1/2"	0.00	9.48 15.54
									Ice	0.00	15.54
									1" Ice		
									2" Ice		
Safety Line	В	No	No	CaAa (Out	100.00 - 0.00	0.0000	0.45	1	No	0.00	0.22
(3/8")				Of Face)					Ice	0.00	0.75
(***)				,					1/2"	0.00	1.28
									Ice	0.00	2.34
									1" Ice		
									2" Ice		

	-	_	-	
1 )iec	roto	Tower	 へつだら	٠
LIBL	rete		 -vau:	

Description	Face or Leg	Offset Type	Offsets: Horz Lateral	Azimuth Adjustment	Placement		C <sub>A</sub> A <sub>A</sub> Front	C <sub>A</sub> A <sub>A</sub> Side	Weight
			Vert ft ft ft	o	ft		ft²	fl²	Ib
SBNHH-1D65A w/ Mount	A	From Leg	1.00	0.0000	100.00	No Ice	0.00	0.00	61,30
Pipe			0.00			1/2" Ice	0.00	0.00	115.03
•			4.00			1" Ice	0.00	0.00	175.35
						2" Ice	0.00	0.00	318.84
SBNHH-1D65A w/ Mount	В	From Leg	1.00	0.0000	100.00	No Ice	0.00	0.00	61.30
Pipe		ŭ	0.00			1/2" Ice	0.00	0.00	115,03
•			4.00			l" Ice	0.00	0.00	175.35
				-		2" Ice	0.00	0.00	318.84
SBNHH-1D65A w/ Mount	D	From Leg	1.00	0.0000	100.00	No Ice	0.00	0.00	61.30
Pipe		-	0.00			1/2" Ice	0.00	0.00	115.03
•			4.00			1" Ice	0.00	0.00	175.35
						2" Ice	0.00	0.00	318.84
DB806-XC	В	From Leg	1.00	0.0000	100.00	No Ice	0.00	0.00	21.00
		_	0.00			1/2" Ice	0.00	0.00	29.93
			4.00			1" Ice	0.00	0.00	42.71
						2" Ice	0.00	0.00	80.38
ATBT-BOTTOM-24V	Α	From Leg	1.00	0.0000	100.00	No Ice	0.00	0.00	2.87
		_	0.00			1/2" Ice	0.00	0.00	4.02
			4.00			1" Ice	0.00	0.00	5.94
						2" Ice	0.00	0.00	12.91
ATBT-BOTTOM-24V	В	From Leg	1.00	0.0000	100.00	No Ice	0.00	0.00	2.87
			0.00			1/2" Ice	0.00	0.00	4.02
			4.00			l" Ice	0.00	0.00	5.94
						2" Ice	0.00	0.00	12.91
ATBT-BOTTOM-24V	D	From Leg	1.00	0.0000	100.00	No Ice	0.00	0.00	2.87
			0.00			1/2" Ice	0.00	0.00	4.02
			4.00			I" Ice	0.00	0.00	5.94
						2" Ice	0.00	0.00	12.91
(2) ATMAA1412D-1A20	A	From Leg	1.00	0.0000	100.00	No Ice	0.00	0.00	13.00
		_	0.00			1/2" Ice	0.00	0.00	20.62
			4.00			1" Ice	0.00	0.00	30.11
						2" Ice	0.00	0.00	55.52
(2) ATMAA1412D-1A20	В	From Leg	1.00	0.0000	100.00	No Ice	0.00	0.00	13.00
			0.00			1/2" Ice	0.00	0.00	20.62
			4.00			l" Ice	0.00	0.00	30.11

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	800529 CT HAMDEN NORTH CAC	9 of 12
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	Azimuth Adjustment	Placement		$C_AA_A$ Front	C <sub>A</sub> A <sub>A</sub> Side	Weight
(2) ATMAA1412D-1A20 D From Leg 1.00 0.0000 100.00 No face 0.00 0.00 0.00 0.00 1/2" Ice 0.00 0.00 0.00 0.00 1/2" Ice 0.00 0.00 0.00 0.00 1/2" Ice 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.				fî fî	۵	fì		ft²	fî²	lb
(2) ATMAA1412D-1A200 D From Leg 1.00 0.0000 100.00 No Ice 0.00 0.00				Ji			2" Ice	0.00	0.00	55.52
BXA-70063-6CF-EDIN-X w/   A   From   A   00   0.0000   95.00   No lec   0.00   0.000	ATMAA14[2D-1A20	D	From Leg		0.0000	100.00				13.00
BXA-70063-6CF-EDIN-X w/ Mount Pipe								0.00	0.00	20.62
BXA-70063-6CF-EDIN-X w/ Mount Pipe				4.00						30.11
Mount Pipe	70/162 6CE EDW V/	٨	17	4.00	0.0000	05.05				55.52
BXA-70063-6CF-EDIN-X w/ C From 4.00 0.000 95.00 No lee 0.00 0.00   BXA-70063-6CF-EDIN-X w/ D From 4.00 0.000 95.00 No lee 0.00 0.00   BXA-70063-6CF-EDIN-X w/ D From 4.00 0.000 95.00 No lee 0.00 0.00   BXA-70063-6CF-EDIN-X w/ D From 4.00 0.000 95.00 No lee 0.00 0.00   BXA-80080/4CF w/Mount A From 4.00 0.000 95.00 No lee 0.00 0.00   BXA-80080/4CF w/Mount Pipe		A			0.0000	95.00				42.25
BXA-70063-6CF-EDIN-X w/ Mount Pipe	1/20an 1 ipb									103.01
BXA-70063-6CF-EDIN-X w/   C			8	3.00						171.49
Mount Pipe	70063-6CF-EDIN-X w/	C	From	4 00	0.0000	95.00				335.23 42.25
BXA-70063-6CF-EDIN-X w/ Mount Pipe  BXA-80080/4CF w/Mount Pipe  Centroid-Le  BXA-80080/4CF w/Mount Pipe  Centroid-Le  Cent	Mount Pipe				0.000	23.00				103.01
BXA-70063-6CF-EDIN-X w/ D			g							171.49
Mount Pipe   Centroid-Le   0.00   3.00   1.72"   Se   0.00   0.00			_							335.23
BXA-80080/4CF w/Mount   A   From   4.00   0.0000   95.00   No Ice   0.00   0.000   0		D		4.00	0.0000	95.00	No Ice			42,25
BXA-80080/4CF w/Mount Pipe  (2) JAHH-65B-R3B w/ Mount Pipe  (2) JAHH-65B-R3B w/ Mount Pipe  (2) JAHH-65B-R3B w/ Mount Pipe  (3) JAHH-65B-R3B w/ Mount Pipe  (2) JAHH-65B-R3B w/ Mount Pipe  (3) JAHH-65B-R3B w/ Mount Pipe  (4) Centroid-Le 0.00 0.000	Mount Pipe		Centroid-Le				1/2" Ice	0.00	0.00	103.01
BXA-80080/4CF w/Mount   A   From   4.00   0.0000   95.00   No Ice   0.00   0.000			g	3.00					0.00	171.49
Pipe	90000/400 /5 4 /		-							335.23
BXA-80080/4CF w/Mount   C   From   4.00   0.0000   95.00   No Ice   0.00   0.000	,	A			0.0000	95.00				39.85
BXA-\$0080/4CF w/Mount Pipe   Centroid-Le   0.00   0.0000   95.00   No kee   0.00   0.0	ripe									89.34
BXA-80080/4CF w/Mount Pipe			g	3.00						145.14
Pipe	80080/4CF w/Mount	C	From	4.00	0.0000	05.00				279.30
BXA-80080/4CF w/Mount   D   From   4.00   0.0000   95.00   No Ice   0.00   0.00		. •			0.0000	95.00				39.85
BXA-80080/4CF w/Mount Pipe	1 1p0									89.34
BXA-80080/4CF w/Mount   Pipe			5	3.00						145,14 279.30
Pipe   Centroid-Le   0.00     1/2"   Ice   0.00   0	80080/4CF w/Mount	D	From	4.00	0.0000	95.00				39.85
(2) JAHH-65B-R3B w/ Mount Pipe  A From 4.00 0.0000 95.00 No Ice 0.00 0.00  Mount Pipe  Centroid-Le 0.00	Pipe					73.00				89.34
(2) JAHH-65B-R3B w/ Mount Pipe    Centroid-Le   0.00   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.00000   0.00000   0.00000   0.00000   0.00000   0.00000   0.0000000   0.000000   0.0000000   0.00000000			g							145.14
(2) JAHH-65B-R3B w/ Mount Pipe										279.30
Mount Pipe   Centroid-Le   0.00     1/2" Ice   0.00   0.		A	From	4.00	0.0000	95.00				86.15
(2) JAHH-65B-R3B W/ Mount Pipe  Centroid-Le 0.00	Mount Pipe		Centroid-Le				1/2" Ice	0.00		162.72
(2) JAHH-65B-R3B w/ Mount Pipe			g	3.00			1" <b>I</b> ce	0.00	0.00	247.46
Mount Pipe   Centroid-Le   0.00   1/2" Ice   0.00	11707 CCD DAD 4	_	_						0.00	445.07
S   3.00   I" Ice   0.00   0		C			0.0000	95.00				86.15
(2) JAHH-65B-R3B w/ D From 4.00 0.0000 95.00 No Ice 0.00 0.00 Mount Pipe	Mount Pipe									162.72
(2) JAHH-65B-R3B w/ Mount Pipe			8	3.00						247.46
Mount Pipe   Centroid-Le   0.00   1/2"   Ice   0.00   0.	ΔΉΗ_65R_P2R *v/	D	Trom	4.00	0.0000	05.00				445.07
B25 RRH4x30-4R		ъ			0.0000	95.00				86.15
B25 RRH4x30-4R	man i p									162.72
B25 RRH4x30-4R			8	2.00						247.46 445.07
Centroid-Le   0.00   1/2" Ice   0.00   0.00	25 RRH4x30-4R	Α	From	4.00	0.0000	95.00				51.00
B25 RRH4x30-4R C From 4.00 0.0000 95.00 No Ice 0.00 0.00 Centroid-Le 0.00 0.000 95.00 No Ice 0.00 0.00 0.00 B2* Ice 0.00 0.00 0.00 1/2* Ice 0.00 0.00 0.00 B2* Ice 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.					510 3 0 5	22.00				68.46
B25 RRH4x30-4R			g							88.75
B25 RRH4x30-4R			_							138.59
Centroid-Le	25 RRH4x30-4R	С	From	4.00	0.0000	95.00				51.00
B25 RRH4x30-4R D From 4.00 0.0000 95.00 No Ice 0.00 0.00 Centroid-Le 0.00 1/2" Ice 0.00 0.00 1/2" Ice 0.00 0.00 g 0.00 1" Ice 0.00 0.00 2" Ice 0.00 0.00			Centroid-Le				1/2" Ice			68.46
B25 RRH4x30-4R D From 4.00 0.0000 95.00 No Ice 0.00 0.00 Centroid-Le 0.00 1/2" Ice 0.00 0.00 g 0.00 1" Ice 0.00 0.00 2" Ice 0.00 0.00			g	0.00			1" Ice	0.00		88.75
Centroid-Le 0.00 1/2" Ice 0.00 0.00 g 0.00 1" Ice 0.00 0.00 2" Ice 0.00 0.00	SEDDITA 40 AB		_						0.00	138,59
g 0.00 I* Ice 0.00 0.00 2" Ice 0.00 0.00	⊃ KKH4x30-4R ]				0.0000	95.00				51.00
2" Ice 0.00 0.00										68.46
2" Ice 0.00 0.00			g	0.00						88.75
	A DDEIAVAS AD		F	4.00	0.0000	25.00				138.59
B66A RRH4X45-4R A From 4.00 0.0000 95.00 No Ice 0.00 0.00	AP-CPARLIAL AN				0.0000	95.00				56.80
Centroid-Le 0.00 1/2" Ice 0.00 0.00		,								76.92
g 0.00 1" Ice 0.00 0.00 2" Ice 0.00 0.00			¥	0.00						100.15 156.66

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

Job		Page
	800529 CT HAMDEN NORTH CAC	10 of 12
Project	2019777.800529.07	Date 07:34:33 07/24/19
Client	Crown Castle	Designed by msteward

Description	Face or	Offset Type	Offsets: Horz	Azimuth Adjustment	Placement		$C_AA_A$ Front	C.A.A Side	Weight
	Leg		Lateral Vert						
			fi fi ft	o	ft		ft²	fi²	1b
B66A RRH4X45-4R	С	From	4.00	0.0000	95.00	No Ice	0.00	0.00	56.80
		Centroid-Le	0.00			1/2" Ice	0.00	0.00	76.92
		g	0.00			l" Ice	0.00	0.00	100.15
DCCI BBTTANAC AD	ъ.		4.00	0.0000	05.00	2" Ice No Ice	0.00 0.00	0.00	156.66 56.80
B66A RRH4X45-4R	Ð	From Centroid-Le	4.00 0.00	0.0000	95.00	1/2" Ice	0.00	0.00	76.92
		g emaona-re	0.00			1" Ice	0.00	0.00	100.15
		•	0.00			2" Ice	0,00	0.00	156.66
DB-T1-6Z-8AB-0Z	A	From	4.00	0.0000	95.00	No Ice	0.00	0.00	44.00
		Centroid-Le	0.00			1/2" Ice	0.00	0.00	80.13
		g	0.00			1" Ice	0.00	0.00	120.22
						2" Ice	0.00	0.00	213.04
DB-T1-6Z-8AB-0Z	C	From	4.00	0.0000	95.00	No Ice	0.00	0.00	44.00
		Centroid-Le	0.00			1/2" Ice	0.00	0.00	80.13 120.22
		g	0.00			1" Ice 2" Ice	0.00 0.00	0.00 0.00	213.04
RFV01U-D2A	Α	From	4.00	0.0000	95.00	No Ice	0.00	0.00	73.00
RF VOIO-DZA	А	Centroid-Le	0.00	0.0000	95.00	1/2" Ice	0.00	0.00	89.43
		g g	0.00			1" Ice	0.00	0.00	108.53
						2" Ice	0.00	0.00	155.50
RFV01U-D2A	С	From	4.00	0.0000	95.00	No Ice	0.00	0.00	73.00
		Centroid-Le	0.00			1/2" Ice	0.00	0.00	89.43
		g	0.00			l" Ice	0.00	0.00	108.53
						2" Ice	0.00	0.00	155.50
RFV01U-D2A	D	From	4.00	0.0000	9 <b>5</b> .00	No Ice	0.00	0.00	73.00
		Centroid-Le	0.00			1/2" Ice	00.00 00.0	0.00 0.00	89.43 108.53
		g	0,00	•		1" Ice 2" Ice	0.00	0.00	155.50
800 10121 w/ Mount Pipe	A	From	4.00	0.0000	85.00	No Ice	0.00	0.00	64.55
600 10121 w Mount Tipe	r.	Centroid-Le	0.00	0.0000	45,00	1/2" Ice	0.00	0.00	110.68
		g	0.00			1" Ice	0.00	0.00	163.06
		5				2" Ice	0.00	0.00	289.46
800 10121 w/ Mount Pipe	С	From	4.00	0.0000	85.00	No Ice	0.00	0.00	64.55
•		Centroid-Le	0.00			1/2" Ice	0.00	0.00	110.68
		g	0.00			1" Ice	0.00	0.00	163.06
						2º Ice	0.00	0.00	289.46
800 10121 w/ Mount Pipe	D	From	4.00	0.0000	85.00	No Ice	0.00	0.00	64.55
		Centroid-Le	0.00			1/2" Ice 1" Ice	0.00 0.00	0.00 0.00	110.68 163.06
		g	0.00			2" Ice	0.00	0.00	289.46
HPA-33R-BUU-H6 w/	A	From	4.00	0.0000	85.00	No Ice	0.00	0.00	104.95
Mount Pipe		Centroid-Le	0.00	3.5505	50.50	1/2" Ice	0.00	0.00	209.02
		g	0.00			1" Icc	00.0	0.00	321.92
		J				2" Icc	0.00	0.00	577.86
HPA-33R-BUU-H6 w/	C	From	4.00	0.0000	85.00	No Ice	0.00	0.00	104.95
Mount Pipe		Centroid-Le	0.00			1/2" Ice	0.00	0.00	209.02
		g.	0.00			l" Ice	0.00	0.00	321.92
	-	_	4.00	0.0000	0.5.00	2" Ice	0.00	0.00	577,86
HPA-33R-BUU-H6 w/	D	From	4.00	0.0000	85.00	No Ice 1/2" Ice	00.0 00.0	0.00 0.00	104,95 209,02
Mount Pipe		Centroid-Le	00.0 00.0			1/2 (ce 1º Ice	0.00	0.00	321.92
		g	0.00			2" Ice	0.00	0.00	577.86
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
	A	From	4.00	0.0000	85.00	No Ice	0.00	0.00	89.03

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Job		Page
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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	Azimuth Adjustment	Placement		C <sub>A</sub> A <sub>A</sub> Front	C <sub>A</sub> A <sub>A</sub> Side	Weight
			Vert ft fi ft	o	ft		ft²	fî²	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
		_				2º 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) 0 (2 4 2 2 2 2	_	_				2" Ice	0.00	0.00	13.42
(2) 860 10025	С	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
(0) 0/0 10005	_	_	4.00	0.0000		2" Ice	0.00	0.00	13.42
(2) 860 10025	D	From	4.00	0.000	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) DTM ( A D D701 01 (010 )		<del></del>	4.00	0.0000	97.00	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) DTMABP7819VG12A	C	From	4.00	0.0000	85.00	2" Ice	0.00 0.00	0.00 0.00	60.23 19.18
(2) DIMADE /619 VOIZA	C	Centroid-Le	0.00	0.0000	63.00	No Ice 1/2" Ice	0.00	0.00	26.48
			0.00			172 Ice 1" Ice	0.00	0.00	26.46 35.63
		g	0.00			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
(2) DIWADI 7019 VOIZA	D	Centroid-Le	0.00	0.0000	UU.CB	1/2" Ice	0.00	0.00	26.48
		g g	0.00			1" Ice	0.00	0.00	35.63
		5	0.00			2" Ice	0.00	0.00	60.23
DC6-48-60-18-8F Surge	Α	From	4.00	0.0000	85.00	No Ice	0.00	0.00	18.90
Suppression Unit	11	Centroid-Le	0.00	0.0000	63.00	1/2" Ice	0.00	0.00	36,62
Dupprooff Chi		g	0.00			1" Ice	0.00	0.00	56.82
		6	0.20			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
<b></b>		Centroid-Le	0.00			1/2" Ice	0.00	0.00	68.42
		g	0.00			1" Ice	0.00	0.00	92.25
		G				2" Ice	0.00	0.00	149.81
RRUS-11	С	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	Ð	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			I" Ice	0.00	0.00	92.25
		_				2" Ice	0.00	0.00	149.81
RRUS 32 B2	Α	From	4.00	0.0000	85.00	No Ice	0.00	0.00	<b>52.9</b> 0
		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 Centroid-Le	4.00 0.00	0.0000	85.00	No Ice 1/2" Ice	0.00 0.00	0.00 0.00	52.90 73.96

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Project		Date
	2019777.800529.07	07:34:33 07/24/19
Client	Crown Castle	Designed by msteward

Description	Face or Leg	Offset Type	Offseis: Horz Lateral	Azimuth Adjustment	Placement		$C_A A_A$ Front	C₄A₄ Side	Weight
			Vert ft ft ft	o	ft		ft²	ft²	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	4.00	0.0000	75.00	No Ice	0.00	0.00	43.55
		Centroid-Le	0.00	******		1/2" Ice	0.00	0.00	88.76
		g	0.00			I" Ice	0.00	0.00	139.53
						2" Ice	0.00	0.00	261.39
A-18A24N-U w/ mount pipe	Ð	From	4.00	0.0000	75.00	No Ice	0.00	0.00	43.55
		Centroid-Le	0.00			1/2" Ice	0.00	0.00	88.76
		g	0.00			1" Ice	0.00	0.00	139.53
		U				2" Ice	0.00	0.00	261.39
(3) DB844H90E-XY w/	Α	From	4.00	0.0000	75.00	No Ice	0.00	0.00	43.20
Mount Pipe		Centroid-Le	0.00			1/2" Ice	0.00	0.00	90.60
		g	0.00			1" Ice	0.00	0.00	144.32
		ū				2" Ice	0.00	0.00	274.74
(4) DB844H90E-XY w/	В	From	4.00	0.0000	75.00	No Ice	0.00	0.00	43.20
Mount Pipe		Centroid-Le	0.00			1/2" Ice	0.00	0.00	90.60
		g	0.00			1" Ice	0.00	0.00	144.32
		ŭ				2" Ice	0.00	0.00	274.74
(3) DB844H90E-XY w/	D	From	4.00	0.0000	75.00	No Ice	0.00	0.00	43.20
Mount Pipe		Centroid-Le	0.00			1/2" Ice	0.00	0.00	90.60
		g	0.00			l" Ice	0.00	0.00	144.32
		•				2" Ice	0.00	0.00	274.74
742 213 w/ Mount Pipe	Α	From Leg	1.00	0.0000	65.00	No Ice	0.00	0.00	51.20
		, ,	0.00			1/2" Ice	0.00	0.00	97.45
			0.00			1" Ice	0.00	0.00	151.50
						2" Ice	0.00	0.00	287.00
742 213 w/ Mount Pipe	С	From Leg	1.00	0.0000	65.00	No Ice	0.00	0.00	51.20
		5	0.00			1/2" Ice	0.00	0.00	97.45
			0.00			1" Ice	0.00	0.00	151.50
						2" Ice	0.00	0.00	287.00
742 213 w/ Mount Pipe	D	From Leg	1.00	0.0000	65.00	No Ice	0.00	0.00	51.20
		J	0.00			1/2" Ice	- 0.00	0.00	97.45
			0.00			1" Ice	0.00	0.00	151.50
						2" Ice	0.00	0.00	287.00



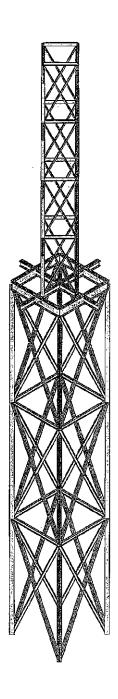
Structure Information	mation		
Structure Type:	Building		
Subtruit deignt:	gn.	Ŀ	
Gh (Mount Gust Effect Factor) =	1,00		
Risk Category:	=		

Code S	Code Specifications	
IBC Edition:	2015	
TA/EIA Code:	Ŧ	
Ultimate Wind Speed (No Ice) =	125	mph (3-s gust)
Ultimate Wind Speed (With Ice) =	25	mph (3-s gust)
ice Thickness	ដ	E
Exposure Category	U	
Building Base Elevation (AMSL)	139	#

Structure Information	fermation				Çoq	Code Specifications				Topog	Topographic Inputs	
Structure Type:	Building		<u> </u>		IBC Edition:	2015				Tooperarhir Festives	21/4	
Structure Height:	108	æ			TA/EIA Code:	Ŧ				100000	V/0	
Gh iMount Gust Effect Factori≈	:			Ultimate V	Ultimate Wind Speed (No Ice) =	125	mph (3-s gust)					
Risk Category:					= (avitation) = lee Thickness	1	· mpm (3-5 gust) In					
					Exposure Category	U	1					
			l	Building	Building Base Elevation (AMSL)	139	#					
	-			Section Sets						1014		
										23:02	indino an	-
Mount Components	МетрегТүре	Length (in)	Side (Longest seeing wind) (in)	Other Side (in)	Calculated Dc, for the toe weight (in)	Dc, for Ice weight (in)	Area Type (Round or Flat)	,	User's Wind Multiplier	Normal Wind Pressure [lb/ft^2]*	Normal Ice Wind Force (Ib/ft^2)*	ice Weight (ib/ft)*
Cap	Pipe	000.96	192	192		192,00	Raund	0.90	9.60	251 BC	90.0	00 100
rer from 90*-100"	Pipe	120.000	192	192		192.00	Round	0.90	090	26.60	57.6	20.750
rer from 80'-90'	Pige	120,000	192	192		192.00	Round	0.80	1 50	17.60	9 6	000
Ar from 70'-80"	Pjpe	120,000	192	192		197.00	Round	0.50	. 180	26.97	9 6	00,000
/er from 60'-70'	Pipe	120,000	192	192		192,00	Round	0.90	0.60	26.17	2.98	379 69
/er from 40'-60'	He.	240,000	192	192		192.00	Round	0.90	0.60	24.76	2.82	369 77
rer from 20'-40'	Pipe	240,000	192	. 261		392,00	Round	0.90	0.60	22.23	2 23	351.23
иет from 0'-20"	Мре	240	201	192		192.00	Round	06.0	0,60	19.24	2.18	314,43
										ball former and referenced		

		Appu	Appurtenances					Shielding		No Ice	88	lee Output
Appurtenance Model	Loading Elevation (ft) Height (in) Front Width (in)	Height (in)	Front Width (In)	Side Depth (in)	wt (lbs)	Type for Area	Front Shielding	Side Shielding (%)	K, and/or block shielding	Normal Wind Force (Ibs)*	Wt (lbs) (no ice)*	From Sidelding Side Shelding K, and/or block Normal Wind Wt (lbs) (no los)* Normal Wind Force (fbs) wt (lbs) (only res)* (56) shelding Force (bs)* Only res)*
<u> </u>									060 060 060 060			
ලි ලි ලි	-								06.0 08.0			





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



Company : GPD
Designer : MKS
Job Number : 2019777.800529.07
Model Name : 800529 CT HAMDEN NORTH CAC

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#### (Global) Model Settings

5
97
Yes
Yes
Yes
Yes
144
.12
0.50%
Yes
No
3
32.2
24
4
Ý
XZ
Sparse Accelerated
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



Company Designer

y : GPD r : MKS

Job Number : 2019777.800529.07

Model Name : 800529 CT HAMDEN NORTH CAC

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(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
TX (sec)	Not Entered
TZ (sec)	Not Entered
RX	
RZ	3
<u></u>	3.
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	l 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	Yieldiksil	Rv	Fu[ksi]	Rt
1	<u>A500-46</u>	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]	Jvy [in4]	lzz (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	<u>Column</u>	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		Wide Flan		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



Company : GPD
Designer : MKS
Job Number : 2019777.800529.07
Model Name : 800529 CT HAMDEN NORTH CAC

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#### Member Primary Data

111/01/	ibel Filli	ary Da	<u></u>							
	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		A36	Typical
2	M10	N4	N1		1	TWR DIAG L1	Column	None	A36	Typical
3	M11	N4	N5			TWR DIAG L1	Column		A36	Typical
4.	M12	N6	N3		f	TWR DIAG L1	Column		A36	Typical
5	M13	N6	N7		1	TWR DIAG L1	Column		A36	
6	M14	N8	N5				Column			Typical
7	M15		N1		<del> </del>	TWR_DIAG_L1			A36	Typical
		N8	I IV I		<del>                                     </del>	TWR DIAG L1	Column		A36	<u>Tvpical</u>
. 8	M16	N2	N7			TWR DIAG L1	Column		A36	Typical
9	M25	N13	N4			TWR DIAG L2	Column		A36	Typical
10	M26	N14	N2			TWR_DIAG_L2	Column		A36	Typical
11	M27	N14	N6			TWR DIAG L2	Column		A36	Typical
12	M28	N15	N4			TWR_DIAG_L2	Column		A36	Typical
13	M29	N15	N8			TWR DIAG L2	Column	None	A36	Typical
14	M30	N16	N6		ll	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		i i	TWR DIAG L3	Column	None	A36	Typical
18	M42	N22	N13			TWR DIAG L3	Column	None	A36	Typical
19	M43	N22	N15		<del> </del>	TWR DIAG L3	Column	None	A36	Typical
20	M44	N23	N14		<del>-</del>	TWR DIAG L3	Column	None	A36	
21	M45	N23	N16	· · · · · · · · · · · · · · · · · · ·	<del>├</del>	TWR DIAG L3	Column			Typical
22	M46	N24	N15		<del> </del>		Column	None	A36	Typical
					- <del></del> -	TWR_DIAG_L3		None	A36	Typical
23	M47	N24	N13			TWR DIAG L3	Column	None	A36	<u>Typical</u>
24	<u> M48</u>	N21	N16			TWR DIAG L3	Column	None	A36	Typical
25	<u>M57</u>	N29	N22		ļ	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		ļ <u>.</u>	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		i	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 TI	Column	None	A36	Typical
37	M77	N42	N43			TWR DIAG T1	Column	None	A36	
38	M78	N44	N41		<del></del>	TWR DIAG T1	Column			Typical
								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 Typical
41	M89	N49	N40		000	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	<u>M93</u>	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	
54	M110	N60	N51				Column			Typical
55	M111			•	•	TWR DIAG T3	·	None	A36	Typical
		N60	N49			TWR DIAG T3	Column	None	A36	Typical
56	M112	N57	N52			TWR_DIAG_T3	Column	None	A36	Typical



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#### Member Primary Data (Continued)

58 M2 N4 N3		Label	I Joint	J Joint	K Joint	Rotate(d	Section/Shape	Type	Design List	Material	Design Ru
Fig.   May   Nay   Nay	57				IX JOIN						Typical
Sep   M3   N6   N5   225   TWR LEG   1   Column   Tube   A500-46   Typ											Typical
Fig.   M4					· `						Typical
61   M17   M13   N2   45   TWR LEG   2   Column   Tube   A500-46   Typ     63   M18   M14   M4   M4   M35   TWR LEG   2   Column   Tube   A500-46   Typ     64   M20   N16   N8   225   TWR LEG   2   Column   Tube   A500-46   Typ     65   M33   N21   N13   M5   ST   TWR LEG   2   Column   Tube   A500-46   Typ     66   M34   N22   N14   S15   TWR LEG   3   Column   Tube   A500-46   Typ     67   M35   N23   N16   225   TWR LEG   3   Column   Tube   A500-46   Typ     68   M38   N24   N18   S15   TWR LEG   3   Column   Tube   A500-46   Typ     69   M39   N29   N21   45   TWR LEG   3   Column   Tube   A500-46   Typ     70   M50   N30   N22   S135   TWR LEG   4   Column   Tube   A500-46   Typ     71   M51   N31   N23   225   TWR LEG   4   Column   Tube   A500-46   Typ     72   M52   N32   N24   S15   TWR LEG   4   Column   Tube   A500-46   Typ     73   M65   N38   N37   45   TWR LEG   4   Column   Tube   A500-46   Typ     74   M68   N40   N39   S135   TWR LEG   4   Column   Tube   A500-46   Typ     75   M67   M32   N41   225   TWR LEG   1   Column   Tube   A500-46   Typ     76   M68   M44   N43   S15   TWR LEG   1   Column   Tube   A500-46   Typ     77   M81   M49   N38   45   TWR LEG   1   Column   Tube   A500-46   Typ     78   M82   N50   N40   S15   TWR LEG   1   Column   Tube   A500-46   Typ     79   M83   N44   N43   S15   TWR LEG   1   Column   Tube   A500-46   Typ     79   M81   M49   N38   45   TWR LEG   1   Column   Tube   A500-46   Typ     79   M81   N49   N38   45   TWR LEG   1   Column   Tube   A500-46   Typ     79   M81   N49   N38   45   TWR LEG   1   Column   Tube   A500-46   Typ     79   M81   N49   N38   45   TWR LEG   1   Column   Tube   A500-46   Typ     79   M81   N49   N38   45   TWR LEG   1   Column   Tube   A500-46   Typ     79   M81   N49   N38   45   TWR LEG   1   Column   Tube   A500-46   Typ     79   M83   N89   N											Typical
62   M18 N14 N14 N14   135 TWR LEG L2 Column Tube					· · · · · ·						Typical
64 M20 N16 N8 315 TWR LEG L2 Column Tube A500-46 Typl 65 M33 N21 N13 45 TWR LEG L3 Column Tube A500-46 Typl 66 M34 N22 N14 135 TWR LEG L3 Column Tube A500-46 Typl 67 M35 N23 N15 225 TWR LEG L3 Column Tube A500-46 Typl 68 M34 N22 N14 135 TWR LEG L3 Column Tube A500-46 Typl 68 M36 N24 N18 315 TWR LEG L3 Column Tube A500-46 Typl 70 M36 N30 N22 N31 N31 TWR LEG L3 Column Tube A500-46 Typl 70 M36 N30 N22 N22 N32 TWR LEG L4 Column Tube A500-46 Typl 70 M36 N30 N22 N35 TWR LEG L4 Column Tube A500-46 Typl 71 M31 N31 N33 N37 TWR LEG L4 Column Tube A500-46 Typl 72 M36 N38 N37 A5 TWR LEG L4 Column Tube A500-46 Typl 72 M36 N38 N37 A5 TWR LEG L4 Column Tube A500-46 Typl 73 M36 N38 N37 A5 TWR LEG L4 Column Tube A500-46 Typl 74 M36 N39 N37 A5 TWR LEG L1 Column Tube A500-46 Typl 75 M36 N38 N37 A5 TWR LEG L1 Column Tube A500-46 Typl 76 M36 N38 N37 A5 TWR LEG T1 Column Tube A500-46 Typl 77 M36 N38 N37 M37 M37 M37 M37 M37 M37 M37 M37 M37 M						135					Typical
64   M32   M16   M8   M15   TWR   LEG   L2   Column   Tube   A500-46   Typ					<del></del>	225					Typical
66   M33   N21   N13   45   TWR LEG 13   Column   Tube   A500-46   Typ					. :				Tube		Typical
66   M34   M22				N13	····						Typical
68   M36   N24   N15   225   TWR LEG 13   Column   Tube   A500-46   Typ						135					Typical
68   M38   N24   N16   315   TWR LEG L3   Column   Tube   A500-46   Typ						225					Typical
Fig.   May   N29   N21   45   TWR   LEG   L4   Column   Tube   A500-46   Typi					·						Typical
TWO   M50   N30   N22   135   TWR   LEG   L4   Column   Tube   A500-46   Typ   Typ   M51   N31   N23   225   TWR   LEG   L4   Column   Tube   A500-46   Typ   Typ   M52   N32   N24   315   TWR   LEG   L4   Column   Tube   A500-46   Typ   Typ   M52   N32   N24   315   TWR   LEG   L4   Column   Tube   A500-46   Typ   Typ   M68   N40   N39   135   TWR   LEG   L7   Column   Tube   A500-46   Typ   Typ   M68   N40   N39   135   TWR   LEG   L7   Column   Tube   A500-46   Typ   Typ											Typical
Times											Typical
Type											Typical
Table											Typical
Type											Typical
To   Mes									Tube		
Total											
Type											
Type					,						
Type						40°E					
80         M84         N52         N44         316         TWR LEG T3         Column         Tube         A500-46         Typl           81         M97         N57         N49         45         TWR LEG T3         Column         Tube         A500-46         Typl           82         M98         N58         N50         135         TWR LEG T3         Column         Tube         A500-46         Typl           83         M99         N59         N51         225         TWR LEG T3         Column         Tube         A500-46         Typl           84         M100         N60         N52         315         TWR LEG T3         Column         Tube         A500-46         Typl           85         M5         N1         N3         180         TWR TOP GIRT L1         Beam         Channel         A36         Typl           86         M6         N3         N5         180         TWR TOP GIRT L1         Beam         Channel         A36         Typl           87         M7         N5         N7         180         TWR TOP GIRT L1         Beam         Channel         A36         Typl           88         M81         N7         N1											
81         M97         N57         N49         45         TWR LEG T3         Column Tube         A500-46         Typi           82         M98         N58         N50         135         TWR LEG T3         Column Tube         A500-46         Typi           84         M100         N60         N52         315         TWR LEG T3         Column Tube         A500-46         Typi           85         M5         N1         N3         180         TWR TOP GIRT L1         Beam Channel         A36         Typi           86         M6         N3         N5         180         TWR TOP GIRT L1         Beam Channel         A36         Typi           87         M7         N5         N7         180         TWR TOP GIRT L1         Beam Channel         A36         Typi           88         M8         N7         N1         180         TWR TOP GIRT L2         Beam Channel         A36         Typi           89         M21         N2         N4         180         TWR TOP GIRT L2         Beam Channel         A36         Typi           89         M22         N4         N6         180         TWR TOP GIRT L3         Beam Channel         A36         Typi      <											
M98											
83   M99   N59   N51   225   TWR LEG T3   Column   Tube   A500-46   Typi					, ,	45				A500-46	
84         M100         N60         N52         315         TWR LEG T3         Column         Tube         A500-46         Typi           85         M5         N1         N3         180         TWR TOP GIRT L1         Beam Channel         A36         Typi           86         M8         N3         N5         180         TWR TOP GIRT L1         Beam Channel         A36         Typi           87         M7         N5         N7         180         TWR TOP GIRT L1         Beam Channel         A36         Typi           88         M8         N7         N1         180         TWR TOP GIRT L2         Beam Channel         A36         Typi           89         M21         N2         N4         180         TWR TOP GIRT L2         Beam Channel         A36         Typi           91         M23         N6         N8         180         TWR TOP GIRT L2         Beam Channel         A36         Typi           92         M24         N8         N2         180         TWR TOP GIRT L3         Beam Channel         A36         Typi           93         M37         N13         N14         180         TWR TOP GIRT L3         Beam Channel         A36         Typi<											
85         M5         N1         N3         180         TWR TOP GIRT L1         Beam Channel         A36         Typi           86         M8         N3         N5         180         TWR TOP GIRT L1         Beam Channel         A36         Typi           87         M7         N5         N7         180         TWR TOP GIRT L1         Beam Channel         A36         Typi           88         M8         N7         N1         180         TWR TOP GIRT L2         Beam Channel         A36         Typi           89         M21         N2         N4         180         TWR TOP GIRT L2         Beam Channel         A36         Typi           90         M22         N4         N6         180         TWR TOP GIRT L2         Beam Channel         A36         Typi           91         M23         N6         N8         180         TWR TOP GIRT L3         Beam Channel         A36         Typi           92         M24         N8         N2         180         TWR TOP GIRT L3         Beam Channel         A36         Typi           93         M37         N13         N14         180         TWR TOP GIRT L3         Beam Channel         A36         Typi											Typical
86         M6         N3         N5         180         TWR_TOP_GIRT_L1         Beam Channel         A36         Typi           87         M7         N5         N7         180         TWR_TOP_GIRT_L1         Beam Channel         A36         Typi           88         M8         N7         N1         180         TWR_TOP_GIRT_L1         Beam Channel         A36         Typi           89         M21         N2         N4         180         TWR_TOP_GIRT_L2         Beam Channel         A36         Typi           90         M22         N4         N6         180         TWR_TOP_GIRT_L2         Beam Channel         A36         Typi           91         M23         N6         N8         180         TWR_TOP_GIRT_L2         Beam Channel         A36         Typi           92         M24         N8         N2         180         TWR_TOP_GIRT_L3         Beam Channel         A36         Typi           93         M37         N13         N14         180         TWR_TOP_GIRT_L3         Beam Channel         A36         Typi           94         M38         N14         N15         180         TWR_TOP_GIRT_L3         Beam Channel         A36         Typi											
87         M7         N5         N7         180         TWR TOP GIRT L1 Beam Channel         A36         Typl           88         M8         N7         N1         180         TWR TOP GIRT L1 Beam Channel         A36         Typl           89         M21         N2         N4         180         TWR TOP GIRT L2 Beam Channel         A36         Typl           90         M22         N4         N6         180         TWR TOP GIRT L2 Beam Channel         A36         Typl           91         M23         N6         N8         180         TWR TOP GIRT L2 Beam Channel         A36         Typl           92         M24         N8         N2         180         TWR TOP GIRT L3 Beam Channel         A36         Typl           93         M37         N13         N14         180         TWR TOP GIRT L3 Beam Channel         A36         Typl           94         M38         N14         N15         180         TWR TOP GIRT L3 Beam Channel         A36         Typl           95         M39         N15         N16         180         TWR TOP GIRT L3 Beam Channel         A36         Typl           96         M40         N16         N13         180         TWR TOP GIRT L4 Beam Chan								Beam			Typical
88         M8         N7         N1         180         TWR TOP GIRT L1 Beam Channel         A36         Typin           89         M21         N2         N4         180         TWR TOP GIRT L2 Beam Channel         A36         Typin           90         M22         N4         N6         180         TWR TOP GIRT L2 Beam Channel         A36         Typin           91         M23         N6         N8         180         TWR TOP GIRT L2 Beam Channel         A36         Typin           92         M24         N8         N2         180         TWR TOP GIRT L3 Beam Channel         A36         Typin           93         M37         N13         N14         180         TWR TOP GIRT L3 Beam Channel         A36         Typin           94         M38         N14         N15         180         TWR TOP GIRT L3 Beam Channel         A36         Typin           95         M39         N15         N16         180         TWR TOP GIRT L3 Beam Channel         A36         Typin           96         M40         N16         N13         180         TWR TOP GIRT L4 Beam Channel         A36         Typin           97         M53         N21         N22         180         TWR TOP GIRT					[						Typical
M21									Channel		Typical
90   M22									Channel		Typical
91   M23   N6   N8   180   TWR   TOP   GIRT   L2   Beam   Channel   A36   Typi   Seam   Seam   Channel   A36   Typi   Seam   Seam   Channel   A36   Typi   Seam   Seam											Typical
92         M24         N8         N2         180         TWR TOP GIRT L2 Beam Channel         A36         Typin           93         M37         N13         N14         180         TWR TOP GIRT L3 Beam Channel         A36         Typin           94         M38         N14         N15         180         TWR TOP GIRT L3 Beam Channel         A36         Typin           95         M39         N15         N16         180         TWR TOP GIRT L3 Beam Channel         A36         Typin           96         M40         N16         N13         180         TWR TOP GIRT L4 Beam Channel         A36         Typin           97         M53         N21         N22         180         TWR TOP GIRT L4 Beam Channel         A36         Typin           98         M54         N22         N23         180         TWR TOP GIRT L4 Beam Channel         A36         Typin           100         M56         N24         N21         180         TWR TOP GIRT L4 Beam Channel         A36         Typin           101         M69         N37         N39         TWR TOP GIRT L4 Beam Channel         A36         Typin           102         M70         N39         N41         TWR TOP GIRT T1 Beam Wide Flange					· · ·						Typical
93         M37         N13         N14         180         TWR TOP GIRT L3         Beam Channel         A36         Typing           94         M38         N14         N15         180         TWR TOP GIRT L3         Beam Channel         A36         Typing           95         M39         N15         N16         180         TWR TOP GIRT L3         Beam Channel         A36         Typing           96         M40         N16         N13         180         TWR TOP GIRT L3         Beam Channel         A36         Typing           97         M53         N21         N22         180         TWR TOP GIRT L4         Beam Channel         A36         Typing           98         M54         N22         N23         180         TWR TOP GIRT L4         Beam Channel         A36         Typing           100         M56         N24         N21         180         TWR TOP GIRT L4         Beam Channel         A36         Typing           101         M69         N37         N39         TWR TOP GIRT L4         Beam Wide Flange         A992-50         Typing           102         M70         N39         N41         TWR TOP GIRT T1         Beam Wide Flange         A992-50         Typing <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Channel</td> <td></td> <td>Typical</td>									Channel		Typical
94         M38         N14         N15         180         TWR TOP GIRT L3         Beam Channel         A36         Typles           95         M39         N15         N16         180         TWR TOP GIRT L3         Beam Channel         A36         Typies           96         M40         N16         N13         180         TWR TOP GIRT L3         Beam Channel         A36         Typies           97         M53         N21         N22         180         TWR TOP GIRT L4         Beam Channel         A36         Typies           98         M54         N22         N23         180         TWR TOP GIRT L4         Beam Channel         A36         Typies           100         M55         N23         N24         180         TWR TOP GIRT L4         Beam Channel         A36         Typies           101         M69         N37         N39         TWR TOP GIRT L4         Beam Channel         A36         Typies           102         M70         N39         N41         TWR TOP GIRT T1         Beam Wide Flange         A992-50         Typies           103         M71         N41         N43         TWR TOP GIRT T1         Beam Wide Flange         A992-50         Typies											Typical
95         M39         N15         N16         180         TWR TOP GIRT L3 Beam Channel         A36         Typing           96         M40         N16         N13         180         TWR TOP GIRT L3 Beam Channel         A36         Typing           97         M53         N21         N22         180         TWR TOP GIRT L4 Beam Channel         A36         Typing           98         M54         N22         N23         180         TWR TOP GIRT L4 Beam Channel         A36         Typing           99         M55         N23         N24         180         TWR TOP GIRT L4 Beam Channel         A36         Typing           100         M56         N24         N21         180         TWR TOP GIRT L4 Beam Channel         A36         Typing           101         M69         N37         N39         TWR TOP GIRT L4 Beam Channel         A36         Typing           102         M70         N39         N41         TWR TOP GIRT T1 Beam Wide Flange         A992-50         Typing           103         M71         N41         N43         TWR TOP GIRT T1 Beam Wide Flange         A992-50         Typing           105         M85         N38         N40         360         TWR TOP GIRT T2 Beam Wide Flange <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Beam</td> <td>Channel</td> <td></td> <td>Typical</td>								Beam	Channel		Typical
96         M40         N16         N13         180         TWR TOP GIRT L3 Beam         Channel         A36         Typin           97         M53         N21         N22         180         TWR TOP GIRT L4 Beam         Channel         A36         Typin           98         M54         N22         N23         180         TWR TOP GIRT L4 Beam         Channel         A36         Typin           99         M55         N23         N24         180         TWR TOP GIRT L4 Beam         Channel         A36         Typin           100         M56         N24         N21         180         TWR TOP GIRT L4 Beam         Channel         A36         Typin           101         M69         N37         N39         TWR TOP GIRT T1 Beam         Wide Flange         A992-50         Typin           102         M70         N39         N41         TWR TOP GIRT T1 Beam         Wide Flange         A992-50         Typin           103         M71         N41         N43         TWR TOP GIRT T1 Beam         Wide Flange         A992-50         Typin           105         M85         N38         N40         360         TWR TOP GIRT T2 Beam         Wide Flange         A992-50         Typin								Beam			Typical
97         M53         N21         N22         180         TWR TOP GIRT L4 Beam Channel         A36         Typing           98         M54         N22         N23         180         TWR TOP GIRT L4 Beam Channel         A36         Typing           99         M55         N23         N24         180         TWR TOP GIRT L4 Beam Channel         A36         Typing           100         M56         N24         N21         180         TWR TOP GIRT L4 Beam Channel         A36         Typing           101         M69         N37         N39         TWR TOP GIRT T1 Beam Wide Flange         A992-50         Typing           102         M70         N39         N41         TWR TOP GIRT T1 Beam Wide Flange         A992-50         Typing           103         M71         N41         N43         TWR TOP GIRT T1 Beam Wide Flange         A992-50         Typing           104         M72         N43         N37         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typing           105         M85         N38         N40         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typing           107         M87         N42         N44         360         TWR TOP GIRT T2 Beam Wide Flan											Typical
98         M54         N22         N23         180         TWR TOP GIRT L4 Beam Channel         A36         Typinal           99         M55         N23         N24         180         TWR TOP GIRT L4 Beam Channel         A36         Typinal           100         M56         N24         N21         180         TWR TOP GIRT L4 Beam Channel         A36         Typinal           101         M69         N37         N39         TWR TOP GIRT T1 Beam Wide Flange         A992-50         Typinal           102         M70         N39         N41         TWR TOP GIRT T1 Beam Wide Flange         A992-50         Typinal           103         M71         N41         N43         TWR TOP GIRT T1 Beam Wide Flange         A992-50         Typinal           104         M72         N43         N37         TWR TOP GIRT T1 Beam Wide Flange         A992-50         Typinal           105         M85         N38         N40         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typinal           106         M86         N40         N42         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typinal           108         M88         N44         N38         360         TWR TOP GIRT			N16								Typical
99         M55         N23         N24         180         TWR TOP GIRT L4 Beam Channel         A36         Typin           100         M56         N24         N21         180         TWR TOP GIRT L4 Beam Channel         A36         Typin           101         M69         N37         N39         TWR TOP GIRT T1 Beam Wide Flange         A992-50         Typin           102         M70         N39         N41         TWR TOP GIRT T1 Beam Wide Flange         A992-50         Typin           103         M71         N41         N43         TWR TOP GIRT T1 Beam Wide Flange         A992-50         Typin           104         M72         N43         N37         TWR TOP GIRT T1 Beam Wide Flange         A992-50         Typin           105         M85         N38         N40         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typin           106         M86         N40         N42         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typin           107         M87         N42         N44         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typin           108         M88         N44         N38         360         TWR TOP GIRT T3 Beam											Typical
100         M56         N24         N21         180         TWR TOP GIRT L4 Beam Channel         A36         Typin           101         M69         N37         N39         TWR TOP GIRT T1 Beam Wide Flange         A992-50         Typin           102         M70         N39         N41         TWR TOP GIRT T1 Beam Wide Flange         A992-50         Typin           103         M71         N41         N43         TWR TOP GIRT T1 Beam Wide Flange         A992-50         Typin           104         M72         N43         N37         TWR TOP GIRT T1 Beam Wide Flange         A992-50         Typin           105         M85         N38         N40         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typin           106         M86         N40         N42         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typin           107         M87         N42         N44         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typin           108         M88         N44         N38         360         TWR TOP GIRT T3 Beam Wide Flange         A992-50         Typin           109         M101         N49         N50         TWR TOP GIRT T3 Beam Wide Flange		<u>M54</u>						Beam			Typica!
101         M69         N37         N39         TWR TOP GIRT T1 Beam Wide Flange         A992-50         Typing           102         M70         N39         N41         TWR TOP GIRT T1 Beam Wide Flange         A992-50         Typing           103         M71         N41         N43         TWR TOP GIRT T1 Beam Wide Flange         A992-50         Typing           104         M72         N43         N37         TWR TOP GIRT T1 Beam Wide Flange         A992-50         Typing           105         M85         N38         N40         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typing           106         M86         N40         N42         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typing           107         M87         N42         N44         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typing           108         M88         N44         N38         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typing           109         M101         N49         N50         TWR TOP GIRT T3 Beam Wide Flange         A992-50         Typing           110         M102         N50         N51         TWR TOP GIRT T3 Beam Wide Flange <td>99</td> <td></td> <td>N23</td> <td></td> <td></td> <td>180</td> <td>TWR TOP GIRT L4</td> <td>Beam</td> <td></td> <td>A36</td> <td>Typical</td>	99		N23			180	TWR TOP GIRT L4	Beam		A36	Typical
101         M69         N37         N39         TWR TOP GIRT T1 Beam Wide Flange         A992-50         Typing           102         M70         N39         N41         TWR TOP GIRT T1 Beam Wide Flange         A992-50         Typing           103         M71         N41         N43         TWR TOP GIRT T1 Beam Wide Flange         A992-50         Typing           104         M72         N43         N37         TWR TOP GIRT T1 Beam Wide Flange         A992-50         Typing           105         M85         N38         N40         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typing           106         M86         N40         N42         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typing           107         M87         N42         N44         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typing           108         M88         N44         N38         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typing           109         M101         N49         N50         TWR TOP GIRT T3 Beam Wide Flange         A992-50         Typing           110         M102         N50         N51         TWR TOP GIRT T3 Beam Wide Flange <td>100</td> <td>M56</td> <td></td> <td></td> <td>• '</td> <td>_180</td> <td>TWR_TOP_GIRT_L4</td> <td>Beam</td> <td>Channel</td> <td></td> <td>Typical</td>	100	M56			• '	_180	TWR_TOP_GIRT_L4	Beam	Channel		Typical
103         M71         N41         N43         TWR TOP GIRT T1 Beam         Wide Flange         A992-50         Typi           104         M72         N43         N37         TWR TOP GIRT T1 Beam         Wide Flange         A992-50         Typi           105         M85         N38         N40         360         TWR TOP GIRT T2 Beam         Wide Flange         A992-50         Typi           106         M86         N40         N42         360         TWR TOP GIRT T2 Beam         Wide Flange         A992-50         Typi           107         M87         N42         N44         360         TWR TOP GIRT T2 Beam         Wide Flange         A992-50         Typi           108         M88         N44         N38         360         TWR TOP GIRT T2 Beam         Wide Flange         A992-50         Typi           109         M101         N49         N50         TWR TOP GIRT T3 Beam         Wide Flange         A992-50         Typi           110         M102         N50         N51         TWR TOP GIRT T3 Beam         Wide Flange         A992-50         Typi		M69					TWR TOP GIRT T1	Beam	Wide Flange		Typical
104         M72         N43         N37         TWR TOP GIRT T1 Beam Wide Flange         A992-50         Typic           105         M85         N38         N40         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typic           106         M86         N40         N42         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typic           107         M87         N42         N44         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typic           108         M88         N44         N38         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typic           109         M101         N49         N50         TWR TOP GIRT T3 Beam Wide Flange         A992-50         Typic           110         M102         N50         N51         TWR TOP GIRT T3 Beam Wide Flange         A992-50         Typic		M70	N39				TWR_TOP_GIRT_T1	Beam	Wide Flange		Typical
104         M72         N43         N37         TWR TOP GIRT T1 Beam Wide Flange         A992-50         Typic           105         M85         N38         N40         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typic           106         M86         N40         N42         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typic           107         M87         N42         N44         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typic           108         M88         N44         N38         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typic           109         M101         N49         N50         TWR TOP GIRT T3 Beam Wide Flange         A992-50         Typic           110         M102         N50         N51         TWR TOP GIRT T3 Beam Wide Flange         A992-50         Typic	103	M71									Typical
105         M85         N38         N40         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typic           106         M86         N40         N42         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typic           107         M87         N42         N44         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typic           108         M88         N44         N38         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typic           109         M101         N49         N50         TWR TOP GIRT T3 Beam Wide Flange         A992-50         Typic           110         M102         N50         N51         TWR TOP GIRT T3 Beam Wide Flange         A992-50         Typic			N43	N37							Typical
106         M86         N40         N42         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typic           107         M87         N42         N44         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typic           108         M88         N44         N38         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typic           109         M101         N49         N50         TWR TOP GIRT T3 Beam Wide Flange         A992-50         Typic           110         M102         N50         N51         TWR TOP GIRT T3 Beam Wide Flange         A992-50         Typic						360	TWR TOP GIRT T2	Beam	Wide Flange		Typical
107         M87         N42         N44         360         TWR TOP GIRT T2 Beam Wide Flange         Mide Flange         A992-50         Typic           108         M88         N44         N38         360         TWR TOP GIRT T2 Beam Wide Flange         A992-50         Typic           109         M101         N49         N50         TWR TOP GIRT T3 Beam Wide Flange         A992-50         Typic           110         M102         N50         N51         TWR TOP GIRT T3 Beam Wide Flange         A992-50         Typic				N42	.	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         Typic           109         M101         N49         N50         TWR_TOP_GIRT_T3_Beam         Wide Flange         A992-50         Typic           110         M102         N50         N51         TWR_TOP_GIRT_T3_Beam         Wide Flange         A992-50         Typic						360	TWR TOP GIRT T2	Beam	Wide Flange		Typical_
109         M101         N49         N50         TWR TOP GIRT T3 Beam Wide Flange         Mide Flange         A992-50         Typic           110         M102         N50         N51         TWR TOP GIRT T3 Beam Wide Flange         A992-50         Typic						360	TWR TOP GIRT T2	Beam	Wide Flange	A992-50	Typical
110 M102 N50 N51 TWR TOP GIRT T3 Beam Wide Flange A992-50 Typic							TWR TOP GIRT T3	Beam	Wide Flange	A992-50	Typical
					-		TWR TOP GIRT T3	Beam	Wide Flange		Typical
	111	M103	N51	N52			TWR TOP GIRT T3	Beam	Wide Flange	A992-50	Typical
							TWR TOP GIRT T3	Beam	Wide Flange		Typical
											Typical



: GPD : MKS : 2019777.800529.07 : 800529 CT HAMDEN NORTH CAC

July 24, 2019 7:44 AM Checked By:\_

#### 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		TWE	LINNER_BRACE_T	「1 Beam	Wide Flange	A992-50	Typical_
115	M115	N66	N65		TWE	INNER_BRACE_1	[1] Beam	Wide Flange	A992-50	Typical
116	M116	N65	N68			LINNER_BRACE_T	1 Beam	Wide Flange	A992-50	Typical

#### Hot Rolled Steel Design Parameters

	Label	Shape	Length	Lbyv[ft]	Lbzz[ft]	Lcomp to	Lcomp bo.	.L-tor	Куу	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		Leteral
4	M12	TWR_DIAG_L1	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1	ļ	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	<u> </u>	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	<u>M27</u>	TWR DIAG L2	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
12	<u> M28</u>	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	11		Lateral
14	M30	TWR_DIAG_L2	11,107	4.7	4.7	4.7	4.7	4.7	1.3_	1	<u>.</u>	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	<u> </u>	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	<u>M47</u>	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	111.107	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	·	Latera!
27	M59	TWR DIAG L4	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
28	M60	TWR DIÁG L4	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
29	<u>M61</u>	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	<u>M63</u>	TWR DIAG L4	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
32	<u>M64</u>	TWR_DIAG_L4	11.107	4.7	4.7	4.7	4.7	4.7	1.3	1		Lateral
33	<u>M73</u>	TWR DIAG T1	22,151	10.02	10.02	10.02	10.02	10.02	1.25	1		Latera!
34	M74	TWR_DIAG_T1	22.151	10.02	10.02	10.02	10.02	10.02	1.25	1		Lateral
35	<u>M75</u>	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		Lateral
37	M77	TWR DIAG T1	22.151	10.02	10.02	10,02	10.02		1.25	_1		Lateral
38	<u> M78</u>	TWR_DIAG_T1	22.151	10.02	10.02	10.02	10.02	10.02	1.25	_1_		Lateral
39	<u>M79</u>	TWR DIAG T1	22.151	10.02	10.02	10.02	10,02	10.02		_1_		Lateral
40	M80	TWR_DIAG_T1	22.151	10.02	10.02	_ 10.02	10.02	10.02	1.25	1		Lateral
41	<u>M89</u>	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	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	,	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			1.25	<u>·1</u>		Lateral
49	M105	TWR_DIAG_T3	22,151	10.02	10.02	10.02	10.02	10.02	1.25	_1_		Lateral



: GPD : MKS : 2019777.800529.07 : 800529 CT HAMDEN NORTH CAC

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#### Hot Rolled Steel Design Parameters (Continued)

71007	Label	Shape	Length	Lbyy[ft]_	Lbzz[ft]	Lcomp to	Leamp ba	.L-tor Kyv	Kzz	Cb	Funct
50	M106	TWR DIAG T3	22.151	10.02	10.02	10.02	10.02	10.02 1.25		1	Lateral
51	M107	TWR DIAG T3	22.151	10,02	10.02	10,02	10.02	10.02 1.25	1	$\top$	Lateral
52	M108	TWR DIAG T3	22.151	10.02	10.02	10.02	10.02	10.02 1.25		<u> </u>	Lateral
53	M109	TWR DIAG T3	22.151	10.02	10.02	10.02	10.02	10.02 1.25	1_1_		Lateral
54	M110	TWR DIAG T3	22.151	10.02	10.02	10.02	10.02	10.02 1.25	1	· .	Lateral
55	M111	TWR DIAG T3	22.151	10,02	10.02	10.02	10.02	10.02 1.25	11_		Lateral
56	M112	TWR DIAG T3	22,151	10.02	10.02	10.02	10.02	10.02 1.25	1		Lateral
57	M1	TWR LEG L1	10	10	10	10	10	10 1	1_		Lateral
58	M2	TWR LEG L1	10	10	10	10	10	10   1	1_		Lateral
59	М3	TWR LEG L1	10	10	10	10	10	10 1	1_1_		Lateral
60	M4	TWR LEG L1	10	10	10	:10	10	10 1	1		Lateral
61	M17	TWR LEG L2	10	10	10	10	10	10 1	1	<u> </u>	Lateral
62	M18	TWR LEG L2	10	10	10	10	10	10 1	1		Lateral
63	M19	TWR LEG L2	10	10	10	10	10	10 1	1		Lateral
64	M20	TWR LEG L2	10	10	10	10	10	10 1	1		Lateral
65	M33	TWR LEG L3	10	10	10	10	10	10 1	1_1_		Lateral
66	M34	TWR LEG L3	10	10	10	10	10	10 1	1_1_		Lateral
67	M35	TWR LEG L3	10	10	10	10	10	10 1	11	<u> </u>	Lateral
68_	M36	TWR LEG L3	10	10	10	10	10	10 1	1		Lateral
69	M49	TWR LEG L4	10	10	10	· 10	10	10 1	<u> </u>	ļ.,	Lateral
70	M50	TWR_LEG_L4	10	10	10:	10	10	10 1	<u> </u>	·	Lateral
71	M51	TWR LEG L4	10	10	10	10	10	10 1	1_		Lateral
7.2	M52	TWR LEG_L4	10	10	10	10	10	10 1	1_		Lateral
73	M65	TWR LEG T1	20	20	20	20	20	20 1	1	ļ	Lateral
74	- M66	TWR_LEG_T1	20	20	20	20	20	20 1	1_	<u> </u>	Lateral
75	M67	TWR LEG T1	20_	20	20	20	20	20 1	1		Lateral
76	M68	TWR_LEG_T1	20	20	20	20	20	20 1	1	<del></del>	Lateral
77	M81	TWR LEG T2	20	20	20	20	20	20 1	1	<u> </u>	Lateral
78	M82	TWR_LEG_T2	20	20	20	20	20	20 1	1	<del> </del>	Lateral
79	M83	TWR LEG T2	20	20	20	20	20	20 1	1	<b>↓</b>	Lateral
80	M84	TWR_LEG_T2	20	20	20	20	20	20 1	1	<b></b> _	Lateral
81	M97	TWR LEG T3	20	20	20	20	20	20 1	1	<del>  -</del>	Latera
82	M98	TWR_LEG_T3	20_	20	20	20	20	20 1	1	┼	Lateral
83	M99	TWR LEG T3	20	20	20	20_	20	20 1	11	┼	Lateral
84	M100	TWR_LEG_T3	20	20	20	20	20	20 1	1	<del> </del>	Lateral
85	<u>M5</u>	TWR TOP GIRT L1	4.833	4.33	4.33	4.33	4.33	4.33 1	1	<del> </del>	Lateral
86	M6 :	TWR TOP_GIRT_L1	4.833	4.33	4.33	4.33	4.33	4.33 1	1-1-	<del></del>	Lateral
87	M7	TWR TOP GIRT L1	4.833	4.33	4.33	4.33	4.33	4.33 1	1-1-	<del> </del>	Lateral
88	<u> 188`</u>	TWR_TOP_GIRT_L1	4.833	4.33	4.33	4.33	4.33	4,33 1	1_	<del> </del>	Lateral
89	<u>M21</u>	TWR TOP GIRT L2	4.833	4.33	4.33	4.33	4.33	4.33 1	1 1	<del>- </del>	Lateral
90	M22	TWR TOP GIRT L2	4.833	4.33	4.33	4.33	4.33	4.33 1	11.	┿┈	Lateral
91	<u>M23</u>	TWR TOP GIRT L2	4.833	4.33	4.33	4.33	4.33	4.33 1	1	+	Lateral
92	<u>M24</u>	TWR TOP GIRT L2	4.833	4.33	4.33	4.33	4.33	4.33 1	1 1	+	Lateral
93	<u>M37</u>	TWR TOP GIRT L3	4.833	4.33	4.33	4.33	4.33	4.55	<del>                                     </del>	+	Lateral Lateral
94	<u>M38</u>	TWR TOP GIRT L3	4.833	4.33	4.33	4.33	4.33	4.33 1	1 1		Lateral
95	<u>M39</u>	TWR TOP GIRT L3	4.833	4.33	4.33	4.33	4.33	4.33 1	1	-	Lateral
96	M40	TWR TOP GIRT L3	4.833	4,33	4,33	4.33	4.33	7.00	1	+	Lateral
97	M53	TWR TOP GIRT L4	4.833	4,33	4.33	4.33	4.33	11.00	1	+	Lateral
98	<u>M54</u>	TWR TOP GIRT L4	4,833	4.33	4:33	4.33	4.33	1100	1	<del> </del>	Lateral
99	M55	TWR TOP GIRT L4	4.833	4.33	4.33	4.33	4.33	4.33 1	1	+	Lateral
100	M56	TWR TOP GIRT L4	4.833	4.33	4.33	4.33	4.33	1,00	1	+	Lateral
101	M69	TWR TOP GIRT T1	9.521	8.85	8.85	8.85	8.85	8.85 1	1	+	Lateral
102	M70	TWR TOP GIRT T1	9.521	8.85	8.85	8.85	8.85	8.85 1 8.85 1	1	+	Lateral
103	M71	TWR TOP GIRT T1	9.521	8.85	8.85	8.85	8,85	10,00	1 1	+	Lateral
104	<u>M72</u>	TWR TOP GIRT T1	0.02.1	8.85	8.85	8.85	8,85 8,85	8.85 1 8.85 1	1 1	+	Lateral
105	<u>M85</u>	TWR TOP GIRT T2	9.521	8.85	8,85	8.85			1 1	+	Lateral
106	M86	TWR_TOP_GIRT_T2	9.521	8.85	8.85	8.85	8.85	8.85 1	<u> </u>	1	Faraidi

RISA-3D Version 17.0.2



Company : GPD
Designer : MKS
Job Number : 2019777.800529.07
Model Name : 800529 CT HAMDEN NORTH CAC

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Hot Rolled Steel Design Parameters (Continued)

		Label	Shape	Length	Lbvv[ft]	Lbzz[ft]	Lcomp to	. L.comp bo	<u>.L-tor</u>	Kyy	Kzz	<u>Cb</u>	Funct
1	07	_M87	TWR TOP GIRT T2	9.521	8,85	8.85	8.85	8.85	8.85	1	1		Lateral
	08	M88	TWR TOP GIRT T2	9.521	8.85	8.85	8.85	8.85	8.85	1	1 1		Lateral
	09	M101	TWR TOP GIRT T3	9.521	8.85	8.85	8.85	8.85	8.85	1	1		Lateral
	10	M102	TWR TOP GIRT T3	9.521	8.85	8.85	8.85	8.85	8.85	1			Lateral
	11	M103	TWR TOP GIRT T3	9.521	8.85	8.85	8.85	8.85	8.85	1	1		Lateral
	12	M104	TWR TOP GIRT T3	9.521	8.85	8,85	8.85	8.85	8.85	1	1		Lateral
	13	M113	TWR INNER BRACE T1	7.813	7.813	7.813	7.813	7.813	7.813	2.1	2.1		Lateral
			TWR INNER BRACE T1	7.813	7.813	7.813	7.813	7.813	7.813	2.1	2.1		Lateral
	14	M114		7.813	7.813	7.813	7.813	7.813	7.813	21	2,1		Lateral
	15	M115	TWR INNER BRACE T1					7.813	7.813	2.1	2.1	· -	Lateral
1	16	M116	ITWR INNER BRACE T1	7.813	7.813	7.813	7.813	<u> </u>	17.013	<u></u>	الليكا		meries M

Basic Load Cases

	C LUGG COSCS		<del></del>					
	BLC Description	Category	X Gravity Y Gravity Z Gravit	/ Joint	Point	Distribut	Area(Memb	<u>er) Surface</u>
1	Dead	None	-1	56	240	60	4	
2	No Ice Wind 0 deg	None		64				
3	No Ice Wind 45 dea	None		128				
4	No Ice Wind 90 dea	None						
5	Ice	None		56	260_	172		
6	Temperature Drop	None				117		
7	ice Wind 0 deg	None		64				
8	Ice Wind 45 dea	None		128	·	·		
9	Ice Wind 90 deg	None						
10	Service Wind 0 deg	None						
11	Service Wind 45 deg	None			<u> </u>			
12	Service Wind 90 deg	None			·			
13	Live Load	None			<u> </u>		4	
	BLC 1 Transient Area Loads	None			ļ	96	ļ	
16	BLC 13 Transient Area Loads	None	<u> </u>		<u> </u>	96_	<u> </u>	

Load Combinations

	Description	So	P	S I	BLC	Fac	BLC	Fac.	BLC	Fac.	BLC	Fac	BLC	Fac	BLC	Fac	BLC	Fac	BLC	<u>Fac</u>	BLÇİ	acl	3LC	<u>Fac</u>
1		Yes			1	1.4	13	1	14	1_	0		0		0		0		0		0			
2	Dead+Wind 0 deg - No I	Yes	Y	I	1.	1.2	2	1_	Ţ					,	O		0_		0		0		_	
3	Dead+Wind 45 deg - No				1	1.2	3	_1	13	1	14	1	0_		0		0		0		0			
4	Dead+VVind 90 deg - No	. 1	Ŷ		1	. 1	4	1	13	1.	14	1	0		0		0		0		0		]	
5	Dead+lce+Temp	Yes	Υ		1	1	5	1	6	1_	13	1	14	1	0		0		0		0			
6	Dead+Wind 0 deg+Ice+	Yes	Υ		1	1.2	7	1	5	1	6	1	13	1.	14	_1_	0		0		0	ļ	_	
	Dead+Wind 45 deg+lce			1	1	1.2	8	1	5	1	6	1	13	1_	14	1	0		0		0			
	Dead+Wind 90 deg+lce		·Υ		1	1	0)	<u> </u>	5	<u> </u>	6	1	13	1_	14	1	0		0		0			إ_نـــ
9	Dead+Wind 0 deg - Serv		Ý		1	1	10	1	13	<b>-1</b> _	14	1_	0		0		0		0_		0			
	Dead+Wind 45 deg - Se		Y		1	1	11	1	13	1	14	1	0	. <u> </u>	0		0		0	,	0		[	
11	Dead+Wind 90 deg - Se		Y		1	1	12	1	13	1	14	_1_	0		0		0		Q		0		l	

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	O	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	-15.8 <u>83</u>	3_	. 0	1	0	2	0	1
5	N59	max	1,892	3	103,069	2	14.156	2	0	7	0	3	0	1.7
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_	Q_	2	00	17



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Envelope Joint Reactions (Continued)

	Joint		X [k]	LÇ	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	<u>LC</u>	MZ [k-ft]	LC
8		min	-12.526	3	<u>-113.778</u>	3	-12.57	3	0	1_1_	0	7	0	1 7 1
9	Totals:	max	0	5	101.7	7	0	6	<u> </u>	ļ				1
10		min	-29 647	2	50,099	2	-20.964	3	l'	l			· · · · · · · · · · · · · · · · · · ·	

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

The color of the	Enve	<u> Piope AlSC</u>	; 15th(360-1	0): Lf	KFU 3	1e	er Cou								
M9		Member	Shape C	ode C	. Loc[ft]	LC	Shear	Loc[ft] Dir	LC	phi*Pnc [k]	phi*Pnt [k] ,	h <u>i*Mn y</u> ,	<u>phi*Mn z</u>	Cb	Egn
2	1			.145	0 1	5	.003_	5.553 v	2	29.85	46.322	2.888	<u> 1.47 </u>	1 1	
M11	2		2L2x2x3/16x1	160	0	7.	.003	5,553 v	2	29.85	46,322	2.888	<u> 1.47 </u>		
Mig					Ō				2	29.85	46.322	2.888	<u> 1.47</u>		
Section										29.85	46.322	2.888	1.47		
Number   Color			<del></del>										1,47	<u>1</u>	-11-1b*
No.						3						2.888	1.47		
8 M/16									-					1 1	-11-1b*
No.   No.   No.   No.   No.   No.   S.   S.   S.   S.   S.   S.   S.															
10   M26   212x2x3/16x1,   157   0   3   0.03   6.553   y   2   29.85   46.322   2.888   1.47   1   H1-1b*   12   M27   212x2x3/16x1,   0.62   0   3   0.03   6.553   y   2   29.85   46.322   2.888   1.47   1   H1-1b*   13   M29   212x2x3/16x1,   0.62   0   3   0.03   6.553   y   2   29.85   46.322   2.888   1.47   1   H1-1b*   14   M30   212x2x3/16x1,   0.62   5.553   3   0.03   6.553   y   2   29.85   46.322   2.888   1.47   1   H1-1b*   15   M31   212x2x3/16x1,   0.649   5.553   2   0.03   5.553   y   2   29.85   46.322   2.888   1.47   1   H1-1b*   16   M32   212x2x3/16x1,   0.649   5.553   3   0.03   6.553   y   2   29.85   46.322   2.888   1.47   1   H1-1b*   16   M32   212x2x3/16x1,   0.73   5.553   0.03   5.553   y   2   29.85   46.322   2.888   1.47   1   H1-1b*   17   M41   212x2x3/16x1,   0.73   5.553   0.03   5.553   y   2   29.85   46.322   2.888   1.47   1   H1-1b*   18   M42   212x2x3/16x1,   2.36   2.777   2   0.03   5.553   y   2   29.85   46.322   2.888   1.47   1   H1-1b*   18   M42   212x2x3/16x1,   2.36   2.777   2   0.03   5.553   y   2   29.85   46.322   2.888   1.47   1   H1-1b*   18   M44   212x2x3/16x1,   2.35   2.777   2   0.03   5.553   y   2   29.85   46.322   2.888   1.47   1   H1-1b*   18   M44   212x2x3/16x1,   2.35   2.777   2   0.03   5.553   y   2   29.85   46.322   2.888   1.47   1   H1-1b*   18   M44   212x2x3/16x1,   2.35   2.892   3   0.03   5.553   y   2   29.85   46.322   2.888   1.47   1   H1-1b*   18   M44   212x2x3/16x1,   2.31   2.892   3   0.03   5.553   y   2   29.85   46.322   2.888   1.47   1   H1-1b*   18   M44   212x2x3/16x1,   2.31   2.892   3   0.03   5.553   y   2   29.85   46.322   2.888   1.47   1   H1-1b*   18   M44   212x2x3/16x1,   2.31   2.302   2.303   5.553   y   2   29.85   46.322   2.888   1.47   1   H1-1b*   18   M44   212x2x3/16x1,   2.31   2.303   5.553   y   2   29.85   46.322   2.888   1.47   1   H1-1b*   18   M44   212x2x3/16x1,   0.89   0   0   0   0   0   0   0   0   0															
11   M27   2L2x2x3/6x1, .145   0   2   0.03   6.553   v   2   29.85   46.322   2.888   1.47   1   H1-1b*					_	3			2	20.00					
M28											46 322				
13			<del></del>						2						
M30															
15   M31   21.2x2x3/16x1   0.49   5.553   2   0.03   5.553   v   2   29.85   46.322   2.888   1.47   1   H1-1b*     16   M32   21.2x2x3/16x1   0.81   0   2   0.03   5.553   v   2   29.85   46.322   2.888   1.47   1   H1-1b*     17   M41   21.2x2x3/16x1   2.36   2.777   2   0.03   5.553   v   2   29.85   46.322   2.888   1.47   1   H1-1b*     18   M42   21.2x2x3/16x1   2.36   2.777   2   0.03   5.553   v   2   29.85   46.322   2.888   1.47   1   H1-1b*     19   M43   21.2x2x3/16x1   2.35   2.777   2   0.03   5.553   v   2   29.85   46.322   2.888   1.47   1   H1-1b*     20   M44   21.2x2x3/16x1   2.24   0   3   0.03   5.553   v   2   29.85   46.322   2.888   1.47   1   H1-1b*     21   M45   21.2x2x3/16x1   0.77   5.553   2   0.03   5.553   v   2   29.85   46.322   2.888   1.47   1   H1-1a*     22   M46   21.2x2x3/16x1   0.76   5.553   2   0.03   5.553   v   2   29.85   46.322   2.888   1.47   1   H1-1b*     23   M47   21.2x2x3/16x1   0.76   5.553   2   0.03   5.553   v   2   29.85   46.322   2.888   1.47   1   H1-1b*     24   M48   21.2x2x3/16x1   0.76   5.553   2   0.03   5.553   v   2   29.85   46.322   2.888   1.47   1   H1-1b*     25   M57   21.2x2x3/16x1   0.35   5.553   0.05   5.553   v   2   29.85   46.322   2.888   1.47   1   H1-1b*     26   M58   21.2x2x3/16x1   0.35   5.553   0.05   0.553   v   2   29.85   46.322   2.888   1.47   1   H1-1b*     28   M68   21.2x2x3/16x1   0.35   5.553   0.05   0   v   3   29.85   46.322   2.888   1.47   1   H1-1b*     29   M61   21.2x2x3/16x1   0.36   5.553   0.05   0   v   3   29.85   46.322   2.888   1.47   1   H1-1a*     29   M61   21.2x2x3/16x1   0.36   5.553   0.004   5.553   v   2   29.85   46.322   2.888   1.47   1   H1-1a*     30   M62   21.2x2x3/16x1   0.36   5.553   0.005   0   v   3   29.85   46.322   2.888   1.47   1   H1-1a*     31   M63   21.2x2x3/16x1   0.36   5.553   0.005   0   v   3   29.85   46.322   2.888   1.47   1   H1-1a*     32   M64   21.2x2x3/16x1   0.36   5.553   0.005   0   v   3   29.85   46.322   2.888   1.47   1   H1-1a*     33   M73   2						<u></u>									
16   M32   2L2x2x3/16x1,															
17															
18   M42   2Lxxxx/16x1   236   2,777   2   0.03   5,553   y   2   29,85   46,322   2,888   1,47   1   H1-1a   19   M43   2Lxxxx/16x1   235   2,777   2   0.03   5,553   y   2   29,85   46,322   2,888   1,47   1   H1-1a   20   M44   2L2xxx/16x1   124   0   3   0.03   5,553   y   2   29,85   46,322   2,888   1,47   1   H1-1a   2   1   M45   2Lxxxx/16x1   231   2,892   3   0.03   5,553   y   2   29,85   46,322   2,888   1,47   1   H1-1a   22   M46   2L2xxx/16x1   0.77   5,553   2   0.03   5,553   y   2   29,85   46,322   2,888   1,47   1   H1-1b   23   M47   2L2xxx/16x1   0.76   5,553   2   0.03   5,553   y   2   29,85   46,322   2,888   1,47   1   H1-1b   24   M48   2L2xxx/16x1   0.89   0   2   0.03   5,553   y   2   29,85   46,322   2,888   1,47   1   H1-1b   25   M57   2L2xxx/16x1   0.89   0   2   0.03   5,553   y   2   29,85   46,322   2,888   1,47   1   H1-1b   26   M58   2L2xxx/16x1   316   5,553   3   0.05   5,553   y   2   29,85   46,322   2,888   1,47   1   H1-1b   27   M59   2L2xxx/16x1   316   5,553   3   0.03   0   y   2   29,85   46,322   2,888   1,47   1   H1-1b   28   M60   2L2xxx/16x1   316   5,553   3   0.05   0   y   3   29,85   46,322   2,888   1,47   1   H1-1b   30   M62   2L2xx/3/16x1   316   5,553   2   0.05   0   y   3   29,85   46,322   2,888   1,47   1   H1-1b   30   M62   2L2xx/3/16x1   316   5,553   2   0.05   0   y   3   29,85   46,322   2,888   1,47   1   H1-1b   30   M62   2L2xx/3/16x1   316   5,553   2   0.04   5,553   y   2   29,85   46,322   2,888   1,47   1   H1-1b   30   M62   2L2xx/3/16x1   316   5,553   2   0.04   5,553   y   2   29,85   46,322   2,888   1,47   1   H1-1b   30   M62   2L2xx/3/16x1   316   5,553   2   0.04   5,553   y   2   29,85   46,322   2,888   1,47   1   H1-1b   30   M62   2L2xx/3/16x1   316   5,553   2   0.04   5,553   y   2   29,85   46,322   2,888   1,47   1   H1-1b   30   M62   2L2xx/3/16x1   316   5,553   2   0.04   5,553   y   2   29,85   46,322   2,888   1,47   1   H1-1b   30   M62   2L2xx/3/16x1.															
19   M43   21.2x2x3/16x1.   .235   2.777   2   .003   5.553   v   2   .29.85   .46.322   .2888   1.47   1   H1-1a		<u> M41 </u>	<del></del>		5.553										
10			2L2x2x3/16x1	<u>.236</u>	2.777	2									
21 M45 2L2x2x3/16x1. 231 2.892 3 .003 5.553 V 2 29.85 46.322 2.888 1.47 1 H1-1a 22 M46 2L2x2x3/16x1. 076 5.553 2 .003 5.553 V 2 29.85 46.322 2.888 1.47 1 H1-1b 23 M47 2L2x2x3/16x1. 089 0 2 .003 5.553 V 2 29.85 46.322 2.888 1.47 1 H1-1b 24 M48 2L2x2x3/16x1. 108 0 2 .003 5.553 V 2 29.85 46.322 2.888 1.47 1 H1-1b 25 M57 2L2x2x3/16x1. 103 5.553 3 .005 5.553 V 2 29.85 46.322 2.888 1.47 1 H1-1b 26 M58 2L2x2x3/16x1. 315 5.553 3 .003 0 V 2 29.85 46.322 2.888 1.47 1 H1-1b 26 M58 2L2x2x3/16x1. 315 5.553 3 .003 0 V 2 29.85 46.322 2.888 1.64 1 H1-1a 27 M59 2L2x2x3/16x1. 318 5.553 3 .003 0 V 2 29.85 46.322 2.888 1.64 1 H1-1a 28 M60 2L2x2x3/16x1. 318 5.553 3 .004 5.553 V 2 29.85 46.322 2.888 1.64 1 H1-1a 28 M60 2L2x2x3/16x1. 318 5.553 3 .004 5.553 V 2 29.85 46.322 2.888 1.64 1 H1-1a 28 M61 2L2x2x3/16x1. 318 5.553 3 .004 5.553 V 2 29.85 46.322 2.888 1.64 1 H1-1a 30 M62 2L2x2x3/16x1. 106 5.553 2 .005 0 V 3 29.85 46.322 2.888 1.64 1 H1-1a 31 M63 2L2x2x3/16x1. 106 5.553 2 .004 5.553 V 2 29.85 46.322 2.888 1.47 1 H1-1b 31 M63 2L2x2x3/16x1. 106 5.553 2 .004 5.553 V 2 29.85 46.322 2.888 1.47 1 H1-1b 32 M64 2L2x2x3/16x1. 106 5.553 2 .004 5.553 V 2 29.85 46.322 2.888 1.47 1 H1-1b 32 M64 2L2x2x3/16x1. 106 5.553 2 .004 5.553 V 2 29.85 46.322 2.888 1.47 1 H1-1b 32 M64 2L2x2x3/16x1. 106 5.553 2 .004 5.553 V 2 29.85 46.322 2.888 1.47 1 H1-1b 32 M64 2L2x2x3/16x1. 106 5.553 2 .004 5.553 V 2 29.85 46.322 2.888 1.47 1 H1-1b 32 M64 2L2x2x3/16x1. 106 5.553 2 .004 5.553 V 2 29.85 46.322 2.888 1.47 1 H1-1b 32 M64 2L2x2x3/16x1. 106 5.553 2 .004 5.553 V 2 29.85 46.322 2.888 1.47 1 H1-1b 32 M64 2L2x2x3/16x1. 106 5.553 2 .004 5.553 V 2 29.85 46.322 2.888 1.47 1 H1-1b 32 M64 2L2x2x3/16x1. 106 5.553 2 .004 5.553 V 2 29.85 46.322 2.888 1.47 1 H1-1b 32 M64 2L2x2x3/16x1. 106 5.553 2 .004 5.553 V 2 29.85 46.322 2.888 1.47 1 H1-1b 32 M64 2L2x2x3/16x1. 106 5.553 2 .004 5.553 V 2 29.85 46.322 2.888 1.47 1 H1-1b 32 M64 2L2x2x3/16x1. 106 5.553 2 .004 5.553 V 2 29.85 46.322 2.888 1.47 1 H1-1b 32 M64 2L2x2x3/16x1. 106 5.553 2 .004 5.553 V 2 29.85 46.322 2.888 1.4	19	M43	2L2x2x3/16x1	.235	2,777			5.553 v		29.85					
21 M46	20	M44	2L2x2x3/16x1	.124		3		5.553 y	2						
22 M46 2L2x2x3/16x1 077 5.553 2 .003 5.553 V 2 29.85 46.322 2.888 1.47 1 H1-1b 24 M48 2L2x2x3/16x1 103 5.553 2 .003 5.553 V 2 29.85 46.322 2.888 1.47 1 H1-1b 25 M57 2L2x2x3/16x1 103 5.553 3 .005 5.553 V 2 29.85 46.322 2.888 1.47 1 H1-1b 26 M58 2L2x2x3/16x1 103 5.553 3 .005 5.553 V 2 29.85 46.322 2.888 1.47 1 H1-1b 27 M59 2L2x2x3/16x1 289 5.553 3 .003 0 V 2 29.85 46.322 2.888 1.64 1 H1-1a 28 M60 2L2x2x3/16x1 18 0 3 .005 0 V 3 29.85 46.322 2.888 1.64 1 H1-1a 29 M61 2L2x2x3/16x1 318 5.553 3 .004 5.553 V 2 29.85 46.322 2.888 1.64 1 H1-1a 30 M62 2L2x2x3/16x1 106 5.553 2 .005 0 V 3 29.85 46.322 2.888 1.47 1 H1-1b 31 M63 2L2x2x3/16x1 106 5.553 2 .004 5.553 V 2 29.85 46.322 2.888 1.47 1 H1-1b 32 M64 2L2x2x3/16x1 106 5.553 2 .004 5.553 V 3 29.85 46.322 2.888 1.47 1 H1-1b 33 M73 2L4x4x3/8x1/2 .046 11.076 2 .004 5.553 V 3 29.85 46.322 2.888 1.47 1 H1-1b 34 M74 2L4x4x3/8x1/2 .046 11.076 2 .002 11.075 V 8 112.46 185.287 20.065 11.621 1 H1-1b 35 M75 2L4x4x3/8x1/2 .154 0 3 .002 11.075 V 8 112.46 185.287 20.065 11.621 1 H1-1b 36 M76 2L4x4x3/8x1/2 .154 0 3 .002 11.075 V 7 112.46 185.287 20.065 11.621 1 H1-1b 37 M77 2L4x4x3/8x1/2 .053 11.075 3 .002 11.075 V 7 112.46 185.287 20.065 11.621 1 H1-1b 38 M78 2L4x4x3/8x1/2 .053 11.075 3 .002 11.075 V 7 112.46 185.287 20.065 11.621 1 H1-1b 39 M79 2L4x4x3/8x1/2 .053 11.075 3 .002 11.075 V 7 112.46 185.287 20.065 11.621 1 H1-1b 40 M80 2L4x4x3/8x1/2 .053 11.075 3 .002 11.075 V 7 112.46 185.287 20.065 11.621 1 H1-1b 41 M89 2L4x4x3/8x1/2 .053 11.075 3 .002 11.075 V 7 112.46 185.287 20.065 11.621 1 H1-1b 42 M90 2L4x4x3/8x1/2 .053 11.075 3 .002 11.075 V 7 112.46 185.287 20.065 11.621 1 H1-1b 43 M91 2L4x4x3/8x1/2 .053 11.075 3 .002 11.075 V 7 112.46 185.287 20.065 11.621 1 H1-1b 44 M92 2L4x4x3/8x1/2 .053 11.075 3 .002 11.075 V 7 112.46 185.287 20.065 11.621 1 H1-1b 44 M92 2L4x4x3/8x1/2 .053 11.075 3 .002 11.075 V 7 112.46 185.287 20.065 11.621 1 H1-1b 45 M93 2L4x4x3/8x1/2 .053 11.075 3 .002 11.075 V 7 112.46 185.287 20.065 11.621 1 H1-1b 46 M94 2L4x4x3/8x1/2 .059 1		M45	2L2x2x3/16x1	.231	2,892		.003	5.553 v		29.85	46.322				
MAT   2L2x2x3/16x1,   .069   0   2   .003   5.553   y   2   .29.85   .46.322   2.888   1.47   1   H1-1b*		M46	2L2x2x3/16x1	.077	5.553	2	.003	5.553 y							
M48			2L2x2x3/16x1	.076	5.553	2	.003	5.553 V	2	29,85					
NST   2 2x2x3/16x1    103   5.553   3   005   5.553   y   2   29.85   46.322   2.888   1.47   1   11-1b   12-1b   14-1b   14			2L2x2x3/16x1	.089			.003	5.553 <u>  v</u>	2	29.85					
M68   2L2x2x3/16x1.   .315   5.553   3   .003   0   y   2   .29.85   .46.322   2.888   1.64   1   .H1-1a   .H1-1a   .H1-1b   .H1-1a   .H1-1b   .H1-1a   .H			2L2x2x3/16x1.	.103	5.553		.005	5.553 v	2	29.85					
M59   2L2x2x3/16x1   289   5.553   2   .005   0   y   3   29.85   46.322   2.888   1.64   1   H1-1a			2L2x2x3/16x1							29.85	46.322				
M60			2L2x2x3/16x1		5.553	2	.005	0 v	3	29.85		2,888	<u>1.64</u>		
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   .053   11.075   3   .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   7   112.46   185.287   20.065   11.621   1   H1-1b   40   M80   2L4x4x3/8x1/2   .053   11.075   2   .002   11.075   y   6   112.46   185.287   20.065   11.621   1   H1-1b   41   M199   2L4x4x3/8x1/2   .058   11.075   2   .002   11.075   y   6   112.46   185.287   20.065   11.621   1   H1-1b   42   M90   2L4x4x3/8x1/2   .058   11.075   2   .002   11.075   y   6   112.46   185.287   20.065   11.621   1   H1-1b   42   M90   2L4x4x3/8x1/2   .234   5.538   3   .002   11.075   y   6   112.46   185.287   20.065   11.621   1   H1-1b   44   M92   2L4x4x3/8x1/2   .235   5.538   3   .002   11.075   y   6   112.46   185.287   20.065   11.621   1   H1-1b   44   M92   2L4x4x3/8x1/2   .235   5.538   3   .002   11.075   y   3   112.46   185.287   20.065   11.621   1   H1-1b   45   M93   2L4x4x3/8x1/2   .059   11.075   3   .002   11.075   y   3   112.46   185.287   20.065   11.621   1   H1-1b   46   M94   2L4x4x3/8x1/2   .077   11.075   3   .0			<del></del>			3		0 v	3		46.322	2.888			
30   M62   21.2x2x3/16x1   106   5.553   2   .003   5.553   y   2   29.85   46.322   2.888   1.47   1   H1-1b   31   M63   21.2x2x3/16x1   106   5.553   2   .004   5.553   y   3   29.85   46.322   2.888   1.47   1   H1-1b   32   M64   21.2x2x3/16x1   151   0   2   .004   5.553   y   3   29.85   46.322   2.888   1.47   1   H1-1b   33   M73   21.4x4x3/8x1/2   .045   11.075   2   .002   11.075   y   6   112.46   185.287   20.065   11.621   1   H1-1b   34   M74   21.4x4x3/8x1/2   .155   0   3   .002   11.075   y   6   112.46   185.287   20.065   11.621   1   H1-1b   35   M75   21.4x4x3/8x1/2   .111   0   2   .002   11.075   y   6   .112.46   .185.287   20.065   .11.621   1   H1-1b   36   M76   21.4x4x3/8x1/2   .111   0   2   .002   .11.075   y   7   .112.46   .185.287   20.065   .11.621   1   H1-1b   37   M77   21.4x4x3/8x1/2   .053   .11.075   3   .002   .11.075   y   6   .112.46   .185.287   20.065   .11.621   1   H1-1b   38   M78   21.4x4x3/8x1/2   .053   .11.075   3   .002   .11.075   y   6   .112.46   .185.287   .20.065   .11.621   1   H1-1b   .185   .			2L2x2x3/16x1		5.553		.004	5.553 v	2	29.85		2.888		1	<u>H1-1a</u>
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   .053   11.075   3   .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   6   112.46   185.287   20.065   11.621   1   H1-1b   40   M80   2L4x4x3/8x1/2   .053   11.075   3   .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   6   112.46   185.287   20.065   11.621   1   H1-1b   42   M90   2L4x4x3/8x1/2   .235   5.538   3   .002   11.075   y   7   112.46   185.287   20.065   11.621   1   H1-1b   44   M92   2L4x4x3/8x1/2   .235   5.538   3   .002   11.075   y   6   112.46   185.287   20.065   11.621   1   H1-1b   45   M93   2L4x4x3/8x1/2   .777   11.075   3   .002   11.075   y   6   112.46   185.287   20.065   11.621   1   H1-1b   46   M94   2L4x4x3/8x1/2   .077   11.075   3   .002   11.075   y   6   112.46   185.287   20.065   11.621   1   H1-1b   47   M95   2L4x4x3/8x1/2   .077   11.075   3   .002   11.075   y   6   112.46   185.287   20.065   11.621   1   H1-1b   48   M96   2L4x4x3/8x1/2   .077   11.075   3   .002   11.075   y   6   112.46   185.287   20.065   11.621   1   H1-1b   48   M96   2L4x4x3/8x1/2   .059   11.075   2								5.553 v			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 6 112.46 185.287 20.065 11.621 1 H1-1b* 40 M80 2L4x4x3/8x1/2 .043 0 7 .002 11.075 y 7 112.46 185.287 20.065 11.621 1 H1-1b* 41 M89 2L4x4x3/8x1/2 .058 11.075 2 .002 11.075 y 6 112.46 185.287 20.065 11.621 1 H1-1b* 42 M90 2L4x4x3/8x1/2 .058 11.075 2 .002 11.075 y 7 112.46 185.287 20.065 11.621 1 H1-1b* 43 M91 2L4x4x3/8x1/2 .234 5.538 3 .002 11.075 y 7 112.46 185.287 20.065 11.621 1 H1-1a* 44 M92 2L4x4x3/8x1/2 .234 5.538 3 .002 11.075 y 6 112.46 185.287 20.065 11.621 1 H1-1a* 44 M92 2L4x4x3/8x1/2 .058 11.075 2 .002 11.075 y 6 112.46 185.287 20.065 11.621 1 H1-1a* 45 M93 2L4x4x3/8x1/2 .058 11.075 2 .002 11.075 y 6 112.46 185.287 20.065 11.621 1 H1-1b* 46 M94 2L4x4x3/8x1/2 .077 11.075 3 .002 11.075 y 6 112.46 185.287 20.065 11.621 1 H1-1b* 47 M95 2L4x4x3/8x1/2 .077 11.075 3 .002 11.075 y 6 112.46 185.287 20.065 11.621 1 H1-1b* 48 M96 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 .077 11.075 3 .002 11.075 y 6 112.46 185.287 20.065 11.621 1 H1-1b*											46.322		1. <u>47</u>	1	H1-1b
33 M73 2L4x4x3/8x1/2 045 11.075 2 .002 11.075 V 6 112.46 185.287 20.065 11.621 1 H1-1b 34 M74 2L4x4x3/8x1/2 .155 0 3 .002 11.075 V 6 112.46 185.287 20.065 11.621 1 H1-1b* 35 M75 2L4x4x3/8x1/2 .154 0 3 .002 11.075 V 6 112.46 185.287 20.065 11.621 1 H1-1b* 36 M76 2L4x4x3/8x1/2 .111 0 2 .002 11.075 V 7 112.46 185.287 20.065 11.621 1 H1-1b* 37 M77 2L4x4x3/8x1/2 .111 0 2 .002 11.075 V 7 112.46 185.287 20.065 11.621 1 H1-1b* 38 M78 2L4x4x3/8x1/2 .053 11.075 3 .002 11.075 V 7 112.46 185.287 20.065 11.621 1 H1-1b* 39 M79 2L4x4x3/8x1/2 .053 11.075 3 .002 11.075 V 7 112.46 185.287 20.065 11.621 1 H1-1b* 40 M80 2L4x4x3/8x1/2 .043 0 7 .002 11.075 V 7 112.46 185.287 20.065 11.621 1 H1-1b* 41 M89 2L4x4x3/8x1/2 .058 11.075 2 .002 11.075 V 3 112.46 185.287 20.065 11.621 1 H1-1b* 42 M90 2L4x4x3/8x1/2 .234 5.538 3 .002 11.075 V 7 112.46 185.287 20.065 11.621 1 H1-1b* 44 M91 2L4x4x3/8x1/2 .234 5.538 3 .002 11.075 V 7 112.46 185.287 20.065 11.621 1 H1-1b* 44 M92 2L4x4x3/8x1/2 .235 5.538 3 .002 11.075 V 7 112.46 185.287 20.065 11.621 1 H1-1b* 44 M92 2L4x4x3/8x1/2 .235 5.538 3 .002 11.075 V 7 112.46 185.287 20.065 11.621 1 H1-1b* 45 M93 2L4x4x3/8x1/2 .235 5.538 3 .002 11.075 V 6 112.46 185.287 20.065 11.621 1 H1-1b* 46 M94 2L4x4x3/8x1/2 .077 11.075 3 .002 11.075 V 6 112.46 185.287 20.065 11.621 1 H1-1b* 46 M94 2L4x4x3/8x1/2 .077 11.075 3 .002 11.075 V 6 112.46 185.287 20.065 11.621 1 H1-1b* 47 M95 2L4x4x3/8x1/2 .077 11.075 3 .002 11.075 V 6 112.46 185.287 20.065 11.621 1 H1-1b* 48 M96 2L4x4x3/8x1/2 .077 11.075 3 .002 11.075 V 6 112.46 185.287 20.065 11.621 1 H1-1b* 48 M96 2L4x4x3/8x1/2 .077 11.075 3 .002 11.075 V 6 112.46 185.287 20.065 11.621 1 H1-1b* 48 M96 2L4x4x3/8x1/2 .077 11.075 3 .002 11.075 V 6 112.46 185.287 20.065 11.621 1 H1-1b* 48 M96 2L4x4x3/8x1/2 .077 11.075 3 .002 11.075 V 6 112.46 185.287 20.065 11.621 1 H1-1b* 48 M96 2L4x4x3/8x1/2 .077 11.075 3 .002 11.075 V 6 112.46 185.287 20.065 11.621 1 H1-1b* 48 M96 2L4x4x3/8x1/2 .059 11.075 V 6 112.46 185.287 20.065 11.621 1 H1-1b* 48 M96 2L4x4x3/8x1/2 .059 11.075 V 6 112.46 1								5.553 V					1,47	1 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 6 112.46 185.287 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 H1-1b* 43 M91 2L4x4x3/8x1/2 235 5.538 3 002 11.075 y 7 112.46 185.287 20.065 11.621 1 H1-1a* 44 M92 2L4x4x3/8x1/2 179 0 2 002 11.075 y 6 112.46 185.287 20.065 11.621 1 H1-1a* 45 M93 2L4x4x3/8x1/2 179 0 2 002 11.075 y 6 112.46 185.287 20.065 11.621 1 H1-1b* 46 M94 2L4x4x3/8x1/2 179 0 2 002 11.075 y 6 112.46 185.287 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*				· · · · · ·				T					11.621	1	H1 <u>-1b</u>
35 M75								<del>                                     </del>			-			1 1	H1-1b*
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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 6 112.46 185.287 20.065 11.621 1 H1-1a* 45 M93 2L4x4x3/8x1/2 .179 0 2 .002 11.075 y 3 112.46 185.287 20.065 11.621 1 H1-1b* 46 M94 2L4x4x3/8x1/2 .077 11.075 3 .002 11.075 y 6 112.46 185.287 20.065 13.044 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 .077 11.075 3 .002 11.075 y 6 112.46 185.287 20.065 11.621 1 H1-1b*		1. 4							-						
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         6         112.46         185.287         20.065         11.621         1         H1-1b*           45         M93         2L4x4x3/8x1/2         .143         0         2         .002 </td <td></td>															
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         6         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         .						-								_	
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         3         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         y         3<												20.000	11 621		
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         y										112.40					
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           48         M96         2L4x4x3/8x1/2         .059         11.075         y			<del></del>		5.538	3	-1	1					11.021		
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															
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 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						_		1							
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							<del>                                     </del>		_						
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		M9 <u>4</u>													
40 WISC. ELTA-MODALITA GOD 14 OTE 0 440 40 40 007 00 005 44 624 4 H4 4bt		M95					1		_						
49   M105   2L4x4x3/8x1/2   122   0   3   .002   11.075   v   3   112.46   185.287   20.065   11.621   1   H1-10^1	_48	M96				1									
IN THE LAND TO SERVICE THE PARTY OF THE PART	49	M105	2L4x4x3/8x1/2	.122	0	3	.002	11.075  y	3	112.46	185.287	20,065	17.627		<u>m1-10"</u>



GPD MKS 2019777.800529.07 800529 CT HAMDEN NORTH CAC

July 24, 2019 7:44 AM Checked By:\_

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

Elive	TOPE AISC	<u>, 15111300-</u>	1 U/. 1-1	<u> </u>	ĻV.	<u>, , ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>								
	Member	Shape	Code C	Locift1	LC	Shear	Loc[ft]	Dir	LC	phi*Pnc (k)	phi*Pnt [k]	<u>phi*Mn y</u>	.phi*Mn <u>z</u>	Cb Ean
50	M106	2L4x4x3/8x1/2	.337	5.999	3	.002	11.075		7	112,46	185.287	20.065	11.621	<u>  1   H1-1a  </u>
51	M107	2L4x4x3/8x1/2		5.999		.002	11.075		6	112,46	185.287	20.065	11,621	1 H1-1a
		2L4x4x3/8x1/2		11.075		.002	11.075		3	112.46	185.287	20.065	11.621	1 H1-1a
52	M108	2L4x4x3/8x1/2				.002	11.075		6	112.46	185.287	20.065	13.044	1 H1-1b*
53	<u>M109</u>		.175	0 14 075	2		11.075	_					11.621	1 H1-1b
54	<u> M110</u>	2L4x4x3/8x1/2	.108	11.075		.002		-	6	112.46	185,287	20.065		1 H1-1b
55	M111	2L4x4x3/8x1/2	.108	11.075		.002	11.075		<u></u>	112.46	185.287	20.065	11.621	
56	M112	2L4x4x3/8x1/2	.087	11.075	_	.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 1	ν	7	181.658	216,936	38.64	38,64	1 H1-1b*
59	M3	HSS6x6x1/4	.016	Ö	3	.000	0	Z	2	181.658	216.936	38.64	3 <u>8.64</u>	1 H1-1b*
	M4	HSS6x6x1/4	.010	Ö	6	,000	ō i	z	7		216.936	38,64	38.64	1 H1-1b
60		HSS6x6x1/4	.027	0	6	.001	ő	Z	6		216,936	38.64	38.64	1 H1-1b*
61	<u> M17  </u>	<del></del>							7		216.936	38.64	38.64	1 H1-1b*
62	<u>M18</u>	HSS6x6x1/4	.063	<u> </u>	2	.001	0	у.					38,64	1 H1-1b*
63	<u>M19</u>	HSS6x6x1/4	051	0	3	.000	0	Z	2		216.936	38.64		
64_	M20	HSS6x6x1/4	.029	0.	5	.001	0	Z	7	181.658		38.64	38,64	
65	M33	H\$\$6x6x1/4	.040	Q	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	У.	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	Ö	2	.001	Ö	V	2	181.658			38.64	1 H1-1b
		HSS6x6x1/4	.068	10	3	.001	ŏ	Z	3		216.936	38,64	38.64	1 H1-1b
69	<u>M49</u>							V	3	181.658		38.64	38.64	1 H1-1a
70	M50	HSS6x6x1/4	.245	10	2	.001	0.	_				38.64	38.64	1 H1-1b*
71	M51	HSS6x6x1/4	.177	0_	3	.001	Ö	Z	3		216,936		38.64	1 H1-1b
72	<u> </u>	HSS6x6x1/4	.102	10_	2	.001	0	у.	3		216.936	38.64		
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	<u>y</u>	3	199.192	293,94	66,288	66.288	1 H1-15*
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	ō	3	.000	0	٧	3	199.192	293,94	66.288	66,288	1 H1-1b
	M81	HSS8x8x1/4	.065	Ö	2	.000	Ö	z	3	199.192	293.94	66.288	66,288	1 H1-1b
77		HSS8x8x1/4		0	3	.000	ŏ	z	2	199.192	293,94	66,288	66.288	1 H1-1a
78	<u> M82 :</u>		.281_				<del></del>		3	199.192	293.94	66,288	66,288	1 H1-1b*
79	<u></u>	HSS8x8x1/4	.195	0	2	.000	0 -	Z	_			66.288	66.288	1 H1-1b
_80_	<u>M84</u>	HSS8x8x1/4	.081	0	3	.000	Q Q	у_	3	199.192	293.94			
81	M97	HSS8x8x1/4	.092	20 _	2	.001	0	Z		199.192	293,94	66.288	66,288	1 H1-1b
82	M98	HSS8x8x1/4	.391	20	3	.000	0	у.	3		293.94	66.288	66.288	1 H1-1a
83	M99	HSS8x8x1/4	.288	20	2	_001_	0 _	Lz_	3	199,192	293.94	66,288	66,288	1
84	M100	HSS8x8x1/4	.226	20	3	.000	.0	ľv	3	199.192	293.94	66,288	66.288	1 H1-1a
85	M5	C6X10.5	.013	2,417	6	.003	4.833	Ιv	6	59.887	99.468	2,428	15,224	1 H1-1b
		C6X10.5	.004	2.417	6	.003	4.833				99.468	2,428	15.224	1 H1-1b
86	<u>M6</u>						4.833		$\overline{}$		99,468	2.428	15.224	1 H1-1b
87	<u>M7</u>	C6X10.5	.004	2.417	6	.003			T =			2.428	15.224	1 H1-1b
_88	M8	C6X10.5	.013_	2.417	6	.003	0	У	6		99,468			1 H1-1b
89	M21	C6X10.5	050_	2.417	-	.013	4.833		_		99,468	2.428	15.224	
90	M22	C6X10,5	.044	2.417		014	4.833	_			99.468	2.428	15.224	1 H1-1b
91	M23	C6X10.5	.046	2.417	1	.015	4.833	V	6		99,468	2.428	15.224	1 H1-1b
92	M24	C6X10.5	.051	2.467		.013	4.833	У	7	59.887	99,468	2.428	15.224	1 H1-1b
93	M37	C6X10.5		2,417			4.833		1		99.468	2.428	15.224	1 H1-1b
		C6X10.5	.051	2,417		.013	4.833	Ţ,	1			2.428	15.224	
94	M38			2.417	목	.015	4.833	۲,	1		99.468	2,428	15.224	
95	<u>M39</u>	C6X10.5	.048								99,468	2.428	15.224	
96	<u>M40</u>	C6X10.5		2.467		.013	4.833						15.224	1 H1-1b
97	<u>M53</u>	C6X10.5	.045	2.417		.013	4.833				99.468	2.428		
98	M54	C6X10.5	.055	2.417		.013	4.833				99.468	2.428	15.224	1 H1-1b
99	M55	C6X10.5	.051	2.417		.015	4.833	V.	1		99.468	2.428	15.224	1 H1-1b
100	M56	C6X10.5	.054	2.467			4.833	١v	1		99.468	2.428	15.224	1 H1-1b
101	M69	W16X45	.423	4.76		.111	0	Ý				54.375		1 H1-1b
			.473	4.76	7		9.521					54.375		1 H1-1b
102	M70	W16X45		4.70	1							54,375	273.12	1 H1-1b
103	<u>M71</u>	W16X45	.288	4.76			4.76	Y	- <del></del>	40E 775				1 H1-1b
104	M72	W16X45	.378	4.76			4.76					54.375		
105	_M85	<u> W6X12</u>	.041	4.76			9.521				159.75	8.7	22.79	1 H1-1b
106	M86	W6X12	.050	4.76	2	.003	9.521	l y	7	<u>59.891</u>	159.75	8,7	22.79	<u>  1   H1-1b</u>
	<u>,</u>				=			_						D 0



Company : GPD
Designer : MKS
Job Number : 2019777.800529.07
Model Name : 800529 CT HAMDEN NORTH CAC

July 24, 2019 7:44 AM Checked By:\_

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

	Member	Shape	Code C	Lociffi	LC	Shear	Lociftl	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y	.phi*Mn z	Cb	Eqn_
107	M87	W6X12	100	Ω	3		9.521	٧	6	59.891	159.75	8.7	22.79	1	H1-1b*
108	M88	W6X12	.166	Ō	2	.003	9.521	٧	7	59.891	159.75	8.7	22.79	1	H1-1b*
109	M101	W6X12	.061	4.76	3	.003	9.521	v	6	59.891	159.75	8.7	22.79_	1	H1-1b
110	M102	W6X12	078	4.76	2	.003	9.521	v	7	59.891	159.75	8.7	22.79	1	H1-1b
111	M103	W6X12	.187	0	3	.003	9,521	v	6	59,891	159.75	8.7	22.79	1	H1-1b*
112	M104	W6X12	.300	4.76	2	.003	9.521	v	7	59.891	159.75	8.7	22.79	1	H1-1a
113	M113	W10X33		4.395	3	.403	3.092	v	3	205.996	436.95	52,5	142.087	1	H1-1b
114	M114	W10X33	.200	n	2	.239	3.418		3	205.996	436,95	52.5_	142.087	1	H1-1b
115	M115	W10X33	.398	4.395		.496	3.092		2	205.996	436,95	52.5	142.087	1	H1-1b
116	M116	W10X33	.306	3,418	_	379	3.418		2	205.996	436.95	52.5	142.087	1	H1-1b

## APPENDIX B BASE LEVEL DRAWING

CROWN REGION ADDRESS

SECRET: MOREO MARIA MAR SERVICIA

STORICE MOREO MARIA MAR SERVICIA

SECRET: MOREO MARIA MAR SERVICIA

SECRET: MOREO MARIA MARIA SERVICIA

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BUSINESS LANTEGROS29 TOWER ID: C\_BASELEVEL

FILE NAME: 800529\_BASELEVEL.dwg

(OTHER CONSIDERED EQUIPMENT) (18) 1-5/8" TO 100 FT LENEE.

(OTHER CONSIDERED EQUIPMENT) -(1) 1/2" TO 100 FT LEVEL (OTHER CONSIDERED EQUIPMENT) -(6) 1-5/8" TO 65 FT LEVEL 900000 EG 87 (d 83) LEG A (PROPOSED EQUIPMENT CONFIGURATION)
(2) 1-1/4" TO 95 FT LEVEL (OTHER CONSIDERED EQUIPMENT) (11) 1-1/4" TO 75 FL LEVEL—

, 13

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

SITE NUMBER; SITE NAME: SITE NAME

CT HANDEN NORTH CAC BUSINESS UNIT NUMBER

SITE ADDRESS 890 EVERGREEN AVENUE HAMISH, CT 08514 NEW HAVEN COUNTY USA

BASE LEVEL DRAWING SHOET NUMBER

A1.6

Kar 10/2-100 PATThem (18 1994 Batter

## APPENDIX C ADDITIONAL CALCULATIONS

						DOL	CHECKS	1				
Section #	Elevation	Component Type	Bolt Grade	Bolt Size (In)	# of Balts	Maximum toad (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	15.589	0.153	1.000	14.6%	1.0
L2	90	Diagonal	A325N	0.875	2	4.71	2.355	15.588	0.151	1,000	14.4%	1,05
<u>L3</u>	80	Diagona!	A325N	0.875	2	6.859	3.43	15,588	0.220	1.000	21.0%	1.0
ξ4	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	G.875	2	13,76	6.88	24,354	0.283	1,000	28.9%	1.00
		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%	1.40
		Diagonal	A325N	0.875	2	38.427	18.214	41.372	0.440	1.000	41.9%	1.05
										Maximum	· · · · <del>- ·</del> ·	***************************************

Maximum | Capacity 47.7%

## **CCIplate**

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

Tower Info	rmation
Tower Type	Self Support
TIA-222 Rev	H

Apply TIA-222-H Section 15.5

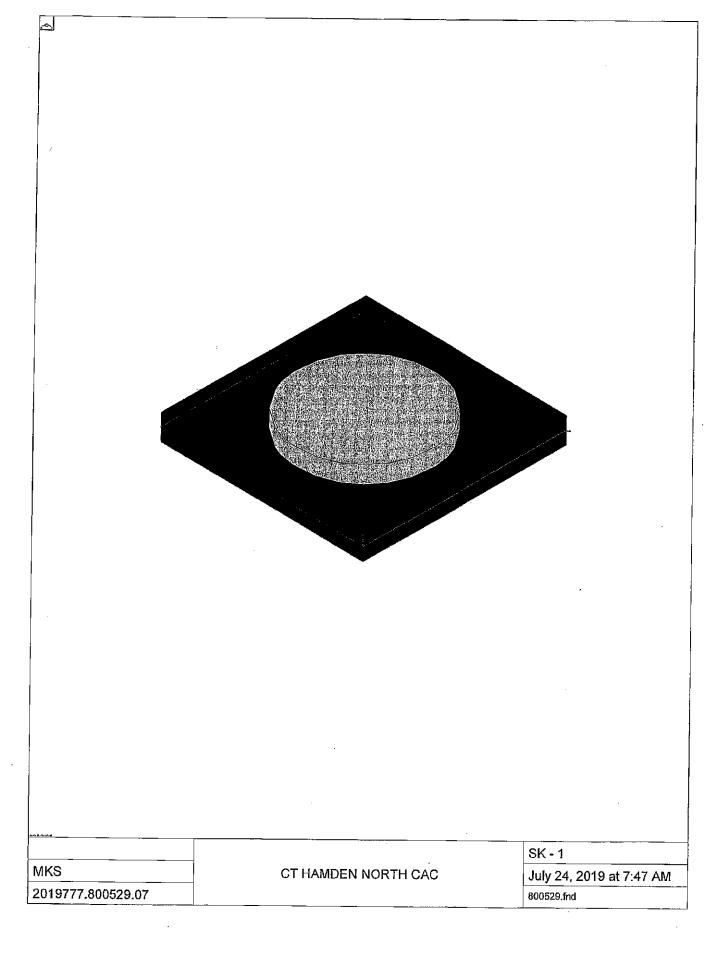
Applied Loads										
	Comp.	Uplift								
Axial (k)		113.80								
Shear (k)	22.40	17.70								

Anchor Rod Data	
Quantity:	8
Diameter (in):	1.25
Material Grade:	A36
Grout Considered:	and the second s
l <sub>ar</sub> (in):	0
Eta Factor, η:	property of the control of the state of the
Thread Type:	N-Included
Configuration:	Symmetrical

Fy=36 ksi Fu=58 ksi Not Considered, lar<=1(d)

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., фМп (kip-in)	_
Stress Rating	11.5%

Pass





: MKS : 2019777.800529.07 : CT HAMDEN NORTH CAC

July 24, 2019 7:48 AM Checked By:\_\_\_

#### (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)	1.12
Solver	Sparse Accelerated
Coefficient of Friction	3
	<u> </u>
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
	<u></u>

Concrete Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E.	.Densitv[k/ft	fc[ksi]	Lambda	Fley 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
<u> </u>	Conc4000LW	2408	1047	.15	.6	.11	4	75	60	60

#### Slab Rebar Parameters

Label Top Bar Bottom Max Top Ba Min Top Bar May Bot Bar Min Bot Bar	
Solution to be administrated by the solution of the solution o	cing Increment[in] Rebar Options
1 Circular #6 #3 9 9 999 999	
333	2 Force Top and Botto
2 Square #5 #8 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	Zandarania Dadamiginari		Delauit?
Delault	<u></u>	4.5	None	Yes
				1 220

#### Slabs

Label	Thickness [in]	B.C 1 1	1 1 0 1 0 1			
 Label	TOTAL TITLE	<u> Material</u>	Local Axis Angle	Analysis Offset [in]	Passive Pressur	Soil Over
 52	36	Conc3000NV	V	0		1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 			<u> </u>		<u> </u>	

#### Pedestal Properties

							-		
	Labei	Type	Shape	Height/in1	e/BL	av fin I	e-fin1	DI 101	
4	F				— <u> </u>	ex[in]	ezini	BLx[ft]	B <b>Lzfft1</b>
_ [_ 1	Footing 1 I	Pedestai	ICRECT12X12	24	Use ex ez	Λ	, i		
			10.4m 0 1 1 m2 4 1 1 m	<u> </u>	TOSE EX.EZ				U I

#### **Load Combinations**

	<u>Labei</u>	<u>Solve</u>	<u>Service</u>	<u> ASF</u>	CI	<u>-a</u> (	Cat	<u>.Fa</u>	. Category	Fa.,	.C	Fa	.C	Fa	C	Fa	C	Fa	C	Fa	C	F۵	0	Ea
1 1	1	Yes		_ 1	DL/	1.2	LL	11				[	J	1		<u> </u>	<u> </u>	<u> </u>	, C	1		1 9	<u> </u>	1 2 1
2	2	Yes	_ · · ·		DL.	1.2	EL	1			1 -				_	<del> </del>				<del> </del>		-		H
3	3	Yes			DL '	1.2	WL	1				-			_			i	-	╁		-	_	<del>  </del>
4	4	Yes	·		DL/	1.2	SL	1			···						<del>                                     </del>	-	<del>                                     </del>		_			$\vdash$
	_5	Yes			DL.	1.2	RLL	1									<u> </u>			<b>-</b>	T			$\vdash$



: MKS : 2019777.800529.07 : CT HAMDEN NORTH CAC July 24, 2019 7:48 AM Checked By:\_\_\_

#### Load Combinations (Continued)

	Label	Solve	Service	ASF	CF	⁻a.	Cat.	Fa	l	Category	Fa.	С	Fα	С	Fa	C	F۵	C	Fa	C	Fa	C	Fa	_	Fa
6	6_	Yes	ļ l		DL ·	1.2	LLS	3 1					Ţ		<del> </del>	1	<u> </u>	<u> </u>	<u> </u>	<u> </u>		) <u></u>	1	<u> </u>	<del>1 "</del> "
7	<u>1s</u>	Yes	Yes	····	DL	1	LL	11							T			┌─	İ	_	<del> </del>			<del> </del>	╁┷┥
_8	2s	Yes	Yes		DL	1	EL	1	7		-				┌┈			<del>                                     </del>		1	-				+
9	3s	Yes	Yes		DL	1	W	1	Ť			<u> </u>			İΤ	<b>†</b> "	一	<del>                                     </del>							
10	48	Yes	Yes		DL	1	SI	1	1			<u> </u>			İΤ	-	$\vdash$		<del>                                     </del>	<del>                                     </del>	<b>-</b>	_			$\vdash$
11	5s	Yes	Yes		DL	1	RII	1	1		_					<u> </u>			_	┝∸		<u> </u>			$\vdash$
12	6s	Yes	Yes		DL	1	LLS	3 1	İ				-					_	_	-					$\vdash$

#### Design Cuts

Label	Design Rule
	No Data to Print

#### <u>Design Strips</u>

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

#### Envelope Slab Soil Pressures

	Label	UC	<u>LC</u>	Soil Pressure(ksf)	Allowable Bearing[ksf]	Point
_1_	<u> 82</u>		9	1,546	4.5	N34

#### Slab Overturning Safety Factors

	LC	<u>Sla</u> b	Angle[deg]	Ma-xx[k-ft]	Ms-xx[k-ft]	Mo-zzik-fti	Ms-zz[k-ft]	Ms-xx/Mo-xx	Ms-zz/Mo-zz
1	7	<u>\$2</u>	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	<u>S2</u>	0	0	4827.183	O	4824.647	9.999+	9,999+
5		<u> 82</u>	0	0	5124.907	0	4935,361	9.999+	9.999+
<u> </u>	12	S2	0	. 0	5060,36	0:	5071.009	9,999+	9,999+

#### Strip Reinforcing

	Labati	HO To										
	Label_	UC Top	LÇ	lop 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		DS2-X14	109			DS2-X34	427		
~~~	D92	000						#8@9in		121	2	DS2-X25
	<u>DS3</u>	.062	3	#5@9in	DS3-X38	.089	3	#8@9in	DS3-X17	099	. 3	DS3-X29



ASCE 7 Hazards Report

Standard:

ASCE/SEI 7-10

**Elevation: 205.84 ft (NAVD 88)** 

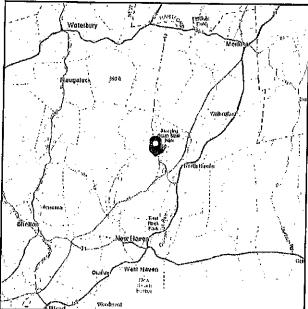
No Address at This

Risk Category: II Location Soil Class:

D - Stiff Soil

Latitude: 41.406639 Longitude: -72.904533







Site Soll Class Results:	D-S	tiff Soil			
S <sub>s</sub> : S <sub>1</sub> : F <sub>a</sub> :	0.185 0.063 1.6	S <sub>DS</sub> S <sub>DM</sub> :	0.198 0.1 6		
F <sub>v</sub> : S <sub>MS</sub> : S <sub>M1</sub> :	2.4 0.297 0.151	PGA : PGA : F <sub>PGA</sub> I <sub>a</sub> :	0.096 0.154 : 1.6		
Seismic Desig	n Category B		1		
0.30 0.25 0.20	MCE <sub>R</sub> Response Specti	0.20 0.18 0.16 0.14 0.12	Design Re	esponse Spectrum	
0.15 0.10 0.05		0.10 0.08 0.05 0.04 0.02			
u į	$S_a(g)$ vs $T(s)$	6 7	) 1 2 3 Sa(g) vs T(	3 4 5 s)	6 7

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.



lce

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.

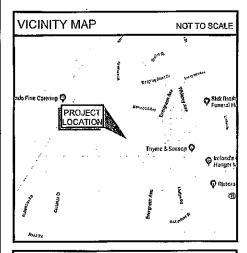
The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided "as is" and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.

# **Veriza**HAMDEN NO

### CROWN CASTLE BI 890 EVERGREEN HAMDEN, CT (



#### 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

CROWN CASTLE LLI

TOWER OWNER:

67 SHARP STREET HINGHAM, MA 02043

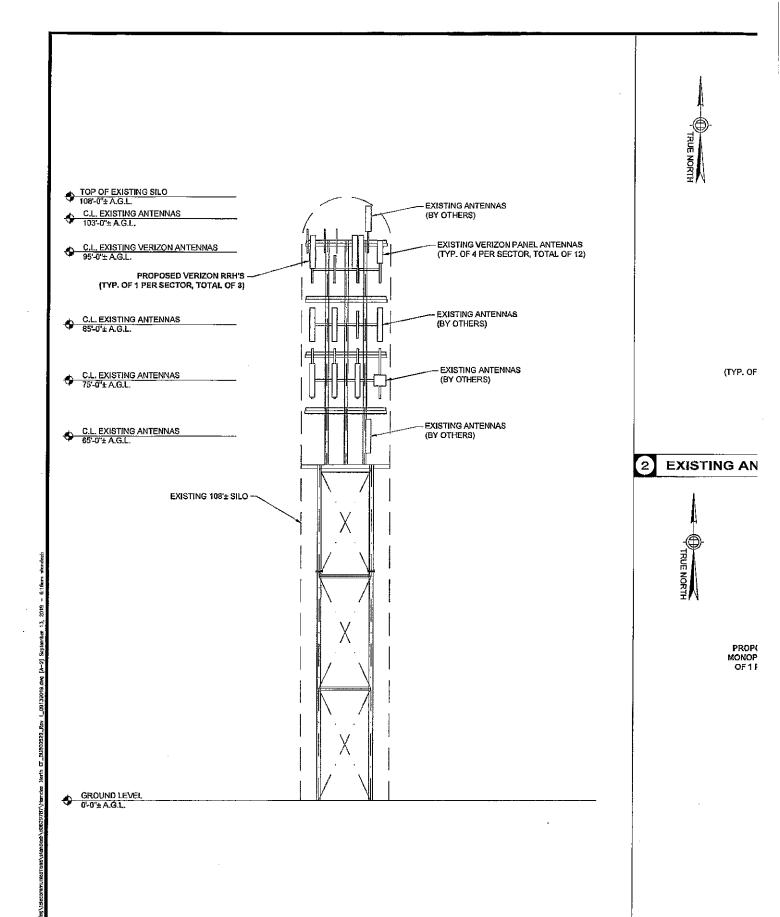
COORDINATES:

N 41° 24' 23.90" W 72° 54' 16.32"

APPLICANT:

VERIZON WRELESS 20 ALEXANDER DRI' WALLINGFORD, CT

0 EXISTING UTILITY BOX -0 - EXISTING BACKHAUL/METI FRAME EXISTING DOOR PA EXISTING VERIZON AT&T AND SPRINT 48'-0" X 30'-0" EQUIPMENT BUILDING EXISTING GPS (TYP.) EXISTING RRU (TYP.) EXISTING 108' SILO SITE PLAN



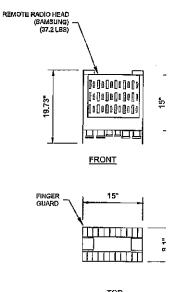
SITE ELEVATION

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

PROPOSED #

#### GENERAL NOTES:

- 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.
- CONSTRUCTION SAFETY SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THESE DRAWINGS DO NOT INCLUDE NECESSARY SAFETY COMPONENTS.
- BRACE STRUCTURES SUCH AS LATERAL BRACING, ANCHOR BOLTS, ETC. SHALL BE INSTALLED UNTIL ALL STRUCTURAL ELEMENTS REACH TO REQUIRED STABILITY.
- 4. INCORRECTLY FABRICATED, DAMAGED, OR DTHERWISE MISFITTING OF NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO PROCEEDING.
- EACH CONTRACTOR SHALL COOPERATE WITH THE OWNER'S REPRESENTATIVE AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
- REPAIR ANY DAMAGE DURING CONSTRUCTION TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE CONSTRUCTION MANAGER.
- 7. CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
- REUSE EXISTING ANTENNA MOUNTS AND COAX, INSPECT FOR DAMAGE OR DECAY AND REPLACE AS NEEDED PER STRUCTURAL ANALYSIS.
- CONTRACTOR TO VERIFY FINAL ANTENNA DESIGN AND NOTIFY CARRIER AND ENGINEER WITH ANY DISCREPANCIES PRIOR TO THE INSTALLATION.



<u>TOP</u>

1 GENERAL NOTES

SCALE: NTS

2

SAMSUNG 700/850 RRH - RFV01U-



## OF HAMDEN

#### CONNECTICUT

BOND RELEASE RECOMMENDATION/ACTION	
MEMO TO: Planning & Zoning Commission	
MEMO TO: Planning & Zoning Commission  FROM: Joseph J. Venditto, Zoning Enforcement Officer  DATE: March 7, 2002	
DATE: MARCH 7, 2002	
RE: Bond Release	
ADDRESS: 890 EVERGREEN PO	e
PROJECT: SITE PLAN 00-126	3
TOTAL BOND AMOUNT: Present Amt. Recommendation Amt. to Retain	
Site Work 13,527.	
Right of Way	
Subtotal 13,527. 0	
Other 10% /, 473 · 0	
TOTAL 15,000.	

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

CAN BE RECOMMENDED.

\$ 60,00

#### TOWN OF HANDEN ON FOR CERTIFICATE OF ZONING COMPLIANCE

wen sugar Corre and Toming District R. 4
Property Address
Property Course Contract To 3 HERRICH BULL GLOSTON BURY, OF OGOS
Property Owner Address 703 HEARTON ANE GLASTON BURY, OF 0603
Type of Zoning Permit
I cornty that the work required has been completed in accordance with approved plans except as noted on attached asbuilt drawing.
Applicant Signature Signature Date 8:86-02
PRINTED NAME WILLIAM WOLSON - 2M
ADDRESS 703 WARROW DUE, GLOSTON BURY OF 06193
TELEMENE: (240) 657-1567 FAX: (860) 677-7078
Certificate of Zoning Compliance
Zorung Enforcement Officer Findings: based upon inspection of MARCH 5, 2002
Unconditional Meets all requirements
Conditional C 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:

Here is not a Certificate of Occupancy under the Building Code TOWN OF HAMDEN

RECEIVED-

Rev 001601

1 . 3 % 6 CUUL

PLANNING AND ZONING DEPT.

200/200'd \$1971

ITIRT THAT TYPAN



Crown Castle Atlantic LLC Northeast Region 703 Hebron Avenue, 2<sup>nd</sup> Floor Glastonbury, CT 06033 Tel 860 633.9369
Fax 860 633.7078
www.crowncastle.com

February 25, 2002

Mr. Joseph J. Vendino Town of Handon 2372 Whitney Avenue Handen, 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

WIN WINE

RECEIVED
TOWN OF HAMDEN
FEB 2 5 2002
PLANNING AND
ZONING DEET



## TOWN OF HAMBEN

CONNECTICUT

EC'D AND FILED BY

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

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 18<sup>th</sup> have been addressed. RWA comments dated 9/17/01. The comment on slope stabilization has already been discussed.

Mr. Del Vecchio sald 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 anne. 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 eatch 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 fron 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 Veschio 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
  390 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 \$2,209.00 Requested by Joan Wagner

#### C Approval of Minutes

- 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.

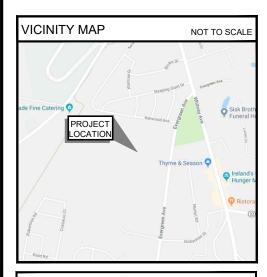
Ms. Woodward motions to adjourn. Mr. Cesare seconds. Closed at 7:30 p.m.

Submitted by:

Deborah Gaiolini, Clerk

## verizon HAMDEN NORTH CT

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



#### 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

#### WALLINGFORD, CT 06492 APPLICANT'S CONTACT: JAMES O'DONNELL (413) 575-2626 ARCHITECT: JACOBS ENGINEERING GROUP, INC. 120 SAINT JAMES AVENUE BOSTON, MA 02116 STRUCTURAL ENGINEER: JACOBS ENGINEERING GROUP, INC. 120 SAINT JAMES AVENUE

5TH FLOOR BOSTON, MA 02116

5TH FLOOR

BOSTON, MA 02116

JACOBS ENGINEERING GROUP, INC.

120 SAINT JAMES AVENUE

VERIZON WIRELESS

20 ALEXANDER DRIVE

**CONSULTANT TEAM** 

APPLICANT

ELECTRICAL ENGINEER:

#### PROJECT SUMMARY

VERIZON SITE NAME: HAMDEN NORTH CT

CROWN CASTLE SITE NAME: CT HAMDEN NORTH CAC

TOWER OWNER

CROWN CASTLE LLC 67 SHARP STREET

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.

FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION

#### SHEET INDEX

TITLE SHEET

SITE PLAN

**ELEVATION PLAN** 

**EQUIPMENT DETAILS** 



UNDERGROUND SERVICE ALERT

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

T-1

CONSTRUCTION

venzo.

3 CORPORATE PARK DRIVE SUITE 10



**APPROVALS** CONSTRUCTION

ERCC0004

CM

DC CHECKED BY:

SUBMITTALS 09/13/19 CONSTRUCTION

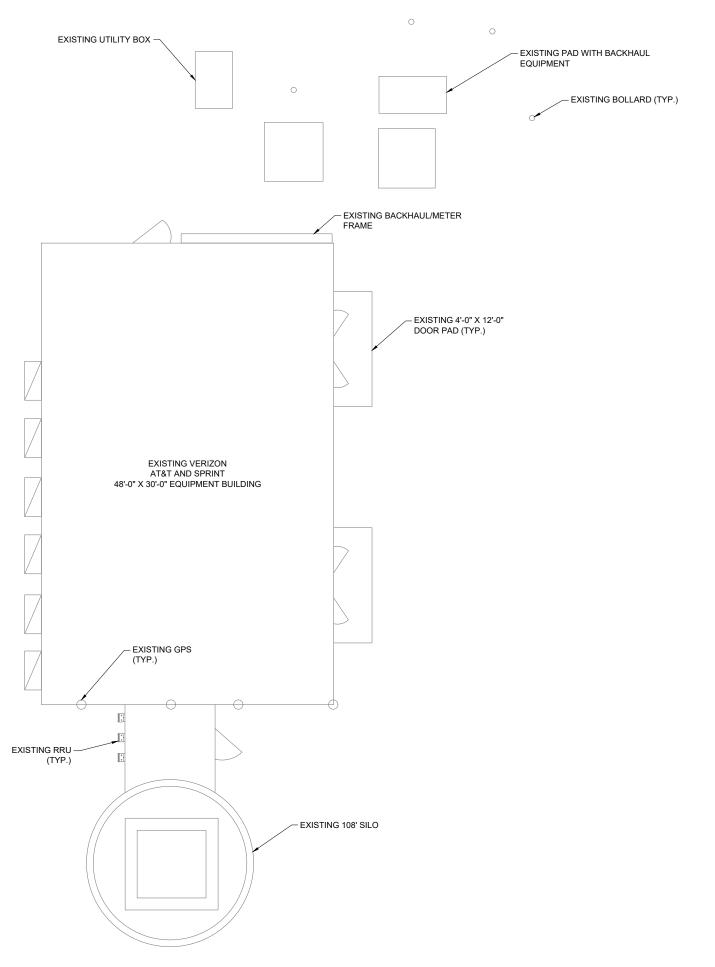
FRICTLY PROHIBITED. DUPLICATION AND GOVERNMENT AGENCIES FOR THE POSES OF CONDUCTING THEIR LAWFUL INISTRATIVE FUNCTIONS IS SPECIFICAL

0 08/12/19 FOR PERMITTING

SITE NAME: HAMDEN NORTH CT CROWN CASTLE BU#:

890 EVERGREEN AVENUE HAMDEN, CT 06518

TITLE SHEET



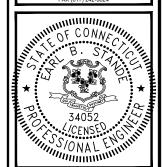


- 1. SOME EXISTING AND PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
- 2. NORTH SHOWN AS APPROXIMATE.
- EXISTING ANTENNAS SHOWN AS APPROXIMATE. ELEVATION BASED ON EXISTING INFORMATION AND VISUAL INSPECTION AND HAVE NOT BEEN VERIFIED THROUGH AN ANTENNA MAPPING.
- 4. PLANS BASED ON DRAWINGS FROM CROWN CASTLE 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.
- 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.
- 13. CONSTRUCTION SAFETY SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THESE DRAWINGS DO NOT INCLUDE NECESSARY SAFETY
- 14. BRACE STRUCTURES SUCH AS LATERAL BRACING, ANCHOR BOLTS, ETC. SHALL BE INSTALLED UNTIL ALL STRUCTURAL ELEMENTS REACH TO REQUIRED STABILITY
- 15. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OF NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO PROCEEDING.
- 16. EACH CONTRACTOR SHALL COOPERATE WITH THE OWNER'S REPRESENTATIVE AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
- 17. REPAIR ANY DAMAGE DURING CONSTRUCTION TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE CONSTRUCTION MANAGER.
- 18. CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER
- 19. REUSE EXISTING ANTENNA MOUNTS AND COAX. INSPECT FOR DAMAGE OR DECAY AND REPLACE AS NEEDED PER STRUCTURAL ANALYSIS.
- 20. CONTRACTOR TO VERIFY FINAL ANTENNA DESIGN AND NOTIFY CARRIER AND ENGINEER WITH ANY DISCREPANCIES PRIOR TO THE INSTALLATION.



CASTLE 3 CORPORATE PARK DRIVE SUITE 101

CO 120 ST JAMES AVENUE 5TH FLOOR BOSTON, MA 02116



APPROVALS
LANDLORD
LEASING
R.F
ZONING
CONSTRUCTION
A & E

PROJECT NO: ERCC0004

DRAWN BY CM

DC CHECKED BY:

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

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

890 EVERGREEN AVENUE HAMDEN, CT 06518

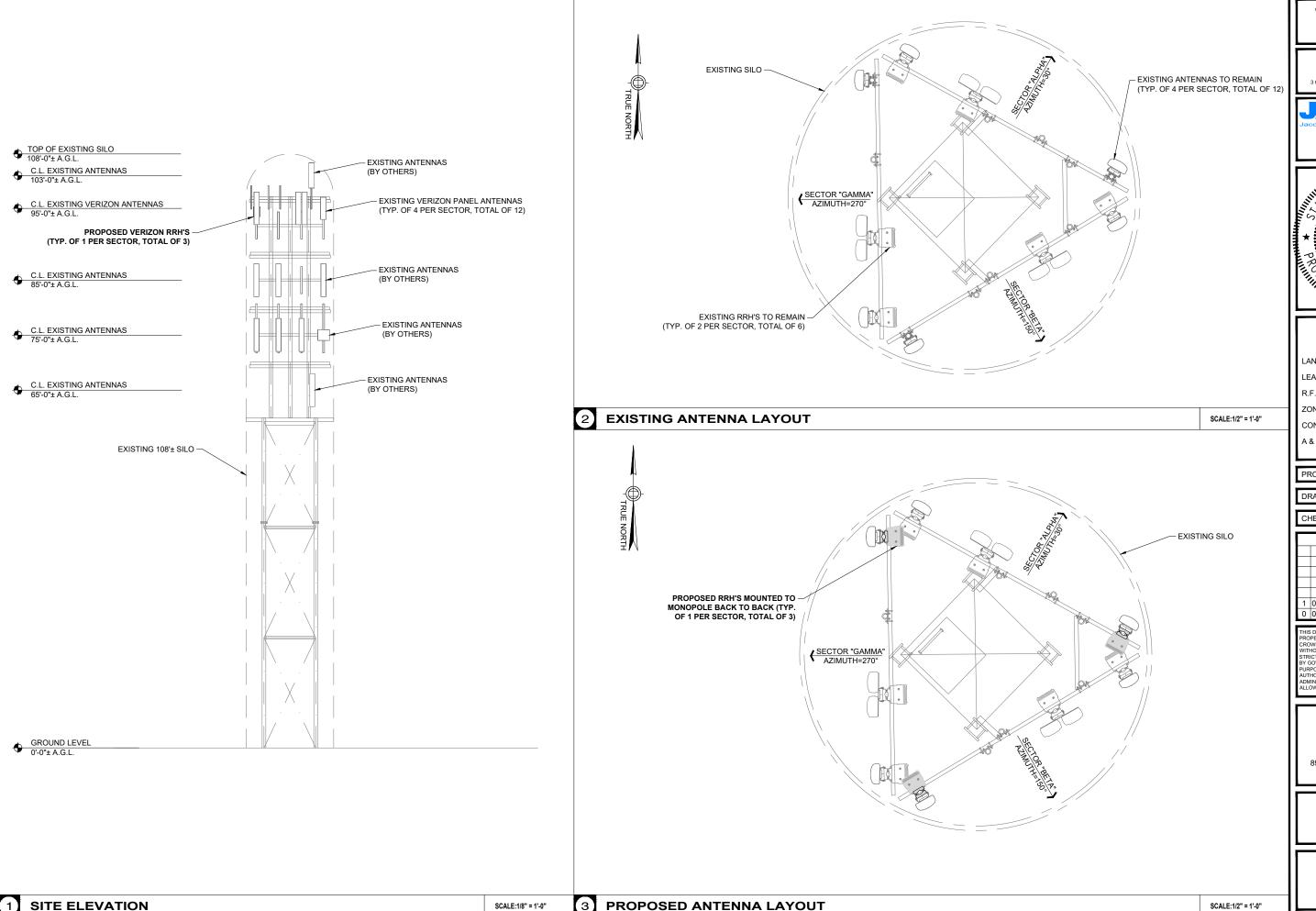
SITE PLAN

A-1

CONSTRUCTION

**SITE PLAN** 

SCALE: 1"=5'b



vertzoi

CROWN 3 CORPORATE PARK DRIVE, SUITE 10 CLIFTON PARK, NEW YORK, 12065



APPROVALS LANDLORD\_ LEASING\_ CONSTRUCTION

PROJECT NO: ERCC0004

СМ

DC CHECKED BY:

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

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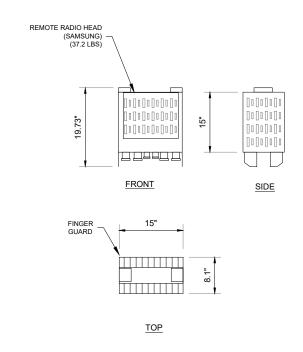
890 EVERGREEN AVENUE HAMDEN, CT 06518

SITE ELEVATION AND ANTENNA LAYOUT

A-2 CONSTRUCTION

#### GENERAL NOTES:

- 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.
- 2. CONSTRUCTION SAFETY SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THESE DRAWINGS DO NOT INCLUDE NECESSARY SAFETY COMPONENTS.
- 3. BRACE STRUCTURES SUCH AS LATERAL BRACING, ANCHOR BOLTS, ETC. SHALL BE INSTALLED UNTIL ALL STRUCTURAL ELEMENTS REACH TO REQUIRED
- INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OF NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO PROCEEDING.
- EACH CONTRACTOR SHALL COOPERATE WITH THE OWNER'S REPRESENTATIVE AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
- 6. REPAIR ANY DAMAGE DURING CONSTRUCTION TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE CONSTRUCTION MANAGER.
- CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT
- 8. REUSE EXISTING ANTENNA MOUNTS AND COAX, INSPECT FOR DAMAGE OR DECAY AND REPLACE AS NEEDED PER STRUCTURAL ANALYSIS.
- 9. CONTRACTOR TO VERIFY FINAL ANTENNA DESIGN AND NOTIFY CARRIER AND ENGINEER WITH ANY DISCREPANCIES PRIOR TO THE INSTALLATION.



*Verzon* 

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



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DMINISTRATIVE FUNCTIONS IS SPECIFICALI

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EQUIPMENT DETAILS

**A-3** CONSTRUCTION

**GENERAL NOTES SAMSUNG 700/850 RRH - RFV01U-D2A** 

**DETAIL NOT USED** 

SCALE: NTS

**DETAIL NOT USED** 

SCALE: NTS

SCALE: NTS

**DETAIL NOT USED** 

**DETAIL NOT USED** 

SCALE: NTS