September 6, 2022

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

Re: Tower Share Application – Dish Site 14046283
Dish Wireless Telecommunications Facility @ 305 W. Service Rd., Hartford, CT

Dear Ms. Bachman,

Enclosed please find three (3) sets of Tower Share application packages for the above referenced site and check number 034926 in the amount of Six Hundred Twenty Five Dollars ($625.00). The application package consists of:

- Letter of Authorization from tower owner;
- Letter dated 6/7/2016 from Hartford Development regarding prior approval;
- GIS Map;
- Construction Drawings;
- Structural Analysis Report;
- Antenna Mount Analysis Report;
- EME Study Report; and
- Four (4) Notice Confirmations.

A pdf copy of these same documents has been emailed to your office this day.

As always, if you have any questions or comments, please feel free to contact me.

Sincerely,

Jack Andrews
Zoning Manager, Centerline Communications
10130 Donleigh Drive
Columbia, MD 21046
443-677-0144

August 30, 2021

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

Re: Tower Share Application – Dish Site 14046283
Dish Wireless Telecommunications Facility @ 305 W. Service Rd., Hartford, CT 06120

Dear Ms. Bachman,

Dish Wireless ("Dish") is proposing a wireless telecommunications facility on an existing one hundred forty eight (148) foot tall monopole tower at 305 W. Service Rd., Hartford, CT 06106 (Latitude: 41.79953889, Longitude: -72.65669722) and within the existing fenced compound. The monopole tower is owned and operated by American Tower Corporation. The subject property is owned by 305 W Service Rd Assoc LLC. As stated in the enclosed letter, the Hartford Planning and Economic Development Division has no record of the original approval for the tower.

Dish proposes to install a five (5) foot by seven (7) foot metal platform within the existing fenced compound and install three (3) antennas, a single antenna mount, six (6) RRUs, and cables on the existing tower at one hundred forty five (154) feet as more particularly detailed and described on the enclosed Construction Drawings prepared by American Tower Engineering.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of Dish's intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A §16-50j-73, a copy of this letter is being sent to the following individuals: American Tower Corporation as Tower Operator/Owner; 305 W Service Rd Assoc LLC as Property Owner; the Honorable Luke Bronin as Mayor of the City of Hartford and Charles Mathews, Director of Development Services for the City of Hartford.

The applicant's proposal falls squarely within those activities explicitly provided for in R.C.S.A. §16-50j-89. Specifically:

1. The proposed modifications will NOT result in an increase in the height of the existing structure.
2. The proposed modifications will NOT require an extension of the site boundary.
3. The proposed modifications will NOT increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the modified facility will NOT increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. Please see the RF emissions calculation for DISH's facility enclosed herewith.
5. The proposed modifications will NOT cause an ineligible change or alteration in the physical or environmental characteristics of the site.

Jack Andrews, Zoning Manager • 10130 Donleigh Drive, Columbia, MD 21046 • (443) 677-0144
Centerline Communications • 750 W Center Street, Suite 301, W Bridgewater, MA 02379

6. The existing structure and its foundation can support the proposed loading. Please see the enclosed structural analysis dated June 22, 2022, prepared by American Tower Corporation.

Connecticut General Statute 16-50aa indicates that the Council must approve the shared use of a telecommunications facility provided it finds the shared use is technically, legally, environmentally, and economically feasible and meets public safety concerns. As demonstrated in this letter, Dish respectfully indicates that the shared use of this facility satisfies these criteria:

A. Technical Feasibility. The existing monopole has been deemed structurally capable of supporting Dish's proposed loading (see attached Structural Analysis).

B. Legal Feasibility. As referenced above, C.G.S. 16-50aa has been authorized to issue orders approving the shared use of an existing tower. Under the authority granted to the Council, an order of the Council approving the requested shared use would permit Dish to obtain a building permit for the proposed installation. Further, a Letter of Authorization is attached, authorizing Dish to file this application for shared use.

C. Environmental Feasibility. The proposed shared use of this facility would have a minimal environmental impact. The installation of Dish equipment at the 145-foot level of the existing 148-foot tower would have an insignificant visual impact on the area around the tower. Dish ground equipment would be installed within the existing facility compound. DISH shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by the attached EME study, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.

D. Economic Feasibility. Dish will be entering into an agreement with the owner of this facility to mutually agreeable terms. As previously mentioned, the Letter of Authorization has been provided by the owner to assist Dish with this tower sharing application.

E. Public Safety Concerns. As discussed above, the tower is structurally capable of supporting the proposed loading. Dish is not aware of any public safety concerns relative to the proposed sharing of the existing tower. Dish's intentions of providing new and improved wireless service through the shared use of this facility is expected to enhance the safety and welfare of local residents and individuals traveling through the area.

Jack Andrews, Zoning Manager • 10130 Donleigh Drive, Columbia, MD 21046 • (443) 677-0144
Centerline Communications • 750 W Center Street, Suite 301, W Bridgewater, MA 02379

For the foregoing reasons, Dish respectfully requests that the Council approve this request for the shared use of this tower located at 305 W. Service Rd., Hartford, CT 06120.

If you have any questions, please feel free to contact me.

Sincerely,

Jack Andrews
Zoning Manager, Centerline Communications
10130 Donleigh Drive
Columbia, MD 21046
443-677-0144

Enclosures:

Exhibit 1 – Letter of Authorization from tower owner
Exhibit 2 – Property Card / GIS Map
Exhibit 3 – Construction Drawings
Exhibit 4 – Structural Analysis Report
Exhibit 5 – Antenna Mount Analysis Report
Exhibit 6 – EME Study Report
Exhibit 7 – Hartford Planning & Zoning Tower Approval Letter
Exhibit 8 – (4) Notice Confirmations

cc:

American Tower Corporation – Tower Operator/Owner
305 W Service Rd Assoc LLC – Property Owner
The Honorable Luke Bronin - Mayor of the City of Hartford
Charles Mathews - Director of Hartford Development Services

AMERICAN TOWER®
CORPORATION

LETTER OF AUTHORIZATION FOR PERMITTING

ATC SITE#/NAME/PROJECT: 302466 / WEST SERVICE ROAD / 14046283
SITE ADDRESS: 305 W SERVICE RD, HARTFORD, CT 06120
APN: HTFD M:304 B:074 L:014
LICENSEE: DISH WIRELESS L.L.C. dba DISH WIRELESS L.L.C.
SITE ACQUISITION VENDOR: CENTERLINE COMMUNICATIONS LLC

I, Margaret Robinson, Vice President, UST Legal for American Tower*, owner/operator of the tower facility located at the address identified above (the "Tower Facility"), do hereby authorize **DISH WIRELESS L.L.C. dba DISH WIRELESS L.L.C.** their successors and assigns, and/or their agent, (collectively, the "Licensee") to act as American Tower's non-exclusive agent for the sole purpose of filing and consummating any land-use, building, or electrical permit application(s) as may be required by the applicable permitting authorities for Licensee's telecommunications' installation on the Tower Facility.

American Tower understands that this application may be denied, modified or approved with conditions. The above authorization is limited to the acceptance by Licensee only of conditions related to Licensee's installation and any such conditions of approval or modifications will be Licensee's sole responsibility.

Signature:

Print Name: Margaret Robinson
Vice President, UST Legal
American Tower*

NOTARY BLOCK

Commonwealth of MASSACHUSETTS
County of Middlesex

This instrument was acknowledged before me by Margaret Robinson, Vice President, UST Legal for American Tower*, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same.

WITNESS my hand and official seal, this 10th day of August, 2022

NOTARY SEAL

MELISSA ANN METZLER
Notary Public
Commonwealth of Massachusetts
My Commission Expires March 14, 2025

Notary Public
My Commission Expires: March 14, 2025

* American Tower is defined as American Tower Corporation and any of its affiliates or subsidiaries.

City of Hartford Property Viewer

305 West Service Rd.

Parcels (1)

304074014

305 WEST SERVICE RD
305 W SERVICE RD ASSOC LLC

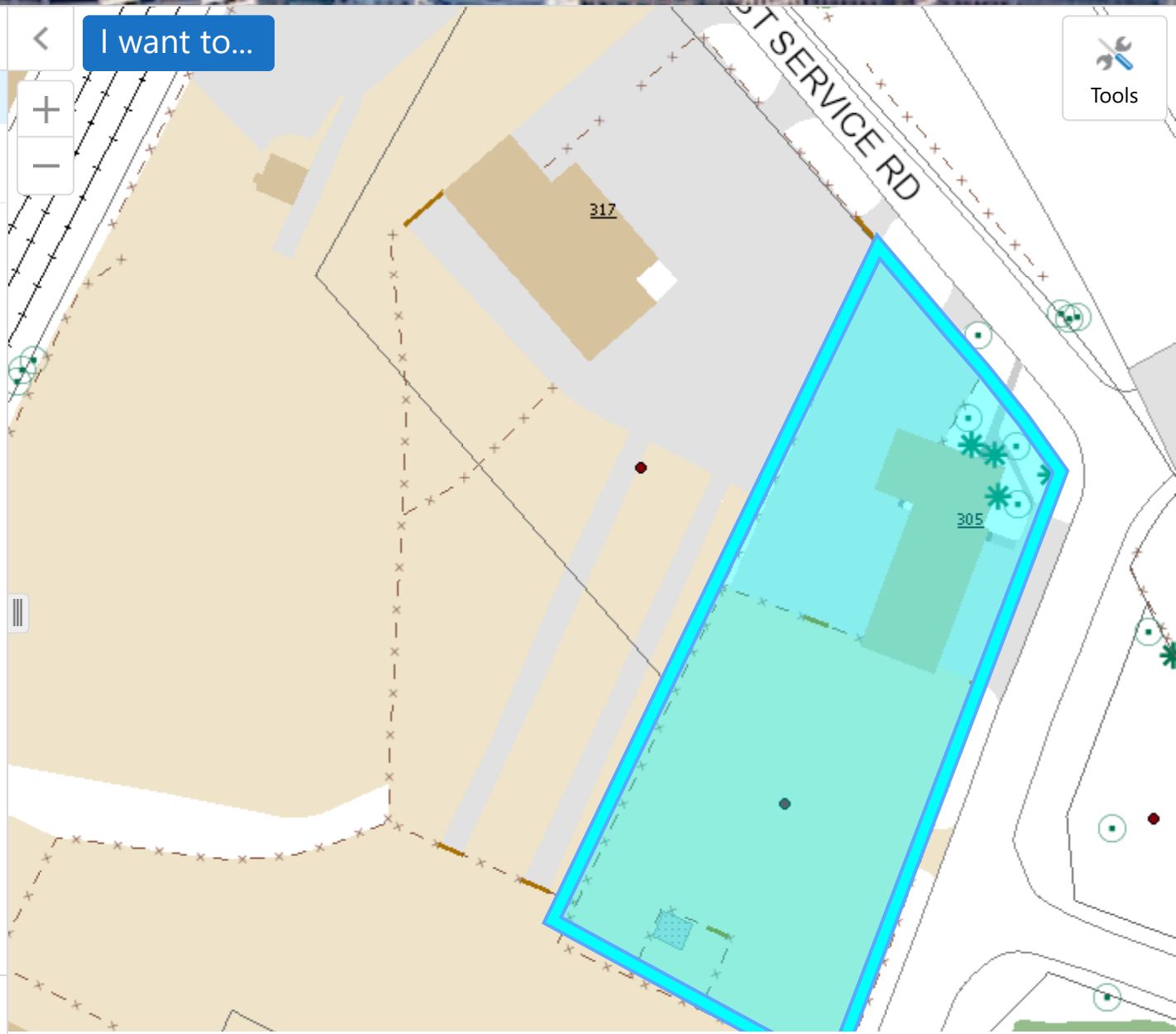
Displaying 1 - 1 (Total: 1)

Page 1 of 1

Home | Parcel Labels | Parcels (1)

I want to...

Tools



Streets

0 50 100ft

LUKE BRONIN
MAYOR

CITY OF HARTFORD

DEPARTMENT OF DEVELOPMENT SERVICES
Planning and Economic Development Division
250 Constitution Plaza, 4th Floor
Hartford, Connecticut 06103

Telephone: (860) 757- 9025
Fax: (860) 722-6402
www.hartford.gov

JAMIE BRÄTT
DIRECTOR

June 7, 2016

Denise Sabo
Northeast Site Solutions
54 Main Street Unit 3
Sturbridge MA 01566

RE: 305 West Service Road

Dear Ms. Sabo:

In response to your inquiry regarding cell towers at 305 West Service Road, the Planning Division did not find any original zoning approvals. A Certificate of Occupancy was found for the use of cell towers. Building permits also indicate that the use of cell towers currently exists.

Please feel free to contact me at 860-757-9055, should you have any questions.

Sincerely,

Lynda Crespo,
Administrative Assistant

EBI Consulting

environmental | engineering | due diligence

RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

Dish Wireless Existing Facility

Site ID: BOBDL00079B

BOBDL00079B
305 W Service Road
Hartford, Connecticut 06120

June 1, 2022

EBI Project Number: 6222003505

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**40.27%**

June 1, 2022

Attn: Dish Wireless

Emissions Analysis for Site: BOBDL00079B - BOBDL00079B

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **305 W Service Road** in **Hartford, Connecticut** for the purpose of determining whether the emissions from the Proposed Dish Wireless Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu W/cm^2$). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits; therefore, it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed Dish Wireless Wireless antenna facility located at 305 W Service Road in Hartford, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since Dish Wireless is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

For all calculations, all equipment was calculated using the following assumptions:

1) 4 n71 channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 4 n70 channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

3) 4 n66 channels (AWS Band - 2190 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

4) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

5) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative

estimate as gain reductions for these particular antennas are typically much higher in this direction.

6) The antennas used in this modeling are the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector A, the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector B, the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

7) The antenna mounting height centerline of the proposed antennas is 148 feet above ground level (AGL).

8) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

9) All calculations were done with respect to uncontrolled / general population threshold limits.

Dish Wireless Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21
Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz	Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz	Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz
Gain:	11.35 dBd / 15.75 dBd / 16.75 dBd	Gain:	11.35 dBd / 15.75 dBd / 16.75 dBd	Gain:	11.35 dBd / 15.75 dBd / 16.75 dBd
Height (AGL):	148 feet	Height (AGL):	148 feet	Height (AGL):	148 feet
Channel Count:	12	Channel Count:	12	Channel Count:	12
Total TX Power (W):	440.00 Watts	Total TX Power (W):	440.00 Watts	Total TX Power (W):	440.00 Watts
ERP (W):	2,524.75	ERP (W):	2,524.75	ERP (W):	2,524.75
Antenna A1 MPE %:	**0.57%**	Antenna B1 MPE %:	**0.57%**	Antenna C1 MPE %:	**0.57%**

Site Composite MPE %	
Carrier	**MPE %**
Dish Wireless (Max at Sector A):	0.57%
Northcoast	0.2%
Nextel	0.28%
Clearwire	9.72%
Sensus (CL&P)	0.14%
Verizon	15.48%
T-Mobile	13.88%
Site Total MPE % :	40.27%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	0.57%
Dish Wireless Sector B Total:	0.57%
Dish Wireless Sector C Total:	0.57%
Site Total MPE % :	40.27%

Dish Wireless Maximum MPE Power Values (Sector A)

Dish Wireless Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
Dish Wireless 600 MHz n71	4	110.82	145.0	0.82	600 MHz n71	400	0.21%
Dish Wireless 1900 MHz n70	4	245.22	145.0	1.83	1900 MHz n70	1000	0.18%
Dish Wireless 2190 MHz n66	4	275.14	145.0	2.05	2190 MHz n66	1000	0.20%
						Total:	**0.57%**

• NOTE: Totals may vary by approximately 0.01% due to summation of remainders in calculations.

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

The anticipated maximum composite contributions from the Dish Wireless facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

Dish Wireless Sector	Power Density Value (%)
Sector A:	0.57%
Sector B:	0.57%
Sector C:	0.57%
Dish Wireless Maximum MPE % (Sector A):	0.57%
Site Total:	40.27%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **40.27%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

Mount Structural ANALYSIS REPORT
Monopole

FORESITE LLC
•Architects •Engineers •Surveyors
Complete A&E services for wireless telecommunications industry

Prepared for:

dish WIRELESS

5701 South Santa Fe Drive
Littleton, CO 80120

Site ID: BOBDL00079B
Address:
305 W. Service Rd.
Hartford, CT 06120

Revisions: 0, Date: 08/25/2022
Submitted by:
Foresite LLC.
462 Walnut Street, Suite 1
Newton, MA 02460
Phone: 617-5273031

Date: 8/25/2022

To: DISH Wireless L.L.C.
5701 South Santa Fe Drive
Littleton, CO 80120

Subject: **Mount Structural Analysis Report**

DISH Wireless L.L.C. Designation: **Site ID:** BOBDL00079B

EFI Designation: **Project Number:** 049.03685 - 2275030

Site Data: **305 W. Service Rd., Hartford, CT 06120**
Latitude 41.79953889°, Longitude -72.65669722°

EFI Global, Inc. is pleased to submit this **"Mount Structural Analysis Report"** to determine the structural capacity of the antenna mounts utilized by DISH Wireless L.L.C. at the above referenced site.

The purpose of the analysis is to determine acceptability of the mount stress level for the changes proposed by DISH Wireless L.L.C. under the following load case we have determined the mounts to have:

Proposed Equipment **Adequate Capacity (49.4%)**
Note: See Analysis Criteria for loading configuration

The analysis has been performed in accordance with the TIA-222-G Standard and the 2018 Connecticut State Building Code (2015 IBC).

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

Sincerely,
EFI Global, Inc.
License No: PEC0001245

8/25/2022

Ahmet Colakoglu, PE
Connecticut Professional Engineer
License No: 27057

EFI Global, Inc.
1117 Perimeter Center West, Suite E500, Atlanta GA 30338 - Tel: (470) 990-6593

1) ANALYSIS CRITERIA

The analysis was performed for the proposed appurtenances as specified in the loading information referenced below, and per the following loading criteria of Table 1.

Table 1 – Loading and Analysis Criteria

Rad Center	145’
Structure Type	Monopole
Exposure Category	C
Basic Wind Speed	125 * √0.6 = 96.8 mph (ASD)
Ice Loading	1.00” with 50 mph Wind
Risk Category	II
Topographic Factor	Kzt = 1.0

Table 1.1 – Proposed and Final Appurtenance Configuration

Qty	Model
3	JMA MX08FRO665-21 – Antennas
3	Fujitsu TA08025-B605 – RRUs*
3	Fujitsu TA08025-B604 – RRUs*
1	Raycap RDIDC-9181-PF-48 – OVP Box

***To be mounted behind antennas.**

Table 1.2 – Assumed Material Properties

Member Type	ASTM Material Designation	Fy (ksi)	Fu (ksi)
Pipes	A53 Gr. B	35	60
Angles/Channels	A36	36	58
Rectangular HSS	A500 Gr. B - 46	46	58
Round HSS	A500 Gr. B - 42	42	58
Others (UNO)	A572 Gr. 50	50	65

2) ANALYSIS PROCEDURE

The analysis is based on the following information:

Table 2 – Documents

Document	Provided By	Date
Structural Analysis Report	ATC	06/22/2022
Preliminary Construction Drawings	ATC	04/27/2022

2.1) Analysis Method

Risa-3D, a commercially available analysis software package, was used to create a three-dimensional model of the mount and calculate member stresses for various loading cases. Selected output from the analysis is included in the Appendix.

2.2) Analysis Conditions and Assumptions

1) The mount was built and installed in accordance with the manufacturer's specifications.
2) The mount has been maintained and will be maintained in accordance with the manufacturer's specifications. All structural members and connections of the mount are in good condition and can achieve theoretical strength.
3) The configuration of antennas is as specified in "1) Analysis Criteria".
4) The analysis was performed for the subject mount only. It does not include an evaluation of the other mounts or the tower, which should be analyzed by others.
5) The evaluation does not include any antenna rigging loads. The equipment should not be rigged using the subject antenna mount as the support.
6) The analysis includes a minimum 250 lbf maintenance point load at the worst-case location on the mount, as well as a minimum 250 lbf maintenance point load at each antenna location in conjunction with a 30 mph wind load.
7) Any steel grating represented in this model is for loading purposes only and it is not considered to provide any structural restraint or support.
8) Member sizes per available mount specifications and assumed based on our experience with similar structures. Please refer to calculation output in the appendix of this report for sizes and lengths assumed.
9) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.

EFI Global, Inc. (EFI), must be notified immediately if any of these assumptions are discovered to be incorrect. The results of this analysis may be affected if any of the assumptions are not valid or have been made in error.

3) ANALYSIS RESULTS AND CONCLUSION

The analysis results are shown on the table below.

Table 3.1 – Mount Component Stresses vs. Capacity

Component	% Capacity	Pass / Fail
Horizontal Face Pipes	<20	Pass
Platform Base Standoff Tubes	36.4	Pass
Platform Base Grating Angles	23.8	Pass
Platform Base Grating Channels	38.4	Pass
Connection Plates	33.2	Pass
Support Rail Pipes	21.9	Pass
Support Rail Corner Angles	23.5	Pass
Mount Pipes	49.4	Pass
Platform Corner Plates	36.2	Pass

Platform Mount: The proposed platform mount has **adequate** capacity for the proposed changes by DISH Wireless L.L.C. For the code specified load combinations and as a maximum, the mount members are stressed to **49.4%** of their structural capacity.

EFI Global, Inc. has assumed that Commscope Snub Nose Platform with Support Rail (P/N: MC-PK8-C, Specs attached) will be installed at this site prior to the equipment installation proposed in this analysis. The analysis also assumes the following:

- **The platform base is installed at 143'-4'' AGL (above grade level).**
- **The antenna RAD center is at equidistant between support rail and base perimeter pipe.**
- **The support rail is installed 40" above the platform base.**
- **(3) equally spaced 72" long 2.0 STD mount pipes are installed at each face.**
- **(1) 48" long 2.0 STD OVP Box mount pipe should be installed at platform base tube to attach OVP Box. The pipe should be connected to platform base tube using Commscope Pipe Mount Kit (P/N: MTC3055PM2).**

APPENDIX

INPUT LOADS
ANALYSIS OUTPUT
MOUNT SPECS

EFI Global, Inc.
1117 Perimeter Center West, Suite E500, Atlanta GA 30338 - Tel: (470) 990-6593

CLIENT: Foresite LLC

PROJECT: BOBDL00079B

SUBJECT: Antenna Loads - G Code with Sections 16 Revisions

Tower Height	148.00	ft	Type of Mount: Platform
Basic Wind Speed, V	96.8	mph (=Ultimate Speed*Sqrt(0.6))	
Basic Wind Speed with Ice, V_i	50	mph	
Maintanence Load Factor, L_{FM}	0.0960	Load Factor for Maint. Load Cases (Basic Wind Speed=30 mph)	
Design Ice Thickness, t_i	1	inches	

Table 2-3 Importance Factors

Structure Classification	Wind Load Without Ice	Wind Load With Ice	Ice Thickness	Earthquake
II	1	1	1	1

Table 2-4 Exposure Category Coefficients

Exposure Category	Zg	α	Kzmin	Ke	m
C	900	9.5	0.85	1	0.6

Table 2-5 Topographic Categories

Kzt 1.000

Table 2-2 Wind Directionality Factor, Kd

Structure Type	Kd	
Monopole	0.95	DOES NOT CHANGE

Gust Effect Factor Gh

Structure Type	Gh	
Monopole	1.00	DOES NOT CHANGE

Shielding Factor, Ka

Structure Type	Ka	
Monopole	0.90	DOES NOT CHANGE

CLIENT: Foresite LLC

PROJECT: BOBDL00079B

SUBJECT: Antenna Loads - G Code with Sections 16 Revisions

Rad Center **145.00** ft

Antenna AND Mount Without Ice

Mounting Pole	Height (ft)	Model Number	#	Weight (lbs)	H (in)	*W (in)	D (in)	Ka	**A_N (ft2)	***A_T (ft2)	Aspect (FRONT)	Aspect (SIDE)	Ca (FRONT)	Ca (SIDE)	K_z	q_z (psf)	Pounds: Wind Load (Front)	Wind Load (Side)	Dead Load	Total Wind Load (Front)	Total Wind Load (Side)	Total Dead Load
Pos. 1	**145.00**	JMA MX08FRO665-21	1	64.5	72.0	20.0	8.0	0.90	10.00	4.00	3.60	9.00	1.25	1.47	1.369	31.2	350.5	164.7	64.5	351	223	203
	145.00	Fujitsu TA08025-B605	1	75.0	14.9	N/A	9.0	0.90	-	0.93	-	1.66	-	1.20	1.369	31.2	0.0	31.4	74.95			
	145.00	Fujitsu TA08025-B604	1	63.9	14.9	N/A	7.8	0.90	-	0.81	-	1.91	-	1.20	1.369	31.2	0.0	27.2	63.9			
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0			
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0			
																				176	**112**	**102**
Standoff		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0	64	36	22
	145.00	Raycap RDIDC-9181-PF-48	1	21.8	19.0	14.4	8.2	0.90	1.90	1.07	1.32	2.33	1.20	1.20	1.369	31.2	63.9	36.2	21.82			
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0			
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0			
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0			
																				32	**19**	**11**

* Enter N/A in the W column for front sheilded apurtanances.

** A_N is the product of H and W

*** A_T is the product of H and D

DL 225

Mount	Height (ft)	Member	*L (in)	**W (in)	D (in)	*** Ca	K_z	q_z (psf)	Wind Load (PLF)
	145.00	3.0 STD Pipe	12.00	3.50	0.00	1.20	1.369	28.1	9.8
	145.00	2.0 STD Pipe	12.00	2.38	0.00	1.20	1.369	28.1	6.7
	145.00	1.25 STD Pipe	0.00	1.66	0.00	-	-	-	-
	145.00	1" SR	0.00	1.00	0.00	-	-	-	-
	145.00	3/4" SR	0.00	0.75	0.00	-	-	-	-
	145.00	(L2x2x0.25)	12.00	2.00	2.00	2.00	1.369	28.1	9.4
	145.00	(L6.6x4.4x0.25)	12.00	6.60	4.40	2.00	1.369	28.1	30.9
	145.00	L(1.5X1.5)	0.00	1.50	1.50	-	-	-	-
	145.00	HSS4x4x4/16	12.00	4.00	4.00	2.00	1.369	28.1	18.7
	145.00	Plate Horizontal (PL0.375x6.5)	12.00	6.50	0.38	2.00	1.369	28.1	30.4
	145.00	Plate Horizontal (PL0.5x2.375)	12.00	2.38	0.50	2.00	1.369	28.1	11.1
	145.00	PL0.375X0.875	0.00	0.38	0.88	-	-	-	-
	145.00	PL0.875X0.375	0.00	0.88	0.38	-	-	-	-
	145.00	Double Angle (LL3x3x4x0)	0.00	3.00	3.00	-	-	-	-
	145.00	C3.38x2.06x0.25	12.00	3.38	2.06	2.00	1.369	28.1	15.8
	145.00	MC12x14.3	0.00	2.12	12.00	-	-	-	-

* The dimension L is the longest dimension of the member

** The dimension W is the height or width of the member that resists wind load

*** Ca will equal 1.2 for round members and 2.0 for flat members

CLIENT: Foresite LLC

PROJECT: BOBDL00079B

SUBJECT: Antenna Loads - G Code with Sections 16 Revisions

ti (in) 2.319078 Kiz 1.1595391 reduction 0.2668

Antenna AND Mount With Ice

Mounting Pole	Height (ft)	Model Number	#	H (in)	W (in)	D (in)	Ka	*A_N (ft2)	*A_T (ft2)	*Volume Ice (ft3)	*Weight Ice (lbs)	**Ca (FRONT)	**Ca (SIDE)	Kz	q_z (psf)	Pounds: Ice Wind Load (Front)	Ice Wind Load (Side)	Combined Wind Load (Front)	Combined Wind Load (Side)	Ice Dead Load	**Total Wind Load (Front)	**Total Wind Load (Side)	Total Ice Load
Pos. 1	**145.00**	JMA MX08FRO665-21	1	72.0	20.0	8.0	0.90	3.11	2.73	7.14	400.03	0.70	0.70	1.369	8.3	16.3	14.3	109.8	58.2	400	110	83	608
	145.00	Fujitsu TA08025-B605	1	14.9	15.7	9.0	0.90	-	0.92	1.92	107.40	0.70	0.70	1.369	8.3	0.0	4.8	0.0	13.2	107			
	145.00	Fujitsu TA08025-B604	1	14.9	15.7	7.8	0.90	-	0.88	1.80	101.04	0.70	0.70	1.369	8.3	0.0	4.6	0.0	11.9	101			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
																					55	**42**	**305**
Standoff		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0	23	15	114
	145.00	Raycap RDIDC-9181-PF-48	1	19.0	14.4	8.2	0.90	1.22	1.02	2.04	114.11	0.70	0.70	1.369	8.3	6.4	5.4	23.5	15.0	114			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
																					12	**8**	**58**

* A_N ,A_T, Volume Ice and Weight Ice are calculated per unit

** Ca will equal 1.2 for all ice load calculations

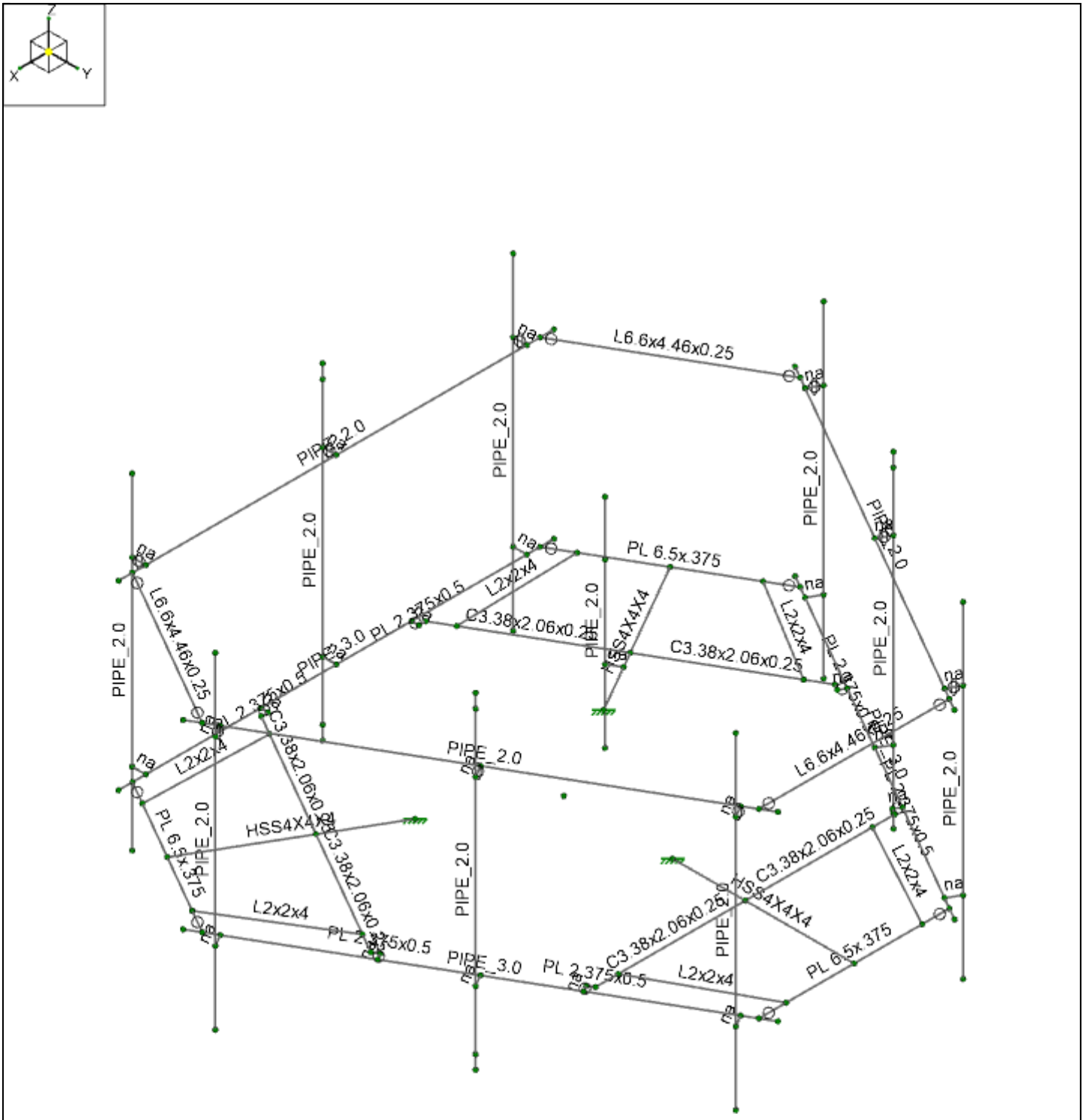
Mount	Height (ft)	Member	*L (in)	**W (in)	D (in)	***A_N (ft2)	Volume Ice (ft3)	Weight Ice (lbs)	****Ca (FRONT)	Kz	q_z (psf)	PLF: Ice Wind Load (Front)	Combined Wind Load (Front)	Ice Dead Load
	145.00	3.0 STD Pipe	12.00	3.50	0.00	0.65	0.29	16.49	1.20	1.369	7.5	5.8	8.5	16.5
	145.00	2.0 STD Pipe	12.00	2.38	0.00	0.61	0.24	13.30	1.20	1.369	7.5	5.5	7.3	13.3
	145.00	1.25 STD Pipe	0.00	1.66	0.00	-	-	-	-	-	-	-	-	-
	145.00	1" SR	0.00	1.00	0.00	-	-	-	-	-	-	-	-	-
	145.00	3/4" SR	0.00	0.75	0.00	-	-	-	-	-	-	-	-	-
	145.00	(L2x2x0.25)	12.00	2.00	2.00	0.60	0.13	7.21	1.20	1.369	7.5	5.4	7.9	7.2
	145.00	(L6.6x4.4x0.25)	12.00	6.60	4.40	0.75	0.35	19.84	1.20	1.369	7.5	6.7	15.0	19.8
	145.00	L(1.5X1.5)	0.00	1.50	1.50	-	-	-	-	-	-	-	-	-
	145.00	HSS4x4x4/16	12.00	4.00	4.00	0.66	0.61	34.01	1.20	1.369	7.5	6.0	11.0	34.0
	145.00	Plate Horizontal (PL0.375x6.5)	12.00	6.50	0.38	0.75	0.52	29.16	1.20	1.369	7.5	6.7	14.8	29.2
	145.00	Plate Horizontal (PL0.5x2.375)	12.00	2.38	0.50	0.61	0.34	18.97	1.20	1.369	7.5	5.5	8.5	19.0
	145.00	PL0.375X0.875	0.00	0.38	0.88	-	-	-	-	-	-	-	-	-
	145.00	PL0.875X0.375	0.00	0.88	0.38	-	-	-	-	-	-	-	-	-
	145.00	Double Angle (LL3x3x4x0)	0.00	3.00	3.00	-	-	-	-	-	-	-	-	-
	145.00	C3.38x2.06x0.25	12.00	3.38	2.06	0.64	0.28	15.91	1.20	1.369	7.5	5.8	10.0	15.9
	145.00	MC12x14.3	0.00	2.12	12.00	-	-	-	-	-	-	-	-	-

* The dimension L is the longest dimension of the member

** The dimension W is the height or width of the member that resists wind load

*** A_N is the area of ice built up on the LW plane

**** Ca will equal 1.2 for all ice load calculations



Envelope Only Solution

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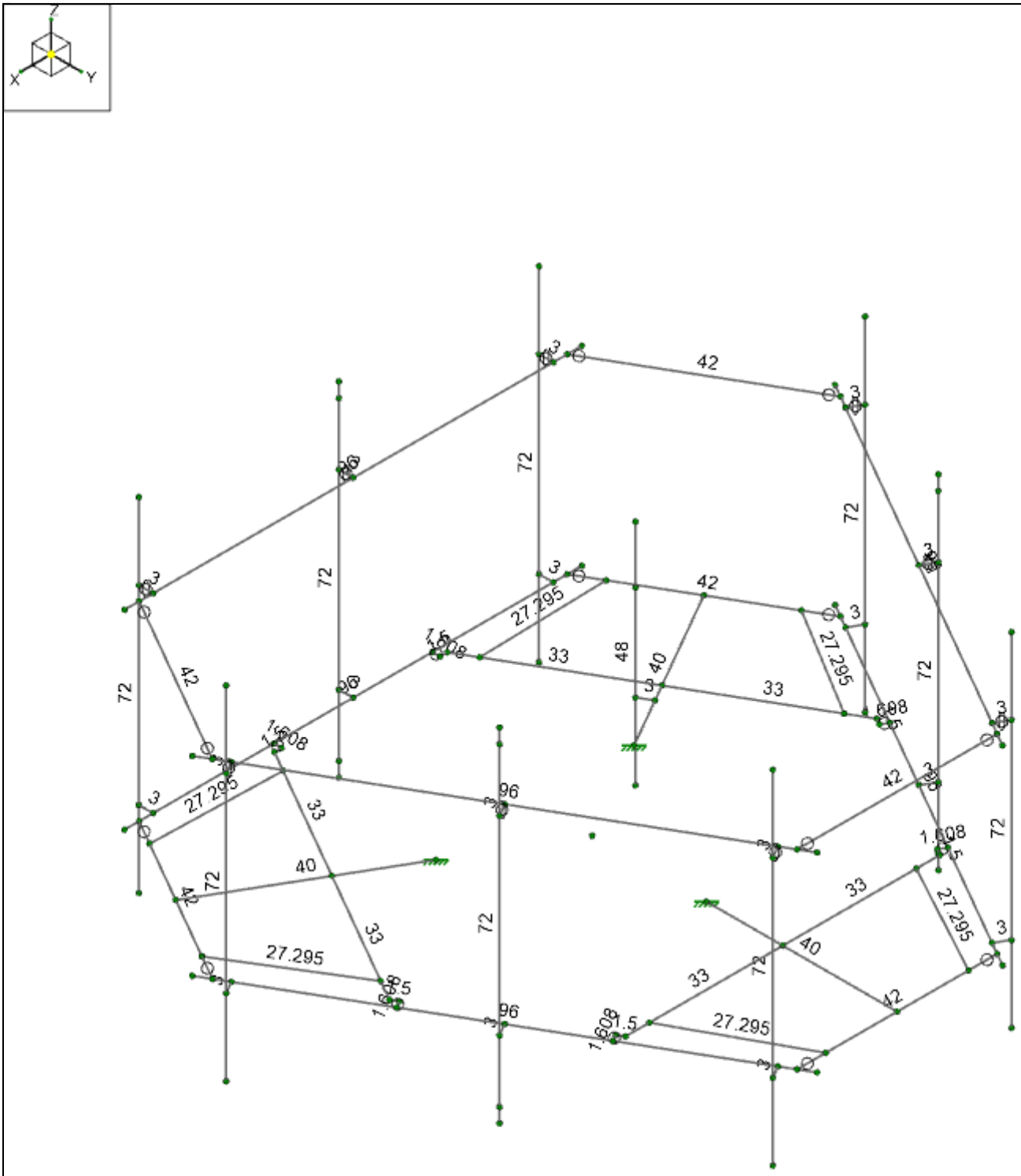
AJ		Aug 25, 2022
049.03685 - 2275030		BOBDL00079B.r3d



Member Length (in) Displayed
Envelope Only Solution

ForeSite/EFI	BOBDL00079B	SK-2
AJ		Aug 25, 2022
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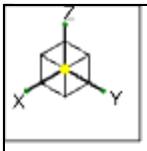

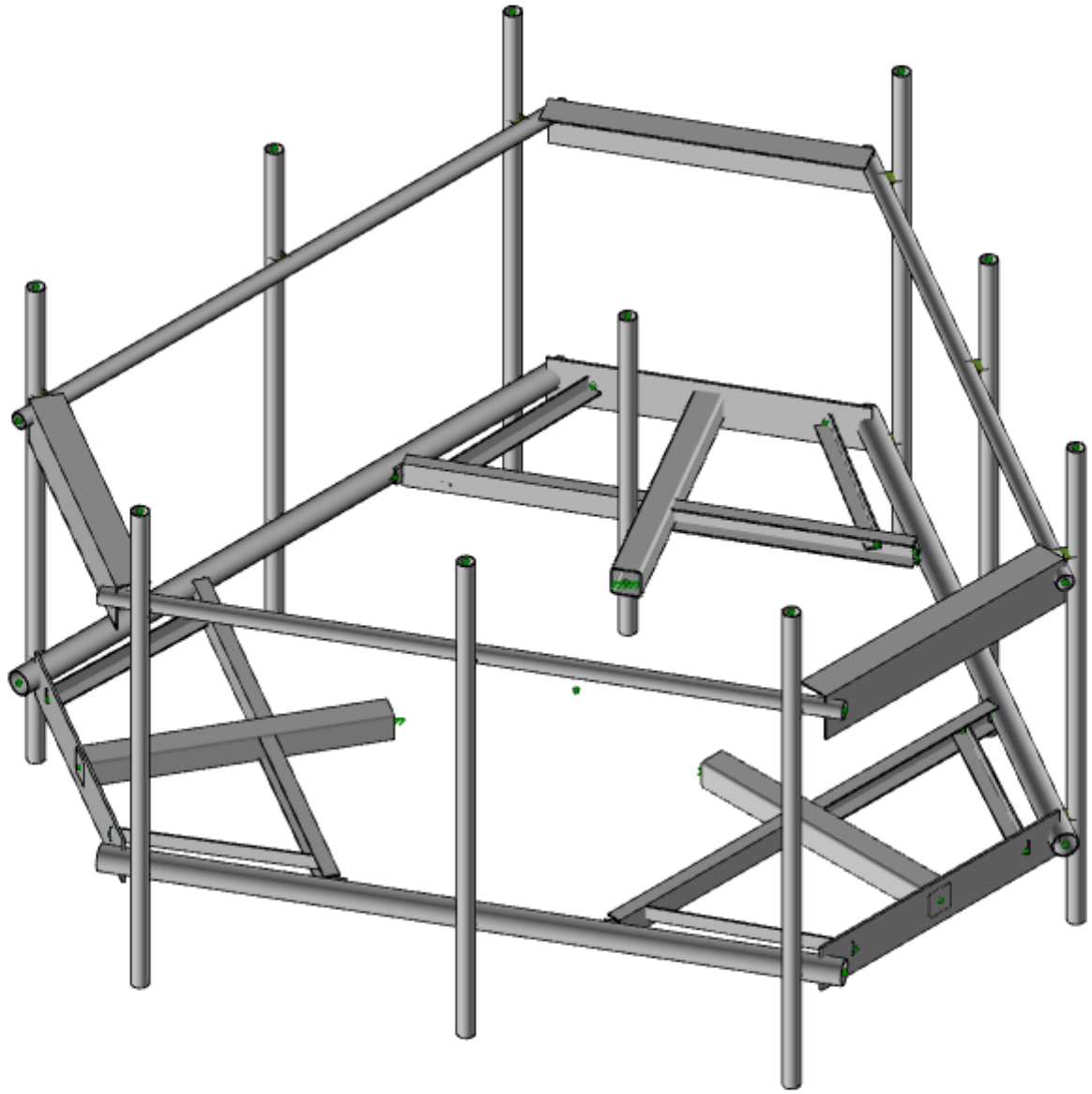

Envelope Only Solution

ForeSite/EFI	BOBDL00079B	SK-3
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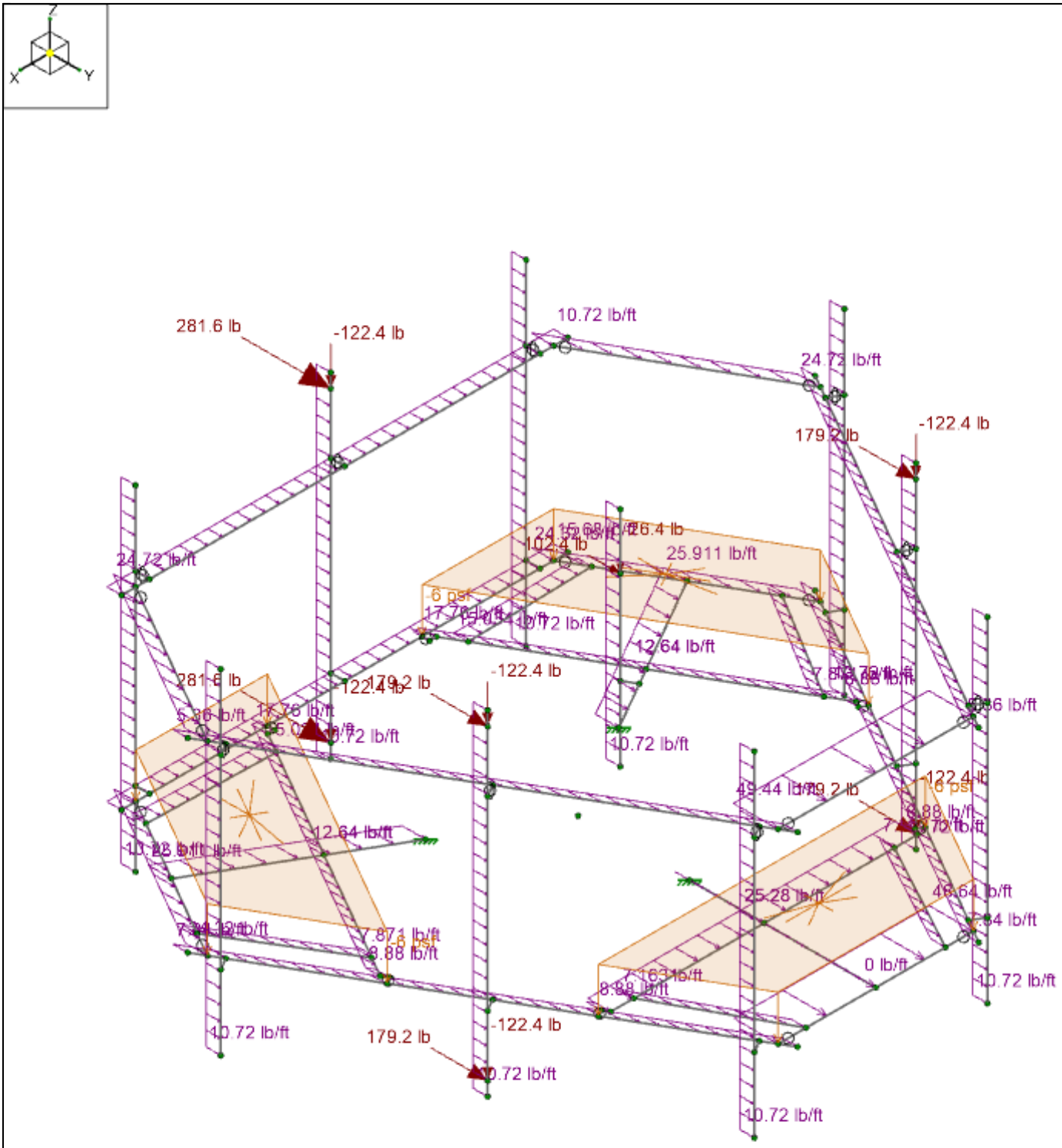

Loads: LC 1, DL + WL (NO ICE) 0 Degree
Envelope Only Solution

ForeSite/EFI	BOBDL00079B	SK-4
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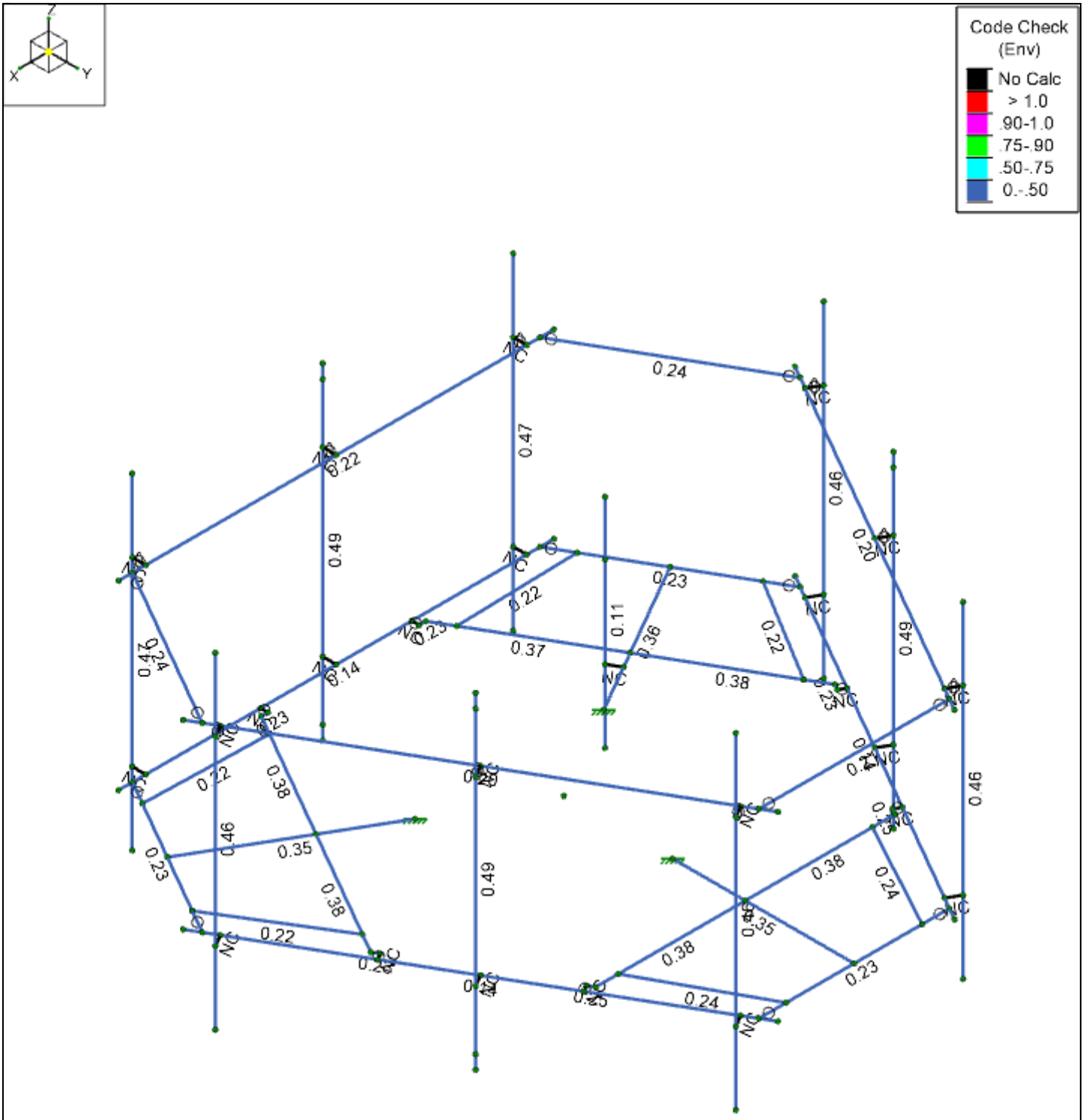

Member Code Checks Displayed (Enveloped)
Envelope Only Solution

ForeSite/EFI	BOBDL00079B	SK-5
AJ		Aug 25, 2022
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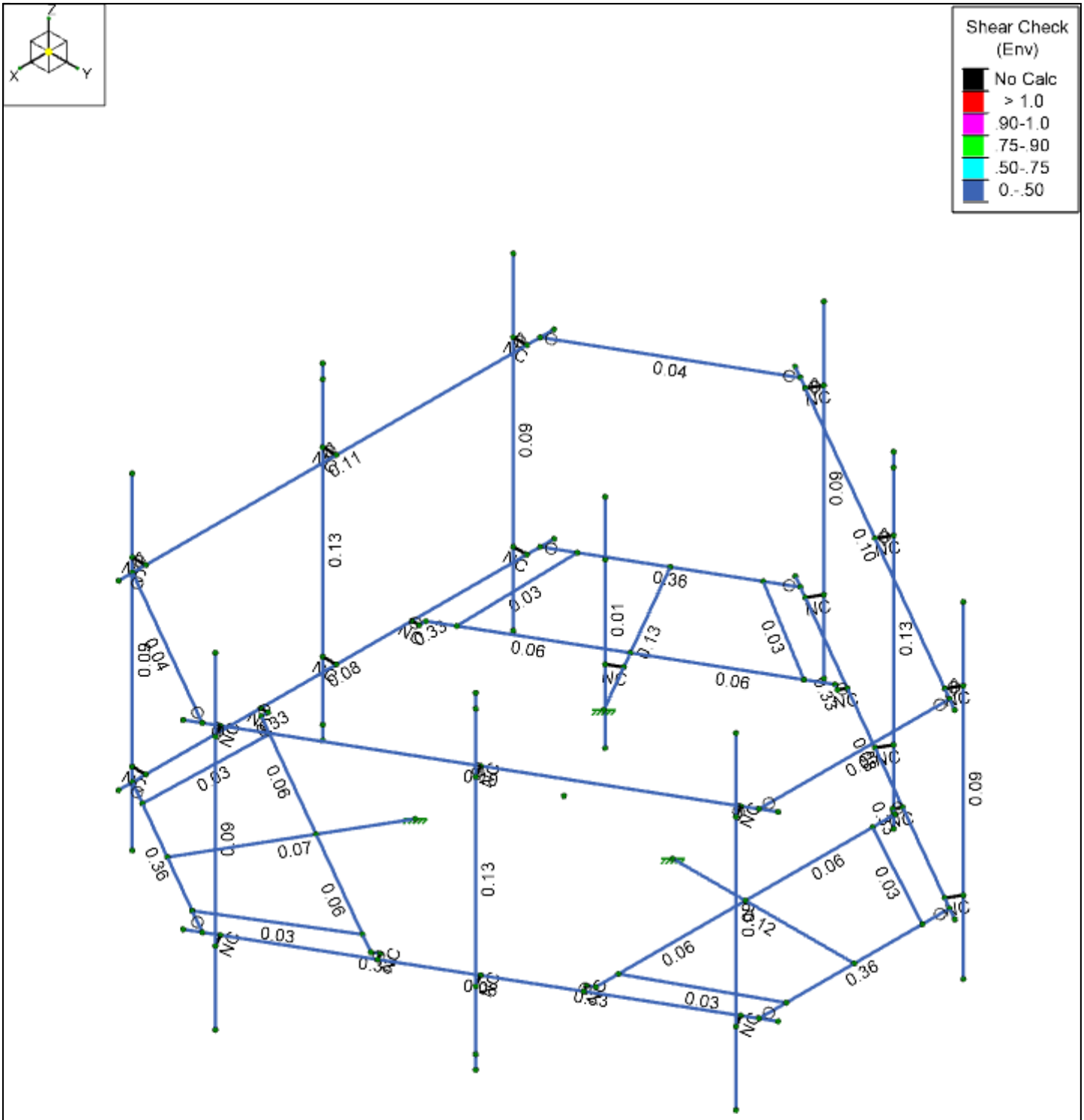

Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

ForeSite/EFI	BOBDL00079B	SK-6
AJ		Aug 25, 2022
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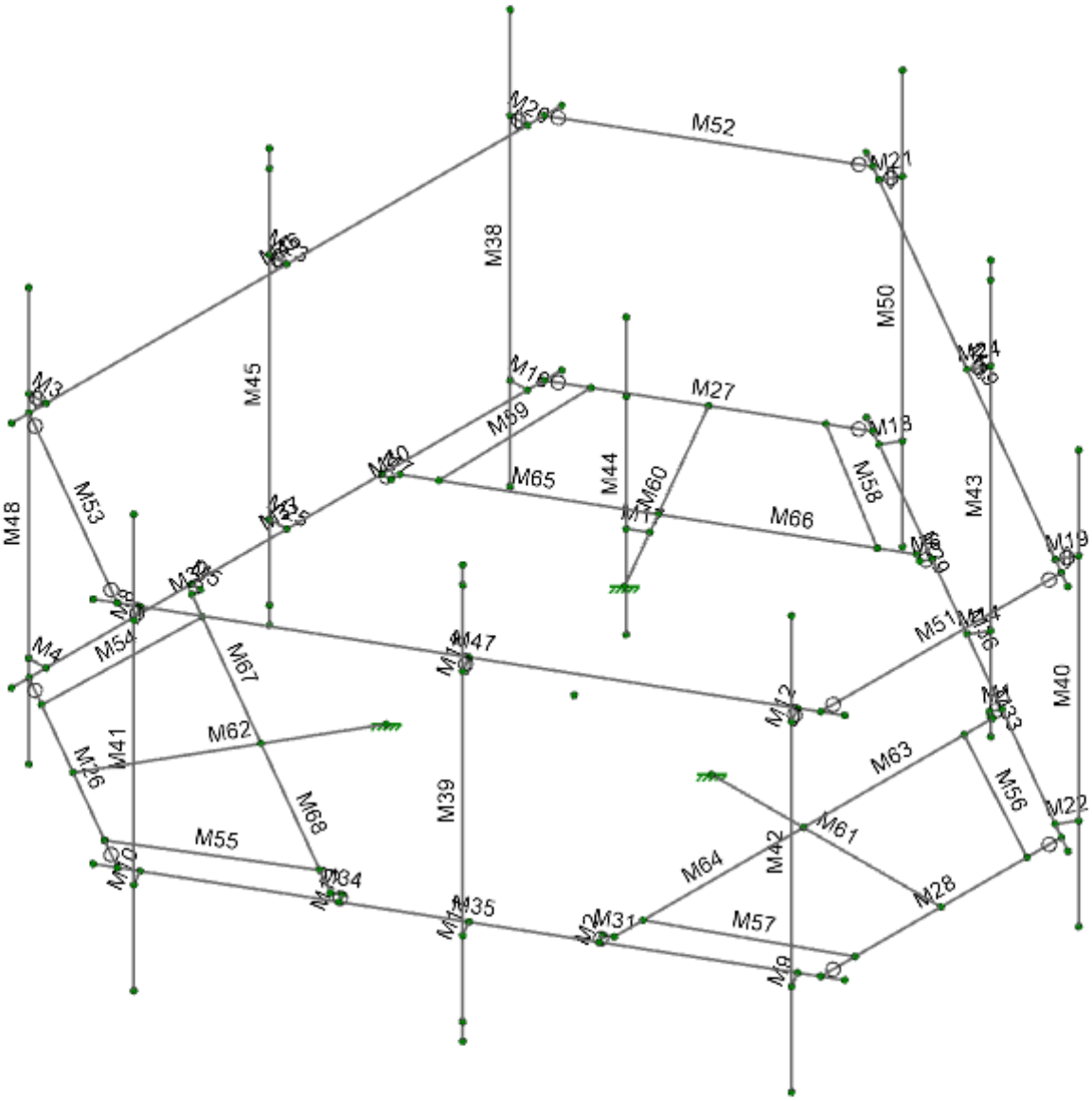

Envelope Only Solution

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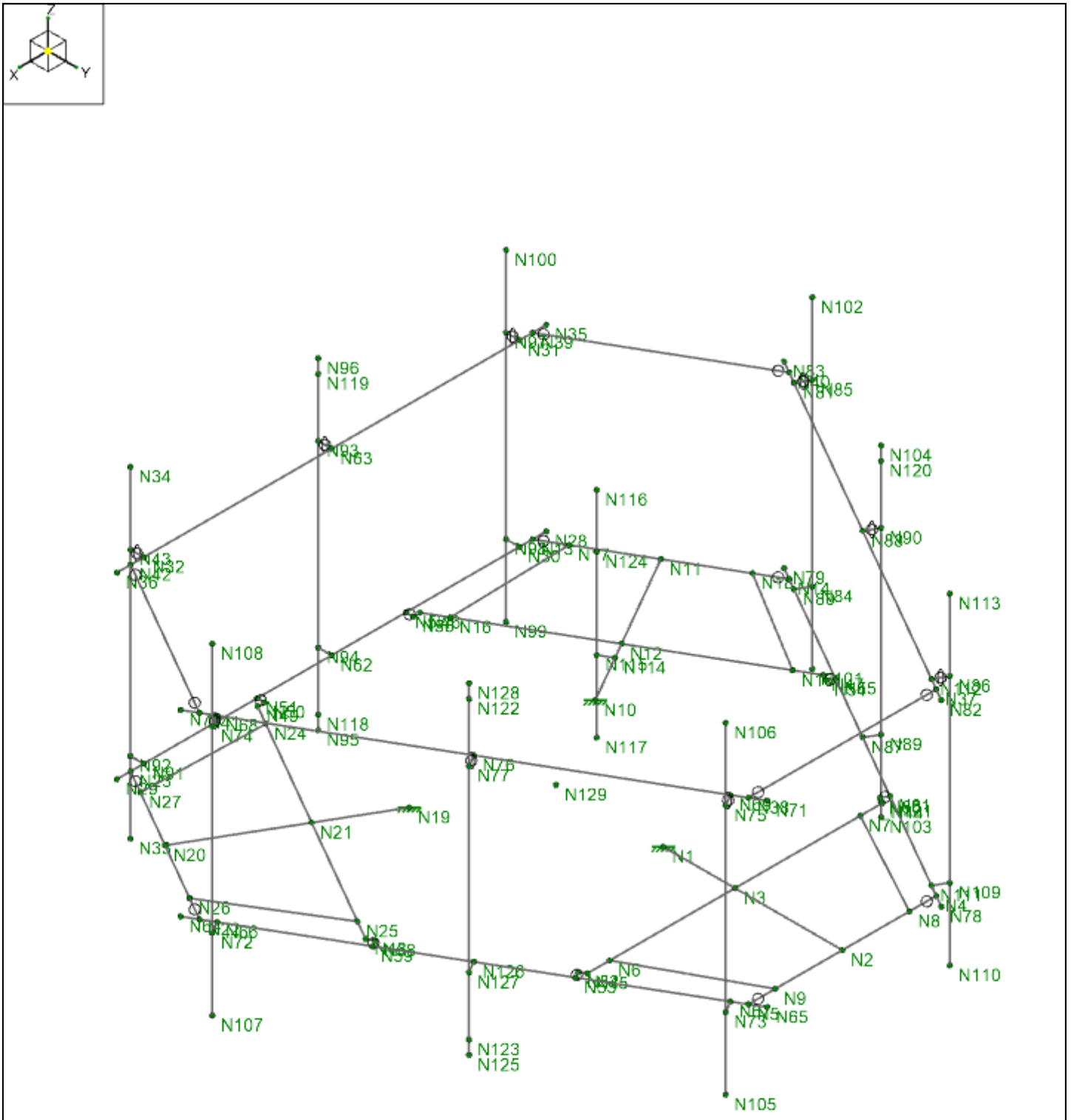


Envelope Only Solution

ForeSite/EFI	BOBDL00079B	SK-8
AJ		Aug 25, 2022
049.03685 - 2275030		BOBDL00079B.r3d

Model Settings

Solution

Members

Number of Reported Sections	5
Number of Internal Sections	100
Member Area Load Mesh Size (in^2)	144
Consider Shear Deformation	Yes
Consider Torsional Warping	Yes

Wall Panels

Approximate Mesh Size (in)	24
Transfer Forces Between Intersecting Wood Walls	Yes
Increase Wood Wall Nailing Capacity for Wind Loads	Yes
Include P-Delta for Walls	Yes
Optimize Masonry and Wood Walls	Yes
Maximum Number of Iterations	3

Processor Core Utilization

Single	No
Multiple (Optimum)	Yes
Maximum	No

Axis

Vertical Global Axis

Global Axis corresponding to vertical direction	Z
Convert Existing Data	Yes

Default Member Orientation

Default Global Plane for z-axis	XY

Plate Axis

Plate Local Axis Orientation	Global

Codes

Hot Rolled Steel	AISC 14th (360-10): LRFD
Stiffness Adjustment	Yes (Iterative)
Notional Annex	None
Connections	None
Cold Formed Steel	None
Stiffness Adjustment	Yes (Iterative)
Wood	None
Temperature	< 100F
Concrete	None
Masonry	None
Aluminum	None
Structure Type	Building
Stiffness Adjustment	Yes (Iterative)
Stainless	None
Stiffness Adjustment	Yes (Iterative)

Concrete

Compression Stress Block	Rectangular Stress Block
Analyze using Cracked Sections	Yes
Leave room for horizontal rebar splices (2*d bar spacing)	No

Model Settings (Continued)

List forces which were ignored for design in the Detail Report	Yes

Rebar

Column Min Steel	1
Column Max Steel	8
Rebar Material Spec	ASTM A615
Warn if beam-column framing arrangement is not understood	No

Shear Reinforcement

Number of Shear Regions	4
Region 2 & 3 Spacing Increase Increment (in)	4

Seismic

RISA-3D Seismic Load Options

Code	ASCE 7-16
Risk Category	I or II
Drift Cat	Other
Base Elevation (ft)	
Include the weight of the structure in base shear calcs	Yes

Site Parameters

S_1 (g)	1
SD_1 (g)	1
SD_s (g)	1
T_L (sec)	5

Structure Characteristics

T Z (sec)	
T X (sec)	
C_tX	0.02
C_tExp. Z	0.75
C_tExp. X	0.75
R Z	3
R X	3
Ω_0Z	1
Ω_0X	1
C_dZ	4
C_dX	4
ρ Z	1
ρ X	1

Project Grid Lines

No Data to Print...

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [k/ft³]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3
8	A913 Gr.65	29000	11154	0.3	0.65	0.49	65	1.1	80	1.1
9	A500 GR.C	29000	11154	0.3	0.65	0.49	46	1.6	60	1.2
10	A529 Gr. 50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
11	A1011-33Ksi	29000	11154	0.3	0.65	0.49	33	1.5	58	1.2
12	A1011 36 Ksi	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
13	A1018 50 Ksi	29000	11154	0.3	0.65	0.49	50	1.5	65	1.2

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	M1	N61	N60		RIGID	None	None	RIGID	Typical
2	M25	N62	N94		RIGID	None	None	RIGID	Typical
3	M24	N88	N90		RIGID	None	None	RIGID	Typical
4	M23	N63	N93		RIGID	None	None	RIGID	Typical
5	M22	N111	N109		RIGID	None	None	RIGID	Typical
6	M21	N81	N85		RIGID	None	None	RIGID	Typical
7	M20	N31	N97		RIGID	None	None	RIGID	Typical
8	M19	N112	N86		RIGID	None	None	RIGID	Typical
9	M18	N80	N84		RIGID	None	None	RIGID	Typical
10	M17	N115	N114		RIGID	None	None	RIGID	Typical
11	M16	N30	N98		RIGID	None	None	RIGID	Typical
12	M14	N87	N89		RIGID	None	None	RIGID	Typical
13	M15	N76	N77		RIGID	None	None	RIGID	Typical
14	M12	N69	N75		RIGID	None	None	RIGID	Typical
15	M2	N53	N52		RIGID	None	None	RIGID	Typical
16	M3	N32	N43		RIGID	None	None	RIGID	Typical
17	M4	N91	N92		RIGID	None	None	RIGID	Typical
18	M13	N59	N58		RIGID	None	None	RIGID	Typical
19	M6	N55	N54		RIGID	None	None	RIGID	Typical
20	M5	N51	N50		RIGID	None	None	RIGID	Typical
21	M8	N68	N74		RIGID	None	None	RIGID	Typical
22	M9	N67	N73		RIGID	None	None	RIGID	Typical
23	M10	N66	N72		RIGID	None	None	RIGID	Typical
24	M11	N126	N127		RIGID	None	None	RIGID	Typical
25	M7	N57	N56		RIGID	None	None	RIGID	Typical
26	M26	N22	N23		PL 6.5x.375	Beam	RECT	A36 Gr.36	Typical
27	M27	N13	N14		PL 6.5x.375	Beam	RECT	A36 Gr.36	Typical
28	M28	N4	N5		PL 6.5x.375	Beam	RECT	A36 Gr.36	Typical
29	M33	N44	N60		PL 2.375x0.5	Beam	RECT	A36 Gr.36	Typical
30	M32	N49	N50		PL 2.375x0.5	Beam	RECT	A36 Gr.36	Typical
31	M34	N48	N58		PL 2.375x0.5	Beam	RECT	A36 Gr.36	Typical
32	M30	N46	N56		PL 2.375x0.5	Beam	RECT	A36 Gr.36	Typical
33	M29	N47	N54		PL 2.375x0.5	Beam	RECT	A36 Gr.36	Typical
34	M31	N45	N52		PL 2.375x0.5	Beam	RECT	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
35	M35	N64	N65		PIPE_3.0	Beam	Pipe	A500 GR.C	Typical
36	M36	N78	N79		PIPE_3.0	Beam	Pipe	A500 GR.C	Typical
37	M37	N28	N29		PIPE_3.0	Beam	Pipe	A500 GR.C	Typical
38	M49	N82	N83		PIPE_2.0	Beam	Pipe	A500 GR.C	Typical
39	M48	N33	N34		PIPE_2.0	Beam	Pipe	A500 GR.C	Typical
40	M47	N70	N71		PIPE_2.0	Beam	Pipe	A500 GR.C	Typical
41	M46	N35	N36		PIPE_2.0	Beam	Pipe	A500 GR.C	Typical
42	M45	N95	N96		PIPE_2.0	Beam	Pipe	A500 GR.C	Typical
43	M44	N117	N116		PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
44	M50	N101	N102		PIPE_2.0	Beam	Pipe	A500 GR.C	Typical
45	M42	N105	N106		PIPE_2.0	Beam	Pipe	A500 GR.C	Typical
46	M41	N107	N108		PIPE_2.0	Beam	Pipe	A500 GR.C	Typical
47	M40	N110	N113		PIPE_2.0	Beam	Pipe	A500 GR.C	Typical
48	M39	N125	N128		PIPE_2.0	Beam	Pipe	A500 GR.C	Typical
49	M38	N99	N100		PIPE_2.0	Beam	Pipe	A500 GR.C	Typical
50	M43	N103	N104		PIPE_2.0	Beam	Pipe	A500 GR.C	Typical
51	M51	N38	N37	180	L6.6x4.46x0.25	Beam	Single Angle	A1011 36 Ksi	Typical
52	M52	N40	N39	180	L6.6x4.46x0.25	Beam	Single Angle	A1011 36 Ksi	Typical
53	M53	N42	N41	180	L6.6x4.46x0.25	Beam	Single Angle	A1011 36 Ksi	Typical
54	M59	N16	N17		L2x2x4	Beam	Single Angle	A1011 36 Ksi	Typical
55	M58	N15	N18	270	L2x2x4	Beam	Single Angle	A1011 36 Ksi	Typical
56	M57	N6	N9	270	L2x2x4	Beam	Single Angle	A1011 36 Ksi	Typical
57	M56	N7	N8		L2x2x4	Beam	Single Angle	A1011 36 Ksi	Typical
58	M54	N24	N27	270	L2x2x4	Beam	Single Angle	A1011 36 Ksi	Typical
59	M55	N25	N26		L2x2x4	Beam	Single Angle	A1011 36 Ksi	Typical
60	M60	N11	N10		HSS4X4X4	Beam	Tube	A500 Gr.B Rect	Typical
61	M61	N2	N1		HSS4X4X4	Beam	Tube	A500 Gr.B Rect	Typical
62	M62	N20	N19		HSS4X4X4	Beam	Tube	A500 Gr.B Rect	Typical
63	M67	N21	N49		C3.38x2.06x0.25	Beam	Channel	A1011 36 Ksi	Typical
64	M63	N3	N44		C3.38x2.06x0.25	Beam	Channel	A1011 36 Ksi	Typical
65	M64	N3	N45		C3.38x2.06x0.25	Beam	Channel	A1011 36 Ksi	Typical
66	M65	N12	N46		C3.38x2.06x0.25	Beam	Channel	A1011 36 Ksi	Typical
67	M66	N12	N47		C3.38x2.06x0.25	Beam	Channel	A1011 36 Ksi	Typical
68	M68	N21	N48		C3.38x2.06x0.25	Beam	Channel	A1011 36 Ksi	Typical

Member Advanced Data

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
1	M1	BenPIN		Yes	** NA **	None
2	M25			Yes	** NA **	None
3	M24	OOOXOX		Yes	** NA **	None
4	M23	OOOXOX		Yes	** NA **	None
5	M22			Yes	** NA **	None
6	M21	OOOXOX		Yes	** NA **	None
7	M20	OOOXOX		Yes	** NA **	None
8	M19	OOOXOX		Yes	** NA **	None
9	M18			Yes	** NA **	None
10	M17			Yes	** NA **	None
11	M16			Yes	** NA **	None
12	M14			Yes	** NA **	None
13	M15	OOOXOX		Yes	** NA **	None
14	M12	OOOXOX		Yes	** NA **	None
15	M2	BenPIN		Yes	** NA **	None
16	M3	OOOXOX		Yes	** NA **	None
17	M4			Yes	** NA **	None
18	M13	BenPIN		Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
19	M6	BenPIN		Yes	** NA **	None
20	M5	BenPIN		Yes	** NA **	None
21	M8	OOOXOX		Yes	** NA **	None
22	M9			Yes	** NA **	None
23	M10			Yes	** NA **	None
24	M11			Yes	** NA **	None
25	M7	BenPIN		Yes	** NA **	None
26	M26	BenPIN	BenPIN	Yes	Default	None
27	M27	BenPIN	BenPIN	Yes	Default	None
28	M28	BenPIN	BenPIN	Yes	Default	None
29	M33			Yes	N/A	None
30	M32			Yes	N/A	None
31	M34			Yes	N/A	None
32	M30			Yes	N/A	None
33	M29			Yes	N/A	None
34	M31			Yes	N/A	None
35	M35			Yes	N/A	None
36	M36			Yes	N/A	None
37	M37			Yes	N/A	None
38	M49			Yes	N/A	None
39	M48			Yes	Default	None
40	M47			Yes	N/A	None
41	M46			Yes	N/A	None
42	M45			Yes	N/A	None
43	M44			Yes	Default	None
44	M50			Yes	Default	None
45	M42			Yes	Default	None
46	M41			Yes	N/A	None
47	M40			Yes	N/A	None
48	M39			Yes	N/A	None
49	M38			Yes	N/A	None
50	M43			Yes	N/A	None
51	M51	OOOOOX	OOOOOX	Yes	N/A	None
52	M52	OOOOOX	OOOOOX	Yes	N/A	None
53	M53	OOOOOX	OOOOOX	Yes	Default	None
54	M59			Yes	N/A	None
55	M58			Yes	N/A	None
56	M57			Yes	N/A	None
57	M56			Yes	N/A	None
58	M54			Yes	N/A	None
59	M55			Yes	N/A	None
60	M60			Yes	N/A	None
61	M61			Yes	N/A	None
62	M62			Yes	Default	None
63	M67			Yes	Default	None
64	M63			Yes	Default	None
65	M64			Yes	Default	None
66	M65			Yes	Default	None
67	M66			Yes	Default	None
68	M68			Yes	Default	None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lcomp top [in]	Function
1	M26	PL 6.5x.375	42	Lbyy	Lateral
2	M27	PL 6.5x.375	42	Lbyy	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lcomp top [in]	Function
3	M28	PL 6.5x.375	42	Lbyy	Lateral
4	M33	PL 2.375x0.5	1.5		Lateral
5	M32	PL 2.375x0.5	1.5		Lateral
6	M34	PL 2.375x0.5	1.5		Lateral
7	M30	PL 2.375x0.5	1.5		Lateral
8	M29	PL 2.375x0.5	1.5		Lateral
9	M31	PL 2.375x0.5	1.5		Lateral
10	M35	PIPE_3.0	96	Lbyy	Lateral
11	M36	PIPE_3.0	96	Lbyy	Lateral
12	M37	PIPE_3.0	96	Lbyy	Lateral
13	M49	PIPE_2.0	96	Lbyy	Lateral
14	M48	PIPE_2.0	72	Lbyy	Lateral
15	M47	PIPE_2.0	96	Lbyy	Lateral
16	M46	PIPE_2.0	96	Lbyy	Lateral
17	M45	PIPE_2.0	72	Lbyy	Lateral
18	M44	PIPE_2.0	48	Lbyy	Lateral
19	M50	PIPE_2.0	72	Lbyy	Lateral
20	M42	PIPE_2.0	72	Lbyy	Lateral
21	M41	PIPE_2.0	72	Lbyy	Lateral
22	M40	PIPE_2.0	72	Lbyy	Lateral
23	M39	PIPE_2.0	72	Lbyy	Lateral
24	M38	PIPE_2.0	72	Lbyy	Lateral
25	M43	PIPE_2.0	72	Lbyy	Lateral
26	M51	L6.6x4.46x0.25	42	Lbyy	Lateral
27	M52	L6.6x4.46x0.25	42	Lbyy	Lateral
28	M53	L6.6x4.46x0.25	42	Lbyy	Lateral
29	M59	L2x2x4	27.295	Lbyy	Lateral
30	M58	L2x2x4	27.295	Lbyy	Lateral
31	M57	L2x2x4	27.295	Lbyy	Lateral
32	M56	L2x2x4	27.295	Lbyy	Lateral
33	M54	L2x2x4	27.295	Lbyy	Lateral
34	M55	L2x2x4	27.295	Lbyy	Lateral
35	M60	HSS4X4X4	40	Lbyy	Lateral
36	M61	HSS4X4X4	40	Lbyy	Lateral
37	M62	HSS4X4X4	40	Lbyy	Lateral
38	M67	C3.38x2.06x0.25	33	Lbyy	Lateral
39	M63	C3.38x2.06x0.25	33	Lbyy	Lateral
40	M64	C3.38x2.06x0.25	33	Lbyy	Lateral
41	M65	C3.38x2.06x0.25	33	Lbyy	Lateral
42	M66	C3.38x2.06x0.25	33	Lbyy	Lateral
43	M68	C3.38x2.06x0.25	33	Lbyy	Lateral

Node Coordinates

	Label	X [in]	Y [in]	Z [in]	Detach From Diaphragm
1	N1	0	24.	6	
2	N2	0	64.	6	
3	N3	0	40.	6	
4	N4	-21.	64.	6	
5	N5	21.	64.	6	
6	N6	28.	40.	6	
7	N7	-28.	40.	6	
8	N8	-15.	64.	6	
9	N9	15.	64.	6	
10	N10	-20.78461	-12	6	
11	N11	-55.425626	-32	6	

Node Coordinates (Continued)

	Label	X [in]	Y [in]	Z [in]	Detach From Diaphragm
12	N12	-34.641016	-20	6	
13	N13	-44.925626	-50.186533	6	
14	N14	-65.925626	-13.813467	6	
15	N15	-48.641016	4.248711	6	
16	N16	-20.641016	-44.248711	6	
17	N17	-47.925626	-44.990381	6	
18	N18	-62.925626	-19.009619	6	
19	N19	20.78461	-12.	6	
20	N20	55.425626	-32.	6	
21	N21	34.641016	-20.	6	
22	N22	65.925626	-13.813466	6	
23	N23	44.925626	-50.186533	6	
24	N24	20.641016	-44.248711	6	
25	N25	48.641016	4.248711	6	
26	N26	62.925626	-19.009619	6	
27	N27	47.925626	-44.990381	6	
28	N28	-48.	-50.186533	6	
29	N29	48.	-50.186533	6	
30	N30	-42.	-50.186533	6	
31	N31	-42.	-50.186533	46	
32	N32	42.	-50.186533	46	
33	N33	42.	-53.186533	-10	
34	N34	42.	-53.186533	62	
35	N35	-48.	-50.186533	46	
36	N36	48.	-50.186533	46	
37	N37	-21	64.	46	
38	N38	21	64.	46	
39	N39	-44.925626	-50.186533	46	
40	N40	-65.925626	-13.813467	46	
41	N41	65.925626	-13.813466	46	
42	N42	44.925626	-50.186533	46	
43	N43	42.	-53.186533	46	
44	N44	-33.	40.	6	
45	N45	33.	40.	6	
46	N46	-18.141016	-48.578838	6	
47	N47	-51.141016	8.578838	6	
48	N48	51.141016	8.578838	6	
49	N49	18.141016	-48.578838	6	
50	N50	16.641016	-48.578838	6	
51	N51	16.641016	-50.186533	6	
52	N52	33.75	38.700962	6	
53	N53	35.142305	39.504809	6	
54	N54	-50.391016	9.877877	6	
55	N55	-51.783321	10.681724	6	
56	N56	-16.641016	-48.578838	6	
57	N57	-16.641016	-50.186533	6	
58	N58	50.391016	9.877877	6	
59	N59	51.783321	10.681724	6	
60	N60	-33.75	38.700962	6	
61	N61	-35.142305	39.504809	6	
62	N62	0	-50.186533	6	
63	N63	0	-50.186533	46	
64	N64	67.462813	-16.475952	6	
65	N65	19.462813	66.662486	6	
66	N66	64.462813	-11.2798	6	

Node Coordinates (Continued)

	Label	X [in]	Y [in]	Z [in]	Detach From Diaphragm
67	N67	22.462813	61.466334	6	
68	N68	64.462813	-11.2798	46	
69	N69	22.462813	61.466334	46	
70	N70	67.462813	-16.475952	46	
71	N71	19.462813	66.662486	46	
72	N72	67.060889	-9.7798	6	
73	N73	25.060889	62.966334	6	
74	N74	67.060889	-9.7798	46	
75	N75	25.060889	62.966334	46	
76	N76	43.462813	25.093267	46	
77	N77	46.060889	26.593267	46	
78	N78	-19.462813	66.662486	6	
79	N79	-67.462813	-16.475953	6	
80	N80	-64.462813	-11.2798	6	
81	N81	-64.462813	-11.2798	46	
82	N82	-19.462813	66.662486	46	
83	N83	-67.462813	-16.475953	46	
84	N84	-67.060889	-9.7798	6	
85	N85	-67.060889	-9.7798	46	
86	N86	-25.061076	62.96601	46	
87	N87	-43.462813	25.093266	6	
88	N88	-43.462813	25.093266	46	
89	N89	-46.060889	26.593267	6	
90	N90	-46.060889	26.593267	46	
91	N91	42.	-50.186533	6	
92	N92	42.	-53.186533	6	
93	N93	0	-53.186533	46	
94	N94	0	-53.186533	6	
95	N95	0	-53.186533	-10	
96	N96	0	-53.186533	62	
97	N97	-42.	-53.186533	46	
98	N98	-42.	-53.186533	6	
99	N99	-42.	-53.186533	-10	
100	N100	-42.	-53.186533	62	
101	N101	-67.060889	-9.7798	-10	
102	N102	-67.060889	-9.7798	62	
103	N103	-46.060889	26.593267	-10	
104	N104	-46.060889	26.593267	62	
105	N105	25.060889	62.966334	-10	
106	N106	25.060889	62.966334	62	
107	N107	67.060889	-9.7798	-10	
108	N108	67.060889	-9.7798	62	
109	N109	-25.061076	62.96601	6	
110	N110	-25.061076	62.96601	-10	
111	N111	-22.463	61.46601	6	
112	N112	-22.463	61.46601	46	
113	N113	-25.061076	62.96601	62	
114	N114	-31.176915	-18	6	
115	N115	-29.676915	-20.598076	6	
116	N116	-29.676915	-20.598076	38	
117	N117	-29.676915	-20.598076	-10	
118	N118	0	-53.186533	-7	
119	N119	0	-53.186533	59	
120	N120	-46.060889	26.593267	59	
121	N121	-46.060889	26.593267	-7	

Node Coordinates (Continued)

	Label	X [in]	Y [in]	Z [in]	Detach From Diaphragm
122	N122	46.060889	26.593267	59	
123	N123	46.060889	26.593267	-7	
124	N124	-29.676915	-20.598076	26	
125	N125	46.060889	26.593267	-10	
126	N126	43.462813	25.093267	6	
127	N127	46.060889	26.593267	6	
128	N128	46.060889	26.593267	62	
129	N129	0	0	6	

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	N19	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N10	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Basic Load Cases

	BLC Description	Category	Z Gravity	Nodal	Distributed	Area(Member)
1	DEAD LOAD	None	-1	7		3
2	DEAD LOAD ICE	None		7	43	3
3	WIND LOAD (NO ICE) FRONT	None		7	43	
4	WIND LOAD (NO ICE) SIDE	None		7	43	
5	WIND LOAD (ICE) FRONT	None		7	43	
6	WIND LOAD (ICE) SIDE	None		7	43	
7	LIVE LOAD1	None		1		
8	LIVE LOAD2	None		1		
9	LIVE LOAD3	None		1		
10	MAINTENANCE LOAD 1	None		1		
11	MAINTENANCE LOAD 2	None		1		
12	MAINTENANCE LOAD 3	None		1		
13	MAINTENANCE LOAD 4	None				
14	BLC 1 Transient Area Loads	None			120	
15	BLC 2 Transient Area Loads	None			120	

Node Loads and Enforced Displacements (BLC 1 : DEAD LOAD)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N118	L	Z	-102
2	N119	L	Z	-102
3	N120	L	Z	-102
4	N121	L	Z	-102
5	N122	L	Z	-102
6	N123	L	Z	-102
7	N124	L	Z	-22

Node Loads and Enforced Displacements (BLC 2 : DEAD LOAD ICE)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N118	L	Z	-305
2	N119	L	Z	-305
3	N120	L	Z	-305
4	N121	L	Z	-305
5	N122	L	Z	-305

Node Loads and Enforced Displacements (BLC 2 : DEAD LOAD ICE) (Continued)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
6	N123	L	Z	-305
7	N124	L	Z	-114

Node Loads and Enforced Displacements (BLC 3 : WIND LOAD (NO ICE) FRONT)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N118	L	Y	176
2	N119	L	Y	176
3	N120	L	Y	112
4	N122	L	Y	112
5	N121	L	Y	112
6	N123	L	Y	112
7	N124	L	Y	64

Node Loads and Enforced Displacements (BLC 4 : WIND LOAD (NO ICE) SIDE)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N118	L	X	112
2	N119	L	X	112
3	N120	L	X	176
4	N122	L	X	176
5	N121	L	X	176
6	N123	L	X	176
7	N124	L	X	36

Node Loads and Enforced Displacements (BLC 5 : WIND LOAD (ICE) FRONT)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N118	L	Y	55
2	N119	L	Y	55
3	N120	L	Y	42
4	N122	L	Y	42
5	N121	L	Y	42
6	N123	L	Y	42
7	N124	L	Y	23

Node Loads and Enforced Displacements (BLC 6 : WIND LOAD (ICE) SIDE)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N118	L	X	42
2	N119	L	X	42
3	N120	L	X	55
4	N122	L	X	55
5	N121	L	X	55
6	N123	L	X	55
7	N124	L	X	15

Node Loads and Enforced Displacements (BLC 7 : LIVE LOAD1)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N64	L	Z	-250

Node Loads and Enforced Displacements (BLC 8 : LIVE LOAD2)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N28	L	Z	-250

Node Loads and Enforced Displacements (BLC 9 : LIVE LOAD3)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N78	L	Z	-250

Node Loads and Enforced Displacements (BLC 10 : MAINTENANCE LOAD 1)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N101	L	Z	-500

Node Loads and Enforced Displacements (BLC 11 : MAINTENANCE LOAD 2)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N103	L	Z	-500

Node Loads and Enforced Displacements (BLC 12 : MAINTENANCE LOAD 3)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N110	L	Z	-500

Member Point Loads

No Data to Print...

Member Distributed Loads (BLC 2 : DEAD LOAD ICE)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M26	Z	-29.2	-29.2	0	%100
2	M27	Z	-29.2	-29.2	0	%100
3	M28	Z	-29.2	-29.2	0	%100
4	M33	Z	-19	-19	0	%100
5	M32	Z	-19	-19	0	%100
6	M34	Z	-19	-19	0	%100
7	M30	Z	-19	-19	0	%100
8	M29	Z	-19	-19	0	%100
9	M31	Z	-19	-19	0	%100
10	M35	Z	-16.5	-16.5	0	%100
11	M36	Z	-16.5	-16.5	0	%100
12	M37	Z	-16.5	-16.5	0	%100
13	M49	Z	-13.3	-13.3	0	%100
14	M48	Z	-13.3	-13.3	0	%100
15	M47	Z	-13.3	-13.3	0	%100
16	M46	Z	-13.3	-13.3	0	%100
17	M45	Z	-13.3	-13.3	0	%100
18	M44	Z	-13.3	-13.3	0	%100
19	M50	Z	-13.3	-13.3	0	%100
20	M42	Z	-13.3	-13.3	0	%100
21	M41	Z	-13.3	-13.3	0	%100
22	M40	Z	-13.3	-13.3	0	%100
23	M39	Z	-13.3	-13.3	0	%100
24	M38	Z	-13.3	-13.3	0	%100

Member Distributed Loads (BLC 2 : DEAD LOAD ICE) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
25	M43	Z	-13.3	-13.3	0	%100
26	M51	Z	-19.8	-19.8	0	%100
27	M52	Z	-19.8	-19.8	0	%100
28	M53	Z	-19.8	-19.8	0	%100
29	M59	Z	-7.2	-7.2	0	%100
30	M58	Z	-7.2	-7.2	0	%100
31	M57	Z	-7.2	-7.2	0	%100
32	M56	Z	-7.2	-7.2	0	%100
33	M54	Z	-7.2	-7.2	0	%100
34	M55	Z	-7.2	-7.2	0	%100
35	M60	Z	-34	-34	0	%100
36	M61	Z	-34	-34	0	%100
37	M62	Z	-34	-34	0	%100
38	M67	Z	-15.9	-15.9	0	%100
39	M63	Z	-15.9	-15.9	0	%100
40	M64	Z	-15.9	-15.9	0	%100
41	M65	Z	-15.9	-15.9	0	%100
42	M66	Z	-15.9	-15.9	0	%100
43	M68	Z	-15.9	-15.9	0	%100

Member Distributed Loads (BLC 3 : WIND LOAD (NO ICE) FRONT)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M26	PY	30.4	30.4	0	%100
2	M27	PY	30.4	30.4	0	%100
3	M28	PY	30.4	30.4	0	%100
4	M33	PY	11.1	11.1	0	%100
5	M32	PY	11.1	11.1	0	%100
6	M34	PY	11.1	11.1	0	%100
7	M30	PY	11.1	11.1	0	%100
8	M29	PY	11.1	11.1	0	%100
9	M31	PY	11.1	11.1	0	%100
10	M35	PY	9.8	9.8	0	%100
11	M36	PY	9.8	9.8	0	%100
12	M37	PY	9.8	9.8	0	%100
13	M49	PY	6.7	6.7	0	%100
14	M48	PY	6.7	6.7	0	%100
15	M47	PY	6.7	6.7	0	%100
16	M46	PY	6.7	6.7	0	%100
17	M45	PY	6.7	6.7	0	%100
18	M44	PY	6.7	6.7	0	%100
19	M50	PY	6.7	6.7	0	%100
20	M42	PY	6.7	6.7	0	%100
21	M41	PY	6.7	6.7	0	%100
22	M40	PY	6.7	6.7	0	%100
23	M39	PY	6.7	6.7	0	%100
24	M38	PY	6.7	6.7	0	%100
25	M43	PY	6.7	6.7	0	%100
26	M51	PY	30.9	30.9	0	%100
27	M52	PY	30.9	30.9	0	%100
28	M53	PY	30.9	30.9	0	%100
29	M59	PY	9.4	9.4	0	%100
30	M58	PY	9.4	9.4	0	%100
31	M57	PY	9.4	9.4	0	%100
32	M56	PY	9.4	9.4	0	%100
33	M54	PY	9.4	9.4	0	%100

Member Distributed Loads (BLC 3 : WIND LOAD (NO ICE) FRONT) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
34	M55	PY	9.4	9.4	0	%100
35	M60	PY	18.7	18.7	0	%100
36	M61	PY	18.7	18.7	0	%100
37	M62	PY	18.7	18.7	0	%100
38	M67	PY	15.8	15.8	0	%100
39	M63	PY	15.8	15.8	0	%100
40	M64	PY	15.8	15.8	0	%100
41	M65	PY	15.8	15.8	0	%100
42	M66	PY	15.8	15.8	0	%100
43	M68	PY	15.8	15.8	0	%100

Member Distributed Loads (BLC 4 : WIND LOAD (NO ICE) SIDE)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M26	PX	30.4	30.4	0	%100
2	M27	PX	30.4	30.4	0	%100
3	M28	PX	30.4	30.4	0	%100
4	M33	PX	11.1	11.1	0	%100
5	M32	PX	11.1	11.1	0	%100
6	M34	PX	11.1	11.1	0	%100
7	M30	PX	11.1	11.1	0	%100
8	M29	PX	11.1	11.1	0	%100
9	M31	PX	11.1	11.1	0	%100
10	M35	PX	9.8	9.8	0	%100
11	M36	PX	9.8	9.8	0	%100
12	M37	PX	9.8	9.8	0	%100
13	M49	PX	6.7	6.7	0	%100
14	M48	PX	6.7	6.7	0	%100
15	M47	PX	6.7	6.7	0	%100
16	M46	PX	6.7	6.7	0	%100
17	M45	PX	6.7	6.7	0	%100
18	M44	PX	6.7	6.7	0	%100
19	M50	PX	6.7	6.7	0	%100
20	M42	PX	6.7	6.7	0	%100
21	M41	PX	6.7	6.7	0	%100
22	M40	PX	6.7	6.7	0	%100
23	M39	PX	6.7	6.7	0	%100
24	M38	PX	6.7	6.7	0	%100
25	M43	PX	6.7	6.7	0	%100
26	M51	PX	30.9	30.9	0	%100
27	M52	PX	30.9	30.9	0	%100
28	M53	PX	30.9	30.9	0	%100
29	M59	PX	9.4	9.4	0	%100
30	M58	PX	9.4	9.4	0	%100
31	M57	PX	9.4	9.4	0	%100
32	M56	PX	9.4	9.4	0	%100
33	M54	PX	9.4	9.4	0	%100
34	M55	PX	9.4	9.4	0	%100
35	M60	PX	18.7	18.7	0	%100
36	M61	PX	18.7	18.7	0	%100
37	M62	PX	18.7	18.7	0	%100
38	M67	PX	15.8	15.8	0	%100
39	M63	PX	15.8	15.8	0	%100
40	M64	PX	15.8	15.8	0	%100
41	M65	PX	15.8	15.8	0	%100
42	M66	PX	15.8	15.8	0	%100

Member Distributed Loads (BLC 4 : WIND LOAD (NO ICE) SIDE) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
43	M68	PX	15.8	15.8	0	%100

Member Distributed Loads (BLC 5 : WIND LOAD (ICE) FRONT)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M26	PY	14.8	14.8	0	%100
2	M27	PY	14.8	14.8	0	%100
3	M28	PY	14.8	14.8	0	%100
4	M33	PY	8.5	8.5	0	%100
5	M32	PY	8.5	8.5	0	%100
6	M34	PY	8.5	8.5	0	%100
7	M30	PY	8.5	8.5	0	%100
8	M29	PY	8.5	8.5	0	%100
9	M31	PY	8.5	8.5	0	%100
10	M35	PY	8.5	8.5	0	%100
11	M36	PY	8.5	8.5	0	%100
12	M37	PY	8.5	8.5	0	%100
13	M49	PY	7.3	7.3	0	%100
14	M48	PY	7.3	7.3	0	%100
15	M47	PY	7.3	7.3	0	%100
16	M46	PY	7.3	7.3	0	%100
17	M45	PY	7.3	7.3	0	%100
18	M44	PY	7.3	7.3	0	%100
19	M50	PY	7.3	7.3	0	%100
20	M42	PY	7.3	7.3	0	%100
21	M41	PY	7.3	7.3	0	%100
22	M40	PY	7.3	7.3	0	%100
23	M39	PY	7.3	7.3	0	%100
24	M38	PY	7.3	7.3	0	%100
25	M43	PY	7.3	7.3	0	%100
26	M51	PY	15	15	0	%100
27	M52	PY	15	15	0	%100
28	M53	PY	15	15	0	%100
29	M59	PY	7.9	7.9	0	%100
30	M58	PY	7.9	7.9	0	%100
31	M57	PY	7.9	7.9	0	%100
32	M56	PY	7.9	7.9	0	%100
33	M54	PY	7.9	7.9	0	%100
34	M55	PY	7.9	7.9	0	%100
35	M60	PY	11	11	0	%100
36	M61	PY	11	11	0	%100
37	M62	PY	11	11	0	%100
38	M67	PY	10	10	0	%100
39	M63	PY	10	10	0	%100
40	M64	PY	10	10	0	%100
41	M65	PY	10	10	0	%100
42	M66	PY	10	10	0	%100
43	M68	PY	10	10	0	%100

Member Distributed Loads (BLC 6 : WIND LOAD (ICE) SIDE)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M26	PX	14.8	14.8	0	%100
2	M27	PX	14.8	14.8	0	%100
3	M28	PX	14.8	14.8	0	%100

Member Distributed Loads (BLC 6 : WIND LOAD (ICE) SIDE) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
4	M33	PX	8.5	8.5	0	%100
5	M32	PX	8.5	8.5	0	%100
6	M34	PX	8.5	8.5	0	%100
7	M30	PX	8.5	8.5	0	%100
8	M29	PX	8.5	8.5	0	%100
9	M31	PX	8.5	8.5	0	%100
10	M35	PX	8.5	8.5	0	%100
11	M36	PX	8.5	8.5	0	%100
12	M37	PX	8.5	8.5	0	%100
13	M49	PX	7.3	7.3	0	%100
14	M48	PX	7.3	7.3	0	%100
15	M47	PX	7.3	7.3	0	%100
16	M46	PX	7.3	7.3	0	%100
17	M45	PX	7.3	7.3	0	%100
18	M44	PX	7.3	7.3	0	%100
19	M50	PX	7.3	7.3	0	%100
20	M42	PX	7.3	7.3	0	%100
21	M41	PX	7.3	7.3	0	%100
22	M40	PX	7.3	7.3	0	%100
23	M39	PX	7.3	7.3	0	%100
24	M38	PX	7.3	7.3	0	%100
25	M43	PX	7.3	7.3	0	%100
26	M51	PX	15	15	0	%100
27	M52	PX	15	15	0	%100
28	M53	PX	15	15	0	%100
29	M59	PX	7.9	7.9	0	%100
30	M58	PX	7.9	7.9	0	%100
31	M57	PX	7.9	7.9	0	%100
32	M56	PX	7.9	7.9	0	%100
33	M54	PX	7.9	7.9	0	%100
34	M55	PX	7.9	7.9	0	%100
35	M60	PX	11	11	0	%100
36	M61	PX	11	11	0	%100
37	M62	PX	11	11	0	%100
38	M67	PX	10	10	0	%100
39	M63	PX	10	10	0	%100
40	M64	PX	10	10	0	%100
41	M65	PX	10	10	0	%100
42	M66	PX	10	10	0	%100
43	M68	PX	10	10	0	%100

Member Distributed Loads (BLC 14 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M57	Z	-2.984	-4.23	10.918	16.377
2	M57	Z	-4.23	-4.092	16.377	21.836
3	M57	Z	-4.092	-0.718	21.836	27.295
4	M56	Z	-1.518	-3.168	0	5.459
5	M56	Z	-3.168	-3.777	5.459	10.918
6	M56	Z	-3.777	-4.243	10.918	16.377
7	M56	Z	-4.243	-3.617	16.377	21.836
8	M56	Z	-3.617	-1	21.836	27.295
9	M61	Z	-0.534	-6.117	0	8
10	M61	Z	-6.117	-5.916	8	16
11	M61	Z	-5.916	-0.534	16	24
12	M63	Z	-0.997	-3.68	0	6.6

Member Distributed Loads (BLC 14 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
13	M63	Z	-3.68	-3.969	6.6	13.2
14	M63	Z	-3.969	-2.278	13.2	19.8
15	M63	Z	-2.278	-1.375	19.8	26.4
16	M63	Z	-1.375	-0.847	26.4	33
17	M64	Z	-0.948	-3.635	0	6.6
18	M64	Z	-3.635	-3.968	6.6	13.2
19	M64	Z	-3.968	-2.189	13.2	19.8
20	M64	Z	-2.189	-1.235	19.8	26.4
21	M64	Z	-1.235	-0.867	26.4	33
22	M27	Z	-0.539	-2.067	0	8.4
23	M27	Z	-2.067	-2.657	8.4	16.8
24	M27	Z	-2.657	-2.666	16.8	25.2
25	M27	Z	-2.666	-1.966	25.2	33.6
26	M27	Z	-1.966	-0.198	33.6	42
27	M30	Z	-0.228	-0.228	0	1.5
28	M29	Z	-0.223	-0.223	0	1.5
29	M36	Z	-0.032	-0.438	57.6	65.28
30	M36	Z	-0.438	-1.127	65.28	72.96
31	M36	Z	-1.127	-1.282	72.96	80.64
32	M36	Z	-1.282	-0.835	80.64	88.32
33	M36	Z	-0.835	-0.198	88.32	96
34	M37	Z	-0.038	-0.815	0	7.68
35	M37	Z	-0.815	-1.313	7.68	15.36
36	M37	Z	-1.313	-1.134	15.36	23.04
37	M37	Z	-1.134	-0.446	23.04	30.72
38	M37	Z	-0.446	-0.038	30.72	38.4
39	M59	Z	-1.518	-3.168	0	5.459
40	M59	Z	-3.168	-3.777	5.459	10.918
41	M59	Z	-3.777	-4.243	10.918	16.377
42	M59	Z	-4.243	-3.617	16.377	21.836
43	M59	Z	-3.617	-1	21.836	27.295
44	M58	Z	-1.739	-2.781	0	5.459
45	M58	Z	-2.781	-3.003	5.459	10.918
46	M58	Z	-3.003	-4.381	10.918	16.377
47	M58	Z	-4.381	-4.241	16.377	21.836
48	M58	Z	-4.241	-0.609	21.836	27.295
49	M60	Z	-0.534	-6.117	0	8
50	M60	Z	-6.117	-5.916	8	16
51	M60	Z	-5.916	-0.534	16	24
52	M65	Z	-0.997	-3.68	0	6.6
53	M65	Z	-3.68	-3.969	6.6	13.2
54	M65	Z	-3.969	-2.278	13.2	19.8
55	M65	Z	-2.278	-1.375	19.8	26.4
56	M65	Z	-1.375	-0.847	26.4	33
57	M66	Z	-0.948	-3.635	0	6.6
58	M66	Z	-3.635	-3.968	6.6	13.2
59	M66	Z	-3.968	-2.189	13.2	19.8
60	M66	Z	-2.189	-1.235	19.8	26.4
61	M66	Z	-1.235	-0.867	26.4	33
62	M26	Z	-0.201	-1.955	0	8.4
63	M26	Z	-1.955	-2.657	8.4	16.8
64	M26	Z	-2.657	-2.666	16.8	25.2
65	M26	Z	-2.666	-2.079	25.2	33.6
66	M26	Z	-2.079	-0.538	33.6	42
67	M32	Z	-0.223	-0.223	0	1.5

Member Distributed Loads (BLC 14 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
68	M34	Z	-0.228	-0.228	0	1.5
69	M35	Z	-0.197	-0.832	0	7.68
70	M35	Z	-0.832	-1.279	7.68	15.36
71	M35	Z	-1.279	-1.128	15.36	23.04
72	M35	Z	-1.128	-0.44	23.04	30.72
73	M35	Z	-0.44	-0.032	30.72	38.4
74	M37	Z	-0.038	-0.444	57.6	65.28
75	M37	Z	-0.444	-1.133	65.28	72.96
76	M37	Z	-1.133	-1.316	72.96	80.64
77	M37	Z	-1.316	-0.818	80.64	88.32
78	M37	Z	-0.818	-0.038	88.32	96
79	M54	Z	-1.727	-2.768	0	5.459
80	M54	Z	-2.768	-2.984	5.459	10.918
81	M54	Z	-2.984	-4.23	10.918	16.377
82	M54	Z	-4.23	-4.092	16.377	21.836
83	M54	Z	-4.092	-0.718	21.836	27.295
84	M55	Z	-1.53	-3.182	0	5.459
85	M55	Z	-3.182	-3.795	5.459	10.918
86	M55	Z	-3.795	-4.393	10.918	16.377
87	M55	Z	-4.393	-3.766	16.377	21.836
88	M55	Z	-3.766	-0.891	21.836	27.295
89	M62	Z	-0.534	-6.117	0	8
90	M62	Z	-6.117	-5.916	8	16
91	M62	Z	-5.916	-0.534	16	24
92	M67	Z	-0.948	-3.635	0	6.6
93	M67	Z	-3.635	-3.968	6.6	13.2
94	M67	Z	-3.968	-2.189	13.2	19.8
95	M67	Z	-2.189	-1.235	19.8	26.4
96	M67	Z	-1.235	-0.867	26.4	33
97	M68	Z	-0.997	-3.68	0	6.6
98	M68	Z	-3.68	-3.969	6.6	13.2
99	M68	Z	-3.969	-2.278	13.2	19.8
100	M68	Z	-2.278	-1.375	19.8	26.4
101	M68	Z	-1.375	-0.847	26.4	33
102	M28	Z	-0.528	-2.056	0	8.4
103	M28	Z	-2.056	-2.645	8.4	16.8
104	M28	Z	-2.645	-2.654	16.8	25.2
105	M28	Z	-2.654	-2.068	25.2	33.6
106	M28	Z	-2.068	-0.527	33.6	42
107	M33	Z	-0.228	-0.228	0	1.5
108	M31	Z	-0.223	-0.223	0	1.5
109	M35	Z	-0.038	-0.444	57.6	65.28
110	M35	Z	-0.444	-1.133	65.28	72.96
111	M35	Z	-1.133	-1.316	72.96	80.64
112	M35	Z	-1.316	-0.818	80.64	88.32
113	M35	Z	-0.818	-0.038	88.32	96
114	M36	Z	-0.038	-0.815	0	7.68
115	M36	Z	-0.815	-1.313	7.68	15.36
116	M36	Z	-1.313	-1.134	15.36	23.04
117	M36	Z	-1.134	-0.446	23.04	30.72
118	M36	Z	-0.446	-0.038	30.72	38.4
119	M57	Z	-1.727	-2.768	0	5.459
120	M57	Z	-2.768	-2.984	5.459	10.918

Member Distributed Loads (BLC 15 : BLC 2 Transient Area Loads)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M26	Z	-0.436	-4.23	0	8.4
2	M26	Z	-4.23	-5.749	8.4	16.8
3	M26	Z	-5.749	-5.769	16.8	25.2
4	M26	Z	-5.769	-4.499	25.2	33.6
5	M26	Z	-4.499	-1.165	33.6	42
6	M32	Z	-0.484	-0.484	0	1.5
7	M34	Z	-0.494	-0.494	0	1.5
8	M35	Z	-0.426	-1.799	0	7.68
9	M35	Z	-1.799	-2.767	7.68	15.36
10	M35	Z	-2.767	-2.441	15.36	23.04
11	M35	Z	-2.441	-0.951	23.04	30.72
12	M35	Z	-0.951	-0.069	30.72	38.4
13	M37	Z	-0.082	-0.961	57.6	65.28
14	M37	Z	-0.961	-2.452	65.28	72.96
15	M37	Z	-2.452	-2.848	72.96	80.64
16	M37	Z	-2.848	-1.769	80.64	88.32
17	M37	Z	-1.769	-0.082	88.32	96
18	M54	Z	-3.737	-5.99	0	5.459
19	M54	Z	-5.99	-6.458	5.459	10.918
20	M54	Z	-6.458	-9.153	10.918	16.377
21	M54	Z	-9.153	-8.855	16.377	21.836
22	M54	Z	-8.855	-1.553	21.836	27.295
23	M55	Z	-3.312	-6.885	0	5.459
24	M55	Z	-6.885	-8.212	5.459	10.918
25	M55	Z	-8.212	-9.506	10.918	16.377
26	M55	Z	-9.506	-8.15	16.377	21.836
27	M55	Z	-8.15	-1.929	21.836	27.295
28	M62	Z	-1.155	-13.237	0	8
29	M62	Z	-13.237	-12.802	8	16
30	M62	Z	-12.802	-1.155	16	24
31	M67	Z	-2.052	-7.866	0	6.6
32	M67	Z	-7.866	-8.587	6.6	13.2
33	M67	Z	-8.587	-4.737	13.2	19.8
34	M67	Z	-4.737	-2.673	19.8	26.4
35	M67	Z	-2.673	-1.877	26.4	33
36	M68	Z	-2.158	-7.962	0	6.6
37	M68	Z	-7.962	-8.589	6.6	13.2
38	M68	Z	-8.589	-4.929	13.2	19.8
39	M68	Z	-4.929	-2.974	19.8	26.4
40	M68	Z	-2.974	-1.833	26.4	33
41	M28	Z	-1.142	-4.449	0	8.4
42	M28	Z	-4.449	-5.725	8.4	16.8
43	M28	Z	-5.725	-5.744	16.8	25.2
44	M28	Z	-5.744	-4.475	25.2	33.6
45	M28	Z	-4.475	-1.14	33.6	42
46	M33	Z	-0.494	-0.494	0	1.5
47	M31	Z	-0.484	-0.484	0	1.5
48	M35	Z	-0.082	-0.961	57.6	65.28
49	M35	Z	-0.961	-2.452	65.28	72.96
50	M35	Z	-2.452	-2.848	72.96	80.64
51	M35	Z	-2.848	-1.769	80.64	88.32
52	M35	Z	-1.769	-0.082	88.32	96
53	M36	Z	-0.082	-1.763	0	7.68
54	M36	Z	-1.763	-2.842	7.68	15.36
55	M36	Z	-2.842	-2.455	15.36	23.04

Member Distributed Loads (BLC 15 : BLC 2 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
56	M36	Z	-2.455	-0.965	23.04	30.72
57	M36	Z	-0.965	-0.082	30.72	38.4
58	M57	Z	-3.737	-5.99	0	5.459
59	M57	Z	-5.99	-6.458	5.459	10.918
60	M57	Z	-6.458	-9.153	10.918	16.377
61	M57	Z	-9.153	-8.855	16.377	21.836
62	M57	Z	-8.855	-1.553	21.836	27.295
63	M56	Z	-3.285	-6.857	0	5.459
64	M56	Z	-6.857	-8.173	5.459	10.918
65	M56	Z	-8.173	-9.182	10.918	16.377
66	M56	Z	-9.182	-7.828	16.377	21.836
67	M56	Z	-7.828	-2.164	21.836	27.295
68	M61	Z	-1.155	-13.237	0	8
69	M61	Z	-13.237	-12.802	8	16
70	M61	Z	-12.802	-1.155	16	24
71	M63	Z	-2.158	-7.962	0	6.6
72	M63	Z	-7.962	-8.589	6.6	13.2
73	M63	Z	-8.589	-4.929	13.2	19.8
74	M63	Z	-4.929	-2.974	19.8	26.4
75	M63	Z	-2.974	-1.833	26.4	33
76	M64	Z	-2.052	-7.866	0	6.6
77	M64	Z	-7.866	-8.587	6.6	13.2
78	M64	Z	-8.587	-4.737	13.2	19.8
79	M64	Z	-4.737	-2.673	19.8	26.4
80	M64	Z	-2.673	-1.877	26.4	33
81	M27	Z	-1.167	-4.474	0	8.4
82	M27	Z	-4.474	-5.749	8.4	16.8
83	M27	Z	-5.749	-5.769	16.8	25.2
84	M27	Z	-5.769	-4.254	25.2	33.6
85	M27	Z	-4.254	-0.429	33.6	42
86	M30	Z	-0.494	-0.494	0	1.5
87	M29	Z	-0.484	-0.484	0	1.5
88	M36	Z	-0.069	-0.947	57.6	65.28
89	M36	Z	-0.947	-2.438	65.28	72.96
90	M36	Z	-2.438	-2.773	72.96	80.64
91	M36	Z	-2.773	-1.806	80.64	88.32
92	M36	Z	-1.806	-0.427	88.32	96
93	M37	Z	-0.082	-1.763	0	7.68
94	M37	Z	-1.763	-2.842	7.68	15.36
95	M37	Z	-2.842	-2.455	15.36	23.04
96	M37	Z	-2.455	-0.965	23.04	30.72
97	M37	Z	-0.965	-0.082	30.72	38.4
98	M59	Z	-3.285	-6.857	0	5.459
99	M59	Z	-6.857	-8.173	5.459	10.918
100	M59	Z	-8.173	-9.182	10.918	16.377
101	M59	Z	-9.182	-7.828	16.377	21.836
102	M59	Z	-7.828	-2.164	21.836	27.295
103	M58	Z	-3.764	-6.019	0	5.459
104	M58	Z	-6.019	-6.499	5.459	10.918
105	M58	Z	-6.499	-9.48	10.918	16.377
106	M58	Z	-9.48	-9.178	16.377	21.836
107	M58	Z	-9.178	-1.317	21.836	27.295
108	M60	Z	-1.155	-13.237	0	8
109	M60	Z	-13.237	-12.802	8	16
110	M60	Z	-12.802	-1.155	16	24

Member Distributed Loads (BLC 15 : BLC 2 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
111	M65	Z	-2.158	-7.962	0	6.6
112	M65	Z	-7.962	-8.589	6.6	13.2
113	M65	Z	-8.589	-4.929	13.2	19.8
114	M65	Z	-4.929	-2.974	19.8	26.4
115	M65	Z	-2.974	-1.833	26.4	33
116	M66	Z	-2.052	-7.866	0	6.6
117	M66	Z	-7.866	-8.587	6.6	13.2
118	M66	Z	-8.587	-4.737	13.2	19.8
119	M66	Z	-4.737	-2.673	19.8	26.4
120	M66	Z	-2.673	-1.877	26.4	33

Member Area Loads (BLC 1 : DEAD LOAD)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [psf]
1	N59	N22	N23	N51	Z	Two Way	-5
2	N61	N4	N5	N53	Z	Two Way	-5
3	N57	N13	N14	N55	Z	Two Way	-5

Member Area Loads (BLC 2 : DEAD LOAD ICE)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [psf]
1	N59	N22	N23	N51	Z	Two Way	-10.82
2	N61	N4	N5	N53	Z	Two Way	-10.82
3	N57	N13	N14	N55	Z	Two Way	-10.82

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	DL + WL (NO ICE) 0 Degree	Yes	Y	1	1.2			3	1.6		
2	DL + WL (NO ICE) 30 Degree	Yes	Y	1	1.2			3	1.386	4	0.8
3	DL + WL (NO ICE) 60 Degree	Yes	Y	1	1.2			3	0.8	4	1.386
4	DL + WL (NO ICE) 90 Degree	Yes	Y	1	1.2					4	1.6
5	DL + WL (NO ICE) 120 Degree	Yes	Y	1	1.2			3	-0.8	4	1.386
6	DL + WL (NO ICE) 150 Degree	Yes	Y	1	1.2			3	-1.386	4	0.8
7	DL + WL (NO ICE) 180 Degree	Yes	Y	1	1.2			3	-1.6		
8	DL + WL (NO ICE) 210 Degree	Yes	Y	1	1.2			3	-1.386	4	-0.8
9	DL + WL (NO ICE) 240 Degree	Yes	Y	1	1.2			3	-0.8	4	-1.386
10	DL + WL (NO ICE) 270 Degree	Yes	Y	1	1.2					4	-1.6
11	DL + WL (NO ICE) 300 Degree	Yes	Y	1	1.2			3	0.8	4	-1.386
12	DL + WL (NO ICE) 330 Degree	Yes	Y	1	1.2			3	1.386	4	-0.8
13	DL + DL ICE + WL (ICE) 0 Degree	Yes	Y	1	1.2	2	1	5	1		
14	DL + DL ICE + WL (ICE) 30 Degree	Yes	Y	1	1.2	2	1	5	0.866	6	0.5
15	DL + DL ICE + WL (ICE) 60 Degree	Yes	Y	1	1.2	2	1	5	0.5	6	0.866
16	DL + DL ICE + WL (ICE) 90 Degree	Yes	Y	1	1.2	2	1			6	1
17	DL + DL ICE + WL (ICE) 120 Degree	Yes	Y	1	1.2	2	1	5	-0.5	6	0.866
18	DL + DL ICE + WL (ICE) 150 Degree	Yes	Y	1	1.2	2	1	5	-0.866	6	0.5
19	DL + DL ICE + WL (ICE) 180 Degree	Yes	Y	1	1.2	2	1	5	-1		
20	DL + DL ICE + WL (ICE) 210 Degree	Yes	Y	1	1.2	2	1	5	-0.866	6	-0.5
21	DL + DL ICE + WL (ICE) 240 Degree	Yes	Y	1	1.2	2	1	5	-0.5	6	-0.866
22	DL + DL ICE + WL (ICE) 270 Degree	Yes	Y	1	1.2	2	1			6	-1
23	DL + DL ICE + WL (ICE) 300 Degree	Yes	Y	1	1.2	2	1	5	0.5	6	-0.866
24	DL + DL ICE + WL (ICE) 330 Degree	Yes	Y	1	1.2	2	1	5	0.866	6	-0.5
25	DEAD LOAD + LIVE LOAD1	Yes	Y	1	1.2					7	1.5
26	DEAD LOAD + LIVE LOAD2	Yes	Y	1	1.2					8	1.5
27	DEAD LOAD + LIVE LOAD3	Yes	Y	1	1.2					9	1.5

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
28	DL + MAIN L1+30MPH WL FRONT	Yes	Y	1	1.2	10	1.5	3	0.096		
29	DL + MAIN L2+30MPH WL FRONT	Yes	Y	1	1.2	11	1.5	3	0.096		
30	DL + MAIN L3+30MPH WL FRONT	Yes	Y	1	1.2	12	1.5	3	0.096		
31	DL + MAIN L4+30MPH WL FRONT	Yes	Y	1	1.2	13	1.5	3	0.096		
32	DL + MAIN L1+30MPH WL SIDE	Yes	Y	1	1.2	10	1.5	4	0.096		
33	DL + MAIN L2+30MPH WL SIDE	Yes	Y	1	1.2	11	1.5	4	0.096		
34	DL + MAIN L3+30MPH WL SIDE	Yes	Y	1	1.2	12	1.5	4	0.096		
35	DL + MAIN L4+30MPH WL SIDE	Yes	Y	1	1.2	13	1.5	4	0.096		
36	DL + MAIN L1+30MPH WL FRONT (REVERSED)	Yes	Y	1	1.2	10	1.5	3	-0.096		
37	DL + MAIN L2+30MPH WL FRONT (REVERSED)	Yes	Y	1	1.2	11	1.5	3	-0.096		
38	DL + MAIN L3+30MPH WL FRONT (REVERSED)	Yes	Y	1	1.2	12	1.5	3	-0.096		
39	DL + MAIN L4+30MPH WL FRONT (REVERSED)	Yes	Y	1	1.2	13	1.5	3	-0.096		
40	DL + MAIN L1+30MPH WL SIDE (REVERSED)	Yes	Y	1	1.2	10	1.5	4	-0.096		
41	DL + MAIN L2+30MPH WL SIDE (REVERSED)	Yes	Y	1	1.2	11	1.5	4	-0.096		
42	DL + MAIN L3+30MPH WL SIDE (REVERSED)	Yes	Y	1	1.2	12	1.5	4	-0.096		
43	DL + MAIN L4+30MPH WL SIDE (REVERSED)	Yes	Y	1	1.2	13	1.5	4	-0.096		

Envelope Node Reactions

	Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N19	max	1040.881	9	1430.663	8	2525.642	17	0.448	11	0.797	11	1.808	8
2		min	-1037.775	3	-1431.487	2	-33.15	11	-2.661	17	-4.624	17	-1.808	2
3	N10	max	1124.313	11	1573.318	7	2733.949	21	0.501	3	4.818	21	1.917	12
4		min	-1127.456	5	-1576.057	1	12.81	3	-2.823	21	-0.866	3	-1.918	6
5	N1	max	1673.219	10	709.495	7	2529.204	13	5.352	13	1.193	34	1.776	4
6		min	-1673.202	4	-703.985	1	-23.578	7	-0.875	7	-0.305	10	-1.776	10
7	Totals:	max	3692.88	10	3709.698	7	6989.578	19						
8		min	-3692.879	4	-3709.697	1	2019.61	1						

Envelope Node Displacements

	Node Label		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
1	N1	max	0	4	0	1	0	7	0	7	0	10	0	10
2		min	0	10	0	7	0	13	0	13	0	34	0	4
3	N2	max	0.02	4	0	1	0.041	7	1.6e-3	7	1.463e-3	10	2.881e-4	10
4		min	-0.02	10	0	7	-0.158	13	-5.446e-3	13	-3.902e-3	34	-2.884e-4	4
5	N3	max	0.01	4	0	1	0.007	7	9.069e-4	7	4.096e-4	10	7.099e-4	10
6		min	-0.01	10	0	7	-0.038	13	-3.905e-3	13	-1.604e-3	34	-7.1e-4	4
7	N4	max	0.02	4	0.068	2	0.05	8	1.277e-2	5	2.174e-2	5	8.042e-4	9
8		min	-0.02	10	-0.068	8	-0.205	30	-1.271e-2	11	-2.261e-2	11	-8.197e-4	3
9	N5	max	0.02	4	0.067	12	0.049	6	1.283e-2	9	2.262e-2	3	8.17e-4	11
10		min	-0.02	10	-0.067	6	-0.167	24	-1.275e-2	3	-2.176e-2	9	-8.019e-4	5
11	N6	max	0.011	4	0.054	12	-0.013	7	8.428e-4	5	5.135e-3	13	1.997e-3	12
12		min	-0.011	10	-0.054	6	-0.129	24	-3.706e-3	23	7.131e-4	38	-1.995e-3	6
13	N7	max	0.011	4	0.054	2	-0.012	7	8.624e-4	9	-1.089e-3	7	2.001e-3	8
14		min	-0.011	10	-0.054	8	-0.129	14	-4.974e-3	34	-5.149e-3	13	-2.003e-3	2
15	N8	max	0.02	4	0.052	2	0.044	8	3.663e-3	6	1.514e-3	10	1.513e-3	10
16		min	-0.02	10	-0.052	8	-0.178	30	-4.625e-3	30	-4.602e-3	34	-1.503e-3	4
17	N9	max	0.02	4	0.052	12	0.043	6	3.686e-3	8	1.691e-3	10	1.506e-3	10
18		min	-0.02	10	-0.052	6	-0.163	24	-4.084e-3	2	-3.856e-3	34	-1.515e-3	4
19	N10	max	0	5	0	1	0	3	0	21	0	3	0	6
20		min	0	11	0	7	0	21	0	3	0	21	0	12
21	N11	max	0.012	6	0.021	12	0.045	3	3.147e-3	26	1.531e-3	3	4.372e-4	6
22		min	-0.012	12	-0.021	6	-0.162	21	-1.468e-3	32	-5.364e-3	40	-4.372e-4	12
23	N12	max	0.006	6	0.01	12	0.008	3	2.026e-3	21	8.919e-4	3	7.8e-4	6

Envelope Node Displacements (Continued)

	Node Label		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
24		min	-0.006	12	-0.01	6	-0.04	21	-5.071e-4	3	-3.452e-3	21	-7.8e-4	12
25	N13	max	0.058	4	0.03	2	0.048	4	2.56e-2	7	3.991e-3	4	8.808e-4	5
26		min	-0.058	10	-0.03	8	-0.169	22	-2.49e-2	1	-3.512e-3	10	-8.944e-4	11
27	N14	max	0.057	3	0.043	2	0.05	2	1.264e-2	6	2.215e-2	5	9.501e-4	7
28		min	-0.057	9	-0.043	8	-0.205	36	-1.346e-2	12	-2.254e-2	11	-9.36e-4	1
29	N15	max	0.043	2	0.032	2	-0.012	3	-2.567e-5	6	1.06e-4	1	2.02e-3	8
30		min	-0.043	8	-0.032	8	-0.13	21	-3.198e-3	29	-6.363e-3	36	-2.018e-3	2
31	N16	max	0.045	4	0.022	3	-0.012	3	6.342e-3	22	1.464e-3	5	1.822e-3	4
32		min	-0.045	10	-0.022	9	-0.131	21	6.357e-4	4	-1.589e-3	11	-1.823e-3	10
33	N17	max	0.046	4	0.026	2	0.046	3	3.476e-3	26	3.533e-3	2	1.467e-3	6
34		min	-0.046	10	-0.026	8	-0.166	21	-3.406e-3	32	-3.805e-3	8	-1.458e-3	12
35	N18	max	0.044	3	0.037	1	0.048	3	2.449e-3	11	3.314e-3	3	1.488e-3	6
36		min	-0.044	9	-0.037	7	-0.177	40	-2.373e-3	5	-6.28e-3	40	-1.5e-3	12
37	N19	max	0	3	0	2	0	11	0	17	0	17	0	2
38		min	0	9	0	8	0	17	0	11	0	11	0	8
39	N20	max	0.012	2	0.02	2	0.042	11	2.807e-3	16	4.72e-3	17	4.205e-4	2
40		min	-0.012	8	-0.02	8	-0.158	17	-1.13e-3	10	-1.467e-3	11	-4.207e-4	8
41	N21	max	0.005	2	0.009	2	0.008	11	1.951e-3	16	3.373e-3	17	7.516e-4	2
42		min	-0.005	8	-0.009	8	-0.038	17	-4.901e-4	10	-8.223e-4	11	-7.518e-4	8
43	N22	max	0.057	5	0.043	12	0.049	12	1.266e-2	8	2.254e-2	3	9.18e-4	1
44		min	-0.057	11	-0.043	6	-0.167	18	-1.349e-2	2	-2.218e-2	9	-9.323e-4	7
45	N23	max	0.058	4	0.03	12	0.048	10	2.559e-2	7	3.461e-3	4	8.741e-4	3
46		min	-0.058	10	-0.03	6	-0.165	16	-2.489e-2	1	-3.975e-3	10	-8.605e-4	9
47	N24	max	0.045	4	0.022	11	-0.013	11	6.28e-3	15	1.574e-3	3	1.833e-3	4
48		min	-0.045	10	-0.022	5	-0.129	17	6.414e-4	10	-1.488e-3	9	-1.831e-3	10
49	N25	max	0.043	6	0.032	12	-0.013	11	-7.432e-5	8	5.784e-3	19	2.017e-3	12
50		min	-0.043	12	-0.032	6	-0.129	17	-3.084e-3	14	-1.053e-4	1	-2.018e-3	6
51	N26	max	0.044	5	0.036	1	0.045	11	2.517e-3	3	3.71e-3	5	1.494e-3	2
52		min	-0.044	11	-0.036	7	-0.163	17	-2.472e-3	9	-3.268e-3	11	-1.484e-3	8
53	N27	max	0.045	4	0.025	12	0.043	11	2.225e-3	5	3.717e-3	6	1.45e-3	2
54		min	-0.046	10	-0.025	6	-0.161	17	-1.869e-3	11	-3.468e-3	12	-1.462e-3	8
55	N28	max	0.058	4	0.03	2	0.06	4	2.56e-2	7	3.991e-3	4	8.809e-4	5
56		min	-0.058	10	-0.03	8	-0.171	22	-2.49e-2	1	-3.512e-3	10	-8.944e-4	11
57	N29	max	0.058	4	0.03	12	0.06	10	2.559e-2	7	3.461e-3	4	8.742e-4	3
58		min	-0.058	10	-0.029	6	-0.166	16	-2.489e-2	1	-3.975e-3	10	-8.606e-4	9
59	N30	max	0.058	4	0.031	2	0.037	3	2.564e-2	7	4.007e-3	4	8.672e-4	5
60		min	-0.058	10	-0.031	8	-0.168	22	-2.495e-2	1	-3.534e-3	10	-8.82e-4	11
61	N31	max	0.686	4	1.055	1	0.049	4	1.056e-2	12	2.179e-3	2	5.858e-3	1
62		min	-0.686	10	-1.05	7	-0.181	22	-9.929e-3	6	-1.503e-3	8	-6.203e-3	7
63	N32	max	0.686	4	1.054	1	0.048	10	1.054e-2	2	1.361e-3	6	6.232e-3	7
64		min	-0.686	10	-1.049	7	-0.177	16	-9.914e-3	8	-2.074e-3	12	-5.883e-3	1
65	N33	max	0.016	14	0.387	7	0.073	12	2.559e-2	7	3.441e-3	4	8.619e-4	3
66		min	0.001	8	-0.376	1	-0.184	18	-2.49e-2	1	-3.949e-3	10	-8.47e-4	9
67	N34	max	1.033	4	1.474	1	0.073	12	2.587e-2	8	2.168e-2	4	6.232e-3	7
68		min	-1.029	10	-1.458	7	-0.184	18	-2.638e-2	2	-2.142e-2	10	-5.883e-3	1
69	N35	max	0.686	4	1.019	1	0.056	3	1.079e-2	12	2.085e-3	1	5.916e-3	1
70		min	-0.686	10	-1.013	7	-0.175	21	-1.017e-2	6	-1.434e-3	7	-6.267e-3	7
71	N36	max	0.686	4	1.018	1	0.053	10	1.078e-2	2	1.293e-3	7	6.298e-3	7
72		min	-0.686	10	-1.011	7	-0.17	17	-1.015e-2	8	-1.981e-3	1	-5.942e-3	1
73	N37	max	1.061	4	0.68	12	0.054	8	4.545e-3	10	8.997e-3	10	5.061e-3	4
74		min	-1.061	10	-0.683	6	-0.213	30	-4.281e-3	4	-9.844e-3	4	-5.426e-3	10
75	N38	max	1.061	4	0.681	2	0.053	6	4.52e-3	4	9.867e-3	10	5.413e-3	4
76		min	-1.061	10	-0.684	8	-0.176	24	-4.252e-3	10	-9.026e-3	4	-5.052e-3	10
77	N39	max	0.686	4	1.038	1	0.051	4	1.079e-2	12	2.086e-3	1	5.916e-3	1
78		min	-0.686	10	-1.032	7	-0.178	21	-1.017e-2	6	-1.434e-3	7	-6.268e-3	7

Envelope Node Displacements (Continued)

	Node Label		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
79	N40	max	0.928	5	0.856	1	0.054	3	7.514e-3	12	1.146e-2	1	5.586e-3	11
80		min	-0.924	11	-0.853	7	-0.213	36	-8.344e-3	6	-1.153e-2	6	-5.234e-3	5
81	N41	max	0.923	3	0.856	1	0.054	12	7.504e-3	2	1.152e-2	8	5.244e-3	9
82		min	-0.928	9	-0.853	7	-0.176	18	-8.341e-3	8	-1.145e-2	1	-5.598e-3	3
83	N42	max	0.686	4	1.037	1	0.051	10	1.078e-2	2	1.293e-3	7	6.298e-3	7
84		min	-0.686	10	-1.031	7	-0.173	16	-1.015e-2	8	-1.981e-3	1	-5.942e-3	1
85	N43	max	0.686	4	1.054	1	0.073	12	2.583e-2	8	2.164e-2	4	6.232e-3	7
86		min	-0.686	10	-1.049	7	-0.184	18	-2.634e-2	2	-2.138e-2	10	-5.883e-3	1
87	N44	max	0.011	4	0.064	2	-0.018	7	1.092e-3	8	-1.123e-3	7	1.974e-3	8
88		min	-0.011	10	-0.064	8	-0.156	13	-4.852e-3	30	-5.337e-3	13	-1.975e-3	2
89	N45	max	0.011	4	0.064	12	-0.019	7	1.075e-3	6	5.322e-3	13	1.969e-3	12
90		min	-0.011	10	-0.064	6	-0.156	24	-2.544e-3	24	8.015e-4	38	-1.967e-3	6
91	N46	max	0.053	4	0.026	3	-0.018	3	5.928e-3	21	1.503e-3	4	1.802e-3	4
92		min	-0.053	10	-0.026	9	-0.158	21	4.693e-4	3	-1.054e-3	26	-1.802e-3	10
93	N47	max	0.052	2	0.038	2	-0.017	3	-4.281e-4	8	3.909e-4	3	2.011e-3	8
94		min	-0.052	8	-0.038	8	-0.157	21	-3.751e-3	14	-6.274e-3	40	-2.011e-3	2
95	N48	max	0.052	6	0.037	12	-0.019	11	-4.598e-4	6	4.858e-3	18	2.011e-3	12
96		min	-0.052	12	-0.037	6	-0.156	17	-3.76e-3	24	-3.291e-4	11	-2.011e-3	6
97	N49	max	0.053	4	0.026	11	-0.018	11	5.851e-3	17	9.43e-4	4	1.814e-3	4
98		min	-0.053	10	-0.026	5	-0.156	17	5.076e-4	11	-1.501e-3	10	-1.813e-3	10
99	N50	max	0.053	4	0.029	11	-0.021	11	7.342e-3	17	9.335e-4	4	2.712e-3	4
100		min	-0.053	10	-0.029	5	-0.157	17	7.45e-4	11	-1.508e-3	10	-2.707e-3	10
101	N51	max	0.058	4	0.029	11	-0.022	11	2.584e-2	7	9.335e-4	4	9.581e-4	10
102		min	-0.058	10	-0.029	5	-0.169	17	-2.498e-2	1	-1.508e-3	10	-9.724e-4	4
103	N52	max	0.01	4	0.065	12	-0.021	7	8.906e-4	6	6.616e-3	13	2.936e-3	12
104		min	-0.01	10	-0.065	6	-0.157	24	-3.235e-3	24	1.338e-3	8	-2.93e-3	6
105	N53	max	0.011	4	0.07	12	-0.022	7	1.306e-2	9	2.274e-2	3	1.114e-3	6
106		min	-0.011	10	-0.07	6	-0.168	13	-1.301e-2	3	-2.172e-2	9	-1.128e-3	12
107	N54	max	0.055	2	0.036	2	-0.02	3	-6.615e-4	8	1.917e-4	3	2.956e-3	8
108		min	-0.055	8	-0.036	8	-0.158	21	-4.478e-3	14	-6.887e-3	40	-2.951e-3	2
109	N55	max	0.057	2	0.04	2	-0.021	3	1.215e-2	5	2.222e-2	5	1.087e-3	3
110		min	-0.057	8	-0.04	8	-0.17	21	-1.305e-2	11	-2.27e-2	11	-1.098e-3	9
111	N56	max	0.053	4	0.029	3	-0.02	3	7.407e-3	21	1.509e-3	4	2.688e-3	4
112		min	-0.053	10	-0.029	9	-0.159	21	7.079e-4	3	-1.044e-3	26	-2.693e-3	10
113	N57	max	0.058	4	0.029	3	-0.021	3	2.584e-2	7	1.509e-3	4	9.65e-4	10
114		min	-0.058	10	-0.029	9	-0.171	21	-2.499e-2	1	-1.044e-3	26	-9.509e-4	4
115	N58	max	0.055	6	0.036	12	-0.021	11	-6.817e-4	6	6.116e-3	17	2.954e-3	12
116		min	-0.055	12	-0.036	6	-0.157	17	-4.483e-3	24	-1.248e-4	11	-2.958e-3	6
117	N59	max	0.057	6	0.04	12	-0.022	11	1.22e-2	9	2.27e-2	3	1.097e-3	5
118		min	-0.057	12	-0.04	6	-0.169	17	-1.31e-2	3	-2.224e-2	9	-1.085e-3	11
119	N60	max	0.01	4	0.066	2	-0.02	7	9.087e-4	8	-1.283e-3	6	2.938e-3	8
120		min	-0.01	10	-0.066	8	-0.157	13	-5.199e-3	30	-6.631e-3	13	-2.944e-3	2
121	N61	max	0.011	4	0.07	2	-0.021	7	1.3e-2	5	2.171e-2	5	1.125e-3	2
122		min	-0.011	10	-0.07	8	-0.169	13	-1.295e-2	11	-2.274e-2	11	-1.112e-3	8
123	N62	max	0.058	4	0.011	1	-0.032	28	2.597e-2	7	1.841e-3	4	1.699e-3	10
124		min	-0.058	10	-0.011	7	-0.175	19	-2.501e-2	1	-1.861e-3	10	-1.699e-3	4
125	N63	max	0.686	4	1.249	1	-0.028	7	8.304e-3	1	2.859e-3	4	6.417e-3	4
126		min	-0.686	10	-1.256	7	-0.185	13	-7.438e-3	7	-2.878e-3	10	-6.416e-3	10
127	N64	max	0.055	5	0.044	12	0.062	12	1.266e-2	8	2.254e-2	3	9.18e-4	1
128		min	-0.055	11	-0.045	6	-0.169	18	-1.349e-2	2	-2.218e-2	9	-9.323e-4	7
129	N65	max	0.022	4	0.066	12	0.062	6	1.283e-2	9	2.262e-2	3	8.17e-4	11
130		min	-0.022	10	-0.066	6	-0.169	24	-1.275e-2	3	-2.176e-2	9	-8.019e-4	5
131	N66	max	0.058	5	0.042	12	0.038	12	1.264e-2	8	2.261e-2	3	9.051e-4	1
132		min	-0.058	11	-0.042	6	-0.166	18	-1.346e-2	2	-2.225e-2	9	-9.206e-4	7
133	N67	max	0.018	4	0.069	12	0.038	6	1.291e-2	9	2.262e-2	3	8.03e-4	11

Envelope Node Displacements (Continued)

	Node Label		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
134		min	-0.018	10	-0.069	6	-0.166	24	-1.284e-2	3	-2.176e-2	9	-7.867e-4	5
135	N68	max	0.937	3	0.859	1	0.05	12	7.217e-3	2	1.141e-2	8	5.153e-3	9
136		min	-0.942	9	-0.856	7	-0.179	18	-8.07e-3	8	-1.126e-2	2	-5.502e-3	3
137	N69	max	1.074	4	0.687	2	0.05	6	4.56e-3	4	9.685e-3	9	5.246e-3	3
138		min	-1.073	10	-0.689	8	-0.179	24	-4.282e-3	10	-8.788e-3	4	-4.904e-3	9
139	N70	max	0.908	3	0.852	1	0.058	11	7.504e-3	2	1.152e-2	8	5.244e-3	9
140		min	-0.914	9	-0.85	7	-0.173	18	-8.341e-3	8	-1.145e-2	1	-5.598e-3	3
141	N71	max	1.046	4	0.675	2	0.055	6	4.52e-3	4	9.867e-3	10	5.413e-3	4
142		min	-1.048	10	-0.679	8	-0.173	24	-4.252e-3	10	-9.026e-3	4	-5.051e-3	10
143	N72	max	0.059	5	0.044	12	0.078	10	1.264e-2	8	2.261e-2	3	9.051e-4	1
144		min	-0.059	11	-0.044	6	-0.184	16	-1.346e-2	2	-2.225e-2	9	-9.206e-4	7
145	N73	max	0.019	4	0.071	12	0.072	8	1.291e-2	9	2.262e-2	3	8.03e-4	11
146		min	-0.019	10	-0.07	6	-0.184	14	-1.284e-2	3	-2.176e-2	9	-7.867e-4	5
147	N74	max	0.946	3	0.855	1	0.078	10	2.543e-2	7	2.315e-2	3	5.153e-3	9
148		min	-0.949	9	-0.853	7	-0.185	16	-2.502e-2	1	-2.359e-2	9	-5.502e-3	3
149	N75	max	1.067	4	0.698	2	0.072	8	1.921e-2	7	2.816e-2	4	5.246e-3	3
150		min	-1.067	10	-0.699	8	-0.184	14	-1.919e-2	1	-2.874e-2	10	-4.904e-3	9
151	N76	max	1.138	4	0.812	2	-0.028	3	4.953e-3	3	9.819e-3	8	6.073e-3	12
152		min	-1.13	10	-0.807	8	-0.184	21	-5.351e-3	9	-9.281e-3	2	-6.067e-3	6
153	N77	max	1.142	4	0.82	2	0.033	9	2.65e-2	7	3.421e-2	4	6.073e-3	12
154		min	-1.134	10	-0.815	8	-0.209	15	-2.651e-2	1	-3.437e-2	10	-6.067e-3	6
155	N78	max	0.022	4	0.066	2	0.063	8	1.277e-2	5	2.174e-2	5	8.043e-4	9
156		min	-0.022	10	-0.066	8	-0.212	30	-1.271e-2	11	-2.261e-2	11	-8.198e-4	3
157	N79	max	0.055	3	0.045	2	0.063	2	1.264e-2	6	2.215e-2	5	9.501e-4	7
158		min	-0.055	9	-0.045	8	-0.211	36	-1.346e-2	12	-2.254e-2	11	-9.36e-4	1
159	N80	max	0.059	3	0.042	2	0.039	3	1.262e-2	6	2.223e-2	5	9.383e-4	7
160		min	-0.058	9	-0.042	8	-0.199	40	-1.344e-2	12	-2.261e-2	11	-9.23e-4	1
161	N81	max	0.941	5	0.859	1	0.051	2	7.227e-3	12	1.126e-2	1	5.489e-3	11
162		min	-0.938	11	-0.856	7	-0.206	36	-8.072e-3	6	-1.141e-2	6	-5.143e-3	5
163	N82	max	1.047	4	0.674	12	0.056	8	4.545e-3	10	8.997e-3	10	5.061e-3	4
164		min	-1.047	10	-0.678	6	-0.22	30	-4.281e-3	4	-9.844e-3	4	-5.426e-3	10
165	N83	max	0.914	5	0.852	1	0.061	3	7.514e-3	12	1.146e-2	1	5.586e-3	11
166		min	-0.909	11	-0.85	7	-0.22	40	-8.344e-3	6	-1.153e-2	6	-5.234e-3	5
167	N84	max	0.059	3	0.044	2	0.081	4	1.262e-2	6	2.223e-2	5	9.383e-4	7
168		min	-0.059	9	-0.044	8	-0.213	40	-1.344e-2	12	-2.261e-2	11	-9.23e-4	1
169	N85	max	0.949	5	0.855	1	0.081	4	2.539e-2	7	2.357e-2	5	5.489e-3	11
170		min	-0.946	11	-0.852	7	-0.213	40	-2.498e-2	1	-2.314e-2	11	-5.143e-3	5
171	N86	max	1.066	4	0.697	12	0.072	6	1.921e-2	7	2.873e-2	4	4.909e-3	5
172		min	-1.067	10	-0.698	6	-0.212	30	-1.918e-2	1	-2.817e-2	10	-5.253e-3	11
173	N87	max	0.033	3	0.055	2	-0.041	5	1.262e-2	5	2.195e-2	5	1.911e-3	2
174		min	-0.033	9	-0.055	8	-0.174	23	-1.31e-2	11	-2.28e-2	11	-1.911e-3	8
175	N88	max	1.13	4	0.811	12	-0.03	11	4.984e-3	11	9.258e-3	12	6.057e-3	8
176		min	-1.139	10	-0.805	6	-0.183	17	-5.379e-3	5	-9.807e-3	6	-6.067e-3	2
177	N89	max	0.031	3	0.05	2	0.035	5	1.262e-2	5	2.195e-2	5	1.911e-3	2
178		min	-0.03	9	-0.05	8	-0.209	23	-1.31e-2	11	-2.28e-2	11	-1.911e-3	8
179	N90	max	1.134	4	0.819	12	0.035	5	2.648e-2	7	3.437e-2	4	6.057e-3	8
180		min	-1.143	10	-0.814	6	-0.21	23	-2.65e-2	1	-3.423e-2	10	-6.067e-3	2
181	N91	max	0.058	4	0.031	11	0.036	10	2.564e-2	7	3.483e-3	4	8.619e-4	3
182		min	-0.058	10	-0.031	5	-0.164	16	-2.494e-2	1	-3.991e-3	10	-8.47e-4	9
183	N92	max	0.06	4	0.031	11	0.073	12	2.564e-2	7	3.483e-3	4	8.619e-4	3
184		min	-0.06	10	-0.031	5	-0.184	18	-2.494e-2	1	-3.991e-3	10	-8.47e-4	9
185	N93	max	0.705	4	1.249	1	0.034	1	3.617e-2	7	2.508e-2	4	6.417e-3	4
186		min	-0.706	10	-1.256	7	-0.212	19	-3.644e-2	1	-2.51e-2	10	-6.416e-3	10
187	N94	max	0.053	4	0.011	1	0.035	1	2.597e-2	7	1.841e-3	4	1.699e-3	10
188		min	-0.053	10	-0.011	7	-0.211	19	-2.501e-2	1	-1.861e-3	10	-1.699e-3	4

Envelope Node Displacements (Continued)

	Node Label		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
189	N95	max	0.036	4	0.384	7	0.035	1	2.427e-2	7	7.568e-4	4	1.699e-3	10
190		min	-0.036	10	-0.369	1	-0.212	19	-2.332e-2	1	-1.055e-3	26	-1.699e-3	4
191	N96	max	1.119	4	1.853	1	0.034	1	3.787e-2	7	2.619e-2	4	6.417e-3	4
192		min	-1.12	10	-1.855	7	-0.212	19	-3.814e-2	1	-2.62e-2	10	-6.416e-3	10
193	N97	max	0.685	4	1.055	1	0.077	2	2.583e-2	6	2.135e-2	4	5.858e-3	1
194		min	-0.687	10	-1.05	7	-0.189	20	-2.634e-2	12	-2.164e-2	10	-6.203e-3	7
195	N98	max	0.06	4	0.031	2	0.077	2	2.564e-2	7	4.007e-3	4	8.672e-4	5
196		min	-0.061	10	-0.031	8	-0.189	20	-2.495e-2	1	-3.534e-3	10	-8.82e-4	11
197	N99	max	0.023	26	0.387	7	0.077	2	2.56e-2	7	3.965e-3	4	8.672e-4	5
198		min	-0.016	24	-0.376	1	-0.189	20	-2.49e-2	1	-3.492e-3	10	-8.82e-4	11
199	N100	max	1.027	4	1.475	1	0.077	2	2.586e-2	6	2.139e-2	4	5.858e-3	1
200		min	-1.034	10	-1.46	7	-0.189	20	-2.637e-2	12	-2.169e-2	10	-6.203e-3	7
201	N101	max	0.338	11	0.183	5	0.081	4	1.258e-2	6	2.219e-2	5	9.383e-4	7
202		min	-0.332	5	-0.195	11	-0.214	40	-1.34e-2	12	-2.258e-2	11	-9.23e-4	1
203	N102	max	1.326	5	1.255	1	0.081	4	2.543e-2	7	2.36e-2	5	5.489e-3	11
204		min	-1.317	11	-1.259	7	-0.213	40	-2.502e-2	1	-2.318e-2	11	-5.143e-3	5
205	N103	max	0.336	11	0.192	5	0.035	5	1.207e-2	5	2.049e-2	5	1.911e-3	2
206		min	-0.323	5	-0.2	11	-0.209	23	-1.255e-2	11	-2.133e-2	11	-1.911e-3	8
207	N104	max	1.705	4	1.253	1	0.035	5	2.759e-2	7	3.607e-2	4	6.057e-3	8
208		min	-1.711	10	-1.244	7	-0.21	23	-2.76e-2	1	-3.593e-2	10	-6.067e-3	2
209	N105	max	0.331	9	0.202	9	0.072	8	1.289e-2	9	2.258e-2	3	8.03e-4	11
210		min	-0.344	3	-0.201	3	-0.184	14	-1.282e-2	3	-2.173e-2	9	-7.867e-4	5
211	N106	max	1.518	4	0.996	2	0.072	8	1.925e-2	7	2.82e-2	4	5.246e-3	3
212		min	-1.527	10	-0.999	8	-0.184	14	-1.923e-2	1	-2.878e-2	10	-4.904e-3	9
213	N107	max	0.333	9	0.185	9	0.078	10	1.26e-2	8	2.258e-2	3	9.051e-4	1
214		min	-0.339	3	-0.197	3	-0.184	16	-1.342e-2	2	-2.222e-2	9	-9.206e-4	7
215	N108	max	1.316	3	1.256	1	0.078	10	2.548e-2	7	2.318e-2	3	5.153e-3	9
216		min	-1.327	9	-1.26	7	-0.185	16	-2.506e-2	1	-2.363e-2	9	-5.502e-3	3
217	N109	max	0.019	4	0.071	2	0.072	6	1.286e-2	5	2.175e-2	5	7.89e-4	9
218		min	-0.019	10	-0.071	8	-0.212	30	-1.279e-2	11	-2.262e-2	11	-8.056e-4	3
219	N110	max	0.344	11	0.201	5	0.072	6	1.284e-2	5	2.171e-2	5	7.89e-4	9
220		min	-0.331	5	-0.199	11	-0.212	30	-1.277e-2	11	-2.258e-2	11	-8.056e-4	3
221	N111	max	0.018	4	0.069	2	0.039	8	1.286e-2	5	2.175e-2	5	7.89e-4	9
222		min	-0.018	10	-0.069	8	-0.199	30	-1.279e-2	11	-2.262e-2	11	-8.056e-4	3
223	N112	max	1.073	4	0.686	12	0.051	8	4.585e-3	10	8.759e-3	10	4.909e-3	5
224		min	-1.074	10	-0.688	6	-0.207	30	-4.31e-3	4	-9.655e-3	5	-5.253e-3	11
225	N113	max	1.526	4	0.994	12	0.072	6	1.925e-2	7	2.877e-2	4	4.909e-3	5
226		min	-1.518	10	-0.997	6	-0.212	30	-1.923e-2	1	-2.821e-2	10	-5.253e-3	11
227	N114	max	0.004	6	0.007	12	0.005	3	1.712e-3	21	6.92e-4	3	8.151e-4	6
228		min	-0.004	12	-0.007	6	-0.024	21	-3.999e-4	3	-2.894e-3	21	-8.151e-4	12
229	N115	max	0.006	6	0.005	12	0.005	3	1.712e-3	21	6.92e-4	3	8.151e-4	6
230		min	-0.006	12	-0.005	6	-0.024	21	-3.999e-4	3	-2.894e-3	21	-8.151e-4	12
231	N116	max	0.047	3	0.049	2	0.005	3	2.561e-3	8	1.669e-3	3	8.151e-4	6
232		min	-0.102	21	-0.075	8	-0.024	21	-1.754e-3	2	-3.278e-3	21	-8.151e-4	12
233	N117	max	0.047	20	0.028	22	0.005	3	1.698e-3	22	6.557e-4	3	8.151e-4	6
234		min	-0.011	2	-0.008	4	-0.024	21	-3.79e-4	3	-2.869e-3	21	-8.151e-4	12
235	N118	max	0.039	4	0.311	7	0.035	1	2.427e-2	7	7.571e-4	4	1.699e-3	10
236		min	-0.038	10	-0.299	1	-0.212	19	-2.332e-2	1	-1.055e-3	26	-1.699e-3	4
237	N119	max	1.041	4	1.738	1	0.034	1	3.787e-2	7	2.619e-2	4	6.417e-3	4
238		min	-1.042	10	-1.742	7	-0.212	19	-3.814e-2	1	-2.62e-2	10	-6.416e-3	10
239	N120	max	1.596	4	1.17	1	0.035	5	2.759e-2	7	3.607e-2	4	6.057e-3	8
240		min	-1.604	10	-1.162	7	-0.21	23	-2.76e-2	1	-3.593e-2	10	-6.067e-3	2
241	N121	max	0.272	11	0.156	5	0.035	5	1.207e-2	5	2.049e-2	5	1.911e-3	2
242		min	-0.261	5	-0.162	11	-0.209	23	-1.255e-2	11	-2.133e-2	11	-1.911e-3	8
243	N122	max	1.603	4	1.17	1	0.033	9	2.76e-2	7	3.591e-2	4	6.073e-3	12

Envelope Node Displacements (Continued)

	Node Label		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
244		min	-1.596	10	-1.162	7	-0.209	15	-2.761e-2	1	-3.607e-2	10	-6.067e-3	6
245	N123	max	0.261	9	0.157	9	0.033	9	1.213e-2	9	2.133e-2	3	1.913e-3	6
246		min	-0.272	3	-0.164	3	-0.208	15	-1.26e-2	3	-2.05e-2	9	-1.913e-3	12
247	N124	max	0.027	4	0.028	2	0.005	3	2.545e-3	8	1.654e-3	3	8.151e-4	6
248		min	-0.063	22	-0.044	8	-0.024	21	-1.738e-3	2	-3.268e-3	21	-8.151e-4	12
249	N125	max	0.323	9	0.194	9	0.033	9	1.213e-2	9	2.133e-2	3	1.913e-3	6
250		min	-0.336	3	-0.201	3	-0.208	15	-1.26e-2	3	-2.05e-2	9	-1.913e-3	12
251	N126	max	0.033	5	0.055	12	-0.032	42	1.268e-2	9	2.28e-2	3	1.913e-3	6
252		min	-0.033	11	-0.055	6	-0.173	15	-1.315e-2	3	-2.197e-2	9	-1.913e-3	12
253	N127	max	0.03	5	0.05	12	0.033	9	1.268e-2	9	2.28e-2	3	1.913e-3	6
254		min	-0.031	11	-0.05	6	-0.208	15	-1.315e-2	3	-2.197e-2	9	-1.913e-3	12
255	N128	max	1.71	4	1.253	1	0.033	9	2.76e-2	7	3.591e-2	4	6.073e-3	12
256		min	-1.705	10	-1.245	7	-0.209	15	-2.761e-2	1	-3.607e-2	10	-6.067e-3	6
257	N129	max	0	43	0	43	0	43	0	43	0	43	0	43
258		min	0	1	0	1	0	1	0	1	0	1	0	1

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	M26	PL 6.5x.375	0.233	21	5	0.362	5.687	y	9	3658.14	78975	0.617	7.416	1.319	H1-1b
2	M27	PL 6.5x.375	0.232	21	9	0.36	36.312	y	5	3658.14	78975	0.617	7.411	1.318	H1-1b
3	M28	PL 6.5x.375	0.23	21	2	0.36	36.312	y	9	3658.14	78975	0.617	7.796	1.387	H1-1b
4	M33	PL 2.375x0.5	0.255	1.5	9	0.33	0	y	23	38256.871	38475	0.401	1.904	2.223	H1-1b
5	M32	PL 2.375x0.5	0.233	1.5	9	0.332	0	y	19	38256.871	38475	0.401	1.904	2.272	H1-1b
6	M34	PL 2.375x0.5	0.23	1.5	1	0.328	0	y	15	38256.871	38475	0.401	1.904	2.249	H1-1b
7	M30	PL 2.375x0.5	0.232	1.5	5	0.328	0	y	19	38256.871	38475	0.401	1.904	2.251	H1-1b
8	M29	PL 2.375x0.5	0.23	1.5	1	0.33	0	y	23	38256.871	38475	0.401	1.904	2.263	H1-1b
9	M31	PL 2.375x0.5	0.255	1.5	5	0.33	0	y	15	38256.871	38475	0.401	1.904	2.226	H1-1b
10	M35	PIPE_3.0	0.136	6	6	0.084	64		12	54628.551	85698	7.555	7.555	1.696	H1-1b
11	M36	PIPE_3.0	0.136	90	8	0.084	32		2	54628.551	85698	7.555	7.555	1.695	H1-1b
12	M37	PIPE_3.0	0.136	90	4	0.084	64		4	54628.551	85698	7.555	7.555	1.685	H1-1b
13	M49	PIPE_2.0	0.205	90	2	0.1	92		8	15369.683	42228	2.46	2.46	1.867	H1-1b
14	M48	PIPE_2.0	0.467	16.5	4	0.094	16.5		8	23945.804	42228	2.46	2.46	1.687	H1-1b
15	M47	PIPE_2.0	0.205	6	12	0.1	4		6	15369.683	42228	2.46	2.46	1.879	H1-1b
16	M46	PIPE_2.0	0.219	90	10	0.109	92		4	15369.683	42228	2.46	2.46	1.997	H1-1b
17	M45	PIPE_2.0	0.494	16.5	4	0.133	16.5		4	23945.804	42228	2.46	2.46	1.639	H1-1b
18	M44	PIPE_2.0	0.112	16	7	0.014	16		7	26521.424	32130	1.872	1.872	2.487	H1-1b
19	M50	PIPE_2.0	0.463	16.5	8	0.085	16.5		10	23945.804	42228	2.46	2.46	1.66	H1-1b
20	M42	PIPE_2.0	0.46	16.5	12	0.087	16.5		4	23945.804	42228	2.46	2.46	1.656	H1-1b
21	M41	PIPE_2.0	0.465	16.5	6	0.085	16.5		4	23945.804	42228	2.46	2.46	1.66	H1-1b
22	M40	PIPE_2.0	0.461	16.5	2	0.088	16.5		10	23945.804	42228	2.46	2.46	1.656	H1-1b
23	M39	PIPE_2.0	0.487	16.5	12	0.13	16.5		12	23945.804	42228	2.46	2.46	1.488	H1-1b
24	M38	PIPE_2.0	0.465	16.5	10	0.094	16.5		6	23945.804	42228	2.46	2.46	1.687	H1-1b
25	M43	PIPE_2.0	0.487	16.5	2	0.13	16.5		2	23945.804	42228	2.46	2.46	1.488	H1-1b
26	M51	L6.6x4.46x0.25	0.212	41.562	8	0.03	42	z	4	50616.195	87561	2.465	7.125	1.136	H2-1
27	M52	L6.6x4.46x0.25	0.235	41.562	4	0.036	42	z	12	50616.195	87561	2.465	7.125	1.136	H2-1
28	M53	L6.6x4.46x0.25	0.235	0.437	10	0.036	0	z	2	50616.195	87561	2.465	7.125	1.136	H2-1
29	M59	L2x2x4	0.22	27.295	6	0.03	0	y	13	23539.001	30585.6	0.691	1.577	1.5	H2-1
30	M58	L2x2x4	0.221	27.295	12	0.031	0	y	15	23539.001	30585.6	0.691	1.577	1.5	H2-1
31	M57	L2x2x4	0.238	27.295	4	0.03	0	z	20	23539.001	30585.6	0.691	1.577	1.385	H2-1
32	M56	L2x2x4	0.238	27.295	10	0.03	0	y	18	23539.001	30585.6	0.691	1.577	1.389	H2-1
33	M54	L2x2x4	0.222	27.295	8	0.03	0	z	13	23539.001	30585.6	0.691	1.577	1.5	H2-1
34	M55	L2x2x4	0.224	27.295	2	0.03	0	z	23	23539.001	30585.6	0.691	1.577	1.5	H2-1
35	M60	HSS4X4X4	0.364	40	20	0.125	27.917	y	36	133178.794	139518	16.181	16.181	2.136	H1-1b
36	M61	HSS4X4X4	0.346	40	14	0.125	40	y	34	133178.794	139518	16.181	16.181	2.09	H1-1b
37	M62	HSS4X4X4	0.347	40	18	0.072	40	y	25	133178.794	139518	16.181	16.181	2.092	H1-1b

Envelope AISC 14TH (360-10): LRFD Member Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
38	M67	C3.38x2.06x0.25	0.376	0	17	0.06	28.187	y	13	47760.074	56700	2.203	5.752	1.647	H1-1b
39	M63	C3.38x2.06x0.25	0.382	0	13	0.056	28.187	y	17	47760.074	56700	2.203	5.752	1.647	H1-1b
40	M64	C3.38x2.06x0.25	0.381	0	13	0.059	28.188	y	21	47760.074	56700	2.203	5.752	1.647	H1-1b
41	M65	C3.38x2.06x0.25	0.374	0	21	0.057	28.188	y	13	47760.074	56700	2.203	5.752	1.647	H1-1b
42	M66	C3.38x2.06x0.25	0.384	0	21	0.061	28.188	y	17	47760.074	56700	2.203	5.752	1.647	H1-1b
43	M68	C3.38x2.06x0.25	0.381	0	17	0.057	28.188	y	21	47760.074	56700	2.203	5.752	1.648	H1-1b

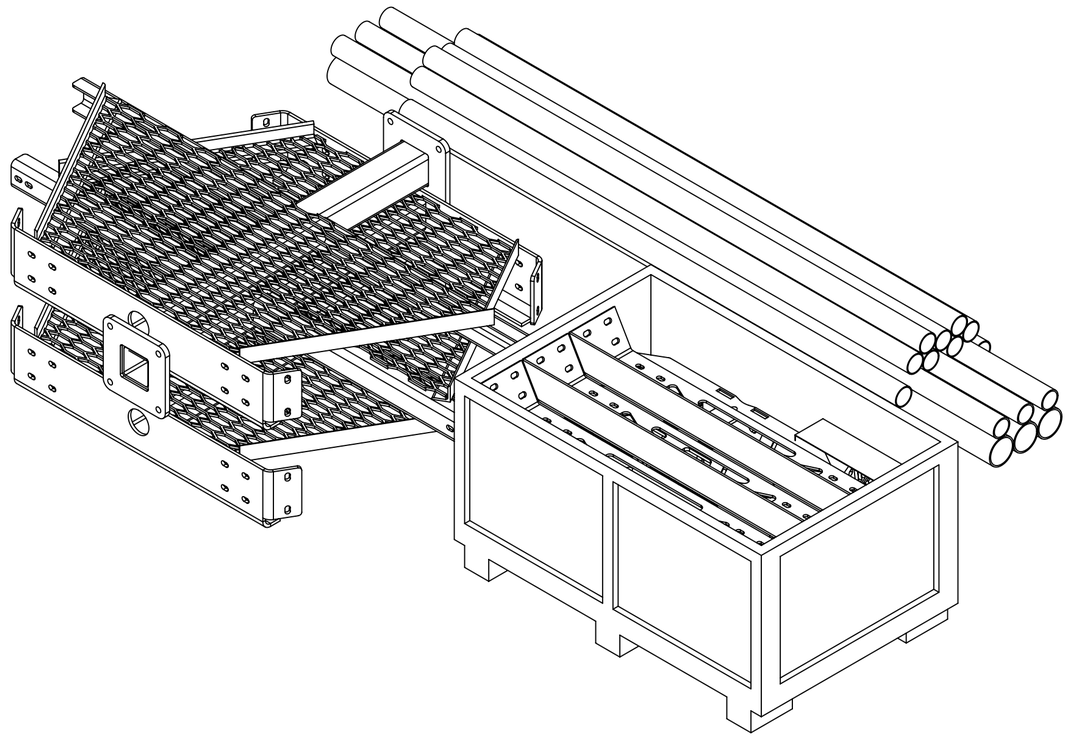
NOTES:

1.0 GENERAL
- 1.1 ALL METRIC DIMENSIONS ARE IN BRACKETS
- 1.2 FOR PATENTS, SEE WWW.CS-PAT.COM

2.0 DESIGN NOTES
3.0 MANUFACTURING/SPECIAL REQUIREMENTS
4.0 TEST
5.0 PACKAGING

REVISIONS				
REV.	ECN	DESCRIPTION	BY	DATE
A		INITIAL RELEASE	DRR	12/27/11
B	8000005979	CHANGE NOSE CORNER BRKT, ADD GUB-4240	MSM	11/25/14
C	8000007579	NEW RINGMOUNT WELDMENT DESIGN	RJC	04/07/15
D	8000039257	UPDATED WELDMENT SNUB NOSE & SCHD 40 PIPE ON HR & UPDATED PIPE MOUNT PLATE	MRC	02/12/20

FOR BOM ENTRY ONLY



PATENT PENDING

ITEM	PART NO.	DESCRIPTION	QTY.	WEIGHT	NOTE NO.
1	MTC3006SB	STEEL BUNDLE FOR SNUB NOSE PLATFORM	1	462.92 LBS	
2	MCPK8CSB	PIPE STEEL BUNDLE FOR MC-PK8-C	1	389.19 LBS	
3	MCPK8CHWK	HARDWARE KIT FOR MC-PK8-C	1	520.97 LBS	

DENSITY	lbs/in³
MASS	lbs
VOLUME	in³
SURFACE AREA	in²
HEIGHT	
LENGTH	
WIDTH	

COMMSCOPE, INC. OF NORTH CAROLINA

TOLERANCES				SAP MATERIAL MASTER
0 PLACE X ± .25		2 PLACE .XX ± 0.06		MC-PK8-C
1 PLACE .X ± 0.12		ANGLES ± 2°		
FINISH: GALV A123				MATERIAL: A500, A1011/A1018

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES INTERPRET PER ANSI Y 14.5M-1994

	NAME	DATE
CE	MRC	02/17/20
RW	MC1107	02/27/2020
RV		
AD	BCAMPBELLCON	02/27/2020
RE	FA1024	02/27/2020

ECN 008000039257

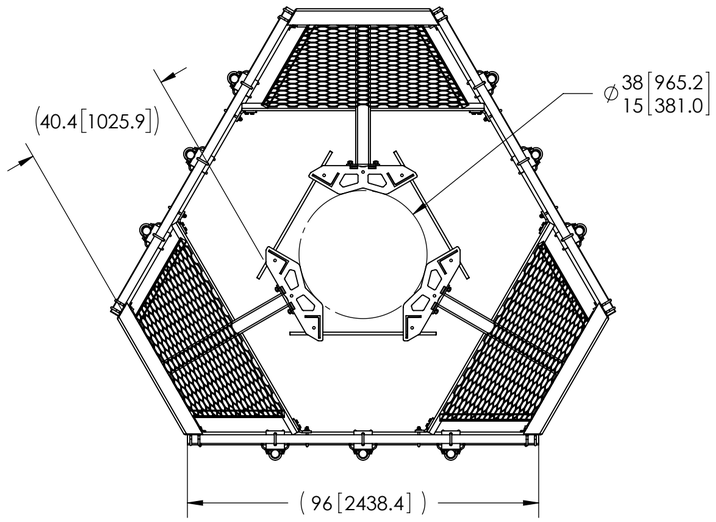
TITLE: LOW PROFILE PLATFORM 8' FACE

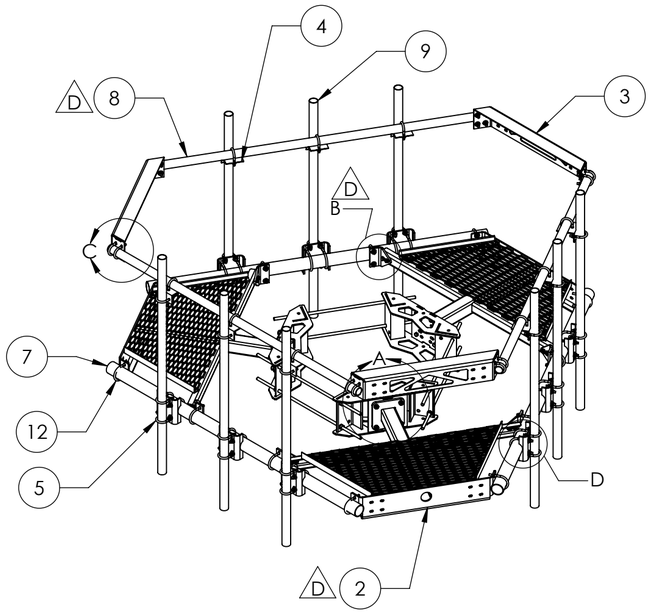
SCALE: 1:12

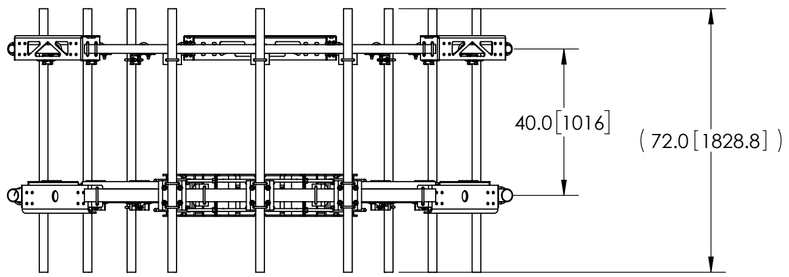
DOCUMENT NO.: MC-PK8-C

SIZE	WORK AREA 24	MODEL			DRAWING			SHEET
		VERSION	STATUS	REVISION	VERSION	STATUS	REVISION	
C		00	RE	B	01	RE	D	1 OF 3

NOTES:







ITEM	PART NO.	DESCRIPTION	QTY.	
1	MC-RM1550-3	12" - 50" OD RINGMOUNT	1	
2	MTC300602	LOW PROFILE CO-LOCATION PLTFM SNUB NOSE	3	D
3	MT195801	Corner Weldment Snub Nose Handrail	3	
4	XA2020.01	ANTENNA MOUNT ANGLE	9	
5	GUB-4240	1/2" X 2-1/2" X 4" GALV U-BOLT	48	
6	GB-0520A	5/8" X 2" GALV BOLT KIT (A325)	12	
7	MT54796	3.50" OD X 96" GALV PIPE	3	
8	MT651096154	2.375"OD X 96" SCHD 40 PIPE	3	
9	MT-651	2.375" OD x 72" PIPE	9	D
10	MT21701	PIPE MOUNT PLATE	9	
11	GWF-04	1/2" GALV FLAT WASHER	20	
12	GUB-4355	1/2" X 3-5/8" X 5" GALV U-BOLT	14	
13	GUB-4356	1/2" X 3-5/8" X 6" GALV U-BOLT	18	
14	MTC300618	MT196 Pipe Mount Plate	6	D
15	GB-04205	1/2" X 2" GALV BOLT KIT	12	
16	SWF-04	FLAT WASHER, 1/2" SS	4	

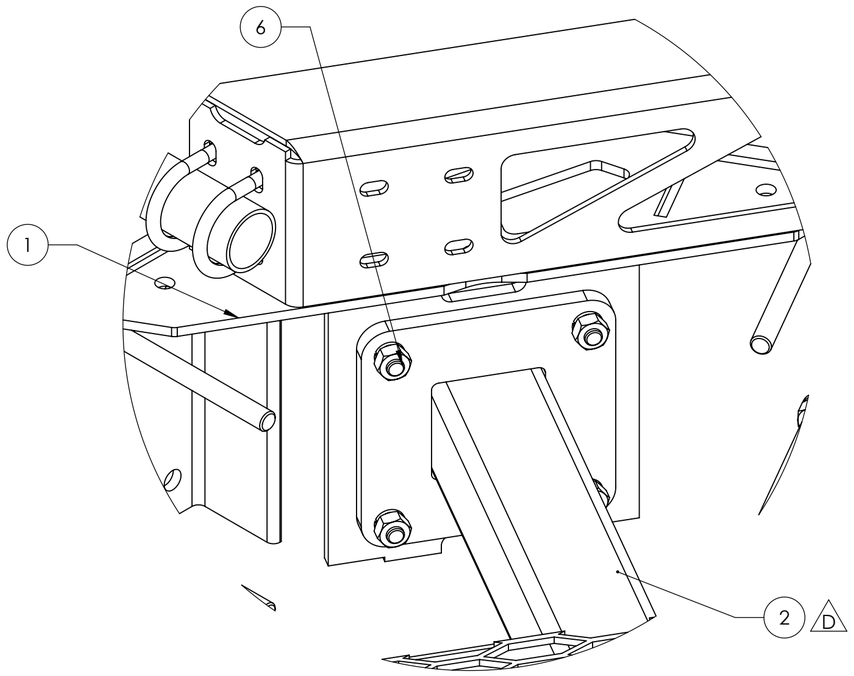
COMMSCOPE, INC. OF NORTH CAROLINA

TITLE

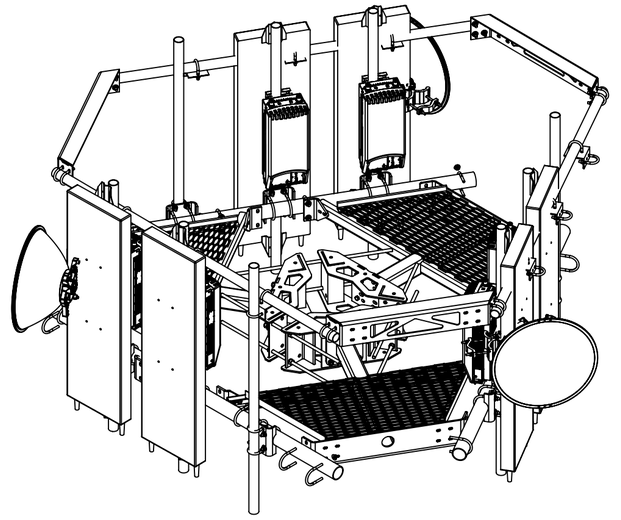
LOW PROFILE PLATFORM 8' FACE

SIZE	SCALE	DOCUMENT NO.			
C	1:32	MC-PK8-C			
		DRAWING			SHEET
		VERSION	STATUS	REVISION	
		05	RE	D	

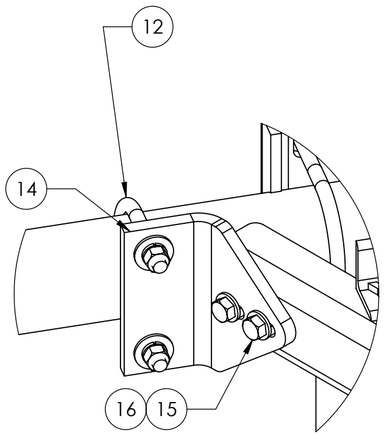
NOTES:



DETAIL A
SCALE 1 : 4



WITH ANTENNAS



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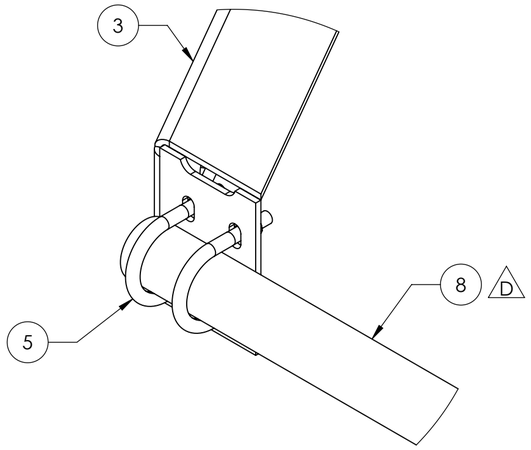
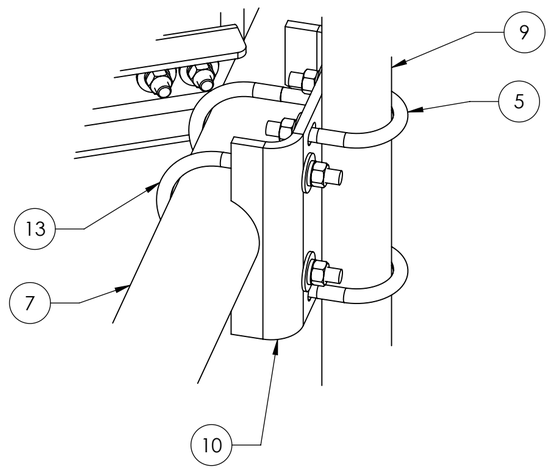
SCALE 1 : 4



DETAIL C
SCALE 1 : 4



DETAIL D
SCALE 1 : 4

COMMSCOPE, INC. OF NORTH CAROLINA			
TITLE: LOW PROFILE PLATFORM 8' FACE			
SIZE: C	SCALE: 1:24	DOCUMENT NO.: MC-PK8-C	
		DRAWING: VERSION 05 / STATUS RE / REVISION D	SHEET: 3 OF 3

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**148 ft Monopole**
ATC Site Name	:	**West Service Road,CT**
ATC Site Number	:	**302466**
Engineering Number	:	**14046283_C3_02**
Proposed Carrier	:	**DISH WIRELESS L.L.C.**
Carrier Site Name	:	**BOBDL00079B**
Carrier Site Number	:	**BOBDL00079B**
Site Location	:	**305 W. Service Rd.** **Hartford, CT 06120-0001** **41.7996, -72.6567**
County	:	**Hartford**
Date	:	**June 22, 2022**
Max Usage	:	**85%**
Result	:	**Pass**

Prepared By:

Taylor Kellner
Structural Engineer I

Reviewed By:

COA : PEC.0001553

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 148 ft Monopole to reflect the change in loading by DISH WIRELESS L.L.C..

Supporting Documents

Tower Drawings	FWT Job #18053, dated September 10, 1998
Foundation Drawing	FWT Job #18054, dated September 24, 1998
Geotechnical Report	Gibble Norden Champion Project #98134.09, dated September 8, 1998

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	117 mph (3-second gust)
Basic Wind Speed w/ Ice:	50 mph (3-second gust) w/ 1.50" radial ice concurrent
Code:	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.19, S_1 = 0.06
Site Class:	D - Stiff Soil - Default

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
135.0	9	Generic 52" x 6" Panel	Triangular Low Profile Platform	(9) 1 5/8" Coax	AT&T MOBILITY
125.0	3	Ericsson Radio 4449 B71 B85A	T-Arm	(3) 1 1/4" (1.25"-31.8mm) Fiber (1) 1 5/8" (1.63"-41.3mm) Fiber (6) 1 5/8" Coax	T-MOBILE
	3	RFS APXVAARR24_43-U-NA20			
	3	Ericsson AIR32 B66Aa/B2a			
	3	Ericsson AIR 21, 1.3M, B2A B4P (91.5 lbs)			
	3	Ericsson Air6449 B41			
	3	Ericsson RRUS 4415 B25			
	3	Ericsson KRY 112 144/1			
117.1	3	Generic 72" x 12" Panel	Triangular Low Profile Platform	(6) 1 5/8" Coax (2) 1 5/8" Hybriflex	VERIZON WIRELESS
115.0	1	Amphenol Antel BXA-70063-6CF-EDIN-2			
	3	Samsung B5/B13 RRH-BR04C			
	1	Raycap RRFDC-3315-PF-48			
	6	Commscope SBNHH-1D65B			
	3	Samsung B2/B66A RRH-BR049			
	5	Amphenol Antel BXA-70063-6CF-EDIN-2			
106.7	1	Antel BCD-87010 ___ 25	Stand-Off	(1) 7/8" Coax	SENSUS USA INC.
98.3	6	Alcatel-Lucent RRH2x50-08	T-Arm	(3) 1 1/4" Hybriflex Cable (1) 1.7" (43.2mm) Hybrid (2) 1/2" Coax (2) 2" conduit (6) 5/16" (0.31"-7.9mm) Coax	CLEARWIRE CORPORATION
95.5	3	Commscope NNVV-65B-R4			
90.0	3	Nokia 2.5G MAA - AAHC(64T64R)	T-Arm		
	1	Generic 18" x 18" x 4" Junction Box			
	3	Alcatel-Lucent 1900MHz RRH (65MHz) w/ solar shield			
	2	DragonWave Horizon Compact			
	1	Andrew VHLP2-18			
	1	Andrew VHLP2-18			
87.9	1	DragonWave A-ANT-18G-3-C			
	1	DragonWave A-ANT-18G-3-C			
82.7	3	NextNet BTS-2500			

Equipment to be Removed

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
148.3	8	Andrew DB844H90E-XY	Triangular Platform with Handrails	(12) 1 1/4" Coax	SPRINT NEXTEL
	4	Andrew 844G65VTZASX			

Proposed Equipment

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
145.0	3	Fujitsu TA08025-B605	Triangular Platform with Handrails	(1) 1.60" (40.6mm) Hybrid	DISH WIRELESS L.L.C.
	1	Raycap RDIDC-9181-PF-48			
	3	Fujitsu TA08025-B604			
	3	JMA Wireless MX08FRO665-21			

[1] Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.

Install proposed lines inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	60%	Pass
Shaft	69%	Pass
Base Plate	15%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	3969.0	5358.2	3429.9	64%
Shear (Kips)	29.4	39.7	33.8	85%
* The design reactions are factored by 1.35 per ANSI/TIA-222-H, Sec. 15.6.2				

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
145.0	JMA Wireless MX08FRO665-21	DISH WIRELESS L.L.C.	1.375	0.870
	Fujitsu TA08025-B605			
	Raycap RDIDC-9181-PF-48			
	Fujitsu TA08025-B604			
90.0	Andrew VHLP2-18	CLEARWIRE CORPORATION	0.585	0.710
	Andrew VHLP2-18			
87.9	DragonWave A-ANT-18G-3-C		0.559	0.700
	DragonWave A-ANT-18G-3-C			

***Deflection and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-H**

Standard Conditions

All engineering services performed by A.T. Engineering Services LLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Services LLC

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Services LLC and used in the performance of our engineering services is correct and complete.

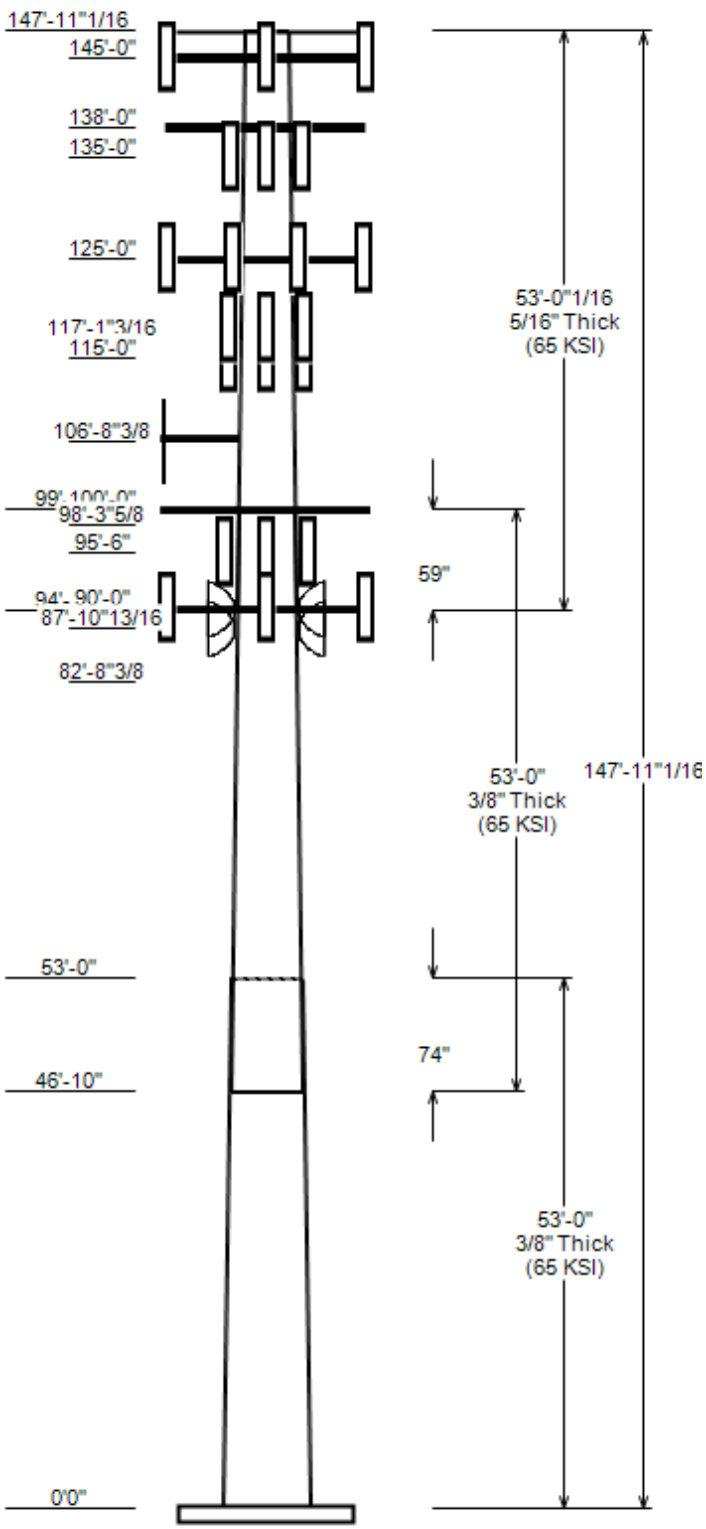
All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and A.T. Engineering Services LLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Services LLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

JOB INFORMATION

Asset :	302466, West Service Road	Height :	147.92 ft
Client :	DISH WIRELESS L.L.C.	Base Width :	56.58
Code :	ANSI/TIA-222-H	Shape :	18 Sides



SITE PARAMETERS

Nominal Wind: 117 mph wind with no ice **Topo Category:** 1

Ice Wind: 50 mph wind with 1.5" radi **Topo Method:** Method 1

Base Elev (ft): 0.00 **Taper :** 0.21500(In/ft) **Topo Feature:**

Structure Class: II **Exposure :** C **S_s :** 0.186 **S_1** : 0.055

SECTION PROPERTIES

Shaft Section	Length (ft)	Diameter (in) Across Flats Top	Diameter (in) Across Flats Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	53.000	45.21	56.58	0.375		0.000	18 Sides	65
2	53.000	35.91	47.28	0.375	Slip Joint	74.000	18 Sides	65
3	53.003	26.22	37.59	0.312	Slip Joint	59.000	18 Sides	65

DISCRETE APPURTENANCE

Attach Elev (ft)	Force Elev (ft)	Qty	Description
145.0	145.0	1	Raycap RDIDC-9181-PF-48
145.0	145.0	3	Fujitsu TA08025-B605
145.0	145.0	3	Fujitsu TA08025-B604
145.0	145.0	3	JMA Wireless MX08FRO665-21
145.0	145.0	1	Generic Round Platform with Ha
138.0	138.0	1	Generic Flat Low Profile Platf
135.0	135.0	9	Generic 52" x 6" Panel
125.0	126.0	3	Ericsson KRY 112 144/1
125.0	125.0	3	Ericsson Radio 4449 B71 B85A
125.0	125.0	3	Ericsson RRUS 4415 B25
125.0	125.0	3	Ericsson Air6449 B41
125.0	125.0	3	Ericsson AIR 21, 1.3M, B2A B4P
125.0	125.0	3	Ericsson AIR32 B66Aa/B2a
125.0	125.0	1	Generic Mount Reinforcement
125.0	125.0	3	Round T-Arm
125.0	125.0	3	RFS APXVAARR24_43-U-NA20
117.1	117.1	3	Generic 72" x 12" Panel
115.0	115.0	3	Samsung B2/B66A RRH-BR049
115.0	115.0	3	Samsung B5/B13 RRH-BR04C
115.0	115.0	1	Raycap RRFDC-3315-PF-48
115.0	115.0	5	Amphenol Antel BXA-70063-6CF-E
115.0	115.0	1	Amphenol Antel BXA-70063-6CF-E
115.0	116.0	6	Commscope SBNHH-1D65B
115.0	115.0	1	Flat Platform with Round Handr
107.0	107.0	1	Generic Flat Stand-Off
106.7	106.7	1	Antel BCD-87010 ___ 25
100.0	100.0	3	Generic Round T-Arm
98.3	98.3	6	Alcatel-Lucent RRH2x50-08
95.5	95.5	3	Commscope NNVV-65B-R4
90.0	90.0	2	DragonWave Horizon Compact
90.0	90.0	3	Alcatel-Lucent 1900MHz RRH (65
90.0	90.0	1	Generic 18" x 18" x 4" Junctio
90.0	90.0	3	Nokia 2.5G MAA - AAHC(64T64R)
90.0	90.0	1	Andrew VHLP2-18
90.0	90.0	1	Andrew VHLP2-18
90.0	90.0	3	Generic Round T-Arm
87.9	87.9	1	DragonWave A-ANT-18G-3-C
87.9	87.9	1	DragonWave A-ANT-18G-3-C
82.7	82.7	3	NextNet BTS-2500

LINEAR APPURTENANCE

Elev From (ft)	Elev To (ft)	Description	Exp To Wind

JOB INFORMATION			
Asset :	302466, West Service Road	Height :	147.92 ft
Client :	DISH WIRELESS L.L.C.	Base Width :	56.58
Code :	ANSI/TIA-222-H	Shape :	18 Sides

LINEAR APPURTENANCE

Elev From (ft)	Elev To (ft)	Description	Exp To Wind
0.0	145.0	1.60" (40.6mm) Hybrid	No
5.0	135.0	1 5/8" Coax	No
5.0	125.0	1 5/8" Coax	No
5.0	125.0	1 5/8" (1.63"-41.3mm) Fiber	Yes
5.0	125.0	1 1/4" (1.25"- 31.8mm) Fiber	Yes
5.0	115.0	1 5/8" Coax	Yes
0.0	115.0	1 5/8" Hybriflex	No
5.0	107.0	7/8" Coax	Yes
5.0	90.0	5/16" (0.31"-7.9mm) Coax	No
5.0	90.0	2" conduit	Yes
5.0	90.0	1/2" Coax	Yes
5.0	90.0	1.7" (43.2mm) Hybrid	No
5.0	90.0	1 1/4" Hybriflex Cable	Yes

LOAD CASES

1.2D + 1.0W Normal	117 mph wind with no ice
0.9D + 1.0W Normal	117 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Nor	50 mph wind with 1.5" radial ice
1.2D + 1.0Ev + 1.0Eh Nor	Seismic
0.9D - 1.0Ev + 1.0Eh Nor	Seismic (Reduced DL)
1.0D + 1.0W Service Norm	60 mph Wind with No Ice

REACTIONS

Load Case	Moment (kip-ft)	Shear (Kip)	Axial (Kip)
1.2D + 1.0W Normal	3429.94	33.77	53.59
0.9D + 1.0W Normal	3393.49	33.75	40.18
1.2D + 1.0Di + 1.0Wi Normal	1025.09	9.93	85.76
1.2D + 1.0Ev + 1.0Eh Normal	160.05	1.34	53.99
0.9D - 1.0Ev + 1.0Eh Normal	157.87	1.34	37.47
1.0D + 1.0W Service Normal	801.84	7.94	44.70

DISH DEFLECTIONS

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W Service Normal	87.90	6.713	0.698
1.0D + 1.0W Service Normal	87.90	6.713	0.698
1.0D + 1.0W Service Normal	90.00	7.023	0.710
1.0D + 1.0W Service Normal	90.00	7.023	0.710

ANALYSIS PARAMETERS

Location:	Hartford County,CT	**Height:**	147.92 ft
Type and Shape:	Taper, 18 Sides	**Base Diameter:**	56.58 in
Manufacturer:	FWT	**Top Diameter:**	26.22 in
K_d (non-service):	0.95	**Taper:**	0.2150 in/ft
K_e:	1.00	**Rotation:**	0.000°

ICE & WIND PARAMETERS

Exposure Category:	C	**Design Wind Speed w/o Ice:**	117 mph
Risk Category:	II	**Design Wind Speed w/Ice:**	50 mph
Topo Factor Procedure:	Method 1	**Operational Wind Speed:**	60 mph
Topographic Category:	1	**Design Ice Thickness:**	1.50 in
Crest Height:	0 ft	**HMSL:**	20.00 ft

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil			**Period Based on Rayleigh Method (sec):**	2.25
T_L (sec):	6	**P:**	1	**C_s:**	0.030
S_s:	0.186	**S_1:**	0.055	**C_s Max:**	0.030
F_a:	1.600	**F_v:**	2.400	**C_s Min:**	0.030
S_{ds}:	0.198	**S_{d1}:**	0.088		

LOAD CASES

1.2D + 1.0W Normal	117 mph wind with no ice
0.9D + 1.0W Normal	117 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Normal	50 mph wind with 1.5" radial ice
1.2D + 1.0Ev + 1.0Eh Normal	Seismic
0.9D - 1.0Ev + 1.0Eh Normal	Seismic (Reduced DL)
1.0D + 1.0W Service Normal	60 mph Wind with No Ice

SHAFT SECTION PROPERTIES

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (in)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	53.00	0.3750	65		0.00	10,844	56.58	0.000	66.90	26,699.3	24.84	150.88	45.21	53.00	53.36	13,551.2	19.49	120.55	0.2146
2-18	53.00	0.3750	65	Slip	74.00	8,848	47.28	46.830	55.83	15,519.3	20.47	126.08	35.91	99.83	42.29	6,747.4	15.12	95.76	0.2146
3-18	53.00	0.3125	65	Slip	59.00	5,651	37.59	94.917	36.97	6,491.2	19.45	120.29	26.22	147.92	25.69	2,178.4	13.03	83.89	0.2146
				Shaft Weight		25,343													

DISCRETE APPURTENANCE PROPERTIES

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor
145.00	Generic Round Platform with Ha	1	1.00	0.000	2500.00	27.200	1.00	4114.75	51.569	1.00
145.00	Fujitsu TA08025-B604	3	0.75	0.000	63.90	1.962	0.50	122.04	2.879	0.50
145.00	JMA Wireless MX08FRO665-21	3	0.75	0.000	64.50	12.489	0.64	320.73	15.291	0.64
145.00	Fujitsu TA08025-B605	3	0.75	0.000	75.00	1.962	0.50	137.45	2.879	0.50
145.00	Raycap RDIDC-9181-PF-48	1	0.75	0.000	21.90	1.867	0.50	78.63	2.764	0.50
138.00	Generic Flat Low Profile Platf	1	1.00	0.000	1875.00	26.100	1.00	2678.91	45.051	1.00
135.00	Generic 52" x 6" Panel	9	0.80	0.000	30.00	3.150	0.68	91.23	4.879	0.68
125.00	Generic Mount Reinforcement	1	1.00	0.000	200.00	7.500	1.00	390.04	14.852	1.00
125.00	Ericsson AIR 21, 1.3M, B2A B4P	3	0.80	0.000	91.50	6.037	0.70	234.47	8.143	0.70
125.00	Ericsson KRY 112 144/1	3	0.80	1.000	11.00	0.351	0.50	21.57	0.750	0.50
125.00	Ericsson Radio 4449 B71 B85A	3	0.80	0.000	75.00	1.650	0.50	134.05	2.484	0.50
125.00	Ericsson RRUS 4415 B25	3	0.80	0.000	46.00	1.842	0.50	94.15	2.723	0.50
125.00	Ericsson Air6449 B41	3	0.80	0.000	104.00	5.682	0.63	237.82	7.241	0.63
125.00	Round T-Arm	3	0.75	0.000	250.00	9.700	0.67	455.23	17.796	0.67
125.00	RFS APXVAARR24_43-U-NA20	3	0.80	0.000	127.90	20.243	0.63	513.40	23.885	0.63
125.00	Ericsson AIR32 B66Aa/B2a	3	0.80	0.000	132.20	6.510	0.71	288.93	8.661	0.71
117.10	Generic 72" x 12" Panel	3	0.80	0.000	45.00	8.133	0.67	205.87	10.856	0.67
115.00	Flat Platform with Round Handr	1	1.00	0.000	2500.00	34.800	1.00	4195.72	58.404	1.00
115.00	Commscope SBNHH-1D65B	6	0.75	1.000	50.70	8.173	0.69	221.58	10.928	0.69
115.00	Amphenol Antel BXA-70063-6CF-E	1	0.75	0.000	17.00	7.569	0.66	161.09	10.254	0.66
115.00	Raycap RRFDC-3315-PF-48	1	0.75	0.000	26.90	2.512	0.50	104.46	3.526	0.50
115.00	Amphenol Antel BXA-70063-6CF-E	5	0.75	0.000	17.00	7.569	0.66	161.09	10.254	0.66
115.00	Samsung B5/B13 RRH-BR04C	3	0.75	0.000	70.30	1.875	0.50	125.99	2.754	0.50
115.00	Samsung B2/B66A RRH-BR049	3	0.75	0.000	84.40	1.875	0.50	146.51	2.754	0.50
107.00	Generic Flat Stand-Off	1	1.00	0.000	187.50	6.300	1.00	316.56	9.318	1.00
106.70	Antel BCD-87010 ___ 25	1	1.00	0.000	26.50	2.900	1.00	155.86	6.583	1.00
100.00	Generic Round T-Arm	3	0.75	0.000	312.50	9.700	0.67	563.86	17.632	0.67
98.30	Alcatel-Lucent RRH2x50-08	6	0.80	0.000	52.90	1.701	0.50	109.74	2.528	0.50
95.50	Commscope NNVV-65B-R4	3	0.80	0.000	77.40	12.271	0.64	318.01	14.956	0.64
90.00	Generic 18" x 18" x 4" Junctio	1	0.80	0.000	21.00	2.700	0.50	75.64	3.721	0.50
90.00	Generic Round T-Arm	3	0.75	0.000	312.50	9.700	0.67	560.95	17.541	0.67
90.00	Andrew VHLP2-18	1	1.00	0.000	27.00	4.680	1.00	119.88	5.889	1.00
90.00	DragonWave Horizon Compact	2	0.80	0.000	10.60	0.721	0.50	31.98	1.262	0.50
90.00	Alcatel-Lucent 1900MHz RRH (65	3	0.80	0.000	60.00	2.583	0.50	147.69	3.642	0.50
90.00	Nokia 2.5G MAA - AAHC(64T64R)	3	0.80	0.000	103.60	4.203	0.64	210.81	5.478	0.64
90.00	Andrew VHLP2-18	1	1.00	0.000	27.00	4.680	0.60	119.88	5.889	0.60
87.90	DragonWave A-ANT-18G-3-C	1	1.00	0.000	49.60	9.018	1.00	224.58	10.686	1.00
87.90	DragonWave A-ANT-18G-3-C	1	1.00	0.000	49.60	9.018	0.75	224.58	10.686	0.75
82.70	NextNet BTS-2500	3	0.80	0.000	35.00	1.817	0.50	78.71	2.681	0.50
Totals	Num Loadings: 39	102			14,951.90			31,393.70		

LINEAR APPURTENANCE PROPERTIES

Load Case Azimuth (deg) : 135.00

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax/ Row	Dist Between Rows(in)	Dist Between Cols(in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	145.00	1	1.60" (40.6mm) Hybrid	1.6	2.34	N	0	0	0	0	0	N	DISH WIRELESS
5.00	135.00	9	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	AT&T MOBILITY
5.00	125.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	T-MOBILE
5.00	125.00	3	1 1/4" (1.25"- 31.8mm	1.25	1.05	N	3	1	1	30	1	Y	T-MOBILE
5.00	125.00	1	1 5/8" (1.63"-41.3mm)	1.63	1.61	N	1	1	1	15	1	Y	T-MOBILE
5.00	115.00	6	1 5/8" Coax	1.98	0.82	N	3	1	1	135	1	Y	VERIZON WIREL
0.00	115.00	2	1 5/8" Hybriflex	1.98	1.3	N	2	1	1	160	1	N	VERIZON WIREL

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax/ Row	Dist Between Rows(in)	Dist Between Cols(in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
5.00	107.00	1	7/8" Coax	1.09	0.33	N	1	1	1	345	1	Y	SENSUS USA IN
5.00	90.00	6	5/16" (0.31"-7.9mm) C	0.31	0.05	N	0	0	0	0	0	N	CLEARWIRE COR
5.00	90.00	3	1 1/4" Hybriflex Cabl	1.54	1	N	3	1	1	230	1	Y	CLEARWIRE COR
5.00	90.00	2	2" conduit	2.38	3.65	N	2	1	1	215	1	Y	CLEARWIRE COR
5.00	90.00	2	1/2" Coax	0.63	0.15	N	2	1	1	200	1	Y	CLEARWIRE COR
5.00	90.00	1	1.7" (43.2mm) Hybrid	1.7	1.78	N	0	0	0	0	0	N	CLEARWIRE COR

SEGMENT PROPERTIES

(Max Len: 5.ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
0.00		0.3750	56.580	66.896	26,699.30	24.84	150.88	72.2	929.4	0.0	0.0
5.00		0.3750	55.507	65.619	25,199.50	24.34	148.02	72.8	894.2	0.0	1,127.3
10.00		0.3750	54.434	64.342	23,756.90	23.83	145.16	73.4	859.6	0.0	1,105.6
15.00		0.3750	53.362	63.065	22,370.40	23.33	142.30	74	825.7	0.0	1,083.8
20.00		0.3750	52.289	61.788	21,039.00	22.82	139.44	74.6	792.5	0.0	1,062.1
25.00		0.3750	51.216	60.511	19,761.40	22.32	136.58	75.1	760.0	0.0	1,040.4
30.00		0.3750	50.143	59.234	18,536.70	21.81	133.72	75.7	728.1	0.0	1,018.7
35.00		0.3750	49.070	57.958	17,363.60	21.31	130.85	76.3	696.9	0.0	996.9
40.00		0.3750	47.998	56.681	16,241.10	20.81	127.99	76.9	666.5	0.0	975.2
45.00		0.3750	46.925	55.404	15,168.00	20.30	125.13	77.5	636.7	0.0	953.5
46.83	Bot - Section 2	0.3750	46.531	54.936	14,786.70	20.12	124.08	77.7	625.9	0.0	344.2
50.00		0.3750	45.852	54.127	14,143.30	19.80	122.27	78.1	607.5	0.0	1,184.8
53.00	Top - Section 1	0.3750	45.958	54.254	14,242.70	19.85	122.56	78.1	610.4	0.0	1,106.4
55.00		0.3750	45.529	53.743	13,844.30	19.64	121.41	78.3	598.9	0.0	367.5
60.00		0.3750	44.456	52.466	12,880.80	19.14	118.55	78.9	570.7	0.0	903.5
65.00		0.3750	43.384	51.189	11,963.00	18.64	115.69	79.5	543.1	0.0	881.8
70.00		0.3750	42.311	49.912	11,090.00	18.13	112.83	80.1	516.3	0.0	860.1
75.00		0.3750	41.238	48.635	10,260.40	17.63	109.97	80.7	490.1	0.0	838.3
80.00		0.3750	40.165	47.359	9,473.40	17.12	107.11	81.3	464.6	0.0	816.6
82.70		0.3750	39.586	46.669	9,065.60	16.85	105.56	81.6	451.1	0.0	431.9
85.00		0.3750	39.092	46.082	8,727.60	16.62	104.25	81.9	439.7	0.0	363.0
87.90		0.3750	38.470	45.341	8,313.50	16.33	102.59	82.2	425.6	0.0	451.1
90.00		0.3750	38.020	44.805	8,022.00	16.11	101.39	82.4	415.6	0.0	322.1
94.92	Bot - Section 3	0.3750	36.965	43.549	7,366.30	15.62	98.57	82.6	392.5	0.0	739.1
95.00		0.3750	36.947	43.528	7,355.50	15.61	98.52	82.6	392.1	0.0	22.8
95.50		0.3750	36.840	43.400	7,291.00	15.56	98.24	82.6	389.8	0.0	136.7
98.30		0.3750	36.239	42.685	6,936.50	15.28	96.64	82.6	377.0	0.0	758.4
99.83	Top - Section 2	0.3125	36.535	35.927	5,955.50	18.85	116.91	79.2	321.1	0.0	410.0
100.00		0.3125	36.499	35.891	5,937.90	18.83	116.80	79.3	320.4	0.0	20.4
105.00		0.3125	35.426	34.827	5,425.30	18.23	113.36	80	301.6	0.0	601.6
106.70		0.3125	35.061	34.465	5,258.00	18.02	112.20	80.2	295.4	0.0	200.4
107.00		0.3125	34.997	34.402	5,228.80	17.98	111.99	80.2	294.3	0.0	35.2
110.00		0.3125	34.353	33.763	4,943.10	17.62	109.93	80.7	283.4	0.0	347.9
115.00		0.3125	33.281	32.699	4,490.30	17.02	106.50	81.4	265.7	0.0	565.4
117.10		0.3125	32.830	32.252	4,308.70	16.76	105.06	81.7	258.5	0.0	232.1
120.00		0.3125	32.208	31.635	4,066.10	16.41	103.06	82.1	248.7	0.0	315.2
125.00		0.3125	31.135	30.571	3,669.40	15.80	99.63	82.6	232.1	0.0	529.2
130.00		0.3125	30.062	29.507	3,299.50	15.20	96.20	82.6	216.2	0.0	511.1
135.00		0.3125	28.989	28.443	2,955.20	14.59	92.77	82.6	200.8	0.0	493.0
138.00		0.3125	28.346	27.804	2,760.70	14.23	90.71	82.6	191.8	0.0	287.1
140.00		0.3125	27.917	27.379	2,635.80	13.99	89.33	82.6	186.0	0.0	187.8
145.00		0.3125	26.844	26.315	2,340.30	13.38	85.90	82.6	171.7	0.0	456.8
147.92		0.3125	26.217	25.693	2,178.40	13.03	83.90	82.6	163.7	0.0	258.4
									Totals:		25,343.4

Load Case: 1.2D + 1.0W Normal 117 mph wind with no ice 23 Iterations
Gust Response Factor: 1.10
Dead load Factor: 1.20
Wind Load Factor: 1.00

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-53.59	-33.77	0.00	-3,429.9	0.00	3,429.94	4,345.88	1,174.02	5,959.78	5,031.73	0	0	0.695
5.00	-52.11	-33.40	0.00	-3,261.1	0.00	3,261.07	4,297.96	1,151.61	5,734.46	4,880.65	0.1	-0.18	0.681
10.00	-50.44	-33.03	0.00	-3,094.1	0.00	3,094.07	4,248.69	1,129.20	5,513.49	4,730.17	0.38	-0.36	0.667
15.00	-48.80	-32.65	0.00	-2,928.9	0.00	2,928.93	4,198.05	1,106.79	5,296.85	4,580.40	0.85	-0.54	0.652
20.00	-47.19	-32.25	0.00	-2,765.7	0.00	2,765.68	4,146.04	1,084.38	5,084.56	4,431.43	1.51	-0.72	0.636
25.00	-45.61	-31.83	0.00	-2,604.4	0.00	2,604.42	4,092.67	1,061.97	4,876.61	4,283.34	2.36	-0.9	0.620
30.00	-44.06	-31.39	0.00	-2,445.3	0.00	2,445.28	4,037.94	1,039.56	4,673.00	4,136.24	3.41	-1.08	0.603
35.00	-42.54	-30.93	0.00	-2,288.4	0.00	2,288.35	3,981.85	1,017.16	4,473.73	3,990.20	4.64	-1.26	0.585
40.00	-41.05	-30.46	0.00	-2,133.7	0.00	2,133.71	3,924.39	994.75	4,278.81	3,845.32	6.06	-1.45	0.566
45.00	-39.61	-30.12	0.00	-1,981.4	0.00	1,981.40	3,865.57	972.34	4,088.22	3,701.69	7.67	-1.63	0.546
46.83	-39.07	-29.88	0.00	-1,926.2	0.00	1,926.18	3,843.66	964.12	4,019.43	3,649.36	8.31	-1.69	0.539
50.00	-37.45	-29.55	0.00	-1,831.6	0.00	1,831.56	3,805.38	949.93	3,901.98	3,559.40	9.47	-1.81	0.525
53.00	-35.94	-29.27	0.00	-1,742.9	0.00	1,742.90	3,811.41	952.15	3,920.24	3,573.44	10.64	-1.91	0.498
55.00	-35.36	-28.93	0.00	-1,684.4	0.00	1,684.36	3,787.01	943.19	3,846.79	3,516.87	11.46	-1.99	0.489
60.00	-33.98	-28.41	0.00	-1,539.7	0.00	1,539.73	3,725.05	920.78	3,666.19	3,376.46	13.63	-2.15	0.466
65.00	-32.62	-27.88	0.00	-1,397.7	0.00	1,397.70	3,661.73	898.37	3,489.94	3,237.61	15.97	-2.31	0.442
70.00	-31.30	-27.35	0.00	-1,258.3	0.00	1,258.30	3,597.04	875.96	3,318.03	3,100.40	18.48	-2.47	0.416
75.00	-30.01	-26.81	0.00	-1,121.6	0.00	1,121.56	3,530.99	853.55	3,150.46	2,964.92	21.15	-2.63	0.388
80.00	-28.77	-26.37	0.00	-987.5	0.00	987.53	3,463.58	831.14	2,987.23	2,831.26	23.98	-2.77	0.358
82.70	-27.98	-25.98	0.00	-916.3	0.00	916.34	3,426.61	819.04	2,900.89	2,759.88	25.57	-2.85	0.341
85.00	-27.42	-25.69	0.00	-856.6	0.00	856.58	3,394.80	808.73	2,828.35	2,699.53	26.96	-2.91	0.326
87.90	-26.64	-24.69	0.00	-782.1	0.00	782.08	3,354.28	795.74	2,738.18	2,624.03	28.75	-2.99	0.307
90.00	-24.40	-22.69	0.00	-730.2	0.00	730.24	3,324.66	786.33	2,673.80	2,569.79	30.08	-3.04	0.292
94.92	-23.34	-22.37	0.00	-618.7	0.00	618.68	3,235.50	764.29	2,526.07	2,430.10	33.28	-3.16	0.263
95.00	-23.31	-22.34	0.00	-616.8	0.00	616.81	3,233.91	763.92	2,523.60	2,427.71	33.33	-3.16	0.262
95.50	-22.90	-21.27	0.00	-605.6	0.00	605.64	3,224.43	761.68	2,508.82	2,413.42	33.66	-3.18	0.259
98.30	-21.53	-20.77	0.00	-546.1	0.00	546.08	3,171.30	749.13	2,426.84	2,334.15	35.54	-3.24	0.242
99.83	-20.98	-20.65	0.00	-514.2	0.00	514.24	2,561.76	630.51	2,062.89	1,907.82	36.59	-3.27	0.279
100.00	-19.87	-19.63	0.00	-510.8	0.00	510.80	2,560.00	629.89	2,058.82	1,904.61	36.7	-3.28	0.277
105.00	-18.98	-19.21	0.00	-412.7	0.00	412.66	2,506.42	611.22	1,938.57	1,808.99	40.19	-3.39	0.237
106.70	-18.66	-18.95	0.00	-380.0	0.00	380.01	2,487.89	604.87	1,898.51	1,776.80	41.41	-3.42	0.222
107.00	-18.40	-18.45	0.00	-374.3	0.00	374.32	2,484.60	603.75	1,891.49	1,771.13	41.62	-3.43	0.220
110.00	-17.90	-17.98	0.00	-319.0	0.00	318.97	2,451.48	592.54	1,821.94	1,714.80	43.79	-3.48	0.194
115.00	-13.26	-13.11	0.00	-227.9	0.00	227.86	2,395.17	573.87	1,708.93	1,622.13	47.49	-3.56	0.147
117.10	-12.82	-12.22	0.00	-200.3	0.00	200.32	2,371.11	566.03	1,662.54	1,583.69	49.06	-3.59	0.132
120.00	-12.39	-11.83	0.00	-164.9	0.00	164.88	2,337.50	555.19	1,599.54	1,531.08	51.25	-3.63	0.113
125.00	-8.68	-6.89	0.00	-105.7	0.00	105.72	2,271.27	536.52	1,493.76	1,437.17	55.07	-3.67	0.078
130.00	-8.04	-6.40	0.00	-71.3	0.00	71.27	2,192.22	517.85	1,391.60	1,338.39	58.94	-3.71	0.057
135.00	-7.14	-5.22	0.00	-39.3	0.00	39.29	2,113.16	499.17	1,293.06	1,243.12	62.83	-3.73	0.035
138.00	-4.64	-3.55	0.00	-23.6	0.00	23.62	2,065.73	487.97	1,235.67	1,187.64	65.18	-3.74	0.022
140.00	-4.43	-3.23	0.00	-16.5	0.00	16.53	2,034.11	480.50	1,198.14	1,151.36	66.75	-3.75	0.017
145.00	-0.30	-0.12	0.00	-0.4	0.00	0.36	1,955.06	461.82	1,106.84	1,063.13	70.67	-3.75	0.000
147.92	0.00	-0.10	0.00	0.0	0.00	0.00	1,908.89	450.92	1,055.19	1,013.23	72.96	-3.75	0.000

Load Case: 0.9D + 1.0W Normal — 117 mph wind with no ice — 23 Iterations
Gust Response Factor: 1.10
Dead load Factor: 0.90
Wind Load Factor: 1.00

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-40.18	-33.75	0.00	-3,393.5	0.00	3,393.49	4,345.88	1,174.02	5,959.78	5,031.73	0	0	0.684
5.00	-39.04	-33.34	0.00	-3,224.7	0.00	3,224.73	4,297.96	1,151.61	5,734.46	4,880.65	0.1	-0.18	0.671
10.00	-37.77	-32.93	0.00	-3,058.0	0.00	3,058.05	4,248.69	1,129.20	5,513.49	4,730.17	0.38	-0.35	0.656
15.00	-36.52	-32.51	0.00	-2,893.4	0.00	2,893.42	4,198.05	1,106.79	5,296.85	4,580.40	0.84	-0.53	0.641
20.00	-35.29	-32.08	0.00	-2,730.9	0.00	2,730.87	4,146.04	1,084.38	5,084.56	4,431.43	1.5	-0.71	0.626
25.00	-34.08	-31.62	0.00	-2,570.5	0.00	2,570.48	4,092.67	1,061.97	4,876.61	4,283.34	2.34	-0.89	0.609
30.00	-32.90	-31.15	0.00	-2,412.4	0.00	2,412.38	4,037.94	1,039.56	4,673.00	4,136.24	3.37	-1.07	0.592
35.00	-31.74	-30.66	0.00	-2,256.6	0.00	2,256.63	3,981.85	1,017.16	4,473.73	3,990.20	4.58	-1.25	0.574
40.00	-30.60	-30.17	0.00	-2,103.3	0.00	2,103.31	3,924.39	994.75	4,278.81	3,845.32	5.99	-1.43	0.556
45.00	-29.51	-29.82	0.00	-1,952.5	0.00	1,952.47	3,865.57	972.34	4,088.22	3,701.69	7.58	-1.6	0.536
46.83	-29.09	-29.57	0.00	-1,897.8	0.00	1,897.80	3,843.66	964.12	4,019.43	3,649.36	8.21	-1.67	0.529
50.00	-27.87	-29.23	0.00	-1,804.2	0.00	1,804.18	3,805.38	949.93	3,901.98	3,559.40	9.35	-1.78	0.515
53.00	-26.73	-28.95	0.00	-1,716.5	0.00	1,716.50	3,811.41	952.15	3,920.24	3,573.44	10.51	-1.89	0.488
55.00	-26.28	-28.59	0.00	-1,658.6	0.00	1,658.61	3,787.01	943.19	3,846.79	3,516.87	11.32	-1.96	0.479
60.00	-25.23	-28.05	0.00	-1,515.7	0.00	1,515.68	3,725.05	920.78	3,666.19	3,376.46	13.46	-2.12	0.457
65.00	-24.21	-27.51	0.00	-1,375.4	0.00	1,375.43	3,661.73	898.37	3,489.94	3,237.61	15.77	-2.28	0.432
70.00	-23.21	-26.97	0.00	-1,237.9	0.00	1,237.86	3,597.04	875.96	3,318.03	3,100.40	18.24	-2.44	0.407
75.00	-22.23	-26.42	0.00	-1,103.0	0.00	1,103.00	3,530.99	853.55	3,150.46	2,964.92	20.88	-2.59	0.379
80.00	-21.29	-25.98	0.00	-970.9	0.00	970.88	3,463.58	831.14	2,987.23	2,831.26	23.67	-2.73	0.350
82.70	-20.69	-25.60	0.00	-900.7	0.00	900.72	3,426.61	819.04	2,900.89	2,759.88	25.24	-2.81	0.333
85.00	-20.27	-25.31	0.00	-841.8	0.00	841.85	3,394.80	808.73	2,828.35	2,699.53	26.6	-2.87	0.319
87.90	-19.69	-24.30	0.00	-768.5	0.00	768.46	3,354.28	795.74	2,738.18	2,624.03	28.37	-2.95	0.300
90.00	-18.03	-22.33	0.00	-717.4	0.00	717.42	3,324.66	786.33	2,673.80	2,569.79	29.68	-3	0.285
94.92	-17.23	-22.02	0.00	-607.6	0.00	607.63	3,235.50	764.29	2,526.07	2,430.10	32.83	-3.12	0.256
95.00	-17.21	-21.99	0.00	-605.8	0.00	605.80	3,233.91	763.92	2,523.60	2,427.71	32.89	-3.12	0.256
95.50	-16.91	-20.92	0.00	-594.8	0.00	594.81	3,224.43	761.68	2,508.82	2,413.42	33.21	-3.13	0.252
98.30	-15.88	-20.44	0.00	-536.2	0.00	536.23	3,171.30	749.13	2,426.84	2,334.15	35.07	-3.19	0.235
99.83	-15.48	-20.32	0.00	-504.9	0.00	504.89	2,561.76	630.51	2,062.89	1,907.82	36.1	-3.22	0.272
100.00	-14.65	-19.31	0.00	-501.5	0.00	501.51	2,560.00	629.89	2,058.82	1,904.61	36.21	-3.23	0.270
105.00	-13.98	-18.90	0.00	-405.0	0.00	404.96	2,506.42	611.22	1,938.57	1,808.99	39.65	-3.34	0.230
106.70	-13.75	-18.64	0.00	-372.8	0.00	372.83	2,487.89	604.87	1,898.51	1,776.80	40.85	-3.37	0.216
107.00	-13.56	-18.15	0.00	-367.2	0.00	367.24	2,484.60	603.75	1,891.49	1,771.13	41.06	-3.38	0.214
110.00	-13.18	-17.67	0.00	-312.8	0.00	312.80	2,451.48	592.54	1,821.94	1,714.80	43.2	-3.43	0.189
115.00	-9.77	-12.88	0.00	-223.2	0.00	223.21	2,395.17	573.87	1,708.93	1,622.13	46.83	-3.51	0.142
117.10	-9.45	-12.00	0.00	-196.2	0.00	196.16	2,371.11	566.03	1,662.54	1,583.69	48.38	-3.54	0.128
120.00	-9.13	-11.61	0.00	-161.4	0.00	161.36	2,337.50	555.19	1,599.54	1,531.08	50.54	-3.57	0.110
125.00	-6.42	-6.74	0.00	-103.3	0.00	103.29	2,271.27	536.52	1,493.76	1,437.17	54.31	-3.62	0.075
130.00	-5.94	-6.25	0.00	-69.6	0.00	69.60	2,192.22	517.85	1,391.60	1,338.39	58.12	-3.65	0.055
135.00	-5.28	-5.10	0.00	-38.3	0.00	38.33	2,113.16	499.17	1,293.06	1,243.12	61.95	-3.68	0.033
138.00	-3.43	-3.46	0.00	-23.0	0.00	23.04	2,065.73	487.97	1,235.67	1,187.64	64.26	-3.68	0.021
140.00	-3.28	-3.15	0.00	-16.1	0.00	16.12	2,034.11	480.50	1,198.14	1,151.36	65.81	-3.69	0.016
145.00	-0.23	-0.12	0.00	-0.4	0.00	0.35	1,955.06	461.82	1,106.84	1,063.13	69.67	-3.69	0.000
147.92	0.00	-0.10	0.00	0.0	0.00	0.00	1,908.89	450.92	1,055.19	1,013.23	71.93	-3.69	0.000

Load Case: 1.2D + 1.0Di + 1.0Wi Normal		50 mph wind with 1.5" radial ice			23 Iterations
Gust Response Factor:	1.10	Ice Dead Load Factor	1.00		
Dead load Factor:	1.20			Ice Importance Factor	1.00
Wind Load Factor:	1.00				

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-85.76	-9.93	0.00	-1,025.1	0.00	1,025.09	4,345.88	1,174.02	5,959.78	5,031.73	0	0	0.224
5.00	-83.96	-9.85	0.00	-975.4	0.00	975.42	4,297.96	1,151.61	5,734.46	4,880.65	0.03	-0.05	0.219
10.00	-81.69	-9.75	0.00	-926.2	0.00	926.20	4,248.69	1,129.20	5,513.49	4,730.17	0.11	-0.11	0.215
15.00	-79.42	-9.66	0.00	-877.4	0.00	877.43	4,198.05	1,106.79	5,296.85	4,580.40	0.25	-0.16	0.211
20.00	-77.17	-9.56	0.00	-829.1	0.00	829.13	4,146.04	1,084.38	5,084.56	4,431.43	0.45	-0.22	0.206
25.00	-74.93	-9.45	0.00	-781.4	0.00	781.35	4,092.67	1,061.97	4,876.61	4,283.34	0.71	-0.27	0.201
30.00	-72.71	-9.33	0.00	-734.1	0.00	734.12	4,037.94	1,039.56	4,673.00	4,136.24	1.02	-0.32	0.196
35.00	-70.52	-9.20	0.00	-687.5	0.00	687.49	3,981.85	1,017.16	4,473.73	3,990.20	1.39	-0.38	0.190
40.00	-68.35	-9.07	0.00	-641.5	0.00	641.48	3,924.39	994.75	4,278.81	3,845.32	1.81	-0.43	0.184
45.00	-66.21	-8.97	0.00	-596.1	0.00	596.13	3,865.57	972.34	4,088.22	3,701.69	2.3	-0.49	0.178
46.83	-65.43	-8.90	0.00	-579.7	0.00	579.69	3,843.66	964.12	4,019.43	3,649.36	2.49	-0.51	0.176
50.00	-63.38	-8.81	0.00	-551.5	0.00	551.49	3,805.38	949.93	3,901.98	3,559.40	2.84	-0.54	0.172
53.00	-61.45	-8.73	0.00	-525.1	0.00	525.06	3,811.41	952.15	3,920.24	3,573.44	3.19	-0.57	0.163
55.00	-60.61	-8.63	0.00	-507.6	0.00	507.61	3,787.01	943.19	3,846.79	3,516.87	3.43	-0.6	0.160
60.00	-58.53	-8.47	0.00	-464.5	0.00	464.47	3,725.05	920.78	3,666.19	3,376.46	4.09	-0.65	0.153
65.00	-56.48	-8.31	0.00	-422.1	0.00	422.10	3,661.73	898.37	3,489.94	3,237.61	4.79	-0.7	0.146
70.00	-54.47	-8.15	0.00	-380.5	0.00	380.53	3,597.04	875.96	3,318.03	3,100.40	5.54	-0.74	0.138
75.00	-52.49	-7.99	0.00	-339.8	0.00	339.77	3,530.99	853.55	3,150.46	2,964.92	6.35	-0.79	0.130
80.00	-50.54	-7.85	0.00	-299.8	0.00	299.84	3,463.58	831.14	2,987.23	2,831.26	7.2	-0.83	0.121
82.70	-49.26	-7.74	0.00	-278.6	0.00	278.63	3,426.61	819.04	2,900.89	2,759.88	7.68	-0.86	0.115
85.00	-48.38	-7.65	0.00	-260.8	0.00	260.84	3,394.80	808.73	2,828.35	2,699.53	8.09	-0.88	0.111
87.90	-46.87	-7.40	0.00	-238.6	0.00	238.65	3,354.28	795.74	2,738.18	2,624.03	8.63	-0.9	0.105
90.00	-42.89	-6.82	0.00	-223.1	0.00	223.10	3,324.66	786.33	2,673.80	2,569.79	9.03	-0.92	0.100
94.92	-41.27	-6.72	0.00	-189.6	0.00	189.60	3,235.50	764.29	2,526.07	2,430.10	10	-0.95	0.091
95.00	-41.23	-6.71	0.00	-189.0	0.00	189.04	3,233.91	763.92	2,523.60	2,427.71	10.01	-0.95	0.091
95.50	-40.11	-6.45	0.00	-185.7	0.00	185.68	3,224.43	761.68	2,508.82	2,413.42	10.11	-0.96	0.089
98.30	-38.11	-6.30	0.00	-167.6	0.00	167.63	3,171.30	749.13	2,426.84	2,334.15	10.68	-0.98	0.084
99.83	-37.39	-6.26	0.00	-158.0	0.00	157.98	2,561.76	630.51	2,062.89	1,907.82	10.99	-0.99	0.098
100.00	-35.58	-5.93	0.00	-156.9	0.00	156.94	2,560.00	629.89	2,058.82	1,904.61	11.03	-0.99	0.096
105.00	-34.12	-5.80	0.00	-127.3	0.00	127.31	2,506.42	611.22	1,938.57	1,808.99	12.08	-1.02	0.084
106.70	-33.48	-5.70	0.00	-117.5	0.00	117.46	2,487.89	604.87	1,898.51	1,776.80	12.45	-1.03	0.080
107.00	-33.06	-5.56	0.00	-115.8	0.00	115.75	2,484.60	603.75	1,891.49	1,771.13	12.51	-1.03	0.079
110.00	-32.21	-5.43	0.00	-99.1	0.00	99.06	2,451.48	592.54	1,821.94	1,714.80	13.17	-1.05	0.071
115.00	-23.36	-4.01	0.00	-71.6	0.00	71.64	2,395.17	573.87	1,708.93	1,622.13	14.28	-1.08	0.054
117.10	-22.28	-3.76	0.00	-63.2	0.00	63.21	2,371.11	566.03	1,662.54	1,583.69	14.76	-1.09	0.049
120.00	-21.59	-3.63	0.00	-52.3	0.00	52.30	2,337.50	555.19	1,599.54	1,531.08	15.42	-1.1	0.043
125.00	-14.11	-2.23	0.00	-34.2	0.00	34.15	2,271.27	536.52	1,493.76	1,437.17	16.58	-1.11	0.030
130.00	-13.10	-2.06	0.00	-23.0	0.00	22.99	2,192.22	517.85	1,391.60	1,338.39	17.75	-1.12	0.023
135.00	-11.33	-1.69	0.00	-12.7	0.00	12.69	2,113.16	499.17	1,293.06	1,243.12	18.93	-1.13	0.016
138.00	-7.86	-1.14	0.00	-7.6	0.00	7.61	2,065.73	487.97	1,235.67	1,187.64	19.64	-1.13	0.010
140.00	-7.50	-1.04	0.00	-5.3	0.00	5.32	2,034.11	480.50	1,198.14	1,151.36	20.12	-1.13	0.008
145.00	-0.49	-0.05	0.00	-0.1	0.00	0.14	1,955.06	461.82	1,106.84	1,063.13	21.31	-1.14	0.000
147.92	0.00	-0.04	0.00	0.0	0.00	0.00	1,908.89	450.92	1,055.19	1,013.23	22	-1.14	0.000

Load Case: 1.0D + 1.0W Service Normal 60 mph Wind with No Ice 22 Iterations
Gust Response Factor: 1.10
Dead load Factor: 1.00
Wind Load Factor: 1.00

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-44.70	-7.94	0.00	-801.8	0.00	801.84	4,345.88	1,174.02	5,959.78	5,031.73	0	0	0.170
5.00	-43.55	-7.85	0.00	-762.1	0.00	762.13	4,297.96	1,151.61	5,734.46	4,880.65	0.02	-0.04	0.166
10.00	-42.24	-7.76	0.00	-722.9	0.00	722.89	4,248.69	1,129.20	5,513.49	4,730.17	0.09	-0.08	0.163
15.00	-40.95	-7.66	0.00	-684.1	0.00	684.11	4,198.05	1,106.79	5,296.85	4,580.40	0.2	-0.13	0.159
20.00	-39.68	-7.56	0.00	-645.8	0.00	645.81	4,146.04	1,084.38	5,084.56	4,431.43	0.35	-0.17	0.155
25.00	-38.43	-7.46	0.00	-608.0	0.00	608.00	4,092.67	1,061.97	4,876.61	4,283.34	0.55	-0.21	0.151
30.00	-37.21	-7.35	0.00	-570.7	0.00	570.71	4,037.94	1,039.56	4,673.00	4,136.24	0.8	-0.25	0.147
35.00	-36.01	-7.24	0.00	-534.0	0.00	533.97	3,981.85	1,017.16	4,473.73	3,990.20	1.08	-0.3	0.143
40.00	-34.83	-7.12	0.00	-497.8	0.00	497.78	3,924.39	994.75	4,278.81	3,845.32	1.42	-0.34	0.138
45.00	-33.67	-7.04	0.00	-462.2	0.00	462.16	3,865.57	972.34	4,088.22	3,701.69	1.79	-0.38	0.134
46.83	-33.26	-6.98	0.00	-449.2	0.00	449.25	3,843.66	964.12	4,019.43	3,649.36	1.94	-0.4	0.132
50.00	-31.94	-6.91	0.00	-427.1	0.00	427.13	3,805.38	949.93	3,901.98	3,559.40	2.21	-0.42	0.128
53.00	-30.71	-6.84	0.00	-406.4	0.00	406.42	3,811.41	952.15	3,920.24	3,573.44	2.49	-0.45	0.122
55.00	-30.26	-6.76	0.00	-392.7	0.00	392.74	3,787.01	943.19	3,846.79	3,516.87	2.68	-0.46	0.120
60.00	-29.16	-6.63	0.00	-359.0	0.00	358.95	3,725.05	920.78	3,666.19	3,376.46	3.18	-0.5	0.114
65.00	-28.07	-6.51	0.00	-325.8	0.00	325.79	3,661.73	898.37	3,489.94	3,237.61	3.73	-0.54	0.108
70.00	-27.01	-6.38	0.00	-293.3	0.00	293.26	3,597.04	875.96	3,318.03	3,100.40	4.32	-0.58	0.102
75.00	-25.97	-6.25	0.00	-261.4	0.00	261.35	3,530.99	853.55	3,150.46	2,964.92	4.94	-0.61	0.096
80.00	-24.95	-6.15	0.00	-230.1	0.00	230.08	3,463.58	831.14	2,987.23	2,831.26	5.6	-0.65	0.089
82.70	-24.31	-6.06	0.00	-213.5	0.00	213.48	3,426.61	819.04	2,900.89	2,759.88	5.97	-0.66	0.084
85.00	-23.85	-5.99	0.00	-199.5	0.00	199.54	3,394.80	808.73	2,828.35	2,699.53	6.29	-0.68	0.081
87.90	-23.19	-5.76	0.00	-182.2	0.00	182.16	3,354.28	795.74	2,738.18	2,624.03	6.71	-0.7	0.076
90.00	-21.26	-5.29	0.00	-170.1	0.00	170.08	3,324.66	786.33	2,673.80	2,569.79	7.02	-0.71	0.073
94.92	-20.39	-5.22	0.00	-144.1	0.00	144.07	3,235.50	764.29	2,526.07	2,430.10	7.77	-0.74	0.066
95.00	-20.36	-5.21	0.00	-143.6	0.00	143.64	3,233.91	763.92	2,523.60	2,427.71	7.78	-0.74	0.066
95.50	-19.98	-4.96	0.00	-141.0	0.00	141.03	3,224.43	761.68	2,508.82	2,413.42	7.86	-0.74	0.065
98.30	-18.83	-4.84	0.00	-127.2	0.00	127.15	3,171.30	749.13	2,426.84	2,334.15	8.3	-0.76	0.060
99.83	-18.38	-4.81	0.00	-119.7	0.00	119.73	2,561.76	630.51	2,062.89	1,907.82	8.54	-0.76	0.070
100.00	-17.42	-4.58	0.00	-118.9	0.00	118.93	2,560.00	629.89	2,058.82	1,904.61	8.57	-0.76	0.069
105.00	-16.68	-4.48	0.00	-96.0	0.00	96.05	2,506.42	611.22	1,938.57	1,808.99	9.38	-0.79	0.060
106.70	-16.41	-4.42	0.00	-88.4	0.00	88.44	2,487.89	604.87	1,898.51	1,776.80	9.67	-0.8	0.056
107.00	-16.18	-4.30	0.00	-87.1	0.00	87.11	2,484.60	603.75	1,891.49	1,771.13	9.72	-0.8	0.056
110.00	-15.75	-4.19	0.00	-74.2	0.00	74.21	2,451.48	592.54	1,821.94	1,714.80	10.22	-0.81	0.050
115.00	-11.67	-3.05	0.00	-53.0	0.00	52.98	2,395.17	573.87	1,708.93	1,622.13	11.09	-0.83	0.038
117.10	-11.26	-2.85	0.00	-46.6	0.00	46.56	2,371.11	566.03	1,662.54	1,583.69	11.45	-0.84	0.034
120.00	-10.89	-2.75	0.00	-38.3	0.00	38.31	2,337.50	555.19	1,599.54	1,531.08	11.96	-0.85	0.030
125.00	-7.57	-1.60	0.00	-24.5	0.00	24.54	2,271.27	536.52	1,493.76	1,437.17	12.86	-0.86	0.020
130.00	-7.01	-1.49	0.00	-16.5	0.00	16.54	2,192.22	517.85	1,391.60	1,338.39	13.76	-0.86	0.016
135.00	-6.20	-1.21	0.00	-9.1	0.00	9.11	2,113.16	499.17	1,293.06	1,243.12	14.67	-0.87	0.010
138.00	-4.04	-0.82	0.00	-5.5	0.00	5.48	2,065.73	487.97	1,235.67	1,187.64	15.21	-0.87	0.007
140.00	-3.85	-0.75	0.00	-3.8	0.00	3.83	2,034.11	480.50	1,198.14	1,151.36	15.58	-0.87	0.005
145.00	-0.26	-0.03	0.00	-0.1	0.00	0.08	1,955.06	461.82	1,106.84	1,063.13	16.5	-0.87	0.000
147.92	0.00	-0.02	0.00	0.0	0.00	0.00	1,908.89	450.92	1,055.19	1,013.23	17.03	-0.87	0.000

EQUIVALENT LATERAL FORCES METHOD ANALYSIS

(Based on ASCE7-16 Chapters 11, 12 and 15)

Spectral Response Acceleration for Short Period (S_S):	0.186
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.055
Long-Period Transition Period (T_L – Seconds):	6
Importance Factor (I_e):	1.000
Site Coefficient $F_{a:}$	1.600
Site Coefficient F_v:	2.400
Response Modification Coefficient (R):	1.500
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.198
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.088
Seismic Response Coefficient (C_s):	0.030
Upper Limit C_S:	0.030
Lower Limit C_S:	0.030
Period based on Rayleigh Method (sec):	2.250
Redundancy Factor (p):	1.000
Seismic Force Distribution Exponent (k):	1.870
Total Unfactored Dead Load:	44.710 k
Seismic Base Shear (E):	1.340 k

1.2D + 1.0Ev + 1.0Eh Normal **Seismic**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
42	146.46	258	2,966	0.014	18	320
41	142.5	468	5,108	0.024	32	581
40	139	192	2,003	0.009	12	239
39	136.5	294	2,959	0.014	18	365
38	132.5	542	5,153	0.024	32	671
37	127.5	560	4,954	0.023	31	694
36	122.5	626	5,143	0.024	32	776
35	118.55	371	2,869	0.013	18	461
34	116.05	273	2,024	0.009	13	338
33	112.5	700	4,901	0.023	31	868
32	108.5	429	2,804	0.013	17	531
31	106.85	43	275	0.001	2	54
30	105.85	247	1,541	0.007	10	306
29	102.5	738	4,338	0.020	27	915
28	99.9167	25	140	0.001	1	31
27	99.0667	452	2,492	0.012	16	560
26	96.9	835	4,417	0.020	28	1,035
25	95.25	150	770	0.004	5	186
24	94.9583	25	128	0.001	1	31
23	92.4583	873	4,231	0.020	26	1,082
22	88.95	406	1,830	0.008	11	503
21	86.45	567	2,422	0.011	15	703
20	83.85	455	1,835	0.008	11	564
19	81.35	540	2,058	0.010	13	669
18	77.5	1,016	3,538	0.016	22	1,260
17	72.5	1,038	3,189	0.015	20	1,287
16	67.5	1,060	2,847	0.013	18	1,314
15	62.5	1,081	2,515	0.012	16	1,341
14	57.5	1,103	2,195	0.010	14	1,368
13	54	447	791	0.004	5	555
12	51.5	1,226	1,984	0.009	12	1,520
11	48.4167	1,311	1,890	0.009	12	1,626
10	45.9167	417	545	0.002	3	517
9	42.5	1,153	1,302	0.006	8	1,430

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
8	37.5	1,175	1,049	0.005	7	1,456
7	32.5	1,197	817	0.004	5	1,483
6	27.5	1,218	608	0.003	4	1,510
5	22.5	1,240	425	0.002	3	1,537
4	17.5	1,262	270	0.001	2	1,564
3	12.5	1,283	146	0.001	1	1,591
2	7.5	1,305	57	0.000	0	1,618
1	2.5	1,152	6	0.000	0	1,428
Raycap RDIDC-9181-PF-48	145	22	247	0.001	2	27
Fujitsu TA08025-B605	145	225	2,535	0.012	16	279
Fujitsu TA08025-B604	145	192	2,160	0.010	13	238
JMA Wireless MX08FRO665-21	145	194	2,180	0.010	14	240
Generic Round Platform with Handrails	145	2,500	28,165	0.131	176	3,099
Generic Flat Low Profile Platform	138	1,875	19,252	0.090	120	2,324
Generic 52" x 6" Panel	135	270	2,660	0.012	17	335
Ericsson KRY 112 144/1	125	33	281	0.001	2	41
Ericsson Radio 4449 B71 B85A	125	225	1,919	0.009	12	279
Ericsson RRUS 4415 B25	125	138	1,177	0.006	7	171
Ericsson Air6449 B41	125	312	2,661	0.012	17	387
Ericsson AIR 21, 1.3M, B2A B4P (91.5 lbs)	125	274	2,341	0.011	15	340
Ericsson AIR32 B66Aa/B2a	125	397	3,383	0.016	21	492
Generic Mount Reinforcement	125	200	1,706	0.008	11	248
Round T-Arm	125	750	6,397	0.030	40	930
RFS APXVAARR24_43-U-NA20	125	384	3,273	0.015	20	476
Generic 72" x 12" Panel	117.1	135	1,019	0.005	6	167
Samsung B2/B66A RRH-BR049	115	253	1,847	0.009	12	314
Samsung B5/B13 RRH-BR04C	115	211	1,539	0.007	10	261
Raycap RRFDC-3315-PF-48	115	27	196	0.001	1	33
Amphenol Antel BXA-70063-6CF-EDIN-2	115	85	620	0.003	4	105
Amphenol Antel BXA-70063-6CF-EDIN-2	115	17	124	0.001	1	21
Commscope SBNHH-1D65B	115	304	2,219	0.010	14	377
Flat Platform with Round Handrails	115	2,500	18,238	0.085	114	3,099
Generic Flat Stand-Off	107	188	1,195	0.006	7	232
Antel BCD-87010 ___ 25	106.7	26	168	0.001	1	33
Generic Round T-Arm	100	938	5,263	0.024	33	1,162
Generic Round T-Arm	90	938	4,320	0.020	27	1,162
Alcatel-Lucent RRH2x50-08	98.3	317	1,725	0.008	11	393
Commscope NNVV-65B-R4	95.5	232	1,196	0.006	7	288
DragonWave Horizon Compact	90	21	98	0.000	1	26
Alcatel-Lucent 1900MHz RRH (65MHz) w/ solar shield	90	180	829	0.004	5	223
Generic 18" x 18" x 4" Junction Box	90	21	97	0.000	1	26
Nokia 2.5G MAA - AAHC(64T64R)	90	311	1,432	0.007	9	385
Andrew VHLP2-18	90	27	124	0.001	1	33
Andrew VHLP2-18	90	27	124	0.001	1	33
DragonWave A-ANT-18G-3-C	87.9	50	219	0.001	1	61
DragonWave A-ANT-18G-3-C	87.9	50	219	0.001	1	61
NextNet BTS-2500	82.7	105	413	0.002	3	130
		44,707	215,098	1.000	1,341	55,422

0.9D - 1.0Ev + 1.0Eh Normal **Seismic (Reduced DL)**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
42	146.46	258	2,966	0.014	18	222
41	142.5	468	5,108	0.024	32	403
40	139	192	2,003	0.009	12	166
39	136.5	294	2,959	0.014	18	253
38	132.5	542	5,153	0.024	32	466
37	127.5	560	4,954	0.023	31	482
36	122.5	626	5,143	0.024	32	539
35	118.55	371	2,869	0.013	18	320
34	116.05	273	2,024	0.009	13	235

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
33	112.5	700	4,901	0.023	31	602
32	108.5	429	2,804	0.013	17	369
31	106.85	43	275	0.001	2	37
30	105.85	247	1,541	0.007	10	212
29	102.5	738	4,338	0.020	27	635
28	99.9167	25	140	0.001	1	21
27	99.0667	452	2,492	0.012	16	389
26	96.9	835	4,417	0.020	28	718
25	95.25	150	770	0.004	5	129
24	94.9583	25	128	0.001	1	22
23	92.4583	873	4,231	0.020	26	751
22	88.95	406	1,830	0.008	11	349
21	86.45	567	2,422	0.011	15	488
20	83.85	455	1,835	0.008	11	391
19	81.35	540	2,058	0.010	13	464
18	77.5	1,016	3,538	0.016	22	874
17	72.5	1,038	3,189	0.015	20	893
16	67.5	1,060	2,847	0.013	18	912
15	62.5	1,081	2,515	0.012	16	930
14	57.5	1,103	2,195	0.010	14	949
13	54	447	791	0.004	5	385
12	51.5	1,226	1,984	0.009	12	1,055
11	48.4167	1,311	1,890	0.009	12	1,128
10	45.9167	417	545	0.002	3	359
9	42.5	1,153	1,302	0.006	8	992
8	37.5	1,175	1,049	0.005	7	1,011
7	32.5	1,197	817	0.004	5	1,029
6	27.5	1,218	608	0.003	4	1,048
5	22.5	1,240	425	0.002	3	1,067
4	17.5	1,262	270	0.001	2	1,086
3	12.5	1,283	146	0.001	1	1,104
2	7.5	1,305	57	0.000	0	1,123
1	2.5	1,152	6	0.000	0	991
Raycap RDIDC-9181-PF-48	145	22	247	0.001	2	19
Fujitsu TA08025-B605	145	225	2,535	0.012	16	194
Fujitsu TA08025-B604	145	192	2,160	0.010	13	165
JMA Wireless MX08FRO665-21	145	194	2,180	0.010	14	166
Generic Round Platform with Handrails	145	2,500	28,165	0.131	176	2,151
Generic Flat Low Profile Platform	138	1,875	19,252	0.090	120	1,613
Generic 52" x 6" Panel	135	270	2,660	0.012	17	232
Ericsson KRY 112 144/1	125	33	281	0.001	2	28
Ericsson Radio 4449 B71 B85A	125	225	1,919	0.009	12	194
Ericsson RRUS 4415 B25	125	138	1,177	0.006	7	119
Ericsson Air6449 B41	125	312	2,661	0.012	17	268
Ericsson AIR 21, 1.3M, B2A B4P (91.5 lbs)	125	274	2,341	0.011	15	236
Ericsson AIR32 B66Aa/B2a	125	397	3,383	0.016	21	341
Generic Mount Reinforcement	125	200	1,706	0.008	11	172
Round T-Arm	125	750	6,397	0.030	40	645
RFS APXVAARR24_43-U-NA20	125	384	3,273	0.015	20	330
Generic 72" x 12" Panel	117.1	135	1,019	0.005	6	116
Samsung B2/B66A RRH-BR049	115	253	1,847	0.009	12	218
Samsung B5/B13 RRH-BR04C	115	211	1,539	0.007	10	181
Raycap RRFDC-3315-PF-48	115	27	196	0.001	1	23
Amphenol Antel BXA-70063-6CF-EDIN-2	115	85	620	0.003	4	73
Amphenol Antel BXA-70063-6CF-EDIN-2	115	17	124	0.001	1	15
Commscope SBNHH-1D65B	115	304	2,219	0.010	14	262
Flat Platform with Round Handrails	115	2,500	18,238	0.085	114	2,151
Generic Flat Stand-Off	107	188	1,195	0.006	7	161
Antel BCD-87010 ___ 25	106.7	26	168	0.001	1	23
Generic Round T-Arm	100	938	5,263	0.024	33	807
Generic Round T-Arm	90	938	4,320	0.020	27	807
Alcatel-Lucent RRH2x50-08	98.3	317	1,725	0.008	11	273
Commscope NNVV-65B-R4	95.5	232	1,196	0.006	7	200
DragonWave Horizon Compact	90	21	98	0.000	1	18
Alcatel-Lucent 1900MHz RRH (65MHz) w/ solar shield	90	180	829	0.004	5	155
Generic 18" x 18" x 4" Junction Box	90	21	97	0.000	1	18
Nokia 2.5G MAA - AAHC(64T64R)	90	311	1,432	0.007	9	267
Andrew VHLP2-18	90	27	124	0.001	1	23
Andrew VHLP2-18	90	27	124	0.001	1	23

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
DragonWave A-ANT-18G-3-C	87.9	50	219	0.001	1	43
DragonWave A-ANT-18G-3-C	87.9	50	219	0.001	1	43
NextNet BTS-2500	82.7	105	413	0.002	3	90
		44,707	215,098	1.000	1,341	38,462

1.2D + 1.0Ev + 1.0Eh Normal **Seismic**

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-53.99	-1.34	0.00	-160.05	0.00	160.05	4,345.88	1,174.02	5,960	5,031.73	0.00	0.00	0.04
5.00	-52.38	-1.35	0.00	-153.33	0.00	153.33	4,297.96	1,151.61	5,734	4,880.65	0.00	-0.01	0.04
10.00	-50.78	-1.36	0.00	-146.58	0.00	146.58	4,248.69	1,129.20	5,513	4,730.17	0.02	-0.02	0.04
15.00	-49.22	-1.36	0.00	-139.79	0.00	139.79	4,198.05	1,106.79	5,297	4,580.40	0.04	-0.03	0.04
20.00	-47.68	-1.37	0.00	-132.98	0.00	132.98	4,146.04	1,084.38	5,085	4,431.43	0.07	-0.03	0.04
25.00	-46.17	-1.37	0.00	-126.15	0.00	126.15	4,092.67	1,061.97	4,877	4,283.34	0.11	-0.04	0.04
30.00	-44.69	-1.37	0.00	-119.31	0.00	119.31	4,037.94	1,039.56	4,673	4,136.24	0.16	-0.05	0.04
35.00	-43.23	-1.37	0.00	-112.46	0.00	112.46	3,981.85	1,017.16	4,474	3,990.20	0.22	-0.06	0.04
40.00	-41.80	-1.36	0.00	-105.62	0.00	105.62	3,924.39	994.75	4,279	3,845.32	0.29	-0.07	0.04
45.00	-41.28	-1.36	0.00	-98.80	0.00	98.80	3,865.57	972.34	4,088	3,701.69	0.37	-0.08	0.04
46.83	-39.66	-1.35	0.00	-96.30	0.00	96.30	3,843.66	964.12	4,019	3,649.36	0.40	-0.08	0.04
50.00	-38.14	-1.34	0.00	-92.01	0.00	92.01	3,805.38	949.93	3,902	3,559.40	0.45	-0.09	0.04
53.00	-37.58	-1.34	0.00	-87.98	0.00	87.98	3,811.41	952.15	3,920	3,573.44	0.51	-0.09	0.03
55.00	-36.22	-1.33	0.00	-85.30	0.00	85.30	3,787.01	943.19	3,847	3,516.87	0.55	-0.10	0.03
60.00	-34.88	-1.32	0.00	-78.66	0.00	78.66	3,725.05	920.78	3,666	3,376.46	0.66	-0.11	0.03
65.00	-33.56	-1.30	0.00	-72.09	0.00	72.09	3,661.73	898.37	3,490	3,237.61	0.77	-0.11	0.03
70.00	-32.27	-1.28	0.00	-65.59	0.00	65.59	3,597.04	875.96	3,318	3,100.40	0.89	-0.12	0.03
75.00	-31.01	-1.26	0.00	-59.18	0.00	59.18	3,530.99	853.55	3,150	2,964.92	1.02	-0.13	0.03
80.00	-30.35	-1.25	0.00	-52.87	0.00	52.87	3,463.58	831.14	2,987	2,831.26	1.16	-0.14	0.03
82.70	-29.65	-1.24	0.00	-49.50	0.00	49.50	3,426.61	819.04	2,901	2,759.88	1.24	-0.14	0.03
85.00	-28.95	-1.22	0.00	-46.65	0.00	46.65	3,394.80	808.73	2,828	2,699.53	1.31	-0.14	0.03
87.90	-28.32	-1.21	0.00	-43.11	0.00	43.11	3,354.28	795.74	2,738	2,624.03	1.40	-0.15	0.03
90.00	-25.35	-1.13	0.00	-40.57	0.00	40.57	3,324.66	786.33	2,674	2,569.79	1.47	-0.15	0.02
94.92	-25.32	-1.13	0.00	-35.01	0.00	35.01	3,235.50	764.29	2,526	2,430.10	1.63	-0.16	0.02
95.00	-25.13	-1.13	0.00	-34.91	0.00	34.91	3,233.91	763.92	2,524	2,427.71	1.63	-0.16	0.02
95.50	-23.81	-1.09	0.00	-34.35	0.00	34.35	3,224.43	761.68	2,509	2,413.42	1.65	-0.16	0.02
98.30	-22.86	-1.06	0.00	-31.30	0.00	31.30	3,171.30	749.13	2,427	2,334.15	1.74	-0.16	0.02
99.83	-22.83	-1.06	0.00	-29.67	0.00	29.67	2,561.76	630.51	2,063	1,907.82	1.80	-0.17	0.02
100.00	-20.75	-1.00	0.00	-29.49	0.00	29.49	2,560.00	629.89	2,059	1,904.61	1.80	-0.17	0.02
105.00	-20.44	-0.99	0.00	-24.51	0.00	24.51	2,506.42	611.22	1,939	1,808.99	1.98	-0.17	0.02
106.70	-20.36	-0.99	0.00	-22.83	0.00	22.83	2,487.89	604.87	1,899	1,776.80	2.04	-0.17	0.02
107.00	-19.59	-0.96	0.00	-22.54	0.00	22.54	2,484.60	603.75	1,891	1,771.13	2.05	-0.17	0.02
110.00	-18.73	-0.93	0.00	-19.66	0.00	19.66	2,451.48	592.54	1,822	1,714.80	2.16	-0.18	0.02
115.00	-14.18	-0.75	0.00	-15.03	0.00	15.03	2,395.17	573.87	1,709	1,622.13	2.35	-0.18	0.02
117.10	-13.55	-0.72	0.00	-13.46	0.00	13.46	2,371.11	566.03	1,663	1,583.69	2.43	-0.18	0.01
120.00	-12.77	-0.69	0.00	-11.37	0.00	11.37	2,337.50	555.19	1,600	1,531.08	2.54	-0.19	0.01
125.00	-8.72	-0.50	0.00	-7.94	0.00	7.94	2,271.27	536.52	1,494	1,437.17	2.74	-0.19	0.01
130.00	-8.04	-0.46	0.00	-5.44	0.00	5.44	2,192.22	517.85	1,392	1,338.39	2.94	-0.19	0.01
135.00	-7.35	-0.43	0.00	-3.12	0.00	3.12	2,113.16	499.17	1,293	1,243.12	3.14	-0.19	0.01
138.00	-4.78	-0.29	0.00	-1.84	0.00	1.84	2,065.73	487.97	1,236	1,187.64	3.27	-0.20	0.00
140.00	-4.20	-0.25	0.00	-1.26	0.00	1.26	2,034.11	480.50	1,198	1,151.36	3.35	-0.20	0.00
145.00	0.00	0.00	0.00	0.00	0.00	0.00	1,955.06	461.82	1,107	1,063.13	3.55	-0.20	0.00
147.92	0.00	0.00	0.00	0.00	0.00	0.00	1,908.89	450.92	1,055	1,013.23	3.67	-0.20	0.00

0.9D - 1.0Ev + 1.0Eh Normal **Seismic (Reduced DL)**

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-37.47	-1.34	0.00	-157.87	0.00	157.87	4,345.88	1,174.02	5,960	5,031.73	0.00	0.00	0.04

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
5.00	-36.35	-1.35	0.00	-151.15	0.00	151.15	4,297.96	1,151.61	5,734	4,880.65	0.00	-0.01	0.04
10.00	-35.24	-1.35	0.00	-144.42	0.00	144.42	4,248.69	1,129.20	5,513	4,730.17	0.02	-0.02	0.04
15.00	-34.16	-1.35	0.00	-137.66	0.00	137.66	4,198.05	1,106.79	5,297	4,580.40	0.04	-0.03	0.04
20.00	-33.09	-1.36	0.00	-130.89	0.00	130.89	4,146.04	1,084.38	5,085	4,431.43	0.07	-0.03	0.04
25.00	-32.04	-1.36	0.00	-124.11	0.00	124.11	4,092.67	1,061.97	4,877	4,283.34	0.11	-0.04	0.04
30.00	-31.01	-1.36	0.00	-117.33	0.00	117.33	4,037.94	1,039.56	4,673	4,136.24	0.16	-0.05	0.04
35.00	-30.00	-1.35	0.00	-110.55	0.00	110.55	3,981.85	1,017.16	4,474	3,990.20	0.22	-0.06	0.04
40.00	-29.01	-1.35	0.00	-103.79	0.00	103.79	3,924.39	994.75	4,279	3,845.32	0.28	-0.07	0.03
45.00	-28.65	-1.35	0.00	-97.05	0.00	97.05	3,865.57	972.34	4,088	3,701.69	0.36	-0.08	0.03
46.83	-27.52	-1.34	0.00	-94.58	0.00	94.58	3,843.66	964.12	4,019	3,649.36	0.39	-0.08	0.03
50.00	-26.47	-1.32	0.00	-90.36	0.00	90.36	3,805.38	949.93	3,902	3,559.40	0.45	-0.09	0.03
53.00	-26.08	-1.32	0.00	-86.38	0.00	86.38	3,811.41	952.15	3,920	3,573.44	0.50	-0.09	0.03
55.00	-25.13	-1.31	0.00	-83.74	0.00	83.74	3,787.01	943.19	3,847	3,516.87	0.54	-0.10	0.03
60.00	-24.20	-1.29	0.00	-77.20	0.00	77.20	3,725.05	920.78	3,666	3,376.46	0.64	-0.10	0.03
65.00	-23.29	-1.28	0.00	-70.73	0.00	70.73	3,661.73	898.37	3,490	3,237.61	0.76	-0.11	0.03
70.00	-22.40	-1.26	0.00	-64.34	0.00	64.34	3,597.04	875.96	3,318	3,100.40	0.88	-0.12	0.03
75.00	-21.52	-1.24	0.00	-58.04	0.00	58.04	3,530.99	853.55	3,150	2,964.92	1.01	-0.13	0.03
80.00	-21.06	-1.23	0.00	-51.85	0.00	51.85	3,463.58	831.14	2,987	2,831.26	1.15	-0.13	0.02
82.70	-20.58	-1.21	0.00	-48.54	0.00	48.54	3,426.61	819.04	2,901	2,759.88	1.22	-0.14	0.02
85.00	-20.09	-1.20	0.00	-45.75	0.00	45.75	3,394.80	808.73	2,828	2,699.53	1.29	-0.14	0.02
87.90	-19.65	-1.18	0.00	-42.27	0.00	42.27	3,354.28	795.74	2,738	2,624.03	1.38	-0.15	0.02
90.00	-17.59	-1.11	0.00	-39.79	0.00	39.79	3,324.66	786.33	2,674	2,569.79	1.44	-0.15	0.02
94.92	-17.57	-1.11	0.00	-34.33	0.00	34.33	3,235.50	764.29	2,526	2,430.10	1.60	-0.16	0.02
95.00	-17.44	-1.11	0.00	-34.24	0.00	34.24	3,233.91	763.92	2,524	2,427.71	1.60	-0.16	0.02
95.50	-16.52	-1.07	0.00	-33.69	0.00	33.69	3,224.43	761.68	2,509	2,413.42	1.62	-0.16	0.02
98.30	-15.86	-1.04	0.00	-30.69	0.00	30.69	3,171.30	749.13	2,427	2,334.15	1.71	-0.16	0.02
99.83	-15.84	-1.04	0.00	-29.10	0.00	29.10	2,561.76	630.51	2,063	1,907.82	1.77	-0.16	0.02
100.00	-14.40	-0.98	0.00	-28.92	0.00	28.92	2,560.00	629.89	2,059	1,904.61	1.77	-0.16	0.02
105.00	-14.19	-0.97	0.00	-24.04	0.00	24.04	2,506.42	611.22	1,939	1,808.99	1.94	-0.17	0.02
106.70	-14.13	-0.97	0.00	-22.39	0.00	22.39	2,487.89	604.87	1,899	1,776.80	2.01	-0.17	0.02
107.00	-13.60	-0.94	0.00	-22.10	0.00	22.10	2,484.60	603.75	1,891	1,771.13	2.02	-0.17	0.02
110.00	-12.99	-0.91	0.00	-19.28	0.00	19.28	2,451.48	592.54	1,822	1,714.80	2.12	-0.17	0.02
115.00	-9.84	-0.73	0.00	-14.74	0.00	14.74	2,395.17	573.87	1,709	1,622.13	2.31	-0.18	0.01
117.10	-9.40	-0.71	0.00	-13.21	0.00	13.21	2,371.11	566.03	1,663	1,583.69	2.39	-0.18	0.01
120.00	-8.86	-0.67	0.00	-11.16	0.00	11.16	2,337.50	555.19	1,600	1,531.08	2.50	-0.18	0.01
125.00	-6.05	-0.49	0.00	-7.79	0.00	7.79	2,271.27	536.52	1,494	1,437.17	2.69	-0.19	0.01
130.00	-5.58	-0.46	0.00	-5.34	0.00	5.34	2,192.22	517.85	1,392	1,338.39	2.89	-0.19	0.01
135.00	-5.10	-0.42	0.00	-3.06	0.00	3.06	2,113.16	499.17	1,293	1,243.12	3.09	-0.19	0.01
138.00	-3.32	-0.28	0.00	-1.80	0.00	1.80	2,065.73	487.97	1,236	1,187.64	3.21	-0.19	0.00
140.00	-2.92	-0.25	0.00	-1.24	0.00	1.24	2,034.11	480.50	1,198	1,151.36	3.29	-0.19	0.00
145.00	0.00	0.00	0.00	0.00	0.00	0.00	1,955.06	461.82	1,107	1,063.13	3.49	-0.19	0.00
147.92	0.00	0.00	0.00	0.00	0.00	0.00	1,908.89	450.92	1,055	1,013.23	3.61	-0.19	0.00

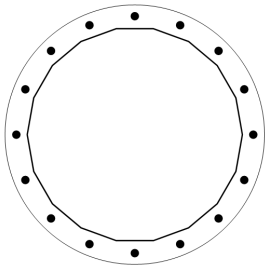
ANALYSIS SUMMARY

	Reactions						Max Usage	
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.0W Normal	33.77	0.00	53.59	0.00	0.00	3429.94	0.00	0.69
0.9D + 1.0W Normal	33.75	0.00	40.18	0.00	0.00	3393.49	0.00	0.68
1.2D + 1.0Di + 1.0Wi Normal	9.93	0.00	85.76	0.00	0.00	1025.09	0.00	0.22
1.2D + 1.0Ev + 1.0Eh Normal	1.37	0.00	53.99	0.00	0.00	160.05	0.00	0.04
0.9D - 1.0Ev + 1.0Eh Normal	1.36	0.00	37.47	0.00	0.00	157.87	0.00	0.04
1.0D + 1.0W Service Normal	7.94	0.00	44.70	0.00	0.00	801.84	0.00	0.17

BASE PLATE ANALYSIS @ 0 FT

PLATE PARAMETERS (ID# 17585)

Diameter:	69	in
Shape:	Round	
Thickness:	2.5	in
Grade:	A633 Gr. E	
Yield Strength:	60	ksi
Tensile Strength:	80	ksi
Rod Detail Type:	d	
Clear Distance	3	in
Base Weld Size:	0.125	in
Orientation Offset:	-	°
Analysis Type:	Plastic	
Neutral Axis:	236	°



ANCHOR ROD PARAMETERS

Class	Arrangement	Quantity	Diameter (in)	Circle (in)	Grade	Fy (ksi)	Fu (ksi)	Spacing (in)	Offset (°)
Original [ID# 18013]	Radial	16	2.25	63	A615-75	75	100	-	-

ANCHOR ROD GEOMETRY AND APPLIED LOADS --- ORIGINAL (16) 2.25"ø [ID 18013]

Position	Radians	X (in)	Y (in)	Moment Arm (in)	Inertia (in^4)	Axial Load (k)	Shear Load (k)
1	0.393	29.10	12.06	16.662	902.427	139.70	2.75
2	0.785	22.27	22.27	5.760	108.592	139.70	3.23
3	1.178	12.06	29.10	-6.018	118.475	-126.30	3.23
4	1.571	0.00	31.50	-16.881	926.287	-126.30	2.73
5	1.963	-12.06	29.10	-25.173	2058.822	-126.30	1.82
6	2.356	-22.27	22.27	-29.633	2852.658	-126.30	0.63
7	2.749	-29.10	12.06	-29.581	2842.774	-126.30	0.66
8	3.142	-31.50	0.00	-25.027	2034.961	-126.30	1.84
9	3.534	-29.10	-12.06	-16.662	902.426	-126.30	2.75
10	3.927	-22.27	-22.27	-5.760	108.591	-126.30	3.23
11	4.320	-12.06	-29.10	6.018	118.475	139.70	3.23
12	4.712	0.00	-31.50	16.881	926.288	139.70	2.73
13	5.105	12.06	-29.10	25.173	2058.823	139.70	1.82
14	5.498	22.27	-22.27	29.633	2852.658	139.70	0.63
15	5.890	29.10	-12.06	29.581	2842.775	139.70	0.66
16	6.283	31.50	0.00	25.027	2034.963	139.70	1.84

REACTION DISTRIBUTION

Component	ID	Moment Mu (k-ft)	Axial Load Pu (k)	Shear Vu (k)	Moment Factor
Pole	56.58"ø x 0.375" (18 Sides)	3429.9	53.59	33.77	1.000
Bolt Group	Original (16) 2.25"ø	3429.9	-	33.77	1.000
	TOTALS	**3429.94**	**53.59**	**33.77**	

COMPONENT PROPERTIES

Component	ID	Gross Area (in^2)	Net Area (in^2)	Individual Inertia (in^4)	Moment of Inertia (in^4)	Threads/in
Pole	56.58"ø x 0.375" (18 Sides)	65.8793	-	-	26017.20	-
Bolt Group	Original (16) 2.25"ø	3.9761	3.2477	0.8393	23690.00	4.5

EXTERNAL BASE PLATE BEND LINE ANALYSIS @ 0 FT

POLE PROPERTIES

Flat-to-Flat Diameter:	56.70	in
Point-to-Point Diameter:	57.58	in
Flat Width:	9.999	in
Flat Radians:	0.349	rad

PLATE PROPERTIES

Neutral Axis:	236	°
Bend Line Lower Limit:	5.219	rad
Bend Line Upper Limit:	6.169	rad

Bend Line	Chord Length (in)	Additional Length (in)	Section Modulus (in^3)	Applied Moment Mu (k-in)	Moment Capacity ϕMn (k-in)	Ratio
Flat	34.528	0.00	53.950	427.6	2913.3	0.147
Corner	33.048	0.00	51.638	278.6	2788.5	0.100
Circumferential	41.091	0.00	64.204	476.3	3467.0	0.137

PLASTIC ANCHOR ROD ANALYSIS

Class	Group Quantity	Rod Diameter (in)	Applied Axial Load Pu (k)	Applied Shear Load Vu (k)	Compressive Capacity ϕPn (k)	Ratio
Original	16	2.25	139.8	3.2	243.6	0.600

DISH Wireless L.L.C. SITE ID:

BOBDL00079B

DISH Wireless L.L.C. SITE ADDRESS:

305 W. SERVICE RD.
HARTFORD, CT 06120

SCOPE OF WORK

THIS IS NOT AN ALL INCLUSIVE LIST. CONTRACTOR SHALL UTILIZE SPECIFIED EQUIPMENT PART OR ENGINEER APPROVED EQUIVALENT. CONTRACTOR SHALL VERIFY ALL NEEDED EQUIPMENT TO PROVIDE A FUNCTIONAL SITE. THE PROJECT GENERALLY CONSISTS OF THE FOLLOWING:

TOWER SCOPE OF WORK:
- INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR)
- INSTALL (1) PROPOSED ANTENNA PLATFORM MOUNT
- INSTALL PROPOSED JUMPERS
- INSTALL (6) PROPOSED RRUs (2 PER SECTOR)
- INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP)
- INSTALL (1) PROPOSED HYBRID CABLE

GROUND SCOPE OF WORK:
- INSTALL (1) PROPOSED METAL PLATFORM
- INSTALL (1) PROPOSED ICE BRIDGE
- INSTALL (1) PROPOSED PPC CABINET
- INSTALL (1) PROPOSED EQUIPMENT CABINET
- INSTALL (1) PROPOSED POWER CONDUIT
- INSTALL (1) PROPOSED TELCO CONDUIT
- INSTALL (1) PROPOSED TELCO-FIBER BOX
- INSTALL (1) PROPOSED GPS UNIT
- INSTALL (1) PROPOSED SAFETY SWITCH (IF REQUIRED)
- INSTALL (1) PROPOSED CIENA BOX (IF REQUIRED)
- INSTALL (1) PROPOSED METER SOCKET

NOTE: THE SCOPE OF THIS PROJECT DOES NOT INCLUDE MODIFICATIONS TO THE TOWER STRUCTURE OR FOUNDATION. A SEPARATE BUILDING PERMIT APPLICATION WILL BE SUBMITTED FOR ANY TOWER MODIFICATIONS.

SITE INFORMATION

PROPERTY OWNER:	305 WEST SERVICES RD ASSOC LLC
ADDRESS:	305 W. SERVICE RD. HARTFORD, CT 06120
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	302466
TOWER APP NUMBER:	14046283_D3
COUNTY:	HARTFORD
LATITUDE (NAD 83):	41° 47' 58.340" N 41.79953889
LONGITUDE (NAD 83):	72° 39' 24.110" W -72.65669722
ZONING JURISDICTION:	CONNECTICUT SITING COUNCIL
ZONING DISTRICT:	COMMERCIAL
PARCEL NUMBER:	HTFD M:304 B:074 L:014
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	C. L.& P. (800) 286-2000
TELEPHONE COMPANY:	AT&T (800) 288-2020

PROJECT DIRECTORY

APPLICANT:	DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801
ENGINEER:	ATC TOWER SERVICES, LLC 3500 REGENCY PARKWAY SUITE 100 CARY, NC 27518
SITE ACQUISITION:	APRIL PARROTT APRIL.PARROTT@DISH.COM
CONSTRUCTION MANAGER:	CHAD WILCOX CHAD.WILCOX@DISH.COM
RF ENGINEER:	BOSSENER CHARLES BOSSENER.CHARLES@DISH.COM

CONNECTICUT CODE COMPLIANCE

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:

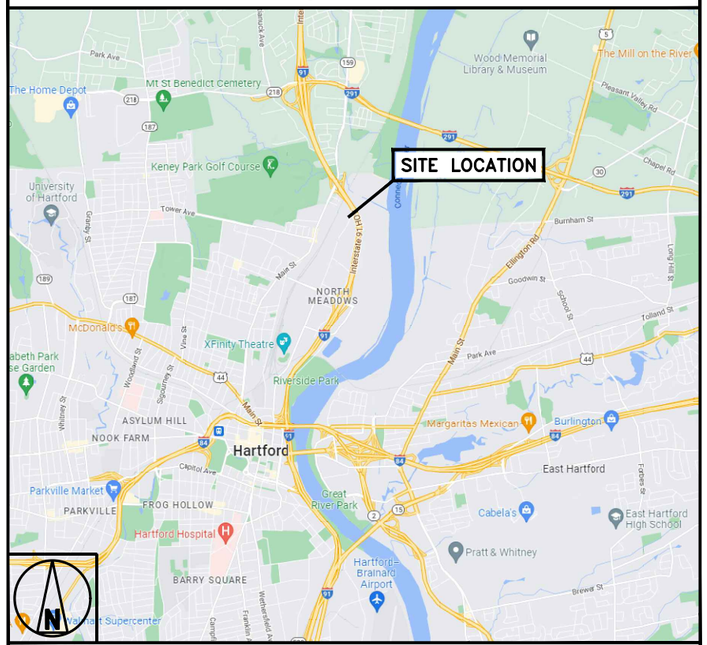
CODE TYPE	CODE
BUILDING	2018 CT STATE BUILDING CODE/2015 IBC W/ CT AMENDMENTS
MECHANICAL	2018 CT STATE BUILDING CODE/2015 IMC W/ CT AMENDMENTS
ELECTRICAL	2018 CT STATE BUILDING CODE/2017 NEC W/ CT AMENDMENTS

SITE PHOTO

DIRECTIONS

DIRECTIONS FROM NEXTEL WHITE PLAINS OAK OFC: 5 BROADWAY (HWY 119) NORTH TO WESTCHESTER AVE. TO I-287 EAST (CROSS WESTCHESTER EXPWAY) TO I-684 NORTH APPROX. 28 MILES TO I-84 EAST. TAKE I-84 EAST 63.6 MILES TO HIGH ST./HARTFORD EXIT) BEAR LEFT ONTO MAIN ST. FOR 1.8 MILES THEN TURN RIGHT ONTO FISHFREY ST. FOR .2 MILES TURN LEFT ON WESTON ST. .5 MILES AND THEN LEFT ONTO WEST SERVICE RD. SITE IS SOUTHWEST CORNER OF LARGER VACANT LOT AT CURVE OF RD ADJACENT TO KOHLER EQUIP. DISTRUBUTOR.

VICINITY MAP



NO SCALE

SHEET INDEX

SHEET NO.	SHEET TITLE
T-1	TITLE SHEET
A-0	EXISTING SURVEY
A-1	OVERALL AND ENLARGED SITE PLAN
A-2	ELEVATION, ANTENNA LAYOUT AND SCHEDULE
A-3	EQUIPMENT PLATFORM AND H-FRAME DETAILS
A-4	EQUIPMENT DETAILS
A-5	EQUIPMENT DETAILS
A-6	EQUIPMENT DETAILS
E-1	ELECTRICAL/FIBER ROUTE PLAN AND NOTES
E-2	ELECTRICAL DETAILS
E-3	ELECTRICAL ONE-LINE, FAULT CALCS & PANEL SCHEDULE
G-1	GROUNDING PLANS AND NOTES
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS
RF-1	RF CABLE COLOR CODE
GN-1	LEGEND AND ABBREVIATIONS
GN-2	RF SIGNAGE
GN-3	GENERAL NOTES
GN-4	GENERAL NOTES
GN-5	GENERAL NOTES

UNDERGROUND SERVICE ALERT CBYD 811
UTILITY NOTIFICATION CENTER OF CONNECTICUT
(800) 922-4455
WWW.CBYD.COM
CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

811

GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE. NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.

THE PROJECT DEPICTED IN THESE PLANS QUALIFIES AS AN ELIGIBLE FACILITIES REQUEST ENTITLED TO EXPEDITED REVIEW UNDER 47 U.S.C. § 1455(A) AS A MODIFICATION OF AN EXISTING WIRELESS TOWER THAT INVOLVES THE COLLOCATION, REMOVAL, AND/OR REPLACEMENT OF TRANSMISSION EQUIPMENT THAT IS NOT A SUBSTANTIAL CHANGE UNDER CFR § 1.61000 (B)(7).

11"x17" PLOT WILL BE HALF SCALE UNLESS OTHERWISE NOTED

CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON THE JOB SITE, AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

dish wireless.
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

AMERICAN TOWER®
A.T. ENGINEERING SERVICE, PLLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
COA: PEC.0001553

DRAWN BY:	CHECKED BY:	APPROVED BY:
AP	SRF	SRF

RFDS REV #: ----

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	06/24/2022	ISSUED FOR CONSTRUCTION

STATE OF CONNECTICUT
PATRICK P. BARRY
28959
LICENSED
PROFESSIONAL ENGINEER

A&E PROJECT NUMBER

302466-14046283_D3

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00079B
305 W. SERVICE RD.
HARTFORD, CT 06120

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1

SCI CONSTRUCTION AS-BUILT LAND SURVEY
CT-0002

ELEVATION DATUM

TOWER TYPE: MONOPOLE TOWER
ALL ELEVATIONS ARE BASED ON NAVD 1988 DATUM
GROUND ELEVATION: 22.2'
STRUCTURE HEIGHT: 149.8 ABOVE GROUND LEVEL
ELEVATION OF TOP OF TOWER: 172.0'
ELEVATION OF HIGHEST POINT: 175.0'

LATITUDE & LONGITUDE

LATITUDE AND LONGITUDE OF EXISTING TOWER IS BASED ON THE NAD 1983.

LATITUDE: 41° 47' 58.3"
LONGITUDE: 72° 39' 24.1"

BASIS OF BEARINGS:
NORTH AMERICAN DATUM (NAD83)

THE GEOGRAPHICAL LOCATION SHOWN IS ACCURATE TO WITHIN ±15' HORIZONTALLY AND ±3' VERTICALLY

SURVEY LEGEND

⊕	BENCHMARK
——x——	CHAIN LINK FENCE
×1000.0	SPOT ELEVATION
P.O.B.	POINT OF BEGINNING
CP	CONCRETE PAD
AC	AIR CONDITINER
P.O.C.	POINT OF COMMENCEMENT

FLOOD NOTE:

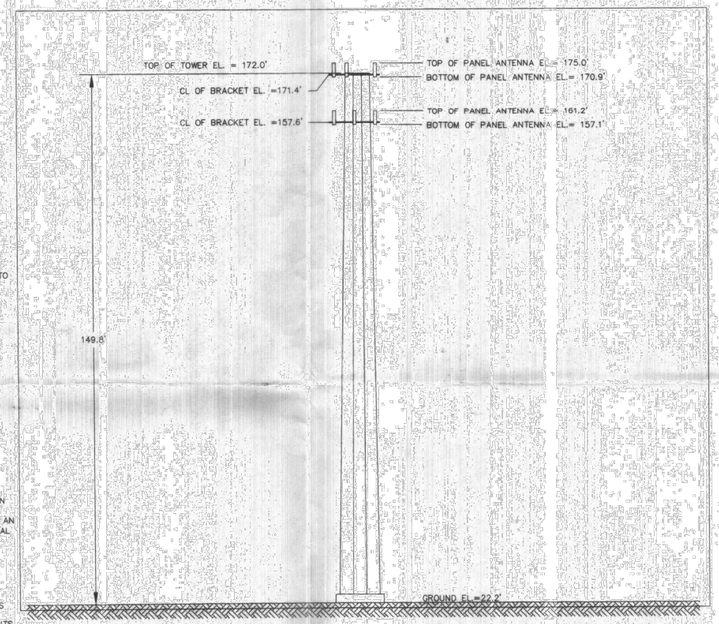
BY GRAPHIC PLOTTING ONLY, SUBJECT PREMISES ARE IN ZONE "X" OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 095080 0005 B, WHICH BEARS AN EFFECTIVE DATE OF 12/04/86 AND IS NOT IN A SPECIAL FLOOD HAZARD AREA.

UTILITY NOTE:

THE UTILITIES AS SHOWN ON THIS DRAWING WERE DEVELOPED FROM THE INFORMATION AVAILABLE, THIS IS NOT IMPLIED NOR INTENDED TO BE THE COMPLETE INVENTORY OF UTILITIES IN THIS AREA. IT IS THE CLIENTS RESPONSIBILITY TO VERIFY THE LOCATION OF ALL UTILITIES (WHETHER SHOWN OR NOT) AND PROTECT SAID UTILITIES FROM ANY DAMAGE.

GENERAL NOTES:

1. TOTAL LENGTH OF FENCE AROUND COMPOUND IS 194 FEET, ENCOMPASSING AN AREA OF 2,349 SQUARE FEET.



20 10 0 20 40
SCALE 1" = 20 ft

COMPOUND PLAN VIEW

10 5 0 10 20
SCALE 1" = 10 ft

LEASE AREA LEGAL DESCRIPTION-AS SURVEYED

Commencing at the fence corner near the southeast corner of the parent parcel;
thence, N 65° 23' 57" W, 96.05 feet to the point of beginning;
thence, N 65° 23' 57" W, 50.00 feet to a point;
thence, N24° 36' 03" E, 50.00 feet to a point;
thence, S 65° 23' 57" E, 50.00 feet to a point;
thence, S 24° 36' 03" W, 50.00 feet to the point of beginning.
Containing 2,500 square feet.

Surveyor:

CONECO ENGINEERS AND SCIENTISTS
4 FIRST ST.
BRIDGEWATER, MA 02324
508-697-6911

Work Coordinated by:

International WIRELESS SERVICES, LLC

2230 McKOWN DRIVE
Norman, Oklahoma 73072
(405) 701-2323 www.viewiws.com

AS-BUILT SURVEY	
Date	10/31/01
Dwn. By	TSB
Aprvd. By	CTC
Dwg. No.	1452
IWS JOB #	01-07-059:04
Scale:	AS NOTED

REVISIONS

DESCRIPTION:	DATE:

Prepared For:

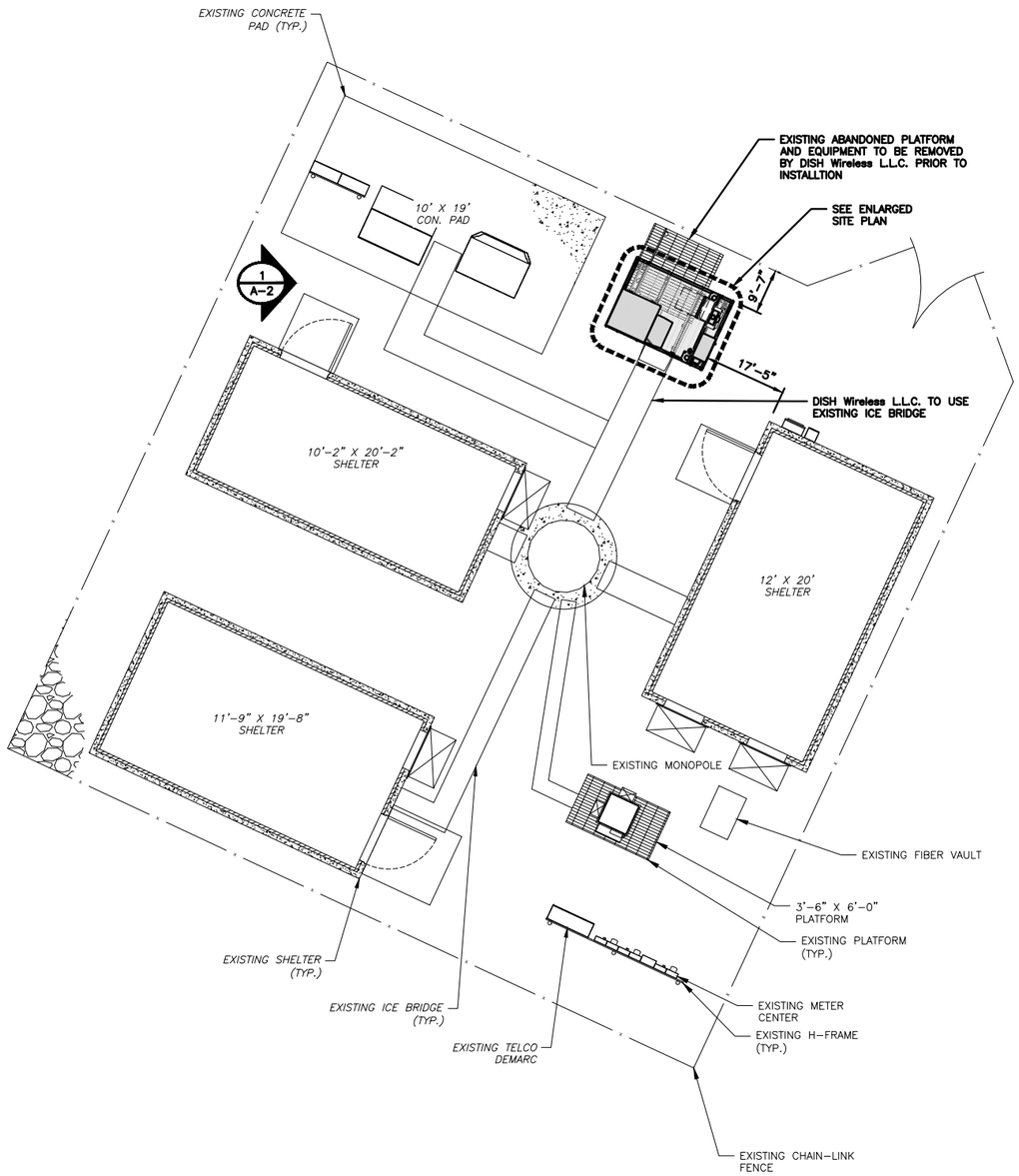
SPECTRASITE COMMUNICATIONS
100 REGENCY FOREST DRIVE, SUITE 400
CARY, NC. 27511

Project Location	HARTFORD, CT
Project Address	305 WEST SERVICE ROAD
Site Name	HARTFORD-W.SERVICE ROAD
SpectraSite Number	CT-0002

SHEET 1 OF 2

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



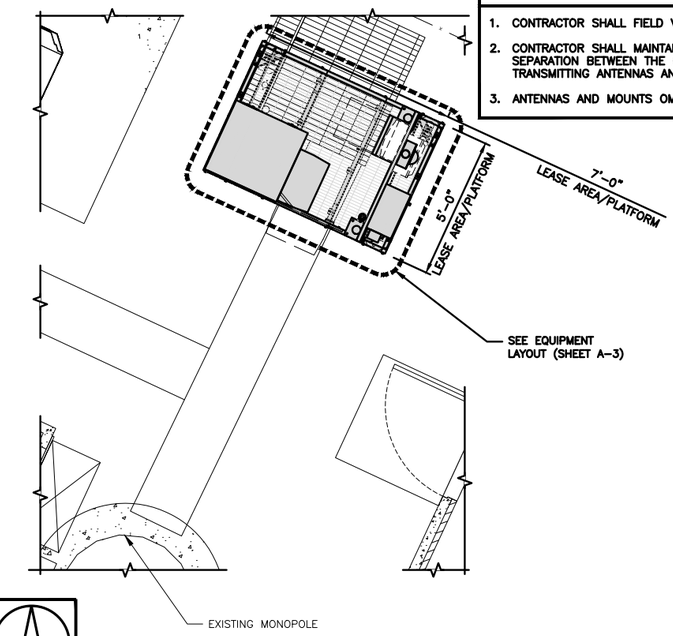
OVERALL SITE PLAN

5' 0 5' 10'
1"=5'

1

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



ENLARGED SITE PLAN

12" 6" 0 1' 2' 3' 4' 5' 6' 7'
3/8"=1'-0"

2

NOT USED

NO SCALE

3

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5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

AMERICAN TOWER®
A.T. ENGINEERING SERVICE, PLLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
COA: PEC.0001553

DRAWN BY:	CHECKED BY:	APPROVED BY:
AP	SRF	SRF

RFDS REV #: ----

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	06/24/2022	ISSUED FOR CONSTRUCTION

STATE OF CONNECTICUT
PATRICK P. BARRY
28959
LICENSED PROFESSIONAL ENGINEER

A&E PROJECT NUMBER
302466-14046283_D3

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00079B
305 W. SERVICE RD.
HARTFORD, CT 06120

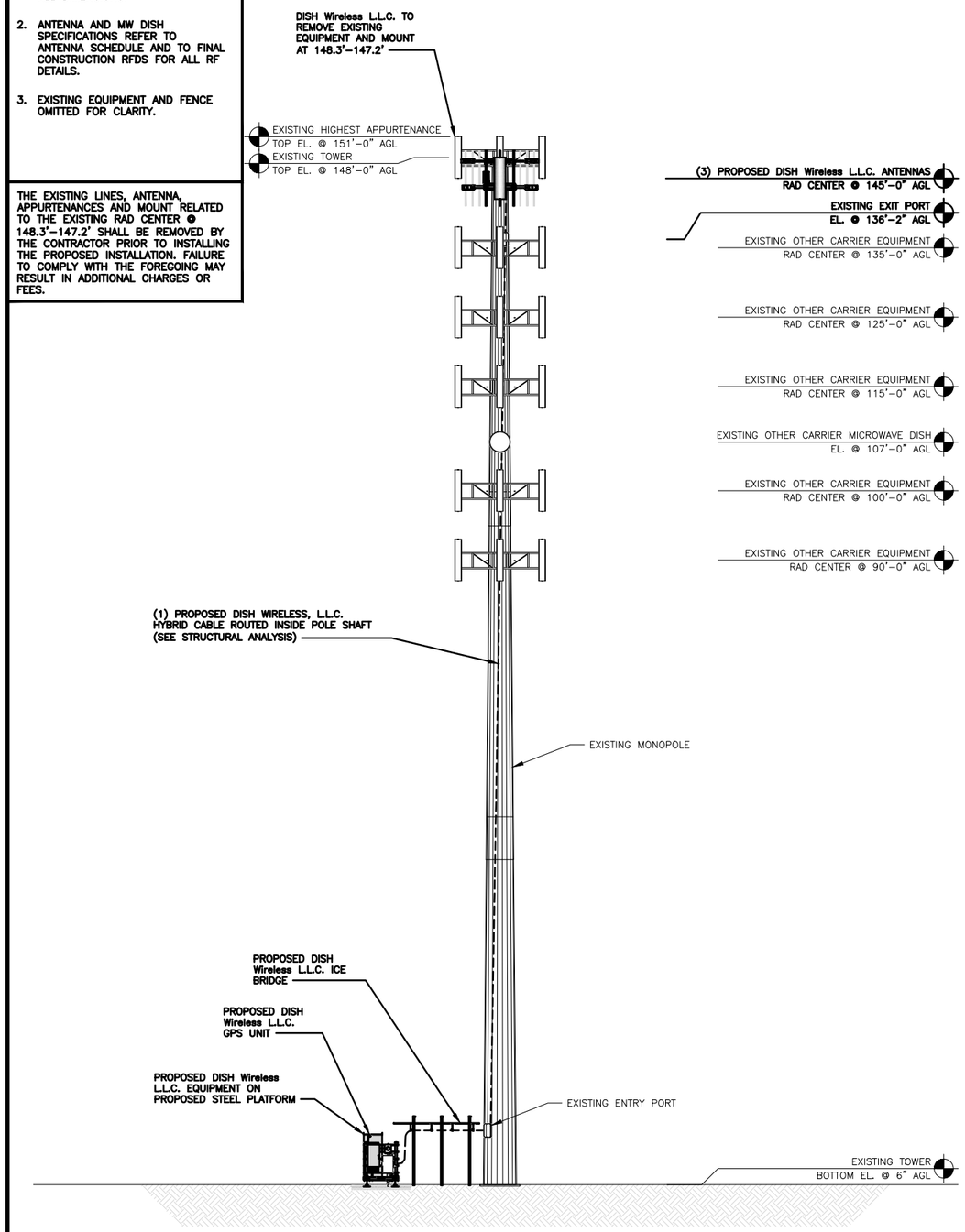
SHEET TITLE
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER
A-1

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS.
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.

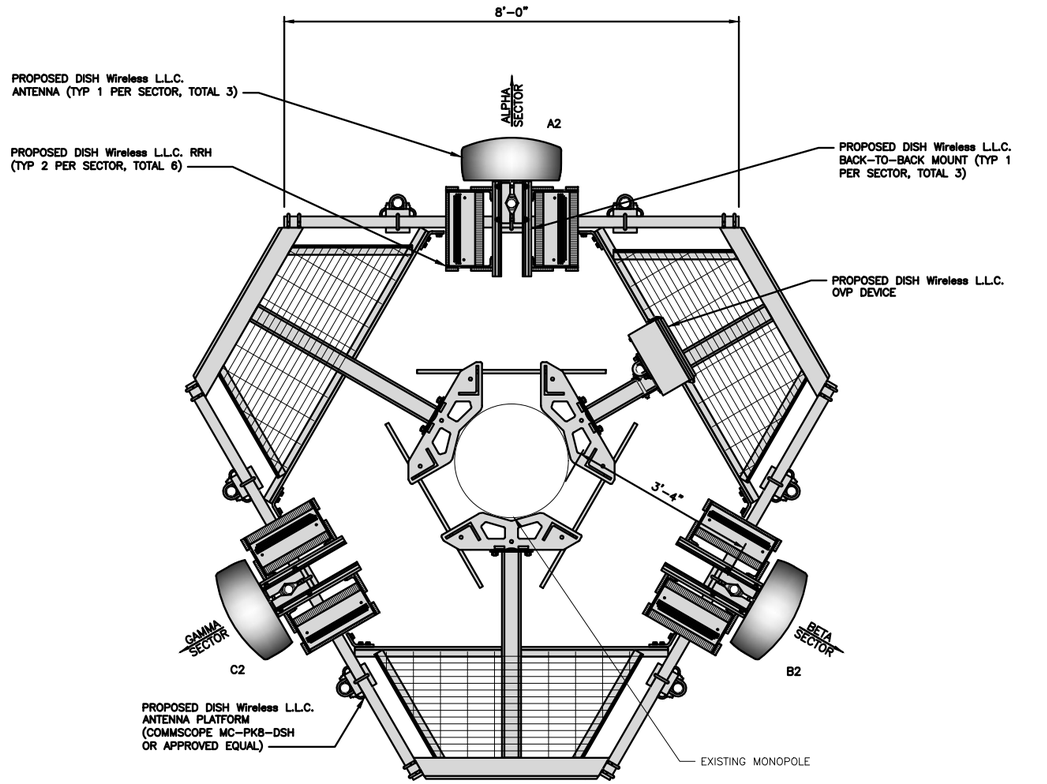
THE EXISTING LINES, ANTENNA, APPURTENANCES AND MOUNT RELATED TO THE EXISTING RAD CENTER @ 148.3'–147.2' SHALL BE REMOVED BY THE CONTRACTOR PRIOR TO INSTALLING THE PROPOSED INSTALLATION. FAILURE TO COMPLY WITH THE FOREGOING MAY RESULT IN ADDITIONAL CHARGES OR FEES.



PROPOSED NORTH ELEVATION

10' 0 10' 20'
1"=10'

1



ANTENNA LAYOUT

12" 6" 0 1' 2' 3'
3/4"=1'–0"

2

SECTOR POS.	ANTENNA					TRANSMISSION CABLE	RRH			OVP
	EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECH	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH	MANUFACTURER – MODEL NUMBER	TECH	POS.	MANUFACTURER MODEL
A1	–	–	–	–	–	(1) HIGH–CAPACITY HYBRID CABLE (184' LONG)	TA08025–B604	5G	A2	(1) RAYCAP RDIDC–9181–PF–48
A2	PROPOSED	JMA – MX08FRO665–21	5G	0°	145'–0"		TA08025–B605	5G	A2	
A3	–	–	–	–	–		–	–	–	
B1	–	–	–	–	–	SHARED W/ALPHA	TA08025–B604	5G	B2	SHARED W/ALPHA
B2	PROPOSED	JMA – MX08FRO665–21	5G	120°	145'–0"		TA08025–B605	5G	B2	
B3	–	–	–	–	–		–	–	–	
C1	–	–	–	–	–	SHARED W/ALPHA	TA08025–B604	5G	C2	SHARED W/ALPHA
C2	PROPOSED	JMA – MX08FRO665–21	5G	240°	145'–0"		TA08025–B605	5G	C2	
C3	–	–	–	–	–		–	–	–	

NOTES

1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS.
2. ANTENNA AND RRH MODELS MAY CHANGE DUE TO EQUIPMENT AVAILABILITY. ALL EQUIPMENT CHANGES MUST BE APPROVED AND REMAIN IN COMPLIANCE WITH THE PROPOSED DESIGN AND STRUCTURAL ANALYSES.

ANTENNA SCHEDULE

NO SCALE

3

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PHONE: (919) 468-0112
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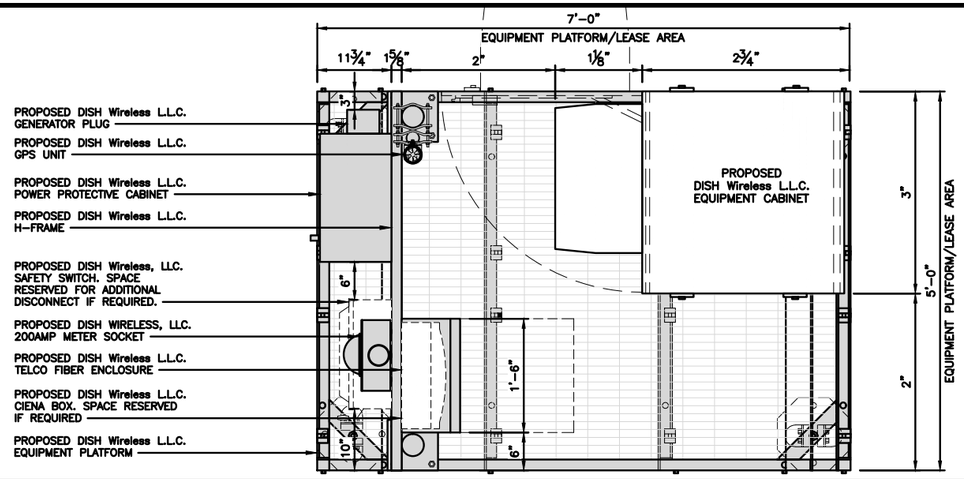
A&E PROJECT NUMBER
302466–14046283_D3

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00079B
305 W. SERVICE RD.
HARTFORD, CT 06120

SHEET TITLE
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER
A-2



PLATFORM EQUIPMENT PLAN

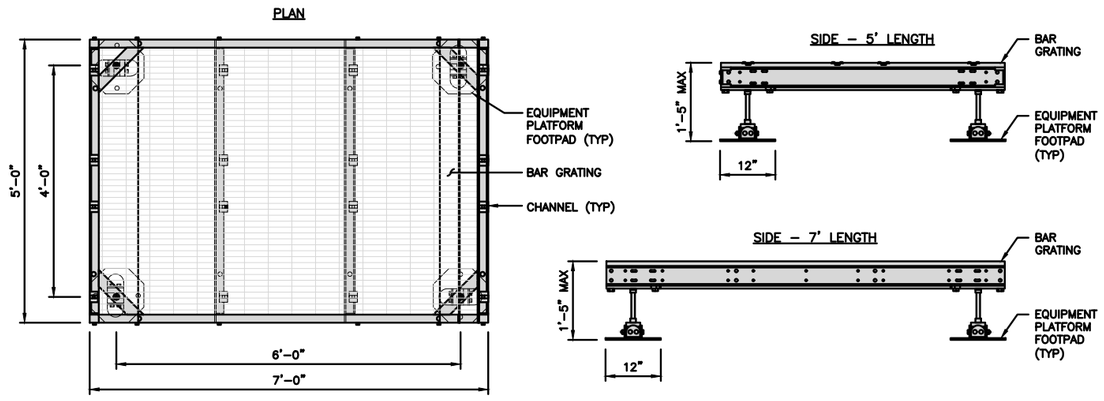
12" 9" 6" 3" 0 1' 2'
1"=1'-0"

1

COMMSCOPE MTC4045LP 5X7 PLATFORM	
DIMENSIONS (HxWxD)	16"x84"x60"
TOTAL WEIGHT	423 LBS

NOTE:

PLATFORM TO BE WITHIN 1° OF LEVEL

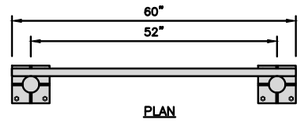


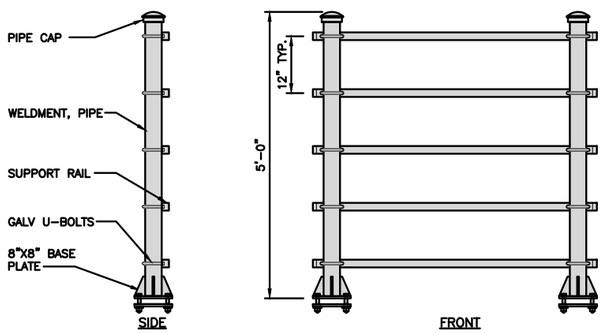
PLATFORM DETAIL

NO SCALE

2

KENWOOD T1701KT5-5S H-FRAME	
UNISTRUT/SUPPORT RAIL	5
WEIGHT/ VOLUME	173.6 LBS





H-FRAME DETAIL

NO SCALE

3

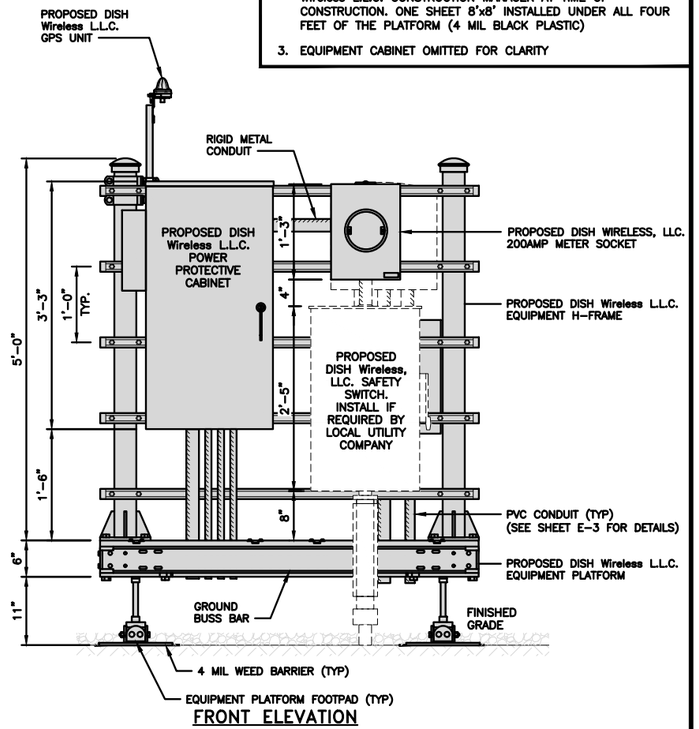
NOT USED

NO SCALE

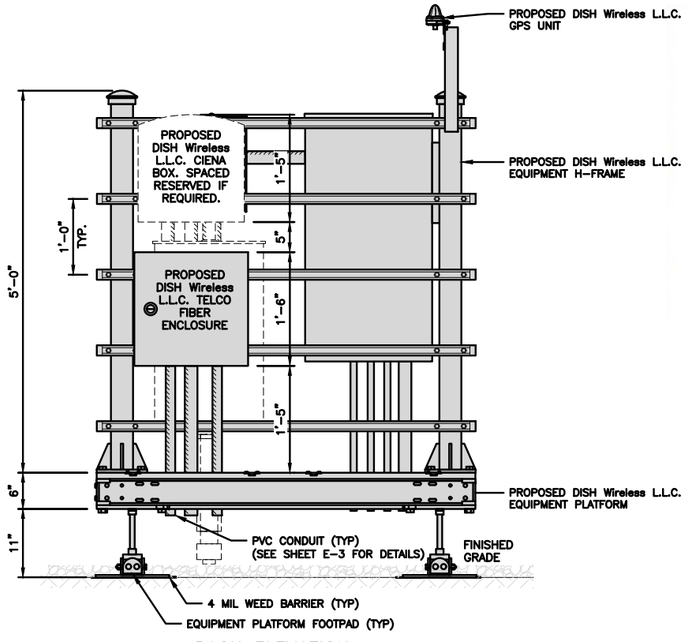
4

NOTES

1. CONTRACTOR TO BURY PLATFORM FEET WITH A MINIMUM OF 2" OF FILL PER EXISTING SITE SURFACE
2. WEED BARRIER FABRIC TO BE ADDED AT DISCRETION OF DISH Wireless L.L.C. CONSTRUCTION MANAGER AT TIME OF CONSTRUCTION. ONE SHEET 8'x8' INSTALLED UNDER ALL FOUR FEET OF THE PLATFORM (4 MIL BLACK PLASTIC)
3. EQUIPMENT CABINET OMITTED FOR CLARITY



FRONT ELEVATION



BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION

12" 9" 6" 3" 0 1' 2'
1"=1'-0"

5

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SUBMITTALS

REV	DATE	DESCRIPTION
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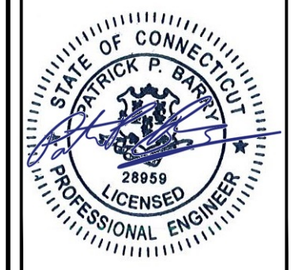


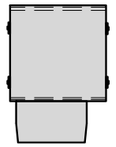
A&E PROJECT NUMBER
302466-14046283_D3

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00079B
305 W. SERVICE RD.
HARTFORD, CT 06120

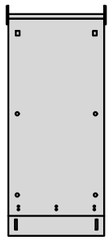
SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

SHEET NUMBER
A-3

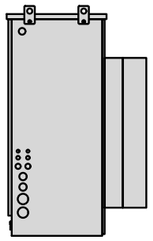
CHARLES INDUSTRY HEX CUBE–PM639155N4	
DIMENSIONS (HxWxD)	74"x32"x32"
POWER PLANT	–48VDC ABB/600W
TOTAL WEIGHT (EMPTY)	408 lbs



PLAN



BACK



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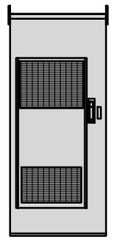
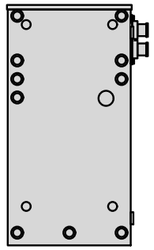


FRONT

CABINET DETAIL | NO SCALE | 1

RAYCAP PPC RDIAC–2465–P–240–MTS	
ENCLOSURE DIMENSIONS (HxWxD):	39"x22.855"x12.593
WEIGHT:	80 lbs
OPERATING AC VOLTAGE	240/120 1 PHASE 3W+G

TOP



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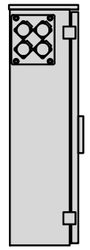
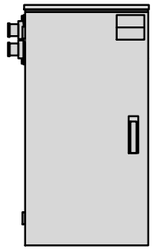


SIDE



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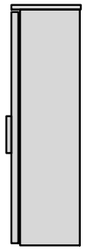
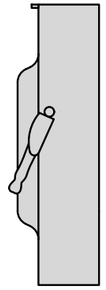


SIDE

POWER PROTECTION CABINET (PPC) DETAIL | NO SCALE | 2

SQUARE D SAFETY SWITCHES D224NRB	
ENCLOSURE DIM (HxWxD)	29.25"x19.00"x8.50"
ENCLOSURE TYPE	NEMA 3R RAINPROOF
UL LISTED	FILE E–2875

TOP



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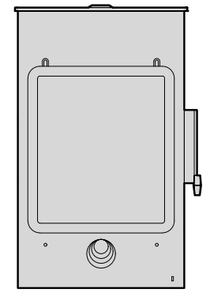
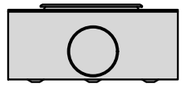


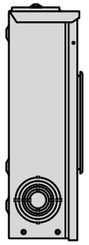
FRONT

SAFETY SWITCH DETAIL | NO SCALE | 3

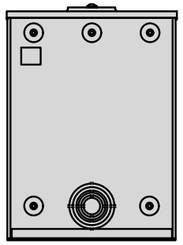
EATON METER SOCKET UNRRS213BEUSE	
METER SOCKET TYPE	RING
ENCLOSURE DIM (HxWxD)	16"x12"x6"
MAIN AMPERE RATING	200A
WEIGHT	18 LBS



PLAN



SIDE



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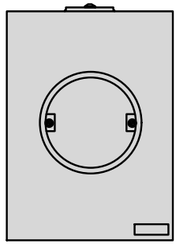
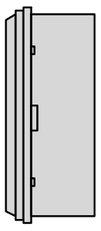


FRONT

METER SOCKET DETAIL | NO SCALE | 4

CIENA 3931 FIBER NID ENCLOSURE	
DIMENSIONS (HxWxD)	17"x16.8"x7"
WEIGHT	28.6 lbs

TOP



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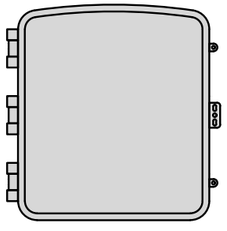
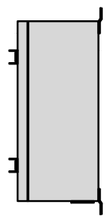


FRONT

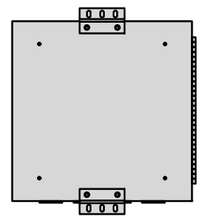
FIBER NID ENCLOSURE DETAIL | NO SCALE | 5

CHARLES CFIT–PF2020DSH1 FIBER TELCO ENCLOSURE	
ENCLOSURE DIMS (HxWxD)	20"x20"x9"
ENCLOSURE WEIGHT	20 lbs
MOUNTING	WALL
COMPLIANCE	TYPE 4

FRONT



SIDE



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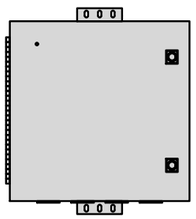
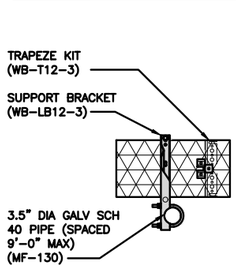


FRONT

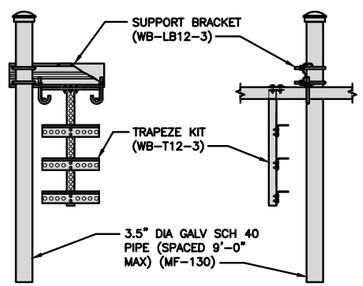
FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

COMMSCOPE WB–K110–B WAVEGUIDE BRIDGE KIT	
DIMENSIONS (HxL)	160"x10'
WEIGHT/ VOLUME	325.0 LBS
CABLE RUN (QTY)	12

INCLUDED PRODUCTS:
- WB–T12–3 TRAPEZE KIT, 3 RUNGS
- WB–LB12–3 SUPPORT BRACKET
- MF–130 DIRECT BURIAL PIPE COLUMN, 13'–4"

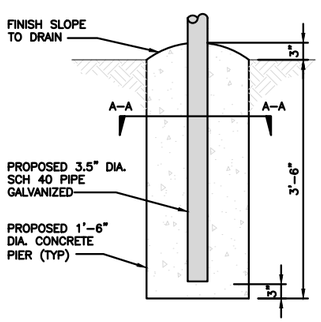


PLAN

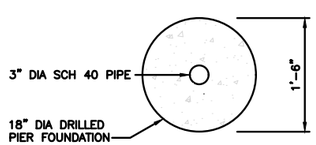


FRONT SIDE

ICE BRIDGE DETAIL | NO SCALE | 7

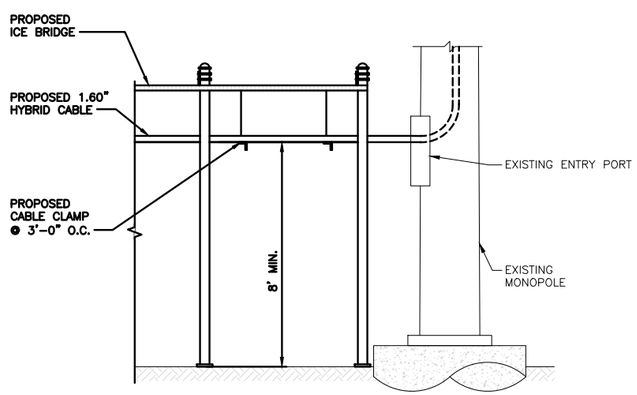


CONCRETE PIER



A–A SECTION

TYPICAL ICE BRIDGE CONCRETE PIER DETAIL | NO SCALE | 8



HYBRID CABLE RUN | NO SCALE | 9

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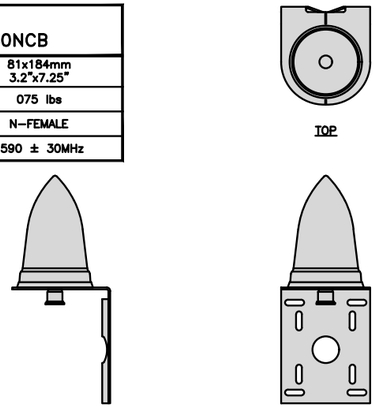
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00079B
305 W. SERVICE RD.
HARTFORD, CT 06120

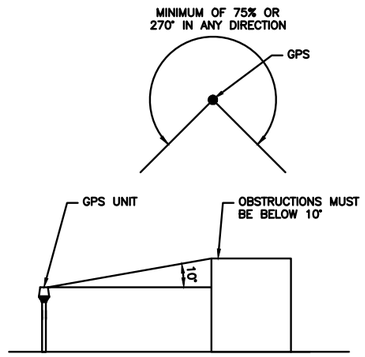
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-4

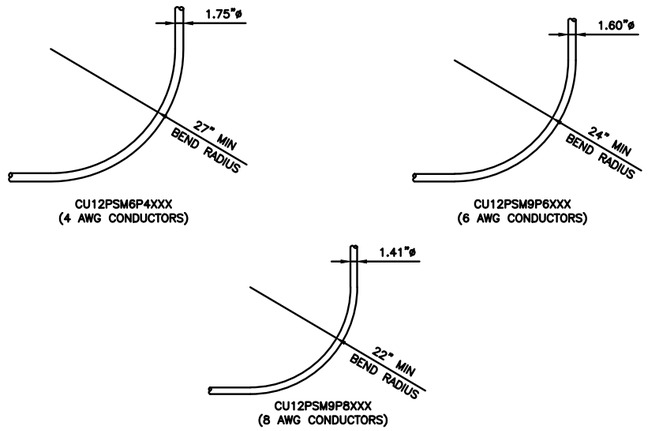
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



GPS DETAIL — NO SCALE — 1



GPS MINIMUM SKY VIEW REQUIREMENTS — NO SCALE — 2



CABLES UNLIMITED HYBRID CABLE MINIMUM BEND RADIUSES — NO SCALE — 3

NOT USED — NO SCALE — 4

NOT USED — NO SCALE — 5

NOT USED — NO SCALE — 6

NOT USED — NO SCALE — 7

NOT USED — NO SCALE — 8

NOT USED — NO SCALE — 9

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COA: PEC.0001553

DRAWN BY:	CHECKED BY:	APPROVED BY:
AP	SRF	SRF

RFDS REV #: ----

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	08/24/2022	ISSUED FOR CONSTRUCTION

STATE OF CONNECTICUT
PATRICK P. BARRY
28959
LICENSED
PROFESSIONAL ENGINEER

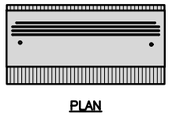
A&E PROJECT NUMBER
302466-14046283_D3

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00079B
305 W. SERVICE RD.
HARTFORD, CT 06120

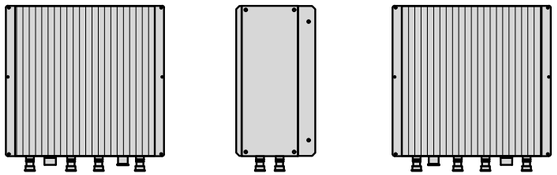
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-5

FUJITSU DUAL BAND TA08025-B604	
DIMENSIONS (HxWxD)	14.9"x15.7"x7.8"
WEIGHT	63.9 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



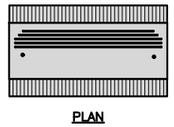
PLAN



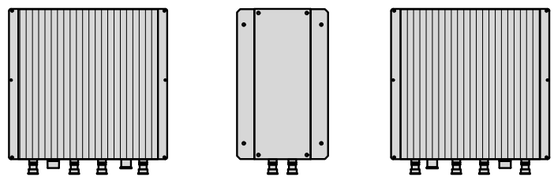
BACK SIDE FRONT

RRH DETAIL | NO SCALE | 1

FUJITSU TRIPLE BAND TA08025-B605	
DIMENSIONS (HxWxD)	14.9"x15.7"x9"
WEIGHT	74.95 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



PLAN

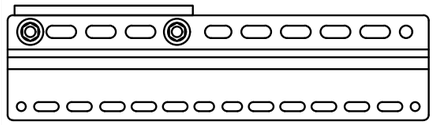


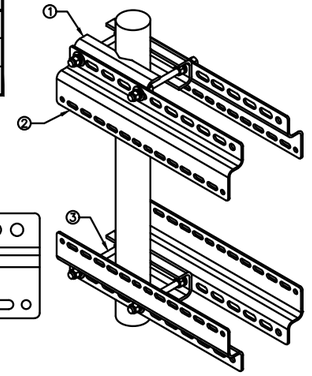
BACK SIDE FRONT

RRH DETAIL | NO SCALE | 2

SABRE DOUBLE Z-BRACKET G10123155	
DIMENSIONS (HxWxD) (1 BRACKET)	5"x20"x1-13/16"
WEIGHT (FULL ASSEMBLY)	35.79 lbs
PACKAGE QUANTITY	4

#	DESCRIPTION
1	PLATE, CHANNEL BRACKET
2	RRH Z BRACKET, 3/16"
3	THREADED ROD ASSEMBLY 1/2"x12"



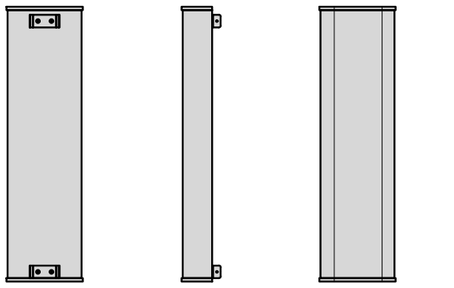


NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

RRH MOUNT DETAIL | NO SCALE | 3

JMA WIRELESS MX08FRO665-21 ANTENNA	
DIMENSIONS (HxWxD)	72.0"x20.0"x8.0"
TOTAL WEIGHT	64.5 LB
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE

PLAN



BACK SIDE FRONT

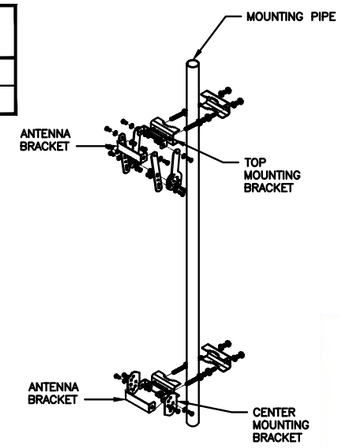
ANTENNA DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

JMA ANTENNA MOUNT BRACKET #91900318	
TOTAL WEIGHT (WITH BRACKETS)	18 lbs (8.18 Kg)
POLE DIAMETER RANGE	2.5" TO 4.5"

NOTE:
KIT #91900318: TOP AND BOTTOM BRACKETS FOR 4-,6-, AND 8-FOOT ANTENNAS

ANTENNA BRACKET NOT PART OF KIT

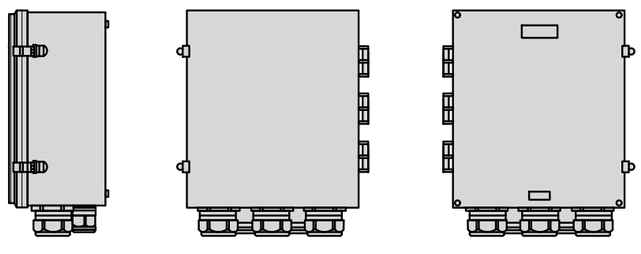


NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

ANTENNA BRACKET DETAIL | NO SCALE | 6

RAYCAP RDIDC-9181-PF-48 DC SURGE PROTECTION (OVP)	
DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 LBS

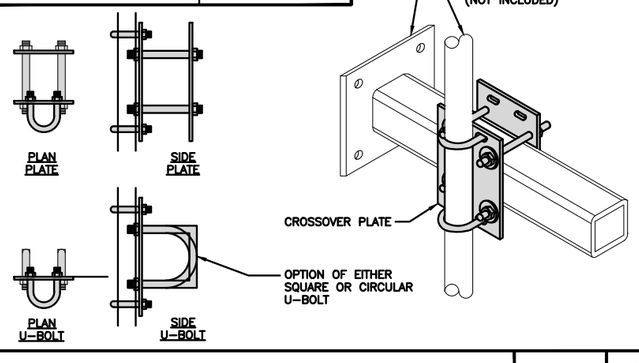
PLAN



SIDE BACK FRONT

SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 7

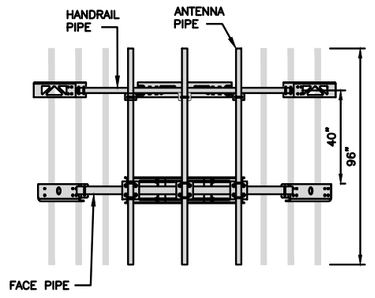
COMMSCOPE XP-2040 CROSSOVER PLATE	
DIMENSIONS (HxW)	10"x12"
WEIGHT	11.023 LBS

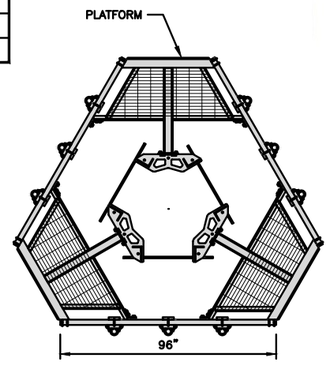


RRH/OVP MOUNT DETAIL | NO SCALE | 8

COMMSCOPE MC-PK8-DSH	
FACE WIDTH	96"
WEIGHT	1373.08 lbs
NOTE: 15" TO 38" O.D.	

NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT





ANTENNA PLATFORM DETAIL | NO SCALE | 9

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COA: PEC.0001553

DRAWN BY:	CHECKED BY:	APPROVED BY:
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RFDS REV #: ----

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
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STATE OF CONNECTICUT
PATRICK P. BARRY
28959
LICENSED
PROFESSIONAL ENGINEER

A&E PROJECT NUMBER
302466-14046283_D3

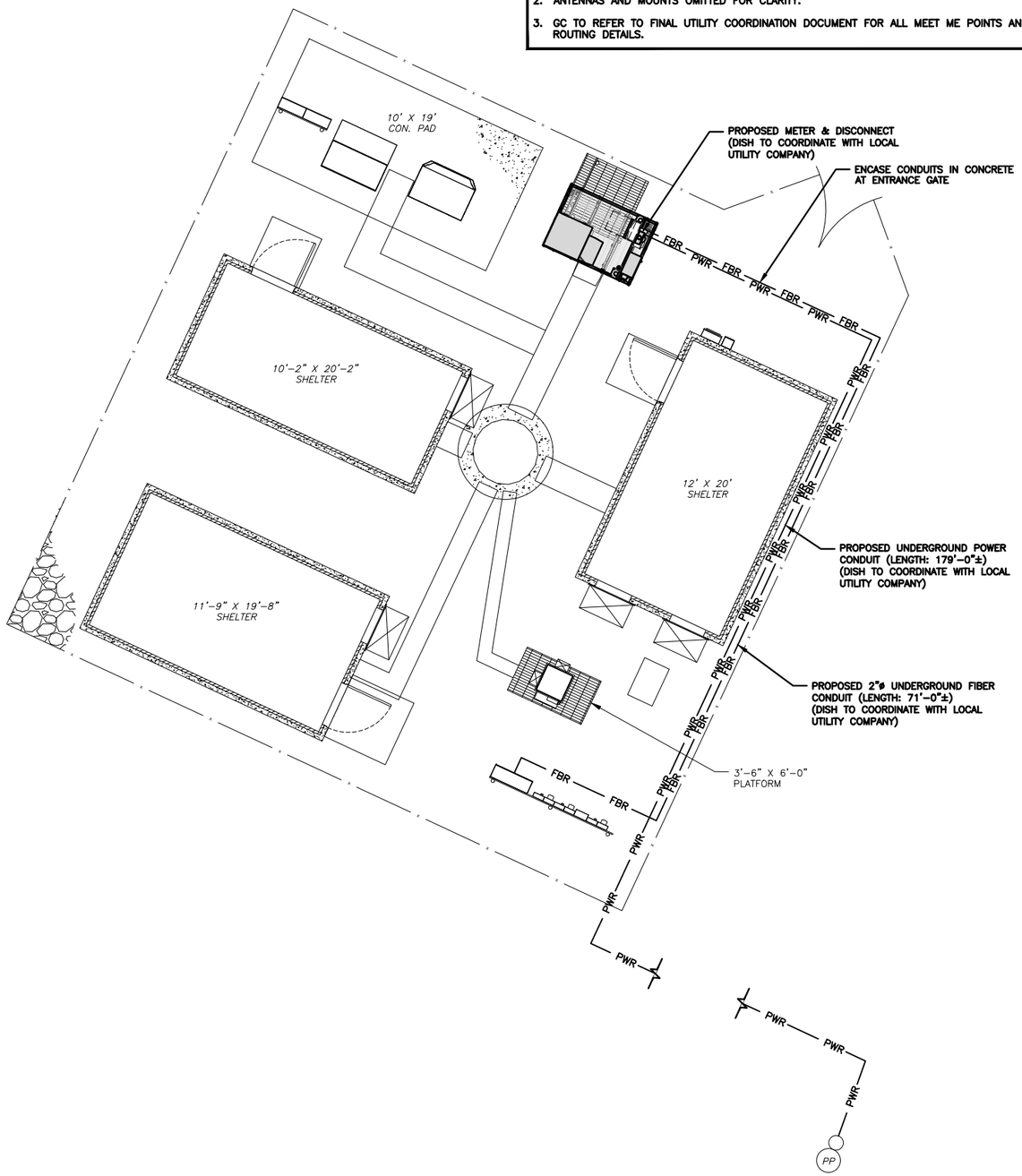
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00079B
305 W. SERVICE RD.
HARTFORD, CT 06120

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-6

NOTES

1. A BOUNDARY SURVEY OF THE EXISTING EASEMENT WAS NOT AVAILABLE AT CONSTRUCTION DRAWING CREATION. CONSTRUCTION CONTRACTOR MUST FIELD VERIFY THAT THE PROPOSED UTILITY ROUTES ARE WITHIN AMERICAN TOWER'S EASEMENT.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
3. GC TO REFER TO FINAL UTILITY COORDINATION DOCUMENT FOR ALL MEET ME POINTS AND ROUTING DETAILS.



UTILITY ROUTE PLAN

5' 0 5' 10'
1"=5'

1

DC POWER WIRING SHALL BE COLOR CODED AT EACH END FOR IDENTIFYING +24V AND -48V CONDUCTORS. RED MARKINGS SHALL IDENTIFY +24V AND BLUE MARKINGS SHALL IDENTIFY -48V.

1. CONTRACTOR SHALL INSPECT THE EXISTING CONDITIONS PRIOR TO SUBMITTING A BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTOR'S FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE PROJECT MANAGER FOR CLARIFICATION, NOT AFTER THE CONTRACT HAS BEEN AWARDED.
2. ALL ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH CURRENT NATIONAL ELECTRICAL CODES AND ALL STATE AND LOCAL CODES, LAWS, AND ORDINANCES. PROVIDE ALL COMPONENTS AND WIRING SIZES AS REQUIRED TO MEET NEC STANDARDS.
3. LOCATION OF EQUIPMENT, CONDUIT AND DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND SHALL BE COORDINATED WITH FIELD CONDITIONS PRIOR TO CONSTRUCTION.
4. CONDUIT ROUGH-IN SHALL BE COORDINATED WITH THE MECHANICAL EQUIPMENT TO AVOID LOCATION CONFLICTS. VERIFY WITH THE MECHANICAL EQUIPMENT CONTRACTOR AND COMPLY AS REQUIRED.
5. CONTRACTOR SHALL PROVIDE ALL BREAKERS, CONDUITS AND CIRCUITS AS REQUIRED FOR A COMPLETE SYSTEM.
6. CONTRACTOR SHALL PROVIDE PULL BOXES AND JUNCTION BOXES AS REQUIRED BY THE NEC ARTICLE 314.
7. CONTRACTOR SHALL PROVIDE ALL STRAIN RELIEF AND CABLE SUPPORTS FOR ALL CABLE ASSEMBLIES. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
8. ALL DISCONNECTS AND CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED PHENOLIC NAMEPLATES INDICATING EQUIPMENT CONTROLLED, BRANCH CIRCUITS INSTALLED ON, AND PANEL FIELD LOCATIONS FED FROM.
9. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS PER THE SPECIFICATIONS AND NEC 250. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULL BOXES, AND ALL DISCONNECT SWITCHES, AND EQUIPMENT CABINETS.
10. ALL NEW MATERIAL SHALL HAVE A U.L. LABEL.
11. PANEL SCHEDULE LOADING AND CIRCUIT ARRANGEMENTS REFLECT POST-CONSTRUCTION EQUIPMENT.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR AS-BUILT PANEL SCHEDULE AND SITE DRAWINGS.
13. ALL TRENCHES IN COMPOUND TO BE HAND DUG

ELECTRICAL NOTES

NO SCALE

2

NOT USED

NO SCALE

3

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COA: PEC.0001553

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RFDS REV #: ----

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	06/24/2022	ISSUED FOR CONSTRUCTION

STATE OF CONNECTICUT
MUSTAPHA RAHA
33740
LICENSED
PROFESSIONAL ENGINEER

A&E PROJECT NUMBER
302466-14046283_D3

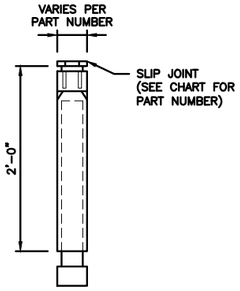
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00079B
305 W. SERVICE RD.
HARTFORD, CT 06120

SHEET TITLE
ELECTRICAL/FIBER ROUTE PAN AND NOTES

SHEET NUMBER
E-1

CARLON EXPANSION FITTINGS

COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD CTN QTY.	TRAVEL LENGTH
E945D	E945DX	1/2"	20	4"
E945E	E945EX	3/4"	15	4"
E945F	E945FX	1"	10	4"
E945G	E945GX	1 1/4"	5	4"
E945H	E945HX	1 1/2"	5	4"
E945J	E945JX	2"	15	8"
E945K	E945KX	2 1/2"	10	8"
E945L	E945LX	3"	10	8"
E945M	E945MX	3 1/2"	5	8"
E945N	E945NX	4"	5	8"
E945P	E945PX	5"	1	8"
E945R	E945RX	6"	1	8"

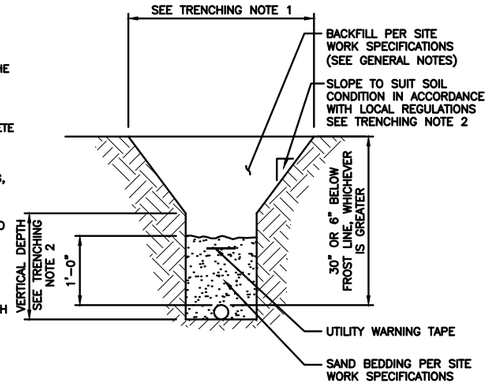


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

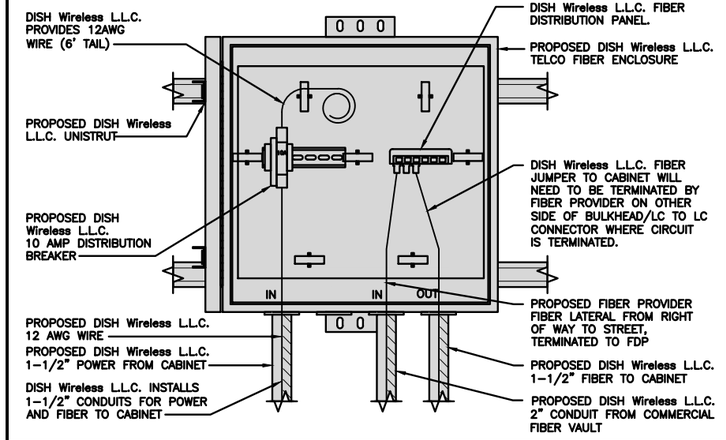
EXPANSION JOINT DETAIL | NO SCALE | 1

TRENCHING NOTES

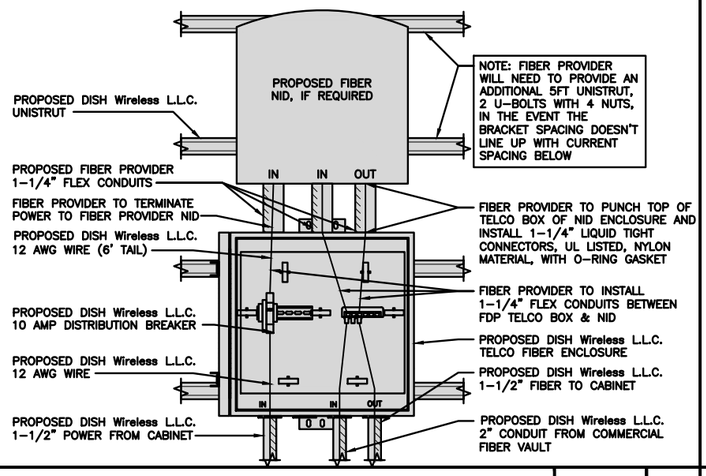
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT OSHA TRENCHING AND EXCAVATION SAFETY STANDARDS.
3. ALL CONDUITS SHALL BE INSTALLED IN COMPLIANCE WITH THE CURRENT NATIONAL ELECTRIC CODE (NEC) OR AS REQUIRED BY THE LOCAL JURISDICTION, WHICHEVER IS THE MOST STRINGENT.



TYPICAL UNDERGROUND TRENCH DETAIL | NO SCALE | 2



DARK TELCO BOX – INTERIOR WIRING LAYOUT | NO SCALE | 3



LIT TELCO BOX – INTERIOR WIRING LAYOUT (OPTIONAL) | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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A&E PROJECT NUMBER
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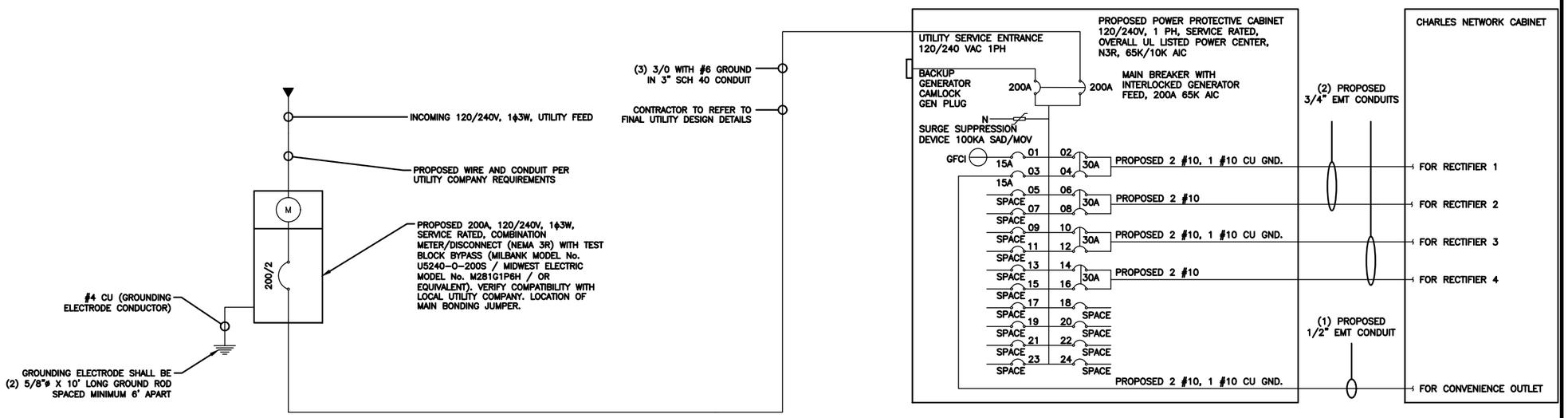
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00079B
305 W. SERVICE RD.
HARTFORD, CT 06120

SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-2



NOTE:
BRANCH CIRCUIT WIRING SUPPLYING RECTIFIERS ARE TO BE RATED UL1015, 105°C, 600V, AND PVC INSULATED, IN THE SIZES SHOWN IN THE ONE-LINE DIAGRAM. CONTRACTOR MAY SUBSTITUTE UL1015 WIRE FOR THWN-2 FOR CONVENIENCE OUTLET BRANCH CIRCUIT.

BREAKERS REQUIRED:
(4) 30A, 2P BREAKER - SQUARE D P/N:QO230
(2) 15A, 1P BREAKER - SQUARE D P/N:QO115

PPC ONE-LINE DIAGRAM | NO SCALE | 1

PROPOSED CHARLES PANEL SCHEDULE

LOAD SERVED	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	LOAD SERVED
PPC GFCI OUTLET	180		15A	1	A	2	30A	2880		ABB/GE INFINITY RECTIFIER 1
CHARLES GFCI OUTLET		180	15A	3	B	4			2880	
-SPACE-				5	A	6	30A	2880		ABB/GE INFINITY RECTIFIER 2
-SPACE-				7	B	8			2880	
-SPACE-				9	A	10	30A	2880		ABB/GE INFINITY RECTIFIER 3
-SPACE-				11	B	12			2880	
-SPACE-				13	A	14	30A	2880		ABB/GE INFINITY RECTIFIER 4
-SPACE-				15	B	16			2880	
-SPACE-				17	A	18				-SPACE-
-SPACE-				19	B	20				-SPACE-
-SPACE-				21	A	22				-SPACE-
-SPACE-				23	B	24				-SPACE-
VOLTAGE AMPS	180	180						11520	11520	
200A MCB, 1ϕ, 24 SPACE, 120/240V			L1		L2					
MB RATING: 65,000 AIC			11700		11700		VOLTAGE AMPS			
			98		98		AMPS			
			98				MAX AMPS			
			122				MAX 125%			

PANEL SCHEDULE | NO SCALE | 2

NOT USED | NO SCALE | 3

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STATE OF CONNECTICUT
MUSTAPHA RAHA
33740
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PROFESSIONAL ENGINEER

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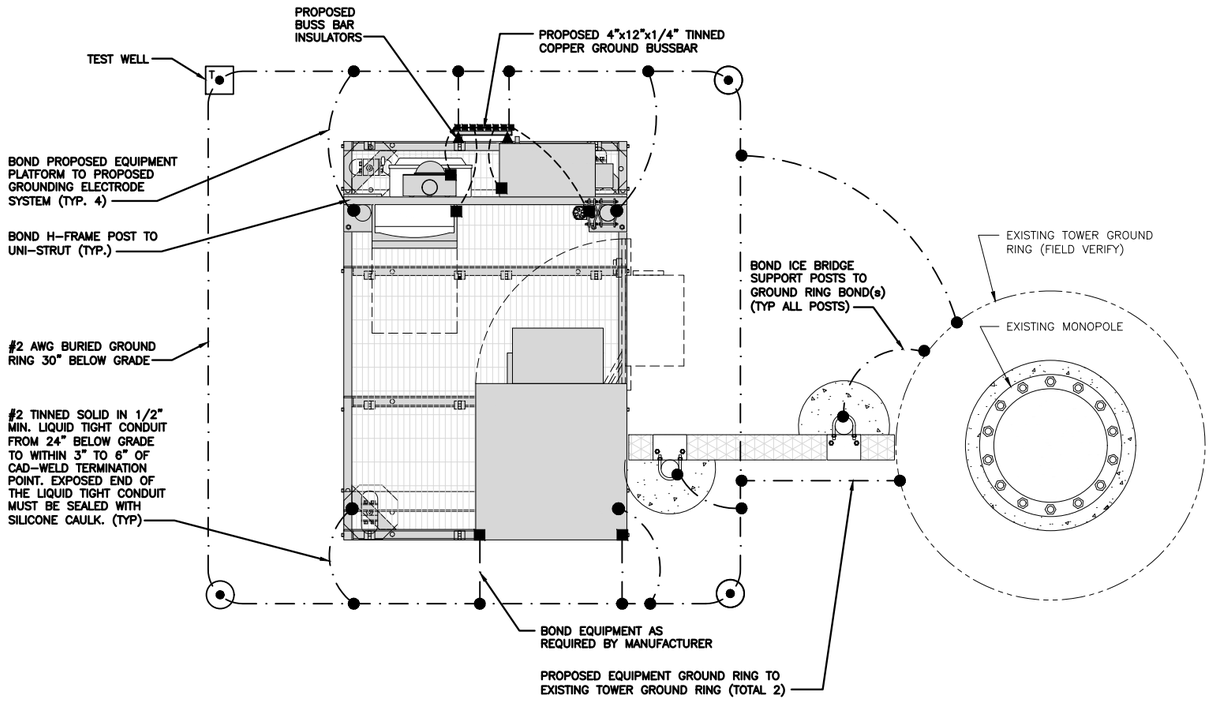
302466-14046283_D3

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00079B
305 W. SERVICE RD.
HARTFORD, CT 06120

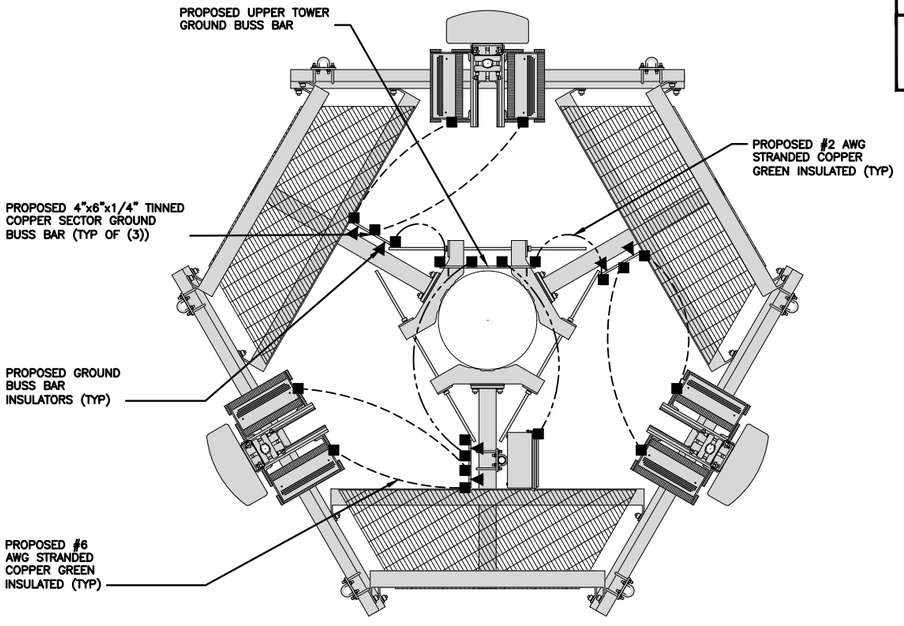
SHEET TITLE
ELECTRICAL ONE-LINE AND PANEL SCHEDULE

SHEET NUMBER
E-3



TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE | 1



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE | 2

NOTES

ANTENNAS AND OVP SHOWN ARE GENERIC AND NOT REFERENCING TO A SPECIFIC MANUFACTURER. THIS LAYOUT IS FOR REFERENCE ONLY

- EXOTHERMIC CONNECTION
- MECHANICAL CONNECTION
- GROUND BUS BAR
- GROUND ROD
- TEST GROUND ROD WITH INSPECTION SLEEVE
- #2 AWG STRANDED & INSULATED
- #2 AWG SOLID COPPER TINNED
- BUSS BAR INSULATOR

GROUNDING LEGEND

1. GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.
2. CONTRACTOR SHALL GROUND ALL EQUIPMENT AS A COMPLETE SYSTEM. GROUNDING SHALL BE IN COMPLIANCE WITH NEC SECTION 250 AND DISH Wireless L.L.C. GROUNDING AND BONDING REQUIREMENTS AND MANUFACTURER'S SPECIFICATIONS.
3. ALL GROUND CONDUCTORS SHALL BE COPPER; NO ALUMINUM CONDUCTORS SHALL BE USED.

GROUNDING KEY NOTES

(A) EXTERIOR GROUND RING: #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING.

(B) TOWER GROUND RING: THE GROUND RING SYSTEM SHALL BE INSTALLED AROUND AN ANTENNA TOWER'S LEGS, AND/OR GUY ANCHORS. WHERE SEPARATE SYSTEMS HAVE BEEN PROVIDED FOR THE TOWER AND THE BUILDING, AT LEAST TWO BONDS SHALL BE MADE BETWEEN THE TOWER RING GROUND SYSTEM AND THE BUILDING RING GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS.

(C) INTERIOR GROUND RING: #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTOR EXTENDED AROUND THE PERIMETER OF THE EQUIPMENT AREA. ALL NON-TELECOMMUNICATIONS RELATED METALLIC OBJECTS FOUND WITHIN A SITE SHALL BE GROUNDED TO THE INTERIOR GROUND RING WITH #6 AWG STRANDED GREEN INSULATED CONDUCTOR.

(D) BOND TO INTERIOR GROUND RING: #2 AWG SOLID TINNED COPPER WIRE PRIMARY BONDS SHALL BE PROVIDED AT LEAST AT FOUR POINTS ON THE INTERIOR GROUND RING, LOCATED AT THE CORNERS OF THE BUILDING.

(E) GROUND ROD: UL LISTED COPPER CLAD STEEL. MINIMUM 5/8" DIAMETER BY EIGHT FEET LONG. GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.

(F) CELL REFERENCE GROUND BAR: POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG UNLESS NOTED OTHERWISE STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUCTORS.

(G) HATCH PLATE GROUND BAR: BOND TO THE INTERIOR GROUND RING WITH TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CRGB MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS EACH.

(H) EXTERIOR CABLE ENTRY PORT GROUND BARS: LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE.

(J) TELCO GROUND BAR: BOND TO BOTH CELL REFERENCE GROUND BAR OR EXTERIOR GROUND RING.

(K) FRAME BONDING: THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK.

(L) INTERIOR UNIT BONDS: METAL FRAMES, CABINETS AND INDIVIDUAL METALLIC UNITS LOCATED WITH THE AREA OF THE INTERIOR GROUND RING REQUIRE A #6 AWG STRANDED GREEN INSULATED COPPER BOND TO THE INTERIOR GROUND RING.

(M) FENCE AND GATE GROUNDING: METAL FENCES WITHIN 7 FEET OF THE EXTERIOR GROUND RING OR OBJECTS BONDED TO THE EXTERIOR GROUND RING SHALL BE BONDED TO THE GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTOR AT AN INTERVAL NOT EXCEEDING 25 FEET. BONDS SHALL BE MADE AT EACH GATE POST AND ACROSS GATE OPENINGS.

(N) EXTERIOR UNIT BONDS: METALLIC OBJECTS, EXTERNAL TO OR MOUNTED TO THE BUILDING, SHALL BE BONDED TO THE EXTERIOR GROUND RING. USING #2 TINNED SOLID COPPER WIRE

(P) ICE BRIDGE SUPPORTS: EACH ICE BRIDGE LEG SHALL BE BONDED TO THE GROUND RING WITH #2 AWG BARE TINNED COPPER CONDUCTOR. PROVIDE EXOTHERMIC WELDS AT BOTH THE ICE BRIDGE LEG AND BURIED GROUND RING.

(Q) DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICE CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH A MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR

(R) TOWER TOP COLLECTOR BUSS BAR IS TO BE MECHANICALLY BONDED TO PROPOSED ANTENNA MOUNT COLLAR.

REFER TO DISH Wireless L.L.C. GROUNDING NOTES.

GROUNDING KEY NOTES

NO SCALE | 3

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COA: PEC.0001553

DRAWN BY:	CHECKED BY:	APPROVED BY:
AP	SRF	SRF

RFDS REV #: ----

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	06/24/2022	ISSUED FOR CONSTRUCTION

STATE OF CONNECTICUT · MUSTAPHA RAHA · 33740 · LICENSED PROFESSIONAL ENGINEER

A&E PROJECT NUMBER
302466-14046283_D3

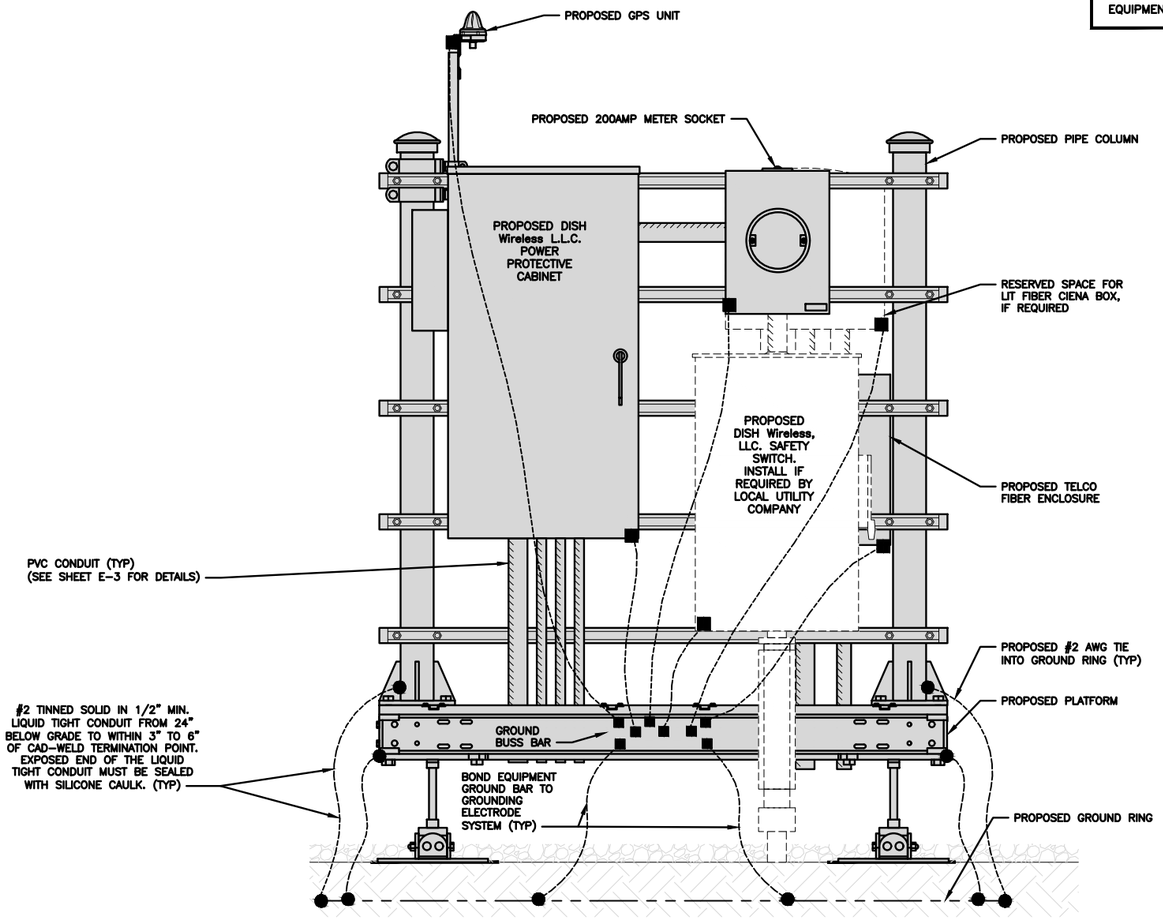
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00079B
305 W. SERVICE RD.
HARTFORD, CT 06120

SHEET TITLE
GROUNDING PLAN AND NOTES

SHEET NUMBER
G-1

NOTES

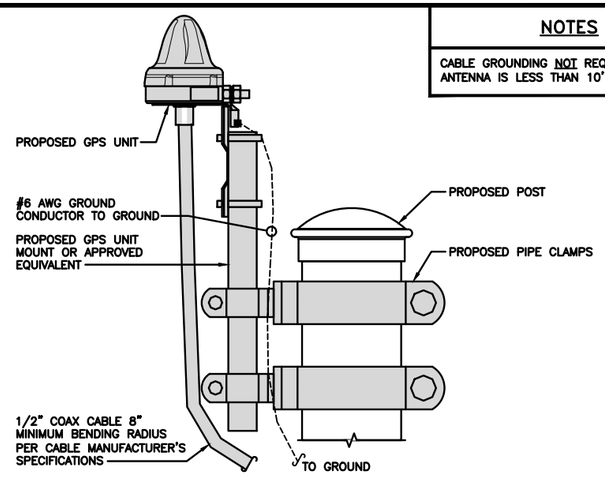
EQUIPMENT CABINET OMITTED FOR CLARITY



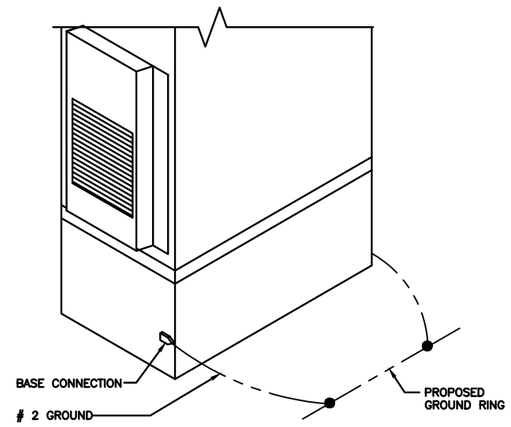
H-FRAME GROUNDING DETAIL | NO SCALE | 1

NOTES

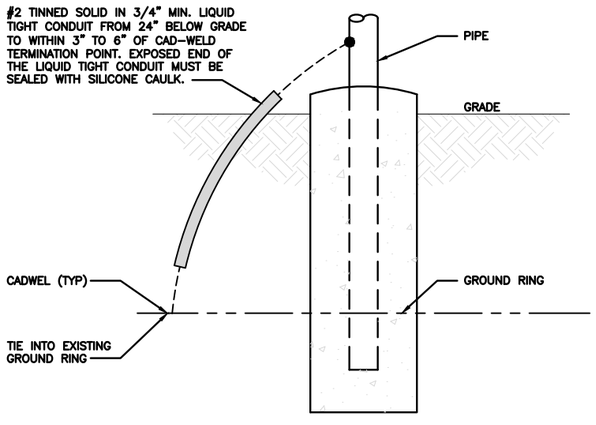
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET



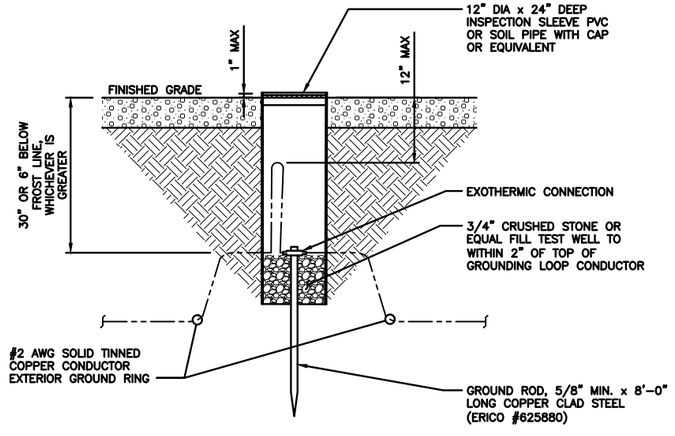
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



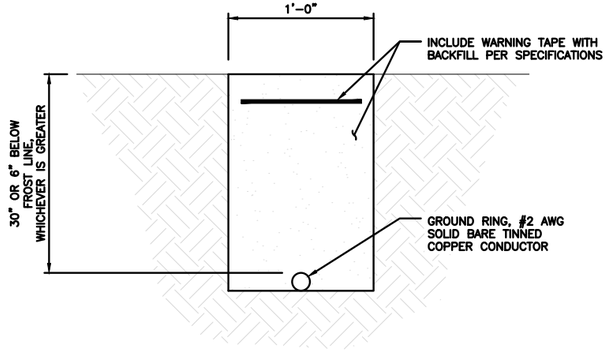
OUTDOOR CABINET GROUNDING | NO SCALE | 3



TRANSITIONING GROUND DETAIL | NO SCALE | 4



TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE | NO SCALE | 5



TYPICAL GROUND RING TRENCH | NO SCALE | 6

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STATE OF CONNECTICUT
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33740
LICENSED PROFESSIONAL ENGINEER

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302466-14046283_D3

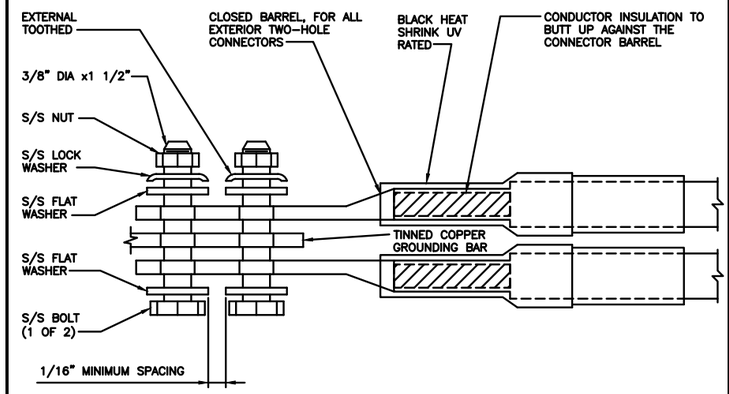
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00079B
305 W. SERVICE RD.
HARTFORD, CT 06120

SHEET TITLE
GROUNDING DETAILS

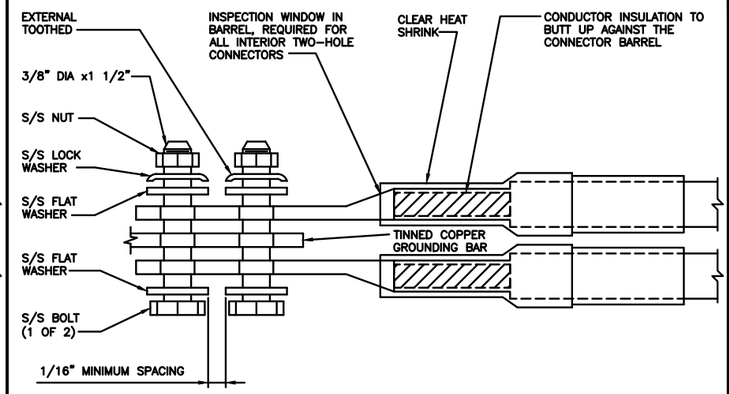
SHEET NUMBER
G-2

1. EXOTHERMIC WELD (2) TWO, #2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUND BAR, ROUTE CONDUCTORS TO BURIED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
2. ALL EXTERIOR GROUNDING HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
3. FOR GROUND BOND TO STEEL ONLY: COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
4. DO NOT INSTALL CABLE GROUNDING KIT AT A BEND AND ALWAYS DIRECT GROUND CONDUCTOR DOWN TO GROUNDING BUS.
5. NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUND BAR AND BOLTED ON THE BACK SIDE.
6. ALL GROUNDING PARTS AND EQUIPMENT TO BE SUPPLIED AND INSTALLED BY CONTRACTOR.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUND BAR AS REQUIRED.
8. ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).

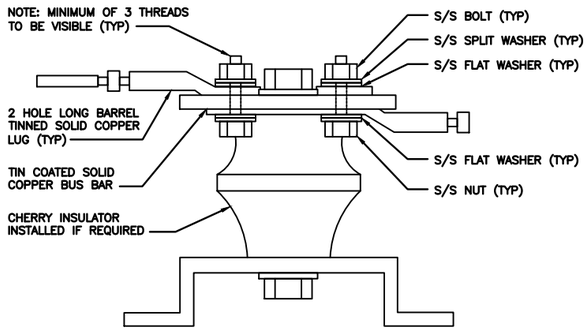
TYPICAL GROUNDING NOTES | NO SCALE | 1



TYPICAL EXTERIOR TWO HOLE LUG | NO SCALE | 2



TYPICAL INTERIOR TWO HOLE LUG | NO SCALE | 3



LUG DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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305 W. SERVICE RD.
HARTFORD, CT 06120

SHEET TITLE
GROUNDING DETAILS

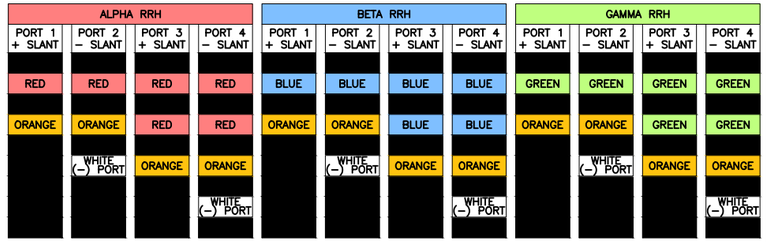
SHEET NUMBER
G-3

HYBRID/DISCREET CABLES

3/4" TAPE WIDTHS WITH 3/4" SPACING

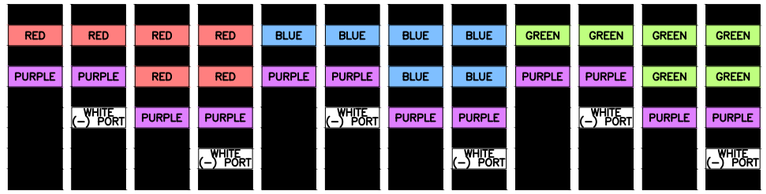
LOW–BAND RRH
(600 MHz N71 BASEBAND) +
(850 MHz N26 BAND) +
(700 MHz N29 BAND) – OPTIONAL PER MARKET

ADD FREQUENCY COLOR TO SECTOR BAND
(CBRS WILL USE YELLOW BAND)



MID–BAND RRH
(AWS BANDS N66+N70)

ADD FREQUENCY COLOR TO SECTOR BAND
(CBRS WILL USE YELLOW BANDS)



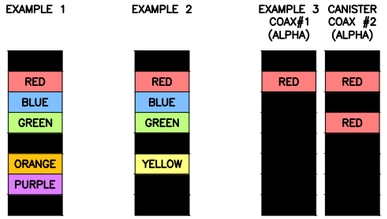
HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED ALONG WITH FREQUENCY BANDS.

EXAMPLE 1 – HYBRID, OR DISCREET, SUPPORTS ALL SECTORS, BOTH LOW–BANDS AND MID–BANDS.

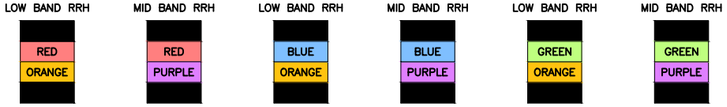
EXAMPLE 2 – HYBRID, OR DISCREET, SUPPORTS CBRS ONLY, ALL SECTORS.

EXAMPLE 3 – MAIN COAX WITH GROUND MOUNTED RRHs.



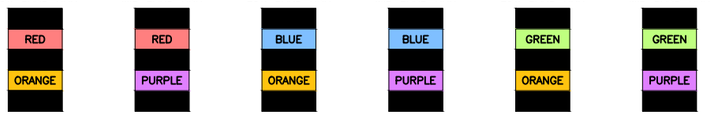
FIBER JUMPERS TO RRHs

LOW–BAND HHR FIBER CABLES HAVE SECTOR STRIPE ONLY.



POWER CABLES TO RRHs

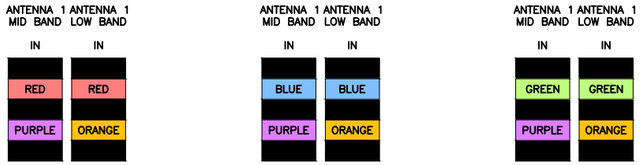
LOW–BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY



RET MOTORS AT ANTENNAS

RET CONTROL IS HANDLED BY THE MID–BAND RRH WHEN ONE SET OF RET PORTS EXIST ON ANTENNA.

SEPARATE RET CABLES ARE USED WHEN ANTENNA PORTS PROVIDE INPUTS FOR BOTH LOW AND MID BANDS.



MICROWAVE RADIO LINKS

LINKS WILL HAVE A 1.5–2 INCH WHITE WRAP WITH THE AZIMUTH COLOR OVERLAPPING IN THE MIDDLE.
ADD ADDITIONAL SECTOR COLOR BANDS FOR EACH ADDITIONAL MW RADIO.

MICROWAVE CABLES WILL REQUIRE P–TOUCH LABELS INSIDE THE CABINET TO IDENTIFY THE LOCAL AND REMOTE SITE ID's.

LOW BANDS (N71+N26) OPTIONAL – (N29): ORANGE

AWS (N66+N70+H–BLOCK): PURPLE

CBRS TECH (3 GHz): YELLOW

NEGATIVE SLANT PORT ON ANT/RRH: WHITE

ALPHA SECTOR: RED

BETA SECTOR: BLUE

GAMMA SECTOR: GREEN

COLOR IDENTIFIER		2
NOT USED		3
RF CABLE COLOR CODES		1
NOT USED		4

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SUBMITTALS

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MUSTAPHA RAHA
33740
LICENSED
PROFESSIONAL ENGINEER
STATE OF CONNECTICUT

A&E PROJECT NUMBER
302466–14046283_D3

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00079B
305 W. SERVICE RD.
HARTFORD, CT 06120

SHEET TITLE
RF CABLE COLOR CODES

SHEET NUMBER
RF-1

LEGEND

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

BUSS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM — T

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE — T

SINGLE POLE SWITCH — $

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE — GFCI

FLUORESCENT LIGHTING FIXTURE (2) TWO LAMPS 48–T8 — F

SMOKE DETECTION (DC) — SD

EMERGENCY LIGHTING (DC)

SECURITY LIGHT W/PHOTOCELL LITHONIA ALXW LED–1–25A400/51K–SR4–120–PE–DDBTXD

CHAIN LINK FENCE — x — x — x — x

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE — W — W — W — W — W

UNDERGROUND POWER — UGP — UGP — UGP — UGP — UGP

UNDERGROUND TELCO — UGT — UGT — UGT — UGT — UGT

OVERHEAD POWER — OHP — OHP — OHP — OHP

OVERHEAD TELCO — OHT — OHT — OHT — OHT

UNDERGROUND TELCO/POWER — UGT/P — UGT/P — UGT/P — UGT/P

ABOVE GROUND POWER — AGP — AGP — AGP — AGP — AGP

ABOVE GROUND TELCO — AGT — AGT — AGT — AGT — AGT

ABOVE GROUND TELCO/POWER — AGT/P — AGT/P — AGT/P — AGT/P

WORKPOINT — W.P.

SECTION REFERENCE — XX / X–X

DETAIL REFERENCE — XX / X–X

ABBREVIATIONS

AB	ANCHOR BOLT
ABV	ABOVE
AC	ALTERNATING CURRENT
ADDL	ADDITIONAL
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AGL	ABOVE GROUND LEVEL
AIC	AMPERAGE INTERRUPTION CAPACITY
ALUM	ALUMINUM
ALT	ALTERNATE
ANT	ANTENNA
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BATT	BATTERY
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM
BTC	BARE TINNED COPPER CONDUCTOR
BOF	BOTTOM OF FOOTING
CAB	CABINET
CANT	CANTILEVERED
CHG	CHARGING
CLG	CEILING
CLR	CLEAR
COL	COLUMN
COMM	COMMON
CONC	CONCRETE
CONSTR	CONSTRUCTION
DBL	DOUBLE
DC	DIRECT CURRENT
DEPT	DEPARTMENT
DF	DOUGLAS FIR
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DWG	DRAWING
DWL	DOWEL
EA	EACH
EC	ELECTRICAL CONDUCTOR
EL.	ELEVATION
ELEC	ELECTRICAL
EMT	ELECTRICAL METALLIC TUBING
ENG	ENGINEER
EQ	EQUAL
EXP	EXPANSION
EXT	EXTERIOR
EW	EACH WAY
FAB	FABRICATION
FF	FINISH FLOOR
FG	FINISH GRADE
FIF	FACILITY INTERFACE FRAME
FIN	FINISH(ED)
FLR	FLOOR
FDN	FOUNDATION
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FOW	FACE OF WALL
FS	FINISH SURFACE
FT	FOOT
FTG	FOOTING
GA	GAUGE
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GLB	GLUE LAMINATED BEAM
GLV	GALVANIZED
GPS	GLOBAL POSITIONING SYSTEM
GND	GROUND
GSM	GLOBAL SYSTEM FOR MOBILE
HDG	HOT DIPPED GALVANIZED
HDR	HEADER
HGR	HANGER
HVAC	HEAT/VENTILATION/AIR CONDITIONING
HT	HEIGHT
IGR	INTERIOR GROUND RING
IN	INCH
INT	INTERIOR
LB(S)	POUND(S)
LF	LINEAR FEET
LTE	LONG TERM EVOLUTION
MAS	MASONRY
MAX	MAXIMUM
MB	MACHINE BOLT
MECH	MECHANICAL
MFR	MANUFACTURER
MGB	MASTER GROUND BAR
MIN	MINIMUM
MISC	MISCELLANEOUS
MTL	METAL
MTS	MANUAL TRANSFER SWITCH
MW	MICROWAVE
NEC	NATIONAL ELECTRIC CODE
NM	NEWTON METERS
NO.	NUMBER
#	NUMBER
NTS	NOT TO SCALE
OC	ON–CENTER
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
OPNG	OPENING
P/C	PRECAST CONCRETE
PCS	PERSONAL COMMUNICATION SERVICES
PCU	PRIMARY CONTROL UNIT
PRC	PRIMARY RADIO CABINET
PP	POLARIZING PRESERVING
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
PWR	POWER CABINET
QTY	QUANTITY
RAD	RADIUS
RECT	RECTIFIER
REF	REFERENCE
REINF	REINFORCEMENT
REQ'D	REQUIRED
RET	REMOTE ELECTRIC TILT
RF	RADIO FREQUENCY
RMC	RIGID METALLIC CONDUIT
RRH	REMOTE RADIO HEAD
RRU	REMOTE RADIO UNIT
RWY	RACEWAY
SCH	SCHEDULE
SHT	SHEET
SIAD	SMART INTEGRATED ACCESS DEVICE
SIM	SIMILAR
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
STL	STEEL
TEMP	TEMPORARY
THK	THICKNESS
TMA	TOWER MOUNTED AMPLIFIER
TN	TOE NAIL
TOA	TOP OF ANTENNA
TOC	TOP OF CURB
TOF	TOP OF FOUNDATION
TOP	TOP OF PLATE (PARAPET)
TOS	TOP OF STEEL
TOW	TOP OF WALL
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORY
UNO	UNLESS NOTED OTHERWISE
UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
UPS	UNITERRUPTIBLE POWER SYSTEM (DC POWER PLANT)
VIF	VERIFIED IN FIELD
W	WIDE
W/	WITH
WD	WOOD
WP	WEATHERPROOF
WT	WEIGHT

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PATRICK P. BARRY — STATE OF CONNECTICUT — 28959 — LICENSED PROFESSIONAL ENGINEER

A&E PROJECT NUMBER
302466–14046283_D3

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00079B
305 W. SERVICE RD.
HARTFORD, CT 06120

SHEET TITLE
LEGEND AND ABBREVIATIONS

SHEET NUMBER
GN-1

SIGN TYPES		
TYPE	COLOR	COLOR CODE PURPOSE
INFORMATION	GREEN	**"INFORMATIONAL SIGN"** TO NOTIFY OTHERS OF SITE OWNERSHIP & CONTACT NUMBER AND POTENTIAL RF EXPOSURE.
NOTICE	BLUE	**"NOTICE BEYOND THIS POINT"** RF FIELDS BEYOND THIS POINT MAY EXCEED THE FCC GENERAL PUBLIC EXPOSURE LIMIT. OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR–1.1307(b)
CAUTION	YELLOW	**"CAUTION BEYOND THIS POINT"** RF FIELDS BEYOND THIS POINT MAY EXCEED THE FCC GENERAL PUBLIC EXPOSURE LIMIT. OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR–1.1307(b)
WARNING	ORANGE/RED	**"WARNING BEYOND THIS POINT"** RF FIELDS AT THIS SITE EXCEED FCC RULES FOR HUMAN EXPOSURE. FAILURE TO OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS COULD RESULT IN SERIOUS INJURY. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR–1.1307(b)

SIGN PLACEMENT:

- RF SIGNAGE PLACEMENT SHALL FOLLOW THE RECOMMENDATIONS OF AN EXISTING EME REPORT, CREATED BY A THIRD PARTY PREVIOUSLY AUTHORIZED BY DISH Wireless L.L.C.
- INFORMATION SIGN (GREEN) SHALL BE LOCATED ON EXISTING DISH Wireless L.L.C EQUIPMENT.
  A) IF THE INFORMATION SIGN IS A STICKER, IT SHALL BE PLACED ON EXISTING DISH Wireless L.L.C EQUIPMENT CABINET.
  B) IF THE INFORMATION SIGH IS A METAL SIGN IT SHALL BE PLACED ON EXISTING DISH Wireless L.L.C H–FRAME WITH A SECURE ATTACH METHOD.
- IF EME REPORT IS NOT AVAILABLE AT THE TIME OF CREATION OF CONSTRUCTION DOCUMENTS; PLEASE CONTACT DISH Wireless L.L.C. CONSTRUCTION MANAGER FOR FURTHER INSTRUCTION ON HOW TO PROCEED.

NOTES:

1. FOR DISH Wireless L.L.C. LOGO, SEE DISH Wireless L.L.C. DESIGN SPECIFICATIONS (PROVIDED BY DISH Wireless L.L.C.)
2. SITE ID SHALL BE APPLIED TO SIGNS USING "LASER ENGRAVING" OR ANY OTHER WEATHER RESISTANT METHOD (DISH Wireless L.L.C. APPROVAL REQUIRED)
3. TEXT FOR SIGNAGE SHALL INDICATE CORRECT SITE NAME AND NUMBER AS PER DISH Wireless L.L.C. CONSTRUCTION MANAGER RECOMMENDATIONS.
4. CABINET/SHELTER MOUNTING APPLICATION REQUIRES ANOTHER PLATE APPLIED TO THE FACE OF THE CABINET WITH WATER PROOF POLYURETHANE ADHESIVE
5. ALL SIGNS WILL BE SECURED WITH EITHER STAINLESS STEEL ZIP TIES OR STAINLESS STEEL TECH SCREWS
6. ALL SIGNS TO BE 8.5"x11" AND MADE WITH 0.04" OF ALUMINUM MATERIAL

INFORMATION

This is an access point to an area with transmitting antennas.

Obey all signs and barriers beyond this point.
Call the DISH Wireless L.L.C. NOC at 1-866-624-6874

Site ID: _____

THIS SIGN IS FOR REFERENCE PURPOSES ONLY

NOTICE

Transmitting Antenna(s)

Radio frequency fields beyond this point MAY *EXCEED* the FCC Occupational exposure limit.

Obey all posted signs and site guidelines for working in radio frequency environments.

Call the DISH Wireless L.L.C. NOC at 1-866-624-6874 prior to working beyond this point.

Site ID: _____

dish

THIS SIGN IS FOR REFERENCE PURPOSES ONLY

CAUTION

Transmitting Antenna(s)

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Site ID: _____

dish

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WARNING

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Call the DISH Wireless L.L.C. NOC at 1-866-624-6874 prior to working beyond this point.

Site ID: _____

dish

THIS SIGN IS FOR REFERENCE PURPOSES ONLY

RF SIGNAGE

dish wireless.
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

AMERICAN TOWER®
A.T. ENGINEERING SERVICE, PLLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
COA: PEC.0001553

DRAWN BY:	CHECKED BY:	APPROVED BY:
AP	SRF	SRF

RFDS REV #: ----

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	06/24/2022	ISSUED FOR CONSTRUCTION

STATE OF CONNECTICUT
PATRICK P. BARRY
28959
LICENSED
PROFESSIONAL ENGINEER

A&E PROJECT NUMBER
302466-14046283_D3

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00079B
305 W. SERVICE RD.
HARTFORD, CT 06120

SHEET TITLE
RF SIGNAGE

SHEET NUMBER
GN-2

SITE ACTIVITY REQUIREMENTS:

1. NOTICE TO PROCEED – NO WORK SHALL COMMENCE PRIOR TO CONTRACTOR RECEIVING A WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE DISH Wireless L.L.C. AND TOWER OWNER NOC & THE DISH Wireless L.L.C. AND TOWER OWNER CONSTRUCTION MANAGER.

2. "LOOK UP" – DISH Wireless L.L.C. AND TOWER OWNER SAFETY CLIMB REQUIREMENT:

THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR DISH Wireless L.L.C. AND DISH Wireless L.L.C. AND TOWER OWNER POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.

3. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.

4. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND DISH Wireless L.L.C. AND TOWER OWNER STANDARDS, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA–322 (LATEST EDITION).

5. ALL SITE WORK TO COMPLY WITH DISH Wireless L.L.C. AND TOWER OWNER INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON DISH Wireless L.L.C. AND TOWER OWNER TOWER SITE AND LATEST VERSION OF ANSI/TIA–1019–A–2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."

6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY DISH Wireless L.L.C. AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.

7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES INCLUDING PRIVATE LOCATES SERVICES PRIOR TO THE START OF CONSTRUCTION.

10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.

11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND DISH PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.

12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.

13. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF DISH Wireless L.L.C. AND TOWER OWNER, AND/OR LOCAL UTILITIES.

14. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.

15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.

16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.

17. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.

18. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.

20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS AND RADIOS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

22. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES:

1.FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH Wireless L.L.C.

TOWER OWNER:TOWER OWNER

2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.

3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.

4. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.

5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.

6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CARRIER POC AND TOWER OWNER.

7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.

11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION, BEFORE SUBMITTING BIDS, TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.

12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF DISH Wireless L.L.C. AND TOWER OWNER

13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

dish wireless.
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

AMERICAN TOWER®
A.T. ENGINEERING SERVICE, PLLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
COA: PEC.0001553

DRAWN BY:	CHECKED BY:	APPROVED BY:
AP	SRF	SRF

RFDS REV #: ----

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	06/24/2022	ISSUED FOR CONSTRUCTION

STATE OF CONNECTICUT
PATRICK P. BARRY
28959
LICENSED
PROFESSIONAL ENGINEER

A&E PROJECT NUMBER
302466–14046283_D3

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00079B
305 W. SERVICE RD.
HARTFORD, CT 06120

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-3

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.

2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.

3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF PLACEMENT.

4. CONCRETE EXPOSED TO FREEZE-THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.

5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:

#4 BARS AND SMALLER 40 ksi

#5 BARS AND LARGER 60 ksi

6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

- CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
- CONCRETE EXPOSED TO EARTH OR WEATHER:
- #6 BARS AND LARGER 2"
- #5 BARS AND SMALLER 1-1/2"
- CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
- SLAB AND WALLS 3/4"
- BEAMS AND COLUMNS 1-1/2"

7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.

2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.

3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.

4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.

4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.

4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.

5. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.

6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).

7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.

8. TIE WRAPS ARE NOT ALLOWED.

9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.

10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.

11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.

12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.

13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).

14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.

15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

16. ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.

17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.

18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.

19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.

20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.

21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).

22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).

23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.

24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3 (OR BETTER) FOR EXTERIOR LOCATIONS.

25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.

26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.

27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR DISH Wireless L.L.C. AND TOWER OWNER BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.

28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.

29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "DISH Wireless L.L.C.".

30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

dish wireless.
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

AMERICAN TOWER®
A.T. ENGINEERING SERVICE, PLLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
COA: PEC.0001553

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AP	SRF	SRF

RFDS REV #: ----

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	06/24/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
302466-14046283_D3

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00079B
305 W. SERVICE RD.
HARTFORD, CT 06120

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-4

GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

2. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.

4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.

7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.

8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.

11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.

13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.

14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.

15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.

17. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.

19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.

20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON-METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).

21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). DO NOT ATTACH GROUNDING TO FIRE SPRINKLER SYSTEM PIPES.

STRUCTURAL STEEL NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS."

2. STRUCTURAL STEEL ROLLED SHAPES, PLATES AND BARS SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:

A. ASTM A-572, GRADE 50 – ALL W SHAPES, UNLESS NOTED OR A992 OTHERWISE

B. ASTM A-36 – ALL OTHER ROLLED SHAPES, PLATES AND BARS UNLESS NOTED OTHERWISE.

C. ASTM A-500, GRADE B – HSS SECTION (SQUARE, RECTANGULAR, AND ROUND)

D. ASTM A-325, TYPE SC OR N – ALL BOLTS FOR CONNECTING STRUCTURAL MEMBERS

E. ASTM F-1554 07 – ALL ANCHOR BOLTS, UNLESS NOTED OTHERWISE

3. ALL EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123. EXPOSED STEEL HARDWARE AND ANCHOR BOLTS SHALL BE GALVANIZED PER ASTM A153 OR B695.

4. ALL FIELD CUT SURFACES, FIELD DRILLED HOLES AND GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.

5. DO NOT DRILL HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.

6. CONNECTIONS:

A. ALL WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS AND CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1.

B. ALL WELDS SHALL BE INSPECTED VISUALLY. 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. REPAIR ALL WELDS AS NECESSARY.

C. INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.

D. IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE BURNING/WELDING PERMITS AS REQUIRED BY LOCAL GOVERNING AUTHORITY AND IF REQUIRED SHALL HAVE FIRE DEPARTMENT DETAIL FOR ANY WELDING ACTIVITY.

E. ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER METAL, PER AWS D1.1, UNLESS NOTED OTHERWISE.

F. MINIMUM WELD SIZE TO BE 0.1875 INCH FILLET WELDS, UNLESS NOTED OTHERWISE.

G. PRIOR TO FIELD WELDING GALVANIZING MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING ½" BEYOND ALL FIELD WELD SURFACES. AFTER WELD AND WELD INSPECTION IS COMPLETE, REPAIR ALL GROUND AND WELDED SURFACES WITH ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.

H. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING AND/OR BRACING WHERE REQUIRED DURING CONSTRUCTION UNTIL ALL CONNECTIONS ARE COMPLETE.

I. ANY FIELD CHANGES OR SUBSTITUTIONS SHALL HAVE PRIOR APPROVAL FROM THE ENGINEER, AND DISH WIRELESS L.L.C. PROJECT MANAGER IN WRITING

dish wireless.
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

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A.T. ENGINEERING SERVICE, PLLC
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COA: PEC.0001553

DRAWN BY:	CHECKED BY:	APPROVED BY:
AP	SRF	SRF

RFDS REV #: ----

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	06/24/2022	ISSUED FOR CONSTRUCTION

STATE OF CONNECTICUT
PATRICK P. BARRY
28959
LICENSED
PROFESSIONAL ENGINEER

A&E PROJECT NUMBER
302466-14046283_D3

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00079B
305 W. SERVICE RD.
HARTFORD, CT 06120

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-5

August 30, 2021

Charles Mathews
Director of Development Services
260 Constitution Plaza, 1st Fl
Hartford, CT 06103

Re: Tower Share Application – Dish Site 14046283
Dish Wireless Telecommunications Facility @ 305 W. Service Rd., Hartford, CT 06120

Dear Director Mathews:

Dish Wireless ("Dish") is proposing a wireless telecommunications facility on an existing one hundred forty eight (148) foot tall monopole tower at 305 W. Service Rd., Hartford, CT 06106 (Latitude: 41.79953889, Longitude: -72.65669722) and within the existing fenced compound. The monopole tower is owned and operated by American Tower Corporation. The subject property is owned by 305 W Service Rd Assoc LLC. As stated in the enclosed letter, the Hartford Planning and Economic Development Division has no record of the original approval for the tower.

Dish proposes to install a five (5) foot by seven (7) foot metal platform within the existing fenced compound and install three (3) antennas, a single antenna mount, six (6) RRUs, and cables on the existing tower at one hundred forty five (154) feet as more particularly detailed and described on the enclosed Construction Drawings prepared by American Tower Engineering.

This letter is intended to serve as the required notice to the municipal planning agency. As required by Regulations of Connecticut State Agencies ("RCSA") 16-50j-73 the Connecticut Siting Council ("CSC") has been notified of this proposal and will review this application. Please accept this letter as notification pursuant to RSCA 16-50j-73.

The enclosed letter and attachments to the CSC fully describe Dish's proposal for the site. However, if you have any questions or require any additional information concerning our plans or the CSC procedures, please contact me at 443-677-0144 or contact Melanie Bachmann, Executive Director of the CSC at 860-972-2935.

Respectfully Submitted,

Jack Andrews
Zoning Manager, Centerline Communications
10130 Donleigh Drive
Columbia, MD 21046
443-677-0144

Enclosures

August 30, 2021

305 W Service Rd Assoc LLC
305 W. Service Rd.
Hartford, CT 06120

Re: Tower Share Application – Dish Site 14046283
Dish Wireless Telecommunications Facility @ 305 W. Service Rd., Hartford, CT 06120

Dear Property Owner:

Dish Wireless ("Dish") is proposing a wireless telecommunications facility on an existing one hundred forty eight (148) foot tall monopole tower at 305 W. Service Rd., Hartford, CT 06106 (Latitude: 41.79953889, Longitude: -72.65669722) and within the existing fenced compound. The monopole tower is owned and operated by American Tower Corporation. The subject property is owned by 305 W Service Rd Assoc LLC. As stated in the enclosed letter, the Hartford Planning and Economic Development Division has no record of the original approval for the tower.

Dish proposes to install a five (5) foot by seven (7) foot metal platform within the existing fenced compound and install three (3) antennas, a single antenna mount, six (6) RRUs, and cables on the existing tower at one hundred forty five (154) feet as more particularly detailed and described on the enclosed Construction Drawings prepared by American Tower Engineering.

This letter is intended to serve as the required notice to the property owner. As required by Regulations of Connecticut State Agencies ("RCSA") 16-50j-73 the Connecticut Siting Council ("CSC") has been notified of this proposal and will review this application. Please accept this letter as notification pursuant to RSCA 16-50j-73.

The enclosed letter and attachments to the CSC fully describe Dish's proposal for the site. However, if you have any questions or require any additional information concerning our plans or the CSC procedures, please contact me at 443-677-0144 or contact Melanie Bachmann, Executive Director of the CSC at 860-972-2935.

Respectfully Submitted,

Jack Andrews
Zoning Manager, Centerline Communications
10130 Donleigh Drive
Columbia, MD 21046
443-677-0144

Enclosures

August 30, 2021

The Honorable Luke Bronin
Hartford City Hall
550 Main Street, 2nd Floor, Room 200
Hartford, CT 06103

Re: Tower Share Application – Dish Site 14046283
Dish Wireless Telecommunications Facility @ 305 W. Service Rd., Hartford, CT 06120

Dear Mayor Bronin:

Dish Wireless ("Dish") is proposing a wireless telecommunications facility on an existing one hundred forty eight (148) foot tall monopole tower at 305 W. Service Rd., Hartford, CT 06106 (Latitude: 41.79953889, Longitude: -72.65669722) and within the existing fenced compound. The monopole tower is owned and operated by American Tower Corporation. The subject property is owned by 305 W Service Rd Assoc LLC. As stated in the enclosed letter, the Hartford Planning and Economic Development Division has no record of the original approval for the tower.

Dish proposes to install a five (5) foot by seven (7) foot metal platform within the existing fenced compound and install three (3) antennas, a single antenna mount, six (6) RRUs, and cables on the existing tower at one hundred forty five (154) feet as more particularly detailed and described on the enclosed Construction Drawings prepared by American Tower Engineering.

This letter is intended to serve as the required notice to the chief elected official of the municipality. As required by Regulations of Connecticut State Agencies ("RCSA") 16-50j-73 the Connecticut Siting Council ("CSC") has been notified of this proposal and will review this application. Please accept this letter as notification pursuant to RSCA 16-50j-73.

The enclosed letter and attachments to the CSC fully describe Dish's proposal for the site. However, if you have any questions or require any additional information concerning our plans or the CSC procedures, please contact me at 443-677-0144 or contact Melanie Bachmann, Executive Director of the CSC at 860-972-2935.

Respectfully Submitted,

Jack Andrews
Zoning Manager, Centerline Communications
10130 Donleigh Drive
Columbia, MD 21046

Enclosures

August 30, 2021

Blake Paynter
Project Manager, Site Development
American Tower Corporation
10 Presidential Way
Woburn, MA 01801

Re: Tower Share Application – Dish Site 14046283
Dish Wireless Telecommunications Facility @ 305 W. Service Rd., Hartford, CT 06120

Dear Mr. Paynter,

Dish Wireless ("Dish") is proposing a wireless telecommunications facility on an existing one hundred forty eight (148) foot tall monopole tower at 305 W. Service Rd., Hartford, CT 06106 (Latitude: 41.79953889, Longitude: -72.65669722) and within the existing fenced compound. The monopole tower is owned and operated by American Tower Corporation. The subject property is owned by 305 W Service Rd Assoc LLC. As stated in the enclosed letter, the Hartford Planning and Economic Development Division has no record of the original approval for the tower.

Dish proposes to install a five (5) foot by seven (7) foot metal platform within the existing fenced compound and install three (3) antennas, a single antenna mount, six (6) RRUs, and cables on the existing tower at one hundred forty five (154) feet as more particularly detailed and described on the enclosed Construction Drawings prepared by American Tower Engineering.

This letter is intended to serve as the required notice to the tower owner. As required by Regulations of Connecticut State Agencies ("RCSA") 16-50j-73 the Connecticut Siting Council ("CSC") has been notified of this proposal and will review this application. Please accept this letter as notification pursuant to RSCA 16-50j-73.

The enclosed letter and attachments to the CSC fully describe Dish's proposal for the site. However, if you have any questions or require any additional information concerning our plans or the CSC procedures, please contact me at 443-677-0144 or contact Melanie Bachmann, Executive Director of the CSC at 860-972-2935.

Respectfully Submitted,

Jack Andrews
Zoning Manager, Centerline Communications
10130 Donleigh Drive
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