April 28, 2022

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

Re: Tower Share Application – Dish Site 13735391
Dish Wireless Telecommunications Facility @ 15 Soundview Avenue, Shelton, CT 06484

Dear Ms. Bachman,

Dish Wireless ("Dish") is proposing a wireless telecommunications facility on an existing one hundred twenty one foot tall stealth camouflage ("monopine") tower at 15 Soundview Avenue, Shelton, CT 06484 (Latitude: 41.29500000, Longitude: -73.13722200) and within the existing fenced compound. The tower is owned and operated by American Tower Corporation. The subject property is owned by the Harry B. Brownson Country Club.

Dish proposes to install a five (5) foot by seven (7) foot metal platform within the existing fenced compound and install three (3) antennas, three (3) antenna mounts, eight (8) RRUs, and cables on the existing tower at a one hundred and five (105) feet as more particularly detailed on the enclosed Construction Drawings. The overall height of the existing tower will remain at 121-feet and no changes will be made to the compound dimensions.

I cannot locate the original tower approval. Most recently, on March 23, 2020, the Council approved an exempt modification in case number EM-VER-126-200226. The tower is not listed in the Council's Excel database.

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; Harry B. Brownson Country Club as Property Owner; the Honorable Mark A. Lauretti, Mayor of Shelton, and Alexander Rosetti, Shelton Planning & Zoning Administrator.

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.

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

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 modified facility enclosed herewith.
5. The proposed modifications will NOT cause an ineligible change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading. Please see the structural analysis enclosed herewith.

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 on the monopine tower will have an insignificant visual impact on the area around the tower. Dish ground equipment would be installed within the existing facility compound. The 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 15 Soundview Avenue, Shelton, CT 06484.

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 and GIS
Exhibit 3 – Construction Drawings
Exhibit 4 – Structural Analysis Report
Exhibit 5 – Antenna Mount Analysis Report
Exhibit 6 – EME Study Report
Exhibit 7 – (4) Notice Confirmations

cc:
American Tower Corporation - Tower Operator/Owner
Harry B. Brownson Country Club - Property Owner
The Honorable Mark A. Lauretti - Mayor of Shelton
Alexander Rosetti - Shelton Planning & Zoning Administrator

AMERICAN TOWER®
CORPORATION

LETTER OF AUTHORIZATION

SITE NO/PROJECT NO: 415438 / 13735391 **SITE NAME: Brownson Country Club CT**

ADDRESS: OLD SHELTON RD
SHELTON, CT 06484 **APN: SHEL M:74 L:15**

I, Margaret Robinson, Senior Counsel, US Tower Division on behalf of American Tower*, owner of the tower facility located at the address identified above (the "Tower Facility"), do hereby authorize **Centerline Communications** its successors and assigns, to act as American Tower's non-exclusive agent for the purpose of filing and securing any zoning, land-use, building permit and/or electrical permit application(s) and approvals of the applicable jurisdiction for and to conduct the construction of the installation of antennas and related telecommunications equipment on the Tower Facility located at the above address. This installation shall not affect adjoining lands and will occur only within the area leased by American Tower.

American Tower understands that the application may be denied, modified or approved with conditions. The above authorization is limited to the acceptance by American Tower of conditions related to American Tower's installation. Any such conditions of approval or modifications will not be effective unless approved in writing by American Tower.

The above authorization does not permit **Centerline Communications** to modify or alter any existing permit(s) and/or zoning or land-use conditions or impose any additional conditions unrelated to American Tower's installation of telecommunications equipment without the prior written approval of American Tower.

Signature: _____

Margaret Robinson, Senior Counsel
US Tower Division

NOTARY BLOCK

COMMONWEALTH OF MASSACHUSETTS
County of Middlesex

This instrument was acknowledged before me by Margaret Robinson, Senior Counsel of American Tower (Tower Facility owner and/or operator), 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/she executed the same.

WITNESS my hand and official seal, this 29th day of April 2022.

NOTARY SEAL

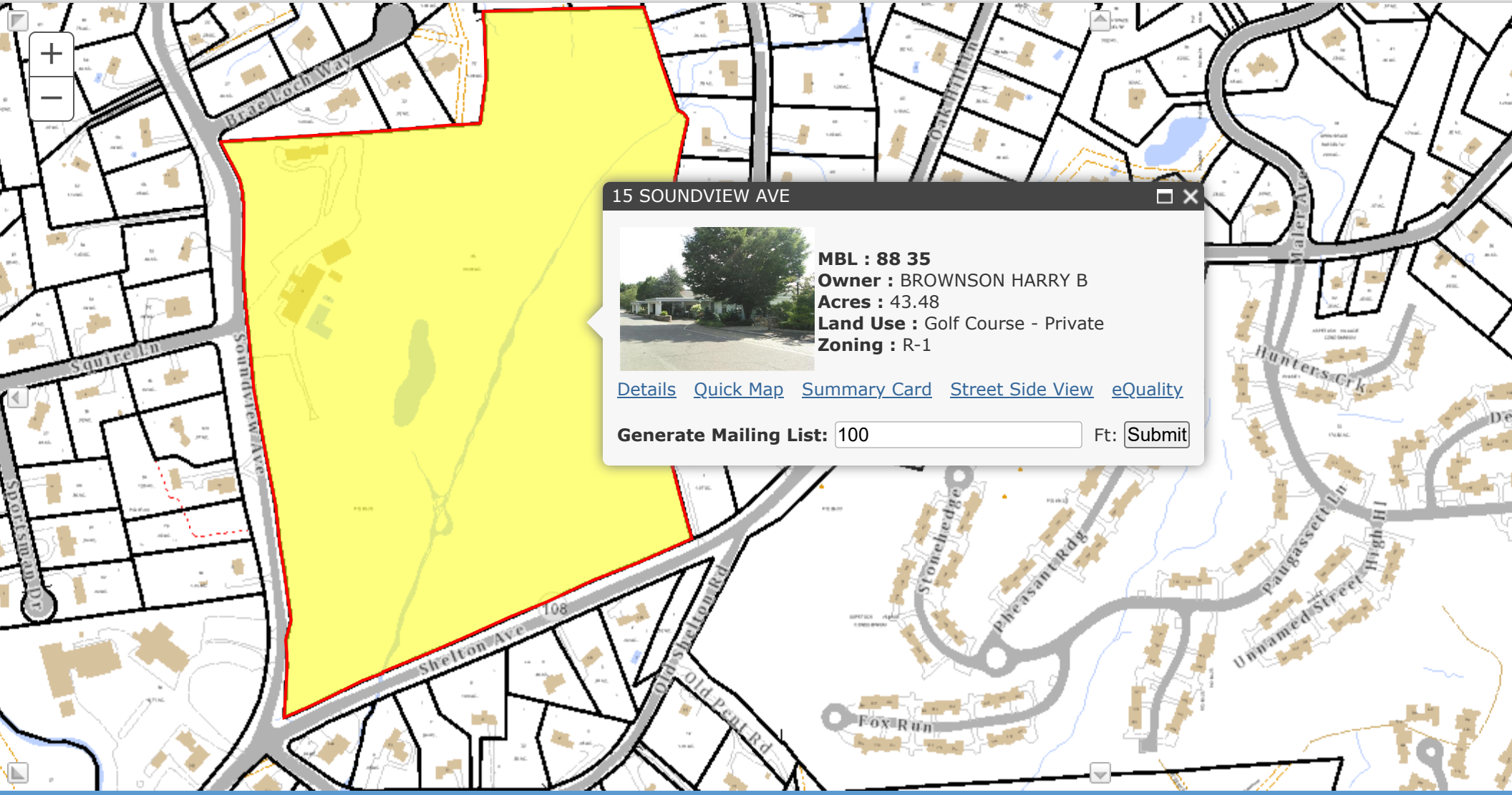
MELISSA ANN METZLER
Notary Public
Commonwealth of Massachusetts
My Commission Expires March 14, 2025

Notary Public _____
My Commission Expires: March 14, 2025

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

Town of Shelton, CT - MapXpress Property Information Viewer

Full Town View | Reset Map | **Search** | Print Map | Help | Select | View Le | Base Maps / Air Photos | Map Layers



15 SOUNDVIEW AVE

MBL : 88 35
Owner : BROWNSON HARRY B
Acres : 43.48
Land Use : Golf Course - Private
Zoning : R-1

Details | Quick Map | Summary Card | Street Side View | eQuality

Generate Mailing List: 100 Ft: Submit

Full Extent | Zoom In | Zoom Out | Prev Extent | Next Extent | Pan | **Parcel Information** | Simple Measure | Path Measure | Area Measure

MapXpress v1.2 **Parcel boundaries updated on OCT 2020** Scale: 1 in = 400 ft

CITY OF SHELTON CONNECTICUT

GIS & Real Property Information

City Offices
254 Hill Street
Shelton, CT 06484

Property Search

Name: ex. Smith

House No:
15

Street:
SOUNDVIEW AVE

Example: 117B 73 (Map Lot)

GO

Information Updates

GIS Parcels Provided
Oct 2020

Ownership & Sales Updated
Oct 2021

Current Parcel Count
13,296 +/-

Detailed Parcel Information

Parcel ID
88 35

Owner
BROWNSON HARRY B

Dev Map

Dev Lot

Location
15 SOUNDVIEW AVE

MAILING ADDRESS
15 SOUNDVIEW AVE
SHELTON CT 06484

Quick Map | Assessor Map | Property Card | FEMA Panel | eQuality | Zoom to GIS

Scroll Down For Complete Property Detail

PARCEL VALUATIONS

	Appraised Value	Assessed Value
Buildings	1346600	942620
Land	608700	426090

REPORT AN ISSUE

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

March 23, 2020

Alex Murshteyn
Site Acquisition Consultant
Centerline Communications LLC
750 West Center Street
Suite 301
W Bridgewater, MA 02379-1518

RE: **EM-VER-126-200226** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 0 Old Shelton Rd (off Lane St) aka 15 Soundview Avenue, Shelton, Connecticut.

Dear Mr. Murshteyn:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

1. Prior to Verizon's antenna installation, the antenna mount modifications shall be installed in accordance with the Mount Analysis prepared by American Tower Corporation, dated January 22, 2020 and stamped and signed by Esha Kaushal Modi;

2. Within 45 days following completion of equipment installation, Verizon shall provide documentation certified by a Professional Engineer that its installation complied with the recommendations of the Mount Analysis;

3. Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;

4. Any material changes to this modification as proposed shall require the filing of a new notice with the Council;

5. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;

6. Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by Verizon shall be removed within 60 days of the date the antenna ceased to function;

7. The validity of this action shall expire one year from the date of this letter; and

8. The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated February 25, 2020.

The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site by any dimension, increase noise levels at the tower site boundary by six decibels or more, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standards adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996 and by the state Department of Energy and Environmental Protection pursuant to Connecticut General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below state and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Sincerely,

Melanie A. Bachman
Executive Director

MAB/IN/emr

c: The Honorable Mark A. Lauretti, Mayor, City of Shelton
Ken Nappi, Interim Planning and Zoning Administrator, City of Shelton
American Tower Corporation, Tower Owner
Harry B. Brownson Country Club, Property Owner

Pinnacle Telecom Group

Professional and Technical Services

Antenna Site FCC RF Compliance Assessment and Report for Municipal Submission

Prepared for:	Dish Wireless, LLC
Site ID:	NJJER02055A
Site Address:	15 Soundview Avenue Shelton, CT
Latitude:	N 41.295000
Longitude:	W 73.137222
Structure type:	Monopole
Report date:	March 11, 2022
Compliance Conclusion:	Dish Wireless, LLC will be in compliance with the rules and regulations as described in OET Bulletin 65, following the implementation of the proposed mitigation as detailed in the report.

14 Ridgedale Avenue - Suite 260 • Cedar Knolls, NJ 07927 • 973-451-1630

Contents

Introduction and Summary

At the request of Dish Wireless, LLC ("Dish"), Pinnacle Telecom Group has performed an independent expert assessment of radiofrequency (RF) levels and related FCC compliance for proposed wireless base station antenna operations on an existing monopole located at 15 Soundview Avenue in Shelton, CT. Dish refers to the antenna site by the code "NJJER02055A", and its proposed operation involves directional panel antennas and transmission in the 600 MHz, 2000 MHz and 2100 MHz frequency bands licensed to it by the FCC.

The FCC requires all wireless antenna operators to perform an assessment of potential human exposure to radiofrequency (RF) fields emanating from all the transmitting antennas at a site whenever antenna operations are added or modified, and to ensure compliance with the Maximum Permissible Exposure (MPE) limit in the FCC's regulations. In this case, the compliance assessment needs to take into account the RF effects of other existing antenna operations at the site by Verizon Wireless. Note that FCC regulations require any future antenna collocators to assess and assure continuing compliance based on the cumulative effects of all then-proposed and then-existing antennas at the site.

This report describes a mathematical analysis of RF levels resulting around the site in areas of unrestricted public access, that is, at street level around the site. The compliance analysis employs a standard FCC formula for calculating the effects of the antennas in a very conservative manner, in order to overstate the RF levels and to ensure "safe-side" conclusions regarding compliance with the FCC limit for safe continuous exposure of the general public.

The results of a compliance assessment can be described in layman's terms by expressing the calculated RF levels as simple percentages of the FCC MPE limit. If the normalized reference for that limit is 100 percent, then calculated RF levels higher than 100 percent indicate the MPE limit is exceeded and there is a need to mitigate the potential exposure. On the other hand, calculated RF levels consistently below 100 percent serve as a clear and sufficient demonstration of compliance with the MPE limit. We can (and will) also describe the overall worst-case result via the "plain-English" equivalent "times-below-the-limit" factor.

The result of the RF compliance assessment in this case is as follows:

- At street level, the conservatively calculated maximum RF level from the combination of proposed and existing antenna operations at the site is 1.2273 percent of the FCC general population MPE limit – well below the 100-percent reference for compliance. In other words, the worst-case calculated RF level – intentionally and significantly overstated by the calculations – is still more than 81 times below the FCC limit for safe, continuous exposure of the general public.
- A supplemental analysis of the RF levels at the same height as the Dish antennas indicate that the FCC MPE limit is potentially exceeded. Therefore, it is recommended that two Caution signs be installed six feet below the antennas. In addition, NOC Information signs are to be installed at the base of the monopole.
- The results of the calculations, along with the proposed mitigation, combine to satisfy the FCC requirements and associated guidelines on RF compliance at street level around the site and on the subject roof. Moreover, because of the significant conservatism incorporated in the analysis, RF levels actually caused by the antennas will be lower than these calculations indicate.

The remainder of this report provides the following:

- relevant technical data on the proposed Dish antenna operations at the site, as well as on the other existing antenna operations;
- a description of the applicable FCC mathematical model for calculating RF levels, and application of the relevant technical data to that model;
- analysis of the results of the calculations against the FCC MPE limit, and the compliance conclusion for the site.

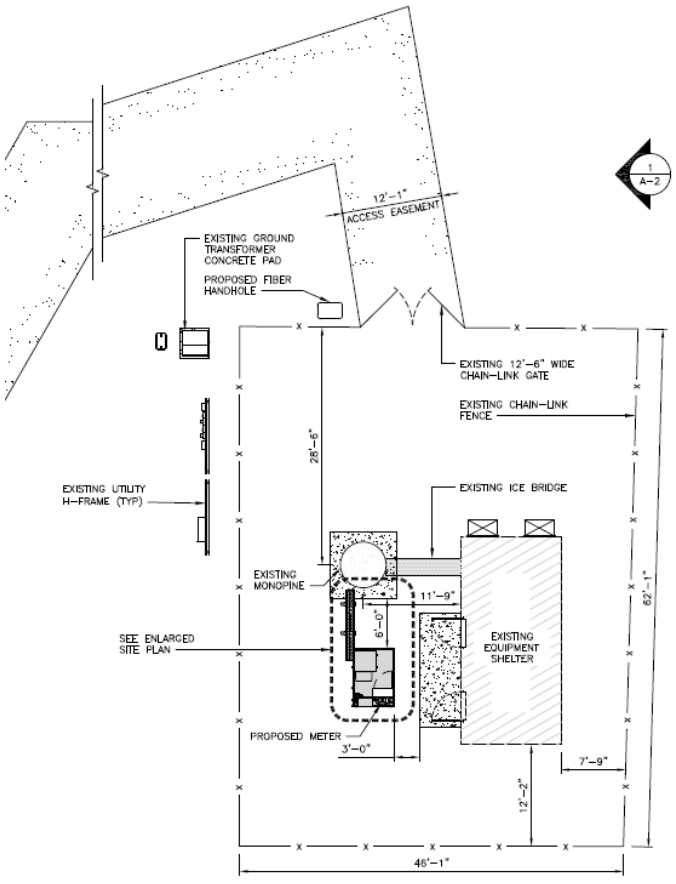
In addition, four Appendices are included. Appendix A provides information on the documents used to prepare the analysis. Appendix B provides background on the FCC MPE limit. Appendix C details the proposed mitigation to satisfy the FCC requirements and associated guidelines on RF compliance. Appendix D provides

a summary of the qualifications of the expert certifying FCC compliance for this site.

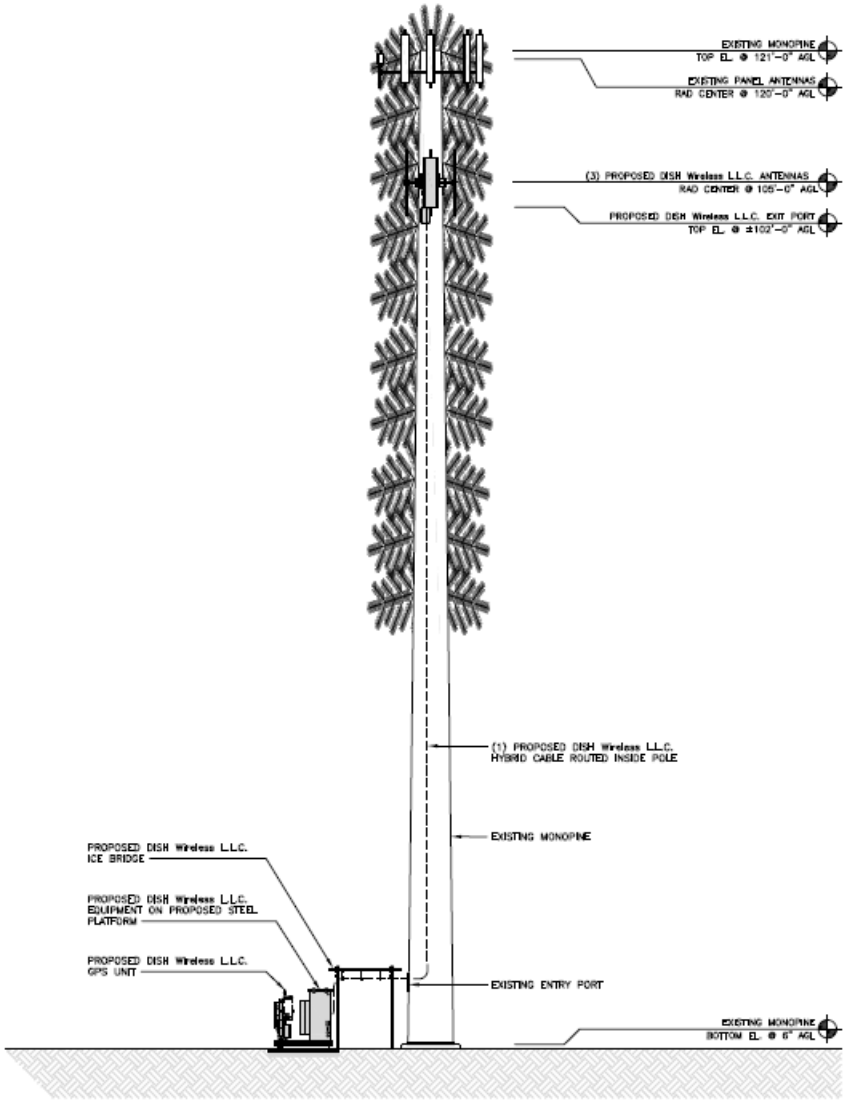
Antenna and Transmission Data

The plan and elevation views that follow, extracted from the site drawings, illustrate the mounting positions of the Dish antennas at the site.

Plan View:



Elevation View:



The table that follows summarizes the relevant data for the proposed Dish antenna operations. Note that the "Z" height references the centerline of the antenna.

Ant. ID	Carrier	Antenna Manufacturer	Antenna Model	Type	Freq (MHz)	Ant. Dim. (ft.)	Total Input Power (watts)	Total ERP (watts)	Z AGL (ft)	Ant. Gain (dBd)	B/W	Azimuth	EDT	MDT
❶	Dish	Commscope	FFVV-65B-R2	Panel	600	6	120	2110	105	12.46	64	30	2	0
❶	Dish	Commscope	FFVV-65B-R2	Panel	2000	6	160	7396	105	16.66	67	30	2	0
❶	Dish	Commscope	FFVV-65B-R2	Panel	2100	6	160	7396	105	16.66	67	30	2	0
❷	Dish	Commscope	FFVV-65B-R2	Panel	600	6	120	2110	105	12.46	64	150	2	0
❷	Dish	Commscope	FFVV-65B-R2	Panel	2000	6	160	7396	105	16.66	67	150	2	0
❷	Dish	Commscope	FFVV-65B-R2	Panel	2100	6	160	7396	105	16.66	67	150	2	0
❸	Dish	Commscope	FFVV-65B-R2	Panel	600	6	120	2110	105	12.46	64	270	2	0
❸	Dish	Commscope	FFVV-65B-R2	Panel	2000	6	160	7396	105	16.66	67	270	2	0
❸	Dish	Commscope	FFVV-65B-R2	Panel	2100	6	160	7396	105	16.66	67	270	2	0

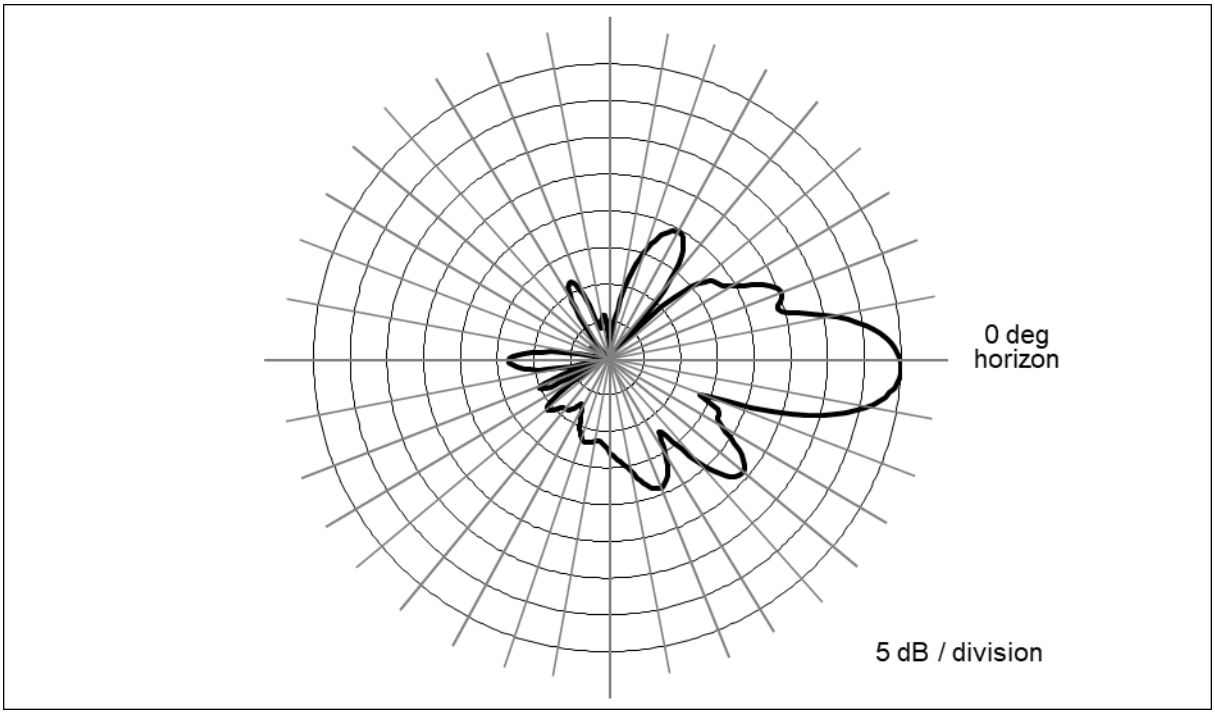
The area below the antennas, at street level, is of interest in terms of potential "uncontrolled" exposure of the general public, so the antenna's vertical-plane emission characteristic is used in the calculations, as it is a key determinant of the relative amount of RF emissions in the "downward" direction.

By way of illustration, Figure 1 that follows shows the vertical-plane radiation pattern of the proposed antenna model in the 600 MHz frequency band. In this type of antenna radiation pattern diagram, the antenna is effectively pointed at the three o'clock position (the horizon) and the relative strength of the pattern at different angles is described using decibel units.

Note that the use of a decibel scale to describe the relative pattern at different angles actually serves to significantly understate the actual focusing effects of the antenna. Where the antenna pattern reads 20 dB the relative RF energy emitted at the corresponding downward angle is 1/100th of the maximum that occurs in the main beam (at 0 degrees); at 30 dB, the energy is only 1/1000th of the maximum.

Finally, note that the automatic pattern-scaling feature of our internal software may skew side-by-side visual comparisons of different antenna models, or even different parties' depictions of the same antenna model.

Figure 1. Commscope FFVV-65B-R2 – 600 MHz Vertical-plane Pattern



As noted at the outset, there is an existing wireless antenna operation by Verizon Wireless to include in the compliance assessment and we will conservatively assume operation with maximum channel capacity and at maximum transmitter power per channel to be used in each of its FCC-licensed frequency bands.

The table that follows summarizes the relevant data for the collocated antenna operations.

Carrier	*Antenna Manufacturer*	*Antenna Model*	*Type*	*Freq (MHz)*	*Total ERP (watts)*	*Ant. Gain (dBd)*	*Azimuth*
Verizon Wireless	Generic	Generic	Panel	746	2400	11.76	N/A
Verizon Wireless	Generic	Generic	Panel	869	5166	12.36	N/A
Verizon Wireless	Generic	Generic	Panel	1900	5372	15.26	N/A
Verizon Wireless	Generic	Generic	Panel	2100	5625	15.46	N/A

Compliance Analysis

FCC Office of Engineering and Technology Bulletin 65 ("OET Bulletin 65") provides guidelines for mathematical models to calculate the RF levels at various points around transmitting antennas. Different models apply in different areas around antennas, with one model applying to street level around a site, and another applying to the rooftop near the antennas. We will address each area of interest in turn in the subsections that follow.

Street Level Analysis

At street-level around an antenna site (in what is called the "far field" of the antennas), the RF levels are directly proportional to the total antenna input power and the relative antenna gain in the downward direction of interest – and the levels are otherwise inversely proportional to the square of the straight-line distance to the antenna.

Conservative calculations also assume the potential RF exposure is enhanced by reflection of the RF energy from the intervening ground. Our calculations will assume a 100% "perfect", mirror-like reflection, which is the absolute worst-case scenario.

The formula for street-level compliance assessment for any given wireless antenna operation is as follows:

$$MPE\% = (100 * Chans * TxPower * 10^{(Gmax-Vdisc/10)} * 4) / (MPE * 4\pi * R^2)$$

where

MPE%	=	RF level, expressed as a percentage of the MPE limit applicable to continuous exposure of the general public
100	=	factor to convert the raw result to a percentage
Chans	=	maximum number of RF channels per sector
TxPower	=	maximum transmitter power per channel, in milliwatts

$10^{(Gmax-Vdisc/10)}$	=	numeric equivalent of the relative antenna gain in the downward direction of interest; data on the antenna vertical-plane pattern is taken from manufacturer specifications
4	=	factor to account for a 100-percent-efficient energy reflection from the ground, and the squared relationship between RF field strength and power density ($2^2 = 4$)
MPE	=	FCC general population MPE limit
R	=	straight-line distance from the RF source to the point of interest, centimeters

The MPE% calculations are performed out to a distance of 500 feet from the facility to points 6.5 feet (approximately two meters, the FCC-recommended standing height) off the ground, as illustrated in Figure 2, below.

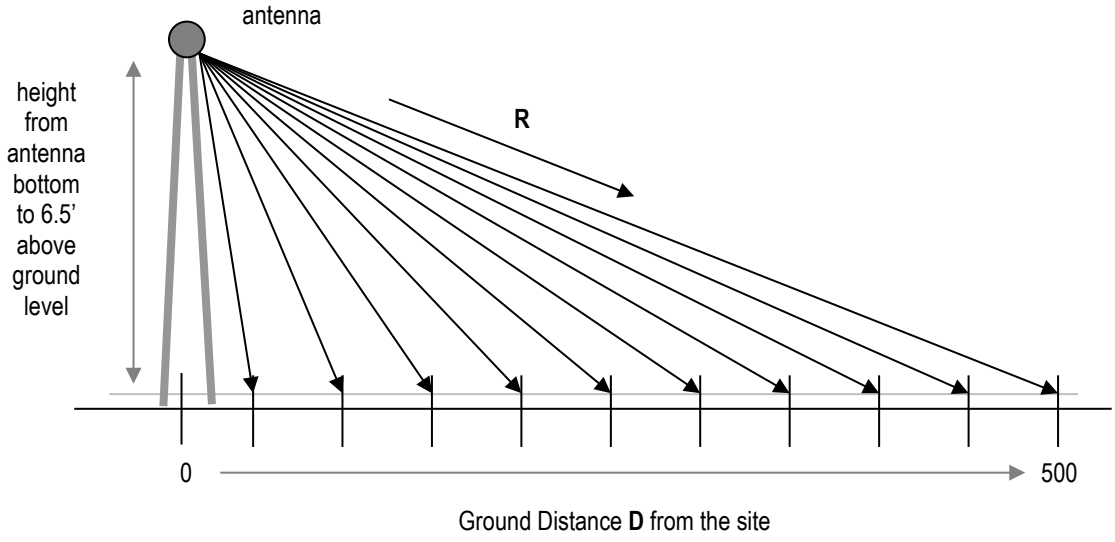


Figure 2. Street-level MPE% Calculation Geometry

It is popularly understood that the farther away one is from an antenna, the lower the RF level – which is generally but not universally correct. The results of MPE% calculations fairly close to the site will reflect the variations in the vertical-plane antenna pattern as well as the variation in straight-line distance to the antenna.

Therefore, RF levels may actually increase slightly with increasing distance within the range of zero to 500 feet from the site. As the distance approaches 500 feet and beyond, though, the antenna pattern factor becomes less significant, the RF levels become primarily distance-controlled and, as a result, the RF levels generally decrease with increasing distance. In any case, the RF levels more than 500 feet from a wireless antenna site are well understood to be sufficiently low to be comfortably in compliance.

According to the FCC, when directional antennas (such as panels) are used, compliance assessments are based on the RF effect of a single (facing) antenna sector, as the effects of directional antennas pointed away from the point(s) of interest are considered insignificant. If the different parameters apply in the different sectors, compliance is based on the worst-case parameters.

Street level FCC compliance for a collocated antenna site is assessed in the following manner. At each distance point along the ground, an MPE% calculation is made for each antenna operation (including each frequency band), and the sum of the individual MPE% contributions at each point is compared to 100 percent, the normalized reference for compliance with the MPE limit. We refer to the sum of the individual MPE% contributions as “total MPE%”, and any calculated total MPE% result exceeding 100 percent is, by definition, higher than the FCC limit and represents non-compliance and a need to mitigate the potential exposure. If all results are consistently below 100 percent, on the other hand, that set of results serves as a clear and sufficient demonstration of compliance with the MPE limit.

Note that the following conservative methodology and assumptions are incorporated into the MPE% calculations on a general basis:

1. The antennas are assumed to be operating continuously at maximum power and maximum channel capacity.
2. The power-attenuation effects of shadowing or other obstructions to the line-of-sight path from the antenna to the point of interest are ignored.
3. The calculations intentionally minimize the distance factor (R) by assuming a 6’6” human and performing the calculations from the bottom (rather than

the centerline) of each operator's lowest-mounted antenna, as applicable.

4. The calculations also conservatively take into account, when applicable, the different technical characteristics and related RF effects of the use of multiple antennas for transmission in the same frequency band.
5. The RF exposure at ground level is assumed to be 100-percent enhanced (increased) via a "perfect" field reflection from the intervening ground.

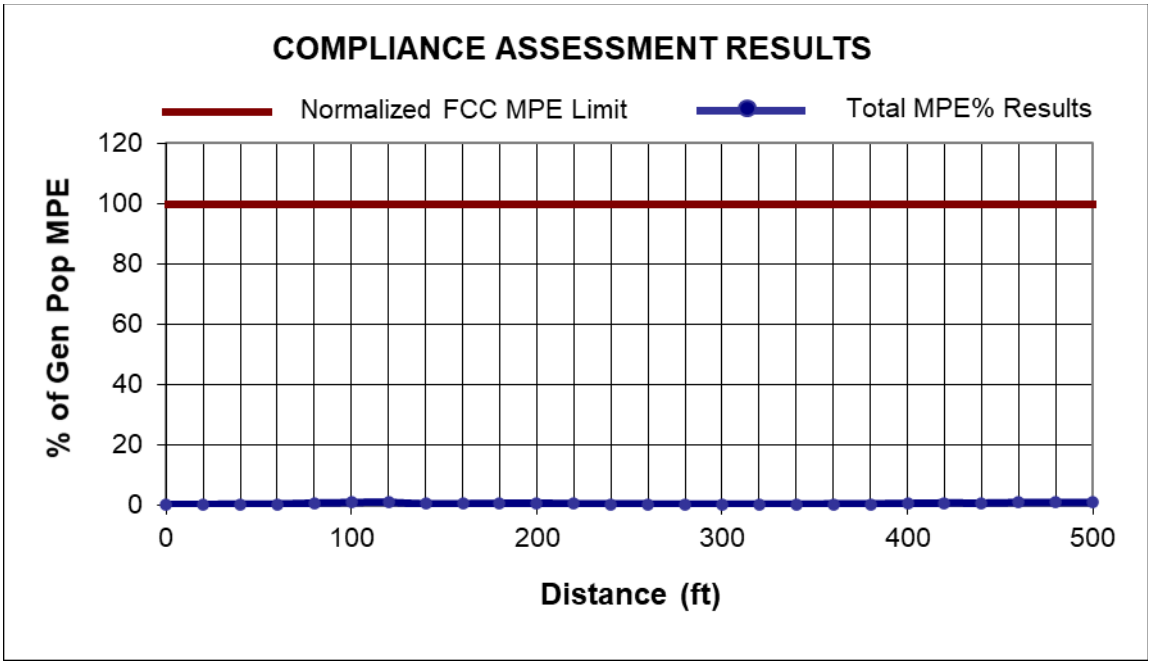
The net result of these assumptions is to intentionally and significantly overstate the calculated RF levels relative to the levels that will actually result from the antenna operations – and the purpose of this conservatism is to allow very "safe-side" conclusions about compliance.

The table that follows provides the results of the MPE% calculations for each antenna operation, with the overall worst-case calculated result highlighted in bold in the last column. Note that the transmission parameters for each Dish antenna sector are identical, and the calculations reflect the worst-case result for any/all sectors.

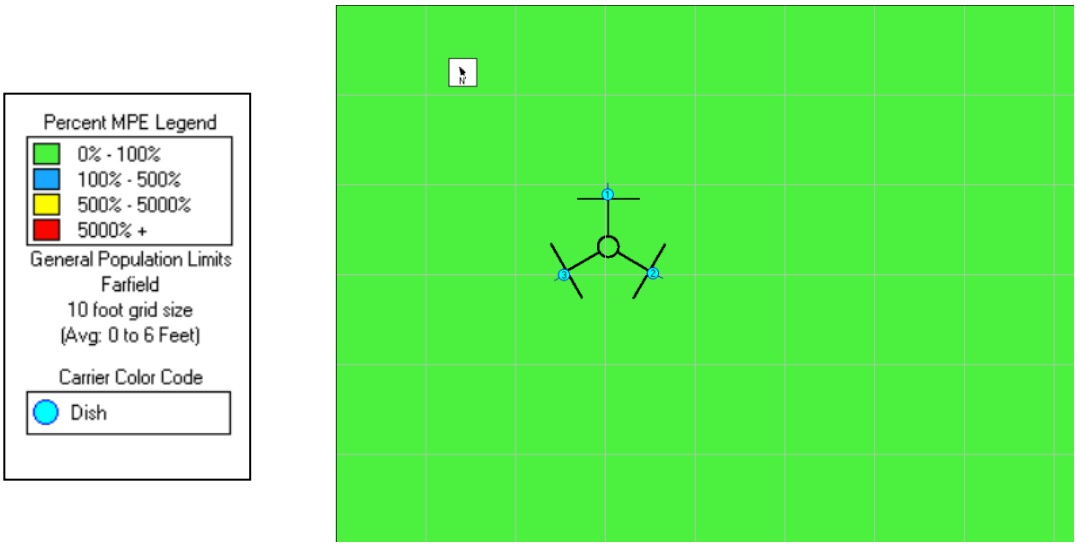
Ground Distance (ft)	Dish 600 MHz MPE%	Dish 2000 MHz MPE%	Dish 2100 MHz MPE%	Verizon Wireless MPE%	Total MPE%
0	0.0534	0.0025	0.0004	0.0272	0.0835
20	0.1137	0.0063	0.0092	0.0385	0.1677
40	0.2110	0.0362	0.0275	0.1089	0.3836
60	0.0486	0.0019	0.1237	0.1868	0.3610
80	0.0985	0.3019	0.2387	0.1945	0.8336
100	0.3411	0.2468	0.3658	0.1442	1.0979
120	**0.2779**	**0.2235**	**0.3667**	**0.3592**	**1.2273**
140	0.1200	0.0126	0.0323	0.3291	0.4940
160	0.0445	0.0050	0.0782	0.4005	0.5282
180	0.0342	0.0967	0.0393	0.5722	0.7424
200	0.0254	0.0886	0.1508	0.5752	0.8400
220	0.0138	0.0166	0.0861	0.4552	0.5717
240	0.0118	0.1001	0.0278	0.2939	0.4336
260	0.0200	0.1282	0.0772	0.1978	0.4232
280	0.0735	0.0665	0.1360	0.0684	0.3444
300	0.1167	0.0208	0.0888	0.0331	0.2594
320	0.1714	0.0055	0.0387	0.0335	0.2491
340	0.2374	0.0051	0.0119	0.0608	0.3152
360	0.3121	0.0040	0.0039	0.1174	0.4374
380	0.2820	0.0036	0.0035	0.1987	0.4878
400	0.3566	0.0073	0.0022	0.3063	0.6724
420	0.4345	0.0282	0.0108	0.4335	0.9070
440	0.3977	0.0258	0.0099	0.3973	0.8307
460	0.4705	0.0597	0.0350	0.5373	1.1025
480	0.4336	0.0550	0.0322	0.4957	1.0165
500	0.4988	0.0757	0.0607	0.4560	1.0912

As indicated, the maximum calculated overall RF level is 1.2273 percent of the FCC MPE limit – well below the 100-percent reference for compliance.

A graph of the overall calculation results, shown below, perhaps provides a clearer *visual* illustration of the relative compliance of the calculated RF levels. The line representing the overall calculation results shows an obviously clear, consistent margin to the FCC MPE limit.



The graphic output for the areas at street level surrounding the site is reproduced on the next page.

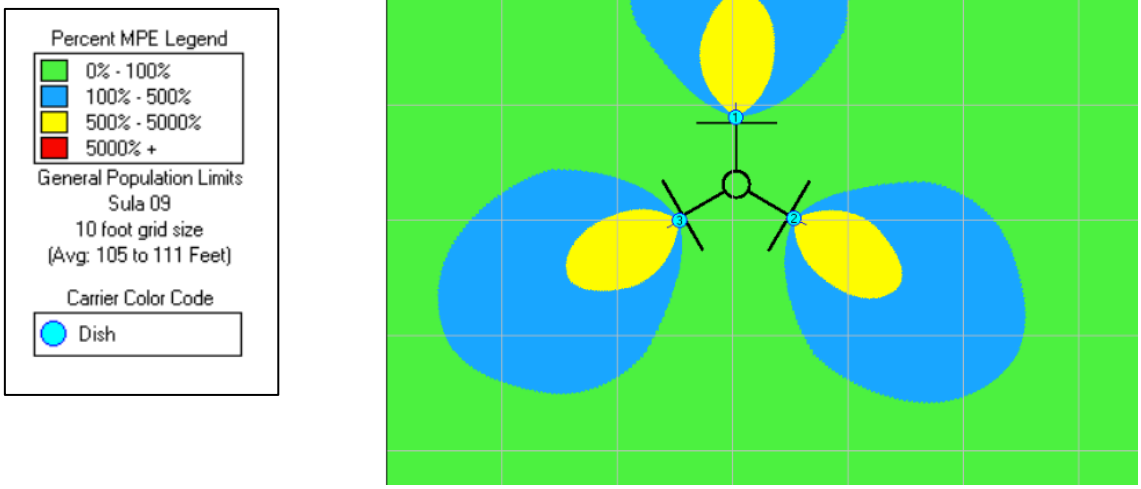


Near-field Analysis

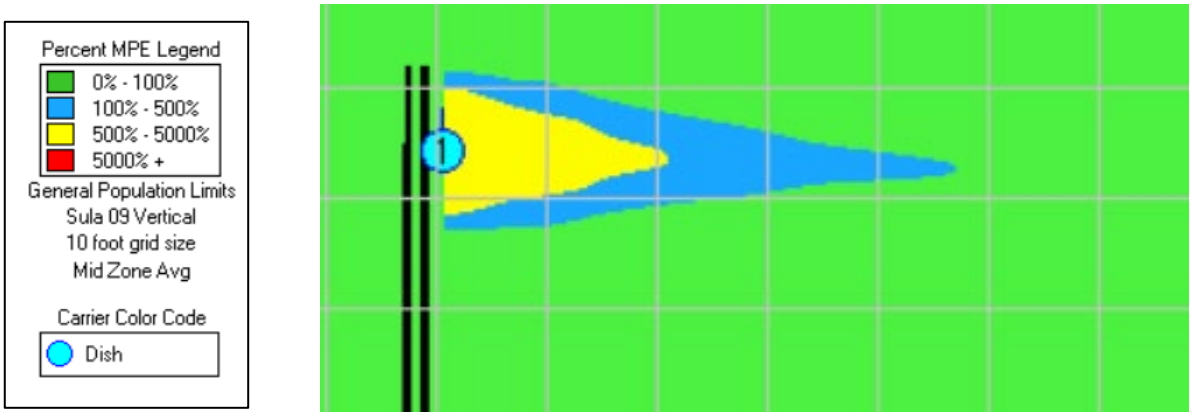
The compliance analysis for the same height as the antennas is performed using the RoofMaster program by Waterford Consultants.

RF levels in the near field of an antenna depend on the power input to the antenna, the antenna's length and horizontal beamwidth, the mounting height of the antenna above nearby roof, and one's position and distance from the antenna. RF levels in front of a directional antenna are higher than they are to the sides or rear, and in any given horizontal direction are inversely proportional to the straight-line distance to the antenna.

The RoofMaster graphic outputs for the same height as the Dish antennas are reproduced on the next page.



RoofMaster – Same Height as the Antennas – Alpha / Beta / Gamma sectors



RoofMaster – Same Height as the Antennas – Alpha / Beta / Gamma sectors

Compliance Conclusion

According to the FCC, the MPE limit has been constructed in such a manner that continuous human exposure to RF fields up to and including 100 percent of the MPE limit is acceptable and safe.

The conservative analysis in this case shows that the maximum calculated RF level from the combination of proposed and existing antenna operations at street level around the site is 1.2273 percent of the FCC general population MPE limit. At the same height as the antennas, the analysis shows that the calculated RF levels potentially exceed the FCC MPE limit. Per Dish guidelines, and consistent with FCC guidance on compliance, it is recommended that two Caution signs be installed six feet below the antennas. In addition, NOC Information signs be installed at the base of the monopole.

The results of the calculations, along with the described RF mitigation, combine to satisfy the FCC's RF compliance requirements and associated guidelines on compliance.

Moreover, because of the extremely conservative calculation methodology and operational assumptions we applied in the analysis, RF levels actually caused by the antennas will be significantly lower than the calculation results here indicate.

Certification

It is the policy of Pinnacle Telecom Group that all FCC RF compliance assessments are reviewed, approved, and signed by the firm's Chief Technical Officer who certifies as follows:

1. I have read and fully understand the FCC regulations concerning RF safety and the control of human exposure to RF fields (47 CFR 1.1301 *et seq*).
2. To the best of my knowledge, the statements and information disclosed in this report are true, complete and accurate.
3. The analysis of site RF compliance provided herein is consistent with the applicable FCC regulations, additional guidelines issued by the FCC, and industry practice.
4. The results of the analysis indicate that the subject antenna operations will be in compliance with the FCC regulations concerning the control of potential human exposure to the RF emissions from antennas.

Daniel J. Collins
Chief Technical Officer
Pinnacle Telecom Group, LLC

3/11/22
Date

Appendix A. Documents Used to Prepare the Analysis

RFDS: RFDS-NJJER02055A-Final-20211202-v.0_20211202223343

CD: NJJER02055A_FinalStampedCDs_20211116154028

Appendix B. Background on the FCC MPE Limit

As directed by the Telecommunications Act of 1996, the FCC has established limits for maximum continuous human exposure to RF fields.

The FCC maximum permissible exposure (MPE) limits represent the consensus of federal agencies and independent experts responsible for RF safety matters. Those agencies include the National Council on Radiation Protection and Measurements (NCRP), the Occupational Safety and Health Administration (OSHA), the National Institute for Occupational Safety and Health (NIOSH), the American National Standards Institute (ANSI), the Environmental Protection Agency (EPA), and the Food and Drug Administration (FDA). In formulating its guidelines, the FCC also considered input from the public and technical community – notably the Institute of Electrical and Electronics Engineers (IEEE).

The FCC's RF exposure guidelines are incorporated in Section 1.301 *et seq* of its Rules and Regulations (47 CFR 1.1301-1.1310). Those guidelines specify MPE limits for both occupational and general population exposure.

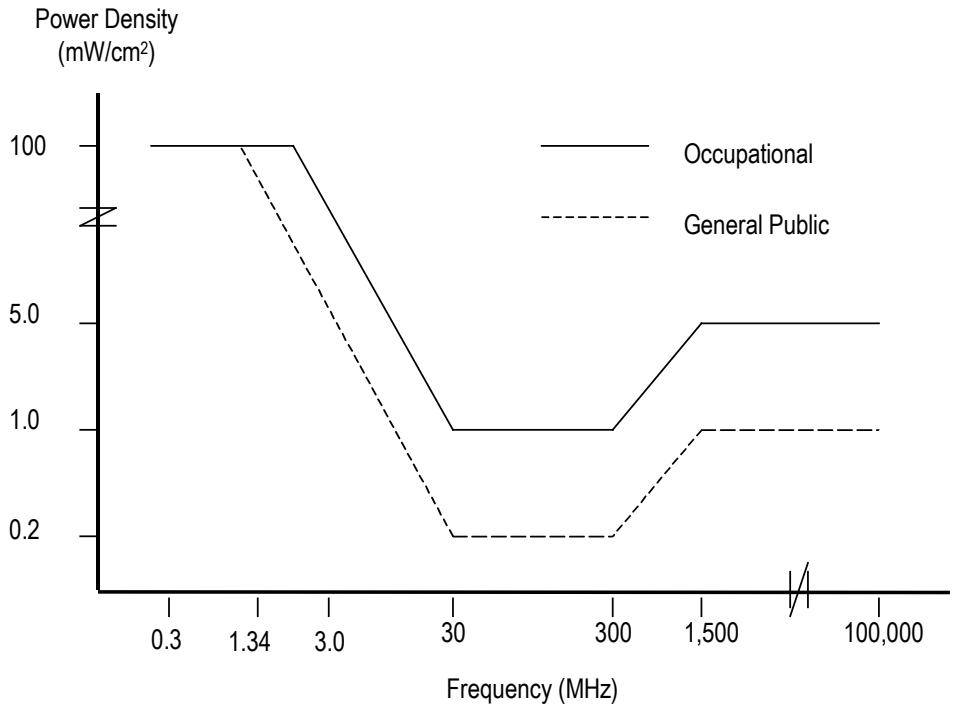
The specified continuous exposure MPE limits are based on known variation of human body susceptibility in different frequency ranges, and a Specific Absorption Rate (SAR) of 4 watts per kilogram, which is universally considered to accurately represent human capacity to dissipate incident RF energy (in the form of heat). The occupational MPE guidelines incorporate a safety factor of 10 or greater with respect to RF levels known to represent a health hazard, and an additional safety factor of five is applied to the MPE limits for general population exposure. Thus, the general population MPE limit has a built-in safety factor of more than 50. The limits were constructed to appropriately protect humans of both sexes and all ages and sizes and under all conditions – and continuous exposure at levels equal to or below the applicable MPE limits is considered to result in no adverse health effects or even health risk.

The reason for *two* tiers of MPE limits is based on an understanding and assumption that members of the general public are unlikely to have had appropriate RF safety training and may not be aware of the exposures they receive; occupational exposure in controlled environments, on the other hand, is assumed to involve individuals who have had such training, are aware of the exposures, and know how to maintain a safe personal work environment.

The FCC's RF exposure limits are expressed in two equivalent forms, using alternative units of field strength (expressed in volts per meter, or V/m), and power density (expressed in milliwatts per square centimeter, or mW/cm^2). The table on the next page lists the FCC limits for both occupational and general population exposures, using the mW/cm^2 reference, for the different radio frequency ranges.

Frequency Range (F) (MHz)	Occupational Exposure (mW/cm^2)	General Public Exposure (mW/cm^2)
0.3 - 1.34	100	100
1.34 - 3.0	100	$180 / F^2$
3.0 - 30	$900 / F^2$	$180 / F^2$
30 - 300	1.0	0.2
300 - 1,500	F / 300	F / 1500
1,500 - 100,000	5.0	1.0

The diagram below provides a graphical illustration of both the FCC's occupational and general population MPE limits.



Because the FCC's RF exposure limits are frequency-shaped, the exact MPE limits applicable to the instant situation depend on the frequency range used by the systems of interest.

The most appropriate method of determining RF compliance is to calculate the RF power density attributable to a particular system and compare that to the MPE limit applicable to the operating frequency in question. The result is usually expressed as a percentage of the MPE limit.

For potential exposure from multiple systems, the respective percentages of the MPE limits are added, and the total percentage compared to 100 (percent of the limit). If the result is less than 100, the total exposure is in compliance; if it is more than 100, exposure mitigation measures are necessary to achieve compliance.

Note that the FCC "categorically excludes" all "non-building-mounted" wireless antenna operations whose mounting heights are more than 10 meters (32.8 feet) from the routine requirement to demonstrate compliance with the MPE limit, because such operations "are deemed, individually and cumulatively, to have no significant effect on the human environment". The categorical exclusion also applies to *all* point-to-point antenna operations, regardless of the type of structure they're mounted on. Note that the FCC considers any facility qualifying for the categorical exclusion to be automatically in compliance.

In addition, FCC Rules and Regulations Section 1.1307(b)(3) describes a provision known in the industry as "the 5% rule". It describes that when a specific location – like a spot on a rooftop – is subject to an overall exposure level exceeding the applicable MPE limit, operators with antennas whose MPE% contributions at the point of interest are less than 5% are exempted from the obligation otherwise shared by all operators to bring the site into compliance, and those antennas are automatically deemed by the FCC to satisfy the rooftop compliance requirement.

FCC References on RF Compliance

47 CFR, FCC Rules and Regulations, Part 1 (Practice and Procedure), Section 1.1310 (Radiofrequency radiation exposure limits).

FCC Second Memorandum Opinion and Order and Notice of Proposed Rulemaking (FCC 97-303), *In the Matter of Procedures for Reviewing Requests for Relief From State and Local Regulations Pursuant to Section 332(c)(7)(B)(v) of the Communications Act of 1934 (WT Docket 97-192), Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation (ET Docket 93-62), and Petition for Rulemaking of the Cellular Telecommunications Industry Association Concerning Amendment of the Commission's Rules to Preempt State and Local Regulation of Commercial Mobile Radio Service Transmitting Facilities*, released August 25, 1997.

FCC First Memorandum Opinion and Order, ET Docket 93-62, *In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, released December 24, 1996.

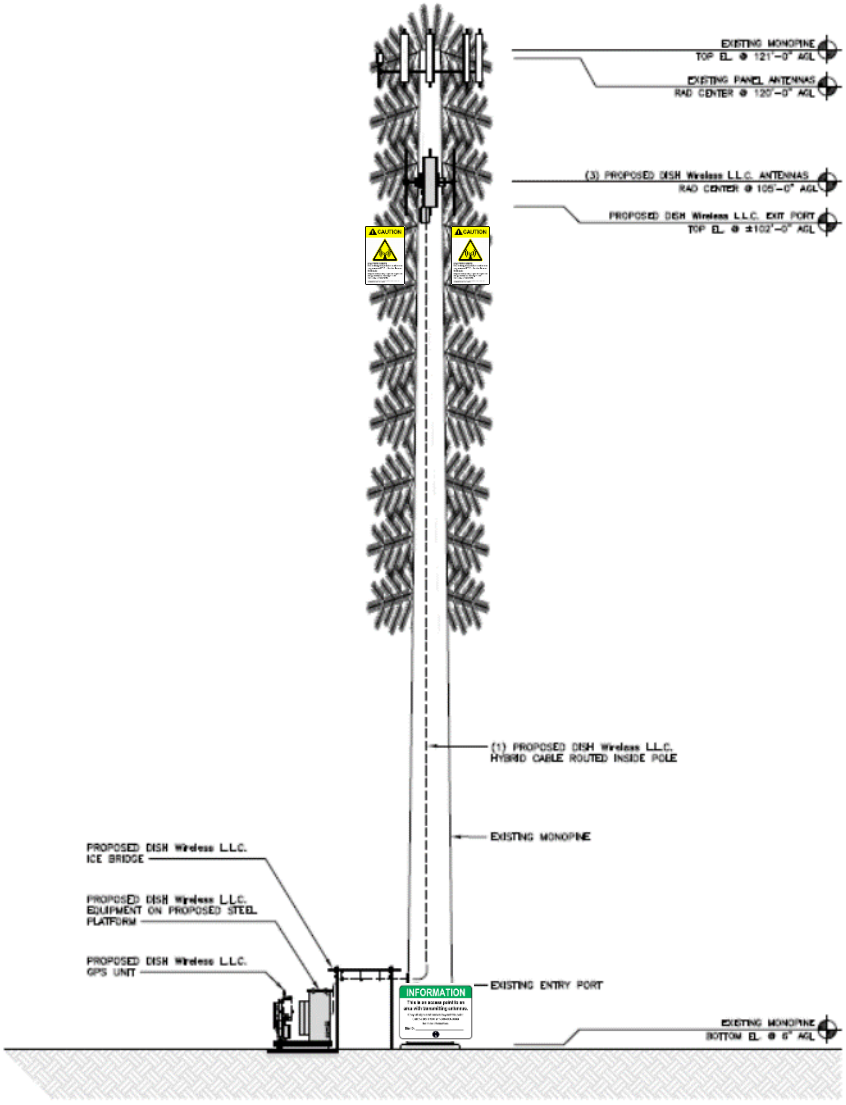
FCC Report and Order, ET Docket 93-62, *In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, released August 1, 1996.

FCC Report and Order, Notice of Proposed Rulemaking, Memorandum Opinion and Order (FCC 19-126), *Proposed Changes in the Commission's Rules Regarding Human Exposure to Radiofrequency Electromagnetic Fields; Reassessment of Federal Communications Commission Radiofrequency Exposure Limits and Policies,* released December 4, 2019.

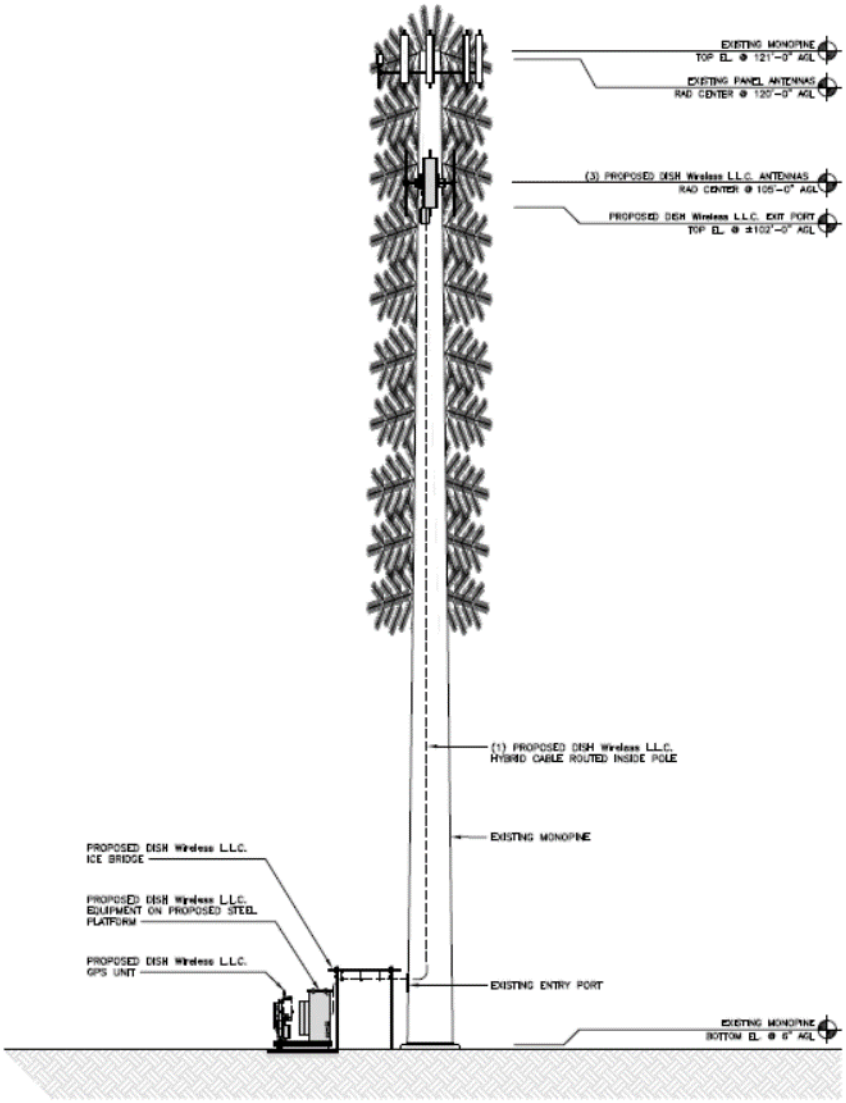
FCC Office of Engineering and Technology (OET) Bulletin 65, “Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields”, Edition 97-01, August 1997.

FCC Office of Engineering and Technology (OET) Bulletin 56, “Questions and Answers About Biological Effects and Potential Hazards of RF Radiation”, edition 4, August 1999.

Appendix C. Proposed Signage



NOC Information Sign		Caution Sign	
Guidelines Sign		Warning Sign	
Notice Sign			



Appendix D. Summary of Expert Qualifications

Daniel J. Collins, Chief Technical Officer, Pinnacle Telecom Group, LLC

Synopsis:	• 40+ years of experience in all aspects of wireless system engineering, related regulation, and RF exposure • Has performed or led RF exposure compliance assessments on more than 20,000 antenna sites since the latest FCC regulations went into effect in 1997 • Has provided testimony as an RF compliance expert more than 1,500 times since 1997 • Have been accepted as an FCC compliance expert in New York, New Jersey, Connecticut, Pennsylvania and more than 40 other states, as well as by the FCC
Education:	• B.E.E., City College of New York (Sch. Of Eng.), 1971 • M.B.A., 1982, Fairleigh Dickinson University, 1982

	• Bronx High School of Science, 1966
Current Responsibilities:	• Leads all PTG staff work involving RF safety and FCC compliance, microwave and satellite system engineering, and consulting on wireless technology and regulation
Prior Experience:	• Edwards & Kelcey, VP – RF Engineering and Chief Information Technology Officer, 1996-99 • Bellcore (a Bell Labs offshoot after AT&T's 1984 divestiture), Executive Director – Regulation and Public Policy, 1983-96 • AT&T (Corp. HQ), Division Manager – RF Engineering, and Director – Radio Spectrum Management, 1977-83 • AT&T Long Lines, Group Supervisor – Microwave Radio System Design, 1972-77
Specific RF Safety / Compliance Experience:	• Involved in RF exposure matters since 1972 • Have had lead corporate responsibility for RF safety and compliance at AT&T, Bellcore, Edwards & Kelcey, and PTG • While at AT&T, helped develop the mathematical models for calculating RF exposure levels • Have been relied on for compliance by all major wireless carriers, as well as by the federal government, several state and local governments, equipment manufacturers, system integrators, and other consulting / engineering firms
Other Background:	• Author, *Microwave System Engineering* (AT&T, 1974) • Co-author and executive editor, *A Guide to New Technologies and Services* (Bellcore, 1993) • National Spectrum Management Association (NSMA) – former three-term President and Chairman of the Board of Directors; was founding member, twice-elected Vice President, long-time member of the Board, and was named an NSMA Fellow in 1991 • Have published more than 35 articles in industry magazines

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**121 ft Monopine**
ATC Site Name	:	**Brownson Country Club CT,CT**
ATC Site Number	:	**415438**
Engineering Number	:	**13735391_C3_02**
Proposed Carrier	:	**DISH WIRELESS L.L.C.**
Carrier Site Name	:	**NJJER02055A**
Carrier Site Number	:	**NJJER02055A**
Site Location	:	**15 Soundview Avenue** **SHELTON, CT 06484-2844** **41.295, -73.1372**
County	:	**Fairfield**
Date	:	**October 22, 2021**
Max Usage	:	**51%**
Result	:	**Pass**

STATE OF CONNECTICUT
ESHA KAUSHAL MODI
32593
LICENSED
PROFESSIONAL ENGINEER

Prepared By:

Faisal Wakid
Structural Engineer

Faisal Wakid

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 121 ft Monopine to reflect the change in loading by DISH WIRELESS L.L.C..

Supporting Documents

Tower Drawings	EEI Project #16219, dated March 1, 2012
Foundation Drawing	Mapping by TPS Report #TPS-FL-CT-438, dated September 10, 2015
Geotechnical Report	FDH Velocitel Project #15BXNW1600, dated August 21, 2015

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:	118 mph (3-second gust)
Basic Wind Speed w/ Ice:	50 mph (3-second gust) w/ 1.00" radial ice concurrent
Code:	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.20, S_1 = 0.05
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
120.0	3	Samsung B5/B13 RRH-BR04C	T-Arm	(6) 1 5/8" Coax (1) 2.02 (51.2mm) Hybrid	VERIZON WIRELESS
	3	Samsung Outdoor CBRS 20W RRH			
	3	Samsung Outdoor CBRS 20W RRH –Clip-on Antenna			
	6	Quintel QS6656-5D			
	3	Samsung B2/B66A RRH-BR049			
	1	RFS DB-C1-12C-24AB-0Z			
	6	Decibel DB846F65ZAXY			
118.0	1	VZW Unused Reserve (18029.67 sqin)			

Equipment to be Removed

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
No loading was considered as removed as part of this analysis.					

Proposed Equipment

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
105.0	1	Raycap RDIDC-9181-PF-48	T-Arm	(1) 1.41" (35.8mm) Hybrid	DISH WIRELESS L.L.C.
	3	Fujitsu TA08025-B604			
	3	Fujitsu TA08025-B605			
	3	Commscope FFVV-65B-R2			

[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	51%	Pass
Shaft	46%	Pass
Base Plate	24%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	5024.0	14%
Axial (Kips)	53.1	6%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
105.0	Raycap RDIDC-9181-PF-48	DISH WIRELESS L.L.C.	0.468	0.450
	Commscope FFVV-65B-R2			
	Fujitsu TA08025-B605			
	Fujitsu TA08025-B604			

***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 Service, PLLC 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 Service, PLLC

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

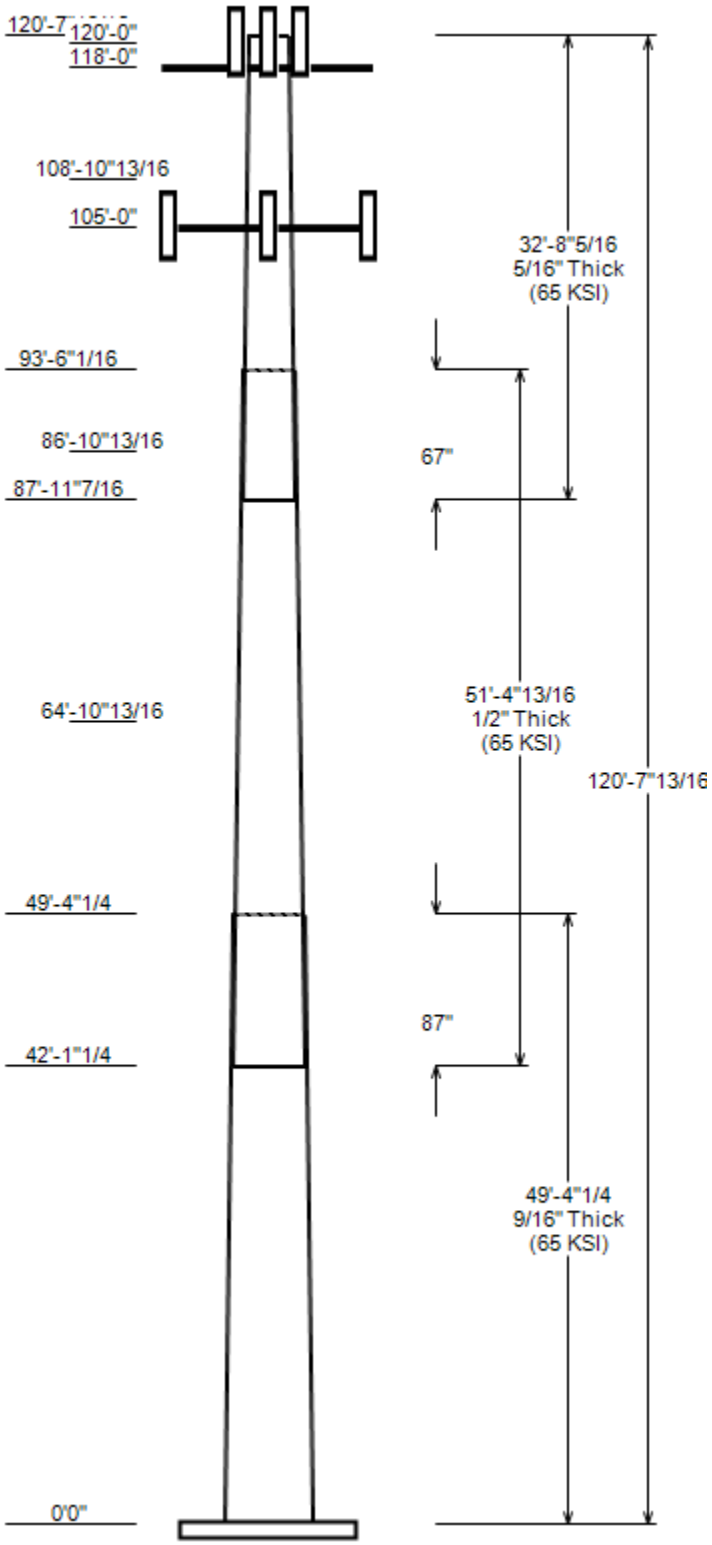
All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with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

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, 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 Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

JOB INFORMATION

Asset :	415438, Brownson Country Club CT	Height :	120.65 ft
Client :	DISH WIRELESS L.L.C.	Base Width :	66
Code :	ANSI/TIA-222-H	Shape :	18 Sides



SITE PARAMETERS

Base Elev (ft):	0.00	Structure Class:	II
Taper :	0.31000 (In/ft)	Exposure :	B
Topographic Category :	1	Topographic Feature:	
Topo Method :	Method 1		

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	49.354	50.70	66.00	0.562		0.000	18 Sides	65
2	51.401	38.01	53.94	0.500	Slip Joint	86.970	18 Sides	65
3	32.695	30.22	40.36	0.312	Slip Joint	66.630	18 Sides	65

DISCRETE APPURTENANCE

Attach Elev (ft)	Force Elev (ft)	Qty	Description
120.0	120.0	3	Samsung Outdoor CBRS 20W RRH
120.0	120.0	3	Samsung Outdoor CBRS 20W RRH –
120.0	120.0	3	Samsung B5/B13 RRH-BR04C
120.0	120.0	3	Samsung B2/B66A RRH-BR049
120.0	120.0	1	RFS DB-C1-12C-24AB-0Z
120.0	120.0	6	Decibel DB846F65ZAXY
120.0	120.0	6	Quintel QS6656-5D
118.0	118.0	3	Flat T-Arm
118.0	118.0	1	VZW Unused Reserve (18029.67 s
108.9	108.9	1	Branch 3
105.0	105.0	1	Raycap RDIDC-9181-PF-48
105.0	105.0	3	Fujitsu TA08025-B604
105.0	105.0	3	Fujitsu TA08025-B605
105.0	105.0	3	Commscope FFVV-65B-R2
105.0	105.0	3	Generic Flat T-Arm
86.9	86.9	1	Branch 2
64.9	64.9	1	Branch 1

LINEAR APPURTENANCE

Elev From (ft)	Elev To (ft)	Description	Exp To Wind
0.0	120.0	2.02 (51.2mm) Hybrid	No
0.0	120.0	1 5/8" Coax	No
0.0	105.0	1.41" (35.8mm) Hybrid	No

LOAD CASES

1.2D + 1.0W	118 mph wind with no ice
0.9D + 1.0W	118 mph wind with no ice
1.2D + 1.0Di + 1.0Wi	50 mph wind with 1" radial ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	60 mph Wind with No Ice

REACTIONS

Load Case	Moment (kip-ft)	Shear (Kip)	Axial (Kip)
1.2D + 1.0W	5023.96	58.98	53.07
0.9D + 1.0W	5011.47	58.97	39.79
1.2D + 1.0Di + 1.0Wi	1321.49	15.64	65.30
1.2D + 1.0Ev + 1.0Eh	218.15	2.60	52.56
0.9D - 1.0Ev + 1.0Eh	217.49	2.60	36.19
1.0D + 1.0W	1160.44	13.64	44.27

DISH DEFLECTIONS

Load Case	Attach	Deflection	Rotation

JOB INFORMATION			
Asset :	415438, Brownson Country Club CT	Height :	120.65 ft
Client :	DISH WIRELESS L.L.C.	Base Width :	66
Code :	ANSI/TIA-222-H	Shape :	18 Sides

Elev (ft)	(in)	(deg)

ANALYSIS PARAMETERS

Location:	Fairfield County,CT	Height:	120.65 ft
Type and Shape:	Taper, 18 Sides	Base Diameter:	66.00 in
Manufacturer:	EEI	Top Diameter:	30.22 in
K_d (non-service):	0.95	Taper:	0.3100 in/ft
K_e:	0.99	Rotation:	0.000°

ICE & WIND PARAMETERS

Exposure Category:	B	Design Wind Speed w/o Ice:	118 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:	1.00 in
Crest Height:	0 ft	HMSL:	304.00 ft

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil			Period Based on Rayleigh Method (sec):	0.98
T_L (sec):	6	P:	1	$C_{s:}$	0.059
$S_{s:}$	0.205	$S_{1:}$	0.054	C_s Max:	0.059
$F_{a:}$	1.600	$F_{v:}$	2.400	C_s Min:	0.030
$S_{ds:}$	0.219	$S_{d1:}$	0.086		

LOAD CASES

1.2D + 1.0W	118 mph wind with no ice
0.9D + 1.0W	118 mph wind with no ice
1.2D + 1.0Di + 1.0Wi	50 mph wind with 1" radial ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	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)
									116.8							28,425.6			
1-18	49.35	0.5625	65		0.00	17,326	66.00	-0.004	3	63,204.4	19.28	117.33	50.70	49.35	89.51		14.48	90.13	0.3100
2-18	51.40	0.5000	65	Slip	86.97	12,623	53.94	42.109	84.81	30,608.5	17.61	107.89	38.01	93.51	59.52	10,580.7	11.99	76.02	0.3100
3-18	32.70	0.3125	65	Slip	66.63	3,859	40.36	87.955	39.72	8,045.7	21.36	129.14	30.22	120.65	29.66	3,351.8	15.64	96.70	0.3100
				Shaft Weight		33,808													

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
120.00	Decibel DB846F65ZAXY	6	0.80	0.000	21.00	7.030	0.75	132.16	8.788	0.75
120.00	RFS DB-C1-12C-24AB-0Z	1	0.80	0.000	32.00	4.056	1.00	114.96	4.947	1.00
120.00	Samsung B5/B13 RRH-BR04C	3	0.80	0.000	70.30	1.875	0.50	107.64	2.464	0.50
120.00	Samsung B2/B66A RRH-BR049	3	0.80	0.000	84.40	1.875	0.50	126.04	2.464	0.50
120.00	Samsung Outdoor CBRS 20W RRH –	3	0.80	0.000	4.40	0.892	0.50	16.15	1.309	0.50
120.00	Quintel QS6656-5D	6	0.80	0.000	88.00	8.133	0.74	218.06	9.953	0.74
120.00	Samsung Outdoor CBRS 20W RRH	3	0.80	0.000	18.60	0.857	0.50	34.26	1.266	0.50
118.00	VZW Unused Reserve (18029.67 s	1	0.80	0.000	1280.90	125.206	0.90	1862.14	182.021	0.90
118.00	Flat T-Arm	3	0.75	0.000	250.00	12.900	0.67	386.13	18.227	0.67
108.90	Branch 3	1	1.00	0.000	1125.00	290.500	1.00	1631.15	421.199	1.00
105.00	Generic Flat T-Arm	3	0.75	0.000	312.50	12.900	0.67	480.50	18.159	0.67
105.00	Commscope FFVV-65B-R2	3	0.80	0.000	70.80	12.271	0.64	232.41	14.074	0.64
105.00	Fujitsu TA08025-B605	3	0.80	0.000	75.00	1.962	0.50	115.29	2.554	0.50
105.00	Raycap RDIDC-9181-PF-48	1	0.80	0.000	21.90	1.867	1.00	58.50	2.446	1.00
105.00	Fujitsu TA08025-B604	3	0.80	0.000	63.90	1.962	0.50	101.40	2.554	0.50
86.90	Branch 2	1	1.00	0.000	1575.00	406.700	1.00	2268.29	585.722	1.00
64.90	Branch 1	1	1.00	0.000	1800.00	464.800	1.00	2567.42	662.965	1.00
Totals	Num Loadings: 17	45			9,338.50			15,403.24		

LINEAR APPURTENANCE PROPERTIES

Load Case Azimuth (deg) : _

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	120.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	VERIZON WIREL
0.00	120.00	1	2.02 (51.2mm) Hybrid	2.02	3.04	N	0	0	0	0	0	N	VERIZON WIREL
0.00	105.00	1	1.41" (35.8mm) Hybrid	1.41	1.66	N	0	0	0	0	0	N	DISH WIRELESS

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		0.5625	66.000	116.826	63,204.40	19.28	117.33	78.7	1886.2	0.0	0.0
5.00		0.5625	64.450	114.059	58,818.00	18.79	114.58	79.3	1797.5	0.0	1,964.1
10.00		0.5625	62.900	111.291	54,639.50	18.31	111.82	79.9	1711.0	0.0	1,917.0
15.00		0.5625	61.349	108.523	50,663.70	17.82	109.07	80.4	1626.6	0.0	1,870.0
20.00		0.5625	59.799	105.756	46,885.60	17.33	106.31	81	1544.3	0.0	1,822.9
25.00		0.5625	58.249	102.988	43,300.10	16.85	103.55	81.6	1464.1	0.0	1,775.8
30.00		0.5625	56.699	100.221	39,902.30	16.36	100.80	82.2	1386.1	0.0	1,728.7
35.00		0.5625	55.149	97.453	36,687.00	15.88	98.04	82.6	1310.3	0.0	1,681.6
40.00		0.5625	53.598	94.686	33,649.30	15.39	95.29	82.6	1236.5	0.0	1,634.5
42.11	Bot - Section 2	0.5625	52.945	93.519	32,421.40	15.19	94.12	82.6	1206.1	0.0	674.5
45.00		0.5625	52.048	91.918	30,784.10	14.90	92.53	82.6	1164.9	0.0	1,740.9
49.35	Top - Section 1	0.5000	51.698	81.249	26,907.90	16.82	103.40	81.6	1025.1	0.0	2,563.6
50.00		0.5000	51.498	80.931	26,593.40	16.75	103.00	81.7	1017.1	0.0	178.3
55.00		0.5000	49.948	78.471	24,241.20	16.20	99.90	82.3	955.9	0.0	1,356.0
60.00		0.5000	48.398	76.011	22,032.00	15.66	96.80	82.6	896.6	0.0	1,314.2
64.90		0.5000	46.878	73.600	20,001.40	15.12	93.76	82.6	840.4	0.0	1,247.3
65.00		0.5000	46.847	73.551	19,961.30	15.11	93.69	82.6	839.2	0.0	25.0
70.00		0.5000	45.297	71.091	18,024.60	14.56	90.59	82.6	783.7	0.0	1,230.5
75.00		0.5000	43.747	68.630	16,217.40	14.02	87.49	82.6	730.2	0.0	1,188.6
80.00		0.5000	42.197	66.170	14,535.20	13.47	84.39	82.6	678.5	0.0	1,146.7
85.00		0.5000	40.647	63.710	12,973.60	12.92	81.29	82.6	628.7	0.0	1,104.9
86.90		0.5000	40.057	62.775	12,410.80	12.72	80.11	82.6	610.2	0.0	408.9
87.96	Bot - Section 3	0.5000	39.730	62.256	12,105.30	12.60	79.46	82.6	600.1	0.0	224.5
90.00		0.5000	39.096	61.250	11,528.00	12.38	78.19	82.6	580.8	0.0	703.7
93.51	Top - Section 2	0.3125	38.634	38.009	7,052.10	20.39	123.63	77.4	359.5	0.0	1,180.8
95.00		0.3125	38.171	37.550	6,799.70	20.13	122.15	77.7	350.9	0.0	191.9
100.00		0.3125	36.621	36.012	5,998.10	19.25	117.19	78.8	322.6	0.0	625.8
105.00		0.3125	35.071	34.475	5,262.20	18.38	112.23	79.8	295.5	0.0	599.6
108.90		0.3125	33.862	33.275	4,731.90	17.70	108.36	80.6	275.2	0.0	449.5
110.00		0.3125	33.521	32.937	4,589.10	17.50	107.27	80.8	269.6	0.0	123.9
115.00		0.3125	31.970	31.399	3,975.90	16.63	102.31	81.8	244.9	0.0	547.3
118.00		0.3125	31.040	30.477	3,635.70	16.10	99.33	82.5	230.7	0.0	315.8
120.00		0.3125	30.420	29.862	3,420.00	15.75	97.34	82.6	221.4	0.0	205.3
120.65		0.3125	30.219	29.662	3,351.80	15.64	96.70	82.6	218.5	0.0	65.8
								Totals:			33,807.9

Load Case: 1.2D + 1.0W 118 mph wind with no ice 17 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	-53.07	-58.98	0.00	-5,024.0	0.00	5,023.96	8,277.51	2,050.30	12,118.55	11,136.85	0	0	0.458
5.00	-50.55	-58.56	0.00	-4,729.0	0.00	4,729.05	8,140.09	2,001.73	11,551.25	10,690.30	0.06	-0.11	0.449
10.00	-48.08	-58.15	0.00	-4,436.2	0.00	4,436.24	7,999.82	1,953.16	10,997.55	10,248.93	0.24	-0.22	0.440
15.00	-45.66	-57.74	0.00	-4,145.5	0.00	4,145.49	7,856.70	1,904.59	10,457.45	9,813.03	0.53	-0.33	0.429
20.00	-43.31	-57.33	0.00	-3,856.8	0.00	3,856.80	7,710.74	1,856.02	9,930.94	9,382.86	0.94	-0.44	0.418
25.00	-41.01	-56.93	0.00	-3,570.1	0.00	3,570.14	7,561.93	1,807.44	9,418.04	8,958.71	1.47	-0.56	0.405
30.00	-38.77	-56.53	0.00	-3,285.5	0.00	3,285.49	7,410.27	1,758.87	8,918.73	8,540.84	2.11	-0.67	0.391
35.00	-36.60	-56.11	0.00	-3,002.9	0.00	3,002.86	7,240.28	1,710.30	8,433.03	8,112.19	2.87	-0.78	0.376
40.00	-34.51	-55.80	0.00	-2,722.3	0.00	2,722.30	7,034.66	1,661.73	7,960.92	7,655.69	3.75	-0.89	0.362
42.11	-33.62	-55.59	0.00	-2,604.8	0.00	2,604.75	6,948.03	1,641.27	7,766.08	7,467.32	4.16	-0.94	0.355
45.00	-31.43	-55.25	0.00	-2,443.9	0.00	2,443.92	6,829.04	1,613.16	7,502.41	7,212.41	4.75	-1	0.345
49.35	-28.26	-54.98	0.00	-2,203.4	0.00	2,203.36	5,968.08	1,425.91	6,594.33	6,275.12	5.71	-1.1	0.357
50.00	-27.98	-54.74	0.00	-2,167.8	0.00	2,167.85	5,950.78	1,420.34	6,542.84	6,232.22	5.86	-1.11	0.354
55.00	-26.20	-54.28	0.00	-1,894.2	0.00	1,894.15	5,815.30	1,377.16	6,151.17	5,903.41	7.09	-1.22	0.327
60.00	-24.49	-53.82	0.00	-1,622.8	0.00	1,622.76	5,647.21	1,333.99	5,771.59	5,551.25	8.42	-1.32	0.298
64.90	-21.11	-38.56	0.00	-1,359.0	0.00	1,359.04	5,468.10	1,291.68	5,411.33	5,202.93	9.84	-1.42	0.266
65.00	-21.05	-38.34	0.00	-1,355.2	0.00	1,355.18	5,464.44	1,290.81	5,404.10	5,195.94	9.87	-1.42	0.266
70.00	-19.47	-37.87	0.00	-1,163.5	0.00	1,163.47	5,281.67	1,247.64	5,048.70	4,852.38	11.4	-1.51	0.244
75.00	-17.95	-37.41	0.00	-974.1	0.00	974.10	5,098.90	1,204.46	4,705.38	4,520.57	13.03	-1.59	0.220
80.00	-16.48	-36.94	0.00	-787.1	0.00	787.07	4,916.13	1,161.29	4,374.15	4,200.51	14.75	-1.67	0.192
85.00	-15.08	-36.61	0.00	-602.4	0.00	602.37	4,733.36	1,118.12	4,055.01	3,892.20	16.54	-1.74	0.159
86.90	-13.11	-22.19	0.00	-532.8	0.00	532.81	4,663.90	1,101.71	3,936.91	3,778.12	17.23	-1.76	0.144
87.96	-12.83	-22.05	0.00	-509.4	0.00	509.39	4,625.32	1,092.59	3,872.05	3,715.49	17.62	-1.78	0.140
90.00	-11.95	-21.79	0.00	-464.3	0.00	464.30	4,550.58	1,074.94	3,747.96	3,595.64	18.39	-1.8	0.132
93.51	-10.49	-21.54	0.00	-387.9	0.00	387.86	2,648.37	667.05	2,308.88	2,087.59	19.73	-1.84	0.191
95.00	-10.24	-21.27	0.00	-355.7	0.00	355.71	2,626.77	659.00	2,253.46	2,045.36	20.3	-1.85	0.179
100.00	-9.43	-20.84	0.00	-249.4	0.00	249.39	2,552.56	632.01	2,072.72	1,905.52	22.28	-1.91	0.136
105.00	-6.80	-18.75	0.00	-145.2	0.00	145.21	2,475.49	605.03	1,899.53	1,768.42	24.31	-1.96	0.086
108.90	-5.25	-7.66	0.00	-72.1	0.00	72.08	2,413.41	583.98	1,769.68	1,663.56	25.93	-1.98	0.046
110.00	-5.10	-7.42	0.00	-63.7	0.00	63.66	2,395.59	578.04	1,733.89	1,634.33	26.38	-1.99	0.041
115.00	-4.41	-7.09	0.00	-26.6	0.00	26.56	2,312.83	551.06	1,575.81	1,503.53	28.48	-2	0.020
118.00	-1.72	-2.63	0.00	-5.3	0.00	5.28	2,261.81	534.87	1,484.59	1,426.74	29.73	-2.01	0.004
120.00	-0.08	-0.02	0.00	-0.0	0.00	0.01	2,218.59	524.08	1,425.28	1,370.95	30.58	-2.01	0.000
120.65	0.00	-0.02	0.00	0.0	0.00	0.00	2,203.74	520.57	1,406.27	1,352.57	30.85	-2.01	0.000

Load Case: 0.9D + 1.0W 118 mph wind with no ice 17 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	-39.79	-58.97	0.00	-5,011.5	0.00	5,011.47	8,277.51	2,050.30	12,118.55	11,136.85	0	0	0.456
5.00	-37.87	-58.53	0.00	-4,716.6	0.00	4,716.63	8,140.09	2,001.73	11,551.25	10,690.30	0.06	-0.11	0.447
10.00	-35.99	-58.09	0.00	-4,424.0	0.00	4,424.00	7,999.82	1,953.16	10,997.55	10,248.93	0.24	-0.22	0.437
15.00	-34.15	-57.66	0.00	-4,133.6	0.00	4,133.55	7,856.70	1,904.59	10,457.45	9,813.03	0.53	-0.33	0.426
20.00	-32.36	-57.24	0.00	-3,845.2	0.00	3,845.25	7,710.74	1,856.02	9,930.94	9,382.86	0.94	-0.44	0.415
25.00	-30.61	-56.82	0.00	-3,559.1	0.00	3,559.08	7,561.93	1,807.44	9,418.04	8,958.71	1.46	-0.56	0.402
30.00	-28.90	-56.40	0.00	-3,275.0	0.00	3,274.99	7,410.27	1,758.87	8,918.73	8,540.84	2.11	-0.67	0.388
35.00	-27.25	-55.97	0.00	-2,993.0	0.00	2,992.99	7,240.28	1,710.30	8,433.03	8,112.19	2.87	-0.78	0.374
40.00	-25.66	-55.66	0.00	-2,713.1	0.00	2,713.13	7,034.66	1,661.73	7,960.92	7,655.69	3.74	-0.89	0.359
42.11	-24.98	-55.44	0.00	-2,595.9	0.00	2,595.88	6,948.03	1,641.27	7,766.08	7,467.32	4.15	-0.94	0.352
45.00	-23.32	-55.10	0.00	-2,435.5	0.00	2,435.47	6,829.04	1,613.16	7,502.41	7,212.41	4.74	-1	0.342
49.35	-20.93	-54.84	0.00	-2,195.6	0.00	2,195.58	5,968.08	1,425.91	6,594.33	6,275.12	5.7	-1.09	0.355
50.00	-20.71	-54.59	0.00	-2,160.2	0.00	2,160.15	5,950.78	1,420.34	6,542.84	6,232.22	5.85	-1.11	0.352
55.00	-19.36	-54.13	0.00	-1,887.2	0.00	1,887.21	5,815.30	1,377.16	6,151.17	5,903.41	7.07	-1.22	0.325
60.00	-18.05	-53.66	0.00	-1,616.6	0.00	1,616.58	5,647.21	1,333.99	5,771.59	5,551.25	8.4	-1.32	0.296
64.90	-15.60	-38.42	0.00	-1,353.6	0.00	1,353.62	5,468.10	1,291.68	5,411.33	5,202.93	9.81	-1.41	0.264
65.00	-15.55	-38.20	0.00	-1,349.8	0.00	1,349.78	5,464.44	1,290.81	5,404.10	5,195.94	9.84	-1.42	0.263
70.00	-14.35	-37.73	0.00	-1,158.8	0.00	1,158.78	5,281.67	1,247.64	5,048.70	4,852.38	11.37	-1.51	0.242
75.00	-13.20	-37.27	0.00	-970.1	0.00	970.11	5,098.90	1,204.46	4,705.38	4,520.57	12.99	-1.59	0.218
80.00	-12.09	-36.81	0.00	-783.8	0.00	783.77	4,916.13	1,161.29	4,374.15	4,200.51	14.7	-1.67	0.190
85.00	-11.04	-36.48	0.00	-599.7	0.00	599.73	4,733.36	1,118.12	4,055.01	3,892.20	16.48	-1.73	0.157
86.90	-9.67	-22.09	0.00	-530.4	0.00	530.41	4,663.90	1,101.71	3,936.91	3,778.12	17.18	-1.76	0.143
87.96	-9.45	-21.95	0.00	-507.1	0.00	507.10	4,625.32	1,092.59	3,872.05	3,715.49	17.57	-1.77	0.139
90.00	-8.80	-21.69	0.00	-462.2	0.00	462.22	4,550.58	1,074.94	3,747.96	3,595.64	18.33	-1.79	0.131
93.51	-7.70	-21.45	0.00	-386.1	0.00	386.14	2,648.37	667.05	2,308.88	2,087.59	19.66	-1.83	0.189
95.00	-7.51	-21.17	0.00	-354.1	0.00	354.13	2,626.77	659.00	2,253.46	2,045.36	20.24	-1.84	0.177
100.00	-6.90	-20.75	0.00	-248.3	0.00	248.26	2,552.56	632.01	2,072.72	1,905.52	22.21	-1.91	0.134
105.00	-4.94	-18.69	0.00	-144.5	0.00	144.51	2,475.49	605.03	1,899.53	1,768.42	24.23	-1.95	0.085
108.90	-3.88	-7.61	0.00	-71.6	0.00	71.64	2,413.41	583.98	1,769.68	1,663.56	25.84	-1.98	0.045
110.00	-3.76	-7.37	0.00	-63.3	0.00	63.27	2,395.59	578.04	1,733.89	1,634.33	26.3	-1.98	0.040
115.00	-3.25	-7.05	0.00	-26.4	0.00	26.41	2,312.83	551.06	1,575.81	1,503.53	28.38	-2	0.019
118.00	-1.27	-2.61	0.00	-5.2	0.00	5.24	2,261.81	534.87	1,484.59	1,426.74	29.64	-2	0.004
120.00	-0.06	-0.02	0.00	-0.0	0.00	0.01	2,218.59	524.08	1,425.28	1,370.95	30.47	-2	0.000
120.65	0.00	-0.02	0.00	0.0	0.00	0.00	2,203.74	520.57	1,406.27	1,352.57	30.75	-2	0.000

Load Case: 1.2D + 1.0Di + 1.0Wi		50 mph wind with 1" radial ice			16 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	-65.30	-15.64	0.00	-1,321.5	0.00	1,321.49	8,277.51	2,050.30	12,118.55	11,136.85	0	0	0.127
5.00	-62.56	-15.52	0.00	-1,243.3	0.00	1,243.29	8,140.09	2,001.73	11,551.25	10,690.30	0.02	-0.03	0.124
10.00	-59.85	-15.39	0.00	-1,165.7	0.00	1,165.72	7,999.82	1,953.16	10,997.55	10,248.93	0.06	-0.06	0.121
15.00	-57.19	-15.27	0.00	-1,088.8	0.00	1,088.76	7,856.70	1,904.59	10,457.45	9,813.03	0.14	-0.09	0.118
20.00	-54.58	-15.15	0.00	-1,012.4	0.00	1,012.41	7,710.74	1,856.02	9,930.94	9,382.86	0.25	-0.12	0.115
25.00	-52.02	-15.03	0.00	-936.7	0.00	936.68	7,561.93	1,807.44	9,418.04	8,958.71	0.39	-0.15	0.112
30.00	-49.53	-14.91	0.00	-861.5	0.00	861.54	7,410.27	1,758.87	8,918.73	8,540.84	0.55	-0.18	0.108
35.00	-47.10	-14.78	0.00	-787.0	0.00	787.01	7,240.28	1,710.30	8,433.03	8,112.19	0.76	-0.21	0.104
40.00	-44.72	-14.69	0.00	-713.1	0.00	713.11	7,034.66	1,661.73	7,960.92	7,655.69	0.99	-0.23	0.100
42.11	-43.74	-14.62	0.00	-682.2	0.00	682.16	6,948.03	1,641.27	7,766.08	7,467.32	1.09	-0.25	0.098
45.00	-41.41	-14.52	0.00	-639.8	0.00	639.85	6,829.04	1,613.16	7,502.41	7,212.41	1.25	-0.26	0.095
49.35	-37.99	-14.44	0.00	-576.6	0.00	576.63	5,968.08	1,425.91	6,594.33	6,275.12	1.5	-0.29	0.098
50.00	-37.72	-14.37	0.00	-567.3	0.00	567.30	5,950.78	1,420.34	6,542.84	6,232.22	1.54	-0.29	0.097
55.00	-35.69	-14.23	0.00	-495.4	0.00	495.45	5,815.30	1,377.16	6,151.17	5,903.41	1.86	-0.32	0.090
60.00	-33.72	-14.09	0.00	-424.3	0.00	424.30	5,647.21	1,333.99	5,771.59	5,551.25	2.21	-0.35	0.083
64.90	-29.13	-10.17	0.00	-355.3	0.00	355.26	5,468.10	1,291.68	5,411.33	5,202.93	2.58	-0.37	0.074
65.00	-29.09	-10.10	0.00	-354.2	0.00	354.24	5,464.44	1,290.81	5,404.10	5,195.94	2.59	-0.37	0.074
70.00	-27.24	-9.96	0.00	-303.8	0.00	303.75	5,281.67	1,247.64	5,048.70	4,852.38	2.99	-0.4	0.068
75.00	-25.45	-9.81	0.00	-254.0	0.00	253.97	5,098.90	1,204.46	4,705.38	4,520.57	3.42	-0.42	0.061
80.00	-23.72	-9.67	0.00	-204.9	0.00	204.92	4,916.13	1,161.29	4,374.15	4,200.51	3.87	-0.44	0.054
85.00	-22.05	-9.57	0.00	-156.6	0.00	156.58	4,733.36	1,118.12	4,055.01	3,892.20	4.34	-0.46	0.045
86.90	-19.03	-5.82	0.00	-138.4	0.00	138.40	4,663.90	1,101.71	3,936.91	3,778.12	4.52	-0.46	0.041
87.96	-18.69	-5.78	0.00	-132.2	0.00	132.25	4,625.32	1,092.59	3,872.05	3,715.49	4.62	-0.47	0.040
90.00	-17.71	-5.70	0.00	-120.4	0.00	120.43	4,550.58	1,074.94	3,747.96	3,595.64	4.82	-0.47	0.037
93.51	-16.06	-5.62	0.00	-100.4	0.00	100.44	2,648.37	667.05	2,308.88	2,087.59	5.17	-0.48	0.054
95.00	-15.73	-5.54	0.00	-92.0	0.00	92.04	2,626.77	659.00	2,253.46	2,045.36	5.32	-0.48	0.051
100.00	-14.65	-5.40	0.00	-64.4	0.00	64.35	2,552.56	632.01	2,072.72	1,905.52	5.84	-0.5	0.040
105.00	-10.74	-4.88	0.00	-37.3	0.00	37.34	2,475.49	605.03	1,899.53	1,768.42	6.37	-0.51	0.026
108.90	-8.26	-1.98	0.00	-18.3	0.00	18.30	2,413.41	583.98	1,769.68	1,663.56	6.8	-0.52	0.014
110.00	-8.04	-1.90	0.00	-16.1	0.00	16.13	2,395.59	578.04	1,733.89	1,634.33	6.92	-0.52	0.013
115.00	-7.11	-1.80	0.00	-6.6	0.00	6.63	2,312.83	551.06	1,575.81	1,503.53	7.46	-0.52	0.007
118.00	-3.36	-0.62	0.00	-1.2	0.00	1.24	2,261.81	534.87	1,484.59	1,426.74	7.79	-0.52	0.002
120.00	-0.11	-0.01	0.00	-0.0	0.00	0.01	2,218.59	524.08	1,425.28	1,370.95	8.01	-0.52	0.000
120.65	0.00	-0.01	0.00	0.0	0.00	0.00	2,203.74	520.57	1,406.27	1,352.57	8.08	-0.52	0.000

Load Case: 1.0D + 1.0W 60 mph Wind with No Ice 16 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	-44.27	-13.64	0.00	-1,160.4	0.00	1,160.44	8,277.51	2,050.30	12,118.55	11,136.85	0	0	0.110
5.00	-42.25	-13.54	0.00	-1,092.2	0.00	1,092.23	8,140.09	2,001.73	11,551.25	10,690.30	0.01	-0.03	0.107
10.00	-40.28	-13.44	0.00	-1,024.5	0.00	1,024.52	7,999.82	1,953.16	10,997.55	10,248.93	0.05	-0.05	0.105
15.00	-38.36	-13.34	0.00	-957.3	0.00	957.31	7,856.70	1,904.59	10,457.45	9,813.03	0.12	-0.08	0.102
20.00	-36.48	-13.25	0.00	-890.6	0.00	890.59	7,710.74	1,856.02	9,930.94	9,382.86	0.22	-0.1	0.100
25.00	-34.65	-13.15	0.00	-824.4	0.00	824.35	7,561.93	1,807.44	9,418.04	8,958.71	0.34	-0.13	0.097
30.00	-32.87	-13.06	0.00	-758.6	0.00	758.59	7,410.27	1,758.87	8,918.73	8,540.84	0.49	-0.15	0.093
35.00	-31.14	-12.96	0.00	-693.3	0.00	693.30	7,240.28	1,710.30	8,433.03	8,112.19	0.66	-0.18	0.090
40.00	-29.45	-12.89	0.00	-628.5	0.00	628.50	7,034.66	1,661.73	7,960.92	7,655.69	0.87	-0.21	0.086
42.11	-28.75	-12.84	0.00	-601.4	0.00	601.36	6,948.03	1,641.27	7,766.08	7,467.32	0.96	-0.22	0.085
45.00	-26.98	-12.76	0.00	-564.2	0.00	564.21	6,829.04	1,613.16	7,502.41	7,212.41	1.1	-0.23	0.082
49.35	-24.37	-12.70	0.00	-508.7	0.00	508.66	5,968.08	1,425.91	6,594.33	6,275.12	1.32	-0.25	0.085
50.00	-24.18	-12.64	0.00	-500.5	0.00	500.46	5,950.78	1,420.34	6,542.84	6,232.22	1.35	-0.26	0.084
55.00	-22.77	-12.54	0.00	-437.2	0.00	437.25	5,815.30	1,377.16	6,151.17	5,903.41	1.64	-0.28	0.078
60.00	-21.41	-12.43	0.00	-374.6	0.00	374.57	5,647.21	1,333.99	5,771.59	5,551.25	1.95	-0.31	0.071
64.90	-18.33	-8.90	0.00	-313.7	0.00	313.67	5,468.10	1,291.68	5,411.33	5,202.93	2.27	-0.33	0.064
65.00	-18.30	-8.85	0.00	-312.8	0.00	312.78	5,464.44	1,290.81	5,404.10	5,195.94	2.28	-0.33	0.064
70.00	-17.02	-8.74	0.00	-268.5	0.00	268.53	5,281.67	1,247.64	5,048.70	4,852.38	2.63	-0.35	0.059
75.00	-15.78	-8.63	0.00	-224.8	0.00	224.82	5,098.90	1,204.46	4,705.38	4,520.57	3.01	-0.37	0.053
80.00	-14.59	-8.53	0.00	-181.6	0.00	181.64	4,916.13	1,161.29	4,374.15	4,200.51	3.41	-0.39	0.046
85.00	-13.43	-8.45	0.00	-139.0	0.00	139.00	4,733.36	1,118.12	4,055.01	3,892.20	3.82	-0.4	0.039
86.90	-11.45	-5.12	0.00	-122.9	0.00	122.94	4,663.90	1,101.71	3,936.91	3,778.12	3.98	-0.41	0.035
87.96	-11.22	-5.09	0.00	-117.5	0.00	117.54	4,625.32	1,092.59	3,872.05	3,715.49	4.07	-0.41	0.034
90.00	-10.50	-5.03	0.00	-107.1	0.00	107.14	4,550.58	1,074.94	3,747.96	3,595.64	4.25	-0.42	0.032
93.51	-9.28	-4.97	0.00	-89.5	0.00	89.50	2,648.37	667.05	2,308.88	2,087.59	4.56	-0.42	0.046
95.00	-9.08	-4.91	0.00	-82.1	0.00	82.08	2,626.77	659.00	2,253.46	2,045.36	4.69	-0.43	0.044
100.00	-8.40	-4.81	0.00	-57.6	0.00	57.55	2,552.56	632.01	2,072.72	1,905.52	5.14	-0.44	0.034
105.00	-6.17	-4.33	0.00	-33.5	0.00	33.50	2,475.49	605.03	1,899.53	1,768.42	5.61	-0.45	0.021
108.90	-4.58	-1.76	0.00	-16.6	0.00	16.61	2,413.41	583.98	1,769.68	1,663.56	5.99	-0.46	0.012
110.00	-4.45	-1.71	0.00	-14.7	0.00	14.67	2,395.59	578.04	1,733.89	1,634.33	6.09	-0.46	0.011
115.00	-3.86	-1.64	0.00	-6.1	0.00	6.12	2,312.83	551.06	1,575.81	1,503.53	6.58	-0.46	0.006
118.00	-1.50	-0.61	0.00	-1.2	0.00	1.22	2,261.81	534.87	1,484.59	1,426.74	6.87	-0.46	0.002
120.00	-0.07	-0.01	0.00	0.0	0.00	0.00	2,218.59	524.08	1,425.28	1,370.95	7.06	-0.46	0.000
120.65	0.00	0.00	0.00	0.0	0.00	0.00	2,203.74	520.57	1,406.27	1,352.57	7.12	-0.46	0.000

EQUIVALENT LATERAL FORCES METHOD ANALYSIS

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

Spectral Response Acceleration for Short Period (S_S):	0.205
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.054
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}):	0.219
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.086
Seismic Response Coefficient (C_s):	0.059
Upper Limit C_S:	0.059
Lower Limit C_S:	0.030
Period based on Rayleigh Method (sec):	0.980
Redundancy Factor (p):	1.000
Seismic Force Distribution Exponent (k):	1.240
Total Unfactored Dead Load:	44.280 k
Seismic Base Shear (E):	2.600 k

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

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
33	120.325	66	25	0.003	9	82
32	119	221	83	0.011	29	275
31	116.5	340	125	0.017	43	423
30	112.5	587	206	0.028	72	730
29	109.45	133	45	0.006	16	165
28	106.95	481	158	0.021	55	598
27	102.5	648	203	0.027	70	806
26	97.5	674	198	0.026	69	838
25	94.2538	206	58	0.008	20	256
24	91.7538	1,215	331	0.044	115	1,511
23	88.9778	723	190	0.025	66	900
22	87.4278	235	60	0.008	21	292
21	85.95	427	107	0.014	37	531
20	82.5	1,153	275	0.037	96	1,434
19	77.5	1,195	264	0.035	92	1,486
18	72.5	1,237	252	0.034	87	1,538
17	67.5	1,279	238	0.032	83	1,590
16	64.95	26	5	0.001	2	32
15	62.45	1,294	219	0.029	76	1,610
14	57.5	1,362	208	0.028	72	1,694
13	52.5	1,404	191	0.026	66	1,746
12	49.677	184	23	0.003	8	229
11	47.177	2,605	311	0.042	108	3,241
10	43.5533	1,769	191	0.026	66	2,200
9	41.0533	695	70	0.009	24	864
8	37.5	1,683	151	0.020	52	2,093
7	32.5	1,730	130	0.017	45	2,151
6	27.5	1,777	109	0.014	38	2,210
5	22.5	1,824	87	0.012	30	2,268
4	17.5	1,871	65	0.009	23	2,327
3	12.5	1,918	44	0.006	15	2,386
2	7.5	1,965	24	0.003	8	2,444
1	2.5	2,012	6	0.001	2	2,503
Samsung Outdoor CBRS 20W RRH	120	56	21	0.003	7	69

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
Samsung Outdoor CBRS 20W RRH –Clip-on Antenna	120	13	5	0.001	2	16
Samsung B2/B66A RRH-BR049	120	253	96	0.013	33	315
Samsung B5/B13 RRH-BR04C	120	211	80	0.011	28	262
RFS DB-C1-12C-24AB-0Z	120	32	12	0.002	4	40
Decibel DB846F65ZAXY	120	126	48	0.006	17	157
Quintel QS6656-5D	120	528	201	0.027	70	657
Flat T-Arm	118	750	279	0.037	97	933
VZW Unused Reserve (18029.67 sqin)	118	1,281	477	0.064	166	1,593
Branch 3	108.9	1,125	379	0.051	132	1,399
Raycap RDIDC-9181-PF-48	105	22	7	0.001	2	27
Fujitsu TA08025-B604	105	192	62	0.008	21	238
Fujitsu TA08025-B605	105	225	73	0.010	25	280
Commscope FFVV-65B-R2	105	212	68	0.009	24	264
Generic Flat T-Arm	105	938	302	0.040	105	1,166
Branch 2	86.9	1,575	401	0.054	139	1,959
Branch 1	64.9	1,800	319	0.043	111	2,239
		44,276	7,486	1.000	2,597	55,068

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

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
33	120.325	66	25	0.003	9	56
32	119	221	83	0.011	29	189
31	116.5	340	125	0.017	43	291
30	112.5	587	206	0.028	72	503
29	109.45	133	45	0.006	16	114
28	106.95	481	158	0.021	55	412
27	102.5	648	203	0.027	70	555
26	97.5	674	198	0.026	69	577
25	94.2538	206	58	0.008	20	177
24	91.7538	1,215	331	0.044	115	1,040
23	88.9778	723	190	0.025	66	619
22	87.4278	235	60	0.008	21	201
21	85.95	427	107	0.014	37	366
20	82.5	1,153	275	0.037	96	987
19	77.5	1,195	264	0.035	92	1,023
18	72.5	1,237	252	0.034	87	1,059
17	67.5	1,279	238	0.032	83	1,095
16	64.95	26	5	0.001	2	22
15	62.45	1,294	219	0.029	76	1,108
14	57.5	1,362	208	0.028	72	1,166
13	52.5	1,404	191	0.026	66	1,202
12	49.677	184	23	0.003	8	158
11	47.177	2,605	311	0.042	108	2,231
10	43.5533	1,769	191	0.026	66	1,515
9	41.0533	695	70	0.009	24	595
8	37.5	1,683	151	0.020	52	1,441
7	32.5	1,730	130	0.017	45	1,481
6	27.5	1,777	109	0.014	38	1,521
5	22.5	1,824	87	0.012	30	1,562
4	17.5	1,871	65	0.009	23	1,602
3	12.5	1,918	44	0.006	15	1,642
2	7.5	1,965	24	0.003	8	1,683
1	2.5	2,012	6	0.001	2	1,723
Samsung Outdoor CBRS 20W RRH	120	56	21	0.003	7	48
Samsung Outdoor CBRS 20W RRH –Clip-on Antenna	120	13	5	0.001	2	11
Samsung B2/B66A RRH-BR049	120	253	96	0.013	33	217
Samsung B5/B13 RRH-BR04C	120	211	80	0.011	28	181
RFS DB-C1-12C-24AB-0Z	120	32	12	0.002	4	27
Decibel DB846F65ZAXY	120	126	48	0.006	17	108

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
Quintel QS6656-5D	120	528	201	0.027	70	452
Flat T-Arm	118	750	279	0.037	97	642
VZW Unused Reserve (18029.67 sqin)	118	1,281	477	0.064	166	1,097
Branch 3	108.9	1,125	379	0.051	132	963
Raycap RDIDC-9181-PF-48	105	22	7	0.001	2	19
Fujitsu TA08025-B604	105	192	62	0.008	21	164
Fujitsu TA08025-B605	105	225	73	0.010	25	193
Commscope FFVV-65B-R2	105	212	68	0.009	24	182
Generic Flat T-Arm	105	938	302	0.040	105	803
Branch 2	86.9	1,575	401	0.054	139	1,349
Branch 1	64.9	1,800	319	0.043	111	1,541
		44,276	7,486	1.000	2,597	37,912

1.2D + 1.0Ev + 1.0Eh **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	-52.56	-2.60	0.00	-218.15	0.00	218.15	8,277.51	2,050.30	12,119	11,136.85	0.00	0.00	0.03
5.00	-50.12	-2.59	0.00	-205.17	0.00	205.17	8,140.09	2,001.73	11,551	10,690.30	0.00	0.00	0.03
10.00	-47.73	-2.58	0.00	-192.21	0.00	192.21	7,999.82	1,953.16	10,998	10,248.93	0.01	-0.01	0.03
15.00	-45.41	-2.56	0.00	-179.30	0.00	179.30	7,856.70	1,904.59	10,457	9,813.03	0.02	-0.01	0.02
20.00	-43.14	-2.53	0.00	-166.49	0.00	166.49	7,710.74	1,856.02	9,931	9,382.86	0.04	-0.02	0.02
25.00	-40.93	-2.50	0.00	-153.82	0.00	153.82	7,561.93	1,807.44	9,418	8,958.71	0.06	-0.02	0.02
30.00	-38.78	-2.46	0.00	-141.32	0.00	141.32	7,410.27	1,758.87	8,919	8,540.84	0.09	-0.03	0.02
35.00	-36.68	-2.41	0.00	-129.04	0.00	129.04	7,240.28	1,710.30	8,433	8,112.19	0.12	-0.03	0.02
40.00	-35.82	-2.38	0.00	-117.01	0.00	117.01	7,034.66	1,661.73	7,961	7,655.69	0.16	-0.04	0.02
42.11	-33.62	-2.32	0.00	-111.99	0.00	111.99	6,948.03	1,641.27	7,766	7,467.32	0.18	-0.04	0.02
45.00	-30.38	-2.21	0.00	-105.28	0.00	105.28	6,829.04	1,613.16	7,502	7,212.41	0.21	-0.04	0.02
49.35	-30.15	-2.20	0.00	-95.67	0.00	95.67	5,968.08	1,425.91	6,594	6,275.12	0.25	-0.05	0.02
50.00	-28.40	-2.13	0.00	-94.24	0.00	94.24	5,950.78	1,420.34	6,543	6,232.22	0.25	-0.05	0.02
55.00	-26.71	-2.06	0.00	-83.57	0.00	83.57	5,815.30	1,377.16	6,151	5,903.41	0.31	-0.05	0.02
60.00	-25.10	-1.99	0.00	-73.25	0.00	73.25	5,647.21	1,333.99	5,772	5,551.25	0.36	-0.06	0.02
64.90	-22.83	-1.87	0.00	-63.51	0.00	63.51	5,468.10	1,291.68	5,411	5,202.93	0.43	-0.06	0.02
65.00	-21.24	-1.79	0.00	-63.32	0.00	63.32	5,464.44	1,290.81	5,404	5,195.94	0.43	-0.06	0.02
70.00	-19.70	-1.70	0.00	-54.37	0.00	54.37	5,281.67	1,247.64	5,049	4,852.38	0.49	-0.07	0.02
75.00	-18.21	-1.61	0.00	-45.86	0.00	45.86	5,098.90	1,204.46	4,705	4,520.57	0.57	-0.07	0.01
80.00	-16.78	-1.51	0.00	-37.80	0.00	37.80	4,916.13	1,161.29	4,374	4,200.51	0.64	-0.07	0.01
85.00	-16.25	-1.48	0.00	-30.23	0.00	30.23	4,733.36	1,118.12	4,055	3,892.20	0.72	-0.08	0.01
86.90	-14.00	-1.31	0.00	-27.42	0.00	27.42	4,663.90	1,101.71	3,937	3,778.12	0.75	-0.08	0.01
87.96	-13.10	-1.25	0.00	-26.04	0.00	26.04	4,625.32	1,092.59	3,872	3,715.49	0.77	-0.08	0.01
90.00	-11.59	-1.13	0.00	-23.49	0.00	23.49	4,550.58	1,074.94	3,748	3,595.64	0.80	-0.08	0.01
93.51	-11.33	-1.11	0.00	-19.52	0.00	19.52	2,648.37	667.05	2,309	2,087.59	0.86	-0.08	0.01
95.00	-10.49	-1.04	0.00	-17.86	0.00	17.86	2,626.77	659.00	2,253	2,045.36	0.89	-0.08	0.01
100.00	-9.69	-0.97	0.00	-12.66	0.00	12.66	2,552.56	632.01	2,073	1,905.52	0.98	-0.09	0.01
105.00	-7.11	-0.73	0.00	-7.81	0.00	7.81	2,475.49	605.03	1,900	1,768.42	1.07	-0.09	0.01
108.90	-5.55	-0.58	0.00	-4.95	0.00	4.95	2,413.41	583.98	1,770	1,663.56	1.14	-0.09	0.01
110.00	-4.82	-0.51	0.00	-4.31	0.00	4.31	2,395.59	578.04	1,734	1,634.33	1.16	-0.09	0.01
115.00	-4.40	-0.47	0.00	-1.75	0.00	1.75	2,312.83	551.06	1,576	1,503.53	1.25	-0.09	0.00
118.00	-1.60	-0.17	0.00	-0.34	0.00	0.34	2,261.81	534.87	1,485	1,426.74	1.31	-0.09	0.00
120.00	0.00	0.00	0.00	0.00	0.00	0.00	2,218.59	524.08	1,425	1,370.95	1.35	-0.09	0.00
120.65	0.00	0.00	0.00	0.00	0.00	0.00	2,203.74	520.57	1,406	1,352.57	1.36	-0.09	0.00

0.9D - 1.0Ev + 1.0Eh **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	-36.19	-2.60	0.00	-217.49	0.00	217.49	8,277.51	2,050.30	12,119	11,136.85	0.00	0.00	0.02
5.00	-34.51	-2.59	0.00	-204.51	0.00	204.51	8,140.09	2,001.73	11,551	10,690.30	0.00	0.00	0.02
10.00	-32.86	-2.58	0.00	-191.56	0.00	191.56	7,999.82	1,953.16	10,998	10,248.93	0.01	-0.01	0.02

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
15.00	-31.26	-2.56	0.00	-178.67	0.00	178.67	7,856.70	1,904.59	10,457	9,813.03	0.02	-0.01	0.02
20.00	-29.70	-2.53	0.00	-165.88	0.00	165.88	7,710.74	1,856.02	9,931	9,382.86	0.04	-0.02	0.02
25.00	-28.18	-2.49	0.00	-153.24	0.00	153.24	7,561.93	1,807.44	9,418	8,958.71	0.06	-0.02	0.02
30.00	-26.70	-2.45	0.00	-140.77	0.00	140.77	7,410.27	1,758.87	8,919	8,540.84	0.09	-0.03	0.02
35.00	-25.26	-2.40	0.00	-128.52	0.00	128.52	7,240.28	1,710.30	8,433	8,112.19	0.12	-0.03	0.02
40.00	-24.66	-2.38	0.00	-116.52	0.00	116.52	7,034.66	1,661.73	7,961	7,655.69	0.16	-0.04	0.02
42.11	-23.15	-2.31	0.00	-111.52	0.00	111.52	6,948.03	1,641.27	7,766	7,467.32	0.18	-0.04	0.02
45.00	-20.91	-2.20	0.00	-104.84	0.00	104.84	6,829.04	1,613.16	7,502	7,212.41	0.20	-0.04	0.02
49.35	-20.76	-2.19	0.00	-95.26	0.00	95.26	5,968.08	1,425.91	6,594	6,275.12	0.25	-0.05	0.02
50.00	-19.55	-2.13	0.00	-93.84	0.00	93.84	5,950.78	1,420.34	6,543	6,232.22	0.25	-0.05	0.02
55.00	-18.39	-2.06	0.00	-83.20	0.00	83.20	5,815.30	1,377.16	6,151	5,903.41	0.31	-0.05	0.02
60.00	-17.28	-1.98	0.00	-72.93	0.00	72.93	5,647.21	1,333.99	5,772	5,551.25	0.36	-0.06	0.02
64.90	-15.72	-1.87	0.00	-63.23	0.00	63.23	5,468.10	1,291.68	5,411	5,202.93	0.42	-0.06	0.02
65.00	-14.62	-1.78	0.00	-63.04	0.00	63.04	5,464.44	1,290.81	5,404	5,195.94	0.43	-0.06	0.02
70.00	-13.56	-1.70	0.00	-54.12	0.00	54.12	5,281.67	1,247.64	5,049	4,852.38	0.49	-0.07	0.01
75.00	-12.54	-1.60	0.00	-45.64	0.00	45.64	5,098.90	1,204.46	4,705	4,520.57	0.56	-0.07	0.01
80.00	-11.55	-1.51	0.00	-37.63	0.00	37.63	4,916.13	1,161.29	4,374	4,200.51	0.64	-0.07	0.01
85.00	-11.19	-1.47	0.00	-30.09	0.00	30.09	4,733.36	1,118.12	4,055	3,892.20	0.72	-0.08	0.01
86.90	-9.64	-1.31	0.00	-27.30	0.00	27.30	4,663.90	1,101.71	3,937	3,778.12	0.75	-0.08	0.01
87.96	-9.02	-1.24	0.00	-25.92	0.00	25.92	4,625.32	1,092.59	3,872	3,715.49	0.76	-0.08	0.01
90.00	-7.98	-1.13	0.00	-23.38	0.00	23.38	4,550.58	1,074.94	3,748	3,595.64	0.80	-0.08	0.01
93.51	-7.80	-1.11	0.00	-19.43	0.00	19.43	2,648.37	667.05	2,309	2,087.59	0.86	-0.08	0.01
95.00	-7.22	-1.04	0.00	-17.78	0.00	17.78	2,626.77	659.00	2,253	2,045.36	0.88	-0.08	0.01
100.00	-6.67	-0.97	0.00	-12.60	0.00	12.60	2,552.56	632.01	2,073	1,905.52	0.97	-0.09	0.01
105.00	-4.90	-0.73	0.00	-7.77	0.00	7.77	2,475.49	605.03	1,900	1,768.42	1.06	-0.09	0.01
108.90	-3.82	-0.58	0.00	-4.92	0.00	4.92	2,413.41	583.98	1,770	1,663.56	1.13	-0.09	0.01
110.00	-3.32	-0.51	0.00	-4.29	0.00	4.29	2,395.59	578.04	1,734	1,634.33	1.16	-0.09	0.00
115.00	-3.03	-0.47	0.00	-1.74	0.00	1.74	2,312.83	551.06	1,576	1,503.53	1.25	-0.09	0.00
118.00	-1.10	-0.17	0.00	-0.34	0.00	0.34	2,261.81	534.87	1,485	1,426.74	1.31	-0.09	0.00
120.00	0.00	0.00	0.00	0.00	0.00	0.00	2,218.59	524.08	1,425	1,370.95	1.34	-0.09	0.00
120.65	0.00	0.00	0.00	0.00	0.00	0.00	2,203.74	520.57	1,406	1,352.57	1.36	-0.09	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	58.98	0.00	53.07	0.00	0.00	5023.96	0.00	0.46
0.9D + 1.0W	58.97	0.00	39.79	0.00	0.00	5011.47	0.00	0.46
1.2D + 1.0Di + 1.0Wi	15.64	0.00	65.30	0.00	0.00	1321.49	0.00	0.13
1.2D + 1.0Ev + 1.0Eh	2.60	0.00	52.56	0.00	0.00	218.15	0.00	0.03
0.9D - 1.0Ev + 1.0Eh	2.60	0.00	36.19	0.00	0.00	217.49	0.00	0.02
1.0D + 1.0W	13.64	0.00	44.27	0.00	0.00	1160.44	0.00	0.11

Base Plate & Anchor Rod Analysis

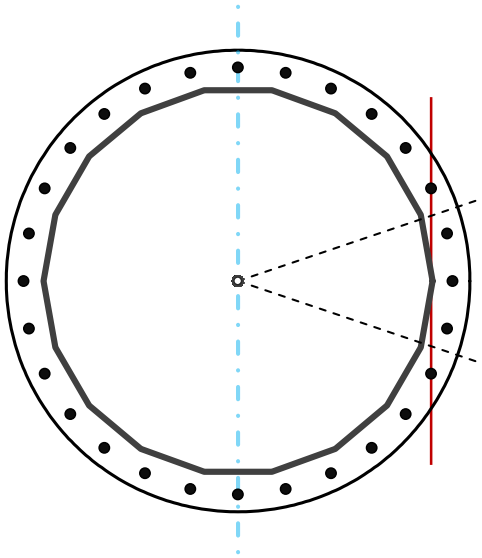
Pole Dimensions		
Number of Sides	18	-
Diameter	66	in
Thickness	0.5625	in
Orientation Offset	0	°

Base Reactions		
Moment, Mu	5024.0	k-ft
Axial, Pu	53.1	k
Shear, Vu	59.0	k
Neutral Axis	270	°

Report Capacities		
Component	Capacity	Result
Base Plate	24%	Pass
Anchor Rods	51%	Pass
Dwyidag	-	-

Base Plate		
Shape	Round	-
Diameter, ø	80	in
Thickness	3 1/4	in
Grade	A572-50	
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Clip	N/A	in
Orientation Offset	0	°
Anchor Rod Detail	d	η=0.5
Clear Distance	3	in
Applied Moment, Mu	776.9	k
Bending Stress, ϕMn	3268.0	k

Original Anchor Rods		
Arrangement	Radial	-
Quantity	28	-
Diameter, ø	2 1/4	in
Bolt Circle	74	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	8.3	in
Orientation Offset	0	°
Applied Force, Pu	122.1	k
Anchor Rods, ϕPn	243.6	k



Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	59.0	5024.0	1.00
Anchor Rod Forces	59.0	5024.0	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	115.0514	6.3917	0.6770		61594.41
Bolt	3.9761	3.2477	0.8393	4.5	58337.37
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	Round	-
Diameter, D	80	in
Thickness, t	3.25	in
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Base Plate Chord	45.211	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

Anchor Rods		
Anchor Rod Quantity, N	28	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	74	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	122.1	k
Applied Shear, Vu	0.7	k
Compressive Capacity, ϕPn	243.6	k
Tensile Capacity, ϕRnt	0.501	OK
Interaction Capacity	0.507	OK

External Base Plate		
Chord Length AA	38.467	in
Additional AA	6.000	in
Section Modulus, Z	117.422	in^3
Applied Moment, Mu	776.9	k-ft
Bending Capacity, ϕMn	5284.0	k-ft
Capacity, Mu/ϕMn	0.147	OK
Chord Length AB	36.658	in
Additional AB	6.000	in
Section Modulus, Z	112.643	in^3
Applied Moment, Mu	593.1	k-ft
Bending Capacity, ϕMn	5068.9	k-ft
Capacity, Mu/ϕMn	0.117	OK
Bend Line Length	27.502	in
Additional Bend Line	0.000	in
Section Modulus, Z	72.623	in^3
Applied Moment, Mu	776.9	k-ft
Bending Capacity, ϕMn	3268.0	k-ft
Capacity, Mu/ϕMn	0.238	OK

Internal Base Plate		
Arc Length	0.000	in
Section Modulus, Z	0.000	in^3
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		

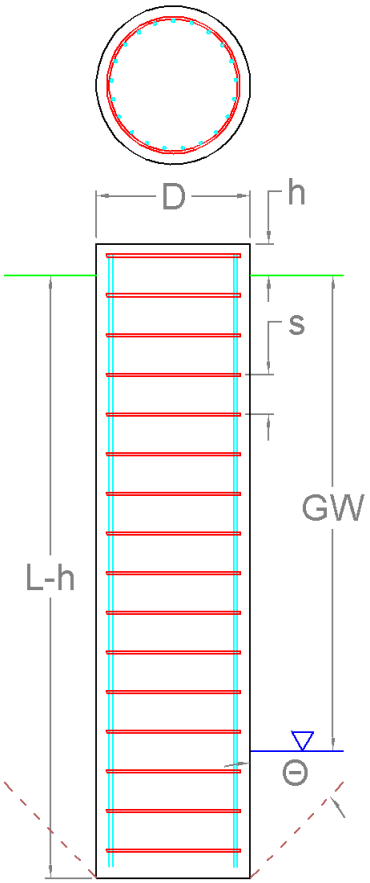
Pier Foundation Analysis (ANSI/TIA-222-H)

Foundation Analysis Parameters			
Pier Diameter	*D*	8.00	ft
Pier Embedment	*L-h*	24.0	ft
Pier Height above Ground	*H*	0.50	ft
Water Table Depth [BGL]	*GW*	99	ft
Pullout Angle	Θ	30	°
Unit Weight of Concrete		150	pcf
Uplift Skin Friction Factor		1.000	

Reactions		
Moment, M_u	5,024.0	k-ft
Shear, V_u	59.0	k
Axial, P_u	53.1	k
Uplift, T_u	0.0	k

Soil Properties

Layer Depth (ft)		Unit Weight	Cohesion	Friction Angle	Ultimate Skin Friction	Ultimate Bearing Pressure
TOP	BTM	pcf	psf	°	psf	psf
0.0	2.0	135	0	0	0	0
2.0	4.0	115	0	30	0	0
4.0	6.0	135	0	36	0	0
6.0	9.0	150	15,000	0	0	0
9.0	25.0	140	10,000	0	0	30,000



Soil Strength Capacities		
Volume of Concrete	1,231.5	ft^3
Weight of Concrete [Buoyancy Considered]	184.7	k
Average Soil Unit Weight	138.3	pcf
Skin Friction Resistance	0.0	k
Compressive Bearing Resistance	1,508.0	k
Pullout Weight [Minus Concrete Weight]	1,245.6	k
Compressive Force, P_u	70.0	k
Nominal Compressive Capacity, $\phi_s P_n$	1,131.0	k
$P_u / \phi_s P_n$	**6.2%**	
Total Lateral Resistance	11,560.6	k
Inflection Point [BGL]	14.4	ft
Moment at Inflection Point, M_D	5,901.4	k-ft
Nominal Moment Capacity, $\phi_s M_n$	41,396.1	k-ft
$M_D / \phi_s M_n$	**14.3%**	

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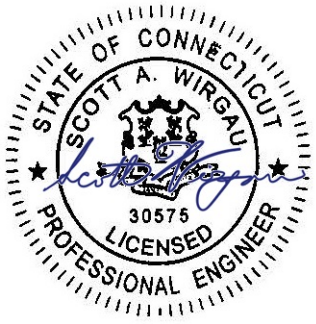
Mount Analysis Report

ATC Site Name	:	**Brownson Country Club CT, CT**
ATC Site Number	:	**415438**
Engineering Number	:	**13735391_C8_04**
Mount Elevation	:	**105 ft**
Carrier	:	**Dish Wireless L.L.C.**
Carrier Site Name	:	**NJJER02055A**
Carrier Site Number	:	**NJJER02055A**
Site Location	:	**15 Soundview Avenue** **SHELTON, CT 06484-2844** **41.295 , -73.137222**
County	:	**Fairfield**
Date	:	**March 23, 2022**
Max Usage	:	**74%**
Result	:	**Contingent Pass**



Prepared By:
Garrett Williams
Structural Engineer I

Garrett Williams

Reviewed By:

COA: PEC.0001553

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Table of Contents

Introduction

The purpose of this report is to summarize results of the mount analysis performed for Dish Wireless L.L.C. at 105 ft.

Supporting Documents

Specifications Sheet	Commscope MC-K6MHDX-9-96, dated March 19, 2021
Radio Frequency Data Sheet	RFDS ID #NJJER02055A, dated September 7, 2021

Analysis

This mount was analyzed using American Tower Corporation's Mount Analysis Program and RISA-3D

Basic Wind Speed:	118 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1.00'' radial ice concurrent
Codes:	ANSI/TIA-222-H
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 2
Feature:	Flat
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.205, S1 = 0.054
Site Class:	D - Stiff Soil
Live Loads:	Lm = 500 lbs, Lv = 250 lbs

Conclusion

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed above provided the modifications listed below are completed:

- Analysis is based on new Commscope MC-K6MHDX-9-96 T-arms.
- Install P2 (2.375" x 60") antenna mounting pipe (Mount Pipe D) with Site Pro 1 SCX7-U (or approved equivalent) crossover plate kits.
- No structural failures were addressed with the noted contingencies. Contingencies address Carrier's antenna spacing requirements.

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.

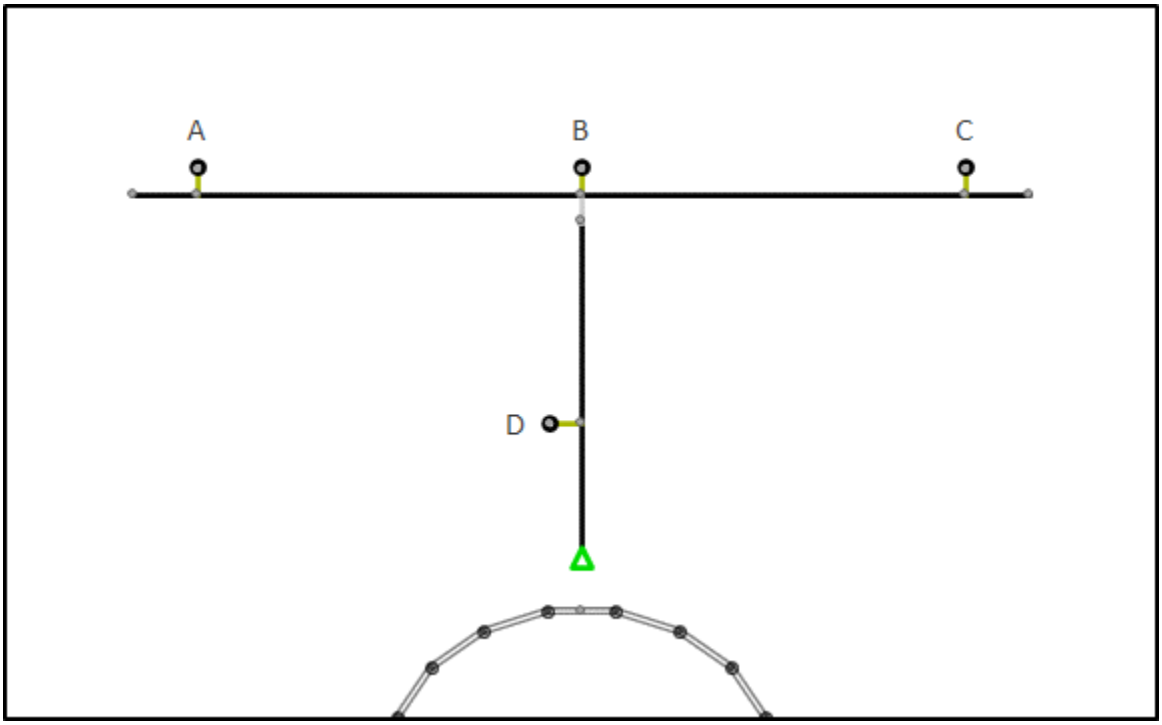
Application Loading

Mount Centerline (ft)	Equipment Centerline (ft)	Qty	Equipment Manufacturer & Model
105.0	105.0	3	Commscope FFVV-65B-R2
		1	Raycap RDIDC-9181-PF-48
		3	Fujitsu TA08025-B604
		3	Fujitsu TA08025-B605

Structure Usages

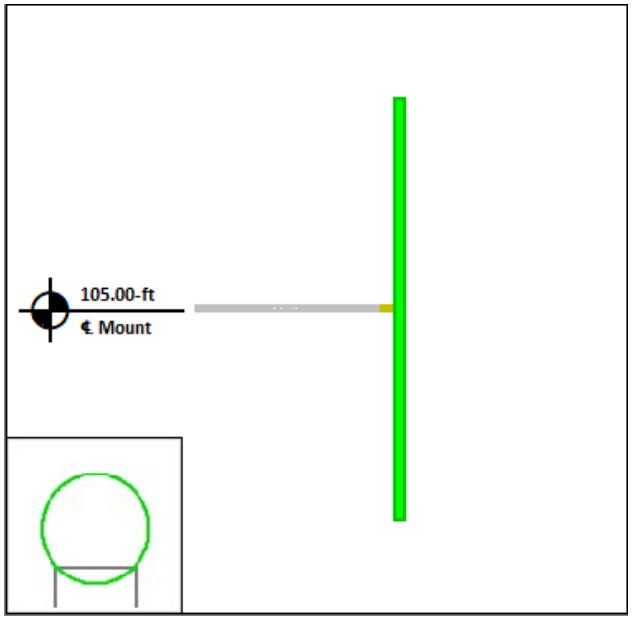
Structural Component	Controlling Usage	Pass/Fail
Horizontals	33%	Pass
Verticals	23%	Pass
Mount Pipes	15%	Pass
Connection Check	74%	Pass
Serviceability	N/A	Pass

Mount Layout

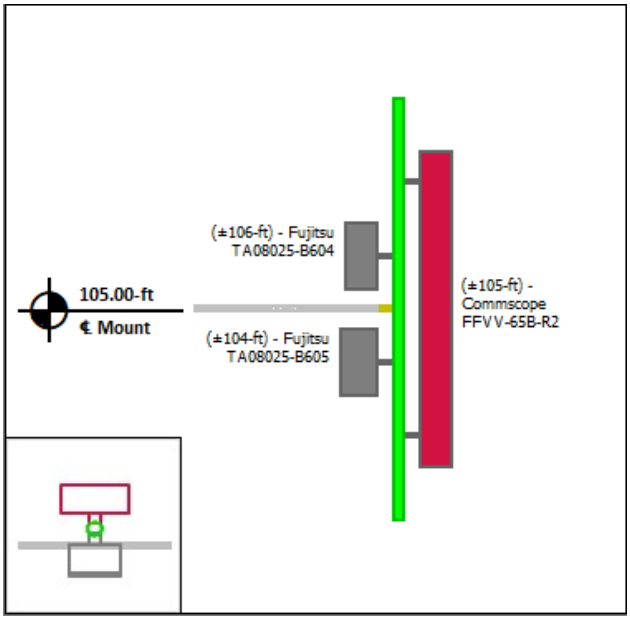


Equipment Layout

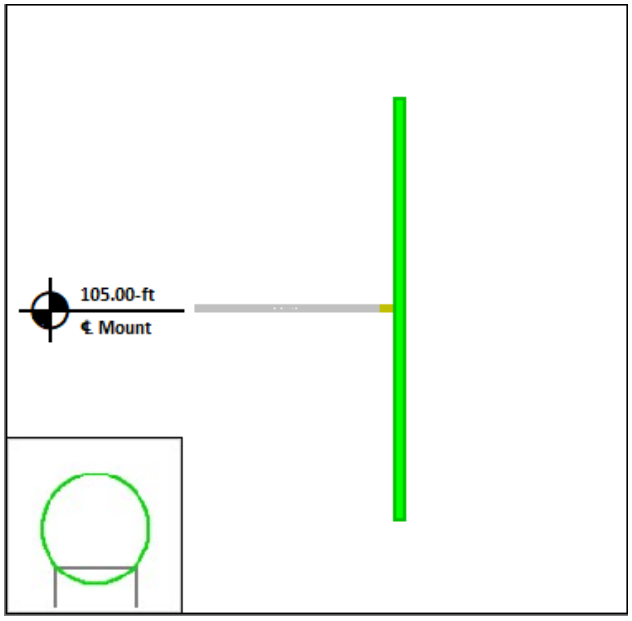
Mount Pipe A



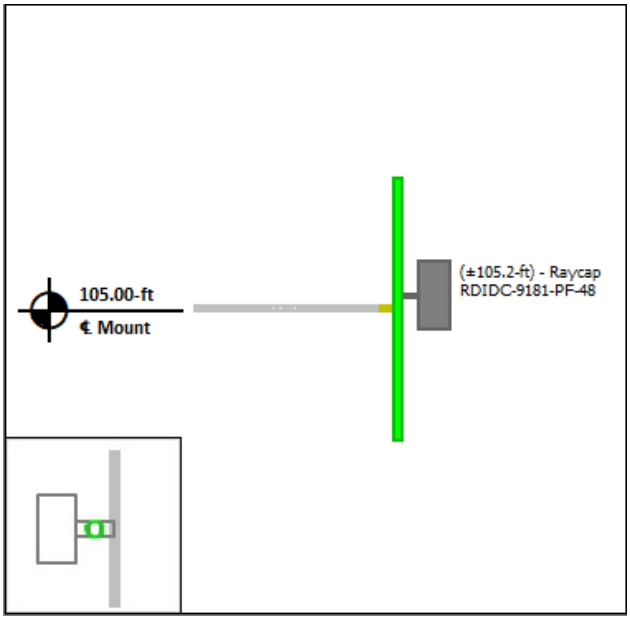
Mount Pipe B



Mount Pipe C



Mount Pipe D



Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC 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 equipment, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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

American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

All connections are to be verified for condition and tightness by the installation contractor preceding any changes to the appurtenance mounting system and/or equipment attached to it.

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

Installation of all equipment and steel should be confirmed not to cause tower conflicts nor impede the tower climbing pegs.

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

AMERICAN TOWER®
CORPORATION

Site Number:	*415438*
Project Number:	*13735391_C8_04*
Carrier:	*Dish Wireless L.L.C.*
Mount Elevation:	*105 ft*
Date:	3/23/2022

Mount Analysis Force Calculations

Wind & Ice Load Calculations			
Velocity Pressure Coefficient	K_z	1.00	
Topographic Factor	K_{zt}	1.00	
Rooftop Wind Speed-up Factor	K_s	1.00	
Shielding Factor	K_a	0.90	
Ground Elevation Factor	K_e	0.99	
Wind Direction Probability Factor	K_d	0.95	
Basic Wind Speed	V	118	mph
Velocity Pressure	q_z	33.6	psf
Height Escalation Factor	K_{iz}	1.12	
Thickness of Radial Glaze Ice	T_{iz}	1.12	in

Seismic Load Calculations			
Short Period DSRAP	S_{DS}	0.219	
1 Second DSRAP	S_{D1}	0.086	
Importance Factor	I	1.0	
Response Modification Coefficient	R	2.0	
Seismic Response Coefficient	C_S	0.109	
Amplification Factor	A	1.0	
Total Weight	W	499.8	lbs
Total Shear Force	V_S	54.6	lbs
Horizontal Seismic Load	Eh	54.6	lbs
Vertical Seismic Load	Ev	21.9	lbs

Antenna Calculations (Elevations per Application/RFDS)*

Equipment	Height	Width	Depth	Weight	EPA_N	EPA_T	EPA_{Ni}	EPA_{Ti}
Model #	in	in	in	lbs	sqft	sqft	sqft	sqft
Commscope FFVV-65B-R2	72.0	19.6	7.8	70.8	12.27	2.36	14.10	3.14
Raycap RDIDC-9181-PF-48	16.0	14.0	8.0	21.9	1.87	1.07	2.47	1.56
Fujitsu TA08025-B604	15.7	15.0	7.9	63.9	1.96	1.03	2.58	1.52
Fujitsu TA08025-B605	15.7	15.0	9.1	75.0	1.96	1.19	2.58	1.70

**** Equipment with EPA values N/A were not considered in the mount analysis***

AMERICAN TOWER®
CORPORATION

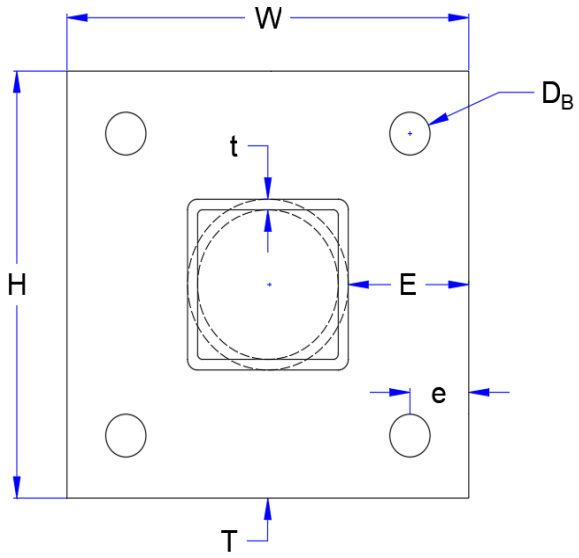
Site Number:	*415438*
Project Number:	*13735391_C8_04*
Carrier:	*Dish Wireless L.L.C.*
Mount Elevation:	*105 ft*
Date:	3/23/2022

Mount-to-Tower Connection Analysis

Applied Loads from RISA 3D			
Controlling Load Combination		99	
Node Label		N002	
Force in X	Fx	-41.6	lbs
Force in Y	Fy	1334.0	lbs
Force in Z	Fz	22.3	lbs
Moment about X	Mx	-4627.7	lb-ft
Moment about Y	My	-132.5	lb-ft
Moment about Z	Mz	-2293.0	lb-ft

Bolt Shear and Tensile Capacity			
Bolt Quantity	n	4	
Bolt Diameter	D_B	5/8	in
Bolt Edge Distance	e	1	in
Bolt Grade		A325	
Bolt Fy	Fy_B	92	ksi
Bolt Fu	Fu_B	120	ksi
Applied Shear	Vu	-0.01	k
Applied Tension	Tu	4.09	k
Tensile Strength	ϕTn	20.3	k
Interaction Capacity	(Tu+Vu)/ϕTn	20%	Pass

Plate Flexural Capacity			
Plate Height	H	9	in
Plate Width	W	9	in
Plate Thickness	T	3/8	in
Plate Grade		A36	
Plate Fy	Fy_P	36	ksi
Plate Fu	Fu_P	58	ksi
Shear Capacity	ϕVn	28.8	k
Applied Moment	Mu	12.3	k-in
Flexural Strength	ϕMn	16.5	k-in
Flexural Capacity	Mu/ϕMn	74%	Pass

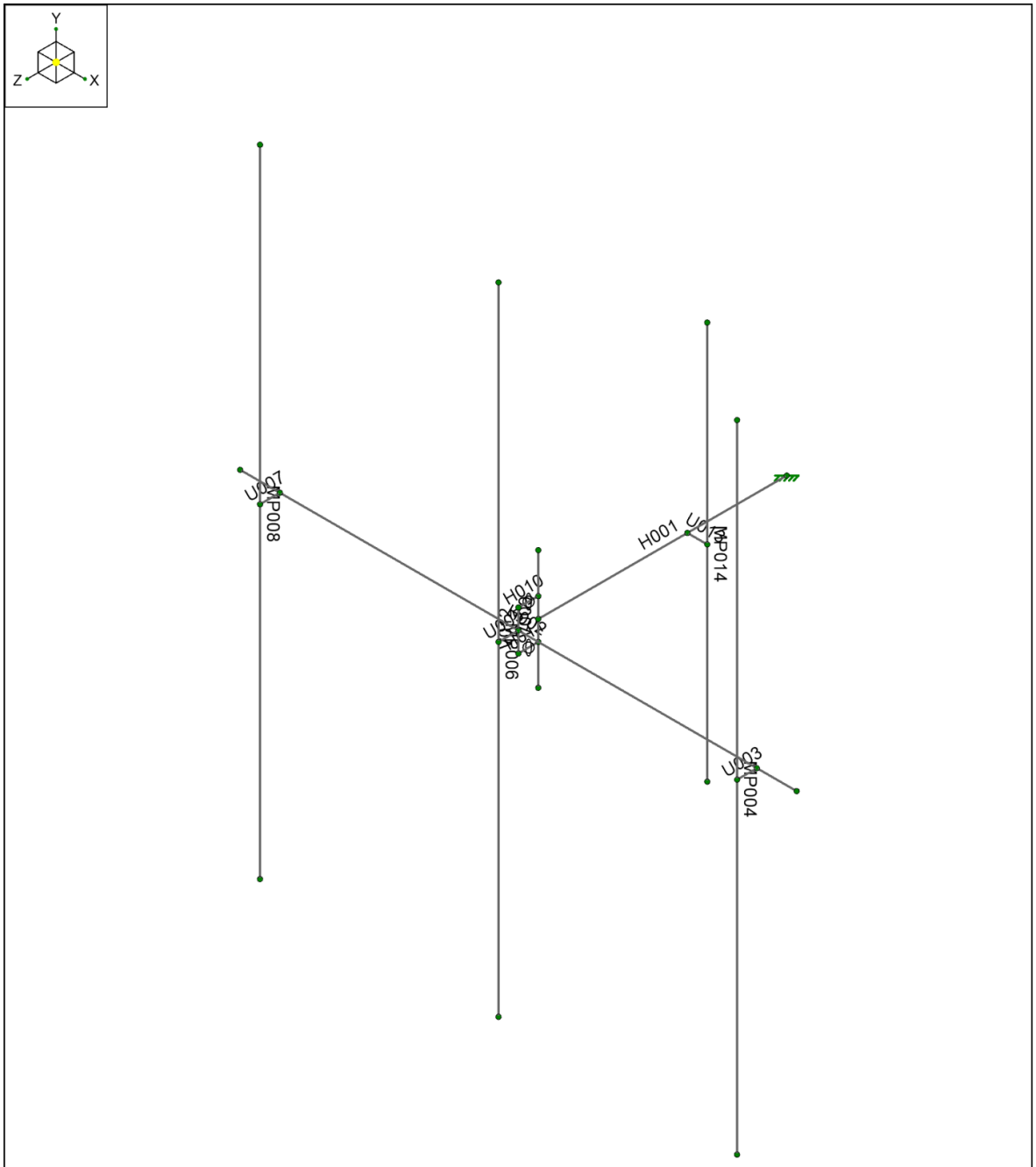


Weld and Base Metal Capacity			
Standoff Type		Tube	
Standoff Member		HSS4x4x4	
Member Edge Distance	E	2.5	in
Member Width	w	4	in
Member Thickness	t	0.250	in
Member Grade		A500 Gr. B	
Member Fy	Fy_M	42	ksi
Member Fu	Fu_M	58	ksi
Weld Size	a	1/4	in
Weld Length	l	16.0	in
Applied Load	Pu	8.2	k
Weld Strength	ϕRn	44.5	k
Weld Capacity	Pu/ϕRn	18%	Pass

Minimum Base Metal Thickness	0.213	in
Controlling Base Metal Thickness	0.250	in
Base Metal Result	Acceptable	

Prying Action Considerations							
Moment Arm	b	1.50	in	Minimum Thickness	t_{min}	0.24	in
Effective Moment Arm	b'	1.19	in	No Prying Thickness	t_{np}	0.32	in
Tributary Length	p	3.63	in	Min Bolt Strength Thickness	t_c	0.71	k-in
Effective Edge Distance	a'	1.31	in	Prying Action Bolt Tension	T_{up}	0.00	k

American Tower Corp.	415438, Brownson Country Club CT	SK-1
Garrett.Williams		Mar 23, 2022
13735391_C8_04		R3D. DISH WIRELESS L.L.C. @...



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Garrett.Williams		Mar 23, 2022
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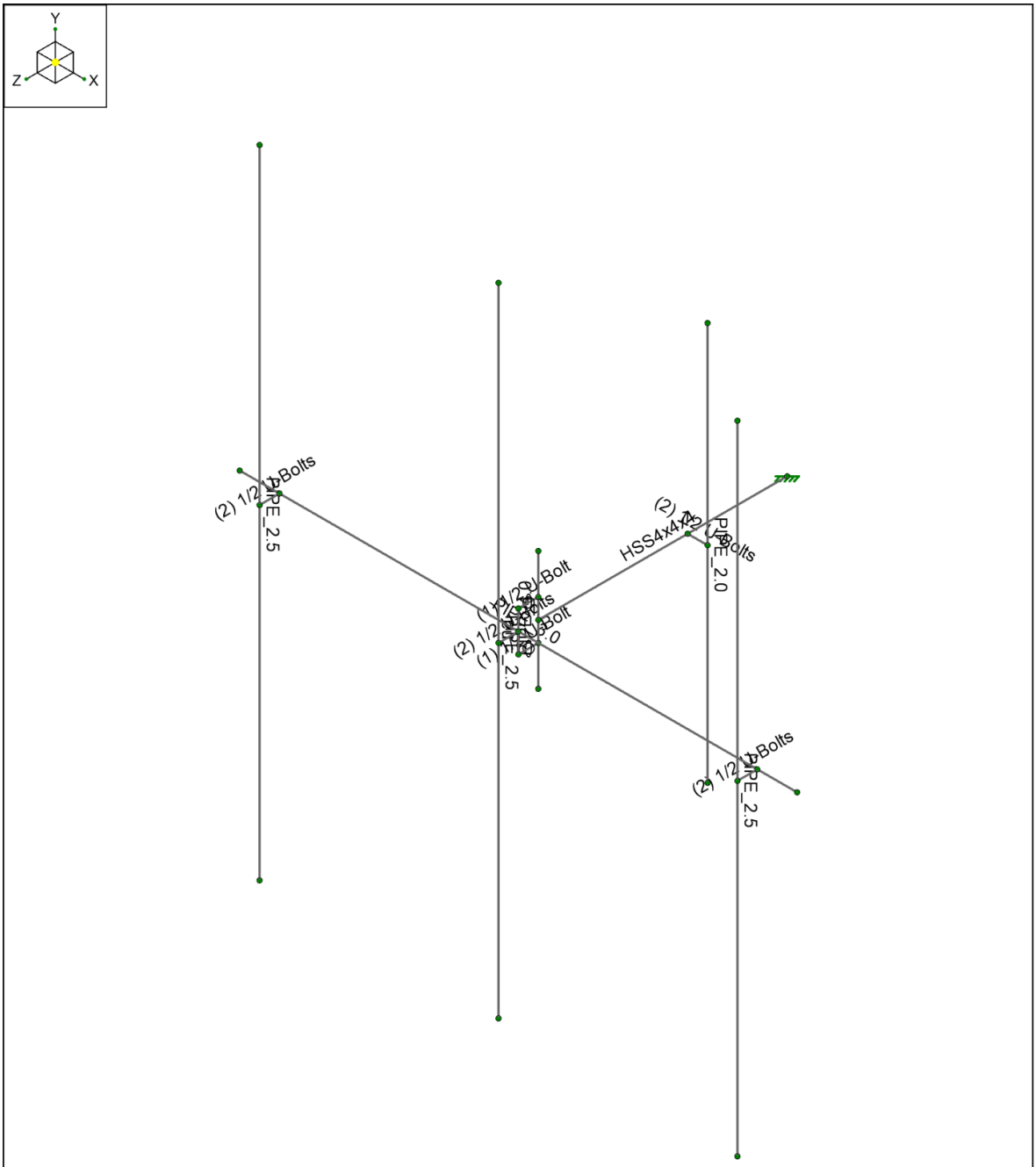

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Garrett.Williams		Mar 23, 2022
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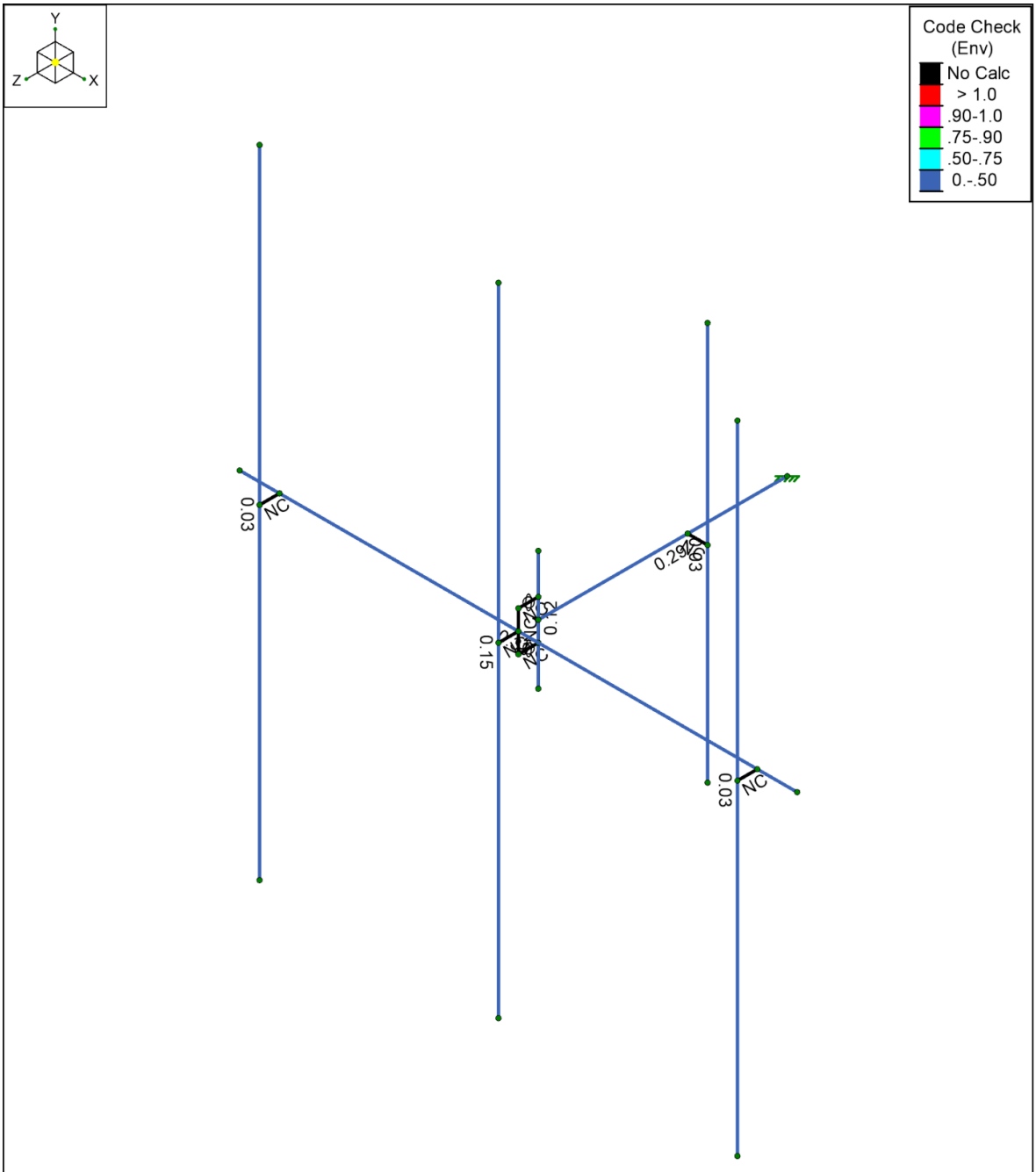
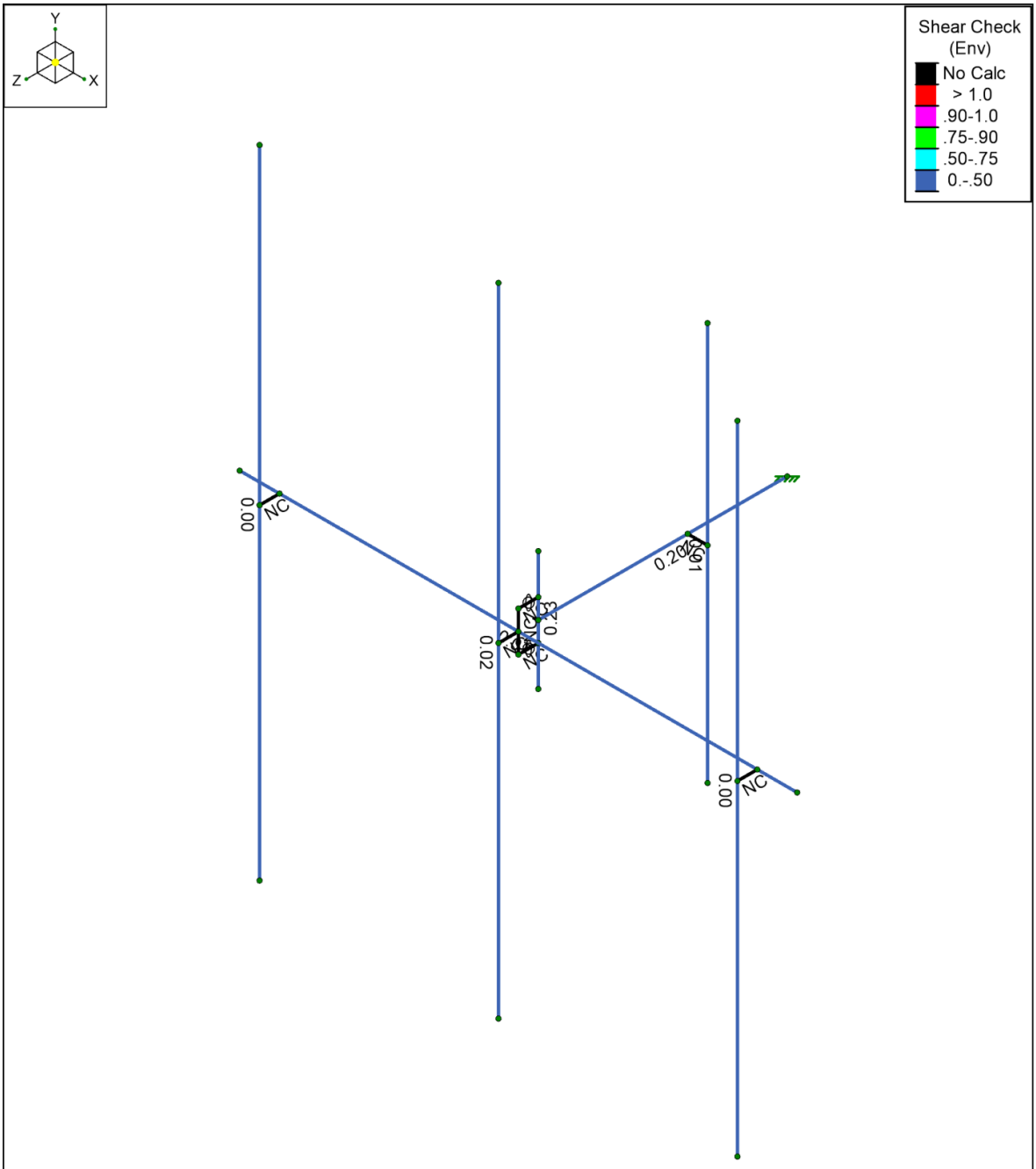


Member Code Checks Displayed (Enveloped)

American Tower Corp.	415438, Brownson Country Club CT	SK-4
Garrett.Williams		Mar 23, 2022
13735391_C8_04		R3D. DISH WIRELESS L.L.C. @...



Member Shear Checks Displayed (Enveloped)

American Tower Corp.	415438, Brownson Country Club CT	SK-5
Garrett.Williams		Mar 23, 2022
13735391_C8_04		R3D. DISH WIRELESS L.L.C. @...

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed
1	D	DL	-1		5	
2	Di	IL			5	7
3	W 0	WL			5	14
4	W 30	WL			10	27
5	W 60	WL			10	27
6	W 90	WL			5	15
7	W 120	WL			10	27
8	W 150	WL			10	27
9	W 180	WL			5	14
10	W 210	WL			10	27
11	W 240	WL			10	27
12	W 270	WL			5	15
13	W 300	WL			10	27
14	W 330	WL			10	27
15	Wi 0	WL			5	14
16	Wi 30	WL			10	27
17	Wi 60	WL			10	27
18	Wi 90	WL			5	15
19	Wi 120	WL			10	27
20	Wi 150	WL			10	27
21	Wi 180	WL			5	14
22	Wi 210	WL			10	27
23	Wi 240	WL			10	27
24	Wi 270	WL			5	15
25	Wi 300	WL			10	27
26	Wi 330	WL			10	27
27	Ws 0	WL			5	14
28	Ws 30	WL			10	27
29	Ws 60	WL			10	27
30	Ws 90	WL			5	15
31	Ws 120	WL			10	27
32	Ws 150	WL			10	27
33	Ws 180	WL			5	14
34	Ws 210	WL			10	27
35	Ws 240	WL			10	27
36	Ws 270	WL			5	15
37	Ws 300	WL			10	27
38	Ws 330	WL			10	27
39	Ev -Y	ELY				7
40	Eh -Z	ELZ				7
41	Eh -X	ELX				7
42	Lv (1)	LL			1	
43	Lv (2)	LL			1	
44	Lv (3)	LL		1		
45	Lm (1)	LL		1		
46	Lm (2)	LL		1		
47	Lm (3)	LL		1		
48	Lm (4)	LL		1		

Node Boundary Conditions

	Node Label	X [lb/in]	Y [lb/in]	Z [lb/in]	X Rot [k-in/rad]	Y Rot [k-in/rad]	Z Rot [k-in/rad]
1	N002	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Member Primary Data

	Label	I Node	J Node	Section/Shape	Type	Design List	Material	Design Rule
1	H001	N002	N003	HSS4x4x4	Beam	None	A500 Gr. B [SQR]	Typical
2	H002	N004	N005	PIPE_3.0	Beam	None	A500 Gr. C	Typical
3	U003	N007	N009	(2) 1/2 U-Bolts	Beam	None	A36	Typical
4	MP004	N010	N011	PIPE_2.5	Column	None	A53 Gr. B	Typical
5	U005	N006	N012	(2) 1/2 U-Bolts	Beam	None	A36	Typical
6	MP006	N013	N014	PIPE_2.5	Column	None	A53 Gr. B	Typical
7	U007	N008	N015	(2) 1/2 U-Bolts	Beam	None	A36	Typical
8	MP008	N016	N017	PIPE_2.5	Column	None	A53 Gr. B	Typical
9	V009	N019	N018	PIPE_4.0	Column	None	A53 Gr. B	Typical
10	H010	N021	N020	(1) 1/2 U-Bolt	Beam	None	A36	Typical
11	H011	N022	N023	(1) 1/2 U-Bolt	Beam	None	A36	Typical
12	V012	N023	N020	RIGID	None	None	RIGID	Typical
13	U013	N024	N025	(2) 1/2 U-Bolts	Beam	None	A36	Typical
14	MP014	N026	N027	PIPE_2.0	Column	None	A53 Gr. B	Typical

Member Advanced Data

	Label	I Release	Physical	Deflection Ratio Options	Activation	Seismic DR
1	H001		Yes	N/A		None
2	H002		Yes	N/A		None
3	U003		Yes	N/A	Exclude	None
4	MP004		Yes	** NA **		None
5	U005		Yes	N/A	Exclude	None
6	MP006		Yes	** NA **		None
7	U007		Yes	N/A	Exclude	None
8	MP008		Yes	** NA **		None
9	V009		Yes	** NA **		None
10	H010	OOOXOX	Yes	N/A	Exclude	None
11	H011	OOOXOX	Yes	N/A	Exclude	None
12	V012		Yes	** NA **		None
13	U013		Yes	N/A	Exclude	None
14	MP014		Yes	** NA **		None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	L-Torque [in]	K y-y	K z-z	Function
1	H001	HSS4x4x4	37.5			Lbyy		2.1	2.1	Lateral
2	H002	PIPE_3.0	84			Lbyy		2.1	2.1	Lateral
3	U003	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
4	MP004	PIPE_2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
5	U005	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
6	MP006	PIPE_2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
7	U007	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
8	MP008	PIPE_2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
9	V009	PIPE_4.0	18			Lbyy		2.1	2.1	Lateral
10	H010	(1) 1/2 U-Bolt	3			Lbyy		2.1	2.1	Lateral
11	H011	(1) 1/2 U-Bolt	3			Lbyy		2.1	2.1	Lateral
12	U013	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
13	MP014	PIPE_2.0	60	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral

Hot Rolled Steel Properties

	Label	E [psi]	G [psi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [lb/ft³]	Yield [psi]	Ry	Fu [psi]	Rt
1	A500 Gr. B [SQR]	2.9e+07	1.115e+07	0.3	0.65	527	46000	1.4	58000	1.3
2	A500 Gr. C	2.9e+07	1.115e+07	0.3	0.65	490	46000	1.4	62000	1.3
3	A36	2.9e+07	1.115e+07	0.3	0.65	490	36000	1.5	58000	1.2
4	A53 Gr. B	2.9e+07	1.115e+07	0.3	0.65	490	35000	1.6	60000	1.2

Envelope Node Reactions

	Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N002	max	680.73	18	1334.026	107	808.794	14	-1391.275	20	2156.63	6	2316.938	68
2		min	-680.73	12	438.022	14	-808.794	8	-4628.803	89	-2160.828	12	-2293.083	98
3	Totals:	max	680.73	18	1334.026	107	808.794	14						
4		min	-680.73	12	438.022	14	-808.794	8						

Envelope AISC 15TH (360-16): 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 [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
1	H001	HSS4x4x4	0.294	0	99	0.204	0	y	68	116507.601	139518	16180.5	16180.5	1.546	H1-1b
2	H002	PIPE_3.0	0.333	42	99	0.066	42		89	20691.289	85698	7555.5	7555.5	1.588	H1-1b
3	MP004	PIPE_2.5	0.031	47	73	0.002	47		8	29154.339	50715	3596.25	3596.25	2.849	H1-1b
4	MP006	PIPE_2.5	0.153	47	9	0.017	47		9	29154.339	50715	3596.25	3596.25	1.721	H1-1b
5	MP008	PIPE_2.5	0.031	47	93	0.002	47		8	29154.339	50715	3596.25	3596.25	1.722	H1-1b
6	V009	PIPE_4.0	0.116	9	73	0.227	9		67	90327.022	93240	10631.25	10631.25	1.923	H1-1b
7	MP014	PIPE_2.0	0.033	28.75	112	0.009	28.75		10	23593.813	32130	1871.625	1871.625	2.28	H1-1b*

DISH Wireless L.L.C. SITE ID:

NJJER02055A

DISH Wireless L.L.C. SITE ADDRESS:

15 SOUNDVIEW AVENUE
SHELTON, CT 06484

CONNECTICUT CODE OF 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

SHEET INDEX

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 T-ARM 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 FIBER NID (IF REQUIRED)
- INSTALL (1) PROPOSED METER SOCKET

SITE PHOTO

UNDERGROUND SERVICE ALERT
UTILITY NOTIFICATION CENTER OF (STATE)
(XXX) XXX-XXXX
WWW.(WEBSITE).ORG

CALL # 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.

SITE INFORMATION

PROPERTY OWNER:	BROWNSON HARRY B
ADDRESS:	OLD SHELTON RD SHELTON, CT 06484
TOWER TYPE:	MONOPINE
TOWER CO SITE ID:	415438
TOWER APP NUMBER:	13735391
COUNTY:	FAIRFIELD
LATITUDE (NAD 83):	41° 17' 42" N 41.29500000 N
LONGITUDE (NAD 83):	73° 8' 14" W 73.13722200 W
ZONING JURISDICTION:	FAIRFIELD COUNTY
ZONING DISTRICT:	RESIDENTIAL
PARCEL NUMBER:	74.-15
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	UNITED ILLUMINATING CO.
TELEPHONE COMPANY:	XFINITY

PROJECT DIRECTORY

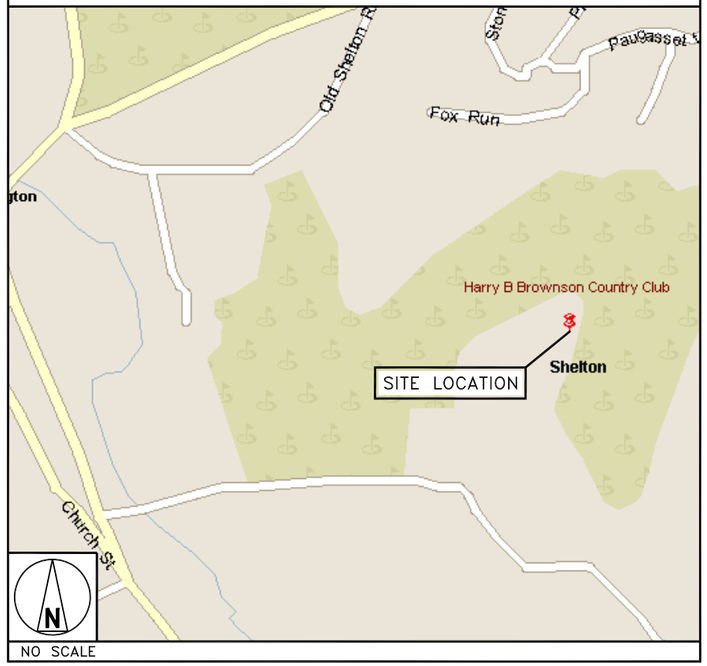
APPLICANT:	DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	AMERICAN TOWER CORPORATION 10 PRESIDENTIAL WAY WOBURN, MA 01801 (781) 926-4500
SITE DESIGNER:	B+T GROUP 1717 S. BOULDER AVE, SUITE 300 TULSA, OK 74119 (918) 587-4630
SITE ACQUISITION:	WILLIAM SNIDER william.snider@dish.com
CONST. MANAGER:	VICTOR CORREA victor.correa@dish.com
RF ENGINEER:	MURUGABIRAN JAYAPAL murugabiran.jayapal@dish.com

DIRECTIONS

DIRECTIONS FROM 3 ADP BLVD, ROSELAND, NJ 07068:

DEPART 3 ADP BLVD ON BECKER FARM RD, TURN RIGHT ONTO CR-527 [LIVINGSTON AVE], TAKE RAMP (RIGHT) ONTO I-280 AT EXIT 17B, STAY ON I-280, TAKE RAMP ONTO I-95 [NEW JERSEY TPKE], STAY ON I-95 [NEW JERSEY TPKE] AT EXIT 73, STAY ON I-95 [NEW JERSEY TPKE] ENTERING NEW YORK, STAY ON I-95 [US-1] (EAST) AT EXIT 16, STAY ON I-95 [NEW ENGLAND THROUGHWAY] STAY ON I-95 [NEW ENGLAND THROUGHWAY] ENTERING CONNECTICUT AT EXIT 27A, TURN RIGHT ONTO RAMP ROAD NAME CHANGES TO CT-25 [CT-8] KEEP RIGHT ONTO CT-8 AT EXIT 11, KEEP RIGHT ONTO RAMP TURN LEFT ONTO HUNTINGTON RD
ROAD NAME CHANGES TO HUNTINGTON ST TURN RIGHT ONTO LANE ST TURN LEFT ONTO LOCAL ROAD(S).
ARRIVE AT DESTINATION.

VICINITY MAP



NO SCALE

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STATE OF CONNECTICUT — GREGORY L. SIMPSON — No. 23924 — LICENSED PROFESSIONAL ENGINEER

11/16/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
CH	BLJ	GLS

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	10/29/21	ISSUED FOR REVIEW
0	11/16/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

158141.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER02055A
15 SOUNDVIEW AVENUE
SHELTON, CT 06484

SHEET TITLE

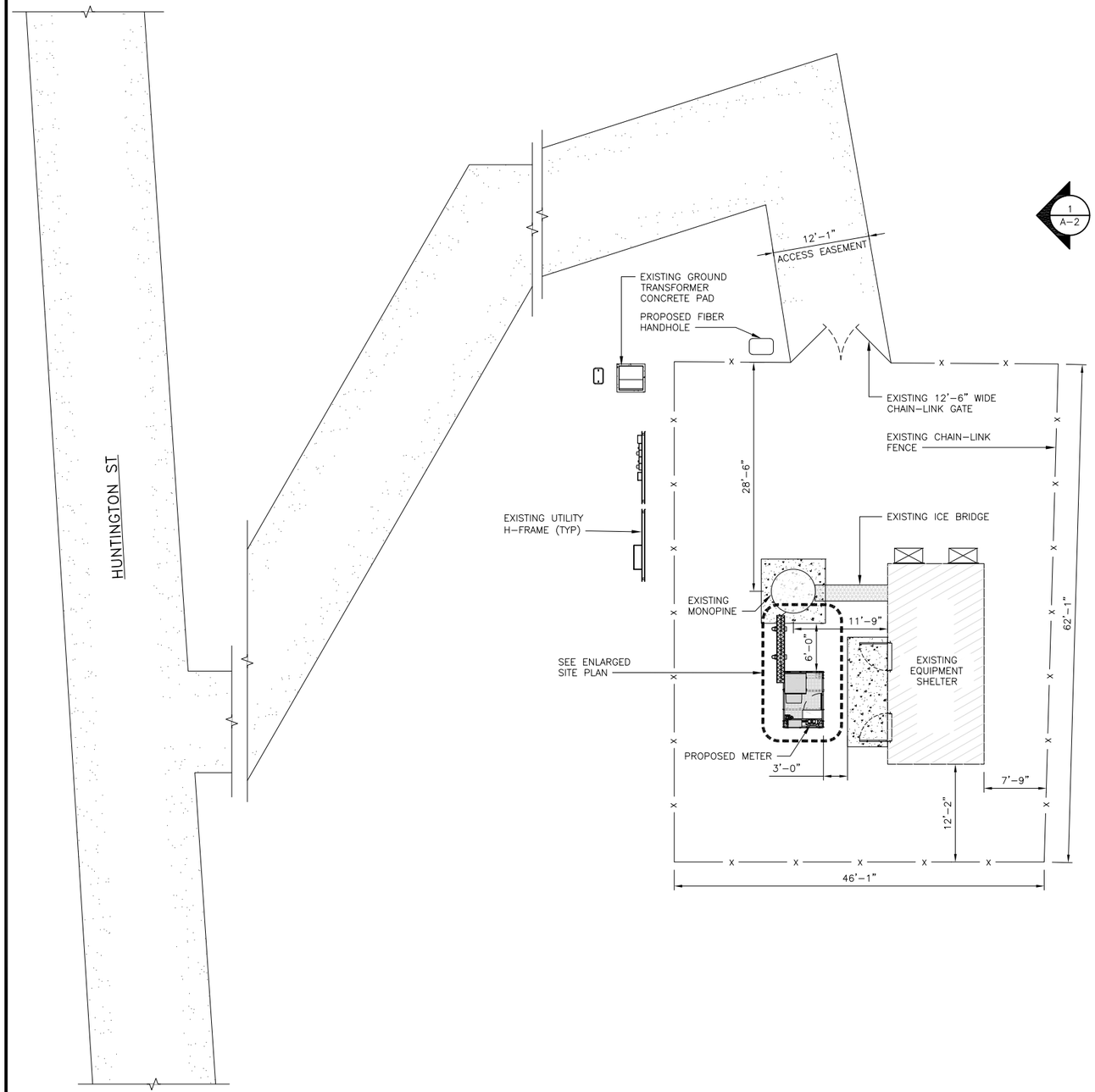
TITLE SHEET

SHEET NUMBER

T-1

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



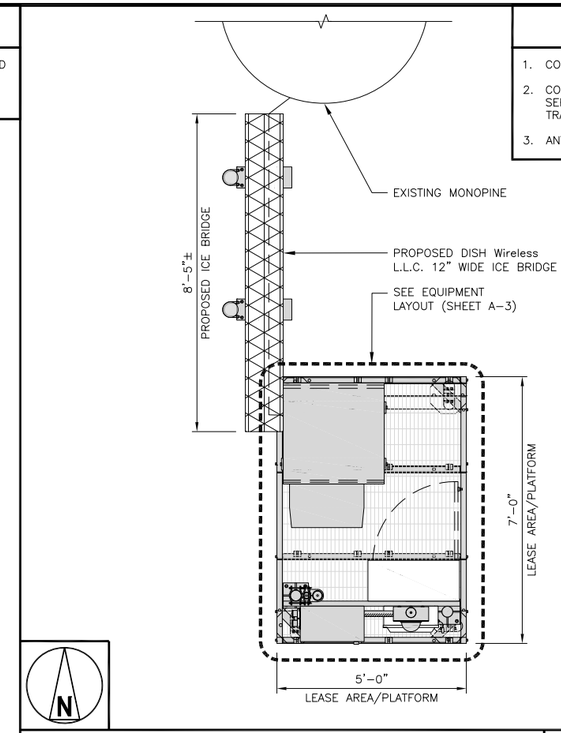
OVERALL SITE PLAN

8' 4' 0 8' 16'
1/8"=1'-0"

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'
1/2"=1'-0"

2

AN EXISTING CONDITIONS SURVEY WAS NOT AVAILABLE AT THE TIME THIS DRAWING'S CREATION

AERIAL IMAGE

NO SCALE

3

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SHEET TITLE

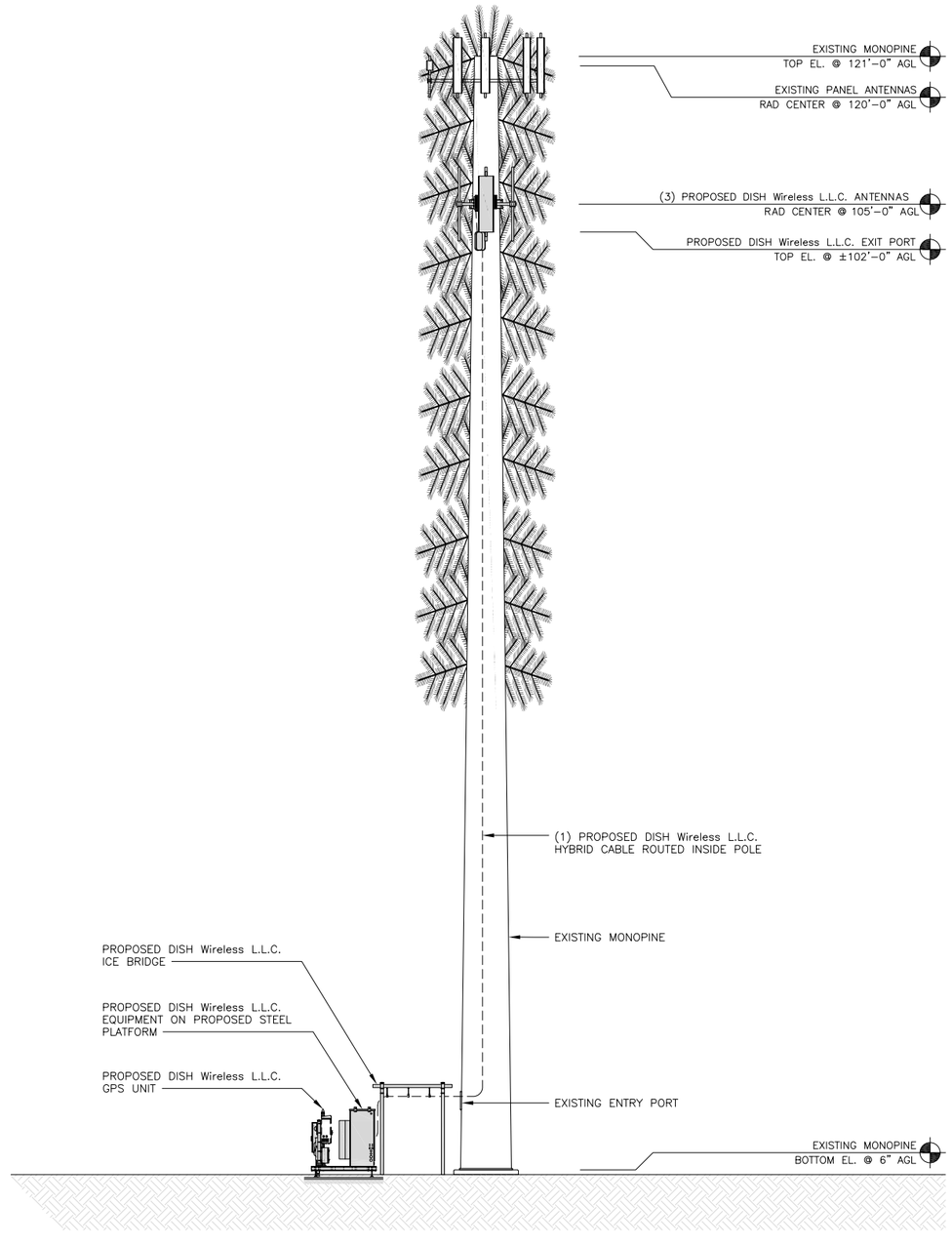
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER

A-1

NOTES

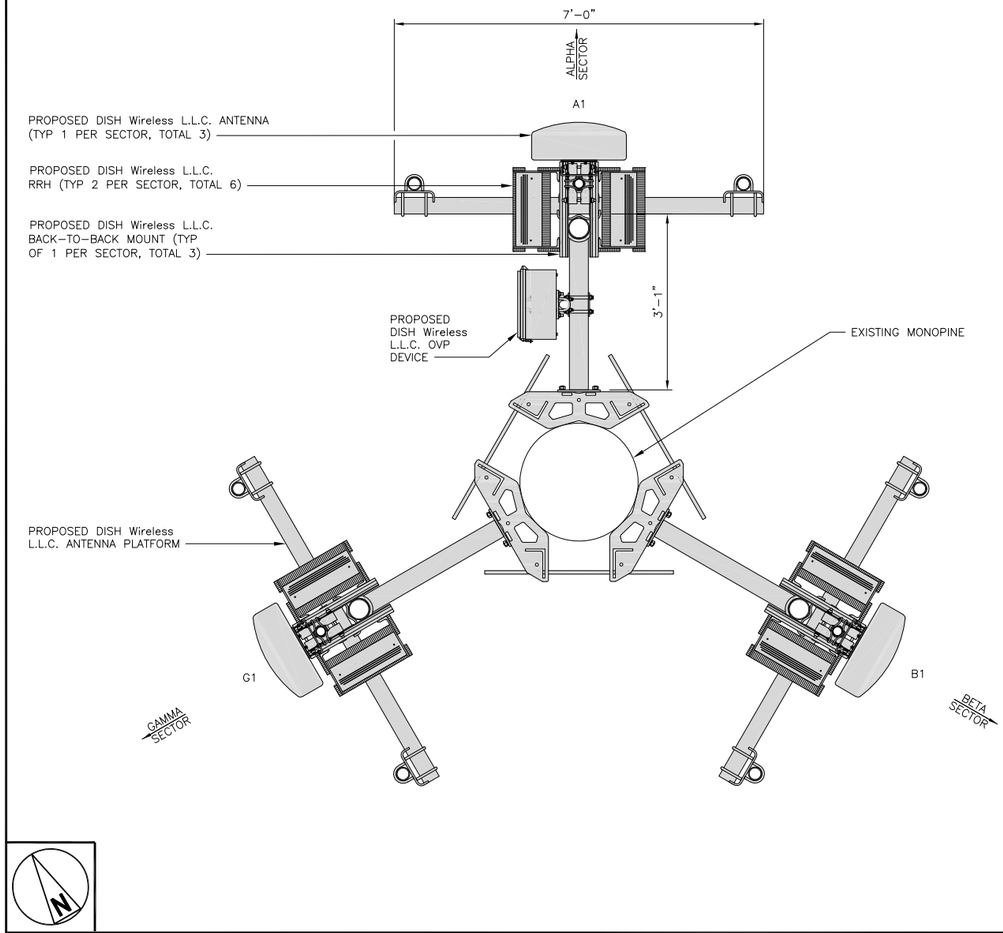
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



PROPOSED EAST ELEVATION

8' 4' 0 8' 16'
1/8"=1'-0"

1



ANTENNA LAYOUT

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

2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	COMMSCOPE–FFVV–65B–R2	5G	72.0" x 19.6"	30°	105'–0"	(1) HIGH–CAPACITY HYBRID CABLE (140' LONG)
BETA	B1	PROPOSED	COMMSCOPE–FFVV–65B–R2	5G	72.0" x 19.6"	150°	105'–0"	
GAMMA	G1	PROPOSED	COMMSCOPE–FFVV–65B–R2	5G	72.0" x 19.6"	270°	105'–0"	

SECTOR	POSITION	RRH	
		MANUFACTURER – MODEL NUMBER	TECHNOLOGY
ALPHA	A1	FUJITSU–TA08025–B605	5G
	A1	FUJITSU–TA08025–B604	5G
BETA	B1	FUJITSU–TA08025–B605	5G
	B1	FUJITSU–TA08025–B604	5G
GAMMA	G1	FUJITSU–TA08025–B605	5G
	G1	FUJITSU–TA08025–B604	5G

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.

OVP		
EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	SIZE (HxWxD)
PROPOSED	RAYCAP–RDIDC–9181–PF–48	18.98"x14.39"x8.15"

ANTENNA SCHEDULE

NO SCALE

3

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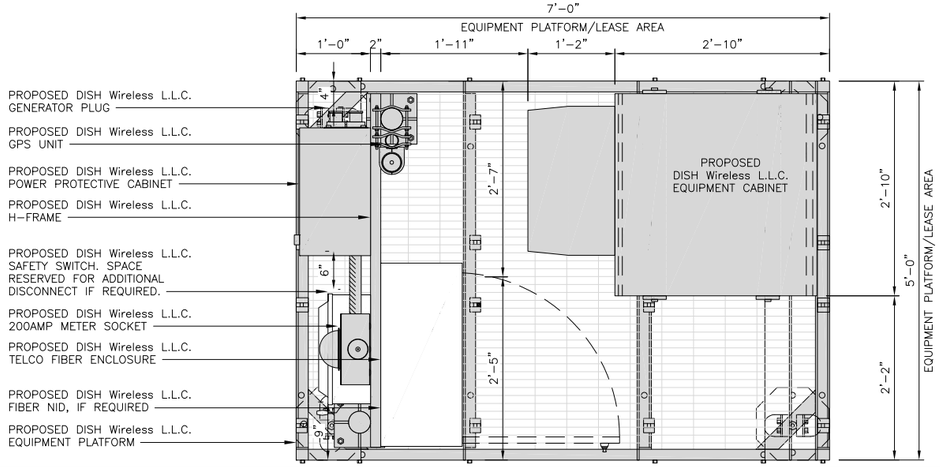
15 SOUNDVIEW AVENUE
SHELTON, CT 06484

SHEET TITLE

ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER

A-2



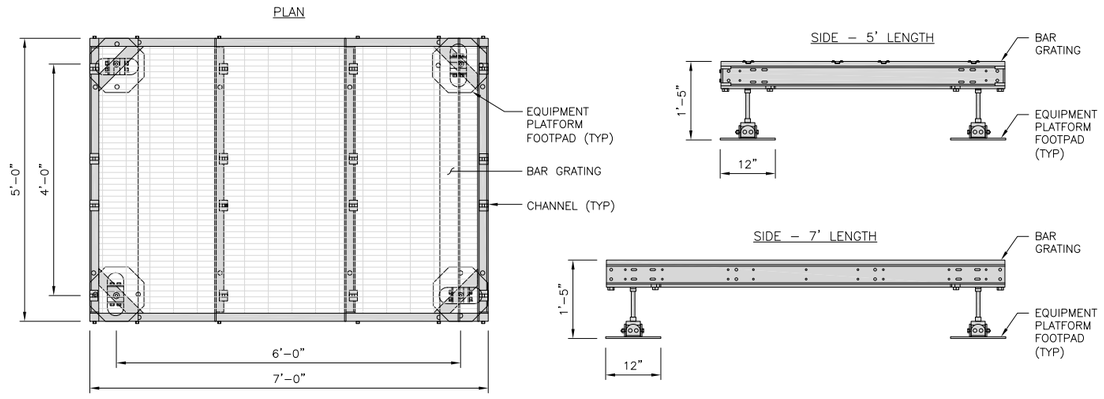
PLATFORM EQUIPMENT PLAN

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:
GC TO PROVIDE EXTENDED THREAD FOR PLATFORM IF REQUIRED HEIGHT EXCEEDS 17"

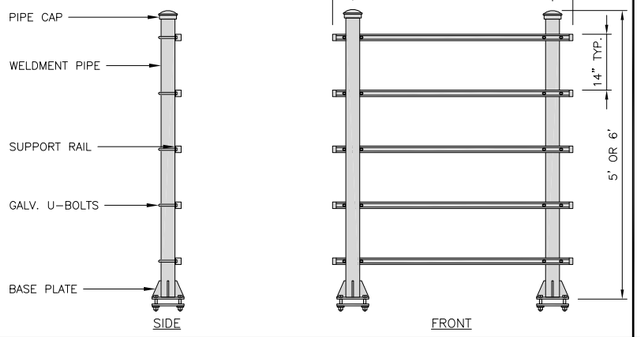


PLATFORM DETAIL

NO SCALE

2

COMMSCOPE MTC4045HFLD H-FRAME	
UNISTRUT/SUPPORT RAILS QTY	5
WEIGHT	59.74 lbs



H-FRAME DETAIL

NO SCALE

3

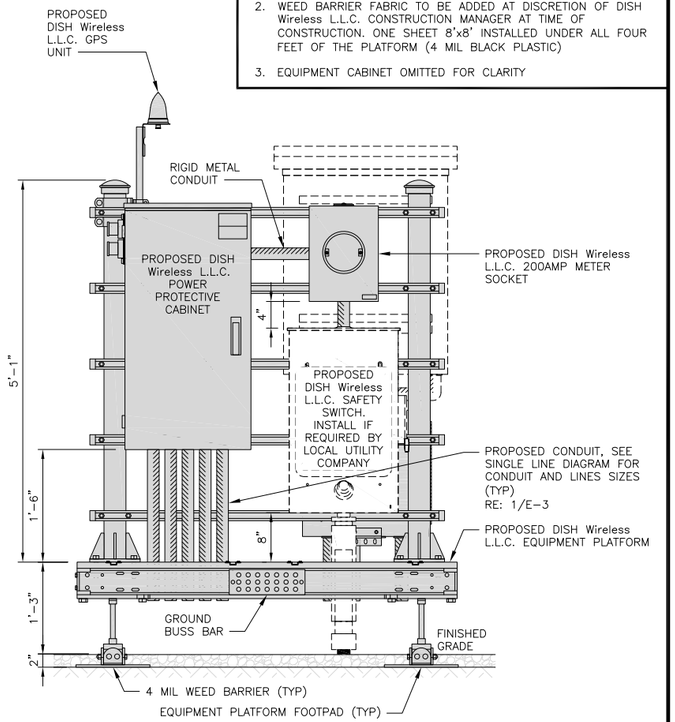
NOT USED

NO SCALE

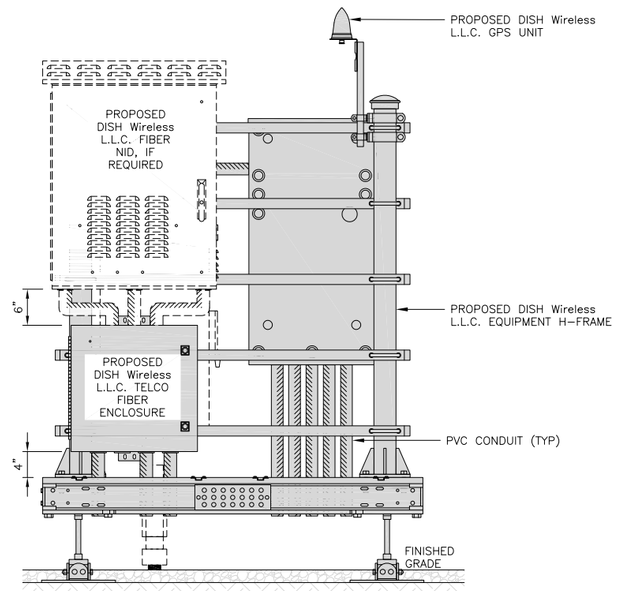
4

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

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

H-FRAME EQUIPMENT ELEVATION

5

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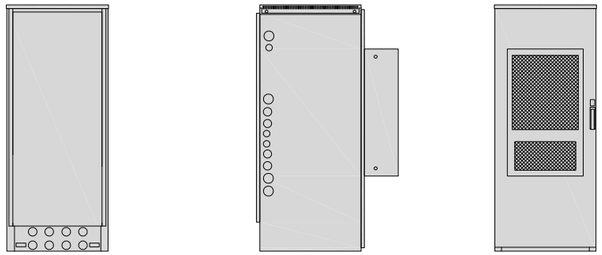
SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

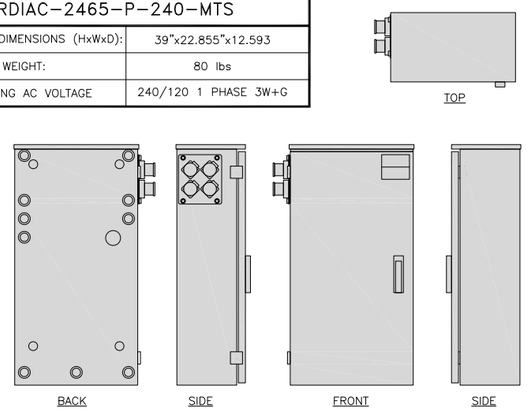
SHEET NUMBER
A-3

ENERSYS HEX 20000059996	
DIMENSIONS (HxWxD)	73"x30"x32"
POWER SYSTEM	-48V ALPHA/600A
HEATER	800W
TOTAL WEIGHT (EMPTY)	376 lbs



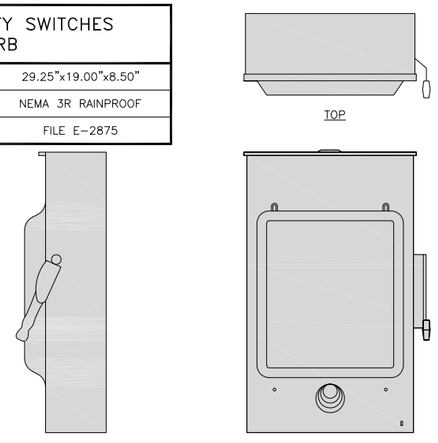
CABINET DETAIL | NO SCALE | 1

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



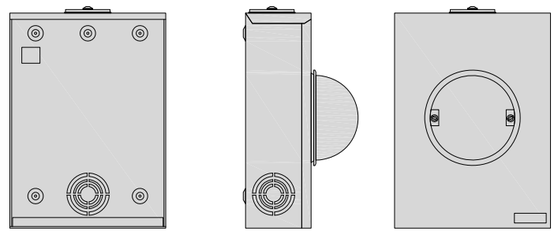
POWER PROTECTION CABINET (PPC) DETAIL | NO SCALE | 2

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



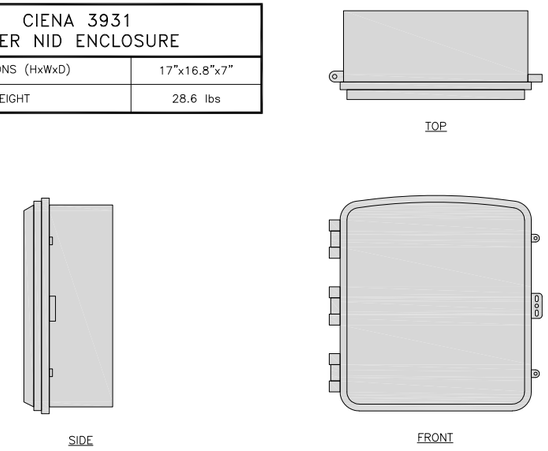
SAFETY SWITCH DETAIL | NO SCALE | 3

EATON METER SOCKET UNRRS213BEUSE	
DIMENSIONS (HxWxD)	16"x12"x6"
TYPE	RING
AMPERAGE RATING	200 CONT. AMP
WEIGHT	18 lbs



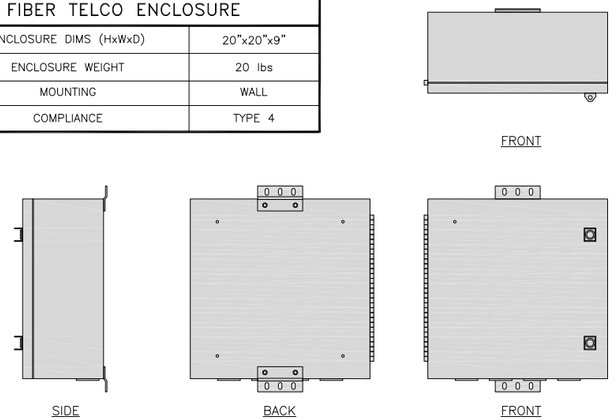
METER BANK DETAIL | NO SCALE | 4

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



FIBER NID ENCLOSURE DETAIL | NO SCALE | 5

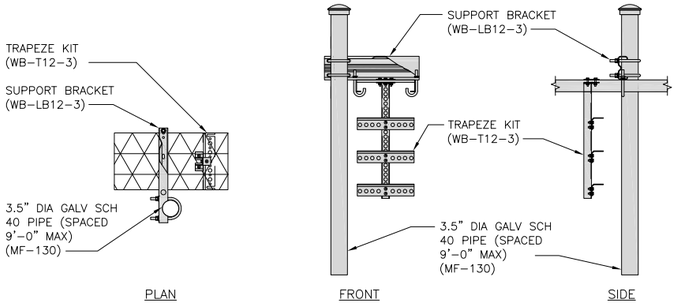
CHARLES CFIT-PF2020DSH1 FIBER TELCO ENCLOSURE	
ENCLOSURE DIMS (HxWxD)	20"x20"x9"
ENCLOSURE WEIGHT	20 lbs
MOUNTING	WALL
COMPLIANCE	TYPE 4



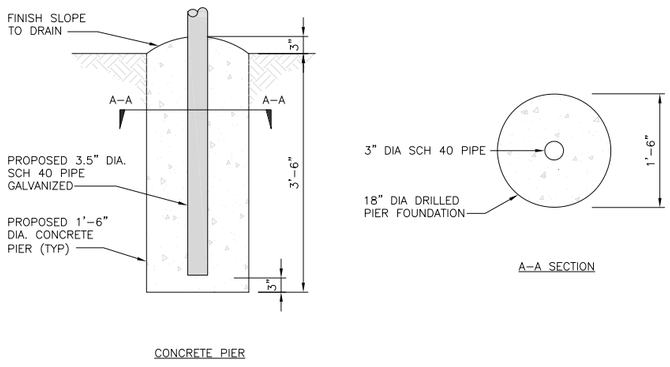
FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

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

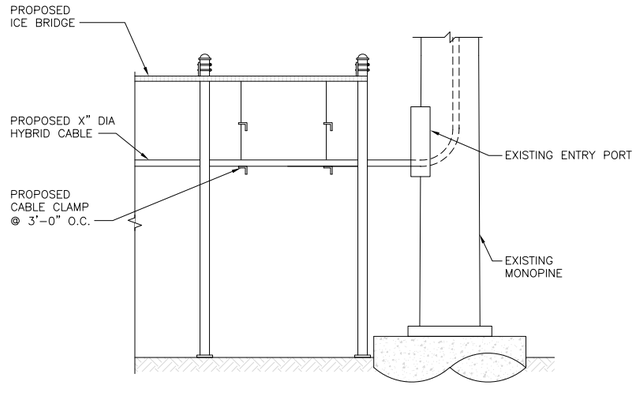
INCLUDED PRODUCTS:	WB-T12-3 TRAPEZE KIT, 3 RUNGS
	WB-LB12-3 SUPPORT BRACKET
	MF-130 DIRECT BURIAL PIPE COLUMN, 13'-4"



ICE BRIDGE DETAIL | NO SCALE | 7



TYPICAL ICE BRIDGE CONCRETE PIER DETAIL | NO SCALE | 8



HYBRID CABLE RUN | NO SCALE | 9

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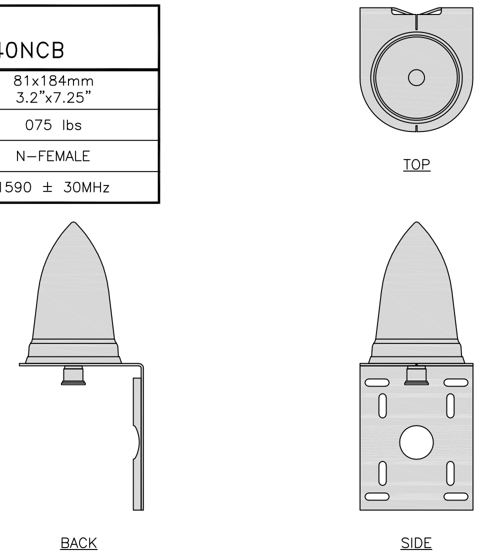
SHEET TITLE

EQUIPMENT DETAILS

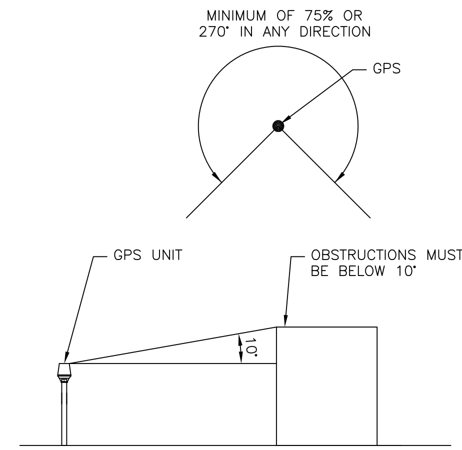
SHEET NUMBER

A-4

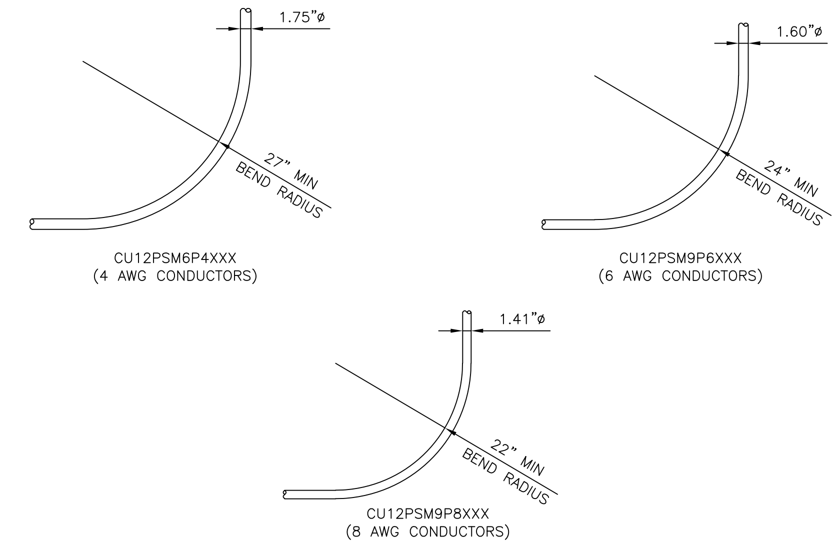
PCTEL GPSGL–TMG–SPI–40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N–FEMALE
FREQUENCY RANGE	1590 ± 30MHz



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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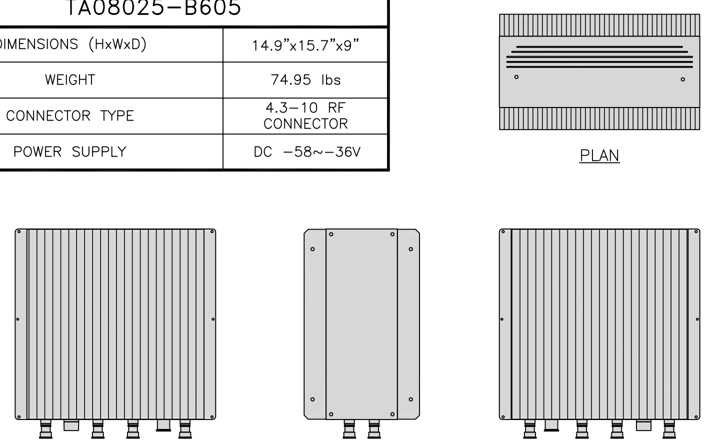
SHEET TITLE
EQUIPMENT DETAILS

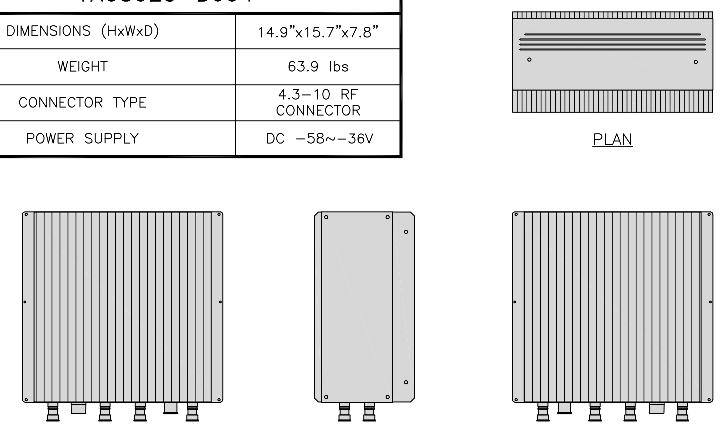
SHEET NUMBER
A-5

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



RRH DETAIL — NO SCALE — 1

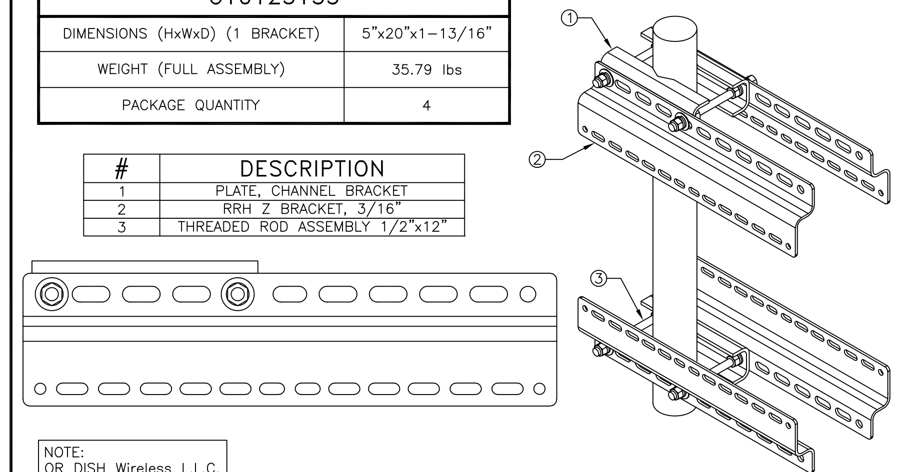
FUJITSU DUAL BAND TA08025-B604	
DIMENSIONS (HxWxD)	14.9"x15.7"x7.8"
WEIGHT	63.9 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



RRH DETAIL — NO SCALE — 2

SABRE DOUBLE Z-BRACKET C10123155	
DIMENSIONS (HxWxD) (1 BRACKET)	5"x20"x1-13/16"
WEIGHT (FULL ASSEMBLY)	35.79 lbs
PACKAGE QUANTITY	4

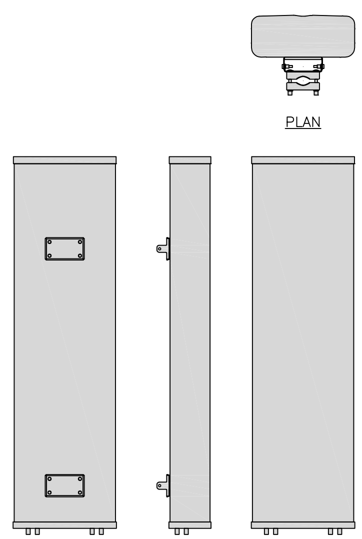
#	DESCRIPTION
1	PLATE, CHANNEL BRACKET
2	RRH Z BRACKET, 3/16"
3	THREADED ROD ASSEMBLY 1/2"x12"



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

RRH MOUNT DETAIL — NO SCALE — 3

COMMSCOPE FFVV-65B-R2	
DIMENSIONS (HxWxD)(MM/IN)	1828x498x197 72"x19.6"x7.8"
RF CONNECTOR INTERFACE	4.3-10 FEMALE
WEIGHT	70.8 lbs
WEIGHT WITH BRACKETS	98.1 lbs

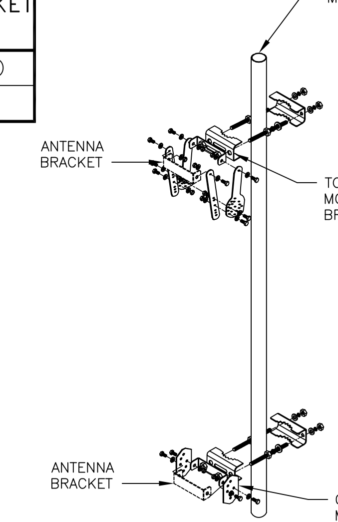


ANTENNA DETAIL — NO SCALE — 4

NOT USED — NO SCALE — 5

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

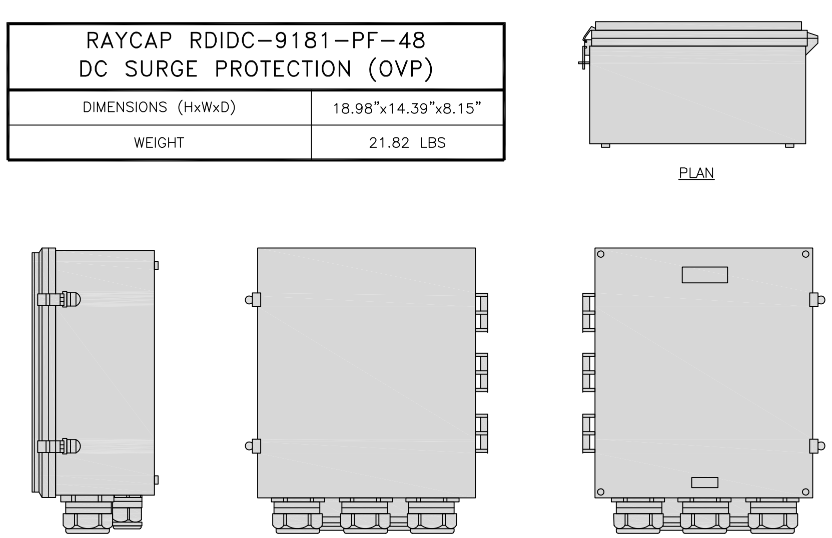
NOTE:
KIT #91900318: TOP AND BOTTOM BRACKETS FOR 4-,6-, AND 8-FOOT ANTENNAS
ANTENNA BRACKET NOT PART OF KIT



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



SURGE SUPPRESSION DETAIL (OVP) — NO SCALE — 7

COMMSCOPE XP-2040 CROSSOVER PLATE	
DIMENSIONS (HxW)	10"x12"
WEIGHT	11 lbs

NOTE:
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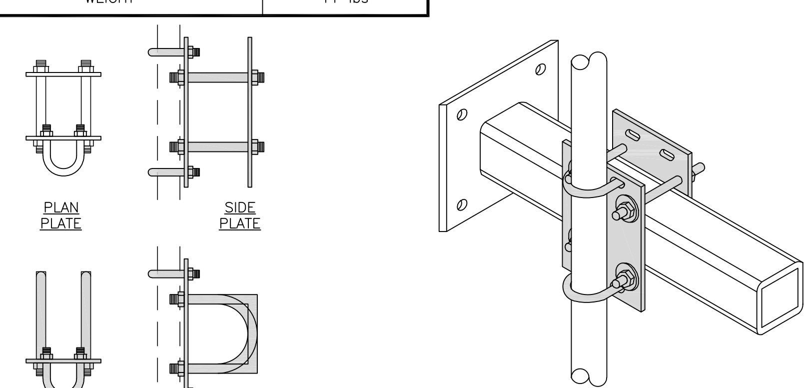
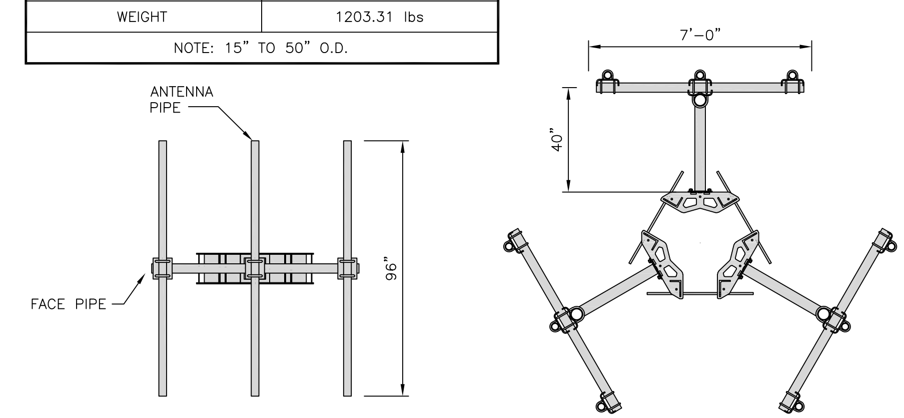
APPROVED EQUIVALENT



RRH/OVP MOUNT DETAIL — NO SCALE — 8

COMMSCOPE MC-K6MHDX-9-96	
FACE WIDTH	7'-0"
WEIGHT	1203.31 lbs
NOTE: 15" TO 50" O.D.	



T-ARM MOUNT DETAIL — NO SCALE — 9

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CONSTRUCTION DOCUMENTS

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A&E PROJECT NUMBER
158141.001.01

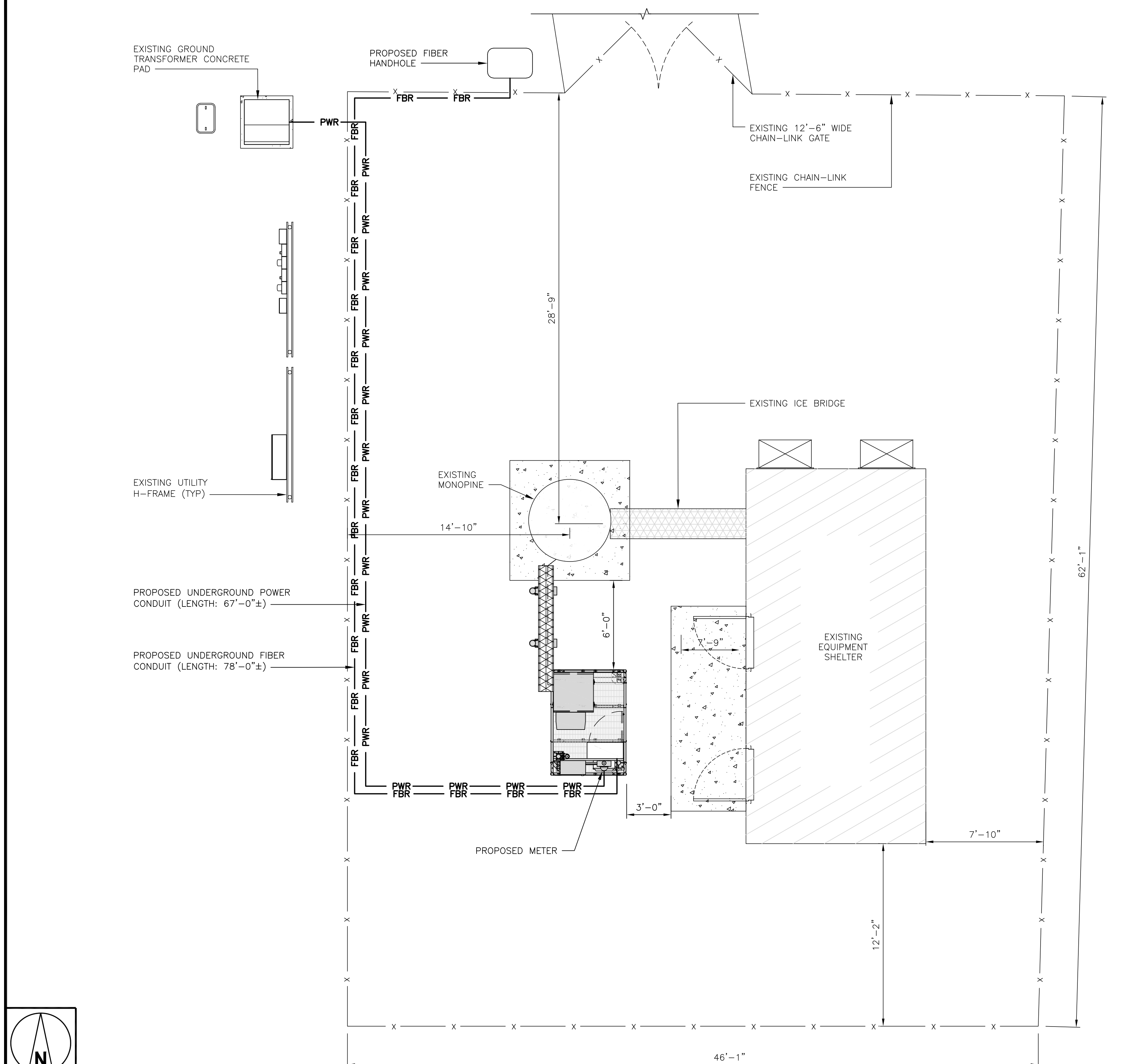
DISH Wireless L.L.C.
PROJECT INFORMATION
NJJER02055A
15 SOUNDVIEW AVENUE
SHELTON, CT 06484

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.



UTILITY ROUTE PLAN

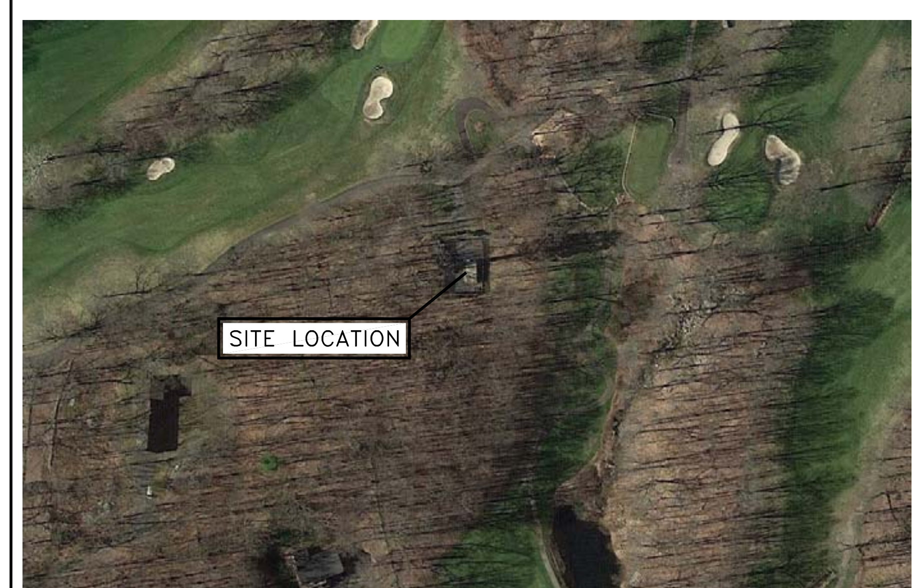
4' 2' 0 4' 8'

1/4"=1'-0"

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



AN EXISTING CONDITIONS SURVEY WAS NOT AVAILABLE AT THE TIME THIS DRAWING'S CREATION

ELECTRICAL NOTES

NO SCALE

2

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15 SOUNDVIEW AVENUE
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SHEET TITLE

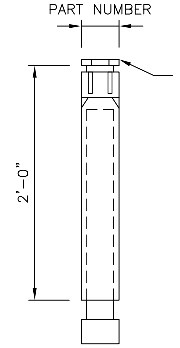
ELECTRICAL/FIBER ROUTE PLAN AND NOTES

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"

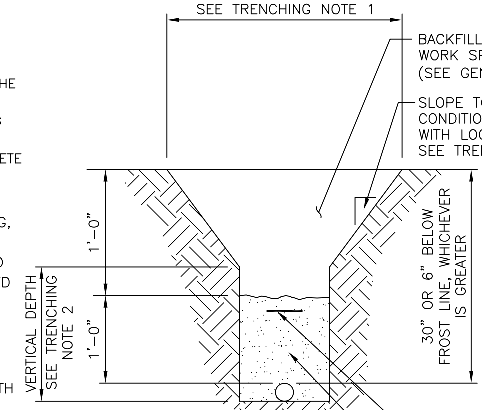


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

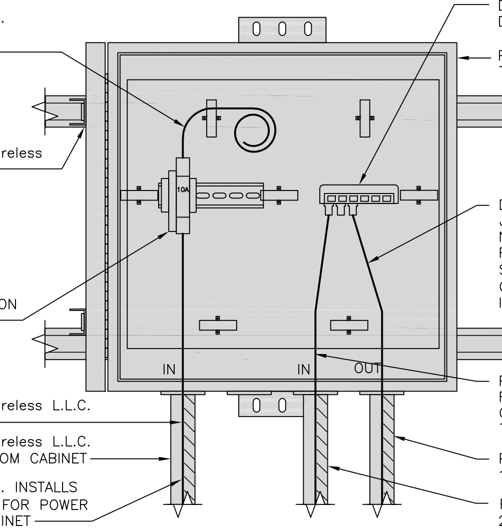
EXPANSION JOINT DETAIL — NO SCALE — 1

TRENCHING NOTES

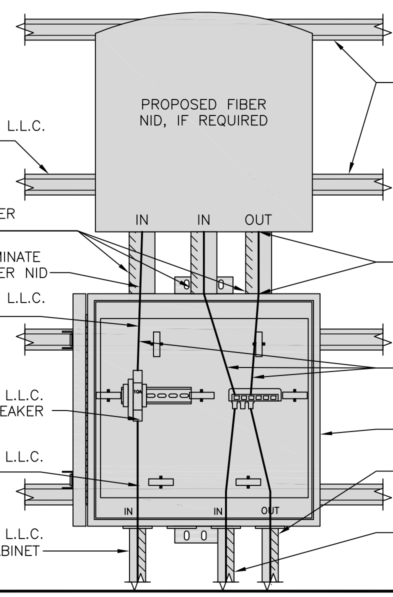
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT 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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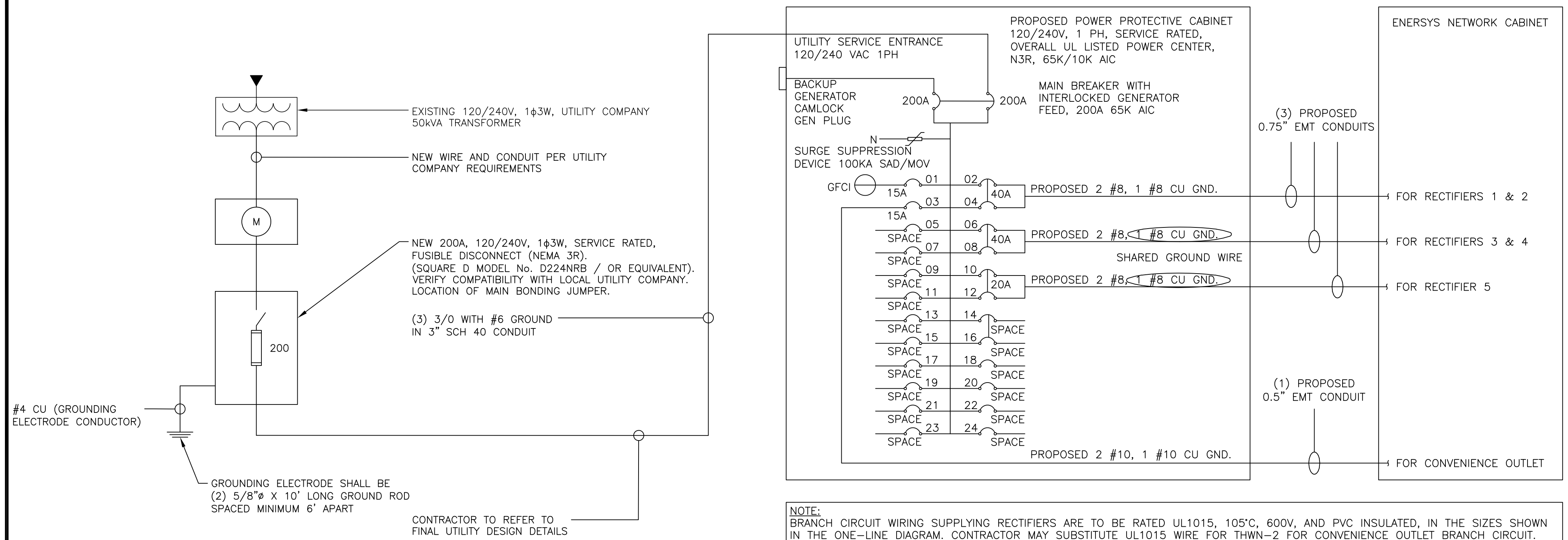
DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER02055A
15 SOUNDVIEW AVENUE
SHELTON, CT 06484

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:
(2) 40A, 2P BREAKER – SQUARE D P/N:QO240
(1) 20A, 2P BREAKER – SQUARE D P/N:QO220
(1) 20A, 1P BREAKER – SQUARE D P/N:QO120

NOTES

THE ENGINEER OF RECORD HAS PERFORMED ALL REQUIRED SHORT CIRCUIT CALCULATIONS AND THE AIC RATINGS FOR EACH DEVICE IS ADEQUATE TO PROTECT THE EQUIPMENT AND THE ELECTRICAL SYSTEM.

THE ENGINEER OF RECORD HAS PERFORMED ALL REQUIRED VOLTAGE DROP CALCULATIONS AND ALL BRANCH CIRCUIT AND FEEDERS COMPLY WITH THE NEC (LISTED ON T-1) ARTICLE 210.19(A)(1) FPN NO. 4.

CONDUIT SIZING: AT 40% FILL PER NEC CHAPTER 9, TABLE 4, ARTICLE 358.
0.5" CONDUIT – 0.122 SQ. IN AREA
0.75" CONDUIT – 0.213 SQ. IN AREA
2.0" CONDUIT – 1.316 SQ. IN AREA
3.0" CONDUIT – 2.907 SQ. IN AREA

CABINET CONVENIENCE OUTLET CONDUCTORS (1 CONDUIT): USING THWN-2, CU.
#10 – 0.0211 SQ. IN X 2 = 0.0422 SQ. IN
#10 – 0.0211 SQ. IN X 1 = 0.0211 SQ. IN <GROUND
TOTAL = 0.0633 SQ. IN

0.5" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (3) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

RECTIFIER CONDUCTORS (3 CONDUITS): USING UL1015, CU.
#8 – 0.0552 SQ. IN X 2 = 0.1103 SQ. IN
#8 – 0.0131 SQ. IN X 1 = 0.0131 SQ. IN <BARE GROUND
TOTAL = 0.1234 SQ. IN

0.75" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (3) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

PPC FEED CONDUCTORS (1 CONDUIT): USING THWN, CU.
3/0 – 0.2679 SQ. IN X 3 = 0.8037 SQ. IN
#6 – 0.0507 SQ. IN X 1 = 0.0507 SQ. IN <GROUND
TOTAL = 0.8544 SQ. IN

3.0" SCH 40 PVC CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (4) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

PPC ONE-LINE DIAGRAM — NO SCALE — 1

PROPOSED ENERSYS 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	40A	3840		ENERSYS ALPHA CORDEX RECTIFIERS 1 & 2
ENERSYS GFCI OUTLET		180	15A	3	B	4			3840	
-SPACE-				5	A	6	40A	3840		ENERSYS ALPHA CORDEX RECTIFIER 3 & 4
-SPACE-				7	B	8			3840	
-SPACE-				9	A	10	20A	1920		ENERSYS ALPHA CORDEX RECTIFIER 5
-SPACE-				11	B	12			1920	
-SPACE-				13	A	14				-SPACE-
-SPACE-				15	B	16				-SPACE-
-SPACE-				17	A	18				-SPACE-
-SPACE-				19	B	20				-SPACE-
-SPACE-				21	A	22				-SPACE-
-SPACE-				23	B	24				-SPACE-
VOLTAGE AMPS	180	180						9500	9500	

200A MCB, 1φ, 24 SPACE, 120/240V	L1	L2	
MB RATING: 65,000 AIC	9680	9680	VOLTAGE AMPS
	81	81	AMPS
	81		MAX AMPS
	102		MAX 125%

PANEL SCHEDULE — NO SCALE — 2

NOT USED — NO SCALE — 3

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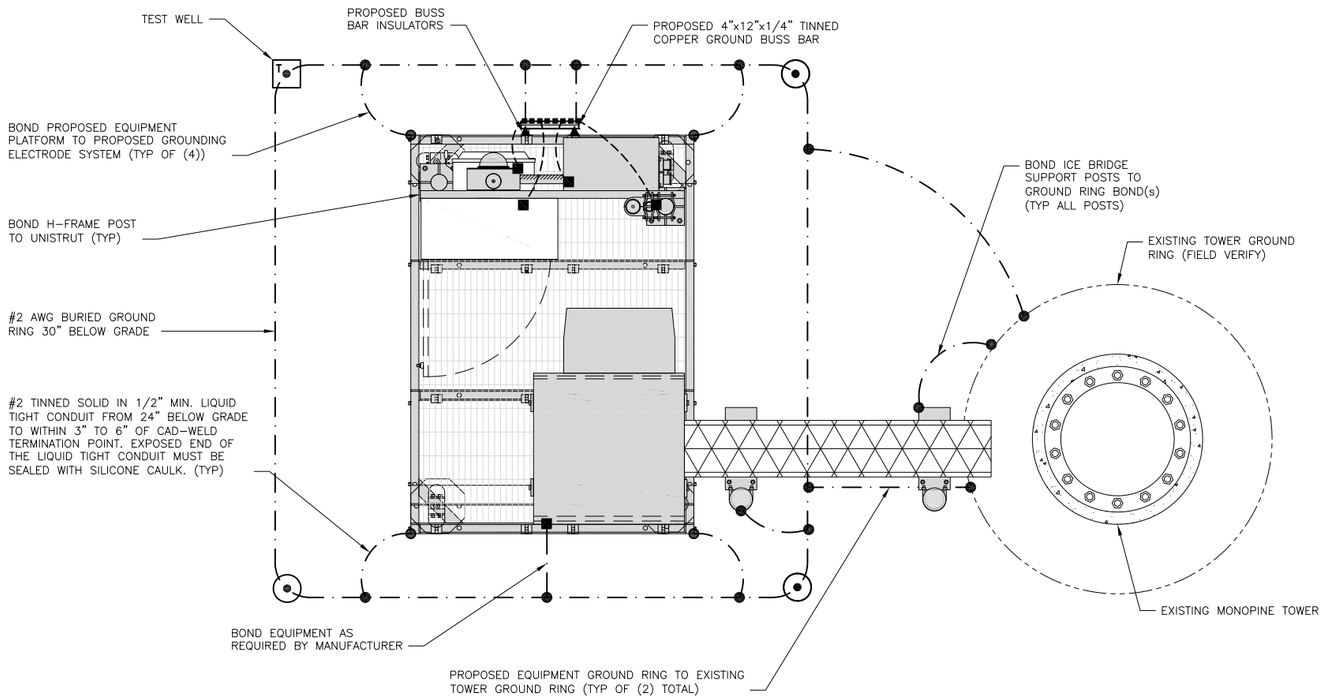
SHELTON, CT 06484

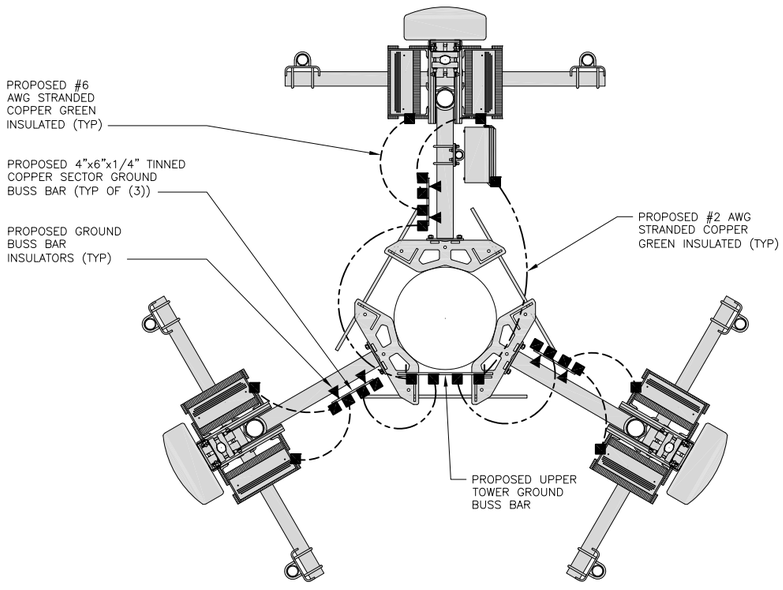
SHEET TITLE
ELECTRICAL ONE-LINE, FAULT CALCS & PANEL SCHEDULE

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 PURPOSES ONLY

EXOTHERMIC CONNECTION
MECHANICAL CONNECTION
GROUND BUS BAR
GROUND ROD
TEST GROUND ROD WITH INSPECTION SLEEVE
#6 AWG STRANDED & INSULATED
#2 AWG SOLID COPPER TINNED
#2 AWG STRANDED & INSULATED
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 1/2" 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.

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

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

(K) 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.

(L) 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.

(M) 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

(N) 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.

(O) 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

(P) 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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STATE OF CONNECTICUT — No. 23924 — LICENSED PROFESSIONAL ENGINEER
11/16/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
CH	BLJ	GLS

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	10/29/21	ISSUED FOR REVIEW
0	11/16/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
158141.001.01

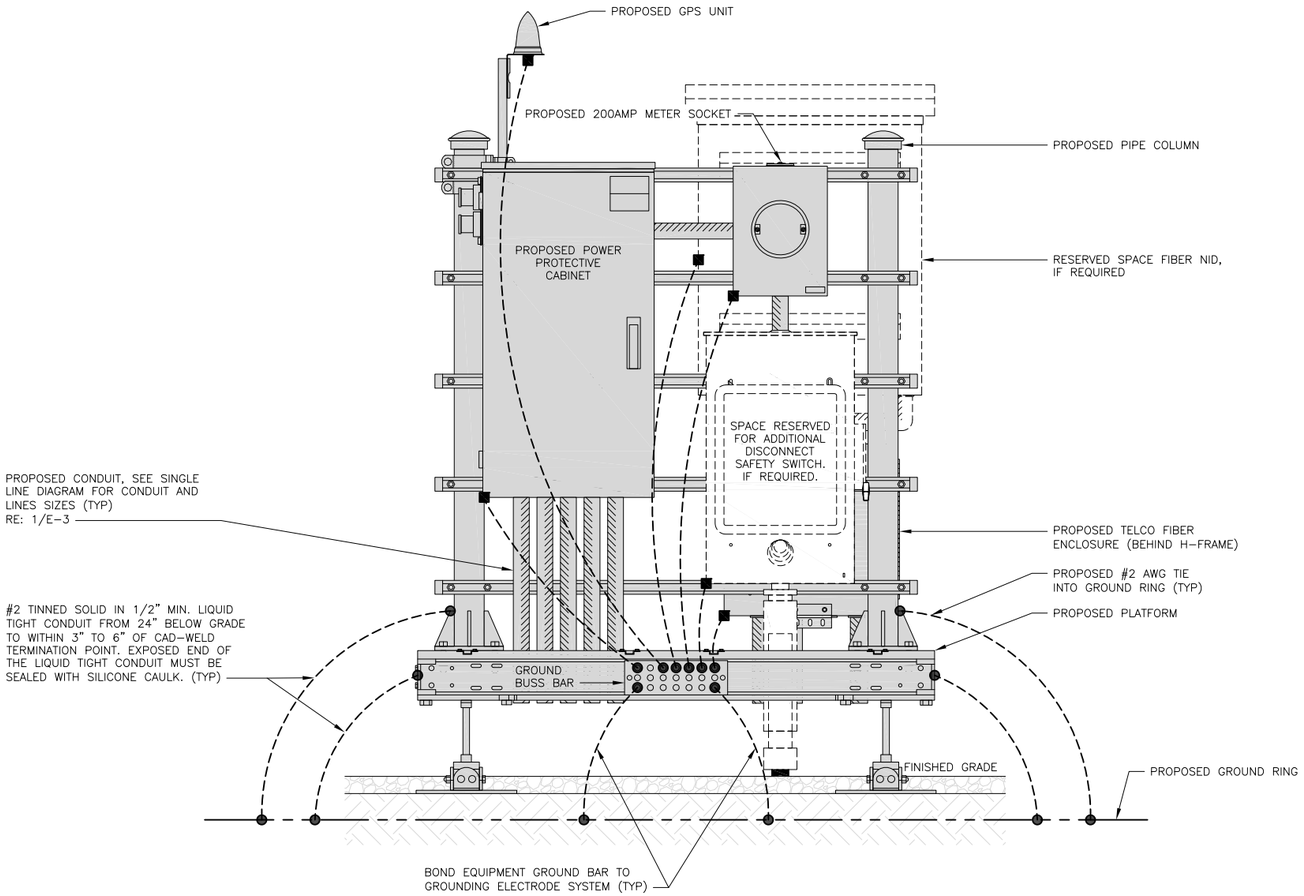
DISH Wireless L.L.C.
PROJECT INFORMATION
NJJER02055A
15 SOUNDVIEW AVENUE
SHELTON, CT 06484

SHEET TITLE
GROUNDING PLANS AND NOTES

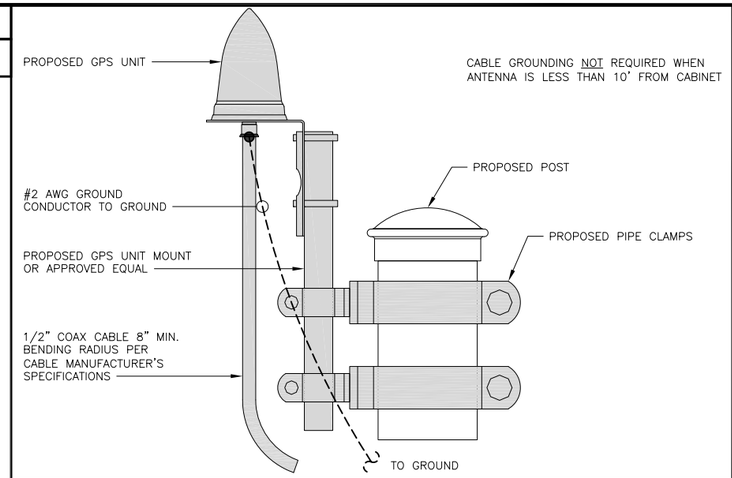
SHEET NUMBER
G-1

NOTES

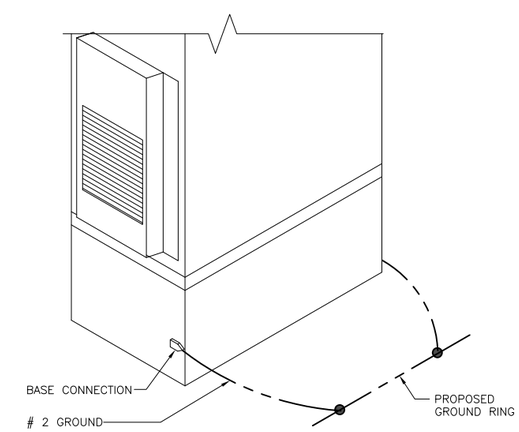
EQUIPMENT CABINET OMITTED FOR CLARITY



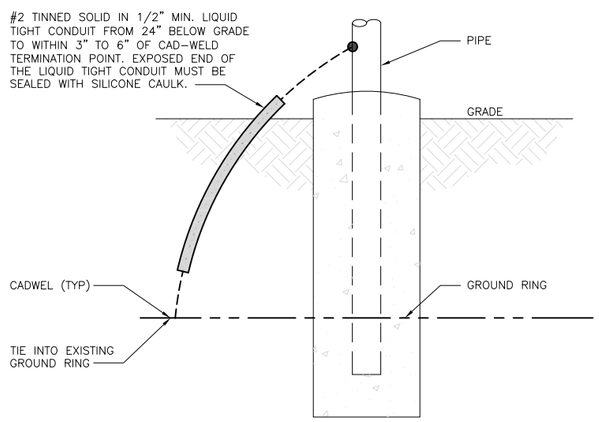
H-FRAME GROUNDING DETAIL | NO SCALE | 1



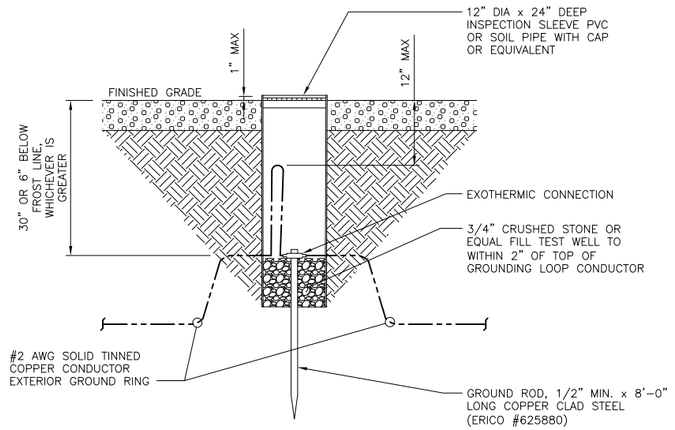
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



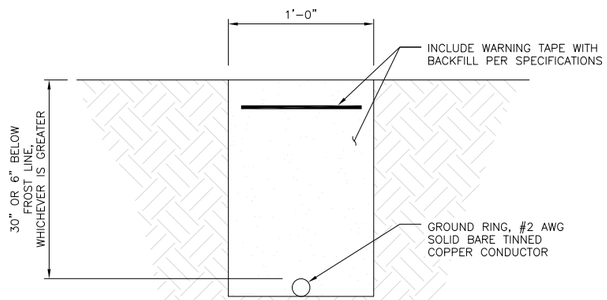
OUTDOOR CABINET GROUNDING | NO SCALE | 3



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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SHEET TITLE

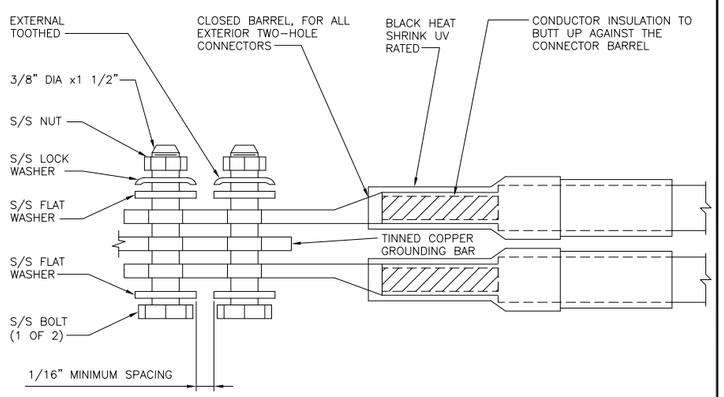
GROUNDING DETAILS

SHEET NUMBER

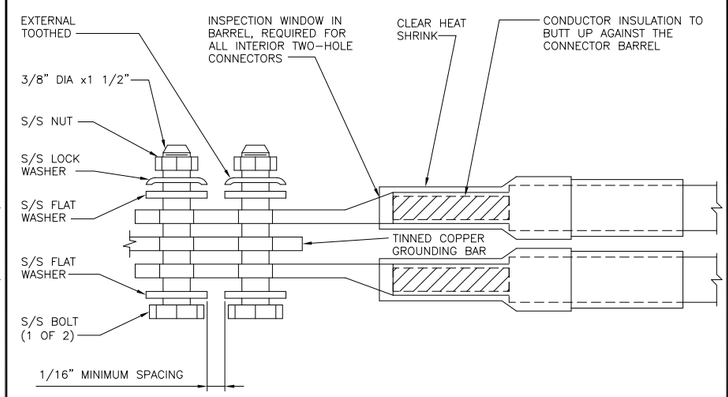
G-2

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).

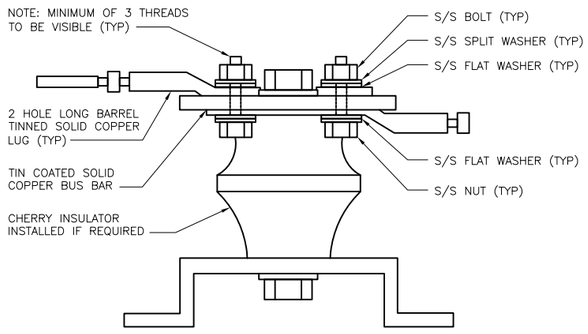
TYPICAL GROUNDING NOTES | NO SCALE | 1



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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SHELTON, CT 06484

SHEET TITLE

GROUNDING DETAILS

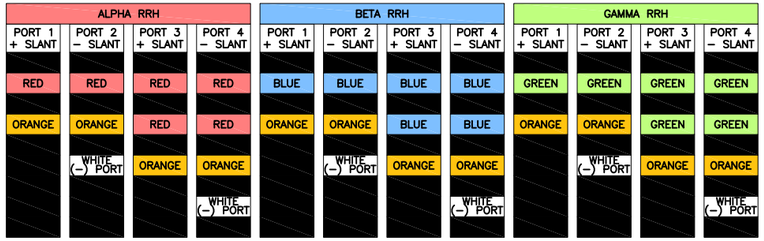
SHEET NUMBER

G-3

HYBRID/DISCREET CABLES — 3/4" TAPE WIDTHS WITH 3/4" SPACING

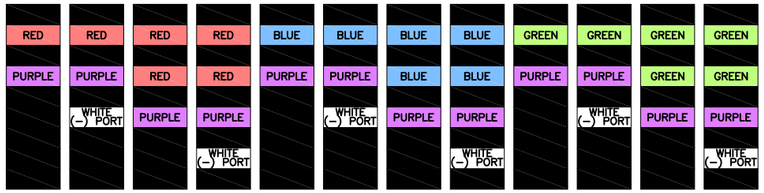
LOW–BAND RRH
(600 MHz N71 BASEBAND) +
(850 MHz N26 BAND) +
(700 MHz N29 BAND) – OPTIONAL PER MARKET

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)



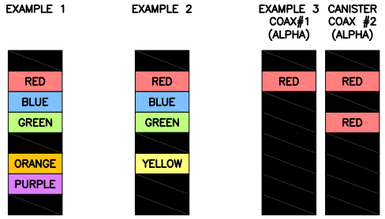
HYBRID/DISCREET CABLES

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.



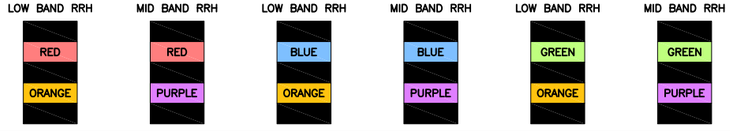
CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RD DETAILS. FINAL RFDS IS IN NEXSYSONE.

FIBER JUMPERS TO RRHs

LOW–BAND HHR FIBER CABLES HAVE SECTOR STRIPE ONLY.

POWER CABLES TO RRHs

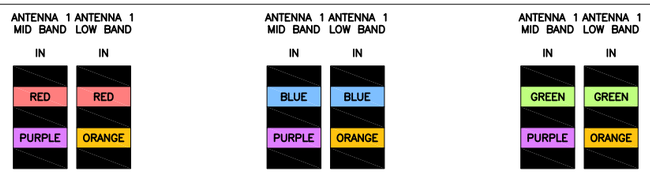
LOW–BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY



RET MOTORS AT ANTENNAS

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

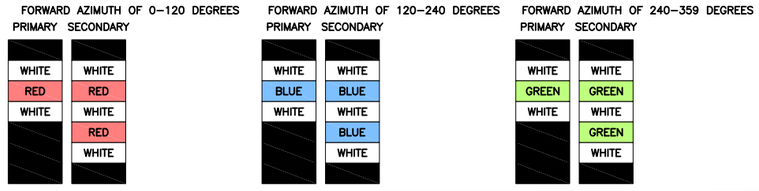
SEPARATE RET CABLES ARE USED WHEN ANTENNA PORTS PROVIDE INPUTS FOR BOTH LOW AND MID BANDS.



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.



RF CABLE COLOR CODES | NO SCALE | 1

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 | NO SCALE | 2

NOT USED | NO SCALE | 3

NOT USED | NO SCALE | 4

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15 SOUNDVIEW AVENUE
SHELTON, CT 06484

SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER
RF-1

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

BUSS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE

SINGLE POLE SWITCH

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE

FLUORESCENT LIGHTING FIXTURE (2) TWO LAMPS 48–T8

SMOKE DETECTION (DC)

EMERGENCY LIGHTING (DC)

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

CHAIN LINK FENCE

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE

UNDERGROUND POWER

UNDERGROUND TELCO

OVERHEAD POWER

OVERHEAD TELCO

UNDERGROUND TELCO/POWER

ABOVE GROUND POWER

ABOVE GROUND TELCO

ABOVE GROUND TELCO/POWER

WORKPOINT

W.P.

SECTION REFERENCE

XX
X–X

DETAIL REFERENCE

XX
X–X

LEGEND

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

ABBREVIATIONS

dish wireless.

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15 SOUNDVIEW AVENUE
SHELTON, CT 06484

SHEET TITLE

LEGEND AND ABBREVIATIONS

SHEET NUMBER

GN-1

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.

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11/16/21

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PEC.0001564
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DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER02055A
15 SOUNDVIEW AVENUE
SHELTON, CT 06484

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-2

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

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11/16/21

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DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER02055A
15 SOUNDVIEW AVENUE
SHELTON, CT 06484

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-3

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.

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11/16/21

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GENERAL NOTES

SHEET NUMBER

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The Honorable Mark A. Lauretti, Mayor

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Data provided by USPS

Tracking number 9505510391962122624723

Delivered
May 04, 11:01AM
Woburn, MA

American Tower Corporation - Tower Operator/Owner

View details on USPS

Call 1-800-275-8777

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April 28, 2022

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

Re: Tower Share Application – Dish Site 13735391
Dish Wireless Telecommunications Facility @ 15 Soundview Avenue, Shelton, CT 06484

Dear Mr. Paynter:

Dish Wireless ("Dish") is proposing a wireless telecommunications facility on an existing one hundred twenty one foot tall stealth camouflage ("monopine") tower at 15 Soundview Avenue, Shelton, CT 06484 (Latitude: 41.29500000, Longitude: -73.13722200) and within the existing fenced compound. The tower is owned and operated by American Tower Corporation. The subject property is owned by the Harry B. Brownson Country Club.

Dish proposes to install a five (5) foot by seven (7) foot metal platform within the existing fenced compound and install three (3) antennas, three (3) antenna mounts, eight (8) RRUs, and cables on the existing tower at a one hundred and five (105) feet as more particularly detailed on the enclosed Construction Drawings. The overall height of the existing tower will remain at 121-feet and no changes will be made to the compound dimensions.

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, Acting Executive Director of the CSC at 860-972-2935.

Respectfully Submitted,

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

April 28, 2022

Alexander Rosetti, Planning & Zoning Administrator
City of Shelton
54 Hill Street
Shelton, CT 06484

Re: Tower Share Application – Dish Site 13735391
Dish Wireless Telecommunications Facility @ 15 Soundview Avenue, Shelton, CT 06484

Dear Mr. Rosetti:

Dish Wireless ("Dish") is proposing a wireless telecommunications facility on an existing one hundred twenty one foot tall stealth camouflage ("monopine") tower at 15 Soundview Avenue, Shelton, CT 06484 (Latitude: 41.29500000, Longitude: -73.13722200) and within the existing fenced compound. The tower is owned and operated by American Tower Corporation. The subject property is owned by the Harry B. Brownson Country Club.

Dish proposes to install a five (5) foot by seven (7) foot metal platform within the existing fenced compound and install three (3) antennas, three (3) antenna mounts, eight (8) RRUs, and cables on the existing tower at a one hundred and five (105) feet as more particularly detailed on the enclosed Construction Drawings. The overall height of the existing tower will remain at 121-feet and no changes will be made to the compound dimensions.

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, Acting Executive Director of the CSC at 860-972-2935.

Respectfully Submitted,

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

April 28, 2022

The Honorable Mark A. Lauretti
Town of Shelton
54 Hill Street
Shelton, CT 06484

Re: Tower Share Application – Dish Site 13735391
Dish Wireless Telecommunications Facility @ 15 Soundview Avenue, Shelton, CT 06484

Dear Mayor Lauretti:

Dish Wireless ("Dish") is proposing a wireless telecommunications facility on an existing one hundred twenty one foot tall stealth camouflage ("monopine") tower at 15 Soundview Avenue, Shelton, CT 06484 (Latitude: 41.29500000, Longitude: -73.13722200) and within the existing fenced compound. The tower is owned and operated by American Tower Corporation. The subject property is owned by the Harry B. Brownson Country Club.

Dish proposes to install a five (5) foot by seven (7) foot metal platform within the existing fenced compound and install three (3) antennas, three (3) antenna mounts, eight (8) RRUs, and cables on the existing tower at a one hundred and five (105) feet as more particularly detailed on the enclosed Construction Drawings. The overall height of the existing tower will remain at 121-feet and no changes will be made to the compound dimensions.

This letter is intended to serve as the required notice to the chief elected official. 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 the 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, Acting Executive Director of the CSC at 860-972-2935.

Respectfully Submitted,

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

April 28, 2022

Harry B. Brownson Country Club
15 Soundview Avenue
Shelton, CT 06484

Re: Tower Share Application – Dish Site 13735391
Dish Wireless Telecommunications Facility @ 15 Soundview Avenue, Shelton, CT 06484

Dear Property Owner:

Dish Wireless ("Dish") is proposing a wireless telecommunications facility on an existing one hundred twenty one foot tall stealth camouflage ("monopine") tower at 15 Soundview Avenue, Shelton, CT 06484 (Latitude: 41.29500000, Longitude: -73.13722200) and within the existing fenced compound. The tower is owned and operated by American Tower Corporation. The subject property is owned by the Harry B. Brownson Country Club.

Dish proposes to install a five (5) foot by seven (7) foot metal platform within the existing fenced compound and install three (3) antennas, three (3) antenna mounts, eight (8) RRUs, and cables on the existing tower at a one hundred and five (105) feet as more particularly detailed on the enclosed Construction Drawings. The overall height of the existing tower will remain at 121-feet and no changes will be made to the compound dimensions.

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 the 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, Acting Executive Director of the CSC at 860-972-2935.

Respectfully Submitted,

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