

PROJECT NARRATIVE

April 27, 2022

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

Re: Request of DISH Wireless LLC for an Order to Approve the Shared Use of an Existing Tower
234 Melba Street, Milford, CT 06460
Latitude: 41°12'35.52" / Longitude: -73°1'9.87"

Dear Ms. Bachman:

Pursuant to Connecticut General Statutes ("C.G.S.") §16-50aa, as amended, DISH Wireless LLC ("DISH") hereby requests an order from the Connecticut Siting Council ("Council") to approve the shared use by DISH of an existing telecommunication tower at 234 Melba Street in Milford (the "Property"). The existing 134-foot flagpole tower is owned by American Tower Corporation ("ATC"). The underlying property is owned by 17 Mile 04 LLC. DISH requests that the Council find that the proposed shared use of the ATC tower satisfies the criteria of C.G.S. §16-50aa and issue an order approving the proposed shared use. A copy of this filing is being sent to Benjamin G. Blake, Mayor for the City of Milford, David Sulkis, City of Milford City Planner and 17 Mile 04 LLC as the property owner.

Background

This facility was originally approved by the Council under Docket No. 410 on April 27, 2011. A copy of this decision is included in this filing. The existing ATC facility consists of a 134-foot flagpole tower located within an existing leased area. Verizon Wireless currently maintains antennas at the 130, 120, and 110-foot levels. Equipment associated with these antennas are located at various positions within the tower and compound.

DISH is licensed by the Federal Communications Commission ("FCC") to provide wireless services throughout the State of Connecticut. DISH and ATC have agreed to the proposed shared use of the 234 Melba Street tower pursuant to mutually acceptable terms and conditions. Likewise, DISH and ATC have agreed to the proposed installation of equipment cabinets on the ground within the existing compound. ATC has authorized DISH to apply for all necessary permits and approvals that may be required to share the existing tower.
(See attached Letter of Authorization)

DISH proposes to install three (3) antennas and (6) Remote radio units at the 89-foot level along with, (1) over voltage protection device (OVP) and (1) Hybrid cable. DISH will install an equipment cabinet on a 5'x7' equipment platform. DISH's Construction Drawings provide project specifications for all proposed site improvement locations. The construction drawings also include specifications for DISH's proposed antenna and groundwork.

C.G.S. § 16-50aa(c)(1) provides that, upon written request for approval of a proposed shared use, "if the Council finds that the proposed shared use of the facility is technically, legally, environmentally and economically feasible and meets public safety concerns, the council shall issue an order approving such a shared use." DISH respectfully submits that the shared use of the tower satisfies these criteria.

A. Technical Feasibility. The existing ATC tower is structurally capable of supporting DISH's proposed improvements. The proposed shared use of this tower is, therefore, technically feasible. A Feasibility Structural Analysis Report ("Structural Report") prepared for this project confirms that this tower can support DISH's proposed loading. A copy of the Structural Report has been included in this application.

B. Legal Feasibility. Under C.G.S. § 16-50aa, the Council has been authorized to issue order approving the shared use of an existing tower such as the ATC tower. This authority complements the Council's prior-existing authority under C.G.S. § 16-50p to issue orders approving the construction of new towers that are subject to the Council's jurisdiction. In addition, § 16-50x(a) directs the Council to "give such consideration to the other state laws and municipal regulations as it shall deem appropriate" in ruling on requests for the shared use of existing tower facilities. Under the statutory authority vested in the Council, an order by the Council approving the requested shared use would permit the Applicant to obtain a building permit for the proposed installations.

C. Environmental Feasibility. The proposed shared use of the ATC tower would have a minimal environmental effect for the following reasons:

1. The proposed installation will have no visual impact on the area of the tower. DISH's equipment cabinet would be installed within the existing facility compound. DISH's shared use of this tower therefore will not cause any significant change or alteration in the physical or environmental characteristics of the existing site.
2. Operation of DISH's antennas at this site would not exceed the RF emissions standard adopted by the Federal Communications Commission ("FCC"). Included in the EME report of this filing are the approximation tables that demonstrate that DISH's proposed facility will operate well within the FCC RF emissions safety standards.
3. Under ordinary operating conditions, the proposed installation would not require the use of any water or sanitary facilities and would not generate air emissions or discharges to water bodies or sanitary facilities. After construction is complete the proposed installations would not generate any increased traffic to the ATC facility other than periodic maintenance. The proposed shared use of the ATC tower, would, therefore, have a minimal environmental effect, and is environmentally feasible.

D. **Economic Feasibility.** As previously mentioned, DISH has entered into an agreement with ATC for the shared use of the existing facility subject to mutually agreeable terms. The proposed tower sharing is, therefore, economically feasible.

E. **Public Safety Concerns.** As discussed above, the tower is structurally capable of supporting DISH's full array of three (3) antennas, (6) Remote radio units, (1) over voltage protection device (OVP) and (1) Hybrid cable and all related equipment. DISH is not aware of any public safety concerns relative to the proposed sharing of the existing ATC tower.

Conclusion

For the reasons discussed above, the proposed shared use of the existing ATC tower at 234 Melba Street satisfies the criteria stated in C.G.S. §16-50aa and advances the Council's goal of preventing the unnecessary proliferation of towers in Connecticut. The Applicant, therefore, respectfully requests that the Council issue an order approving the proposed shared use.

Sincerely,

Margie Weber

Margie Weber
Program Manager

LETTER OF AUTHORIZATION

ORIGINAL FACILITY APPROVAL



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

April 27, 2011

TO: Parties and Intervenors

FROM: Linda Roberts, Executive Director *LR*

RE: **DOCKET NO. 410** - Cellco Partnership d/b/a Verizon Wireless application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility located at 234 Melba Street, Milford, Connecticut.

By its Decision and Order dated April 14, 2011, the Connecticut Siting Council granted a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility located at 234 Melba Street, Milford, Connecticut.

Enclosed are the Council's Findings of Fact, Opinion, and Decision and Order.

LR/MP/laf

Enclosures (3)

c: State Documents Librarian

STATE OF CONNECTICUT)
ss. New Britain, Connecticut :
COUNTY OF HARTFORD)

I hereby certify that the foregoing is a true and correct copy of the Findings of Fact, Opinion, and Decision and Order issued by the Connecticut Siting Council, State of Connecticut.

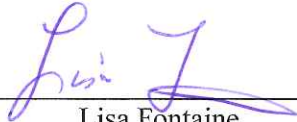
ATTEST:



Linda Roberts
Executive Director
Connecticut Siting Council

I certify that a copy of the Findings of Fact, Opinion, and Decision and Order in Docket No. 410 has been forwarded by Certified First Class Return Receipt Requested mail, on April 27, 2011, to all parties and intervenors of record as listed on the attached service list, dated October 21, 2010.

ATTEST:



Lisa Fontaine
Fiscal Administrative Officer
Connecticut Siting Council

LIST OF PARTIES AND INTERVENORS
SERVICE LIST

Status Granted	Document Service	Status Holder (name, address & phone number)	Representative (name, address & phone number)
Applicant	<input checked="" type="checkbox"/> E-mail <input checked="" type="checkbox"/> U.S. Mail	Cellco Partnership d/b/a Verizon Wireless	Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103-3597 (860) 275-8345 (860) 275-8299 - fax kbaldwin@rc.com Sandy Carter Regulatory Manager Verizon Wireless 99 East River Drive East Hartford, CT 06108

DOCKET NO. 410 - Cellco Partnership d/b/a Verizon Wireless } Connecticut
application for a Certificate of Environmental Compatibility and }
Public Need for the construction, maintenance and operation of a } Siting
telecommunications facility located at 234 Melba Street, Milford, }
Connecticut. } Council

April 14, 2011

Findings of Fact

Introduction

1. Cellco Partnership d/b/a Verizon Wireless (Cellco), in accordance with provisions of Connecticut General Statutes (CGS) § 16-50g through 16-50aa, applied to the Connecticut Siting Council (Council) on October 20, 2010 for the construction, maintenance, and operation of a telecommunications facility, which would include a 136-foot flagpole tower, at 234 Melba Street in the Town of Milford, Connecticut. (Cellco 1, p. i)
2. Cellco is a Delaware Partnership with an administrative office located at 99 East River Drive, East Hartford, Connecticut. Cellco is licensed by the Federal Communications Commission (FCC) to operate a wireless telecommunications system in Connecticut. The operation of wireless telecommunications systems and related activities is Cellco's sole business in Connecticut. (Cellco 1, p. 5)
3. The party in this proceeding is the applicant. (Transcript, February 3, 2011, 3:15 p.m. [Tr. 1], pp. 3-4)
4. The purpose of the proposed facility is to provide coverage and capacity relief along portions of Route 162 and local roads, as well as commercial and residential areas in the Bayville section of Milford, and portions of Long Island Sound. (Cellco 1, p. i)
5. Pursuant to CGS § 16-50m, the Council, after giving due notice thereof, held a public hearing on February 3, 2011, beginning at 3:15 p.m. and continuing at 7:00 p.m. at the Milford City Hall Auditorium, 110 River Street, Milford, Connecticut. (Tr. 1, p. 2)
6. The Council and its staff conducted an inspection of the proposed site on February 3, 2011, beginning at 2:00 p.m. The applicant flew a red, four-foot diameter balloon at the site from approximately 8:00 a.m. until approximately 5:00 p.m. at a height of 136 feet to simulate the proposed flagpole tower. Weather conditions were not optimal. While the winds were calm for approximately the first hour of the balloon flight, these calm conditions were intermittent. At other times, there was an eight to twelve mile per hour wind. (Tr. 1, p. 10)
7. Pursuant to CGS § 16-50/(b), Cellco published public notice of its intent to submit this application on October 14 and 15, 2010 in the Connecticut Post. (Cellco 1, p. 6; Cellco 3)
8. Pursuant to CGS § 16-50/(b), Cellco sent notices of its intent to file an application with the Council to each person appearing of record as owner of property abutting the property on which the site is located. (Cellco 1, p. 6; Attachment 4)
9. Of the 69 certified letters Cellco sent to the abutting property owners, 13 were returned "unclaimed" or otherwise "undeliverable." A second notification letter was sent by regular mail to the 13 property owners from whom return receipts were not received. (Cellco 6, Response 13)

10. Pursuant to CGS § 16-50I (b), Cellco provided copies of its application to all federal, state and local officials and agencies listed therein. (Cellco 1, p. 6; Attachment 2)
11. Cellco posted a sign giving public notice of its pending application on the host property on January 17, 2011. The sign was four feet by six feet in size and included the date of the scheduled public hearing and contact information for the Council. (Cellco 5)

State Agency Comment

12. Pursuant to CGS § 16-50I, on December 8, 2010 and February 4, 2011, the Council solicited comments on Cellco's application from the following state agencies: Department of Agriculture, Department of Environmental Protection (DEP), Department of Public Health, Council on Environmental Quality, Department of Public Utility Control, Office of Policy and Management, Department of Economic and Community Development, the Department of Transportation, and the Department of Emergency Management and Homeland Security. (CSC Hearing Package dated December 8, 2010; CSC Letter to State Department Heads dated February 4, 2011)
13. The Council did not receive comments from any state agencies. (Record)

Municipal Consultation

14. On May 5, 2010, Cellco representatives met with Mayor James L. Richetelli of the City of Milford (City) to commence the sixty day municipal consultation period required by CGS §16-50I(e). At this meeting, Cellco provided Mayor Richetelli with copies of technical information summarizing Cellco's proposed telecommunications facility. The information provided was based on the original design which included a 126-foot flagpole tower with a top diameter of 54 inches. (Cellco 1, p. 20)
15. On August 10, 2010, Cellco notified Mayor Richetelli of its plans to modify the flagpole design by increasing the height to 136 feet and decreasing the top diameter to 42 inches. (Cellco 1, p. 20)
16. Cellco would provide space on the tower for municipal emergency services antennas free of charge if a need exists. (Cellco 1, p. 3; Tr. 1, p. 15)

Public Need for Service

17. In 1996, the United States Congress recognized a nationwide need for high quality wireless telecommunications services, including cellular telephone service. Through the Federal Telecommunications Act of 1996, Congress seeks to promote competition, encourage technical innovations, and foster lower prices for telecommunications services. (Council Administrative Notice Item No. 8)
18. In issuing cellular licenses, the Federal government has preempted the determination of public need for wireless service by the states, and has established design standards to ensure technical integrity and nationwide compatibility among all systems. (Council Administrative Notice Item No. 8; Cellco 1, p. 7)
19. The Telecommunications Act of 1996 prohibits local and state bodies from discriminating among providers of functionally equivalent services. (Council Administrative Notice Item No. 8)

20. The Telecommunications Act of 1996 prohibits any state or local entity from regulating telecommunications towers on the basis of the environmental effects, which include human health effects, of radio frequency emissions to the extent that such towers and equipment comply with FCC's regulations concerning such emissions. This Act also blocks the Council from prohibiting or acting with the effect of prohibiting the provision of personal wireless service. (Council Administrative Notice Item No. 8)
21. In recognition of the public safety benefits enhanced wireless telecommunications networks can provide, Congress enacted the Wireless Communications and Public Safety Act of 1999 (the 911 Act). The purpose of this legislation was to promote public safety by making 9-1-1 the universal emergency assistance number and through the deployment of a seamless, nationwide emergency communications infrastructure that includes wireless communications services. (Cellco 1, p. 8)
22. In 2004, Congress enacted the Enhanced 911 (E911) Act for the specific purpose of enhancing and promoting homeland security, public safety, and citizen activated emergency response capabilities. (Cellco 1, p. 8)
23. Cellco's antennas at the proposed facility would comply with E911 requirements. (Cellco 6, Response 15)

Existing and Proposed Wireless Coverage

24. Cellco is licensed to operate in the 850 MHz (cellular), 1900 MHz (PCS), and 700 MHz (Long Term Evolution – LTE) frequency ranges throughout Connecticut. (Cellco 6, Response 14)
25. Cellco's network design thresholds for reliable service are -85 dBm for in-vehicle service and -75 dBm for in-building coverage. (Cellco 6, Response 18)
26. Cellco's existing signal strength in the vicinity of the proposed facility ranges from -86 dBm to -98 dBm. (Cellco 6, Response 19)
27. Cellco does not currently provide LTE service in Connecticut. However, Cellco expects to begin activating its LTE network in Connecticut in 2011. (Cellco 4, response 9)
28. From existing sites surrounding the proposed facility, Cellco experiences dropped calls at a rate of 1.49 percent and ineffective attempts at a rate of 2.19 percent. (Cellco 6, Response 20)
29. Cellco's nationwide standard for dropped calls and ineffective attempts is less than one percent. (Cellco 6, response 20)
30. Cellco also experiences significant gaps in PCS and cellular coverage along portions of Route 162, Edgefield Street, Pond Point Avenue, and Buckingham Avenue in southeast Milford. (Cellco 1, Tab 6; Cellco 4, response 11)

31. The table below indicates the distances Cellco would cover at its different licensed frequencies along the major routes in the area of its proposed facility at various heights.

Frequency	Street Name	Coverage at Proposed Flagpole Height of 136 feet	Coverage at 125 feet	Coverage at 116 feet
PCS (1900 MHz)	Edgefield Street	0.76 miles	0.75 miles	0.73 miles
PCS (1900 MHz)	Pond Point Avenue	0.96 miles	0.95 miles	0.94 miles
PCS (1900 MHz)	Buckingham Avenue	0.56 miles	0.54 miles	0.54 miles
Cellular (850 MHz)	Edgefield Street	0.99 miles	0.94 miles	0.89 miles
Cellular (850 MHz)	Pond Point Avenue	1.2 miles	1.1 miles	1.08 miles
Cellular (850 MHz)	Buckingham Avenue	0.69 miles	0.67 miles	0.66 miles
LTE (700 MHz)	Edgefield Street	0.99 miles	0.95 miles	0.94 miles
LTE (700 MHz)	Pond Point Avenue	1.21 miles	1.15 miles	1.1 miles
LTE (700 MHz)	Buckingham Avenue	0.7 miles	0.68 miles	0.67 miles

(Cellco 4, response 11)

32. The table below indicates the total areas Cellco would cover at its different licensed frequencies from the proposed facility at various heights.

Frequency	Area Covered at Proposed Flagpole Height of 136 feet*	Area Covered at 125 feet*	Area Covered at 116 feet*
PCS (1900 MHz)	20.49 square miles	19.82 square miles	19.13 square miles
Cellular (850 MHz)	90.0 square miles	87.84 square miles	85.43 square miles
LTE (700 MHz)	101.45 square miles	98.37 square miles	95.42 square miles

*This includes coverage over open water.

(Cellco 4, response 12)

33. Cellco’s proposed facility would hand off signals with the adjacent facilities identified in the following table.

Site Location	Distance and Direction from Proposed Site
200 High Street, Milford	2.7 miles northwest
1052 Boston Post Road, Milford	2.3 miles northwest
311 Old Gate Lane, Milford	1.7 miles north
185 Research Drive, Milford	2.2 miles northeast

(Cellco 1, p. 2; Cellco 6, Response 21)

34. The lowest feasible heights at which Cellco’s antennas could achieve its coverage objectives are the proposed heights: PCS antennas at 130 feet; cellular antennas at 120 feet; and LTE antennas at 110 feet above ground level (agl). (Cellco 1, p. 1; Cellco 4, Response 8)

Site Selection

35. Cellco initiated its site search process in the vicinity of the proposed site in September 2006. The search ring was centered near the intersection of Pond Point Avenue and Bryan Hill Road. The radius of the search ring was approximately 2,000 feet. (Cellco 4, response 1)
36. Cellco maintains four telecommunications facilities within approximately three miles of the proposed site. None of these facilities can provide the service Cellco is seeking to provide in this area of Milford. Cellco’s existing sites are listed in the following table.

Owner/(Cellco Site Name)	Facility Height and Type	Location	Cellco Ant. Ht.	Distance and Direction to Proposed Facility
Milford South	70’ smokestack	200 High Street, Milford	67’	2.6 mi, SE
Forest Heights	87.5’ rooftop flagpole	1052 Boston Post Road, Milford	76.5’ and 82.5’	2.1 mi, SE
Old Gate	120’ monopole tower	311 Old Gate Lane, Milford	100’	1.7 mi, S
Milford South 2	185’ monopole tower	185 Research Drive, Milford	126’	2.1 mi, S

(Cellco 1, Attachment 8; Tr. 1, p. 12)

37. In its site search process, Cellco did not find any existing, non-tower structures of a height that would enable Cellco to provide its desired coverage. (Cellco 1, pp. 11-12)

38. Cellco investigated two municipal properties for a possible tower site. These properties and the determinations of their suitability are listed below
 - a.) Milford Fire Department Station 6 – Melba Street – This location does not have sufficient space for tower and the associated equipment.
 - b.) Park – Melba Street – This property is not available for lease for a tower. (Tr. 1, pp. 10-11)
39. Cellco also investigated the possibility of locating its tower on private property, but found that the surrounding area has lot sizes that are too small for a telecommunications facility. (Tr. 1, pp. 11-12)
40. The possibility of co-locating on existing electric transmission structures was also considered. However, there are no electric transmission structures located within Cellco's search ring. (Tr. 1, p. 17)
41. There is an existing 135-foot tall flagpole tower (which varies in diameter from 24 inches to 16 inches) on the subject property that is owned by T-Mobile and located approximately 125 feet southwest of the proposed tower. This tower is not structurally capable of supporting additional antennas or being expanded to accommodate Cellco. The flagpole would have to be replaced with a 165-foot flagpole to accommodate Cellco and the existing carriers. The diameter of the flagpole would also have to be significantly greater. (Cellco 1, pp. I, 4-5; Cellco 1, Attachment 1, Drawing C-2; Tr. 1, pp. 11-12, and 14)
42. From a radio frequency perspective, it is not feasible to co-locate Cellco's antennas on the existing flagpole, below the existing carriers. (Tr. 1, pp. 28-29)
43. The proposed Cellco flagpole tower would be located approximately 124 feet from the existing T-Mobile flagpole tower. This horizontal separation distance is necessary so that Cellco can meet its RF coverage objectives from the facility location. (Tr. 1, pp. 39-4)
44. Cellco could not identify any equally effective technological alternatives to the proposed facility that would provide service of comparable quality. (Cellco 1, p. 11)

Facility Description

45. Cellco's proposed site is on a 2.71-acre property located at 234 Melba Street in the Bayville section of Milford. The property is owned by Melba Realty LLC and is currently used for commercial retail purposes. (See Figures 1 and 2) (Cellco 1, pp. I, 1, and 2)
46. The Melba Realty LLC property is zoned Business Zone District (BD). (Cellco 1, p. 2)
47. Cellco's proposed facility would be located in the western portion of the Melba Realty LLC property. Cellco would lease a L-shaped compound area with one area approximately 61 feet by 22 feet and the other area 14 feet by 5 feet, within which it would develop a roughly 1,412 square foot fenced compound. The compound would be enclosed by an eight-foot high chain link fence with privacy slats and topped with three strands of barbed wire. (Cellco 1, Attachment 1; Tr. 1, p. 15)
48. The proposed tower would be located at 41° 12' 35.52" N latitude and 73° 01' 9.87" W longitude. Its elevation at ground level would be approximately 30 feet above mean sea level. (Cellco 1, Attachment 1, Sheet T-1)

49. Cellco's proposed tower would be designed in accordance with the specifications of the Electronic Industries Association Standard EIA/TIA-222-F "Structural Standards for Steel Antenna Towers and Antenna Support Structures." (Cellco 1, Attachment 1, p. 6)
50. The diameter of the tower would be approximately 56 inches at its base and taper to a smaller diameter, reaching 42 inches at approximately the 83-foot level of the tower. From the 83-foot level to the top of the tower, the tower would have a constant diameter of 42 inches. (Tr. 1, pp. 30-33)
51. Consistent with the flagpole design, the tower would have a brass-colored sphere at the top of the tower. However, a flag is not proposed to avoid interference issues with the antennas (particularly when the flag is wet), as well as the need to maintain the flag and/or light it at night. (Cellco 1, Tr. 1, pp. 14; Tr. 2, pp. 3-5)
52. The proposed tower would be designed to accommodate a minimum of two additional wireless carriers and municipal public safety antennas. To date, no other wireless carriers have expressed an interest in co-locating on the proposed facility. (Cellco 1, p. 12; Cellco 1, Attachment 1, Drawing C-2; Tr. 1, p. 15)
53. Cellco would install 9 antennas—three PCS antennas (1900 MHz), three cellular antennas (850 MHz), and three LTE (700 MHz) antennas, at centerline heights of 130 feet, 120 feet, and 110 feet, respectively. These antennas would be internally-mounted within the flagpole. (Cellco 1, p. 1 and Attachment 1)
54. Cellco's ground equipment would be housed in a 12-foot by 24-foot shelter located near the base of the tower. Equipment housed in the shelter would include a propane-fueled generator for emergency backup power. The generator room floor would be lower than the door threshold to create a "bowl" effect capable of containing 120% of the volume of all generator fluids. The floor would also be equipped with leak detection alarms. (Cellco 4, responses 4 and 5; Cellco 1, Attachment 1, Drawing C-2)
55. Propane for the back-up generator would be stored in a 1,000-gallon tank located in the northern portion of the fenced compound. This would provide about 70 hours of generator run time before refueling would be required. (Cellco 4, Response 19; Tr. 1, pp. 16-17)
56. The generator would, under normal conditions, operate approximately 20 minutes per week to maintain it in proper working condition. The generator, with designed noise mitigation, would meet applicable noise standards. (Tr. 1, pp. 16-17)
57. Development of the proposed facility would require approximately 29 cubic yards of cutting. No filling is expected to be necessary. (Cellco 4, Response 7)
58. Vehicular access to the proposed facility would extend from Melba Street over an existing paved driveway for a distance of approximately 405 feet to the proposed compound. (Cellco 1, p. 3)
59. Utilities for the proposed facility would extend underground from an existing utility meter board associated with the T-Mobile facility to Cellco's equipment shelter. Final routing of utilities will be subject to the review and approval of The United Illuminating Company. (Cellco 1, Attachment 1, Drawing C-2; Cellco 6, response 23)
60. Cellco does not anticipate a need to conduct any blasting to develop the proposed site. (Cellco 6, Response 24)

61. The tower's setback radius would extend approximately 82 feet onto adjacent properties to the west owned by Point Beach Volunteer Engine Co. and Saranor Apartments Limited Partnership. (Cellco 1, Attachment 1, Sheets C-1 and C-1A)
62. Cellco could design a yield point into the proposed tower so that it would not encroach onto any adjacent properties in the event of a collapse. Such yield point would be located at approximately 82 feet above ground level. (Cellco 1, Attachment 1, Sheets C-1 and C-1A; Cellco 6, Response 25)
63. There are 53 residential properties and 27 apartment buildings within 1,000 feet of the proposed facility. (Tr. 1, p. 13)
64. The closest off-site residence property is the Saranor Apartments located at 5 Hilldale Court, approximately 100 feet to the west-northwest of the proposed facility. It is owned by Saranor Apartments Limited Partnership. (Cellco 1, Attachment 1, Sheet C-1)
65. Land use in the surrounding vicinity consists of a mix of single-family residential, multi-family residential (apartments and condominiums), commercial/retail, recreational/park, municipal (fire department) and institutional (Milford Health Care Center) uses. (Cellco 4, response 2)
66. The existing T-Mobile tower has a flag that is undersized in proportion to the structure's height. The flag on the T-Mobile tower is flown 24 hours per day, seven days per week, and is lit at night. (Tr. 1, pp. 35-36; Tr. 2, p. 4)
67. Typical flagpole lighting requires either lighting from the base of the pole up towards the flag or the installation of a light at the top of pole directed down towards the flag. (Tr. 2, p. 6)
68. The correct (proportional) sized flag for a pole of 136 feet in height would be 20 feet tall by 38 feet wide, which is substantially larger than the flag currently located on the T-Mobile flagpole tower. The cost of an appropriately sized flag is approximately \$800 and typically would need to be replaced every six to eight months. (Tr. 2, pp. 3-5)
69. T-Mobile has no objection to removing the flag from its tower, if requested. (Tr. 2, pp. 4 and 7)
70. The estimated cost of the proposed facility, including antennas, is:

Cell site radio equipment	\$450,000
Tower, coax, and antennas costs	150,000
Power systems costs	40,000
Equipment building costs	50,000
<u>Miscellaneous costs</u>	<u>43,000</u>
Total costs	\$733,000

(Cellco 1, p. 22)

Environmental Considerations

71. The proposed facilities would have no effect upon historic, architectural, or archaeological resources listed on or eligible for the National Register of Historic Places. (Cellco 1, Attachment 10)

72. The Piping Plover, a federally-listed threatened species occurs in the Milford area. The Piping Plover is a migratory breeder that nests only in coastal sandy beaches. This habitat does not exist on the subject site. Therefore, the proposed facility would not have an adverse impact on this species. (Cellco 1, p. 21 and Attachment 10)
73. There are no known extant populations of State endangered, threatened or special concern species that occur at the subject site. (Cellco 1, Attachment 10)
74. Cellco's proposed facility is approximately 2.1 miles east/northeast of the state's nearest Important Bird Area, which is Silver Sands/Walnut Beach/Charles Island Natural Area Preserve in Milford. (Cellco 6, response 26)
75. Cellco's proposed facility would comply with the United States Fish and Wildlife Service's recommended guidelines for minimizing the potential for telecommunications towers to impact bird species, provided that the tower is not lit. If the tower is lit, for example to accommodate a flag, it might not fully comply with such guidelines. (Cellco 6, response 27; Tr. 2, p. 7)
76. Cellco's proposed facility is not expected to have an adverse impact on migratory birds. (Tr. 1, pp. 27-28)
77. Approximately six trees with diameters greater than six inches at breast height would be removed to build the proposed facility. (Tr. 1, pp. 24-25)
78. If the compound were shifted a minimum of approximately 35 feet to the east and approximately 5 feet to the south, the wooded area could be avoided and no tree clearing would be necessary. Some additional pavement clearing would be necessary. (Cellco 1, Tab 1, Sheet C-1A)
79. The nearest wetland system is located approximately 13 feet from the northwest corner of the compound. (Cellco 1, Attachment 1, Sheet C-1A; Tr. 1, pp. 25-26)
80. Cellco would establish and maintain appropriate soil erosion and sedimentation control measures, in accordance with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control established by the Connecticut Council for Soil and Water Conservation, in cooperation with the Connecticut DEP, throughout the construction period of the proposed facility. (Cellco 1, p. 19)
81. Cellco's environmental consultant, Vanasse Hangen Brustlin, Inc., recommends further measures to mitigate wetland impacts such as stabilizing exposed soils with loam and seeding with a New England Conservation/Wildlife seed mix. Also, a row of native shrubs (e.g. serviceberry, black chokecherry, gray dogwood, and nannyberry) should be planted along the north side of the proposed compound in the disturbed area between the compound's fence and the limit of work line defined by the erosion and sedimentation controls. (Cellco 1, Attachment 11, pp. 1-2)
82. With appropriate soil erosion and sedimentation controls and other mitigation measures, development of the proposed facility would not result in any likely adverse impacts to wetlands. (Cellco 1, Attachment 11, pp. 1-2)

83. The proposed facility location is located within the coastal boundary. No federal or state-regulated coastal resources are located on the subject property. The nearest coastal resources consist of tidal wetlands and an estuary area associated with the Calf Pen Meadow Creek, located approximately 800 feet northwest of the proposed facility and a beach area associated with Point Beach, located approximately 1,200 feet to the south. Due to the distance separating nearby coastal resources from the proposed facility and the stealth facility design on a commercial parcel, there is no likely adverse impact to coastal resources associated with this project. (Cellco 1, Attachment 11)
84. Cellco's proposed facility is located outside of the 500-year floodplain delineated by the Federal Emergency Management Agency. (Cellco 1, p. 19 and Attachment 11)
85. The proposed tower would not constitute an obstruction or hazard to air navigation and, therefore, would not require any obstruction marking or lighting. (Cellco 1, pp. 20-21; Attachment 12)
86. The cumulative worst-case maximum power density from the radio frequency emissions from Cellco's proposed antennas is 19.05 percent of the standard for Maximum Permissible Exposure, as adopted by the FCC, at the base of the proposed tower. This calculation was based on methodology prescribed by the FCC Office of Engineering and Technology Bulletin No. 65E, Edition 97-01 (August 1997) that assumes all antennas would be pointed at the base of the tower and all channels would be operating simultaneously, which creates the highest possible power density levels. Under normal operation, the antennas would be oriented outward, directing radio frequency emissions away from the tower, thus resulting in significantly lower power density levels in areas around the tower. (Cellco 1, p. 16)
87. The existing T-Mobile flagpole tower has a maximum worst-case power density of 22.14 percent of the standard for Maximum Permissible Exposure. Thus, the combined power densities of both towers would not exceed 41.19 percent of the FCC limit. (Cellco 6, p. 4)

Visibility

88. The proposed tower would be visible year-round from approximately 3,276 acres within a two-mile radius of the site. This takes into account an average tree height of 50 feet within the study area. A vast majority of this year-round visibility (3,258 acres or 99.45 percent) occurs over the open waters of Long Island Sound. The tower would be located approximately 0.4 miles north of Long Island Sound. (Cellco 1, pp. 14-15, Attachment 9)
89. Approximately 81 residential properties would have at least partial year-round views of the proposed facility. Approximately 73 additional properties would have seasonal views of the proposed tower. However, the use of a flagpole would minimize these visual effects, particularly in comparison with a monopole with externally-mounted antennas. (Cellco 1, Attachment 9)

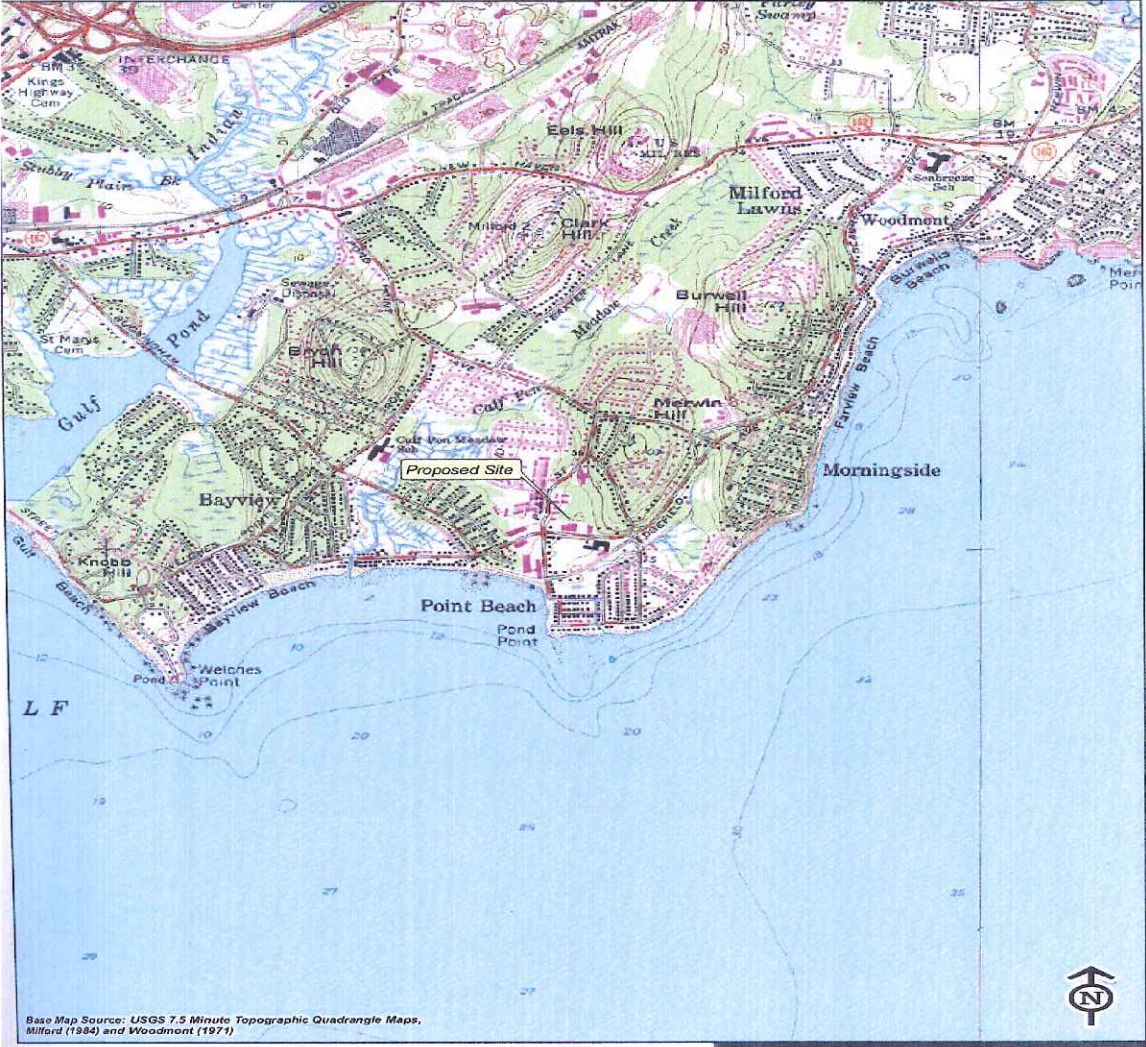
90. The visibility of Cellco’s proposed tower from different vantage points in the surrounding vicinity is summarized in the following table. The vantage points listed are identified by their corresponding number in the Visual Resource Evaluation Report contained in Attachment 9 of Cellco’s application.

<u>Location</u>	<u>Site Visible</u>	<u>Approx. Portion of (136’) Tower Visible</u>	<u>Approx. Distance and Direction to Tower</u>
1 – 29 Point Beach Road	Yes	23’	1,900 feet; NW
2 – 22 Virginia Street	Yes	24’	1,600 feet; N
3 – 22 Morehouse Avenue	Yes	38’	1,400 feet; N
4 – Park located south of subject property	Yes	57’	790 feet; N
5 – Field Court at Bayside Drive	Yes	23’	4,000 feet; NE
6 – Melba Street at Mills Street	Yes	57’	1,000 feet; NE
7 – 33 Clover Street	Yes	59’	1,400 feet; SE
8 – 29 Indian River Road	Yes	52’	3,100 feet; SE
9 – Welchs Point Road	Yes	20’	2,900 feet; SE
10 – 44 Carriage Lane	Yes	47’	1,300 feet; SE
11 – Parking area on Platt Street	Yes	62’	1,300 feet; E
12 – 196 Platt Street	Yes	40’	950 feet; SW
13 – 64 Melba Avenue	Yes	87’	500 feet; NW
14 – 94 Point Lookout Road	Yes	48’	5,700 feet; NE
15 – 21 McDermott Street	Yes	28’	4,900 feet; SW

(Cellco 1, Attachment 9)

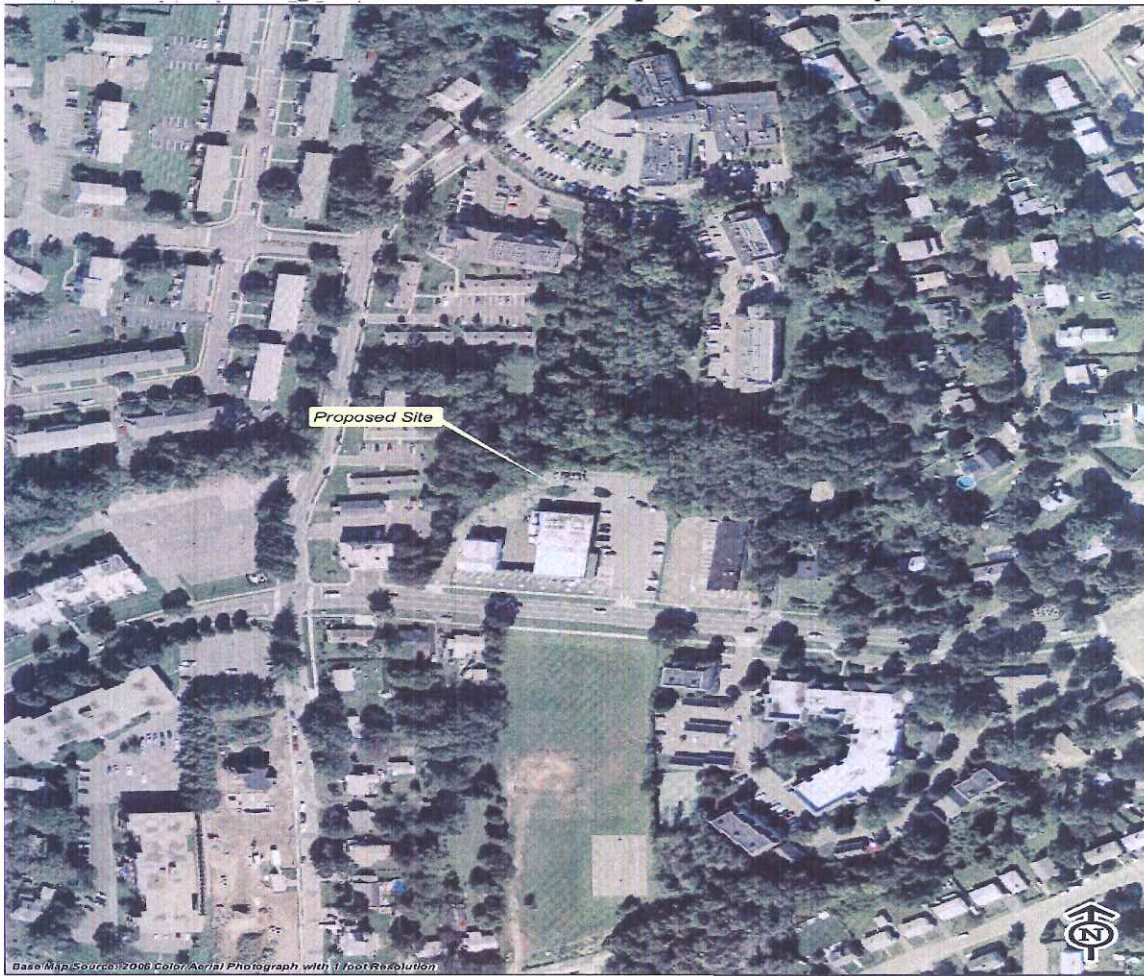
91. While approximately the top 25 percent of the proposed tower would be visible from Long Island Sound, the tower is expected to blend in with the surroundings due the close proximity of the T-Mobile flagpole tower. (Tr. 1, p. 18)
92. Replacing the existing flagpole with a new flagpole approximately 30 feet taller than proposed would create a significant visual intrusion in the area because it would be out of scale, given the approximately 50-foot existing tree height. (Tr. 1, pp. 20-21)
93. A stealth tower (other than a flagpole) is not a practical option because it would not blend in effectively with the existing flagpole. (Tr. 1, p. 22)
94. Lighting the tower could be a source of light pollution to neighbors. (Tr. 2, pp. 3-4)

Figure 1: Location Map



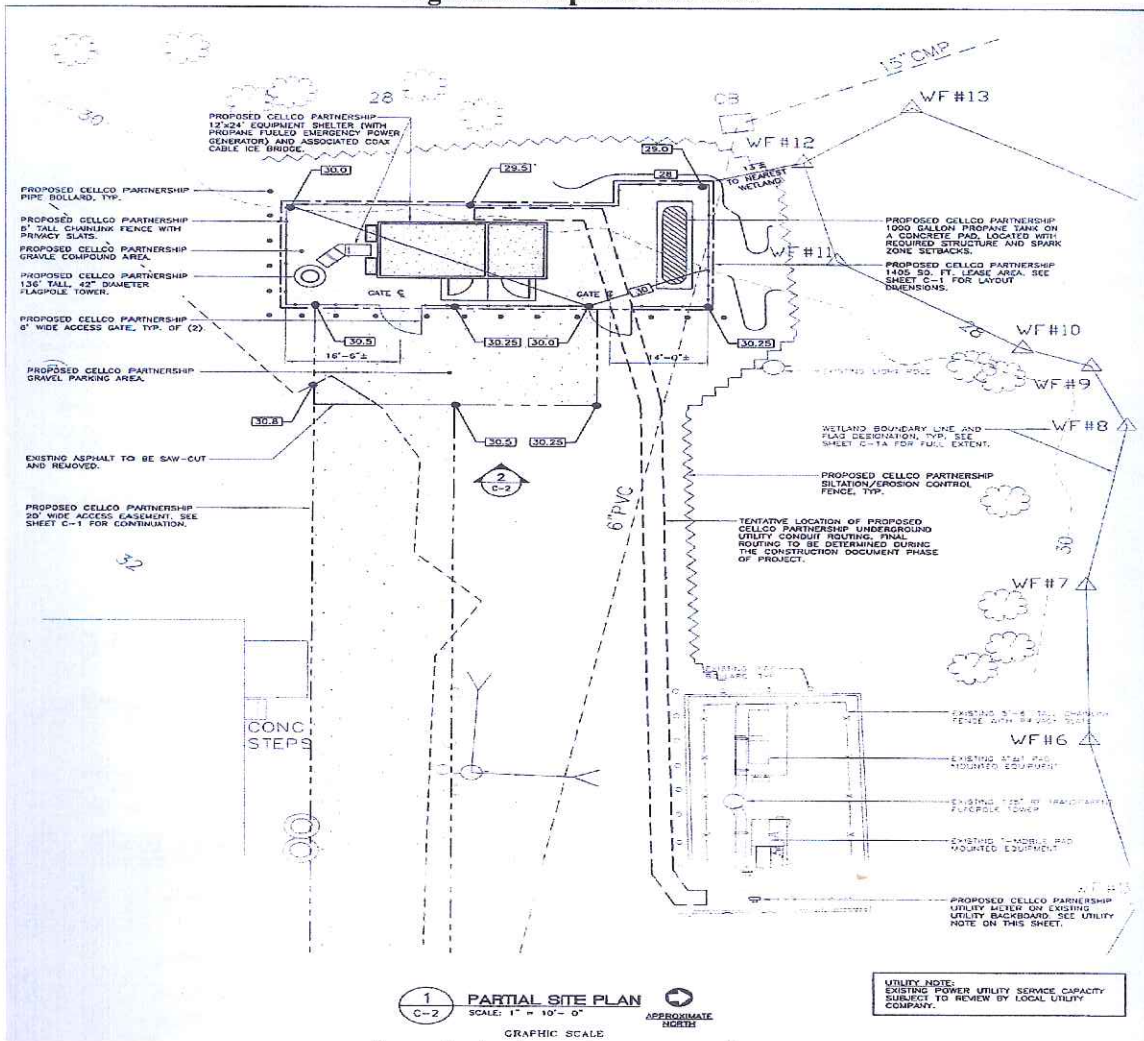
(Cellco 1, p. iii)

Figure 2: Aerial Photo of Proposed Site's Vicinity



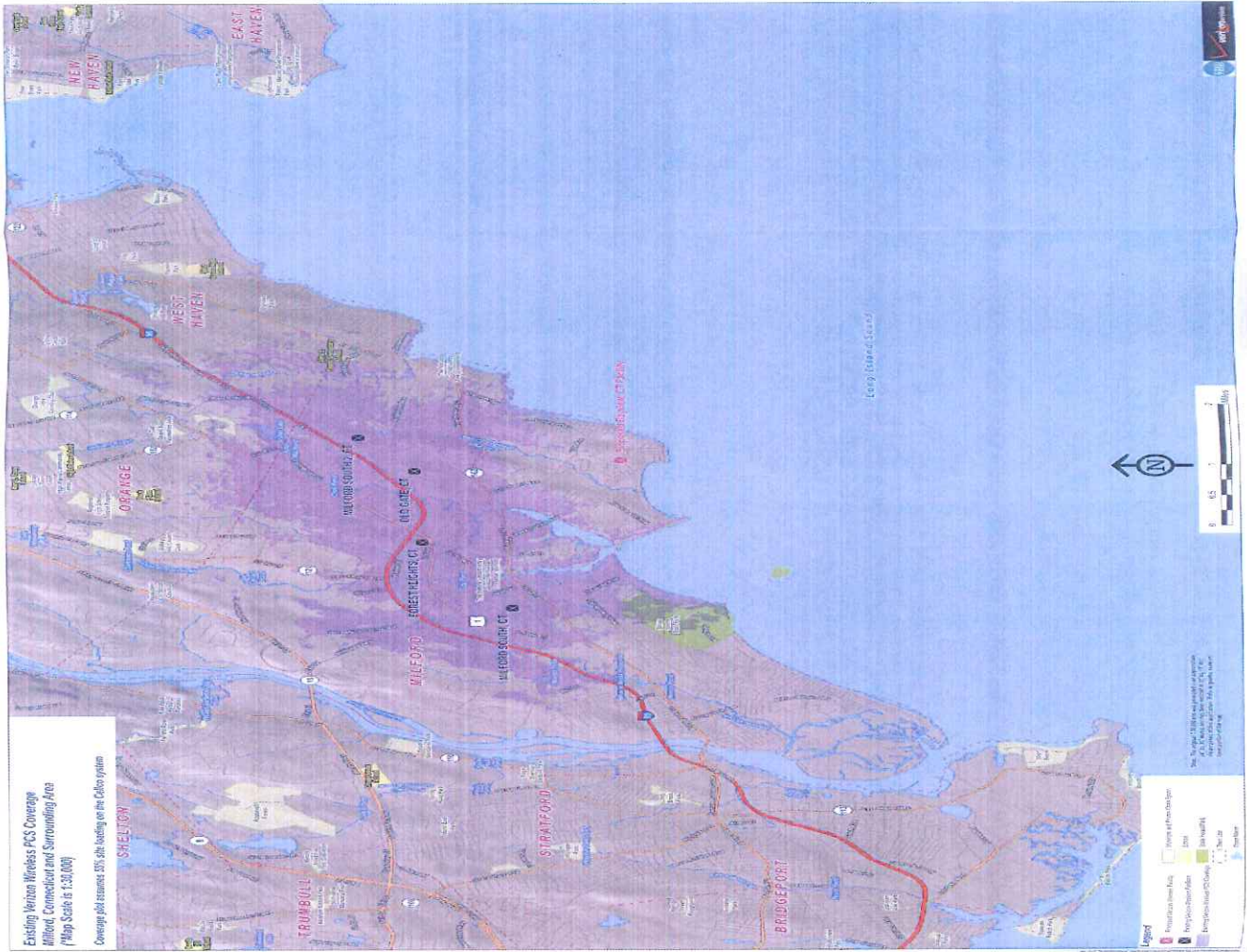
(Cellco 1, p. iv)

Figure 3: Proposed Site Plan



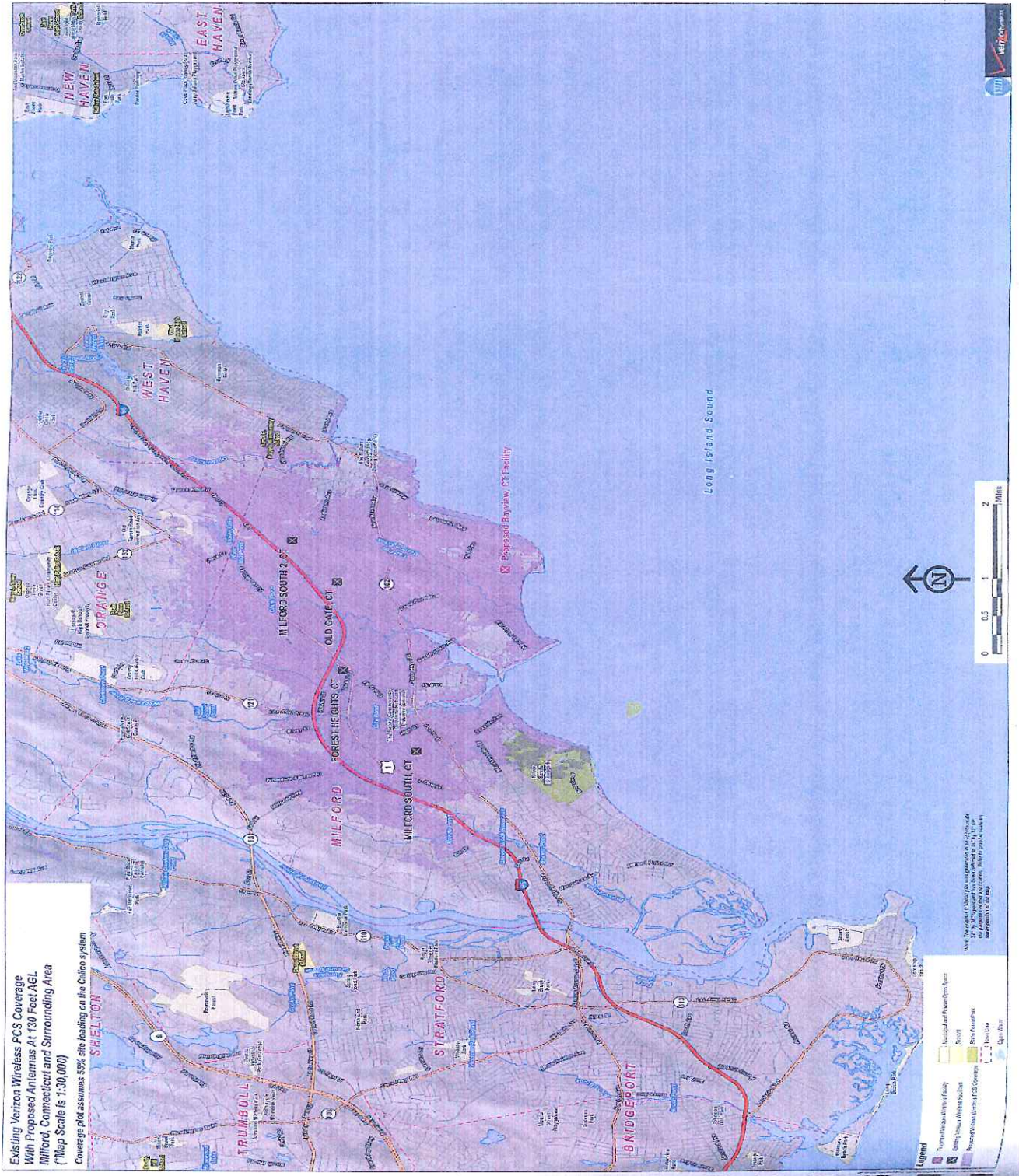
(Cellco 1, Attachment 1, Drawing C-2)

Figure 4: Cellco's Existing Coverage at PCS Frequencies



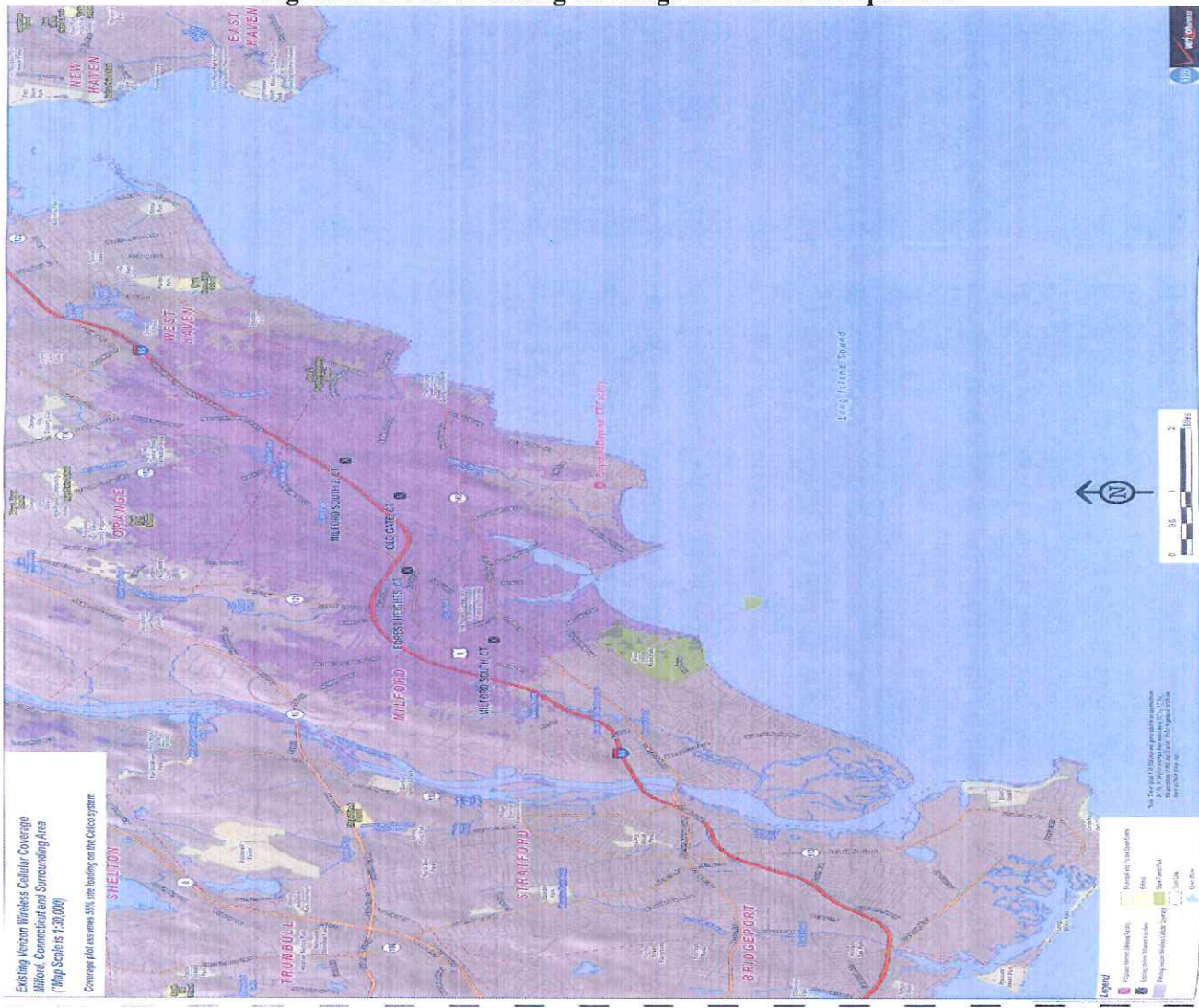
(Cellco 1, Attachment 6)

Figure 5: Cellco's Proposed PCS Coverage at 130 feet



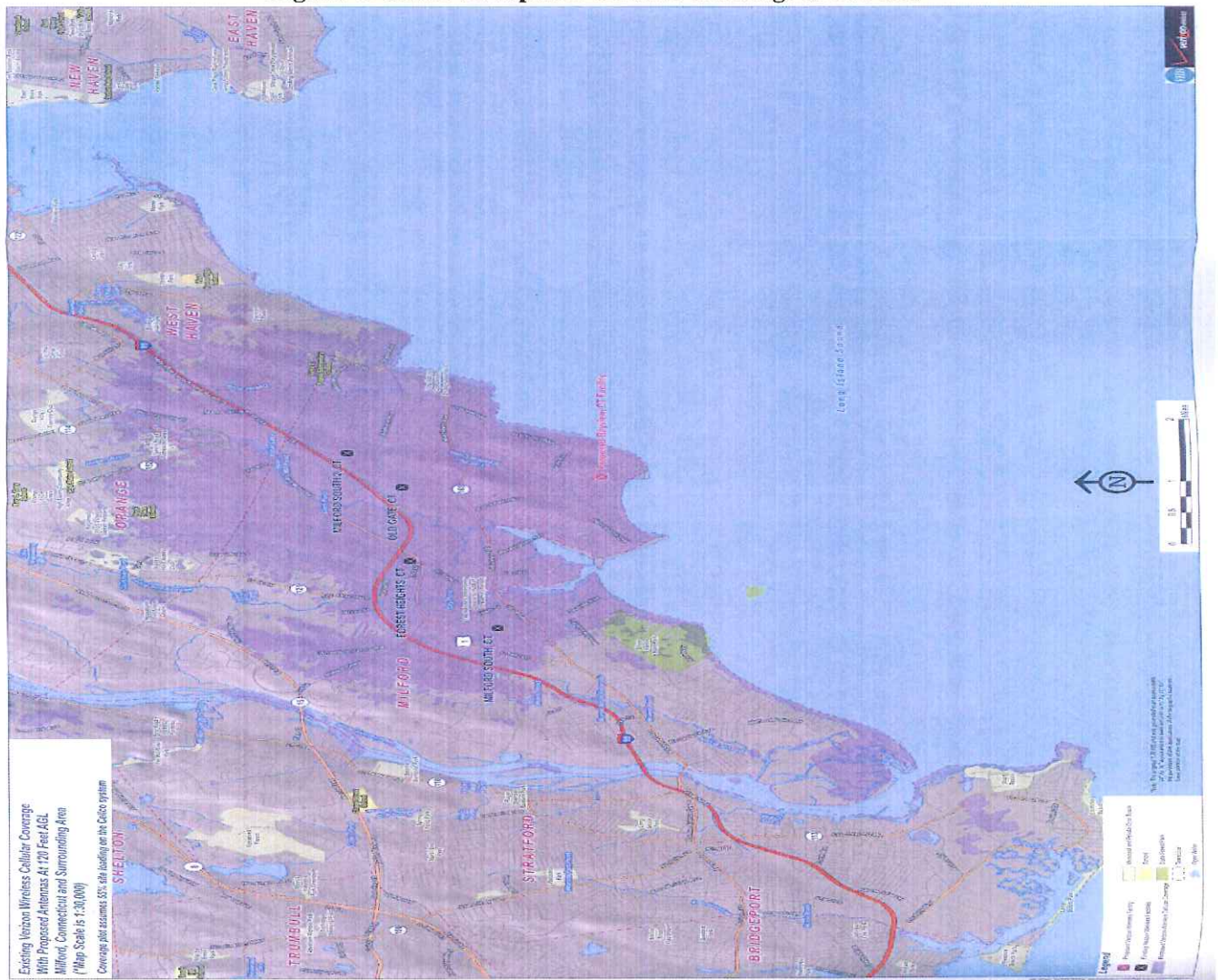
(Cellco 1, Attachment 6)

Figure 6: Cellco's Existing Coverage at Cellular Frequencies



(Cellco 1, Attachment 6)

Figure 7: Cellco's Proposed Cellular Coverage at 120 feet



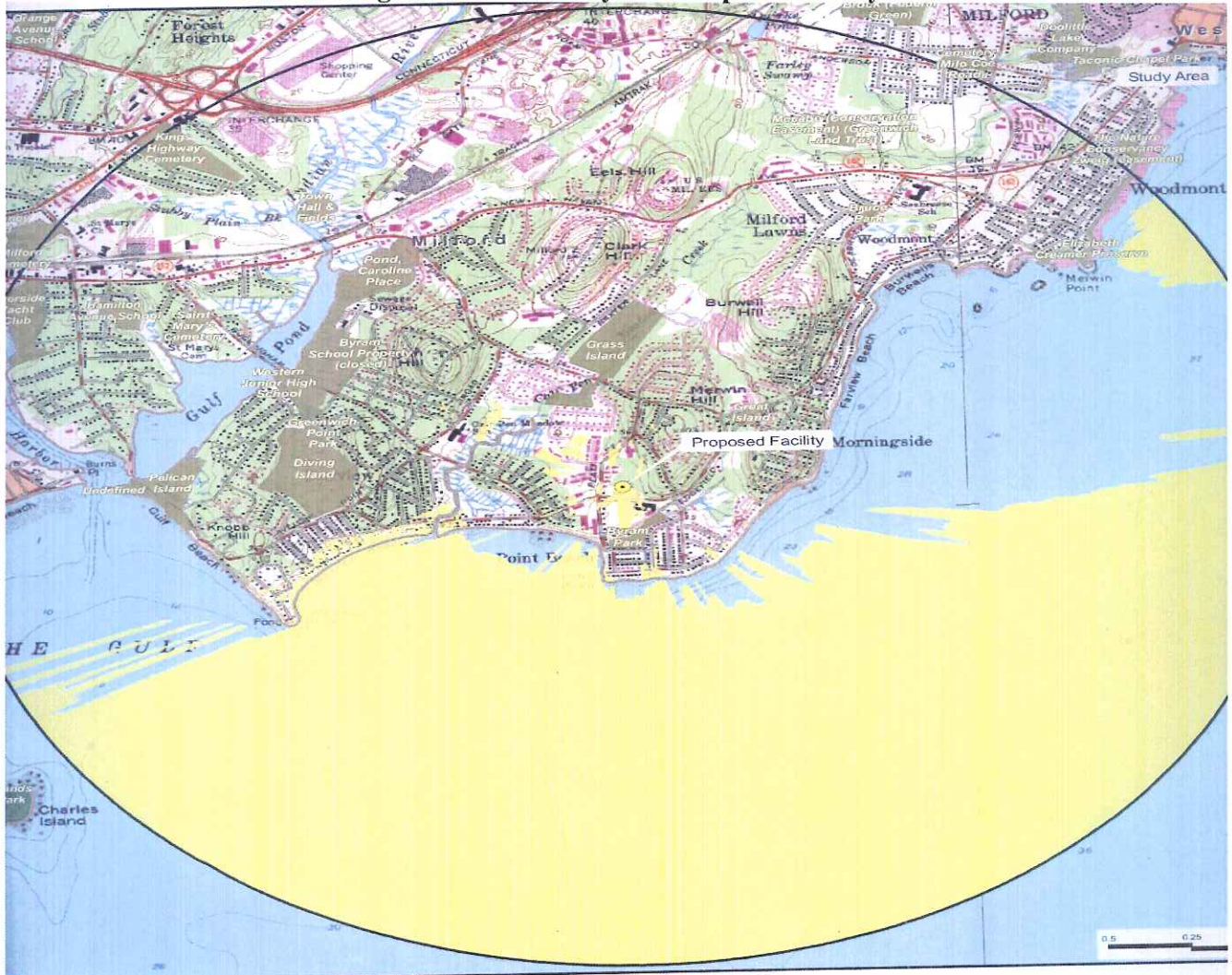
(Cellco 1, Attachment 6)

Figure 8: Cellco's Proposed LTE Coverage at 110 feet



(Cellco 1, Attachment 6)

Figure 8: Visual Analysis of Proposed Facility



Map Compiled April, 2010

Legend

-  Proposed Facility Location
-  Year-Round Visibility (Approximately 3,311 acres total, approximately 50 acres on land)
-  Protected Municipal and Private Open Space (CT DEP, 1997)
 - Cemetery
 - Preservation
 - Conservation
 - Existing Preserved Open Space
 - Recreation
 - General Recreation
 - School
 - Uncategorized
-  CT DEP Property (CT DEP, Dec 2009)
 - State Forest
 - State Park
 - DEP Owned Waterbody
 - State Park Scenic Reserve
 - Historic Preserve
 - Natural Area Preserve
 - Fish Hatchery
 - Flood Control
 - Other
 - State Park Trail
 - Water Access
 - Wildlife Area
 - Wildlife Sanctuary
-  Federal Open Space (CT DEP, 2004)
-  Boat Launches (CT DEP, Dec 2009)
-  Scenic Road (State and Local)
-  Town Line

DOCKET NO. 410 - Cellco Partnership d/b/a Verizon Wireless } Connecticut
application for a Certificate of Environmental Compatibility and }
Public Need for the construction, maintenance and operation of a } Siting
telecommunications facility located at 234 Melba Street, Milford, }
Connecticut. } Council

April 14, 2011

Opinion

On October 20, 2010, Cellco Partnership d/b/a Verizon Wireless (Cellco) applied to the Connecticut Siting Council (Council) for a Certificate of Environmental Compatibility and Public Need (Certificate) for the construction, maintenance and operation of a wireless telecommunications facility to be located at 234 Melba Street in the Town of Milford, Connecticut. Cellco is seeking to develop a facility on a 2.71-acre parcel owned by Melba Realty LLC and currently used for commercial retail purposes. Cellco's objective in locating a facility at this location is to provide coverage and capacity relief along portions of Route 162 and local roads, as well as commercial and residential areas in the Bayville section of Milford, and portions of Long Island Sound. There were no other parties or intervenors in this proceeding.

Cellco would lease an L-shaped compound area with one area approximately 61 feet by 22 feet and the other area 14 feet by 5 feet, within which it would develop a roughly 1,412 square foot fenced compound. Within the compound, Cellco would install a 136-foot flagpole tower. The compound would be enclosed by an eight-foot high chain link fence with barbed wire. Vehicular access to the proposed facility would extend from Melba Street over an existing paved driveway for a distance of approximately 405 feet to the proposed compound. Utilities for the proposed facility would extend underground from an existing utility meter board associated with the T-Mobile facility to Cellco's equipment shelter. Final design and routing of utilities will be subject to The United Illuminating Company and would be included in the Development and Management Plan.

The tower's setback radius would extend approximately 82 feet onto either the Point Beach Volunteer Engine Company property or the Saranor Apartments Limited Partnership property, both located to the west. To prevent the tower from potentially encroaching onto either adjacent property in the event of a collapse, Cellco could design it with a yield point at approximately 82 feet above ground level.

The proposed tower would be visible year-round from approximately 3,276 acres within a two-mile radius of the site. A vast majority of this year-round visibility (3,258 acres or 99.45 percent) occurs over the open waters of Long Island Sound. The tower would be located approximately 0.4 miles north of Long Island Sound. Approximately 81 residential properties would have at least partial year-round views of the proposed facility. Approximately 73 additional properties would have seasonal views of the proposed tower.

The Council is concerned about the visibility of a telecommunications facility from nearby residences as well as from Long Island Sound. To mitigate these effects, Cellco has proposed a flagpole tower (without a flag) that is comparable in height to the existing 135-foot T-Mobile flagpole tower (with a flag) located approximately 125 feet southwest of the proposed tower. While this would result in two towers on one parcel, it is not feasible to co-locate Cellco's antennas on T-Mobile's tower. To accommodate Cellco, T-Mobile's tower would have to be replaced with a considerably taller (and wider) 165-foot flagpole tower. Such a taller tower

would be a significant visual intrusion as it would be over triple the existing average tree height of 50 feet.

The Council believes that a flagpole tower of comparable height would blend in with surroundings more effectively since the towers would look similar and neither one would visually dominate the landscape by being significantly taller than the other. Furthermore, the flagpole design avoids the visual impact of external antennas associated with a monopole tower. Finally, for visual consistency, the Council recommends that the flag be removed from the T-Mobile flagpole tower.

The nearest wetland system is located approximately 13 feet from the northwest corner of the compound. With appropriate soil erosion and sedimentation controls and other mitigation measures, development of the proposed facility would not result in any likely adverse impacts to wetlands. Accordingly, the Council will require that Cellco establish and maintain appropriate soil erosion and sedimentation control measures, in accordance with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control and implement the wetlands impact mitigation measures as proposed by Cellco's environmental consultant, Vanasse Hangen Brustlin, Inc.

Approximately six trees with diameters greater than six inches at breast height would be removed to build the proposed facility. The Council questions the need to remove the trees, especially in a relatively open, commercial area. To minimize the removal of trees and preserve the visual screening afforded by the trees, the Council will order that the compound be rotated about the tower axis to minimize the tree removal to the extent reasonably feasible. The final compound orientation will be provided in the Development and Management plan.

There are no known extant populations of State endangered, threatened or special concern species that occur at the subject site. However, the Piping Plover, a federally-listed threatened species occurs in the Milford area. The Piping Plover is a migratory breeder that nests only in coastal sandy beaches. This habitat does not exist on the subject site. Therefore, the proposed facility would not have an adverse impact on this species.

Cellco's proposed facility is not expected to have an adverse impact on migratory birds. While Cellco's proposed facility is approximately 2.1 miles east/northeast of the state's nearest Important Bird Area – the Silver Sands/Walnut Beach/Charles Island Natural Area Preserve in Milford, the facility would comply with the United States Fish and Wildlife Service's recommended guidelines for minimizing the potential for telecommunications towers to impact bird species, provided that the tower is not lit. However, it is not necessary to light the tower because it is not required by the Federal Aviation Administration, and the proposed tower would not have a flag to be lit.

The proposed facilities would have no effect upon historic, architectural, or archaeological resources listed on or eligible for the National Register of Historic Places.

After reviewing the record in this proceeding, the Council finds that there is a need for additional coverage and capacity in the vicinity of the proposed facility and that the facility would not cause any significant environmental impacts. We also find that the visual presence of the proposed tower would not be unduly disruptive in the surrounding vicinity.

According to a methodology prescribed by the Federal Communications Commission (FCC) Office of Engineering and Technology Bulletin No. 65E, Edition 97-01 (August 1997), the worst case combined radio frequency power density levels of the antennas proposed to be installed on

the tower have been calculated by Council staff to amount to 19.05 percent of the FCC's Maximum Permissible Exposure, as measured at the base of the tower. This percentage is well below federal and state standards established for the frequencies used by wireless companies. If federal or state standards change, the Council will require that the tower be brought into compliance with such standards. The Council will require that the power densities be recalculated in the event other carriers add antennas to the tower. The Telecommunications Act of 1996 prohibits any state or local agency from regulating telecommunications towers on the basis of the environmental effects of radio frequency emissions to the extent that such towers and equipment comply with FCC's regulations concerning such emissions.

Based on the record in this proceeding, the Council finds that the effects associated with the construction, maintenance, and operation of the telecommunications facility at the proposed site, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with policies of the State concerning such effects, and are not sufficient reason to deny this application. Therefore, the Council will issue a Certificate for the construction, maintenance and operation of a 136-foot flagpole tower telecommunications facility at 234 Melba Street, Milford, Connecticut.

DOCKET NO. 410 - Cellco Partnership d/b/a Verizon Wireless } Connecticut
application for a Certificate of Environmental Compatibility and }
Public Need for the construction, maintenance and operation of a } Siting
telecommunications facility located at 234 Melba Street, Milford, } Council
Connecticut. }

April 14, 2011

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, maintenance, and operation of a telecommunications facility, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Cellco Partnership d/b/a Verizon Wireless, hereinafter referred to as the Certificate Holder, for a telecommunications facility at the proposed site, located at 234 Melba Street, Milford, Connecticut.

Unless otherwise approved by the Council, the facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a flagpole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of the Certificate Holder and other entities, both public and private, but such tower shall not exceed a height of 136 feet above ground level. The compound shall be rotated about the tower axis to minimize the tree removal to the extent reasonably feasible.
2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the City of Milford (City) for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
 - a) a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line, and landscaping; and
 - b) construction plans for site clearing, grading, landscaping, water drainage, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.
3. Prior to the commencement of operation, the Certificate Holder shall provide the Council worst-case modeling of the electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of the electromagnetic radio frequency power density be submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

4. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.
5. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
6. The Certificate Holder shall provide reasonable space on the tower for no compensation for any City of Milford public safety services (police, fire and medical services), provided such use can be accommodated and is compatible with the structural integrity of the tower.
7. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed with at least one fully operational wireless telecommunications carrier providing wireless service within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The Certificate Holder shall provide written notice to the Executive Director of any schedule changes as soon as is practicable.
8. Any request for extension of the time period referred to in Condition 7 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the City of Milford. Any proposed modifications to this Decision and Order shall likewise be so served.
9. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.
10. Any nonfunctioning antenna, and associated antenna mounting equipment, on this facility shall be removed within 60 days of the date the antenna ceased to function.
11. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction, and the commencement of site operation.
12. The Certificate Holder shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v.
13. This Certificate may be transferred in accordance with Conn. Gen. Stat. §16-50k(b), provided both the Certificate Holder/transferor and the transferee are current with payments to the Council for their respective annual assessments and invoices under Conn. Gen. Stat. §16-50v. In addition, both the Certificate Holder/transferor and the transferee shall provide the Council a written agreement as to the entity responsible for any quarterly assessment charges under Conn. Gen. Stat. §16-50v(b)(2) that may be associated with this facility.

14. The Certificate Holder shall maintain the facility and associated equipment, including but not limited to, the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line and landscaping in a reasonable physical and operational condition that is consistent with this Decision and Order and a Development and Management Plan to be approved by the Council.
15. If the Certificate Holder is a wholly-owned subsidiary of a corporation or other entity and is sold/transferred to another corporation or other entity, the Council shall be notified of such sale and/or transfer and of any change in contact information for the individual or representative responsible for management and operations of the Certificate Holder within 30 days of the sale and/or transfer.

Pursuant to General Statutes § 16-50p, the Council hereby directs that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in the Connecticut Post, New Haven Register, and the Milford Mirror.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The parties and intervenors to this proceeding are:

Applicant

Cellco Partnership d/b/a Verizon Wireless

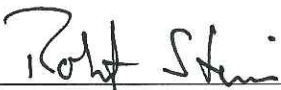
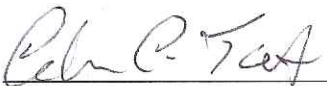
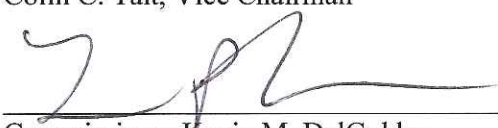

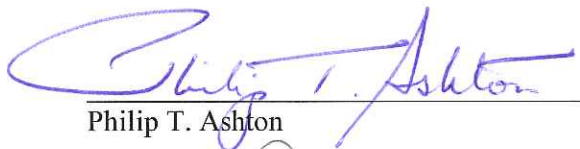
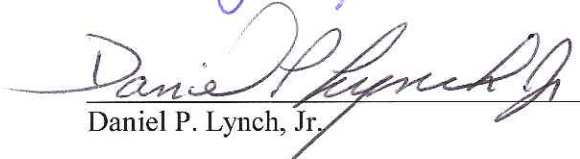
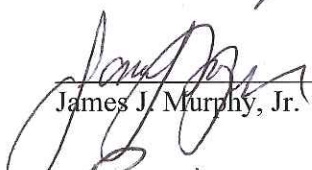
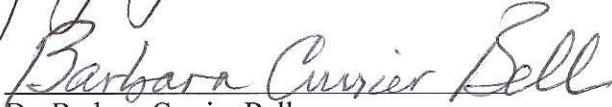
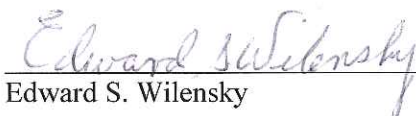
Its Representative

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597
(860) 275-8345
(860) 275-8299 - fax
kbaldwin@rc.com

Sandy Carter
Regulatory Manager
Verizon Wireless
99 East River Drive
East Hartford, CT 06108

CERTIFICATION

The undersigned members of the Connecticut Siting Council (Council) hereby certify that they have heard this case, or read the record thereof, in **DOCKET NO. 410** - Cellco Partnership d/b/a Verizon Wireless application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility located at 234 Melba Street, Milford, Connecticut, and voted as follows to approve the proposed telecommunications facility:

<u>Council Members</u>	<u>Vote Cast</u>
 _____ Robert Stein, Chairman	Abstain
 _____ Colin C. Tait, Vice Chairman	Yes
 _____ Commissioner Kevin M. DelGobbo Designee: Larry P. Levesque	Abstain
 _____ Acting Commissioner Dan Esty Designee: Brian Golembiewski	Yes
 _____ Philip T. Ashton	Yes
 _____ Daniel P. Lynch, Jr.	Yes
 _____ James J. Murphy, Jr.	No
 _____ Dr. Barbara Currier Bell	Recuse
 _____ Edward S. Wilensky	Yes

Dated at New Britain, Connecticut, April 14, 2011.



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

April 27, 2011

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597

RE: **DOCKET NO. 410** - Cellco Partnership d/b/a Verizon Wireless application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility located at 234 Melba Street, Milford, Connecticut.

Dear Attorney Baldwin:

By its Decision and Order dated April 14, 2011, the Connecticut Siting Council (Council) granted a Certificate of Environmental Compatibility and Public Need (Certificate) for the construction, maintenance and operation of a telecommunications facility located at 234 Melba Street, Milford, Connecticut.

Enclosed are the Council's Certificate, Findings of Fact, Opinion, and Decision and Order.

Very truly yours,

Linda Roberts
Executive Director

LR/MP/laf

Enclosures (4)



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

CERTIFICATE

OF

ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED

DOCKET NO. 410

Pursuant to General Statutes § 16-50k, as amended, the Connecticut Siting Council hereby issues a Certificate of Environmental Compatibility and Public Need to Cellco Partnership d/b/a Verizon Wireless for the construction, maintenance and operation of a telecommunications facility located at 234 Melba Street, Milford, Connecticut. This Certificate is issued in accordance with and subject to the terms and conditions set forth in the Decision and Order of the Council on April 14, 2011.

By order of the Council,



Robert Stein, Chairman

April 14, 2011



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

April 27, 2011

TO: Classified/Legal Supervisor
410110203
Connecticut Post, The (Daily)
410 State Street
Bridgeport, CT 06604-4560

Classified/Legal Supervisor
410110203
New Haven Register
40 Sargent Drive
New Haven, CT 06511

Classified/Legal Supervisor
410110203
Milford Mirror, The (Weekly)
Hometown Publications
1000 Bridgeport Avenue
Shelton, CT 06484

FROM: Lisa A. Fontaine, Fiscal Administrative Officer

RE: **DOCKET NO. 410** - Cellco Partnership d/b/a Verizon Wireless application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility located at 234 Melba Street, Milford, Connecticut.

Please publish the attached notice as soon as possible, but not on Saturday, Sunday, or a holiday.

Please send an affidavit of publication and invoice to my attention.

Thank you.

LAF



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

NOTICE

Pursuant to General Statutes § 16-50p (e), the Connecticut Siting Council (Council) announces that, on April 14, 2011, the Council issued Findings of Fact, an Opinion, and a Decision and Order approving an application from Cellco Partnership d/b/a Verizon Wireless for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility located at 234 Melba Street, Milford, Connecticut. This application record is available for public inspection in the Council's office, Ten Franklin Square, New Britain, Connecticut.

ENGINEERING DRAWINGS



DISH Wireless L.L.C. SITE ID:

BOHVN00139A

DISH Wireless L.L.C. SITE ADDRESS:

**234 MELBA STREET
MILFORD, CT 06460**

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

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

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 RRU's (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 CBYD 811
UTILITY NOTIFICATION CENTER OF CONNECTICUT
(800) 922-4455
WWW.CBYD.COM**



CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

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: 17 MILE 04 LLC
ADDRESS: 69 HARRY ST
CONSHOHOCKEN, PA 19428

TOWER TYPE: MONOPOLE

TOWER CO SITE ID: 283564

TOWER APP NUMBER: 13698061

COUNTY: NEW HAVEN

LATITUDE (NAD 83): 41° 12' 35.52" N
41.20986666 N

LONGITUDE (NAD 83): 73° 1' 9.87" W
73.01940830 W

ZONING JURISDICTION: NEW HAVEN COUNTY

ZONING DISTRICT: COMMERCIAL

PARCEL NUMBER: 039 542 38 A

OCCUPANCY GROUP: U

CONSTRUCTION TYPE: II-B

POWER COMPANY: T.B.D.

TELEPHONE COMPANY: T.B.D.

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: APRIL PARROTT
april.parrott@dish.com

CONST. MANAGER: T.B.D.

RF ENGINEER: SYED ZAIDI
syed.zaidi@dish.com

DIRECTIONS

DIRECTIONS FROM BRADLEY INTERNATIONAL AIRPORT:

CONTINUE TO BRADLEY INTERNATIONAL AIRPORT CON, HEAD NORTH TOWARD BRADLEY INTERNATIONAL AIRPORT, SLIGHT LEFT ONTO BRADLEY INTERNATIONAL AIRPORT, CONTINUE STRAIGHT, TAKE I-91 S TO MARSH HILL RD IN ORANGE. TAKE EXIT 41 FROM I-95 S, CONTINUE ONTO BRADLEY INTERNATIONAL AIRPORT CON, CONTINUE ONTO CT-20 E/BRADLEY INTERNATIONAL AIRPORT CON, TAKE THE EXIT ONTO I-91 S TOWARD HARTFORD, KEEP RIGHT TO STAY ON I-91 S, TAKE THE EXIT ON THE LEFT ONTO I-95 S TOWARD N.Y. CITY, TAKE EXIT 41 FOR MARSH HILL RD TOWARD ORANGE, TAKE MERWIN AVE AND EDGEFIELD AVE TO YOUR DESTINATION IN MILFORD, USE THE LEFT 2 LANES TO TURN LEFT ONTO MARSH HILL RD, CONTINUE ONTO OXFORD RD, TURN RIGHT ONTO MERWIN AVE, CONTINUE ONTO EDGEFIELD AVE, EDGEFIELD AVE TURNS SLIGHTLY RIGHT AND BECOMES MELBA S TURN RIGHT, DESTINATION WILL BE ON THE LEFT.

VICINITY MAP



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



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

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

DRAWN BY:	CHECKED BY:	APPROVED BY:
CH	ANP	ANP

RFDS REV #: 3

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	11/23/21	ISSUED FOR REVIEW
0	12/27/21	ISSUED FOR construction

A&E PROJECT NUMBER
157041.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00139A
234 MELBA STREET
MILFORD, CT 06460

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

STATEMENT OF ENCROACHMENTS

NO ENCROACHMENTS AT THE TIME OF THIS SURVEY

NOTES CORRESPONDING TO SCHEDULE "B"

The property hereon described is the same as the pertinent property as described in Fidelity National Title Insurance Company, Commitment No. 19251685, effective date , August 20, 2014

- Agreement dated 06/23/1950, by and between Lewis J. Mc Dermott, Jr. and The Milford Plan and Zoning Commission, recorded on 06/23/1950 in Deed Book 337, Page 279. (NOT SURVEY RELATED)
- Zoning Waiver dated 08/04/1964, by The Board of Zoning Appeals of the City of Milford, recorded on 08/20/1964 in Deed Book 536, Page 255. (NOT SURVEY RELATED)
- Drainage Easement in Favor of David L. Diana and Olive S. Diana, set forth in instrument recorded on 07/06/1978 in Deed Book 960, Page 8. (AFFECTS PARENT PARCEL ONLY)
- Notice of Special Exception dated 12/05/2000, by The Milford Planning and Zoning Board, recorded on 12/27/2000 in Deed Book 2443, Page 49. (NOT SURVEY RELATED)
- Notice of Variance dated 09/12/2000, by The Milford Zoning Board of Appeals, recorded on 12/27/2000 in Deed Book 2443, Page 51. (NOT SURVEY RELATED)
- Notice of Variance dated 10/14/2003, by The Milford Zoning Board of Appeals, recorded on 10/21/2003 in Deed Book 2814, Page 467. (NOT SURVEY RELATED)
- Terms and conditions of Memorandum of Land Lease Agreement dated 07/15/2010 by and between Melba Realty, LLC, a Connecticut limited liability company, as Landlord/Lessor, and Cello Partnership, a Delaware general partnership d/b/a Verizon Wireless, as Tenant/Lessee, recorded on 08/04/2010 in Deed Book 3365, Page 099; ASSIGNED to Construction Services Towers, LLC, a Connecticut limited liability company, by Assignment and Assumption of Ground Lease dated 11/25/2011 and recorded 12/07/2011 in Deed Book 3443, Page 046; Second Amendment to Land Lease Agreement dated 04/09/2012 and recorded 04/12/2012 in Deed Book 3463, Page 229. (NOT SURVEY RELATED)
- Terms and conditions of Memorandum of Tower Lease Agreement dated 11/25/2011 by and between Construction Services Towers, LLC, a Connecticut limited liability company, as Landlord/Lessor, and Cello Partnership, a Delaware general partnership d/b/a Verizon Wireless, as Tenant/Lessee, recorded on 12/07/2011 in Deed Book 3443, Page 034. (NOT SURVEY RELATED)
- Terms and conditions of Memorandum of Lease dated 01/09/2013 by and between Melba Realty, LLC, a Connecticut limited liability company, as Landlord/Lessor, and Degross, LLC, a Kentucky limited liability company, as Tenant/Lessee, recorded on 01/08/2013 in Deed Book 3510, Page 304. (NOT SURVEY RELATED)
- Terms and conditions of Memorandum of Agreement dated 06/21/2012 by and between Construction Services Towers, LLC, a Connecticut limited liability company, as Landlord/Lessor, and MetroPCS Massachusetts LLC, a Delaware limited liability company, as Tenant/Lessee, recorded on 03/04/2013 in Deed Book 3530, Page 308. (NOT SURVEY RELATED)
- Terms and conditions of Memorandum of Master Prepaid Lease and Management Agreement dated 10/08/2013 by and between T-Mobile USA Tower LLC, a Delaware limited liability company, as Landlord/Lessor, and CCTMO LLC, a Delaware limited liability company, as Tenant/Lessee, recorded on 02/11/2014 in Deed Book 3574, Page 111. (NOT SURVEY RELATED)

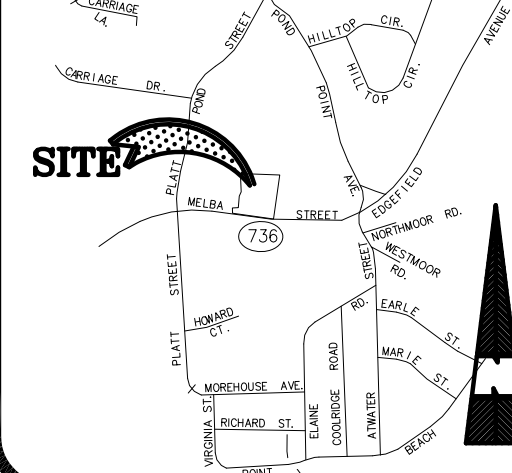
GENERAL NOTES

- SUBJECT LEGAL DESCRIPTION FORMS A MATHEMATICALLY CLOSED FIGURE WITH NO GAPS, GORES OR OVERLAPS.
- THE UTILITY LOCATIONS SHOWN HEREON WERE DETERMINED BY OBSERVED ABOVE GROUND EVIDENCE ONLY. THE SURVEYOR WAS NOT PROVIDED WITH UNDERGROUND AND/OR ABOVE GROUND MARKINGS TO DETERMINE ANY SUBSURFACE UTILITY LOCATIONS.
- NO OBSERVED EVIDENCE OF CURRENT EARTH WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS.
- AT THE TIME OF THE ALTA SURVEY THERE WERE NO CHANGES IN STREET RIGHT OF WAY LINES EITHER COMPLETED OR PROPOSED, AND AVAILABLE FROM THE CONTROLLING JURISDICTION OR OBSERVABLE EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION REPAIRS.
- AT THE TIME OF THE ALTA SURVEY THERE WAS NO OBSERVABLE EVIDENCE OF SITE USE AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL.
- SUBJECT PROPERTY HAS DIRECT ACCESS TO MELBA STREET, A PUBLIC DEDICATED STREET MAINTAINED BY THE TOWN OF MILFORD.
- THERE WAS NO OBSERVED EVIDENCE OF CEMETERIES, GRAVESITES, OR BURIAL GROUNDS AT THE TIME OF THIS SURVEY.
- THERE WAS NO POSTED ADDRESS ON SITE AT THE TIME OF THIS SURVEY.
- POSSIBLE WETLANDS WERE OBSERVED ON THE PROPERTY AND ABUTTING THE PROPERTY (OBSERVATION WAS NOT MADE BY A CERTIFIED SOIL SCIENTIST)

PARKING STALLS

N/A

VICINITY MAP



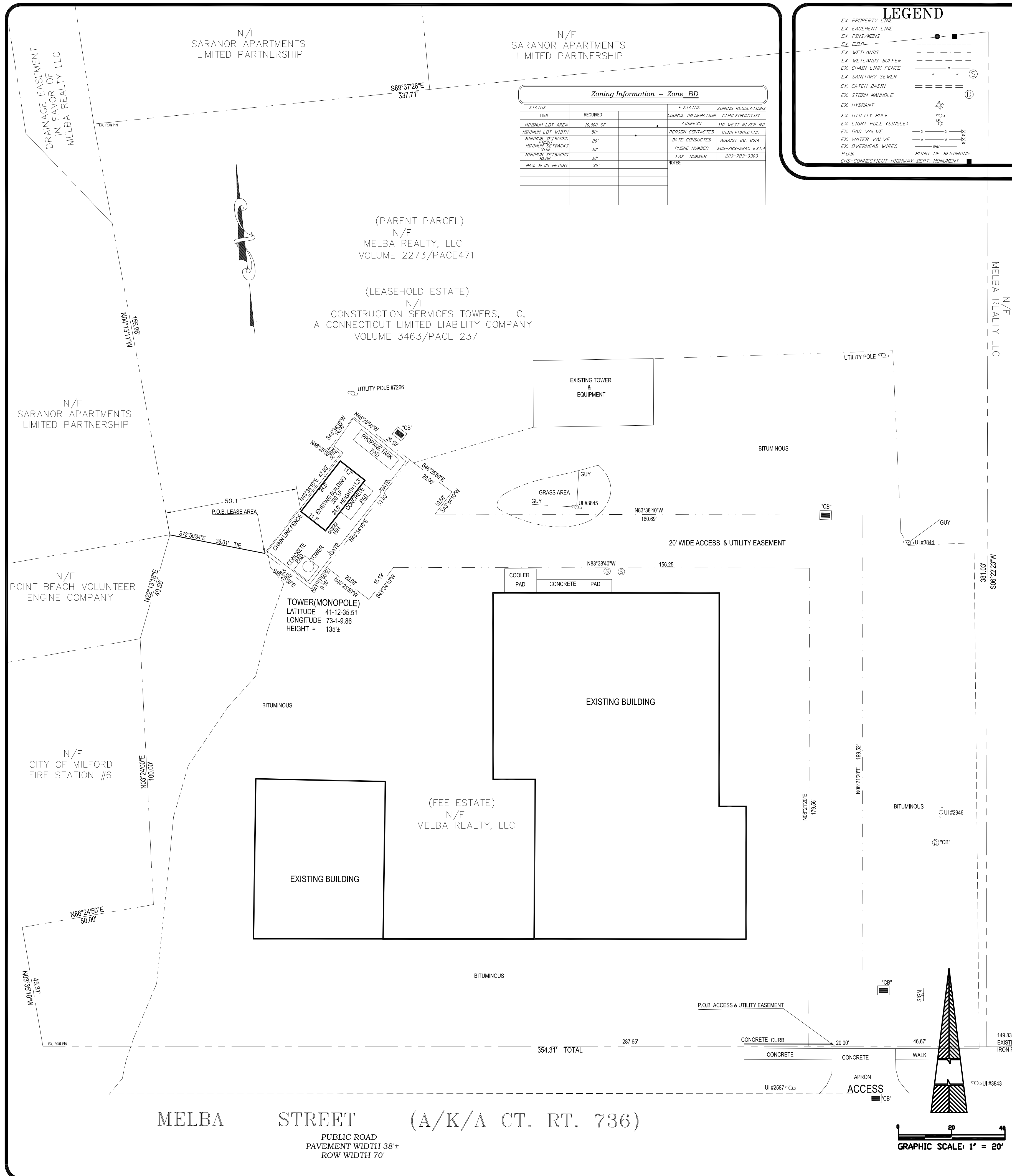
FLOOD NOTE

FLOOD NOTE: Based on maps prepared by the Federal Emergency Management Agency (FEMA) available online at www.fema.com and by graphic plotting only, this property is located in Zone "X" on Flood Insurance Rate Map Number 09009C05341, which bears an effective date of July 8, 2013 and is not in a Special Flood Hazard Area. By reviewing flood maps provided by the National Flood Insurance Program we have learned this community does participate in the program. No field surveying was performed to determine this zone and an elevation certificate may be needed to verify the accuracy of the maps and/or to apply for a variance from the Federal Emergency Management Agency.

LAND AREA

PARENT PARCEL
118,001 S.F.
2.71 Ac.
LEASE AREA
1,405 S.F.
0.03 ACRES

BASIS OF BEARINGS
STREET LINE OF MELBA STREET
N 83 44' 22" W
VOLUME 3463/PAGE 237



LEGAL DESCRIPTION

AS PROVIDED AS SURVEYED
 A Leasehold Estate, said leasehold being a portion of the following described parcel:
 All that certain parcel or parcel of land, with all the Improvements thereon, situated In the Town of Milford, In the County of New Haven and State of Connecticut, known as 234-244 Melba Street, and bounded:
 SOUTHERLY: 354.30 feet more or less by Melba Street;
 WESTERLY: 44.94 feet more or less by land of the Town of Milford; NORTHERLY: 50 feet more or less by land of the Town of Milford; WESTERLY: again, 100 feet more or less by land of the Town of Milford;
 NORTHWESTERLY: 40 feet by land now or formerly of Point Beach Volunteer Engine Company #6, Incorporated;
 WESTERLY: again, 156.66 feet more or less by land now or formerly of Ruth V. Platt and Sarah Virginia Platt, by a straight line;
 NORTHERLY: again, 337.34 feet by land now or formerly of George E. Haskins, along the remains of a wire fence;
 EASTERLY: 376.29 feet more or less by land now or formerly of Albert Leroy Wilcox, along a row of pipes.
 AND BEING the same property conveyed to Melba Realty, LLC by Certificate of Foreclosure dated April 09, 1998 and recorded April 16, 1998 in Deed Book 2273, Page 471.
 Tax Parcel No. Map 39 Block 542 Lot 38A
 Said Leasehold Estate being more particularly described by the following
 LEASE AREA DESCRIPTION (AS PROVIDED) (AS SURVEYED)
 BEGINNING AT THE SOUTHWEST CORNER OF THE HEREIN DESCRIBED LEASE AREA, SAID POINT BEING 57°50'34" E A DISTANCE OF 36.01' FROM A POINT ON THE WESTERLY PROPERTY LINE OF MELBA REALTY LLC AT THE NORTHEAST CORNER OF PROPERTY OF POINT BEACH VOLUNTEER ENGINE COMPANY, THENCE RUNNING N43°34'10" E A DISTANCE OF 41.00' TO A POINT, THENCE RUNNING N 48°25'50" W A DISTANCE OF 4.50' TO A POINT, THENCE RUNNING N45°34'10" E A DISTANCE OF 24.00' TO A POINT, THENCE RUNNING S46°25'50" E A DISTANCE OF 26.50' TO A POINT, THENCE RUNNING S 43°34'10" W A DISTANCE OF 61.00' TO A POINT, THENCE RUNNING N46°25'50" W A DISTANCE OF 22.00' TO THE POINT AND PLACE OF BEGINNING POINT.
 ACCESS AND UTILITY EASEMENT AREA DESCRIPTION (AS PROVIDED)
 BEGINNING AT A POINT ON THE NORTHERLY SIDE OF MELBA STREET, SAID POINT BEING S83°44'22" E A DISTANCE OF 267.45' FROM AN IRON PIN AT THE SOUTHEAST CORNER OF LAND OF THE CITY OF MILFORD FIRE STATION #6, THENCE RUNNING N0°21'20" E A DISTANCE OF 179.56' TO A POINT, THENCE RUNNING N83°38'40" W A DISTANCE OF 158.25' TO A POINT, THENCE RUNNING S43°34'10" W A DISTANCE OF 15.19' TO A POINT, THENCE RUNNING N46°25'50" W A DISTANCE OF 10.00' TO A POINT, SAID POINT BEING ON THE SOUTHWESTERLY CORNER OF A PROPOSED LEASE AREA, THENCE RUNNING ALONG SAID LEASE AREA N46°34'10" E A DISTANCE OF 51.00' TO A POINT, THENCE RUNNING S45°25'50" E A DISTANCE OF 20.00' TO A POINT, THENCE RUNNING S43°34'10" W A DISTANCE OF 10.73' TO A POINT, THENCE RUNNING S83°38'40" E A DISTANCE OF 161.00' TO A POINT, THENCE RUNNING S6°21'20" W A DISTANCE OF 139.52' TO A POINT, SAID POINT BEING ON THE NORTHERLY LINE OF MELBA STREET, THENCE RUNNING ALONG MELBA STREET N83°44'22" W A DISTANCE OF 20.00' TO THE POINT AND PLACE OF BEGINNING.

The property hereon described is the same as the pertinent property as described in Fidelity National Title Insurance Company, Commitment No. 19251685, effective date , August 20, 2014

SHEET TITLE
ALTA/ACSM LAND TITLE SURVEY
PROJECT
#283564
 234 MELBA STREET
 MILFORD, CONNECTICUT, 06460-7663

ALTA/ACSM LAND TITLE SURVEY
 SURVEYOR'S CERTIFICATE:
 To: AMERICAN TOWERS LLC AND FIDELITY NATIONAL TITLE INSURANCE COMPANY

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2011 Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes Items 2,3,4,6b,7a,7b,1,7c,8,9,11a,11b,13,16-18, of Table A thereof. The field work was completed on 8/21/2014
 Date of Plat or Map: August 26, 2014
 JAMES E. JONES CT. L.S. #12329

James E. Jones

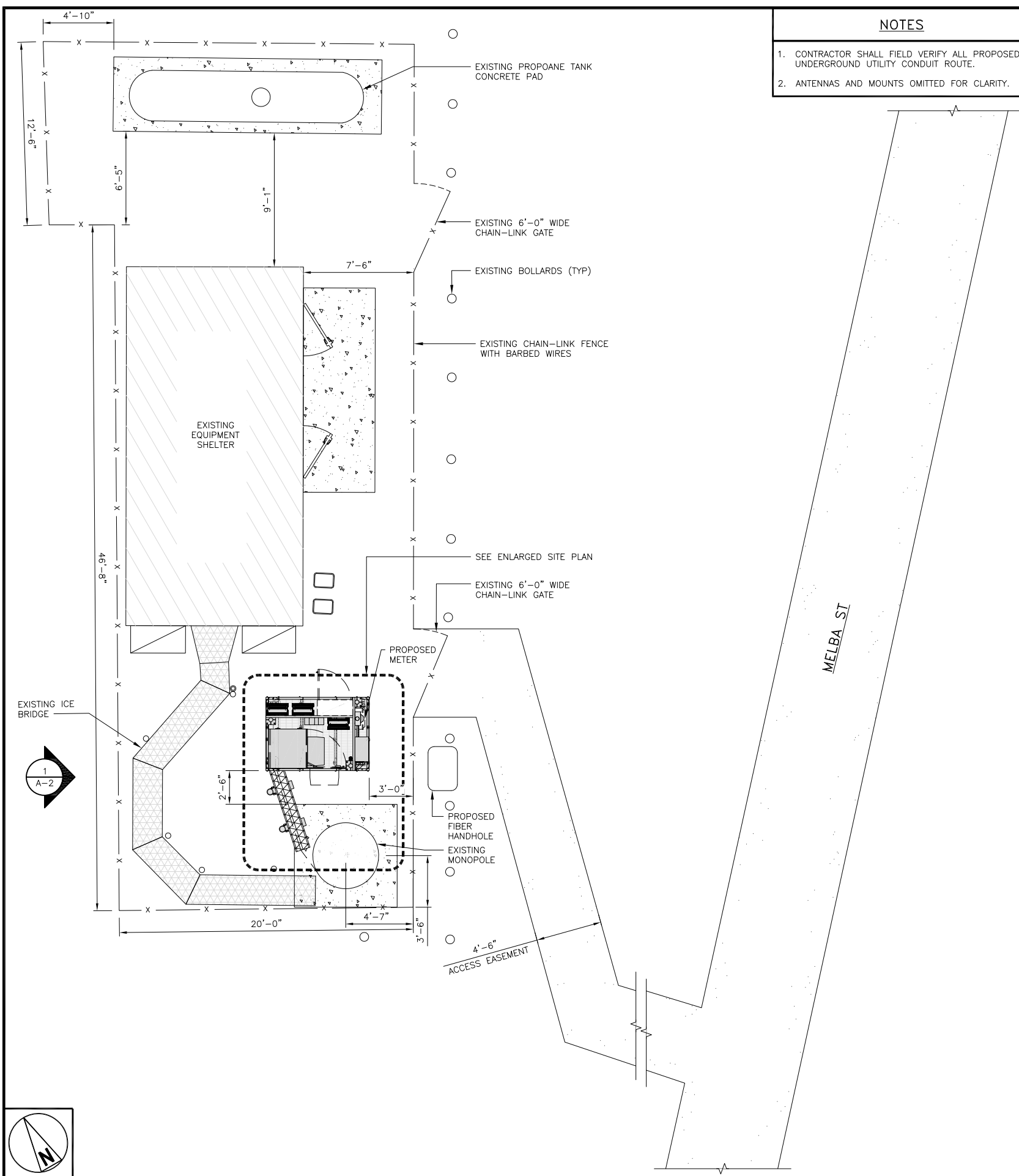
COORDINATED BY:
OLD REPUBLIC COMMERCIAL DUE DILIGENCE SERVICES
 A MEMBER OF THE OLD REPUBLIC TITLE INSURANCE GROUP
 Preston Park Financial Center East
 4965 Preston Park Blvd #620
 Plano, TX 75093
 P: (972) 943-5300 F: (972) 943-5339

PROJECT NUMBER
142100-S

SHEET
10F 1

SURVEYED BY:
JONES ENGINEERING LLC
 970 BOX 249 SOUTHTON CT
 MILFORD, CT 06460-0200
 PHONE: 860-621-0700
 FAX: 860-621-0700
 EMAIL: J.JONES@JONESENGINEERINGLLC.COM
DRAWN BY: RB
CHECKED BY: EJ

NO.	DATE	REVISION	ORCDS	COMMENTS
1.	9/23/2014			
2.				
3.				
4.				
5.				

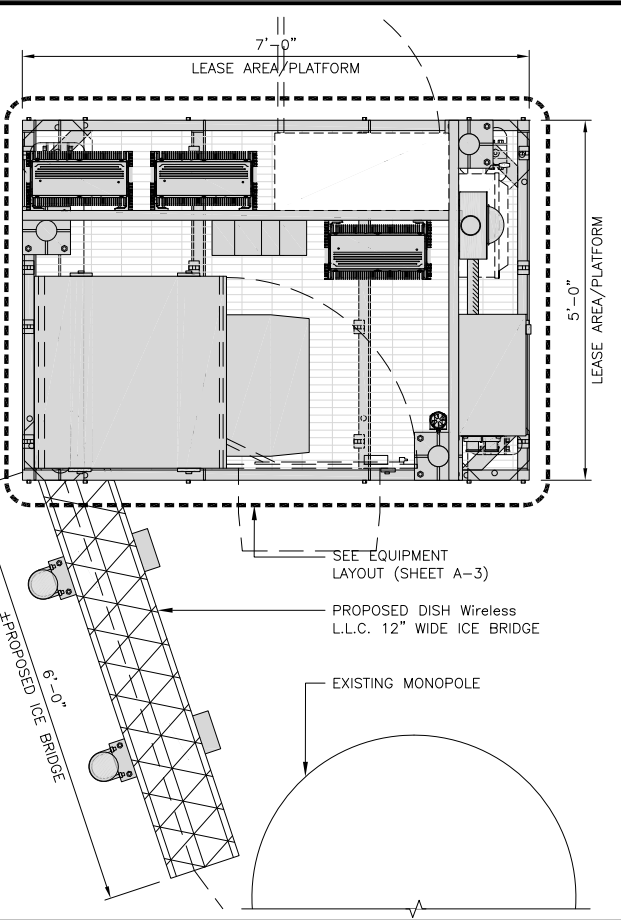


NOTES

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

NOTES

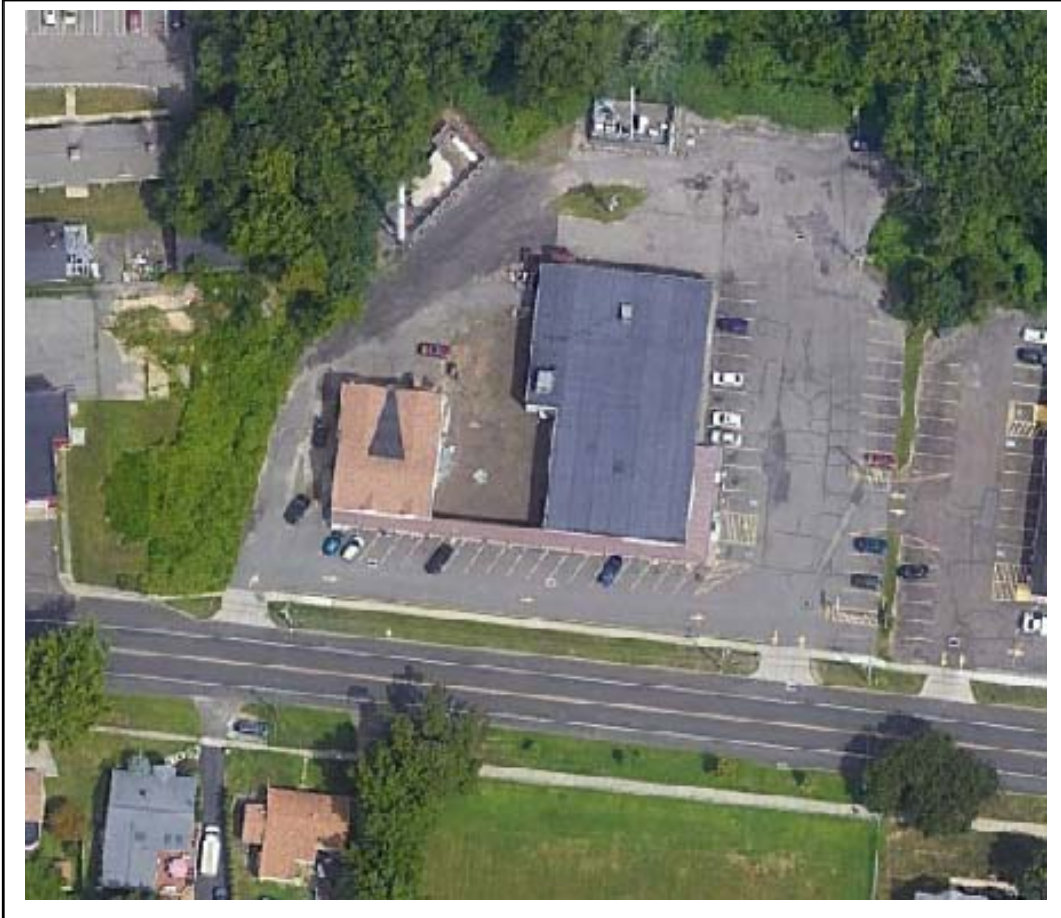
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



ENLARGED SITE PLAN

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

2



AERIAL IMAGE

NO SCALE

3

OVERALL SITE PLAN

4' 2' 0 4' 8' 1/4"=1'-0"

1

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

AMERICAN TOWER
10 PRESIDENTIAL WAY
WOBURN, MA 01801

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

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DRAWN BY: CH
CHECKED BY: ANP
APPROVED BY: ANP

RFDS REV #: 3

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	11/23/21	ISSUED FOR REVIEW
0	12/27/21	ISSUED FOR construction

A&E PROJECT NUMBER
157041.001.01

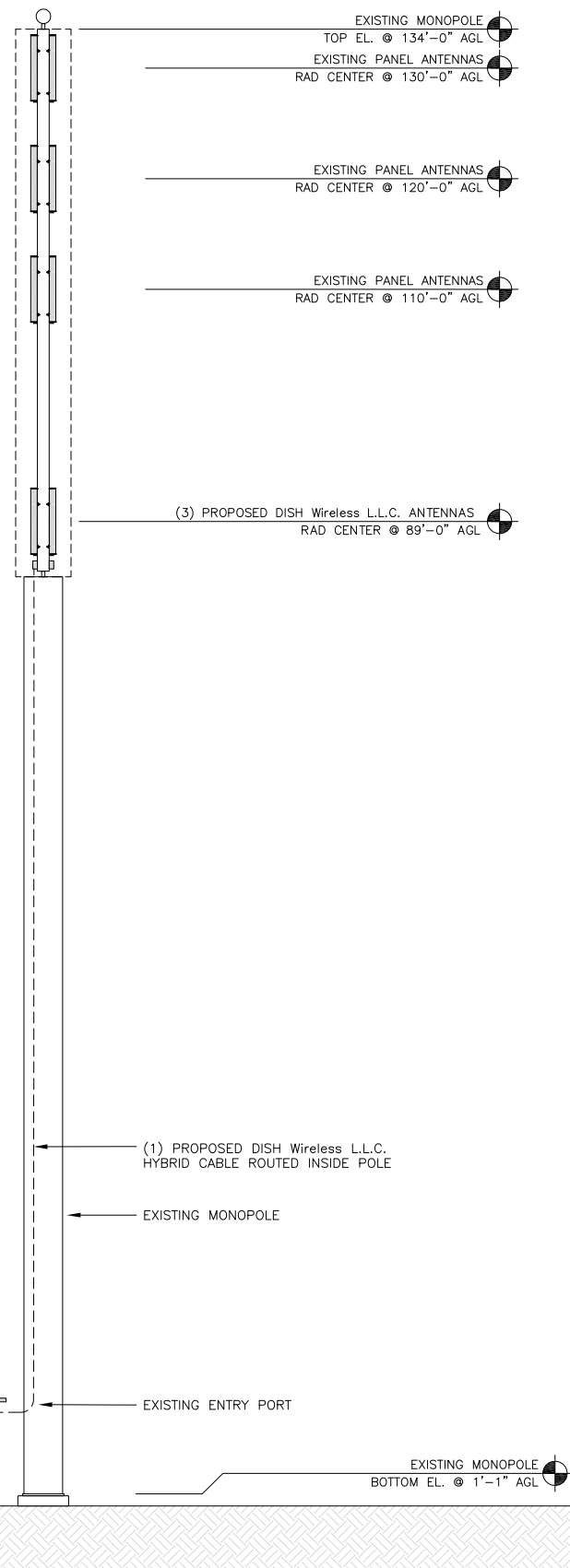
DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00139A
234 MELBA STREET
MILFORD, CT 06460

SHEET TITLE
OVERALL AND ENLARGED
SITE PLAN

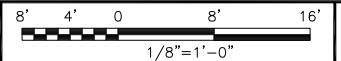
SHEET NUMBER
A-1

NOTES

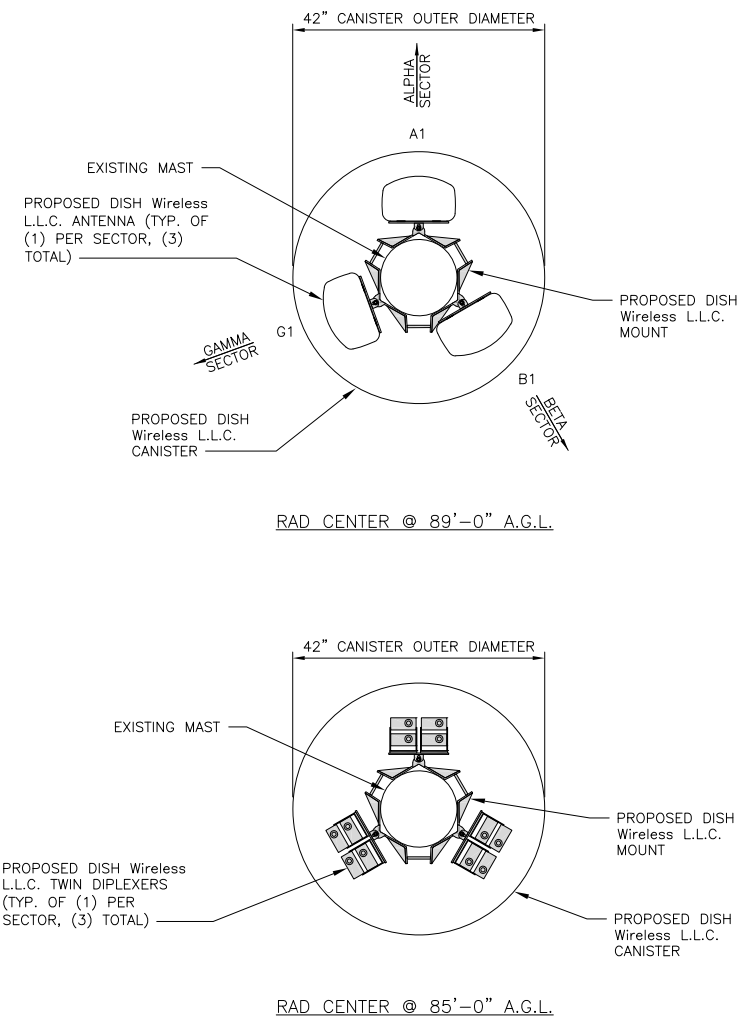
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



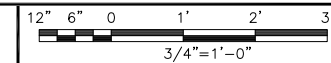
PROPOSED WEST ELEVATION



1



ANTENNA LAYOUT



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 - FW-65B-R3	5G	71.9" x 11.8"	0°	89'-0"	(1) HIGH-CAPACITY HYBRID CABLE (100' LONG)
BETA	B1	PROPOSED	COMMSCOPE - FW-65B-R3	5G	71.9" x 11.8"	150°	89'-0"	
GAMMA	G1	PROPOSED	COMMSCOPE - FW-65B-R3	5G	71.9" x 11.8"	250°	89'-0"	

SECTOR	POSITION	RRH		NOTES
		MANUFACTURER - MODEL NUMBER	TECHNOLOGY	
ALPHA	A1	FUJITSU-TA08025-B605	5G	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.
	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	

ANTENNA SCHEDULE

NO SCALE

3



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



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

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DRAWN BY: CH
CHECKED BY: ANP
APPROVED BY: ANP

RFDS REV #: 3

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	11/23/21	ISSUED FOR REVIEW
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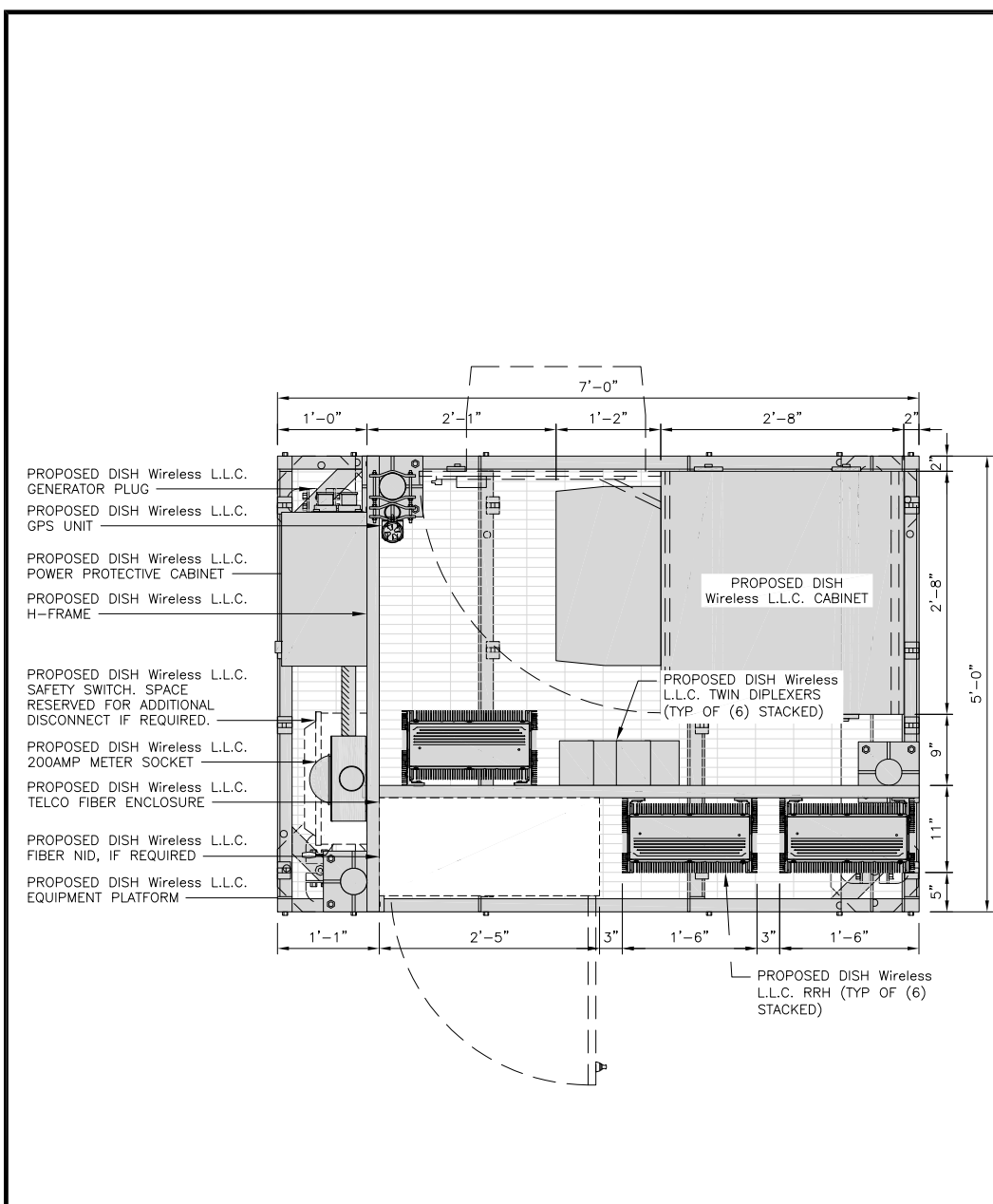
A&E PROJECT NUMBER
157041.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00139A
234 MELBA STREET
MILFORD, CT 06460

SHEET TITLE
ELEVATION, ANTENNA
LAYOUT AND SCHEDULE

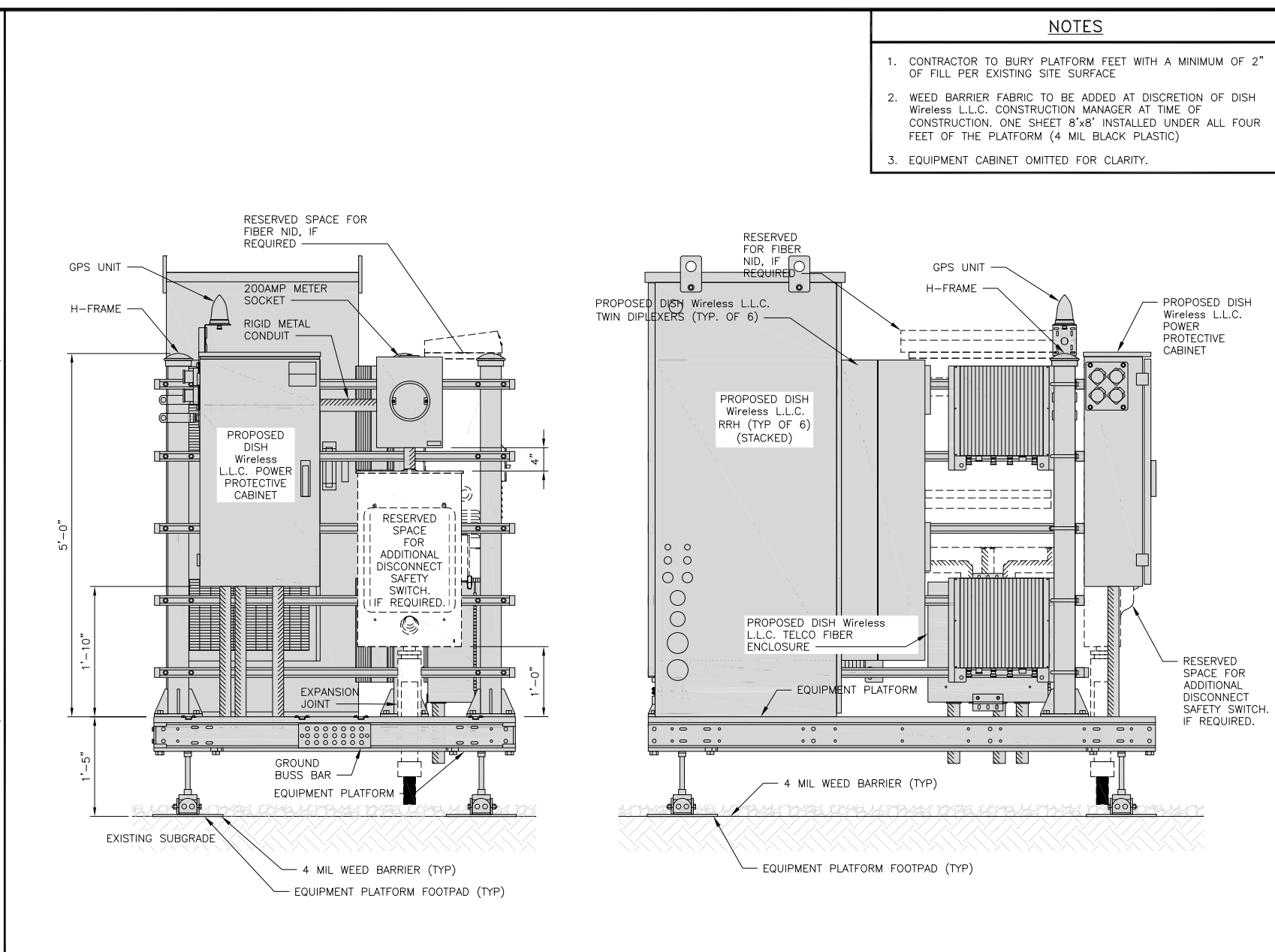
SHEET NUMBER

A-2



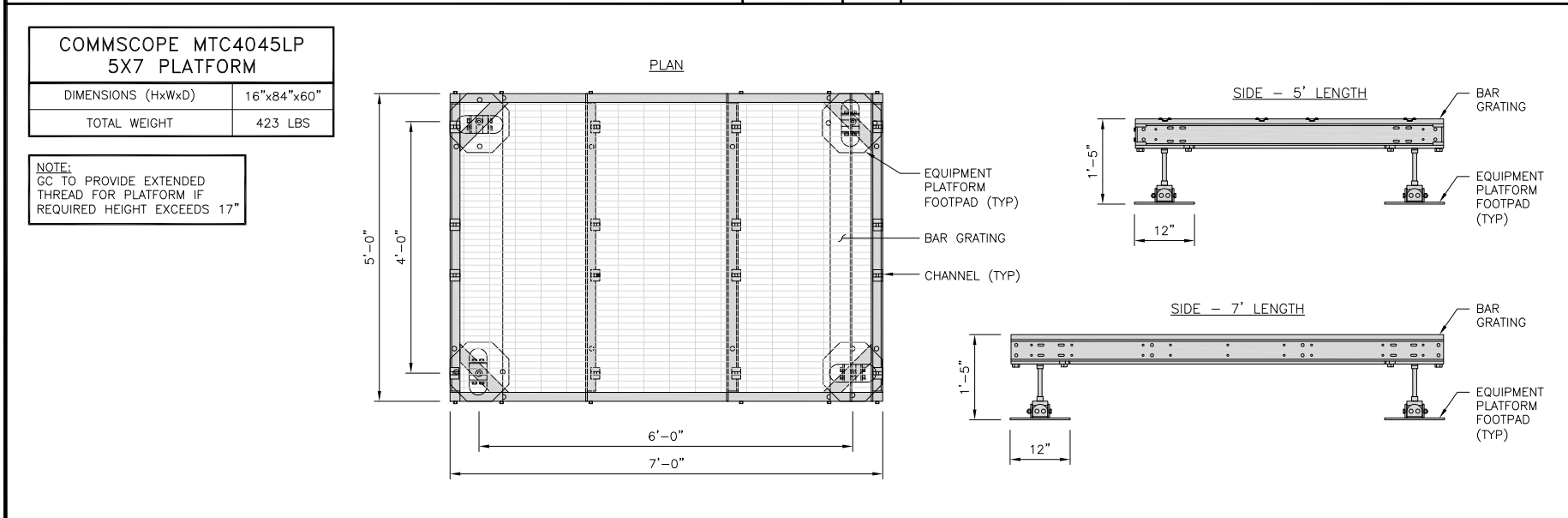
PLATFORM EQUIPMENT PLAN

NO SCALE 1



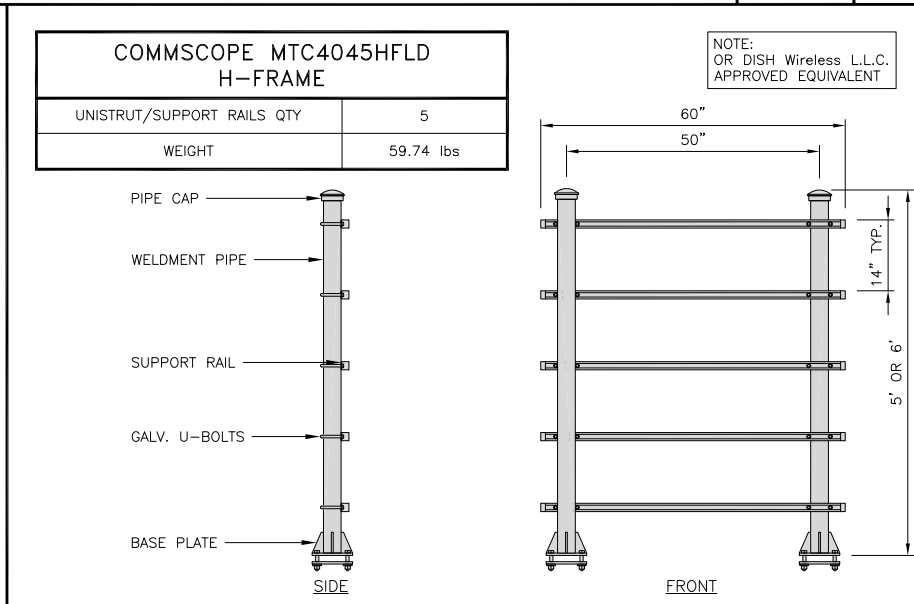
H-FRAME EQUIPMENT ELEVATION

NO SCALE 2



PLATFORM DETAIL

NO SCALE 3



H-FRAME DETAIL

NO SCALE 4

NOTES

- CONTRACTOR TO BURY PLATFORM FEET WITH A MINIMUM OF 2" OF FILL PER EXISTING SITE SURFACE
- 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)
- EQUIPMENT CABINET OMITTED FOR CLARITY.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

10 PRESIDENTIAL WAY
WOBURN, MA 01801

1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

12/27/21

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

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RFDS REV #:	3	

CONSTRUCTION DOCUMENTS

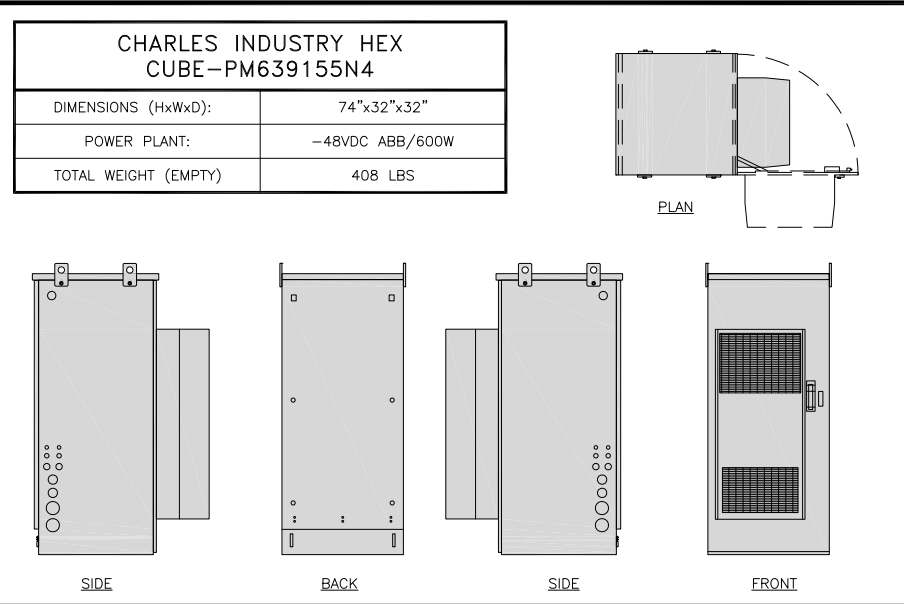
SUBMITTALS		
REV	DATE	DESCRIPTION
A	11/23/21	ISSUED FOR REVIEW
0	12/27/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
157041.001.01

DISH Wireless L.L.C. PROJECT INFORMATION
 BOHVN00139A
 234 MELBA STREET
 MILFORD, CT 06460

SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

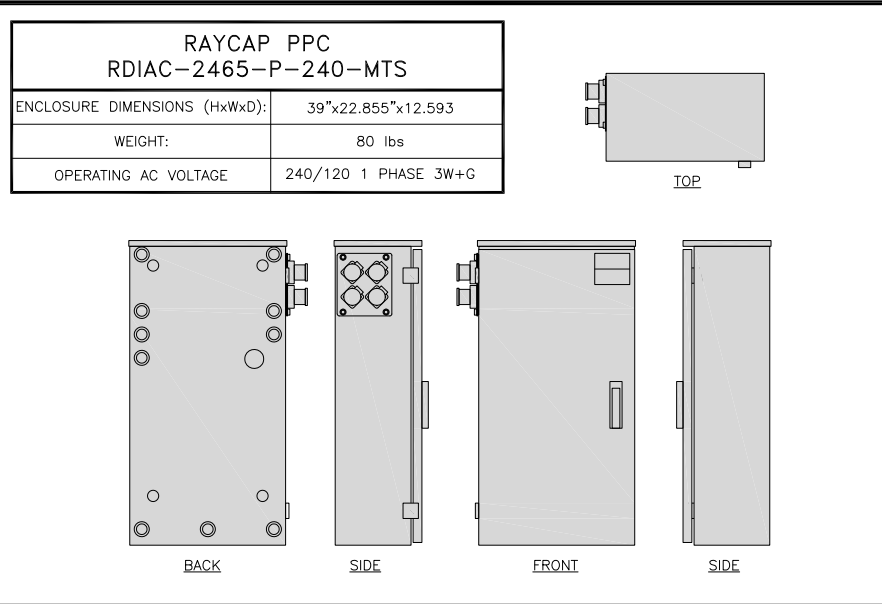
SHEET NUMBER
A-3



CABINET DETAIL

NO SCALE

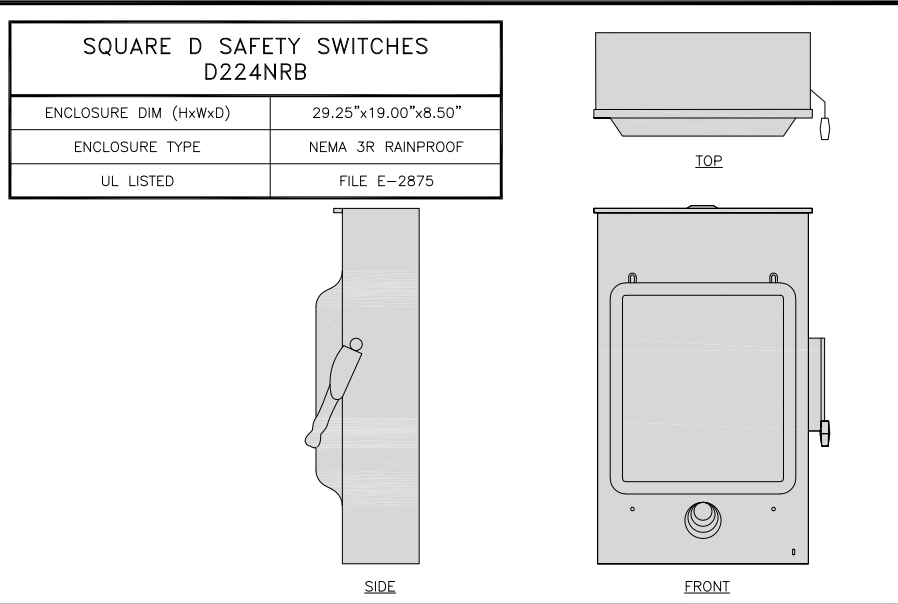
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POWER PROTECTION CABINET (PPC) DETAIL

NO SCALE

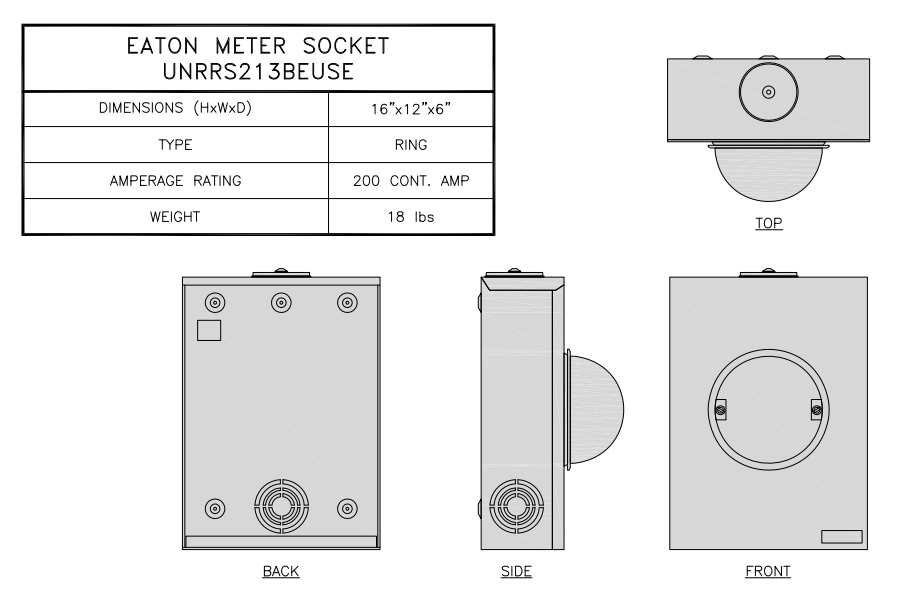
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SAFETY SWITCH DETAIL

NO SCALE

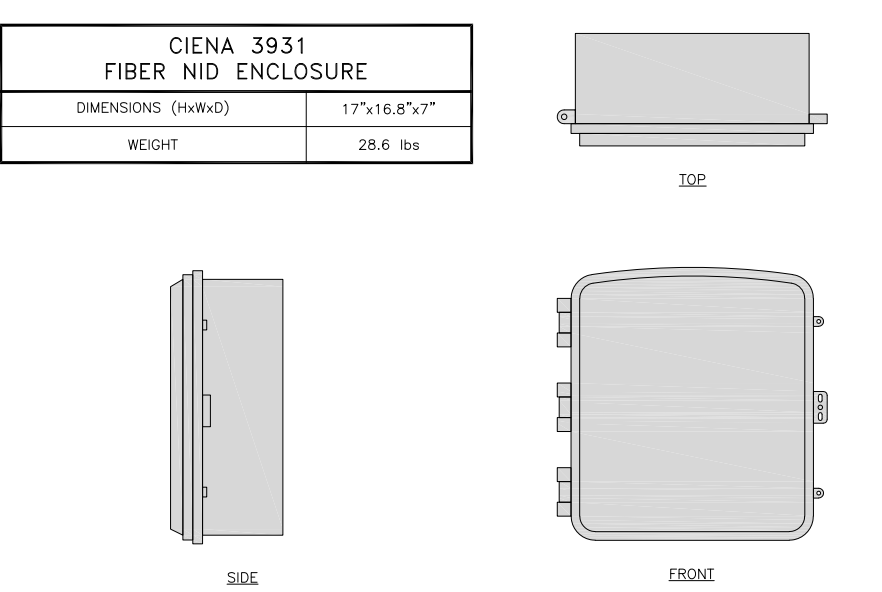
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METER BANK DETAIL

NO SCALE

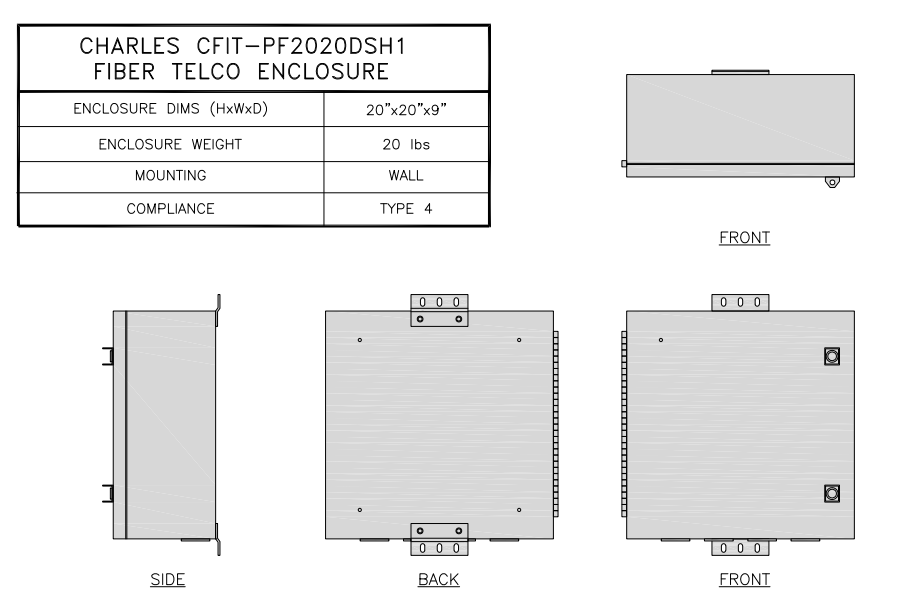
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FIBER NID ENCLOSURE DETAIL

NO SCALE

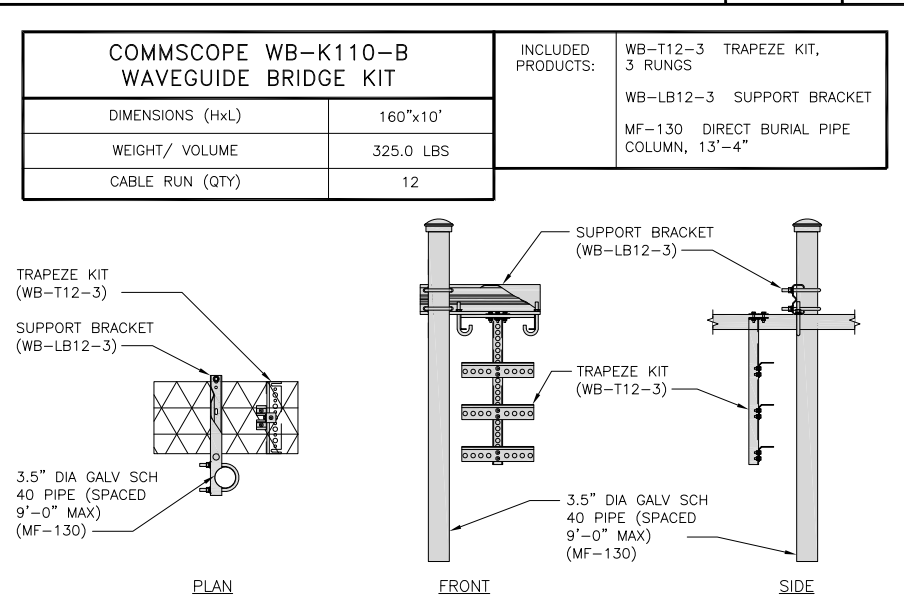
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FIBER TELCO ENCLOSURE DETAIL

NO SCALE

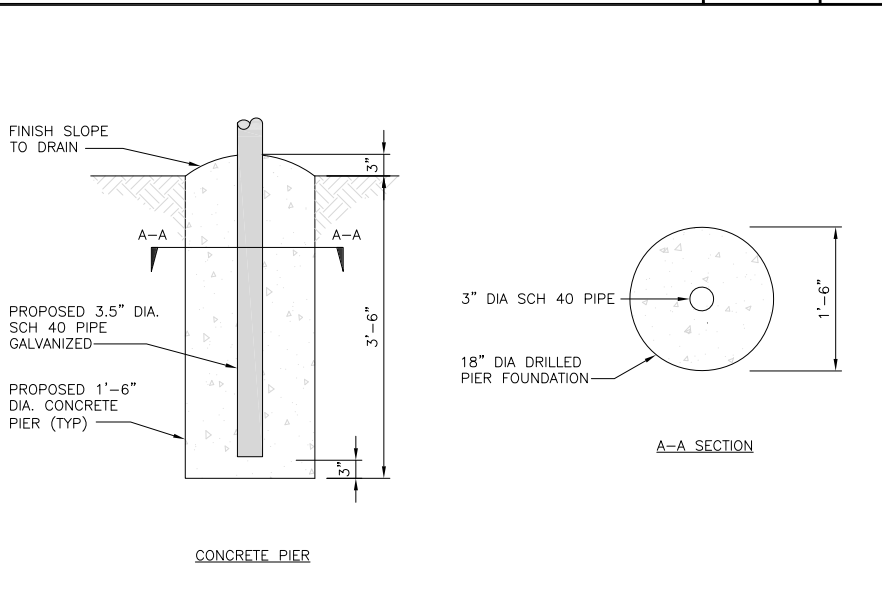
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ICE BRIDGE DETAIL

NO SCALE

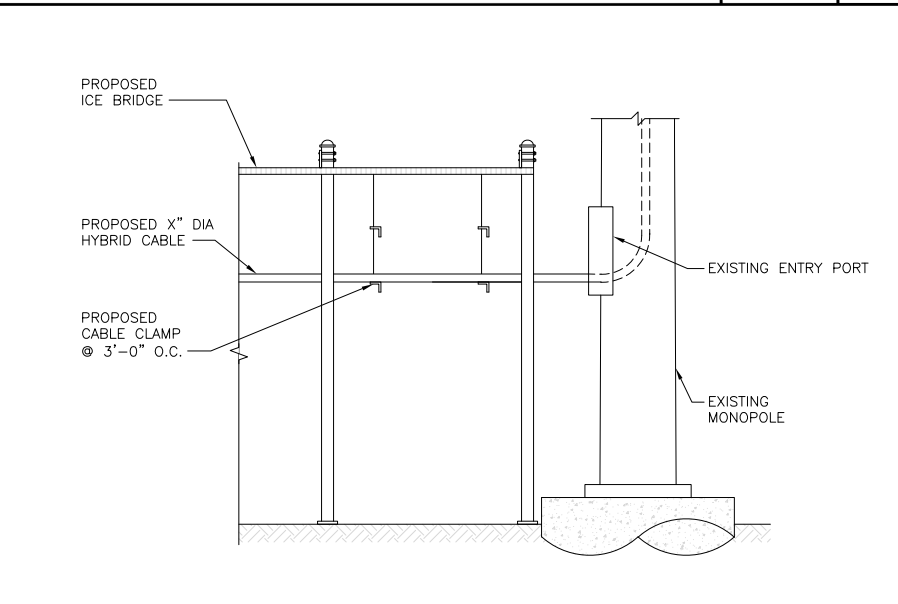
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TYPICAL ICE BRIDGE CONCRETE PIER DETAIL

NO SCALE

8



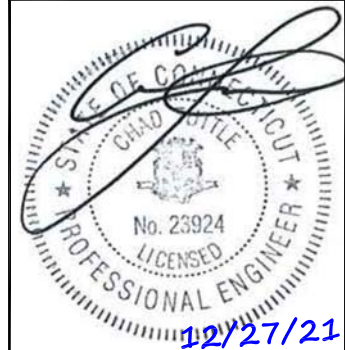
HYBRID CABLE RUN

NO SCALE

9



5701 SOUTH SANTA FE DRIVE
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APPROVED BY: ANP

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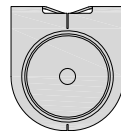
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DISH Wireless L.L.C.
PROJECT INFORMATION
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234 MELBA STREET
MILFORD, CT 06460

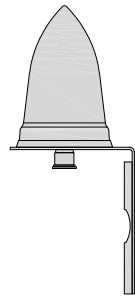
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-4

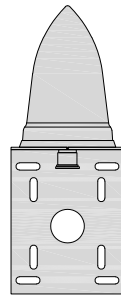
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



TOP



BACK

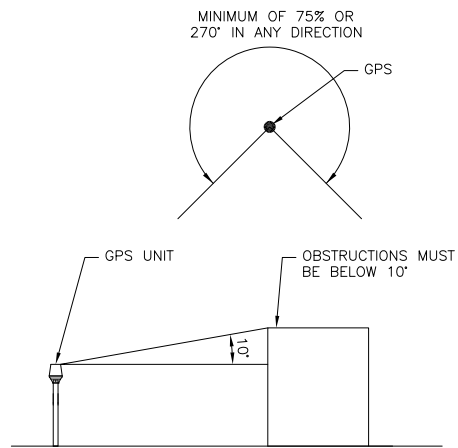


SIDE

GPS DETAIL

NO SCALE

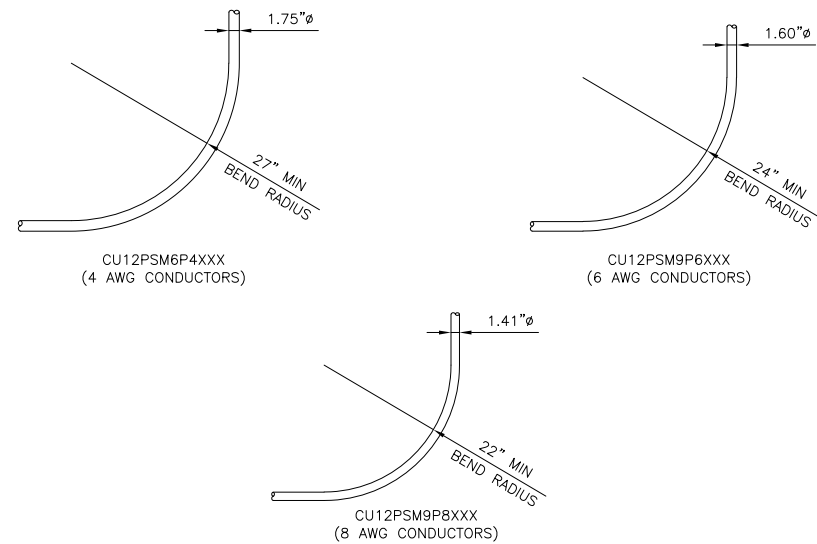
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GPS MINIMUM SKY VIEW REQUIREMENTS

NO SCALE

2

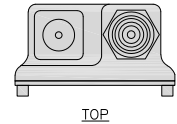


CABLES UNLIMITED HYBRID CABLE
MINIMUM BEND RADIUS

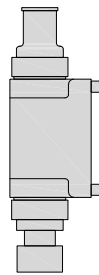
NO SCALE

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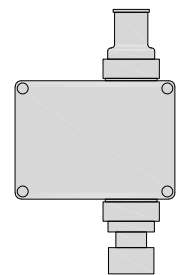
KAELUS SMART BIAS TEE SBT0003F1V1 (BOTTOM OF TOWER)	
DIMENSIONS (HxWxD)	5.41"x3.27"x1.88"
WEIGHT	0.88 lbs
RF TO RF+AISG	
PASSBAND	555-3800 MHz
INSERTION LOSS	0.1dB MAX
RETURN LOSS	20dB MIN
MAX INPUT POWER	750W CW/5kW PEP
INTERMODULATION PRODUCTS	-160dBc(IM3)MAX @ 2x20W CW CARRIERS
RF IMPEDANCE	50 Ohms



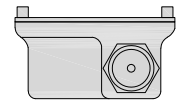
TOP



SIDE



FRONT



BOTTOM

SMART BIAS TEE DETAIL

NO SCALE

4

NOT USED

NO SCALE

5

NOT USED

NO SCALE

6

NOT USED

NO SCALE

7

NOT USED

NO SCALE

8

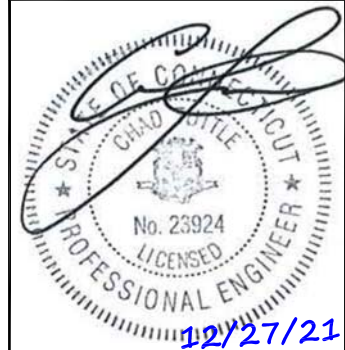
NOT USED

NO SCALE

9



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LITTLETON, CO 80120



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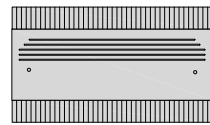
A&E PROJECT NUMBER
157041.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00139A
234 MELBA STREET
MILFORD, CT 06460

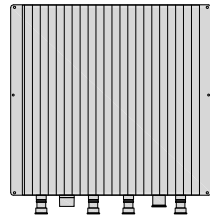
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-5

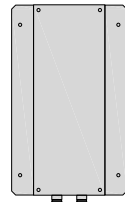
FUJITSU TRIPLE BAND TA08025-B605	
DIMENSIONS (HxWxD)	14.9"x15.7"x9"
WEIGHT	74.95 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



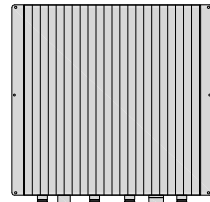
PLAN



BACK

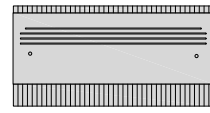


SIDE

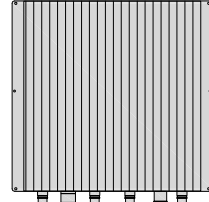


FRONT

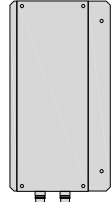
FUJITSU DUAL BAND TA08025-B604	
DIMENSIONS (HxWxD)	14.9"x15.7"x7.8"
WEIGHT	63.9 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



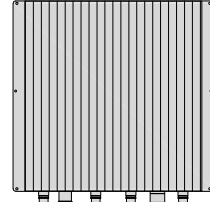
PLAN



BACK



SIDE



FRONT

RRH DETAIL

NO SCALE

1

RRH DETAIL

NO SCALE

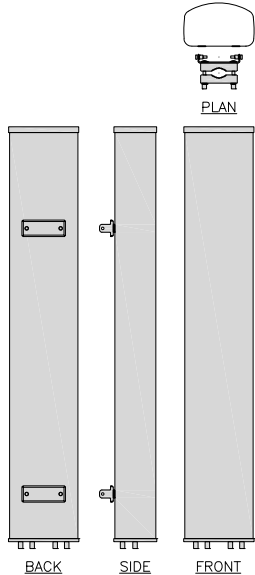
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NOT USED

NO SCALE

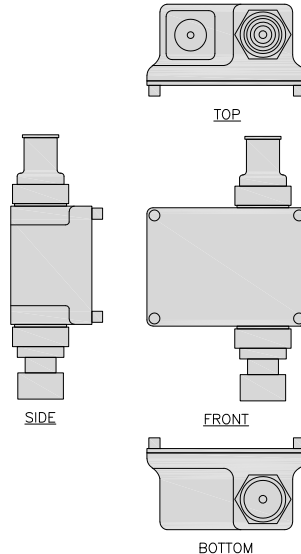
3

COMMSCOPE FVV-65B-R3	
DIMENSIONS (HxWxD)(MM/IN)	1828x300x181 71.9"x11.8"x7.1"
RF CONNECTOR INTERFACE	4.3-10 FEMALE
WEIGHT	43.8 lbs
WEIGHT WITH BRACKETS	70.9 lbs



BACK SIDE FRONT

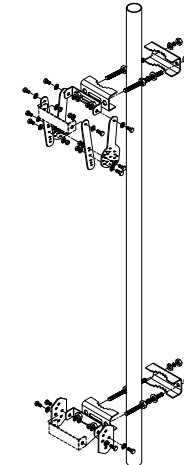
KAEIUS SMART BIAS TEE SBT0003F1V2 (TOP OF TOWER)	
DIMENSIONS (HxWxD)	5.41"x3.27"x1.88"
WEIGHT	0.88 lbs
RF TO RF+AISG	
PASSBAND	555-3800 MHz
INSERTION LOSS	0.1dB MAX
RETURN LOSS	20dB MIN
MAX INPUT POWER	750W CW/5kW PEP
INTERMODULATION PRODUCTS	-160dBc(IM3)MAX @ 2x20W CW CARRIERS
RF IMPEDANCE	50 Ohms



SIDE FRONT BOTTOM

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

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



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

ANTENNA DETAIL

NO SCALE

4

SMART BIAS TEE DETAIL

NO SCALE

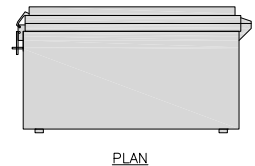
5

ANTENNA BRACKET DETAIL

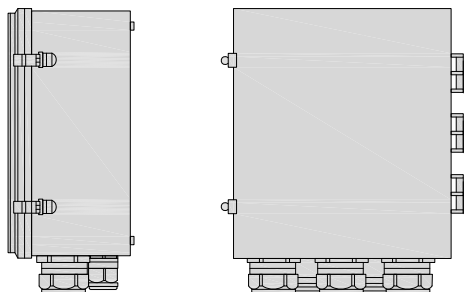
NO SCALE

6

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

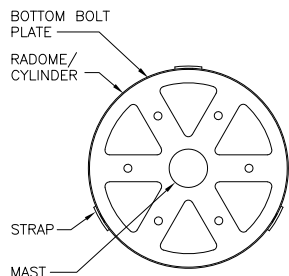


PLAN

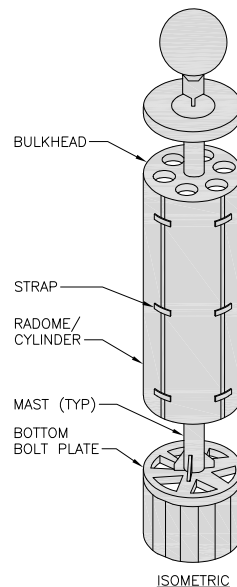


SIDE BACK FRONT

RAYCAP STEALTH SMOOTH MULTI-PART	
RADOME OUTSIDE DIAMETERS	24"-60" DIA.
APPROX. MATERIAL THICKNESS	3/16"
MAX. HEIGHT	12'-0"
CONNECTION	BOLTS OR STRAPS



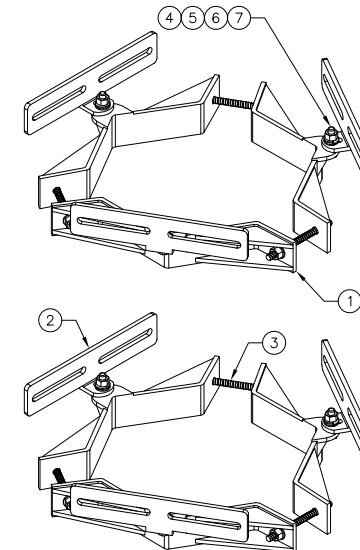
PLAN



ISOMETRIC

EEI FPXL-AB TRIAD FLUSHED MOUNT	
DESCRIPTION	PART # - QTY
TRIAD-FPXL - 1/4" BRACKET ASSEMBLY	PART 1 - QTY: 6
TRIAD-AB - 1/4" HRPO GUSSET ASSEMBLY	PART 2 - QTY: 6
3/8"x7" A36 THREADED ROD	PART 3 - QTY: 6
3/8"x1-1/4" A307 BOLT	PART 4 - QTY: 6
3/8" HEX NUT	PART 5 - QTY: 6
3/8" FLAT WASHER	PART 6 - QTY: 6
3/8" LOCK WASHER	PART 7 - QTY: 6
TOTAL WEIGHT	±101.4 lbs
POLE DIAMETER	10"Ø-14"Ø

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



SURGE SUPPRESSION DETAIL (OVP)

NO SCALE

7

RADOME CANISTER DETAIL

NO SCALE

8

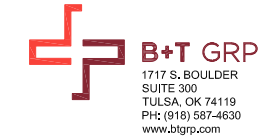
MAST MOUNT DETAIL

NO SCALE

9



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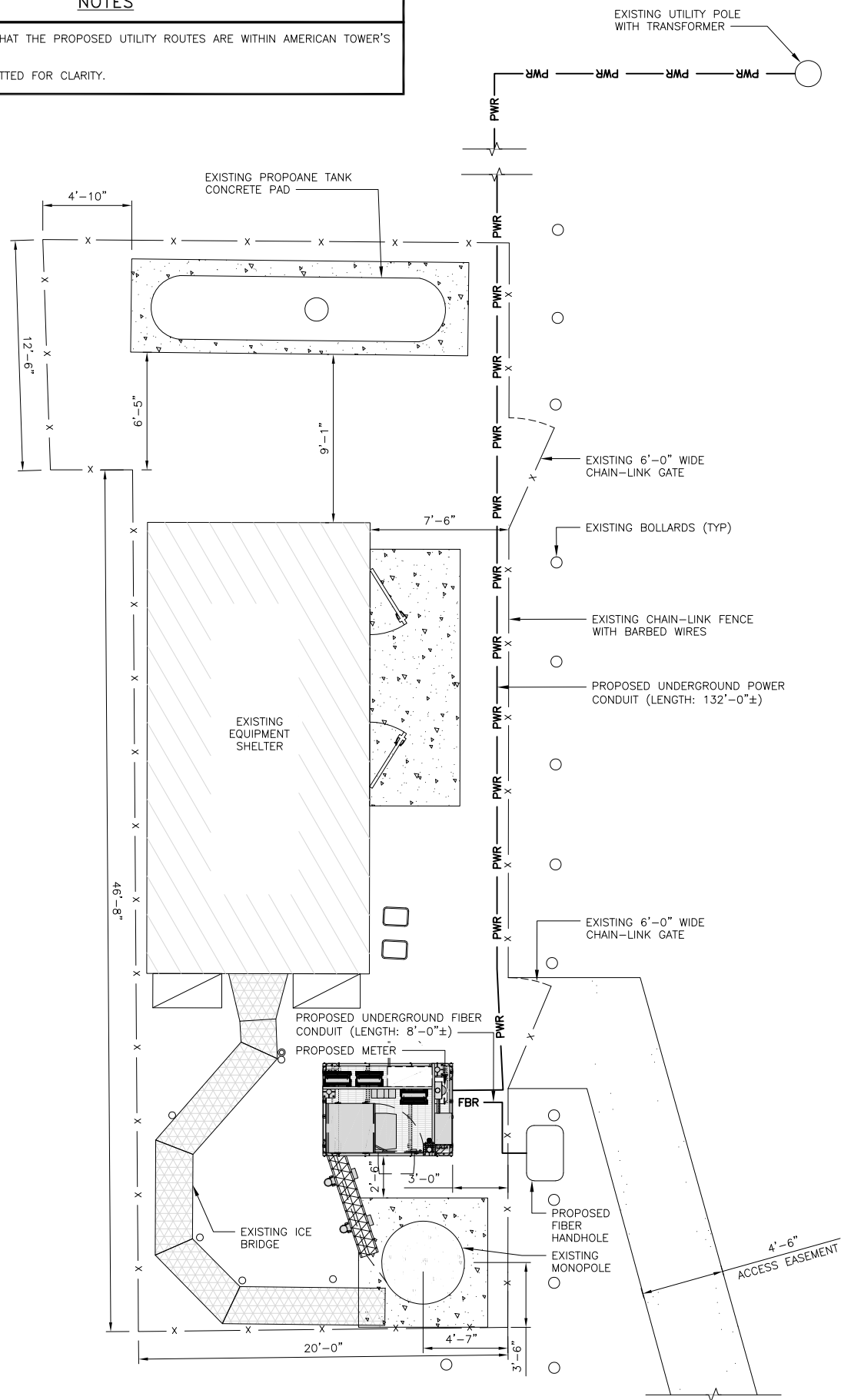
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PROJECT INFORMATION
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234 MELBA STREET
MILFORD, CT 06460

SHEET TITLE
EQUIPMENT DETAILS

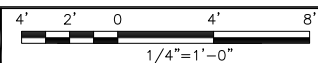
SHEET NUMBER
A-6

NOTES

1. CONTRACTOR MUST VERIFY THAT THE PROPOSED UTILITY ROUTES ARE WITHIN AMERICAN TOWER'S EASEMENT.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



UTILITY ROUTE PLAN



1

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

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



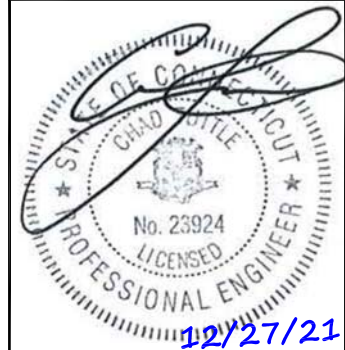
ELECTRICAL NOTES

NO SCALE

2



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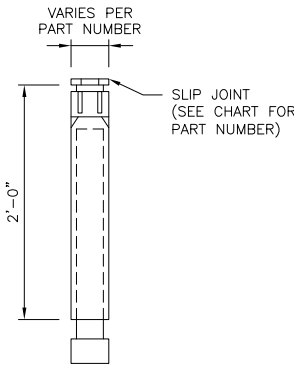
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MILFORD, CT 06460

SHEET TITLE
ELECTRICAL/FIBER ROUTE
PLAN AND NOTES

SHEET NUMBER
E-1

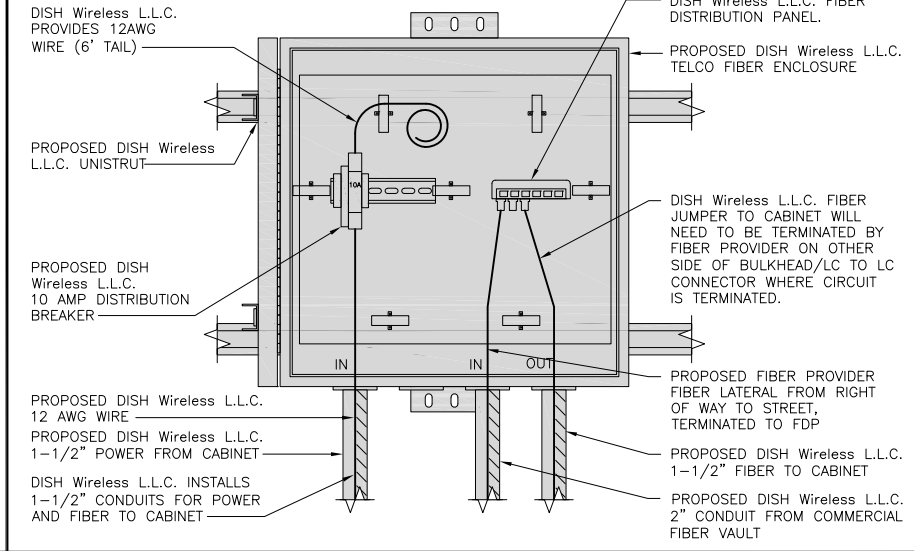
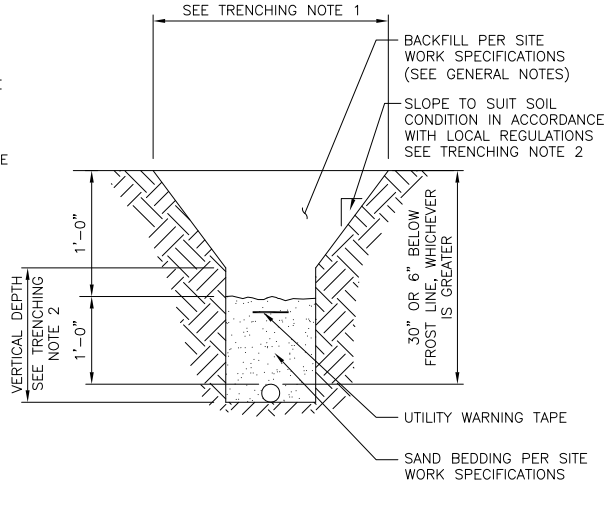
CARLON EXPANSION FITTINGS				
COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD CTN QTY.	TRAVEL LENGTH
E945D	E945DX	1/2"	20	4"
E945E	E945EX	3/4"	15	4"
E945F	E945FX	1"	10	4"
E945G	E945GX	1 1/4"	5	4"
E945H	E945HX	1 1/2"	5	4"
E945J	E945JX	2"	15	8"
E945K	E945KX	2 1/2"	10	8"
E945L	E945LX	3"	10	8"
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.

TRENCHING NOTES

- 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.
- TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT OSHA TRENCHING AND EXCAVATION SAFETY STANDARDS.
- 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.



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RFDS REV #: 3

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	11/23/21	ISSUED FOR REVIEW
0	12/27/21	ISSUED FOR construction

A&E PROJECT NUMBER
157041.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00139A
234 MELBA STREET
MILFORD, CT 06460

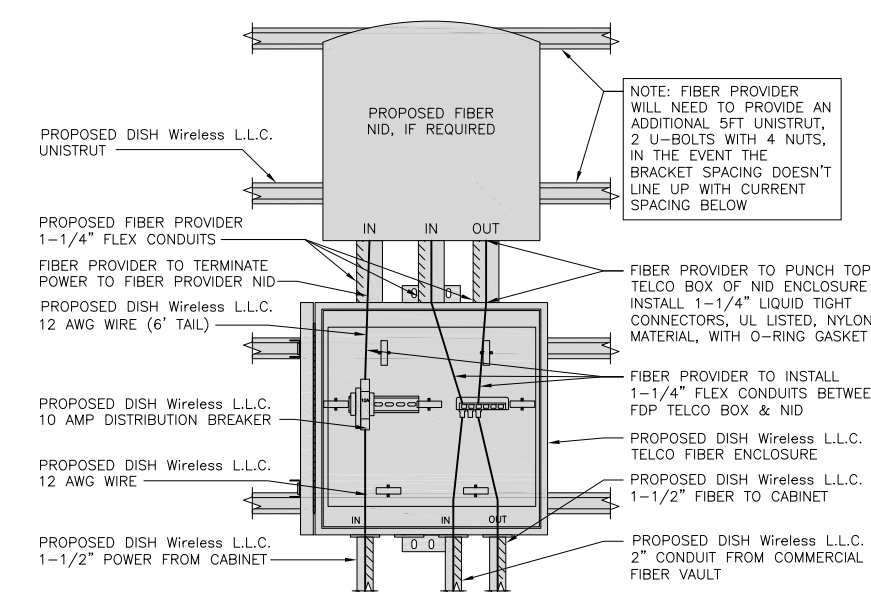
SHEET TITLE
ELECTRICAL
DETAILS

SHEET NUMBER
E-2

EXPANSION JOINT DETAIL NO SCALE 1

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

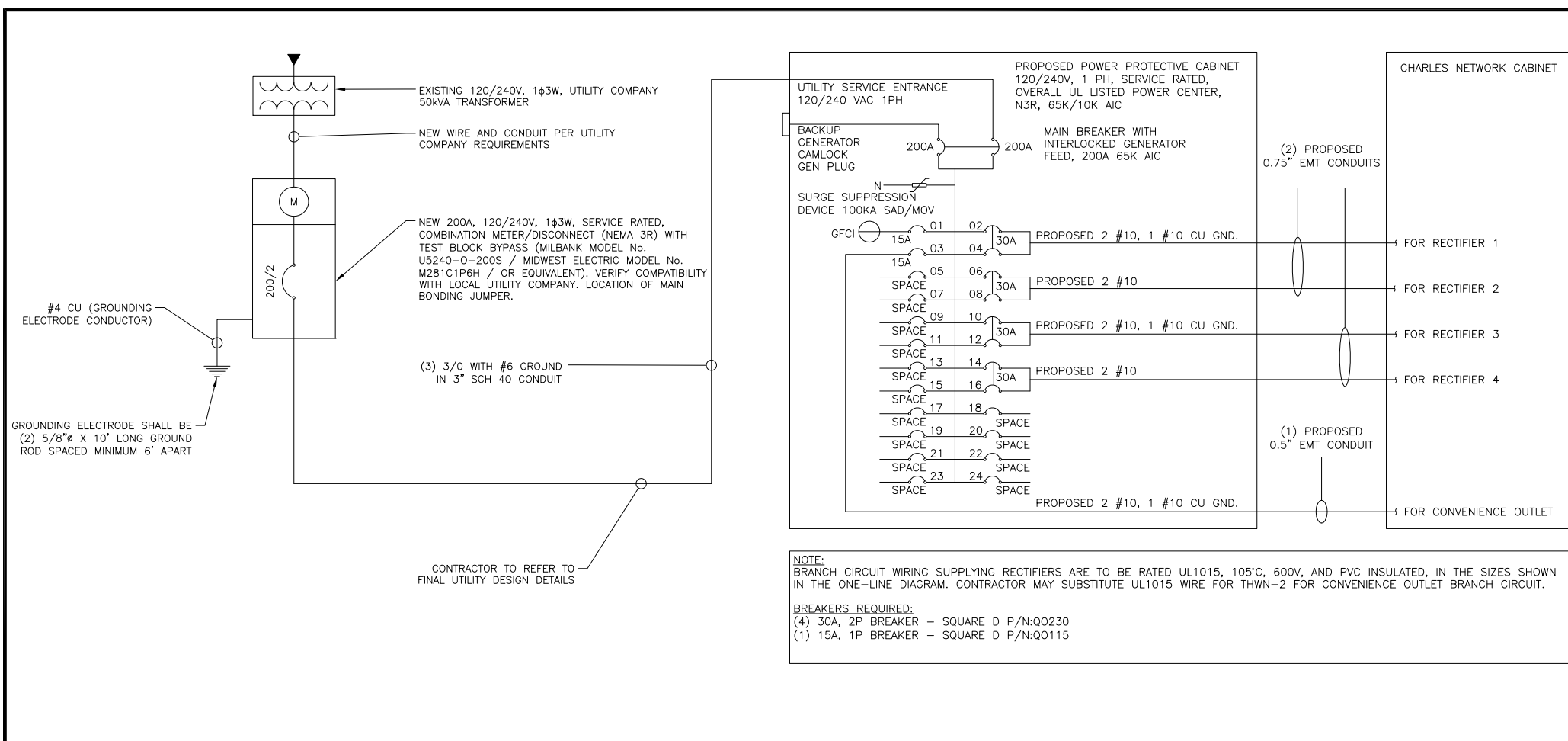
NOT USED NO SCALE 5

NOT USED NO SCALE 6

NOT USED NO SCALE 7

NOT USED NO SCALE 8

NOT USED NO SCALE 9



NOTES

THE (2) CONDUITS WITH (4) CURRENT CARRYING CONDUCTORS EACH, SHALL APPLY THE ADJUSTMENT FACTOR OF 80% PER 2014/17 NEC TABLE 310.15(B)(3)(g) OR 2020 NEC TABLE 310.15(C)(1) FOR UL1015 WIRE.

#12 FOR 15A-20A/1P BREAKER: 0.8 x 30A = 24.0A
 #10 FOR 25A-30A/2P BREAKER: 0.8 x 40A = 32.0A
 #8 FOR 35A-40A/2P BREAKER: 0.8 x 55A = 44.0A
 #6 FOR 45A-60A/2P BREAKER: 0.8 x 75A = 60.0A

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 (2 CONDUITS): USING UL1015, CU.

#10 - 0.0266 SQ. IN X 4 = 0.1064 SQ. IN
 #10 - 0.0082 SQ. IN X 1 = 0.0082 SQ. IN <BARE GROUND
 TOTAL = 0.1146 SQ. IN

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

PANEL SCHEDULE

NO SCALE

2

NOT USED

NO SCALE

3



5701 SOUTH SANTA FE DRIVE
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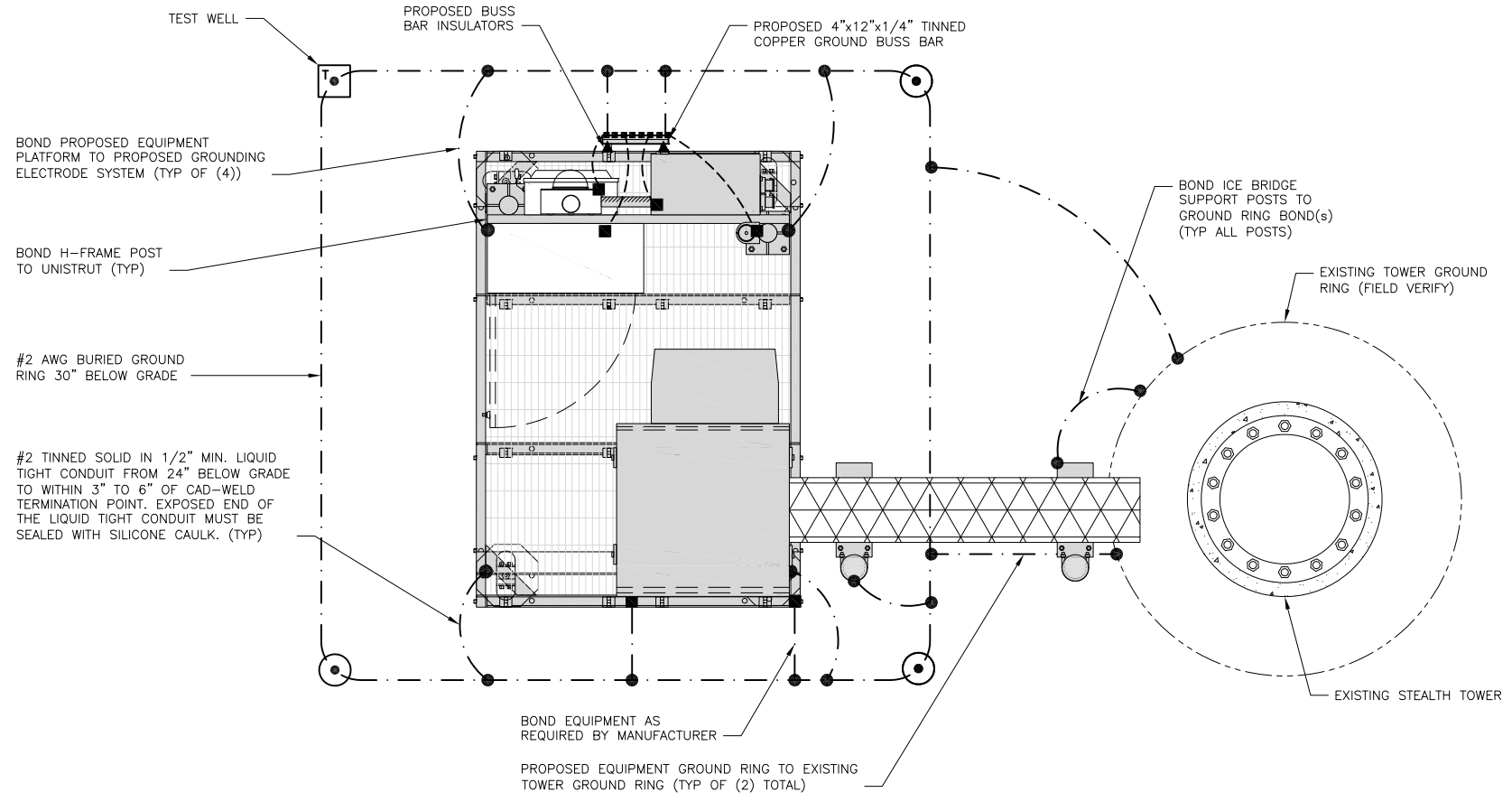
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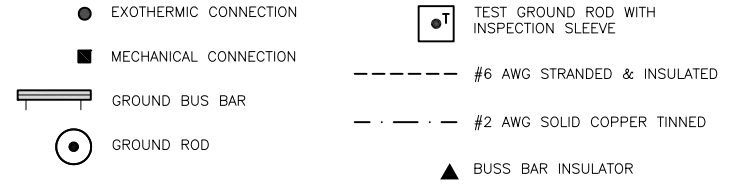
SHEET TITLE
ELECTRICAL ONE-LINE, FAULT
CALCS & PANEL SCHEDULE

SHEET NUMBER
E-3



TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE 1



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.

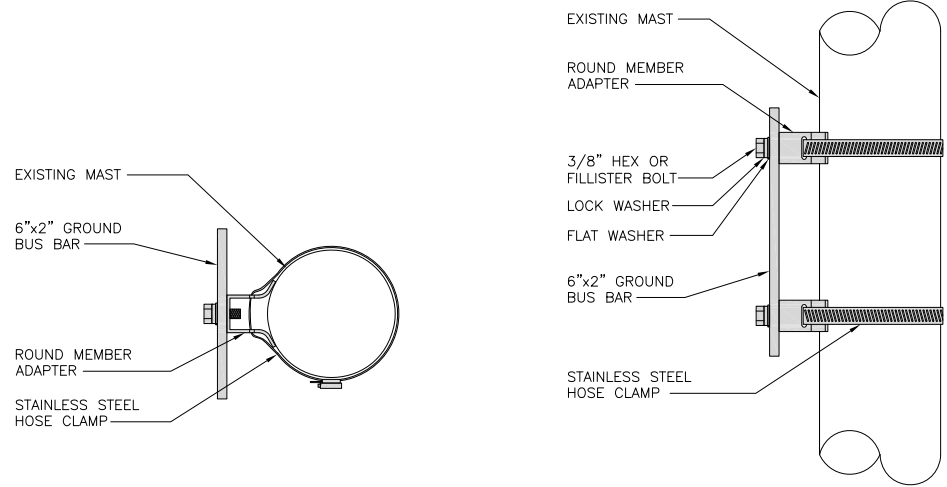
GROUNDING KEY NOTES

- (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 AND 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.

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

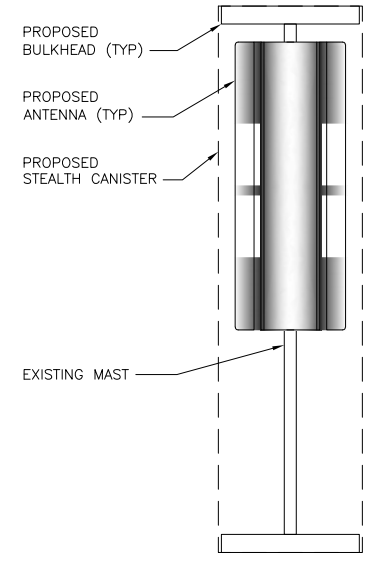
GROUNDING KEY NOTES

NO SCALE 3



BUSS BAR PLAN

BUSS BAR ELEVATION



ANTENNA GROUNDING ELEVATION

TYPICAL ANTENNA GROUNDING DETAIL

NO SCALE 2



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LITTLETON, CO 80120



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234 MELBA STREET
MILFORD, CT 06460

SHEET TITLE
GROUNDING PLANS
AND NOTES

SHEET NUMBER
G-1



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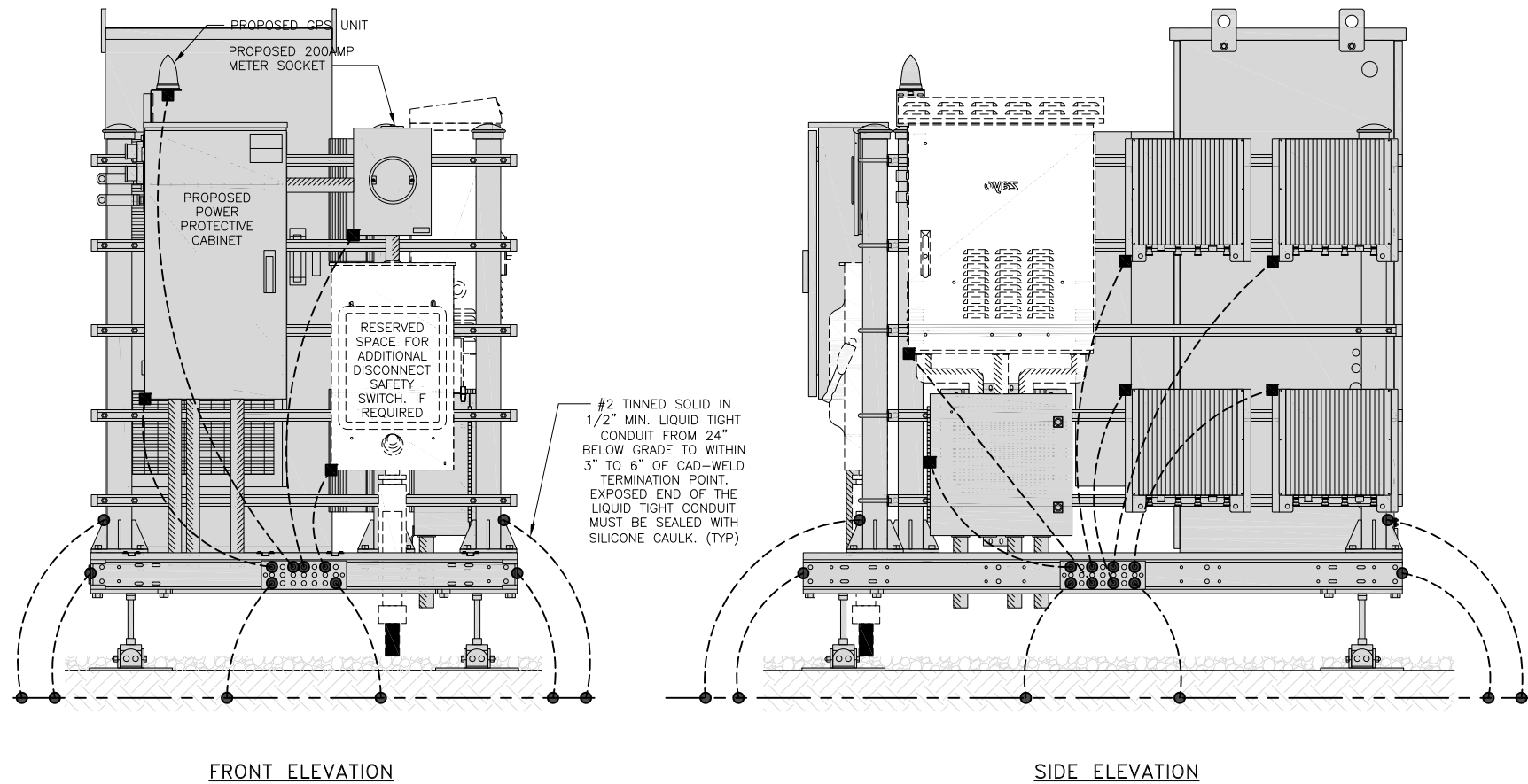
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PROJECT INFORMATION
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MILFORD, CT 06460

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-2



NOT USED

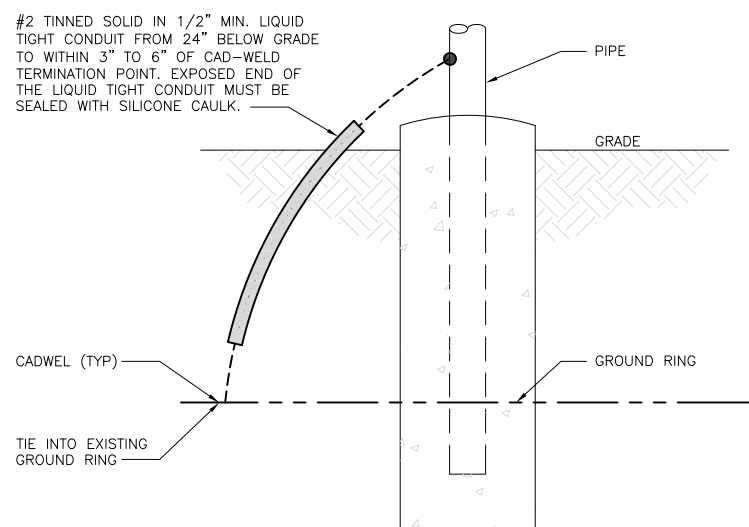
NO SCALE

1

H-FRAME GROUNDING DETAIL

NO SCALE

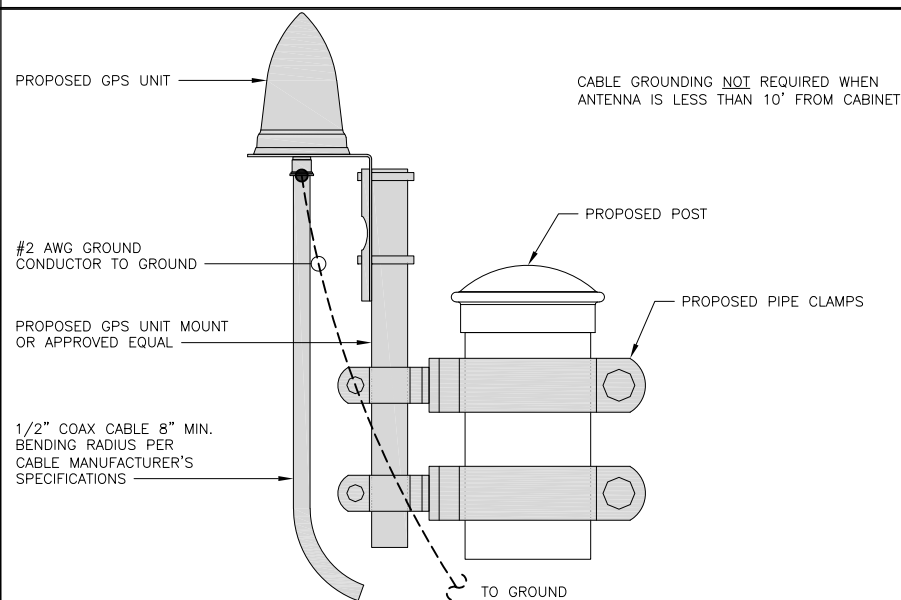
4



TRANSITIONING GROUND DETAIL

NO SCALE

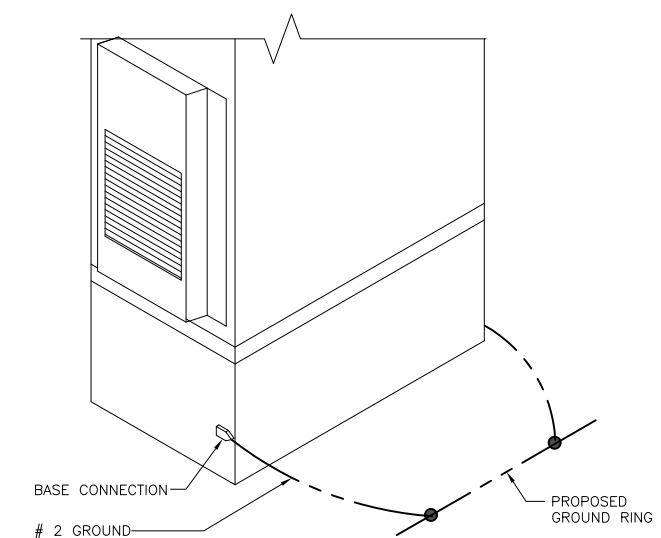
5



TYPICAL GPS UNIT GROUNDING

NO SCALE

6

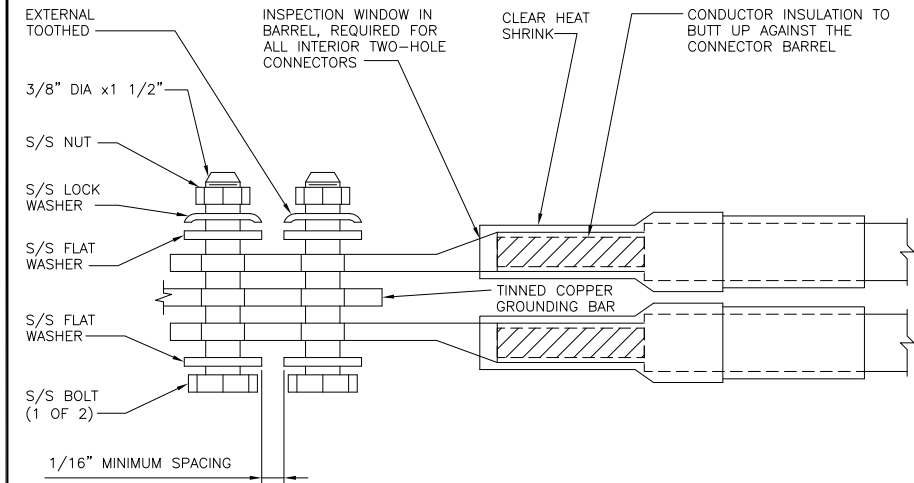
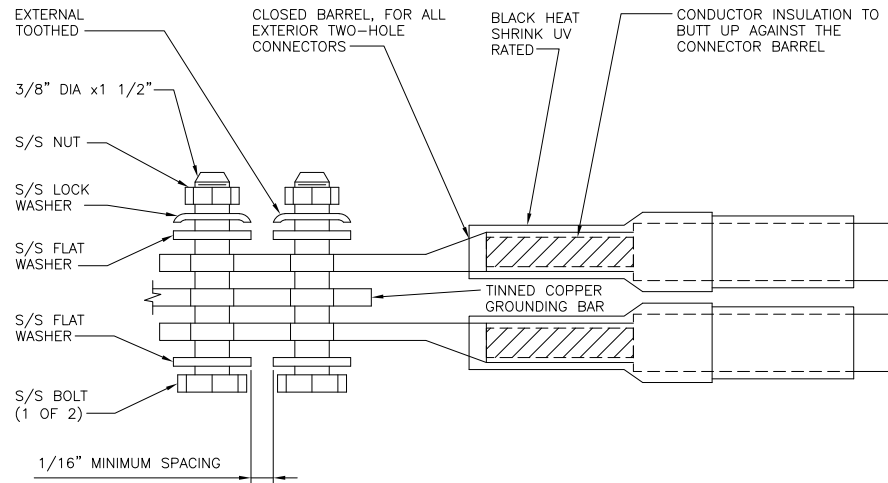


OUTDOOR CABINET GROUNDING

NO SCALE

7

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

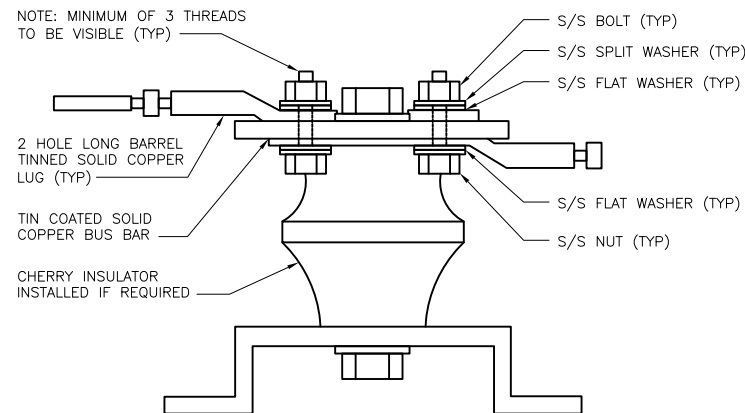
NO SCALE

2

TYPICAL INTERIOR TWO HOLE LUG

NO SCALE

3



LUG DETAIL

NO SCALE

4

TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE

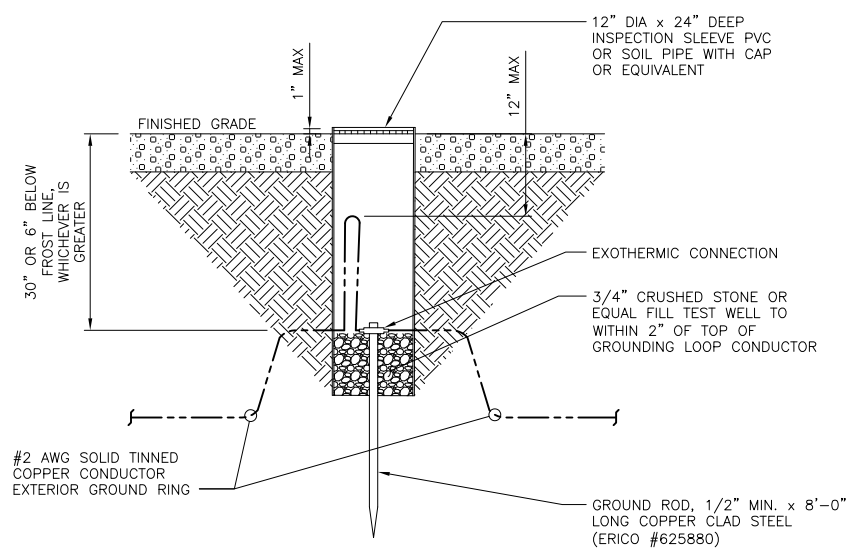
NO SCALE

5

NOT USED

NO SCALE

6



NOT USED

NO SCALE

7

NOT USED

NO SCALE

8

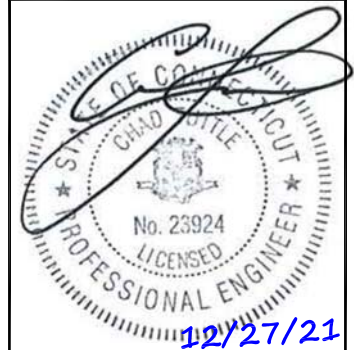
NOT USED

NO SCALE

9



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LITTLETON, CO 80120



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MILFORD, CT 06460

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-3

HYBRID/DISCREET CABLES												3/4" TAPE WIDTHS WITH 3/4" SPACING															
<p>LOW-BAND RRH (600 MHz N71 BASEBAND) + (850 MHz N26 BAND) + (700 MHz N29 BAND) - OPTIONAL PER MARKET</p> <p>ADD FREQUENCY COLOR TO SECTOR BAND (CBRS WILL USE YELLOW BAND)</p>												ALPHA RRH				BETA RRH				GAMMA RRH							
PORT 1 + SLANT		PORT 2 - SLANT		PORT 3 + SLANT		PORT 4 - SLANT		PORT 1 + SLANT		PORT 2 - SLANT		PORT 3 + SLANT		PORT 4 - SLANT		PORT 1 + SLANT		PORT 2 - SLANT		PORT 3 + SLANT		PORT 4 - SLANT					
RED		RED		RED		RED		BLUE		BLUE		BLUE		BLUE		GREEN		GREEN		GREEN		GREEN					
ORANGE		ORANGE		RED		RED		ORANGE		ORANGE		BLUE		BLUE		ORANGE		ORANGE		GREEN		GREEN					
		WHITE (-) PORT		ORANGE		ORANGE				WHITE (-) PORT		ORANGE		ORANGE				WHITE (-) PORT		ORANGE		ORANGE					
						WHITE (-) PORT								WHITE (-) PORT								WHITE (-) PORT					
<p>MID-BAND RRH (AWS BANDS N66+N70)</p> <p>ADD FREQUENCY COLOR TO SECTOR BAND (CBRS WILL USE YELLOW BANDS)</p>												RED				BLUE				GREEN							
RED		RED		RED		RED		BLUE		BLUE		BLUE		BLUE		GREEN		GREEN		GREEN		GREEN					
PURPLE		PURPLE		RED		RED		PURPLE		PURPLE		BLUE		BLUE		PURPLE		PURPLE		GREEN		GREEN					
		WHITE (-) PORT		PURPLE		PURPLE				WHITE (-) PORT		PURPLE		PURPLE				WHITE (-) PORT		PURPLE		PURPLE					
						WHITE (-) PORT								WHITE (-) PORT								WHITE (-) PORT					
<p>HYBRID/DISCREET CABLES</p> <p>INCLUDE SECTOR BANDS BEING SUPPORTED ALONG WITH FREQUENCY BANDS.</p> <p>EXAMPLE 1 - HYBRID, OR DISCREET, SUPPORTS ALL SECTORS, BOTH LOW-BANDS AND MID-BANDS.</p> <p>EXAMPLE 2 - HYBRID, OR DISCREET, SUPPORTS CBRS ONLY, ALL SECTORS.</p> <p>EXAMPLE 3 - MAIN COAX WITH GROUND MOUNTED RRHs.</p>												EXAMPLE 1		EXAMPLE 2		EXAMPLE 3		CANISTER COAX #1 (ALPHA)		CANISTER COAX #2 (ALPHA)							
RED		RED		RED		RED		RED		RED																	
BLUE		BLUE		GREEN		ORANGE		PURPLE		PURPLE																	
GREEN		GREEN		YELLOW																							
ORANGE		ORANGE																									
PURPLE		PURPLE																									
<p>FIBER JUMPERS TO RRHs</p> <p>LOW-BAND HHR FIBER CABLES HAVE SECTOR STRIPE ONLY.</p>												LOW BAND RRH		MID BAND RRH		LOW BAND RRH		MID BAND RRH		LOW BAND RRH		MID BAND RRH					
RED		RED		RED		RED		BLUE		BLUE		GREEN		GREEN													
ORANGE		ORANGE		PURPLE		PURPLE		ORANGE		PURPLE		ORANGE		PURPLE													
<p>POWER CABLES TO RRHs</p> <p>LOW-BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY</p>												LOW BAND RRH		MID BAND RRH		LOW BAND RRH		MID BAND RRH		LOW BAND RRH		MID BAND RRH					
RED		RED		RED		RED		BLUE		BLUE		GREEN		GREEN													
ORANGE		ORANGE		PURPLE		PURPLE		ORANGE		PURPLE		ORANGE		PURPLE													
<p>RET MOTORS AT ANTENNAS</p> <p>RET CONTROL IS HANDLED BY THE MID-BAND RRH WHEN ONE SET OF RET PORTS EXIST ON ANTENNA.</p> <p>SEPARATE RET CABLES ARE USED WHEN ANTENNA PORTS PROVIDE INPUTS FOR BOTH LOW AND MID BANDS.</p>												ANTENNA 1 MID BAND		ANTENNA 1 LOW BAND		ANTENNA 1 MID BAND		ANTENNA 1 LOW BAND		ANTENNA 1 MID BAND		ANTENNA 1 LOW BAND					
IN		IN		IN		IN		IN		IN		IN		IN													
RED		RED		RED		RED		BLUE		BLUE		GREEN		GREEN													
PURPLE		ORANGE		PURPLE		ORANGE		PURPLE		ORANGE		PURPLE		ORANGE													
<p>MICROWAVE RADIO LINKS</p> <p>LINKS WILL HAVE A 1.5-2 INCH WHITE WRAP WITH THE AZIMUTH COLOR OVERLAPPING IN THE MIDDLE.</p> <p>ADD ADDITIONAL SECTOR COLOR BANDS FOR EACH ADDITIONAL MW RADIO.</p> <p>MICROWAVE CABLES WILL REQUIRE P-TOUCH LABELS INSIDE THE CABINET TO IDENTIFY THE LOCAL AND REMOTE SITE ID's.</p>												FORWARD AZIMUTH OF 0-120 DEGREES		FORWARD AZIMUTH OF 120-240 DEGREES		FORWARD AZIMUTH OF 240-359 DEGREES											
PRIMARY		SECONDARY		PRIMARY		SECONDARY		PRIMARY		SECONDARY		PRIMARY		SECONDARY													
WHITE		WHITE		WHITE		WHITE		WHITE		WHITE		WHITE		WHITE													
RED		RED		BLUE		BLUE		GREEN		GREEN		WHITE		WHITE													
WHITE		WHITE		WHITE		WHITE		WHITE		WHITE		GREEN		GREEN													
		RED		BLUE		WHITE						WHITE		WHITE													
		WHITE		WHITE		WHITE						WHITE		WHITE													

RF CABLE COLOR CODES

1

NOT USED

4

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

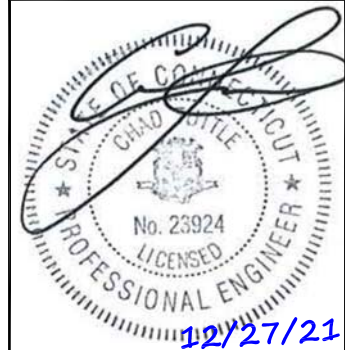
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APPROVED BY: ANP

RFDS REV #: 3

CONSTRUCTION DOCUMENTS

SUBMITTALS		
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A	11/23/21	ISSUED FOR REVIEW
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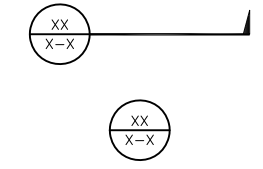
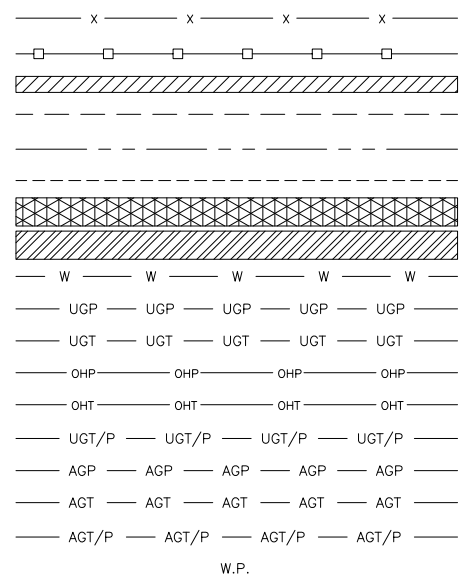
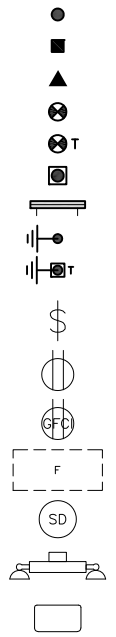
A&E PROJECT NUMBER
157041.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00139A
234 MELBA STREET
MILFORD, CT 06460

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



SECTION REFERENCE
 DETAIL REFERENCE

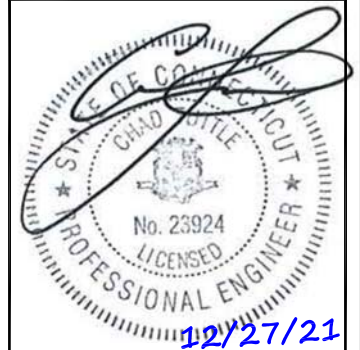
LEGEND

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

ABBREVIATIONS



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PROJECT INFORMATION
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MILFORD, CT 06460

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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234 MELBA STREET
MILFORD, CT 06460

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.



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



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

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DRAWN BY:	CHECKED BY:	APPROVED BY:
CH	ANP	ANP

RFDS REV #: 3

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	11/23/21	ISSUED FOR REVIEW
0	12/27/21	ISSUED FOR construction

A&E PROJECT NUMBER
157041.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00139A
234 MELBA STREET
MILFORD, CT 06460

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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DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00139A
234 MELBA STREET
MILFORD, CT 06460

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-4

ENGINEERING:
STRUCTURAL ANALYSIS
MOUNT ANALYSIS



AMERICAN TOWER®
CORPORATION

This report was prepared for American Tower Corporation by

CLS ENGINEERING
PLLC

Structural Analysis Report

Structure : 134 ft Monopole
ATC Site Name : MILFORD CT,CT
ATC Site Number : 283564
Engineering Number : 13698061_C3_03
Proposed Carrier : DISH WIRELESS L.L.C.
Carrier Site Name : BOHVN00139A
Carrier Site Number : BOHVN00139A
Site Location : 234 Melba Street
Milford, CT 06460-7633
41.2099, -73.0194
County : New Haven
Date : November 11, 2021
Max Usage : 96%
Result : Pass

Prepared By:

Ravi Siddharth Raja
CLS

Reviewed By:



Tyler M. Barker
CLS Engineering PLLC
PE # 32402 Exp. 1/31/2022
COA # PEC.001833 Exp. 8/14/2022
11/2/2021

Table of Contents

Introduction3
Supporting Documents3
Analysis3
Conclusion3
Existing and Reserved Equipment.....4
Equipment to be Removed4
Proposed Equipment4
Structure Usages.....5
Foundations5
Deflection and Sway*5
Standard Conditions6
CalculationsAttached

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 134 ft Monopole to reflect the change in loading by DISH WIRELESS L.L.C..

Supporting Documents

Tower Drawings	CellXion Job #50016, dated October 4, 2011 Stealth Job #SA11-01013H-00R1, dated October 10, 2011
Foundation Drawing	CellXion Job #50016, dated October 4, 2011
Geotechnical Report	DET Job #2011.07, dated May 27, 2011

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:	120 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:	C
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	$S_s = 0.20, S_i = 0.05$
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
130.0	6	Commscope CBC71921-DF	Canister	(6) 1 5/8" Coax	VERIZON WIRELESS
	3	Alcatel-Lucent B66A RRH 4x45			
	3	Nokia B5 RRH4x40-850			
	3	Alcatel-Lucent RRH2X60-1900			
	3	Alcatel-Lucent RRH2x60 700			
	3	Commscope SBNHH-1D65B			
120.0	3	Amphenol Antel BXA-80063-6BF-EDIN-X	Canister	(6) 1 5/8" Coax (1) 3/8" Coax	VERIZON WIRELESS
110.0	6	Commscope CBC71921-DF	Canister	(6) 1 5/8" Coax	
	3	Commscope SBNHH-1D65B			
100.0	1	Generic TMO Incentive Reserve	Canister	-	ATC RESERVED

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
89.0	3	Commscope CDX623T-DS-T	Canister	(12) 7/8" Coax	DISH WIRELESS L.L.C.
	3	Commscope FVV-65B-R3			

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	40%	Pass
Shaft	47%	Pass
Base Plate	59%	Pass
Flange Plate	96%	Pass

Foundation

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	934.3	18%
Shear (Kips)	14.1	11%
Axial (Kips)	29.4	66%

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) (°)
89.0	Commscope FVV-65B-R3	DISH WIRELESS L.L.C.	0.167	0.240
	Commscope CDX623T-DS-T			

*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.

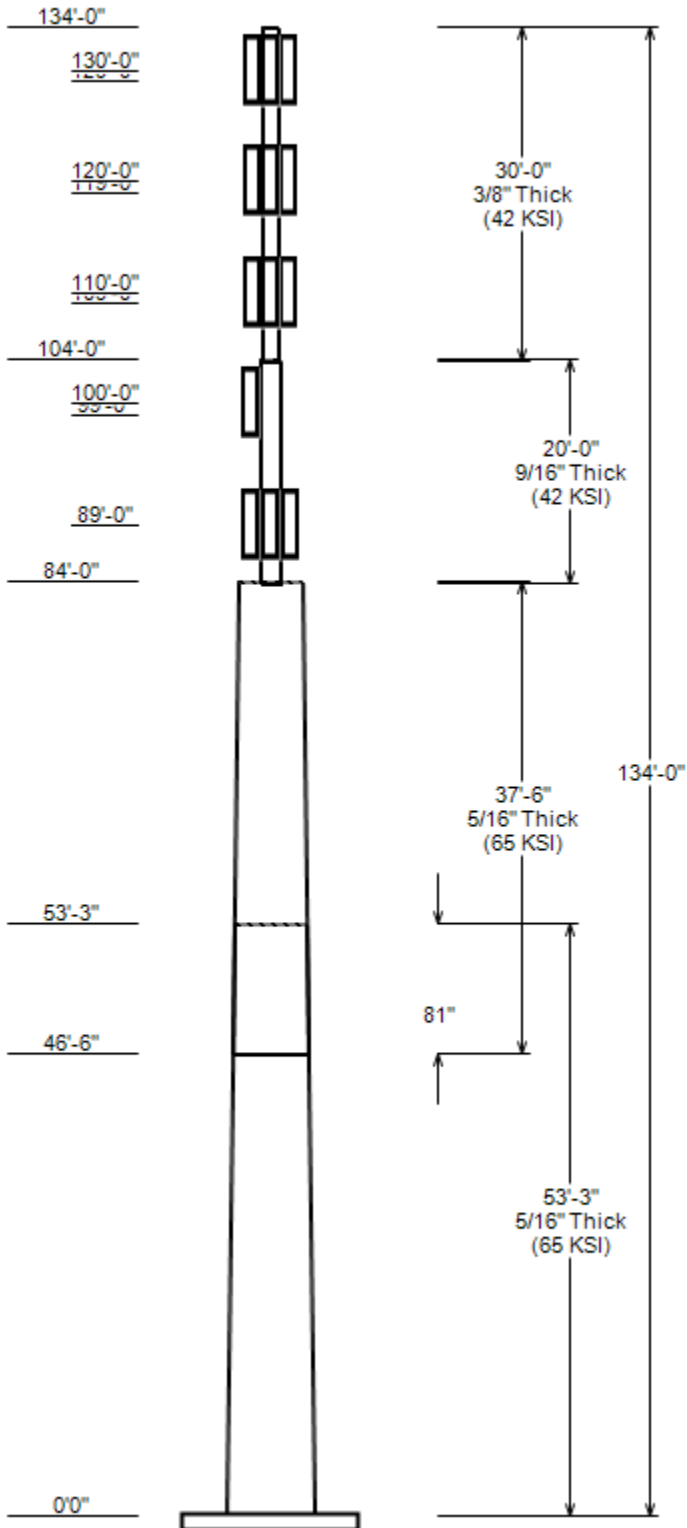
Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

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 : 283564, MILFORD CT
 Client : DISH WIRELESS L.L.C.
 Code : ANSI/TIA-222-H

Height : 134 ft
 Base Width : 53.97
 Shape : 18 Sides



SITE PARAMETERS

Base Elev (ft): 0.00 Structure Class: II
 Taper : 0.15000 (In/ft) Exposure : C
 Topographic Category : 1 Topographic Feature:
 Topo Method : Method 1

SECTION PROPERTIES

Shaft Section	Length (ft)	Diameter (in)		Thick (in)	Overlap Length (in)	Steel Grade (ksi)
		Across Flats Top	Across Flats Bottom			
1	53.250	45.99	53.97	0.312	0.000	18 Sides 65
2	37.500	42.00	47.62	0.312	81.000	Slip Joint 18 Sides 65
3	20.000	12.75	12.75	0.562	0.000	Butt Joint Round 42
4	30.000	10.75	10.75	0.365	0.000	Butt Joint Round 42

DISCRETE APPURTENANCE

Attach Elev (ft)	Force Elev (ft)	Qty	Description
130.0	130.0	6	Commscope CBC71921-DF
130.0	130.0	3	Nokia B5 RRH4x40-850
130.0	130.0	3	Alcatel-Lucent RRH2X60-1900
130.0	130.0	3	Alcatel-Lucent RRH2x60 700
130.0	130.0	3	Alcatel-Lucent B66A RRH 4x45
130.0	130.0	3	Commscope SBNHH-1D65B
129.0	129.0	1	Canister 5
120.0	120.0	3	Amphenol Antel BXA-80063-6BF-E
119.0	119.0	1	Canister 4
110.0	110.0	6	Commscope CBC71921-DF
110.0	110.0	3	Commscope SBNHH-1D65B
109.0	109.0	1	Canister 3
100.0	100.0	1	Generic TMO Incentive Reserve
99.0	99.0	1	Canister 2
89.0	89.0	3	Commscope CDX623T-DS-T
89.0	89.0	3	Commscope FVV-65B-R3
89.0	89.0	1	Canister 1

LINEAR APPURTENANCE

Elev From (ft)	Elev To (ft)	Description	Exp To Wind
0.0	130.0	1 5/8" Coax	No
0.0	120.0	3/8" Coax	No
0.0	120.0	1 5/8" Coax	No
0.0	110.0	1 5/8" Coax	No
0.0	89.0	7/8" Coax	No

LOAD CASES

1.2D + 1.0W 120 mph wind with no ice
 0.9D + 1.0W 120 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	934.32	14.08	29.35
0.9D + 1.0W	929.90	14.07	22.01
1.2D + 1.0Di + 1.0Wi	280.05	4.18	41.95
1.2D + 1.0Ev + 1.0Eh	83.82	0.91	29.17
0.9D - 1.0Ev + 1.0Eh	83.19	0.91	20.12
1.0D + 1.0W	215.43	3.21	24.47

JOB INFORMATION

Asset : 283564, MILFORD CT
Client : DISH WIRELESS L.L.C.
Code : ANSI/TIA-222-H

Height : 134 ft
Base Width : 53.97
Shape : 18 Sides

DISH DEFLECTIONS

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
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ASSET: 283564, MILFORD CT
CUSTOMER: DISH WIRELESS L.L.C.

CODE: ANSI/TIA-222-H
ENG NO: 13698061_C3_03

ANALYSIS PARAMETERS

Location:	New Haven County,CT	Height:	134 ft
Type and Shape:	Custom, Round	Base Diameter:	53.97 in
Manufacturer:	Undetermined	Top Diameter:	10.75 in
K_d (non-service):	0.95	Taper:	0.1500 in/ft
K_e:	1.00	Rotation:	0.000°

ICE & WIND PARAMETERS

Exposure Category:	C	Design Wind Speed w/o Ice:	120 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:	25.00 ft

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method		
Site Class:	D - Stiff Soil	Period Based on Rayleigh Method (sec):	1.53
T_L (sec):	6	P:	1
S_s:	0.200	S₁:	0.053
F_a:	1.600	F_v:	2.400
S_{ds}:	0.213	S_{dt}:	0.085
		C_s:	0.037
		C_s Max:	0.037
		C_s Min:	0.030

LOAD CASES

1.2D + 1.0W	120 mph wind with no ice
0.9D + 1.0W	120 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

ASSET: 283564, MILFORD CT
 CUSTOMER: DISH WIRELESS L.L.C.

CODE: ANSI/TIA-222-H
 ENG NO: 13698061_C3_03

SHAFT SECTION PROPERTIES

Sect Info	Bottom										Top								
	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint len (in)	Weight (lb)	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	53.25	0.3125	65		0.00	8,926	7	0.000	53.22	19,359.1	29.04	172.70	45.99	53.25	45.30	11,941.0	24.54	147.16	0.1499
2-18	37.50	0.3125	65	Slip	0	5,632	2	46.500	46.93	13,271.3	25.46	152.39	42.00	84.00	41.35	9,080.7	22.29	134.40	0.1499
3-R	20.00	0.5620	42	Butt	0.00	1,464	5	84.000	21.52	399.9	0.00	22.69	12.75	104.00	21.52	399.9	0.00	22.69	0.0000
4-R	30.00	0.3650	42	Butt	0.00	1,216	5	0	11.91	160.7	0.00	29.45	10.75	134.00	11.91	160.7	0.00	29.45	0.0000
Shaft Weight						17,238													

DISCRETE APPURTENANCE PROPERTIES

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice			Ice		
					Weight (lb)	EPAA (sf)	Orientation Factor	Weight (lb)	EPAA (sf)	Orientation Factor
130.00	Commscope SBNHH-1D65B	3	1.00	0.000	50.70	8.173	0.01	166.23	10.036	0.01
130.00	Alcatel-Lucent B66A RRH 4x45	3	1.00	0.000	67.00	2.580	0.01	113.83	3.323	0.01
130.00	Alcatel-Lucent RRH2X60-1900	3	1.00	0.000	43.00	1.876	0.01	79.42	2.493	0.01
130.00	Nokia B5 RRH4x40-850	3	1.00	0.000	48.50	1.322	0.01	75.66	1.823	0.01
130.00	Commscope CBC71921-DF	6	1.00	0.000	7.70	0.498	0.01	19.84	0.814	0.01
130.00	Alcatel-Lucent RRH2x60 700	3	1.00	0.000	56.70	2.150	0.01	101.50	2.810	0.01
129.00	Canister 5	1	1.00	0.000	266.70	12.400	1.00	998.27	16.889	1.00
120.00	Amphenol Antel BXA-80063-6BF-E	3	1.00	0.000	19.20	7.262	0.01	113.36	9.000	0.01
119.00	Canister 4	1	1.00	0.000	266.70	12.400	1.00	991.93	16.881	1.00
110.00	Commscope SBNHH-1D65B	3	1.00	0.000	50.70	8.173	0.01	164.31	10.005	0.01
110.00	Commscope CBC71921-DF	6	1.00	0.000	7.70	0.498	0.01	19.63	0.809	0.01
109.00	Canister 3	1	1.00	0.000	266.70	12.400	1.00	985.12	16.869	1.00
100.00	Generic TMO Incentive Reserve	1	1.00	0.000	2500.00	146.00	0	6093.49	173.912	0.01
99.00	Canister 2	1	1.00	0.000	266.70	11.400	1.00	977.75	15.499	1.00
89.00	Commscope CDX623T-DS-T	3	1.00	0.000	10.10	0.371	0.01	19.13	0.645	0.01
89.00	Commscope FVV-65B-R3	3	1.00	0.000	43.90	8.024	0.01	153.76	9.789	0.01
89.00	Canister 1	1	1.00	0.000	266.70	11.400	1.00	384.24	16.424	1.00
Totals	Num Loadings: 17	45			5,095.30			13,629.22		

LINEAR APPURTENANCE PROPERTIES

Load Case Azimuth (deg) : _

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Max Coax/ Row	Dist Between Rows (in)	Dist Between Cols (in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	130.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	N	VERIZON WIREL
0.00	120.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	N	VERIZON WIREL
0.00	120.00	1	3/8" Coax	0.44	0.08	N	0	0	0	0	N	VERIZON WIREL
0.00	110.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	N	VERIZON WIREL
0.00	89.00	12	7/8" Coax	1.09	0.33	N	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		0.3125	53.970	53.220	19,359.10	29.04	172.70	67.2	706.5	0.0	0.0
5.00		0.3125	53.221	52.476	18,559.20	28.62	170.31	67.7	686.8	0.0	899.1
10.00		0.3125	52.471	51.733	17,781.60	28.20	167.91	68.2	667.5	0.0	886.5
15.00		0.3125	51.722	50.989	17,026.00	27.77	165.51	68.7	648.4	0.0	873.9
20.00		0.3125	50.972	50.246	16,292.10	27.35	163.11	69.2	629.5	0.0	861.2
25.00		0.3125	50.223	49.503	15,579.60	26.93	160.71	69.7	611.0	0.0	848.6
30.00		0.3125	49.473	48.759	14,888.20	26.50	158.31	70.2	592.7	0.0	835.9
35.00		0.3125	48.724	48.016	14,217.60	26.08	155.92	70.7	574.7	0.0	823.3
40.00		0.3125	47.974	47.273	13,567.40	25.66	153.52	71.2	557.0	0.0	810.6
45.00		0.3125	47.225	46.529	12,937.40	25.24	151.12	71.7	539.6	0.0	798.0
46.50	Bot - Section 2	0.3125	47.000	46.306	12,752.20	25.11	150.40	71.9	534.4	0.0	236.9
50.00		0.3125	46.475	45.786	12,327.10	24.81	148.72	72.2	522.4	0.0	1,104.2
53.25	Top - Section 1	0.3125	46.613	45.922	12,437.90	24.89	149.16	72.1	525.6	0.0	1,014.2
55.00		0.3125	46.351	45.662	12,227.70	24.74	148.32	72.3	519.6	0.0	272.7
60.00		0.3125	45.601	44.919	11,640.10	24.32	145.92	72.8	502.8	0.0	770.6
65.00		0.3125	44.852	44.176	11,071.70	23.90	143.52	73.3	486.2	0.0	757.9
70.00		0.3125	44.102	43.432	10,522.10	23.47	141.13	73.8	469.9	0.0	745.3
75.00		0.3125	43.353	42.689	9,991.10	23.05	138.73	74.3	453.9	0.0	732.6
80.00		0.3125	42.603	41.945	9,478.10	22.63	136.33	74.8	438.2	0.0	720.0
84.00	Top - Section 2	0.3125	42.003	41.351	9,080.70	22.29	134.41	75.2	425.8	0.0	566.9
84.00	Bot - Section 3	0.5620	12.750	21.519	399.90	0.00	22.69	42	62.7	83.5	
85.00		0.5620	12.750	21.519	399.90	0.00	22.69	42	62.7	83.5	73.2
89.00		0.5620	12.750	21.519	399.90	0.00	22.69	42	62.7	83.5	292.9
90.00		0.5620	12.750	21.519	399.90	0.00	22.69	42	62.7	83.5	73.2
95.00		0.5620	12.750	21.519	399.90	0.00	22.69	42	62.7	83.5	366.1
99.00		0.5620	12.750	21.519	399.90	0.00	22.69	42	62.7	83.5	292.9
100.00		0.5620	12.750	21.519	399.90	0.00	22.69	42	62.7	83.5	73.2
104.00	Top - Section 3	0.5620	12.750	21.519	399.90	0.00	22.69	42	62.7	83.5	292.9
104.00	Bot - Section 4	0.3650	10.750	11.908	160.70	0.00	29.45	42	29.9	39.4	
105.00		0.3650	10.750	11.908	160.70	0.00	29.45	42	29.9	39.4	40.5
109.00		0.3650	10.750	11.908	160.70	0.00	29.45	42	29.9	39.4	162.1
110.00		0.3650	10.750	11.908	160.70	0.00	29.45	42	29.9	39.4	40.5
115.00		0.3650	10.750	11.908	160.70	0.00	29.45	42	29.9	39.4	202.6
119.00		0.3650	10.750	11.908	160.70	0.00	29.45	42	29.9	39.4	162.1
120.00		0.3650	10.750	11.908	160.70	0.00	29.45	42	29.9	39.4	40.5
125.00		0.3650	10.750	11.908	160.70	0.00	29.45	42	29.9	39.4	202.6
129.00		0.3650	10.750	11.908	160.70	0.00	29.45	42	29.9	39.4	162.1
130.00		0.3650	10.750	11.908	160.70	0.00	29.45	42	29.9	39.4	40.5
134.00		0.3650	10.750	11.908	160.70	0.00	29.45	42	29.9	39.4	162.1

Totals: 17,238.4

Load Case: 1.2D + 1.0W	120 mph wind with no ice	24 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	-29.35	-14.08	0.00	-934.3	0.00	934.32	3,220.76	934.00	4,526.36	3,563.04	0	0	0.272
5.00	-28.15	-13.57	0.00	-863.9	0.00	863.93	3,199.27	920.96	4,400.80	3,489.53	0.04	-0.07	0.257
10.00	-26.96	-13.07	0.00	-796.1	0.00	796.07	3,177.10	907.91	4,277.01	3,415.98	0.14	-0.13	0.242
15.00	-25.78	-12.56	0.00	-730.7	0.00	730.72	3,154.28	894.87	4,154.99	3,342.41	0.31	-0.19	0.227
20.00	-24.63	-12.04	0.00	-667.9	0.00	667.92	3,130.78	881.82	4,034.73	3,268.86	0.54	-0.25	0.212
25.00	-23.49	-11.49	0.00	-607.7	0.00	607.74	3,106.62	868.77	3,916.24	3,195.35	0.83	-0.3	0.198
30.00	-22.36	-10.93	0.00	-550.3	0.00	550.29	3,081.80	855.73	3,799.51	3,121.92	1.18	-0.36	0.184
35.00	-21.26	-10.35	0.00	-495.7	0.00	495.66	3,056.31	842.68	3,684.55	3,048.60	1.58	-0.41	0.170
40.00	-20.17	-9.76	0.00	-443.9	0.00	443.92	3,030.15	829.63	3,571.36	2,975.41	2.04	-0.45	0.156
45.00	-19.10	-9.37	0.00	-395.1	0.00	395.11	3,003.33	816.59	3,459.93	2,902.40	2.54	-0.5	0.143
46.50	-18.78	-9.07	0.00	-381.0	0.00	381.05	2,995.15	812.67	3,426.84	2,880.53	2.7	-0.51	0.139
50.00	-17.38	-8.65	0.00	-349.3	0.00	349.30	2,975.84	803.54	3,350.26	2,829.58	3.08	-0.54	0.129
53.25	-16.09	-8.34	0.00	-321.2	0.00	321.17	2,980.95	805.94	3,370.30	2,842.96	3.46	-0.57	0.118
55.00	-15.72	-7.93	0.00	-306.6	0.00	306.57	2,971.21	801.37	3,332.22	2,817.51	3.67	-0.58	0.114
60.00	-14.68	-7.31	0.00	-266.9	0.00	266.93	2,942.95	788.33	3,224.62	2,744.97	4.29	-0.61	0.102
65.00	-13.67	-6.69	0.00	-230.4	0.00	230.39	2,914.02	775.28	3,118.78	2,672.70	4.95	-0.64	0.091
70.00	-12.66	-6.07	0.00	-196.9	0.00	196.94	2,884.43	762.23	3,014.71	2,600.72	5.64	-0.67	0.080
75.00	-11.68	-5.45	0.00	-166.6	0.00	166.60	2,854.17	749.19	2,912.40	2,529.08	6.35	-0.69	0.070
80.00	-10.70	-4.89	0.00	-139.4	0.00	139.36	2,823.24	736.14	2,811.86	2,457.80	7.09	-0.72	0.061
84.00	-9.94	-4.62	0.00	-119.8	0.00	119.81	2,798.02	725.70	2,732.70	2,401.06	7.7	-0.73	0.053
84.00	-9.94	-4.62	0.00	-119.8	0.00	119.81	813.41	244.02	261.48	263.16	7.7	-0.73	0.468
85.00	-9.82	-4.57	0.00	-115.2	0.00	115.19	813.41	244.02	261.48	263.16	7.85	-0.74	0.450
89.00	-8.86	-3.96	0.00	-96.9	0.00	96.91	813.41	244.02	261.48	263.16	8.6	-1.04	0.379
90.00	-8.74	-3.89	0.00	-93.0	0.00	92.95	813.41	244.02	261.48	263.16	8.82	-1.1	0.364
95.00	-8.20	-3.77	0.00	-73.5	0.00	73.50	813.41	244.02	261.48	263.16	10.14	-1.4	0.290
99.00	-7.47	-3.14	0.00	-58.4	0.00	58.40	813.41	244.02	261.48	263.16	11.4	-1.59	0.231
100.00	-4.36	-2.91	0.00	-55.3	0.00	55.26	813.41	244.02	261.48	263.16	11.73	-1.63	0.216
104.00	-3.94	-2.83	0.00	-43.6	0.00	43.62	813.41	244.02	261.48	263.16	13.16	-1.77	0.171
104.00	-3.94	-2.83	0.00	-43.6	0.00	43.62	450.13	135.04	123.30	124.05	13.16	-1.77	0.361
105.00	-3.87	-2.77	0.00	-40.8	0.00	40.80	450.13	135.04	123.30	124.05	13.53	-1.8	0.338
109.00	-3.30	-2.08	0.00	-29.7	0.00	29.72	450.13	135.04	123.30	124.05	15.15	-2.05	0.247
110.00	-2.99	-1.98	0.00	-27.6	0.00	27.65	450.13	135.04	123.30	124.05	15.59	-2.1	0.230
115.00	-2.69	-1.85	0.00	-17.8	0.00	17.76	450.13	135.04	123.30	124.05	17.9	-2.3	0.149
119.00	-2.16	-1.14	0.00	-10.4	0.00	10.35	450.13	135.04	123.30	124.05	19.87	-2.4	0.088
120.00	-2.03	-1.04	0.00	-9.2	0.00	9.21	450.13	135.04	123.30	124.05	20.37	-2.42	0.079
125.00	-1.76	-0.91	0.00	-4.0	0.00	4.01	450.13	135.04	123.30	124.05	22.94	-2.48	0.036
129.00	-1.26	-0.18	0.00	-0.4	0.00	0.38	450.13	135.04	123.30	124.05	25.02	-2.49	0.006
130.00	-0.19	-0.05	0.00	-0.2	0.00	0.20	450.13	135.04	123.30	124.05	25.54	-2.49	0.002
134.00	0.00	-0.04	0.00	0.0	0.00	0.00	450.13	135.04	123.30	124.05	27.63	-2.49	0.000

Load Case: 0.9D + 1.0W	120 mph wind with no ice	24 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	-22.01	-14.07	0.00	-929.9	0.00	929.90	3,220.76	934.00	4,526.36	3,563.04	0	0	0.268
5.00	-21.10	-13.56	0.00	-859.5	0.00	859.53	3,199.27	920.96	4,400.80	3,489.53	0.04	-0.07	0.253
10.00	-20.21	-13.05	0.00	-791.7	0.00	791.73	3,177.10	907.91	4,277.01	3,415.98	0.14	-0.13	0.238
15.00	-19.32	-12.54	0.00	-726.5	0.00	726.48	3,154.28	894.87	4,154.99	3,342.41	0.31	-0.19	0.224
20.00	-18.46	-12.01	0.00	-663.8	0.00	663.80	3,130.78	881.82	4,034.73	3,268.86	0.54	-0.25	0.209
25.00	-17.60	-11.45	0.00	-603.8	0.00	603.77	3,106.62	868.77	3,916.24	3,195.35	0.83	-0.3	0.195
30.00	-16.76	-10.89	0.00	-546.5	0.00	546.50	3,081.80	855.73	3,799.51	3,121.92	1.17	-0.36	0.181
35.00	-15.93	-10.31	0.00	-492.1	0.00	492.07	3,056.31	842.68	3,684.55	3,048.60	1.57	-0.41	0.167
40.00	-15.11	-9.72	0.00	-440.5	0.00	440.53	3,030.15	829.63	3,571.36	2,975.41	2.02	-0.45	0.153
45.00	-14.30	-9.33	0.00	-391.9	0.00	391.93	3,003.33	816.59	3,459.93	2,902.40	2.52	-0.5	0.140
46.50	-14.07	-9.03	0.00	-377.9	0.00	377.94	2,995.15	812.67	3,426.84	2,880.53	2.68	-0.51	0.136
50.00	-13.01	-8.61	0.00	-346.3	0.00	346.34	2,975.84	803.54	3,350.26	2,829.58	3.06	-0.54	0.127
53.25	-12.04	-8.30	0.00	-318.4	0.00	318.35	2,980.95	805.94	3,370.30	2,842.96	3.44	-0.56	0.116
55.00	-11.77	-7.89	0.00	-303.8	0.00	303.83	2,971.21	801.37	3,332.22	2,817.51	3.65	-0.57	0.112
60.00	-10.99	-7.27	0.00	-264.4	0.00	264.40	2,942.95	788.33	3,224.62	2,744.97	4.27	-0.61	0.100
65.00	-10.23	-6.65	0.00	-228.0	0.00	228.05	2,914.02	775.28	3,118.78	2,672.70	4.92	-0.64	0.089
70.00	-9.48	-6.03	0.00	-194.8	0.00	194.81	2,884.43	762.23	3,014.71	2,600.72	5.6	-0.66	0.078
75.00	-8.74	-5.41	0.00	-164.7	0.00	164.66	2,854.17	749.19	2,912.40	2,529.08	6.31	-0.69	0.068
80.00	-8.01	-4.85	0.00	-137.6	0.00	137.61	2,823.24	736.14	2,811.86	2,457.80	7.05	-0.71	0.059
84.00	-7.44	-4.59	0.00	-118.2	0.00	118.20	2,798.02	725.70	2,732.70	2,401.06	7.65	-0.73	0.052
84.00	-7.44	-4.59	0.00	-118.2	0.00	118.20	813.41	244.02	261.48	263.16	7.65	-0.73	0.459
85.00	-7.34	-4.53	0.00	-113.6	0.00	113.61	813.41	244.02	261.48	263.16	7.8	-0.73	0.441
89.00	-6.63	-3.91	0.00	-95.5	0.00	95.48	813.41	244.02	261.48	263.16	8.54	-1.03	0.371
90.00	-6.54	-3.84	0.00	-91.6	0.00	91.57	813.41	244.02	261.48	263.16	8.76	-1.09	0.356
95.00	-6.13	-3.72	0.00	-72.4	0.00	72.37	813.41	244.02	261.48	263.16	10.07	-1.39	0.283
99.00	-5.58	-3.08	0.00	-57.5	0.00	57.49	813.41	244.02	261.48	263.16	11.31	-1.57	0.225
100.00	-3.25	-2.88	0.00	-54.4	0.00	54.41	813.41	244.02	261.48	263.16	11.64	-1.61	0.211
104.00	-2.93	-2.79	0.00	-42.9	0.00	42.91	813.41	244.02	261.48	263.16	13.05	-1.75	0.167
104.00	-2.93	-2.79	0.00	-42.9	0.00	42.91	450.13	135.04	123.30	124.05	13.05	-1.75	0.353
105.00	-2.88	-2.73	0.00	-40.1	0.00	40.11	450.13	135.04	123.30	124.05	13.42	-1.78	0.330
109.00	-2.46	-2.04	0.00	-29.2	0.00	29.18	450.13	135.04	123.30	124.05	15.02	-2.02	0.241
110.00	-2.23	-1.95	0.00	-27.1	0.00	27.13	450.13	135.04	123.30	124.05	15.45	-2.07	0.224
115.00	-2.00	-1.82	0.00	-17.4	0.00	17.39	450.13	135.04	123.30	124.05	17.73	-2.27	0.145
119.00	-1.61	-1.11	0.00	-10.1	0.00	10.10	450.13	135.04	123.30	124.05	19.68	-2.37	0.085
120.00	-1.51	-1.02	0.00	-9.0	0.00	8.99	450.13	135.04	123.30	124.05	20.17	-2.38	0.076
125.00	-1.31	-0.89	0.00	-3.9	0.00	3.90	450.13	135.04	123.30	124.05	22.7	-2.44	0.034
129.00	-0.94	-0.16	0.00	-0.4	0.00	0.36	450.13	135.04	123.30	124.05	24.76	-2.46	0.005
130.00	-0.14	-0.05	0.00	-0.2	0.00	0.19	450.13	135.04	123.30	124.05	25.27	-2.46	0.002
134.00	0.00	-0.04	0.00	0.0	0.00	0.00	450.13	135.04	123.30	124.05	27.33	-2.46	0.000

Load Case: 1.2D + 1.0Di + 1.0Wi	50 mph wind with 1" radial ice		23 Iterations
Gust Response Factor: 1.10	Ice Dead Load Factor	1.00	
Dead load Factor: 1.20			Ice Importance Factor 1.00
Wind Load Factor: 1.00			

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-41.95	-4.18	0.00	-280.0	0.00	280.05	3,220.76	934.00	4,526.36	3,563.04	0	0	0.092
5.00	-40.50	-4.03	0.00	-259.2	0.00	259.17	3,199.27	920.96	4,400.80	3,489.53	0.01	-0.02	0.087
10.00	-39.03	-3.89	0.00	-239.0	0.00	239.01	3,177.10	907.91	4,277.01	3,415.98	0.04	-0.04	0.082
15.00	-37.57	-3.74	0.00	-219.6	0.00	219.58	3,154.28	894.87	4,154.99	3,342.41	0.09	-0.06	0.078
20.00	-36.12	-3.59	0.00	-200.9	0.00	200.88	3,130.78	881.82	4,034.73	3,268.86	0.16	-0.07	0.073
25.00	-34.68	-3.43	0.00	-182.9	0.00	182.94	3,106.62	868.77	3,916.24	3,195.35	0.25	-0.09	0.068
30.00	-33.25	-3.26	0.00	-165.8	0.00	165.79	3,081.80	855.73	3,799.51	3,121.92	0.35	-0.11	0.064
35.00	-31.84	-3.10	0.00	-149.5	0.00	149.47	3,056.31	842.68	3,684.55	3,048.60	0.48	-0.12	0.059
40.00	-30.44	-2.92	0.00	-134.0	0.00	134.00	3,030.15	829.63	3,571.36	2,975.41	0.61	-0.14	0.055
45.00	-29.06	-2.81	0.00	-119.4	0.00	119.38	3,003.33	816.59	3,459.93	2,902.40	0.76	-0.15	0.051
46.50	-28.65	-2.72	0.00	-115.2	0.00	115.17	2,995.15	812.67	3,426.84	2,880.53	0.81	-0.15	0.050
50.00	-27.03	-2.60	0.00	-105.7	0.00	105.66	2,975.84	803.54	3,350.26	2,829.58	0.93	-0.16	0.046
53.25	-25.53	-2.50	0.00	-97.2	0.00	97.22	2,980.95	805.94	3,370.30	2,842.96	1.04	-0.17	0.043
55.00	-25.06	-2.38	0.00	-92.8	0.00	92.84	2,971.21	801.37	3,332.22	2,817.51	1.1	-0.17	0.041
60.00	-23.71	-2.20	0.00	-81.0	0.00	80.95	2,942.95	788.33	3,224.62	2,744.97	1.29	-0.18	0.038
65.00	-22.38	-2.01	0.00	-70.0	0.00	69.97	2,914.02	775.28	3,118.78	2,672.70	1.49	-0.19	0.034
70.00	-21.07	-1.82	0.00	-59.9	0.00	59.91	2,884.43	762.23	3,014.71	2,600.72	1.7	-0.2	0.030
75.00	-19.78	-1.64	0.00	-50.8	0.00	50.79	2,854.17	749.19	2,912.40	2,529.08	1.91	-0.21	0.027
80.00	-18.50	-1.47	0.00	-42.6	0.00	42.60	2,823.24	736.14	2,811.86	2,457.80	2.13	-0.22	0.024
84.00	-17.50	-1.39	0.00	-36.7	0.00	36.71	2,798.02	725.70	2,732.70	2,401.06	2.32	-0.22	0.022
84.00	-17.50	-1.39	0.00	-36.7	0.00	36.71	813.41	244.02	261.48	263.16	2.32	-0.22	0.161
85.00	-17.37	-1.37	0.00	-35.3	0.00	35.32	813.41	244.02	261.48	263.16	2.36	-0.22	0.156
89.00	-15.97	-1.21	0.00	-29.8	0.00	29.83	813.41	244.02	261.48	263.16	2.59	-0.31	0.133
90.00	-15.84	-1.19	0.00	-28.6	0.00	28.62	813.41	244.02	261.48	263.16	2.66	-0.34	0.128
95.00	-15.22	-1.15	0.00	-22.7	0.00	22.67	813.41	244.02	261.48	263.16	3.06	-0.43	0.105
99.00	-13.85	-0.98	0.00	-18.1	0.00	18.07	813.41	244.02	261.48	263.16	3.44	-0.48	0.086
100.00	-7.94	-0.89	0.00	-17.1	0.00	17.09	813.41	244.02	261.48	263.16	3.54	-0.5	0.075
104.00	-7.44	-0.86	0.00	-13.5	0.00	13.52	813.41	244.02	261.48	263.16	3.98	-0.54	0.061
104.00	-7.44	-0.86	0.00	-13.5	0.00	13.52	450.13	135.04	123.30	124.05	3.98	-0.54	0.126
105.00	-7.36	-0.84	0.00	-12.7	0.00	12.67	450.13	135.04	123.30	124.05	4.09	-0.55	0.118
109.00	-6.15	-0.66	0.00	-9.3	0.00	9.32	450.13	135.04	123.30	124.05	4.59	-0.63	0.089
110.00	-5.51	-0.62	0.00	-8.7	0.00	8.67	450.13	135.04	123.30	124.05	4.72	-0.64	0.082
115.00	-5.12	-0.56	0.00	-5.6	0.00	5.59	450.13	135.04	123.30	124.05	5.43	-0.71	0.056
119.00	-3.93	-0.37	0.00	-3.3	0.00	3.33	450.13	135.04	123.30	124.05	6.04	-0.74	0.036
120.00	-3.56	-0.33	0.00	-3.0	0.00	2.96	450.13	135.04	123.30	124.05	6.19	-0.74	0.032
125.00	-3.21	-0.28	0.00	-1.3	0.00	1.29	450.13	135.04	123.30	124.05	6.98	-0.76	0.018
129.00	-2.04	-0.08	0.00	-0.2	0.00	0.18	450.13	135.04	123.30	124.05	7.63	-0.77	0.006
130.00	-0.26	-0.02	0.00	-0.1	0.00	0.10	450.13	135.04	123.30	124.05	7.79	-0.77	0.001
134.00	0.00	-0.02	0.00	0.0	0.00	0.00	450.13	135.04	123.30	124.05	8.43	-0.77	0.000

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

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-24.47	-3.21	0.00	-215.4	0.00	215.43	3,220.76	934.00	4,526.36	3,563.04	0	0	0.068
5.00	-23.47	-3.10	0.00	-199.4	0.00	199.38	3,199.27	920.96	4,400.80	3,489.53	0.01	-0.02	0.064
10.00	-22.49	-2.98	0.00	-183.9	0.00	183.91	3,177.10	907.91	4,277.01	3,415.98	0.03	-0.03	0.061
15.00	-21.52	-2.87	0.00	-169.0	0.00	169.00	3,154.28	894.87	4,154.99	3,342.41	0.07	-0.04	0.057
20.00	-20.57	-2.75	0.00	-154.7	0.00	154.66	3,130.78	881.82	4,034.73	3,268.86	0.12	-0.06	0.054
25.00	-19.62	-2.63	0.00	-140.9	0.00	140.91	3,106.62	868.77	3,916.24	3,195.35	0.19	-0.07	0.050
30.00	-18.69	-2.50	0.00	-127.8	0.00	127.78	3,081.80	855.73	3,799.51	3,121.92	0.27	-0.08	0.047
35.00	-17.78	-2.37	0.00	-115.3	0.00	115.28	3,056.31	842.68	3,684.55	3,048.60	0.37	-0.09	0.044
40.00	-16.87	-2.24	0.00	-103.4	0.00	103.42	3,030.15	829.63	3,571.36	2,975.41	0.47	-0.11	0.040
45.00	-15.98	-2.15	0.00	-92.2	0.00	92.22	3,003.33	816.59	3,459.93	2,902.40	0.59	-0.12	0.037
46.50	-15.71	-2.09	0.00	-89.0	0.00	88.99	2,995.15	812.67	3,426.84	2,880.53	0.62	-0.12	0.036
50.00	-14.54	-1.99	0.00	-81.7	0.00	81.70	2,975.84	803.54	3,350.26	2,829.58	0.71	-0.13	0.034
53.25	-13.47	-1.92	0.00	-75.2	0.00	75.22	2,980.95	805.94	3,370.30	2,842.96	0.8	-0.13	0.031
55.00	-13.16	-1.83	0.00	-71.9	0.00	71.86	2,971.21	801.37	3,332.22	2,817.51	0.85	-0.13	0.030
60.00	-12.30	-1.69	0.00	-62.7	0.00	62.71	2,942.95	788.33	3,224.62	2,744.97	0.99	-0.14	0.027
65.00	-11.45	-1.55	0.00	-54.2	0.00	54.25	2,914.02	775.28	3,118.78	2,672.70	1.15	-0.15	0.024
70.00	-10.61	-1.41	0.00	-46.5	0.00	46.49	2,884.43	762.23	3,014.71	2,600.72	1.31	-0.16	0.022
75.00	-9.78	-1.28	0.00	-39.4	0.00	39.42	2,854.17	749.19	2,912.40	2,529.08	1.47	-0.16	0.019
80.00	-8.97	-1.15	0.00	-33.0	0.00	33.04	2,823.24	736.14	2,811.86	2,457.80	1.64	-0.17	0.017
84.00	-8.33	-1.09	0.00	-28.4	0.00	28.44	2,798.02	725.70	2,732.70	2,401.06	1.79	-0.17	0.015
84.00	-8.33	-1.09	0.00	-28.4	0.00	28.44	813.41	244.02	261.48	263.16	1.79	-0.17	0.118
85.00	-8.23	-1.08	0.00	-27.4	0.00	27.35	813.41	244.02	261.48	263.16	1.82	-0.17	0.114
89.00	-7.44	-0.94	0.00	-23.0	0.00	23.04	813.41	244.02	261.48	263.16	2	-0.24	0.097
90.00	-7.35	-0.92	0.00	-22.1	0.00	22.10	813.41	244.02	261.48	263.16	2.05	-0.26	0.093
95.00	-6.91	-0.89	0.00	-17.5	0.00	17.50	813.41	244.02	261.48	263.16	2.36	-0.33	0.075
99.00	-6.29	-0.75	0.00	-13.9	0.00	13.94	813.41	244.02	261.48	263.16	2.65	-0.37	0.061
100.00	-3.70	-0.70	0.00	-13.2	0.00	13.19	813.41	244.02	261.48	263.16	2.73	-0.38	0.055
104.00	-3.35	-0.68	0.00	-10.4	0.00	10.40	813.41	244.02	261.48	263.16	3.07	-0.42	0.044
104.00	-3.35	-0.68	0.00	-10.4	0.00	10.40	450.13	135.04	123.30	124.05	3.07	-0.42	0.091
105.00	-3.29	-0.66	0.00	-9.7	0.00	9.73	450.13	135.04	123.30	124.05	3.16	-0.42	0.086
109.00	-2.81	-0.50	0.00	-7.1	0.00	7.09	450.13	135.04	123.30	124.05	3.54	-0.48	0.063
110.00	-2.55	-0.47	0.00	-6.6	0.00	6.59	450.13	135.04	123.30	124.05	3.64	-0.5	0.059
115.00	-2.30	-0.44	0.00	-4.2	0.00	4.22	450.13	135.04	123.30	124.05	4.19	-0.54	0.039
119.00	-1.83	-0.27	0.00	-2.5	0.00	2.47	450.13	135.04	123.30	124.05	4.66	-0.57	0.024
120.00	-1.72	-0.25	0.00	-2.2	0.00	2.19	450.13	135.04	123.30	124.05	4.77	-0.57	0.022
125.00	-1.50	-0.21	0.00	-1.0	0.00	0.95	450.13	135.04	123.30	124.05	5.38	-0.59	0.011
129.00	-1.05	-0.05	0.00	-0.1	0.00	0.10	450.13	135.04	123.30	124.05	5.87	-0.59	0.003
130.00	-0.16	-0.01	0.00	-0.1	0.00	0.06	450.13	135.04	123.30	124.05	6	-0.59	0.001
134.00	0.00	-0.01	0.00	0.0	0.00	0.00	450.13	135.04	123.30	124.05	6.49	-0.59	0.000

EQUIVALENT LATERAL FORCES METHOD ANALYSIS

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

Spectral Response Acceleration for Short Period (S_S):	0.200
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.053
Long-Period Transition Period (T_L – Seconds):	6
Importance Factor (I_a):	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}):	0.213
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.085
Seismic Response Coefficient (C_s):	0.037
Upper Limit C_s :	0.037
Lower Limit C_s :	0.030
Period based on Rayleigh Method (sec):	1.530
Redundancy Factor (ρ):	1.000
Seismic Force Distribution Exponent (k):	1.510
Total Unfactored Dead Load:	24.470 k
Seismic Base Shear (E):	0.910 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)
36	132	162	263	0.018	16	201
35	129.5	45	72	0.005	4	56
34	127	182	278	0.019	17	226
33	122.5	227	329	0.022	20	282
32	119.5	50	70	0.005	4	63
31	117	202	273	0.018	17	251
30	112.5	252	321	0.022	20	313
29	109.5	55	68	0.004	4	69
28	107	221	262	0.018	16	275
27	104.5	55	63	0.004	4	69
26	102	352	387	0.026	24	438
25	99.5	88	93	0.006	6	109
24	97	352	359	0.024	22	438
23	92.5	440	417	0.028	25	547
22	89.5	88	79	0.005	5	109
21	87	368	318	0.021	19	457
20	84.5	92	76	0.005	5	114
19	82	642	507	0.034	31	798
18	77.5	814	590	0.040	36	1,012
17	72.5	827	542	0.036	33	1,027
16	67.5	839	494	0.033	30	1,043
15	62.5	852	446	0.030	27	1,059
14	57.5	865	399	0.027	24	1,074
13	54.125	306	129	0.009	8	380
12	51.625	1,075	421	0.028	26	1,336
11	48.25	1,170	414	0.028	25	1,454
10	45.75	265	87	0.006	5	329
9	42.5	892	260	0.018	16	1,108
8	37.5	905	219	0.015	13	1,124
7	32.5	917	178	0.012	11	1,140
6	27.5	930	140	0.009	9	1,156
5	22.5	943	105	0.007	6	1,171
4	17.5	955	73	0.005	4	1,187
3	12.5	968	44	0.003	3	1,203

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
2	7.5	981	21	0.001	1	1,218
1	2.5	993	4	0.000	0	1,234
Commscope CBC71921-DF	130	46	73	0.005	4	57
Commscope CBC71921-DF	110	46	57	0.004	3	57
Nokia B5 RRH4x40-850	130	146	231	0.016	14	181
Alcatel-Lucent RRH2X60-1900	130	129	205	0.014	12	160
Alcatel-Lucent RRH2x60 700	130	170	270	0.018	16	211
Alcatel-Lucent B66A RRH 4x45	130	201	319	0.021	19	250
Commscope SBNHH-1D65B	130	152	241	0.016	15	189
Commscope SBNHH-1D65B	110	152	187	0.013	11	189
Canister 5	129	267	418	0.028	25	331
Amphenol Antel BXA-80063-6BF-EDIN-X	120	58	81	0.005	5	72
Canister 4	119	267	370	0.025	22	331
Canister 3	109	267	324	0.022	20	331
Generic TMO Incentive Reserve	100	2,500	2,666	0.179	162	3,107
Canister 2	99	267	280	0.019	17	331
Commscope CDX623T-DS-T	89	30	27	0.002	2	38
Commscope FVV-65B-R3	89	132	118	0.008	7	164
Canister 1	89	267	238	0.016	14	331
		24,467	14,908	1.000	905	30,404

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)
36	132	162	263	0.018	16	139
35	129.5	45	72	0.005	4	39
34	127	182	278	0.019	17	156
33	122.5	227	329	0.022	20	195
32	119.5	50	70	0.005	4	43
31	117	202	273	0.018	17	173
30	112.5	252	321	0.022	20	216
29	109.5	55	68	0.004	4	47
28	107	221	262	0.018	16	190
27	104.5	55	63	0.004	4	47
26	102	352	387	0.026	24	302
25	99.5	88	93	0.006	6	76
24	97	352	359	0.024	22	302
23	92.5	440	417	0.028	25	378
22	89.5	88	79	0.005	5	76
21	87	368	318	0.021	19	316
20	84.5	92	76	0.005	5	79
19	82	642	507	0.034	31	550
18	77.5	814	590	0.040	36	698
17	72.5	827	542	0.036	33	709
16	67.5	839	494	0.033	30	720
15	62.5	852	446	0.030	27	730
14	57.5	865	399	0.027	24	741
13	54.125	306	129	0.009	8	262
12	51.625	1,075	421	0.028	26	922
11	48.25	1,170	414	0.028	25	1,003
10	45.75	265	87	0.006	5	227
9	42.5	892	260	0.018	16	765
8	37.5	905	219	0.015	13	776
7	32.5	917	178	0.012	11	786
6	27.5	930	140	0.009	9	797
5	22.5	943	105	0.007	6	808
4	17.5	955	73	0.005	4	819
3	12.5	968	44	0.003	3	830
2	7.5	981	21	0.001	1	841
1	2.5	993	4	0.000	0	851
Commscope CBC71921-DF	130	46	73	0.005	4	40
Commscope CBC71921-DF	110	46	57	0.004	3	40

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
Nokia B5 RRH4x40-850	130	146	231	0.016	14	125
Alcatel-Lucent RRH2X60-1900	130	129	205	0.014	12	111
Alcatel-Lucent RRH2x60 700	130	170	270	0.018	16	146
Alcatel-Lucent B66A RRH 4x45	130	201	319	0.021	19	172
Commscope SBNHH-1D65B	130	152	241	0.016	15	130
Commscope SBNHH-1D65B	110	152	187	0.013	11	130
Canister 5	129	267	418	0.028	25	229
Amphenol Antel BXA-80063-6BF-EDIN-X	120	58	81	0.005	5	49
Canister 4	119	267	370	0.025	22	229
Canister 3	109	267	324	0.022	20	229
Generic TMO Incentive Reserve	100	2,500	2,666	0.179	162	2,143
Canister 2	99	267	280	0.019	17	229
Commscope CDX623T-DS-T	89	30	27	0.002	2	26
Commscope FVV-65B-R3	89	132	118	0.008	7	113
Canister 1	89	267	238	0.016	14	229
		24,467	14,908	1.000	905	20,976

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	-29.17	-0.91	0.00	-83.82	0.00	83.82	3,220.76	934.00	4,526	3,563.04	0.00	0.00	0.03
5.00	-27.95	-0.91	0.00	-79.29	0.00	79.29	3,199.27	920.96	4,401	3,489.53	0.00	-0.01	0.03
10.00	-26.75	-0.91	0.00	-74.75	0.00	74.75	3,177.10	907.91	4,277	3,415.98	0.01	-0.01	0.03
15.00	-25.56	-0.91	0.00	-70.21	0.00	70.21	3,154.28	894.87	4,155	3,342.41	0.03	-0.02	0.03
20.00	-24.39	-0.90	0.00	-65.68	0.00	65.68	3,130.78	881.82	4,035	3,268.86	0.05	-0.02	0.03
25.00	-23.23	-0.89	0.00	-61.18	0.00	61.18	3,106.62	868.77	3,916	3,195.35	0.08	-0.03	0.03
30.00	-22.09	-0.88	0.00	-56.71	0.00	56.71	3,081.80	855.73	3,800	3,121.92	0.11	-0.03	0.03
35.00	-20.97	-0.87	0.00	-52.28	0.00	52.28	3,056.31	842.68	3,685	3,048.60	0.15	-0.04	0.02
40.00	-19.86	-0.86	0.00	-47.92	0.00	47.92	3,030.15	829.63	3,571	2,975.41	0.19	-0.04	0.02
45.00	-19.53	-0.85	0.00	-43.63	0.00	43.63	3,003.33	816.59	3,460	2,902.40	0.24	-0.05	0.02
46.50	-18.08	-0.83	0.00	-42.35	0.00	42.35	2,995.15	812.67	3,427	2,880.53	0.26	-0.05	0.02
50.00	-16.74	-0.80	0.00	-39.45	0.00	39.45	2,975.84	803.54	3,350	2,829.58	0.30	-0.05	0.02
53.25	-16.36	-0.79	0.00	-36.85	0.00	36.85	2,980.95	805.94	3,370	2,842.96	0.33	-0.06	0.02
55.00	-15.29	-0.77	0.00	-35.46	0.00	35.46	2,971.21	801.37	3,332	2,817.51	0.36	-0.06	0.02
60.00	-14.23	-0.74	0.00	-31.61	0.00	31.61	2,942.95	788.33	3,225	2,744.97	0.42	-0.06	0.02
65.00	-13.19	-0.71	0.00	-27.90	0.00	27.90	2,914.02	775.28	3,119	2,672.70	0.49	-0.07	0.02
70.00	-12.16	-0.68	0.00	-24.34	0.00	24.34	2,884.43	762.23	3,015	2,600.72	0.56	-0.07	0.01
75.00	-11.15	-0.64	0.00	-20.95	0.00	20.95	2,854.17	749.19	2,912	2,529.08	0.63	-0.07	0.01
80.00	-10.35	-0.61	0.00	-17.74	0.00	17.74	2,823.24	736.14	2,812	2,457.80	0.71	-0.08	0.01
84.00	-10.24	-0.61	0.00	-15.29	0.00	15.29	2,798.02	725.70	2,733	2,401.06	0.77	-0.08	0.01
84.00	-10.24	-0.61	0.00	-15.29	0.00	15.29	813.41	244.02	261	263.16	0.77	-0.08	0.07
85.00	-9.78	-0.59	0.00	-14.69	0.00	14.69	813.41	244.02	261	263.16	0.79	-0.08	0.07
89.00	-9.14	-0.56	0.00	-12.33	0.00	12.33	813.41	244.02	261	263.16	0.87	-0.12	0.06
90.00	-8.59	-0.54	0.00	-11.77	0.00	11.77	813.41	244.02	261	263.16	0.89	-0.12	0.06
95.00	-8.15	-0.52	0.00	-9.06	0.00	9.06	813.41	244.02	261	263.16	1.05	-0.16	0.04
99.00	-7.71	-0.50	0.00	-6.97	0.00	6.97	813.41	244.02	261	263.16	1.19	-0.18	0.04
100.00	-4.17	-0.30	0.00	-6.47	0.00	6.47	813.41	244.02	261	263.16	1.23	-0.19	0.03
104.00	-4.10	-0.30	0.00	-5.25	0.00	5.25	813.41	244.02	261	263.16	1.40	-0.21	0.03
104.00	-4.10	-0.30	0.00	-5.25	0.00	5.25	450.13	135.04	123	124.05	1.40	-0.21	0.05
105.00	-3.82	-0.29	0.00	-4.95	0.00	4.95	450.13	135.04	123	124.05	1.44	-0.21	0.05
109.00	-3.42	-0.26	0.00	-3.81	0.00	3.81	450.13	135.04	123	124.05	1.63	-0.24	0.04
110.00	-2.86	-0.23	0.00	-3.55	0.00	3.55	450.13	135.04	123	124.05	1.68	-0.25	0.04
115.00	-2.61	-0.21	0.00	-2.43	0.00	2.43	450.13	135.04	123	124.05	1.95	-0.27	0.03
119.00	-2.22	-0.18	0.00	-1.59	0.00	1.59	450.13	135.04	123	124.05	2.19	-0.29	0.02
120.00	-1.86	-0.15	0.00	-1.41	0.00	1.41	450.13	135.04	123	124.05	2.25	-0.29	0.02
125.00	-1.64	-0.14	0.00	-0.65	0.00	0.65	450.13	135.04	123	124.05	2.56	-0.30	0.01
129.00	-1.25	-0.10	0.00	-0.10	0.00	0.10	450.13	135.04	123	124.05	2.81	-0.30	0.00
130.00	0.00	0.00	0.00	0.00	0.00	0.00	450.13	135.04	123	124.05	2.87	-0.30	0.00
134.00	0.00	0.00	0.00	0.00	0.00	0.00	450.13	135.04	123	124.05	3.13	-0.30	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 (ft-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	-20.12	-0.91	0.00	-83.19	0.00	83.19	3,220.76	934.00	4,526	3,563.04	0.00	0.00	0.03
5.00	-19.28	-0.91	0.00	-78.67	0.00	78.67	3,199.27	920.96	4,401	3,489.53	0.00	-0.01	0.03
10.00	-18.45	-0.90	0.00	-74.14	0.00	74.14	3,177.10	907.91	4,277	3,415.98	0.01	-0.01	0.03
15.00	-17.64	-0.90	0.00	-69.62	0.00	69.62	3,154.28	894.87	4,155	3,342.41	0.03	-0.02	0.03
20.00	-16.83	-0.90	0.00	-65.11	0.00	65.11	3,130.78	881.82	4,035	3,268.86	0.05	-0.02	0.03
25.00	-16.03	-0.89	0.00	-60.62	0.00	60.62	3,106.62	868.77	3,916	3,195.35	0.08	-0.03	0.02
30.00	-15.24	-0.88	0.00	-56.17	0.00	56.17	3,081.80	855.73	3,800	3,121.92	0.11	-0.03	0.02
35.00	-14.47	-0.87	0.00	-51.77	0.00	51.77	3,056.31	842.68	3,685	3,048.60	0.15	-0.04	0.02
40.00	-13.70	-0.85	0.00	-47.44	0.00	47.44	3,030.15	829.63	3,571	2,975.41	0.19	-0.04	0.02
45.00	-13.48	-0.85	0.00	-43.18	0.00	43.18	3,003.33	816.59	3,460	2,902.40	0.24	-0.05	0.02
46.50	-12.47	-0.82	0.00	-41.91	0.00	41.91	2,995.15	812.67	3,427	2,880.53	0.26	-0.05	0.02
50.00	-11.55	-0.80	0.00	-39.03	0.00	39.03	2,975.84	803.54	3,350	2,829.58	0.29	-0.05	0.02
53.25	-11.29	-0.79	0.00	-36.44	0.00	36.44	2,980.95	805.94	3,370	2,842.96	0.33	-0.06	0.02
55.00	-10.55	-0.76	0.00	-35.06	0.00	35.06	2,971.21	801.37	3,332	2,817.51	0.35	-0.06	0.02
60.00	-9.82	-0.74	0.00	-31.24	0.00	31.24	2,942.95	788.33	3,225	2,744.97	0.42	-0.06	0.02
65.00	-9.10	-0.71	0.00	-27.56	0.00	27.56	2,914.02	775.28	3,119	2,672.70	0.48	-0.07	0.01
70.00	-8.39	-0.67	0.00	-24.03	0.00	24.03	2,884.43	762.23	3,015	2,600.72	0.55	-0.07	0.01
75.00	-7.69	-0.64	0.00	-20.66	0.00	20.66	2,854.17	749.19	2,912	2,529.08	0.63	-0.07	0.01
80.00	-7.14	-0.61	0.00	-17.48	0.00	17.48	2,823.24	736.14	2,812	2,457.80	0.70	-0.07	0.01
84.00	-7.06	-0.60	0.00	-15.05	0.00	15.05	2,798.02	725.70	2,733	2,401.06	0.76	-0.08	0.01
84.00	-7.06	-0.60	0.00	-15.05	0.00	15.05	813.41	244.02	261	263.16	0.76	-0.08	0.07
85.00	-6.75	-0.58	0.00	-14.45	0.00	14.45	813.41	244.02	261	263.16	0.78	-0.08	0.06
89.00	-6.30	-0.56	0.00	-12.12	0.00	12.12	813.41	244.02	261	263.16	0.86	-0.11	0.05
90.00	-5.92	-0.53	0.00	-11.56	0.00	11.56	813.41	244.02	261	263.16	0.89	-0.12	0.05
95.00	-5.62	-0.51	0.00	-8.89	0.00	8.89	813.41	244.02	261	263.16	1.04	-0.16	0.04
99.00	-5.32	-0.49	0.00	-6.84	0.00	6.84	813.41	244.02	261	263.16	1.18	-0.18	0.03
100.00	-2.87	-0.30	0.00	-6.34	0.00	6.34	813.41	244.02	261	263.16	1.22	-0.19	0.03
104.00	-2.83	-0.30	0.00	-5.15	0.00	5.15	813.41	244.02	261	263.16	1.38	-0.20	0.02
104.00	-2.83	-0.30	0.00	-5.15	0.00	5.15	450.13	135.04	123	124.05	1.38	-0.20	0.05
105.00	-2.64	-0.28	0.00	-4.85	0.00	4.85	450.13	135.04	123	124.05	1.42	-0.21	0.05
109.00	-2.36	-0.26	0.00	-3.73	0.00	3.73	450.13	135.04	123	124.05	1.61	-0.24	0.04
110.00	-1.97	-0.22	0.00	-3.48	0.00	3.48	450.13	135.04	123	124.05	1.66	-0.24	0.03
115.00	-1.80	-0.20	0.00	-2.37	0.00	2.37	450.13	135.04	123	124.05	1.93	-0.27	0.02
119.00	-1.53	-0.18	0.00	-1.56	0.00	1.56	450.13	135.04	123	124.05	2.16	-0.28	0.02
120.00	-1.29	-0.15	0.00	-1.38	0.00	1.38	450.13	135.04	123	124.05	2.22	-0.29	0.01
125.00	-1.13	-0.13	0.00	-0.63	0.00	0.63	450.13	135.04	123	124.05	2.52	-0.29	0.01
129.00	-0.86	-0.10	0.00	-0.10	0.00	0.10	450.13	135.04	123	124.05	2.77	-0.30	0.00
130.00	0.00	0.00	0.00	0.00	0.00	0.00	450.13	135.04	123	124.05	2.83	-0.30	0.00
134.00	0.00	0.00	0.00	0.00	0.00	0.00	450.13	135.04	123	124.05	3.08	-0.30	0.00

ASSET: 283564, MILFORD CT
 CUSTOMER: DISH WIRELESS L.L.C.

CODE: ANSI/TIA-222-H
 ENG NO: 13698061_C3_03

ANALYSIS SUMMARY

Load Case	Reactions						Max Usage	
	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	14.08	0.00	29.35	0.00	0.00	934.32	84.00	0.47
0.9D + 1.0W	14.07	0.00	22.01	0.00	0.00	929.90	84.00	0.46
1.2D + 1.0Di + 1.0Wi	4.18	0.00	41.95	0.00	0.00	280.05	84.00	0.16
1.2D + 1.0Ev + 1.0Eh	0.91	0.00	29.17	0.00	0.00	83.82	84.00	0.07
0.9D - 1.0Ev + 1.0Eh	0.91	0.00	20.12	0.00	0.00	83.19	84.00	0.07
1.0D + 1.0W	3.21	0.00	24.47	0.00	0.00	215.43	84.00	0.12

Site ID
Site Name

283564
Milford CT, CT



Spoked Flange Analysis for Concealment Poles

Spline Reactions		
Moment, Mu	119.8	k-ft
Axial, Pu	9.9	k
Shear, Vu	4.6	k
Elevation	84.0	ft

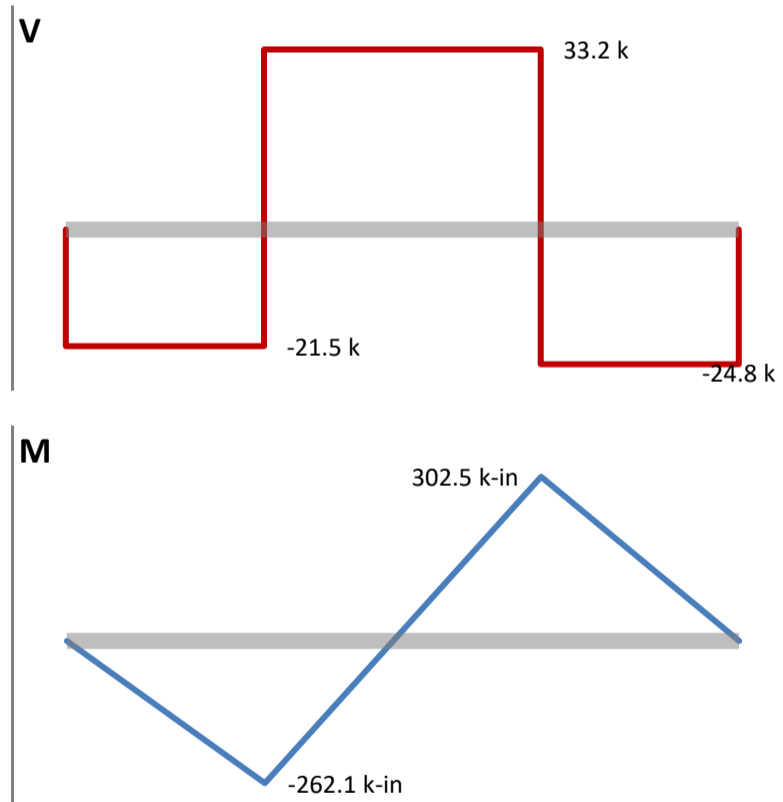
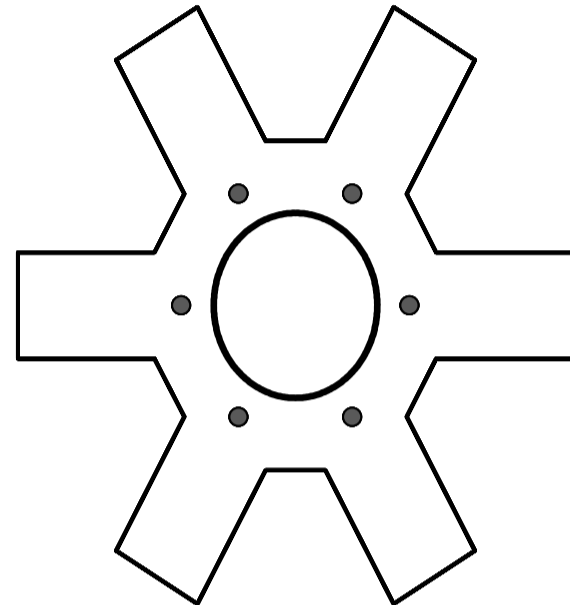
Pole/Spline Data		
Spine Diameter	12.75	in
Spine Thickness	0.562	in
Monopole Diameter	42	in
Monopole Thickness	0.3125	in

Bolt & Spoked Plate Parameters		
Bolt Quantity	6	#
Bolt Diameter	1 1/2	in
Bolt Circle	17	in
Bolt Grade	A325	-
Bolt Yield Strength, Fy	92	ksi
Bolt Tensile Strength, Fu	120	ksi
Spoke Flange Location	Inner	-
Spoke Quantity	6	#
Spoke Thickness	2	in
Spoke Width	7	in
Inner Plate Diameter	21	in
Plate Grade	A572-50	-
Plate Yield Strength, Fy	50	ksi
Has Stiffeners?	No	-
Unstiffened Spoke Length, a	10.5	in

Plate Calculations		
$Z = bd^2/4$	7.00	in ³
$Mol = 1/8N_{bolt}BC^2$	216.8	in ²
$A_{gbolt} = (d_n - 0.9743/n)^2\pi/5$	1.45	in ²
$A_{nbolt} = A_g - A_{holes} + t\Sigma s/4g$	1.41	in ²
$T_{bolt} = (Pu/N_{bolt}) - ((Mu*BC/2)/Mol)$	54.72	k
$C_{bolt} = (Pu/N_{bolt}) + ((Mu*BC/2)/Mol)$	58.03	k
$MU_{applied} = Pu*a$	302.50	k-in
$\Phi Tn = 0.9*Fy*Ag$	120.43	k
$\Phi Tn = 0.75*Fu*An$	126.90	k
$\Phi Mn = 0.9*Fy*Z$	315.00	k-in

Bolt & Plate Capacities		
Flange Bolt Stress	43%	Pass
Spoked Plate Stress	96%	Pass

Weld Parameters		
Weld Strength	70	ksi
Top Weld Type	Fillet	-
Side Weld Type	Fillet	-
Bottom Weld Type	Fillet	-
Top Fillet Thickness	7/16	in
Side Fillet Thickness	7/16	in
Bottom Fillet Thickness	7/16	in
Rn _{applied}	24.82	k
$\Phi Rn = 0.75*0.6*F_{exx}*throat*a*1$	243.58	k
Weld Stress	10%	Pass



Base Metal Parameters		
Pole Grade	A572-65	-
Pole Yield Strength, Fy	65	ksi
Pole Tensile Strength, Fu	80	ksi
Pole Thickness	0.3125	in
Rn _{applied}	24.82	k
$\Phi Rn = 0.75*(0.6*Fu*Anv+Ubs*Fu*Ant)$	167.81	k
Shear & Rupture Stress	15%	Pass
Ae, Effective Area	7.88	in ²
$\Phi Rn = 0.9*0.6*Fy*A$ OR $\Phi Rn = 0.75*0.6*Fu*A$	276.41	k
Shear & Rupture Stress	3%	Pass

Flange Plate Analysis

Flange Plate	Plate Type	Flange	@ 104 ft
	Pole Diameter	12.875	in
	Pole Thickness	0.37	in
	Plate Diameter	18.5	in
	Plate Thickness	1 1/2	in
	Plate Fy	50	ksi
	Weld Length	4/13	in
	f _s Resistance	99.08	k-in
	Applied	10.83	k-in

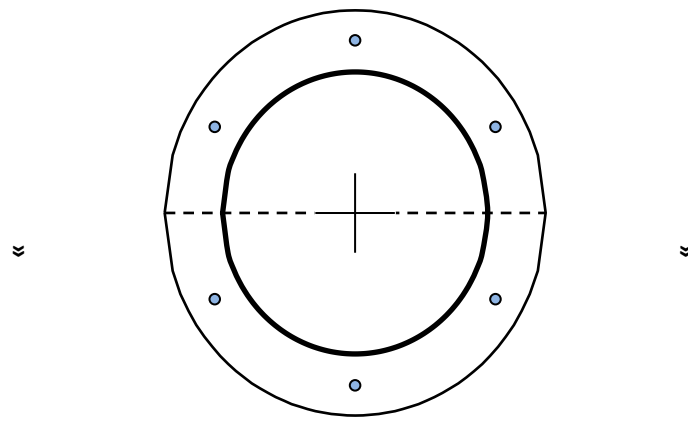
Code Rev.	H
Moment	43.6 k-ft
Axial	3.9 k

Date	11/11/2021
Engineer	RSR
Site #	283564
Carrier	DISH WIRELESS L.L.C

Required Flange Thickness:
0.50 in OK

Stiffeners	#	
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Bolts	#	6	
	Bolt Circle (R)adial / (S)quare	15.75	in
	Diameter	1 1/8	in
	Hole Diameter	1 1/4	in
	Type	A325	
	Fy	81	ksi
	Fu	105	ksi
	f _s Resistance	60.11	k
	Applied	21.45	k



Reinforcement	#	
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Plate Stress Ratio:
11% Pass

Bolt Stress Ratio:
36% Pass

Extra Bolts	O	
#		



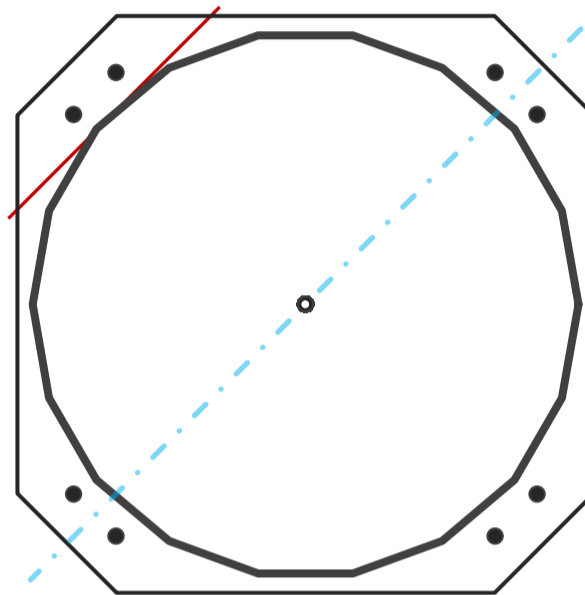
Base Plate & Anchor Rod Analysis

Pole Dimensions		
Number of Sides	18	-
Diameter	53.97	in
Thickness	5/16	in
Orientation Offset		°

Base Reactions		
Moment, Mu	934.3	k-ft
Axial, Pu	29.4	k
Shear, Vu	14.1	k
Neutral Axis	45	°

Report Capacities		
Component	Capacity	Result
Base Plate	59%	Pass
Anchor Rods	40%	Pass
Dwyidag	-	-

Base Plate		
Shape	Square	-
Width	58	in
Thickness	1 3/4	in
Grade	A572-50	
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Clip	10	in
Orientation Offset	0	°
Anchor Rod Detail	d	η=0.5
Clear Distance	3	in
Applied Moment, Mu	563.4	k
Bending Stress, φMn	962.3	k



Original Anchor Rods		
Arrangement	Cluster	-
Quantity	8	-
Diameter, φ	2 1/4	in
Bolt Circle	60.25	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	6.0	in
Orientation Offset	0	°
Applied Force, Pu	96.2	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	14.1	934.3	1.00
Anchor Rod Forces	14.1	934.3	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	52.4111	2.9117	0.0951		18863.99
Bolt	3.9761	3.2477	0.8393	4.5	11796.03
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	Square	-
Width, W	58	in
Thickness, t	1.75	in
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Base Plate Chord	21.242	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

Anchor Rods

Anchor Rod Quantity, N	8	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	60.25	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	96.2	k
Applied Shear, Vu	0.3	k
Compressive Capacity, ϕP_n	243.6	k
Tensile Capacity, ϕR_n	0.395	OK
Interaction Capacity	0.398	OK

External Base Plate

Chord Length AA	27.929	in
Additional AA	0.000	in
Section Modulus, Z	21.383	in ³
Applied Moment, Mu	563.4	k-ft
Bending Capacity, ϕM_n	962.3	k-ft
Capacity, Mu/ ϕM_n	0.585	OK

Chord Length AB	27.095	in
Additional AB	0.000	in
Section Modulus, Z	20.745	in ³
Applied Moment, Mu	483.1	k-ft
Bending Capacity, ϕM_n	933.5	k-ft
Capacity, Mu/ ϕM_n	0.518	OK

Bend Line Length	0.000	in
Additional Bend Line	0.000	in
Section Modulus, Z	0.000	in ³
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕM_n	0.0	k-ft
Capacity, Mu/ ϕM_n		

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, ϕM_n	0.0	k-ft
Capacity, Mu/ ϕM_n		

Site Name: Milford CT, CT
Site Number: 283564
Tower Type: MP
Design Loads (Factored) - Analysis per TIA-222-H Standards

Monolithic Mat & Pier Foundation Analysis

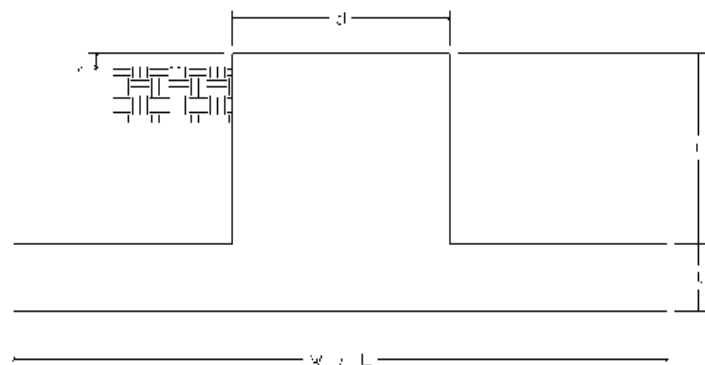
Foundation Analysis Parameters		
Design / Analysis / Mapping:	Analysis	-
Compression/Leg:	29.4	k
Uplift/Leg:	0.0	k
Total Shear:	14.1	k
Moment:	934.3	k-ft
Tower + Appurtenance Weight:	29.4	k
Depth to Base of Foundation (l + t - h):	6	ft
Diameter of Pier (d):	7	ft
Length of Pier (l):	3.5	ft
Height of Pier above Ground (h):	0.5	ft
Width of Pad (W):	24	ft
Length of Pad (L):	20	ft
Thickness of Pad (t):	3	ft
Tower Leg Center to Center:	0	ft
Number of Tower Legs:	1	-
Tower Center from Mat Center:	0	ft
Depth Below Ground Surface to Water Table:	6	ft
Unit Weight of Concrete:	150	pcf
Unit Weight of Soil Above Water Table:	107	pcf
Unit Weight of Water:	62.4	pcf
Unit Weight of Soil Below Water Table:	44.6	pcf
Friction Angle of Uplift:	15	°
Coefficient of Shear Friction:	0.25	-
Ultimate Compressive Bearing Pressure:	2,056	psf
Ultimate Passive Pressure on Pad Face:	29,854	psf
$f_{\text{Soil and Concrete Weight}}$:	0.9	-
f_{Soil} :	0.75	-

Foundation Steel Parameters		
Shear/Leg (Compression):	14.1	k
Shear/Leg (Uplift):	14.1	k
Concrete Strength (f'_c):	4,000	psi
Pad Tension Steel Depth:	32.44	in
Dead Load Factor:	0.9	-
f_{Shear} :	0.75	-
$f_{\text{Flexure / Tension}}$:	0.9	-
$f_{\text{Compression}}$:	0.65	-
b:	0.85	-
Bottom Pad Rebar Size #:	9	-
# of Bottom Pad Rebar:	26	-
Pad Bottom Steel Area:	26.00	in ²
Pad Steel F_y :	60,000	psi
Top Pad Rebar Size #:	9	-
# of Top Pad Rebar:	26	-
Pad Top Steel Area:	26.00	in ²
Pier Rebar Size #:	8	-
Pier Steel Area (Single Bar):	0.79	in ²
# of Pier Rebar:	36	-
Pier Steel F_y :	60,000	psi
Pier Cage Diameter:	76.0	in
Rebar Strain Limit:	0.008	-
Steel Elastic Modulus:	29,000	ksi
Tie Rebar Size #:	4	-
Tie Steel Area (Single Bar):	0.20	in ²
Tie Spacing:	12	in
Tie Steel F_y :	60,000	psi
Clear Cover:	3	in

Overturning Moment Usage		
Design OTM:	1026.0	k-ft
OTM Resistance:	5604.2	k-ft
Design OTM / OTM Resistance:	18%	Pass

Soil Bearing Pressure Usage		
Net Bearing Pressure:	1024	psf
Factored Nominal Bearing Pressure:	1542	psf
Factored Nominal (Net) Bearing Pressure:	66%	Pass
Load Direction Controlling Design Bearing Pressure:	Diagonal to Pad Edge	

Sliding Factor of Safety		
Ultimate Friction Resistance:	100.6	k
Ultimate Passive Pressure Resistance:	1612.1	k
Total Factored Sliding Resistance:	1284.5	k
Sliding Design / Sliding Resistance:	1%	Pass



Pad Strength Capacity			
Factored One Way Shear (V_u):	93.3	k	
One Way Shear Capacity (fV_c):	886.3	k	ACI 318-14 25.5.5.1
V_u / fV_c :	11%	Pass	
Load Direction Controlling Shear Capacity:	Parallel to Pad Edge		
Lower Steel Pad Factored Moment (M_u):	313.6	k-ft	
Lower Steel Pad Moment Capacity (fM_n):	3716.0	k-ft	ACI 318-14 22.3.1.1
M_u / fM_n :	8%	Pass	
Load Direction Controlling Flexural Capacity:	Parallel to Pad Edge		
Upper Steel Pad Factored Moment (M_u):	389.6	k-ft	
Upper Steel Pad Moment Capacity (fM_n):	3716.0	k-ft	
M_u / fM_n :	10%	Pass	
Lower Pad Flexural Reinforcement Ratio:	0.0028		OK - ACI 318-14 7.6.1.1 & 8.6.1.1
Upper Pad Flexural Reinforcement Ratio:	0.0028		OK - ACI 318-14 7.6.1.1 & 8.6.1.1
Lower Pad Reinforcement Spacing:	11.3	in	OK - ACI 318-14 7.7.2.3, 8.7.2.2, & 24.4.3.3
Upper Pad Reinforcement Spacing:	11.3	in	OK - ACI 318-14 7.7.2.3, 8.7.2.2, & 24.4.3.3
Ultimate Punching Shear Stress, v_u :	12.51	psi	ACI 318-14 R8.4.4.2.3
Nominal Punching Shear Capacity ($f_c v_c$):	189.7	psi	ACI 318-14 22.6.5.2
$v_u / f_c v_c$:	7%	Pass	
Pier Moment Pad Flexure Transfer Ratio, γ_f :	0.60		TIA-222-H 9.4.2
Moment Transfer Effective Flexural Width, B_{eff} :	16.00	ft	TIA-222-H 9.4.2
Moment Transfer Through Pad Flexure:	7082.28	k-in	TIA-222-H 9.4.2
Moment Transfer Flexural Capacity ($fM_{sc,f}$):	30938.47	k-in	
$g_f M_{sc} / fM_{sc,f}$:	0%	Pass	

Pier Strength Capacity			
Factored Moment in Pier (M_u):	983.7	k-ft	
Pier Moment Capacity (fM_n):	4756.5	k-ft	
M_u / fM_n :	21%	Pass	
Factored Shear in Pier (V_u):	14.1	k	
Pier Shear Capacity (fV_n):	627.9	k	ACI 318-14 22.5.1.1
V_u / fV_c :	2%	Pass	
Pier Shear Reinforcement Ratio:	0.0004		OK - No Ties Necessary for Shear - ACI11.5.6.1
Factored Tension in Pier (T_u):	0.0	k	
Pier Tension Capacity (fT_n):	1535.8	k	
T_u / fT_n :	0%	Pass	
Factored Compression in Pier (P_u):	29.4	k	
Pier Compression Capacity (fP_n):	9772.2	k	ACI 318-14 22.4.2.1
P_u / fP_n :	0%	Pass	
Minimum Depth to Develop Vertical Rebar:	29	in	ACI 318-14 25.4.2.3
Minimum Hook Development Length:	19	in	ACI 318-14 25.4.3.1
Minimum Mat Thickness / Edge Distance from Pier:	22.0	in	
Minimum Foundation Depth:	4.52	ft	
$M_u / f_B M_n + T_u / f_T T_n$:	21%	Pass	

INFINIGY 8

MOUNT ANALYSIS REPORT

September 21, 2021

Dish Wireless Site Name	BOHVN00139A
Dish Wireless Site Number	BOHVN00139A
Infinigy Job Number	1197-F0001-B
Client	NSS/DISH
Carrier	Dish Wireless
Site Location	234 Melba Street Milford, CT 06460 New Haven County 41.2098670 N NAD83 73.0194083 W NAD83
Mount Type	8.0 ft Platform
Mount Elevation	71.0 ft AGL
Structural Usage Ratio	31.7%
Overall Result	Pass
Notes:	Tower information was not provided, so Option 1 Mount was considered for the mount analysis and the DISH rad height was assumed to be the tower height.

The enclosed mount structural analysis has been performed in accordance with the 2018 Connecticut State Building Code (2015 IBC) based on an ultimate 3-second gust wind speed of 120 mph. The evaluation criteria and applicable codes are presented in the next section of this report.



CONTENTS

1. Introduction
2. Design/Analysis Parameters
3. Proposed Loading Configuration
4. Supporting Documentation
5. Results
6. Recommendations
7. Assumptions
8. Liability Waiver and Limitations
9. Calculations

1. INTRODUCTION

Infinigy performed a structural analysis on the Dish Wireless proposed telecommunication equipment supporting Platform mounted to the existing structure located at the aforementioned address. All referenced supporting documents have been obtained from the client and are assumed to be accurate and applicable to this site. The mount was analyzed using Risa-3D version 17.0.4 analysis software.

2. DESIGN/ANALYSIS PARAMETERS

Wind Speed	120 mph (3-Second Gust)
Wind Speed w/ ice	50 mph (3-Second Gust) w/ 1.0" ice
Code / Standard	TIA-222-H
Adopted Code	2018 Connecticut State Building Code (2015 IBC)
Risk Category	II
Exposure Category	C
Topographic Category	1
Calculated Crest Height	0 ft
Seismic Spectral Response	$S_s = 0.2 \text{ g} / S_1 = 0.053 \text{ g}$
Live Load Wind Speed	60 mph
Man Live Load at Mid/End Points	250 lbs
Man Live Load at Mount Pipes	500 lbs

3. PROPOSED LOADING CONFIGURATION - 71.0 ft. AGL Platform

Antenna Centerline (ft)	Qty.	Appurtenance Manufacturers	Appurtenance Models
71.0	3	JMA WIRELESS	MX08FRO665-21
	3	FUJITSU	TA08025-B605
	3	FUJITSU	TA08025-B604
	1	RAYCAP	RDIDC-9181-PF-48

4. SUPPORTING DOCUMENTATION

Proposed Loading	Dish Wireless Asset ID CT-ATC-T-283564 Rev 3, Site #BOHVN00139A, dated July 12, 2021
Mount Manufacturer Drawings	Commscope Document # MC-PK8-DSH, dated March 08, 2021

5. RESULTS

Components	Capacity	Pass/Fail
Mount Pipes	20.3%	Pass
Horizontals	12.2%	Pass
Standoffs	30.3%	Pass
Handrails	24.4%	Pass
Connections	31.7%	Pass
MOUNT RATING =	31.7%	Pass

Notes:

1. See additional documentation in Appendix for calculations supporting the capacity consumed and detailed mount connection calculations.

6. RECOMMENDATIONS

Infinigy recommends installing Dish Wireless's proposed equipment loading configuration on the mount at 71.0 ft. The installation shall be performed in accordance with the construction documents issued for this site.

Alisha Khadka
Project Engineer II | [INFINIGY](#)

7. ASSUMPTIONS

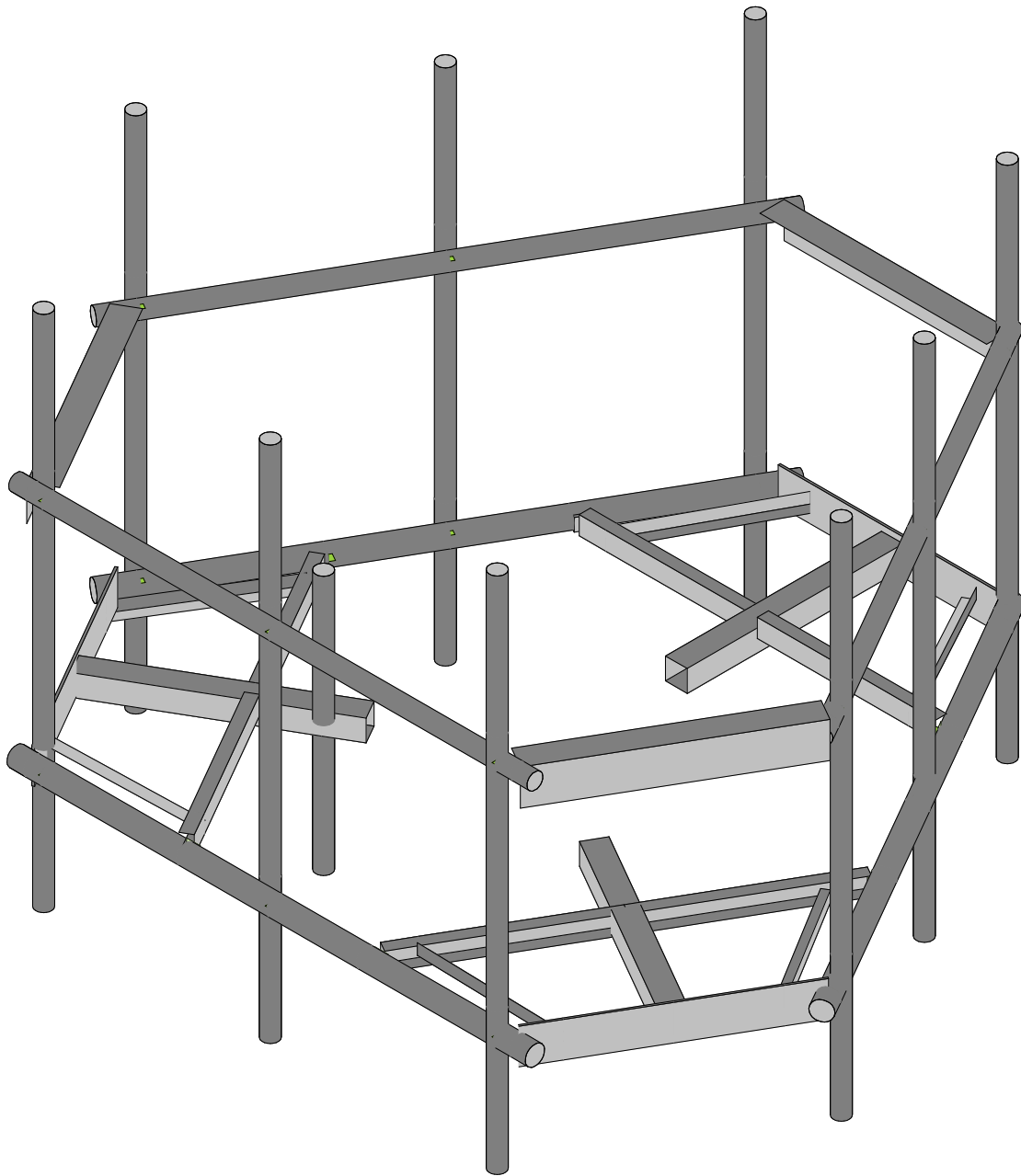
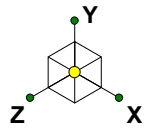
The antenna mounting system was properly fabricated, installed and maintained in accordance with its original design and manufacturer's specifications.	
The configuration of antennas, mounts, and other appurtenances are as specified in the proposed loading configuration table.	
All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.	
The analysis will require revisions if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members.	
Steel grades have been assumed as follows, unless noted otherwise:	
Channel, Solid Round, Plate, Built-up Angle	ASTM A1011 36 KSI
Structural Angle	ASTM A529 Gr. 50
HSS (Rectangular)	ASTM A500-B GR 46
HSS (Circular)	ASTM A500-B GR 42
Pipe	ASTM A500 Gr C
Connection Bolts	ASTM A325
U-Bolts	ASTM A307
All bolted connections are pretensioned in accordance with Table 8.2 of the RCSC 2014 Standard	

8. LIABILITY WAIVER AND LIMITATIONS

Our structural calculations are completed assuming all information provided to Infinigy is accurate and applicable to this site. For the purposes of calculations, we assume an overall structure condition as erected and all members and connections to be free of corrosion and/or structural defects. The structure owner and/or contractor shall verify the structure's condition prior to installation of any proposed equipment. If actual conditions differ from those described in this report, Infinigy should be notified immediately to assess the impact on the results of this report.

Our evaluation is completed using industry standard methods and procedures. The structural results, conclusions and recommendations contained in this report are proprietary and should not be used by others as their own. Infinigy is not responsible for decisions made by others that are or are not based on the stated assumptions and conclusions in this report.

This report is an evaluation of the mount structure only and does not determine the adequacy of the supporting structure, other carrier mounts or cable mounting attachments. The analysis of these elements is outside the scope of this analysis, are assumed to be adequate for the purpose of this report and to have been installed per their manufacturer requirements. This document is not for construction purposes.



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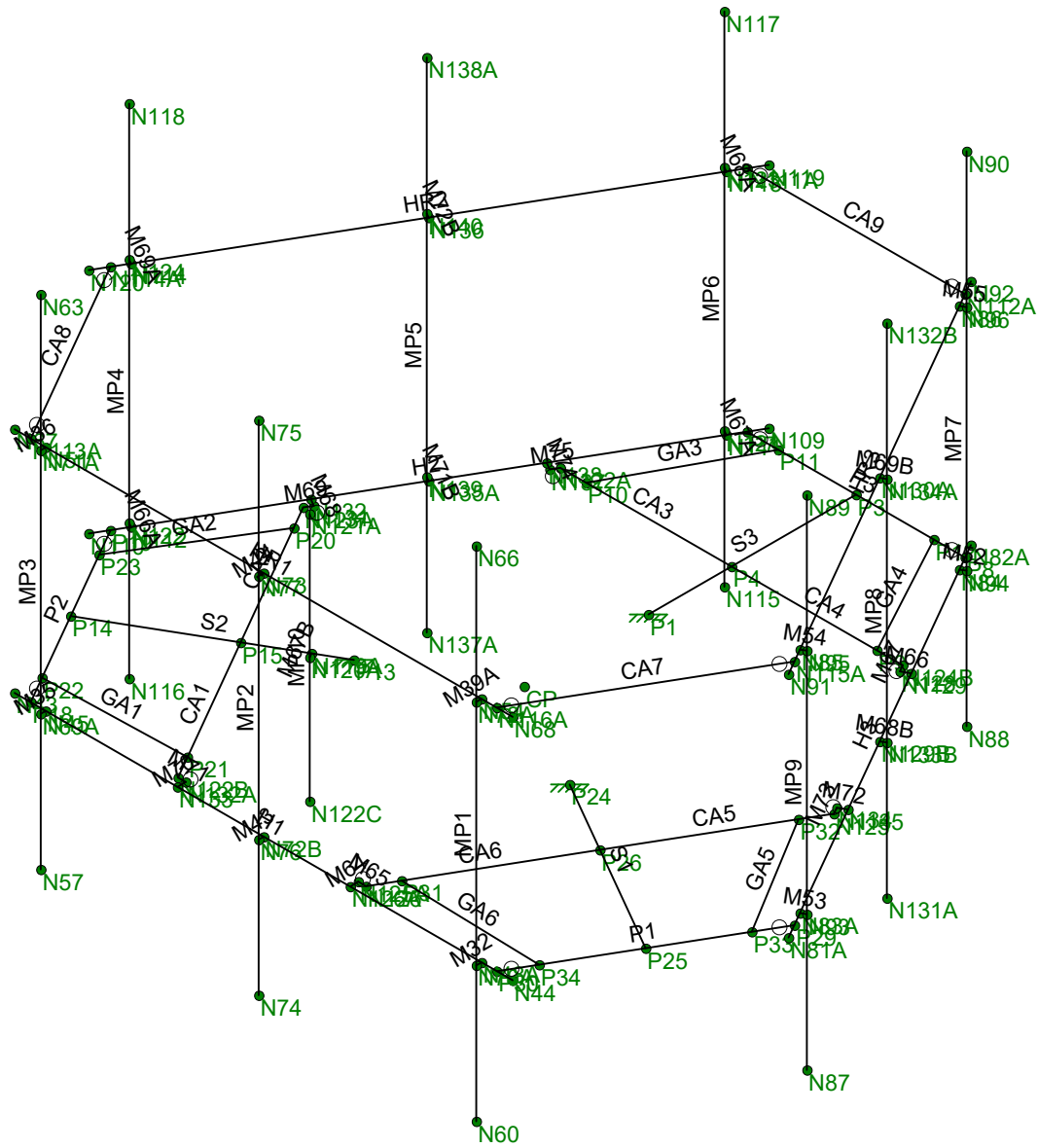
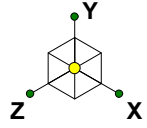
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BOHVN00139A

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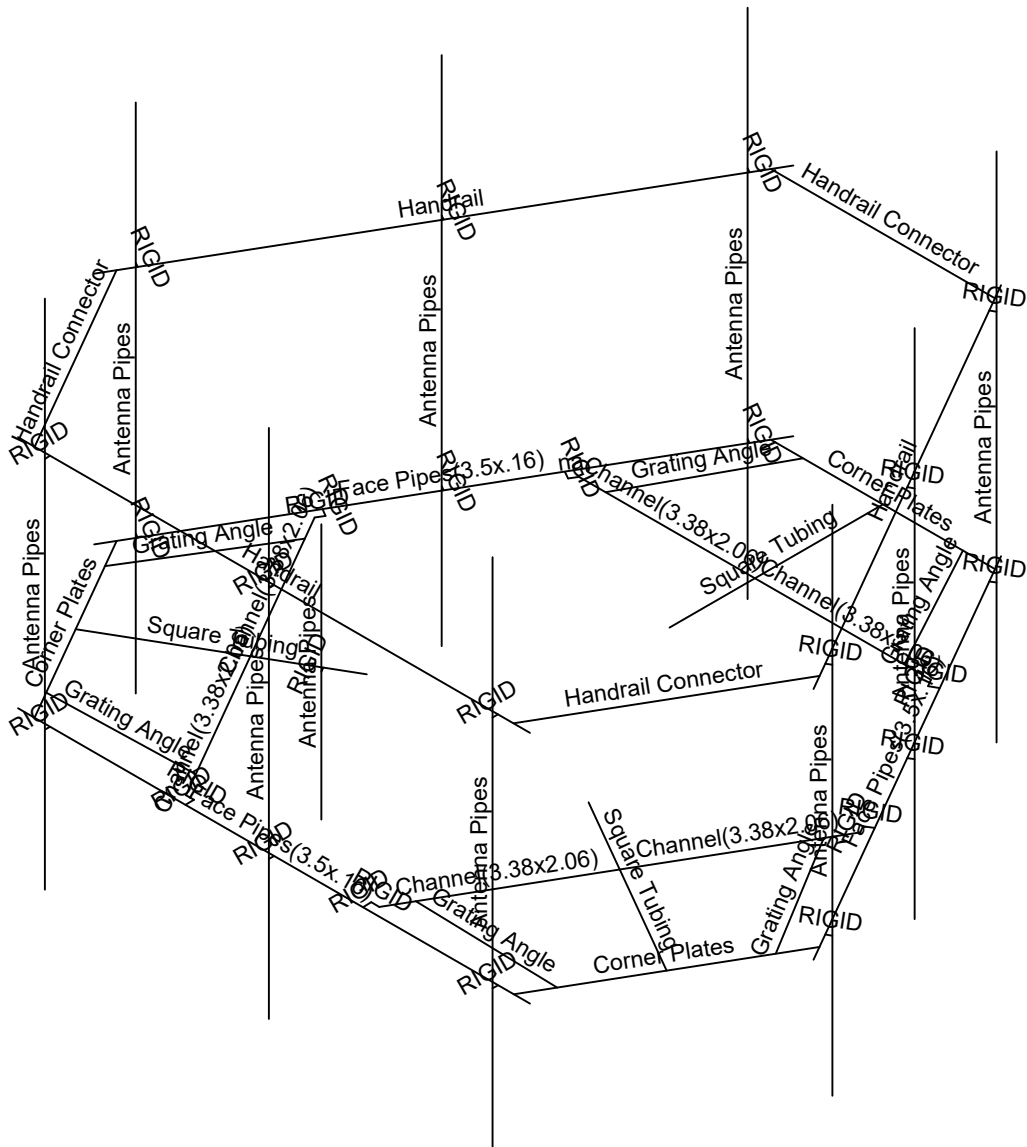
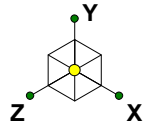
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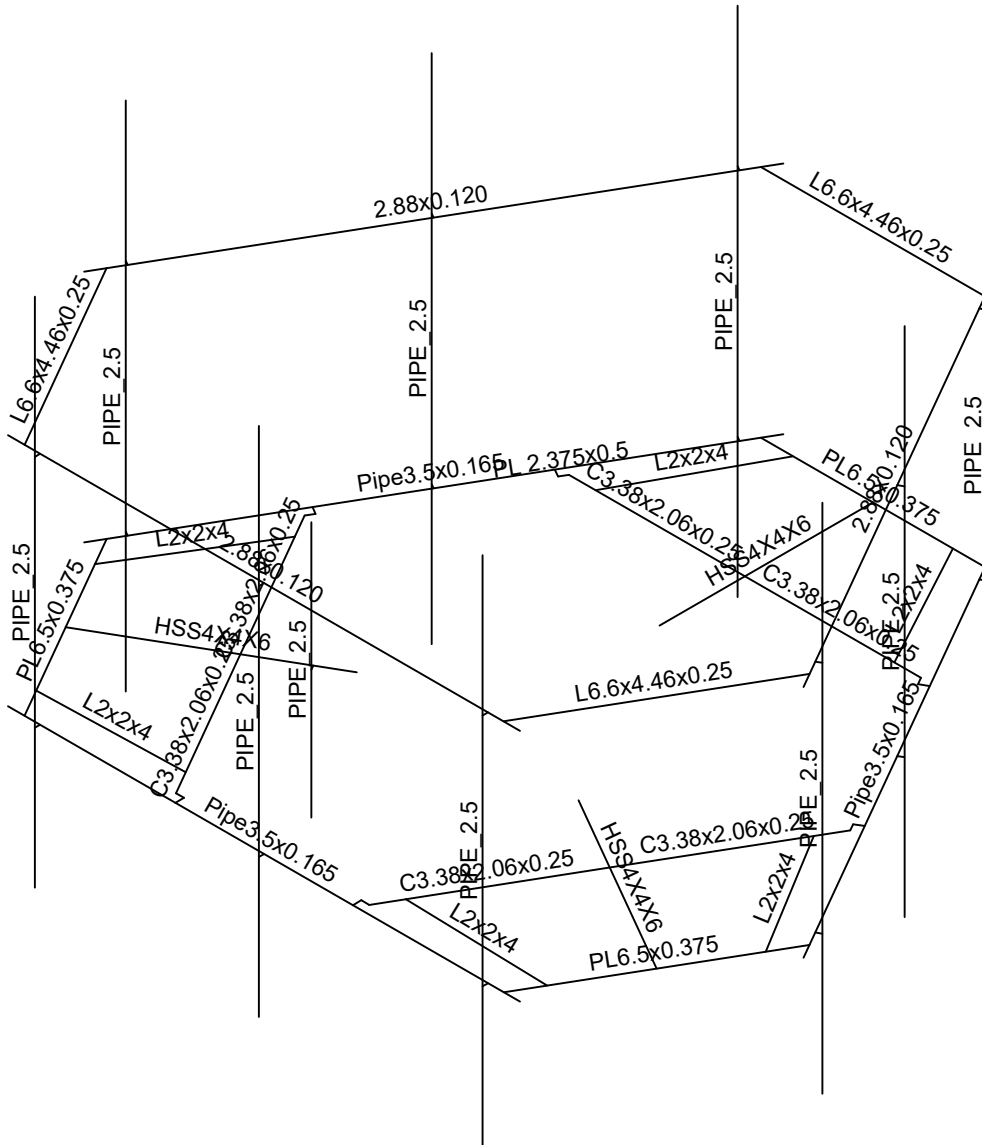
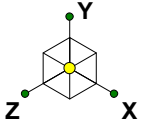
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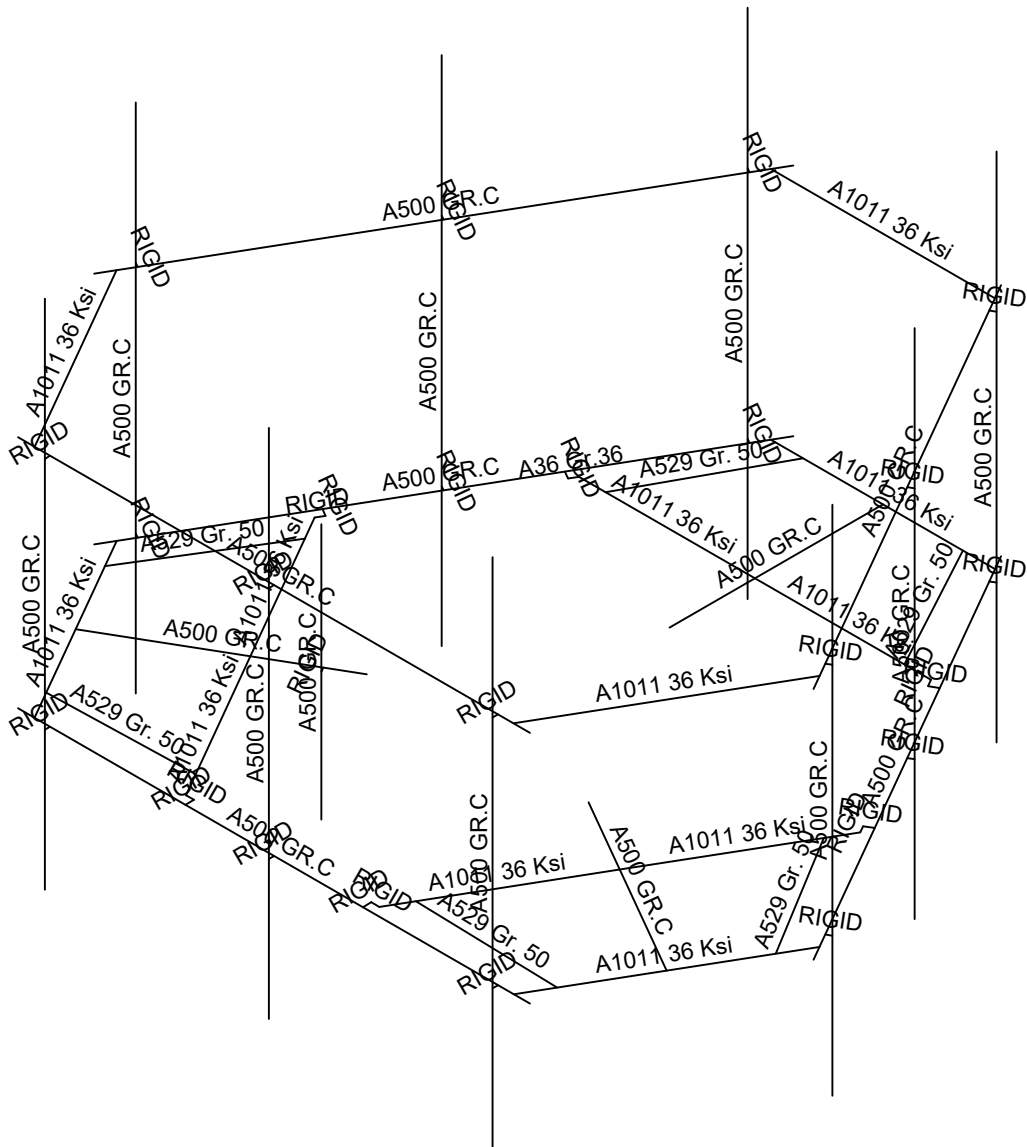
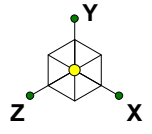
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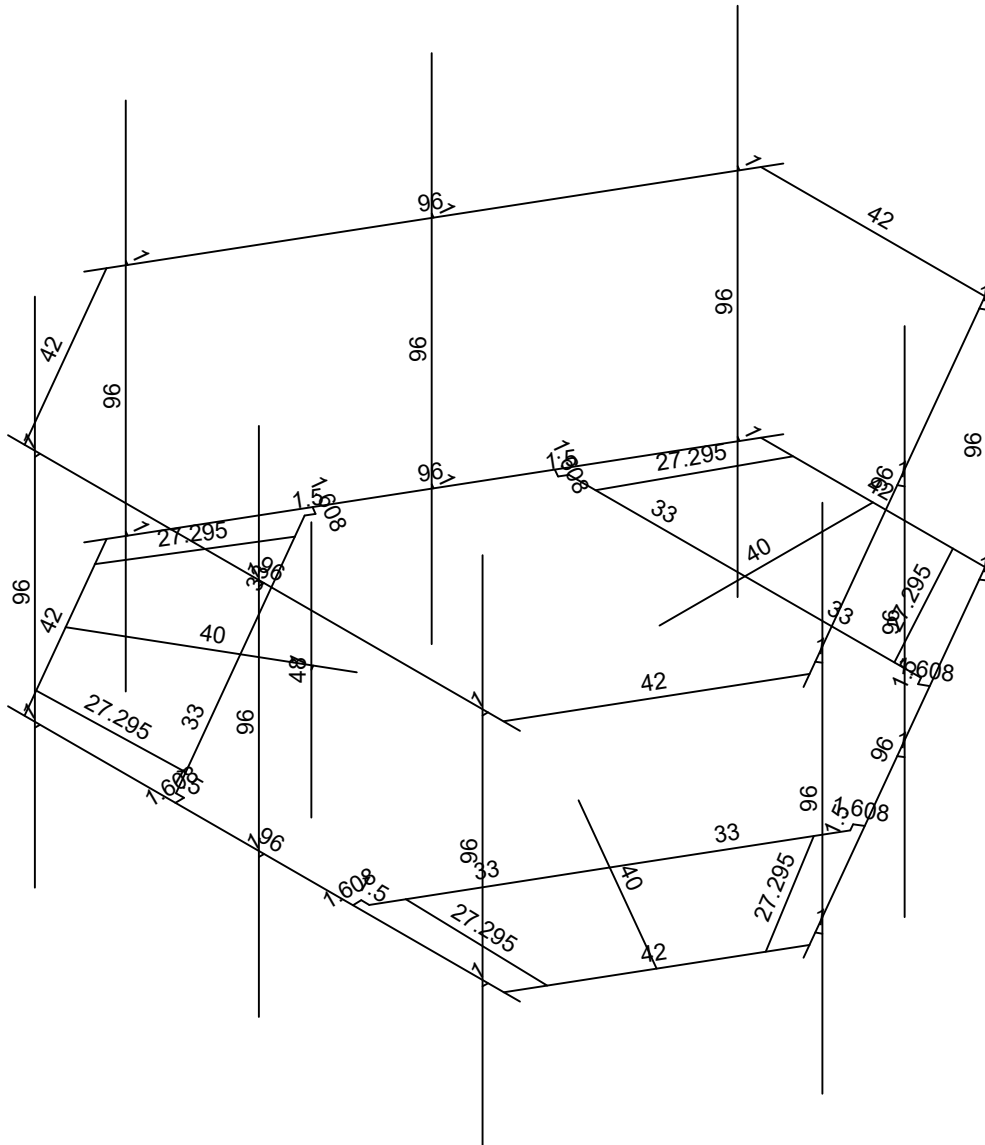
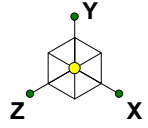
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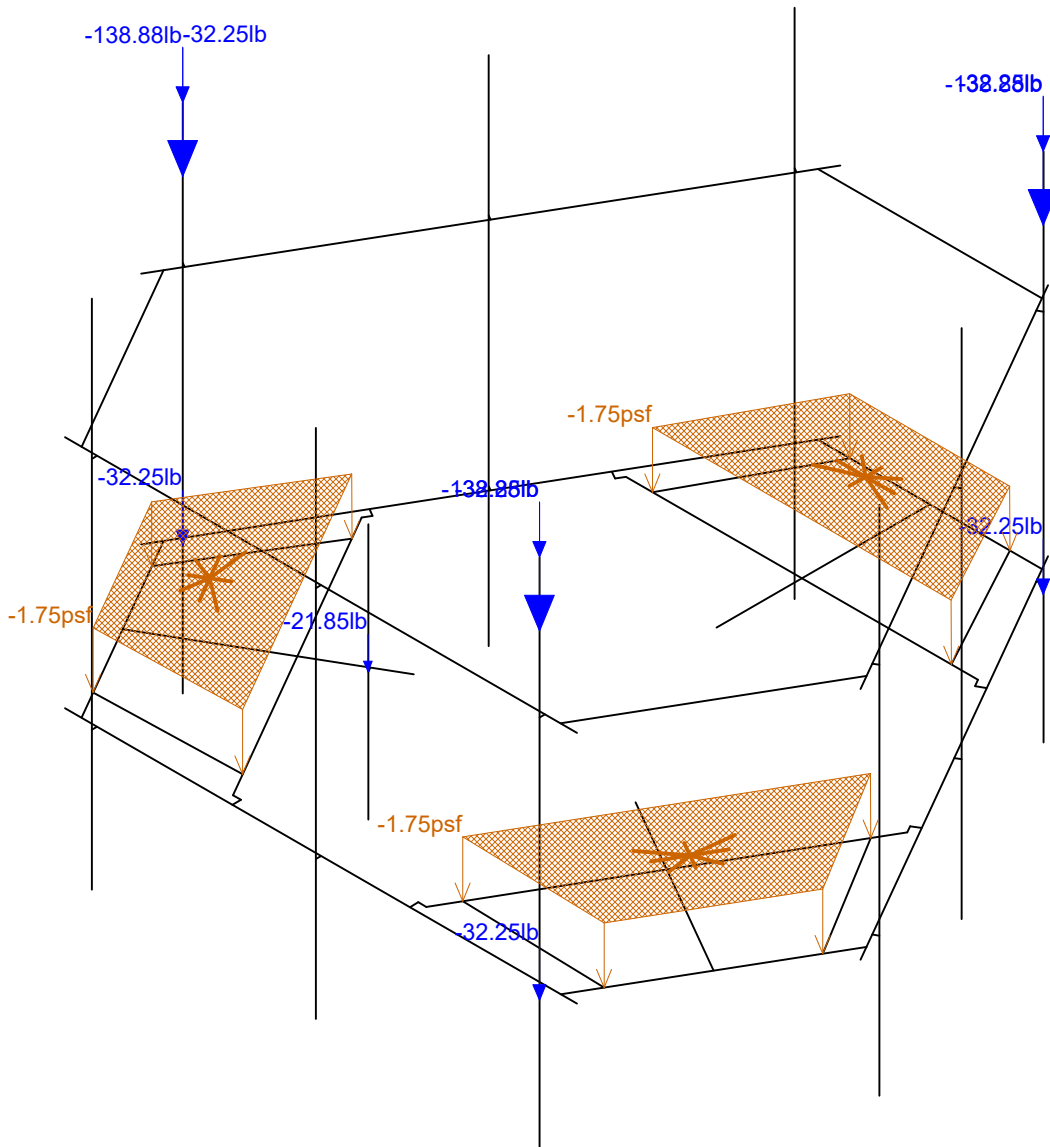
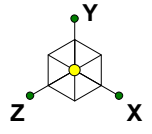


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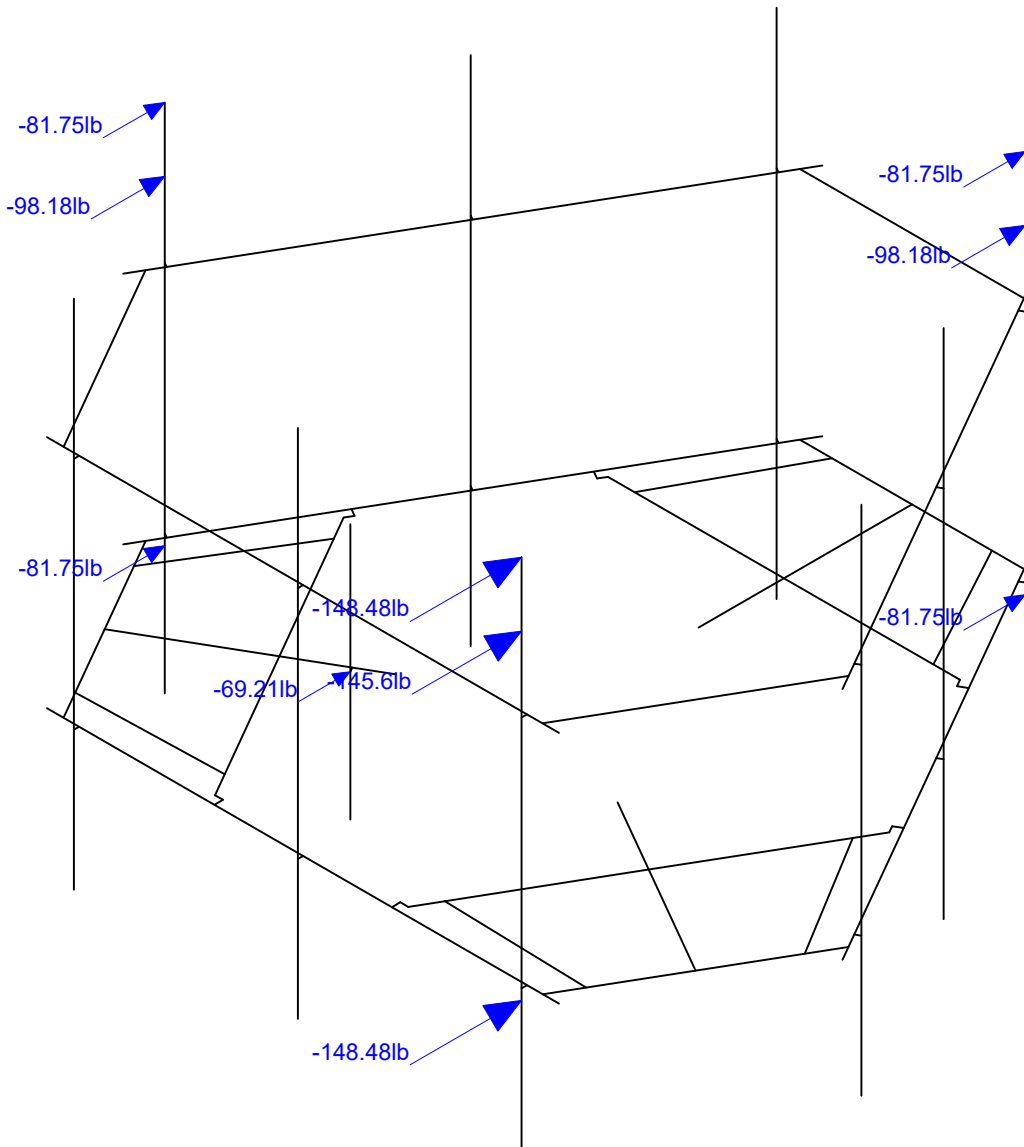
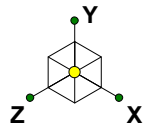
Member Length (in) Displayed

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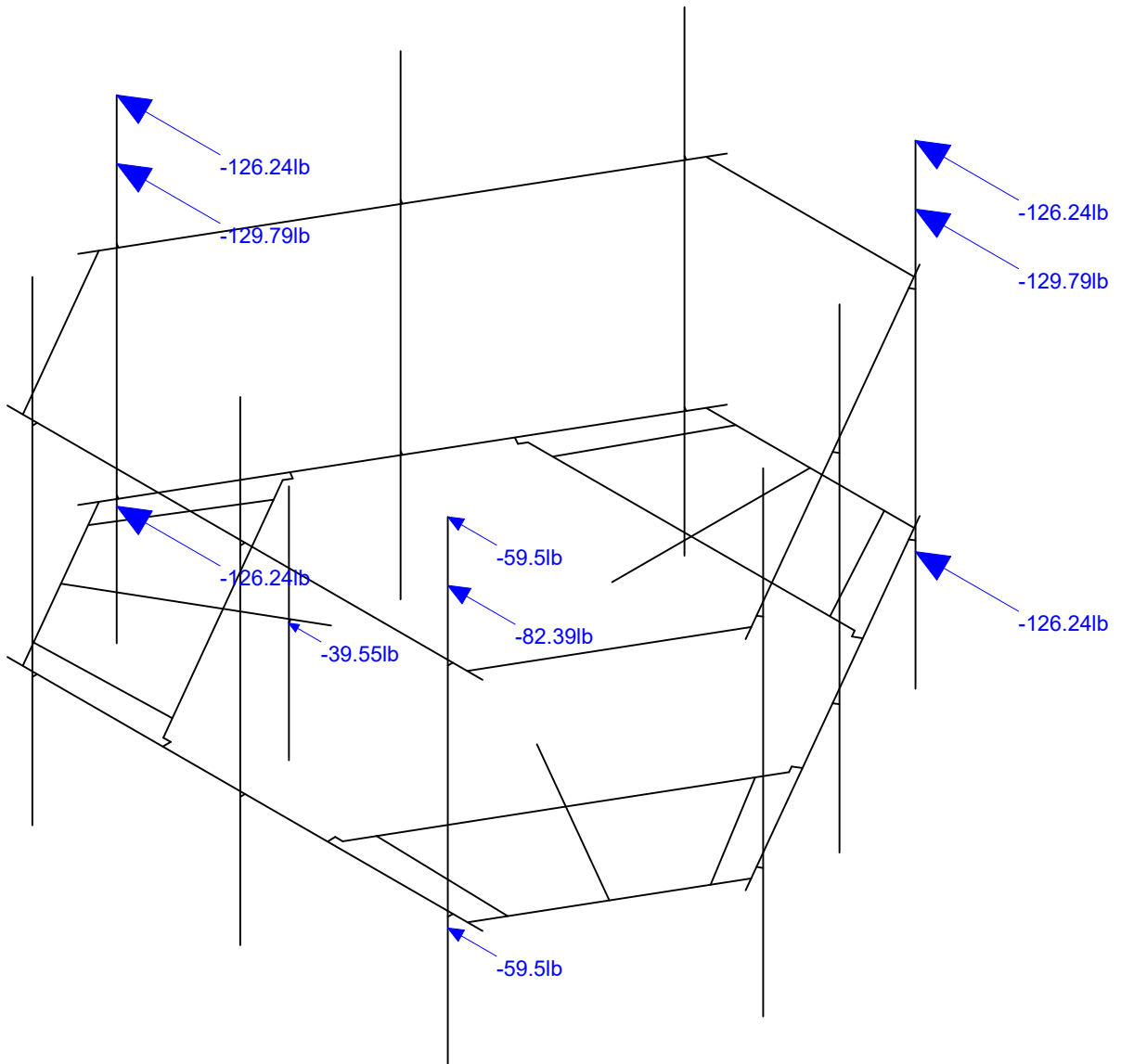
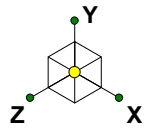
Loads: BLC 1, Self Weight

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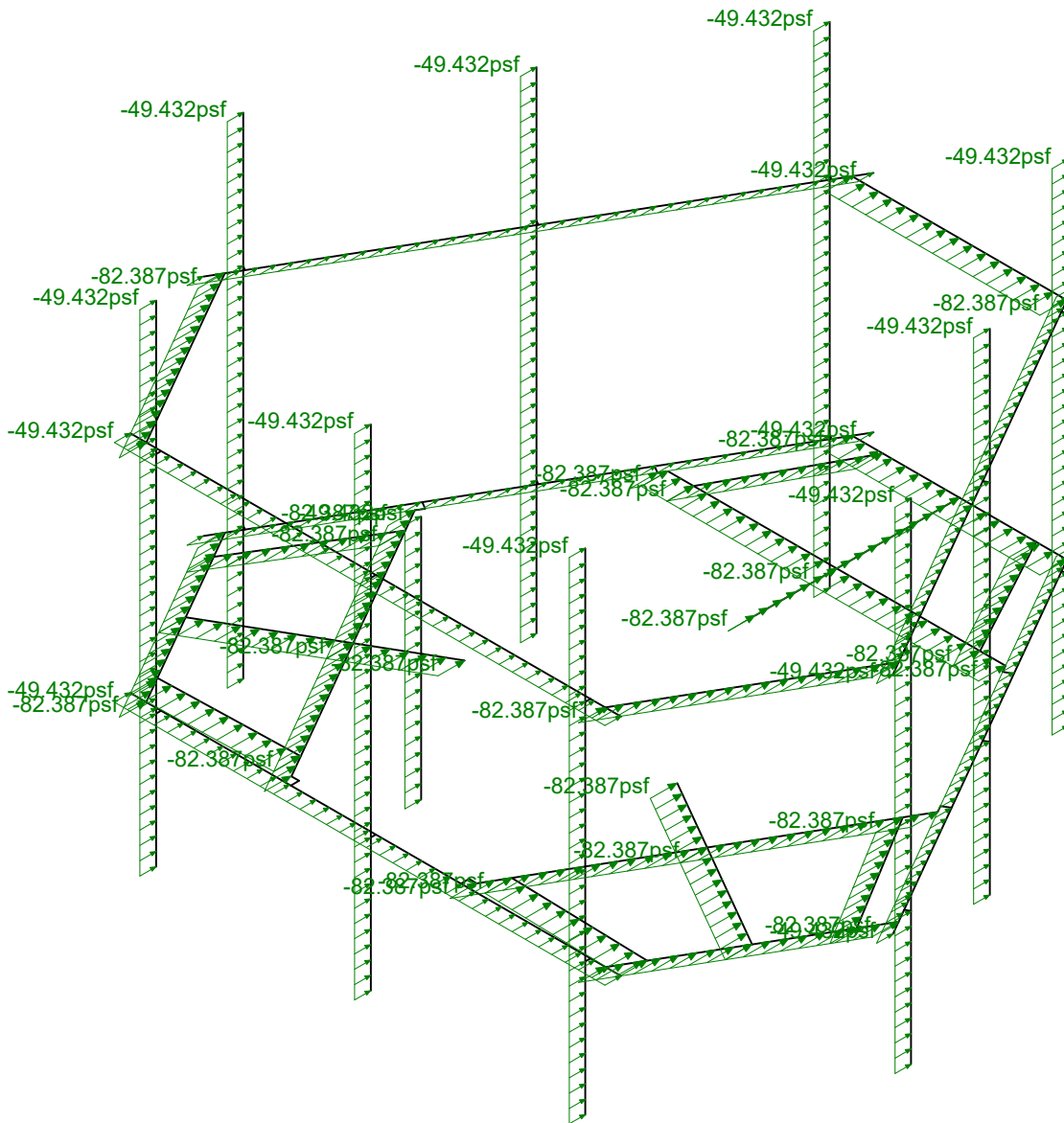
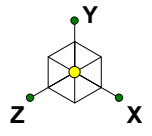
Loads: BLC 2, Wind Load AZI 0

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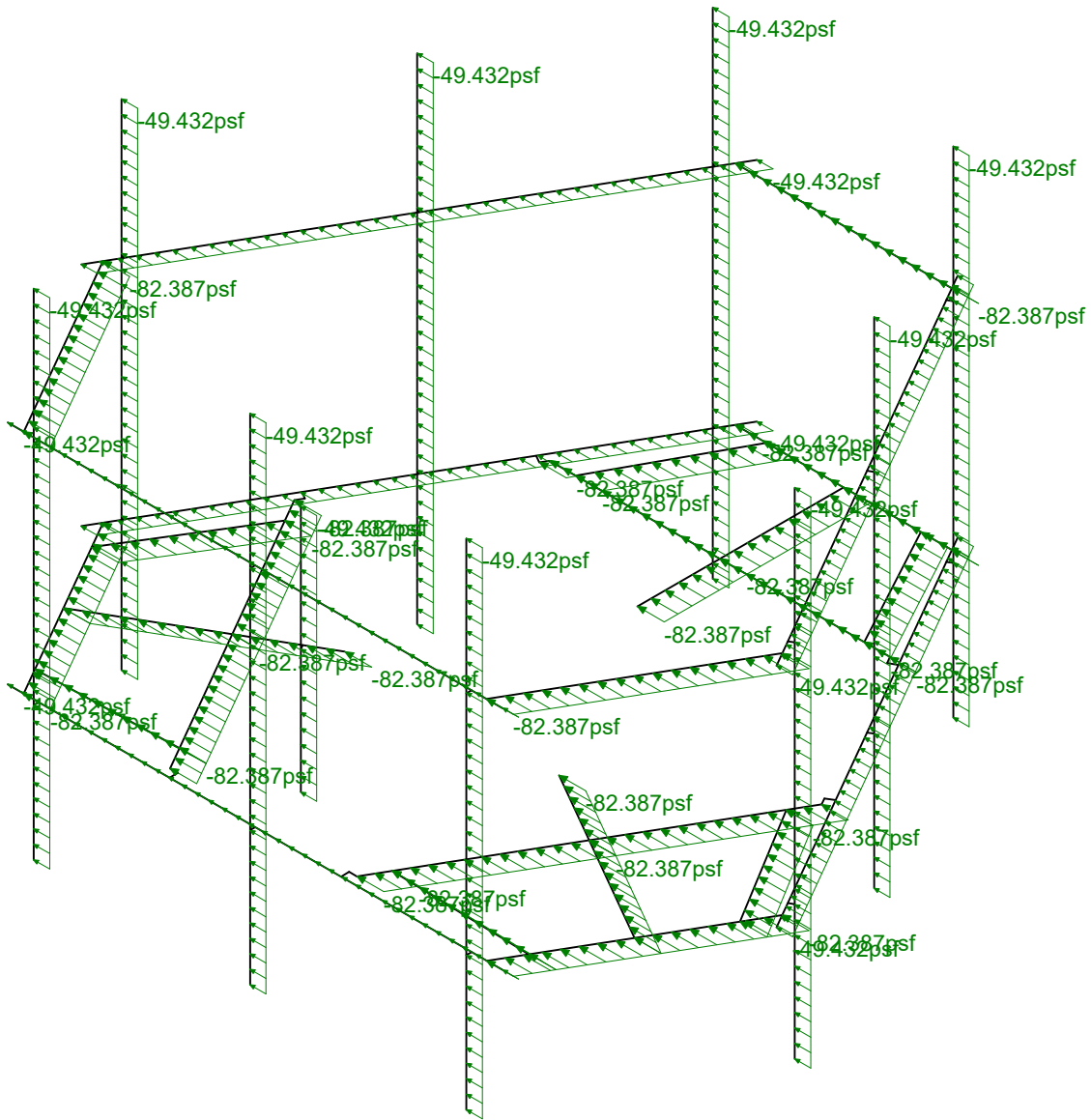
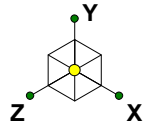
Loads: BLC 5, Wind Load AZI 90

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Loads: BLC 14, Distr. Wind Load Z

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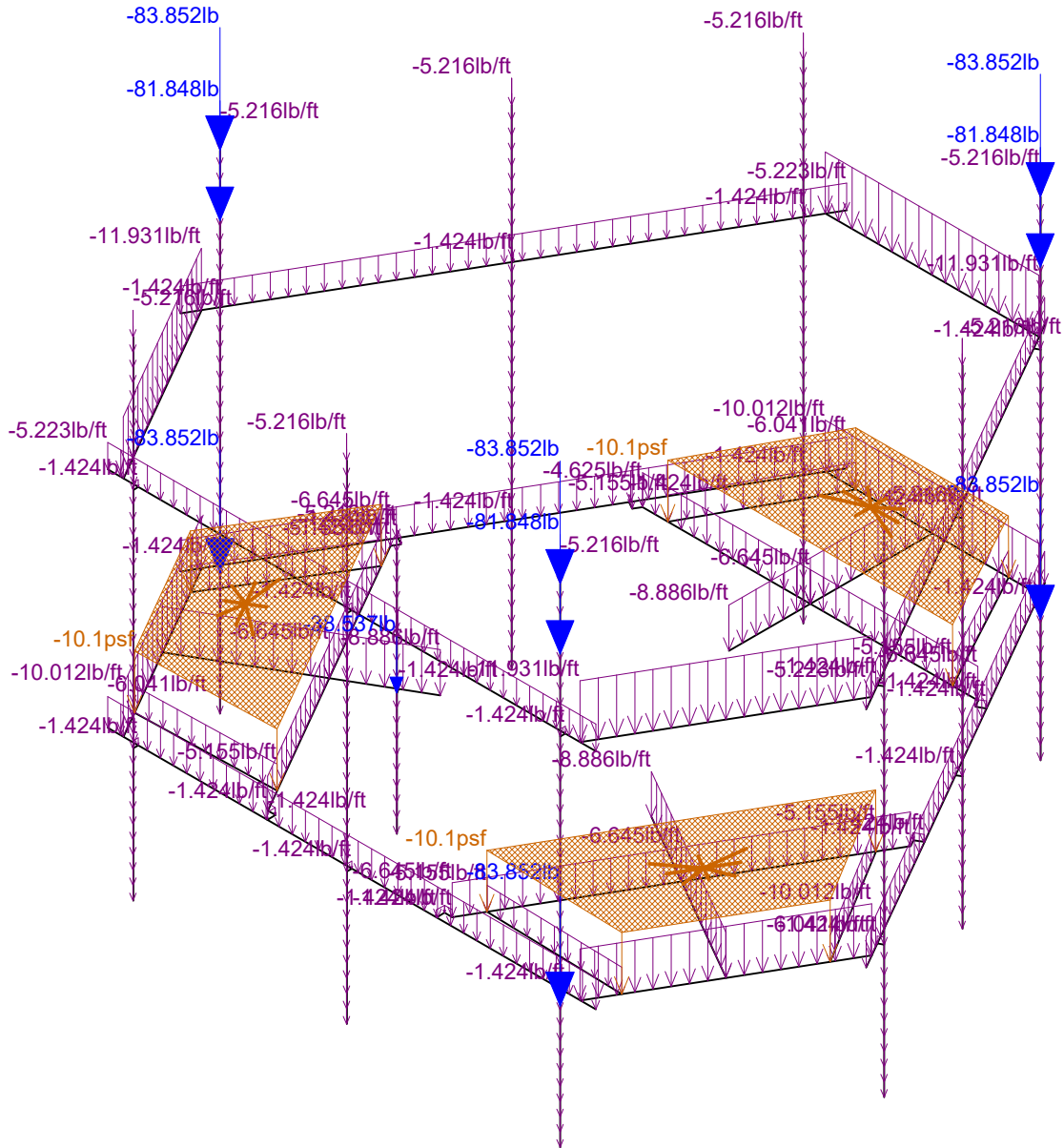
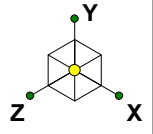


Loads: BLC 15, Distr. Wind Load X

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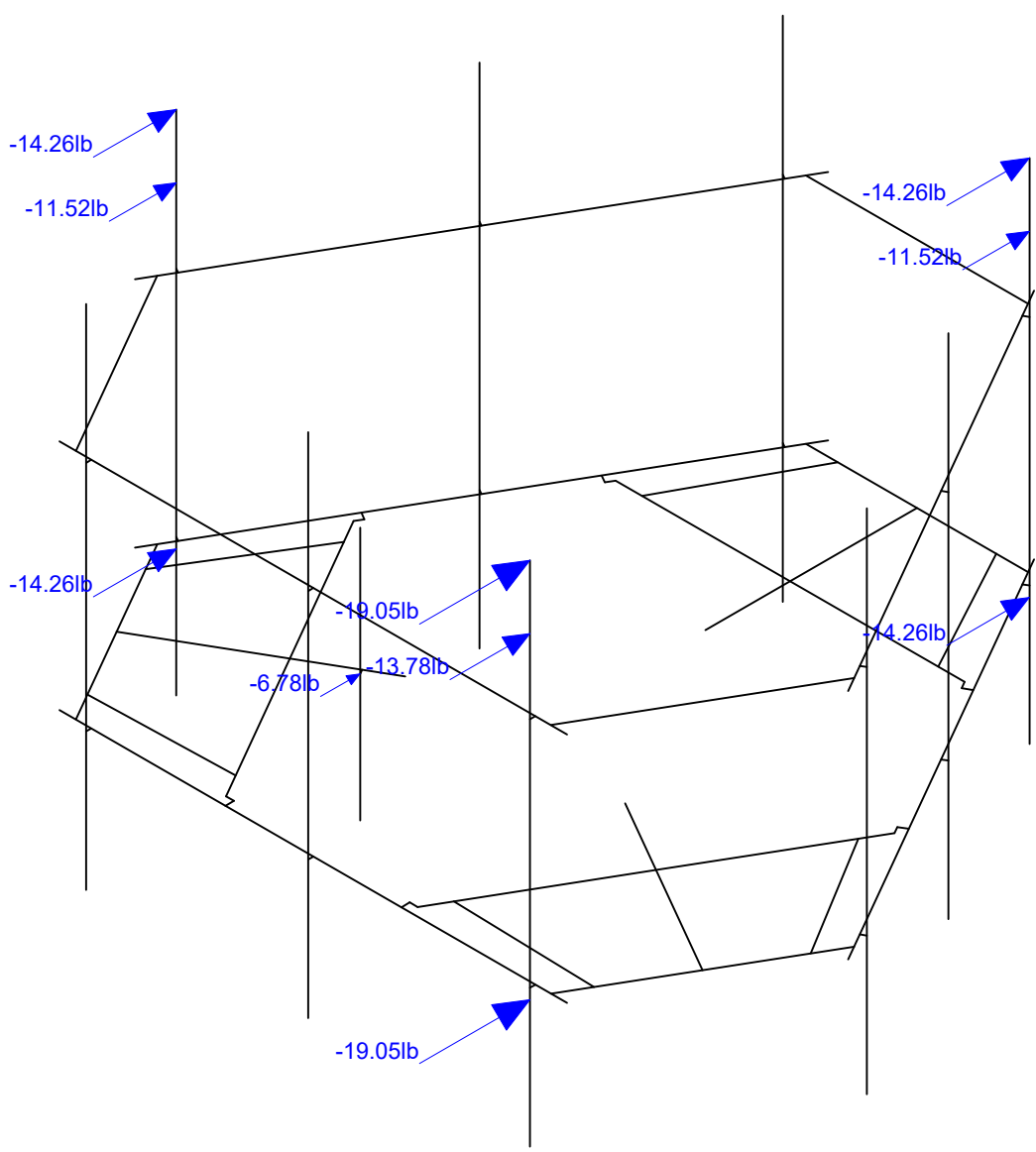
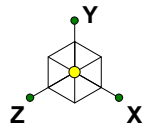
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Distr. Wind Load 90
Sept 20, 2021 at 12:02 PM
BOHVN00139A_loaded.r3d



Loads: BLC 16, Ice Weight

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Loads: BLC 17, Ice Wind Load AZI 0
Envelope Only Solution

Infinigy Engineering

AK

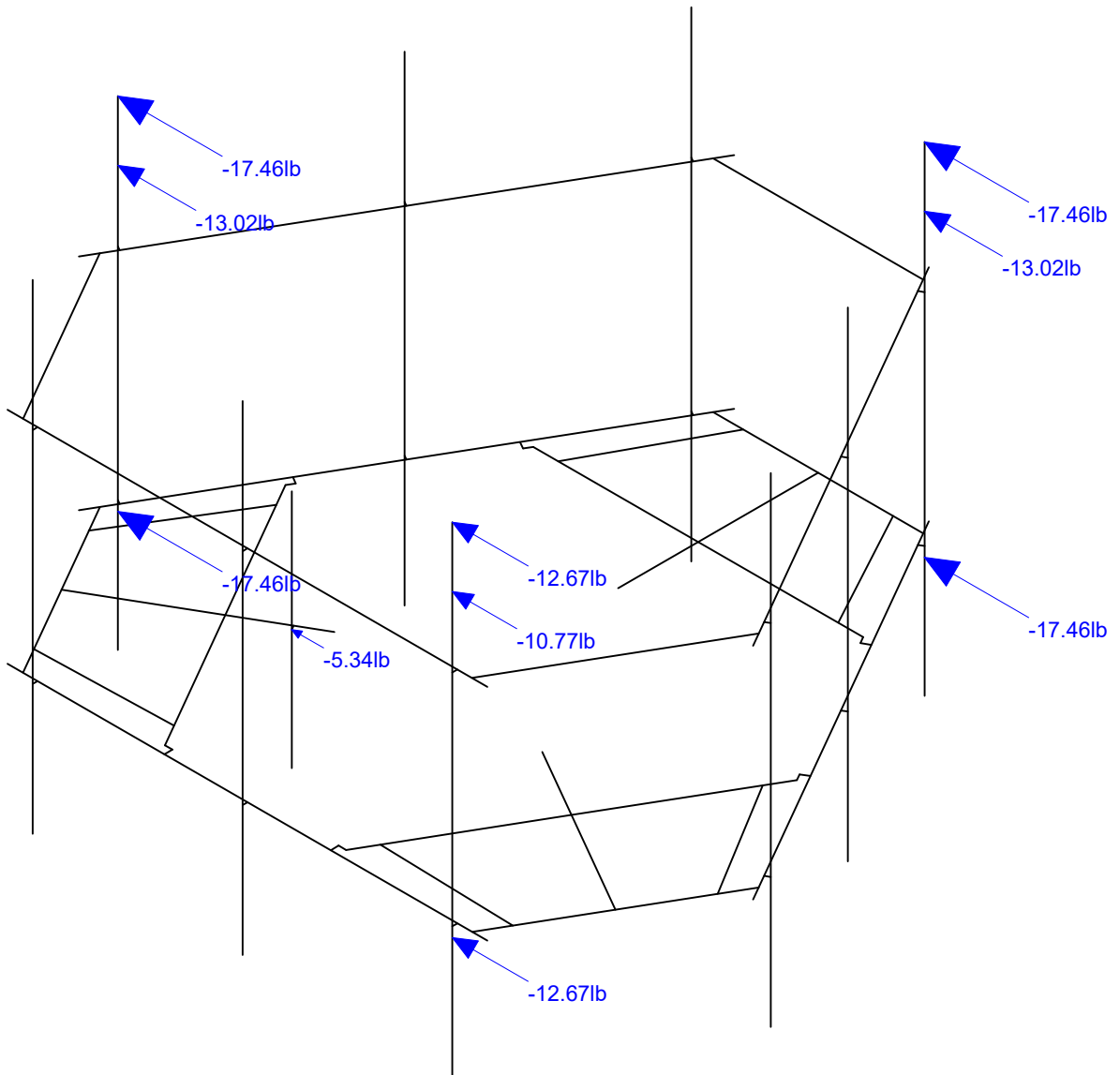
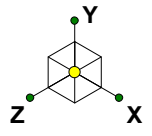
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BOHVN00139A

Ice + Wind Load 0

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Loads: BLC 20, Ice Wind Load AZI 90
Envelope Only Solution

Infinigy Engineering

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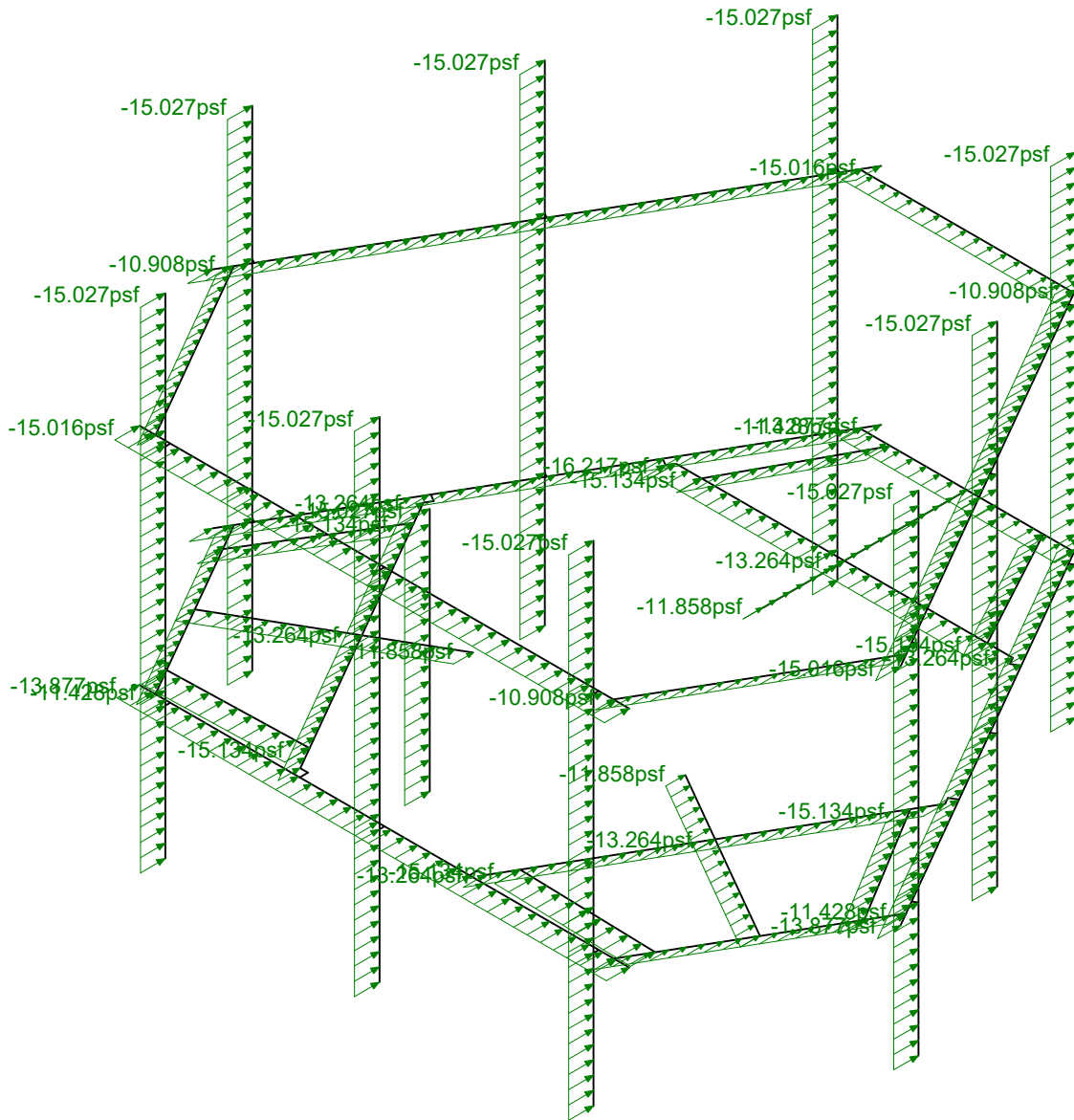
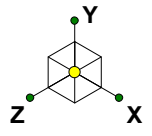
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BOHVN00139A

Ice + Wind Load 90

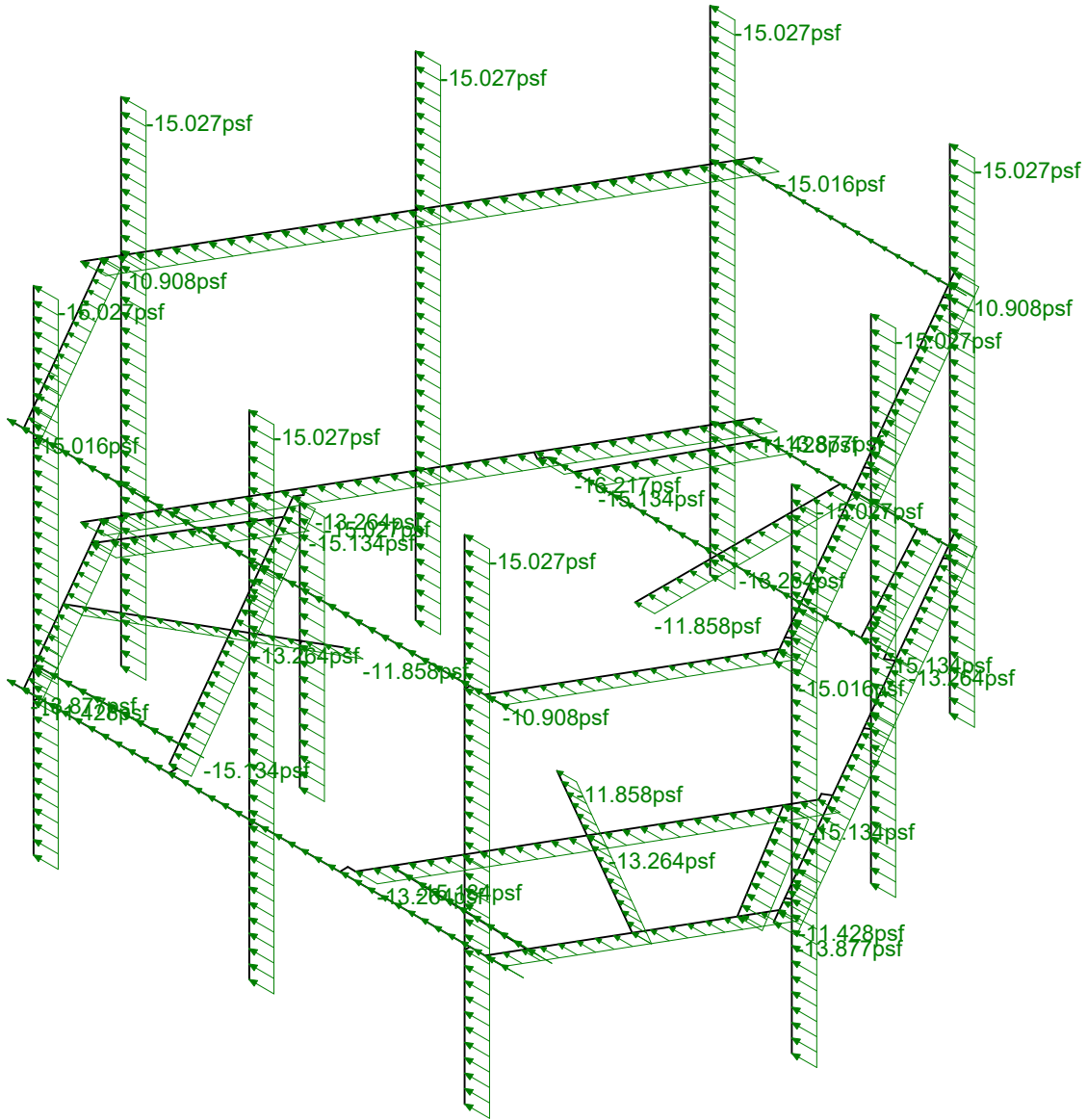
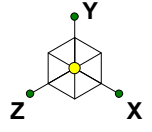
Sept 20, 2021 at 12:05 PM

BOHVN00139A_loaded.r3d



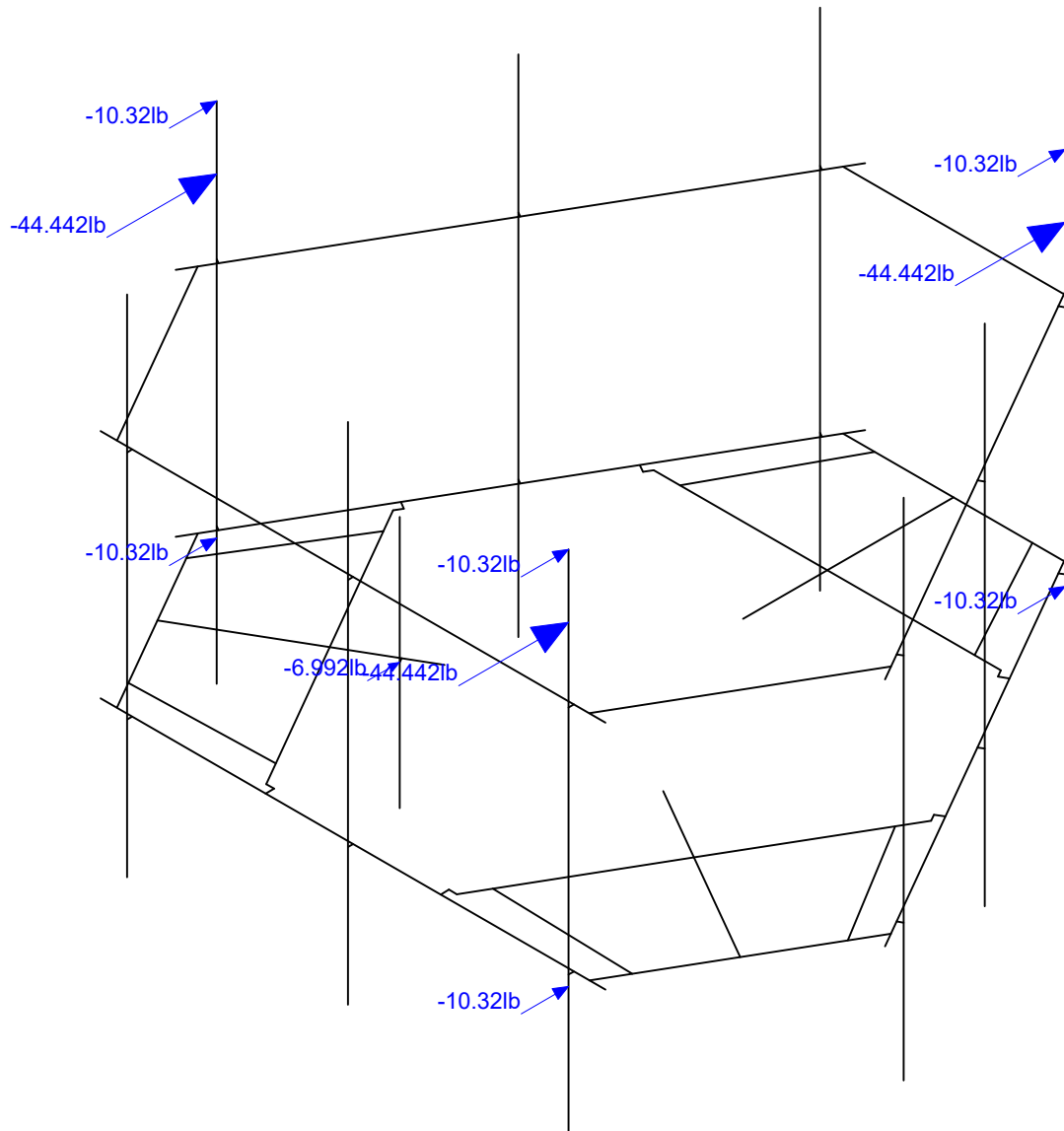
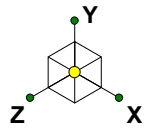
Loads: BLC 29, Distr. Ice Wind Load Z
Envelope Only Solution

Infinigy Engineering	BOHVN00139A	Distr. Ice + Wind Load 0
AK		Sept 20, 2021 at 12:06 PM
1197-F0001-B		BOHVN00139A_loaded.r3d



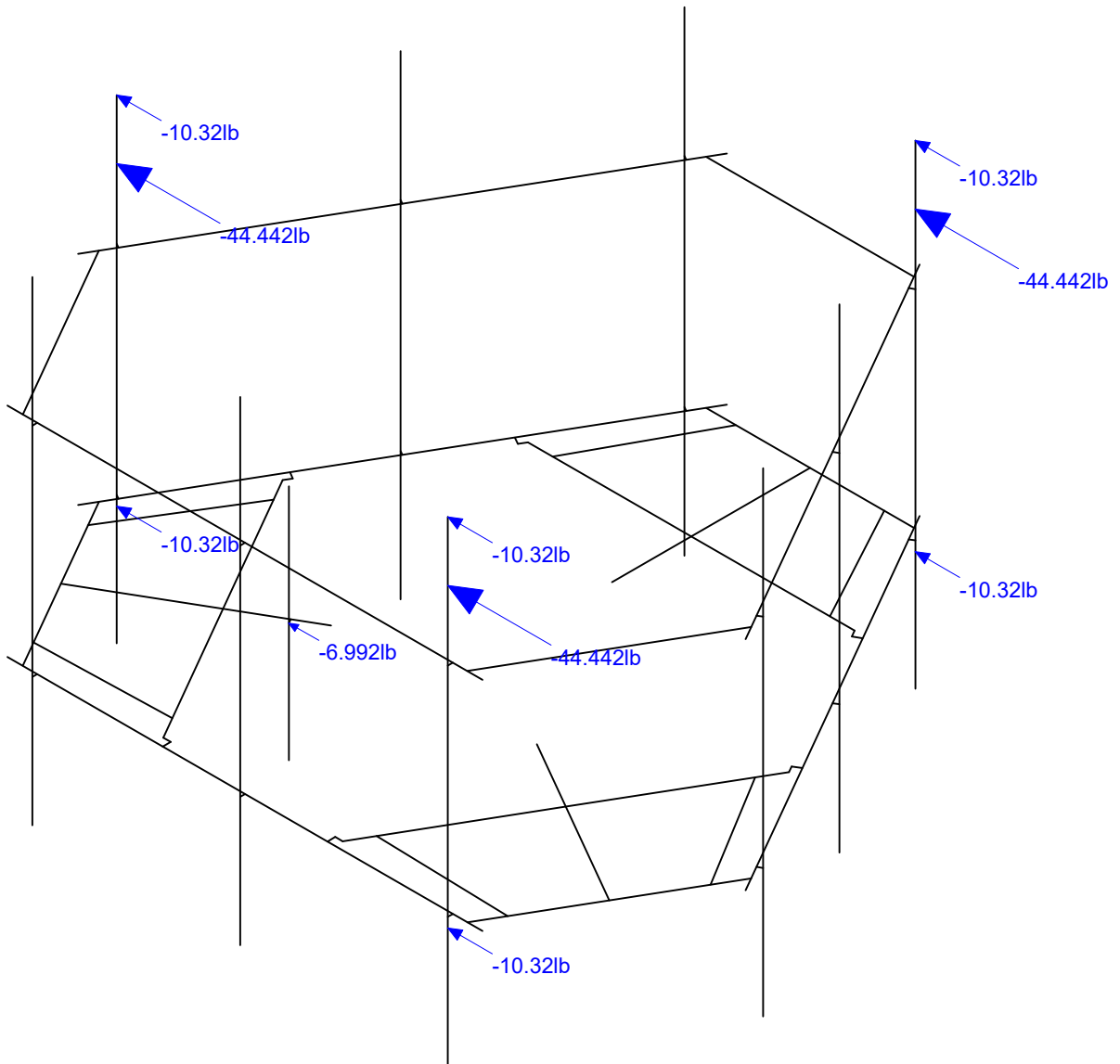
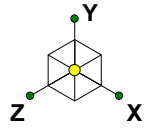
Loads: BLC 30, Distr. Ice Wind Load X
Envelope Only Solution

Infinigy Engineering	BOHVN00139A	Distr. Ice + Wind Load 90
AK		Sept 20, 2021 at 12:06 PM
1197-F0001-B		BOHVN00139A_loaded.r3d



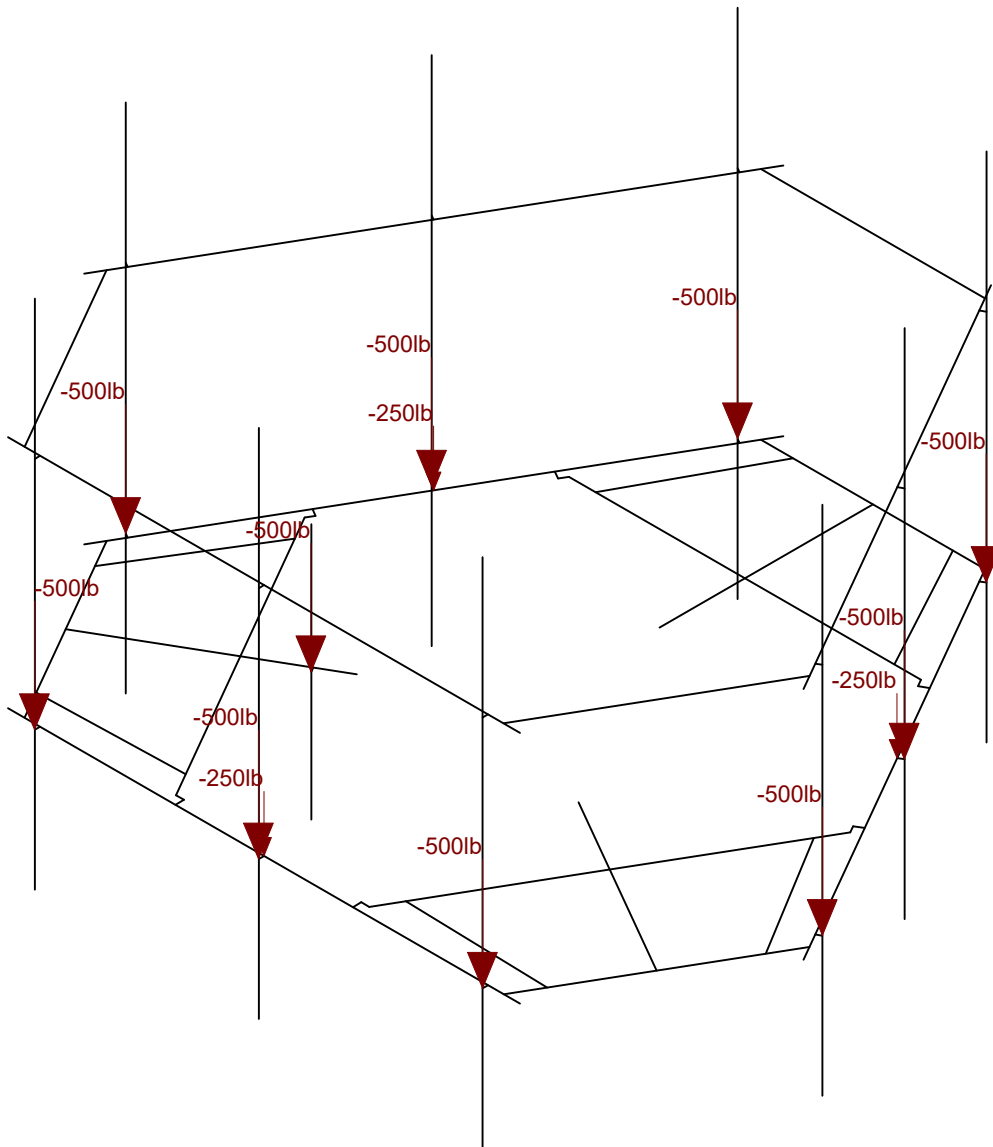
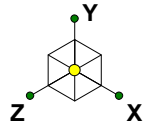
Loads: BLC 31, Seismic Load Z
Envelope Only Solution

Infinigy Engineering	BOHVN00139A	Seismic Load 0
AK		Sept 20, 2021 at 12:07 PM
1197-F0001-B		BOHVN00139A_loaded.r3d



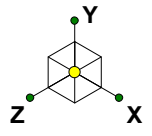
Loads: BLC 32, Seismic Load X
Envelope Only Solution

Infinigy Engineering	BOHVN00139A	Seismic Load 90
AK		Sept 20, 2021 at 12:07 PM
1197-F0001-B		BOHVN00139A_loaded.r3d

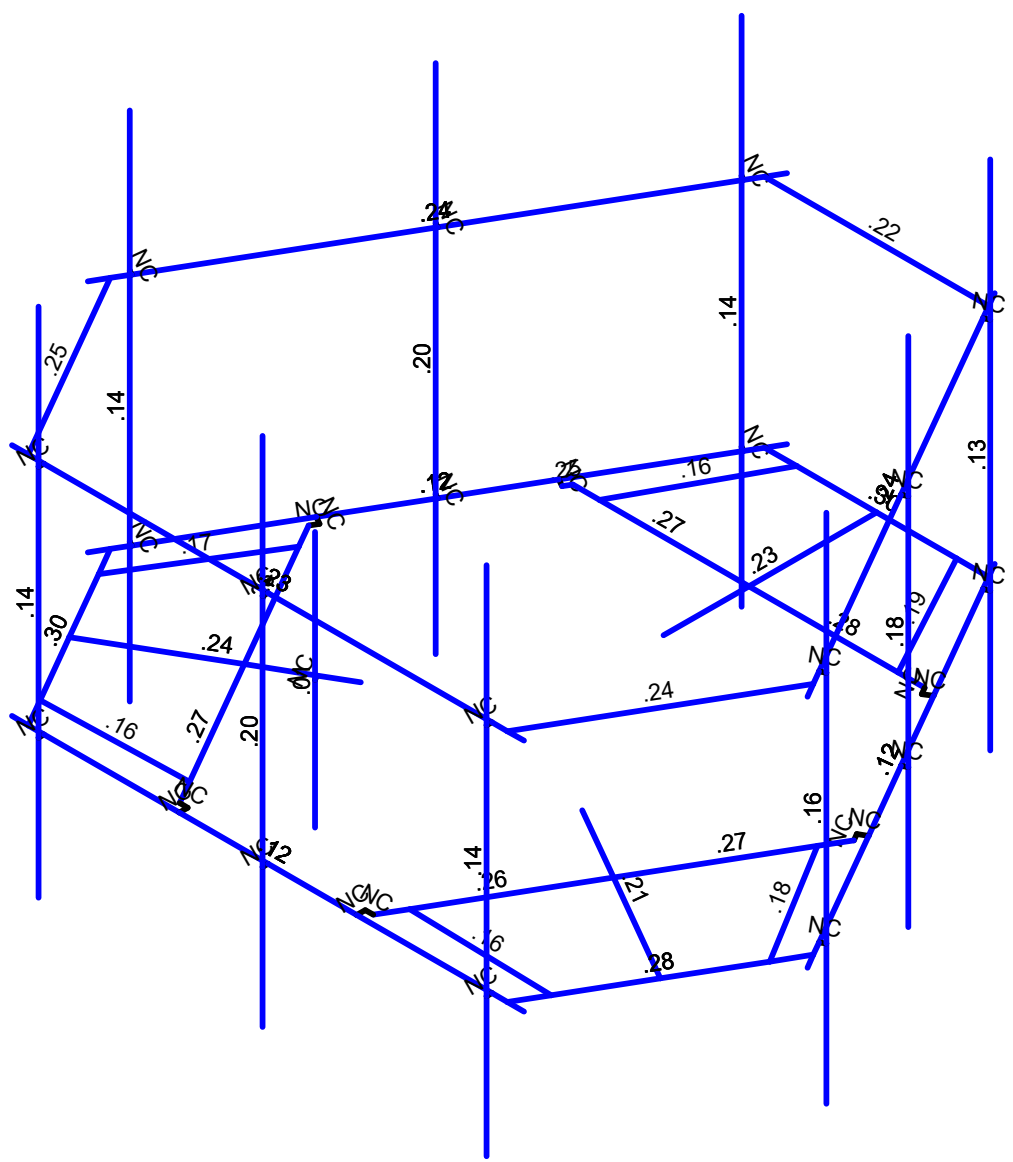


Loads: LL - Live Load
Envelope Only Solution

Infinigy Engineering	BOHVN00139A	Non-concurrent Live Loads
AK		Sept 20, 2021 at 12:08 PM
1197-F0001-B		BOHVN00139A_loaded.r3d



Code Check (Env)	
	No Calc
	> 1.0
	.90-1.0
	.75-.90
	.50-.75
	0-.50



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Infinigy Engineering	BOHVN00139A	Bending Check
AK		Sept 20, 2021 at 12:08 PM
1197-F0001-B		BOHVN00139A_loaded.r3d

Program Inputs

PROJECT INFORMATION		
Client:	ATC	
Carrier:	Dish Wireless	
Engineer:	Alisha Khadka	

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	C	
Topo Factor Procedure:	Method 1, Category 1	
Site Class:	D - Stiff Soil (Assumed)	
Ground Elevation:	30.83	ft *Rev H

MOUNT INFORMATION		
Mount Type:	Platform	
Num Sectors:	3	
Centerline AGL:	71.00	ft
Tower Height AGL:	71.00	ft

TOPOGRAPHIC DATA		
Topo Feature:	N/A	
Slope Distance:	N/A	ft
Crest Distance:	N/A	ft
Crest Height:	N/A	ft

FACTORS		
Directionality Fact. (K_d):	0.950	
Ground Ele. Factor (K_e):	0.999	*Rev H Only
Rooftop Speed-Up (K_s):	1.000	*Rev H Only
Topographic Factor (K_{zt}):	1.000	
Gust Effect Factor (G_H):	1.000	

CODE STANDARDS		
Building Code:	2015 IBC	
TIA Standard:	TIA-222-H	
ASCE Standard:	ASCE 7-16	

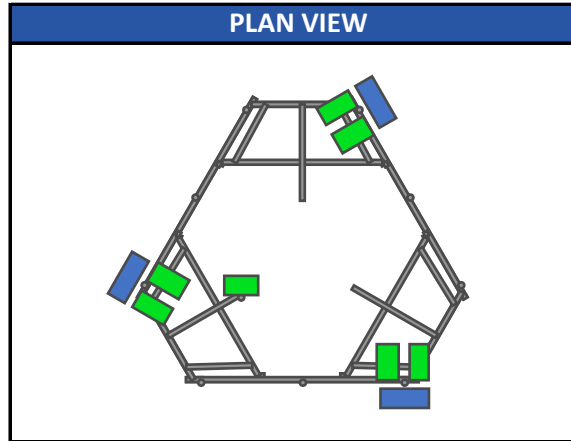
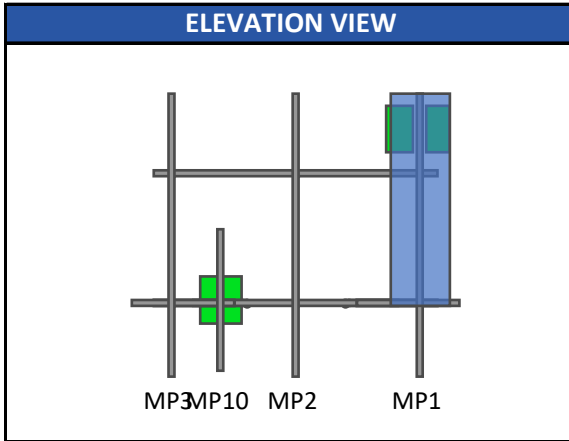
WIND AND ICE DATA		
Ultimate Wind (V_{ult}):	120	mph
Design Wind (V):	N/A	mph
Ice Wind (V_{ice}):	50	mph
Base Ice Thickness (t_i):	1	in
Flat Pressure:	82.387	psf
Round Pressure:	49.432	psf
Ice Wind Pressure:	8.582	psf

SEISMIC DATA		
Short-Period Accel. (S_s):	0.200	g
1-Second Accel. (S_1):	0.053	g
Short-Period Design (S_{DS}):	0.213	
1-Second Design (S_{D1}):	0.085	
Short-Period Coeff. (F_a):	1.600	
1-Second Coeff. (F_v):	2.400	
Amplification Factor (A_s):	3.000	
Response Mod. Coeff. (R):	2.000	



Infinigy Load Calculator V2.1.7

Program Inputs



Infinigy Load Calculator V2.1.7

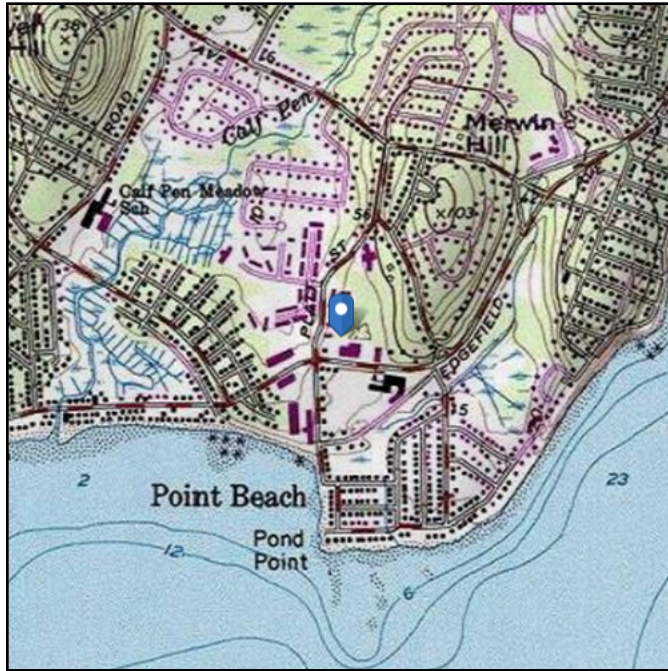
APPURTENANCE INFORMATION												
Appurtenance Name	Elevation	Qty.	K_a	q_z (psf)	EPA_N (ft ²)	EPA_T (ft ²)	Wind F_z (lbs)	Wind F_x (lbs)	Weight (lbs)	Seismic F (lbs)	Member (α sector)	
JMA WIRELESS MX08FRO665-21	71.0	3	0.90	41.19	8.01	3.21	296.96	119.01	64.50	20.64	MP1	
FUJITSU TA08025-B605	71.0	3	0.90	41.19	1.96	1.19	72.80	44.09	74.95	23.98	MP1	
FUJITSU TA08025-B604	71.0	3	0.90	41.19	1.96	1.03	72.80	38.30	63.93	20.46	MP1	
RAYCAP RDIDC-9181-PF-48	71.0	1	0.90	41.19	1.87	1.07	69.21	39.55	21.85	6.99	MP10	

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 30.83 ft (NAVD 88)
Latitude: 41.209867
Longitude: -73.019408



Wind

Results:

Wind Speed:	120 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	91 Vmph
100-year MRI	99 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Mon Sep 20 2021

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

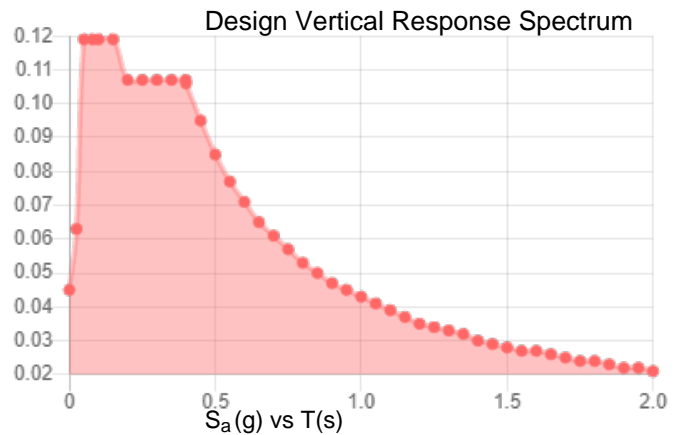
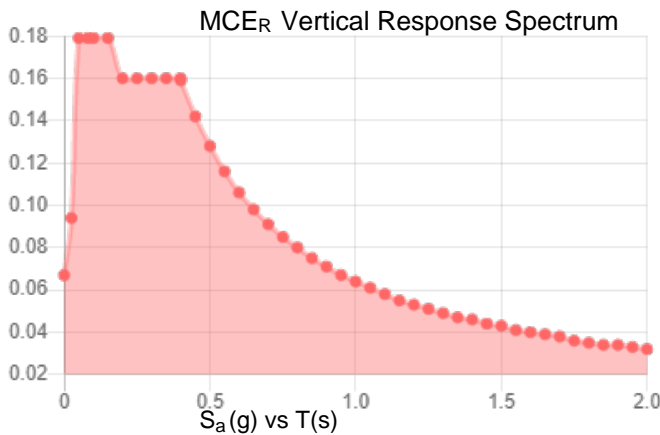
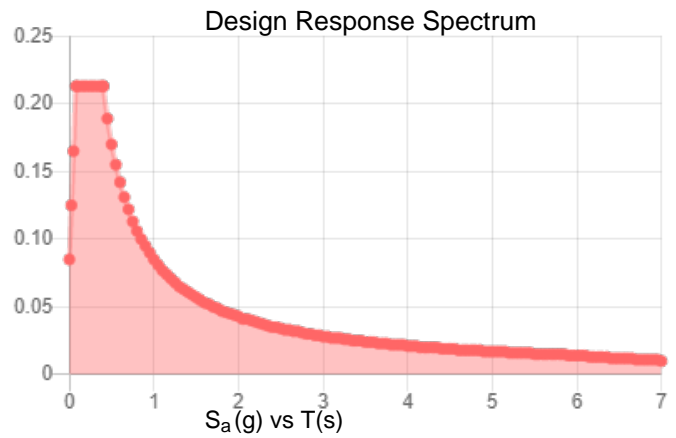
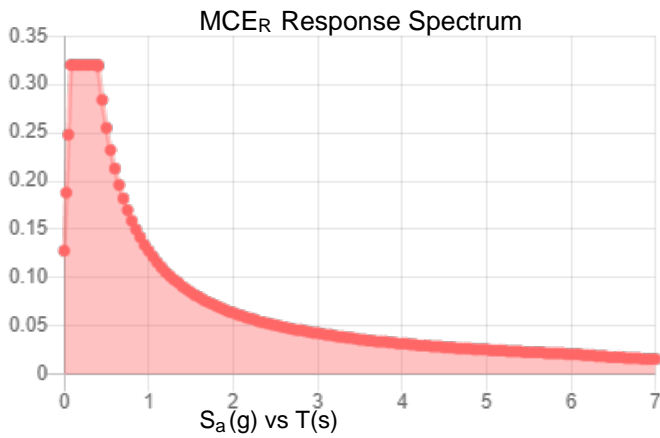
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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

Results:

S_s :	0.2	S_{D1} :	0.085
S_1 :	0.053	T_L :	6
F_a :	1.6	PGA :	0.112
F_v :	2.4	PGA _M :	0.177
S_{MS} :	0.32	F_{PGA} :	1.576
S_{M1} :	0.128	I_e :	1
S_{DS} :	0.213	C_v :	0.7

Seismic Design Category B



Data Accessed: Mon Sep 20 2021
Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness: 1.00 in.

Concurrent Temperature: 15 F

Gust Speed: 50 mph

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

Date Accessed: Mon Sep 20 2021

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

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

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Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	S3	P1	P3			Square Tubing	Beam	None	A500 GR.C	Typical
2	GA4	P9	P12		270	Grating Angle	Beam	None	A529 Gr. 50	Typical
3	GA3	P10	P11			Grating Angle	Beam	None	A529 Gr. 50	Typical
4	P3	P7	P8			Corner Plates	Beam	None	A1011 36 ...	Typical
5	S2	P13	P14			Square Tubing	Beam	None	A500 GR.C	Typical
6	GA2	P20	P23		270	Grating Angle	Beam	None	A529 Gr. 50	Typical
7	GA1	P21	P22			Grating Angle	Beam	None	A529 Gr. 50	Typical
8	P2	P18	P19			Corner Plates	Beam	None	A1011 36 ...	Typical
9	S1	P24	P25			Square Tubing	Beam	None	A500 GR.C	Typical
10	GA6	P31	P34		270	Grating Angle	Beam	None	A529 Gr. 50	Typical
11	GA5	P32	P33			Grating Angle	Beam	None	A529 Gr. 50	Typical
12	P1	P29	P30			Corner Plates	Beam	None	A1011 36 ...	Typical
13	H1	N43	N44			Face Pipes(3...	Beam	None	A500 GR.C	Typical
14	MP1	N66	N60			Antenna Pipes	Beam	None	A500 GR.C	Typical
15	MP3	N63	N57			Antenna Pipes	Beam	None	A500 GR.C	Typical
16	HR1	N67	N68			Handrail	Beam	None	A500 GR.C	Typical
17	CA8	N114A	N113A		180	Handrail Conn...	Beam	None	A1011 36 ...	Typical
18	CA9	N112A	N111A		180	Handrail Conn...	Beam	None	A1011 36 ...	Typical
19	CA7	N116A	N115A		180	Handrail Conn...	Beam	None	A1011 36 ...	Typical
20	M32	N48A	N70A			RIGID	None	None	RIGID	Typical
21	M35	N45	N69A			RIGID	None	None	RIGID	Typical
22	M36	N51	N71A			RIGID	None	None	RIGID	Typical
23	M39A	N54	N72A			RIGID	None	None	RIGID	Typical
24	CA3	P4	N122A			Channel(3.38x...	Beam	None	A1011 36 ...	Typical
25	CA4	N124B	P4			Channel(3.38x...	Beam	None	A1011 36 ...	Typical
26	CA1	P15	N122B			Channel(3.38x...	Beam	None	A1011 36 ...	Typical
27	CA2	N123A	P15			Channel(3.38x...	Beam	None	A1011 36 ...	Typical
28	CA5	P26	N125			Channel(3.38x...	Beam	None	A1011 36 ...	Typical
29	CA6	N126	P26			Channel(3.38x...	Beam	None	A1011 36 ...	Typical
30	M64	N126A	N125A			RIGID	None	None	RIGID	Typical
31	M65	N126	N125A			RIGID	None	None	RIGID	Typical
32	M66	N129	N128			RIGID	None	None	RIGID	Typical
33	M67	N124B	N128			RIGID	None	None	RIGID	Typical
34	M68	N132	N131			RIGID	None	None	RIGID	Typical
35	M69	N123A	N131			RIGID	None	None	RIGID	Typical
36	M70	N133	N132A			RIGID	None	None	RIGID	Typical
37	M71	N122B	N132A			RIGID	None	None	RIGID	Typical
38	M72	N135	N134			RIGID	None	None	RIGID	Typical
39	M73	N125	N134			RIGID	None	None	RIGID	Typical
40	M74	N138	N137			RIGID	None	None	RIGID	Typical
41	M75	N122A	N137			PL 2.375x0.5	None	None	A36 Gr.36	Typical
42	MP2	N75	N74			Antenna Pipes	Beam	None	A500 GR.C	Typical
43	M43	N72B	N76			RIGID	None	None	RIGID	Typical
44	M44	N73	N77			RIGID	None	None	RIGID	Typical
45	H3	N81A	N82A			Face Pipes(3...	Beam	None	A500 GR.C	Typical
46	MP7	N90	N88			Antenna Pipes	Beam	None	A500 GR.C	Typical
47	MP9	N89	N87			Antenna Pipes	Beam	None	A500 GR.C	Typical
48	HR3	N91	N92			Handrail	Beam	None	A500 GR.C	Typical
49	M52	N84	N94			RIGID	None	None	RIGID	Typical
50	M53	N83A	N93			RIGID	None	None	RIGID	Typical
51	M54	N85	N95			RIGID	None	None	RIGID	Typical
52	M55	N86	N96			RIGID	None	None	RIGID	Typical
53	H2	N109	N110			Face Pipes(3...	Beam	None	A500 GR.C	Typical
54	MP4	N118	N116			Antenna Pipes	Beam	None	A500 GR.C	Typical
55	MP6	N117	N115			Antenna Pipes	Beam	None	A500 GR.C	Typical
56	HR2	N119	N120			Handrail	Beam	None	A500 GR.C	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
57	M66A	N112	N122			RIGID	None	None	RIGID	Typical
58	M67A	N111	N121			RIGID	None	None	RIGID	Typical
59	M68A	N113	N123			RIGID	None	None	RIGID	Typical
60	M69A	N114	N124			RIGID	None	None	RIGID	Typical
61	MP8	N132B	N131A			Antenna Pipes	Beam	None	A500 GR.C	Typical
62	M68B	N129B	N133B			RIGID	None	None	RIGID	Typical
63	M69B	N130A	N134A			RIGID	None	None	RIGID	Typical
64	MP5	N138A	N137A			Antenna Pipes	Beam	None	A500 GR.C	Typical
65	M71B	N135A	N139			RIGID	None	None	RIGID	Typical
66	M72B	N136	N140			RIGID	None	None	RIGID	Typical
67	M67B	N119A	N120A			RIGID	None	None	RIGID	Typical
68	MP10	N121A	N122C			Antenna Pipes	Beam	None	A500 GR.C	Typical

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
1	S3	Square Tubi...	40			Lbyy						Lateral
2	GA4	Grating Angle	27.295			Lbyy						Lateral
3	GA3	Grating Angle	27.295			Lbyy						Lateral
4	P3	Corner Plates	42			Lbyy						Lateral
5	S2	Square Tubi...	40			Lbyy						Lateral
6	GA2	Grating Angle	27.295			Lbyy						Lateral
7	GA1	Grating Angle	27.295			Lbyy						Lateral
8	P2	Corner Plates	42			Lbyy						Lateral
9	S1	Square Tubi...	40			Lbyy						Lateral
10	GA6	Grating Angle	27.295			Lbyy						Lateral
11	GA5	Grating Angle	27.295			Lbyy						Lateral
12	P1	Corner Plates	42			Lbyy						Lateral
13	H1	Face Pipes(...	96			Lbyy						Lateral
14	MP1	Antenna Pip...	96			Lbyy						Lateral
15	MP3	Antenna Pip...	96			Lbyy						Lateral
16	HR1	Handrail	96			Lbyy						Lateral
17	CA8	Handrail Co...	42			Lbyy						Lateral
18	CA9	Handrail Co...	42			Lbyy						Lateral
19	CA7	Handrail Co...	42			Lbyy						Lateral
20	CA3	Channel(3.3...	33			Lbyy						Lateral
21	CA4	Channel(3.3...	33			Lbyy						Lateral
22	CA1	Channel(3.3...	33			Lbyy						Lateral
23	CA2	Channel(3.3...	33			Lbyy						Lateral
24	CA5	Channel(3.3...	33			Lbyy						Lateral
25	CA6	Channel(3.3...	33			Lbyy						Lateral
26	M75	PL 2.375x0.5	1.5			Lbyy						Lateral
27	MP2	Antenna Pip...	96			Lbyy						Lateral
28	H3	Face Pipes(...	96			Lbyy						Lateral
29	MP7	Antenna Pip...	96			Lbyy						Lateral
30	MP9	Antenna Pip...	96			Lbyy						Lateral
31	HR3	Handrail	96			Lbyy						Lateral
32	H2	Face Pipes(...	96			Lbyy						Lateral
33	MP4	Antenna Pip...	96			Lbyy						Lateral
34	MP6	Antenna Pip...	96			Lbyy						Lateral
35	HR2	Handrail	96			Lbyy						Lateral
36	MP8	Antenna Pip...	96			Lbyy						Lateral
37	MP5	Antenna Pip...	96			Lbyy						Lateral
38	MP10	Antenna Pip...	48			Lbyy						Lateral

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat..	Analysis ...	Inactive	Seismic...
1	S3						Yes				None
2	GA4						Yes				None
3	GA3						Yes				None
4	P3	BenPIN	BenPIN				Yes	Default			None
5	S2						Yes				None
6	GA2						Yes				None
7	GA1						Yes				None
8	P2	BenPIN	BenPIN				Yes	Default			None
9	S1						Yes	Default			None
10	GA6						Yes				None
11	GA5						Yes				None
12	P1	BenPIN	BenPIN				Yes	Default			None
13	H1						Yes	Default			None
14	MP1						Yes	Default	+y+3		None
15	MP3						Yes		+y+3		None
16	HR1						Yes				None
17	CA8	OOOOOX	OOOOOX				Yes				None
18	CA9	OOOOOX	OOOOOX				Yes				None
19	CA7	OOOOOX	OOOOOX				Yes	Default			None
20	M32						Yes	** NA **			None
21	M35						Yes	** NA **			None
22	M36						Yes	** NA **			None
23	M39A						Yes	** NA **			None
24	CA3						Yes	Default			None
25	CA4						Yes	Default			None
26	CA1						Yes	Default			None
27	CA2						Yes	Default			None
28	CA5						Yes	Default			None
29	CA6						Yes	Default			None
30	M64	BenPIN					Yes	** NA **			None
31	M65						Yes	** NA **			None
32	M66	BenPIN					Yes	** NA **			None
33	M67						Yes	** NA **			None
34	M68	BenPIN					Yes	** NA **			None
35	M69						Yes	** NA **			None
36	M70	BenPIN					Yes	** NA **			None
37	M71						Yes	** NA **			None
38	M72	BenPIN					Yes	** NA **			None
39	M73						Yes	** NA **			None
40	M74	BenPIN					Yes	** NA **			None
41	M75						Yes	** NA **			None
42	MP2						Yes		+y+3		None
43	M43						Yes	** NA **			None
44	M44						Yes	** NA **			None
45	H3						Yes				None
46	MP7						Yes		+y+3		None
47	MP9						Yes		+y+3		None
48	HR3						Yes				None
49	M52						Yes	** NA **			None
50	M53						Yes	** NA **			None
51	M54						Yes	** NA **			None
52	M55						Yes	** NA **			None
53	H2						Yes				None
54	MP4						Yes		+y+3		None
55	MP6						Yes		+y+3		None
56	HR2						Yes				None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat..	Analysis ...	Inactive	Seismic...
57	M66A						Yes	** NA **			None
58	M67A						Yes	** NA **			None
59	M68A						Yes	** NA **			None
60	M69A						Yes	** NA **			None
61	MP8						Yes		+y+3		None
62	M68B						Yes	** NA **			None
63	M69B						Yes	** NA **			None
64	MP5						Yes		+y+3		None
65	M71B						Yes	** NA **			None
66	M72B						Yes	** NA **			None
67	M67B						Yes	** NA **			None
68	MP10						Yes	Default			None

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General				
2	RIGID		30	36.1	0
3	Total General		30	36.1	0
4					
5	Hot Rolled Steel				
6	A1011 36 Ksi	C3.38x2.06x0.25	6	198	98.255
7	A1011 36 Ksi	PL6.5x0.375	3	126	87.09
8	A1011 36 Ksi	L6.6x4.46x0.25	3	126	96.558
9	A36 Gr.36	PL 2.375x0.5	1	1.5	.505
10	A500 GR.C	2.88x0.120	3	288	84.974
11	A500 GR.C	HSS4X4X6	3	120	162.653
12	A500 GR.C	Pipe3.5x0.165	3	288	141.202
13	A500 GR.C	PIPE 2.5	10	912	416.364
14	A529 Gr. 50	L2x2x4	6	163.8	43.838
15	Total HR Steel		38	2223.3	1131.439

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Corner Plates	PL6.5x0.375	Beam	None	A1011 36 Ksi	Typical	2.438	.029	8.582	.11
2	6"x0.37" Plate	Plate 6x.37	Beam	None	A1011 36 Ksi	Typical	2.22	.025	6.66	.097
3	Grating Angle	L2x2x4	Beam	None	A529 Gr. 50	Typical	.944	.346	.346	.021
4	Face Pipes(3.5x.16)	Pipe3.5x0.1...	Beam	None	A500 GR.C	Typical	1.729	2.409	2.409	4.819
5	Antenna Pipes	PIPE 2.5	Beam	None	A500 GR.C	Typical	1.61	1.45	1.45	2.89
6	Channel(3.38x2.06)	C3.38x2.06...	Beam	None	A1011 36 Ksi	Typical	1.75	.715	3.026	.034
7	Square Tubing	HSS4X4X6	Beam	None	A500 GR.C	Typical	4.78	10.3	10.3	17.5
8	Handrail Connector	L6.6x4.46x...	Beam	None	A1011 36 Ksi	Typical	2.703	4.759	12.473	.055
9	Handrail	2.88x0.120	Beam	None	A500 GR.C	Typical	1.04	.993	.993	1.985

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distrib...	Area(Me...	Surface(...
1	Self Weight	DL		-1			13		3	
2	Wind Load AZI 0	WLZ					26			
3	Wind Load AZI 30	None					26			
4	Wind Load AZI 60	None					26			
5	Wind Load AZI 90	WLX					26			
6	Wind Load AZI 120	None					26			
7	Wind Load AZI 150	None					26			

Basic Load Cases (Continued)

BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distrib...	Area(Me...	Surface(...
8 Wind Load AZI 180	None					26			
9 Wind Load AZI 210	None					26			
10 Wind Load AZI 240	None					26			
11 Wind Load AZI 270	None					26			
12 Wind Load AZI 300	None					26			
13 Wind Load AZI 330	None					26			
14 Distr. Wind Load Z	WLZ						68		
15 Distr. Wind Load X	WLX						68		
16 Ice Weight	OL1					13	68	3	
17 Ice Wind Load AZI 0	OL2					26			
18 Ice Wind Load AZI 30	None					26			
19 Ice Wind Load AZI 60	None					26			
20 Ice Wind Load AZI 90	OL3					26			
21 Ice Wind Load AZI 120	None					26			
22 Ice Wind Load AZI 150	None					26			
23 Ice Wind Load AZI 180	None					26			
24 Ice Wind Load AZI 210	None					26			
25 Ice Wind Load AZI 240	None					26			
26 Ice Wind Load AZI 270	None					26			
27 Ice Wind Load AZI 300	None					26			
28 Ice Wind Load AZI 330	None					26			
29 Distr. Ice Wind Load Z	OL2						68		
30 Distr. Ice Wind Load X	OL3						68		
31 Seismic Load Z	ELZ			-32		13			
32 Seismic Load X	ELX	-32				13			
33 Service Live Loads	LL				3				
34 Maintenance Load 1	LL				1				
35 Maintenance Load 2	LL				1				
36 Maintenance Load 3	LL				1				
37 Maintenance Load 4	LL				1				
38 Maintenance Load 5	LL				1				
39 Maintenance Load 6	LL				1				
40 Maintenance Load 7	LL				1				
41 Maintenance Load 8	LL				1				
42 Maintenance Load 9	LL				1				
43 Maintenance Load 10	LL				1				
44 BLC 1 Transient Area Loads	None						9		
45 BLC 16 Transient Area Loads	None						9		

Load Combinations

Description	S...PDe...	SRSS	BLC	Factor	BLC Fac...	BLC Fa...	B...Fa...	B...Fa...	B...Fa...	B...Fa...	B...Fa...	B...Fa...	B...Fa...	B...Fa...	B...Fa...	B...Fa...	B...Fa...
1 1.4DL	Y...Y		1	1.4													
2 1.2DL + 1WL AZI 0	Y...Y		1	1.2	2	1	14	1	15								
3 1.2DL + 1WL AZI 30	Y...Y		1	1.2	3	1	14	.866	15	.5							
4 1.2DL + 1WL AZI 60	Y...Y		1	1.2	4	1	14	.5	15	.866							
5 1.2DL + 1WL AZI 90	Y...Y		1	1.2	5	1	14		15	1							
6 1.2DL + 1WL AZI 120	Y...Y		1	1.2	6	1	14	-.5	15	.866							
7 1.2DL + 1WL AZI 150	Y...Y		1	1.2	7	1	14	-.8	15	.5							
8 1.2DL + 1WL AZI 180	Y...Y		1	1.2	8	1	14	-1	15								
9 1.2DL + 1WL AZI 210	Y...Y		1	1.2	9	1	14	-.8	15	-.5							
10 1.2DL + 1WL AZI 240	Y...Y		1	1.2	10	1	14	-.5	15	-.8							
11 1.2DL + 1WL AZI 270	Y...Y		1	1.2	11	1	14		15	-1							
12 1.2DL + 1WL AZI 300	Y...Y		1	1.2	12	1	14	.5	15	-.8							
13 1.2DL + 1WL AZI 330	Y...Y		1	1.2	13	1	14	.866	15	-.5							
14 0.9DL + 1WL AZI 0	Y...Y		1	.9	2	1	14	1	15								

Load Combinations (Continued)

	Description	S...	PDe...	SRSS	BLC	Factor	BLC	Fac...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	
72	1.0DL + 1.5LL + 1.0SWL (...)	Y..	Y		1	1	11	.25	14		15	-.25	33	1.5								
73	1.0DL + 1.5LL + 1.0SWL (...)	Y..	Y		1	1	12	.25	14	.125	15	-.2	33	1.5								
74	1.0DL + 1.5LL + 1.0SWL (...)	Y..	Y		1	1	13	.25	14	.216	15	-.1	33	1.5								
75	1.2DL + 1.5LL	Y..	Y		1	1.2	33	1.5														
76	1.2DL + 1.5LM-MP1 + 1S...	Y..	Y		1	1.2	34	1.5	2	.063	14	.063	15									
77	1.2DL + 1.5LM-MP1 + 1S...	Y..	Y		1	1.2	34	1.5	3	.063	14	.054	15	.031								
78	1.2DL + 1.5LM-MP1 + 1S...	Y..	Y		1	1.2	34	1.5	4	.063	14	.031	15	.054								
79	1.2DL + 1.5LM-MP1 + 1S...	Y..	Y		1	1.2	34	1.5	5	.063	14		15	.063								
80	1.2DL + 1.5LM-MP1 + 1S...	Y..	Y		1	1.2	34	1.5	6	.063	14	-.0	15	.054								
81	1.2DL + 1.5LM-MP1 + 1S...	Y..	Y		1	1.2	34	1.5	7	.063	14	-.0	15	.031								
82	1.2DL + 1.5LM-MP1 + 1S...	Y..	Y		1	1.2	34	1.5	8	.063	14	-.0	15									
83	1.2DL + 1.5LM-MP1 + 1S...	Y..	Y		1	1.2	34	1.5	9	.063	14	-.0	15	-.0								
84	1.2DL + 1.5LM-MP1 + 1S...	Y..	Y		1	1.2	34	1.5	10	.063	14	-.0	15	-.0								
85	1.2DL + 1.5LM-MP1 + 1S...	Y..	Y		1	1.2	34	1.5	11	.063	14		15	-.0								
86	1.2DL + 1.5LM-MP1 + 1S...	Y..	Y		1	1.2	34	1.5	12	.063	14	.031	15	-.0								
87	1.2DL + 1.5LM-MP1 + 1S...	Y..	Y		1	1.2	34	1.5	13	.063	14	.054	15	-.0								
88	1.2DL + 1.5LM-MP2 + 1S...	Y..	Y		1	1.2	35	1.5	2	.063	14	.063	15									
89	1.2DL + 1.5LM-MP2 + 1S...	Y..	Y		1	1.2	35	1.5	3	.063	14	.054	15	.031								
90	1.2DL + 1.5LM-MP2 + 1S...	Y..	Y		1	1.2	35	1.5	4	.063	14	.031	15	.054								
91	1.2DL + 1.5LM-MP2 + 1S...	Y..	Y		1	1.2	35	1.5	5	.063	14		15	.063								
92	1.2DL + 1.5LM-MP2 + 1S...	Y..	Y		1	1.2	35	1.5	6	.063	14	-.0	15	.054								
93	1.2DL + 1.5LM-MP2 + 1S...	Y..	Y		1	1.2	35	1.5	7	.063	14	-.0	15	.031								
94	1.2DL + 1.5LM-MP2 + 1S...	Y..	Y		1	1.2	35	1.5	8	.063	14	-.0	15									
95	1.2DL + 1.5LM-MP2 + 1S...	Y..	Y		1	1.2	35	1.5	9	.063	14	-.0	15	-.0								
96	1.2DL + 1.5LM-MP2 + 1S...	Y..	Y		1	1.2	35	1.5	10	.063	14	-.0	15	-.0								
97	1.2DL + 1.5LM-MP2 + 1S...	Y..	Y		1	1.2	35	1.5	11	.063	14		15	-.0								
98	1.2DL + 1.5LM-MP2 + 1S...	Y..	Y		1	1.2	35	1.5	12	.063	14	.031	15	-.0								
99	1.2DL + 1.5LM-MP2 + 1S...	Y..	Y		1	1.2	35	1.5	13	.063	14	.054	15	-.0								
100	1.2DL + 1.5LM-MP3 + 1S...	Y..	Y		1	1.2	36	1.5	2	.063	14	.063	15									
101	1.2DL + 1.5LM-MP3 + 1S...	Y..	Y		1	1.2	36	1.5	3	.063	14	.054	15	.031								
102	1.2DL + 1.5LM-MP3 + 1S...	Y..	Y		1	1.2	36	1.5	4	.063	14	.031	15	.054								
103	1.2DL + 1.5LM-MP3 + 1S...	Y..	Y		1	1.2	36	1.5	5	.063	14		15	.063								
104	1.2DL + 1.5LM-MP3 + 1S...	Y..	Y		1	1.2	36	1.5	6	.063	14	-.0	15	.054								
105	1.2DL + 1.5LM-MP3 + 1S...	Y..	Y		1	1.2	36	1.5	7	.063	14	-.0	15	.031								
106	1.2DL + 1.5LM-MP3 + 1S...	Y..	Y		1	1.2	36	1.5	8	.063	14	-.0	15									
107	1.2DL + 1.5LM-MP3 + 1S...	Y..	Y		1	1.2	36	1.5	9	.063	14	-.0	15	-.0								
108	1.2DL + 1.5LM-MP3 + 1S...	Y..	Y		1	1.2	36	1.5	10	.063	14	-.0	15	-.0								
109	1.2DL + 1.5LM-MP3 + 1S...	Y..	Y		1	1.2	36	1.5	11	.063	14		15	-.0								
110	1.2DL + 1.5LM-MP3 + 1S...	Y..	Y		1	1.2	36	1.5	12	.063	14	.031	15	-.0								
111	1.2DL + 1.5LM-MP3 + 1S...	Y..	Y		1	1.2	36	1.5	13	.063	14	.054	15	-.0								
112	1.2DL + 1.5LM-MP4 + 1S...	Y..	Y		1	1.2	37	1.5	2	.063	14	.063	15									
113	1.2DL + 1.5LM-MP4 + 1S...	Y..	Y		1	1.2	37	1.5	3	.063	14	.054	15	.031								
114	1.2DL + 1.5LM-MP4 + 1S...	Y..	Y		1	1.2	37	1.5	4	.063	14	.031	15	.054								
115	1.2DL + 1.5LM-MP4 + 1S...	Y..	Y		1	1.2	37	1.5	5	.063	14		15	.063								
116	1.2DL + 1.5LM-MP4 + 1S...	Y..	Y		1	1.2	37	1.5	6	.063	14	-.0	15	.054								
117	1.2DL + 1.5LM-MP4 + 1S...	Y..	Y		1	1.2	37	1.5	7	.063	14	-.0	15	.031								
118	1.2DL + 1.5LM-MP4 + 1S...	Y..	Y		1	1.2	37	1.5	8	.063	14	-.0	15									
119	1.2DL + 1.5LM-MP4 + 1S...	Y..	Y		1	1.2	37	1.5	9	.063	14	-.0	15	-.0								
120	1.2DL + 1.5LM-MP4 + 1S...	Y..	Y		1	1.2	37	1.5	10	.063	14	-.0	15	-.0								
121	1.2DL + 1.5LM-MP4 + 1S...	Y..	Y		1	1.2	37	1.5	11	.063	14		15	-.0								
122	1.2DL + 1.5LM-MP4 + 1S...	Y..	Y		1	1.2	37	1.5	12	.063	14	.031	15	-.0								
123	1.2DL + 1.5LM-MP4 + 1S...	Y..	Y		1	1.2	37	1.5	13	.063	14	.054	15	-.0								
124	1.2DL + 1.5LM-MP5 + 1S...	Y..	Y		1	1.2	38	1.5	2	.063	14	.063	15									
125	1.2DL + 1.5LM-MP5 + 1S...	Y..	Y		1	1.2	38	1.5	3	.063	14	.054	15	.031								
126	1.2DL + 1.5LM-MP5 + 1S...	Y..	Y		1	1.2	38	1.5	4	.063	14	.031	15	.054								
127	1.2DL + 1.5LM-MP5 + 1S...	Y..	Y		1	1.2	38	1.5	5	.063	14		15	.063								
128	1.2DL + 1.5LM-MP5 + 1S...	Y..	Y		1	1.2	38	1.5	6	.063	14	-.0	15	.054								

Load Combinations (Continued)

	Description	S...	PDe...	SRSS	BLC	Factor	BLC	Fac...	BLC	Fac...	B...	Fac...	B...	Fac...	B...	Fac...	B...	Fac...	B...	Fac...	B...
186	1.2DL + 1.5LM-MP10 + 1S..Y...	Y			1	1.2	43	1.5	4	.063	14.031	15.054									
187	1.2DL + 1.5LM-MP10 + 1S..Y...	Y			1	1.2	43	1.5	5	.063	14	15.063									
188	1.2DL + 1.5LM-MP10 + 1S..Y...	Y			1	1.2	43	1.5	6	.063	14	-0...15.054									
189	1.2DL + 1.5LM-MP10 + 1S..Y...	Y			1	1.2	43	1.5	7	.063	14	-0...15.031									
190	1.2DL + 1.5LM-MP10 + 1S..Y...	Y			1	1.2	43	1.5	8	.063	14	-0...15									
191	1.2DL + 1.5LM-MP10 + 1S..Y...	Y			1	1.2	43	1.5	9	.063	14	-0...15									
192	1.2DL + 1.5LM-MP10 + 1S..Y...	Y			1	1.2	43	1.5	10	.063	14	-0...15									
193	1.2DL + 1.5LM-MP10 + 1S..Y...	Y			1	1.2	43	1.5	11	.063	14	15	-0...								
194	1.2DL + 1.5LM-MP10 + 1S..Y...	Y			1	1.2	43	1.5	12	.063	14.031	15	-0...								

Joint Boundary Conditions

Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1 P24	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2 P13	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3 P1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Envelope Joint Reactions

Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1 P24	max	909.321	6	1609.7...	10	1384.717	13	878.311	16	1750.7...	19	3689.3...	132
2	min	-892.672	24	-472.172	16	-1376.675	19	-3191.207	84	-1768.11	13	-1572...	16
3 P13	max	1151.516	4	1811.7...	31	1506.874	15	839.408	24	1966.9...	15	1365.2...	24
4	min	-1149.651	22	-358.566	24	-1514.429	9	-2822.957	92	-2013....	9	-4390....	6
5 P1	max	1428.374	17	1688.7...	2	738.074	2	4620.913	2	1625.7...	11	1582.7...	115
6	min	-1447.025	11	-462.526	20	-743.035	8	-1783.07	20	-1574....	17	-861.255	157
7 Totals:	max	3330.661	5	4336.3...	33	3524.988	14						
8	min	-3330.659	23	1544.0...	51	-3524.991	8						

Member Point Loads (BLC 1 : Self Weight)

Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1 MP1	Y	-32.25	0
2 MP1	Y	-32.25	72
3 MP1	Y	-74.95	12
4 MP1	Y	-63.93	12
5 MP10	Y	-21.85	24
6 MP4	Y	-32.25	0
7 MP4	Y	-32.25	72
8 MP4	Y	-74.95	12
9 MP4	Y	-63.93	12
10 MP7	Y	-32.25	0
11 MP7	Y	-32.25	72
12 MP7	Y	-74.95	12
13 MP7	Y	-63.93	12

Member Point Loads (BLC 2 : Wind Load AZI 0)

Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1 MP1	X	0	0
2 MP1	Z	-148.48	0
3 MP1	X	0	72
4 MP1	Z	-148.48	72
5 MP1	X	0	12
6 MP1	Z	-72.8	12
7 MP1	X	0	12

Member Point Loads (BLC 2 : Wind Load AZI 0) (Continued)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
8	MP1	Z	-72.8	12
9	MP10	X	0	24
10	MP10	Z	-69.21	24
11	MP4	X	0	0
12	MP4	Z	-81.75	0
13	MP4	X	0	72
14	MP4	Z	-81.75	72
15	MP4	X	0	12
16	MP4	Z	-51.26	12
17	MP4	X	0	12
18	MP4	Z	-46.92	12
19	MP7	X	0	0
20	MP7	Z	-81.75	0
21	MP7	X	0	72
22	MP7	Z	-81.75	72
23	MP7	X	0	12
24	MP7	Z	-51.26	12
25	MP7	X	0	12
26	MP7	Z	-46.92	12

Member Point Loads (BLC 3 : Wind Load AZI 30)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	-63.12	0
2	MP1	Z	-109.33	0
3	MP1	X	-63.12	72
4	MP1	Z	-109.33	72
5	MP1	X	-32.81	12
6	MP1	Z	-56.83	12
7	MP1	X	-32.09	12
8	MP1	Z	-55.57	12
9	MP10	X	-30.9	24
10	MP10	Z	-53.51	24
11	MP4	X	-63.12	0
12	MP4	Z	-109.33	0
13	MP4	X	-63.12	72
14	MP4	Z	-109.33	72
15	MP4	X	-32.81	12
16	MP4	Z	-56.83	12
17	MP4	X	-32.09	12
18	MP4	Z	-55.57	12
19	MP7	X	-29.75	0
20	MP7	Z	-51.53	0
21	MP7	X	-29.75	72
22	MP7	Z	-51.53	72
23	MP7	X	-22.04	12
24	MP7	Z	-38.18	12
25	MP7	X	-19.15	12
26	MP7	Z	-33.16	12

Member Point Loads (BLC 4 : Wind Load AZI 60)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	-70.8	0
2	MP1	Z	-40.87	0
3	MP1	X	-70.8	72
4	MP1	Z	-40.87	72
5	MP1	X	-44.4	12

Member Point Loads (BLC 4 : Wind Load AZI 60) (Continued)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
6	MP1	Z	-25.63	12
7	MP1	X	-40.63	12
8	MP1	Z	-23.46	12
9	MP10	X	-40.67	24
10	MP10	Z	-23.48	24
11	MP4	X	-128.59	0
12	MP4	Z	-74.24	0
13	MP4	X	-128.59	72
14	MP4	Z	-74.24	72
15	MP4	X	-63.04	12
16	MP4	Z	-36.4	12
17	MP4	X	-63.04	12
18	MP4	Z	-36.4	12
19	MP7	X	-70.8	0
20	MP7	Z	-40.87	0
21	MP7	X	-70.8	72
22	MP7	Z	-40.87	72
23	MP7	X	-44.4	12
24	MP7	Z	-25.63	12
25	MP7	X	-40.63	12
26	MP7	Z	-23.46	12

Member Point Loads (BLC 5 : Wind Load AZI 90)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	-59.5	0
2	MP1	Z	0	0
3	MP1	X	-59.5	72
4	MP1	Z	0	72
5	MP1	X	-44.09	12
6	MP1	Z	0	12
7	MP1	X	-38.3	12
8	MP1	Z	0	12
9	MP10	X	-39.55	24
10	MP10	Z	0	24
11	MP4	X	-126.24	0
12	MP4	Z	0	0
13	MP4	X	-126.24	72
14	MP4	Z	0	72
15	MP4	X	-65.62	12
16	MP4	Z	0	12
17	MP4	X	-64.17	12
18	MP4	Z	0	12
19	MP7	X	-126.24	0
20	MP7	Z	0	0
21	MP7	X	-126.24	72
22	MP7	Z	0	72
23	MP7	X	-65.62	12
24	MP7	Z	0	12
25	MP7	X	-64.17	12
26	MP7	Z	0	12

Member Point Loads (BLC 6 : Wind Load AZI 120)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	-70.8	0
2	MP1	Z	40.87	0
3	MP1	X	-70.8	72

Member Point Loads (BLC 6 : Wind Load AZI 120) (Continued)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
4	MP1	Z	40.87	72
5	MP1	X	-44.4	12
6	MP1	Z	25.63	12
7	MP1	X	-40.63	12
8	MP1	Z	23.46	12
9	MP10	X	-40.67	24
10	MP10	Z	23.48	24
11	MP4	X	-70.8	0
12	MP4	Z	40.87	0
13	MP4	X	-70.8	72
14	MP4	Z	40.87	72
15	MP4	X	-44.4	12
16	MP4	Z	25.63	12
17	MP4	X	-40.63	12
18	MP4	Z	23.46	12
19	MP7	X	-128.59	0
20	MP7	Z	74.24	0
21	MP7	X	-128.59	72
22	MP7	Z	74.24	72
23	MP7	X	-63.04	12
24	MP7	Z	36.4	12
25	MP7	X	-63.04	12
26	MP7	Z	36.4	12

Member Point Loads (BLC 7 : Wind Load AZI 150)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	-63.12	0
2	MP1	Z	109.33	0
3	MP1	X	-63.12	72
4	MP1	Z	109.33	72
5	MP1	X	-32.81	12
6	MP1	Z	56.83	12
7	MP1	X	-32.09	12
8	MP1	Z	55.57	12
9	MP10	X	-30.9	24
10	MP10	Z	53.51	24
11	MP4	X	-29.75	0
12	MP4	Z	51.53	0
13	MP4	X	-29.75	72
14	MP4	Z	51.53	72
15	MP4	X	-22.04	12
16	MP4	Z	38.18	12
17	MP4	X	-19.15	12
18	MP4	Z	33.16	12
19	MP7	X	-63.12	0
20	MP7	Z	109.33	0
21	MP7	X	-63.12	72
22	MP7	Z	109.33	72
23	MP7	X	-32.81	12
24	MP7	Z	56.83	12
25	MP7	X	-32.09	12
26	MP7	Z	55.57	12

Member Point Loads (BLC 8 : Wind Load AZI 180)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	0	0

Member Point Loads (BLC 8 : Wind Load AZI 180) (Continued)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
2	MP1	Z	148.48	0
3	MP1	X	0	72
4	MP1	Z	148.48	72
5	MP1	X	0	12
6	MP1	Z	72.8	12
7	MP1	X	0	12
8	MP1	Z	72.8	12
9	MP10	X	0	24
10	MP10	Z	69.21	24
11	MP4	X	0	0
12	MP4	Z	81.75	0
13	MP4	X	0	72
14	MP4	Z	81.75	72
15	MP4	X	0	12
16	MP4	Z	51.26	12
17	MP4	X	0	12
18	MP4	Z	46.92	12
19	MP7	X	0	0
20	MP7	Z	81.75	0
21	MP7	X	0	72
22	MP7	Z	81.75	72
23	MP7	X	0	12
24	MP7	Z	51.26	12
25	MP7	X	0	12
26	MP7	Z	46.92	12

Member Point Loads (BLC 9 : Wind Load AZI 210)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	63.12	0
2	MP1	Z	109.33	0
3	MP1	X	63.12	72
4	MP1	Z	109.33	72
5	MP1	X	32.81	12
6	MP1	Z	56.83	12
7	MP1	X	32.09	12
8	MP1	Z	55.57	12
9	MP10	X	30.9	24
10	MP10	Z	53.51	24
11	MP4	X	63.12	0
12	MP4	Z	109.33	0
13	MP4	X	63.12	72
14	MP4	Z	109.33	72
15	MP4	X	32.81	12
16	MP4	Z	56.83	12
17	MP4	X	32.09	12
18	MP4	Z	55.57	12
19	MP7	X	29.75	0
20	MP7	Z	51.53	0
21	MP7	X	29.75	72
22	MP7	Z	51.53	72
23	MP7	X	22.04	12
24	MP7	Z	38.18	12
25	MP7	X	19.15	12
26	MP7	Z	33.16	12

Member Point Loads (BLC 10 : Wind Load AZI 240)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	70.8	0
2	MP1	Z	40.87	0
3	MP1	X	70.8	72
4	MP1	Z	40.87	72
5	MP1	X	44.4	12
6	MP1	Z	25.63	12
7	MP1	X	40.63	12
8	MP1	Z	23.46	12
9	MP10	X	40.67	24
10	MP10	Z	23.48	24
11	MP4	X	128.59	0
12	MP4	Z	74.24	0
13	MP4	X	128.59	72
14	MP4	Z	74.24	72
15	MP4	X	63.04	12
16	MP4	Z	36.4	12
17	MP4	X	63.04	12
18	MP4	Z	36.4	12
19	MP7	X	70.8	0
20	MP7	Z	40.87	0
21	MP7	X	70.8	72
22	MP7	Z	40.87	72
23	MP7	X	44.4	12
24	MP7	Z	25.63	12
25	MP7	X	40.63	12
26	MP7	Z	23.46	12

Member Point Loads (BLC 11 : Wind Load AZI 270)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	59.5	0
2	MP1	Z	0	0
3	MP1	X	59.5	72
4	MP1	Z	0	72
5	MP1	X	44.09	12
6	MP1	Z	0	12
7	MP1	X	38.3	12
8	MP1	Z	0	12
9	MP10	X	39.55	24
10	MP10	Z	0	24
11	MP4	X	126.24	0
12	MP4	Z	0	0
13	MP4	X	126.24	72
14	MP4	Z	0	72
15	MP4	X	65.62	12
16	MP4	Z	0	12
17	MP4	X	64.17	12
18	MP4	Z	0	12
19	MP7	X	126.24	0
20	MP7	Z	0	0
21	MP7	X	126.24	72
22	MP7	Z	0	72
23	MP7	X	65.62	12
24	MP7	Z	0	12
25	MP7	X	64.17	12
26	MP7	Z	0	12

Member Point Loads (BLC 12 : Wind Load AZI 300)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	70.8	0
2	MP1	Z	-40.87	0
3	MP1	X	70.8	72
4	MP1	Z	-40.87	72
5	MP1	X	44.4	12
6	MP1	Z	-25.63	12
7	MP1	X	40.63	12
8	MP1	Z	-23.46	12
9	MP10	X	40.67	24
10	MP10	Z	-23.48	24
11	MP4	X	70.8	0
12	MP4	Z	-40.87	0
13	MP4	X	70.8	72
14	MP4	Z	-40.87	72
15	MP4	X	44.4	12
16	MP4	Z	-25.63	12
17	MP4	X	40.63	12
18	MP4	Z	-23.46	12
19	MP7	X	128.59	0
20	MP7	Z	-74.24	0
21	MP7	X	128.59	72
22	MP7	Z	-74.24	72
23	MP7	X	63.04	12
24	MP7	Z	-36.4	12
25	MP7	X	63.04	12
26	MP7	Z	-36.4	12

Member Point Loads (BLC 13 : Wind Load AZI 330)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	63.12	0
2	MP1	Z	-109.33	0
3	MP1	X	63.12	72
4	MP1	Z	-109.33	72
5	MP1	X	32.81	12
6	MP1	Z	-56.83	12
7	MP1	X	32.09	12
8	MP1	Z	-55.57	12
9	MP10	X	30.9	24
10	MP10	Z	-53.51	24
11	MP4	X	29.75	0
12	MP4	Z	-51.53	0
13	MP4	X	29.75	72
14	MP4	Z	-51.53	72
15	MP4	X	22.04	12
16	MP4	Z	-38.18	12
17	MP4	X	19.15	12
18	MP4	Z	-33.16	12
19	MP7	X	63.12	0
20	MP7	Z	-109.33	0
21	MP7	X	63.12	72
22	MP7	Z	-109.33	72
23	MP7	X	32.81	12
24	MP7	Z	-56.83	12
25	MP7	X	32.09	12
26	MP7	Z	-55.57	12

Member Point Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	Y	-83.852	0
2	MP1	Y	-83.852	72
3	MP1	Y	-42.293	12
4	MP1	Y	-39.556	12
5	MP10	Y	-38.537	24
6	MP4	Y	-83.852	0
7	MP4	Y	-83.852	72
8	MP4	Y	-42.293	12
9	MP4	Y	-39.556	12
10	MP7	Y	-83.852	0
11	MP7	Y	-83.852	72
12	MP7	Y	-42.293	12
13	MP7	Y	-39.556	12

Member Point Loads (BLC 17 : Ice Wind Load AZI 0)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	0	0
2	MP1	Z	-19.05	0
3	MP1	X	0	72
4	MP1	Z	-19.05	72
5	MP1	X	0	12
6	MP1	Z	-6.89	12
7	MP1	X	0	12
8	MP1	Z	-6.89	12
9	MP10	X	0	24
10	MP10	Z	-6.78	24
11	MP4	X	0	0
12	MP4	Z	-14.26	0
13	MP4	X	0	72
14	MP4	Z	-14.26	72
15	MP4	X	0	12
16	MP4	Z	-5.88	12
17	MP4	X	0	12
18	MP4	Z	-5.64	12
19	MP7	X	0	0
20	MP7	Z	-14.26	0
21	MP7	X	0	72
22	MP7	Z	-14.26	72
23	MP7	X	0	12
24	MP7	Z	-5.88	12
25	MP7	X	0	12
26	MP7	Z	-5.64	12

Member Point Loads (BLC 18 : Ice Wind Load AZI 30)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	-8.73	0
2	MP1	Z	-15.12	0
3	MP1	X	-8.73	72
4	MP1	Z	-15.12	72
5	MP1	X	-3.27	12
6	MP1	Z	-5.67	12
7	MP1	X	-3.24	12
8	MP1	Z	-5.6	12
9	MP10	X	-3.21	24
10	MP10	Z	-5.56	24
11	MP4	X	-8.73	0

Member Point Loads (BLC 18 : Ice Wind Load AZI 30) (Continued)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
12	MP4	Z	-15.12	0
13	MP4	X	-8.73	72
14	MP4	Z	-15.12	72
15	MP4	X	-3.27	12
16	MP4	Z	-5.67	12
17	MP4	X	-3.24	12
18	MP4	Z	-5.6	12
19	MP7	X	-6.33	0
20	MP7	Z	-10.97	0
21	MP7	X	-6.33	72
22	MP7	Z	-10.97	72
23	MP7	X	-2.77	12
24	MP7	Z	-4.8	12
25	MP7	X	-2.61	12
26	MP7	Z	-4.53	12

Member Point Loads (BLC 19 : Ice Wind Load AZI 60)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	-12.35	0
2	MP1	Z	-7.13	0
3	MP1	X	-12.35	72
4	MP1	Z	-7.13	72
5	MP1	X	-5.09	12
6	MP1	Z	-2.94	12
7	MP1	X	-4.89	12
8	MP1	Z	-2.82	12
9	MP10	X	-4.93	24
10	MP10	Z	-2.85	24
11	MP4	X	-16.5	0
12	MP4	Z	-9.53	0
13	MP4	X	-16.5	72
14	MP4	Z	-9.53	72
15	MP4	X	-5.96	12
16	MP4	Z	-3.44	12
17	MP4	X	-5.96	12
18	MP4	Z	-3.44	12
19	MP7	X	-12.35	0
20	MP7	Z	-7.13	0
21	MP7	X	-12.35	72
22	MP7	Z	-7.13	72
23	MP7	X	-5.09	12
24	MP7	Z	-2.94	12
25	MP7	X	-4.89	12
26	MP7	Z	-2.82	12

Member Point Loads (BLC 20 : Ice Wind Load AZI 90)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	-12.67	0
2	MP1	Z	0	0
3	MP1	X	-12.67	72
4	MP1	Z	0	72
5	MP1	X	-5.54	12
6	MP1	Z	0	12
7	MP1	X	-5.23	12
8	MP1	Z	0	12
9	MP10	X	-5.34	24

Member Point Loads (BLC 20 : Ice Wind Load AZI 90) (Continued)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
10	MP10	Z	0	24
11	MP4	X	-17.46	0
12	MP4	Z	0	0
13	MP4	X	-17.46	72
14	MP4	Z	0	72
15	MP4	X	-6.55	12
16	MP4	Z	0	12
17	MP4	X	-6.47	12
18	MP4	Z	0	12
19	MP7	X	-17.46	0
20	MP7	Z	0	0
21	MP7	X	-17.46	72
22	MP7	Z	0	72
23	MP7	X	-6.55	12
24	MP7	Z	0	12
25	MP7	X	-6.47	12
26	MP7	Z	0	12

Member Point Loads (BLC 21 : Ice Wind Load AZI 120)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	-12.35	0
2	MP1	Z	7.13	0
3	MP1	X	-12.35	72
4	MP1	Z	7.13	72
5	MP1	X	-5.09	12
6	MP1	Z	2.94	12
7	MP1	X	-4.89	12
8	MP1	Z	2.82	12
9	MP10	X	-4.93	24
10	MP10	Z	2.85	24
11	MP4	X	-12.35	0
12	MP4	Z	7.13	0
13	MP4	X	-12.35	72
14	MP4	Z	7.13	72
15	MP4	X	-5.09	12
16	MP4	Z	2.94	12
17	MP4	X	-4.89	12
18	MP4	Z	2.82	12
19	MP7	X	-16.5	0
20	MP7	Z	9.53	0
21	MP7	X	-16.5	72
22	MP7	Z	9.53	72
23	MP7	X	-5.96	12
24	MP7	Z	3.44	12
25	MP7	X	-5.96	12
26	MP7	Z	3.44	12

Member Point Loads (BLC 22 : Ice Wind Load AZI 150)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	-8.73	0
2	MP1	Z	15.12	0
3	MP1	X	-8.73	72
4	MP1	Z	15.12	72
5	MP1	X	-3.27	12
6	MP1	Z	5.67	12
7	MP1	X	-3.24	12

Member Point Loads (BLC 22 : Ice Wind Load AZI 150) (Continued)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
8	MP1	Z	5.6	12
9	MP10	X	-3.21	24
10	MP10	Z	5.56	24
11	MP4	X	-6.33	0
12	MP4	Z	10.97	0
13	MP4	X	-6.33	72
14	MP4	Z	10.97	72
15	MP4	X	-2.77	12
16	MP4	Z	4.8	12
17	MP4	X	-2.61	12
18	MP4	Z	4.53	12
19	MP7	X	-8.73	0
20	MP7	Z	15.12	0
21	MP7	X	-8.73	72
22	MP7	Z	15.12	72
23	MP7	X	-3.27	12
24	MP7	Z	5.67	12
25	MP7	X	-3.24	12
26	MP7	Z	5.6	12

Member Point Loads (BLC 23 : Ice Wind Load AZI 180)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	0	0
2	MP1	Z	19.05	0
3	MP1	X	0	72
4	MP1	Z	19.05	72
5	MP1	X	0	12
6	MP1	Z	6.89	12
7	MP1	X	0	12
8	MP1	Z	6.89	12
9	MP10	X	0	24
10	MP10	Z	6.78	24
11	MP4	X	0	0
12	MP4	Z	14.26	0
13	MP4	X	0	72
14	MP4	Z	14.26	72
15	MP4	X	0	12
16	MP4	Z	5.88	12
17	MP4	X	0	12
18	MP4	Z	5.64	12
19	MP7	X	0	0
20	MP7	Z	14.26	0
21	MP7	X	0	72
22	MP7	Z	14.26	72
23	MP7	X	0	12
24	MP7	Z	5.88	12
25	MP7	X	0	12
26	MP7	Z	5.64	12

Member Point Loads (BLC 24 : Ice Wind Load AZI 210)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	8.73	0
2	MP1	Z	15.12	0
3	MP1	X	8.73	72
4	MP1	Z	15.12	72
5	MP1	X	3.27	12

Member Point Loads (BLC 24 : Ice Wind Load AZI 210) (Continued)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
6	MP1	Z	5.67	12
7	MP1	X	3.24	12
8	MP1	Z	5.6	12
9	MP10	X	3.21	24
10	MP10	Z	5.56	24
11	MP4	X	8.73	0
12	MP4	Z	15.12	0
13	MP4	X	8.73	72
14	MP4	Z	15.12	72
15	MP4	X	3.27	12
16	MP4	Z	5.67	12
17	MP4	X	3.24	12
18	MP4	Z	5.6	12
19	MP7	X	6.33	0
20	MP7	Z	10.97	0
21	MP7	X	6.33	72
22	MP7	Z	10.97	72
23	MP7	X	2.77	12
24	MP7	Z	4.8	12
25	MP7	X	2.61	12
26	MP7	Z	4.53	12

Member Point Loads (BLC 25 : Ice Wind Load AZI 240)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	12.35	0
2	MP1	Z	7.13	0
3	MP1	X	12.35	72
4	MP1	Z	7.13	72
5	MP1	X	5.09	12
6	MP1	Z	2.94	12
7	MP1	X	4.89	12
8	MP1	Z	2.82	12
9	MP10	X	4.93	24
10	MP10	Z	2.85	24
11	MP4	X	16.5	0
12	MP4	Z	9.53	0
13	MP4	X	16.5	72
14	MP4	Z	9.53	72
15	MP4	X	5.96	12
16	MP4	Z	3.44	12
17	MP4	X	5.96	12
18	MP4	Z	3.44	12
19	MP7	X	12.35	0
20	MP7	Z	7.13	0
21	MP7	X	12.35	72
22	MP7	Z	7.13	72
23	MP7	X	5.09	12
24	MP7	Z	2.94	12
25	MP7	X	4.89	12
26	MP7	Z	2.82	12

Member Point Loads (BLC 26 : Ice Wind Load AZI 270)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	12.67	0
2	MP1	Z	0	0
3	MP1	X	12.67	72

Member Point Loads (BLC 26 : Ice Wind Load AZI 270) (Continued)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
4	MP1	Z	0	72
5	MP1	X	5.54	12
6	MP1	Z	0	12
7	MP1	X	5.23	12
8	MP1	Z	0	12
9	MP10	X	5.34	24
10	MP10	Z	0	24
11	MP4	X	17.46	0
12	MP4	Z	0	0
13	MP4	X	17.46	72
14	MP4	Z	0	72
15	MP4	X	6.55	12
16	MP4	Z	0	12
17	MP4	X	6.47	12
18	MP4	Z	0	12
19	MP7	X	17.46	0
20	MP7	Z	0	0
21	MP7	X	17.46	72
22	MP7	Z	0	72
23	MP7	X	6.55	12
24	MP7	Z	0	12
25	MP7	X	6.47	12
26	MP7	Z	0	12

Member Point Loads (BLC 27 : Ice Wind Load AZI 300)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	12.35	0
2	MP1	Z	-7.13	0
3	MP1	X	12.35	72
4	MP1	Z	-7.13	72
5	MP1	X	5.09	12
6	MP1	Z	-2.94	12
7	MP1	X	4.89	12
8	MP1	Z	-2.82	12
9	MP10	X	4.93	24
10	MP10	Z	-2.85	24
11	MP4	X	12.35	0
12	MP4	Z	-7.13	0
13	MP4	X	12.35	72
14	MP4	Z	-7.13	72
15	MP4	X	5.09	12
16	MP4	Z	-2.94	12
17	MP4	X	4.89	12
18	MP4	Z	-2.82	12
19	MP7	X	16.5	0
20	MP7	Z	-9.53	0
21	MP7	X	16.5	72
22	MP7	Z	-9.53	72
23	MP7	X	5.96	12
24	MP7	Z	-3.44	12
25	MP7	X	5.96	12
26	MP7	Z	-3.44	12

Member Point Loads (BLC 28 : Ice Wind Load AZI 330)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	8.73	0

Member Point Loads (BLC 28 : Ice Wind Load AZI 330) (Continued)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
2	MP1	Z	-15.12	0
3	MP1	X	8.73	72
4	MP1	Z	-15.12	72
5	MP1	X	3.27	12
6	MP1	Z	-5.67	12
7	MP1	X	3.24	12
8	MP1	Z	-5.6	12
9	MP10	X	3.21	24
10	MP10	Z	-5.56	24
11	MP4	X	6.33	0
12	MP4	Z	-10.97	0
13	MP4	X	6.33	72
14	MP4	Z	-10.97	72
15	MP4	X	2.77	12
16	MP4	Z	-4.8	12
17	MP4	X	2.61	12
18	MP4	Z	-4.53	12
19	MP7	X	8.73	0
20	MP7	Z	-15.12	0
21	MP7	X	8.73	72
22	MP7	Z	-15.12	72
23	MP7	X	3.27	12
24	MP7	Z	-5.67	12
25	MP7	X	3.24	12
26	MP7	Z	-5.6	12

Member Point Loads (BLC 31 : Seismic Load Z)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	Z	-10.32	0
2	MP1	Z	-10.32	72
3	MP1	Z	-23.984	12
4	MP1	Z	-20.458	12
5	MP10	Z	-6.992	24
6	MP4	Z	-10.32	0
7	MP4	Z	-10.32	72
8	MP4	Z	-23.984	12
9	MP4	Z	-20.458	12
10	MP7	Z	-10.32	0
11	MP7	Z	-10.32	72
12	MP7	Z	-23.984	12
13	MP7	Z	-20.458	12

Member Point Loads (BLC 32 : Seismic Load X)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	-10.32	0
2	MP1	X	-10.32	72
3	MP1	X	-23.984	12
4	MP1	X	-20.458	12
5	MP10	X	-6.992	24
6	MP4	X	-10.32	0
7	MP4	X	-10.32	72
8	MP4	X	-23.984	12
9	MP4	X	-20.458	12
10	MP7	X	-10.32	0
11	MP7	X	-10.32	72
12	MP7	X	-23.984	12

Member Point Loads (BLC 32 : Seismic Load X) (Continued)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
13	MP7	X	-20.458	12

Joint Loads and Enforced Displacements (BLC 33 : Service Live Loads)

	Joint Label	L,D,M	Direction	Magnitude[(lb.lb-ft), (in.rad), (lb*s^2...]
1	N72B	L	Y	-250
2	N135A	L	Y	-250
3	N129B	L	Y	-250

Joint Loads and Enforced Displacements (BLC 34 : Maintenance Load 1)

	Joint Label	L,D,M	Direction	Magnitude[(lb.lb-ft), (in.rad), (lb*s^2...]
1	N70A	L	Y	-500

Joint Loads and Enforced Displacements (BLC 35 : Maintenance Load 2)

	Joint Label	L,D,M	Direction	Magnitude[(lb.lb-ft), (in.rad), (lb*s^2...]
1	N69A	L	Y	-500

Joint Loads and Enforced Displacements (BLC 36 : Maintenance Load 3)

	Joint Label	L,D,M	Direction	Magnitude[(lb.lb-ft), (in.rad), (lb*s^2...]
1	N76	L	Y	-500

Joint Loads and Enforced Displacements (BLC 37 : Maintenance Load 4)

	Joint Label	L,D,M	Direction	Magnitude[(lb.lb-ft), (in.rad), (lb*s^2...]
1	N94	L	Y	-500

Joint Loads and Enforced Displacements (BLC 38 : Maintenance Load 5)

	Joint Label	L,D,M	Direction	Magnitude[(lb.lb-ft), (in.rad), (lb*s^2...]
1	N93	L	Y	-500

Joint Loads and Enforced Displacements (BLC 39 : Maintenance Load 6)

	Joint Label	L,D,M	Direction	Magnitude[(lb.lb-ft), (in.rad), (lb*s^2...]
1	N122	L	Y	-500

Joint Loads and Enforced Displacements (BLC 40 : Maintenance Load 7)

	Joint Label	L,D,M	Direction	Magnitude[(lb.lb-ft), (in.rad), (lb*s^2...]
1	N121	L	Y	-500

Joint Loads and Enforced Displacements (BLC 41 : Maintenance Load 8)

	Joint Label	L,D,M	Direction	Magnitude[(lb.lb-ft), (in.rad), (lb*s^2...]
1	N133B	L	Y	-500

Joint Loads and Enforced Displacements (BLC 42 : Maintenance Load 9)

	Joint Label	L,D,M	Direction	Magnitude[(lb.lb-ft), (in.rad), (lb*s^2...]
1	N139	L	Y	-500

Joint Loads and Enforced Displacements (BLC 43 : Maintenance Load 10)

	Joint Label	L,D,M	Direction	Magnitude[(lb.lb-ft), (in.rad), (lb*s^2...]
1	N120A	L	Y	-500

Member Distributed Loads (BLC 14 : Distr. Wind Load Z)

Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in, %]	End Location[in, %]
1	S3	SZ	-82.387	-82.387	0 %100
2	GA4	SZ	-82.387	-82.387	0 %100
3	GA3	SZ	-82.387	-82.387	0 %100
4	P3	SZ	-82.387	-82.387	0 %100
5	S2	SZ	-82.387	-82.387	0 %100
6	GA2	SZ	-82.387	-82.387	0 %100
7	GA1	SZ	-82.387	-82.387	0 %100
8	P2	SZ	-82.387	-82.387	0 %100
9	S1	SZ	-82.387	-82.387	0 %100
10	GA6	SZ	-82.387	-82.387	0 %100
11	GA5	SZ	-82.387	-82.387	0 %100
12	P1	SZ	-82.387	-82.387	0 %100
13	H1	SZ	-49.432	-49.432	0 %100
14	MP1	SZ	-49.432	-49.432	0 %100
15	MP3	SZ	-49.432	-49.432	0 %100
16	HR1	SZ	-49.432	-49.432	0 %100
17	CA8	SZ	-82.387	-82.387	0 %100
18	CA9	SZ	-82.387	-82.387	0 %100
19	CA7	SZ	-82.387	-82.387	0 %100
20	M32	SZ	0	0	0 %100
21	M35	SZ	0	0	0 %100
22	M36	SZ	0	0	0 %100
23	M39A	SZ	0	0	0 %100
24	CA3	SZ	-82.387	-82.387	0 %100
25	CA4	SZ	-82.387	-82.387	0 %100
26	CA1	SZ	-82.387	-82.387	0 %100
27	CA2	SZ	-82.387	-82.387	0 %100
28	CA5	SZ	-82.387	-82.387	0 %100
29	CA6	SZ	-82.387	-82.387	0 %100
30	M64	SZ	0	0	0 %100
31	M65	SZ	0	0	0 %100
32	M66	SZ	0	0	0 %100
33	M67	SZ	0	0	0 %100
34	M68	SZ	0	0	0 %100
35	M69	SZ	0	0	0 %100
36	M70	SZ	0	0	0 %100
37	M71	SZ	0	0	0 %100
38	M72	SZ	0	0	0 %100
39	M73	SZ	0	0	0 %100
40	M74	SZ	0	0	0 %100
41	M75	SZ	-82.387	-82.387	0 %100
42	MP2	SZ	-49.432	-49.432	0 %100
43	M43	SZ	0	0	0 %100
44	M44	SZ	0	0	0 %100
45	H3	SZ	-49.432	-49.432	0 %100
46	MP7	SZ	-49.432	-49.432	0 %100
47	MP9	SZ	-49.432	-49.432	0 %100
48	HR3	SZ	-49.432	-49.432	0 %100
49	M52	SZ	0	0	0 %100
50	M53	SZ	0	0	0 %100
51	M54	SZ	0	0	0 %100
52	M55	SZ	0	0	0 %100
53	H2	SZ	-49.432	-49.432	0 %100
54	MP4	SZ	-49.432	-49.432	0 %100
55	MP6	SZ	-49.432	-49.432	0 %100
56	HR2	SZ	-49.432	-49.432	0 %100

Member Distributed Loads (BLC 14 : Distr. Wind Load Z) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft.F...	Start Location[in, %]	End Location[in, %]
57	M66A	SZ	0	0	0	%100
58	M67A	SZ	0	0	0	%100
59	M68A	SZ	0	0	0	%100
60	M69A	SZ	0	0	0	%100
61	MP8	SZ	-49.432	-49.432	0	%100
62	M68B	SZ	0	0	0	%100
63	M69B	SZ	0	0	0	%100
64	MP5	SZ	-49.432	-49.432	0	%100
65	M71B	SZ	0	0	0	%100
66	M72B	SZ	0	0	0	%100
67	M67B	SZ	0	0	0	%100
68	MP10	SZ	-49.432	-49.432	0	%100

Member Distributed Loads (BLC 15 : Distr. Wind Load X)

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft.F...	Start Location[in, %]	End Location[in, %]
1	S3	SX	-82.387	-82.387	0	%100
2	GA4	SX	-82.387	-82.387	0	%100
3	GA3	SX	-82.387	-82.387	0	%100
4	P3	SX	-82.387	-82.387	0	%100
5	S2	SX	-82.387	-82.387	0	%100
6	GA2	SX	-82.387	-82.387	0	%100
7	GA1	SX	-82.387	-82.387	0	%100
8	P2	SX	-82.387	-82.387	0	%100
9	S1	SX	-82.387	-82.387	0	%100
10	GA6	SX	-82.387	-82.387	0	%100
11	GA5	SX	-82.387	-82.387	0	%100
12	P1	SX	-82.387	-82.387	0	%100
13	H1	SX	-49.432	-49.432	0	%100
14	MP1	SX	-49.432	-49.432	0	%100
15	MP3	SX	-49.432	-49.432	0	%100
16	HR1	SX	-49.432	-49.432	0	%100
17	CA8	SX	-82.387	-82.387	0	%100
18	CA9	SX	-82.387	-82.387	0	%100
19	CA7	SX	-82.387	-82.387	0	%100
20	M32	SX	0	0	0	%100
21	M35	SX	0	0	0	%100
22	M36	SX	0	0	0	%100
23	M39A	SX	0	0	0	%100
24	CA3	SX	-82.387	-82.387	0	%100
25	CA4	SX	-82.387	-82.387	0	%100
26	CA1	SX	-82.387	-82.387	0	%100
27	CA2	SX	-82.387	-82.387	0	%100
28	CA5	SX	-82.387	-82.387	0	%100
29	CA6	SX	-82.387	-82.387	0	%100
30	M64	SX	0	0	0	%100
31	M65	SX	0	0	0	%100
32	M66	SX	0	0	0	%100
33	M67	SX	0	0	0	%100
34	M68	SX	0	0	0	%100
35	M69	SX	0	0	0	%100
36	M70	SX	0	0	0	%100
37	M71	SX	0	0	0	%100
38	M72	SX	0	0	0	%100
39	M73	SX	0	0	0	%100
40	M74	SX	0	0	0	%100
41	M75	SX	-82.387	-82.387	0	%100

Member Distributed Loads (BLC 15 : Distr. Wind Load X) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft....]	End Magnitude[lb/ft,F...]	Start Location[in, %]	End Location[in, %]
42	MP2	SX	-49.432	-49.432	0	%100
43	M43	SX	0	0	0	%100
44	M44	SX	0	0	0	%100
45	H3	SX	-49.432	-49.432	0	%100
46	MP7	SX	-49.432	-49.432	0	%100
47	MP9	SX	-49.432	-49.432	0	%100
48	HR3	SX	-49.432	-49.432	0	%100
49	M52	SX	0	0	0	%100
50	M53	SX	0	0	0	%100
51	M54	SX	0	0	0	%100
52	M55	SX	0	0	0	%100
53	H2	SX	-49.432	-49.432	0	%100
54	MP4	SX	-49.432	-49.432	0	%100
55	MP6	SX	-49.432	-49.432	0	%100
56	HR2	SX	-49.432	-49.432	0	%100
57	M66A	SX	0	0	0	%100
58	M67A	SX	0	0	0	%100
59	M68A	SX	0	0	0	%100
60	M69A	SX	0	0	0	%100
61	MP8	SX	-49.432	-49.432	0	%100
62	M68B	SX	0	0	0	%100
63	M69B	SX	0	0	0	%100
64	MP5	SX	-49.432	-49.432	0	%100
65	M71B	SX	0	0	0	%100
66	M72B	SX	0	0	0	%100
67	M67B	SX	0	0	0	%100
68	MP10	SX	-49.432	-49.432	0	%100

Member Distributed Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Start Magnitude[lb/ft....]	End Magnitude[lb/ft,F...]	Start Location[in, %]	End Location[in, %]
1	S3	Y	-8.886	-8.886	0	%100
2	GA4	Y	-5.155	-5.155	0	%100
3	GA3	Y	-5.155	-5.155	0	%100
4	P3	Y	-10.012	-10.012	0	%100
5	S2	Y	-8.886	-8.886	0	%100
6	GA2	Y	-5.155	-5.155	0	%100
7	GA1	Y	-5.155	-5.155	0	%100
8	P2	Y	-10.012	-10.012	0	%100
9	S1	Y	-8.886	-8.886	0	%100
10	GA6	Y	-5.155	-5.155	0	%100
11	GA5	Y	-5.155	-5.155	0	%100
12	P1	Y	-10.012	-10.012	0	%100
13	H1	Y	-6.041	-6.041	0	%100
14	MP1	Y	-5.216	-5.216	0	%100
15	MP3	Y	-5.216	-5.216	0	%100
16	HR1	Y	-5.223	-5.223	0	%100
17	CA8	Y	-11.931	-11.931	0	%100
18	CA9	Y	-11.931	-11.931	0	%100
19	CA7	Y	-11.931	-11.931	0	%100
20	M32	Y	-1.424	-1.424	0	%100
21	M35	Y	-1.424	-1.424	0	%100
22	M36	Y	-1.424	-1.424	0	%100
23	M39A	Y	-1.424	-1.424	0	%100
24	CA3	Y	-6.645	-6.645	0	%100
25	CA4	Y	-6.645	-6.645	0	%100
26	CA1	Y	-6.645	-6.645	0	%100

Member Distributed Loads (BLC 16 : Ice Weight) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft,F...	Start Location[in, %]	End Location[in, %]
27	CA2	Y	-6.645	-6.645	0	%100
28	CA5	Y	-6.645	-6.645	0	%100
29	CA6	Y	-6.645	-6.645	0	%100
30	M64	Y	-1.424	-1.424	0	%100
31	M65	Y	-1.424	-1.424	0	%100
32	M66	Y	-1.424	-1.424	0	%100
33	M67	Y	-1.424	-1.424	0	%100
34	M68	Y	-1.424	-1.424	0	%100
35	M69	Y	-1.424	-1.424	0	%100
36	M70	Y	-1.424	-1.424	0	%100
37	M71	Y	-1.424	-1.424	0	%100
38	M72	Y	-1.424	-1.424	0	%100
39	M73	Y	-1.424	-1.424	0	%100
40	M74	Y	-1.424	-1.424	0	%100
41	M75	Y	-4.625	-4.625	0	%100
42	MP2	Y	-5.216	-5.216	0	%100
43	M43	Y	-1.424	-1.424	0	%100
44	M44	Y	-1.424	-1.424	0	%100
45	H3	Y	-6.041	-6.041	0	%100
46	MP7	Y	-5.216	-5.216	0	%100
47	MP9	Y	-5.216	-5.216	0	%100
48	HR3	Y	-5.223	-5.223	0	%100
49	M52	Y	-1.424	-1.424	0	%100
50	M53	Y	-1.424	-1.424	0	%100
51	M54	Y	-1.424	-1.424	0	%100
52	M55	Y	-1.424	-1.424	0	%100
53	H2	Y	-6.041	-6.041	0	%100
54	MP4	Y	-5.216	-5.216	0	%100
55	MP6	Y	-5.216	-5.216	0	%100
56	HR2	Y	-5.223	-5.223	0	%100
57	M66A	Y	-1.424	-1.424	0	%100
58	M67A	Y	-1.424	-1.424	0	%100
59	M68A	Y	-1.424	-1.424	0	%100
60	M69A	Y	-1.424	-1.424	0	%100
61	MP8	Y	-5.216	-5.216	0	%100
62	M68B	Y	-1.424	-1.424	0	%100
63	M69B	Y	-1.424	-1.424	0	%100
64	MP5	Y	-5.216	-5.216	0	%100
65	M71B	Y	-1.424	-1.424	0	%100
66	M72B	Y	-1.424	-1.424	0	%100
67	M67B	Y	-1.424	-1.424	0	%100
68	MP10	Y	-5.216	-5.216	0	%100

Member Distributed Loads (BLC 29 : Distr. Ice Wind Load Z)

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft,F...	Start Location[in, %]	End Location[in, %]
1	S3	SZ	-11.858	-11.858	0	%100
2	GA4	SZ	-15.134	-15.134	0	%100
3	GA3	SZ	-15.134	-15.134	0	%100
4	P3	SZ	-11.428	-11.428	0	%100
5	S2	SZ	-11.858	-11.858	0	%100
6	GA2	SZ	-15.134	-15.134	0	%100
7	GA1	SZ	-15.134	-15.134	0	%100
8	P2	SZ	-11.428	-11.428	0	%100
9	S1	SZ	-11.858	-11.858	0	%100
10	GA6	SZ	-15.134	-15.134	0	%100
11	GA5	SZ	-15.134	-15.134	0	%100

Member Distributed Loads (BLC 29 : Distr. Ice Wind Load Z) (Continued)

Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft.F...	Start Location[in, %]	End Location[in, %]
12	P1	SZ	-11.428	-11.428	0 %100
13	H1	SZ	-13.877	-13.877	0 %100
14	MP1	SZ	-15.027	-15.027	0 %100
15	MP3	SZ	-15.027	-15.027	0 %100
16	HR1	SZ	-15.016	-15.016	0 %100
17	CA8	SZ	-10.908	-10.908	0 %100
18	CA9	SZ	-10.908	-10.908	0 %100
19	CA7	SZ	-10.908	-10.908	0 %100
20	M32	SZ	0	0	0 %100
21	M35	SZ	0	0	0 %100
22	M36	SZ	0	0	0 %100
23	M39A	SZ	0	0	0 %100
24	CA3	SZ	-13.264	-13.264	0 %100
25	CA4	SZ	-13.264	-13.264	0 %100
26	CA1	SZ	-13.264	-13.264	0 %100
27	CA2	SZ	-13.264	-13.264	0 %100
28	CA5	SZ	-13.264	-13.264	0 %100
29	CA6	SZ	-13.264	-13.264	0 %100
30	M64	SZ	0	0	0 %100
31	M65	SZ	0	0	0 %100
32	M66	SZ	0	0	0 %100
33	M67	SZ	0	0	0 %100
34	M68	SZ	0	0	0 %100
35	M69	SZ	0	0	0 %100
36	M70	SZ	0	0	0 %100
37	M71	SZ	0	0	0 %100
38	M72	SZ	0	0	0 %100
39	M73	SZ	0	0	0 %100
40	M74	SZ	0	0	0 %100
41	M75	SZ	-16.217	-16.217	0 %100
42	MP2	SZ	-15.027	-15.027	0 %100
43	M43	SZ	0	0	0 %100
44	M44	SZ	0	0	0 %100
45	H3	SZ	-13.877	-13.877	0 %100
46	MP7	SZ	-15.027	-15.027	0 %100
47	MP9	SZ	-15.027	-15.027	0 %100
48	HR3	SZ	-15.016	-15.016	0 %100
49	M52	SZ	0	0	0 %100
50	M53	SZ	0	0	0 %100
51	M54	SZ	0	0	0 %100
52	M55	SZ	0	0	0 %100
53	H2	SZ	-13.877	-13.877	0 %100
54	MP4	SZ	-15.027	-15.027	0 %100
55	MP6	SZ	-15.027	-15.027	0 %100
56	HR2	SZ	-15.016	-15.016	0 %100
57	M66A	SZ	0	0	0 %100
58	M67A	SZ	0	0	0 %100
59	M68A	SZ	0	0	0 %100
60	M69A	SZ	0	0	0 %100
61	MP8	SZ	-15.027	-15.027	0 %100
62	M68B	SZ	0	0	0 %100
63	M69B	SZ	0	0	0 %100
64	MP5	SZ	-15.027	-15.027	0 %100
65	M71B	SZ	0	0	0 %100
66	M72B	SZ	0	0	0 %100
67	M67B	SZ	0	0	0 %100
68	MP10	SZ	-15.027	-15.027	0 %100

Member Distributed Loads (BLC 30 : Distr. Ice Wind Load X)

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft.F...	Start Location[in, %]	End Location[in, %]
1	S3	SX	-11.858	-11.858	0	%100
2	GA4	SX	-15.134	-15.134	0	%100
3	GA3	SX	-15.134	-15.134	0	%100
4	P3	SX	-11.428	-11.428	0	%100
5	S2	SX	-11.858	-11.858	0	%100
6	GA2	SX	-15.134	-15.134	0	%100
7	GA1	SX	-15.134	-15.134	0	%100
8	P2	SX	-11.428	-11.428	0	%100
9	S1	SX	-11.858	-11.858	0	%100
10	GA6	SX	-15.134	-15.134	0	%100
11	GA5	SX	-15.134	-15.134	0	%100
12	P1	SX	-11.428	-11.428	0	%100
13	H1	SX	-13.877	-13.877	0	%100
14	MP1	SX	-15.027	-15.027	0	%100
15	MP3	SX	-15.027	-15.027	0	%100
16	HR1	SX	-15.016	-15.016	0	%100
17	CA8	SX	-10.908	-10.908	0	%100
18	CA9	SX	-10.908	-10.908	0	%100
19	CA7	SX	-10.908	-10.908	0	%100
20	M32	SX	0	0	0	%100
21	M35	SX	0	0	0	%100
22	M36	SX	0	0	0	%100
23	M39A	SX	0	0	0	%100
24	CA3	SX	-13.264	-13.264	0	%100
25	CA4	SX	-13.264	-13.264	0	%100
26	CA1	SX	-13.264	-13.264	0	%100
27	CA2	SX	-13.264	-13.264	0	%100
28	CA5	SX	-13.264	-13.264	0	%100
29	CA6	SX	-13.264	-13.264	0	%100
30	M64	SX	0	0	0	%100
31	M65	SX	0	0	0	%100
32	M66	SX	0	0	0	%100
33	M67	SX	0	0	0	%100
34	M68	SX	0	0	0	%100
35	M69	SX	0	0	0	%100
36	M70	SX	0	0	0	%100
37	M71	SX	0	0	0	%100
38	M72	SX	0	0	0	%100
39	M73	SX	0	0	0	%100
40	M74	SX	0	0	0	%100
41	M75	SX	-16.217	-16.217	0	%100
42	MP2	SX	-15.027	-15.027	0	%100
43	M43	SX	0	0	0	%100
44	M44	SX	0	0	0	%100
45	H3	SX	-13.877	-13.877	0	%100
46	MP7	SX	-15.027	-15.027	0	%100
47	MP9	SX	-15.027	-15.027	0	%100
48	HR3	SX	-15.016	-15.016	0	%100
49	M52	SX	0	0	0	%100
50	M53	SX	0	0	0	%100
51	M54	SX	0	0	0	%100
52	M55	SX	0	0	0	%100
53	H2	SX	-13.877	-13.877	0	%100
54	MP4	SX	-15.027	-15.027	0	%100
55	MP6	SX	-15.027	-15.027	0	%100
56	HR2	SX	-15.016	-15.016	0	%100
57	M66A	SX	0	0	0	%100

Member Distributed Loads (BLC 30 : Distr. Ice Wind Load X) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft....]	End Magnitude[lb/ft.F...]	Start Location[in.%]	End Location[in.%]
58	M67A	SX	0	0	0	%100
59	M68A	SX	0	0	0	%100
60	M69A	SX	0	0	0	%100
61	MP8	SX	-15.027	-15.027	0	%100
62	M68B	SX	0	0	0	%100
63	M69B	SX	0	0	0	%100
64	MP5	SX	-15.027	-15.027	0	%100
65	M71B	SX	0	0	0	%100
66	M72B	SX	0	0	0	%100
67	M67B	SX	0	0	0	%100
68	MP10	SX	-15.027	-15.027	0	%100

Member Distributed Loads (BLC 44 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft....]	End Magnitude[lb/ft.F...]	Start Location[in.%]	End Location[in.%]
1	S2	Y	-3.185	-3.185	16.404	40
2	GA2	Y	-1.605	-1.605	3.828	27.295
3	GA1	Y	-1.605	-1.605	3.828	27.295
4	S3	Y	-3.185	-3.185	16.404	40
5	GA4	Y	-1.605	-1.605	3.828	27.295
6	GA3	Y	-1.605	-1.605	3.828	27.295
7	S1	Y	-3.185	-3.185	16.404	40
8	GA6	Y	-1.605	-1.605	3.828	27.295
9	GA5	Y	-1.605	-1.605	3.828	27.295

Member Distributed Loads (BLC 45 : BLC 16 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft....]	End Magnitude[lb/ft.F...]	Start Location[in.%]	End Location[in.%]
1	S2	Y	-18.384	-18.384	16.404	40
2	GA2	Y	-9.264	-9.264	3.828	27.295
3	GA1	Y	-9.264	-9.264	3.828	27.295
4	S3	Y	-18.384	-18.384	16.404	40
5	GA4	Y	-9.264	-9.264	3.828	27.295
6	GA3	Y	-9.264	-9.264	3.828	27.295
7	S1	Y	-18.384	-18.384	16.404	40
8	GA6	Y	-9.264	-9.264	3.828	27.295
9	GA5	Y	-9.264	-9.264	3.828	27.295

Member Area Loads (BLC 1 : Self Weight)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	P22	P21	P20	P23	Y	Two Way	-1.75
2	P10	P11	P12	P9	Y	Two Way	-1.75
3	P31	P34	P33	P32	Y	Two Way	-1.75

Member Area Loads (BLC 16 : Ice Weight)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	P22	P21	P20	P23	Y	Two Way	-10.1
2	P10	P11	P12	P9	Y	Two Way	-10.1
3	P31	P34	P33	P32	Y	Two Way	-10.1

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

Memb...	Shape	Code Check	Loc[in]	LC	Shear C...Loc[in]	Dir	LC	phi*Pnc...	phi*Pnt...	phi*Mn y-y	phi*Mn z-z	Cb	Eqn
1	P3	PL6.5x0.375	.303	21	2	.139 36.312	y	5	3658.14	78975	616.993	7964.893	1.4...H1-...
2	P2	PL6.5x0.375	.297	21	6	.129 36.312	y	10	3658.14	78975	616.993	7948.6	1.4...H1-...

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

Memb...	Shape	Code Check	Loc[in]	LC	Shear C...	Loc[in]	Dir	LC	phi*Pnc...	phi*Pnt...	phi*Mn y-y	phi*Mn z-z	Cb	Eqn
3	P1	PL6.5x0.375	.278	21	10	.140	36.312	y	2	3658.14	78975	616.993	7967.918	1.4..H1-...
4	CA4	C3.38x2.06x0....	.278	33	2	.033	33	y	115	47760....	56700	2202.821	5751.945	1.6..H1-...
5	CA5	C3.38x2.06x0....	.274	0	10	.032	28.187	y	28	47760....	56700	2202.821	5751.945	1.6..H1-...
6	CA3	C3.38x2.06x0....	.268	0	2	.033	28.188	y	32	47760....	56700	2202.821	5751.945	1.6..H1-...
7	CA1	C3.38x2.06x0....	.267	0	6	.033	28.188	y	36	47760....	56700	2202.821	5751.945	1.6..H1-...
8	CA2	C3.38x2.06x0....	.263	33	6	.033	33	y	143	47760....	56700	2202.821	5751.945	1.6..H1-...
9	CA6	C3.38x2.06x0....	.259	33	10	.032	33	y	87	47760....	56700	2202.821	5751.945	1.6..H1-...
10	CA8	L6.6x4.46x0.25	.252	41.562	22	.035	42	z	4	51170....	87561	2464.809	7125.374	1.1..H2-1
11	M75	PL 2.375x0.5	.249	1.5	12	.186	0	y	173	38256....	38475	400.783	1903.711	2.2..H1-...
12	HR2	2.88x0.120	.244	90	3	.122	92		4	22491....	43076....	3155.674	3155.674	1.6..H1-...
13	CA7	L6.6x4.46x0.25	.244	41.562	3	.033	42	z	8	51170....	87561	2464.809	7125.374	1.1..H2-1
14	HR3	2.88x0.120	.241	6	2	.113	92		6	22491....	43076....	3155.674	3155.674	1.7..H1-...
15	S2	HSS4X4X6	.238	0	5	.111	0	y	142	188250..	197892	22045.5	22045.5	1.8..H1-...
16	HR1	2.88x0.120	.234	6	4	.107	6		4	22491....	43076....	3155.674	3155.674	1.9..H1-...
17	S3	HSS4X4X6	.232	0	13	.111	0	y	114	188250..	197892	22045.5	22045.5	1.81H1-...
18	CA9	L6.6x4.46x0.25	.224	41.562	6	.031	42	z	12	51170....	87561	2464.809	7125.374	1.1..H2-1
19	S1	HSS4X4X6	.213	0	9	.108	0	y	86	188250..	197892	22045.5	22045.5	1.8..H1-...
20	MP2	PIPE 2.5	.203	70	5	.072	70		5	33487....	66654	4726.5	4726.5	4.4..H1-...
21	MP5	PIPE 2.5	.199	70	7	.062	70		7	33487....	66654	4726.5	4726.5	4.5..H1-...
22	GA4	L2x2x4	.188	0	2	.013	27.295	y	9	29527....	42480	959.63	2190.068	2.2..H2-1
23	MP8	PIPE 2.5	.178	70	9	.076	70		3	33487....	66654	4726.5	4726.5	4.0..H1-...
24	GA5	L2x2x4	.178	0	9	.017	27.295	z	2	29527....	42480	959.63	2190.068	2.1..H2-1
25	GA2	L2x2x4	.173	0	12	.014	0	y	12	29527....	42480	959.63	2190.068	2.3..H2-1
26	GA1	L2x2x4	.161	0	6	.015	27.295	z	10	29527....	42480	959.63	2190.068	2.29H2-1
27	GA3	L2x2x4	.160	0	7	.016	27.295	z	6	29527....	42480	959.63	2190.068	2.1..H2-1
28	GA6	L2x2x4	.159	0	4	.013	0	y	4	29527....	42480	959.63	2190.068	2.3..H2-1
29	MP9	PIPE 2.5	.159	70	2	.072	70		7	33487....	66654	4726.5	4726.5	3.3..H1-...
30	MP6	PIPE 2.5	.145	70	7	.078	70		6	33487....	66654	4726.5	4726.5	4.5..H1-...
31	MP1	PIPE 2.5	.141	70	11	.087	26		8	33487....	66654	4726.5	4726.5	2.64H1-...
32	MP3	PIPE 2.5	.140	70	5	.079	70		3	33487....	66654	4726.5	4726.5	4.4..H1-...
33	MP4	PIPE 2.5	.137	70	7	.079	26		4	33487....	66654	4726.5	4726.5	1.7..H1-...
34	MP7	PIPE 2.5	.134	70	9	.071	26		6	33487....	66654	4726.5	4726.5	3.3..H1-...
35	H3	Pipe3.5x0.165	.122	31	2	.076	90		2	45873....	71580.6	6337.65	6337.65	1.9..H1-...
36	H1	Pipe3.5x0.165	.117	31	10	.068	48		4	45873....	71580.6	6337.65	6337.65	2.0..H1-...
37	H2	Pipe3.5x0.165	.117	31	6	.055	48		12	45873....	71580.6	6337.65	6337.65	1.7..H1-...
38	MP10	PIPE 2.5	.005	24	6	.001	24		6	56116....	66654	4726.5	4726.5	1.5..H1-...

Bolt Calculation Tool, V1.5.1

PROJECT DATA	
Site Name:	BOHVN00139A
Site Number:	BOHVN00139A
Connection Description:	Platform to Monopole

MAXIMUM BOLT LOADS		
Bolt Tension:	6442.11	lbs
Bolt Shear:	3886.11	lbs

WORST CASE BOLT LOADS ¹		
Bolt Tension:	6442.11	lbs
Bolt Shear:	447.86	lbs

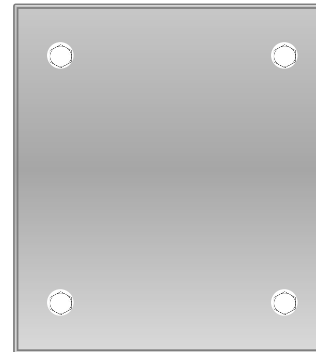
BOLT PROPERTIES		
Bolt Type:	Bolt	-
Bolt Diameter:	0.625	in
Bolt Grade:	A325	-
# of Bolts:	4	-
Threads Excluded?	No	-

¹ Worst case bolt loads correspond to Load combination #5 on member S2 in RISA-3D, which causes the maximum demand on the bolts.

Member Information
I nodes of S3, S2, S1

BOLT CHECK	
Tensile Strength	20340.15
Shear Strength	13805.83
Max Tensile Usage	31.7%
Max Shear Usage	28.1%
Interaction Check (Worst Case)	0.10
Result	Pass

≤1.05



POWER DENSITY STUDY

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

Dish Wireless Existing Facility

Site ID: BOHVN00139A

BOHVN00139A
234 Melba Street
Milford, Connecticut 06460

April 18, 2022

EBI Project Number: 6222004005

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	23.51%

April 18, 2022

Dish Wireless

Emissions Analysis for Site: BOHVN00139A - BOHVN00139A

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **234 Melba Street in Milford, Connecticut** for the purpose of determining whether the emissions from the Proposed Dish Wireless Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed Dish Wireless antenna facility located at 234 Melba Street in Milford, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since Dish Wireless is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

- 1) 4 n71 channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 4 n70 channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 3) 4 n66 channels (AWS Band - 2190 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 4) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 5) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative

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

- 6) The antennas used in this modeling are the Commscope FFVV-65B-R3 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector A, the Commscope FFVV-65B-R3 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector B, the Commscope FFVV-65B-R3 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 7) The antenna mounting height centerline of the proposed antennas is 89 feet above ground level (AGL).
- 8) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.
- 9) All calculations were done with respect to uncontrolled / general population threshold limits.

Dish Wireless Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	I	Antenna #:	I	Antenna #:	I
Make / Model:	Commscope FFVV-65B-R3	Make / Model:	Commscope FFVV-65B-R3	Make / Model:	Commscope FFVV-65B-R3
Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz	Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz	Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz
Gain:	17.55 dBd / 22.05 dBd / 22.05 dBd	Gain:	17.55 dBd / 22.05 dBd / 22.05 dBd	Gain:	17.55 dBd / 22.05 dBd / 22.05 dBd
Height (AGL):	89 feet	Height (AGL):	89 feet	Height (AGL):	89 feet
Channel Count:	12	Channel Count:	12	Channel Count:	12
Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts
ERP (W):	4,956.89	ERP (W):	4,956.89	ERP (W):	4,956.89
Antenna AI MPE %:	3.30%	Antenna BI MPE %:	3.30%	Antenna CI MPE %:	3.30%

Site Composite MPE %	
Carrier	MPE %
Dish Wireless (Max at Sector A):	3.30%
Voicestream	0.86%
T-Mobile	3.76%
AT&T	15.59%
Site Total MPE % :	23.51%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	3.30%
Dish Wireless Sector B Total:	3.30%
Dish Wireless Sector C Total:	3.30%
Site Total MPE % :	23.51%

Dish Wireless Maximum MPE Power Values (Sector A)							
Dish Wireless Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
Dish Wireless 600 MHz n71	4	226.27	89.0	4.72	600 MHz n71	400	1.18%
Dish Wireless 1900 MHz n70	4	506.48	89.0	10.57	1900 MHz n70	1000	1.06%
Dish Wireless 2190 MHz n66	4	506.48	89.0	10.57	2190 MHz n66	1000	1.06%
Total:							3.30%

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

Summary

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

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

Dish Wireless Sector	Power Density Value (%)
Sector A:	3.30%
Sector B:	3.30%
Sector C:	3.30%
Dish Wireless Maximum MPE % (Sector A):	3.30%
Site Total:	23.51%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **23.51%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

UNDERLYING PROPERTY INFORMATION

Property Detail Report

For Property Located At :
234 MELBA ST, MILFORD, CT 06460-7633



Owner Information

Owner Name: **17 MILE 4 LLC**
 Mailing Address: **69 HARRY ST, CONSHOHOCKEN PA 19428-2071 C006**
 Vesting Codes: **// CO**

Location Information

Legal Description:
 County: **NEW HAVEN, CT** APN: **MILF-000039-000542-000038-A000000**
 Census Tract / Block: **1510.00 / 2** Alternate APN: **1206590**
 Township-Range-Sect:
 Legal Book/Page: Subdivision:
 Legal Lot: Map Reference: **/**
 Legal Block: Tract #:
 Market Area: School District:
 Neighbor Code: School District Name:
 Munic/Township: **MILFORD**

Owner Transfer Information

Recording/Sale Date: **/** Deed Type:
 Sale Price: 1st Mtg Document #:
 Document #:

Last Market Sale Information

Recording/Sale Date: **03/04/2016 / 02/23/2016** 1st Mtg Amount/Type: **/**
 Sale Price: 1st Mtg Int. Rate/Type: **/**
 Sale Type: 1st Mtg Document #: **/**
 Document #: **3670-238** 2nd Mtg Amount/Type: **/**
 Deed Type: **QUIT CLAIM DEED** 2nd Mtg Int. Rate/Type: **/**
 Transfer Document #: Price Per SqFt:
 New Construction: Multi/Split Sale: **MULTI**
 Title Company:
 Lender:
 Seller Name: **MELBA REALTY LLC**

Prior Sale Information

Prior Rec/Sale Date: **03/04/2016 / 02/23/2016** Prior Lender: **WELLS FARGO BK NA**
 Prior Sale Price: **\$2,490,000** Prior 1st Mtg Amt/Type: **\$1,150,000 / CONV**
 Prior Doc Number: **3670-233** Prior 1st Mtg Rate/Type: **/**
 Prior Deed Type: **WARRANTY DEED**

Property Characteristics

Year Built / Eff:	1970 /	Total Rooms/Offices		Garage Area:	
Gross Area:	17,378	Total Restrooms:	2	Garage Capacity:	
Building Area:	17,378	Roof Type:	FLAT	Parking Spaces:	
Tot Adj Area:		Roof Material:	TAR & GRAVEL	Heat Type:	FORCED AIR
Above Grade:		Construction:	MASONRY	Air Cond:	YES
# of Stories:	2	Foundation:		Pool:	
Other Improvements:	Building Permit	Exterior wall:	VINYL	Quality:	
		Basement Area:		Condition:	AVERAGE

Site Information

Zoning:	BD	Acres:	2.71	County Use:	
Lot Area:	118,048	Lot Width/Depth:	x	State Use:	COMMERCIAL BUILDING (347)
Land Use:	COMMERCIAL BUILDING	Res/Comm Units:	5 / 5	Water Type:	
Site Influence:				Sewer Type:	

Tax Information

Total Value:	\$1,361,230	Assessed Year:	2021	Property Tax:	\$37,638.00
Land Value:	\$317,530	Improved %:	77%	Tax Area:	333
Improvement Value:	\$1,043,700	Tax Year:	2021	Tax Exemption:	
Total Taxable Value:					

NOTIFICATIONS

(https://www.fedex.com/en-us/home.html)



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776728797008

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Delivered
Tuesday, 5/3/2022 at 9:20 am



DELIVERED

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FROM
BLUE BELL, PA US

TO
CONSHOHOCKEN, PA US

[MANAGE DELIVERY](#)

Travel History

TIME ZONE

Local Scan Time



Tuesday, May 3, 2022

9:20 AM	CONSHOHOCKEN, PA	Delivered Package delivered to recipient address - release authorized
8:09 AM	KING OF PRUSSIA, PA	On FedEx vehicle for delivery
7:07 AM	KING OF PRUSSIA, PA	At local FedEx facility

Monday, May 2, 2022

8:23 AM	KING OF PRUSSIA, PA	At local FedEx facility
8:22 AM	KING OF PRUSSIA, PA	At local FedEx facility Package not due for delivery

(<https://www.fedex.com/en-us/home.html>)

Saturday, April 30,
2022



9:28 AM	MEMPHIS, TN	Arrived at FedEx hub
12:12 AM	PHILADELPHIA, PA	At local FedEx facility

Friday, April 29,
2022

9:04 PM	PHILADELPHIA, PA	Shipment arriving On-Time
8:49 PM	PHILADELPHIA, PA	At destination sort facility
8:07 PM	FORT WASHINGTON, PA	Left FedEx origin facility
4:05 PM	FORT WASHINGTON, PA	Picked up
9:53 AM		Shipment information sent to FedEx

Expand History 

Shipment Facts

TRACKING NUMBER 776728797008	SERVICE FedEx 2Day AM	WEIGHT 2 lbs / 0.91 kgs
TOTAL PIECES 1	TOTAL SHIPMENT WEIGHT 2 lbs / 0.91 kgs	TERMS Shipper
SHIPPER REFERENCE 100814 - 283564	PACKAGING FedEx Pak	SPECIAL HANDLING SECTION Deliver Weekday
SHIP DATE 4/29/22 	STANDARD TRANSIT 5/3/22 before 10:30 am 	ACTUAL DELIVERY 5/3/22 at 9:20 am

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FROM
BLUE BELL, PA US

TO
MILFORD, CT US

[MANAGE DELIVERY](#)

Travel History

TIME ZONE

Local Scan Time



Tuesday, May 3, 2022

10:33 AM	MILFORD, CT	Delivered Package delivered to recipient address - release authorized
9:21 AM	STRATFORD, CT	On FedEx vehicle for delivery
8:59 AM	STRATFORD, CT	Shipment arriving On-Time
8:44 AM	STRATFORD, CT	At local FedEx facility

Sunday, May 1, 2022



6:56 PM	EAST GRANBY, CT	Shipment arriving On-Time
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(<https://www.fedex.com/en-us/home.html>)

3:23 PM	MEMPHIS, TN	Departed FedEx hub
Saturday, April 30, 2022		
9:41 AM	MEMPHIS, TN	Shipment arriving On-Time
9:28 AM	MEMPHIS, TN	Arrived at FedEx hub
Friday, April 29, 2022		
8:34 PM	FORT WASHINGTON, PA	Left FedEx origin facility
4:05 PM	FORT WASHINGTON, PA	Picked up
9:44 AM		Shipment information sent to FedEx

Expand History 

Shipment Facts

TRACKING NUMBER 776728660008	SERVICE FedEx 2Day AM	WEIGHT 2 lbs / 0.91 kgs
TOTAL PIECES 1	TOTAL SHIPMENT WEIGHT 2 lbs / 0.91 kgs	TERMS Shipper
SHIPPER REFERENCE 100814 - 283564	PACKAGING FedEx Pak	SPECIAL HANDLING SECTION Deliver Weekday
SHIP DATE 4/29/22 	STANDARD TRANSIT 5/3/22 before 10:30 am 	ACTUAL DELIVERY 5/3/22 at 10:33 am

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Tuesday, 5/3/2022 at 10:41 am



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FROM
BLUE BELL, PA US

TO
MILFORD, CT US

[MANAGE DELIVERY](#)

Travel History

TIME ZONE
Local Scan Time



Tuesday, May 3, 2022

10:41 AM	MILFORD, CT	Delivered Package delivered to recipient address - release authorized
9:20 AM	STRATFORD, CT	On FedEx vehicle for delivery
9:05 AM	STRATFORD, CT	Shipment arriving On-Time
8:46 AM	STRATFORD, CT	At local FedEx facility

Sunday, May 1, 2022



6:42 PM	EAST GRANBY, CT	At destination sort facility
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3:23 PM	MEMPHIS, TN	Departed FedEx hub
Saturday, April 30, 2022		
9:41 AM	MEMPHIS, TN	Shipment arriving On-Time
9:28 AM	MEMPHIS, TN	Arrived at FedEx hub
Friday, April 29, 2022		
8:34 PM	FORT WASHINGTON, PA	Left FedEx origin facility
4:05 PM	FORT WASHINGTON, PA	Picked up
9:43 AM		Shipment information sent to FedEx

Expand History 

Shipment Facts

TRACKING NUMBER 776728639826	SERVICE FedEx 2Day AM	WEIGHT 2 lbs / 0.91 kgs
TOTAL PIECES 1	TOTAL SHIPMENT WEIGHT 2 lbs / 0.91 kgs	TERMS Shipper
SHIPPER REFERENCE 100814 - 283564	PACKAGING FedEx Pak	SPECIAL HANDLING SECTION Deliver Weekday
SHIP DATE 4/29/22 	STANDARD TRANSIT 5/3/22 before 10:30 am 	ACTUAL DELIVERY 5/3/22 at 10:41 am

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