NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Northeast Site Solutions
Denise Sabo
4 Angela's Way, Burlington CT 06013
203-435-3640
denise@northeastsitesolutions.com

June 8, 2022

Members of the Siting Council
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Tower Share Application
170 Mount Tobe Road, Plymouth, CT 06782
Latitude: 41.630000
Longitude: -73.056666
Site #: CT03538-S_BOHVN00179A_SBA_DISH

Dear Ms. Bachman:

This letter and attachments are submitted on behalf of Dish Wireless LLC. Dish Wireless LLC plans to install antennas and related equipment to the tower site located at 170 Mount Tobe Road, Plymouth, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900 MHz 5G antennas and six (6) RRUs, at the 124-foot level of the existing 160-foot monopole tower, one (1) Fiber cable will also be installed. Dish Wireless LLC equipment cabinets will be placed within a 7' x 5' lease area within the fenced compound. Included are plans by B+T, dated May 11, 2022, Exhibit C. Also included is a structural analysis prepared by SBA, dated May 27, 2022, confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit D. The facility was approved by the Town of Plymouth, on September 27, 2001. Please see attached Exhibit A.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of Dish Wireless LLC intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Mayor Joseph Kilduff and Scott Eisenlohr, Zoning Enforcement Officer for the Town of Plymouth, as well as the tower owner (SBA) and property owner (Susan & Walter MacDonald).

The planned modifications of the facility fall squarely within those activities explicitly provided for in R.C.S.A. 16-50j-89.

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the existing tower is 160-feet and the Dish Wireless LLC antennas will be located at a center line height of 124-feet.

2. The proposed modifications will not result in an increase of the site boundary as depicted on the attached site plan.

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3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed local and state criteria. The incremental effect of the proposed changes will be negligent.

4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. The combined site operations will result in a total power density of 24.35% as evidenced by Exhibit F.

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

A. Technical Feasibility. The existing monopole has been deemed structurally capable of supporting Dish Wireless LLC proposed loading. The structural analysis is included as Exhibit D.

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

C. Environmental Feasibility. The proposed shared use of this facility would have a minimal environmental impact. The installation of Dish Wireless LLC equipment at the 124-foot level of the existing 160-foot tower would have an insignificant visual impact on the area around the tower. Dish Wireless LLC ground equipment would be installed within the existing facility compound. Dish Wireless LLC shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit F, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.

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

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

Sincerely,

Denise Sabo

Denise Sabo
Mobile: 203-435-3640
Fax: 413-521-0558
Office: 4 Angela's Way, Burlington CT 06013
Email: denise@northeastsitesolutions.com

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Attachments

Cc: Mayor Joseph Kilduff
Plymouth Town Hall
80 Main Street
Terryville, CT 06786

Scott Eisenlohr - Zoning Enforcement Officer
Plymouth Town Hall
80 Main Street
Terryville, CT 06786

Susan & Walter MacDonald – Property Owners
42 South Street
Plymouth, CT 06782

SBA - Tower Owner

Exhibit A

Original Facility Approval

9. Greystone Road – Special Permit Review – Edwards – Attorney Kenneth Slater, Mr. Edwards and Mr. Massimo were in attendance. Attorney Slater stated that there is no value of an as-built at this time. The project hasn't proceeded at the rate it was supposed to because of the mica schist. Mr. Hrica was engaged to write a report as to what was done and was presented at the last meeting. They had one promising location but it was not permitted. There are some projects coming up where the contractor might be able to get rid of the mica schists. Chairman Herzing stated that it was more than the as-built. They requested a time frame that work was being done because there is a big impact on the neighbors with the traffic, noise and safety. They should have looked into the marketability of the material they had to remove to complete this project and the time restraints. There is a big hole in the side of a mountain causing safety issues with kids playing. It shouldn't be put on hold and let the hole sit there waiting for someone to get hurt. Mica is not a marketable material and research should have been done in advance. Attorney Slater told the Commission that they did not want to come back to them but they learned about the mica when they blasted. Chairman Herzing said they could have created something better than what was there and should clean up the mess and maybe sit on it. Attorney Slater said the engineering report indicated no immediate hazard. This project wouldn't take long to complete if there was a place to bring this material. Chairman Herzing feels they should get in and clean up the gaping hole in the side of the hill. They were supposed to be in 500 feet by the last meeting. Attorney Slater said the General Statutes give 5 years. Properties are left unsafe a lot longer than this. The applicant expected to be ½ done by this time. There is no value in an as-built. Chairman Herzing said that on 7/26/01 the Commission gave them 6 weeks. At that time they needed an as-built so they could see what they had or had not done. Good faith would have had them bring us an as-built. The fear that this was not a driveway – just an excavation operation. Attorney Slater said that they thought they would find a legal location before September but this didn't happen and they have no way to move the material. The Commission said nothing about it being shored up and is reasonably safe right now. When they find a location, the project will continue. The Commission and Attorney Slater went back and forth regarding a time line, a location for the mica schist and the as-built. The permit is over tomorrow (9/28/01) so they have to come in for a renewal. Attorney Slater stated that the permit is effective to 1/11/02. Gaye Zukauskas stated that our special permits run 1 year from the date of approval. Chairman Herzing asked if the Commission could give them a two week extension? Discussion was had. **MOTION:** Gaye Zukauskas made a motion to give a two week extension to Mr. Edwards-Greystone Road-driveway permit to allow them time to prepare a site plan and exhaust all other avenues for solid waste removal. Peter Tonn seconded. VOTE: S. Panasuk – Aye, J. Purney – Aye, P. Tonn – Aye, G. Zukauskas – Aye and Chairman Herzing so voted. It was made clear that the permit stays in effect for the two weeks.

6. 170 Mt. Tobe Road – Special Permit – SBA – Mr. Kuehn informed the Commission that the energy goes horizontal from the antenna and the antenna is vertical to the horizon. It goes parallel to the horizon – not down. Steve Panasuk asked if it met all

FCC regulations and the answer was yes. He also recommended a bond for removing the tower if it is not used for one year. The building is ok in size. The Siting Council has to go over the permit. Discussion was had. **MOTION:** Steve Panasuk made a motion to grant a special permit for SBA for 170 Mt. Tobe Road covering sheet T-1-cover sheet, S-1-site plan, C-1-vicinity plan, C-2-overall site and grading and C-3-site details. Bond to be set by the town engineer for removal of the tower if it is not used for 12 consecutive months. Gaye Zukauskas modified the motion to include: report entitled "Visual Simulations" dated July 9, 2001; View Shed Map, undated, for 160' monopole; and, maps and overlays as submitted to Commission at its meeting of July 26, 2001. Plan sheets for South Plymouth Communications Facility dated 3/16/00, revised 7/16/01 prepared by Erdman Anthony Consulting Engineers. Jamie Purney seconded. VOTE: S. Panasuk – Aye, J. Purney – Aye, G. Zukauskas – Aye and Chairman Herzing so voted. Peter Tonn was not here for the public hearing so didn't vote.

10. 591 Main Street – Site Plan Modification – KCK Properties
11. 10 Todd Hollow Road – Site Plan – KCK Properties – Kim Pelletier of 1 Cynthia Court, Bristol and Brian Ireland represented KCK Properties. They plan to modify 591 Main Street by removing the mountain of rock between 10 Todd Hollow Road and 591 Main Street. This would improve the sight line to Route 6 and provide additional parking area and extend the approved area to the south. This would bring the property up to grade. It would be the same building. Most of the material will be used on site. The rock will be crushed and what is not used will go to Scalia Brothers. Mr. Kuehn told the Commission that he hasn't received all reviews. Ten Todd Hollow Road was changed to Commercial. Gaye Zukauskas asked if they plan to build for themselves or to sell. The back building will be for a shop and executive businesses. Mr. Pelletier installs dump bodies on trucks. The Police Chief would like them to come out on Todd Hollow Road and not Route 6 because of the traffic. Mr. Pelletier said they would like an entrance on both. Mr. Kuehn said they need the elevations for the building on the corner and what it is going to look like – architectural sketches. Also what signage is necessary. Chairman Herzing asked why they were removing the hill. They need more parking area and a place to put dump bodies. Mr. Pelletier asked if it would be possible to make the building 60' by 120' instead of 50' x 100'. They were told to do everything at one time. Item 11 is about the same. They need a landscape design. They are in front of Wetlands on October 3. Discussion was had. **MOTION:** Gaye Zukauskas made a motion to table 591 Main Street-Site Plan Modification-KCK Properties and 10 Todd Hollow Road-Site Plan-KCK Properties until October 11 pending Wetlands approval. VOTE: S. Panasuk – Aye, J. Purney – Aye, P. Tonn – Aye, G. Zukauskas – Aye and Chairman Herzing so voted.

12. 6 Hoye Street – Front Yard Setback – Denski – Mr. Kuehn stated that this is an existing house which encroaches on the front yard. The Commission can allow this if it is consistent with neighboring properties (notes to table 3.12). It will be an additional overhang. Discussion was had. **MOTION:** Gaye Zukauskas made a motion to approve

PLANNING & ZONING REGULAR MEETING
SEPTEMBER 27, 2001

Chairman Herzing called the regular meeting to order at 8:45 p.m.

ATTENDANCE

Steve Panasuk, Jamie Purney, Peter Tonn, William Kuehn-Town Planner, Gaye Zukauskas, Pat Pierzanowski-Recording and Office Secretary and Patrick Herzing-Chairman.

MINUTES

3. July 26, 2001 – Steve Panasuk made a motion to accept the July 26 minutes as mailed. Gaye Zukauskas seconded. VOTE: S. Panasuk – Aye, J. Purney – Aye, G. Zukauskas – Aye and Chairman Herzing so voted.

4. August 15, 2001 - Gaye Zukauskas made a motion to accept the August 15, 2001 minutes. Jamie Purney seconded. VOTE: J. Purney – Aye, G. Zukauskas – Aye and Chairman Herzing so voted.

5. September 13, 2001 – Gaye Zukauskas made a motion to accept the minutes of the September 13, 2001 meeting. Peter Tonn seconded. VOTE: S. Panasuk –-Aye, J. Purney – abstained, P. Tonn – Aye, G. Zukauskas – Aye and Chairman Herzing – abstained. Motion carried.

OLD BUSINESS

6. 170 Mt. Tobe Rd. – Special Permit – SBA – Esther McNany represented SBA. Gaye Zukauskas said that the overlays were great **but** more coverage in the Greystone area would be nice. Steve Panasuk asked staff if they got a letter from SBA of other sites they looked at. Also how many EMF's are generated at 5' and 50' from the tower when it is at maximum output. Discussion was had. **MOTION:** Gaye Zukauskas made a motion to move item #6 - 170 Mt. Tobe Road-Special Permit-SBA to item #9 and items #8 and #9 be moved up. Peter Tonn seconded. VOTE: S. Panasuk – Aye, J. Purney – Aye, P. Tonn – Aye G. Zukauskas – Aye and Vice Chairman Panasuk so voted.

7. a. and b.Public Hearing Items – They were both continued.

8. Proposed Amendment – Signs – Commission – **MOTION:** Steve Panasuk made a motion to table the proposed amendment-signs-Commission. Gaye Zukauskas seconded. VOTE: S. Panasuk – Aye, J. Purney – Aye, P. Tonn – Aye, G. Zukauskas – Aye and Vice Chairman Panasuk so voted.

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Wetlands action. Peter Tonn seconded. VOTE: G. Zukauskas – Aye, P. Tonn – Aye and Vice Chairman Panasuk so voted.

8. Proposed Amendment to the Zoning Regulations – Wireless Communications – Commission – Mr. Kuehn read the existing language and the proposed language into the record. The only difference is 600 sq. ft. The original draft in 1998 was sent to CCRPA and they suggested 150 sq. ft. It was approved as 750 sq. ft. and should have been 150 sq. ft. The Council of Governments of the Central Naugatuck Valley acknowledged receipt of the proposal. Mr. Kuehn read the letter from CCRPA into the record. FOR – No one. AGAINST – No one. FOR NOR AGAINST – No one. Discussion was had. **MOTION:** Gaye Zukauskas made a motion to close the public hearing for Proposed Amendment to the Zoning Regulations-Wireless Communications-Commission. VOTE: G. Zukauskas – Aye, P. Tonn – Aye and Vice Chairman Panasuk so voted.

PLANNING & ZONING REGULAR MEETING
SEPTEMBER 13, 2001
ATTENDANCE

Gaye Zukauskas, William Kuehn-Town Planner, Peter Tonn, Pat Pierzanowski-Recording and Office Secretary and Steve Panasuk-Vice Chairman.

MINUTES

9. July 26, 2001 and 10. August 15, 2001 – **MOTION:** Gaye Zukauskas made a motion to table the minutes of the July 26, 2001 and August 15, 2001 meetings until the next meeting when we have a quorum. Peter Tonn seconded. VOTE: G. Zukauskas - Aye, P. Tonn – Aye and Vice Chairman Panasuk so voted.

OLD BUSINESS

11. 170 Mt. Tobe Rd. – Special Permit – SBA – Esther McNany was here and Mr. Kuehn talked to her. Only two commissioners who were here for this item are in attendance tonight so she asked to have the item continued. Gaye Zukauskas felt the overlays were a big help. Steve Panasuk asked staff to get a letter from SBA of other sites they looked at. He would also like to know how much RFP's will be generated at 5' and 50' when it is at maximum output. **MOTION:** Gaye Zukauskas made a motion to table 170 Mt. Tobe Road-Special Permit-SBA to the next meeting. We have to act on this then. Peter Tonn seconded. VOTE: G. Zukauskas – Aye, P. Tonn – Aye and Vice Chairman Panasuk so voted.

12. a., b., c., d., e., f. and g Public Hearing Items – They were all continued.

12. h. Proposed Amendment to the Zoning Regulations – Wireless Communications – Commission – Discussion was had. **MOTION:** Gaye Zukauskas made a motion to approve the amendment change for wireless communications as written by staff – removing 750 sq. ft. and replacing it with 150 sq. ft. of building area. Peter Tonn seconded. VOTE: G. Zukauskas – Aye, P. Tonn – Aye and Vice Chairman Panasuk seconded.

13. Proposed Amendment – Signs – Commission – **MOTION:** Gaye Zukauskas made a motion to table the proposed amendment-signs-Commission. Peter Tonn seconded. VOTE: G. Zukauskas – Aye, P. Tonn – Aye and Vice Chairman Panasuk so voted.

14. Greystone Road – Special Permit Review – Edwards – No one was in the audience for this item. Gaye Zukauskas would like a special meeting to finalize this item. She is very upset with it and doesn't want to wait 2 weeks. Mr. Kuehn said he would check and set up a special meeting for Monday or Tuesday of next week. People in the audience wanted to speak. Tom Napiello of 385 Greystone Road stated that he is a schoolteacher and was home every day in August. From August 1 to this date, they have worked on the

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PLANNING & ZONING PUBLIC HEARINGS
JULY 26, 2001

Chairman Patrick Herzing called the meeting to order at 7:00 p.m.

ATTENDANCE

Steve Panasuk, Gaye Zukauskas, William Kuehn-Town Planner, Jamie Purney, Pat Pierzanowski-Recording and Office Secretary and Patrick Herzing-Chairman.

Chairman Herzing went over the procedure to be followed for the public hearings.

1. 170 Mt. Tobe Rd. – Special Permit – SBA – The representative from SBA stopped by the office this morning. No one was in attendance for them. FOR – No one. AGAINST – No one. FOR NOR AGAINST – No one. **MOTION:** Gaye Zukauskas made a motion to close the public hearing for 170 Mt. Tobe Rd.-Special Permit-SBA. seconded. VOTE: S. Panasuk – Aye, G. Zukauskas – Aye, J. Purney – Aye and Chairman Herzing so voted.

2. 111 Hosier Road – Special Permit – Russell - Mr. Kuehn read the legal notice for the public hearing into the record. Mark Russell of 111 Hosier Road represented himself. They put on a deck and would now like to enclose it. There is no problem with coverage. It is 12' x 14' and would have a sliding door to the deck. FOR – No one. AGAINST – No one. FOR NOR AGAINST – No one. Discussion was had. **MOTION:** Steve Panasuk made a motion to close the public hearing for 111 Hosier Road – Special Permit – Russell. Gaye Zukauskas seconded. VOTE: S. Panasuk – Aye, G. Zukauskas – Aye, J. Purney – Aye and Chairman Herzing so voted.

MOTION: Gaye Zukauskas made a motion to re-open the public hearing for 170 Mt. Tobe Road – Special Permit – SBA. Steve Panasuk seconded. VOTE: S. Panasuk – Aye, G. Zukauskas – Aye, J. Purney – Aye and Chairman Herzing so voted.

1. 170 Mt. Tobe Road – Special Permit – SBA – Esther McNany represented SBA and apologized for being late. There was a traffic jam on Rt. 84. This is a continuation of a public hearing. At the last meeting there were a number of questions the Commission asked to have information for them. There were four particular items. One, revising their site plan to reflect the changes they made in their application in making all the utilities underground and also reducing the tower height from the initial 195 feet down to a maximum height of 160 feet total and all the changes are reflected in the plan on the appropriate pages. They submitted some visual impact studies so they revised the visual simulations utilizing the160 foot tower. They were previously submitted and dated July 9, 2001. The power lines and the overlapping of the RF studies go together. The power lines north of the site from the mile 39 marker the poles are wood, not the steel lattice poles. Ms. McNany went over the overlays. Chairman Herzing asked how many years are they going to be used before they become obsolete with the satellites and all? Ms. McNany stated that they feel they will be here for a long time and they have raised their

lease time from 15-20 years to 99 years. The town could use the pole at no cost. She did not know why Watertown and Thomaston had denied them. FOR: No one. AGAINST: No one. FOR NOR AGAINST: No one. Discussion was had. **MOTION:** Gaye Zukauskas made a motion to close the public hearing for 170 Mt. Tobe Road-Special Permit-SBA. Steve Panasuk seconded. VOTE: S. Panasuk – Aye, G. Zukauskas – Aye, J. Purney – Aye and Chairman Herzing so voted.

PLANNING & ZONING REGULAR MEETING
JULY 26, 2001

Chairman Patrick Herzing called the meeting to order at 7:25 p.m.

ATTENDANCE

Steve Panasuk, Gaye Zukauskas, William Kuehn-Town Planner, Jamie Purney, Pat Pierzanowski-Recording and Office Secretary and Patrick Herzing-Chairman.

MINUTES

3. July 12, 2001 – MOTION: Gaye Zukauskas made a motion to accept the minutes for July 12, 2001 as mailed. Jamie Purney seconded. VOTE: S. Panasuk – Aye, G. Zukauskas – Aye, J. Purney – Aye and Chairman Herzing so voted.

OLD BUSINESS

4.a. 170 Mt. Tobe Rd. – Special Permit – SBA – Gaye Zukauskas would like more time to go over the information. **MOTION:** Gaye Zukauskas made a motion to table 170 Mt. Tobe Road-Special Permit-SBA until 9/13/01. Jamie Purney seconded. VOTE: S. Panasuk – Aye, G. Zukauskas – Aye, J. Purney – Aye and Chairman Herzing so voted.

4.b. 111 Hosier Rd. – Special Permit – Russell – MOTION: Gaye Zukauskas made a motion to approve 111 Hosier Rd.-Special Permit-Russell for the screened in deck on the porch that is being built. Jamie Purney seconded. VOTE: S. Panasuk – Aye, G. Zukauskas – Aye, J. Purney – Aye and Chairman Herzing so voted.

5. Proposed Amendment – Signs – Commission – MOTION: Gaye Zukauskas made a motion to table Proposed Amendment-Signs-Commission until the next meeting. Steve Panasuk seconded. Steve Panasuk remarked that the Commission keeps postponing this item. Maybe we should have a special meeting to discuss this and get it finished. Mr. Kuehn will get it put together during the month of August. VOTE: S. Panasuk – Aye, G. Zukauskas – Aye, J. Purney – Aye and Chairman Herzing so voted.

6. Wilton Rd. – Subdivision – Zappone – Michael Zappone and his father Joseph Zappone were both in attendance. Mr. Kuehn has been working off maps received on June 6 and dated May 16, 2001. Revised plans were supposedly done to include the easements for wetlands and the culvert crossing the driveway. Mr. Zappone that at the last meeting everything was supposed to be all set except for the wetlands. Mr. Zimbouski stated that the town wants discharge rights onto the property. He would like a map filed which clarifies. Mr. Kuehn is uncomfortable because there are some things he doesn't have his hands on and would like a motion written ahead to be sure everything is taken care of. He wrote a letter to the Commission regarding his concerns. Discussion was had. **MOTION:** Gaye Zukauskas made a motion to table Wilton Rd.-Subdivision-

PLANNING & ZONING PUBLIC HEARINGS
JULY 12, 2001

Chairman Patrick Herzing called the meeting to order at 7:00 p.m.

ATTENDANCE

Steve Panasuk, William Kuehn-Town Planner will be a little late, Gaye Zukauskas, Jamie Purney, Pat Pierzanowski-Recording and Office Secretary and Patrick Herzing-Chairman.

Chairman Herzing went over the procedure to be followed for the public hearings.

1. Proposed Amendment – Signs – Commission – Gaye Zukauskas read the letter from Cindy Scoville, President of the Plymouth Chamber of Commerce dated 7/6/01 regarding a frame signs that could be put out during the day and taken in at night. FOR – No one. AGAINST – No one. FOR NOR AGAINST – No one. Discussion was had. **MOTION:** Gaye Zukauskas made a motion to close the public hearing for Proposed Amendment-Signs-Commission. Steve Panasuk seconded. VOTE: S. Panasuk – Aye, G. Zukauskas – Aye, J. Purney – Aye and Chairman Herzing so voted.

2. 170 Mt. Tobe Rd. – Special Permit – SBA – The representative from SBA was unable to make the meeting so asked that the public hearing be continued until July 26, 2001. FOR – No one. AGAINST – No one. FOR NOR AGAINST – No one. **MOTION:** Gaye Zukauskas made a motion to continue the public hearing for 170 Mt. Tobe Rd.-Special Permit-SBA until 7/26/01. Jamie Purney seconded. VOTE: S. Panasuk – Aye, G. Zukauskas – Aye, J. Purney – Aye and Chairman Herzing so voted.

Chairman Herzing read the legal notice for the next two public hearings into the record.

3. Wilton Road – Subdivision – Zappone – Michael Zappone of 197 Pine Hill Road in Thomaston stated that he is buying a piece of property from his father. He has gone to Wetlands and has made the changes that they want. Chairman Herzing read the letter dated 6/11/01 from Michael Zappone regarding a waiver of sidewalks into the record. Chairman Herzing asked if the rest of the land could be subdivided. Steve Panasuk informed Mr. Zappone that if the sidewalks are waived that he would still have to grade for them and provide a snow shelf. FOR – No one. AGAINST – No one. FOR NOR AGAINST – No one. Wetlands wanted a pipe underneath the driveway to catch the water. Sidewalks now or later was discussed. Open space – on 3 parcels or more. There is no correspondence from the other departments. Discussion was had. **MOTION:** Gaye Zukauskas made a motion to close the public hearing for Wilton Road – Subdivision – Zappone. Steve Panasuk seconded. VOTE: S. Panasuk – Aye, G. Zukauskas – Aye, J. Purney – Aye and Chairman Herzing so voted.

4. Proposed Amendments – Plan of Development – Commission – These amendments are mainly for the preservation of the Waterwheel. Dave Philbrick of 1 Magnolia Lane

P & Z CONTINUED PUBLIC HEARING AND PUBLIC HEARINGS
June 28, 2001

The Public Hearing was called to order at 7:10 p.m. by Chairman Patrick Herzing.

ATTENDANCE: Patrick Herzing, Steven Panasuk, Gaye Zukauskas, William Kuehn, Town Planner, and Robin Gudeczauskas, Recording Secretary.

1. **Proposed Amendment – Signs - Commission** – W. Kuehn gave a brief update and recommended the matter be continued one more meeting. **MOTION**: Gaye Zukauskas made a motion to continue the Public Hearing for the Proposed Amendment, Signs, for two weeks from today. Steve Panasuk seconded. VOTE: S. Panasuk – Aye, G. Zukauskas – Aye, and Chairman Herzing so voted.

2. **170 Mt. Tobe Rd. – Special Permit - SBA** – Esther McNany, Territory Manager for SBA stated she has reviewed the 5/24/01 minutes and had the following responses: reviewed the location of utilities stating they will remain underground the additional 6800' to the facility; the stated tower height of 195' has been amended to 155' – 157' and submitted RF Engineering information to backup the request (distributed and reviewed) noting gap in coverage, coverage from the surrounding sites with the Mt. Tobe site at 155', coverage from the proposed SBA site at 170 Mt. Tobe Road, coverage from the Voicestream tower at 150', coverage from the SNET tower at 170'. The main coverage objective from the proposed facility is Rt. 8. Tower heights reviewed, lack of accessibility on Greystone and Wolcott Roads noting restriction is from Waterbury airport, FAA restrictions, and height limitations to reach this area. State forest is restricted for any type of telecommunications. Discussion held. S. Panasuk noted that first priority would be to use existing towers, high tension towers are not mentioned for telecommunication use and if feasible the information submitted will need to be revised. E. McNany reviewed concerns of SBA in utilizing utility lines as being safety of workers and access issues. Commission requested 7 sets of information for next meeting on (a) use of power lines to attach antennae, (b) review of all site plans and update on all visuals to reflect lower height and overlay of all facilities. Commission asked W. Kuehn to obtain from CCRPA a traffic study on Greystone and Rt. 262. Applicant submitted a written request to extend the Public Hearing for 35 days and to continue the public hearing at the next meeting; W. Kuehn read letter dated 6/28/01 into record. **MOTION**: Gaye Zukauskas made a motion to accept the letter requesting a 35-day extension for the public hearing on 170 Mt. Tobe Rd., Special Permit, SBA. Steven Panasuk seconded. VOTE: S. Panasuk – Aye, G. Zukauskas – Aye, and Chairman Herzing so voted. **MOTION**: Gaye Zukauskas made a motion to continue the public hearing on 170 Mt. Tobe Rd., Special Permit, SBA to July 12, 2001. Steve Panasuk seconded. VOTE: : S. Panasuk – Aye, G. Zukauskas – Aye, J. Purney – Aye and Chairman Herzing so voted.

extension of the public hearing for Towill Farms Subdivision – Harwinton Avenue – Towill. Jamie Purney seconded.
VOTE: G. Zukauskas – Aye, J. Purney – Aye and Chairman Herzing so voted.
MOTION: Gaye Zukauskas made a motion to continue the public hearing for Harwinton Avenue – Towill Farms Subdivision – Towill. Jamie Purney seconded.
VOTE: G. Zukauskas – Aye, J. Purney – Aye and Chairman Herzing so voted.

4. 41 Fall Mountain Lake Road – Special Permit – Hultslander – Mark Hultslander of 41 Fall Mountain Lake Road represented himself. The addition is one floor and will be put on piers. He had the size of the deck corrected at town hall. It was 16 x 20. He wants to change the existing deck into living space. Not going any higher. Vincent Lago of Lago Builders showed the Commission the plans. The existing closed in porch will be changed to a bedroom and the existing deck will be changed to living space. There is nothing else on the property. FOR – No one. AGAINST – No one. FOR NOR AGAINST – No one. Discussion was had. **MOTION:** Gaye Zukauskas made a motion to close the public hearing. Jamie Purney seconded. VOTE: G. Zukauskas – Aye, J. Purney – Aye and Chairman Herzing so voted. **MOTION:** Gaye Zukauskas made a motion to accept the application for a special permit – 41 Fall Mountain Lake Road – Hultslander approval based on plans dated March 27, 2001 by Lago Builders designed by Vincent Lago. The whole square footage of the total framing of the house not to exceed 20' x 40'. Silt fence to be put up during building process. Jamie Purney seconded.
VOTE: G. Zukauskas – Aye, J. Purney – Aye and Chairman Herzing so voted.

5. 170 Mt. Tobe Road – Special Permit – SBA – Mr. Thomas Flynn represented SBA Inc. from Glastonbury, CT. Mr. Flynn felt the Commission has been educated on telecommunication towers so would explain why and where they are building it. He showed the Commission a topo map and showed them the locations of towers and how their tower relates to these other towers. They are trying to cover the blind spots up along Route 8. Thomaston recently denied 2 towers. They are proposing a tower on property across from the airport. It is a large parcel of land – over 150 acres – with nothing on it except 1 house. It has an existing road and existing utilities. They will have a lease with the landowner to cross and re-cross. They will be approximately 600' away from the house. It is way back in the property. It is approximately 2000' from Plymouth properties. It is next to the state forest. It is a simple site plan consisting of a compound 100' x 100' with a 70' x 70' compound within it. It will service up to 5 carriers – possibly 6. It will be self contained and fence secured. There will be no lighting except for maintenance and no water or sewer. It will be serviced a couple of times a month. There will be nothing outside the fenced area. The yellow areas on the map are partially visible to the Town of Plymouth. In the green areas, views are screened by vegetation. In the purple areas, views are blocked by topography. The tower will be galvanized, gray mat finish. It will have an ID # and emergency call number on it. It complies with all the regulations in terms of height and tower fall zone. It meets FCC regulations. Utilities are

already underground but would like to propose above ground from there on. Chairman Herzing had concerns as to the
need of the tower and height of the tower. Mr. Flynn stated that the issue in this part of Connecticut is the depth of the river valley. They need the height so they will be able to get it down into the valley. Signals don't roll with the terrain. It varies from carrier to carrier as to where they are on the facility and how high a carrier may need to be. NEXTEL has signed on for this tower. Sprint could probably use this site as well. Chairman Herzing asked how high they need to go to get into the valley. (Since NEXTEL has signed on, what are their requirements?) There are three towers in town that aren't used to their capacity. Mr. Flynn said the lower they put a tower, the smaller the number of co-habitators that can be put on it. They need 10 feet from the mid line separation. Patrick Herzing asked if in the event all antennas are used by your provider, what do you need for height to get into the hole? FOR – Susan Macdonald asked if this tower would cover the dead spot on Route 6 up to Watertown. Mr. Flynn said yes. She also spoke in favor of the tower but she would rather see underground utilities rather than above. There was no one else who wanted to speak for the application. AGAINST – No one. FOR NOR AGAINST – No one. Discussion was had. The Commission would like more information from Mr. Flynn regarding NEXTEL, etc. **MOTION:** Gaye Zukauskas made a motion to continue the public hearing for 170 Mt. Tobe Road-Special Permit-SBA to 6/14. Jamie Purney seconded. VOTE: G. Zukauskas – Aye, J. Purney – Aye and Chairman Herzing so voted.

6. 403 Greystone Road – Modification of Special Permit – Edwards – Connie Massimo of 214 Christian Street, Oxford spoke for the applicant. They would like to extend their hours of operation. The hours at the present time are 8:00 a.m. to 3:00 p.m. which only gives them 6 ½ hours. Chairman Herzing stated that they knew that going into the project. Ms. Massimo stated that it is hard to hire trucks for only 6 ½ hours. They really need more hours. Chairman Herzing stated that he didn't think they were moving that much material from there. The majority was to be used on site to finish the driveway. 35,000 yds. of which 20,000 were to be used on site. This would leave 15,000 yds. to be hauled off. It is 22,000 yds. to be taken out. They had a rough winter and they have a hard time with the blasting because they don't have the time for the blasters to get in and blast. It takes 2 days because by the time they drill their holes, it is 3:00. She really needs to extend the hours. They have been working on this project since January and have had a lot of bad weather and she had a stopping point because of blasting. Chairman Herzing asked her how much material has been removed so far. What percentage of the job is completed. She stated maybe a quarter. Chairman Herzing asked if all that had been removed or has some of it been moved up into the property filling. Some for the road base. Mike Massimo of 214 Christian Street, Oxford stated they took some material out for the swale and some 50' to 75' from the road and then they hit ledge. They have removed about 1000 yds. They have to remove the rock that has been blasted. FOR – No one. AGAINST – Joan Cavalari of 410 Greystone Road lives across the road. Their hours are supposed to be 8-3 and already they have extended them on

Exhibit B

Property Card

Town of Plymouth
Property Listing Report

Parcel ID 093-138-002

Account 00483500

Property Information

Owner	MACDONALD SUSAN A & WALTER T
Address	170 MT TOBE RD
Mailing Address	42 SOUTH ST PLYMOUTH , CT 06782
Land Use	-
Land Class	R

Census Tract	4254
Neighborhood	103
Zoning	RA1
Acreage	117.12
Utilities	
Lot Setting/ Desc	/ 3

Photo

PARCEL VALUATIONS (Assessed value = 70% of Appraised Value)

	Appraised	Assessed
Buildings	142500	
Outbuildings		
Improvements		
Extras		
Land	429400	
Total	251200	175840
Previous		

Construction Details

Year Built	
Stories	
Building Style	
Building Use	
Building Condition	
Total Rooms	
Bedrooms	
Full Bathrooms	
Half Bathrooms	
Bath Style	
Kitchen Style	
Roof Style	
Roof Cover	

EXTERIOR WALLS:	
Primary	
Secondary	
INTERIOR WALLS:	
Primary	
Secondary	
FLOORS:	
Primary	
Secondary	
HEATING/AC:	
Heating Type	
Heating Fuel	
AC Type	

BUILDING AREA:

Effective Building Area	
Gross Building Area	
Total Living Area	

SALES HISTORY:

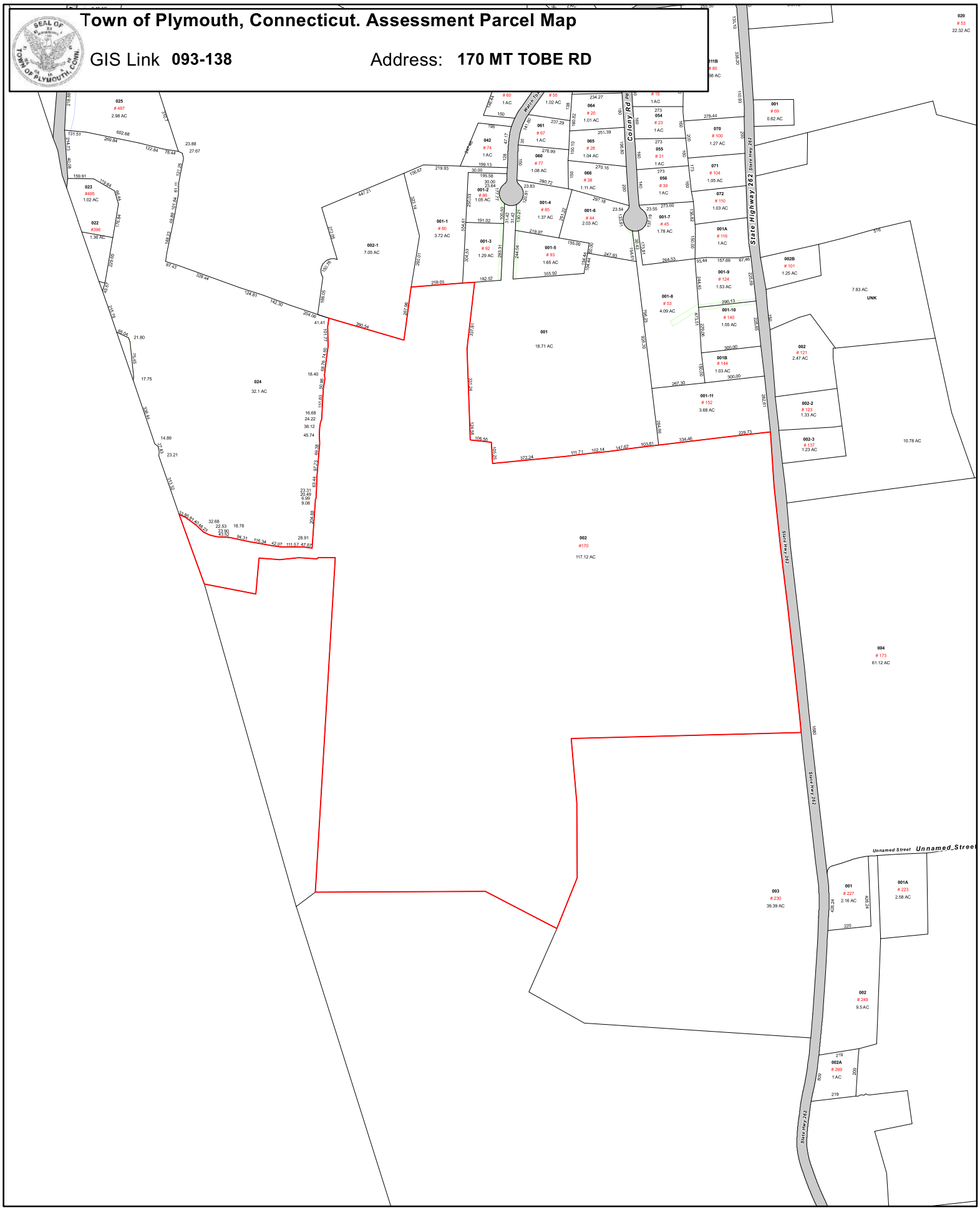
Sale Date	19920601
Sale Price	260000
Book/ Page	230/661

Report Created On 7/6/2021

Town of Plymouth, Connecticut. Assessment Parcel Map

GIS Link **093-138**

Address: **170 MT TOBE RD**



1 inch = 600 feet

0 300 600 900 1,200 Feet

Disclaimer: This map is for informational purposes only All information is subject to verification by any user. The Town of Plymouth and its mapping contractors assume no legal responsibility for the information contained herein.

Map Produced: October 2020

Exhibit C

Construction Drawings

DISH Wireless L.L.C. SITE ID:

BOHVN00179A

DISH Wireless L.L.C. SITE ADDRESS:

170 MOUNT TOBE ROAD
PLYMOUTH, CT 06782

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 THE TRANSMISSION EQUIPMENT THAT IS NOT A SUBSTANTIAL CHANGE UNDER CFR 1.61000 (B)(7).

APPROVED
By Paul Mucci at 12:37 pm, May 26, 2022

SCOPE OF WORK

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

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

GROUND SCOPE OF WORK:
- INSTALL (1) PROPOSED 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 INFORMATION

PROPERTY OWNER:	MACDONALD SUSAN A & WALTER T
ADDRESS:	170 MT TOBE RD PLYMOUTH, CT 06782
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	CT03538-S
TOWER APP NUMBER:	169196
COUNTY:	LITCHFIELD
LATITUDE (NAD 83):	41° 37' 48.11" N 41.630030
LONGITUDE (NAD 83):	73° 3' 23.59" W -73.056553
ZONING JURISDICTION:	CONNECTICUT SITTING COUNCIL
ZONING DISTRICT:	RA1
PARCEL NUMBER:	093-138-002
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	EVERSOURCE CT ELECTRIC
TELEPHONE COMPANY:	CROWN CASTLE

PROJECT DIRECTORY

APPLICANT:	DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	SBA COMMUNICATAIONS CORP. 8051 CONGRESS AVENUE BOCA RATON, FL 33487 (800) 487-7483
SITE DESIGNER:	B+T GROUP 1717 S. BOULDER AVE, SUITE 300 TULSA, OK 74119 (918) 587-4630
SITE ACQUISITION:	RYAN LYNCH ryan.lynch@dish.com
CONST. MANAGER:	CHAD WILCOX chad.wilcox@dish.com
RF ENGINEER:	DIPESH PARIKH dipesh.parikh@dish.com

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

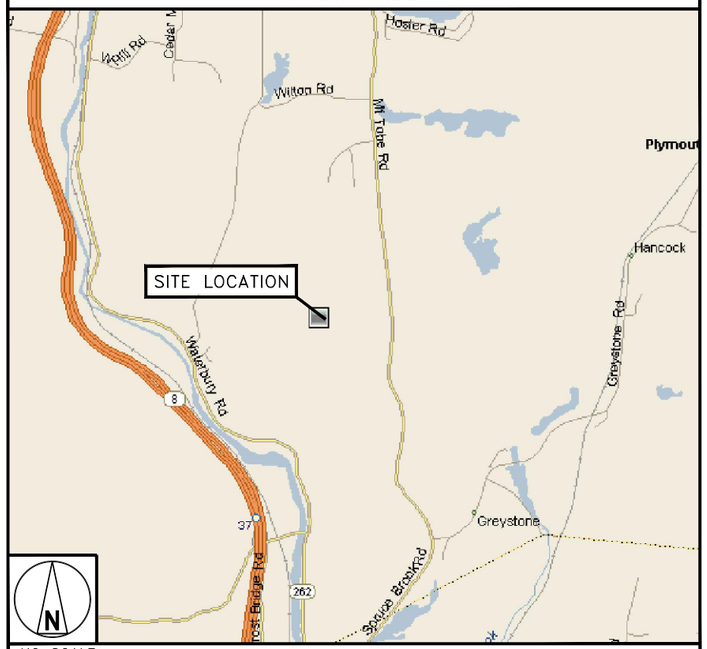
SITE PHOTO

DIRECTIONS

DIRECTIONS FROM MERIDEN MARKHAM MUNICIPAL AIRPORT:

FOLLOW HANOVER ST TO CT-68 W IN WALLINGFORD, HEAD EAST TOWARD EVANSVILLE AVE, TURN RIGHT ONTO EVANSVILLE AVE, CONTINUE ONTO HANOVER ST, FOLLOW CT-68 W AND MAIN ST TO CT-70 W IN CHESHIRE, TURN RIGHT ONTO CT-68 W, TURN LEFT ONTO CT-68 W/CT-70 W, TURN LEFT ONTO MAIN ST, TURN LEFT ONTO CT-68 W/CT-70 W/W MAIN ST, GET ON I-84, CONTINUE STRAIGHT ONTO CT-70 W, CONTINUE ONTO STATE HWY 801, TURN LEFT ONTO THE I-84 W RAMP TO WATERBURY, CONTINUE ON I-84 TO WATERBURY. TAKE EXIT 36 FROM CT-8 N, MERGE WITH I-84, TAKE EXIT 20 TO MERGE WITH CT-8 N TOWARD TORRINGTON, TAKE EXIT 36 FOR HUNTINGDON AVE/COLONIAL AVE, FOLLOW THOMASTON AVE TO CT-262 IN PLYMOUTH, TURN RIGHT ONTO HUNTINGDON AVE, TURN LEFT ONTO THOMASTON AVE, TURN RIGHT ONTO CT-262/SPRUCE BROOK RD, CONTINUE TO FOLLOW CT-262, ARRIVE AT BOHVN00179A.

VICINITY MAP



NO SCALE

SHEET INDEX

UNDERGROUND SERVICE ALERT CBYD 811
UTILITY NOTIFICATION CENTER OF CONNECTICUT
(800) 922-4455
WWW.CBYD.COM

CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

811

GENERAL NOTES

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

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

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

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

SBA

8051 CONGRESS AVENUE
BOCA RATON, FL 33487

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

STATE OF CONNECTICUT
CHAD WILCOX
No. 23924
LICENSED
PROFESSIONAL ENGINEER
5/11/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/1/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
CH	MRE	BEH

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	1/10/22	ISSUED FOR REVIEW
0	5/11/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149542.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

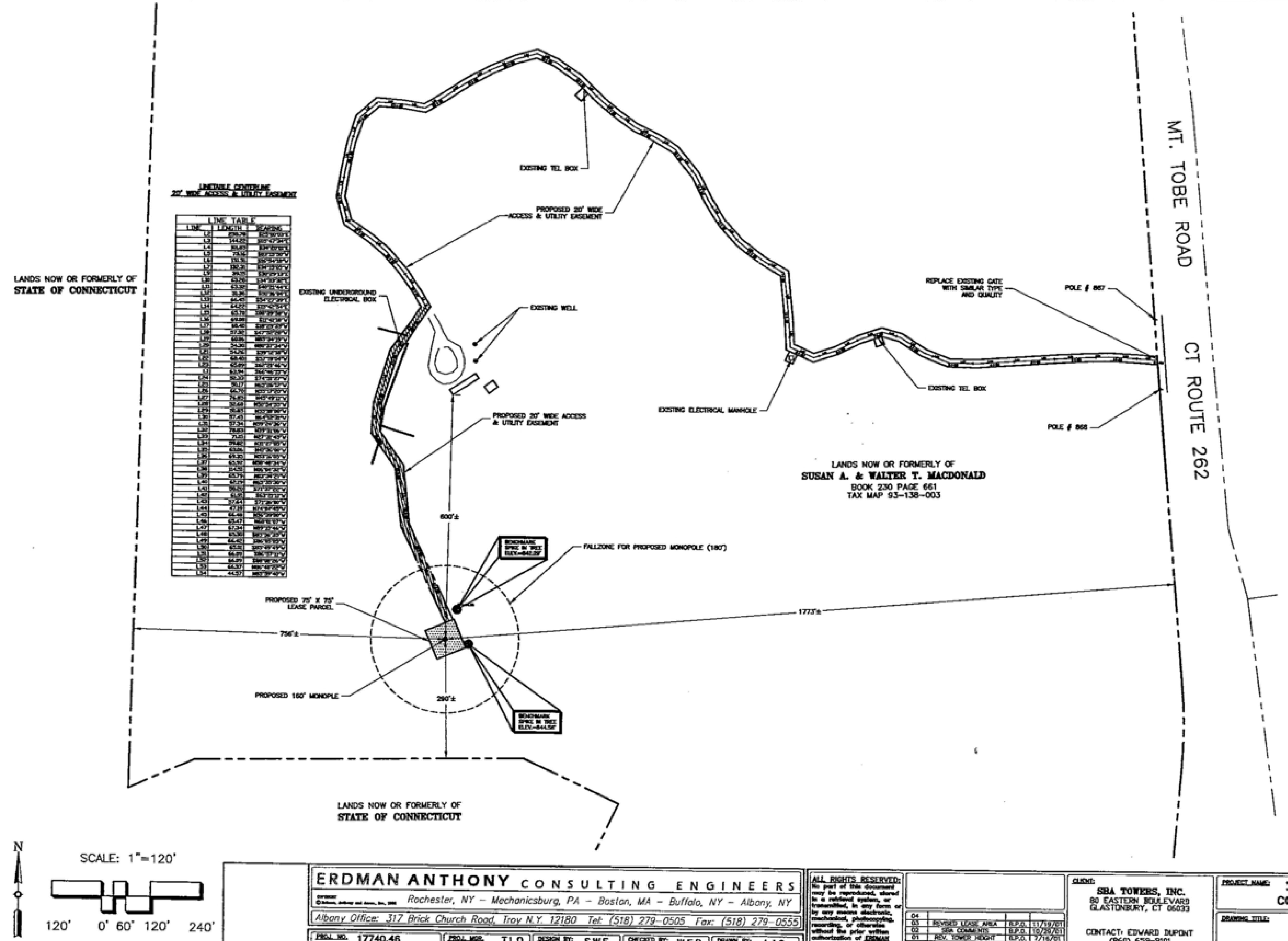
BOHVN00179A
170 MOUNT TOBE ROAD
PLYMOUTH, CT 06782

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1



10125-059
Ct 3538-S

RTP FINAL

LINETABLE CENTERLINE
20' WIDE ACCESS & UTILITY EASEMENT

LINE TABLE		
LINE	LENGTH	BEARING
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L4	[illegible]	[illegible]
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L7	[illegible]	[illegible]
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L11	[illegible]	[illegible]
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L52	[illegible]	[illegible]
L53	[illegible]	[illegible]
L54	[illegible]	[illegible]

LEGEND

PROPOSED		EXISTING
	PROPERTY LINE	
	EASEMENT LINE	
	SETBACK	
	TOWER YARD AREA/ LEASE AREA	
	ACCESS DRIVE/ ACCESS & UTILITY EASEMENT	
744	CONTOUR	744
OHU	OVERHEAD UTILITY	ohu
	TREE >8"DBH	
	TREELINE	
	STONEWALL	
	FENCE LINE	x x x
	DRAINAGE CULVERT	
	INLAND WETLAND BOUNDARY	WET

SBA PROJECT NUMBER 10125-059
SBA PROJECT NAME SO.PLYMOUTH

REDUCED DRAWING - HALF SCALE

PROPERTY INFORMATION
1. PROPERTY ADDRESS
170 MOUNT TOBE ROAD
PLYMOUTH, CT. 06782
2. PROPERTY OWNER
SUSAN A. & WALTER T. MACDONALD
157 BRUSHY HILL ROAD
PLYMOUTH, CT. 06782
DEED: VOLUME 230, PAGE 661
2. ASSESSORS DATA: MAP 93-138-003
3. ZONE RA-1 (RESIDENCE DISTRICT)
4. FEMA FIRM MAP: ZONE N/A
5. PROPERTY SIZE 165.24± ACRES

NOTES:
1. THIS SURVEY AND MAP HAS BEEN PREPARED IN ACCORDANCE WITH SECTIONS 20-300b-1 thru 20-300b-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES – "MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ENDORSED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. IT IS AN EASEMENT MAP, BASED ON AN INDEPENDENT RESURVEY CONFORMING TO A-2 HORIZONTAL ACCURACY AND T-2 TOPOGRAPHIC ACCURACY AND INTENDED TO DEPICT AND NOTE THE POSITION OF A PROPOSED LEASE PARCEL WITH RESPECT TO EXISTING STRUCTURES ON THE PARCEL.
2. NORTH IS BASED ON GRID NORTH CT NAD-27.
3. ELEVATIONS ARE BASED ON NAVD 88.
4. BASE MAPPING PREPARED BY FIELD SURVEY OCTOBER 25, 2000.
5. UNDERGROUND UTILITIES SHOWN FROM ACTUAL FIELD LOCATION IF POSSIBLE. THEIR EXACT LOCATION MAY DIFFER FROM THAT SHOWN AND OTHERS MAY EXIST.
6. SUBJECT TO AN ACCURATE UP-TO-DATE ABSTRACT OF TITLE.
7. SUBJECT TO ALL RIGHTS, EASEMENTS, COVENANTS OR RESTRICTIONS OF RECORD.

"TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON"

DAVID E. DICKINSON, L.S. REG. NO. 17384

SURVEYORS CERTIFICATION

ERDMAN ANTHONY CONSULTING ENGINEERS
Rochester, NY – Mechanicsburg, PA – Boston, MA – Buffalo, NY – Albany, NY
Albany Office: 317 Brick Church Road, Troy N.Y. 12180 Tel: (518) 279-0505 Fax: (518) 279-0555

PROJ. NO. 17740.46 | PROJ. MGR. T.L.O. | DESIGN BY: S.W.E. | CHECKED BY: W.E.B. | DRAWN BY: A.J.C.

REV.	DESCRIPTION	BY	DATE
04			
03	REVISED LEASE AREA	R.P.D.	11/19/01
02	SBA COMMENTS	R.P.D.	10/26/01
01	REV. TOWER HEIGHT	R.P.D.	7/16/01

CLIENT:
SBA TOWERS, INC.
80 EASTERN BOULEVARD
GLASTONBURY, CT 06033
CONTACT: EDWARD DUPONT
(860) 659-9101

PROJECT NAME: SOUTH PLYMOUTH COMMUNICATIONS FACILITY

DRAWING TITLE: SITE SURVEY

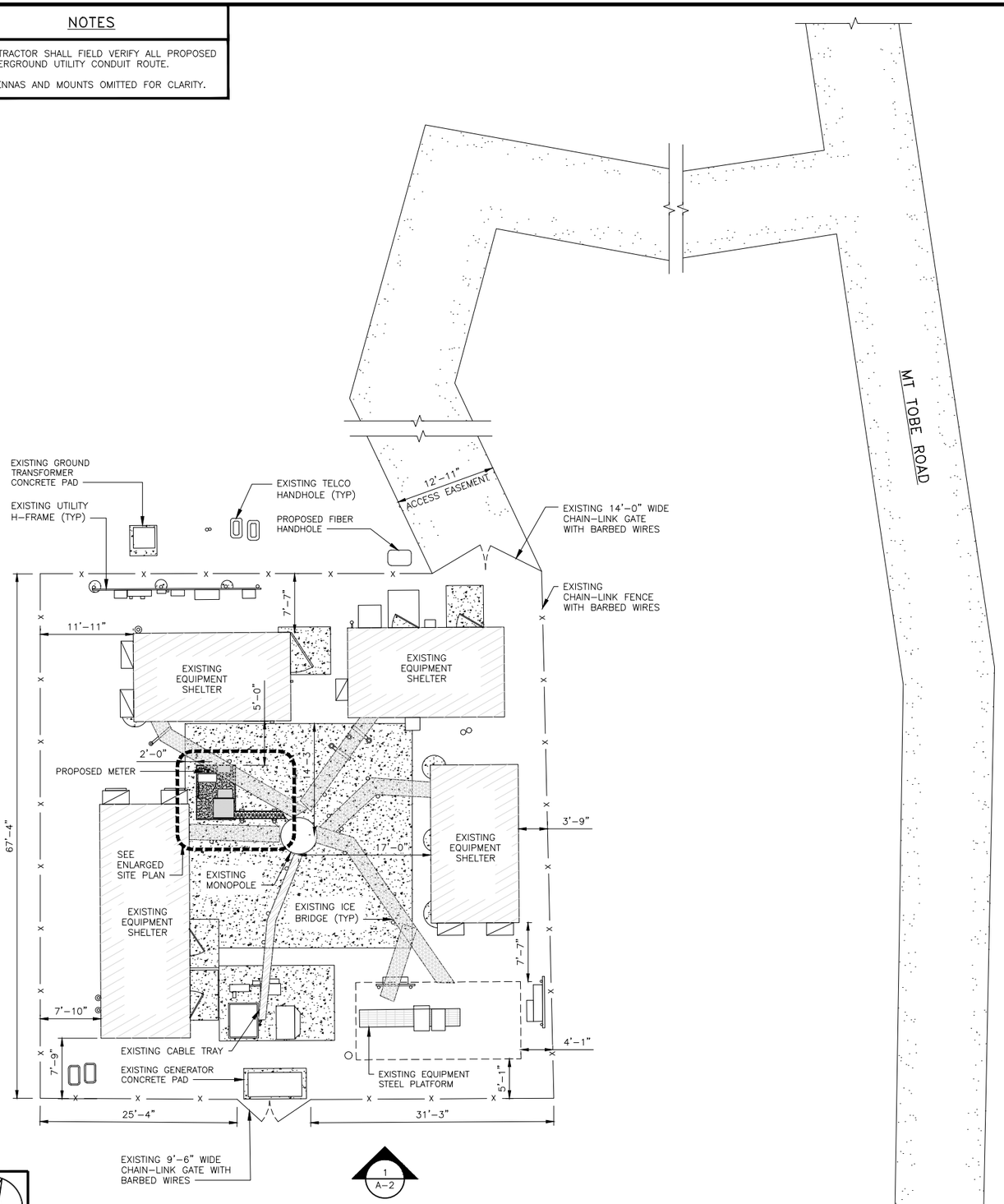
DATE: 3/16/00

SHEET NO. 2 of 8

DRAWING NO. S-1

NOTES

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



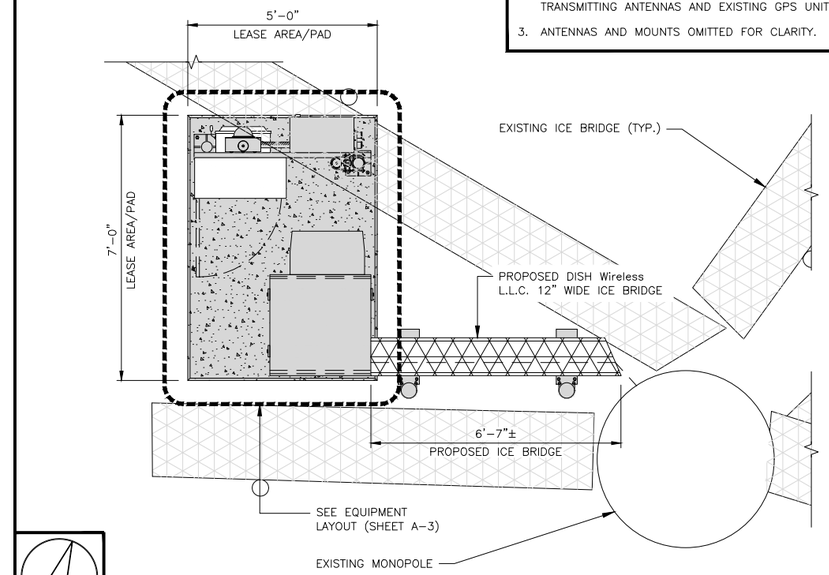
OVERALL SITE PLAN

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

1

NOTES

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



ENLARGED SITE PLAN

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

2

NOT USED

NO SCALE

3

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

SBA
8051 CONGRESS AVENUE
BOCA RATON, FL 33487

B+T GRP
1717 S. BOULDER
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PH: (918) 587-4630
www.btgrp.com

STATE OF CONNECTICUT
CHAD E. TYLER
No. 23924
LICENSED
PROFESSIONAL ENGINEER
5/11/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/1/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
CH	MRE	BEH

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	1/10/22	ISSUED FOR REVIEW
0	5/11/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149542.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00179A
170 MOUNT TOBE ROAD
PLYMOUTH, CT 06782

SHEET TITLE

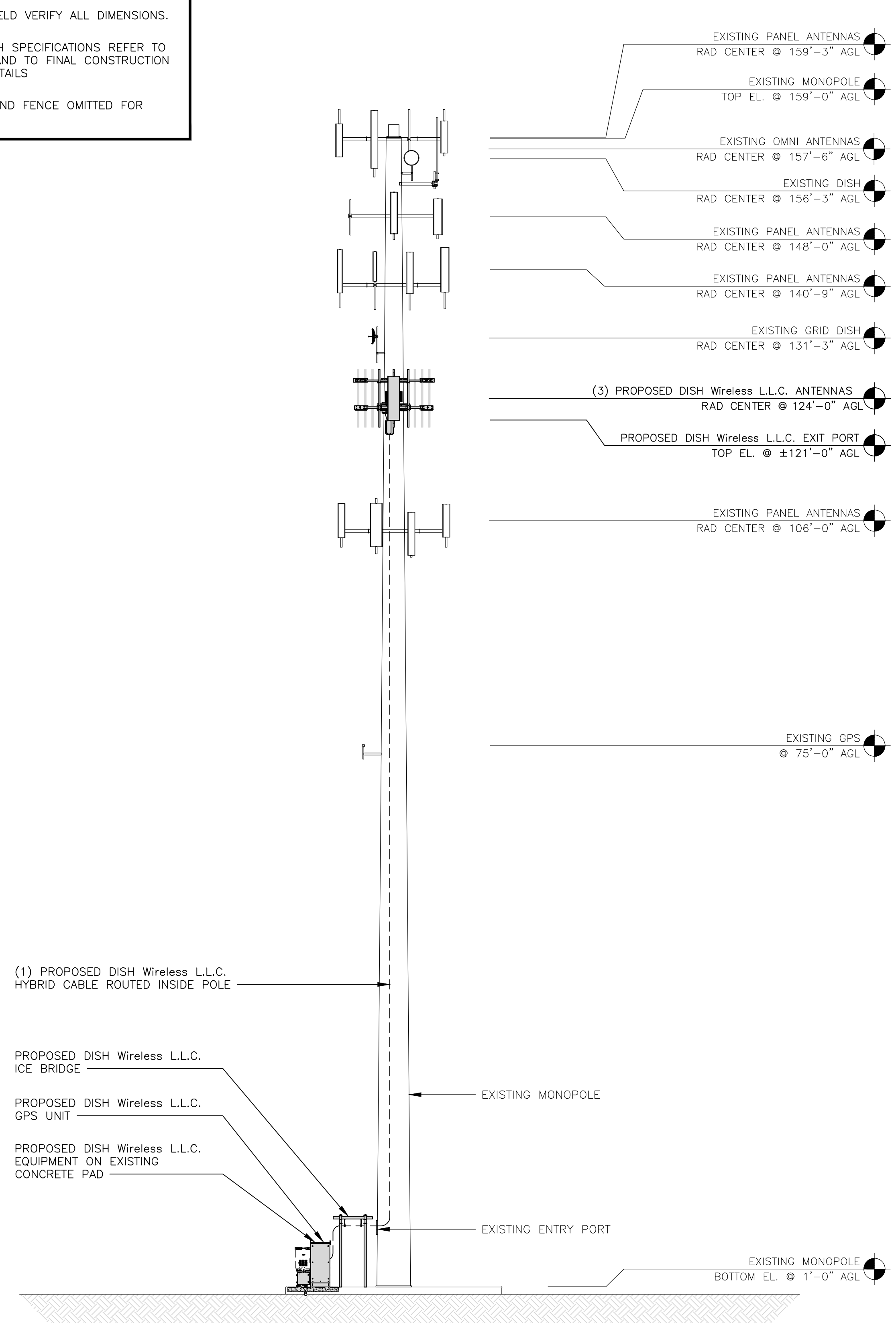
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER

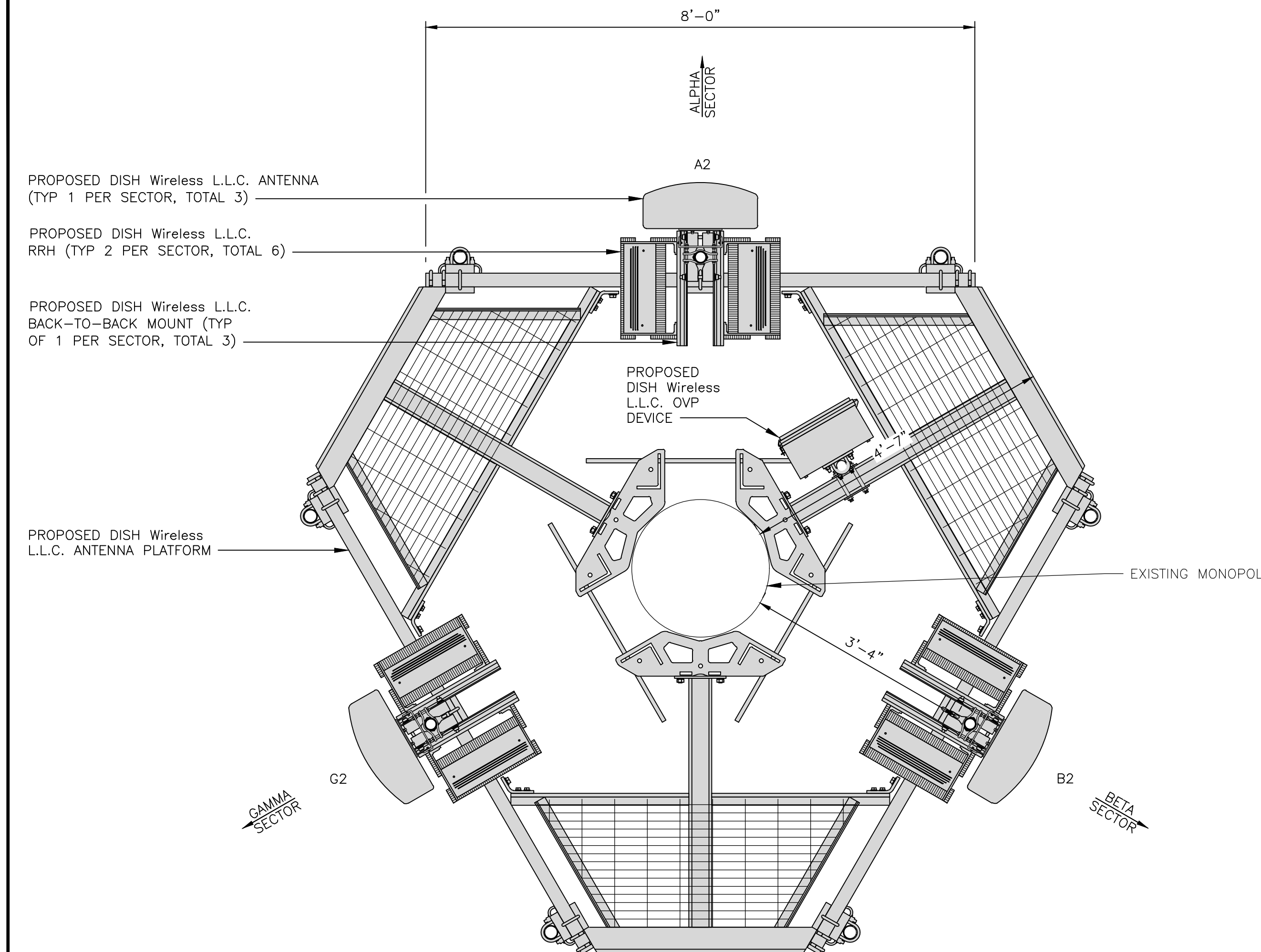
A-1

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 SOUTH ELEVATION — 12' 8' 4' 0 10' 20' — 3/32"=1'-0" — 1



N

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

SECTOR POS.	ANTENNA: EXISTING OR PROPOSED	ANTENNA: MANUFACTURER – MODEL NUMBER	ANTENNA: TECH	ANTENNA: AZIMUTH	ANTENNA: RAD CENTER	TRANSMISSION CABLE: FEED LINE TYPE AND LENGTH	RRH: MANUFACTURER – MODEL NUMBER	RRH: TECH	RRH: POS.	OVP: MANUFACTURER MODEL
A1	--	--	--	--	--	(1) HIGH-CAPACITY HYBRID CABLE (160' LONG)	FUJITSU-TA08025-B605	5G	A2	(1) RAYCAP RDIDC-9181-PF-48
A2	PROPOSED	JMA WIRELESS-MX08FRO665-21	5G	0°	124'-0"		FUJITSU-TA08025-B604	5G	A2	
A3	--	--	--	--	--		--	--	--	
B1	--	--	--	--	--	SHARED W/ALPHA	FUJITSU-TA08025-B605	5G	B2	SHARED W/ALPHA
B2	PROPOSED	JMA WIRELESS-MX08FRO665-21	5G	120°	124'-0"		FUJITSU-TA08025-B604	5G	B2	
B3	--	--	--	--	--		--	--	--	
G1	--	--	--	--	--	SHARED W/ALPHA	FUJITSU-TA08025-B605	5G	G2	SHARED W/ALPHA
G2	PROPOSED	JMA WIRELESS-MX08FRO665-21	5G	240°	124'-0"		FUJITSU-TA08025-B604	5G	G2	
G3	--	--	--	--	--		--	--	--	

NOTES

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

ANTENNA SCHEDULE — NO SCALE — 3

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BOCA RATON, FL 33487

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SUITE 300
TULSA, OK 74119
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STATE OF CONNECTICUT — CHAD TUTTLE — No. 23924 — LICENSED PROFESSIONAL ENGINEER
5/11/22
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/1/23

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	MRE	BEH

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

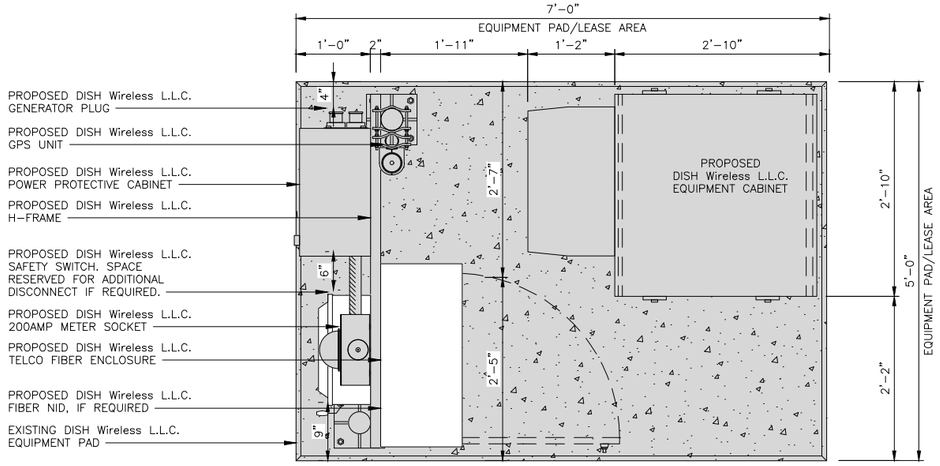
REV	DATE	DESCRIPTION
A	1/10/22	ISSUED FOR REVIEW
0	5/11/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149542.001.01

DISH Wireless L.L.C. PROJECT INFORMATION
BOHVN00179A
170 MOUNT TOBE ROAD
PLYMOUTH, CT 06782

SHEET TITLE
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

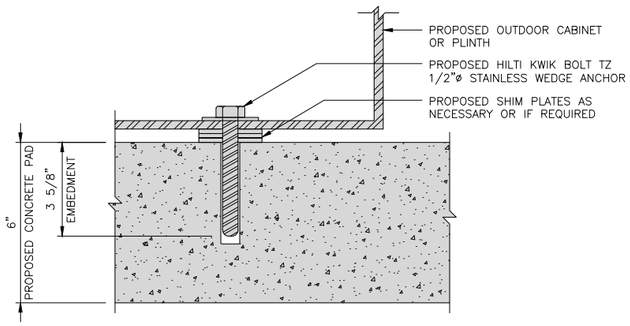
SHEET NUMBER
A-2



PLATFORM EQUIPMENT PLAN

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

1

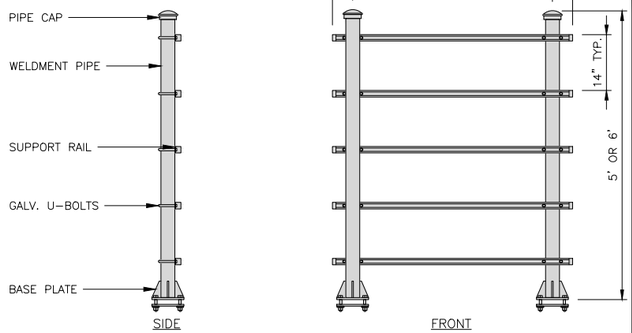


TYPICAL OUTDOOR EQUIPMENT TO CONCRETE SLAB ANCHORAGE

NO SCALE

2

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

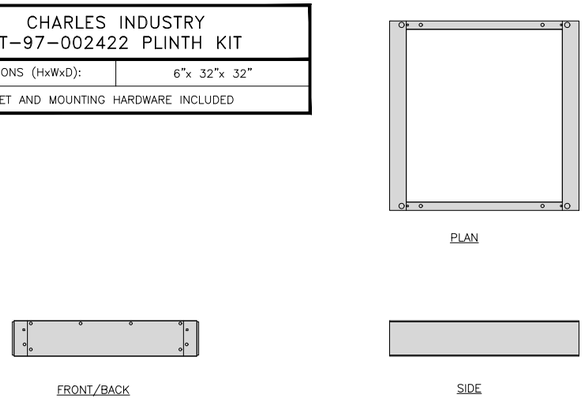


H-FRAME DETAIL

NO SCALE

3

CHARLES INDUSTRY LT-97-002422 PLINTH KIT	
DIMENSIONS (HxWxD):	6"x 32"x 32"
NOTE: GASKET AND MOUNTING HARDWARE INCLUDED	



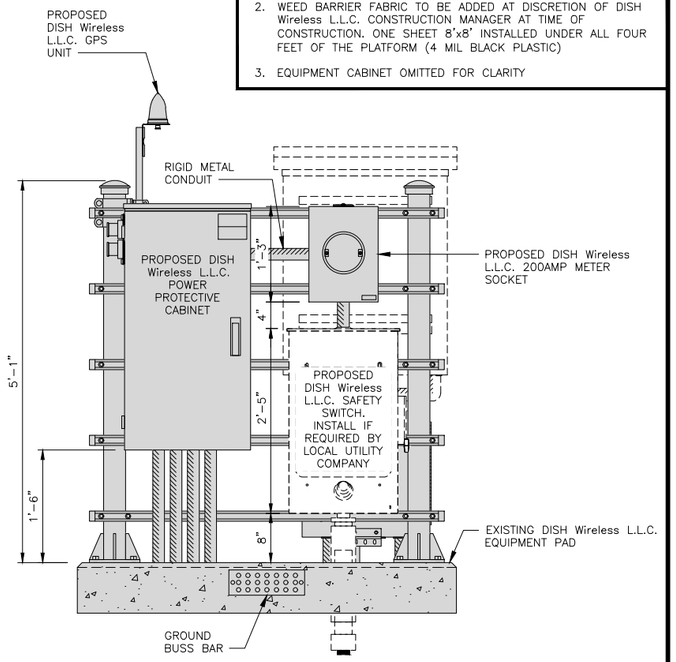
PLINTH DETAIL

NO SCALE

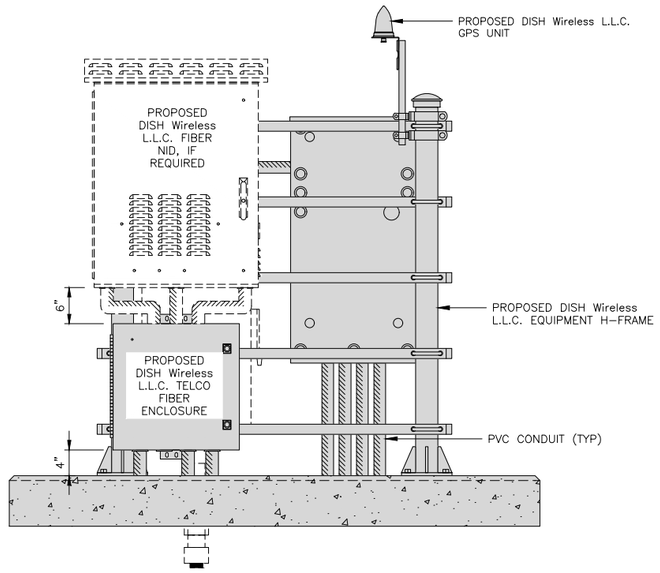
4

NOTES

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



FRONT ELEVATION



BACK ELEVATION

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

H-FRAME EQUIPMENT ELEVATION

5

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149542.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00179A
170 MOUNT TOBE ROAD
PLYMOUTH, CT 06782

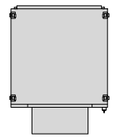
SHEET TITLE

EQUIPMENT PLATFORM AND H-FRAME DETAILS

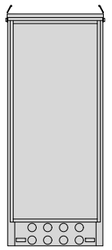
SHEET NUMBER

A-3

ENERSYS HVAC 2000005995	
DIMENSIONS (HxWxD)	73"x30"x32"
POWER SYSTEM	-48V ALPHA/600A
HVAC	600W
TOTAL WEIGHT (EMPTY)	371 lbs



PLAN



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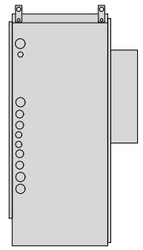
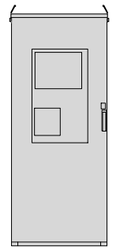


SIDE

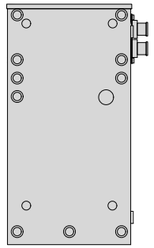


FRONT

CABINET DETAIL — NO SCALE — 1

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

TOP



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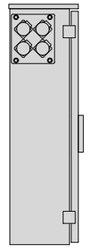

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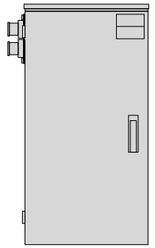
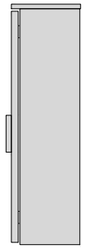


FRONT

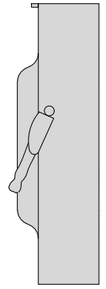


SIDE

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

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

TOP



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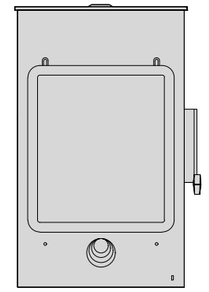
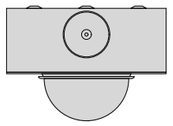


FRONT

SAFETY SWITCH DETAIL — NO SCALE — 3

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



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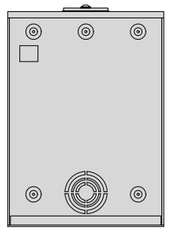

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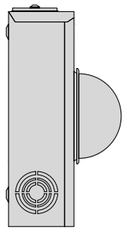
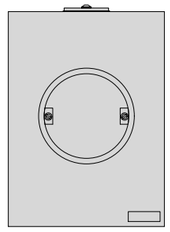


SIDE

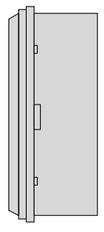


FRONT

METER BANK DETAIL — NO SCALE — 4

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

TOP



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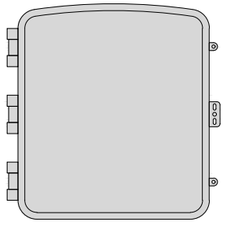
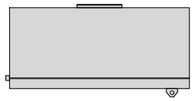


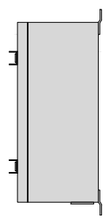
FRONT

FIBER NID ENCLOSURE DETAIL — NO SCALE — 5

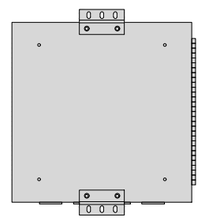
CHARLES CFIT-PF2020DSH1 FIBER TELCO ENCLOSURE	
ENCLOSURE DIMS (HxWxD)	20"x20"x9"
ENCLOSURE WEIGHT	20 lbs
MOUNTING	WALL
COMPLIANCE	TYPE 4



FRONT



SIDE



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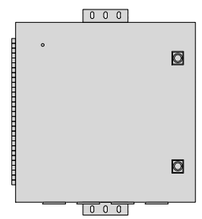
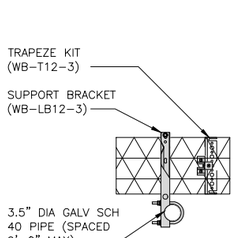


FRONT

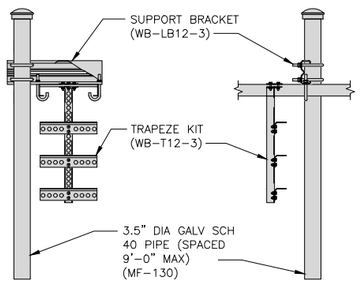
FIBER TELCO ENCLOSURE DETAIL — NO SCALE — 6

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

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



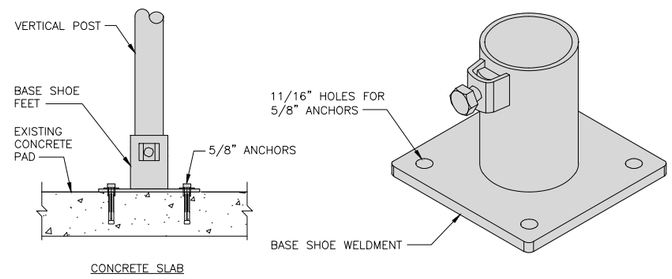
PLAN



FRONT SIDE

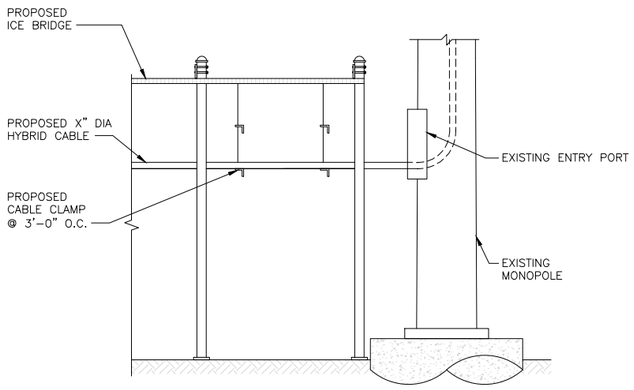
ICE BRIDGE DETAIL — NO SCALE — 7

SITEPRO1 BSF35 BASE SHOE FEET	
DIMENSIONS (HxWxL)	8"x8"x1/2"
WEIGHT	15.0 LBS
POST SIZE:	2-7/8" OR 3-1/2"



CONCRETE SLAB

ICE BRIDGE PIPE MOUNT DETAIL — NO SCALE — 8



HYBRID CABLE RUN — NO SCALE — 9

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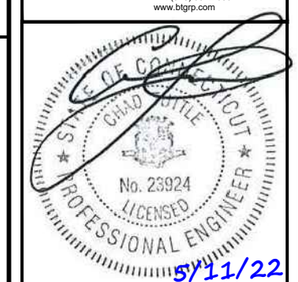

5/11/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/1/23

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CH	MRE	BEH

RFDS REV #: 1.0

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00179A
170 MOUNT TOBE ROAD
PLYMOUTH, CT 06782

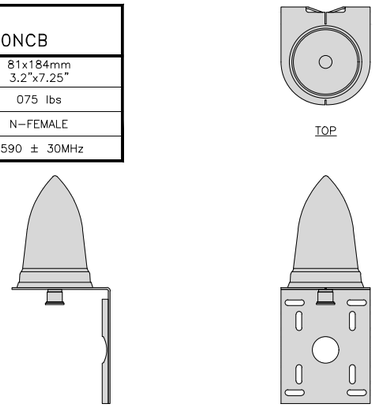
SHEET TITLE

EQUIPMENT DETAILS

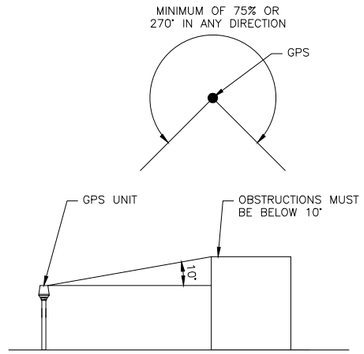
SHEET NUMBER

A-4

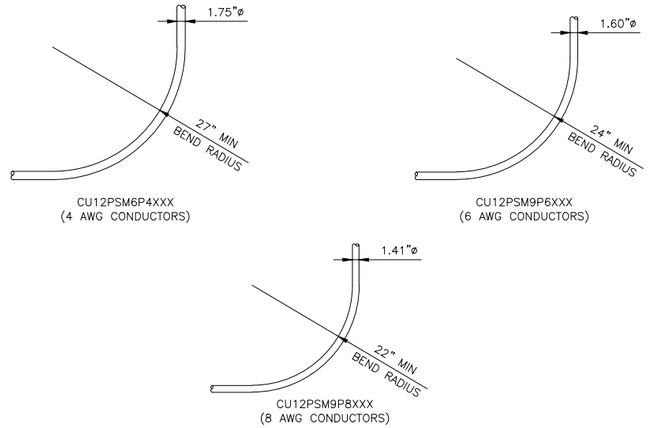
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



GPS DETAIL | NO SCALE | 1



GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 2



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

NOT USED | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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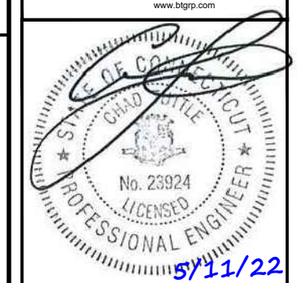

5/11/22

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PROJECT INFORMATION

BOHVN00179A
170 MOUNT TOBE ROAD
PLYMOUTH, CT 06782

SHEET TITLE

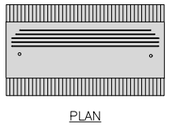
EQUIPMENT DETAILS

SHEET NUMBER

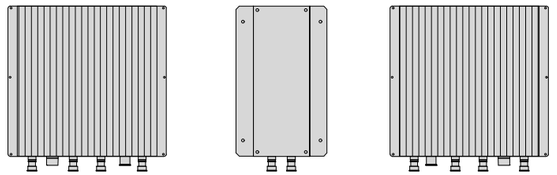
A-5

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

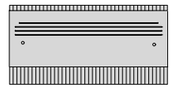


BACK SIDE FRONT

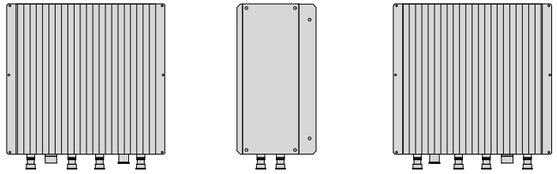
RRH DETAIL | NO SCALE | 1

FUJITSU DUAL BAND TA08025-B604

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



PLAN



BACK SIDE FRONT

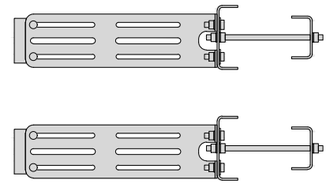
RRH DETAIL | NO SCALE | 2

COMMSCOPE RR-FA2 LARGE STABILIZER

DIMENSIONS (HxWxD)	16.4"x8.5"x18"
WEIGHT	39.2 lbs

DESIGN NOTES:
MOUNT WILL FIT LEGS UP TO:
- 5.6" ROUND
- 6.0" 60° ANGLE
- 4.5" 90° ANGLE

PLAN



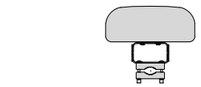
SIDE

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

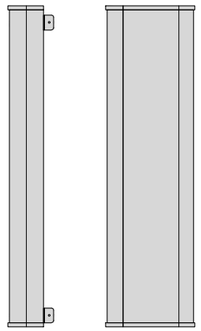
RRH MOUNT DETAIL | NO SCALE | 3

JMA MX08FRO665-21

DIMENSIONS (HxWxD)	72"x20.0"x8.0"
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE
WEIGHT	64.5 lbs
WEIGHT WITH BRACKETS	82.5 lbs



PLAN



SIDE FRONT

ANTENNA DETAIL | NO SCALE | 4

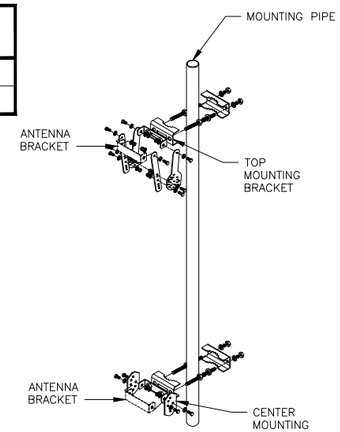
NOT USED | NO SCALE | 5

JMA ANTENNA MOUNT BRACKET #91900318

TOTAL WEIGHT (WITH BRACKETS)	18 lbs (8.18 Kg)
POLE DIAMETER RANGE	2.5" TO 4.5"

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

ANTENNA BRACKET NOT PART OF KIT



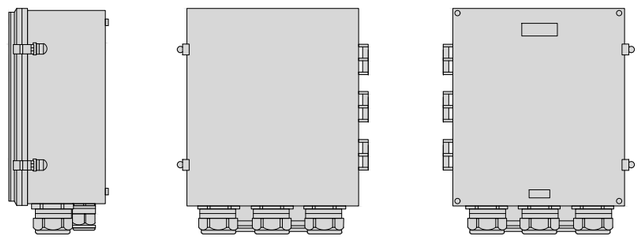
NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

ANTENNA BRACKET DETAIL | NO SCALE | 6

RAYCAP RDIDC-9181-PF-48 DC SURGE PROTECTION (OVP)

DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 LBS

PLAN



SIDE BACK FRONT

SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 7

COMMSCOPE XP-2040 CROSSOVER PLATE

DIMENSIONS (HxW)	10"x12"
WEIGHT	11 lbs

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

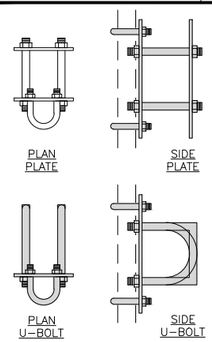
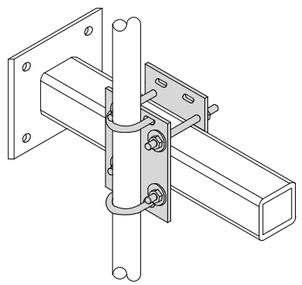


PLATE PLATE U-BOLT U-BOLT

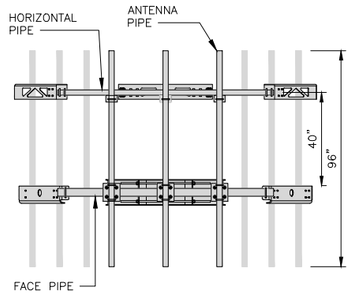


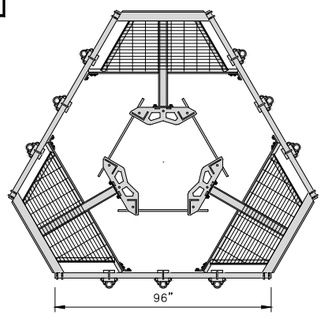
RRH/OVP MOUNT DETAIL | NO SCALE | 8

COMMSCOPE MC-PK8-DSH

FACE WIDTH	96"
WEIGHT	1373.08 lbs
NOTE: 15" TO 38" O.D.	

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





ANTENNA PLATFORM DETAIL | NO SCALE | 9

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SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
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STATE OF CONNECTICUT CHAD HUTTLE No. 23924 LICENSED PROFESSIONAL ENGINEER

5/11/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/1/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
CH	MRE	BEH

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

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A	1/10/22	ISSUED FOR REVIEW
0	5/11/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149542.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00179A
170 MOUNT TOBE ROAD
PLYMOUTH, CT 06782

SHEET TITLE

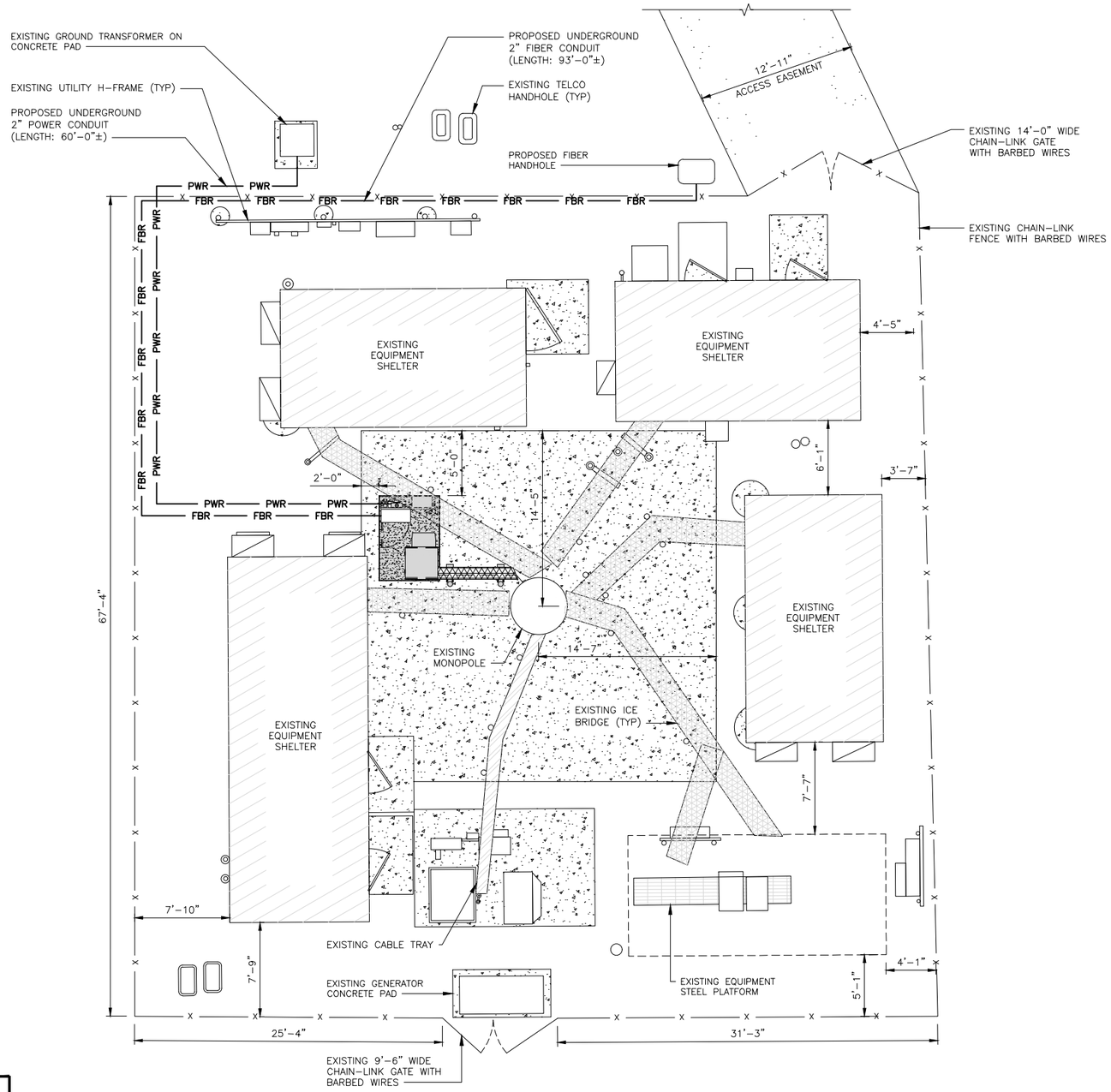
EQUIPMENT DETAILS

SHEET NUMBER

A-6

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
3. THE GROUND LEASE PROVIDES BROAD/BLANKET UTILITY RIGHTS. "PWR" AND "FBR" PATH DEPICTED ON A-1 AND E-1 ARE BASED ON BEST AVAILABLE INFORMATION INCLUDING BUT NOT LIMITED TO FIELD VERIFICATION. PRIOR PROJECT DOCUMENTATION AND OTHER REAL PROPERTY RIGHTS DOCUMENTS. WHEN INSTALLING THE UTILITIES PLEASE LOCATE AND FOLLOW EXISTING PATH. IF EXISTING PATH IS NOT AN OPTION, PLEASE NOTIFY TOWER OWNER AS FURTHER COORDINATION MAY BE NEEDED.



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

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LITTLETON, CO 80120

SBA
8051 CONGRESS AVENUE
BOCA RATON, FL 33487

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1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
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CHAD E. TYLE
No. 23924
LICENSED
PROFESSIONAL ENGINEER
5/11/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/1/23

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CH	MRE	BEH

RFDS REV #: 1.0

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00179A
170 MOUNT TOBE ROAD
PLYMOUTH, CT 06782

SHEET TITLE

ELECTRICAL/FIBER ROUTE PLAN AND NOTES

SHEET NUMBER

E-1

UTILITY ROUTE PLAN

6' 4' 2' 0 5' 10'
3/16"=1'-0"

1

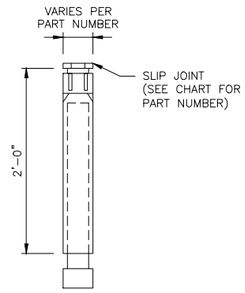
ELECTRICAL NOTES

NO SCALE

2

CARLON EXPANSION FITTINGS

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

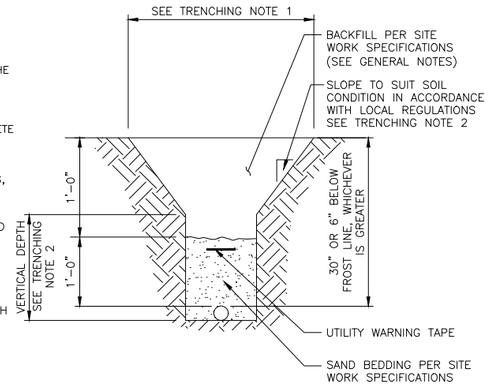


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

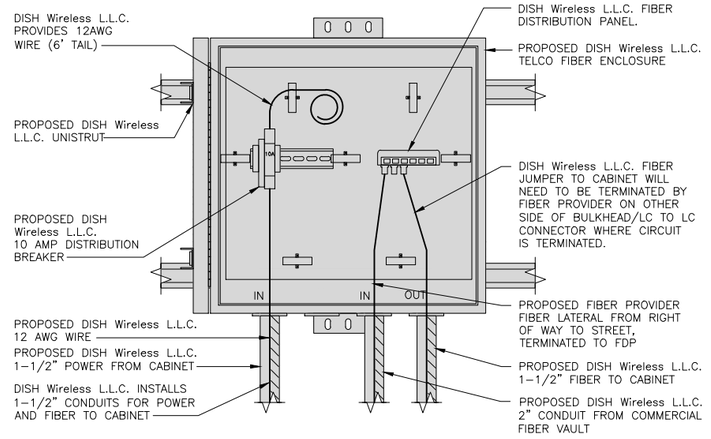
EXPANSION JOINT DETAIL | NO SCALE | 1

TRENCHING NOTES

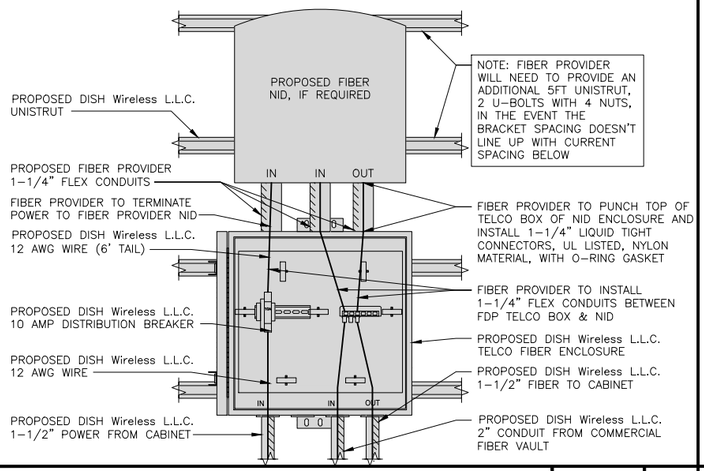
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT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



TYPICAL UNDERGROUND TRENCH DETAIL | NO SCALE | 2



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



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

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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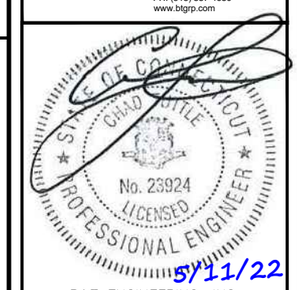

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DISH Wireless L.L.C.
PROJECT INFORMATION

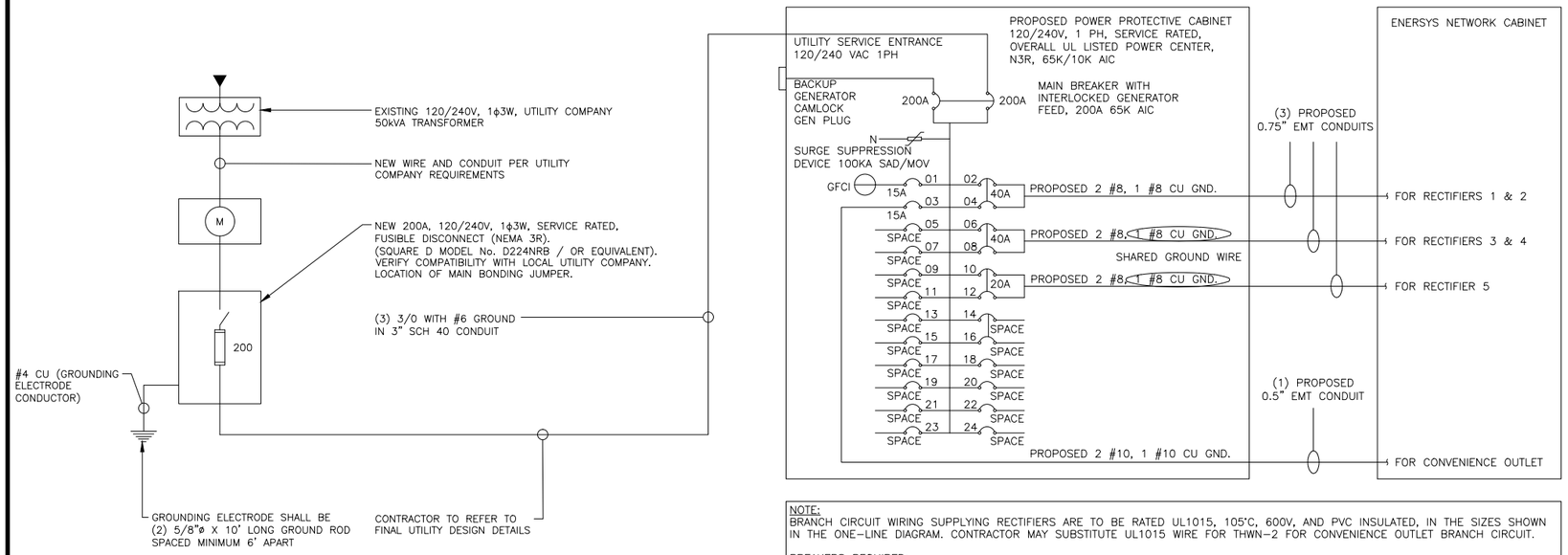
BOHVN00179A
170 MOUNT TOBE ROAD
PLYMOUTH, CT 06782

SHEET TITLE

ELECTRICAL DETAILS

SHEET NUMBER

E-2



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

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

NOTES

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

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

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

CABINET CONVENIENCE OUTLET CONDUCTORS (1 CONDUIT): USING THWN-2, CU.

#10 – 0.0211 SQ. IN X 2 =	0.0422 SQ. IN
#10 – 0.0211 SQ. IN X 1 =	0.0211 SQ. IN <GROUND
TOTAL =	0.0633 SQ. IN

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

RECTIFIER CONDUCTORS (3 CONDUITS): USING UL1015, CU.

#8 – 0.0552 SQ. IN X 2 =	0.1103 SQ. IN
#8 – 0.0131 SQ. IN X 1 =	0.0131 SQ. IN <BARE GROUND
TOTAL =	0.1234 SQ. IN

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

PPC FEED CONDUCTORS (1 CONDUIT): USING THWN, CU.

3/0 – 0.2679 SQ. IN X 3 =	0.8037 SQ. IN
#6 – 0.0507 SQ. IN X 1 =	0.0507 SQ. IN <GROUND
TOTAL =	0.8544 SQ. IN

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

PPC ONE-LINE DIAGRAM

NO SCALE | 1

PROPOSED ENERSYS PANEL SCHEDULE

LOAD SERVED	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	LOAD SERVED
PPC GFCI OUTLET	180		15A	1	A	2	40A	3840		ENERSYS ALPHA CORDEX RECTIFIERS 1 & 2
ENERSYS GFCI OUTLET		180	15A	3	B	4			3840	
-SPACE-				5	A	6	40A	3840		ENERSYS ALPHA CORDEX RECTIFIER 3 & 4
-SPACE-				7	B	8			3840	
-SPACE-				9	A	10	20A	1920		ENERSYS ALPHA CORDEX RECTIFIER 5
-SPACE-				11	B	12			1920	
-SPACE-				13	A	14				-SPACE-
-SPACE-				15	B	16				-SPACE-
-SPACE-				17	A	18				-SPACE-
-SPACE-				19	B	20				-SPACE-
-SPACE-				21	A	22				-SPACE-
-SPACE-				23	B	24				-SPACE-
VOLTAGE AMPS	180	180						9500	9500	
200A MCB, 1φ, 24 SPACE, 120/240V			L1		L2					
MB RATING: 65,000 AIC			9680		9680		VOLTAGE AMPS			
			81		81		AMPS			
			81				MAX AMPS			
			102				MAX 125%			

PANEL SCHEDULE

NO SCALE | 2

NOT USED

NO SCALE | 3

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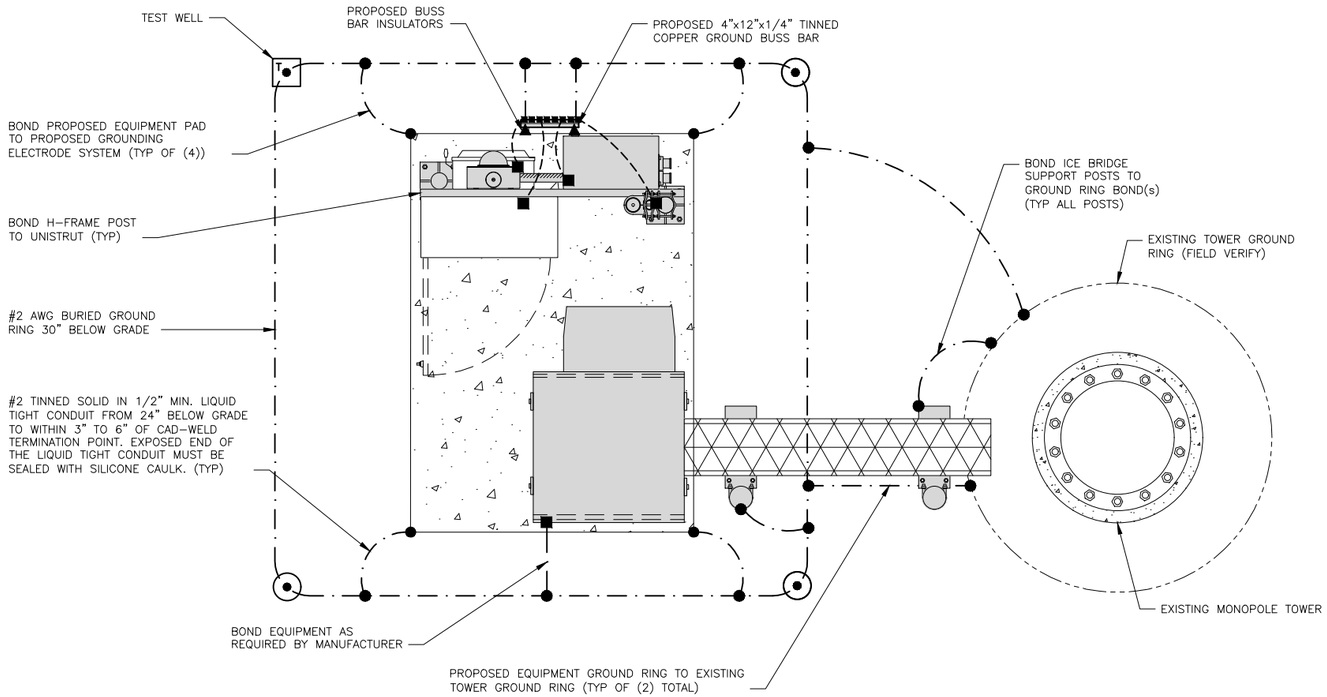
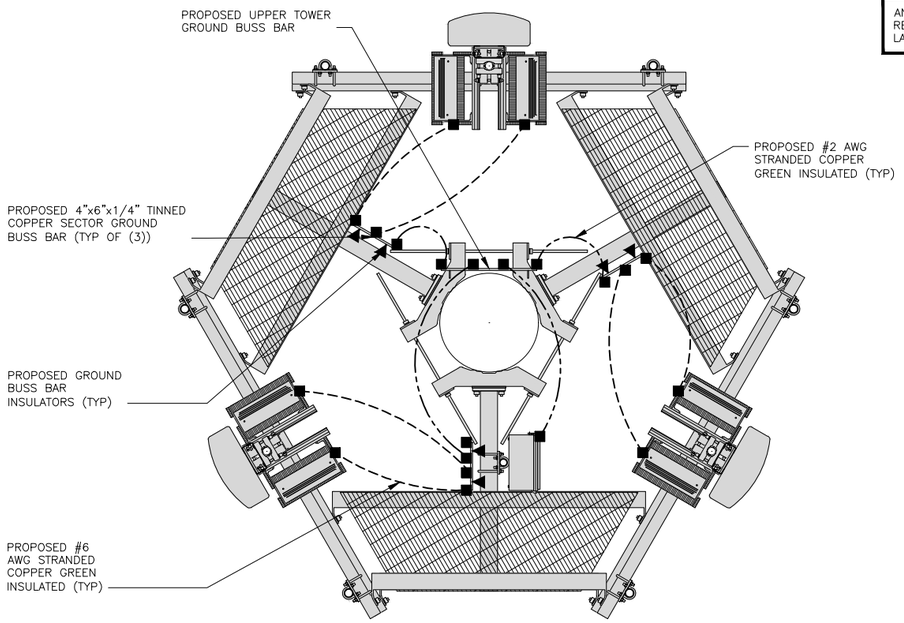
DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00179A
170 MOUNT TOBE ROAD
PLYMOUTH, CT 06782

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

SHEET NUMBER
E-3



TYPICAL EQUIPMENT GROUNDING PLAN | NO SCALE | 1



TYPICAL ANTENNA GROUNDING PLAN | NO SCALE | 2

NOTES

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

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

GROUNDING LEGEND

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

GROUNDING KEY NOTES

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

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

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

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

(E) GROUND ROD: UL LISTED COPPER CLAD STEEL. MINIMUM 1/2" DIAMETER BY EIGHT FEET LONG. GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.

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

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

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

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

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

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

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

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

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

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

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

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

GROUNDING KEY NOTES | NO SCALE | 3

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8051 CONGRESS AVENUE
BOCA RATON, FL 33487

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1717 S. BOULDER
SUITE 300
TULSA, OK 74119
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No. 23924
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PROFESSIONAL ENGINEER
5/11/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/1/23

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0	5/11/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149542.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00179A
170 MOUNT TOBE ROAD
PLYMOUTH, CT 06782

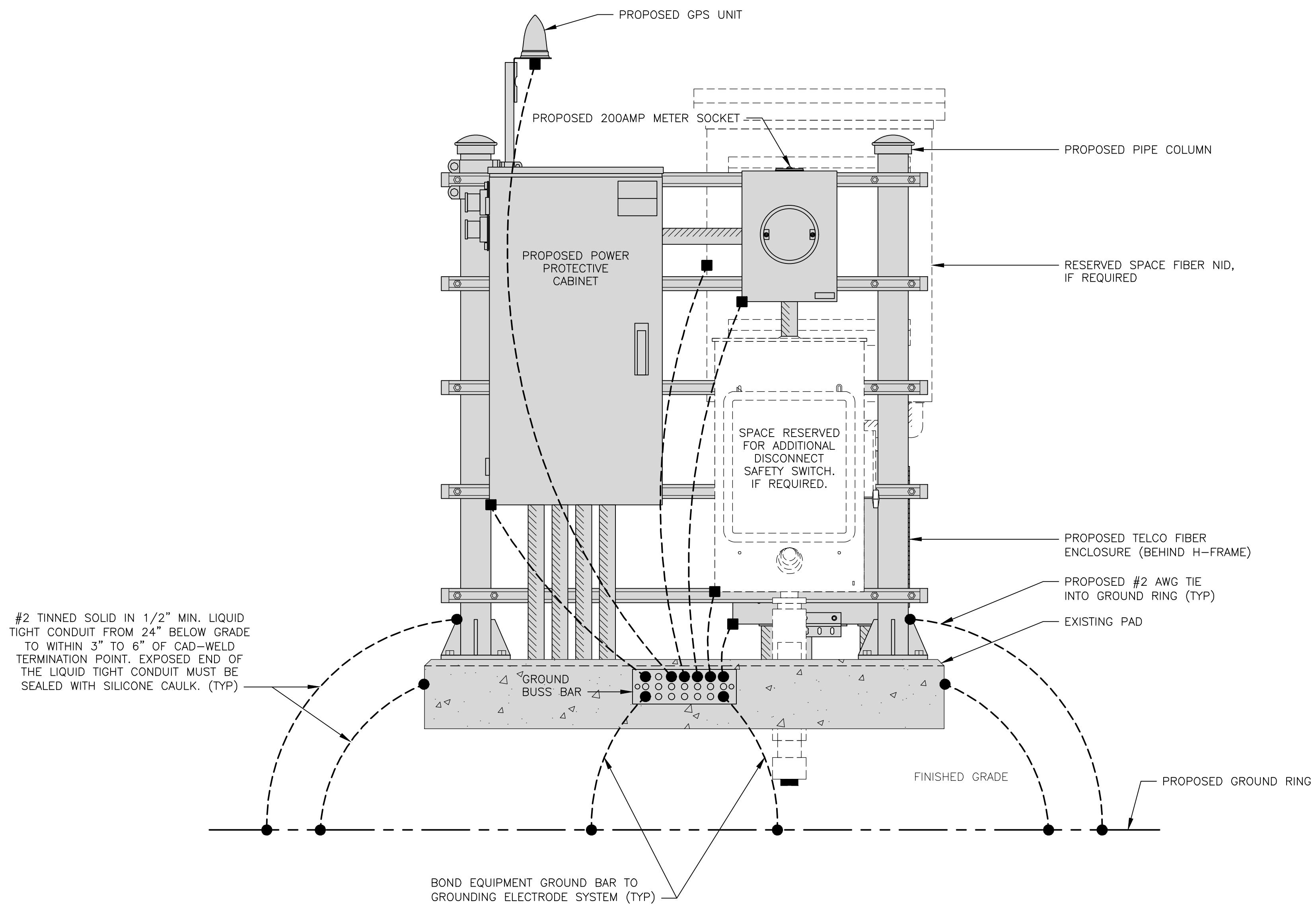
SHEET TITLE

GROUNDING PLANS AND NOTES

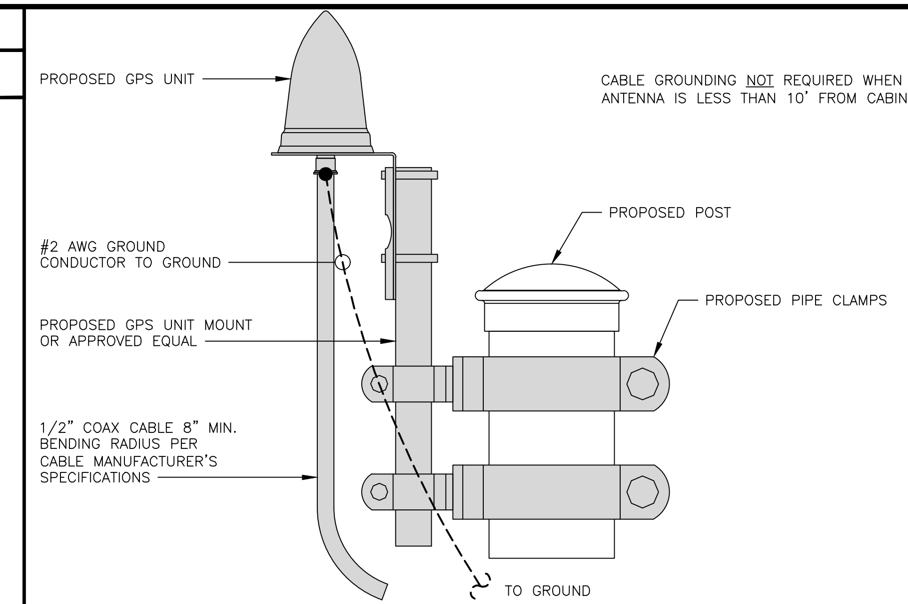
SHEET NUMBER

G-1

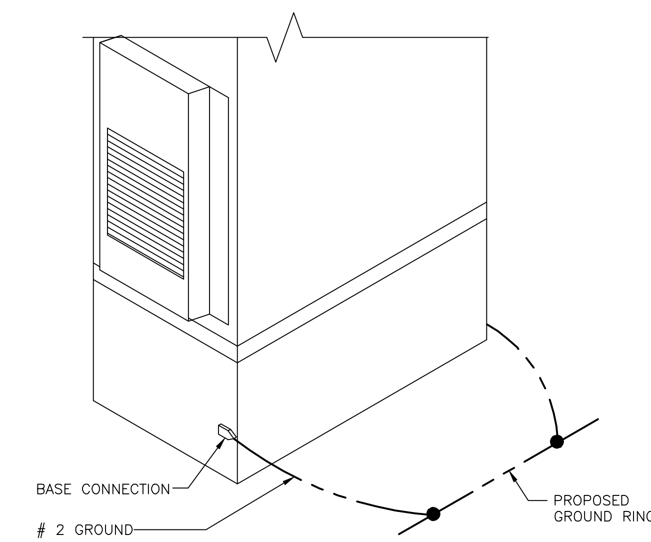
NOTES
EQUIPMENT CABINET OMITTED FOR CLARITY



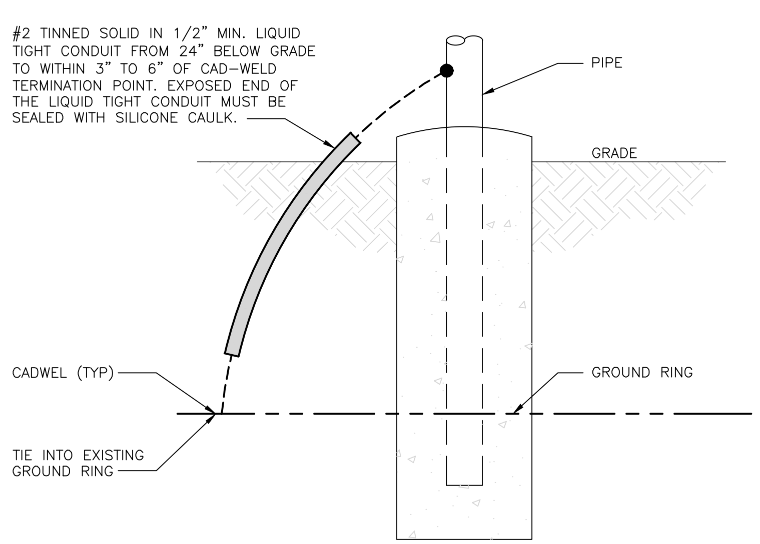
H-FRAME GROUNDING DETAIL — NO SCALE — 1



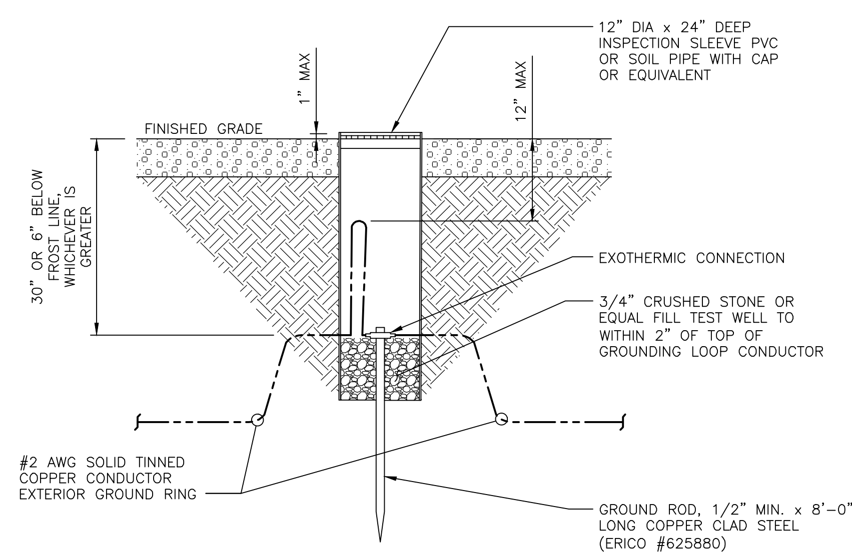
TYPICAL GPS UNIT GROUNDING — NO SCALE — 2



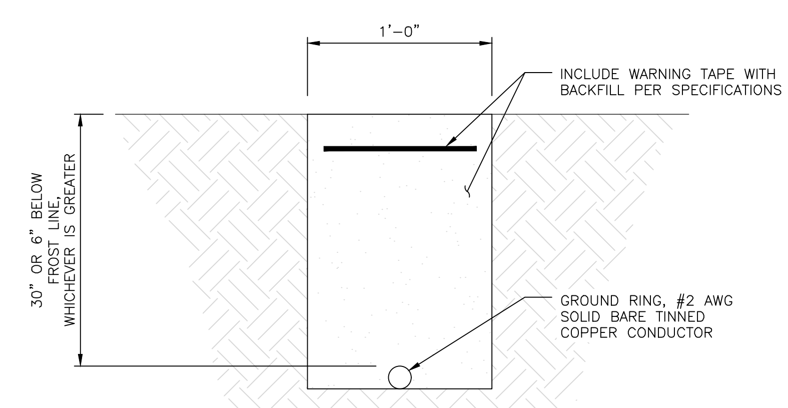
OUTDOOR CABINET GROUNDING — NO SCALE — 3



TRANSITIONING GROUND DETAIL — NO SCALE — 4



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



TYPICAL GROUND RING TRENCH — NO SCALE — 6

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SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
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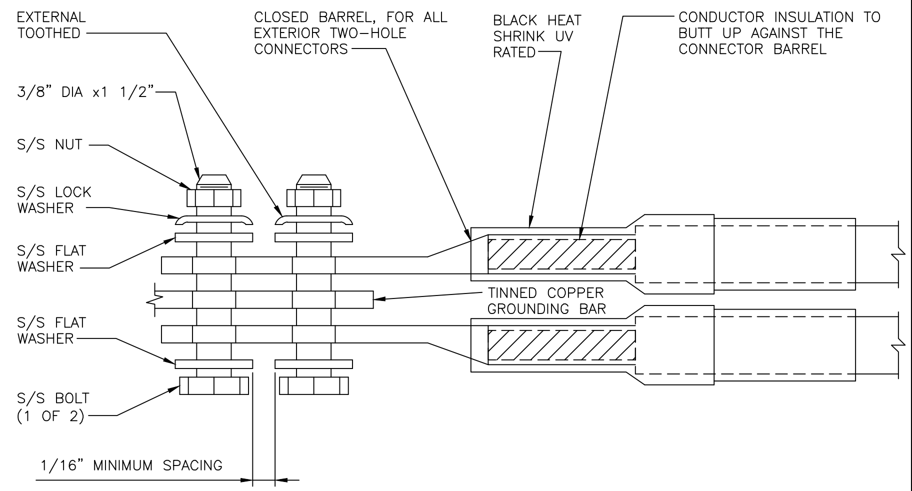
170 MOUNT TOBE ROAD
PLYMOUTH, CT 06782

SHEET TITLE
GROUNDING DETAILS

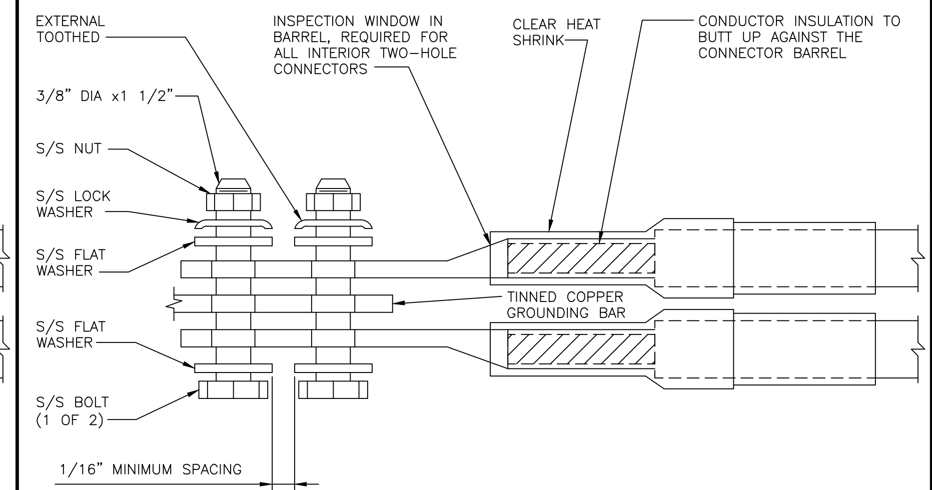
SHEET NUMBER
G-2

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

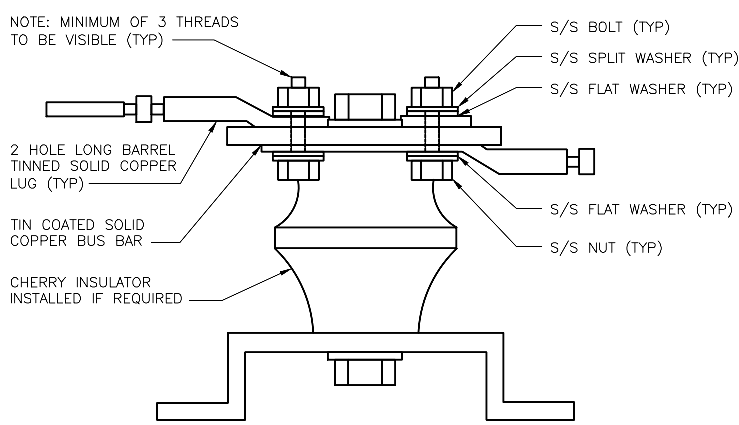
TYPICAL GROUNDING NOTES — NO SCALE — 1



TYPICAL EXTERIOR TWO HOLE LUG — NO SCALE — 2



TYPICAL INTERIOR TWO HOLE LUG — NO SCALE — 3



LUG DETAIL — NO SCALE — 4

NOT USED — NO SCALE — 5

NOT USED — NO SCALE — 6

NOT USED — NO SCALE — 7

NOT USED — NO SCALE — 8

NOT USED — NO SCALE — 9

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PROJECT INFORMATION

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170 MOUNT TOBE ROAD
PLYMOUTH, CT 06782

SHEET TITLE
GROUNDING DETAILS

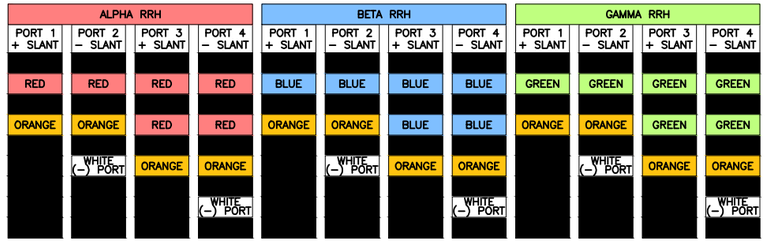
SHEET NUMBER
G-3

HYBRID/DISCREET CABLES

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

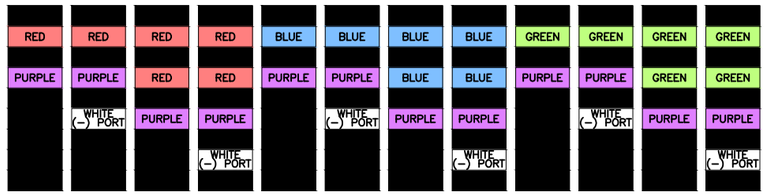
LOW–BAND RRH
(600 MHz N71 BASEBAND) +
(850 MHz N26 BAND) +
(700 MHz N29 BAND) – OPTIONAL PER MARKET

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



MID–BAND RRH
(AWS BANDS N66+N70)

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



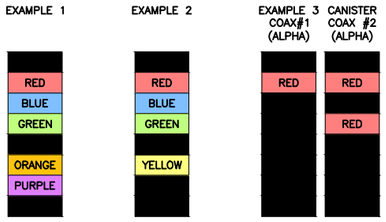
HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED ALONG WITH FREQUENCY BANDS.

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

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

EXAMPLE 3 – MAIN COAX WITH GROUND MOUNTED RRHs.



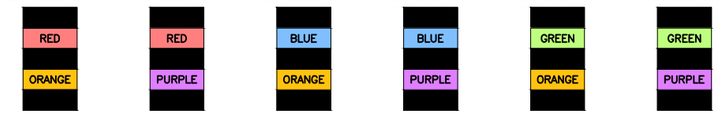
CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RD DETAILS. FINAL RFDS IS IN NEXSYSONE.

FIBER JUMPERS TO RRHs

LOW–BAND HHR FIBER CABLES HAVE SECTOR STRIPE ONLY.

POWER CABLES TO RRHs

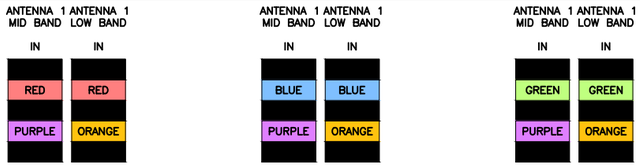
LOW–BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY



RET MOTORS AT ANTENNAS

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

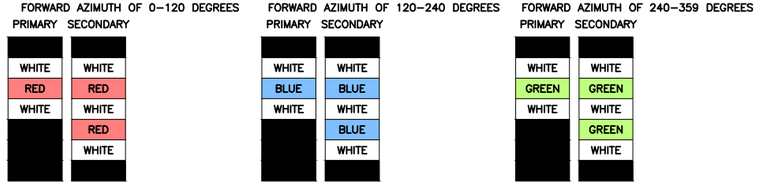
SEPARATE RET CABLES ARE USED WHEN ANTENNA PORTS PROVIDE INPUTS FOR BOTH LOW AND MID BANDS.



MICROWAVE RADIO LINKS

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

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



RF CABLE COLOR CODES | NO SCALE | 1

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

AWS (N66+N70+H–BLOCK): PURPLE

CBRS TECH (3 GHz): YELLOW

NEGATIVE SLANT PORT ON ANT/RRH: WHITE

ALPHA SECTOR: RED

BETA SECTOR: BLUE

GAMMA SECTOR: GREEN

COLOR IDENTIFIER | NO SCALE | 2

NOT USED | NO SCALE | 3

NOT USED | NO SCALE | 4

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DISH Wireless L.L.C.
PROJECT INFORMATION

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170 MOUNT TOBE ROAD
PLYMOUTH, CT 06782

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 — T

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE — T

SINGLE POLE SWITCH

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE — GFCI

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

SMOKE DETECTION (DC) — SD

EMERGENCY LIGHTING (DC)

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

CHAIN LINK FENCE — X — X — X — X

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE — W — W — W — W — W

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

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

OVERHEAD POWER — OHP — OHP — OHP — OHP

OVERHEAD TELCO — OHT — OHT — OHT — OHT

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

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

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

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

WORKPOINT — W.P.

SECTION REFERENCE — XX / X–X

DETAIL REFERENCE — XX / X–X

LEGEND

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

ABBREVIATIONS

dish wireless.

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170 MOUNT TOBE ROAD
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SHEET TITLE

LEGEND AND ABBREVIATIONS

SHEET NUMBER

GN-1

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

SIGN PLACEMENT:

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

NOTES:

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

INFORMATION

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

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

Site ID: _____

THIS SIGN IS FOR REFERENCE PURPOSES ONLY

NOTICE

Transmitting Antenna(s)

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

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

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

Site ID: _____

dish

THIS SIGN IS FOR REFERENCE PURPOSES ONLY

CAUTION

Transmitting Antenna(s)

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dish

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Site ID: _____

dish

THIS SIGN IS FOR REFERENCE PURPOSES ONLY

RF SIGNAGE

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

SBA
8051 CONGRESS AVENUE
BOCA RATON, FL 33487

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

STATE OF CONNECTICUT
CHAD HUTTLE
No. 23924
LICENSED
PROFESSIONAL ENGINEER
5/11/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/1/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
CH	MRE	BEH

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	1/10/22	ISSUED FOR REVIEW
0	5/11/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149542.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00179A
170 MOUNT TOBE ROAD
PLYMOUTH, CT 06782

SHEET TITLE
RF SIGNAGE

SHEET NUMBER
GN-2

SITE ACTIVITY REQUIREMENTS:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL NOTES:

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

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH Wireless L.L.C.

TOWER OWNER:TOWER OWNER

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

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

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

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

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

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

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

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

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

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

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

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

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

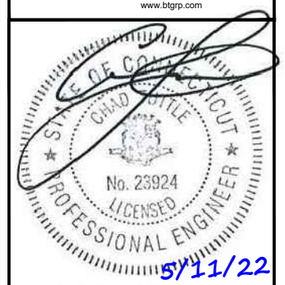
dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

SBA

8051 CONGRESS AVENUE
BOCA RATON, FL 33487

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



B&T ENGINEERING, INC.
PEC.0001564
Expires 2/1/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
CH	MRE	BEH

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	1/10/22	ISSUED FOR REVIEW
0	5/11/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149542.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00179A
170 MOUNT TOBE ROAD
PLYMOUTH, CT 06782

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-3

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

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

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

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

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

#4 BARS AND SMALLER 40 ksi

#5 BARS AND LARGER 60 ksi

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

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

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

ELECTRICAL INSTALLATION NOTES:

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

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

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

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

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

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

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

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

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

8. TIE WRAPS ARE NOT ALLOWED.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

SBA

8051 CONGRESS AVENUE
BOCA RATON, FL 33487

B+T GRP

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

STATE OF CONNECTICUT
CHAD E. TYLE
No. 23924
LICENSED
PROFESSIONAL ENGINEER

5/11/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/1/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
CH	MRE	BEH

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	1/10/22	ISSUED FOR REVIEW
0	5/11/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149542.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00179A
170 MOUNT TOBE ROAD
PLYMOUTH, CT 06782

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-4

GROUNDING NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

SBA

8051 CONGRESS AVENUE
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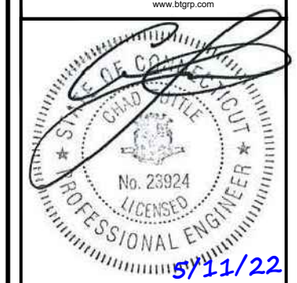

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/1/23

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RFDS REV #: 1.0

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A&E PROJECT NUMBER

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00179A
170 MOUNT TOBE ROAD
PLYMOUTH, CT 06782

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-5

Exhibit D

Structural Analysis Report

SBA Communications Corporation
8051 Congress Avenue
Boca Raton, FL 33487-1307

T + 561 995 7670
F + 561 995 7626

sbasite.com

Structural Analysis Report

Client: Dish Wireless

Client Site ID / Name: BOHVN00179A / 0
Application #: 169196, v2

SBA Site ID / Name: CT03538-S / South Plymouth

160 ft Monopole

170 Mount Tobe Road
Plymouth, Connecticut 06782
Lat: 41.630031, Long: -73.056553

Project number: CT03538-DW-052622

Analysis Results

Tower	66.1%	Pass
Foundation	56.0%	Pass

Change in tower stress due to mount modification / replacement	N/A

Prepared by:

Elizabeth Zubeldia
Structural Engineer II
561-322-7936
ezubeldia@sbasite.com

Reviewed by:

Anantha (Shan) Shanubhogue, P. E.
Senior Manager, Structural Engineering
(561) 981-7390
SShanubhogue@sbasite.com

May 26, 2022

STATE OF CONNECTICUT
ANANTHA B SHANUBHOGUE
33123
LICENSED
PROFESSIONAL ENGINEER

05/27/22

SBA Communications Corporation
8051 Congress Avenue
Boca Raton, FL 33487-1307

T + 561 995 7670
F + 561 995 7626

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Structural Analysis Report

Client: Dish Wireless

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Reviewed by:

Anantha (Shan) Shanubhogue, P. E.
Senior Manager, Structural Engineering
(561) 981-7390
SShanubhogue@sbasite.com

May 26, 2022

Table of Contents

Introduction

The purpose of this report is to summarize the analysis results on the 160 ft Monopole to support the proposed antennas and transmissions lines in addition to those currently installed.

Table 1 List of Documents Used

Item	Document
Tower design/drawings	PJF Job No. 29201-1019, Summit No: 15616, dated 8/21/2001
Foundation drawings	PJF Job No. 29201-1019, Summit No: 15616, dated 8/21/2001
Geotechnical report	Jaworski Geotech, Inc., Project No. 00244G, dated 7/31/ 2001
Modification drawings	N/A
Latest SA	SBA Project #: CT03538-VZW-052721, dated 5/28/2021

Analysis Criteria

Table 2 Code Related Data

Jurisdiction (State/County/City)	Connecticut/Litchfield/Plymouth
Governing Codes	ANSI/TIA/EIA 222-G, 2015 IBC, 2018 Connecticut State Building Code
Basic Wind Speed (3-Sec gust)	93 mph (Ultimate Wind Speed: 120 mph)
Wind Speed with Ice (3-Sec gust)	40 mph
Service Wind Speed (3-Sec gust)	50 mph
Ice Thickness	0.75”
Structural Class*	II
Exposure Category	B
Topographic Category	1
Crest Height	0 ft
Ground Elevation	834.77 ft.
Seismic Parameter Ss**	0.186
Seismic Parameter S_1	0.065

*This structural analysis is based upon the tower being classified as a structural class II; however, if a different classification is required subsequent to the date hereof, the tower classification will be changed to meet such requirement and a new structural analysis will be run.

**Earthquake effects were ignored as per section 2.7.3 of the TIA-222-G code provisions for Ss < 1.0.

Appurtenance Loading

Existing Loading:

Table 3 Existing Appurtenances

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	160.0	3	Ericsson Air 21 B2A/B4P - Panel	Low Profile Platform	(12) 1 5/8" (2) 1 5/8" Fiber (1) 1 5/8" Fiber	T-Mobile
2		3	Ericsson Air 32 - Panel			
3		3	Commscope LNX-6515DS-A1M - Panel			
4		3	Ericsson KRY112 144 - TMA			
5		3	Ericsson RRUS 11 - RRU			
6	156.5	1	Lone Star Electronics LS-230C - Whip	(1) 4 ft Sidearm	(1) 7/8"	Thomaston P.D.
7	153.0	1	Andrew VHLP-2.6-11 - Dish	(2) Pipe Mounts	(2) EW90	
8		1	Hutton HPD 3.4-4.7 - Dish			
9		3	Motorola ODU-A-RF			
10	150.0	3	RFS APXVTM14-C-120 - Panel	Low Profile Platform	(4) 1 1/4"	Sprint
11	148.0	3	RFS APXVSPP18-C-A20 - Panel			
12		3	ALU 1900MHz RRH			
13		3	ALU 800 MHz RRH			
14		3	ALU TD-RRH8x20-25			
15		3	ALU 800 MHz Filter			
16		4	RFS ACU-A20-N			
17	137.0	3	Antel BXA-70080-6CF-2 - Panel	Low Profile Platform w/ Handrail	(6) 1 5/8" (2) 1 5/8" Hybrid	Verizon
18		3	Samsung VZS01- Panel			
19		6	Quintel Technology QS6656-5D - Panel			
20		3	Samsung B5/B13 RRH-BR04C - RRU			
21		3	Samsung B2/B66A RRH-BR049			
22		2	RFS DB-T1-6Z-8AB-0Z			
23	134.5	1	Bird Technologies CSA 10-67 DIM - Whip	(1) Pipe Mount	(1) 7/8"	Thomaston P.D.
24	108.0	6	Powerwave - 7770 - Panel	Low Profile Platform	(12) 1 5/8" (4) 3/4" DC (2) 7/16" Fiber	AT&T
25		3	KMW - AM-X-CD-17-65-00T-RET - Panel			
26		6	Powerwave LGP21401 TMA			
27		6	Powerwave 21903 Diplexer			
28		6	Ericsson RRU 11			
29		3	Andrew ABT-DFDM-ADBH BIAS-T			
30		2	Raycap DC6-48-60-18-8F			
31		3	KMW - EPBQ-652L8H6-L2 - Panel			
32		12	Powerwave 7020 RET			
33		3	Ericsson RRUS 32 B2 RRU			
34		3	Ericsson B14 4478 RRU			

Proposed Loading:

Information pertaining to proposed antennas and transmission lines were based upon the Application #: 169196, v2 from Dish Wireless and is listed in Table 4.

Table 4 Proposed Appurtenances

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	124.0	3	JMA MX08FRO665-21 - Panel	Low Profile Platform w/ Handrail [Commscope MC-PK8-DSH]	(1) 1.441" Hybrid	Dish Wireless
2		3	Fujitsu TA08025-B604 - RRU			
3		3	Fujitsu TA08025-B605 - RRU			
4		1	Raycap RDIDC-9181-PF-48			

Analysis Results

Tower

The results of the structural analysis are shown below in table 5. Additional information for the tower analysis is provided within the Appendix.

Table 5 Tower Analysis Summary

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	66.1%	58.1%	55.7%
Pass/Fail	Pass	Pass	Pass

Foundation

The results of the foundation analysis are shown below in table 6. Additional information for the foundation analysis is provided within the Appendix.

Table 6 Foundation Analysis Summary

Structural Component	Max Usage (%)	Analysis Result
Foundation	56.0%	Pass

Conclusions

Based on the analysis results, the existing tower and foundation were found to be **sufficient** to safely support the equipment listed in this analysis. No modification to the tower and foundation is needed at this time.

Installation Requirements

This analysis was performed under the assumption that the carrier will place the proposed equipment and feed lines at the installation height listed in Table 4 and in accordance with the coax layout shown. TMAs and RRUs are to be installed on existing mounts behind tenant's antennas unless otherwise noted. No equipment is to be installed directly in the climbing path. All equipment is to be installed per mount manufacturer specifications. In case site conditions do not allow for the required installation parameters to be met the carrier must notify SBA Communications Corporation engineers for approval of an alternative placement.

Assumptions and Limitations

Assumptions

This analysis was completed based on the following assumptions:

- Tower and foundation were built in accordance to manufacturer specifications.
- Tower and foundation have been properly maintained in accordance with the manufacturer's specifications
- All existing structural members were assumed to be in good condition with no physical damage or deterioration associated with corrosion
- Welds and bolts are assumed able to carry their intended original design loads.
- The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Table 3 and 4.
- This analysis may be affected if any assumptions are not valid or have been made in error. SBA should be notified to determine the effect on the structural integrity of the tower.

Limitations

The computer generated analysis performed by the tower software is limited to theoretical capacities of the towers structural members and does not account for any missing or damaged members or connections. The tower and foundation are assumed to have been properly designed, fabricated, installed and maintained, barring any conflicting findings from the most recent inspection.

SBA Communications Corporation has used its due diligence to verify the information provided to perform this analysis. It is unreasonable to perform a more detailed inspection of a tower and its components. This report is not a condition assessment of the tower or foundation.

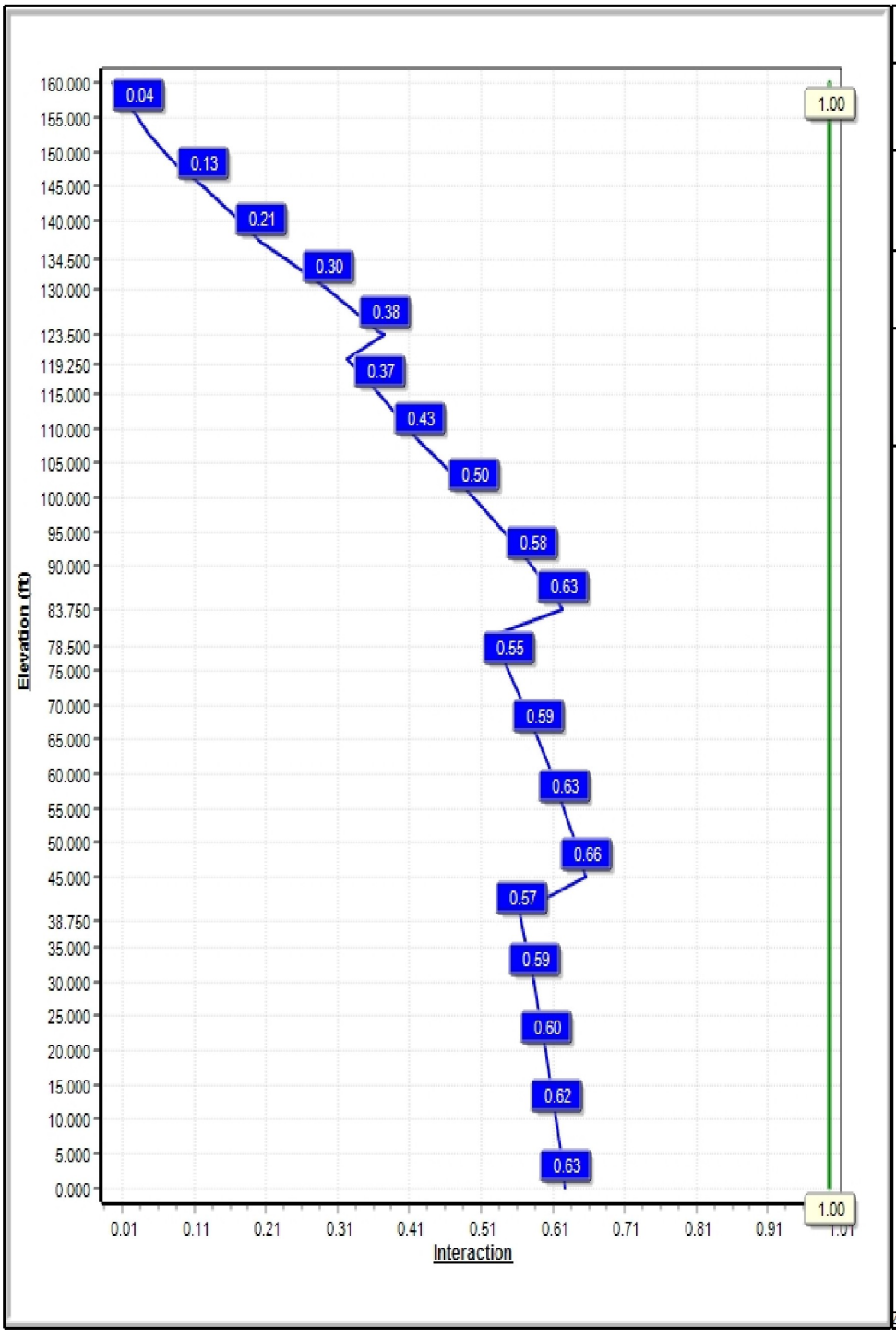
Appendix

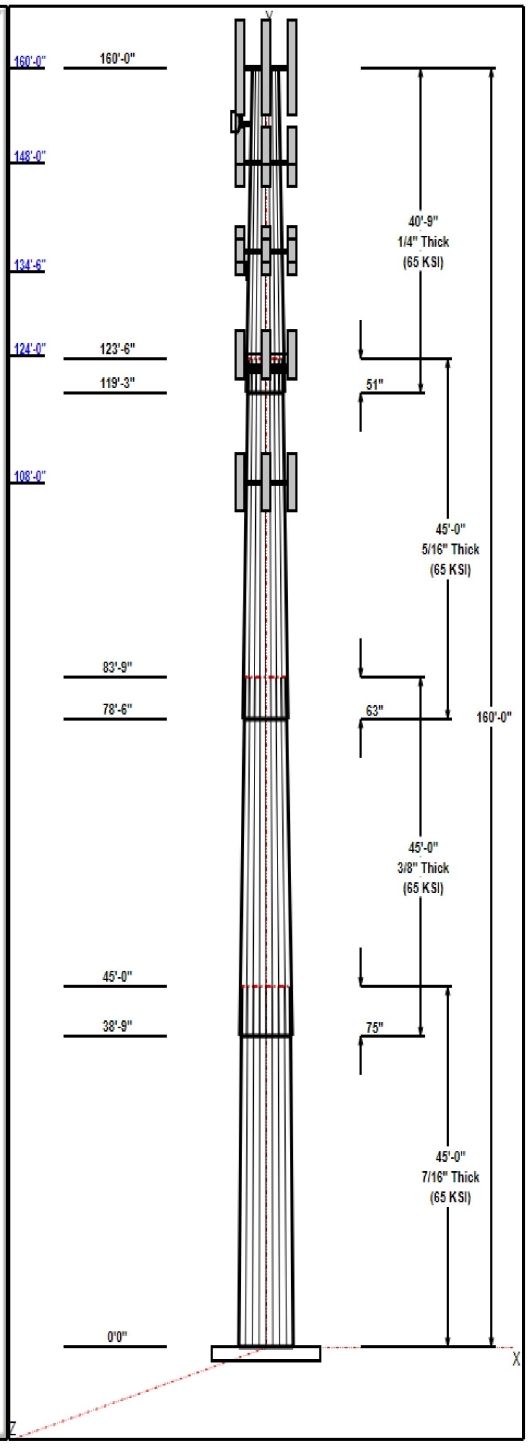
Usage Diagram - Max Ratio 66.09% at 45.0ft

Structure:	CT03538-S	**Code:**	EIA/TIA-222-G	5/26/2022
Site Name:	South Plymouth	**Exposure:**	B	
Height:	160.00 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

Dead Load Factor:	1.20	**Iterations:**	25
Wind Load Factor:	1.60		

Load Case : 1.2D + 1.6W 9 93 mph Wind





Structure: CT03538-S

Type: Tapered
Site Name: South Plymouth
Height: 160.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.21503

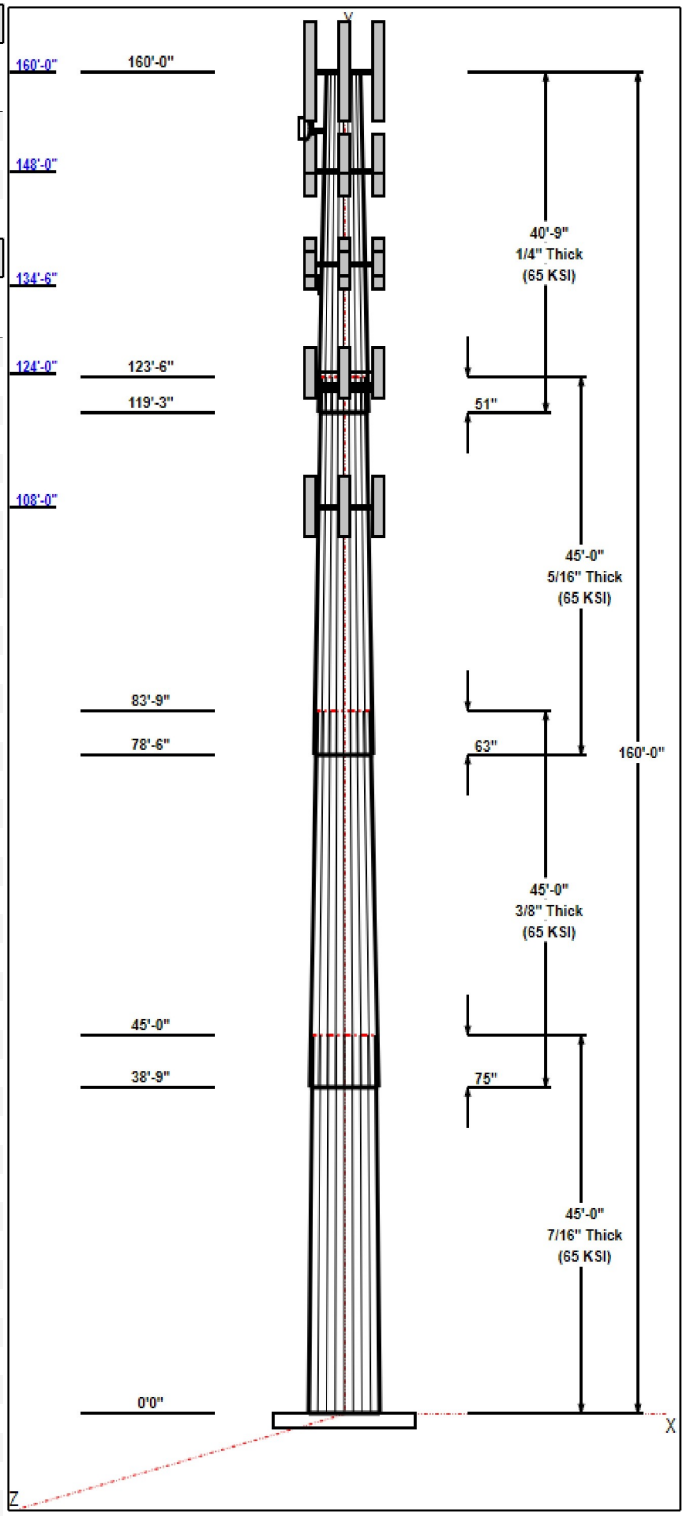
5/26/2022

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	45.00	46.85	56.53	0.438		0.21503	65
2	45.00	39.27	48.95	0.375	Slip	0.21503	65
3	45.00	31.35	41.03	0.313	Slip	0.21503	65
4	40.75	24.00	32.76	0.250	Slip	0.21503	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
160.00	160.00	1	Low Profile Platform	T-Mobile
160.00	160.00	3	Air 21 B2A/B4P	T-Mobile
160.00	160.00	3	Air 32	T-Mobile
160.00	160.00	3	Ericsson KRY 112 144/1	T-Mobile
160.00	160.00	3	RRU 11	T-Mobile
160.00	160.00	3	Commscope LNX112 144 -	T-Mobile
153.00	156.50	1	Lone Star Electronics	Thomaston P.D.
153.00	153.00	1	VHLP-2.6-11	Thomaston P.D.
153.00	153.00	1	Hutton HPD 3.4-4.7	Thomaston P.D.
153.00	153.00	3	Motorola ODU-A-RF	Thomaston P.D.
153.00	153.00	2	Pipe Mounts	Thomaston P.D.
153.00	153.00	1	4 ft Sidearm	Thomaston P.D.
148.00	150.00	3	RFS APXVTM14-C-120	Sprint
148.00	148.00	3	RFS APXVSPP18-C-A20	Sprint
148.00	148.00	3	ALU 1900MHz RRH	Sprint
148.00	148.00	3	ALU 800 MHz RRH	Sprint
148.00	148.00	3	ALU TD-RRH8x20-25	Sprint
148.00	148.00	3	ALU 800 MHz Filter	Sprint
148.00	148.00	4	RFS ACU-A20-N	Sprint
148.00	148.00	1	Low Profile Platform	Sprint
137.00	137.00	3	Antel BXA-70063-6CF-2	Verizon
137.00	137.00	1	Low Profile Platform	Verizon
137.00	137.00	3	Samsung VZS01	Verizon
137.00	137.00	6	Quintel QS6656-5D	Verizon
137.00	137.00	3	Samsung B2/B66A	Verizon
137.00	137.00	2	RFS DB-T1-6Z-8AB-0Z	Verizon
137.00	137.00	1	Platform Handrail	Verizon
137.00	137.00	3	Samsung B5/B13	Verizon
134.50	134.50	1	Bird Technologies CSA	Thomaston P.D.
134.50	134.50	1	Pipe Mount	Thomaston P.D.
124.00	124.00	1	Raycap	DHS
124.00	124.00	1	Platform w/ handrais	DHS
124.00	124.00	3	JMA MX08FRO665-21	DHS
124.00	124.00	3	Fujitsu TA08025-B604	DHS
124.00	124.00	3	Fujitsu TA08025-B605	DHS
108.00	108.00	3	EPBQ-652L8H6-L2	AT&T
108.00	108.00	12	Powerwave 7020 RET	AT&T
108.00	108.00	3	Ericsson RRUS 32 B2	AT&T
108.00	108.00	3	Ericsson B14 4478 RRU	AT&T
108.00	108.00	6	7770	AT&T
108.00	108.00	3	AM-X-CD-17-65-00T-RET	AT&T
108.00	108.00	6	Powerwave LGP21401	AT&T
108.00	108.00	6	Powerwave 21903 Diplexer	AT&T
108.00	108.00	6	Ericsson RRU 11	AT&T
108.00	108.00	3	Andrew ABT-DFDM-ADBH	AT&T



108.00	108.00	2	Raycap DC6-48-60-18-8F	AT&T
108.00	108.00	1	Low Profile Platform	AT&T

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	160.00	Inside	1 5/8" Coax	T-Mobile
0.00	160.00	Inside	1 5/8" Fiber	T-Mobile
0.00	160.00	Inside	1 5/8" Hybrid	T-Mobile
0.00	153.00	Inside	7/8" Coax	Thomaston P.D.
0.00	153.00	Inside	EW90	Thomaston P.D.
0.00	148.00	Inside	1 1/4" Coax	Sprint
0.00	137.00	Inside	1 5/8" Coax	Verizon
0.00	137.00	Inside	1 5/8" Hybrid	Verizon
0.00	134.50	Inside	7/8" Coax	Thomaston P.D.
0.00	124.00	Inside	1.411" Hybrid	DHS
0.00	108.00	Inside	1 5/8" Coax	AT&T
0.00	108.00	Inside	3/4" DC	AT&T
0.00	108.00	Inside	7/16" Fiber	AT&T

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
20	2.25" 18J	75.0	Cluster

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
3.0000	64.0	55.0	Clipped

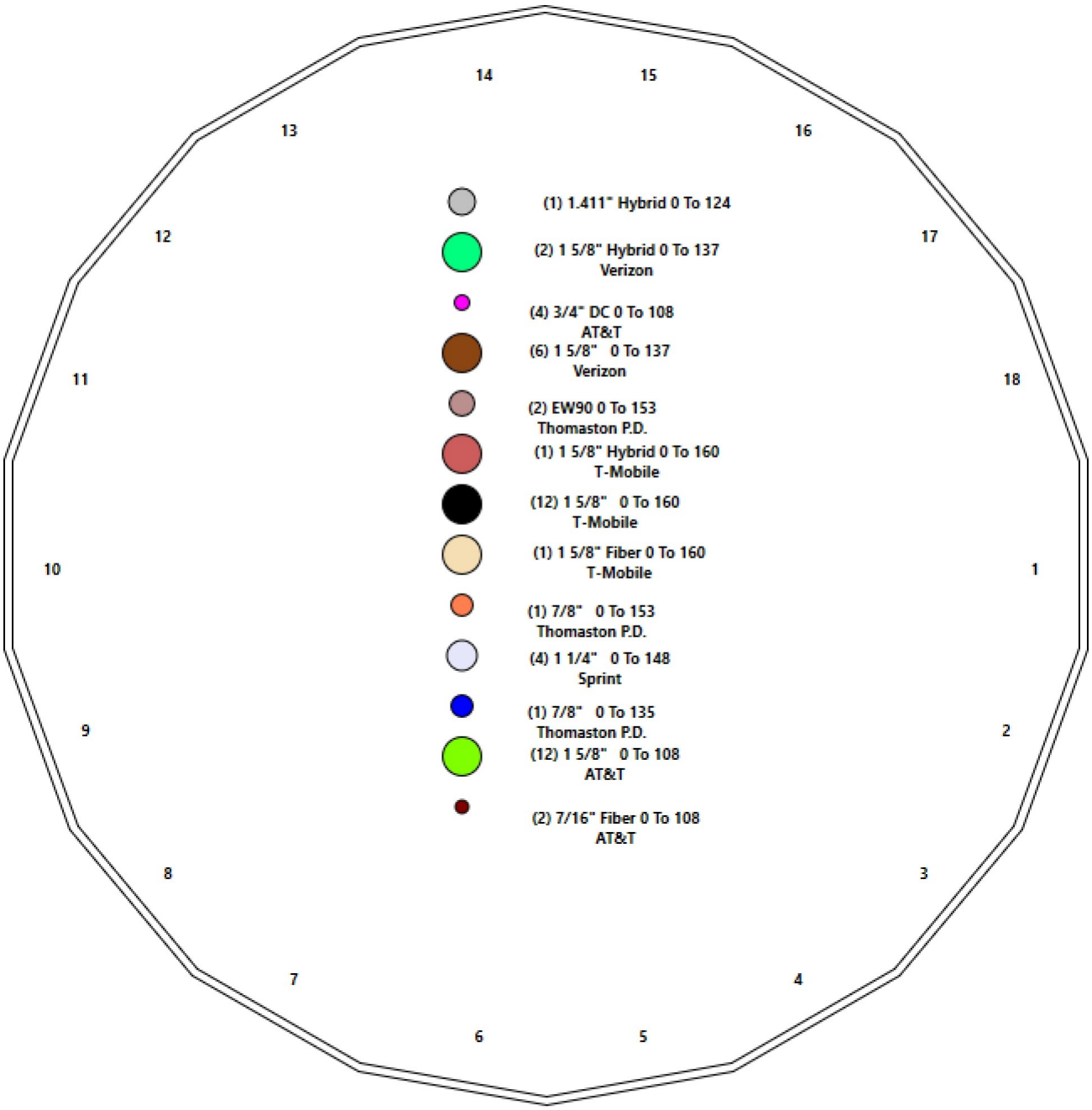
Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 9 93 mph Wind	3830.2	31.5	57.1
0.9D + 1.6W 9 93 mph Wind	3780.8	31.5	42.8
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1294.9	10.4	87.2
1.2D + 1.0E	282.2	2.2	57.2
0.9D + 1.0E	278.1	2.2	42.9
1.0D + 1.0W 50 mph Wind	686.8	5.7	47.6

Structure: CT03538-S - Coax Line Placement

Type: Monopole
Site Name: South Plymouth
Height: 160.00 (ft)

5/26/2022



Shaft Properties

Structure:	CT03538-S		**Code:**	TIA-222-G	5/26/2022
Site Name:	South Plymouth		**Exposure:**	B	
Height:	160.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 5

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	45.000	0.4375	65		0.00	10,898
2	18	45.000	0.3750	65	Slip	75.00	7,971
3	18	45.000	0.3125	65	Slip	63.00	5,448
4	18	40.750	0.2500	65	Slip	51.00	3,095
					Total Shaft Weight:		**27,412**

	Bottom						Top						
Sec. No.	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Taper**
1	56.53	0.00	77.89	30962.56	21.37	129.21	46.85	45.00	64.45	17543.9	17.47	107.0	0.215031
2	48.95	38.75	57.81	17232.49	21.60	130.53	39.27	83.75	46.29	8849.01	17.05	104.7	0.215031
3	41.03	78.50	40.38	8456.28	21.74	131.28	31.35	123.50	30.78	3746.26	16.28	100.3	0.215031
4	32.76	119.2	25.80	3445.37	21.70	131.05	24.00	160.00	18.84	1343.00	15.52	96.00	0.215031

Load Summary

Structure:	CT03538-S	**Code:**	TIA-222-G	5/26/2022	
Site Name:	South Plymouth	**Exposure:**	B		
Height:	160.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

Discrete Appurtenances

				No Ice			Ice				
No.	Elev (ft)	Description	Qty	Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
1	160.00	Low Profile Platform	1	1600.00	22.00	1.00	3005.21	39.776	1.00	0.00	0.00
2	160.00	Air 21 B2A/B4P	3	91.50	6.09	0.86	403.94	11.759	0.86	0.00	0.00
3	160.00	Air 32	3	132.20	5.50	0.87	279.89	9.287	0.87	0.00	0.00
4	160.00	Ericsson KRY 112 144/1	3	11.00	0.41	0.70	21.85	0.888	0.70	0.00	0.00
5	160.00	RRU 11	3	88.00	3.80	0.67	234.54	5.535	0.67	0.00	0.00
6	160.00	Commscope LNX112 144 - TMA	3	128.00	20.00	0.90	262.90	34.052	0.90	0.00	0.00
7	153.00	Lone Star Electronics LS-230C	1	20.00	2.10	1.00	63.02	3.977	1.00	0.00	3.50
8	153.00	VHLP-2.6-11	1	47.60	8.43	1.00	220.63	10.140	1.00	0.00	0.00
9	153.00	Hutton HPD 3.4-4.7	1	105.00	8.92	1.00	112.34	9.544	1.00	0.00	0.00
10	153.00	Motorola ODU-A-RF	3	10.40	1.44	1.00	41.95	2.299	1.00	0.00	0.00
11	153.00	Pipe Mounts	2	50.00	5.00	1.00	91.97	8.497	1.00	0.00	0.00
12	153.00	4 ft Sidearm	1	50.00	3.50	1.00	150.62	11.509	1.00	0.00	0.00
13	148.00	RFS APXVTM14-C-120	3	96.00	6.34	0.89	256.15	7.452	0.94	0.00	2.00
14	148.00	RFS APXVSPP18-C-A20	3	97.00	8.02	0.93	390.76	10.810	0.98	0.00	0.00
15	148.00	ALU 1900MHz RRH	3	44.00	3.80	0.67	153.02	5.188	0.67	0.00	0.00
16	148.00	ALU 800 MHz RRH	3	53.00	2.49	0.67	126.86	3.632	0.00	0.00	0.00
17	148.00	ALU TD-RRH8x20-25	3	70.00	4.05	0.69	180.28	4.862	0.75	0.00	0.00
18	148.00	ALU 800 MHz Filter	3	10.00	0.42	0.99	32.93	0.745	0.67	0.00	0.00
19	148.00	RFS ACU-A20-N	4	1.00	0.14	0.79	5.29	0.436	0.67	0.00	0.00
20	148.00	Low Profile Platform	1	1200.00	25.00	1.00	2245.72	45.914	1.00	0.00	0.00
21	137.00	Antel BXA-70063-6CF-2	3	17.00	7.57	0.83	163.96	10.309	0.88	0.00	0.00
22	137.00	Low Profile Platform	1	1500.00	22.00	1.00	2797.10	39.502	1.00	0.00	0.00
23	137.00	Samsung VZS01	3	87.10	4.70	0.70	198.27	5.594	0.71	0.00	0.00
24	137.00	Quintel QS6656-5D	6	92.50	8.13	0.92	300.02	9.373	0.92	0.00	0.00
25	137.00	Samsung B2/B66A RRH-BR049	3	84.40	1.88	0.83	141.68	2.420	0.85	0.00	0.00
26	137.00	RFS DB-T1-6Z-8AB-0Z	2	44.00	4.80	0.71	158.08	5.640	0.72	0.00	0.00
27	137.00	Platform Handrail	1	358.00	9.70	1.00	667.57	14.733	1.00	0.00	0.00
28	137.00	Samsung B5/B13 RRH-BR04C	3	70.30	1.88	0.77	118.01	2.420	0.79	0.00	0.00
29	134.50	Bird Technologies CSA 10-67 DIM	1	4.60	3.81	1.00	126.00	30.053	1.00	0.00	0.00
30	134.50	Pipe Mount	1	50.00	5.00	1.00	91.43	8.453	1.00	0.00	0.00
31	124.00	Raycap RDIDC-9181-PF-48	1	21.85	2.00	0.78	72.96	2.548	0.80	0.00	0.00
32	124.00	Platform w/ handrais [MC-PK8-DSH]	1	1727.00	34.24	1.00	2909.86	32.738	1.00	0.00	0.00
33	124.00	JMA MX08FRO665-21	3	64.50	12.50	0.73	347.24	13.956	0.75	0.00	0.00
34	124.00	Fujitsu TA08025-B604	3	63.93	1.96	0.76	113.41	2.497	0.78	0.00	0.00
35	124.00	Fujitsu TA08025-B605	3	74.95	1.96	0.80	125.72	2.497	0.82	0.00	0.00
36	108.00	EPBQ-652L8H6-L2	3	99.00	15.71	0.71	409.92	17.333	0.71	0.00	0.00
37	108.00	Powerwave 7020 RET	12	2.20	0.40	1.00	12.10	0.869	1.00	0.00	0.00
38	108.00	Ericsson RRUS 32 B2 RRU	3	77.00	1.65	0.67	123.42	2.209	0.67	0.00	0.00
39	108.00	Ericsson B14 4478 RRU	3	58.00	3.15	0.67	149.65	3.839	0.67	0.00	0.00
40	108.00	7770	6	35.00	5.50	0.83	164.84	6.529	0.88	0.00	0.00
41	108.00	AM-X-CD-17-65-00T-RET	3	48.50	8.02	0.75	205.53	10.723	0.75	0.00	0.00
42	108.00	Powerwave LGP21401 TMA	6	14.10	1.29	0.50	38.29	2.099	0.50	0.00	0.00
43	108.00	Powerwave 21903 Diplexer	6	5.50	0.27	0.84	13.66	0.655	0.89	0.00	0.00
44	108.00	Ericsson RRU 11	6	51.00	2.52	0.67	120.94	3.133	0.67	0.00	0.00
45	108.00	Andrew ABT-DFDM-ADBH BIAS-T	3	1.10	0.05	0.98	3.26	0.236	1.00	0.00	0.00
46	108.00	Raycap DC6-48-60-18-8F	2	31.80	0.92	1.00	91.63	1.344	1.00	0.00	0.00
47	108.00	Low Profile Platform	1	1500.00	22.00	1.00	2766.61	39.091	1.00	0.00	0.00
		Totals:	**137**	**14,385.29**			**33,360.66**				

Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice CaAa (sf)	No Ice CaAa Factor	Ice Weight (lb)	Ice CaAa (sf)	Ice CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	160.00	(12) 1 5/8" Coax	0.00	Inside
0.00	160.00	(1) 1 5/8" Fiber	0.00	Inside
0.00	160.00	(1) 1 5/8" Hybrid	0.00	Inside
0.00	153.00	(1) 7/8" Coax	0.00	Inside
0.00	153.00	(2) EW90	0.00	Inside
0.00	148.00	(4) 1 1/4" Coax	0.00	Inside
0.00	137.00	(6) 1 5/8" Coax	0.00	Inside
0.00	137.00	(2) 1 5/8" Hybrid	0.00	Inside
0.00	134.50	(1) 7/8" Coax	0.00	Inside
0.00	124.00	(1) 1.411" Hybrid	0.00	Inside
0.00	108.00	(12) 1 5/8" Coax	0.00	Inside
0.00	108.00	(4) 3/4" DC	0.00	Inside
0.00	108.00	(2) 7/16" Fiber	0.00	Inside

Shaft Section Properties

Structure:	CT03538-S	**Code:**	TIA-222-G	5/26/2022	
Site Name:	South Plymouth	**Exposure:**	B		
Height:	160.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 8	

Increment Length: **5 (ft)**

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.4375	56.530	77.889	30962.6	21.37	129.21	76.3	1078.	0.0
5.00		0.4375	55.455	76.396	29216.0	20.94	126.75	76.8	1037.	1312.5
10.00		0.4375	54.380	74.903	27536.5	20.51	124.30	77.3	997.4	1287.1
15.00		0.4375	53.305	73.410	25922.5	20.07	121.84	77.8	957.8	1261.7
20.00		0.4375	52.229	71.917	24372.9	19.64	119.38	78.3	919.1	1236.3
25.00		0.4375	51.154	70.424	22886.3	19.21	116.92	78.8	881.2	1210.9
30.00		0.4375	50.079	68.931	21461.4	18.77	114.47	79.3	844.1	1185.5
35.00		0.4375	49.004	67.438	20097.0	18.34	112.01	79.8	807.8	1160.1
38.75	Bot - Section 2	0.4375	48.198	66.318	19112.5	18.01	110.17	80.2	781.0	853.4
40.00		0.4375	47.929	65.945	18791.6	17.91	109.55	80.3	772.2	526.5
45.00	Top - Section 1	0.3750	47.604	56.212	15841.3	20.97	126.94	0.0	0.0	2076.6
50.00		0.3750	46.528	54.932	14783.9	20.47	124.08	77.3	625.8	945.5
55.00		0.3750	45.453	53.652	13774.6	19.96	121.21	77.9	596.9	923.7
60.00		0.3750	44.378	52.373	12812.3	19.46	118.34	78.5	568.6	902.0
65.00		0.3750	43.303	51.093	11895.9	18.95	115.47	79.1	541.1	880.2
70.00		0.3750	42.228	49.814	11024.3	18.45	112.61	79.7	514.2	858.4
75.00		0.3750	41.153	48.534	10196.3	17.94	109.74	80.3	488.0	836.6
78.50	Bot - Section 3	0.3750	40.400	47.638	9642.1	17.59	107.73	80.7	470.1	572.7
80.00		0.3750	40.077	47.254	9410.9	17.43	106.87	80.9	462.5	447.5
83.75	Top - Section 2	0.3125	39.896	39.261	7772.2	21.10	127.67	0.0	0.0	1102.9
85.00		0.3125	39.627	38.994	7614.9	20.95	126.81	76.8	378.5	166.4
90.00		0.3125	38.552	37.928	7007.1	20.34	123.37	77.5	358.0	654.4
95.00		0.3125	37.477	36.861	6432.5	19.74	119.93	78.2	338.1	636.2
100.00		0.3125	36.402	35.795	5890.2	19.13	116.49	78.9	318.7	618.1
105.00		0.3125	35.327	34.728	5379.3	18.52	113.05	79.6	299.9	599.9
108.00		0.3125	34.682	34.089	5087.4	18.16	110.98	80.0	288.9	351.3
110.00		0.3125	34.252	33.662	4898.8	17.92	109.61	80.3	281.7	230.5
115.00		0.3125	33.176	32.596	4447.9	17.31	106.16	81.0	264.1	563.7
119.25	Bot - Section 4	0.3125	32.263	31.689	4087.0	16.79	103.24	81.6	249.5	464.8
120.00		0.3125	32.101	31.529	4025.5	16.70	102.72	81.8	247.0	146.3
123.50	Top - Section 3	0.2500	31.849	25.073	3162.9	21.05	127.39	0.0	0.0	673.2
124.00		0.2500	31.741	24.987	3130.8	20.98	126.96	76.7	194.3	42.6
125.00		0.2500	31.526	24.817	3067.1	20.82	126.10	76.9	191.6	84.7
130.00		0.2500	30.451	23.964	2761.5	20.07	121.80	77.8	178.6	415.0
134.50		0.2500	29.483	23.196	2504.5	19.38	117.93	78.6	167.3	361.1
135.00		0.2500	29.376	23.110	2476.9	19.31	117.50	78.7	166.1	39.4
137.00		0.2500	28.946	22.769	2368.8	19.01	115.78	79.0	161.2	156.1
140.00		0.2500	28.301	22.257	2212.6	18.55	113.20	79.6	154.0	229.8
145.00		0.2500	27.225	21.404	1967.8	17.79	108.90	80.5	142.4	371.4
148.00		0.2500	26.580	20.892	1830.0	17.34	106.32	81.0	135.6	215.9
150.00		0.2500	26.150	20.551	1741.8	17.03	104.60	81.4	131.2	141.0
153.00		0.2500	25.505	20.039	1614.9	16.58	102.02	81.9	124.7	207.2
155.00		0.2500	25.075	19.698	1533.8	16.28	100.30	82.3	120.5	135.2
160.00		0.2500	24.000	18.845	1343.0	15.52	96.00	82.5	110.2	327.9
										27412.2

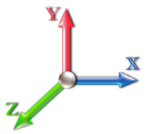
Wind Loading - Shaft

Structure:	CT03538-S	**Code:**	TIA-222-G	5/26/2022	
Site Name:	South Plymouth	**Exposure:**	B		
Height:	160.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 9	

Load Case: 1.2D + 1.6W 9 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	14.724	16.20	372.20	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	14.724	16.20	365.12	0.650	0.000	5.00	23.690	15.40	399.0	0.0	1575.0
10.00		1.00	0.70	14.724	16.20	358.04	0.650	0.000	5.00	23.235	15.10	391.4	0.0	1544.5
15.00		1.00	0.70	14.724	16.20	350.96	0.650	0.000	5.00	22.780	14.81	383.7	0.0	1514.0
20.00		1.00	0.70	14.724	16.20	343.89	0.650	0.000	5.00	22.325	14.51	376.1	0.0	1483.5
25.00		1.00	0.70	14.724	16.20	336.81	0.650	0.000	5.00	21.871	14.22	368.4	0.0	1453.1
30.00		1.00	0.70	14.736	16.21	329.87	0.650	0.000	5.00	21.416	13.92	361.0	0.0	1422.6
35.00		1.00	0.73	15.400	16.94	329.97	0.650	0.000	5.00	20.961	13.62	369.3	0.0	1392.1
38.75	Bot - Section 2	1.00	0.75	15.854	17.44	329.30	0.650	0.000	3.75	15.422	10.02	279.7	0.0	1024.1
40.00		1.00	0.76	15.999	17.60	328.95	0.650	0.000	1.25	5.163	3.36	94.5	0.0	631.8
45.00	Top - Section 1	1.00	0.79	16.546	18.20	327.03	0.650	0.000	5.00	20.368	13.24	385.6	0.0	2491.9
50.00		1.00	0.81	17.052	18.76	329.68	0.650	0.000	5.00	19.913	12.94	388.5	0.0	1134.6
55.00		1.00	0.83	17.523	19.28	326.48	0.650	0.000	5.00	19.458	12.65	390.1	0.0	1108.5
60.00		1.00	0.85	17.964	19.76	322.74	0.650	0.000	5.00	19.004	12.35	390.5	0.0	1082.3
65.00		1.00	0.87	18.380	20.22	318.54	0.650	0.000	5.00	18.549	12.06	390.0	0.0	1056.2
70.00		1.00	0.89	18.773	20.65	313.94	0.650	0.000	5.00	18.094	11.76	388.6	0.0	1030.1
75.00		1.00	0.91	19.147	21.06	308.98	0.650	0.000	5.00	17.639	11.47	386.4	0.0	1004.0
78.50	Bot - Section 3	1.00	0.92	19.398	21.34	305.31	0.650	0.000	3.50	12.077	7.85	268.0	0.0	687.2
80.00		1.00	0.93	19.503	21.45	303.69	0.650	0.000	1.50	5.187	3.37	115.7	0.0	537.0
83.75	Top - Section 2	1.00	0.94	19.760	21.74	299.54	0.650	0.000	3.75	12.788	8.31	289.1	0.0	1323.5
85.00		1.00	0.94	19.844	21.83	302.89	0.650	0.000	1.25	4.206	2.73	95.5	0.0	199.7
90.00		1.00	0.96	20.170	22.19	297.09	0.650	0.000	5.00	16.539	10.75	381.6	0.0	785.2
95.00		1.00	0.97	20.484	22.53	291.05	0.650	0.000	5.00	16.084	10.45	376.9	0.0	763.5
100.00		1.00	0.99	20.787	22.87	284.78	0.650	0.000	5.00	15.629	10.16	371.7	0.0	741.7
105.00		1.00	1.00	21.079	23.19	278.30	0.650	0.000	5.00	15.174	9.86	365.9	0.0	719.9
108.00	Appurtenance(s)	1.00	1.01	21.249	23.37	274.32	0.650	0.000	3.00	8.886	5.78	216.0	0.0	421.5
110.00		1.00	1.02	21.361	23.50	271.63	0.650	0.000	2.00	5.833	3.79	142.5	0.0	276.6
115.00		1.00	1.03	21.634	23.80	264.78	0.650	0.000	5.00	14.264	9.27	353.0	0.0	676.4
119.25	Bot - Section 4	1.00	1.04	21.859	24.05	258.82	0.650	0.000	4.25	11.767	7.65	294.3	0.0	557.8
120.00		1.00	1.04	21.898	24.09	257.76	0.650	0.000	0.75	2.074	1.35	52.0	0.0	175.6
123.50	Top - Section 3	1.00	1.05	22.079	24.29	252.75	0.650	0.000	3.50	9.544	6.20	241.1	0.0	807.9
124.00	Appurtenance(s)	1.00	1.05	22.104	24.31	256.06	0.650	0.000	0.50	1.345	0.87	34.0	0.0	51.1
125.00		1.00	1.05	22.155	24.37	254.62	0.650	0.000	1.00	2.677	1.74	67.8	0.0	101.7
130.00		1.00	1.07	22.405	24.65	247.32	0.650	0.000	5.00	13.111	8.52	336.1	0.0	498.0
134.50	Appurtenance(s)	1.00	1.08	22.624	24.89	240.63	0.650	0.000	4.50	11.411	7.42	295.3	0.0	433.3
135.00		1.00	1.08	22.648	24.91	239.88	0.650	0.000	0.50	1.245	0.81	32.3	0.0	47.3
137.00	Appurtenance(s)	1.00	1.08	22.743	25.02	236.86	0.650	0.000	2.00	4.935	3.21	128.4	0.0	187.3
140.00		1.00	1.09	22.884	25.17	232.30	0.650	0.000	3.00	7.266	4.72	190.2	0.0	275.8
145.00		1.00	1.10	23.115	25.43	224.60	0.650	0.000	5.00	11.746	7.64	310.6	0.0	445.7
148.00	Appurtenance(s)	1.00	1.11	23.251	25.58	219.92	0.650	0.000	3.00	6.829	4.44	181.7	0.0	259.1
150.00		1.00	1.11	23.340	25.67	216.78	0.650	0.000	2.00	4.462	2.90	119.1	0.0	169.2
153.00	Appurtenance(s)	1.00	1.12	23.472	25.82	212.03	0.650	0.000	3.00	6.557	4.26	176.1	0.0	248.6
155.00		1.00	1.12	23.560	25.92	208.84	0.650	0.000	2.00	4.280	2.78	115.4	0.0	162.3
160.00	Appurtenance(s)	1.00	1.13	23.774	26.15	200.79	0.650	0.000	5.00	10.382	6.75	282.4	0.0	393.5
								Totals:	**160.00**			**11,575.2**		**32,894.6**

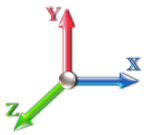
Discrete Appurtenance Forces

Structure:	CT03538-S	**Code:**	TIA-222-G	5/26/2022	
Site Name:	South Plymouth	**Exposure:**	B		
Height:	160.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 10	

Load Case: 1.2D + 1.6W 9 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	160.00	RRU 11	3	23.774	26.152	0.60	0.90	6.87	316.80	0.000	0.000	287.64	0.00	0.00
2	160.00	Ericsson KRY 112 144/1	3	23.774	26.152	0.63	0.90	0.77	39.60	0.000	0.000	32.42	0.00	0.00
3	160.00	Air 32	3	23.774	26.152	0.78	0.90	12.92	475.92	0.000	0.000	540.59	0.00	0.00
4	160.00	Air 21 B2A/B4P	3	23.774	26.152	0.77	0.90	14.14	329.40	0.000	0.000	591.70	0.00	0.00
5	160.00	Low Profile Platform	1	23.774	26.152	1.00	1.00	22.00	1920.00	0.000	0.000	920.54	0.00	0.00
6	160.00	Commscope LNX112 144	3	23.774	26.152	0.81	0.90	48.60	460.80	0.000	0.000	2033.56	0.00	0.00
7	153.00	Hutton HPD 3.4-4.7	1	23.472	25.820	1.00	1.00	8.92	126.00	0.000	0.000	368.50	0.00	0.00
8	153.00	VHLP-2.6-11	1	23.472	25.820	1.00	1.00	8.43	57.12	0.000	0.000	348.25	0.00	0.00
9	153.00	Lone Star Electronics	1	23.625	25.987	1.00	1.00	2.10	24.00	0.000	3.500	87.32	0.00	305.61
10	153.00	Pipe Mounts	2	23.472	25.820	1.00	1.00	10.00	120.00	0.000	0.000	413.11	0.00	0.00
11	153.00	4 ft Sidearm	1	23.472	25.820	1.00	1.00	3.50	60.00	0.000	0.000	144.59	0.00	0.00
12	153.00	Motorola ODU-A-RF	3	23.472	25.820	1.00	1.00	4.32	37.44	0.000	0.000	178.47	0.00	0.00
13	148.00	ALU 800 MHz RRH	3	23.251	25.576	0.54	0.80	4.00	190.80	0.000	0.000	163.84	0.00	0.00
14	148.00	RFS APXVTM14-C-120	3	23.340	25.674	0.71	0.80	13.54	345.60	0.000	2.000	556.29	0.00	1112.58
15	148.00	RFS APXVSPP18-C-A20	3	23.251	25.576	0.74	0.80	17.90	349.20	0.000	0.000	732.51	0.00	0.00
16	148.00	ALU 1900MHz RRH	3	23.251	25.576	0.54	0.80	6.11	158.40	0.000	0.000	250.04	0.00	0.00
17	148.00	ALU TD-RRH8x20-25	3	23.251	25.576	0.55	0.80	6.71	252.00	0.000	0.000	274.45	0.00	0.00
18	148.00	ALU 800 MHz Filter	3	23.251	25.576	0.79	0.80	1.00	36.00	0.000	0.000	40.84	0.00	0.00
19	148.00	RFS ACU-A20-N	4	23.251	25.576	0.63	0.80	0.35	4.80	0.000	0.000	14.48	0.00	0.00
20	148.00	Low Profile Platform	1	23.251	25.576	1.00	1.00	25.00	1440.00	0.000	0.000	1023.03	0.00	0.00
21	137.00	Samsung B5/B13	3	22.743	25.017	0.58	0.75	3.26	253.08	0.000	0.000	130.38	0.00	0.00
22	137.00	Platform Handrail	1	22.743	25.017	1.00	1.00	9.70	429.60	0.000	0.000	388.27	0.00	0.00
23	137.00	RFS DB-T1-6Z-8AB-0Z	2	22.743	25.017	0.53	0.75	5.11	105.60	0.000	0.000	204.62	0.00	0.00
24	137.00	Samsung B2/B66A	3	22.743	25.017	0.62	0.75	3.51	303.84	0.000	0.000	140.53	0.00	0.00
25	137.00	Quintel QS6656-5D	6	22.743	25.017	0.69	0.75	33.66	666.00	0.000	0.000	1347.27	0.00	0.00
26	137.00	Samsung VZS01	3	22.743	25.017	0.52	0.75	7.40	313.56	0.000	0.000	296.31	0.00	0.00
27	137.00	Low Profile Platform	1	22.743	25.017	1.00	1.00	22.00	1800.00	0.000	0.000	880.62	0.00	0.00
28	137.00	Antel BXA-70063-6CF-2	3	22.743	25.017	0.62	0.75	14.14	61.20	0.000	0.000	565.87	0.00	0.00
29	134.50	Bird Technologies CSA	1	22.624	24.886	1.00	1.00	3.81	5.52	0.000	0.000	151.71	0.00	0.00
30	134.50	Pipe Mount	1	22.624	24.886	1.00	1.00	5.00	60.00	0.000	0.000	199.09	0.00	0.00
31	124.00	Fujitsu TA08025-B605	3	22.104	24.315	0.60	0.75	3.53	269.82	0.000	0.000	137.25	0.00	0.00
32	124.00	Fujitsu TA08025-B604	3	22.104	24.315	0.57	0.75	3.35	230.15	0.000	0.000	130.39	0.00	0.00
33	124.00	JMA MX08FRO665-21	3	22.104	24.315	0.55	0.75	20.53	232.20	0.000	0.000	798.74	0.00	0.00
34	124.00	Platform w/ handrais	1	22.104	24.315	1.00	1.00	34.24	2072.40	0.000	0.000	1332.07	0.00	0.00
35	124.00	Raycap	1	22.104	24.315	0.58	0.75	1.17	26.22	0.000	0.000	45.52	0.00	0.00
36	108.00	Ericsson B14 4478 RRU	3	21.249	23.374	0.54	0.80	5.07	208.80	0.000	0.000	189.43	0.00	0.00
37	108.00	Ericsson RRUS 32 B2	3	21.249	23.374	0.54	0.80	2.65	277.20	0.000	0.000	99.22	0.00	0.00
38	108.00	7770	6	21.249	23.374	0.66	0.80	21.91	252.00	0.000	0.000	819.47	0.00	0.00
39	108.00	AM-X-CD-17-65-00T-RET	3	21.249	23.374	0.60	0.80	14.44	174.60	0.000	0.000	539.88	0.00	0.00
40	108.00	Powerwave 7020 RET	12	21.249	23.374	0.80	0.80	3.84	31.68	0.000	0.000	143.61	0.00	0.00
41	108.00	EPBQ-652L8H6-L2	3	21.249	23.374	0.57	0.80	26.77	356.40	0.000	0.000	1001.14	0.00	0.00
42	108.00	Low Profile Platform	1	21.249	23.374	1.00	1.00	22.00	1800.00	0.000	0.000	822.76	0.00	0.00
43	108.00	Powerwave LGP21401	6	21.249	23.374	0.40	0.80	3.10	101.52	0.000	0.000	115.78	0.00	0.00
44	108.00	Powerwave 21903	6	21.249	23.374	0.67	0.80	1.09	39.60	0.000	0.000	40.71	0.00	0.00
45	108.00	Ericsson RRU 11	6	21.249	23.374	0.54	0.80	8.10	367.20	0.000	0.000	303.09	0.00	0.00
46	108.00	Andrew ABT-DFDM-ADBH	3	21.249	23.374	0.78	0.80	0.12	3.96	0.000	0.000	4.40	0.00	0.00
47	108.00	Raycap DC6-48-60-18-8F	2	21.249	23.374	0.80	0.80	1.47	76.32	0.000	0.000	55.05	0.00	0.00

Discrete Appurtenance Forces

Structure:	CT03538-S		**Code:**	TIA-222-G	5/26/2022
Site Name:	South Plymouth		**Exposure:**	B	
Height:	160.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 11

Totals:	**17,262.35**	**19,885.36**

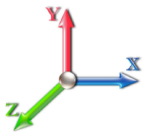
Total Applied Force Summary

Structure:	CT03538-S		**Code:**	TIA-222-G	5/26/2022
Site Name:	South Plymouth		**Exposure:**	B	
Height:	160.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 12

Load Case: 1.2D + 1.6W 9 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		399.04	1832.81	0.00	0.00
10.00		391.38	1802.33	0.00	0.00
15.00		383.72	1771.84	0.00	0.00
20.00		376.06	1741.36	0.00	0.00
25.00		368.39	1710.88	0.00	0.00
30.00		361.04	1680.40	0.00	0.00
35.00		369.28	1649.92	0.00	0.00
38.75		279.72	1217.44	0.00	0.00
40.00		94.50	696.27	0.00	0.00
45.00		385.55	2749.68	0.00	0.00
50.00		388.46	1392.41	0.00	0.00
55.00		390.07	1366.29	0.00	0.00
60.00		390.54	1340.16	0.00	0.00
65.00		390.01	1314.04	0.00	0.00
70.00		388.59	1287.91	0.00	0.00
75.00		386.36	1261.78	0.00	0.00
78.50		267.99	867.70	0.00	0.00
80.00		115.72	614.30	0.00	0.00
83.75		289.07	1516.90	0.00	0.00
85.00		95.48	264.17	0.00	0.00
90.00		381.63	1043.06	0.00	0.00
95.00		376.91	1021.29	0.00	0.00
100.00		371.66	999.52	0.00	0.00
105.00		365.90	977.75	0.00	0.00
108.00	(54) attachments	4350.56	4265.48	0.00	0.00
110.00		142.54	345.22	0.00	0.00
115.00		353.02	847.80	0.00	0.00
119.25		294.25	703.51	0.00	0.00
120.00		51.96	201.33	0.00	0.00
123.50		241.06	927.86	0.00	0.00
124.00	(11) attachments	2477.99	2899.03	0.00	0.00
125.00		67.85	134.61	0.00	0.00
130.00		336.05	662.61	0.00	0.00
134.50	(2) attachments	646.13	646.97	0.00	0.00
135.00		32.26	63.42	0.00	0.00
137.00	(22) attachments	4082.27	4184.83	0.00	0.00
140.00		190.23	342.32	0.00	0.00
145.00		310.62	556.59	0.00	0.00
148.00	(23) attachments	3237.14	3102.40	0.00	1112.58
150.00		119.14	207.24	0.00	0.00
153.00	(9) attachments	1716.30	730.20	0.00	305.61
155.00		115.36	197.49	0.00	0.00
160.00	(16) attachments	4688.81	4024.06	0.00	0.00
	Totals:	**31,460.60**	**57,163.18**	**0.00**	**1,418.19**

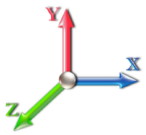
Calculated Forces

Structure:	CT03538-S	**Code:**	TIA-222-G	5/26/2022	
Site Name:	South Plymouth	**Exposure:**	B		
Height:	160.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 13	

Load Case: 1.2D + 1.6W 9 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 25

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 Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-57.11	-31.55	0.00	-3830.2	0.00	3830.21	5345.98	2672.99	12322.4	6170.37	0.00	0.000	0.000	0.632
5.00	-55.19	-31.31	0.00	-3672.4	0.00	3672.47	5278.55	2639.27	11931.9	5974.86	0.09	-0.172	0.000	0.625
10.00	-53.29	-31.08	0.00	-3515.9	0.00	3515.91	5209.75	2604.88	11544.5	5780.84	0.37	-0.347	0.000	0.619
15.00	-51.43	-30.84	0.00	-3360.5	0.00	3360.52	5139.58	2569.79	11160.2	5588.39	0.83	-0.525	0.000	0.611
20.00	-49.59	-30.60	0.00	-3206.3	0.00	3206.31	5068.05	2534.02	10779.2	5397.62	1.47	-0.705	0.000	0.604
25.00	-47.79	-30.37	0.00	-3053.3	0.00	3053.30	4995.14	2497.57	10401.7	5208.61	2.31	-0.888	0.000	0.596
30.00	-46.02	-30.13	0.00	-2901.4	0.00	2901.47	4920.87	2460.43	10028.0	5021.46	3.34	-1.073	0.000	0.587
35.00	-44.29	-29.85	0.00	-2750.8	0.00	2750.85	4845.22	2422.61	9658.13	4836.24	4.56	-1.260	0.000	0.578
38.75	-43.03	-29.61	0.00	-2638.9	0.00	2638.91	4787.59	2393.79	9383.39	4698.67	5.61	-1.403	0.000	0.571
40.00	-42.27	-29.59	0.00	-2601.8	0.00	2601.89	4768.21	2384.10	9292.33	4653.07	5.98	-1.452	0.000	0.568
45.00	-39.44	-29.26	0.00	-2453.9	0.00	2453.94	3881.96	1940.98	7532.86	3772.03	7.61	-1.643	0.000	0.661
50.00	-37.96	-28.97	0.00	-2307.6	0.00	2307.62	3822.99	1911.49	7248.21	3629.49	9.43	-1.836	0.000	0.646
55.00	-36.50	-28.67	0.00	-2162.7	0.00	2162.78	3762.64	1881.32	6966.27	3488.31	11.47	-2.051	0.000	0.630
60.00	-35.06	-28.36	0.00	-2019.4	0.00	2019.43	3700.92	1850.46	6687.23	3348.59	13.74	-2.267	0.000	0.613
65.00	-33.66	-28.05	0.00	-1877.6	0.00	1877.62	3637.84	1818.92	6411.28	3210.40	16.23	-2.484	0.000	0.594
70.00	-32.29	-27.72	0.00	-1737.4	0.00	1737.40	3573.38	1786.69	6138.59	3073.86	18.94	-2.700	0.000	0.574
75.00	-30.96	-27.37	0.00	-1598.8	0.00	1598.80	3507.56	1753.78	5869.35	2939.04	21.89	-2.915	0.000	0.553
78.50	-30.06	-27.12	0.00	-1503.0	0.00	1503.00	3460.67	1730.33	5683.03	2845.74	24.08	-3.067	0.000	0.537
80.00	-29.40	-27.03	0.00	-1462.3	0.00	1462.33	3440.37	1720.18	5603.74	2806.03	25.05	-3.132	0.000	0.530
83.75	-27.85	-26.70	0.00	-1360.9	0.00	1360.98	2706.01	1353.00	4401.17	2203.86	27.58	-3.292	0.000	0.628
85.00	-27.52	-26.66	0.00	-1327.6	0.00	1327.61	2693.89	1346.95	4351.48	2178.97	28.45	-3.346	0.000	0.620
90.00	-26.40	-26.33	0.00	-1194.2	0.00	1194.29	2644.58	1322.29	4154.08	2080.13	32.08	-3.582	0.000	0.585
95.00	-25.30	-25.98	0.00	-1062.6	0.00	1062.66	2593.89	1296.95	3958.97	1982.43	35.95	-3.811	0.000	0.546
100.00	-24.23	-25.64	0.00	-932.75	0.00	932.75	2541.84	1270.92	3766.36	1885.98	40.06	-4.032	0.000	0.505
105.00	-23.21	-25.27	0.00	-804.57	0.00	804.57	2488.42	1244.21	3576.41	1790.86	44.39	-4.241	0.000	0.459
108.00	-19.25	-20.64	0.00	-728.77	0.00	728.77	2455.70	1227.85	3463.79	1734.47	47.09	-4.363	0.000	0.428
110.00	-18.87	-20.52	0.00	-687.49	0.00	687.49	2433.62	1216.81	3389.31	1697.17	48.94	-4.442	0.000	0.413
115.00	-17.99	-20.15	0.00	-584.90	0.00	584.90	2377.46	1188.73	3205.24	1605.00	53.69	-4.627	0.000	0.372
119.25	-17.29	-19.83	0.00	-499.26	0.00	499.26	2328.64	1164.32	3051.30	1527.92	57.87	-4.774	0.000	0.334
120.00	-17.07	-19.78	0.00	-484.39	0.00	484.39	2319.93	1159.96	3024.39	1514.44	58.62	-4.800	0.000	0.327
123.50	-16.14	-19.48	0.00	-415.17	0.00	415.17	1729.39	864.70	2245.31	1124.33	62.18	-4.911	0.000	0.379
124.00	-13.46	-16.76	0.00	-405.43	0.00	405.43	1725.51	862.76	2232.60	1117.96	62.69	-4.927	0.000	0.371
125.00	-13.30	-16.71	0.00	-388.67	0.00	388.67	1717.71	858.86	2207.21	1105.25	63.73	-4.963	0.000	0.360
130.00	-12.63	-16.35	0.00	-305.12	0.00	305.12	1677.90	838.95	2081.35	1042.22	69.01	-5.124	0.000	0.301
134.50	-12.02	-15.66	0.00	-231.56	0.00	231.56	1640.90	820.45	1969.70	986.31	73.90	-5.248	0.000	0.242
135.00	-11.96	-15.63	0.00	-223.73	0.00	223.73	1636.72	818.36	1957.39	980.15	74.45	-5.261	0.000	0.236
137.00	-8.15	-11.19	0.00	-192.48	0.00	192.48	1619.86	809.93	1908.38	955.61	76.66	-5.309	0.000	0.207
140.00	-7.82	-10.97	0.00	-158.92	0.00	158.92	1594.17	797.08	1835.53	919.13	80.01	-5.372	0.000	0.178
145.00	-7.28	-10.62	0.00	-104.05	0.00	104.05	1550.24	775.12	1715.94	859.24	85.68	-5.457	0.000	0.126
148.00	-4.50	-7.10	0.00	-71.08	0.00	71.08	1523.23	761.62	1645.35	823.90	89.11	-5.495	0.000	0.089
150.00	-4.30	-6.97	0.00	-56.87	0.00	56.87	1504.95	752.48	1598.80	800.59	91.42	-5.515	0.000	0.074
153.00	-3.74	-5.19	0.00	-35.66	0.00	35.66	1477.12	738.56	1529.77	766.02	94.89	-5.538	0.000	0.049
155.00	-3.55	-5.06	0.00	-25.28	0.00	25.28	1458.29	729.15	1484.30	743.26	97.20	-5.548	0.000	0.036
160.00	0.00	-4.69	0.00	0.00	0.00	0.00	1400.09	700.04	1362.73	682.38	103.01	-5.560	0.000	0.000

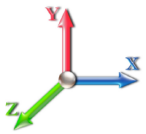
Wind Loading - Shaft

Structure:	CT03538-S	**Code:**	TIA-222-G	5/26/2022	
Site Name:	South Plymouth	**Exposure:**	B		
Height:	160.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 14	

Load Case: 0.9D + 1.6W 9 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	14.724	16.20	372.20	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	14.724	16.20	365.12	0.650	0.000	5.00	23.690	15.40	399.0	0.0	1181.2
10.00		1.00	0.70	14.724	16.20	358.04	0.650	0.000	5.00	23.235	15.10	391.4	0.0	1158.4
15.00		1.00	0.70	14.724	16.20	350.96	0.650	0.000	5.00	22.780	14.81	383.7	0.0	1135.5
20.00		1.00	0.70	14.724	16.20	343.89	0.650	0.000	5.00	22.325	14.51	376.1	0.0	1112.7
25.00		1.00	0.70	14.724	16.20	336.81	0.650	0.000	5.00	21.871	14.22	368.4	0.0	1089.8
30.00		1.00	0.70	14.736	16.21	329.87	0.650	0.000	5.00	21.416	13.92	361.0	0.0	1066.9
35.00		1.00	0.73	15.400	16.94	329.97	0.650	0.000	5.00	20.961	13.62	369.3	0.0	1044.1
38.75	Bot - Section 2	1.00	0.75	15.854	17.44	329.30	0.650	0.000	3.75	15.422	10.02	279.7	0.0	768.1
40.00		1.00	0.76	15.999	17.60	328.95	0.650	0.000	1.25	5.163	3.36	94.5	0.0	473.9
45.00	Top - Section 1	1.00	0.79	16.546	18.20	327.03	0.650	0.000	5.00	20.368	13.24	385.6	0.0	1868.9
50.00		1.00	0.81	17.052	18.76	329.68	0.650	0.000	5.00	19.913	12.94	388.5	0.0	850.9
55.00		1.00	0.83	17.523	19.28	326.48	0.650	0.000	5.00	19.458	12.65	390.1	0.0	831.4
60.00		1.00	0.85	17.964	19.76	322.74	0.650	0.000	5.00	19.004	12.35	390.5	0.0	811.8
65.00		1.00	0.87	18.380	20.22	318.54	0.650	0.000	5.00	18.549	12.06	390.0	0.0	792.2
70.00		1.00	0.89	18.773	20.65	313.94	0.650	0.000	5.00	18.094	11.76	388.6	0.0	772.6
75.00		1.00	0.91	19.147	21.06	308.98	0.650	0.000	5.00	17.639	11.47	386.4	0.0	753.0
78.50	Bot - Section 3	1.00	0.92	19.398	21.34	305.31	0.650	0.000	3.50	12.077	7.85	268.0	0.0	515.4
80.00		1.00	0.93	19.503	21.45	303.69	0.650	0.000	1.50	5.187	3.37	115.7	0.0	402.7
83.75	Top - Section 2	1.00	0.94	19.760	21.74	299.54	0.650	0.000	3.75	12.788	8.31	289.1	0.0	992.6
85.00		1.00	0.94	19.844	21.83	302.89	0.650	0.000	1.25	4.206	2.73	95.5	0.0	149.8
90.00		1.00	0.96	20.170	22.19	297.09	0.650	0.000	5.00	16.539	10.75	381.6	0.0	588.9
95.00		1.00	0.97	20.484	22.53	291.05	0.650	0.000	5.00	16.084	10.45	376.9	0.0	572.6
100.00		1.00	0.99	20.787	22.87	284.78	0.650	0.000	5.00	15.629	10.16	371.7	0.0	556.3
105.00		1.00	1.00	21.079	23.19	278.30	0.650	0.000	5.00	15.174	9.86	365.9	0.0	539.9
108.00	Appurtenance(s)	1.00	1.01	21.249	23.37	274.32	0.650	0.000	3.00	8.886	5.78	216.0	0.0	316.1
110.00		1.00	1.02	21.361	23.50	271.63	0.650	0.000	2.00	5.833	3.79	142.5	0.0	207.5
115.00		1.00	1.03	21.634	23.80	264.78	0.650	0.000	5.00	14.264	9.27	353.0	0.0	507.3
119.25	Bot - Section 4	1.00	1.04	21.859	24.05	258.82	0.650	0.000	4.25	11.767	7.65	294.3	0.0	418.4
120.00		1.00	1.04	21.898	24.09	257.76	0.650	0.000	0.75	2.074	1.35	52.0	0.0	131.7
123.50	Top - Section 3	1.00	1.05	22.079	24.29	252.75	0.650	0.000	3.50	9.544	6.20	241.1	0.0	605.9
124.00	Appurtenance(s)	1.00	1.05	22.104	24.31	256.06	0.650	0.000	0.50	1.345	0.87	34.0	0.0	38.3
125.00		1.00	1.05	22.155	24.37	254.62	0.650	0.000	1.00	2.677	1.74	67.8	0.0	76.3
130.00		1.00	1.07	22.405	24.65	247.32	0.650	0.000	5.00	13.111	8.52	336.1	0.0	373.5
134.50	Appurtenance(s)	1.00	1.08	22.624	24.89	240.63	0.650	0.000	4.50	11.411	7.42	295.3	0.0	325.0
135.00		1.00	1.08	22.648	24.91	239.88	0.650	0.000	0.50	1.245	0.81	32.3	0.0	35.5
137.00	Appurtenance(s)	1.00	1.08	22.743	25.02	236.86	0.650	0.000	2.00	4.935	3.21	128.4	0.0	140.5
140.00		1.00	1.09	22.884	25.17	232.30	0.650	0.000	3.00	7.266	4.72	190.2	0.0	206.8
145.00		1.00	1.10	23.115	25.43	224.60	0.650	0.000	5.00	11.746	7.64	310.6	0.0	334.3
148.00	Appurtenance(s)	1.00	1.11	23.251	25.58	219.92	0.650	0.000	3.00	6.829	4.44	181.7	0.0	194.3
150.00		1.00	1.11	23.340	25.67	216.78	0.650	0.000	2.00	4.462	2.90	119.1	0.0	126.9
153.00	Appurtenance(s)	1.00	1.12	23.472	25.82	212.03	0.650	0.000	3.00	6.557	4.26	176.1	0.0	186.5
155.00		1.00	1.12	23.560	25.92	208.84	0.650	0.000	2.00	4.280	2.78	115.4	0.0	121.7
160.00	Appurtenance(s)	1.00	1.13	23.774	26.15	200.79	0.650	0.000	5.00	10.382	6.75	282.4	0.0	295.1
								Totals:	**160.00**			**11,575.2**		**24,670.9**

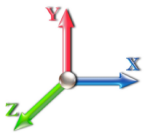
Discrete Appurtenance Forces

Structure:	CT03538-S	**Code:**	TIA-222-G	5/26/2022	
Site Name:	South Plymouth	**Exposure:**	B		
Height:	160.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 15	

Load Case: 0.9D + 1.6W 9 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	160.00	RRU 11	3	23.774	26.152	0.60	0.90	6.87	237.60	0.000	0.000	287.64	0.00	0.00
2	160.00	Ericsson KRY 112 144/1	3	23.774	26.152	0.63	0.90	0.77	29.70	0.000	0.000	32.42	0.00	0.00
3	160.00	Air 32	3	23.774	26.152	0.78	0.90	12.92	356.94	0.000	0.000	540.59	0.00	0.00
4	160.00	Air 21 B2A/B4P	3	23.774	26.152	0.77	0.90	14.14	247.05	0.000	0.000	591.70	0.00	0.00
5	160.00	Low Profile Platform	1	23.774	26.152	1.00	1.00	22.00	1440.00	0.000	0.000	920.54	0.00	0.00
6	160.00	Commscope LNX112 144	3	23.774	26.152	0.81	0.90	48.60	345.60	0.000	0.000	2033.56	0.00	0.00
7	153.00	Hutton HPD 3.4-4.7	1	23.472	25.820	1.00	1.00	8.92	94.50	0.000	0.000	368.50	0.00	0.00
8	153.00	VHLP-2.6-11	1	23.472	25.820	1.00	1.00	8.43	42.84	0.000	0.000	348.25	0.00	0.00
9	153.00	Lone Star Electronics	1	23.625	25.987	1.00	1.00	2.10	18.00	0.000	3.500	87.32	0.00	305.61
10	153.00	Pipe Mounts	2	23.472	25.820	1.00	1.00	10.00	90.00	0.000	0.000	413.11	0.00	0.00
11	153.00	4 ft Sidearm	1	23.472	25.820	1.00	1.00	3.50	45.00	0.000	0.000	144.59	0.00	0.00
12	153.00	Motorola ODU-A-RF	3	23.472	25.820	1.00	1.00	4.32	28.08	0.000	0.000	178.47	0.00	0.00
13	148.00	ALU 800 MHz RRH	3	23.251	25.576	0.54	0.80	4.00	143.10	0.000	0.000	163.84	0.00	0.00
14	148.00	RFS APXVTM14-C-120	3	23.340	25.674	0.71	0.80	13.54	259.20	0.000	2.000	556.29	0.00	1112.58
15	148.00	RFS APXVSPP18-C-A20	3	23.251	25.576	0.74	0.80	17.90	261.90	0.000	0.000	732.51	0.00	0.00
16	148.00	ALU 1900MHz RRH	3	23.251	25.576	0.54	0.80	6.11	118.80	0.000	0.000	250.04	0.00	0.00
17	148.00	ALU TD-RRH8x20-25	3	23.251	25.576	0.55	0.80	6.71	189.00	0.000	0.000	274.45	0.00	0.00
18	148.00	ALU 800 MHz Filter	3	23.251	25.576	0.79	0.80	1.00	27.00	0.000	0.000	40.84	0.00	0.00
19	148.00	RFS ACU-A20-N	4	23.251	25.576	0.63	0.80	0.35	3.60	0.000	0.000	14.48	0.00	0.00
20	148.00	Low Profile Platform	1	23.251	25.576	1.00	1.00	25.00	1080.00	0.000	0.000	1023.03	0.00	0.00
21	137.00	Samsung B5/B13	3	22.743	25.017	0.58	0.75	3.26	189.81	0.000	0.000	130.38	0.00	0.00
22	137.00	Platform Handrail	1	22.743	25.017	1.00	1.00	9.70	322.20	0.000	0.000	388.27	0.00	0.00
23	137.00	RFS DB-T1-6Z-8AB-0Z	2	22.743	25.017	0.53	0.75	5.11	79.20	0.000	0.000	204.62	0.00	0.00
24	137.00	Samsung B2/B66A	3	22.743	25.017	0.62	0.75	3.51	227.88	0.000	0.000	140.53	0.00	0.00
25	137.00	Quintel QS6656-5D	6	22.743	25.017	0.69	0.75	33.66	499.50	0.000	0.000	1347.27	0.00	0.00
26	137.00	Samsung VZS01	3	22.743	25.017	0.52	0.75	7.40	235.17	0.000	0.000	296.31	0.00	0.00
27	137.00	Low Profile Platform	1	22.743	25.017	1.00	1.00	22.00	1350.00	0.000	0.000	880.62	0.00	0.00
28	137.00	Antel BXA-70063-6CF-2	3	22.743	25.017	0.62	0.75	14.14	45.90	0.000	0.000	565.87	0.00	0.00
29	134.50	Bird Technologies CSA	1	22.624	24.886	1.00	1.00	3.81	4.14	0.000	0.000	151.71	0.00	0.00
30	134.50	Pipe Mount	1	22.624	24.886	1.00	1.00	5.00	45.00	0.000	0.000	199.09	0.00	0.00
31	124.00	Fujitsu TA08025-B605	3	22.104	24.315	0.60	0.75	3.53	202.37	0.000	0.000	137.25	0.00	0.00
32	124.00	Fujitsu TA08025-B604	3	22.104	24.315	0.57	0.75	3.35	172.61	0.000	0.000	130.39	0.00	0.00
33	124.00	JMA MX08FRO665-21	3	22.104	24.315	0.55	0.75	20.53	174.15	0.000	0.000	798.74	0.00	0.00
34	124.00	Platform w/ handrais	1	22.104	24.315	1.00	1.00	34.24	1554.30	0.000	0.000	1332.07	0.00	0.00
35	124.00	Raycap	1	22.104	24.315	0.58	0.75	1.17	19.67	0.000	0.000	45.52	0.00	0.00
36	108.00	Ericsson B14 4478 RRU	3	21.249	23.374	0.54	0.80	5.07	156.60	0.000	0.000	189.43	0.00	0.00
37	108.00	Ericsson RRUS 32 B2	3	21.249	23.374	0.54	0.80	2.65	207.90	0.000	0.000	99.22	0.00	0.00
38	108.00	7770	6	21.249	23.374	0.66	0.80	21.91	189.00	0.000	0.000	819.47	0.00	0.00
39	108.00	AM-X-CD-17-65-00T-RET	3	21.249	23.374	0.60	0.80	14.44	130.95	0.000	0.000	539.88	0.00	0.00
40	108.00	Powerwave 7020 RET	12	21.249	23.374	0.80	0.80	3.84	23.76	0.000	0.000	143.61	0.00	0.00
41	108.00	EPBQ-652L8H6-L2	3	21.249	23.374	0.57	0.80	26.77	267.30	0.000	0.000	1001.14	0.00	0.00
42	108.00	Low Profile Platform	1	21.249	23.374	1.00	1.00	22.00	1350.00	0.000	0.000	822.76	0.00	0.00
43	108.00	Powerwave LGP21401	6	21.249	23.374	0.40	0.80	3.10	76.14	0.000	0.000	115.78	0.00	0.00
44	108.00	Powerwave 21903	6	21.249	23.374	0.67	0.80	1.09	29.70	0.000	0.000	40.71	0.00	0.00
45	108.00	Ericsson RRU 11	6	21.249	23.374	0.54	0.80	8.10	275.40	0.000	0.000	303.09	0.00	0.00
46	108.00	Andrew ABT-DFDM-ADBH	3	21.249	23.374	0.78	0.80	0.12	2.97	0.000	0.000	4.40	0.00	0.00
47	108.00	Raycap DC6-48-60-18-8F	2	21.249	23.374	0.80	0.80	1.47	57.24	0.000	0.000	55.05	0.00	0.00

Discrete Appurtenance Forces

Structure:	CT03538-S		**Code:**	TIA-222-G	5/26/2022
Site Name:	South Plymouth		**Exposure:**	B	
Height:	160.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 16

Totals:	**12,946.76**	**19,885.36**

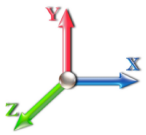
Total Applied Force Summary

Structure:	CT03538-S		**Code:**	TIA-222-G	5/26/2022
Site Name:	South Plymouth		**Exposure:**	B	
Height:	160.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 17

Load Case: 0.9D + 1.6W 9 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		399.04	1374.60	0.00	0.00
10.00		391.38	1351.74	0.00	0.00
15.00		383.72	1328.88	0.00	0.00
20.00		376.06	1306.02	0.00	0.00
25.00		368.39	1283.16	0.00	0.00
30.00		361.04	1260.30	0.00	0.00
35.00		369.28	1237.44	0.00	0.00
38.75		279.72	913.08	0.00	0.00
40.00		94.50	522.20	0.00	0.00
45.00		385.55	2062.26	0.00	0.00
50.00		388.46	1044.31	0.00	0.00
55.00		390.07	1024.72	0.00	0.00
60.00		390.54	1005.12	0.00	0.00
65.00		390.01	985.53	0.00	0.00
70.00		388.59	965.93	0.00	0.00
75.00		386.36	946.34	0.00	0.00
78.50		267.99	650.78	0.00	0.00
80.00		115.72	460.73	0.00	0.00
83.75		289.07	1137.67	0.00	0.00
85.00		95.48	198.13	0.00	0.00
90.00		381.63	782.30	0.00	0.00
95.00		376.91	765.97	0.00	0.00
100.00		371.66	749.64	0.00	0.00
105.00		365.90	733.31	0.00	0.00
108.00	(54) attachments	4350.56	3199.11	0.00	0.00
110.00		142.54	258.91	0.00	0.00
115.00		353.02	635.85	0.00	0.00
119.25		294.25	527.63	0.00	0.00
120.00		51.96	150.99	0.00	0.00
123.50		241.06	695.90	0.00	0.00
124.00	(11) attachments	2477.99	2174.27	0.00	0.00
125.00		67.85	100.96	0.00	0.00
130.00		336.05	496.95	0.00	0.00
134.50	(2) attachments	646.13	485.23	0.00	0.00
135.00		32.26	47.57	0.00	0.00
137.00	(22) attachments	4082.27	3138.62	0.00	0.00
140.00		190.23	256.74	0.00	0.00
145.00		310.62	417.44	0.00	0.00
148.00	(23) attachments	3237.14	2326.80	0.00	1112.58
150.00		119.14	155.43	0.00	0.00
153.00	(9) attachments	1716.30	547.65	0.00	305.61
155.00		115.36	148.12	0.00	0.00
160.00	(16) attachments	4688.81	3018.04	0.00	0.00
	Totals:	**31,460.60**	**42,872.39**	**0.00**	**1,418.19**

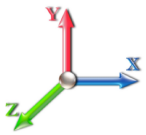
Calculated Forces

Structure:	CT03538-S	**Code:**	TIA-222-G	5/26/2022	
Site Name:	South Plymouth	**Exposure:**	B		
Height:	160.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 18	

Load Case: 0.9D + 1.6W 9 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 25

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 Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-42.82	-31.53	0.00	-3780.7	0.00	3780.78	5345.98	2672.99	12322.4	6170.37	0.00	0.000	0.000	0.621
5.00	-41.36	-31.25	0.00	-3623.1	0.00	3623.15	5278.55	2639.27	11931.9	5974.86	0.09	-0.170	0.000	0.614
10.00	-39.91	-30.97	0.00	-3466.9	0.00	3466.92	5209.75	2604.88	11544.5	5780.84	0.36	-0.343	0.000	0.608
15.00	-38.49	-30.70	0.00	-3312.0	0.00	3312.06	5139.58	2569.79	11160.2	5588.39	0.82	-0.518	0.000	0.600
20.00	-37.10	-30.42	0.00	-3158.5	0.00	3158.58	5068.05	2534.02	10779.2	5397.62	1.45	-0.695	0.000	0.593
25.00	-35.72	-30.15	0.00	-3006.4	0.00	3006.47	4995.14	2497.57	10401.7	5208.61	2.28	-0.875	0.000	0.585
30.00	-34.37	-29.88	0.00	-2855.7	0.00	2855.72	4920.87	2460.43	10028.0	5021.46	3.29	-1.057	0.000	0.576
35.00	-33.06	-29.58	0.00	-2706.3	0.00	2706.34	4845.22	2422.61	9658.13	4836.24	4.50	-1.242	0.000	0.567
38.75	-32.11	-29.33	0.00	-2595.4	0.00	2595.42	4787.59	2393.79	9383.39	4698.67	5.53	-1.382	0.000	0.559
40.00	-31.53	-29.29	0.00	-2558.7	0.00	2558.76	4768.21	2384.10	9292.33	4653.07	5.90	-1.430	0.000	0.557
45.00	-29.38	-28.94	0.00	-2412.3	0.00	2412.33	3881.96	1940.98	7532.86	3772.03	7.50	-1.619	0.000	0.647
50.00	-28.25	-28.62	0.00	-2267.6	0.00	2267.61	3822.99	1911.49	7248.21	3629.49	9.30	-1.808	0.000	0.632
55.00	-27.13	-28.30	0.00	-2124.4	0.00	2124.49	3762.64	1881.32	6966.27	3488.31	11.30	-2.020	0.000	0.616
60.00	-26.04	-27.97	0.00	-1982.9	0.00	1982.99	3700.92	1850.46	6687.23	3348.59	13.53	-2.232	0.000	0.599
65.00	-24.97	-27.63	0.00	-1843.1	0.00	1843.15	3637.84	1818.92	6411.28	3210.40	15.98	-2.444	0.000	0.581
70.00	-23.92	-27.29	0.00	-1704.9	0.00	1704.99	3573.38	1786.69	6138.59	3073.86	18.66	-2.656	0.000	0.562
75.00	-22.91	-26.93	0.00	-1568.5	0.00	1568.54	3507.56	1753.78	5869.35	2939.04	21.55	-2.867	0.000	0.540
78.50	-22.22	-26.67	0.00	-1474.2	0.00	1474.29	3460.67	1730.33	5683.03	2845.74	23.71	-3.016	0.000	0.525
80.00	-21.72	-26.57	0.00	-1434.2	0.00	1434.29	3440.37	1720.18	5603.74	2806.03	24.67	-3.080	0.000	0.518
83.75	-20.55	-26.26	0.00	-1334.6	0.00	1334.64	2706.01	1353.00	4401.17	2203.86	27.15	-3.237	0.000	0.614
85.00	-20.29	-26.20	0.00	-1301.8	0.00	1301.82	2693.89	1346.95	4351.48	2178.97	28.00	-3.290	0.000	0.605
90.00	-19.43	-25.85	0.00	-1170.8	0.00	1170.81	2644.58	1322.29	4154.08	2080.13	31.57	-3.521	0.000	0.571
95.00	-18.59	-25.50	0.00	-1041.5	0.00	1041.55	2593.89	1296.95	3958.97	1982.43	35.38	-3.746	0.000	0.533
100.00	-17.78	-25.14	0.00	-914.05	0.00	914.05	2541.84	1270.92	3766.36	1885.98	39.42	-3.962	0.000	0.492
105.00	-17.00	-24.77	0.00	-788.33	0.00	788.33	2488.42	1244.21	3576.41	1790.86	43.68	-4.168	0.000	0.447
108.00	-14.10	-20.22	0.00	-714.01	0.00	714.01	2455.70	1227.85	3463.79	1734.47	46.33	-4.287	0.000	0.418
110.00	-13.80	-20.09	0.00	-673.56	0.00	673.56	2433.62	1216.81	3389.31	1697.17	48.14	-4.364	0.000	0.403
115.00	-13.14	-19.73	0.00	-573.09	0.00	573.09	2377.46	1188.73	3205.24	1605.00	52.81	-4.545	0.000	0.363
119.25	-12.61	-19.41	0.00	-489.24	0.00	489.24	2328.64	1164.32	3051.30	1527.92	56.92	-4.690	0.000	0.326
120.00	-12.44	-19.36	0.00	-474.68	0.00	474.68	2319.93	1159.96	3024.39	1514.44	57.66	-4.715	0.000	0.319
123.50	-11.75	-19.08	0.00	-406.91	0.00	406.91	1729.39	864.70	2245.31	1124.33	61.15	-4.824	0.000	0.369
124.00	-9.78	-16.43	0.00	-397.37	0.00	397.37	1725.51	862.76	2232.60	1117.96	61.66	-4.839	0.000	0.361
125.00	-9.66	-16.37	0.00	-380.94	0.00	380.94	1717.71	858.86	2207.21	1105.25	62.67	-4.875	0.000	0.351
130.00	-9.15	-16.01	0.00	-299.09	0.00	299.09	1677.90	838.95	2081.35	1042.22	67.86	-5.032	0.000	0.293
134.50	-8.71	-15.34	0.00	-227.03	0.00	227.03	1640.90	820.45	1969.70	986.31	72.66	-5.154	0.000	0.236
135.00	-8.66	-15.31	0.00	-219.36	0.00	219.36	1636.72	818.36	1957.39	980.15	73.20	-5.167	0.000	0.229
137.00	-5.89	-10.96	0.00	-188.74	0.00	188.74	1619.86	809.93	1908.38	955.61	75.37	-5.214	0.000	0.201
140.00	-5.64	-10.76	0.00	-155.86	0.00	155.86	1594.17	797.08	1835.53	919.13	78.67	-5.276	0.000	0.173
145.00	-5.24	-10.41	0.00	-102.08	0.00	102.08	1550.24	775.12	1715.94	859.24	84.23	-5.359	0.000	0.122
148.00	-3.23	-6.97	0.00	-69.72	0.00	69.72	1523.23	761.62	1645.35	823.90	87.61	-5.396	0.000	0.087
150.00	-3.08	-6.84	0.00	-55.77	0.00	55.77	1504.95	752.48	1598.80	800.59	89.87	-5.416	0.000	0.072
153.00	-2.70	-5.08	0.00	-34.94	0.00	34.94	1477.12	738.56	1529.77	766.02	93.27	-5.438	0.000	0.047
155.00	-2.56	-4.95	0.00	-24.77	0.00	24.77	1458.29	729.15	1484.30	743.26	95.55	-5.449	0.000	0.035
160.00	0.00	-4.69	0.00	0.00	0.00	0.00	1400.09	700.04	1362.73	682.38	101.26	-5.460	0.000	0.000

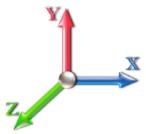
Wind Loading - Shaft

Structure:	CT03538-S	**Code:**	TIA-222-G	5/26/2022	
Site Name:	South Plymouth	**Exposure:**	B		
Height:	160.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 19	

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	4.256	4.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	4.256	4.68	0.00	1.200	1.242	5.00	24.725	29.67	138.9	441.2	2016.1
10.00		1.00	0.70	4.256	4.68	0.00	1.200	1.331	5.00	24.345	29.21	136.8	464.6	2009.1
15.00		1.00	0.70	4.256	4.68	0.00	1.200	1.386	5.00	23.936	28.72	134.5	474.9	1989.0
20.00		1.00	0.70	4.256	4.68	0.00	1.200	1.427	5.00	23.514	28.22	132.1	479.5	1963.1
25.00		1.00	0.70	4.256	4.68	0.00	1.200	1.459	5.00	23.086	27.70	129.7	480.8	1933.9
30.00		1.00	0.70	4.260	4.69	0.00	1.200	1.486	5.00	22.654	27.18	127.4	479.9	1902.5
35.00		1.00	0.73	4.451	4.90	0.00	1.200	1.509	5.00	22.218	26.66	130.5	477.4	1869.5
38.75	Bot - Section 2	1.00	0.75	4.583	5.04	0.00	1.200	1.524	3.75	16.375	19.65	99.1	356.0	1380.1
40.00		1.00	0.76	4.625	5.09	0.00	1.200	1.529	1.25	5.482	6.58	33.5	120.2	752.0
45.00	Top - Section 1	1.00	0.79	4.783	5.26	0.00	1.200	1.547	5.00	21.658	25.99	136.7	476.3	2968.2
50.00		1.00	0.81	4.929	5.42	0.00	1.200	1.564	5.00	21.216	25.46	138.0	471.0	1605.6
55.00		1.00	0.83	5.065	5.57	0.00	1.200	1.579	5.00	20.774	24.93	138.9	465.0	1573.5
60.00		1.00	0.85	5.193	5.71	0.00	1.200	1.592	5.00	20.331	24.40	139.3	458.5	1540.8
65.00		1.00	0.87	5.313	5.84	0.00	1.200	1.605	5.00	19.886	23.86	139.5	451.5	1507.7
70.00		1.00	0.89	5.426	5.97	0.00	1.200	1.617	5.00	19.441	23.33	139.3	444.1	1474.2
75.00		1.00	0.91	5.534	6.09	0.00	1.200	1.628	5.00	18.996	22.80	138.8	436.3	1440.3
78.50	Bot - Section 3	1.00	0.92	5.607	6.17	0.00	1.200	1.636	3.50	13.031	15.64	96.4	301.5	988.7
80.00		1.00	0.93	5.637	6.20	0.00	1.200	1.639	1.50	5.596	6.72	41.6	130.4	667.3
83.75	Top - Section 2	1.00	0.94	5.712	6.28	0.00	1.200	1.646	3.75	13.817	16.58	104.2	321.3	1644.8
85.00		1.00	0.94	5.736	6.31	0.00	1.200	1.649	1.25	4.549	5.46	34.4	106.6	306.3
90.00		1.00	0.96	5.830	6.41	0.00	1.200	1.658	5.00	17.921	21.50	137.9	417.6	1202.8
95.00		1.00	0.97	5.921	6.51	0.00	1.200	1.667	5.00	17.473	20.97	136.6	408.7	1172.2
100.00		1.00	0.99	6.008	6.61	0.00	1.200	1.676	5.00	17.025	20.43	135.0	399.6	1141.3
105.00		1.00	1.00	6.093	6.70	0.00	1.200	1.684	5.00	16.577	19.89	133.3	390.3	1110.2
108.00	Appurtenance(s)	1.00	1.01	6.142	6.76	0.00	1.200	1.689	3.00	9.730	11.68	78.9	230.8	652.3
110.00		1.00	1.02	6.174	6.79	0.00	1.200	1.692	2.00	6.397	7.68	52.1	152.3	429.0
115.00		1.00	1.03	6.253	6.88	0.00	1.200	1.699	5.00	15.680	18.82	129.4	371.1	1047.5
119.25	Bot - Section 4	1.00	1.04	6.318	6.95	0.00	1.200	1.706	4.25	12.975	15.57	108.2	308.4	866.2
120.00		1.00	1.04	6.330	6.96	0.00	1.200	1.707	0.75	2.287	2.74	19.1	55.0	230.6
123.50	Top - Section 3	1.00	1.05	6.382	7.02	0.00	1.200	1.712	3.50	10.542	12.65	88.8	251.8	1059.7
124.00	Appurtenance(s)	1.00	1.05	6.389	7.03	0.00	1.200	1.712	0.50	1.488	1.79	12.5	35.9	87.0
125.00		1.00	1.05	6.404	7.04	0.00	1.200	1.714	1.00	2.962	3.55	25.0	71.3	173.0
130.00		1.00	1.07	6.476	7.12	0.00	1.200	1.720	5.00	14.545	17.45	124.3	346.6	844.5
134.50	Appurtenance(s)	1.00	1.08	6.539	7.19	0.00	1.200	1.726	4.50	12.706	15.25	109.7	303.6	736.9
135.00		1.00	1.08	6.546	7.20	0.00	1.200	1.727	0.50	1.389	1.67	12.0	33.6	80.9
137.00	Appurtenance(s)	1.00	1.08	6.574	7.23	0.00	1.200	1.729	2.00	5.512	6.61	47.8	132.9	320.2
140.00		1.00	1.09	6.615	7.28	0.00	1.200	1.733	3.00	8.133	9.76	71.0	195.6	471.3
145.00		1.00	1.10	6.681	7.35	0.00	1.200	1.739	5.00	13.196	15.83	116.4	315.4	761.1
148.00	Appurtenance(s)	1.00	1.11	6.721	7.39	0.00	1.200	1.743	3.00	7.701	9.24	68.3	185.4	444.5
150.00		1.00	1.11	6.746	7.42	0.00	1.200	1.745	2.00	5.044	6.05	44.9	121.9	291.1
153.00	Appurtenance(s)	1.00	1.12	6.785	7.46	0.00	1.200	1.749	3.00	7.431	8.92	66.5	179.0	427.6
155.00		1.00	1.12	6.810	7.49	0.00	1.200	1.751	2.00	4.864	5.84	43.7	117.6	279.9
160.00	Appurtenance(s)	1.00	1.13	6.872	7.56	0.00	1.200	1.757	5.00	11.845	14.21	107.5	283.2	676.7
								Totals:	**160.00**			**4,178.8**		**46,039.4**

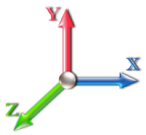
Discrete Appurtenance Forces

Structure:	CT03538-S	**Code:**	TIA-222-G	5/26/2022	
Site Name:	South Plymouth	**Exposure:**	B		
Height:	160.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 20	

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	160.00	RRU 11	3	6.872	7.559	0.60	0.90	10.01	500.51	0.000	0.000	75.69	0.00	0.00
2	160.00	Ericsson KRY 112 144/1	3	6.872	7.559	0.63	0.90	1.68	62.85	0.000	0.000	12.69	0.00	0.00
3	160.00	Air 32	3	6.872	7.559	0.78	0.90	21.82	795.68	0.000	0.000	164.91	0.00	0.00
4	160.00	Air 21 B2A/B4P	3	6.872	7.559	0.77	0.90	27.31	1153.63	0.000	0.000	206.41	0.00	0.00
5	160.00	Low Profile Platform	1	6.872	7.559	1.00	1.00	39.78	2925.21	0.000	0.000	300.67	0.00	0.00
6	160.00	Commscope LNX112 144	3	6.872	7.559	0.81	0.90	82.75	729.60	0.000	0.000	625.50	0.00	0.00
7	153.00	Hutton HPD 3.4-4.7	1	6.785	7.463	1.00	1.00	9.54	238.34	0.000	0.000	71.23	0.00	0.00
8	153.00	VHLP-2.6-11	1	6.785	7.463	1.00	1.00	10.14	180.75	0.000	0.000	75.68	0.00	0.00
9	153.00	Lone Star Electronics	1	6.829	7.512	1.00	1.00	3.98	55.02	0.000	3.500	29.88	0.00	104.56
10	153.00	Pipe Mounts	2	6.785	7.463	1.00	1.00	16.99	103.94	0.000	0.000	126.83	0.00	0.00
11	153.00	4 ft Sidearm	1	6.785	7.463	1.00	1.00	11.51	126.62	0.000	0.000	85.89	0.00	0.00
12	153.00	Motorola ODU-A-RF	3	6.785	7.463	1.00	1.00	6.90	135.09	0.000	0.000	51.48	0.00	0.00
13	148.00	ALU 800 MHz RRH	3	6.721	7.393	0.00	0.80	10.90	349.08	0.000	0.000	80.56	0.00	0.00
14	148.00	RFS APXVTM14-C-120	3	6.746	7.421	0.75	0.80	16.81	826.06	0.000	2.000	124.76	0.00	249.52
15	148.00	RFS APXVSPP18-C-A20	3	6.721	7.393	0.78	0.80	25.43	1201.97	0.000	0.000	187.96	0.00	0.00
16	148.00	ALU 1900MHz RRH	3	6.721	7.393	0.54	0.80	8.34	391.85	0.000	0.000	61.67	0.00	0.00
17	148.00	ALU TD-RRH8x20-25	3	6.721	7.393	0.60	0.80	8.75	582.85	0.000	0.000	64.70	0.00	0.00
18	148.00	ALU 800 MHz Filter	3	6.721	7.393	0.54	0.80	1.20	104.80	0.000	0.000	8.86	0.00	0.00
19	148.00	RFS ACU-A20-N	4	6.721	7.393	0.54	0.80	0.94	16.76	0.000	0.000	6.92	0.00	0.00
20	148.00	Low Profile Platform	1	6.721	7.393	1.00	1.00	45.91	2185.72	0.000	0.000	339.43	0.00	0.00
21	137.00	Samsung B5/B13	3	6.574	7.231	0.59	0.75	4.30	333.51	0.000	0.000	31.10	0.00	0.00
22	137.00	Platform Handrail	1	6.574	7.231	1.00	1.00	14.73	-702.83	0.000	0.000	106.54	0.00	0.00
23	137.00	RFS DB-T1-6Z-8AB-0Z	2	6.574	7.231	0.54	0.75	6.09	239.37	0.000	0.000	44.05	0.00	0.00
24	137.00	Samsung B2/B66A	3	6.574	7.231	0.64	0.75	4.63	455.27	0.000	0.000	33.46	0.00	0.00
25	137.00	Quintel QS6656-5D	6	6.574	7.231	0.69	0.75	38.80	1918.92	0.000	0.000	280.60	0.00	0.00
26	137.00	Samsung VZS01	3	6.574	7.231	0.53	0.75	8.94	634.77	0.000	0.000	64.62	0.00	0.00
27	137.00	Low Profile Platform	1	6.574	7.231	1.00	1.00	39.50	2797.10	0.000	0.000	285.65	0.00	0.00
28	137.00	Antel BXA-70063-6CF-2	3	6.574	7.231	0.66	0.75	20.41	374.57	0.000	0.000	147.60	0.00	0.00
29	134.50	Bird Technologies CSA	1	6.539	7.193	1.00	1.00	30.05	91.72	0.000	0.000	216.18	0.00	0.00
30	134.50	Pipe Mount	1	6.539	7.193	1.00	1.00	8.45	51.43	0.000	0.000	60.80	0.00	0.00
31	124.00	Fujitsu TA08025-B605	3	6.389	7.028	0.61	0.75	4.61	646.98	0.000	0.000	32.38	0.00	0.00
32	124.00	Fujitsu TA08025-B604	3	6.389	7.028	0.58	0.75	4.38	570.38	0.000	0.000	30.80	0.00	0.00
33	124.00	JMA MX08FRO665-21	3	6.389	7.028	0.56	0.75	23.55	1273.91	0.000	0.000	165.51	0.00	0.00
34	124.00	Platform w/ handrais	1	6.389	7.028	1.00	1.00	132.74	4982.26	0.000	0.000	932.91	0.00	0.00
35	124.00	Raycap	1	6.389	7.028	0.60	0.75	1.53	99.18	0.000	0.000	10.74	0.00	0.00
36	108.00	Ericsson B14 4478 RRU	3	6.142	6.756	0.54	0.80	6.17	483.75	0.000	0.000	41.71	0.00	0.00
37	108.00	Ericsson RRUS 32 B2	3	6.142	6.756	0.54	0.80	3.55	416.47	0.000	0.000	24.00	0.00	0.00
38	108.00	7770	6	6.142	6.756	0.70	0.80	27.58	1031.06	0.000	0.000	186.31	0.00	0.00
39	108.00	AM-X-CD-17-65-00T-RET	3	6.142	6.756	0.60	0.80	19.30	506.20	0.000	0.000	130.41	0.00	0.00
40	108.00	Powerwave 7020 RET	12	6.142	6.756	0.80	0.80	8.34	115.65	0.000	0.000	56.33	0.00	0.00
41	108.00	EPBQ-652L8H6-L2	3	6.142	6.756	0.57	0.80	29.53	1289.15	0.000	0.000	199.54	0.00	0.00
42	108.00	Low Profile Platform	1	6.142	6.756	1.00	1.00	39.09	2766.61	0.000	0.000	264.11	0.00	0.00
43	108.00	Powerwave LGP21401	6	6.142	6.756	0.40	0.80	5.04	204.08	0.000	0.000	34.03	0.00	0.00
44	108.00	Powerwave 21903	6	6.142	6.756	0.71	0.80	2.80	74.13	0.000	0.000	18.90	0.00	0.00
45	108.00	Ericsson RRU 11	6	6.142	6.756	0.54	0.80	10.08	690.82	0.000	0.000	68.07	0.00	0.00
46	108.00	Andrew ABT-DFDM-ADBH	3	6.142	6.756	0.80	0.80	0.57	8.34	0.000	0.000	3.83	0.00	0.00
47	108.00	Raycap DC6-48-60-18-8F	2	6.142	6.756	0.80	0.80	2.15	160.57	0.000	0.000	14.53	0.00	0.00

Discrete Appurtenance Forces

Structure:	CT03538-S		**Code:**	TIA-222-G	5/26/2022
Site Name:	South Plymouth		**Exposure:**	B	
Height:	160.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 21

Totals:	**34,179.71**	**6,186.44**

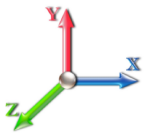
Total Applied Force Summary

Structure:	CT03538-S		**Code:**	TIA-222-G	5/26/2022
Site Name:	South Plymouth		**Exposure:**	B	
Height:	160.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 22

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		138.90	2273.96	0.00	0.00
10.00		136.77	2266.90	0.00	0.00
15.00		134.47	2246.78	0.00	0.00
20.00		132.10	2220.90	0.00	0.00
25.00		129.70	2191.70	0.00	0.00
30.00		127.37	2160.30	0.00	0.00
35.00		130.55	2127.33	0.00	0.00
38.75		99.05	1573.49	0.00	0.00
40.00		33.46	816.49	0.00	0.00
45.00		136.73	3226.02	0.00	0.00
50.00		138.04	1863.43	0.00	0.00
55.00		138.89	1831.32	0.00	0.00
60.00		139.35	1798.66	0.00	0.00
65.00		139.46	1765.53	0.00	0.00
70.00		139.25	1731.99	0.00	0.00
75.00		138.77	1698.08	0.00	0.00
78.50		96.44	1169.16	0.00	0.00
80.00		41.65	744.68	0.00	0.00
83.75		104.17	1838.17	0.00	0.00
85.00		34.44	370.73	0.00	0.00
90.00		137.92	1460.67	0.00	0.00
95.00		136.57	1430.02	0.00	0.00
100.00		135.03	1399.15	0.00	0.00
105.00		133.32	1368.07	0.00	0.00
108.00	(54) attachments	1120.67	8553.82	0.00	0.00
110.00		52.14	497.55	0.00	0.00
115.00		129.43	1218.95	0.00	0.00
119.25		108.22	1011.89	0.00	0.00
120.00		19.11	256.32	0.00	0.00
123.50		88.81	1179.65	0.00	0.00
124.00	(11) attachments	1184.90	7676.82	0.00	0.00
125.00		25.04	205.95	0.00	0.00
130.00		124.34	1009.17	0.00	0.00
134.50	(2) attachments	386.66	1028.21	0.00	0.00
135.00		12.00	97.05	0.00	0.00
137.00	(22) attachments	1041.46	6435.50	0.00	0.00
140.00		71.01	537.87	0.00	0.00
145.00		116.38	872.01	0.00	0.00
148.00	(23) attachments	943.16	6170.13	0.00	249.52
150.00		44.92	329.16	0.00	0.00
153.00	(9) attachments	507.53	1324.42	0.00	104.56
155.00		43.72	315.12	0.00	0.00
160.00	(16) attachments	1493.32	6932.24	0.00	0.00
	Totals:	**10,365.22**	**87,225.34**	**0.00**	**354.08**

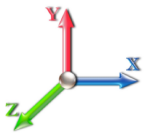
Calculated Forces

Structure:	CT03538-S	**Code:**	TIA-222-G	5/26/2022	
Site Name:	South Plymouth	**Exposure:**	B		
Height:	160.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 23	

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 25

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 Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-87.22	-10.41	0.00	-1294.8	0.00	1294.87	5345.98	2672.99	12322.4	6170.37	0.00	0.000	0.000	0.226
5.00	-84.94	-10.36	0.00	-1242.8	0.00	1242.82	5278.55	2639.27	11931.9	5974.86	0.03	-0.058	0.000	0.224
10.00	-82.66	-10.30	0.00	-1191.0	0.00	1191.04	5209.75	2604.88	11544.5	5780.84	0.12	-0.118	0.000	0.222
15.00	-80.40	-10.25	0.00	-1139.5	0.00	1139.52	5139.58	2569.79	11160.2	5588.39	0.28	-0.178	0.000	0.220
20.00	-78.17	-10.19	0.00	-1088.2	0.00	1088.28	5068.05	2534.02	10779.2	5397.62	0.50	-0.239	0.000	0.217
25.00	-75.97	-10.13	0.00	-1037.3	0.00	1037.32	4995.14	2497.57	10401.7	5208.61	0.78	-0.301	0.000	0.214
30.00	-73.80	-10.08	0.00	-986.65	0.00	986.65	4920.87	2460.43	10028.0	5021.46	1.13	-0.364	0.000	0.212
35.00	-71.66	-10.00	0.00	-936.27	0.00	936.27	4845.22	2422.61	9658.13	4836.24	1.55	-0.428	0.000	0.208
38.75	-70.08	-9.93	0.00	-898.77	0.00	898.77	4787.59	2393.79	9383.39	4698.67	1.90	-0.476	0.000	0.206
40.00	-69.26	-9.94	0.00	-886.35	0.00	886.35	4768.21	2384.10	9292.33	4653.07	2.03	-0.493	0.000	0.205
45.00	-66.02	-9.85	0.00	-836.66	0.00	836.66	3881.96	1940.98	7532.86	3772.03	2.58	-0.558	0.000	0.239
50.00	-64.15	-9.77	0.00	-787.42	0.00	787.42	3822.99	1911.49	7248.21	3629.49	3.20	-0.624	0.000	0.234
55.00	-62.31	-9.69	0.00	-738.57	0.00	738.57	3762.64	1881.32	6966.27	3488.31	3.89	-0.697	0.000	0.228
60.00	-60.50	-9.61	0.00	-690.13	0.00	690.13	3700.92	1850.46	6687.23	3348.59	4.66	-0.771	0.000	0.222
65.00	-58.72	-9.52	0.00	-642.11	0.00	642.11	3637.84	1818.92	6411.28	3210.40	5.51	-0.845	0.000	0.216
70.00	-56.98	-9.42	0.00	-594.53	0.00	594.53	3573.38	1786.69	6138.59	3073.86	6.43	-0.919	0.000	0.209
75.00	-55.28	-9.32	0.00	-547.41	0.00	547.41	3507.56	1753.78	5869.35	2939.04	7.44	-0.993	0.000	0.202
78.50	-54.10	-9.23	0.00	-514.80	0.00	514.80	3460.67	1730.33	5683.03	2845.74	8.18	-1.045	0.000	0.197
80.00	-53.35	-9.22	0.00	-500.95	0.00	500.95	3440.37	1720.18	5603.74	2806.03	8.52	-1.067	0.000	0.194
83.75	-51.51	-9.11	0.00	-466.39	0.00	466.39	2706.01	1353.00	4401.17	2203.86	9.38	-1.122	0.000	0.231
85.00	-51.13	-9.11	0.00	-455.00	0.00	455.00	2693.89	1346.95	4351.48	2178.97	9.67	-1.140	0.000	0.228
90.00	-49.66	-9.01	0.00	-409.44	0.00	409.44	2644.58	1322.29	4154.08	2080.13	10.91	-1.221	0.000	0.216
95.00	-48.22	-8.91	0.00	-364.38	0.00	364.38	2593.89	1296.95	3958.97	1982.43	12.23	-1.300	0.000	0.202
100.00	-46.82	-8.80	0.00	-319.83	0.00	319.83	2541.84	1270.92	3766.36	1885.98	13.63	-1.375	0.000	0.188
105.00	-45.44	-8.68	0.00	-275.81	0.00	275.81	2488.42	1244.21	3576.41	1790.86	15.11	-1.447	0.000	0.172
108.00	-36.92	-7.36	0.00	-249.77	0.00	249.77	2455.70	1227.85	3463.79	1734.47	16.04	-1.489	0.000	0.159
110.00	-36.42	-7.33	0.00	-235.05	0.00	235.05	2433.62	1216.81	3389.31	1697.17	16.67	-1.516	0.000	0.153
115.00	-35.19	-7.20	0.00	-198.41	0.00	198.41	2377.46	1188.73	3205.24	1605.00	18.29	-1.579	0.000	0.138
119.25	-34.18	-7.08	0.00	-167.82	0.00	167.82	2328.64	1164.32	3051.30	1527.92	19.72	-1.629	0.000	0.125
120.00	-33.92	-7.07	0.00	-162.51	0.00	162.51	2319.93	1159.96	3024.39	1514.44	19.97	-1.637	0.000	0.122
123.50	-32.74	-6.96	0.00	-137.77	0.00	137.77	1729.39	864.70	2245.31	1124.33	21.19	-1.675	0.000	0.142
124.00	-25.10	-5.55	0.00	-134.30	0.00	134.30	1725.51	862.76	2232.60	1117.96	21.36	-1.680	0.000	0.135
125.00	-24.90	-5.53	0.00	-128.74	0.00	128.74	1717.71	858.86	2207.21	1105.25	21.72	-1.692	0.000	0.131
130.00	-23.89	-5.40	0.00	-101.07	0.00	101.07	1677.90	838.95	2081.35	1042.22	23.52	-1.745	0.000	0.111
134.50	-22.87	-4.99	0.00	-76.78	0.00	76.78	1640.90	820.45	1969.70	986.31	25.18	-1.786	0.000	0.092
135.00	-22.77	-4.98	0.00	-74.28	0.00	74.28	1636.72	818.36	1957.39	980.15	25.37	-1.790	0.000	0.090
137.00	-16.37	-3.74	0.00	-64.33	0.00	64.33	1619.86	809.93	1908.38	955.61	26.13	-1.806	0.000	0.077
140.00	-15.83	-3.66	0.00	-53.10	0.00	53.10	1594.17	797.08	1835.53	919.13	27.27	-1.828	0.000	0.068
145.00	-14.96	-3.52	0.00	-34.80	0.00	34.80	1550.24	775.12	1715.94	859.24	29.20	-1.856	0.000	0.050
148.00	-8.83	-2.38	0.00	-23.99	0.00	23.99	1523.23	761.62	1645.35	823.90	30.37	-1.869	0.000	0.035
150.00	-8.50	-2.32	0.00	-19.23	0.00	19.23	1504.95	752.48	1598.80	800.59	31.15	-1.875	0.000	0.030
153.00	-7.19	-1.77	0.00	-12.15	0.00	12.15	1477.12	738.56	1529.77	766.02	32.33	-1.883	0.000	0.021
155.00	-6.88	-1.72	0.00	-8.61	0.00	8.61	1458.29	729.15	1484.30	743.26	33.12	-1.887	0.000	0.016
160.00	0.00	-1.49	0.00	0.00	0.00	0.00	1400.09	700.04	1362.73	682.38	35.10	-1.891	0.000	0.000

Seismic Segment Forces (Factored)

Structure:	CT03538-S		**Code:**	TIA-222-G	5/26/2022
Site Name:	South Plymouth		**Exposure:**	B	
Height:	160.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 24

Load Case:	1.2D + 1.0E							**Iterations**	23
Gust Response Factor	1.10				**Sds**	0.20		**Ss**	0.19
Dead Load Factor	1.20	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.07
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.30		**SA**	0.03	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1312.4	0.00	0.03	0.02	26.11	
10.00		1287.0	0.01	0.05	0.03	36.96	
15.00		1261.6	0.02	0.06	0.04	41.79	
20.00		1236.2	0.03	0.07	0.04	43.79	
25.00		1210.8	0.05	0.07	0.04	44.49	
30.00		1185.4	0.07	0.07	0.04	44.67	
35.00		1160.0	0.09	0.07	0.04	44.71	
38.75	Bot - Section 2	853.39	0.11	0.07	0.04	33.45	
40.00		526.51	0.12	0.07	0.03	20.75	
45.00	Top - Section 1	2076.5	0.15	0.07	0.03	83.54	
50.00		945.50	0.18	0.06	0.03	38.48	
55.00		923.72	0.22	0.06	0.02	37.32	
60.00		901.95	0.27	0.05	0.02	34.91	
65.00		880.18	0.31	0.04	0.01	30.67	
70.00		858.41	0.36	0.03	0.01	24.03	
75.00		836.64	0.42	0.01	0.01	14.80	
78.50	Bot - Section 3	572.69	0.45	0.00	0.01	4.90	
80.00		447.46	0.47	-0.01	0.01	1.92	
83.75	Top - Section 2	1102.9	0.52	-0.02	0.01	-7.58	
85.00		166.43	0.53	-0.03	0.01	-1.77	
90.00		654.37	0.60	-0.05	0.01	-16.06	
95.00		636.22	0.67	-0.08	0.02	-22.45	
100.00		618.08	0.74	-0.10	0.04	-25.67	
105.00		599.94	0.81	-0.11	0.06	-25.74	
108.00	Appurtenance(s)	3425.6	0.86	-0.12	0.07	-141.77	
110.00		230.54	0.89	-0.12	0.08	-9.09	
115.00		563.65	0.98	-0.12	0.12	-17.63	
119.25	Bot - Section 4	464.84	1.05	-0.09	0.16	-9.66	
120.00		146.34	1.06	-0.09	0.17	-2.72	
123.50	Top - Section 3	673.22	1.13	-0.05	0.20	-4.73	
124.00	Appurtenance(s)	2401.5	1.14	-0.05	0.21	-12.50	
125.00		84.74	1.15	-0.03	0.22	-0.12	
130.00		414.97	1.25	0.05	0.29	8.40	
134.50	Appurtenance(s)	415.66	1.34	0.17	0.37	18.12	
135.00		39.39	1.35	0.19	0.38	1.83	
137.00	Appurtenance(s)	3433.5	1.39	0.26	0.42	199.71	
140.00		229.82	1.45	0.38	0.48	17.74	
145.00		371.43	1.55	0.64	0.61	41.85	
148.00	Appurtenance(s)	2529.8	1.62	0.83	0.69	344.77	
150.00		141.02	1.66	0.98	0.76	21.57	
153.00	Appurtenance(s)	560.98	1.73	1.23	0.86	100.71	
155.00		135.22	1.77	1.42	0.93	26.80	
160.00	Appurtenance(s)	3279.9	1.89	1.98	1.14	815.01	
	Totals:	**41,797.4**				**1,906.3**	**Total Wind:** **31,460.6**

Calculated Forces

Structure:	CT03538-S		**Code:**	TIA-222-G	5/26/2022
Site Name:	South Plymouth		**Exposure:**	B	
Height:	160.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 25

Load Case:	1.2D + 1.0E							**Iterations**	23
Gust Response Factor	1.10			**Sds**	0.20			**Ss**	0.19
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.07
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.30	**SA**	0.03			**Seismic Importance Factor**	1.00

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 Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-57.16	-2.21	0.00	-282.21	0.00	282.21	5345.98	2672.99	12322.4	6170.37		0.00	0.00	0.056
5.00	-55.33	-2.20	0.00	-271.16	0.00	271.16	5278.55	2639.27	11931.9	5974.86		0.01	-0.01	0.056
10.00	-53.53	-2.17	0.00	-260.18	0.00	260.18	5209.75	2604.88	11544.5	5780.84		0.03	-0.03	0.055
15.00	-51.75	-2.14	0.00	-249.33	0.00	249.33	5139.58	2569.79	11160.2	5588.39		0.06	-0.04	0.055
20.00	-50.01	-2.11	0.00	-238.63	0.00	238.63	5068.05	2534.02	10779.2	5397.62		0.11	-0.05	0.054
25.00	-48.30	-2.07	0.00	-228.10	0.00	228.10	4995.14	2497.57	10401.7	5208.61		0.17	-0.07	0.053
30.00	-46.62	-2.04	0.00	-217.75	0.00	217.75	4920.87	2460.43	10028.0	5021.46		0.25	-0.08	0.053
35.00	-44.97	-2.00	0.00	-207.56	0.00	207.56	4845.22	2422.61	9658.13	4836.24		0.34	-0.09	0.052
38.75	-43.75	-1.97	0.00	-200.07	0.00	200.07	4787.59	2393.79	9383.39	4698.67		0.42	-0.10	0.052
40.00	-43.06	-1.95	0.00	-197.61	0.00	197.61	4768.21	2384.10	9292.33	4653.07		0.44	-0.11	0.051
45.00	-40.31	-1.87	0.00	-187.84	0.00	187.84	3881.96	1940.98	7532.86	3772.03		0.57	-0.12	0.060
50.00	-38.91	-1.84	0.00	-178.47	0.00	178.47	3822.99	1911.49	7248.21	3629.49		0.70	-0.14	0.059
55.00	-37.55	-1.81	0.00	-169.25	0.00	169.25	3762.64	1881.32	6966.27	3488.31		0.86	-0.15	0.058
60.00	-36.21	-1.79	0.00	-160.18	0.00	160.18	3700.92	1850.46	6687.23	3348.59		1.03	-0.17	0.058
65.00	-34.89	-1.76	0.00	-151.25	0.00	151.25	3637.84	1818.92	6411.28	3210.40		1.21	-0.19	0.057
70.00	-33.60	-1.74	0.00	-142.44	0.00	142.44	3573.38	1786.69	6138.59	3073.86		1.42	-0.21	0.056
75.00	-32.34	-1.73	0.00	-133.72	0.00	133.72	3507.56	1753.78	5869.35	2939.04		1.65	-0.22	0.055
78.50	-31.47	-1.73	0.00	-127.65	0.00	127.65	3460.67	1730.33	5683.03	2845.74		1.82	-0.24	0.054
80.00	-30.86	-1.73	0.00	-125.06	0.00	125.06	3440.37	1720.18	5603.74	2806.03		1.89	-0.24	0.054
83.75	-29.34	-1.73	0.00	-118.57	0.00	118.57	2706.01	1353.00	4401.17	2203.86		2.09	-0.26	0.065
85.00	-29.08	-1.73	0.00	-116.41	0.00	116.41	2693.89	1346.95	4351.48	2178.97		2.16	-0.26	0.064
90.00	-28.03	-1.74	0.00	-107.74	0.00	107.74	2644.58	1322.29	4154.08	2080.13		2.44	-0.28	0.062
95.00	-27.01	-1.74	0.00	-99.04	0.00	99.04	2593.89	1296.95	3958.97	1982.43		2.75	-0.30	0.060
100.00	-26.01	-1.75	0.00	-90.32	0.00	90.32	2541.84	1270.92	3766.36	1885.98		3.08	-0.32	0.058
105.00	-25.03	-1.75	0.00	-81.58	0.00	81.58	2488.42	1244.21	3576.41	1790.86		3.43	-0.34	0.056
108.00	-20.77	-1.73	0.00	-76.33	0.00	76.33	2455.70	1227.85	3463.79	1734.47		3.65	-0.36	0.052
110.00	-20.42	-1.73	0.00	-72.88	0.00	72.88	2433.62	1216.81	3389.31	1697.17		3.80	-0.37	0.051
115.00	-19.57	-1.73	0.00	-64.23	0.00	64.23	2377.46	1188.73	3205.24	1605.00		4.19	-0.39	0.048
119.25	-18.87	-1.73	0.00	-56.87	0.00	56.87	2328.64	1164.32	3051.30	1527.92		4.54	-0.40	0.045
120.00	-18.67	-1.73	0.00	-55.58	0.00	55.58	2319.93	1159.96	3024.39	1514.44		4.61	-0.40	0.045
123.50	-17.74	-1.73	0.00	-49.52	0.00	49.52	1729.39	864.70	2245.31	1124.33		4.91	-0.42	0.054
124.00	-14.84	-1.71	0.00	-48.66	0.00	48.66	1725.51	862.76	2232.60	1117.96		4.95	-0.42	0.052
125.00	-14.71	-1.71	0.00	-46.95	0.00	46.95	1717.71	858.86	2207.21	1105.25		5.04	-0.42	0.051
130.00	-14.04	-1.70	0.00	-38.41	0.00	38.41	1677.90	838.95	2081.35	1042.22		5.49	-0.44	0.045
134.50	-13.40	-1.68	0.00	-30.77	0.00	30.77	1640.90	820.45	1969.70	986.31		5.92	-0.46	0.039
135.00	-13.33	-1.68	0.00	-29.93	0.00	29.93	1636.72	818.36	1957.39	980.15		5.97	-0.46	0.039
137.00	-9.15	-1.44	0.00	-26.58	0.00	26.58	1619.86	809.93	1908.38	955.61		6.16	-0.47	0.033
140.00	-8.81	-1.42	0.00	-22.25	0.00	22.25	1594.17	797.08	1835.53	919.13		6.46	-0.48	0.030
145.00	-8.25	-1.38	0.00	-15.12	0.00	15.12	1550.24	775.12	1715.94	859.24		6.97	-0.49	0.023
148.00	-5.15	-1.01	0.00	-10.98	0.00	10.98	1523.23	761.62	1645.35	823.90		7.28	-0.49	0.017
150.00	-4.94	-0.99	0.00	-8.97	0.00	8.97	1504.95	752.48	1598.80	800.59		7.48	-0.50	0.014
153.00	-4.21	-0.88	0.00	-6.01	0.00	6.01	1477.12	738.56	1529.77	766.02		7.80	-0.50	0.011
155.00	-4.02	-0.85	0.00	-4.25	0.00	4.25	1458.29	729.15	1484.30	743.26		8.01	-0.50	0.008
160.00	0.00	-0.81	0.00	0.00	0.00	0.00	1400.09	700.04	1362.73	682.38		8.54	-0.51	0.000

Seismic Segment Forces (Factored)

Structure:	CT03538-S		**Code:**	TIA-222-G	5/26/2022
Site Name:	South Plymouth		**Exposure:**	B	
Height:	160.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 26

Load Case:	0.9D + 1.0E							**Iterations**	22
Gust Response Factor	1.10				**Sds**	0.20		**Ss**	0.19
Dead Load Factor	0.90	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.07
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.30		**SA**	0.03	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1312.4	0.00	0.03	0.02	26.11	
10.00		1287.0	0.01	0.05	0.03	36.96	
15.00		1261.6	0.02	0.06	0.04	41.79	
20.00		1236.2	0.03	0.07	0.04	43.79	
25.00		1210.8	0.05	0.07	0.04	44.49	
30.00		1185.4	0.07	0.07	0.04	44.67	
35.00		1160.0	0.09	0.07	0.04	44.71	
38.75	Bot - Section 2	853.39	0.11	0.07	0.04	33.45	
40.00		526.51	0.12	0.07	0.03	20.75	
45.00	Top - Section 1	2076.5	0.15	0.07	0.03	83.54	
50.00		945.50	0.18	0.06	0.03	38.48	
55.00		923.72	0.22	0.06	0.02	37.32	
60.00		901.95	0.27	0.05	0.02	34.91	
65.00		880.18	0.31	0.04	0.01	30.67	
70.00		858.41	0.36	0.03	0.01	24.03	
75.00		836.64	0.42	0.01	0.01	14.80	
78.50	Bot - Section 3	572.69	0.45	0.00	0.01	4.90	
80.00		447.46	0.47	-0.01	0.01	1.92	
83.75	Top - Section 2	1102.9	0.52	-0.02	0.01	-7.58	
85.00		166.43	0.53	-0.03	0.01	-1.77	
90.00		654.37	0.60	-0.05	0.01	-16.06	
95.00		636.22	0.67	-0.08	0.02	-22.45	
100.00		618.08	0.74	-0.10	0.04	-25.67	
105.00		599.94	0.81	-0.11	0.06	-25.74	
108.00	Appurtenance(s)	3425.6	0.86	-0.12	0.07	-141.77	
110.00		230.54	0.89	-0.12	0.08	-9.09	
115.00		563.65	0.98	-0.12	0.12	-17.63	
119.25	Bot - Section 4	464.84	1.05	-0.09	0.16	-9.66	
120.00		146.34	1.06	-0.09	0.17	-2.72	
123.50	Top - Section 3	673.22	1.13	-0.05	0.20	-4.73	
124.00	Appurtenance(s)	2401.5	1.14	-0.05	0.21	-12.50	
125.00		84.74	1.15	-0.03	0.22	-0.12	
130.00		414.97	1.25	0.05	0.29	8.40	
134.50	Appurtenance(s)	415.66	1.34	0.17	0.37	18.12	
135.00		39.39	1.35	0.19	0.38	1.83	
137.00	Appurtenance(s)	3433.5	1.39	0.26	0.42	199.71	
140.00		229.82	1.45	0.38	0.48	17.74	
145.00		371.43	1.55	0.64	0.61	41.85	
148.00	Appurtenance(s)	2529.8	1.62	0.83	0.69	344.77	
150.00		141.02	1.66	0.98	0.76	21.57	
153.00	Appurtenance(s)	560.98	1.73	1.23	0.86	100.71	
155.00		135.22	1.77	1.42	0.93	26.80	
160.00	Appurtenance(s)	3279.9	1.89	1.98	1.14	815.01	
	Totals:	**41,797.4**				**1,906.3**	**Total Wind:** **31,460.6**

Calculated Forces

Structure:	CT03538-S		**Code:**	TIA-222-G	5/26/2022
Site Name:	South Plymouth		**Exposure:**	B	
Height:	160.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 27

Load Case:	0.9D + 1.0E							**Iterations**	22
Gust Response Factor	1.10			**Sds**	0.20			**Ss**	0.19
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.07
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.30	**SA**	0.03			**Seismic Importance Factor**	1.00

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 Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-42.87	-2.21	0.00	-278.12	0.00	278.12	5345.98	2672.99	12322.4	6170.37		0.00	0.00	0.053
5.00	-41.50	-2.19	0.00	-267.09	0.00	267.09	5278.55	2639.27	11931.9	5974.86		0.01	-0.01	0.053
10.00	-40.14	-2.16	0.00	-256.14	0.00	256.14	5209.75	2604.88	11544.5	5780.84		0.03	-0.03	0.052
15.00	-38.82	-2.13	0.00	-245.33	0.00	245.33	5139.58	2569.79	11160.2	5588.39		0.06	-0.04	0.051
20.00	-37.51	-2.09	0.00	-234.69	0.00	234.69	5068.05	2534.02	10779.2	5397.62		0.11	-0.05	0.051
25.00	-36.23	-2.05	0.00	-224.23	0.00	224.23	4995.14	2497.57	10401.7	5208.61		0.17	-0.06	0.050
30.00	-34.96	-2.02	0.00	-213.96	0.00	213.96	4920.87	2460.43	10028.0	5021.46		0.24	-0.08	0.050
35.00	-33.73	-1.98	0.00	-203.88	0.00	203.88	4845.22	2422.61	9658.13	4836.24		0.33	-0.09	0.049
38.75	-32.81	-1.95	0.00	-196.46	0.00	196.46	4787.59	2393.79	9383.39	4698.67		0.41	-0.10	0.049
40.00	-32.29	-1.93	0.00	-194.03	0.00	194.03	4768.21	2384.10	9292.33	4653.07		0.44	-0.11	0.048
45.00	-30.23	-1.85	0.00	-184.38	0.00	184.38	3881.96	1940.98	7532.86	3772.03		0.56	-0.12	0.057
50.00	-29.18	-1.82	0.00	-175.13	0.00	175.13	3822.99	1911.49	7248.21	3629.49		0.69	-0.14	0.056
55.00	-28.16	-1.79	0.00	-166.05	0.00	166.05	3762.64	1881.32	6966.27	3488.31		0.84	-0.15	0.055
60.00	-27.15	-1.76	0.00	-157.13	0.00	157.13	3700.92	1850.46	6687.23	3348.59		1.01	-0.17	0.054
65.00	-26.17	-1.73	0.00	-148.35	0.00	148.35	3637.84	1818.92	6411.28	3210.40		1.19	-0.19	0.053
70.00	-25.20	-1.71	0.00	-139.70	0.00	139.70	3573.38	1786.69	6138.59	3073.86		1.40	-0.20	0.053
75.00	-24.25	-1.70	0.00	-131.15	0.00	131.15	3507.56	1753.78	5869.35	2939.04		1.62	-0.22	0.052
78.50	-23.60	-1.69	0.00	-125.21	0.00	125.21	3460.67	1730.33	5683.03	2845.74		1.79	-0.23	0.051
80.00	-23.14	-1.69	0.00	-122.67	0.00	122.67	3440.37	1720.18	5603.74	2806.03		1.86	-0.24	0.050
83.75	-22.00	-1.69	0.00	-116.32	0.00	116.32	2706.01	1353.00	4401.17	2203.86		2.05	-0.25	0.061
85.00	-21.81	-1.70	0.00	-114.20	0.00	114.20	2693.89	1346.95	4351.48	2178.97		2.12	-0.26	0.061
90.00	-21.02	-1.70	0.00	-105.72	0.00	105.72	2644.58	1322.29	4154.08	2080.13		2.40	-0.28	0.059
95.00	-20.26	-1.70	0.00	-97.21	0.00	97.21	2593.89	1296.95	3958.97	1982.43		2.70	-0.30	0.057
100.00	-19.51	-1.71	0.00	-88.69	0.00	88.69	2541.84	1270.92	3766.36	1885.98		3.02	-0.32	0.055
105.00	-18.77	-1.71	0.00	-80.16	0.00	80.16	2488.42	1244.21	3576.41	1790.86		3.37	-0.34	0.052
108.00	-15.57	-1.69	0.00	-75.03	0.00	75.03	2455.70	1227.85	3463.79	1734.47		3.58	-0.35	0.050
110.00	-15.31	-1.69	0.00	-71.65	0.00	71.65	2433.62	1216.81	3389.31	1697.17		3.73	-0.36	0.049
115.00	-14.68	-1.69	0.00	-63.18	0.00	63.18	2377.46	1188.73	3205.24	1605.00		4.12	-0.38	0.046
119.25	-14.15	-1.69	0.00	-55.98	0.00	55.98	2328.64	1164.32	3051.30	1527.92		4.46	-0.39	0.043
120.00	-14.00	-1.69	0.00	-54.71	0.00	54.71	2319.93	1159.96	3024.39	1514.44		4.52	-0.40	0.042
123.50	-13.30	-1.69	0.00	-48.78	0.00	48.78	1729.39	864.70	2245.31	1124.33		4.82	-0.41	0.051
124.00	-11.13	-1.68	0.00	-47.93	0.00	47.93	1725.51	862.76	2232.60	1117.96		4.86	-0.41	0.049
125.00	-11.03	-1.68	0.00	-46.26	0.00	46.26	1717.71	858.86	2207.21	1105.25		4.95	-0.42	0.048
130.00	-10.53	-1.67	0.00	-37.87	0.00	37.87	1677.90	838.95	2081.35	1042.22		5.40	-0.44	0.043
134.50	-10.04	-1.65	0.00	-30.36	0.00	30.36	1640.90	820.45	1969.70	986.31		5.82	-0.45	0.037
135.00	-10.00	-1.65	0.00	-29.53	0.00	29.53	1636.72	818.36	1957.39	980.15		5.86	-0.45	0.036
137.00	-6.86	-1.42	0.00	-26.24	0.00	26.24	1619.86	809.93	1908.38	955.61		6.06	-0.46	0.032
140.00	-6.60	-1.41	0.00	-21.97	0.00	21.97	1594.17	797.08	1835.53	919.13		6.35	-0.47	0.028
145.00	-6.18	-1.36	0.00	-14.94	0.00	14.94	1550.24	775.12	1715.94	859.24		6.85	-0.48	0.021
148.00	-3.86	-1.00	0.00	-10.86	0.00	10.86	1523.23	761.62	1645.35	823.90		7.15	-0.49	0.016
150.00	-3.71	-0.97	0.00	-8.87	0.00	8.87	1504.95	752.48	1598.80	800.59		7.35	-0.49	0.014
153.00	-3.16	-0.87	0.00	-5.94	0.00	5.94	1477.12	738.56	1529.77	766.02		7.66	-0.49	0.010
155.00	-3.01	-0.84	0.00	-4.21	0.00	4.21	1458.29	729.15	1484.30	743.26		7.87	-0.49	0.008
160.00	0.00	-0.81	0.00	0.00	0.00	0.00	1400.09	700.04	1362.73	682.38		8.39	-0.50	0.000

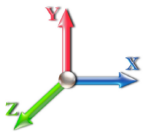
Wind Loading - Shaft

Structure:	CT03538-S	**Code:**	TIA-222-G	5/26/2022	
Site Name:	South Plymouth	**Exposure:**	B		
Height:	160.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 28	

Load Case: 1.0D + 1.0W 50 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	4.256	4.68	200.11	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	4.256	4.68	196.30	0.650	0.000	5.00	23.690	15.40	72.1	0.0	1312.5
10.00		1.00	0.70	4.256	4.68	192.50	0.650	0.000	5.00	23.235	15.10	70.7	0.0	1287.1
15.00		1.00	0.70	4.256	4.68	188.69	0.650	0.000	5.00	22.780	14.81	69.3	0.0	1261.7
20.00		1.00	0.70	4.256	4.68	184.88	0.650	0.000	5.00	22.325	14.51	67.9	0.0	1236.3
25.00		1.00	0.70	4.256	4.68	181.08	0.650	0.000	5.00	21.871	14.22	66.6	0.0	1210.9
30.00		1.00	0.70	4.260	4.69	177.35	0.650	0.000	5.00	21.416	13.92	65.2	0.0	1185.5
35.00		1.00	0.73	4.451	4.90	177.40	0.650	0.000	5.00	20.961	13.62	66.7	0.0	1160.1
38.75	Bot - Section 2	1.00	0.75	4.583	5.04	177.04	0.650	0.000	3.75	15.422	10.02	50.5	0.0	853.4
40.00		1.00	0.76	4.625	5.09	176.85	0.650	0.000	1.25	5.163	3.36	17.1	0.0	526.5
45.00	Top - Section 1	1.00	0.79	4.783	5.26	175.82	0.650	0.000	5.00	20.368	13.24	69.7	0.0	2076.6
50.00		1.00	0.81	4.929	5.42	177.25	0.650	0.000	5.00	19.913	12.94	70.2	0.0	945.5
55.00		1.00	0.83	5.065	5.57	175.53	0.650	0.000	5.00	19.458	12.65	70.5	0.0	923.7
60.00		1.00	0.85	5.193	5.71	173.52	0.650	0.000	5.00	19.004	12.35	70.6	0.0	902.0
65.00		1.00	0.87	5.313	5.84	171.26	0.650	0.000	5.00	18.549	12.06	70.5	0.0	880.2
70.00		1.00	0.89	5.426	5.97	168.79	0.650	0.000	5.00	18.094	11.76	70.2	0.0	858.4
75.00		1.00	0.91	5.534	6.09	166.12	0.650	0.000	5.00	17.639	11.47	69.8	0.0	836.6
78.50	Bot - Section 3	1.00	0.92	5.607	6.17	164.15	0.650	0.000	3.50	12.077	7.85	48.4	0.0	572.7
80.00		1.00	0.93	5.637	6.20	163.28	0.650	0.000	1.50	5.187	3.37	20.9	0.0	447.5
83.75	Top - Section 2	1.00	0.94	5.712	6.28	161.04	0.650	0.000	3.75	12.788	8.31	52.2	0.0	1102.9
85.00		1.00	0.94	5.736	6.31	162.85	0.650	0.000	1.25	4.206	2.73	17.2	0.0	166.4
90.00		1.00	0.96	5.830	6.41	159.73	0.650	0.000	5.00	16.539	10.75	68.9	0.0	654.4
95.00		1.00	0.97	5.921	6.51	156.48	0.650	0.000	5.00	16.084	10.45	68.1	0.0	636.2
100.00		1.00	0.99	6.008	6.61	153.11	0.650	0.000	5.00	15.629	10.16	67.1	0.0	618.1
105.00		1.00	1.00	6.093	6.70	149.62	0.650	0.000	5.00	15.174	9.86	66.1	0.0	599.9
108.00	Appurtenance(s)	1.00	1.01	6.142	6.76	147.48	0.650	0.000	3.00	8.886	5.78	39.0	0.0	351.3
110.00		1.00	1.02	6.174	6.79	146.04	0.650	0.000	2.00	5.833	3.79	25.8	0.0	230.5
115.00		1.00	1.03	6.253	6.88	142.35	0.650	0.000	5.00	14.264	9.27	63.8	0.0	563.7
119.25	Bot - Section 4	1.00	1.04	6.318	6.95	139.15	0.650	0.000	4.25	11.767	7.65	53.2	0.0	464.8
120.00		1.00	1.04	6.330	6.96	138.58	0.650	0.000	0.75	2.074	1.35	9.4	0.0	146.3
123.50	Top - Section 3	1.00	1.05	6.382	7.02	135.89	0.650	0.000	3.50	9.544	6.20	43.5	0.0	673.2
124.00	Appurtenance(s)	1.00	1.05	6.389	7.03	137.67	0.650	0.000	0.50	1.345	0.87	6.1	0.0	42.6
125.00		1.00	1.05	6.404	7.04	136.89	0.650	0.000	1.00	2.677	1.74	12.3	0.0	84.7
130.00		1.00	1.07	6.476	7.12	132.97	0.650	0.000	5.00	13.111	8.52	60.7	0.0	415.0
134.50	Appurtenance(s)	1.00	1.08	6.539	7.19	129.37	0.650	0.000	4.50	11.411	7.42	53.4	0.0	361.1
135.00		1.00	1.08	6.546	7.20	128.97	0.650	0.000	0.50	1.245	0.81	5.8	0.0	39.4
137.00	Appurtenance(s)	1.00	1.08	6.574	7.23	127.35	0.650	0.000	2.00	4.935	3.21	23.2	0.0	156.1
140.00		1.00	1.09	6.615	7.28	124.89	0.650	0.000	3.00	7.266	4.72	34.4	0.0	229.8
145.00		1.00	1.10	6.681	7.35	120.75	0.650	0.000	5.00	11.746	7.64	56.1	0.0	371.4
148.00	Appurtenance(s)	1.00	1.11	6.721	7.39	118.24	0.650	0.000	3.00	6.829	4.44	32.8	0.0	215.9
150.00		1.00	1.11	6.746	7.42	116.55	0.650	0.000	2.00	4.462	2.90	21.5	0.0	141.0
153.00	Appurtenance(s)	1.00	1.12	6.785	7.46	113.99	0.650	0.000	3.00	6.557	4.26	31.8	0.0	207.2
155.00		1.00	1.12	6.810	7.49	112.28	0.650	0.000	2.00	4.280	2.78	20.8	0.0	135.2
160.00	Appurtenance(s)	1.00	1.13	6.872	7.56	107.95	0.650	0.000	5.00	10.382	6.75	51.0	0.0	327.9
								Totals:	**160.00**			**2,091.1**		**27,412.2**

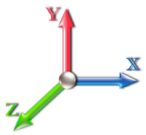
Discrete Appurtenance Forces

Structure:	CT03538-S	**Code:**	TIA-222-G	5/26/2022	
Site Name:	South Plymouth	**Exposure:**	B		
Height:	160.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 29	

Load Case: 1.0D + 1.0W 50 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	160.00	RRU 11	3	6.872	7.559	0.60	0.90	6.87	264.00	0.000	0.000	51.96	0.00	0.00
2	160.00	Ericsson KRY 112 144/1	3	6.872	7.559	0.63	0.90	0.77	33.00	0.000	0.000	5.86	0.00	0.00
3	160.00	Air 32	3	6.872	7.559	0.78	0.90	12.92	396.60	0.000	0.000	97.66	0.00	0.00
4	160.00	Air 21 B2A/B4P	3	6.872	7.559	0.77	0.90	14.14	274.50	0.000	0.000	106.89	0.00	0.00
5	160.00	Low Profile Platform	1	6.872	7.559	1.00	1.00	22.00	1600.00	0.000	0.000	166.30	0.00	0.00
6	160.00	Commscope LNX112 144	3	6.872	7.559	0.81	0.90	48.60	384.00	0.000	0.000	367.38	0.00	0.00
7	153.00	Hutton HPD 3.4-4.7	1	6.785	7.463	1.00	1.00	8.92	105.00	0.000	0.000	66.57	0.00	0.00
8	153.00	VHLP-2.6-11	1	6.785	7.463	1.00	1.00	8.43	47.60	0.000	0.000	62.91	0.00	0.00
9	153.00	Lone Star Electronics	1	6.829	7.512	1.00	1.00	2.10	20.00	0.000	3.500	15.77	0.00	55.21
10	153.00	Pipe Mounts	2	6.785	7.463	1.00	1.00	10.00	100.00	0.000	0.000	74.63	0.00	0.00
11	153.00	4 ft Sidearm	1	6.785	7.463	1.00	1.00	3.50	50.00	0.000	0.000	26.12	0.00	0.00
12	153.00	Motorola ODU-A-RF	3	6.785	7.463	1.00	1.00	4.32	31.20	0.000	0.000	32.24	0.00	0.00
13	148.00	ALU 800 MHz RRH	3	6.721	7.393	0.54	0.80	4.00	159.00	0.000	0.000	29.60	0.00	0.00
14	148.00	RFS APXVTM14-C-120	3	6.746	7.421	0.71	0.80	13.54	288.00	0.000	2.000	100.50	0.00	201.00
15	148.00	RFS APXVSPP18-C-A20	3	6.721	7.393	0.74	0.80	17.90	291.00	0.000	0.000	132.33	0.00	0.00
16	148.00	ALU 1900MHz RRH	3	6.721	7.393	0.54	0.80	6.11	132.00	0.000	0.000	45.17	0.00	0.00
17	148.00	ALU TD-RRH8x20-25	3	6.721	7.393	0.55	0.80	6.71	210.00	0.000	0.000	49.58	0.00	0.00
18	148.00	ALU 800 MHz Filter	3	6.721	7.393	0.79	0.80	1.00	30.00	0.000	0.000	7.38	0.00	0.00
19	148.00	RFS ACU-A20-N	4	6.721	7.393	0.63	0.80	0.35	4.00	0.000	0.000	2.62	0.00	0.00
20	148.00	Low Profile Platform	1	6.721	7.393	1.00	1.00	25.00	1200.00	0.000	0.000	184.82	0.00	0.00
21	137.00	Samsung B5/B13	3	6.574	7.231	0.58	0.75	3.26	210.90	0.000	0.000	23.55	0.00	0.00
22	137.00	Platform Handrail	1	6.574	7.231	1.00	1.00	9.70	358.00	0.000	0.000	70.14	0.00	0.00
23	137.00	RFS DB-T1-6Z-8AB-0Z	2	6.574	7.231	0.53	0.75	5.11	88.00	0.000	0.000	36.97	0.00	0.00
24	137.00	Samsung B2/B66A	3	6.574	7.231	0.62	0.75	3.51	253.20	0.000	0.000	25.39	0.00	0.00
25	137.00	Quintel QS6656-5D	6	6.574	7.231	0.69	0.75	33.66	555.00	0.000	0.000	243.39	0.00	0.00
26	137.00	Samsung VZS01	3	6.574	7.231	0.52	0.75	7.40	261.30	0.000	0.000	53.53	0.00	0.00
27	137.00	Low Profile Platform	1	6.574	7.231	1.00	1.00	22.00	1500.00	0.000	0.000	159.09	0.00	0.00
28	137.00	Antel BXA-70063-6CF-2	3	6.574	7.231	0.62	0.75	14.14	51.00	0.000	0.000	102.23	0.00	0.00
29	134.50	Bird Technologies CSA	1	6.539	7.193	1.00	1.00	3.81	4.60	0.000	0.000	27.41	0.00	0.00
30	134.50	Pipe Mount	1	6.539	7.193	1.00	1.00	5.00	50.00	0.000	0.000	35.97	0.00	0.00
31	124.00	Fujitsu TA08025-B605	3	6.389	7.028	0.60	0.75	3.53	224.85	0.000	0.000	24.80	0.00	0.00
32	124.00	Fujitsu TA08025-B604	3	6.389	7.028	0.57	0.75	3.35	191.79	0.000	0.000	23.56	0.00	0.00
33	124.00	JMA MX08FRO665-21	3	6.389	7.028	0.55	0.75	20.53	193.50	0.000	0.000	144.30	0.00	0.00
34	124.00	Platform w/ handrais	1	6.389	7.028	1.00	1.00	34.24	1727.00	0.000	0.000	240.65	0.00	0.00
35	124.00	Raycap	1	6.389	7.028	0.58	0.75	1.17	21.85	0.000	0.000	8.22	0.00	0.00
36	108.00	Ericsson B14 4478 RRU	3	6.142	6.756	0.54	0.80	5.07	174.00	0.000	0.000	34.22	0.00	0.00
37	108.00	Ericsson RRUS 32 B2	3	6.142	6.756	0.54	0.80	2.65	231.00	0.000	0.000	17.93	0.00	0.00
38	108.00	7770	6	6.142	6.756	0.66	0.80	21.91	210.00	0.000	0.000	148.04	0.00	0.00
39	108.00	AM-X-CD-17-65-00T-RET	3	6.142	6.756	0.60	0.80	14.44	145.50	0.000	0.000	97.53	0.00	0.00
40	108.00	Powerwave 7020 RET	12	6.142	6.756	0.80	0.80	3.84	26.40	0.000	0.000	25.94	0.00	0.00
41	108.00	EPBQ-652L8H6-L2	3	6.142	6.756	0.57	0.80	26.77	297.00	0.000	0.000	180.86	0.00	0.00
42	108.00	Low Profile Platform	1	6.142	6.756	1.00	1.00	22.00	1500.00	0.000	0.000	148.64	0.00	0.00
43	108.00	Powerwave LGP21401	6	6.142	6.756	0.40	0.80	3.10	84.60	0.000	0.000	20.92	0.00	0.00
44	108.00	Powerwave 21903	6	6.142	6.756	0.67	0.80	1.09	33.00	0.000	0.000	7.36	0.00	0.00
45	108.00	Ericsson RRU 11	6	6.142	6.756	0.54	0.80	8.10	306.00	0.000	0.000	54.75	0.00	0.00
46	108.00	Andrew ABT-DFDM-ADBH	3	6.142	6.756	0.78	0.80	0.12	3.30	0.000	0.000	0.79	0.00	0.00
47	108.00	Raycap DC6-48-60-18-8F	2	6.142	6.756	0.80	0.80	1.47	63.60	0.000	0.000	9.95	0.00	0.00

Discrete Appurtenance Forces

Structure:	CT03538-S		**Code:**	TIA-222-G	5/26/2022
Site Name:	South Plymouth		**Exposure:**	B	
Height:	160.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 30

Totals:	**14,385.29**	**3,592.42**

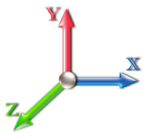
Total Applied Force Summary

Structure:	CT03538-S		**Code:**	TIA-222-G	5/26/2022
Site Name:	South Plymouth		**Exposure:**	B	
Height:	160.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 31

Load Case: 1.0D + 1.0W 50 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		72.09	1527.34	0.00	0.00
10.00		70.71	1501.94	0.00	0.00
15.00		69.32	1476.54	0.00	0.00
20.00		67.94	1451.14	0.00	0.00
25.00		66.55	1425.74	0.00	0.00
30.00		65.22	1400.34	0.00	0.00
35.00		66.71	1374.93	0.00	0.00
38.75		50.53	1014.53	0.00	0.00
40.00		17.07	580.22	0.00	0.00
45.00		69.65	2291.40	0.00	0.00
50.00		70.18	1160.35	0.00	0.00
55.00		70.47	1138.57	0.00	0.00
60.00		70.55	1116.80	0.00	0.00
65.00		70.46	1095.03	0.00	0.00
70.00		70.20	1073.26	0.00	0.00
75.00		69.80	1051.49	0.00	0.00
78.50		48.41	723.09	0.00	0.00
80.00		20.91	511.92	0.00	0.00
83.75		52.22	1264.08	0.00	0.00
85.00		17.25	220.14	0.00	0.00
90.00		68.94	869.22	0.00	0.00
95.00		68.09	851.07	0.00	0.00
100.00		67.14	832.93	0.00	0.00
105.00		66.10	814.79	0.00	0.00
108.00	(54) attachments	785.96	3554.56	0.00	0.00
110.00		25.75	287.68	0.00	0.00
115.00		63.78	706.50	0.00	0.00
119.25		53.16	586.26	0.00	0.00
120.00		9.39	167.77	0.00	0.00
123.50		43.55	773.22	0.00	0.00
124.00	(11) attachments	447.67	2415.86	0.00	0.00
125.00		12.26	112.18	0.00	0.00
130.00		60.71	552.17	0.00	0.00
134.50	(2) attachments	116.73	539.14	0.00	0.00
135.00		5.83	52.85	0.00	0.00
137.00	(22) attachments	737.49	3487.36	0.00	0.00
140.00		34.37	285.26	0.00	0.00
145.00		56.11	463.83	0.00	0.00
148.00	(23) attachments	584.81	2585.33	0.00	201.00
150.00		21.52	172.70	0.00	0.00
153.00	(9) attachments	310.06	608.50	0.00	55.21
155.00		20.84	164.58	0.00	0.00
160.00	(16) attachments	847.06	3353.38	0.00	0.00
	Totals:	**5,683.57**	**47,635.99**	**0.00**	**256.21**

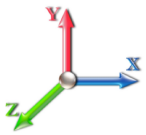
Calculated Forces

Structure:	CT03538-S	**Code:**	TIA-222-G	5/26/2022	
Site Name:	South Plymouth	**Exposure:**	B		
Height:	160.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 32	

Load Case: 1.0D + 1.0W 50 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

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 Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-47.63	-5.70	0.00	-686.77	0.00	686.77	5345.98	2672.99	12322.4	6170.37	0.00	0.000	0.000	0.120
5.00	-46.10	-5.65	0.00	-658.29	0.00	658.29	5278.55	2639.27	11931.9	5974.86	0.02	-0.031	0.000	0.119
10.00	-44.60	-5.60	0.00	-630.05	0.00	630.05	5209.75	2604.88	11544.5	5780.84	0.07	-0.062	0.000	0.118
15.00	-43.12	-5.55	0.00	-602.05	0.00	602.05	5139.58	2569.79	11160.2	5588.39	0.15	-0.094	0.000	0.116
20.00	-41.67	-5.51	0.00	-574.28	0.00	574.28	5068.05	2534.02	10779.2	5397.62	0.26	-0.126	0.000	0.115
25.00	-40.24	-5.46	0.00	-546.75	0.00	546.75	4995.14	2497.57	10401.7	5208.61	0.41	-0.159	0.000	0.113
30.00	-38.83	-5.41	0.00	-519.45	0.00	519.45	4920.87	2460.43	10028.0	5021.46	0.60	-0.192	0.000	0.111
35.00	-37.46	-5.36	0.00	-492.39	0.00	492.39	4845.22	2422.61	9658.13	4836.24	0.82	-0.226	0.000	0.110
38.75	-36.44	-5.32	0.00	-472.29	0.00	472.29	4787.59	2393.79	9383.39	4698.67	1.01	-0.251	0.000	0.108
40.00	-35.86	-5.31	0.00	-465.65	0.00	465.65	4768.21	2384.10	9292.33	4653.07	1.07	-0.260	0.000	0.108
45.00	-33.56	-5.25	0.00	-439.10	0.00	439.10	3881.96	1940.98	7532.86	3772.03	1.36	-0.294	0.000	0.125
50.00	-32.40	-5.19	0.00	-412.85	0.00	412.85	3822.99	1911.49	7248.21	3629.49	1.69	-0.329	0.000	0.122
55.00	-31.26	-5.14	0.00	-386.88	0.00	386.88	3762.64	1881.32	6966.27	3488.31	2.06	-0.367	0.000	0.119
60.00	-30.14	-5.08	0.00	-361.19	0.00	361.19	3700.92	1850.46	6687.23	3348.59	2.46	-0.406	0.000	0.116
65.00	-29.04	-5.02	0.00	-335.80	0.00	335.80	3637.84	1818.92	6411.28	3210.40	2.91	-0.445	0.000	0.113
70.00	-27.97	-4.96	0.00	-310.69	0.00	310.69	3573.38	1786.69	6138.59	3073.86	3.39	-0.483	0.000	0.109
75.00	-26.91	-4.90	0.00	-285.89	0.00	285.89	3507.56	1753.78	5869.35	2939.04	3.92	-0.522	0.000	0.105
78.50	-26.19	-4.85	0.00	-268.75	0.00	268.75	3460.67	1730.33	5683.03	2845.74	4.31	-0.549	0.000	0.102
80.00	-25.67	-4.83	0.00	-261.48	0.00	261.48	3440.37	1720.18	5603.74	2806.03	4.49	-0.561	0.000	0.101
83.75	-24.41	-4.78	0.00	-243.35	0.00	243.35	2706.01	1353.00	4401.17	2203.86	4.94	-0.589	0.000	0.119
85.00	-24.19	-4.77	0.00	-237.38	0.00	237.38	2693.89	1346.95	4351.48	2178.97	5.09	-0.599	0.000	0.118
90.00	-23.32	-4.71	0.00	-213.54	0.00	213.54	2644.58	1322.29	4154.08	2080.13	5.74	-0.641	0.000	0.111
95.00	-22.46	-4.65	0.00	-190.00	0.00	190.00	2593.89	1296.95	3958.97	1982.43	6.44	-0.682	0.000	0.105
100.00	-21.63	-4.58	0.00	-166.78	0.00	166.78	2541.84	1270.92	3766.36	1885.98	7.17	-0.721	0.000	0.097
105.00	-20.81	-4.52	0.00	-143.86	0.00	143.86	2488.42	1244.21	3576.41	1790.86	7.95	-0.759	0.000	0.089
108.00	-17.27	-3.69	0.00	-130.32	0.00	130.32	2455.70	1227.85	3463.79	1734.47	8.43	-0.781	0.000	0.082
110.00	-16.98	-3.67	0.00	-122.94	0.00	122.94	2433.62	1216.81	3389.31	1697.17	8.76	-0.795	0.000	0.079
115.00	-16.27	-3.60	0.00	-104.61	0.00	104.61	2377.46	1188.73	3205.24	1605.00	9.62	-0.828	0.000	0.072
119.25	-15.68	-3.54	0.00	-89.31	0.00	89.31	2328.64	1164.32	3051.30	1527.92	10.36	-0.854	0.000	0.065
120.00	-15.51	-3.53	0.00	-86.65	0.00	86.65	2319.93	1159.96	3024.39	1514.44	10.50	-0.859	0.000	0.064
123.50	-14.74	-3.48	0.00	-74.29	0.00	74.29	1729.39	864.70	2245.31	1124.33	11.14	-0.879	0.000	0.075
124.00	-12.33	-3.00	0.00	-72.54	0.00	72.54	1725.51	862.76	2232.60	1117.96	11.23	-0.882	0.000	0.072
125.00	-12.22	-2.99	0.00	-69.55	0.00	69.55	1717.71	858.86	2207.21	1105.25	11.41	-0.888	0.000	0.070
130.00	-11.67	-2.92	0.00	-54.61	0.00	54.61	1677.90	838.95	2081.35	1042.22	12.36	-0.917	0.000	0.059
134.50	-11.13	-2.80	0.00	-41.45	0.00	41.45	1640.90	820.45	1969.70	986.31	13.24	-0.939	0.000	0.049
135.00	-11.08	-2.80	0.00	-40.05	0.00	40.05	1636.72	818.36	1957.39	980.15	13.33	-0.941	0.000	0.048
137.00	-7.60	-2.00	0.00	-34.46	0.00	34.46	1619.86	809.93	1908.38	955.61	13.73	-0.950	0.000	0.041
140.00	-7.32	-1.96	0.00	-28.46	0.00	28.46	1594.17	797.08	1835.53	919.13	14.33	-0.961	0.000	0.036
145.00	-6.85	-1.90	0.00	-18.64	0.00	18.64	1550.24	775.12	1715.94	859.24	15.35	-0.976	0.000	0.026
148.00	-4.28	-1.27	0.00	-12.73	0.00	12.73	1523.23	761.62	1645.35	823.90	15.96	-0.983	0.000	0.018
150.00	-4.11	-1.25	0.00	-10.18	0.00	10.18	1504.95	752.48	1598.80	800.59	16.38	-0.987	0.000	0.015
153.00	-3.50	-0.93	0.00	-6.38	0.00	6.38	1477.12	738.56	1529.77	766.02	17.00	-0.991	0.000	0.011
155.00	-3.34	-0.91	0.00	-4.53	0.00	4.53	1458.29	729.15	1484.30	743.26	17.41	-0.993	0.000	0.008
160.00	0.00	-0.85	0.00	0.00	0.00	0.00	1400.09	700.04	1362.73	682.38	18.45	-0.995	0.000	0.000

Final Analysis Summary

Structure:	CT03538-S		**Code:**	TIA-222-G	5/26/2022
Site Name:	South Plymouth		**Exposure:**	B	
Height:	160.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 33

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 9 93 mph Wind	31.5	0.00	57.11	0.00	0.00	3830.21
0.9D + 1.6W 9 93 mph Wind	31.5	0.00	42.82	0.00	0.00	3780.78
1.2D + 1.0Di + 1.0Wi 50 mph Wind	10.4	0.00	87.22	0.00	0.00	1294.87
1.2D + 1.0E	2.2	0.00	57.16	0.00	0.00	282.21
0.9D + 1.0E	2.2	0.00	42.87	0.00	0.00	278.12
1.0D + 1.0W 50 mph Wind	5.7	0.00	47.63	0.00	0.00	686.77

Max Stresses

Load Case	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)	Elev (ft)	Stress Ratio
1.2D + 1.6W 9 93 mph Wind	-39.44	-29.26	0.00	-2453.9	0.00	-2453.9	3881.96	1940.9	7532.86	3772.03	45.00	0.661
0.9D + 1.6W 9 93 mph Wind	-29.38	-28.94	0.00	-2412.3	0.00	-2412.3	3881.96	1940.9	7532.86	3772.03	45.00	0.647
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-66.02	-9.85	0.00	-836.66	0.00	-836.66	3881.96	1940.9	7532.86	3772.03	45.00	0.239
1.2D + 1.0E	-29.34	-1.73	0.00	-118.57	0.00	-118.57	2706.01	1353.0	4401.17	2203.86	83.75	0.065
0.9D + 1.0E	-22.00	-1.69	0.00	-116.32	0.00	-116.32	2706.01	1353.0	4401.17	2203.86	83.75	0.061
1.0D + 1.0W 50 mph Wind	-33.56	-5.25	0.00	-439.10	0.00	-439.10	3881.96	1940.9	7532.86	3772.03	45.00	0.125

Base Plate Summary

Structure:	CT03538-S		**Code:**	TIA-222-G	5/26/2022
Site Name:	South Plymouth		**Exposure:**	B	
Height:	160.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 34

Reactions

Original Design

Moment (kip-ft):	4450.00
Axial (kip):	37.00
Shear (kip):	38.00

Analysis (1.2D + 1.6W)

Moment (kip-ft):	3830.21
Axial (kip):	57.11
Shear (kip):	31.55

Base Plate

Yield (ksi):	55.00
Width (in):	64.00
Style:	Clipped
Polygon Sides:	0.00
Clip Length (in):	12.00
Effective Len (in):	8.91
Moment (kip-in):	552.76
Allow Stress (ksi):	74.25
Applied Stress (ksi):	41.58
Stress Ratio:	0.56

Anchor Bolts

Bolt Circle:	64.00
Number Bolts:	20.00
Bolt Type:	2.25" 18J
Bolt Diameter (in):	2.25
Yield (ksi):	75.00
Ultimate (ksi):	100.00
Arrangement:	Clustered
Cluster Dist (in):	6.00
Start Angle (deg):	45.00

Compression

Force (kip):	147.99
Allowable (kip):	260.00
Ratio:	0.58

Tension

Force (kip):	139.27
Allowable (kip):	260.00
Ratio:	0.55

Monopole Mat Foundation Design

			Date: 12/9/2021
Customer Name:		**EIA/TIA Standard:**	EIA-222-H
Site Name:		**Structure Height (Ft.):**	160
Site Number:	CT03538-S	**Engineer Name:**	SBA Engineer
Engr. Number:		**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

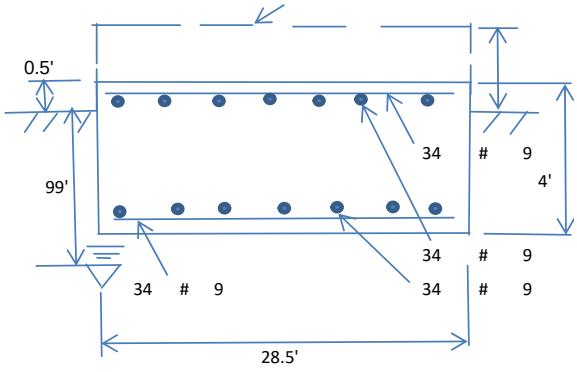
Analysis or Design? Analysis

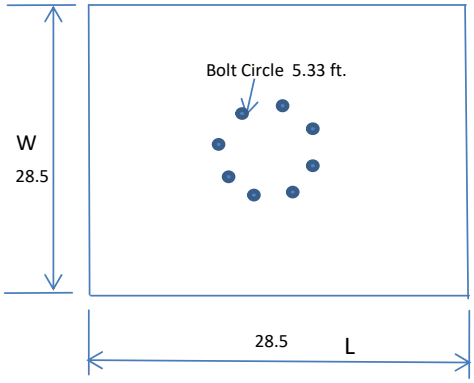
Base Reactions (Factored):

Axial Load (Kips):	57.1	Shear Force (Kips):	31.6
Uplift Force (Kips):	0.0	Moment (Kips-ft):	3830.2
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Anchor Bolt Circle (ft.):	5.33	Depth of Base BG (ft.):	3.50
Thickness of Pad (ft):	4.00		
Length of Pad (ft.):	28.5	Width of Pad (ft.):	28.5
Final Length of pad (ft)	28.5	Final width of pad (ft):	28.5





Material Properties and Reabr Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Pad Rebar Yield (Ksi):	60	Tie Spacing (in):	6.0	
Pad Steel Rebar Size (#):	9			
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	34	Qty. of Rebar in Pad (W):	34	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	34	Qty. of Rebar in Pad (W):	34	
Apply 1.35 factor for e/w Per G:	1.35			

Soil Design Parameters:

Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	20000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:	1.00			

Foundation Analysis and Design: Uplift Strength Reduction Factor: 0.75 — Compression Strength Reduction Factor: 0.75

Total Dry Soil Volume (cu. Ft.):	0.00	Total Dry Soil Weight (Kips):	0.00
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	0.00	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	3249.00	Total Dry Concrete Weight (Kips):	487.35
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	487.35	Total Vertical Load on Base (Kips):	544.46

Check Soil Capacities:

				Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	2180	<	Allowable Factored Soil Bearing (psf): 15000	0.15	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	7064.1	>	Design Factored Momont (kips-ft): 3958	0.56	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.78	OK!			

Check the capacities of Reinforceing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75		
Strength reduction factor (Axial compresion):	0.65	Wind Load Factor on Concrete Design:	1.00		

Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	1248.6	>	One-Way Factored Shear (L-D. Kips):	293.7	0.24	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1248.6	>	One-Way Factored Shear (W-D., Kips)	293.7	0.24	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	1510.4	>	One-Way Factored Shear (C-C, Kips):	489.1	0.32	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0022	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0022		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	6620.0	>	Moment at Bottom (L-Direct. K-Ft):	1120.8	0.17	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	6620.0	>	Moment at Bottom (W-Direct. K-Ft):	1120.8	0.17	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	9319.3	>	Moment at Bottom (C-C Dir. K-Ft):	1585.1	0.17	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0022	OK!	Upper Steel Reinf. Ratio (W-Direct.):	0.0022		
Upper Steel Pad Moment Capacity (L-Direction. Kips-ft):	6620.0	>	Moment at the top (L-Dir Kips-Ft):	159.7	0.02	OK!
Upper Steel Pad Moment Capacity (W-Direction. Kips-ft):	6620.0	>	Moment at the top (W-Dir Kips-Ft):	159.7	0.02	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	9319.3	>	Moment at the top (C-C Direc. K-Ft):	574.2	0.06	OK!

Exhibit E

Mount Analysis

June 13, 2022

David Evans
SBA Network Services, LLC.
470 Davidson Road
Pittsburgh, PA 15239
(412) 515-0111 x 2410

MTS Engineering, P.L.L.C.
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630
towersupport@btgrp.com

Subject:	**Appurtenance Mount Analysis Report**	
Carrier Designation:	***Dish Wireless* Co-Locate**	
	Site Number:	BOHVN00179A
	Site Name:	N/A
***SBA Network Services Designation*:**	**Site Number:**	CT03538-S
	Site Name:	South Plymouth
	Application Number:	169196, v2
Engineering Firm Designation:	**Project Number:**	149542.004.01
Site Data:	**170 Mount Tobe Road, Plymouth, CT, 06782, Litchfield County** **Latitude *41.63003*°, Longitude *-73.05655*°** **Monopole** **8' Platform Mount**	

Dear Mr. Evans,

We are pleased to submit this **"Appurtenance Mount Analysis Report"** to determine the structural integrity of the antenna mount on the above-mentioned structure.

The purpose of the analysis is to determine acceptability of the mount's stress level. Based on our analysis we have determined the stress level for the mount under the following load case to be:

Proposed Equipment Note: See Table 1 for the final loading configuration	**Sufficient Capacity** **(Passing at 46.9%)**

This analysis utilizes an ultimate 3-second gust wind speed of 116 mph as required by the 2018 Connecticut State Building Code(2018 IBC). Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

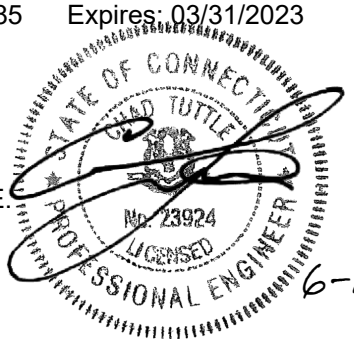
All the equipment proposed in this report shall be installed in accordance with the drawings for the determined available structural capacity to be effective.

We appreciate the opportunity of providing our continuing professional services to you and *SBA Network Services, LLC.* If you have any questions or need further assistance on this or any other projects, please give us a call.

Mount structural analysis prepared by: Chris Guidry

Respectfully submitted by: MTS Engineering, P.L.L.C.
COA: BER: 2386985 Expires: 03/31/2023

Chad E. Tuttle, P.E.



6-13-22

TABLE OF CONTENTS

1) INTRODUCTION

The appurtenance mount consists of a Commscope platform mount, (Part # MC-PK8-DSH) at 124 ft., attached to monopole at 170 Mount Tobe Road, Plymouth, CT, 06782, Litchfield County. The proposed antenna loading information was obtained from SBA Network Services, LLC. All information provided to us was assumed accurate and complete.

2) ANALYSIS CRITERIA

The structural analysis was performed for this mount in accordance with the ANSI/TIA-222-H-2017 Structural Standard for Antenna Supporting Structures and Antennas and Small Wind Turbine Support Structures using a 3-second gust wind speed of 116 mph with no ice and 50 mph with 1.0 inch escalated ice thickness. Exposure Category B, Topographic Category 1 and Risk Category II were used in this analysis. In addition, the platform mount has been analyzed for various live loading conditions consisting of a 250-lb man live load applied individually at the midpoint and cantilevered ends of horizontal members as well as a 500-pound man live load applied individually at mount pipe locations using a 3-second gust of 30 mph. The mount was analyzed under 30º increments in the wind direction. The analyzed loading is detailed in Table 1.

Table 1 – Proposed Equipment Information

Loading	RAD Center Elev. (ft.)	Position	Qty.	Description	Note
Proposed	124	1	3	JMA Wireless MX08FRO665-21	1
			3	Fujitsu TA08025-B605	2
			3	Fujitsu TA08025-B604	
		--	1	Raycap RDIDC-9181-PF-48	3

Note:
(1) Proposed Antenna to be installed on the proposed Mount Pipe.
(2) Proposed Equipment to be installed directly behind the Antenna.
(3) Proposed Equipment to be installed on the Mount.

Table 2 - Documents Provided

Documents	Remarks	Reference	Source
Collo App	Proposed Loading	Date: 06/06/2022	SBA Network Services, LLC.

3) ANALYSIS PROCEDURE

3.1) Analysis Method

RISA-3D (Version 20.0.1), a commercially available analysis software package, was used to create a three-dimensional model of the mount and calculate member stresses and deflections for various loading cases. Selected output from the analysis is included in Appendix A.

Manufacturers drawing were used to create the model.

3.2) Assumptions

1. The mount was built in accordance with the manufacturer's specifications.
2. The mount has been maintained in accordance with the manufacturer's specifications and is free of damage.
3. The configuration of antennas and other appurtenances are as specified in Table 1.
4. All mount components have been assumed to be in sufficient condition to carry their full design capacity for the analysis.
5. Mount areas and weights are determined from field measurements, standard material properties, and/or manufacturer product data.

6. Serviceability with respect to antenna twist, tilt, roll or lateral translation is not checked and is left to the carrier or tower owner to ensure conformance.
7. All prior structural modifications, if any are assumed to be correctly installed and fully effective.
8. 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.
9. The following material grades were assumed (Unless Noted Otherwise):
   a) Connection Bolts : ASTM A325
   b) Steel Pipe : ASTM A53 (GR. 35)
   c) HSS (Round) : ASTM 500 (GR. B-42)
   d) HSS (Rectangular) : ASTM 500 (GR. B-46)
   e) Channel : ASTM A36 (GR. 36)
   f) Steel Solid Rod : ASTM A36 (GR. 36)
   g) Steel Plate : ASTM A36 (GR. 36)
   h) Steel Angle : ASTM A36 (GR. 36)
   i) UNISTRUT : ASTM A570 (GR. 33)

This analysis may be affected if any assumptions are not valid or have been made in error. MTS Engineering, P.L.L.C. should be notified to determine the effect on the structural integrity of the antenna mounting system.

4) ANALYSIS RESULTS

Table 3 – Mount Component Stresses vs. Capacity

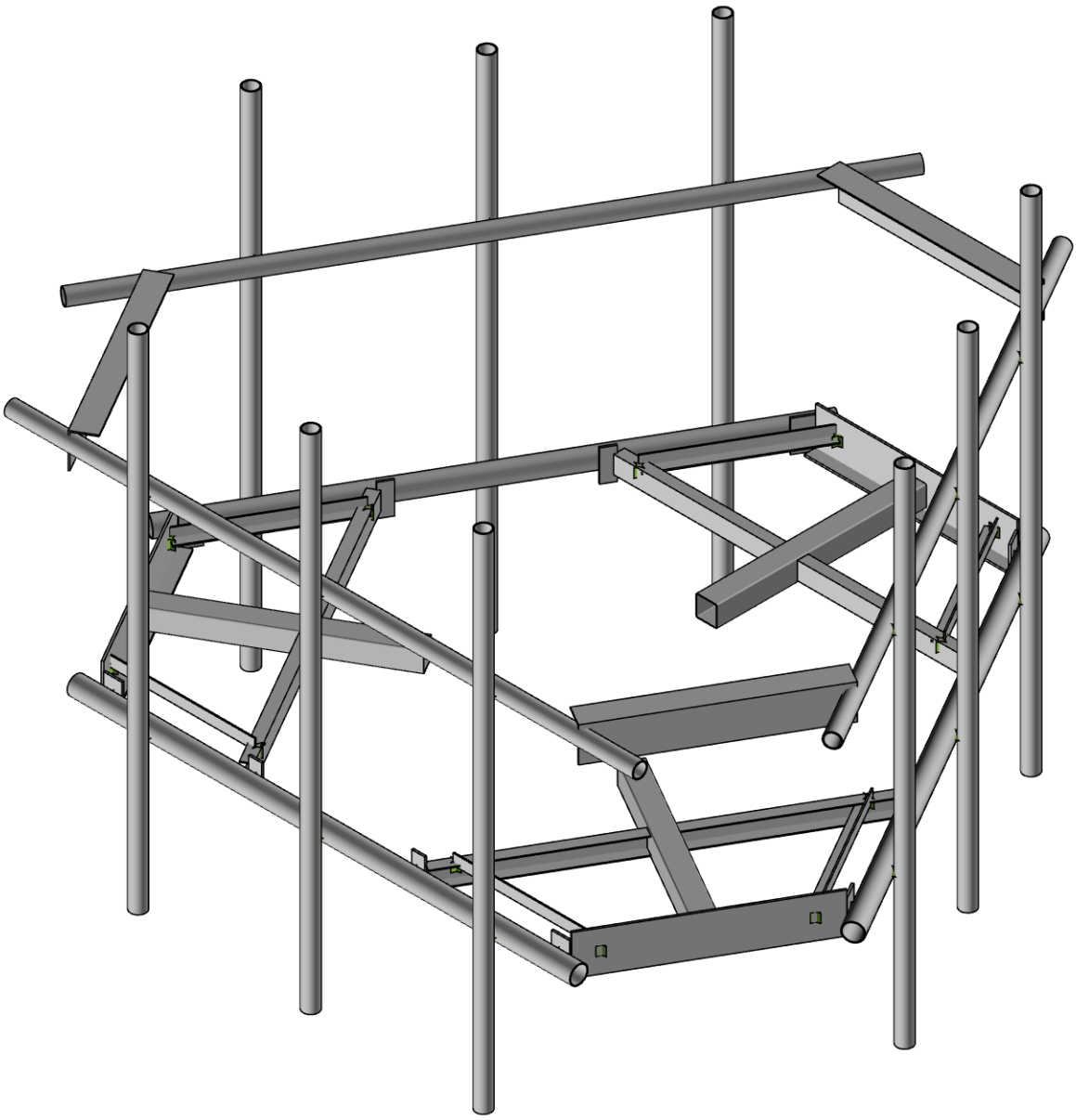
Notes	Component	Elevation (ft.)	% Capacity	Pass / Fail
-	Main Horizontals	124	6.8	Pass
-	Support Rails	124	12.0	Pass
-	Support Tubes	124	46.9	Pass
-	Support Channels	124	32.3	Pass
-	Support Angles	124	31.4	Pass
-	Mount Pipes	124	13.6	Pass
-	Connection Plates	124	19.8	Pass
-	Connection Angles	124	20.2	Pass
-	Connection Bolts	124	24.5	Pass

5) RECOMMENDATIONS

The Commscope platform mount (Part #MC-PK8-DSH) has sufficient capacity to carry the proposed loads and is in compliance with the ANSI/TIA-222-H standard for the proposed loading. (Refer to the RISA output for the specific members).

APPENDIX A

(RISA-3D Output)



Envelope Only Solution

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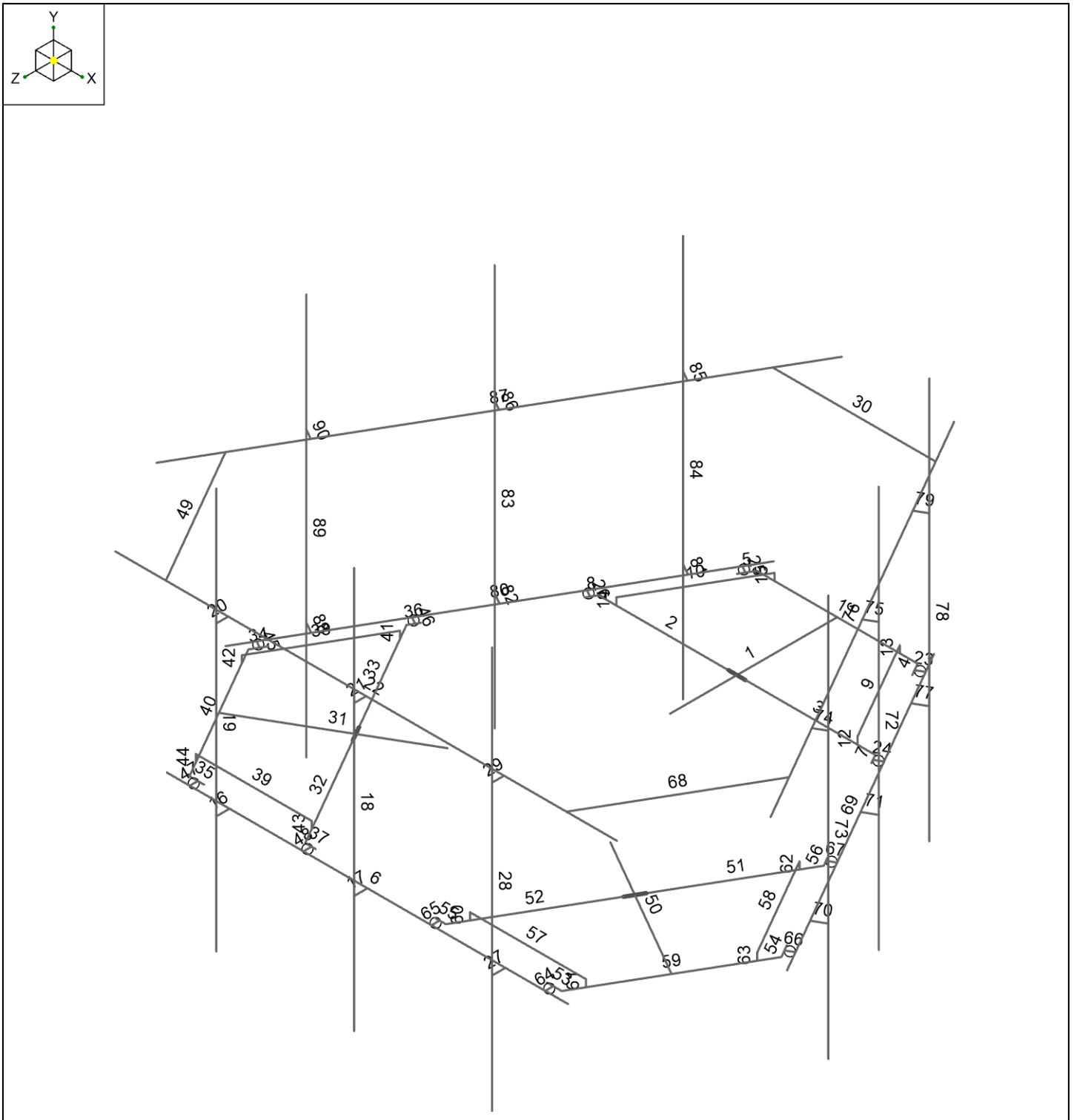

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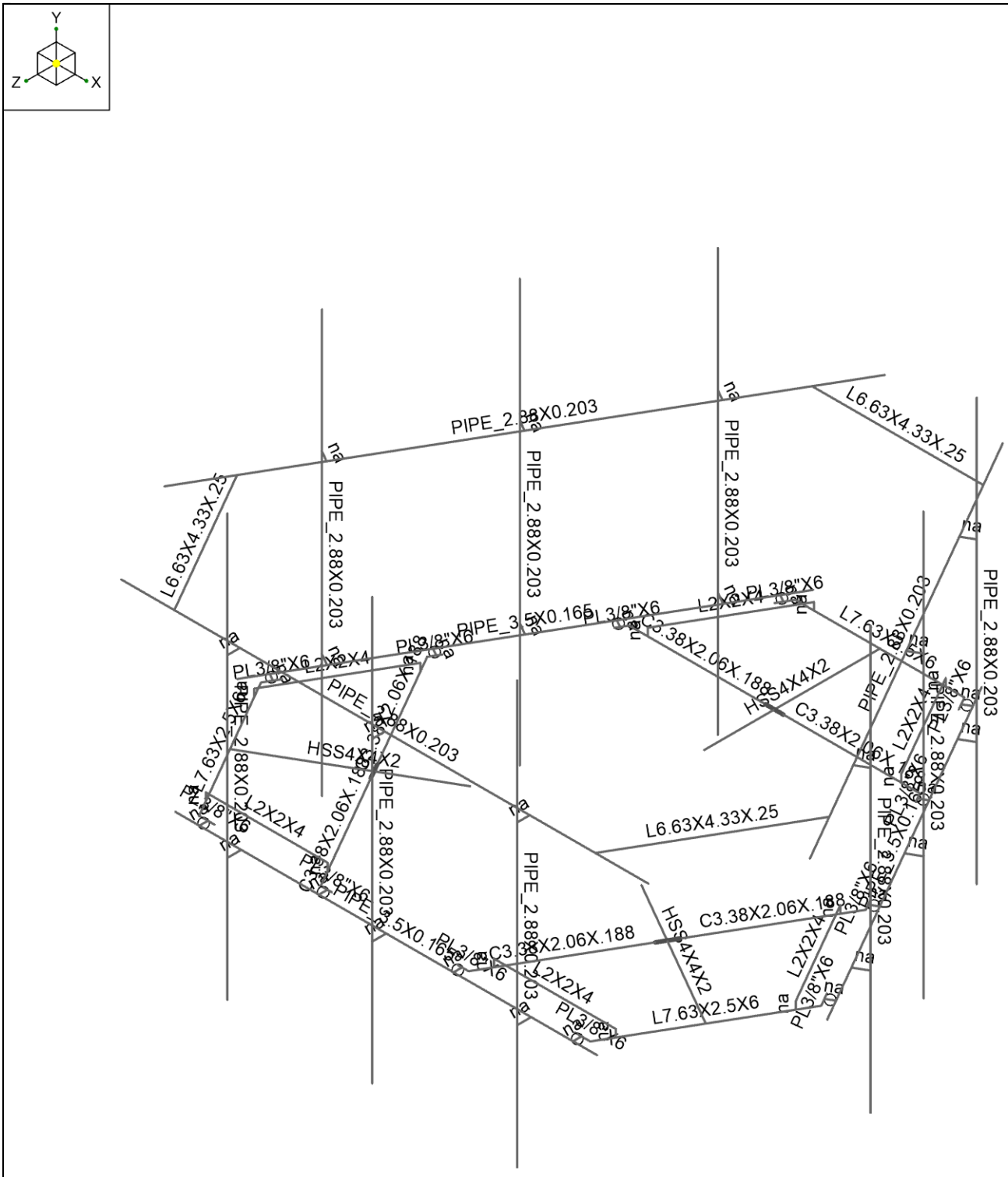

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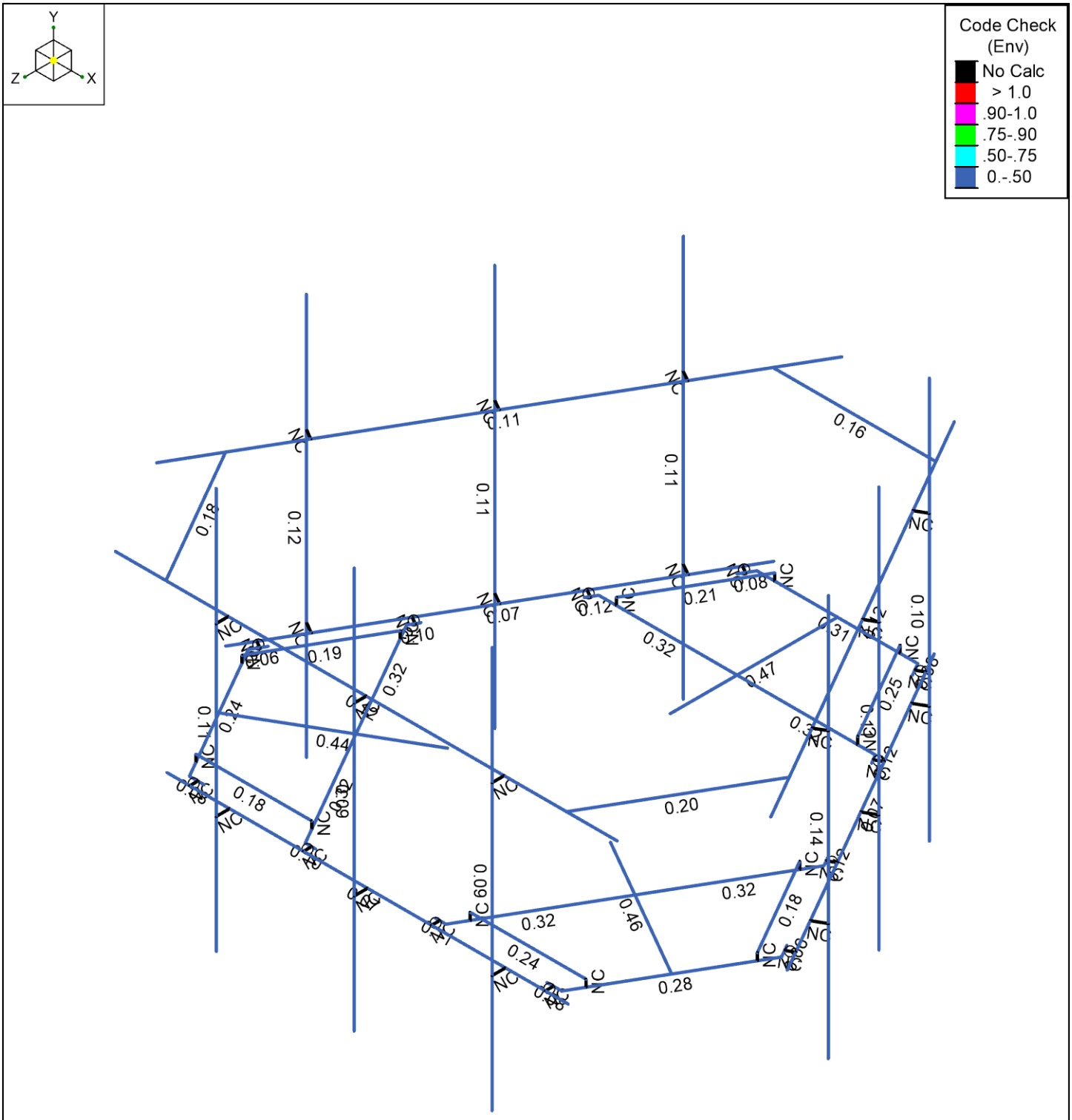

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Envelope Only Solution

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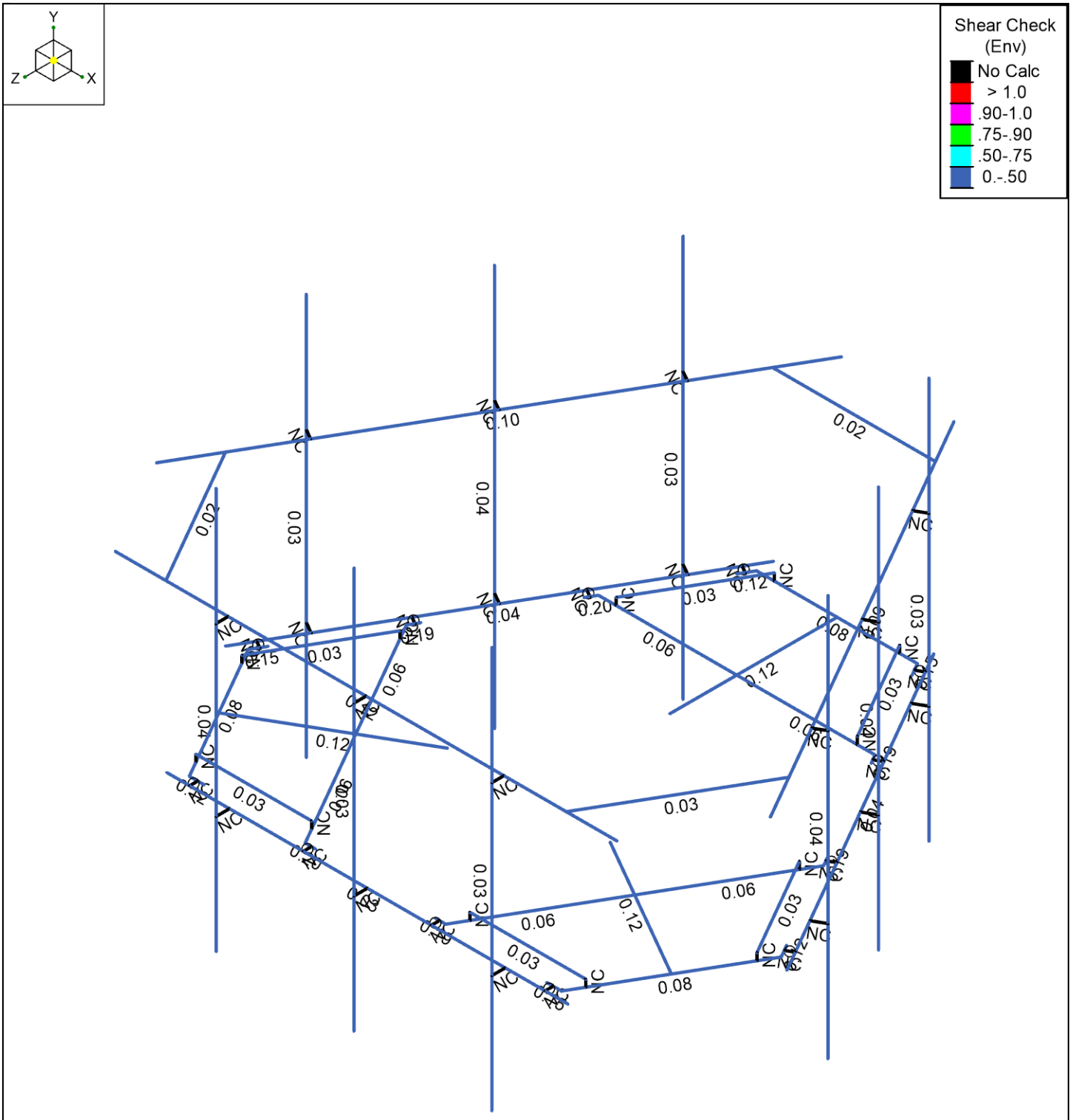

Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

MTS Engineering, P.L.L.C.	CT03538-S - South Plymouth	SK-5
MSP		Jun 11, 2022
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Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	1	0	0	-1.878332	
2	2	0	0	-5.211665	
3	3	0	0	-3.211665	
4	4	2.758333	0	-3.211665	
5	5	-2.758333	0	-3.211665	
6	6	-1.603633	0	-5.211665	
7	7	1.603633	0	-5.211665	
8	8	1.749466	0	-4.959074	
9	9	-1.749466	0	-4.959074	
10	10	1.686966	0	-5.067327	
11	11	1.826823	0	-5.148074	
12	12	-1.686966	0	-5.067327	
13	13	-1.826823	0	-5.148074	
14	14	-3.999998	0	4.156112	
15	15	3.999998	0	4.156112	
16	16	2.8625	0	-3.031243	
17	17	2.820833	0	-3.103413	
18	18	2.960689	0	-3.184159	
19	19	-2.8625	0	-3.031243	
20	20	-2.820833	0	-3.103413	
21	21	-2.960689	0	-3.184159	
22	22	-1.25	0.140833	-5.211665	
23	23	-2.404701	0.140833	-3.211665	
24	24	2.404701	0.140833	-3.211665	
25	25	1.25	0.140833	-5.211665	
26	26	-1.25	0	-5.211665	
27	27	-2.404701	0	-3.211665	
28	28	2.404701	0	-3.211665	
29	29	1.25	0	-5.211665	
30	30	-2.749998	0	4.156112	
31	31	0.000002	0	4.156112	
32	32	-2.749998	0	4.421737	
33	33	0.000002	0	4.421737	
34	34	-2.749998	-2.333667	4.421737	
35	35	0.000002	-2.333667	4.421737	
36	36	-2.749998	5.666335	4.421737	
37	37	0.000002	5.666335	4.421737	
38	38	-2.749998	3.333337	4.421737	
39	39	0.000002	3.333337	4.421737	
40	40	-2.749998	3.333337	4.182153	
41	41	0.000002	3.333337	4.182153	
42	42	-5	3.333337	4.182153	
43	43	5	3.333337	4.182153	
44	44	2.749998	0	4.156112	
45	45	2.749998	0	4.421737	
46	46	2.749998	-2.333667	4.421737	
47	47	2.749998	5.666335	4.421737	
48	48	2.749998	3.333337	4.421737	
49	49	2.749998	3.333337	4.182153	
50	50	0	0	0	
51	51	1.62504	3.333337	-5.549654	
52	52	-1.62504	3.333337	-5.549654	
53	53	-1.626683	0	0.939166	
54	54	-4.513434	0	2.605832	
55	55	-2.781383	0	1.605832	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
56	56	-4.16055	0	-0.782954	
57	57	-1.402217	0	3.994619	
58	58	-3.711618	0	3.994619	
59	59	-5.315251	0	1.217046	
60	60	-5.169417	0	0.964455	
61	61	-3.419951	0	3.994619	
62	62	-5.231917	0	1.072708	
63	63	-5.371774	0	0.991962	
64	64	-3.544951	0	3.994619	
65	65	-3.544951	0	4.156112	
66	66	-4.056383	0	-0.963376	
67	67	-4.098051	0	-0.891207	
68	68	-4.237907	0	-0.971953	
69	69	-1.193883	0	3.994619	
70	70	-1.277218	0	3.994619	
71	71	-1.277218	0	4.156112	
72	72	-3.888434	0.140833	3.688364	
73	73	-1.579033	0.140833	3.688364	
74	74	-3.983734	0.140833	-0.476699	
75	75	-5.138434	0.140833	1.523301	
76	76	-3.888434	0	3.688364	
77	77	-1.579033	0	3.688364	
78	78	-3.983734	0	-0.476699	
79	79	-5.138434	0	1.523301	
80	80	-5.618662	3.333337	1.367501	
81	81	-3.993621	3.333337	4.182153	
82	82	1.626683	0	0.939166	
83	83	4.513434	0	2.605832	
84	84	2.781383	0	1.605832	
85	85	1.402217	0	3.994619	
86	86	4.16055	0	-0.782954	
87	87	5.315251	0	1.217046	
88	88	3.711618	0	3.994619	
89	89	3.419951	0	3.994619	
90	90	5.169417	0	0.964455	
91	91	3.544951	0	3.994619	
92	92	3.544951	0	4.156112	
93	93	5.231917	0	1.072708	
94	94	5.371774	0	0.991962	
95	95	1.193883	0	3.994619	
96	96	1.277218	0	3.994619	
97	97	1.277218	0	4.156112	
98	98	4.056383	0	-0.963376	
99	99	4.098051	0	-0.891207	
100	100	4.237907	0	-0.971953	
101	101	5.138434	0.140833	1.523301	
102	102	3.983734	0.140833	-0.476699	
103	103	1.579033	0.140833	3.688364	
104	104	3.888434	0.140833	3.688364	
105	105	5.138434	0	1.523301	
106	106	3.983734	0	-0.476699	
107	107	1.579033	0	3.688364	
108	108	3.888434	0	3.688364	
109	109	3.993621	3.333337	4.182153	
110	110	5.618662	3.333337	1.367501	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
111	111	5.599297	0	1.386044	
112	112	1.599299	0	-5.542156	
113	113	4.974297	0	0.303512	
114	114	3.599297	0	-2.078058	
115	115	5.204335	0	0.1707	
116	116	3.829335	0	-2.21087	
117	117	5.204335	-2.333667	0.1707	
118	118	3.829335	-2.333667	-2.21087	
119	119	5.204335	5.666335	0.1707	
120	120	3.829335	5.666335	-2.21087	
121	121	5.204335	3.333337	0.1707	
122	122	3.829335	3.333337	-2.21087	
123	123	4.99685	3.333337	0.290491	
124	124	3.62185	3.333337	-2.091078	
125	125	6.121851	3.333337	2.23905	
126	126	1.121851	3.333337	-6.421204	
127	127	2.224299	0	-4.459624	
128	128	2.454337	0	-4.592437	
129	129	2.454337	-2.333667	-4.592437	
130	130	2.454337	5.666335	-4.592437	
131	131	2.454337	3.333337	-4.592437	
132	132	2.246852	3.333337	-4.472645	
133	133	-1.599299	0	-5.542156	
134	134	-5.599297	0	1.386044	
135	135	-2.224299	0	-4.459624	
136	136	-3.599299	0	-2.078054	
137	137	-2.454337	0	-4.592437	
138	138	-3.829337	0	-2.210867	
139	139	-2.454337	-2.333667	-4.592437	
140	140	-3.829337	-2.333667	-2.210867	
141	141	-2.454337	5.666335	-4.592437	
142	142	-3.829337	5.666335	-2.210867	
143	143	-2.454337	3.333337	-4.592437	
144	144	-3.829337	3.333337	-2.210867	
145	145	-2.246852	3.333337	-4.472645	
146	146	-3.621852	3.333337	-2.091075	
147	147	-1.121851	3.333337	-6.421204	
148	148	-6.121851	3.333337	2.23905	
149	149	-4.974297	0	0.303512	
150	150	-5.204335	0	0.1707	
151	151	-5.204335	-2.333667	0.1707	
152	152	-5.204335	5.666335	0.1707	
153	153	-5.204335	3.333337	0.1707	
154	154	-4.99685	3.333337	0.290491	

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	2						
3	3						
4	4						
5	5						
6	16						
7	17						
8	19						

Node Boundary Conditions (Continued)

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
9	20						
10	22						
11	25						
12	26						
13	29						
14	53	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
15	54						
16	55						
17	56						
18	57						
19	66						
20	67						
21	69						
22	70						
23	72						
24	75						
25	76						
26	79						
27	82	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
28	83						
29	84						
30	85						
31	86						
32	95						
33	96						
34	98						
35	99						
36	101						
37	104						
38	105						
39	108						

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e^{5}°F^{-1}]	Density [k/ft^{3}]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3
8	A500 Gr.C	29000	11154	0.3	0.65	0.49	46	1.4	62	1.3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in^{2}]	Iyy [in^{4}]	Izz [in^{4}]	J [in^{4}]
1	MF-H1	PIPE_3.5X0.165	Beam	Pipe	A500 Gr.C	Typical	1.729	2.409	2.409	4.819
2	MF-H2	PIPE_2.88X0.203	Beam	Pipe	A500 Gr.C	Typical	1.707	1.538	1.538	3.076
3	SF-H1	HSS4X4X2	Beam	Tube	A500 Gr.B Rect	Typical	1.77	4.4	4.4	6.91
4	SF-H2	C3.38X2.06X.188	Beam	Channel	A36 Gr.36	Typical	1.339	0.562	2.4	0.015
5	SF-H3	L2X2X4	Beam	Single Angle	A36 Gr.36	Typical	0.944	0.346	0.346	0.021
6	SF-H4	L7.63X2.5X6	Beam	Single Angle	A36 Gr.36	Typical	3.658	1.307	22.092	0.163
7	MF-P1	PIPE_2.88X0.203	Column	Pipe	A500 Gr.C	Typical	1.707	1.538	1.538	3.076
8	MF-CP1	PL3/8"X6	Beam	RECT	A36 Gr.36	Typical	2.25	0.026	6.75	0.101

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
9	MF-H3	L6.63X4.33X.25	Beam	Single Angle	A36 Gr.36	Typical	2.678	4.383	12.502	0.054

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	1	1	2		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
2	2	5	3	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
3	3	3	4	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
4	4	7	8		MF-CP1	Beam	RECT	A36 Gr.36	Typical
5	5	6	9		MF-CP1	Beam	RECT	A36 Gr.36	Typical
6	6	14	15		MF-H1	Beam	Pipe	A500 Gr.C	Typical
7	7	16	4		MF-CP1	Beam	RECT	A36 Gr.36	Typical
8	8	5	19		MF-CP1	Beam	RECT	A36 Gr.36	Typical
9	9	25	24		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
10	10	23	22		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
11	11	6	7		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
12	12	28	24		RIGID	None	None	RIGID	Typical
13	13	29	25		RIGID	None	None	RIGID	Typical
14	14	27	23		RIGID	None	None	RIGID	Typical
15	15	26	22		RIGID	None	None	RIGID	Typical
16	16	32	30		RIGID	None	None	RIGID	Typical
17	17	33	31		RIGID	None	None	RIGID	Typical
18	18	37	35		MF-P1	Column	Pipe	A500 Gr.C	Typical
19	19	36	34		MF-P1	Column	Pipe	A500 Gr.C	Typical
20	20	38	40		RIGID	None	None	RIGID	Typical
21	21	39	41		RIGID	None	None	RIGID	Typical
22	22	42	43		MF-H2	Beam	Pipe	A500 Gr.C	Typical
23	23	11	10		RIGID	None	None	RIGID	Typical
24	24	18	17		RIGID	None	None	RIGID	Typical
25	25	13	12		RIGID	None	None	RIGID	Typical
26	26	21	20		RIGID	None	None	RIGID	Typical
27	27	45	44		RIGID	None	None	RIGID	Typical
28	28	47	46		MF-P1	Column	Pipe	A500 Gr.C	Typical
29	29	48	49		RIGID	None	None	RIGID	Typical
30	30	51	52	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
31	31	53	54		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
32	32	57	55	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
33	33	55	56	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
34	34	59	60		MF-CP1	Beam	RECT	A36 Gr.36	Typical
35	35	58	61		MF-CP1	Beam	RECT	A36 Gr.36	Typical
36	36	66	56		MF-CP1	Beam	RECT	A36 Gr.36	Typical
37	37	57	69		MF-CP1	Beam	RECT	A36 Gr.36	Typical
38	38	75	74		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
39	39	73	72		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
40	40	58	59		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
41	41	78	74		RIGID	None	None	RIGID	Typical
42	42	79	75		RIGID	None	None	RIGID	Typical
43	43	77	73		RIGID	None	None	RIGID	Typical
44	44	76	72		RIGID	None	None	RIGID	Typical
45	45	63	62		RIGID	None	None	RIGID	Typical
46	46	68	67		RIGID	None	None	RIGID	Typical
47	47	65	64		RIGID	None	None	RIGID	Typical
48	48	71	70		RIGID	None	None	RIGID	Typical
49	49	80	81	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
50	50	82	83		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
51	51	86	84	180	SF-H2	Beam	Channel	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
52	52	84	85	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
53	53	88	89		MF-CP1	Beam	RECT	A36 Gr.36	Typical
54	54	87	90		MF-CP1	Beam	RECT	A36 Gr.36	Typical
55	55	95	85		MF-CP1	Beam	RECT	A36 Gr.36	Typical
56	56	86	98		MF-CP1	Beam	RECT	A36 Gr.36	Typical
57	57	104	103		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
58	58	102	101		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
59	59	87	88		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
60	60	107	103		RIGID	None	None	RIGID	Typical
61	61	108	104		RIGID	None	None	RIGID	Typical
62	62	106	102		RIGID	None	None	RIGID	Typical
63	63	105	101		RIGID	None	None	RIGID	Typical
64	64	92	91		RIGID	None	None	RIGID	Typical
65	65	97	96		RIGID	None	None	RIGID	Typical
66	66	94	93		RIGID	None	None	RIGID	Typical
67	67	100	99		RIGID	None	None	RIGID	Typical
68	68	109	110	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
69	69	111	112		MF-H1	Beam	Pipe	A500 Gr.C	Typical
70	70	115	113		RIGID	None	None	RIGID	Typical
71	71	116	114		RIGID	None	None	RIGID	Typical
72	72	120	118		MF-P1	Column	Pipe	A500 Gr.C	Typical
73	73	119	117		MF-P1	Column	Pipe	A500 Gr.C	Typical
74	74	121	123		RIGID	None	None	RIGID	Typical
75	75	122	124		RIGID	None	None	RIGID	Typical
76	76	125	126		MF-H2	Beam	Pipe	A500 Gr.C	Typical
77	77	128	127		RIGID	None	None	RIGID	Typical
78	78	130	129		MF-P1	Column	Pipe	A500 Gr.C	Typical
79	79	131	132		RIGID	None	None	RIGID	Typical
80	80	133	134		MF-H1	Beam	Pipe	A500 Gr.C	Typical
81	81	137	135		RIGID	None	None	RIGID	Typical
82	82	138	136		RIGID	None	None	RIGID	Typical
83	83	142	140		MF-P1	Column	Pipe	A500 Gr.C	Typical
84	84	141	139		MF-P1	Column	Pipe	A500 Gr.C	Typical
85	85	143	145		RIGID	None	None	RIGID	Typical
86	86	144	146		RIGID	None	None	RIGID	Typical
87	87	147	148		MF-H2	Beam	Pipe	A500 Gr.C	Typical
88	88	150	149		RIGID	None	None	RIGID	Typical
89	89	152	151		MF-P1	Column	Pipe	A500 Gr.C	Typical
90	90	153	154		RIGID	None	None	RIGID	Typical

Member Advanced Data

	Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
1	1				Yes	N/A	None
2	2			2	Yes	N/A	None
3	3		2		Yes	N/A	None
4	4				Yes	N/A	None
5	5				Yes	N/A	None
6	6				Yes	N/A	None
7	7				Yes	N/A	None
8	8				Yes	N/A	None
9	9				Yes	N/A	None
10	10				Yes	N/A	None
11	11				Yes	N/A	None
12	12				Yes	** NA **	None
13	13				Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
14	14				Yes	** NA **	None
15	15				Yes	** NA **	None
16	16				Yes	** NA **	None
17	17				Yes	** NA **	None
18	18				Yes	** NA **	None
19	19				Yes	** NA **	None
20	20				Yes	** NA **	None
21	21				Yes	** NA **	None
22	22				Yes	N/A	None
23	23	OOOOOX			Yes	** NA **	None
24	24	OOOOOX			Yes	** NA **	None
25	25	OOOOOX			Yes	** NA **	None
26	26	OOOOOX			Yes	** NA **	None
27	27				Yes	** NA **	None
28	28				Yes	** NA **	None
29	29				Yes	** NA **	None
30	30				Yes	N/A	None
31	31				Yes	N/A	None
32	32			2	Yes	N/A	None
33	33		2		Yes	N/A	None
34	34				Yes	N/A	None
35	35				Yes	N/A	None
36	36				Yes	N/A	None
37	37				Yes	N/A	None
38	38				Yes	N/A	None
39	39				Yes	N/A	None
40	40				Yes	N/A	None
41	41				Yes	** NA **	None
42	42				Yes	** NA **	None
43	43				Yes	** NA **	None
44	44				Yes	** NA **	None
45	45	OOOOOX			Yes	** NA **	None
46	46	OOOOOX			Yes	** NA **	None
47	47	OOOOOX			Yes	** NA **	None
48	48	OOOOOX			Yes	** NA **	None
49	49				Yes	N/A	None
50	50				Yes	N/A	None
51	51			2	Yes	N/A	None
52	52		2		Yes	N/A	None
53	53				Yes	N/A	None
54	54				Yes	N/A	None
55	55				Yes	N/A	None
56	56				Yes	N/A	None
57	57				Yes	N/A	None
58	58				Yes	N/A	None
59	59				Yes	N/A	None
60	60				Yes	** NA **	None
61	61				Yes	** NA **	None
62	62				Yes	** NA **	None
63	63				Yes	** NA **	None
64	64	OOOOOX			Yes	** NA **	None
65	65	OOOOOX			Yes	** NA **	None
66	66	OOOOOX			Yes	** NA **	None
67	67	OOOOOX			Yes	** NA **	None
68	68				Yes	N/A	None

Member Advanced Data (Continued)

	Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
69	69				Yes	N/A	None
70	70				Yes	** NA **	None
71	71				Yes	** NA **	None
72	72				Yes	** NA **	None
73	73				Yes	** NA **	None
74	74				Yes	** NA **	None
75	75				Yes	** NA **	None
76	76				Yes	N/A	None
77	77				Yes	** NA **	None
78	78				Yes	** NA **	None
79	79				Yes	** NA **	None
80	80				Yes	N/A	None
81	81				Yes	** NA **	None
82	82				Yes	** NA **	None
83	83				Yes	** NA **	None
84	84				Yes	** NA **	None
85	85				Yes	** NA **	None
86	86				Yes	** NA **	None
87	87				Yes	N/A	None
88	88				Yes	** NA **	None
89	89				Yes	** NA **	None
90	90				Yes	** NA **	None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [ft]	Lcomp top [ft]	Channel Conn.	a [ft]	Function
1	1	SF-H1	3.333	Lbyy	N/A	N/A	Lateral
2	2	SF-H2	2.758	Lbyy	N/A	N/A	Lateral
3	3	SF-H2	2.758	Lbyy	N/A	N/A	Lateral
4	4	MF-CP1	0.292	Lbyy	N/A	N/A	Lateral
5	5	MF-CP1	0.292	Lbyy	N/A	N/A	Lateral
6	6	MF-H1	8	Lbyy	N/A	N/A	Lateral
7	7	MF-CP1	0.208	Lbyy	N/A	N/A	Lateral
8	8	MF-CP1	0.208	Lbyy	N/A	N/A	Lateral
9	9	SF-H3	2.309	Lbyy	N/A	N/A	Lateral
10	10	SF-H3	2.309	Lbyy	N/A	N/A	Lateral
11	11	SF-H4	3.207	Lbyy	N/A	N/A	Lateral
12	18	MF-P1	8	Lbyy	N/A	N/A	Lateral
13	19	MF-P1	8	Lbyy	N/A	N/A	Lateral
14	22	MF-H2	10	Lbyy	N/A	N/A	Lateral
15	28	MF-P1	8	Lbyy	N/A	N/A	Lateral
16	30	MF-H3	3.25	Lbyy	N/A	N/A	Lateral
17	31	SF-H1	3.333	Lbyy	N/A	N/A	Lateral
18	32	SF-H2	2.758	Lbyy	N/A	N/A	Lateral
19	33	SF-H2	2.758	Lbyy	N/A	N/A	Lateral
20	34	MF-CP1	0.292	Lbyy	N/A	N/A	Lateral
21	35	MF-CP1	0.292	Lbyy	N/A	N/A	Lateral
22	36	MF-CP1	0.208	Lbyy	N/A	N/A	Lateral
23	37	MF-CP1	0.208	Lbyy	N/A	N/A	Lateral
24	38	SF-H3	2.309	Lbyy	N/A	N/A	Lateral
25	39	SF-H3	2.309	Lbyy	N/A	N/A	Lateral
26	40	SF-H4	3.207	Lbyy	N/A	N/A	Lateral
27	49	MF-H3	3.25	Lbyy	N/A	N/A	Lateral
28	50	SF-H1	3.333	Lbyy	N/A	N/A	Lateral
29	51	SF-H2	2.758	Lbyy	N/A	N/A	Lateral
30	52	SF-H2	2.758	Lbyy	N/A	N/A	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [ft]	Lcomp top [ft]	Channel Conn.	a [ft]	Function
31	53	MF-CP1	0.292	Lbyy	N/A	N/A	Lateral
32	54	MF-CP1	0.292	Lbyy	N/A	N/A	Lateral
33	55	MF-CP1	0.208	Lbyy	N/A	N/A	Lateral
34	56	MF-CP1	0.208	Lbyy	N/A	N/A	Lateral
35	57	SF-H3	2.309	Lbyy	N/A	N/A	Lateral
36	58	SF-H3	2.309	Lbyy	N/A	N/A	Lateral
37	59	SF-H4	3.207	Lbyy	N/A	N/A	Lateral
38	68	MF-H3	3.25	Lbyy	N/A	N/A	Lateral
39	69	MF-H1	8	Lbyy	N/A	N/A	Lateral
40	72	MF-P1	8	Lbyy	N/A	N/A	Lateral
41	73	MF-P1	8	Lbyy	N/A	N/A	Lateral
42	76	MF-H2	10	Lbyy	N/A	N/A	Lateral
43	78	MF-P1	8	Lbyy	N/A	N/A	Lateral
44	80	MF-H1	8	Lbyy	N/A	N/A	Lateral
45	83	MF-P1	8	Lbyy	N/A	N/A	Lateral
46	84	MF-P1	8	Lbyy	N/A	N/A	Lateral
47	87	MF-H2	10	Lbyy	N/A	N/A	Lateral
48	89	MF-P1	8	Lbyy	N/A	N/A	Lateral

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Y	-0.032	%15
2	28	Y	-0.032	%85
3	28	Y	-0.075	%50
4	28	Y	-0.064	%20
5	28	Y	0	0
6	89	Y	-0.032	%15
7	89	Y	-0.032	%85
8	89	Y	-0.075	%50
9	89	Y	-0.064	%20
10	89	Y	0	0
11	78	Y	-0.032	%15
12	78	Y	-0.032	%85
13	78	Y	-0.075	%50
14	78	Y	-0.064	%20
15	78	Y	0	0
16	1	Y	-0.022	%10
17	1	Y	0	0
18	1	Y	0	0
19	1	Y	0	0
20	1	Y	0	0

Member Point Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Z	-0.188	%15
2	28	Z	-0.188	%85
3	28	Z	-0.059	%50
4	28	Z	-0.059	%20
5	28	Z	0	0
6	89	Z	-0.188	%15
7	89	Z	-0.188	%85
8	89	Z	-0.059	%50
9	89	Z	-0.059	%20

Member Point Loads (BLC 2 : 0 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
10	89	Z	0	0
11	78	Z	-0.188	%15
12	78	Z	-0.188	%85
13	78	Z	-0.059	%50
14	78	Z	-0.059	%20
15	78	Z	0	0
16	1	Z	-0.06	%10
17	1	Z	0	0
18	1	Z	0	0
19	1	Z	0	0
20	1	Z	0	0

Member Point Loads (BLC 3 : 90 Wind - No Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	X	-0.075	%15
2	28	X	-0.075	%85
3	28	X	-0.036	%50
4	28	X	-0.031	%20
5	28	X	0	0
6	89	X	-0.075	%15
7	89	X	-0.075	%85
8	89	X	-0.036	%50
9	89	X	-0.031	%20
10	89	X	0	0
11	78	X	-0.075	%15
12	78	X	-0.075	%85
13	78	X	-0.036	%50
14	78	X	-0.031	%20
15	78	X	0	0
16	1	X	-0.034	%10
17	1	X	0	0
18	1	X	0	0
19	1	X	0	0
20	1	X	0	0

Member Point Loads (BLC 4 : 0 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Z	-0.035	%15
2	28	Z	-0.035	%85
3	28	Z	-0.011	%50
4	28	Z	-0.011	%20
5	28	Z	0	0
6	89	Z	-0.035	%15
7	89	Z	-0.035	%85
8	89	Z	-0.011	%50
9	89	Z	-0.011	%20
10	89	Z	0	0
11	78	Z	-0.035	%15
12	78	Z	-0.035	%85
13	78	Z	-0.011	%50
14	78	Z	-0.011	%20
15	78	Z	0	0
16	1	Z	-0.011	%10

Member Point Loads (BLC 4 : 0 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
17	1	Z	0	0
18	1	Z	0	0
19	1	Z	0	0
20	1	Z	0	0

Member Point Loads (BLC 5 : 90 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	X	-0.014	%15
2	28	X	-0.014	%85
3	28	X	-0.007	%50
4	28	X	-0.006	%20
5	28	X	0	0
6	89	X	-0.014	%15
7	89	X	-0.014	%85
8	89	X	-0.007	%50
9	89	X	-0.006	%20
10	89	X	0	0
11	78	X	-0.014	%15
12	78	X	-0.014	%85
13	78	X	-0.007	%50
14	78	X	-0.006	%20
15	78	X	0	0
16	1	X	-0.006	%10
17	1	X	0	0
18	1	X	0	0
19	1	X	0	0
20	1	X	0	0

Member Point Loads (BLC 6 : 0 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Z	-0.013	%15
2	28	Z	-0.013	%85
3	28	Z	-0.004	%50
4	28	Z	-0.004	%20
5	28	Z	0	0
6	89	Z	-0.013	%15
7	89	Z	-0.013	%85
8	89	Z	-0.004	%50
9	89	Z	-0.004	%20
10	89	Z	0	0
11	78	Z	-0.013	%15
12	78	Z	-0.013	%85
13	78	Z	-0.004	%50
14	78	Z	-0.004	%20
15	78	Z	0	0
16	1	Z	-0.004	%10
17	1	Z	0	0
18	1	Z	0	0
19	1	Z	0	0
20	1	Z	0	0

Member Point Loads (BLC 7 : 90 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	X	-0.005	%15
2	28	X	-0.005	%85
3	28	X	-0.002	%50
4	28	X	-0.002	%20
5	28	X	0	0
6	89	X	-0.005	%15
7	89	X	-0.005	%85
8	89	X	-0.002	%50
9	89	X	-0.002	%20
10	89	X	0	0
11	78	X	-0.005	%15
12	78	X	-0.005	%85
13	78	X	-0.002	%50
14	78	X	-0.002	%20
15	78	X	0	0
16	1	X	-0.002	%10
17	1	X	0	0
18	1	X	0	0
19	1	X	0	0
20	1	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Y	-0.095	%15
2	28	Y	-0.095	%85
3	28	Y	-0.034	%50
4	28	Y	-0.033	%20
5	28	Y	0	0
6	89	Y	-0.095	%15
7	89	Y	-0.095	%85
8	89	Y	-0.034	%50
9	89	Y	-0.033	%20
10	89	Y	0	0
11	78	Y	-0.095	%15
12	78	Y	-0.095	%85
13	78	Y	-0.034	%50
14	78	Y	-0.033	%20
15	78	Y	0	0
16	1	Y	-0.034	%10
17	1	Y	0	0
18	1	Y	0	0
19	1	Y	0	0
20	1	Y	0	0

Member Point Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	Z	-0.014	%15
2	28	Z	-0.014	%85
3	28	Z	-0.016	%50
4	28	Z	-0.013	%20
5	28	Z	0	0
6	89	Z	-0.014	%15

Member Point Loads (BLC 9 : 0 Seismic) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
7	89	Z	-0.014	%85
8	89	Z	-0.016	%50
9	89	Z	-0.013	%20
10	89	Z	0	0
11	78	Z	-0.014	%15
12	78	Z	-0.014	%85
13	78	Z	-0.016	%50
14	78	Z	-0.013	%20
15	78	Z	0	0
16	1	Z	-0.005	%10
17	1	Z	0	0
18	1	Z	0	0
19	1	Z	0	0
20	1	Z	0	0

Member Point Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	28	X	-0.014	%15
2	28	X	-0.014	%85
3	28	X	-0.016	%50
4	28	X	-0.013	%20
5	28	X	0	0
6	89	X	-0.014	%15
7	89	X	-0.014	%85
8	89	X	-0.016	%50
9	89	X	-0.013	%20
10	89	X	0	0
11	78	X	-0.014	%15
12	78	X	-0.014	%85
13	78	X	-0.016	%50
14	78	X	-0.013	%20
15	78	X	0	0
16	1	X	-0.005	%10
17	1	X	0	0
18	1	X	0	0
19	1	X	0	0
20	1	X	0	0

Member Point Loads (BLC 15 : Maint LL 1)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	22	Y	-0.25	%5

Member Point Loads (BLC 16 : Maint LL 2)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	6	Y	-0.25	%5

Member Point Loads (BLC 17 : Maint LL 3)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	87	Y	-0.25	%5

Member Point Loads (BLC 18 : Maint LL 4)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	80	Y	-0.25	%5

Member Point Loads (BLC 19 : Maint LL 5)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	76	Y	-0.25	%5

Member Point Loads (BLC 20 : Maint LL 6)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	69	Y	-0.25	%5

Member Point Loads (BLC 21 : Maint LL 7)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	22	Y	-0.25	%95

Member Point Loads (BLC 22 : Maint LL 8)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	6	Y	-0.25	%95

Member Point Loads (BLC 23 : Maint LL 9)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	87	Y	-0.25	%95

Member Point Loads (BLC 24 : Maint LL 10)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	80	Y	-0.25	%95

Member Point Loads (BLC 25 : Maint LL 11)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	76	Y	-0.25	%95

Member Point Loads (BLC 26 : Maint LL 12)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	69	Y	-0.25	%95

Member Point Loads (BLC 27 : Maint LL 13)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	31	Y	-0.25	%95

Member Point Loads (BLC 28 : Maint LL 14)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	1	Y	-0.25	%95

Member Point Loads (BLC 29 : Maint LL 15)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	50	Y	-0.25	%95

Member Distributed Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.015	-0.015	0	%100
2	2	Z	-0.012	-0.012	0	%100
3	3	Z	-0.012	-0.012	0	%100
4	4	Z	-0.018	-0.018	0	%100
5	5	Z	-0.018	-0.018	0	%100
6	6	Z	-0.011	-0.011	0	%100
7	7	Z	-0.018	-0.018	0	%100
8	8	Z	-0.018	-0.018	0	%100
9	9	Z	-0.008	-0.008	0	%100
10	10	Z	-0.008	-0.008	0	%100
11	11	Z	-0.025	-0.025	0	%100
12	18	Z	-0.009	-0.009	0	%100
13	19	Z	-0.009	-0.009	0	%100
14	22	Z	-0.009	-0.009	0	%100
15	28	Z	-0.009	-0.009	0	%100
16	30	Z	-0.022	-0.022	0	%100
17	31	Z	-0.015	-0.015	0	%100
18	32	Z	-0.012	-0.012	0	%100
19	33	Z	-0.012	-0.012	0	%100
20	34	Z	-0.018	-0.018	0	%100
21	35	Z	-0.018	-0.018	0	%100
22	36	Z	-0.018	-0.018	0	%100
23	37	Z	-0.018	-0.018	0	%100
24	38	Z	-0.008	-0.008	0	%100
25	39	Z	-0.008	-0.008	0	%100
26	40	Z	-0.025	-0.025	0	%100
27	49	Z	-0.022	-0.022	0	%100
28	50	Z	-0.015	-0.015	0	%100
29	51	Z	-0.012	-0.012	0	%100
30	52	Z	-0.012	-0.012	0	%100
31	53	Z	-0.018	-0.018	0	%100
32	54	Z	-0.018	-0.018	0	%100
33	55	Z	-0.018	-0.018	0	%100
34	56	Z	-0.018	-0.018	0	%100
35	57	Z	-0.008	-0.008	0	%100
36	58	Z	-0.008	-0.008	0	%100
37	59	Z	-0.025	-0.025	0	%100
38	68	Z	-0.022	-0.022	0	%100
39	69	Z	-0.011	-0.011	0	%100
40	72	Z	-0.009	-0.009	0	%100
41	73	Z	-0.009	-0.009	0	%100
42	76	Z	-0.009	-0.009	0	%100
43	78	Z	-0.009	-0.009	0	%100
44	80	Z	-0.011	-0.011	0	%100

Member Distributed Loads (BLC 2 : 0 Wind - No Ice) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
45	83	Z	-0.009	-0.009	0	%100
46	84	Z	-0.009	-0.009	0	%100
47	87	Z	-0.009	-0.009	0	%100
48	89	Z	-0.009	-0.009	0	%100

Member Distributed Loads (BLC 3 : 90 Wind - No Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.015	-0.015	0	%100
2	2	X	-0.012	-0.012	0	%100
3	3	X	-0.012	-0.012	0	%100
4	4	X	-0.018	-0.018	0	%100
5	5	X	-0.018	-0.018	0	%100
6	6	X	-0.011	-0.011	0	%100
7	7	X	-0.018	-0.018	0	%100
8	8	X	-0.018	-0.018	0	%100
9	9	X	-0.008	-0.008	0	%100
10	10	X	-0.008	-0.008	0	%100
11	11	X	-0.025	-0.025	0	%100
12	18	X	-0.009	-0.009	0	%100
13	19	X	-0.009	-0.009	0	%100
14	22	X	-0.009	-0.009	0	%100
15	28	X	-0.009	-0.009	0	%100
16	30	X	-0.022	-0.022	0	%100
17	31	X	-0.015	-0.015	0	%100
18	32	X	-0.012	-0.012	0	%100
19	33	X	-0.012	-0.012	0	%100
20	34	X	-0.018	-0.018	0	%100
21	35	X	-0.018	-0.018	0	%100
22	36	X	-0.018	-0.018	0	%100
23	37	X	-0.018	-0.018	0	%100
24	38	X	-0.008	-0.008	0	%100
25	39	X	-0.008	-0.008	0	%100
26	40	X	-0.025	-0.025	0	%100
27	49	X	-0.022	-0.022	0	%100
28	50	X	-0.015	-0.015	0	%100
29	51	X	-0.012	-0.012	0	%100
30	52	X	-0.012	-0.012	0	%100
31	53	X	-0.018	-0.018	0	%100
32	54	X	-0.018	-0.018	0	%100
33	55	X	-0.018	-0.018	0	%100
34	56	X	-0.018	-0.018	0	%100
35	57	X	-0.008	-0.008	0	%100
36	58	X	-0.008	-0.008	0	%100
37	59	X	-0.025	-0.025	0	%100
38	68	X	-0.022	-0.022	0	%100
39	69	X	-0.011	-0.011	0	%100
40	72	X	-0.009	-0.009	0	%100
41	73	X	-0.009	-0.009	0	%100
42	76	X	-0.009	-0.009	0	%100
43	78	X	-0.009	-0.009	0	%100
44	80	X	-0.011	-0.011	0	%100
45	83	X	-0.009	-0.009	0	%100
46	84	X	-0.009	-0.009	0	%100
47	87	X	-0.009	-0.009	0	%100
48	89	X	-0.009	-0.009	0	%100

Member Distributed Loads (BLC 4 : 0 Wind - Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.005	-0.005	0	%100
2	2	Z	-0.004	-0.004	0	%100
3	3	Z	-0.004	-0.004	0	%100
4	4	Z	-0.008	-0.008	0	%100
5	5	Z	-0.008	-0.008	0	%100
6	6	Z	-0.002	-0.002	0	%100
7	7	Z	-0.009	-0.009	0	%100
8	8	Z	-0.009	-0.009	0	%100
9	9	Z	-0.004	-0.004	0	%100
10	10	Z	-0.004	-0.004	0	%100
11	11	Z	-0.006	-0.006	0	%100
12	18	Z	-0.002	-0.002	0	%100
13	19	Z	-0.002	-0.002	0	%100
14	22	Z	-0.002	-0.002	0	%100
15	28	Z	-0.002	-0.002	0	%100
16	30	Z	-0.006	-0.006	0	%100
17	31	Z	-0.005	-0.005	0	%100
18	32	Z	-0.004	-0.004	0	%100
19	33	Z	-0.004	-0.004	0	%100
20	34	Z	-0.008	-0.008	0	%100
21	35	Z	-0.008	-0.008	0	%100
22	36	Z	-0.009	-0.009	0	%100
23	37	Z	-0.009	-0.009	0	%100
24	38	Z	-0.004	-0.004	0	%100
25	39	Z	-0.004	-0.004	0	%100
26	40	Z	-0.006	-0.006	0	%100
27	49	Z	-0.006	-0.006	0	%100
28	50	Z	-0.005	-0.005	0	%100
29	51	Z	-0.004	-0.004	0	%100
30	52	Z	-0.004	-0.004	0	%100
31	53	Z	-0.008	-0.008	0	%100
32	54	Z	-0.008	-0.008	0	%100
33	55	Z	-0.009	-0.009	0	%100
34	56	Z	-0.009	-0.009	0	%100
35	57	Z	-0.004	-0.004	0	%100
36	58	Z	-0.004	-0.004	0	%100
37	59	Z	-0.006	-0.006	0	%100
38	68	Z	-0.006	-0.006	0	%100
39	69	Z	-0.002	-0.002	0	%100
40	72	Z	-0.002	-0.002	0	%100
41	73	Z	-0.002	-0.002	0	%100
42	76	Z	-0.002	-0.002	0	%100
43	78	Z	-0.002	-0.002	0	%100
44	80	Z	-0.002	-0.002	0	%100
45	83	Z	-0.002	-0.002	0	%100
46	84	Z	-0.002	-0.002	0	%100
47	87	Z	-0.002	-0.002	0	%100
48	89	Z	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 5 : 90 Wind - Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.005	-0.005	0	%100
2	2	X	-0.004	-0.004	0	%100
3	3	X	-0.004	-0.004	0	%100

Member Distributed Loads (BLC 5 : 90 Wind - Ice) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
4	4	X	-0.008	-0.008	0	%100
5	5	X	-0.008	-0.008	0	%100
6	6	X	-0.002	-0.002	0	%100
7	7	X	-0.009	-0.009	0	%100
8	8	X	-0.009	-0.009	0	%100
9	9	X	-0.004	-0.004	0	%100
10	10	X	-0.004	-0.004	0	%100
11	11	X	-0.006	-0.006	0	%100
12	18	X	-0.002	-0.002	0	%100
13	19	X	-0.002	-0.002	0	%100
14	22	X	-0.002	-0.002	0	%100
15	28	X	-0.002	-0.002	0	%100
16	30	X	-0.006	-0.006	0	%100
17	31	X	-0.005	-0.005	0	%100
18	32	X	-0.004	-0.004	0	%100
19	33	X	-0.004	-0.004	0	%100
20	34	X	-0.008	-0.008	0	%100
21	35	X	-0.008	-0.008	0	%100
22	36	X	-0.009	-0.009	0	%100
23	37	X	-0.009	-0.009	0	%100
24	38	X	-0.004	-0.004	0	%100
25	39	X	-0.004	-0.004	0	%100
26	40	X	-0.006	-0.006	0	%100
27	49	X	-0.006	-0.006	0	%100
28	50	X	-0.005	-0.005	0	%100
29	51	X	-0.004	-0.004	0	%100
30	52	X	-0.004	-0.004	0	%100
31	53	X	-0.008	-0.008	0	%100
32	54	X	-0.008	-0.008	0	%100
33	55	X	-0.009	-0.009	0	%100
34	56	X	-0.009	-0.009	0	%100
35	57	X	-0.004	-0.004	0	%100
36	58	X	-0.004	-0.004	0	%100
37	59	X	-0.006	-0.006	0	%100
38	68	X	-0.006	-0.006	0	%100
39	69	X	-0.002	-0.002	0	%100
40	72	X	-0.002	-0.002	0	%100
41	73	X	-0.002	-0.002	0	%100
42	76	X	-0.002	-0.002	0	%100
43	78	X	-0.002	-0.002	0	%100
44	80	X	-0.002	-0.002	0	%100
45	83	X	-0.002	-0.002	0	%100
46	84	X	-0.002	-0.002	0	%100
47	87	X	-0.002	-0.002	0	%100
48	89	X	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 6 : 0 Wind - Service)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.001	-0.001	0	%100
2	2	Z	-0.0008	-0.0008	0	%100
3	3	Z	-0.0008	-0.0008	0	%100
4	4	Z	-0.001	-0.001	0	%100
5	5	Z	-0.001	-0.001	0	%100
6	6	Z	-0.0004	-0.0004	0	%100
7	7	Z	-0.001	-0.001	0	%100

Member Distributed Loads (BLC 6 : 0 Wind - Service) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
8	8	Z	-0.001	-0.001	0	%100
9	9	Z	-0.0005	-0.0005	0	%100
10	10	Z	-0.0005	-0.0005	0	%100
11	11	Z	-0.002	-0.002	0	%100
12	18	Z	-0.0003	-0.0003	0	%100
13	19	Z	-0.0003	-0.0003	0	%100
14	22	Z	-0.0003	-0.0003	0	%100
15	28	Z	-0.0003	-0.0003	0	%100
16	30	Z	-0.002	-0.002	0	%100
17	31	Z	-0.001	-0.001	0	%100
18	32	Z	-0.0008	-0.0008	0	%100
19	33	Z	-0.0008	-0.0008	0	%100
20	34	Z	-0.001	-0.001	0	%100
21	35	Z	-0.001	-0.001	0	%100
22	36	Z	-0.001	-0.001	0	%100
23	37	Z	-0.001	-0.001	0	%100
24	38	Z	-0.0005	-0.0005	0	%100
25	39	Z	-0.0005	-0.0005	0	%100
26	40	Z	-0.002	-0.002	0	%100
27	49	Z	-0.002	-0.002	0	%100
28	50	Z	-0.001	-0.001	0	%100
29	51	Z	-0.0008	-0.0008	0	%100
30	52	Z	-0.0008	-0.0008	0	%100
31	53	Z	-0.001	-0.001	0	%100
32	54	Z	-0.001	-0.001	0	%100
33	55	Z	-0.001	-0.001	0	%100
34	56	Z	-0.001	-0.001	0	%100
35	57	Z	-0.0005	-0.0005	0	%100
36	58	Z	-0.0005	-0.0005	0	%100
37	59	Z	-0.002	-0.002	0	%100
38	68	Z	-0.002	-0.002	0	%100
39	69	Z	-0.0004	-0.0004	0	%100
40	72	Z	-0.0003	-0.0003	0	%100
41	73	Z	-0.0003	-0.0003	0	%100
42	76	Z	-0.0003	-0.0003	0	%100
43	78	Z	-0.0003	-0.0003	0	%100
44	80	Z	-0.0004	-0.0004	0	%100
45	83	Z	-0.0003	-0.0003	0	%100
46	84	Z	-0.0003	-0.0003	0	%100
47	87	Z	-0.0003	-0.0003	0	%100
48	89	Z	-0.0003	-0.0003	0	%100

Member Distributed Loads (BLC 7 : 90 Wind - Service)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.001	-0.001	0	%100
2	2	X	-0.0008	-0.0008	0	%100
3	3	X	-0.0008	-0.0008	0	%100
4	4	X	-0.001	-0.001	0	%100
5	5	X	-0.001	-0.001	0	%100
6	6	X	-0.0004	-0.0004	0	%100
7	7	X	-0.001	-0.001	0	%100
8	8	X	-0.001	-0.001	0	%100
9	9	X	-0.0005	-0.0005	0	%100
10	10	X	-0.0005	-0.0005	0	%100
11	11	X	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 7 : 90 Wind - Service) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
12	18	X	-0.0003	-0.0003	0	%100
13	19	X	-0.0003	-0.0003	0	%100
14	22	X	-0.0003	-0.0003	0	%100
15	28	X	-0.0003	-0.0003	0	%100
16	30	X	-0.002	-0.002	0	%100
17	31	X	-0.001	-0.001	0	%100
18	32	X	-0.0008	-0.0008	0	%100
19	33	X	-0.0008	-0.0008	0	%100
20	34	X	-0.001	-0.001	0	%100
21	35	X	-0.001	-0.001	0	%100
22	36	X	-0.001	-0.001	0	%100
23	37	X	-0.001	-0.001	0	%100
24	38	X	-0.0005	-0.0005	0	%100
25	39	X	-0.0005	-0.0005	0	%100
26	40	X	-0.002	-0.002	0	%100
27	49	X	-0.002	-0.002	0	%100
28	50	X	-0.001	-0.001	0	%100
29	51	X	-0.0008	-0.0008	0	%100
30	52	X	-0.0008	-0.0008	0	%100
31	53	X	-0.001	-0.001	0	%100
32	54	X	-0.001	-0.001	0	%100
33	55	X	-0.001	-0.001	0	%100
34	56	X	-0.001	-0.001	0	%100
35	57	X	-0.0005	-0.0005	0	%100
36	58	X	-0.0005	-0.0005	0	%100
37	59	X	-0.002	-0.002	0	%100
38	68	X	-0.002	-0.002	0	%100
39	69	X	-0.0004	-0.0004	0	%100
40	72	X	-0.0003	-0.0003	0	%100
41	73	X	-0.0003	-0.0003	0	%100
42	76	X	-0.0003	-0.0003	0	%100
43	78	X	-0.0003	-0.0003	0	%100
44	80	X	-0.0004	-0.0004	0	%100
45	83	X	-0.0003	-0.0003	0	%100
46	84	X	-0.0003	-0.0003	0	%100
47	87	X	-0.0003	-0.0003	0	%100
48	89	X	-0.0003	-0.0003	0	%100

Member Distributed Loads (BLC 8 : Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Y	-0.009	-0.009	0	%100
2	2	Y	-0.007	-0.007	0	%100
3	3	Y	-0.007	-0.007	0	%100
4	4	Y	-0.01	-0.01	0	%100
5	5	Y	-0.01	-0.01	0	%100
6	6	Y	-0.006	-0.006	0	%100
7	7	Y	-0.01	-0.01	0	%100
8	8	Y	-0.01	-0.01	0	%100
9	9	Y	-0.006	-0.006	0	%100
10	10	Y	-0.006	-0.006	0	%100
11	11	Y	-0.013	-0.013	0	%100
12	18	Y	-0.006	-0.006	0	%100
13	19	Y	-0.006	-0.006	0	%100
14	22	Y	-0.006	-0.006	0	%100
15	28	Y	-0.006	-0.006	0	%100

Member Distributed Loads (BLC 8 : Ice) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
16	30	Y	-0.013	-0.013	0	%100
17	31	Y	-0.009	-0.009	0	%100
18	32	Y	-0.007	-0.007	0	%100
19	33	Y	-0.007	-0.007	0	%100
20	34	Y	-0.01	-0.01	0	%100
21	35	Y	-0.01	-0.01	0	%100
22	36	Y	-0.01	-0.01	0	%100
23	37	Y	-0.01	-0.01	0	%100
24	38	Y	-0.006	-0.006	0	%100
25	39	Y	-0.006	-0.006	0	%100
26	40	Y	-0.013	-0.013	0	%100
27	49	Y	-0.013	-0.013	0	%100
28	50	Y	-0.009	-0.009	0	%100
29	51	Y	-0.007	-0.007	0	%100
30	52	Y	-0.007	-0.007	0	%100
31	53	Y	-0.01	-0.01	0	%100
32	54	Y	-0.01	-0.01	0	%100
33	55	Y	-0.01	-0.01	0	%100
34	56	Y	-0.01	-0.01	0	%100
35	57	Y	-0.006	-0.006	0	%100
36	58	Y	-0.006	-0.006	0	%100
37	59	Y	-0.013	-0.013	0	%100
38	68	Y	-0.013	-0.013	0	%100
39	69	Y	-0.006	-0.006	0	%100
40	72	Y	-0.006	-0.006	0	%100
41	73	Y	-0.006	-0.006	0	%100
42	76	Y	-0.006	-0.006	0	%100
43	78	Y	-0.006	-0.006	0	%100
44	80	Y	-0.006	-0.006	0	%100
45	83	Y	-0.006	-0.006	0	%100
46	84	Y	-0.006	-0.006	0	%100
47	87	Y	-0.006	-0.006	0	%100
48	89	Y	-0.006	-0.006	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.001	-0.001	0	%100
2	2	Z	-0.0009	-0.0009	0	%100
3	3	Z	-0.0009	-0.0009	0	%100
4	4	Z	-0.002	-0.002	0	%100
5	5	Z	-0.002	-0.002	0	%100
6	6	Z	-0.001	-0.001	0	%100
7	7	Z	-0.002	-0.002	0	%100
8	8	Z	-0.002	-0.002	0	%100
9	9	Z	-0.0007	-0.0007	0	%100
10	10	Z	-0.0007	-0.0007	0	%100
11	11	Z	-0.003	-0.003	0	%100
12	18	Z	-0.001	-0.001	0	%100
13	19	Z	-0.001	-0.001	0	%100
14	22	Z	-0.001	-0.001	0	%100
15	28	Z	-0.001	-0.001	0	%100
16	30	Z	-0.002	-0.002	0	%100
17	31	Z	-0.001	-0.001	0	%100
18	32	Z	-0.0009	-0.0009	0	%100
19	33	Z	-0.0009	-0.0009	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
20	34	Z	-0.002	-0.002	0	%100
21	35	Z	-0.002	-0.002	0	%100
22	36	Z	-0.002	-0.002	0	%100
23	37	Z	-0.002	-0.002	0	%100
24	38	Z	-0.0007	-0.0007	0	%100
25	39	Z	-0.0007	-0.0007	0	%100
26	40	Z	-0.003	-0.003	0	%100
27	49	Z	-0.002	-0.002	0	%100
28	50	Z	-0.001	-0.001	0	%100
29	51	Z	-0.0009	-0.0009	0	%100
30	52	Z	-0.0009	-0.0009	0	%100
31	53	Z	-0.002	-0.002	0	%100
32	54	Z	-0.002	-0.002	0	%100
33	55	Z	-0.002	-0.002	0	%100
34	56	Z	-0.002	-0.002	0	%100
35	57	Z	-0.0007	-0.0007	0	%100
36	58	Z	-0.0007	-0.0007	0	%100
37	59	Z	-0.003	-0.003	0	%100
38	68	Z	-0.002	-0.002	0	%100
39	69	Z	-0.001	-0.001	0	%100
40	72	Z	-0.001	-0.001	0	%100
41	73	Z	-0.001	-0.001	0	%100
42	76	Z	-0.001	-0.001	0	%100
43	78	Z	-0.001	-0.001	0	%100
44	80	Z	-0.001	-0.001	0	%100
45	83	Z	-0.001	-0.001	0	%100
46	84	Z	-0.001	-0.001	0	%100
47	87	Z	-0.001	-0.001	0	%100
48	89	Z	-0.001	-0.001	0	%100

Member Distributed Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.001	-0.001	0	%100
2	2	X	-0.0009	-0.0009	0	%100
3	3	X	-0.0009	-0.0009	0	%100
4	4	X	-0.002	-0.002	0	%100
5	5	X	-0.002	-0.002	0	%100
6	6	X	-0.001	-0.001	0	%100
7	7	X	-0.002	-0.002	0	%100
8	8	X	-0.002	-0.002	0	%100
9	9	X	-0.0007	-0.0007	0	%100
10	10	X	-0.0007	-0.0007	0	%100
11	11	X	-0.003	-0.003	0	%100
12	18	X	-0.001	-0.001	0	%100
13	19	X	-0.001	-0.001	0	%100
14	22	X	-0.001	-0.001	0	%100
15	28	X	-0.001	-0.001	0	%100
16	30	X	-0.002	-0.002	0	%100
17	31	X	-0.001	-0.001	0	%100
18	32	X	-0.0009	-0.0009	0	%100
19	33	X	-0.0009	-0.0009	0	%100
20	34	X	-0.002	-0.002	0	%100
21	35	X	-0.002	-0.002	0	%100
22	36	X	-0.002	-0.002	0	%100
23	37	X	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 10 : 90 Seismic) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
24	38	X	-0.0007	-0.0007	0	%100
25	39	X	-0.0007	-0.0007	0	%100
26	40	X	-0.003	-0.003	0	%100
27	49	X	-0.002	-0.002	0	%100
28	50	X	-0.001	-0.001	0	%100
29	51	X	-0.0009	-0.0009	0	%100
30	52	X	-0.0009	-0.0009	0	%100
31	53	X	-0.002	-0.002	0	%100
32	54	X	-0.002	-0.002	0	%100
33	55	X	-0.002	-0.002	0	%100
34	56	X	-0.002	-0.002	0	%100
35	57	X	-0.0007	-0.0007	0	%100
36	58	X	-0.0007	-0.0007	0	%100
37	59	X	-0.003	-0.003	0	%100
38	68	X	-0.002	-0.002	0	%100
39	69	X	-0.001	-0.001	0	%100
40	72	X	-0.001	-0.001	0	%100
41	73	X	-0.001	-0.001	0	%100
42	76	X	-0.001	-0.001	0	%100
43	78	X	-0.001	-0.001	0	%100
44	80	X	-0.001	-0.001	0	%100
45	83	X	-0.001	-0.001	0	%100
46	84	X	-0.001	-0.001	0	%100
47	87	X	-0.001	-0.001	0	%100
48	89	X	-0.001	-0.001	0	%100

Member Distributed Loads (BLC 30 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	10	Y	-0.02	-0.026	1.27	2.309
2	38	Y	-0.014	-0.02	0	2.078
3	39	Y	0.0006164	-0.016	0	1.155
4	39	Y	-0.016	-0.035	1.155	2.309
5	57	Y	-0.035	-0.016	0	1.155
6	57	Y	-0.016	0.0006163	1.155	2.309
7	58	Y	-0.018	-0.016	0.231	2.309
8	9	Y	-0.015	-0.015	0	2.078
9	10	Y	-0.014	-0.02	0.231	1.27

Member Distributed Loads (BLC 31 : BLC 8 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	9	Y	-0.008	-0.008	0	2.078
2	10	Y	-0.007	-0.01	0.231	1.27
3	10	Y	-0.01	-0.013	1.27	2.309
4	38	Y	-0.007	-0.01	0	2.078
5	39	Y	0.0003082	-0.008	0	1.155
6	39	Y	-0.008	-0.017	1.155	2.309
7	57	Y	-0.017	-0.008	0	1.155
8	57	Y	-0.008	0.0003082	1.155	2.309
9	58	Y	-0.009	-0.008	0.231	2.309

Member Area Loads (BLC 1 : Dead)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	23	22	25	24	Y	Two Way	-0.01
2	73	72	75	74	Y	Two Way	-0.01
3	102	101	104	103	Y	Two Way	-0.01

Member Area Loads (BLC 8 : Ice)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	23	22	25	24	Y	Two Way	-0.005
2	73	72	75	74	Y	Two Way	-0.005
3	102	101	104	103	Y	Two Way	-0.005

Node Loads and Enforced Displacements (BLC 11 : Live Load a)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	30	L	Y	-0.5
2	135	L	Y	-0.5
3	113	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 12 : Live Load b)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	31	L	Y	-0.5
2	136	L	Y	-0.5
3	114	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 13 : Live Load c)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	44	L	Y	-0.5
2	149	L	Y	-0.5
3	127	L	Y	-0.5

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
1	Dead	DL	-1		20		3
2	0 Wind - No Ice	WLZ			20	48	
3	90 Wind - No Ice	WLX			20	48	
4	0 Wind - Ice	WLZ			20	48	
5	90 Wind - Ice	WLX			20	48	
6	0 Wind - Service	WLZ			20	48	
7	90 Wind - Service	WLX			20	48	
8	Ice	OL1			20	48	3
9	0 Seismic	ELZ			20	48	
10	90 Seismic	ELX			20	48	
11	Live Load a	LL		3			
12	Live Load b	LL		3			
13	Live Load c	LL		3			
14	Live Load d	LL					
15	Maint LL 1	LL			1		
16	Maint LL 2	LL			1		
17	Maint LL 3	LL			1		
18	Maint LL 4	LL			1		

Basic Load Cases (Continued)

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
19	Maint LL 5	LL			1		
20	Maint LL 6	LL			1		
21	Maint LL 7	LL			1		
22	Maint LL 8	LL			1		
23	Maint LL 9	LL			1		
24	Maint LL 10	LL			1		
25	Maint LL 11	LL			1		
26	Maint LL 12	LL			1		
27	Maint LL 13	LL			1		
28	Maint LL 14	LL			1		
29	Maint LL 15	LL			1		
30	BLC 1 Transient Area Loads	None				9	
31	BLC 8 Transient Area Loads	None				9	

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 Dead	Yes	Y	1	1.4						
2	1.2 D + 1.0 - 0 W	Yes	Y	1	1.2	2	1				
3	1.2 D + 1.0 - 30 W	Yes	Y	1	1.2	2	0.866	3	0.5		
4	1.2 D + 1.0 - 60 W	Yes	Y	1	1.2	3	0.866	2	0.5		
5	1.2 D + 1.0 - 90 W	Yes	Y	1	1.2	3	1				
6	1.2 D + 1.0 - 120 W	Yes	Y	1	1.2	3	0.866	2	-0.5		
7	1.2 D + 1.0 - 150 W	Yes	Y	1	1.2	2	-0.866	3	0.5		
8	1.2 D + 1.0 - 180 W	Yes	Y	1	1.2	2	-1				
9	1.2 D + 1.0 - 210 W	Yes	Y	1	1.2	2	-0.866	3	-0.5		
10	1.2 D + 1.0 - 240 W	Yes	Y	1	1.2	3	-0.866	2	-0.5		
11	1.2 D + 1.0 - 270 W	Yes	Y	1	1.2	3	-1				
12	1.2 D + 1.0 - 300 W	Yes	Y	1	1.2	3	-0.866	2	0.5		
13	1.2 D + 1.0 - 330 W	Yes	Y	1	1.2	2	0.866	3	-0.5		
14	1.2 D + 1.0 - 0 W/Ice	Yes	Y	1	1.2	4	1			8	1
15	1.2 D + 1.0 - 30 W/Ice	Yes	Y	1	1.2	4	0.866	5	0.5	8	1
16	1.2 D + 1.0 - 60 W/Ice	Yes	Y	1	1.2	5	0.866	4	0.5	8	1
17	1.2 D + 1.0 - 90 W/Ice	Yes	Y	1	1.2	5	1			8	1
18	1.2 D + 1.0 - 120 W/Ice	Yes	Y	1	1.2	5	0.866	4	-0.5	8	1
19	1.2 D + 1.0 - 150 W/Ice	Yes	Y	1	1.2	4	-0.866	5	0.5	8	1
20	1.2 D + 1.0 - 180 W/Ice	Yes	Y	1	1.2	4	-1			8	1
21	1.2 D + 1.0 - 210 W/Ice	Yes	Y	1	1.2	4	-0.866	5	-0.5	8	1
22	1.2 D + 1.0 - 240 W/Ice	Yes	Y	1	1.2	5	-0.866	4	-0.5	8	1
23	1.2 D + 1.0 - 270 W/Ice	Yes	Y	1	1.2	5	-1			8	1
24	1.2 D + 1.0 - 300 W/Ice	Yes	Y	1	1.2	5	-0.866	4	0.5	8	1
25	1.2 D + 1.0 - 330 W/Ice	Yes	Y	1	1.2	4	0.866	5	-0.5	8	1
26	1.2 D + 1.0 E - 0	Yes	Y	1	1.2	9	1				
27	1.2 D + 1.0 E - 30	Yes	Y	1	1.2	9	0.866	10	0.5		
28	1.2 D + 1.0 E - 60	Yes	Y	1	1.2	10	0.866	9	0.5		
29	1.2 D + 1.0 E - 90	Yes	Y	1	1.2	10	1				
30	1.2 D + 1.0 E - 120	Yes	Y	1	1.2	10	0.866	9	-0.5		
31	1.2 D + 1.0 E - 150	Yes	Y	1	1.2	9	-0.866	10	0.5		
32	1.2 D + 1.0 E - 180	Yes	Y	1	1.2	9	-1				
33	1.2 D + 1.0 E - 210	Yes	Y	1	1.2	9	-0.866	10	-0.5		
34	1.2 D + 1.0 E - 240	Yes	Y	1	1.2	10	-0.866	9	-0.5		
35	1.2 D + 1.0 E - 270	Yes	Y	1	1.2	10	-1				
36	1.2 D + 1.0 E - 300	Yes	Y	1	1.2	10	-0.866	9	0.5		
37	1.2 D + 1.0 E - 330	Yes	Y	1	1.2	9	0.866	10	-0.5		
38	1.2 D + 1.5 LL a + Service - 0 W	Yes	Y	1	1.2	6	1			11	1.5
39	1.2 D + 1.5 LL a + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	11	1.5

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
40	1.2 D + 1.5 LL a + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	11	1.5
41	1.2 D + 1.5 LL a + Service - 90 W	Yes	Y	1	1.2	7	1			11	1.5
42	1.2 D + 1.5 LL a + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	11	1.5
43	1.2 D + 1.5 LL a + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	11	1.5
44	1.2 D + 1.5 LL a + Service - 180 W	Yes	Y	1	1.2	6	-1			11	1.5
45	1.2 D + 1.5 LL a + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	11	1.5
46	1.2 D + 1.5 LL a + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	11	1.5
47	1.2 D + 1.5 LL a + Service - 270 W	Yes	Y	1	1.2	7	-1			11	1.5
48	1.2 D + 1.5 LL a + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	11	1.5
49	1.2 D + 1.5 LL a + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	11	1.5
50	1.2 D + 1.5 LL b + Service - 0 W	Yes	Y	1	1.2	6	1			12	1.5
51	1.2 D + 1.5 LL b + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	12	1.5
52	1.2 D + 1.5 LL b + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	12	1.5
53	1.2 D + 1.5 LL b + Service - 90 W	Yes	Y	1	1.2	7	1			12	1.5
54	1.2 D + 1.5 LL b + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	12	1.5
55	1.2 D + 1.5 LL b + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	12	1.5
56	1.2 D + 1.5 LL b + Service - 180 W	Yes	Y	1	1.2	6	-1			12	1.5
57	1.2 D + 1.5 LL b + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	12	1.5
58	1.2 D + 1.5 LL b + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	12	1.5
59	1.2 D + 1.5 LL b + Service - 270 W	Yes	Y	1	1.2	7	-1			12	1.5
60	1.2 D + 1.5 LL b + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	12	1.5
61	1.2 D + 1.5 LL b + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	12	1.5
62	1.2 D + 1.5 LL c + Service - 0 W	Yes	Y	1	1.2	6	1			13	1.5
63	1.2 D + 1.5 LL c + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	13	1.5
64	1.2 D + 1.5 LL c + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	13	1.5
65	1.2 D + 1.5 LL c + Service - 90 W	Yes	Y	1	1.2	7	1			13	1.5
66	1.2 D + 1.5 LL c + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	13	1.5
67	1.2 D + 1.5 LL c + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	13	1.5
68	1.2 D + 1.5 LL c + Service - 180 W	Yes	Y	1	1.2	6	-1			13	1.5
69	1.2 D + 1.5 LL c + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	13	1.5
70	1.2 D + 1.5 LL c + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	13	1.5
71	1.2 D + 1.5 LL c + Service - 270 W	Yes	Y	1	1.2	7	-1			13	1.5
72	1.2 D + 1.5 LL c + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	13	1.5
73	1.2 D + 1.5 LL c + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	13	1.5
74	1.2 D + 1.5 LL d + Service - 0 W	Yes	Y	1	1.2	6	1			14	1.5
75	1.2 D + 1.5 LL d + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	14	1.5
76	1.2 D + 1.5 LL d + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	14	1.5
77	1.2 D + 1.5 LL d + Service - 90 W	Yes	Y	1	1.2	7	1			14	1.5
78	1.2 D + 1.5 LL d + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	14	1.5
79	1.2 D + 1.5 LL d + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	14	1.5
80	1.2 D + 1.5 LL d + Service - 180 W	Yes	Y	1	1.2	6	-1			14	1.5
81	1.2 D + 1.5 LL d + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	14	1.5
82	1.2 D + 1.5 LL d + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	14	1.5
83	1.2 D + 1.5 LL d + Service - 270 W	Yes	Y	1	1.2	7	-1			14	1.5
84	1.2 D + 1.5 LL d + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	14	1.5
85	1.2 D + 1.5 LL d + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	14	1.5
86	1.2 D + 1.5 LL Maint (1)	Yes	Y	1	1.2					15	1.5
87	1.2 D + 1.5 LL Maint (2)	Yes	Y	1	1.2					16	1.5
88	1.2 D + 1.5 LL Maint (3)	Yes	Y	1	1.2					17	1.5
89	1.2 D + 1.5 LL Maint (4)	Yes	Y	1	1.2					18	1.5
90	1.2 D + 1.5 LL Maint (5)	Yes	Y	1	1.2					19	1.5
91	1.2 D + 1.5 LL Maint (6)	Yes	Y	1	1.2					20	1.5
92	1.2 D + 1.5 LL Maint (7)	Yes	Y	1	1.2					21	1.5
93	1.2 D + 1.5 LL Maint (8)	Yes	Y	1	1.2					22	1.5
94	1.2 D + 1.5 LL Maint (9)	Yes	Y	1	1.2					23	1.5

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
95	1.2 D + 1.5 LL Maint (10)	Yes	Y	1	1.2					24	1.5
96	1.2 D + 1.5 LL Maint (11)	Yes	Y	1	1.2					25	1.5
97	1.2 D + 1.5 LL Maint (12)	Yes	Y	1	1.2					26	1.5
98	1.2 D + 1.5 LL Maint (13)	Yes	Y	1	1.2					27	1.5
99	1.2 D + 1.5 LL Maint (14)	Yes	Y	1	1.2					28	1.5
100	1.2 D + 1.5 LL Maint (15)	Yes	Y	1	1.2					29	1.5

Envelope Node Reactions

	Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	1	max	0.942	5	1.733	14	1.182	2	3.515	2	0.933	11	0.343	97
2		min	-0.945	11	0.045	8	-1.305	8	-0.413	8	-0.934	5	-0.205	89
3	53	max	0.9	5	1.644	18	1.125	2	0.11	13	1.121	3	-0.05	12
4		min	-1.005	11	0.188	12	-1.063	8	-1.724	43	-1.123	9	-2.92	18
5	82	max	0.924	5	1.639	22	1.315	2	0.068	3	1.165	7	2.807	46
6		min	-0.816	11	0.182	4	-1.254	8	-1.862	69	-1.166	13	-0.018	4
7	Totals:	max	2.766	5	4.646	68	3.622	2						
8		min	-2.766	11	2.396	2	-3.622	8						

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	1	HSS4X4X2	0.469	0	13	0.12	0	y	73	70.173	73.278	8.24	8.24	2.021	H1-1b
2	2	C3.38X2.06X.188	0.323	2.592	61	0.06	0.351	y	64	35.676	43.394	1.703	4.483	1.62	H1-1b
3	3	C3.38X2.06X.188	0.322	0	13	0.063	2.241	y	44	35.676	43.394	1.694	4.483	1.601	H1-1b
4	4	PL3/8"X6	0.075	0	2	0.151	0	y	62	68.997	72.9	0.57	9.113	2.293	H1-1b
5	5	PL3/8"X6	0.079	0	3	0.123	0	y	38	68.997	72.9	0.57	9.113	1.879	H1-1b
6	6	PIPE_3.5X0.165	0.068	6.75	67	0.032	4		4	45.872	71.57	6.336	6.336	1	H1-1b
7	7	PL3/8"X6	0.119	0.208	8	0.192	0.208	y	50	70.882	72.9	0.57	9.113	1.602	H1-1b
8	8	PL3/8"X6	0.121	0	13	0.196	0	y	50	70.882	72.9	0.57	9.113	2.966	H1-1b
9	9	L2X2X4	0.246	0	8	0.03	2.309	y	48	23.349	30.586	0.691	1.577	1.5	H2-1
10	10	L2X2X4	0.211	2.309	8	0.035	0	y	64	23.349	30.586	0.691	1.577	1.5	H2-1
11	11	L7.63X2.5X6	0.314	1.604	8	0.078	0	z	62	75.414	118.523	1.798	13.806	1.255	H2-1
12	18	PIPE_2.88X0.203	0.091	5.583	5	0.034	5.583		6	35.519	70.68	5.029	5.029	1	H1-1b
13	19	PIPE_2.88X0.203	0.114	2.333	9	0.039	5.583		9	35.519	70.68	5.029	5.029	1	H1-1b
14	22	PIPE_2.88X0.203	0.12	7.813	13	0.115	8.958		2	24.131	70.68	5.029	5.029	1	H1-1b
15	28	PIPE_2.88X0.203	0.092	2.333	7	0.035	5.583		8	35.519	70.68	5.029	5.029	1	H1-1b
16	30	L6.63X4.33X.25	0.161	3.25	6	0.02	3.25	z	12	51.808	86.767	2.31	6.976	1.5	H2-1
17	31	HSS4X4X2	0.443	0	7	0.119	0	y	65	70.173	73.278	8.24	8.24	2.041	H1-1b
18	32	C3.38X2.06X.188	0.322	2.592	54	0.06	0.351	y	68	35.676	43.394	1.703	4.483	1.617	H1-1b
19	33	C3.38X2.06X.188	0.322	0	56	0.063	2.241	y	48	35.676	43.394	1.703	4.483	1.621	H1-1b
20	34	PL3/8"X6	0.064	0	6	0.15	0	y	66	68.997	72.9	0.57	9.113	2.271	H1-1b
21	35	PL3/8"X6	0.078	0	7	0.121	0	y	42	68.997	72.9	0.57	9.113	1.808	H1-1b
22	36	PL3/8"X6	0.103	0.208	13	0.191	0.208	y	54	70.882	72.9	0.57	9.113	2.065	H1-1b
23	37	PL3/8"X6	0.097	0	5	0.198	0	y	55	70.882	72.9	0.57	9.113	3	H1-1b
24	38	L2X2X4	0.189	0	11	0.031	2.309	y	40	23.349	30.586	0.691	1.577	1.5	H2-1
25	39	L2X2X4	0.181	2.309	13	0.034	0	y	68	23.349	30.586	0.691	1.577	1.5	H2-1
26	40	L7.63X2.5X6	0.237	1.604	12	0.078	0	z	66	75.414	118.523	1.798	13.961	1.29	H2-1
27	49	L6.63X4.33X.25	0.175	0	2	0.022	3.25	y	9	51.808	86.767	2.31	6.976	1.5	H2-1
28	50	HSS4X4X2	0.464	0	9	0.121	0	y	68	70.173	73.278	8.24	8.24	2.022	H1-1b
29	51	C3.38X2.06X.188	0.322	2.592	56	0.059	0.351	y	73	35.676	43.394	1.703	4.483	1.62	H1-1b
30	52	C3.38X2.06X.188	0.32	0	61	0.063	2.241	y	39	35.676	43.394	1.703	4.483	1.62	H1-1b
31	53	PL3/8"X6	0.078	0.164	3	0.148	0	y	70	68.997	72.9	0.57	9.113	1.736	H1-1b
32	54	PL3/8"X6	0.062	0	11	0.123	0	y	45	68.997	72.9	0.57	9.113	1.794	H1-1b
33	55	PL3/8"X6	0.107	0.085	2	0.192	0.208	y	57	70.882	72.9	0.57	9.113	1.832	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
34	56	PL3/8"X6	0.123	0	9	0.195	0	y	59	70.882	72.9	0.57	9.113	2.99	H1-1b
35	57	L2X2X4	0.24	0	3	0.03	2.309	y	44	23.349	30.586	0.691	1.577	1.5	H2-1
36	58	L2X2X4	0.176	2.309	4	0.035	0	y	72	23.349	30.586	0.691	1.577	1.5	H2-1
37	59	L7.63X2.5X6	0.28	1.604	3	0.078	0	z	70	75.414	118.523	1.798	14.363	1.387	H2-1
38	68	L6.63X4.33X.25	0.202	3.25	2	0.026	3.25	z	8	51.808	86.767	2.31	6.976	1.5	H2-1
39	69	PIPE_3.5X0.165	0.068	1.25	2	0.042	4		8	45.872	71.57	6.336	6.336	1	H1-1b
40	72	PIPE_2.88X0.203	0.114	5.583	9	0.04	5.583		9	35.519	70.68	5.029	5.029	1	H1-1b
41	73	PIPE_2.88X0.203	0.136	2.333	2	0.039	5.583		13	35.519	70.68	5.029	5.029	1	H1-1b
42	76	PIPE_2.88X0.203	0.118	2.188	13	0.094	2.188		13	24.131	70.68	5.029	5.029	1	H1-1b
43	78	PIPE_2.88X0.203	0.103	5.583	9	0.035	5.583		2	35.519	70.68	5.029	5.029	1	H1-1b
44	80	PIPE_3.5X0.165	0.067	6.75	63	0.04	2.75		13	45.872	71.57	6.336	6.336	1	H1-1b
45	83	PIPE_2.88X0.203	0.113	5.583	13	0.044	5.583		13	35.519	70.68	5.029	5.029	1	H1-1b
46	84	PIPE_2.88X0.203	0.108	2.333	6	0.029	5.583		5	35.519	70.68	5.029	5.029	1	H1-1b
47	87	PIPE_2.88X0.203	0.11	7.813	9	0.104	8.958		9	24.131	70.68	5.029	5.029	1	H1-1b
48	89	PIPE_2.88X0.203	0.117	5.583	2	0.028	5.583		6	35.519	70.68	5.029	5.029	1	H1-1b

APPENDIX B

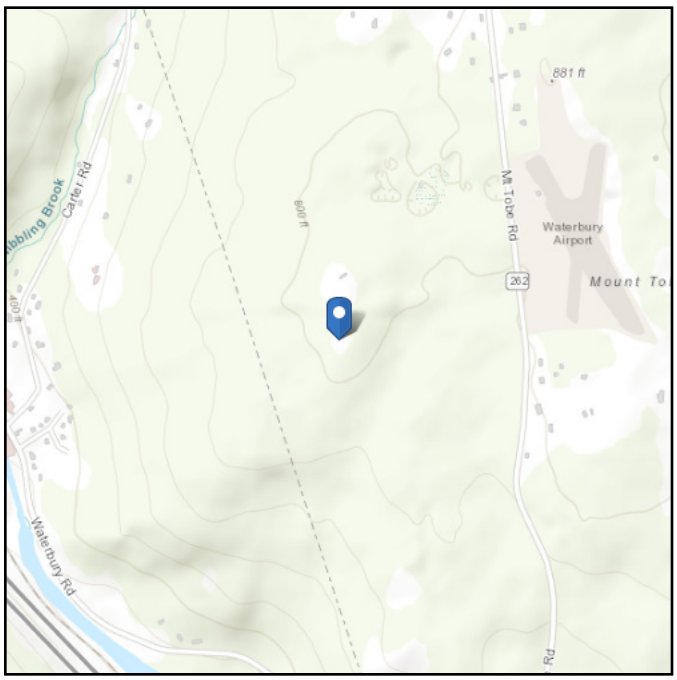
(Additional Calculations)

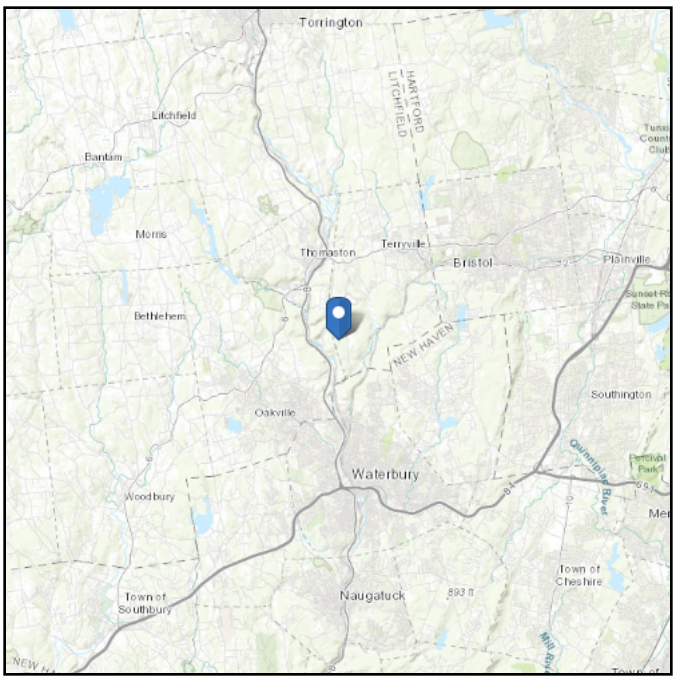
ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 834.77 ft (NAVD 88)
Latitude: 41.63003
Longitude: -73.056553





Wind

Results:

Wind Speed	116 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	96 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: Fri Jan 07 2022

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.

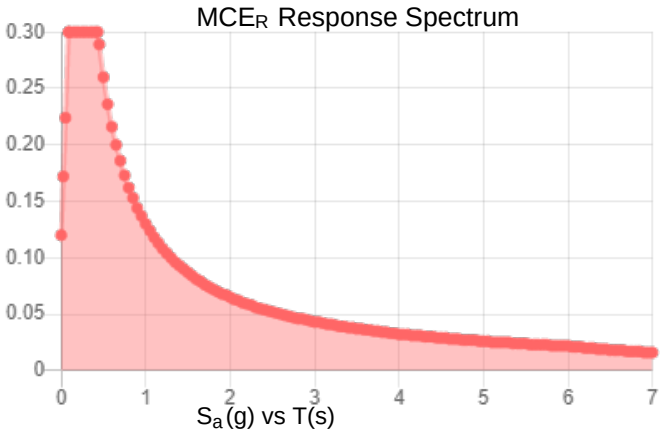
Seismic

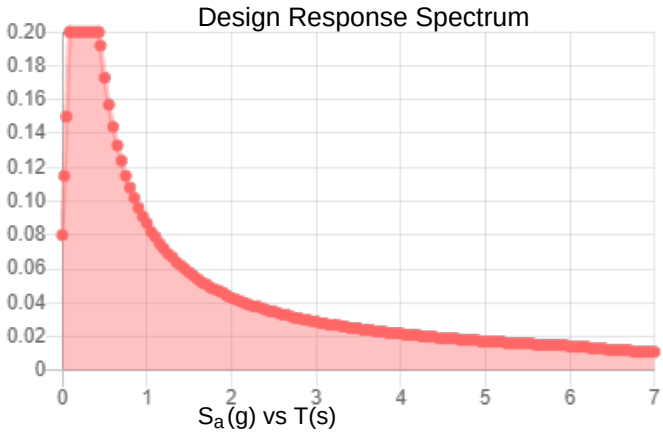
Site Soil Class: D - Default (see Section 11.4.3)

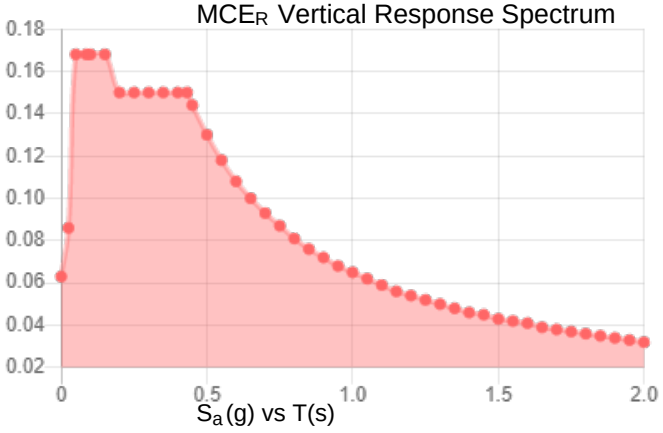
Results:

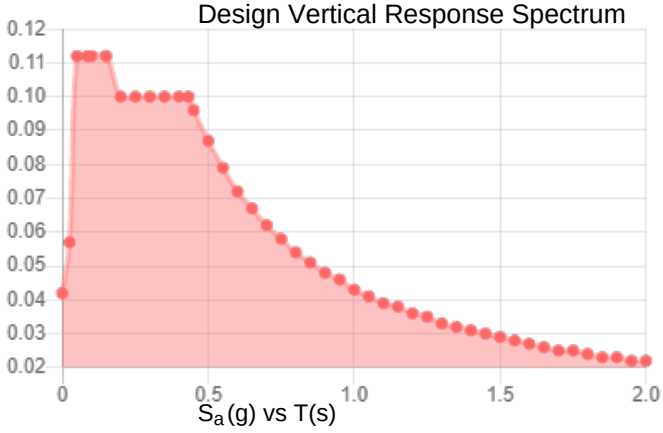
S_S :	0.188	S_{D1} :	0.087
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.102
F_v :	2.4	PGA_M :	0.163
S_{MS} :	0.3	F_{PGA} :	1.595
S_{M1} :	0.13	I_e :	1
S_{DS} :	0.2	C_v :	0.7

Seismic Design Category B









Data Accessed: **Fri Jan 07 2022**

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:	Fri Jan 07 2022

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.

PROJECT	**149542.003.01 - South Plymouth, CT**				**KSC**
SUBJECT	**Platform Mount Analysis**				
DATE	**06/13/22**	PAGE	1	OF	1

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

[REF: AISC 360-05]

Reactions at Bolted Connection

Tension	:	1.182	k
Vertical Shear	:	1.733	k
Horizontal Shear	:	0.942	k
Torsion	:	0.343	k.ft
Moment from Horizontal Forces	:	0.933	k.ft
Moment from Vertical Forces	:	3.515	k.ft

Bolt Parameters

Bolt Grade	:	A325	
Bolt Diameter	:	0.625	in
Nominal Bolt Area	:	0.307	in^2
Bolt spacing, Horizontal	:	6	in
Bolt spacing, Vertical	:	6	in
Bolt edge distance, plate height	:	1.5	in
Bolt edge distance, plate width	:	1.5	in
Total Number of Bolts	:	4	bolts

Summary of Forces

Shear Resultant Force	:	1.97	k
Force from Horz. Moment	:	1.69	k
Force from Vert. Moment	:	6.37	k
Shear Load / Bolt	:	0.49	k
Tension Load / Bolt	:	0.30	k
Resultant from Moments / Bolt	:	3.29	k

Bolt Checks

Nominal Tensile Stress, F_{nt}	:	90.00	ksi	[AISC Table J3.2]
Available Tensile Stress, ΦR_{nt}	:	20.72	k/bolt	[Eq. J3-1]
Unity Check, Bolt Tension	:	**17.32%**		**OKAY**
Nominal Shear Stress, F_{nv}	:	48.00	ksi	[AISC Table J3.2]
Available Shear Stress, ΦR_{nv}	:	11.05	k/bolt	[Eq. J3-1]
Unity Check, Bolt Shear	:	**7.14%**		**OKAY**
Unity Check, Combined	:	**24.46%**		**OKAY**
Available Bearing Strength, ΦR_n	:	34.66	k/bolt	
Unity Check, Bolt Bearing	:	**1.42%**		**OKAY**

Exhibit F

Power Density/RF Emissions Report

Fox Hill Telecom

Radio Frequency Emissions Analysis Report

Site ID: BOHVN00179A

SBA - Mount Tobe Road
170 Mount Tobe Road
Plymouth, CT 06782

May 3, 2022

Fox Hill Telecom Project Number: 220972

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**24.35 %**

Fox Hill Telecom

May 3, 2022

Dish Wireless
5701 South Santa Fe Drive
Littleton, CO 80120

Emissions Analysis for Site: **BOHVN00179A – SBA - Mount Tobe Road**

Fox Hill Telecom, Inc ("Fox Hill") was directed to analyze the proposed radio installation for Dish Wireless, LLC (Dish) facility located at **170 Mount Tobe Road, Plymouth, CT**, for the purpose of determining whether the emissions from the Proposed Dish radio and antenna installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 600 MHz & 700 MHz bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS) and 2100 MHz (AWS / AWS-4) bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed radio system installation for **Dish** on the subject site located at **170 Mount Tobe Road, Plymouth, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since **Dish** 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 manufactures supplied specifications, minus 10 dB for directional panel antennas, 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.

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. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
5G	n71 (600 MHz)	4	61.5
5G	n70 (AWS-4 / 1995-2020)	4	40
5G	n66 (AWS-4 / 2180-2200)	4	40

Table 1: Channel Data Table

The following antennas listed in *Table 2* were used in the modeling for transmission in the 600 MHz (n71) frequency band, and the 2100 MHz (AWS 4) frequency bands at 1995-2020 MHz (n70) and 2180-2200 MHz (n66). This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, 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.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	JMA MX08FRO665-21	124
B	1	JMA MX08FRO665-21	124
C	1	JMA MX08FRO665-21	124

Table 2: Antenna Data

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

RESULTS

Per the calculations completed for the proposed **Dish** configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	JMA MX08FRO665-21	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	5.83
						Sector A Composite MPE%	**5.83**
Antenna B1	JMA MX08FRO665-21	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	5.83
						Sector B Composite MPE%	**5.83**
Antenna C1	JMA MX08FRO665-21	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	5.83
						Sector C Composite MPE%	**5.83**

Table 3: Dish Emissions Levels

The Following table (*table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum **Dish** MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three sectors have the same configuration yielding the same results on all three sectors. *Table 5* below shows a summary for each **Dish** Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	**MPE%**
Dish – Max Per Sector Value	**5.83 %**
T-Mobile	3.76 %
Sprint	0.01 %
MetroPCS	0.55 %
Nextel	0.39 %
Verizon Wireless	10.22 %
AT&T	3.59 %
Site Total MPE %:	**24.35 %**

Table 4: All Carrier MPE Contributions

Dish Sector A Total:	5.83 %
Dish Sector B Total:	5.83 %
Dish Sector C Total:	5.83 %
Site Total:	24.35 %

Table 5: Site MPE Summary

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated **Dish** sector(s). For this site, all three sectors have the same configuration yielding the same results on all three sectors.

Dish _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
Dish n71 (600 MHz) 5G	4	858.77	124	8.87	n71 (600 MHz)	400	2.22%
Dish n70 (AWS-4 / 1995-2020) 5G	4	1,648.39	124	17.02	n70 (AWS-4 / 1995-2020)	1000	1.70%
Dish n66 (AWS-4 / 2180-2200) 5G	4	1,849.52	124	19.10	n66 (AWS-4 / 2180-2200)	1000	1.91%
						Total:	**5.83**

Table 6: Dish Maximum Sector MPE Power Values

Fox Hill Telecom

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 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 Sector	Power Density Value (%)
Sector A:	5.83 %
Sector B:	5.83 %
Sector C:	5.83 %
Dish Maximum Total (per sector):	5.83 %
Site Total:	24.35 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **24.35 %** 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.

Scott Heffernan
Principal RF Engineer
Fox Hill Telecom, Inc
Holden, MA 01520
(978)660-3998

Exhibit G

Letter of Authorization

SBA Letter of Authorization

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

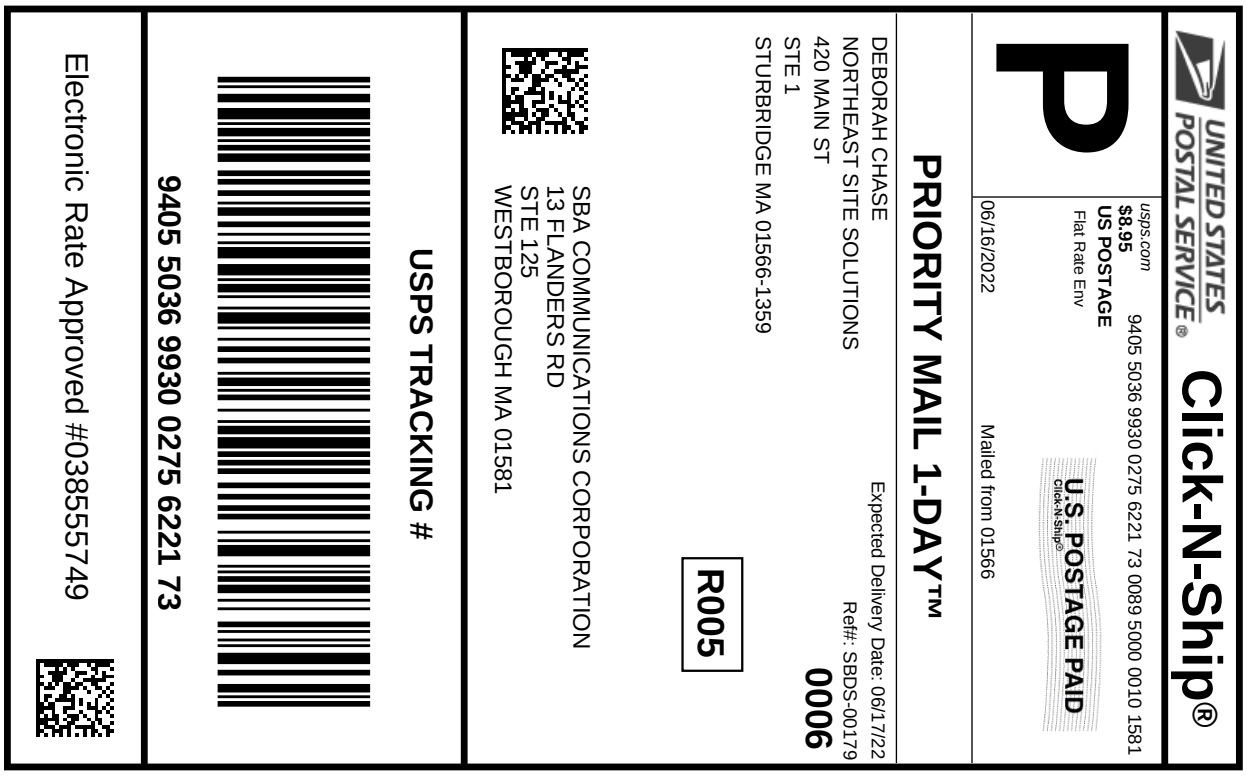
Re: Tower Share Application

SBA COMMUNICATIONS CORPORATION hereby authorizes DISH Wireless LLC, including their Agent, to act as our Agent in the processing of all zoning applications, building permits and approvals through the CONNECTICUT SITING COUNCIL for existing wireless communications towers.

Kri Pelletier
Site Development Manager
SBA COMMUNICATIONS CORPORATION
134 Flanders Road, Suite 125
Westboro, MA 01581

Exhibit H

Recipient Mailings



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Expected Delivery Date:	06/17/2022

Priority Mail® Postage:	**$8.95**
Total:	**$8.95**

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: SBDS-00179

To: SBA COMMUNICATIONS CORPORATION
13 FLANDERS RD
STE 125
WESTBOROUGH MA 01581

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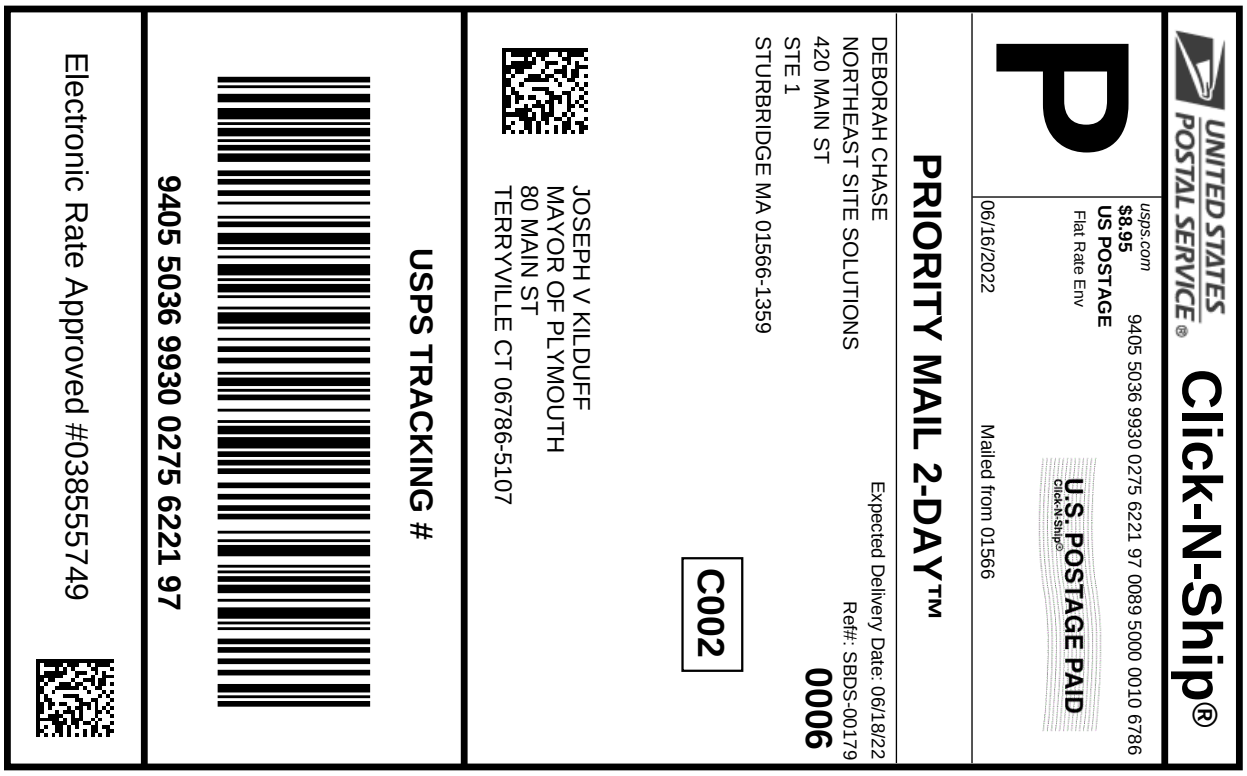

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420 MAIN ST
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STURBRIDGE MA 01566-1359

Ref#: SBDS-00179

To: JOSEPH V KILDUFF
MAYOR OF PLYMOUTH
80 MAIN ST
TERRYVILLE CT 06786-5107

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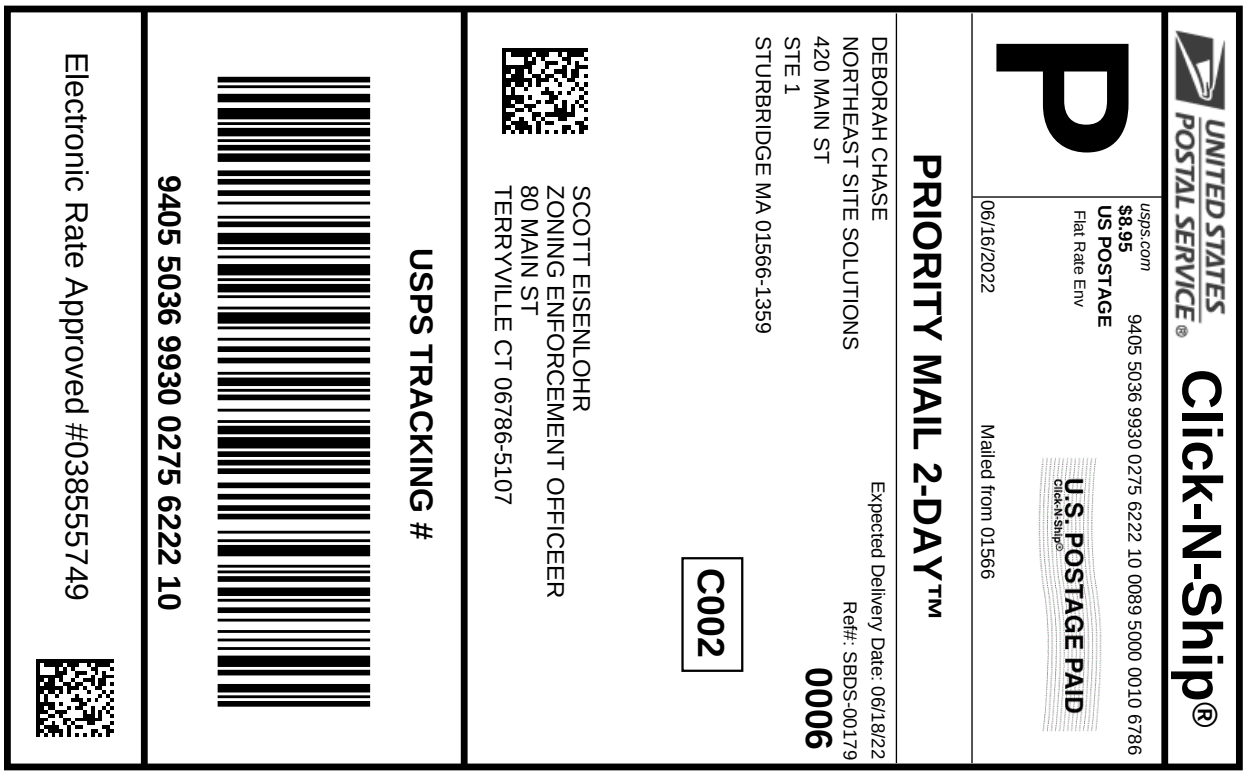

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Trans. #:	565799934
Print Date:	06/16/2022
Ship Date:	06/16/2022
Expected Delivery Date:	06/18/2022

Priority Mail® Postage:	**$8.95**
Total:	**$8.95**

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: SBDS-00179

To: SCOTT EISENLOHR
ZONING ENFORCEMENT OFFICEER
80 MAIN ST
TERRYVILLE CT 06786-5107

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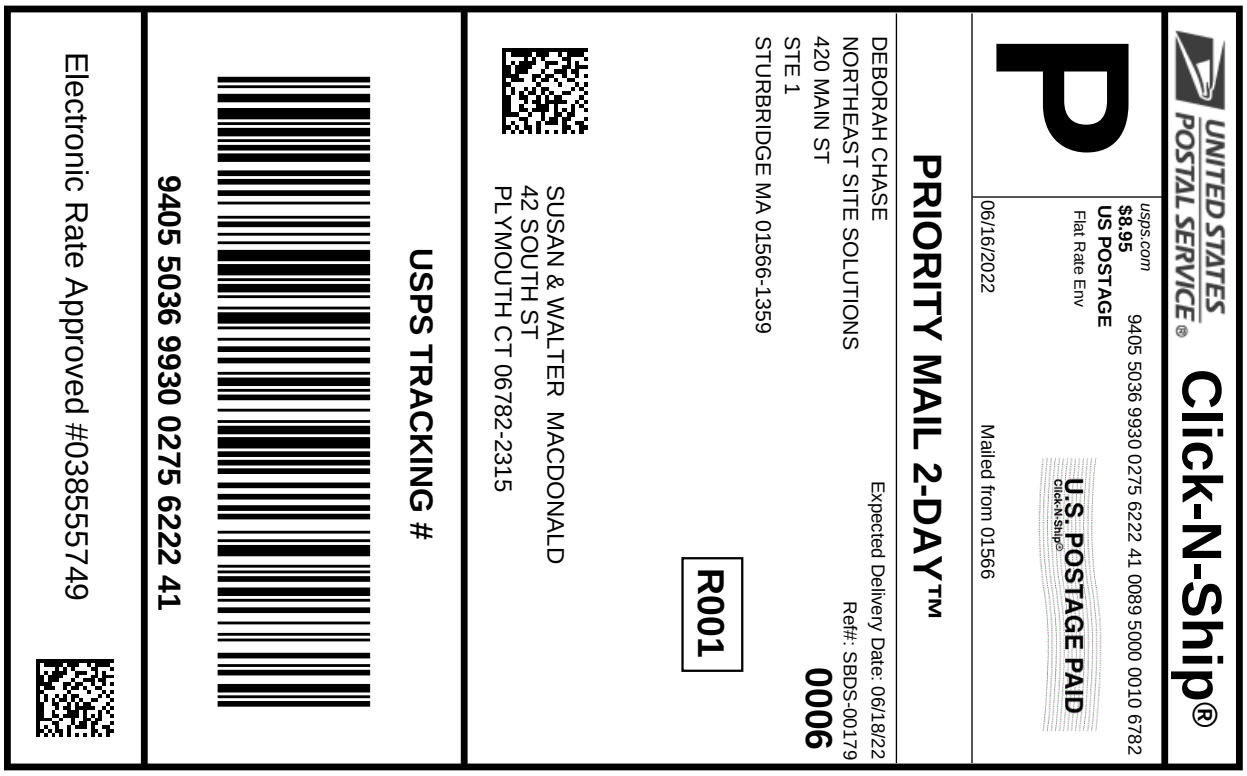

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Ship Date:	06/16/2022
Expected Delivery Date:	06/18/2022

Priority Mail® Postage:	**$8.95**
Total:	**$8.95**

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: SBDS-00179

To: SUSAN & WALTER MACDONALD
42 SOUTH ST
PLYMOUTH CT 06782-2315

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Prepaid Mail Westborough, MA 01581 Weight: 0 lb 1.90 oz Acceptance Date: Tue 06/21/2022 Tracking #: 9405 5036 9930 0275 6221 73	1		$0.00
Prepaid Mail Plymouth, CT 06782 Weight: 0 lb 10.80 oz Acceptance Date: Tue 06/21/2022 Tracking #: 9405 5036 9930 0275 6222 41	1		$0.00
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