PLAN COMMISSION MEETING AGENDA

Tuesday, January 27, 2026 -- 5:30 P.M.

Sister Bay-Liberty Grove Fire Station – 2258 Mill Rd., Sister Bay, WI – Large Meeting Room

To access the meeting electronically, click:
https://zoom.us/j/4439901723?pwd=yAVpi40M1OIqgNufcVUE8XWCUSkKaH.1&omn=9706363858
Meeting ID: 443 990 1723 Passcode: 304078
To connect by phone: 1-301-715-8592 - Meeting ID 443 990 1723#
For additional meeting information visit: www.sisterbaywi.gov, click 'Agendas and Minutes' or watch the meeting video online.

AGENDA

1. Call to Order & Roll Call
2. Approve of Agenda
3. Approve Meeting Minutes: December 18, 2025
4. Comments, Correspondence and Concerns from the Public
5. Public Hearing
    a) Ord. 2026-001; Amending the Village of Sister Bay Future Land Use Map
    b) Ord. 2026-002; Adopting a New Zoning Map for the Village of Sister Bay
    c) Ord. 2026-003; Amending Ch. 66 of the Municipal Code, Zoning
6. Discussion/Action Items:
    a) Standard Zoning Permit Application; Review/Approve Modifications to Existing Tower; 2530 S Bay Shore Drive
7. Matters to be Placed on a Future Agenda or Referred to a Committee, Official or Employee
8. Next Meeting
    - Regular Monthly Meeting; February 24, 2026, at 5:30 P.M.; Large Meeting Room, Sister Bay-Liberty Grove Fire Station
9. Adjournment

Public Notice

For questions regarding the above agenda items or to review the related files contact Benjamin Andrews, Village Administrator, at administrator@sisterbaywi.gov. To submit letters in support or opposition of an agenda item that is *not* part of a public hearing, email adminassist@sisterbaywi.gov by 4:00 pm the day before the meeting; letters regarding a public hearing must be received by 4:00 pm the Thursday before the hearing. It is possible that members of, or quorum of, other governmental bodies may attend the meeting to gather information; no action will be taken by any governmental body other than the body specifically referred to above. Upon reasonable notice, a good faith effort will be made to accommodate the needs of disabled individuals through sign language interpreters or other auxiliary aid or accommodation at no cost to the individual. Due to the difficulty in finding interpreters, requests should be made as far in advance as possible, preferably a minimum of 48 hours. For additional information or to request this service, contact the Village Administration Office at 920.854.4118 or in writing to: Village Administration Building, 2383 Maple Dr., PO Box 769, Sister Bay, WI 54234. Copies of reports and other supporting documentation are typically available online and can also be viewed at the Village Administration Office 8 am – 4 pm Monday through Thursday, except holidays.

The Village of Sister Bay is an Equal Opportunity Provider & Employer

Posted On: 01/23/2026

VILLAGE OF SISTER BAY
PLAN COMMISSION MEETING MINUTES
THURSDAY, DECEMBER 18, 2025
UNAPPROVED

1. Call to Order & Roll Call

Chair Denise Bhirdo called the Plan Commission meeting to order on Thursday, December 18, 2025, at 5:30 P.M. and took roll call.

Present: Plan Commission Chair Denise Bhirdo, and Commission members Steve Bacsi, Laurel Harff, Skip Heidler, and Patrice Champeau (Via Zoom). Nate Bell was absent.

Staff Member(s): Village Administrator Julie Schmelzer, Administrative Assistant Sarah Bertges.

Others: Kurt Harff, James Lohmiller, Erin Peddle, Ellie Soderberg-Guger.

2. Approve of Agenda

Motion to approve the agenda as presented was made by Harff, second by Heidler. Motion carried - all ayes.

3. Approve Meeting Minutes: November 25, 2025

Motion to approve the minutes of November 25, 2025, was made by Heidler, second by Harff. Motion carried -all ayes.

4. Comments, Correspondence and Concerns from the Public

Bhirdo took a moment to express appreciation for Village Administrator Julie Schmelzer's service over the past 3.5 years. Bhirdo highlighted Schmelzer's extensive knowledge of zoning and administration, her exceptional work ethic, and her commitment to the village. Bhirdo noted that Schmelzer had updated numerous sections of the code and policies to ensure compliance with state statutes and federal law and praised her as an out-of-the-box thinker who helped find clear paths forward when the board struggled with decisions. Schmelzer thanked Bhirdo for her kind words and also thanked Laurel Harff, and Trustees Harff and Champeau, who had reached out to express their appreciation for her work.

5. Discussion/Action Items

a) Proposed Sauna at Dorr Hotel for Wellness Event

Schmelzer presented a request from the Dorr Hotel to place a temporary sauna on their property during a wellness event. Schmelzer noted that a similar request had been approved the previous year and suggested the commission consider not requiring annual approvals for this recurring request.

Ellie Soderberg-Guger from Sister Bay Advancement Association (SBAA) clarified that this would be the inaugural Winter Wellness Weekend in Sister Bay, with businesses hosting various wellness events for residents and visitors.

James Lohmiller from the Dorr Hotel provided details about the sauna, explaining it was a wood-burning model in an Airstream-style trailer with a capacity for up to 8 people. The sauna would operate Saturday from 9 AM to 6 PM and Sunday from 9 AM to 3 PM. It would be positioned in the front yard area as indicated by the 'red X' on the site plan.

The commission discussed concerns about the smoke from the wood-burning sauna, placement logistics, and potential damage to village property. Members agreed that placing the sauna in the front yard made sense for visibility purposes rather than in the parking lot.

Motion to approve the sauna placement according to the 'red X' in the packet with conditions that: 1) if any damage or ruts to Village property occur, the applicant would be responsible for repairs; 2) the applicant would not need to return annually unless the location, size, or additional temporary uses/structures were added; 3) no signage would be permitted; and 4) the sauna would only be present from Friday to Sunday of the event. Motion made by Bacsi, second by Harff. Motion carried - all ayes.

b) New Zoning Map; Discussion No. 2

Schmelzer presented the updated draft zoning map incorporating changes discussed at the previous meeting. The commission addressed several remaining items:

- The triangle area at Highway 57 and Orchard Road: After discussion about the size and appropriate zoning, the commission decided that the front of the property, along Highway 57, should be zoned Business (B-1) with the remainder zoned Large Lot Residential (R-3).
- Properties north of Northwoods: The commission agreed to designate the front portion along Highway 57 as Business (B-1) with the remainder as Large Lot Residential (R-3).
- CBRF on Fieldcrest: The commission agreed this community-based residential facility should be zoned Residential (R-1) rather than Business, as it is a residential use in a residential neighborhood. Schmelzer noted the need to update the zoning definitions to match state statutes regarding these facilities.
- Pebble Beach Corner: The commission discussed a business-zoned property across from the south end of the cemetery that currently contains a residence. Despite the property owner's preference to maintain business zoning, the commission felt the property would be more appropriately zoned as Residential (R-2) given its location and surroundings.
- Woodland Overlay: The commission reviewed the proposed woodland overlay district on the map. Schmelzer explained that this overlay protects significant woodland areas while still allowing appropriate development. Heidler raised concerns about ensuring clarity in how the woodland definitions interact with other code sections.
- PUD (Planned Unit Development) Designation: Schmelzer noted that state statutes require PUDs to be identified on the zoning map. The Dorr Hotel was identified as one such development, with others to be added as they are identified.

Motion to proceed with the discussed zoning map changes to a public hearing was made by Heidler, second by Champeau. Motion carried -all ayes.

c) Misc. Text Amendments; Ch. 66

The commission reviewed proposed text amendments to Chapter 66 of the Village Code. Key discussions included:

- Parking Lot Lighting: The commission clarified that the requirements apply to free-standing light fixtures in parking lots, not lighting mounted on buildings.
- Woodland Definitions: The commission discussed clarification needs between "woodlands" as defined in the code and the "woodland overlay" district to avoid confusion.
- Nonconforming Uses and Structures: The commission reviewed updates to these sections to align with state statutes. Schmelzer explained how the 50% rule for repairs to nonconforming buildings helps phase out nonconformities over time.
- Woodland Overlay Requirements: The commission had an extensive discussion about tree removal requirements in the woodland overlay district, particularly regarding how close

structures can be to tree canopies. The requirements aim to balance development rights with woodland preservation goals.

- Wellhead Protection Overlay: Schmelzer noted that this section would need to be updated in the future, as it mentions a road name no longer used, and the current 500-foot protection radius likely does not reflect the actual capture zone. She recommended a future meeting with the Utilities Department to coordinate on this issue.

By consensus the commission agreed to include the text amendments to the zoning map amendments at the January public hearing.

6. Annual Permit Log

Schmelzer presented the annual permit log, noting that it was not yet complete for the year but represented the significant volume of permits processed. She highlighted that no permits had been denied during the year, demonstrating the staff's commitment to working with applicants to find solutions.

7. Matters to be Placed on a Future Agenda or Referred to a Committee, Official or Employee

The commission identified two items for future agendas:

- Public hearing for the zoning map and text amendments in January
- Wellhead protection overlay district update (to be scheduled after consulting with the Utilities Department)

8. Next Meeting

The next regular monthly meeting will be held on January 27, 2026, at 5:30 P.M. in the Large Meeting Room of the Sister Bay-Liberty Grove Fire Station.

9. Adjournment

Motion to adjourn at 7:35 PM was made by Heidler, second by Harff. Motion carried -all ayes.

Respectfully submitted by Sarah Bertges, Administrative Assistant

STAFF REPORT

Date: January 27, 2026

To: Plan Commission

Re: Ord. 2026-001; Amending the Village of Sister Bay Future Land Use Map
Ord. 2026-002; Adopting a New Zoning Map for the Village of Sister Bay
Ord. 2026-003; Amending Ch. 66 of the Municipal Code, Zoning

Author(s): Benjamin Andrews, Village/Zoning Administrator

BACKGROUND INFORMATION

The Plan Commission holding public hearing to consider three items:

1. Future Land Use Map Amendment – Correcting three parcels currently shown as Business to Residential:
    - 2283 Sunset Drive
    - 10705 S. Spring Road
    - 10569 Fieldcrest Road
2. Adoption of a Revised Zoning Map – Aligning zoning with the comprehensive plan and incorporating changes discussed in prior meetings, including:
    - Creation of a Woodland Overlay District
    - Adjustments to zoning classifications along Highway 42, Highway 57, Fieldcrest Road, and Pebble Beach Corner
    - Identification of PUDs (e.g., Dorr Hotel)
3. Text Amendments to Chapter 66 – Updates include:
    - Aligning nonconforming use and structure provisions with state statutes
    - Removing conflicts with state building codes (e.g., fire wall requirements)
    - Revising substandard lot regulations to comply with Wis. Stats. §66.10015(4)
    - Adding regulations for Woodland Overlay District
    - Updating definitions and provisions for community living arrangements and family day care homes
    - Miscellaneous amendments (lighting standards, site plan review exemptions, CS-1 district clarification)

The process is outlined in guidance in UW Extension's Land Use Training & Resources.

PRIOR ACTION/REVIEW

Oct. 28, 2025: Recommended entering into a contract with BayLake Regional Planning Commission for zoning map update (cost not to exceed $20,000).

Nov. 25, 2025: Reviewed draft zoning map; discussed overlay districts and zoning consistency with land use map.

Dec. 18, 2025: Finalized zoning map changes for public hearing; reviewed text amendments to Chapter 66. Motion carried to proceed to public hearing.

POLICY ALTERNATIVE(S)

Each public hearing item and subsequent action taken should be treated independently. The Plan Commission could take the following actions:

- Recommend for Approval to Village Board as Presented
- Recommend for Approval of Modifications
- Deny
- Table for Further Review

ATTACHMENT(S)

- Public Hearing Notice and Affidavit of Publication
- Correspondence regarding Public Hearing
- UW Extension Ordinance Information
- Plan Commission Meeting Minutes Summary

PLAN COMMISSION/VILLAGE BOARD
NOTICE OF PUBLIC HEARING

Public Notice is hereby given that the Sister Bay Plan Commission will hold a public hearing on Tuesday, **January 27, 2026**, at 5:30 PM**,** or shortly thereafter, for the purpose of considering amendments to the adopted future land use map, adopting a revised zoning map, and to consider text amendments to Chapter 66 of the Village of Sister Bay Municipal Code pertaining to zoning. If the Plan Commission recommends approval of the proposals, the Village Board will consider them at a hearing on **February 17, 2026**, at 6:00 PM.

The purpose of the public hearing is to obtain comments and input from the public on the proposed land use map amendment, new zoning map and text amendments. The public hearing will be held at the Sister Bay Liberty Grove Fire Station located at 2258 Mill Rd., Sister Bay. A virtual option is available (visit www.sisterbaywi.gov and search for the agenda for the Zoom link, or, contact the Village Office by phone at 920-854-4118). A summary of the proposed map amendments, new map, and text amendments are as follows:

1. Future Land Use Map: Amend the Village of Sister Bay 2025 Comprehensive Plan, Map 7.2, Future Land Use, changing the land use classification from business to residential on the following three parcels: 2283 Sunset Drive, 10705 S. Spring Road, and 10569 Fieldcrest Road.
2. Chapter 66, Zoning Map: Adopt a revised zoning map to ensure the Village zoning map is consistent with the adopted land use plan. It is proposed a new overlay district be created, and several other changes, in particular in the southeast section of the Village.
3. Chapter 66, Zoning: Text amendments to make the Village's nonconforming structure and use codes consistent with statutes, delete conflicts between Village code and State building codes, address the use of substandard lots, create regulations for the Woodland District Overlay, and other miscellaneous revisions.

In addition to testimony presented at the hearing, written correspondence will also be accepted until 3:00 PM, January 22, 2026, and forwarded to the Plan Commission; the deadline for the Board meeting is the meeting itself, February 17, 2026, 3:00 PM. Correspondence can be mailed to P.O. Box 769, Sister Bay, WI 54234; faxed to 920-854-9637; deposited in the drop box at the Administration Office at 2383 Maple Drive, Sister Bay; or e-mailed to info@sisterbaywi.gov. Late correspondence will not be forwarded to the Commission or Board. Written correspondence will also be available for public inspection until the close of business on the day of the hearing and will be entered into the record. A summary of all correspondence received may be presented at the public hearing, but individual letters will not be read aloud. Anonymous correspondence will not be accepted. All related public hearing materials may normally be viewed at the Sister Bay Administration Building, 2383 Maple Drive, Sister Bay, WI between 8 AM - 4 PM, Monday through Thursday.

By order of the Plan Commission of the Village of Sister Bay
Village Administrator

Peninsula Publishing & Distribution, Inc.

Serving our community since 1996.

Village of Sister Bay
PO Box 769
Sister Bay, WI 54234

Being duly sworn, doth depose and say that she/he is an authorized representative of the Peninsula Pulse, a newspaper published in Sturgeon Bay, Wisconsin, and that an advertisement of which the annexed is a true copy, taken from said paper, which was published therein on:

Total cost of ad(s): $193.93 (PHN 1/27)
Published Date(s): 01/09/26, 01/16/26

(Signed) _____ (Date) 1/9/26
Office Representative

Signed and sworn before me

_____

My commission expires 5/12/27

KATHRYN SHANKS
Notary Public, State of Wisconsin

Zoning “nonconformities” are uses, structures or lots that existed legally prior to the adoption or amendment of a zoning ordinance but do not comply with present zoning provisions. Wisconsin law allows the continuation of some nonconforming uses, structures and lots, but does not provide guidance in all situations. As a result, a local zoning ordinance may include provisions to prohibit or otherwise restrict certain classes of zoning nonconformities. Additional guidance and policy options are provided in the Zoning Nonconformities Handbook referenced at the end of this chapter.

Process to Adopt or Amend a Zoning Ordinance

The process to adopt or amend a general zoning ordinance is outlined in state statutes and summarized below:[1]

1. Petition to adopt or amend the zoning ordinance. The plan commission prepares draft zoning ordinance recommendations, usually with the assistance of legal counsel, an advisory group, zoning staff, or a private consulting firm. A petition to amend the zoning ordinance may be made by a local landowner, the plan commission, or the governing body.
2. Public notice. The clerk publishes a class 2 notice in the community’s official newspaper and mails notice to parties in interest. If the proposed ordinance or amendment has the effect of changing the allowable use of the property, the notice must include a map or description of the property affected by the ordinance and a statement identifying where the map may be obtained.
3. Public hearing. The plan commission, governing body or other appropriate body holds a public hearing on the draft zoning ordinance or amendment.[2] When making significant changes to an ordinance, opportunities for public participation prior to the public hearing are recommended to ensure that the ordinance is understood and accepted by the public.
4. Plan commission recommendation. In response to public comments, the plan commission may modify the draft zoning ordinance or forward it to the governing body with a recommendation for action.[3]
5. Governing body decision. The governing body may approve, modify or deny the proposal, or return it to the plan commission with directions to make additional changes. If the proposal is substantially changed, the public hearing process should be repeated.[4] In most cases, a majority vote of the governing body is needed to adopt the ordinance.[5] However, an affirmative vote of three-fourths of the governing body is required if landowners opposing the amendment file a valid protest petition.[6] Likewise, an affirmative vote of two-thirds of the governing body is required if the owner or operator of an affected airport files a protest petition[7] or if the mayor or county executive vetoes the zoning amendment.[8]
6. Publication of ordinance and effective date. Adopted ordinances and amendments must be published as a class 1 notice and take effect on the day after publication unless otherwise prescribed.[9] County zoning ordinances and amendments take effect once approved by the town board and county executive.

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[1]See Wis. Stat. §§ 59.69(5) counties; 60.61(4) towns; 62.23(7)(d) cities, villages, towns with village powers.
[2]In municipalities, the public hearing may be held by the governing body, plan commission, or board of public land commissioners (Wis. Stat. § 62.23(7)(d)1). In counties, the public hearing may be held by the county zoning agency (planning & zoning committee or plan commission) or the county board (Wis. Stat. §§ 59.69(5) and (6)).
[3]If the governing body of a municipality does not receive a report from the plan commission within sixty days, it may proceed without it (Wis. Stat. 62.23(7)(d)2).
[4]A “substantial change” is one that alters the fundamental character of the original proposal such that it changes the group affected by the proposal or the impact on that group. Herdeman v. City of Muskego, 116 Wis. 2d 687, 690,343, N.W.2d 814 (Ct. App. 1983).
[5]Majority means a majority of all members of the city council, village board or town board (Wis. Stat. §§ 62.11(3)(b), 62.23, 61.35 and 60.62) or a majority of county board members present, unless otherwise provided by law (Wis. Stat. § 59.02).
[6]For cities, villages and towns with village powers, the protest must be signed by owners of 20% of the land to be altered, or by owners of 20% of land within 100 feet, or by owners of 20% of land extending 100 feet opposite the street frontage (Wis. Stat. § 62.23(7)(d)2m).For counties and towns without village powers, the protest must be signed and acknowledged by owners of 50% of the land to be altered, or by owners of 50% of the land within 300 feet (Wis. Stat. §§ 59.69(5)(e)5g and 60.61(4)(c)2). County protest petitions must be received by the clerk at least 24 hours prior to the meeting of the county board.
[7]Wis. Stat. 59.69(5)(e)5m, 60.61(4)(c)2, 62.23(7)(d)2m.b.
[8]Wis. Stat. §§ 59.17(6) and 62.09(8)(c).
[9]Wis. Stat. §§ 59.14, 60.80, 61.50, and 62.11(4).

Notice Requirements

Advance notice of a hearing to adopt or amend a zoning ordinance must be provided to the following parties:

- News media. Notice must be provided in writing or by phone, fax or email to any news media that have filed a written request. Notice must also be provided to the government unit's official newspaper, or if there is no official newspaper, to other media likely to give notice in the affected area.[1]
- Adjacent municipalities. Notice of county zoning amendments must be mailed to the clerk of affected towns at least 10 days prior to the hearing.[2] Written notice of the adoption or amendment of a city, village or town zoning ordinance must be provided to the clerk of any municipality located within 1,000 feet of lands affected by the ordinance at least 10 days prior to the hearing.[3]
- Property owners. Notice of zoning ordinance adoption and amendment must be provided to property owners that have submitted a written request to receive notice of action affecting their property. Notice may be provided by mail or other agreed upon method, and an appropriate fee may be charged.[4]
- Airport owners. Notice of a zoning amendment in an airport affected area must be mailed to the owner or operator of the airport. The airport affected area extends three miles from the boundary of a public airport unless otherwise agreed.[5]
- Military installations. Written notice of city, village and town zoning ordinance adoption and amendment must be provided to the commanding officer of a military base or installation with at least 200 assigned military personnel or at least 2,000 acres, located in or near the municipality.[6]
- Department of Natural Resources. Written notice of amendments to shoreland, shoreland-wetland, and floodplain zoning ordinances must be provided to the appropriate local DNR office at least 10 days prior to the hearing.[7]
- Department of Agriculture, Trade and Consumer Protection. Written notice of amendments to farmland preservation zoning must be provided to DATCP. This requirement does not apply when land is rezoned out of farmland preservation zoning.[8]

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[1]Wis. Stat. § 19.84.
[2]Wis. Stat. § 59.69(5) (e)2.
[3]Wis. Stat. §§ 62.23(7)(d)1.a & 2.
[4]Wis. Stat. § 59.69(5)(f) and 62.23(7)(d)4.
[5]Wis. Stat. §§ 59.69(5)(e)2, 60.61(4)(c)1, 62.23(7)(d)2, 62.23(6)(am)1.b and 66.1009.
[6]Wis. Stat. §§ 62.23(7)(d)1.a & 2.
[7]Wis. Admin. Code §§ NR 115.05(4)(h) & NR 116.20(2)(c).
[8]Wis. Stat. § 91.36(8)(d).

VILLAGE OF SISTER BAY
PLAN COMMISSION MEETING MINUTES
TUESDAY, SEPTEMBER 23, 2025
APPROVED

Administrator's Report
Schmelzer reported:

- She had announced her retirement effective January 2, 2026.
- The Village Board discussed updating the zoning ordinance.
- The Village needs to update its zoning map to match the comprehensive plan within a year.
- She provided commissioners with ideas for increasing housing units in the village, including eliminating the requirement that lots held in common ownership be considered as one lot.

The commission expressed appreciation for Schmelzer's work and requested that she continue working on housing-related amendments if time permits before her retirement.

VILLAGE OF SISTER BAY
PLAN COMMISSION MEETING MINUTES
TUESDAY, OCTOBER 28, 2025
APPROVED AS AMENDED

Proposed Contract; Zoning Map Update; BayLake Regional Planning Commission
Schmelzer presented a proposed contract with BayLake Regional Planning Commission to update the village's zoning map to align with the recently adopted comprehensive plan. She noted the village must have the zoning map consistent with the comprehensive plan within a year of its adoption. The contract would include creating an interactive map layer for the village's GIS system. The cost would not exceed $20,000.

Bell expressed concerns about the lack of a rate sheet and specific cost breakdown. Heidler asked about the interactive map functionality and was told it would be incorporated into the village's GIS system.

Motion by Bhirdo, second by Heidler, to recommend the Village Board enter into the contract as presented. Motion carried 5-1 with Bell opposed.

VILLAGE OF SISTER BAY
PLAN COMMISSION MEETING MINUTES
TUESDAY, OCTOBER 28, 2025
APPROVED AS AMENDED

Proposed Contract; Zoning Map Update; BayLake Regional Planning Commission
Schmelzer presented a proposed contract with BayLake Regional Planning Commission to update the village's zoning map to align with the recently adopted comprehensive plan. She noted the village must have the zoning map consistent with the comprehensive plan within a year of its adoption. The contract would include creating an interactive map layer for the village's GIS system. The cost would not exceed $20,000.

Bell expressed concerns about the lack of a rate sheet and specific cost breakdown. Heidler asked about the interactive map functionality and was told it would be incorporated into the village's GIS system.

Motion by Bhirdo, second by Heidler, to recommend the Village Board enter into the contract as presented. Motion carried 5-1 with Bell opposed.

VILLAGE OF SISTER BAY
PLAN COMMISSION MEETING MINUTES
TUESDAY, NOVEMBER 25, 2025
APPROVED

New Zoning Map; Discussion No. 1
Schmelzer presented a new zoning map and explained her approach to addressing inconsistencies between the future land use map and current zoning. She suggested creating a woodland overlay district to protect wooded areas shown on the land use map without changing the underlying zoning.
The Commission discussed several specific areas where zoning changes might be needed to align with the land use map:

- Areas along Fieldcrest Road and Flintridge Drive
- Property along Woodcrest and near the Deviley farm
- Several properties along Highway 42 and Bay Shore Drive

The Commission decided to keep several areas as Countryside zoning rather than changing them to R-3 as initially suggested. There was discussion about whether Countryside should be considered a residential district or an agricultural district.
Bhirdo expressed frustration at potentially reversing decisions made during the comprehensive planning process six months earlier, emphasizing the need for consistency in decision-making.
Let it be noted that Bell abruptly left the meeting at approximately 9:11 P.M.
The Commission requested more information on specific properties before making final decisions on some proposed changes and agreed to continue the discussion at the next meeting.

VILLAGE OF SISTER BAY
PLAN COMMISSION MEETING MINUTES
THURSDAY, DECEMBER 18, 2025
UNAPPROVED

New Zoning Map; Discussion No. 2

Schmelzer presented the updated draft zoning map incorporating changes discussed at the previous meeting. The commission addressed several remaining items:

- The triangle area at Highway 57 and Orchard Road: After discussion about the size and appropriate zoning, the commission decided that the front of the property, along Highway 57, should be zoned Business (B-1) with the remainder zoned Large Lot Residential (R-3).
- Properties north of Northwoods: The commission agreed to designate the front portion along Highway 57 as Business (B-1) with the remainder as Large Lot Residential (R-3).
- CBRF on Fieldcrest: The commission agreed this community-based residential facility should be zoned Residential (R-1) rather than Business, as it is a residential use in a residential neighborhood. Schmelzer noted the need to update the zoning definitions to match state statutes regarding these facilities.
- Pebble Beach Corner: The commission discussed a business-zoned property across from the south end of the cemetery that currently contains a residence. Despite the property owner's preference to maintain business zoning, the commission felt the property would be more appropriately zoned as Residential (R-2) given its location and surroundings.
- Woodland Overlay: The commission reviewed the proposed woodland overlay district on the map. Schmelzer explained that this overlay protects significant woodland areas while still allowing appropriate development. Heidler raised concerns about ensuring clarity in how the woodland definitions interact with other code sections.
- PUD (Planned Unit Development) Designation: Schmelzer noted that state statutes require PUDs to be identified on the zoning map. The Dorr Hotel was identified as one such development, with others to be added as they are identified.

Motion to proceed with the discussed zoning map changes to a public hearing was made by Heidler, second by Champeau. Motion carried -all ayes.

Misc. Text Amendments; Ch. 66

The commission reviewed proposed text amendments to Chapter 66 of the Village Code. Key discussions included:

- Parking Lot Lighting: The commission clarified that the requirements apply to free-standing light fixtures in parking lots, not lighting mounted on buildings.
- Woodland Definitions: The commission discussed clarification needs between "woodlands" as defined in the code and the "woodland overlay" district to avoid confusion.
- Nonconforming Uses and Structures: The commission reviewed updates to these sections to align with state statutes. Schmelzer explained how the 50% rule for repairs to nonconforming buildings helps phase out nonconformities over time.
- Woodland Overlay Requirements: The commission had an extensive discussion about tree removal requirements in the woodland overlay district, particularly regarding how close structures can be to tree canopies. The requirements aim to balance development rights with woodland preservation goals.
- Wellhead Protection Overlay: Schmelzer noted that this section would need to be updated in the future, as it mentions a road name no longer used, and, the current 500-foot protection radius likely does not reflect the actual capture zone. She recommended a future meeting with the Utilities Department to coordinate on this issue.

By consensus the commission agreed to include the text amendments to the zoning map amendments at the January public hearing.

Public Hearing Phone Call Log
Date of Call: _01/07/2026
Time of Call: __10:30 AM
Resident Name: __Ty Little
Address: __[redacted] Rd, Sister Bay
Reference Letter / Hearing Date: _PH Notice Letter 1/27/2026
Summary of Resident's Comments / Questions:
Ty Little is in favor of the zoning change for his property from B-3 to R-2. Ty Little phoned the village office responding to the Public Hearing Notice letter he recently received as he is unable to attend the Public Hearing/Plan Commission Meeting scheduled 1/27/26.

Information Provided by Clerk / Response:
Ty Little's communication to be added to the Plan Commission communication folder- meeting packet.

Follow-Up / Next Steps (if any):

Clerk : SBertges

Ben Andrews

From: Jake Gazlay <[redacted].com>
Sent: Thursday, January 22, 2026 11:52 AM
To: Ben Andrews
Cc: Ron Gazlay
Subject: New Zoning Map and Zoning Changes Feedback_Gazlay_[redacted]. Sister Bay, WI

Hi Benjamin,
Reaching out to introduce ourselves and congratulate you on joining Sister Bay as our New Village Administrator! Your experience and expertise will be of great value to the Village and our community. We look forward to meeting you this upcoming Summer!

Our family has feedback and questions regarding the upcoming New Zoning Map Changes and the meeting scheduled for Tuesday, Jan 27th at 5:30pm. Will this meeting be hosted via zoom? Or is in person attendance required?

We have a couple pieces of feedback regarding the zoning map changes. Up until the newly released zoning map, our property has been zoned as B-1. Prior to that, our property was zoned as Agriculture as my great grandfather farmed the property. We would like for our property to either stay as B-1 or better yet, be re-zoned as it truly is and we intended for it to stay, which is R-1. Additionally, I'd like to better understand the Land Use map vs Zoning map. The land use calls out our open fields as "open space" which they currently are. I want to ensure this designation would not limit us in further developing our property sometime in the future. If so, I think we would like our land use to read as R-1 as well.

Please let me know if these updates can be made prior to the 1/27/26 meeting or if I need to attend via Zoom or in person to ensure this request is processed.

Lastly, can you point me in the direction of the Villages rules, regs and codes regarding ADUs? As we've welcomed the 5th generation of our family to own this property, we are in need of additional living space. A future ADU would be a consideration we may like to explore at some point in the future. Understanding those opportunities and limitations will be helpful.

Address:
[redacted] Dr.
Sister Bay, WI 54234

Owner:
Ronald Gazlay
(father who is copied on this email)

Thank you again!

--

Jake Gazlay
J[redacted]com
[redacted]

ORDINANCE NO. 2026-001

AMENDING THE VILLAGE OF SISTER BAY FUTURE LAND USE MAP

WHEREAS, on March 26, 2025, the Village of Sister Bay updated their 20-year comprehensive land use plan; and,

WHEREAS, the adopted *Village of Sister Bay 2025 Comprehensive Plan* recommended the Plan Commission review the plan annually; and,

WHEREAS, in conducting the annual review, and while preparing to ensure the proposed zoning map was consistent with the adopted future land use map, the Plan Commission found three properties inadvertently labeled for business use, which are, and intend to be used, residentially; and,

WHEREAS, the Plan Commission held a public hearing on January 27, 2026, to conduct an annual review of the plan and make amendments to the future land use map in the adopted plan, and, voted to recommend to the Village Board an amended future land use map changing the business land use class of the following three properties, to a residential land use classification: 2283 Sunset Drive, 10705 S Spring Road, and 10569 Fieldcrest Road; and,

WHEREAS, the Village Board held a public hearing at their monthly regular meeting on February 17, 2026, and invited public input on the proposed map changes; after consideration of the Plan Commission's recommendation, and public testimony, the Board agreed to amend the adopted future land use map changing the land use classification of three properties.

NOW, THEREFORE, after consideration of the future land use map amendments recommended by the Plan Commission, on February 17, 2026, the Village Board of the Village of Sister Bay voted to amend the *Sister Bay 2025 Comprehensive Plan*, *Map 7.2, Future Land Use Map*, as shown on the attached map.

SECTION 1. Adoption of Amended Comprehensive Plan Future Land Use Map. As shown on the attached, the map serves as the amended *Village of Sister Bay 2025 Comprehensive Plan Future Land Use Ma.*

SECTION 2. Available for Inspection.

A copy of this ordinance shall be permanently on file and open to public inspection in the Village Administration Office at least thirty days prior to its adoption and after its enactment. The Village Clerk is directed to file a copy of the adopted new Future Land Use Map for the Village of Sister Bay with the following:

1. The Clerk for the town of Liberty Grove.
2. The Wisconsin Department of Administration
3. The Bay-Lake Regional Plan Commission
4. The Sister Bay-Liberty Grove Library

SECTION 3. Ordinances in Conflict.

All other ordinances and future land use maps in conflict herewith be, and the same hereby are repealed.

SECTION 4. Effective Date.

This ordinance shall take effect and be in full force from and after February 18, 2025.

SECTION 5. Severability.
If a court of competent jurisdiction adjudges any section, clause, provision, or portion of this ordinance unconstitutional or invalid, the remainder of this ordinance shall not be affected thereby.

VILLAGE OF SISTER BAY
By:

_____
Nate Bell, Village President

ATTEST:

_____
Julie Thyssen, Village Clerk

Ayes: _____ Nays: _____

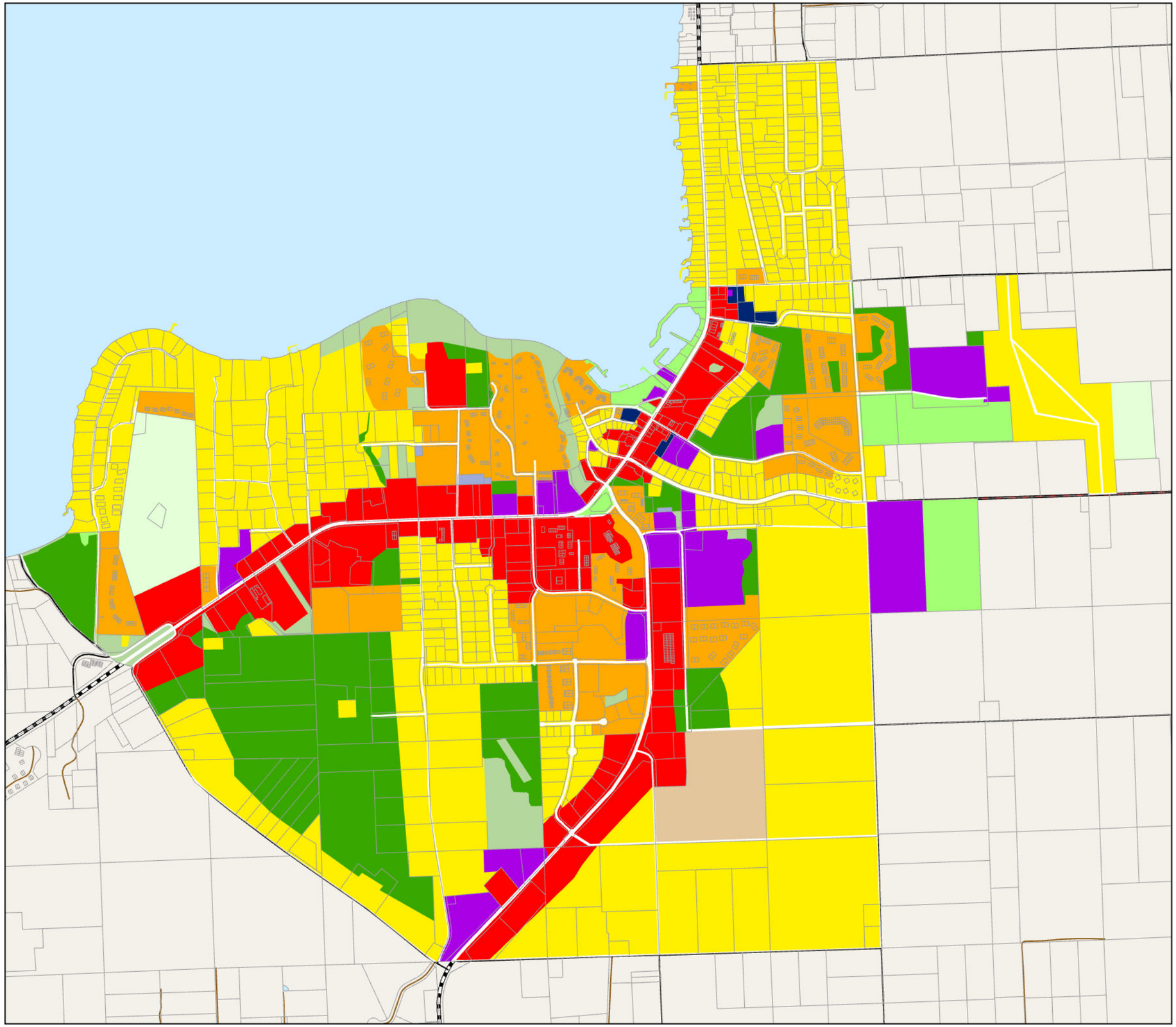
Filed/Posted: _____2/18/2026_____
Village Administration Office, 2383 Maple Drive
Sister Bay Post Office, 10685 N Bay Shore Drive
Sister Bay Liberty Grove Library, 2323 Mill Road
Effective Date: February 19, 2025

ATTACHMENT: Map 7.2 Future Land Use Map

Draft Date: JAS/12/30/2025

Public Hearing Draft 1/27/26

Proposed Future Land Use for the Village of Sister Bay, Door County, Wisconsin



Future Land Use

- Agriculture
- Commercial
- Communications/Utilities
- Institutional/Government
- Multi-Family
- Natural Areas
- Open Lands
- Parks and Recreation
- Residential
- Right-of-Way
- Transportation
- Woodlands

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This draft future land use map is based upon parcel and property boundary maps maintained by Door County. The right-of-way widths for public and private streets vary and the map shows a representation of the easements or rights-of-way. This map is neither a legally recorded map, nor a survey, and is not intended to be used as one. This drawing is a compilation of records, information, and data used for reference purposes only. Bay-Lake RPC is not responsible for any inaccuracies.

ORDINANCE NO. 2026-002

ADOPTING A NEW ZONING MAP FOR THE VILLAGE OF SISTER BAY

WHEREAS, on March 26, 2025, the Village of Sister Bay updated their 20-year comprehensive land use plan, which included a new future land use map; and,

WHEREAS, upon finding three errors on the adopted future land use map, on February 17, 2026, the Village Board revised the map; and,

WHEREAS, Wisconsin Statutes 66.1001 require a municipality's zoning map be consistent with the adopted comprehensive plan, which incorporates the future land use map, and therefore, the Plan Commission created a draft revised zoning map and held a public hearing on January 27, 2026; and,

WHEREAS, the Village Board held a public hearing at their monthly regular meeting on February 17, 2026, and invited public input on the proposed revised zoning map; after consideration of the Plan Commission's recommendation, and public testimony, the Board agreed to adopt a new Village zoning map.

NOW, THEREFORE, on February 17, 2026, the Village Board of the Village of Sister Bay voted to amend Chapter 66, *Zoning*, of the Sister Bay Municipal Code, by adopting a new zoning map, as shown on the attached map, said map to be incorporated into Chapter 66.

SECTION 1. Adoption of New Zoning Map. As shown on the attached, the map serves as the official Zoning Map for the Village of Sister Bay.

SECTION 2. Available for Inspection.
A copy of this ordinance shall be permanently on file and open to public inspection in the Village Administration Office at least thirty days prior to its adoption and after its enactment. The Village Clerk is directed to file a copy of the adopted new Zoning Map for the Village of Sister Bay with the following:

1. The Clerk for the town of Liberty Grove.
2. The Wisconsin Department of Administration
3. The Bay-Lake Regional Plan Commission
4. The Sister Bay-Liberty Grove Library

SECTION 3. Ordinances in Conflict.
All other ordinances and zoning maps in conflict herewith be, and the same hereby are repealed.

SECTION 4. Effective Date.
This ordinance shall take effect and be in full force from and after February 18, 2025.

SECTION 5. Severability.
If a court of competent jurisdiction adjudges any section, clause, provision, or portion of this ordinance unconstitutional or invalid, the remainder of this ordinance shall not be affected thereby.

VILLAGE OF SISTER BAY
By:

_____
Nate Bell, Village President

ATTEST:

_____ Ayes: _____ Nays: _____
Julie Thyssen, Village Clerk

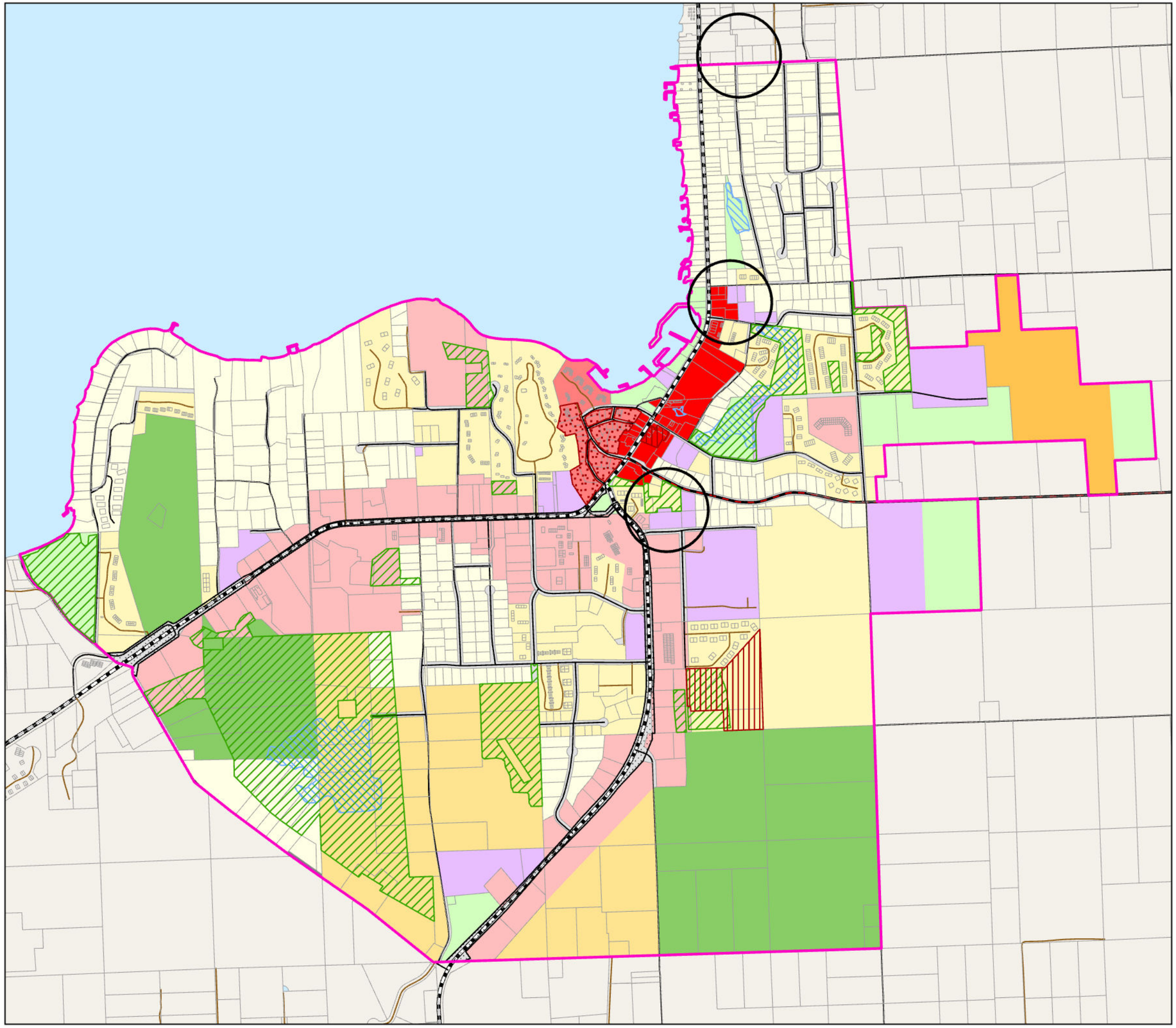
Filed/Posted: _____2/18/2026_____
Village Administration Office, 2383 Maple Drive
Sister Bay Post Office, 10685 N Bay Shore Drive
Sister Bay Liberty Grove Library, 2323 Mill Road
Effective Date: February 19, 2025

ATTACHMENT: New Village of Sister Bay Zoning Map

Draft Date: JAS/12/30/2025

Public Hearing Draft 1/27/26

Proposed Zoning Map for the Village of Sister Bay, Door County, Wisconsin



Zoning Districts

- (B-1) General Business
- (B-2) Downtown Business Transition
- (B-3) Downtown Business
- (CS-1) Countryside
- (I-1) Institutional
- (P-1) Parks and Recreation
- (R-1) Single-Family Residence
- (R-2) Multiple-Family Residence
- (R-3) Large Lot Residence
- (R-4) Small Lot Residence

Overlay Districts

- Woodland Overlay District
- (W-1) Wetland Overlay
- (BP) Bluff Protection Overlay
- (PUD) Planned Unit Development Overlay
- (HL) Highway Landscape Overlay
- B-2 Historic Overlay District
- (WHP) Wellhead Protection Overlay
- Road ROW Overlay

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This draft zoning map is based upon parcel and property boundary maps maintained by Door County. The right-of-way widths for public and private streets vary and the map shows a representation of the easements or rights-of-way. This map is neither a legally recorded map, nor a survey, and is not intended to be used as one. This drawing is a compilation of records, information, and data used for reference purposes only. Bay-Lake RPC is not responsible for any inaccuracies.

ORDINANCE NO. 2026-003

AMENDING CH. 66 REGARDING NONCONFORMING USES AND STRUCTURES, FIRE WALL REQUIREMENTS, FAMILY LIVING ARRANGEMENTS, CREATING A WOODLAND OVERLAY, SUBSTANDARD LOTS, AND OTHER MISCELLANEOUS AMENDMENTS

WHEREAS, the Village of Sister Bay periodically reviews their ordinances to ensure they comply with the Wisconsin State Statutes and Administrative Code, the intent of adopted village plans, they have a regulatory framework to best protect the environment, they are easy and effective to understand and implement, and they support planning policies and trends; and,

WHEREAS, on January 27, 2026, the Plan Commission held a public hearing on amendments to Chapter 66 of the Municipal Code, *Zoning*, to make their nonconforming uses and structures language consistent with state statutes, remove fire wall regulations which conflict with the state's building codes, make their family living arrangement language consistent with state statutes, create a Woodland Overlay to ensure their zoning ordinance was consisted with the adopted comprehensive plan, revise substandard lot language to increase the availability of substandard lots for development, and other miscellaneous amendments; and,

WHEREAS, upon review of the statutes and public comment, the Plan Commission recommended the Village Board amend Chapter 66 to address the inconsistencies and amendments necessary to ensure the zoning code was consistent with state statutes, state building codes, and the comprehensive plan, and there would be regulations in place to increase the availability of lots for development, among other miscellaneous amendments.

NOW, THEREFORE, after consideration of the code amendments recommended by the Plan Commission, on February 17, 2026, the Village Board of the Village of Sister Bay voted to amend Ch. 66, *Zoning*, as shown below.

SECTION 1. Adoption of Code Amendments. Shown below are the amendments to the code, with deletions shown with a red strikethrough and additions shown in red font.

I. Fire Walls

Amend various sections which conflict with the building codes enforced by the Building Inspector:

Sec. 66.0311 R-1 Single-Family Residence District

(4) Dimensional Lot Standards.

R-1 District Dimensional Lot Standards Table ~~Minimum Setbacks~~	
Front Yard (on public street)	70 feet from centerline of street right-of-way
Front Yard (not on public street)	40 feet from edge of easement or edge of pavement
Side Yard	10 feet one side; 25 feet total [2]
Rear Yard	40 feet
~~From Principal Structure, Accessory Structure 120 Square Feet or Less~~	~~5 feet [3]~~

~~From Principal Structure, Accessory Structure in Excess of 120 Square Feet~~	~~10 feet~~
Side Yard	10 feet one side; 25 feet total [2]
Rear Yard	40 feet
a. Excluding attached garages. b. Where a side-entry garage exists, the setback shall be at least 27 feet in width as measured from the closest point of the garage door opening that is perpendicular to the side lot line. ~~c. If constructed with a 1-hour fire rating per ILHR 21.08, or its successor code. Without the 1-hour fire rating, the minimum setback from principal structure shall be 10 feet.~~	

Sec. 66.0312 R-2 Multiple-Family Residence District

(4) Dimensional Lot Standards.

R-2 District Dimensional Lot Standards Table	
Minimum Area	20,000 square feet
Minimum Width (interior lot)	75 feet
Minimum Width (corner lot)	110 feet
Minimum Green Space	40% of lot must be left as green space
Structure Standards	
Maximum Height	35 feet
Minimum Width	24 feet [1]
Minimum Floor Area (one bedroom)	900 square feet
Minimum Floor Area (two bedrooms)	1,000 square feet
Minimum Floor Area (three or more bedrooms)	1,200 square feet
Minimum Setbacks	
Front Yard (on public street)	60 feet from the centerline of street right-of-way
Front Yard (not on public street)	40 feet from edge of easement or edge of pavement
Side Yard	10 feet one side; 25 feet total [2]
Rear Yard	30 feet
~~From Principal Structure, Accessory Structure - 120 Square Feet or Less~~	~~5 feet [3]~~
~~From Principal Structure, In Excess of 120 Square Feet~~	~~10 feet~~
Side Yard	10 feet one side; 25 feet total [2]
Rear Yard	30 feet
1. Excluding attached garages. 2. Where a side-entry garage exists, the setback shall be at least 27 feet in width as measured from the closest point of the garage door opening that is perpendicular to the side lot line.	

3. ~~If constructed with a one-hour fire rating per ILHR 21.08, or its successor code. Without the one hour fire rating, the minimum setback from principal structure shall be 10 feet.~~

Sec. 66.0313 R-3 Large Lot Residence District

(5) Dimensional Lot Standards.

R-3 District Dimensional Lot Standards Table	
Minimum Area	5 acres
Minimum Width (interior lot)	300 feet
Minimum Width (corner lot)	90 feet
Minimum Green Space	80% of the lot must be left as green dpace
Structure Standards	
Maximum Height	35 feet
Minimum Width	24 feet [1]
Minimum Floor Area (one bedroom)	900 square feet
Minimum Floor Area (two bedrooms)	1,000 square feet
Minimum Floor Area (three or more bedrooms)	1,200 square feet
Minimum Setbacks	
Front Yard (on public street)	80 feet from centerline of street right-of-way
Side Yard	10 feet one side; 25 feet total [2]
Rear Yard	50 feet
~~From Principal Structure, Accessory Structure 120 Square Feet Or Less~~	~~5 feet [3]~~
~~From Principal Structure, In Excess of 120 Square Feet~~	~~10 feet~~
Side Yard	10 feet one side; 25 feet total [2]
Rear Yard	50 feet
1. Excluding attached garages. 2. Where a side-entry garage exists, the setback shall be at least 27 feet in width as measured from the closest point of the garage door opening that is perpendicular to the side lot line. 3. ~~If constructed with a one hour fire rating per ILHR 21.08, or its successor code. Without the one hour fire rating, the minimum setback from principal structure shall be 10 feet.~~	

Sec. 66.0314 R-4 Small Lot Residence District

4) Dimensional Lot Standards.

R-4 District Dimensional Lot Standards Table		
Lot	Minimum Area	5000 square feet
	Minimum Width (interior lot)	60 feet

	Minimum Width (corner lot)	75 feet
	Minimum Green Space	20% of lot must be left as green space
Structure Standards		
Principal Structure	Maximum Height	35 feet
	Minimum Width	24 feet [1]
	Minimum Floor Area (one bedroom)	700 square feet
	Minimum Floor Area (two bedrooms)	900 square feet
Principal Structure	Minimum Floor Area (three or more bedrooms)	1,000 square feet
Accessory Structures	Maximum Height	Shall not exceed height of principal structure
Minimum Setbacks		
Principal Structure	Front Yard (on public street)	10 feet from furthest extension to right-of-way (e.g. the porch); 20 feet from the wall to right-of-way
	Front Yard (not on public street)	20 feet from edge of road easement; if no easement, measured from edge of pavement
	Side Yard (from wall)	8 feet one side; 16 feet total [2]
	Rear Yard	25 feet
Accessory Structures	~~From Principal Structure, Accessory Structure 120 Square Feet Or Less~~	~~5 feet [2]~~
	~~From Principal Structure, In Excess of 120 Square Feet~~	~~10 feet~~
	Side Yard, Accessory Structure <120 Square Feet	5 feet one side; 20 feet total [2]
	Side Yard, Accessory Structure >120 Square Feet	8 feet one side; 16 feet total
	Rear Yard	15 feet
1. Excluding attached garages. 2. ~~If constructed with a one hour fire rating per ILHR 21.08. Without the one hour fire rating the minimum setback from the principal structure shall be 10 feet.~~		

1

Sec. 66.0315 CS-1 Countryside District

(4) Dimensional Lot Standards.

CS-1 District Dimensional Lot Standards Table		
Lot	Minimum Area	10 acres
	Minimum Width	300 feet
	Minimum Green Space	90% of lot shall be left as green space
Structure Standards		
Principal Structure	Maximum Height	35 feet
	Minimum Width	24 feet [1]
	Minimum Floor Area (one bedroom)	900 square feet
	Minimum Floor Area (two bedrooms)	1,000 square feet
	Minimum Floor Area (three or more bedrooms)	1,200 square feet
Minimum Setbacks		
Principal Structure	Front Yard (farm buildings) Front Yard (all other buildings)	50 feet from centerline of street right-of-way 80 feet from edge of easement or edge of pavement
	Side Yard	10 feet one side; 25 feet total [2]
	Side Yard (churches)	100 feet
	Rear Yard	50fFeet
Accessory Structures	~~From Principal Structure (structure < 120 square feet)~~	~~5 feet [3]~~
	~~From Principal Structure (structure > 120 Square Feet)~~	~~10 feet~~
	Side Yard	10 feet one side; 25 feet total [2]
	Side Yard (churches)	100 feet
	Rear Yard	50 feet

1. Excluding attached garages.
2. Where a side-entry garage exists, the setback shall be at least 27 feet in width as measured from the closest point of the garage door opening that is perpendicular to the side lot line.
3. ~~If constructed with a one hour fire rating per ILHR 21.08. Without the one hour fire rating the minimum setback from principal structure shall be 10 feet.~~

Sec. 66.0320 B-1 General Business District

(4) Dimensional Lot Standards.

B-1 District Dimensional Lot Standards Table		
Lot Served by Public Sewer [1]	Minimum Area	20,000 square feet
	Minimum Width (interior lot)	60 feet
	Minimum Width (corner lot)	110 feet
Lot Served by Public Sewer [1]	Minimum Green Space	20% of lot shall be left as green space
	Minimum Area	25,000 square feet

Lot Not Served by Public Sewer [1]	Minimum Width (interior lot)	100 feet
	Minimum Width (corner lot)	110 feet
Lot Not Served by Public Sewer [1]	Minimum Green Space	20% of lot shall be left as green space
Structure Standards		
Principal Structure	Maximum Height	35 feet
Minimum Setbacks		
Principal Structure	Front Yard (on public streets)	45 feet from centerline of street right-of-way
	Front Yard (not on public street)	40 feet from edge of easement or edge of pavement
	Side Yard	10 feet [2] - the setback area must be green space
	Rear Yard	20 feet - the setback area must be green space
Accessory Structures	~~From Principal Structure, (structure < 120 square feet)~~	~~5 feet [3]~~
	~~From Principal Structure (structure > 120 square feet)~~	~~10 feet~~
	Front Yard (on public street) [4]	45 feet from centerline of street right-of-way
	Front Yard (not on public street) [4]	40 feet from edge of easement or edge of pavement
	Side Yard	10 feet [2] - the setback area must be green space
	Rear Yard	20 Feet - the setback area must be green space

1. Lots shall have sufficient area and width for the principal structure(s) and its accessory structures, off-street parking and loading areas, and required setbacks.
2. May be increased by Village Engineer in order to accommodate required grading between properties.
3. ~~If constructed with a one hour fire rating per ILHR 21.08. Without the one hour fire rating the minimum setback from principal structure shall be 10 feet.~~
4. Accessory structures located in front yard require a C.U.P.

Sec. 66.0501 Accessory Uses and Structures

(2) Setback Requirements.

(b) (c) All accessory buildings for all zoning districts shall comply with the following setback requirements.

1. Setback From Easements.

a. No accessory building shall be placed over an easement that prohibits such placement. No accessory building shall encroach into the public right-of-way. No accessory building shall encroach upon the street yard of a corner lot.

2. ~~*Setback From Principal Buildings.*~~ [And renumber]

~~a. An accessory building of 120 square feet or less may be erected, altered or moved to a location that is not less than 5 feet from the nearest wall of a principal building if it is constructed with a one-hour fire rating per ILHR 21.08. Without the one-hour fire rating, the minimum separation shall be 10 feet.~~

~~b. An accessory building over 120 square feet may be erected, altered or moved to a location within 10 feet of the nearest wall of the principal building.~~

II. Substandard Lots

Amend the substandard lot regulations to be consistent with 2017 Wisconsin Act 67which prohibits a zoning ordinance from prohibiting the conveyance or development of legal nonconforming lots or requiring a merger of adjacent lots owned by the same property owner without the property owner's permission. This will also create the availability of lots for development. See Wis. Stats. §66.10015(4) for full statutory language.

Amend **Sec. 66.0303 Site and Lot Restrictions**, as follows,

(4) Sub-~~S~~standard Lots. Any lot that does not meet the required lot width and area requirements of this chapter, but is at least 65' in width at the building line and 10,000 square feet in area ~~If two or more sub-standard lots have the same ownership~~ as of November 16, 1973, ~~the lots involved~~ shall be considered an individual parcel for the purposes of this chapter and may be utilized for development provided all setback and green space requirements can be satisfied.

Amend **Sec. 66.0920 Existing Non-Conforming Lots**, as follows,

A lot which is located in the B-1 Business District or the R-1, R-2 or R-3 Residential Zoning Districts which does not contain sufficient area to conform to the dimensional ~~requirements~~ standards of this chapter, but which is at least 65 feet in width at the building line and 65 feet in width at the ordinary high-water mark or rear lot line, and which is 10,000 square feet in area, may be used as a building site provided that the use is permitted in the zoning district, and the lot is on record in the Door County Register of Deeds Office prior to November 16, 1973~~, and the lot is in separate ownership from abutting lands~~. All lots in the R-4 Small Lot Residence District, regardless of the date of creation, shall conform to the dimensional standards in Sec. 66.0314(4).

Lastly, correct the spelling of 'substandard' where found throughout the code.

III. Nonconforming Uses and Structures

A few years back the state removed the ability of a community to regulate repairs to a nonconforming structure to 50% of the structure's equalized assessed value over the lifetime of the structure. As such, the village removed all references, presumably not understanding some limitations were still allowed. Specifically, statutory provisions limiting repair or maintenance of a structure *containing a nonconforming use* to 50 percent of assessed value, and providing that discontinuance of a nonconforming use for 12 months causes the nonconforming use to lose its legal status, are still in effect. See Wis. Stats. §62.23(7)(h) for stator language. It is critical therefore to make sure the code is clear on the distinction between 'use' and 'structure'. In simple terms, a 'nonconforming use' is one not allowed in that zoning district or doesn't meet the use provisions in the code (e.g. a second principal structure on a lot where only one home is allowed, living quarters in an accessory building). A 'nonconforming structure' doesn't meet the dimensional ~~provisions~~standards in the code.

2005 Wisconsin Act 112 allows nonconforming *structures* damaged or destroyed by specified natural causes on or after March 2, 2006, to be rebuilt. The replacement structure may be larger than the one destroyed *if necessary for the structure to comply with applicable State or Federal requirement* (e.g. removing it from a wetland or floodway). This has not been addressed in the village code.
The code makes a distinction between 'detrimental nonconformities' and 'benign nonconformities'. This isn't addressed in statutes, and is subject to interpretation, which often opens the village up for litigation. The amendment would remove this irregularity and ensure the code is consistent with statutes and easier to interpret.

Amendments are shown below.

Sec. 66.0900 Non-Conforming Use Definitions
The following definitions and categories shall apply to non-conforming uses and structures.

- ~~*Detrimental Non-Conformities* are those that have a negative impact on the health and safety of the public. Detrimental non-conformities have the potential for harm.~~
- ~~*Benign Non-Conformities* are those that do not have a negative impact on the health and safety of the public, but may have a negative impact on public welfare.~~
- *Nonconforming Use* means a use of land, water, building or structure that existed lawfully before November 15, 1973, or prior to an amendment thereto, that does not conform with the use restrictions in the current ordinance.
- *Health and Safety of the Public* is the protection from injury, illness, danger and other harm.
- *Public Welfare* is the protection from nuisances, economic interest, convenience, community character and the vision expressed in the Village's Smart Growth Plan.

(1) ~~Detrimental Non-Conforming Uses. Detrimental non-conforming uses are those non-conforming uses, which are not compatible with permitted uses in the zoning district and which, if permitted to continue or expand, would have a detrimental effect on those uses permitted in the zone. Detrimental non-conforming uses shall include the following:~~
(a) ~~Commercial and industrial uses in residential and institutional zones.~~
(b) ~~Industrial uses in commercial zones.~~
(c) ~~In commercial zones, residential uses not specifically permitted in those zones.~~

~~(c) Benign Non-Conforming Uses. Benign non-conforming uses are those uses other than detrimental non-conforming uses, which are generally not detrimental in the zone where they are located and include the following:~~
~~(a) In residential zones, those non-conforming residential uses which do not conform to the population density standards for the zone in which they are located.~~
(b) ~~In commercial zones, those non-conforming uses which are of the same general type as those uses permitted in the zone and are determined by the Plan Commission to not be incompatible with permitted uses.~~

Sec. 66.0901 Existing Non-Conforming Uses *[Renumber]*
~~The lawful non-conforming use of land or water; or a lawful non-conforming use on a conforming or non-conforming lot which existed at the time of the adoption or amendment of this chapter may~~ A lawful nonconforming use may be continued, although the use does not conform with the provisions of this chapter; however,
(a) Expansion of the Non-Conforming Use Prohibited. Only that portion of the land or water or building or structure in actual use may be so continued and the use may not be extended, enlarged,

substituted or moved~~;~~ except when required to do so by law or order or so as to comply with the provisions of this chapter. The expansion of parking or loading space to conform to the code is permitted.

~~(b)~~ Repairs and Structural Alterations. The total structural repairs or alterations in such a nonconforming building, premises, or structure shall not during its life exceed 50 percent of the assessed value of the building, premises, or structure unless permanently changed to a conforming use. The village uses county equalized assessed valuations to determine value.

~~(c)~~ Discontinuance. If such non-conforming use is discontinued or terminated for a period of twelve (12) consecutive months, any future use of the land or water or building or structure shall conform to the provisions of this chapter. ~~When a portion of a non-conforming use ceases on a portion of the land or water, that portion of the non-conforming use shall be terminated.~~

(d) Burden of Proof. The owners of property claiming to have a legal non-conforming use or a lawful conditional use have the burden to prove that such use is in fact a non-conforming use or lawful conditional use in accordance with Sec. 66.0922, *Interpretation and Proof of Uses*.

(e) Changes and Substitutions. A non-conforming use of land or water or building or structure may be changed to a less intense non-conforming use with the approval of a Conditional Use Permit by the Plan Commission when it can be demonstrated that the new use is in fact less detrimental to the other uses in the area.

(a) Once a non-conforming use has been changed to conform, it shall not revert to a non-conforming use.

(b) Once the Plan Commission has permitted the substitution of a less restrictive non-conforming use for an existing non-conforming use, the substituted use shall lose its status as a legal non-conforming use and become subject to all the conditions required by the Plan Commission.

(f) Multiple Occupancy Developments (MODs). MODs are a grouping of residential rental units on the same lot that pre-dated the Village adopting zoning regulations and do not meet the definition of the terms hotel, motel or condominium. These uses are not listed in a specific zoning district and are regulated by Conditional Use Permit. There are two types of multiple occupancy developments:

(a) *Multiple Occupancy Development, Short-Term*. Units are rented on a transient basis; and,

(b) *Multiple Occupancy Development, Long-Term*. Units are rented for periods of thirty (30) consecutive days or more.

a. *Short-Term MODs.* All units in Short-Term Multiple Occupancy Developments which predated zoning, and in which such rentals were not discontinued for twelve (12) months or more can continue to be rented, but any expansion of the use may only be authorized by Conditional Use Permit. Said units can continue to be rented as they were prior to Act 59, but proof of said rental history shall be provided to the Village so as to determine the intensity of the non-conforming use. Since the use cannot be enlarged or extended, the number of days the development can be rented is limited to the number of days in a calendar year it was rented prior to the adoption of Act 59. The non-conforming use must still comply with Chapter 18 of the Municipal Code, *Business Regulation*.

b. *Long-Term MODS.* Units in Long-Term Multiple Occupancy Developments cannot be rented for periods of time less than thirty (30) consecutive days, but if a primary dwelling exists within the development, that one dwelling alone can be utilized as a short-term rental. If more than one unit in a long-term multiple occupancy development were to be rented for periods of less than thirty (30) days, the entire property would have to transition to a Short-Term Multiple Occupancy Development.

Sec. 66.0902 Conforming Structures on Non-Conforming Lots

(a) Continued Use Allowed. The use of a conforming structure existing at the time of the adoption or amendment of this chapter may be continued although the lot area or lot width does not conform to the requirements of this chapter.

(b) Additions and Enlargements. Additions and enlargements to the conforming structures are permitted and shall conform to the established building setback, height, parking, loading and access and other dimensional~~, provisions~~standards of this chapter unless a variance is granted from the Board of Appeals.

(c) Existing Structures on Non-Conforming Lots. Existing conforming structures on non-conforming lots, which are damaged or destroyed by fire, explosion, flood, or other calamity, may be reconstructed and shall conform to the established building setback, height, parking, loading, and access provisions of this chapter unless a variance is granted from the Board of Appeals.

Sec. 66.0910 Non-Conforming Structure Definitions

The following definitions and categories shall apply to non-conforming structures:

- ~~*Detrimental Non-Conformities* are those that have a negative impact on the health and safety of the public. Detrimental non-conformities have the potential for harm.~~
- ~~*Benign Non-Conformities* are those that do not have a negative impact on the health and safety of the public, but may have a negative impact on public welfare.~~
- *Nonconforming Structure* means a dwelling, or other building or structure that existed lawfully before November 15, 1973, or prior to an amendment thereto, that does not conform with one or more development regulations in the current zoning ordinance.
- *Health and Safety of the Public* is the protection from injury, illness, danger and other harm.
- *Public Welfare* is the protection from nuisances, economic interest, convenience, community character and the vision expressed in the Village's Smart Growth Plan.
- ~~*Detrimental Non-Conforming Structures* are those designed for detrimental uses not permitted in a zone and cannot be reasonably structurally altered to house a conforming use. Such structures include the following:~~
  - ~~In residential and institutional zones, commercial and industrial buildings.~~
  - ~~In commercial zones, industrial buildings.~~
  - ~~In commercial zones, residential buildings not specifically permitted in the zone.~~
- ~~*Benign Non-Conforming Structures* are those structures other than detrimental non-conforming structures, which are generally not detrimental in the zone where they are located and include the following:~~
  - ~~In residential zones, buildings that are non-conforming by reason of being designed for residential uses which are not permitted in the zone in which they are located.~~
  - ~~Any building other than a detrimental non-conforming building, which does not conform to the height, yard, setback, parking loading, and green space requirements of the zone where it is located.~~

Sec. 66.0911 Non-Conforming Structures *[Renumber]*

The use of dwelling, building or ~~a~~ structure existing at the time of the adoption or amendment of this chapter may be continued although the structure's size or location does not conform to the established building setback, height, floor area, green space, parking, loading, ~~and/or~~ access and/or other dimensional ~~provisions~~standards of this chapter.

~~( )~~ ~~Discontinuance. If the use of a non-conforming structure is discontinued or terminated for a period of twelve (12) consecutive months, any future use of the structure shall conform to the provisions~~

~~of this chapter. When the use of a portion of a non-conforming structure ceases, that portion of the non-conforming use shall be terminated.~~

(a) Burden of Proof. The owners of property claiming to have a legal non-conforming structure ~~or a lawful conditional use,~~ have the burden to prove that such ~~use~~ structure is in fact a non-conforming structure ~~or lawful conditional use~~ in accordance with ~~Sec. 66.0922 of~~ this chapter.

(b) Additions and Enlargements ~~T~~to Existing ~~Detrimental~~ Non-Conforming Structures. ~~Detrimental n~~Non-conforming structures shall not be moved, enlarged, remodeled or modified except where necessary to bring the structure more into conformance with this chapter. All additions, modifications, or relocations shall meet the dimensional standards of this chapter unless a petition for grant of variance has been approved by the Zoning Board of Appeals. ~~for the purpose of making them suitable for a conforming use. A detrimental non-conforming structure may be modified to permit a less intense non-conforming use with the approval of a conditional use permit by the Plan Commission when it can be demonstrated that the new use is in fact less detrimental to the other uses in the area~~ .

~~(c) Additions and Enlargements To Existing Benign Non-Conforming Structures. Benign non-conforming structures shall not be moved, enlarged or modified unless the structure(s), including the additions and enlargements, is/are made to conform in every respect to the dimensional requirements of the zone where the structure is located. However, the Plan Commission may approve a Conditional Use Permits for the expansion or redevelopment of properties which have been previously developed and do not conform to the requirements in this Code, provided that the expansion or redevelopment is designed for a permitted use. The conditional use permits may permit deviation from the regulations, including parking requirements, when it can be found that:~~

~~(a) Strict conformance to the Zoning Code requirements would preclude viable expansion or redevelopment of the site.~~

~~(b) Strict conformance to the Zoning Code would result in disorderly or illogical transitions between existing and expanded areas of the site.~~

~~(c) Deviation from the Zoning Code regulations would not jeopardize the public health, safety and welfare and would produce a quality built environment.~~

~~(d) Deminimis deviations from a dimensional requirement or standard would not have a negative impact on neighborhood character.~~

(d) Damage to Existing Non-Conforming Structures. Existing ~~benign~~ non-conforming structures which are damaged by fire, explosion, flood, or other calamity after March 2, 2006, may be restored to, or replaced at, the size, location, and use it had immediately before the damage or destruction occurred. The replacement structure may only be larger in footprint or floor area than the original nonconforming structure only if necessary for the structure to comply with applicable State of Federal requirements. If reconstruction or enlargement is not necessary, and the structure is in need of repair only, said repairs are allowed provided:

(a) The use of the building does not change in scope.

(b) No walls are reconstructed; new siding is permissible.

(c) No new roof structure is allowed; roof repair is allowed, new roofing materials are permissible as long as the truss system is not rebuilt.

(d) No plumbing is added to a building that otherwise had no plumbing.

~~(e) May be reconstructed and insofar as is practicable shall conform with the established building setback lines along streets and the yard, as well as the height, parking, loading, and access provisions of this chapter. Existing detrimental non-conforming structures which are damaged by fire, explosion, flood, or other calamity to the extent that such damage is more than fifty percent (50%) of the current equalized assessed value of the structure shall not be reconstructed.~~

(f) Remodeling Existing Non-Conforming Structures. Existing ~~benign~~ non-conforming structures ~~which are remodeled or reconstructed shall conform to the established building setbacks, height, parking, loading, and access provisions of this chapter.~~ may be remodeled provided:

(a) The use of the building does not change in scope.
(b) The floor area or footprint of the building does not change.
(c) No new foundation is installed.
(d) No exterior walls are reconstructed; repair is allowed of individual wall segments, new siding is permissible.
(e) No new roof structure is allowed; roof repair is allowed, new roofing materials are permissible as long as the truss system is not rebuilt.
(f) No plumbing is added to a building that otherwise had no plumbing.

Amend **Sec. 2000 General Definitions**, as follows,

~~Non-Conforming, Uses or Structures~~
~~Any structure, land or water lawfully used, occupied or erected before November 15, 1973 which does not conform to the regulations of this chapter or amendments thereto. Any such structure conforming in respect to use but not in respect to development regulations such as frontage, width, height, area, yard, parking, loading or distance requirements shall be considered a non-conforming structure and not a non-conforming use.~~

Nonconforming Structure means a dwelling, or other building or structure that existed lawfully before November 15, 1973, or prior to an amendment thereto, that does not conform with one or more development regulations in the current zoning ordinance.

Nonconforming Use means a use of land, water, building or structure that existed lawfully before November 15, 1973, or prior to an amendment thereto, that does not conform with the use restrictions in the current ordinance.

Lastly, correct the spelling of 'nonconforming' where found throughout the code.

IV. Woodland Overlay

The comprehensive plan adopted in 2025 identified woodland areas of significance to protect (see Comprehensive Land Use Plan, page 41; goals set on page 45; and the Future Land Use Map). This is done by not allowing clearcutting and requiring selective tree removal and addressing site preparation. To do so, those areas identified in the plan, and identified on the zoning map, will be regulated by a Woodland Overlay, one of several overlays in the code to protect environmentally sensitive areas, such as the Wetland Overlay, Bluff Protection Overlay, Ridges and Swales Overlay, etc.

Create **Sec. 66.0347, Woodland Overlay District** *[And add to the Table of Contents]*

This district serves to protect the village's tree canopy from destruction, aid in climate regulation, air and water purification, soil conservation, provide essential habitat and food sources for wildlife, and enhance the natural beauty of the village.

(1) Determination. The location of the woodlands in the Woodland Overlay District are those woodlands identified on the Future Land Use Map in the village's comprehensive plan.
(2) Requirements.

(a) Buildings and structures shall not be placed, to the greatest practical extent, on those portions of a lot designated Woodland Overlay District. If there is not a building site, that meets setback requirements, on the lot outside the woodland area, a portion of the woodland area may be used for development upon approval of the Plan Commission upon finding no practical building site exists outside the woodland area.

(b) If, upon approval by the Plan Commission in sub. (a) above, development is allowed in a woodland overlay area, no trees may be removed beyond the edge of the tree canopy adjacent to the building or structure.

(c) No roads or driveways shall be installed in the Woodland Overlay District except those necessary to serve an approved building site. In the event such road or driveway is necessary, the road or driveway shall not exceed the minimum width required by this code, and no trees beyond the minimum width of the road or driveway shall be removed, unless such tree removal has been approved by the Plan Commission. The Plan Commission may consult with a registered professional forester, certified forester, or registered landscape engineer to determine if tree removal is required, how to protect the tree canopy or root structure, or other information necessary to allow the road or driveway to be installed while protecting the woodland cover; the applicant shall pay the costs of such consultation.

(d) Woodlands shall not be clear cut, thinned, uprooted, removed or topped except as allowed above or as recommended to prevent disease, the spread thereof, or to control invasive species. A special cutting plan prepared by a registered professional forester, certified forester, or registered landscape engineer shall be submitted to the village and approved by village staff prior to removing woodland vegetation to address disease and invasive species concerns.

Amend **Sec. 66.030 Establishment**, to correct the number of Overlay Districts: *[And add the Historic District Overlay and Woodland Overlay to the text box]*

Sec. 66.0300 Establishment

For the purpose of this chapter, the Village of Sister Bay is hereby divided into ten (10) basic use districts and ~~seven~~ (~~7~~ 9) overlay districts. The names of those districts follows

V. Family Living Arrangements

Wis. Stats. §62.23(7)(i) addresses 'Community and Other Living Arrangements'. Wis. Stats. §62.23(7)(i)2r.3 states 'Community and Other Living Arrangements', and includes 'Adult Family Homes', with 8 or fewer residents, is allowed to locate in *any* residential zone, without a special permit (sub 7 defines that to include 'conditional use permit'); 2r.4 says 9-15 residents is entitled to locate in any R-1 or R-2 zone, by special permit (conditional use); 2r.5 says 16 or more residents is allowed in residential zones by special permit (conditional use). (There are further restrictions so the reader is encouraged to review the statutes.)

Furthermore, Stats. §46.03(22) defines 'Community Living Arrangement for Adults'; §48.743(1) defines 'Community Living Arrangement for Children'; §48.02(6) defines 'Foster Home'; and 'Adult Family Home', is defined in §50.01(1).

Foster homes that are the primary domicile of the foster parent are allowed in all residential zones; adult family homes are allowed in all residential zones without special permit (conditional use). But statutes do say when its 8 or more, they need the special permit.

Here's the issue(s): i. We define 'Community Living Arrangements', so first off, we should make our terminology consistent with state statutes and wherever 'Community Living Arrangements' appear in the code, it should be rewritten as 'Community *and Other* Living Arrangements'. ii. Our definition does not include 'Adult Family Homes' (and we do not allow them anywhere), so we need to include them in the definition and allow them in the code. iii. Where we allow them is inconsistent with statutes, so that needs to be corrected.

Where the code allows or does not allow them compared to statutes:

- Ch. 66 allows them in R-1, R-2, R-3, and CS-1 if <8 as a permitted use, but we need to include that in R-4.
- Those same districts also allow 9-20 persons, by conditional use permit. First, that needs to be changed to 9-*15*, and just be allowed, by conditional use, in R-1 and R-2.
- We do not address 16 or more, but statutes say this is allowed in any residential zone, by special permit (conditional use), so this needs to be added to R-1, R-2, R-3, R-4 and CS-1.

Our definition for 'Family Day Care Home' is also inconsistent with statutes and needs to be corrected.

Amend **Sec. 2000 General Definitions,** as follows:

Adult Family Home

A private residence to which all of the following apply:

(1) Care and maintenance above the level of room and board but not including nursing care are provided in the private residence by the care provider whose primary domicile is this residence for 3 or 4 adults, or more adults if all of the adults are siblings, each of whom has a developmental disability, as defined in Wis. Stats. §51.01(5), or, if the residence is licensed as a foster home, care and maintenance are provided to children, the combined total of adults and children so served being no more than 4, or more adults or children if all of the adults or all of the children are siblings; and,

(2) The private residence was licensed under Wis. Stats. §48.62 as a foster home for the care of the adults specified in sub(a) at least 12 months before any of the adults attained 18 years of age.

And also includes a place where 3 or 4 adults who are not related to the operator reside and receive care, treatment or services that are above the level of room and board and that may include up to 7 hours per week of nursing care per resident.

Community and Other Living Arrangements

~~Means any of the following facilities: child welfare agencies group home for children and community-based residential facilities; but does not include adult family homes, day care centers, nursing homes, general hospitals, special hospitals, prisons and jails.~~ The location of a community living arrangement for adults as defined in Wis. Stats. §46.03(22); a community living arrangement for children, as defined in §48.743(1); a foster home, as defined in in §48.02(6); or an adult family home, as defined in §50.01(1), or their successor statutes.

Community Living Arrangement for Adults

A community-based residential facility as defined in Wis. Stats. §50.01(g) or its successor statute.

Community Living Arrangement for Children

As defined by Wis. Stats. §48.743(1) or its successor statute, a residential care center for children and youth or a group home

[Realphabetize] Community Based Residential Facility (CBRF)

As defined in Wis. Stats. §50.01 or its successor statute as a ~~A~~ place where 5 or more unrelated ~~people~~ adults who are not related to the operator or administrator who dot require care above intermediate level nursing care reside and receive care, treatment or services that are above the level of room and board but that include no more than ~~live together in a community setting. Services provided include room and board, supervision, and support services, and may include up to~~ 3 hours of nursing care per week per resident.

Family Day Care Home

A dwelling licensed as a day care center by the State of Wisconsin pursuant to Wis. Stats. §48.65, where care is provided for 4 or more children ~~not more than eight children~~ under the age of 7 years for less than 24 hours per day. All structures shall be located a minimum of 100 feet from any residentially zoned property.

Foster Home

Any facility operated by a person required to be licensed by ~~section~~ Wis. Stats. §48.62, or its successor statute, that provides care and maintenance for no more than four children ~~unless all children are siblings~~ or, if necessary to enable a sibling group to remain together, for no more than 6 children or, if the state rules permits different number of children.

Amend **Sec. 66.0311,** (R-1) as follows: *[And realphabetize]*

(1) Permitted Uses.
- (a) Single-family dwellings, including short-term rentals.
- (b) Licensed community and other living arrangements, which have a capacity for eight (8) or fewer persons, subject to the limitations set forth in Wis. Stats. §62.23(7)(i).
- (c) ~~Licensed foster family homes subject to the regulations set forth in Wis. Stats. §48.62.~~ [Because they are allowed under (b) above.]
- (d) Public parks.
- (e) Essential services, municipal buildings and facilities.

(2) Permitted Accessory Uses.

[See Sec. 66.0501, Accessory Uses and Structures]
- (a) Detached garages shall not be used, rented or leased to any individual who is not the property owner or an occupant residing on the property.
- (b) Ground-mounted and building-mounted earth station dish and terrestrial antennas.
- (c) Home occupations and professional home offices. *[See Sec. 66.0501(4)]*
- (d) Private swimming pools.
- (e) Private tennis courts.
- (f) Solar collectors attached to the principal structure.
- (g) Any use customary and incidental to the above permitted uses as determined by the Zoning Administrator and the Plan Commission Chair.

(3) Conditional Uses.
- (a) Bed and breakfast establishments as provided for in Wis. Stats. §50.51(b) and Chapter HSS 197 of the Wisconsin Admini~~ni~~strative Code, or its successor code.
- (b) Licensed community and other living arrangements ~~based residential living facilities~~, which have a capacity of at least nine (9) ~~but no more than twenty (20)~~ persons.

(c) Private parks and playgrounds.

Amend **Sec. 66.0312,** (R-2) as follows: *[And realphabetize]*

(1) Permitted Uses.
(a) Single-family dwellings, including short-term rentals.
(b) Licensed community and other living arrangements, which have a capacity for eight or fewer persons, subject to the limitations set forth in Wis. Stats. §62.23(7)(i).
(c) ~~Licensed foster family homes subject to the regulations set forth in Wis. Stats. §48.62.~~
(d) Public parks.
(e) Essential services, municipal buildings and facilities.
(f) Residential condominiums, and multiple family dwelling units.
(g) Boarding houses.
(h) Licensed family day care homes subject to the regulations set forth in Wis. Stats. §48.65.
(i) Duplexes.

(2) Permitted Accessory Uses.
[See Sec. 66.0501, Accessory Uses and Structures]
(a) Detached garages shall not be used, rented or leased to any individual who is not the property owner or an occupant residing on the property.
(b) Ground-mounted and building-mounted earth station dish and terrestrial antennas.
(c) Home occupations and professional home offices. *[See Sec. 66.0501(d)]*
(d) Private swimming pools.
(e) Private tennis courts.
(f) Solar collectors attached to the principal structure.
(g) Any use customary and incidental to the above-mentioned permitted uses as determined by the Zoning Administrator and the Plan Commission Chair.

(3) Conditional Uses.
(a) Bed and breakfast establishments as provided for in Wis. Stats. §50.51(b) and Chapter HSS 197 of the Wisconsin Administrative Code, or its successor code.
(b) Licensed community and other living arrangements ~~-based residential facilities~~ which have a capacity of at least nine (9) ~~but no more than twenty (20)~~ persons.

Amend **Sec. 66.0313,** (R-3) as follows: *[And realphabetize]*

(1) Permitted Uses.
(a) Single-family dwellings, including short-term rentals.
(b) Licensed community and other living arrangements, which have a capacity for eight (8) or fewer persons, subject to the limitations set forth in Wis. Stats. §62.23(7)(i).
(c) ~~Licensed foster family homes subject to the regulations set forth in Wis. Stats. §48.62.~~
(d) Public parks.
(e) Essential services, municipal buildings and facilities.

(2) Permitted Accessory Uses.
[See Sec. 66.0501, Accessory Uses and Structures]
(a) Detached garages shall not be used, rented or leased to any individual who is not the property owner or an occupant residing on the property.
(b) Ground-mounted and building-mounted earth station dish and terrestrial antennas.
(c) Home occupations and professional home offices. *[See Sec. 66.0501(4)]*
(d) Private swimming pools.

(e) Private tennis courts.
(f) Solar collectors attached to the principal structure.
(g) Any use customary and incidental to the above permitted uses as determined by the Zoning Administrator and the Plan Commission Chair.

(3) Conditional Uses.
(a) Bed and breakfast establishments as provided for in Wis. Stats. §50.51(b) and Chapter HSS 197 of the Wisconsin Administrative Code, or its successor code.
(b) Licensed community based residential living facilities, which have a capacity of at least ~~nine (9)~~ sixteen (16) but no more than twenty (20) persons.
(c) Licensed family day care homes subject to the regulations set forth in Wis. Stats. §48.65.

Amend **Sec. 66.0314,** (R-4) as follows:

(1) Permitted Uses.
(a) Single-family dwellings.
(b) Public parks.
(c) Essential services, municipal buildings and facilities.
(d) The R-4 Zoning District shall consist of single family, duplex, townhouse and apartment dwelling units or any combination thereof at a percentage mix as permitted by the Plan Commission. Transient housing is not permitted.
(e) Licensed community and other living arrangements, which have a capacity for eight (8) or fewer persons, subject to the limitations set forth in Wis. Stats. §62.23(7)(i).

(2) Permitted Accessory Uses.
[See Sec. 66.0501, Accessory Uses and Structures]
(a) Detached garages shall not be used, rented or leased to any individual who is not the property owner or an occupant residing on the property.
(b) Ground-mounted and building-mounted earth station dish and terrestrial antennas.
(c) Home occupations and professional home offices. *[See Sec. 66.0501(4)]*
(d) Solar collectors attached to the principal structure.
(e) Any use customary and incidental to the above permitted uses as determined by the Zoning Administrator and the Plan Commission Chair.

(3) Conditional Uses.
(a) Private parks and playgrounds.
(b) Utility substations, municipal wells, pumping stations and towers [Must be a minimum of 50 feet from any side or rear lot line.]
(c) Solar energy collectors erected as an accessory structure.
(d) Utilities requiring a building.
(e) Antennas over 35 feet tall.
(f) Licensed community based residential living facilities, which have a capacity of at least sixteen (16) but no more than twenty (20) persons.

Amend **Sec. 66.0315,** (CS-1) as follows: *[And realphabetize]*

(1) Permitted Uses.
(a) Single-family dwellings, including short-term rentals.
(b) Licensed community-based residential living facilities, which have a capacity for eight (8) or fewer persons, subject to the limitations set forth in Wis. Stats. §62.23(7)(i).
(c) ~~Licensed foster family homes subject to the regulations set forth in Wis. Stats. §48.62.~~

(d) Public parks.
(e) Essential services, municipal buildings and facilities.
(f) General farming, including but not limited to apiculture, floriculture, forage crop production, forestry, grain production, grazing, orchards, vineyards and truck farming.
(g) Horse stables.
(h) Tree farms and woodlots.
(i) Existing dwellings not accessory to any farm operation or a dwelling remaining after farm consolidation.
(j) Indoor institutional uses.
(k) Churches.
(l) Keeping and raising of domestic stock for agribusiness, show, breeding, boarding, or other purposes incidental to the principal use of the premises shall be limited to no more than three (3) non-domestic animals per acre.

(2) Permitted Accessory Uses.

[See Sec. 66.0501, Accessory Uses and Structures]

(a) Detached garages and storage sheds. Detached garages shall not be used, rented or leased to any individual who is not the property owner or an occupant residing on the property.
(b) Ground-mounted and building-mounted earth station dish and terrestrial antennas.
(c) Home occupations and professional home offices. *[See Section 66.0501(4)]*
(d) Private swimming pools.
(e) Private tennis courts.
(f) Solar collectors attached to the principal structure.
(g) Any use customary and incidental to the above permitted uses as determined by the Zoning Administrator and Plan Commission Chair.
(h) One roadside stand, no larger than 200 square feet in area, for the sale of farm products produced on the premises. Any such stand shall conform to the farm stand setbacks set forth in Sec. 66.0315(6)(a) and to the sign, parking and other provisions of this Zoning Code.

(3) Conditional Uses.

(a) Assembly Halls.
(b) Bed and breakfast establishments as provided for in Chapter HSS 197 of the Wisconsin Administrative Code, or its successor code.
(c) Licensed community and other living arrangements, which have a capacity of at least ~~nine (9)~~ sixteen (16) but no more than twenty (20) persons.
(d) Licensed family day care homes subject to the regulations set forth in Wis. Stats. §48.65.

VI. Miscellaneous

Other miscellaneous amendments address lighting; a need to amend the Site Plan and Architectural Review section to reduce the permitting process for retail shops in a retail center; make code language consistent with statutes as to what body is the 'Zoning Board'; and to clarify the CS-1 district is a residential zone, which illustrates compatibility with the future land use map adopted by the Board in early 2025.

Amend **Sec. 66.0809 Outdoor Lighting,** as follows:

(2) General Requirements.

(a) All outdoor lighting fixtures installed by November 13, 2004, and thereafter maintained upon private or public residential, business, and institutional property shall comply with the following standards:

1. The maximum allowable light trespass shall be 0.5 horizontal foot-candles 4 feet above ground. The point of measurement of this offending light shall be at the property line for residential, commercial, institutional or public use. The measurement shall not include any ambient natural light.
2. Light sources shall be shielded or installed so that there is not a direct line of sight between the light source and its reflection and at a point five feet or higher above the ground of adjacent property and public streets. The light source shall not be of such intensity to cause discomfort or annoyance.
3. Any outdoor lighting fixture installed on a parking lot shall ~~use metal halide lamps~~ use dark sky approved lighting, in particular a hood and lens that are shielded to direct light downward.
4. String lights, which are decorative lights consisting of a series of small bulbs connected by a wire or cord, shall use warm light bulbs. For purposes of this section of the code, a warm light bulb is a low color temperature bulb whose color appears yellowish-white to orange and is intended to create a relaxing environment. Warm light does not exceed 2000-3000K.

Amend **Sec. 66.1050 Site Plan and Architectural Review**, as follows:

(b) For the purpose of promoting compatible development, stability of property values, and to prevent impairment or depreciation of property values, no person shall commence any use or erect any structure without first obtaining the approval of detailed site and architectural plans, as set forth in this section prior to the issuance of a Zoning Permit. Except those uses in the Country Walk Shops commercial center development where a use is changed solely to a retail use, ~~T~~the Plan Commission shall review architectural plans and site plans showing existing and proposed structures, neighboring uses, parking areas, driveway locations, sidewalk widths and locations, loading and unloading areas, highway access, traffic generation and circulation, drainage, the utilization of landscaping, existing natural resources and the proposed operation in all districts. However, this process shall not be required in the CS-1 District, unless the development site contains wetlands as shown on either the July 1, 1992, Final Wetlands Inventory Map issued by the Wisconsin Department of Natural Resources, or its successor map, or wet areas as shown on the Village's latest topographic maps or woodlands (this is not the same as the Woodland Overlay District) as shown on the most recent aerial photos of the Village. Single-family and two-family dwellings shall not be subject to site plan and architectural review by the Plan Commission, however, if in the opinion of the Zoning Administrator, such residential plans exhibit design or appearance characteristics to require architectural review, the Zoning Administrator shall refer the application and such written opinion to the Plan Commission for review.

Amend **Sec. 66.1520 Development Agreement Required**, as follows:

(1) The applicant shall be required to enter into a Development Agreement with the Village at the time of approval of an application for a Zoning Permit for all projects and developments listed below:
   (a) All new construction other than individual single-family homes, which are not part of an active subdivision or condominium plat.
   (b) Commercial projects, including those projects in existing buildings involving a change of use or occupancy, expansion, or where the building is non-conforming for setback, height or parking. This does not include those uses in the Country

Walk Shops commercial center development where a use is changed solely to a retail use, or, existing nonconforming commercial buildings which elect to replace siding and existing windows or install new window openings.

(c) The Plan Commission shall have the authority to exempt an applicant from securing a Development Agreement with a three-fourths (3/4) majority of the Plan Commission.

Amend **Sec. 66.1500 Plan Commission**, as follows:

(1) Composition. The Village Plan Commission shall consist of three (3) Trustees, four (4) citizens and one (1) citizen with recognized experience who shall serve as an ex-officio member of the Plan Commission. The Village President will appoint the Plan Commission Chairperson, subject to Board approval. The citizen and Trustee members of the Plan Commission shall be appointed by the President, subject to confirmation by the Board of Trustees, for staggered terms of three (3) years commencing on May 1st of each year.

(2) Powers and Duties. The Plan Commission shall perform such duties as are prescribed by Wis. Stats. §62.23, and to that extent are deemed the Zoning Board, and has such further powers as may be delegated to it by the Wisconsin Statutes and Village ordinances. (Please note the Zoning Board is different from the Zoning Board of Appeals.) The Plan Commission shall have the duties of making reports and recommendations related to the planning and development of the Village to public officials, agencies, public utility companies, civic, educational, and professional and other organizations, and citizens. The Plan Commission may employ consultants, to the extent that the Village budget allows, who may prepare surveys and studies, prepare plans and recommendations, and perform other duties assigned by the Plan Commission. In general, the Plan Commission shall have such powers as may be necessary to enable it to perform its function and promote municipal planning. Decisions, interpretations, and recommendations of the Plan Commission shall take into account existing local, state and federal ordinances, statutes 65 and regulations, together with recent modifications to those legal sources.

Amend **Sec. 66.0315, CS-1 Countryside District,** as follows:

Sec. 66.0315 CS-1 Countryside District

The Countryside (CS-1) District provides for the continuation of low-density residential housing and general, non-intensive, agricultural and related use in those areas suited to farming. The intent is to conserve areas with adequate soil types, drainage and topography for low-density residential use and to preserve the rural landscape from an uneconomical scattering of residential development in such areas. This district may appear as a residential land use on the comprehensive plan's Future Land Use Map.

SECTION 2. Available for Inspection.

A copy of this ordinance shall be permanently on file and open to public inspection in the Village Administration Office two weeks prior to its adoption and after its enactment.

SECTION 3. Ordinances in Conflict.

All other ordinances in conflict herewith be, and the same hereby are repealed.

SECTION 4. Effective Date.
This ordinance shall take effect and be in full force from and after February 18, 2026.

SECTION 5. Severability.
If a court of competent jurisdiction adjudges any section, clause, provision, or portion of this ordinance unconstitutional or invalid, the remainder of this ordinance shall not be affected thereby.

VILLAGE OF SISTER BAY
By:

_____
Nate Bell, Village President

ATTEST:
_____
Julie Thyssen, Village Clerk

Ayes: _____ Nays: _____

Filed/Posted: ____February 17, 2026_____
Village Administration Office, 2383 Maple Drive
Sister Bay Post Office, 10685 N Bay Shore Drive
Sister Bay Liberty Grove Library, 2323 Mill Road
Effective Date: February 18, 2026

Draft Date: JAS/12/31/2025

STAFF REPORT
Date: January 27, 2026

To: Plan Commission

Re: Zoning Permit Application; Review/Approve Modifications to Existing Tower

Author(s): Benjamin Andrews, Village/Zoning Administrator

APPLICATION INFORMATION

Applicant: Verizon Wireless, represented by Jonathan Leeb of Terra Consulting Group.

Address: 2530 S Bay Shore Dr, Sister Bay, WI 54234

Parcel #: 1810006312844G1

PRIOR ACTION/REVIEW

On January 5, 2026, Jonathan Leeb of Terra Consulting Group contacted the Village of Sister Bay regarding a proposed Class 2 collocation at an existing mobile service tower facility located at 2530 S Bay Shore Drive. The representative was notified by the Village of Sister Bay that a Zoning Permit Application and Plan Commission Review was required. On January 19th, a Zoning Permit Application was received.

BACKGROUND INFORMATION

The existing facility consists of a 199-foot guyed tower situated within a fenced compound on the property. Verizon Wireless seeks to:

1) mount and collocate its antennas and associated equipment at the 155-foot centerline of the existing tower; and
2) install its BTS equipment cabinet cluster and an emergency backup generator at grade within the existing fenced compound

According to the applicant, the proposed work will not result in a substantial modification to the existing tower facility and complies with Wisconsin Statutes §66.0404 governing mobile service facility siting.

REGULATORY CONTEXT

The Village of Sister Bay Zoning Code, Section 66.0504, establishes standards for wireless telecommunication sites. The ordinance requires that all wireless facilities be installed in a manner that minimizes risks to public safety, maintains neighborhood character, and complies with applicable federal and state laws.

Collocation on existing towers is generally preferred and may be permitted without a public hearing if:

1) there is no increase tower height;
2) panel antennas must not exceed 60 inches in height and 18 inches in width; and
3) dish antennas must not exceed three feet in diameter.

Generators must meet Village noise regulations, and applicants must provide proof of insurance and indemnification. Notification to property owners within 300 feet of the site is required.

REVIEW

- The proposed collocation meets the ordinance's intent and standards.
- The antennas will be mounted at the 155-foot centerline on the existing 199-foot tower, which remains below the maximum allowable height of 200 feet. No increase in tower height is proposed.
- The equipment cabinets and generator will be located within the existing fenced compound, minimizing additional visual impact.
- The applicant has provided a passing structural analysis confirming the tower's capacity to support the proposed installation.
- The generator must comply with Village noise standards.
- FAA clearance documentation should be verified to ensure compliance with aviation safety requirements.
- The applicant must also confirm that notices were mailed to property owners within 300 feet and provide proof of insurance as required by ordinance.

POTENTIAL CONDITIONS

Village Staff outline the potential following conditions associated with the approval of the zoning permit for the proposed Class 2 collocation:

1. Compliance with all applicable federal, state, and local regulations, including Standard Permit Conditions.
2. Submission of FAA clearance documentation for the existing tower height.
3. Verification that the generator meets Village noise regulations.
4. Provision of a certificate of insurance to the Village.
5. Confirmation of public notification to property owners within 300 feet of the site.

The proposed collocation represents a minimal visual and physical impact while improving wireless service coverage in the Village. Approval is consistent with Village policy favoring collocation over new tower construction.

POLICY ALTERNATIVE(S)

The Plan Commission could take, but is not limited to, the following actions:

"I move to..."

- Approve
- Approve with Conditions
- Deny
- Table

ATTACHMENTS

- Communication with Applicant
- Zoning Permit Application - Cover Letter
- Zoning Permit Application
- Zoning Permit Application – Structural Analysis Report
- Zoning Permit Application – Site Plan

Ben Andrews

From: Ben Andrews
Sent: Friday, January 9, 2026 3:07 PM
To: 'Jonathan Leeb'
Cc: Cindi Sievertson
Subject: RE: VZ Macro- Sister Bay- Village of Sister Bay Permitting Inquiry (2530 S Bay Shore Dr, Sister Bay, WI 54234)

Dear Mr. Leeb,

Thank you for your inquiry regarding Verizon's proposed collocation of equipment and antennas at the existing mobile service tower facility located at 2530 S Bay Shore Dr, Sister Bay, WI 54234 (Parcel #1810006312844G1). After reviewing the circumstances and the Village of Sister Bay Zoning Code, it has been determined that the proposed collocation would generally pose minimal adverse visual effects.

However, please note the following requirements:

- Zoning Permit: A zoning permit is required for this installation.
- Plan Commission Review: The Plan Commission will review the proposal to ensure compliance with applicable standards.
- Public Hearing: A public hearing is not required for this type of collocation.
- Reference: Please refer to Sec. 66.0504(2)(b) – Wireless Telecommunication Sites of the Village's Zoning Code for specific provisions.

To proceed, please submit the necessary Standard Zoning Permit application along with a site plan showing the proposed equipment layout and compliance with screening requirements. This has been provided, but should be included in the application. If you have any questions or need assistance with the application process, feel free to contact me. My cell is 920-421-0089.

Regards,

Benjamin Andrews
Village Administrator/Zoning Administrator
Village of Sister Bay
PO Box 769
Sister Bay, WI 54234
administrator@sisterbaywi.gov
Population 1205 *(per 2024 DOA estimate)*

From: Jonathan Leeb <[redacted]m>
Sent: Monday, January 5, 2026 9:38 AM
To: Ben Andrews <administrator@sisterbaywi.gov>
Cc: Cindi Sievertson [redacted]
Subject: VZ Macro- Sister Bay- Village of Sister Bay Permitting Inquiry

Village Administrator,

My name is Jonny Leeb, and I am writing on behalf of Verizon regarding a proposed collocation of equipment/antennas at an existing mobile service tower facility located at 2530 S Bay Shore Dr, Sister Bay, WI 54234, parcel number 1810006312844G1. Verizon does not currently have equipment located at this tower site.

Verizon seeks to mount its antennas and associated tower equipment at the 155 foot centerline on the existing 181-foot (top of steel) self-support tower. The tower-mounted equipment will connect to a cluster of outdoor cabinets and a standby generator located near the base of the tower, all within the existing fenced compound.

I have been in communication with Brett Guilette, on several similar projects outside of the Village but within Door County and he has been issuing Electrical Permits for theses types of projects. Could you please confirm whether any Village of Sister Bay approvals or permits are require other then what would be issued by Brett Guilette for this installation? I have attached the full set of project plans.

Thank you for your time and assistance.

Sincerely,

Jonny Leeb

TERRA CONSULTING GROUP
has joined Colliers Engineering & Design

JONNY LEEB
Mobile: [redacted]
Office: [redacted]
https://colliersengineering.com/

TERRA CONSULTING GROUP
has joined Colliers Engineering & Design

Via: Email

January 19, 2026

Ben Andrews
Village Administrator
Village of Sister Bay
PO Box 769

Re: Village Sister Bay Zoning Permit Application Submittal- Proposed Class 2 Collocation upon existing Mobile Service Support Structure Facility - 2530 S Bay Shore Dr, Sister Bay, WI 54234

Parcel ID #(s): 1810006312844G1

Dear Mr. Andrews:

On behalf of Verizon Wireless, enclosed please a completed Village of Sister Bay Zoning Permit Application along with a copy of the project construction drawing and a passing structural analysis for its proposed class 2 collocation at the above- referenced existing mobile service support structure facility.

Verizon is proposing to collocate its antennas and equipment at the 155' centerline upon the existing 199' tall mobile service support structure and install its BTS equipment cabinet cluster and emergency backup generator at grade near the base of the tower within the existing fenced compound. None of the proposed work by Verizon would result in a substantial modification to the existing mobile service tower facility.

Under the State of Wisconsin Mobile Tower Siting Regulations found at Wis. Stat. Sect. 66.0404, the application procedures for mobile service facilities are outlined in specific detail. Under Wis Stat. Sect. 66.0404(3)(b), an applicant for a class 2 collocation is referred to 66.0404(2)(b)(1)-(3), which lists the three (3) requirements for a completed application.

Below is a narrative on these three (3) requirements including specific information describing the proposed Verizon Wireless design at its existing mobile service facility:

1. The name and business address of, and the contact individual of, the applicant.

Applicant:
Cellco Partnership
d/b/a Verizon Wireless
[redacted]
Rolling Meadows, Il[redacted]

Contact Individual:
Jonathan Leeb
Terra Consulting Group
[redacted]
Park Ridge,[redacted]

2. The location of the existing support structure.

2530 S Bay Shore Dr, Sister Bay, WI 54234
Parcel No: 1810006312844G1
Existing Mobile Service Tower Facility Coordinates: 45.186514, -87.134778

The existing mobile service tower facility is situated in the rear of the property, north of S Bay Shore Dr.

3. The location of the proposed mobile service facility.

2530 S Bay Shore Dr, Sister Bay, WI 54234
Parcel No: 1810006312844G1
Existing Mobile Service Tower Facility Coordinates: 45.186514, -87.134778

As the plans depict, Verizon is proposing to collocate its antennas and equipment at the 155' centerline upon the existing 199' tall mobile service support structure and install its BTS equipment cabinet cluster and emergency backup generator at grade near the base of the tower within the existing fenced compound. None of the proposed work by Verizon would result in a substantial modification to the existing mobile service tower facility.

If you should have any questions regarding the enclosed information or project, I can be reached directly at [redacted] or by email at [redacted].

Thank you for your assistance with this request.

Sincerely,

Jonathan Leeb

Jonathan Leeb
On behalf of Verizon Wireless

Enclosures as described

Village of Sister Bay

Standard Zoning Permit Application

Village of Sister Bay

2383 MAPLE DRIVE ▮ SISTER BAY, WI 54234

PHONE: (920) 854-4118 ▮ FAX: (920) 854-9637

E-MAIL: INFO@SISTERBAYWI.GOV

WEB SITE: WWW.SISTERBAYWI.GOV

Is the applicant the property owner? ☐ Yes ☒ No

First name
Jonathan

Last name
Leeb

Applicant Address
[redacted]

Applicant Phone
[redacted]

Contractor Name
Jon Bartell, Verizon Construction Engineer

Contractor Address
[redacted]

Contractor Phone
[redacted]

Contractor Email

[redacted]com

Parcel Identification Number (PIN)

1810006312844G1

Street Address of Property in Sister Bay

2530 S Bay Shore Dr, Sister Bay, WI 54234

Is this property connected to public water? ☐ Yes ☐ No *N/A*

Is this property connected to public sewer? ☐ Yes ☐ No *N/A*

What are you looking for? ☒ Zoning Permit ☐ Conditional use permit ☐ Sign permit ☐ Building permit

Applicant Email

jonathanl@terraltd.com

If you are looking for site plan review, conditional use permit, or a sign permit, you need to CANCEL this form submission and use a different form.

Type of Construction ☐ Single Family Home ☐ Commercial ☐ Fence ☐ Attached Garage ☐ Multi family ☐ Deck ☐ Detached Garage ☐ Shed ☐ Addition (Describe below) ☒ Other (Describe here)

Select one

Please Provide a Brief Description of Your Project

Verizon proposes to mount its antennas and associated tower equipment at the 155 foot centerline on the existing 199 foot tower. The tower mounted equipment will connect to a cluster of outdoor cabinets and a standby generator located near the base of the tower, all within the existing fenced compound. There is no substantial modification proposed to the existing mobile service facility proposed. Class 2 collocation.

Lot Size (Ft.)

15.5' x 18' (Verizon Lease Area)

Total Lot Area

279 SF (Verizon Lease Area) Sq. Ft.

Building Length

N/A

Building Width

N/A

Building Footprint

N/A Sq. Ft.

Number of Stories

N/A

Height (Roof Peak)

Existing 199' tower (top of steel)

Primary roof

Estimated costs

$ 15,000

Type of Construction

Telecom

Before ANY applications will be considered this Permit/Application form must be completed and the following documents must be submitted to the employees in the Village Administration Office.

(The only exception will be "Early Start" Permits)

▯ **The Attached Wetland Acknowledgment must be completed and signed by the property owner.**

▯ **Site Plan,** showing location of all existing and proposed structures with setback distances depicted on the plan. A recent or updated survey may be required after initial review by Staff.

▯ **Architectural Plan**, showing all 4 sides of the building, as it will be constructed. Renderings need to be in color and ACTUAL SAMPLES OF COLORS AND MATERIALS MUST BE SUBMITTED.

▯ **Landscaping Plan**, showing location of all plants, landscaping features, fences, or accessories. A plant species list should be attached and referenced on the plan.

▯ **Parking Plan,** showing location of all parking improvements, pavement markings and signs and the number of parking stalls which will be provided.

▯ **Lighting Plan,** showing location of all exterior lights. Copies of proposed fixtures should be attached, with a calculation of lumens of output from the fixtures. All plans must conform to the Village's performance standards section of the Zoning Code regarding light trespass. Approval by the Plan Commission and/or staff does not constitute an engineering approval, and lights found to be in violation of the Village Code will be required to be removed or replaced at the owner's expense regardless of any approvals received from the Village.

▯ **Drainage Plan**, lots in excess of 1 acre will need to meet State of Wisconsin standards, and require engineering approval. Lots less than 1 acre in size will be evaluated on a case by case basis by staff, and, if appropriate, approved by the Plan Commission.

▯ **Floor Plans including a foundation plan**

▯ **Building Plans, showing the interior of the proposed structure. These plans include HVAC, plumbing, and electrical plans.**

▯ **For New Construction – A Complete Water & Drainage Fixture Unit Listing Must Be Provided – A licensed plumber will need to evaluate your plans, and submit a complete Water and Drainage Fixture Unit List, so that REU calculations can be made by the Utilities Director. Any and all impact fees must be paid and a final Utilities inspection conducted before a water meter will be installed.**

▯ **For Remodeling Projects –** ***Before any permits will be issued*** **a licensed plumber will need to evaluate your plans, and submit a complete Water and Drainage Fixture Unit List so that REU calculations can be made by the Utilities Director. Any and all impact fees must be paid before any remodeling commences.**

▯ **Other plans as requested by Village Staff.**

Thank you for your anticipated cooperation.

If you have any questions regarding impact fees please call the WWTP at 920-854-2246.

If you have any questions regarding Building Permits please call the Building Inspector at 920-495-3232

PLEASE ATTACH THE SITE PLAN IN ATTACHMENTS BELOW.

INSTRUCTIONS

▯ INDICATE north and ENTER the dimensions of the property.

▯ SKETCH the location of the well, septic system (tank/field) and all other buildings present on the property.

▯ SKETCH the location of the proposed project (include dimensions) and SHOW the shortest distance from the project to the:

▯ **Well** ▯ **Adjacent Buildings**

▯ **Edge Of Lake/Stream/Wetland** ▯ **Easements**

▯ **Septic Tank & Drain Field** ▯ **Rear & Side Property Lines**

▯ **Center(line) of Road/Highway** ▯ **Right-of-Way of Road/Highway**

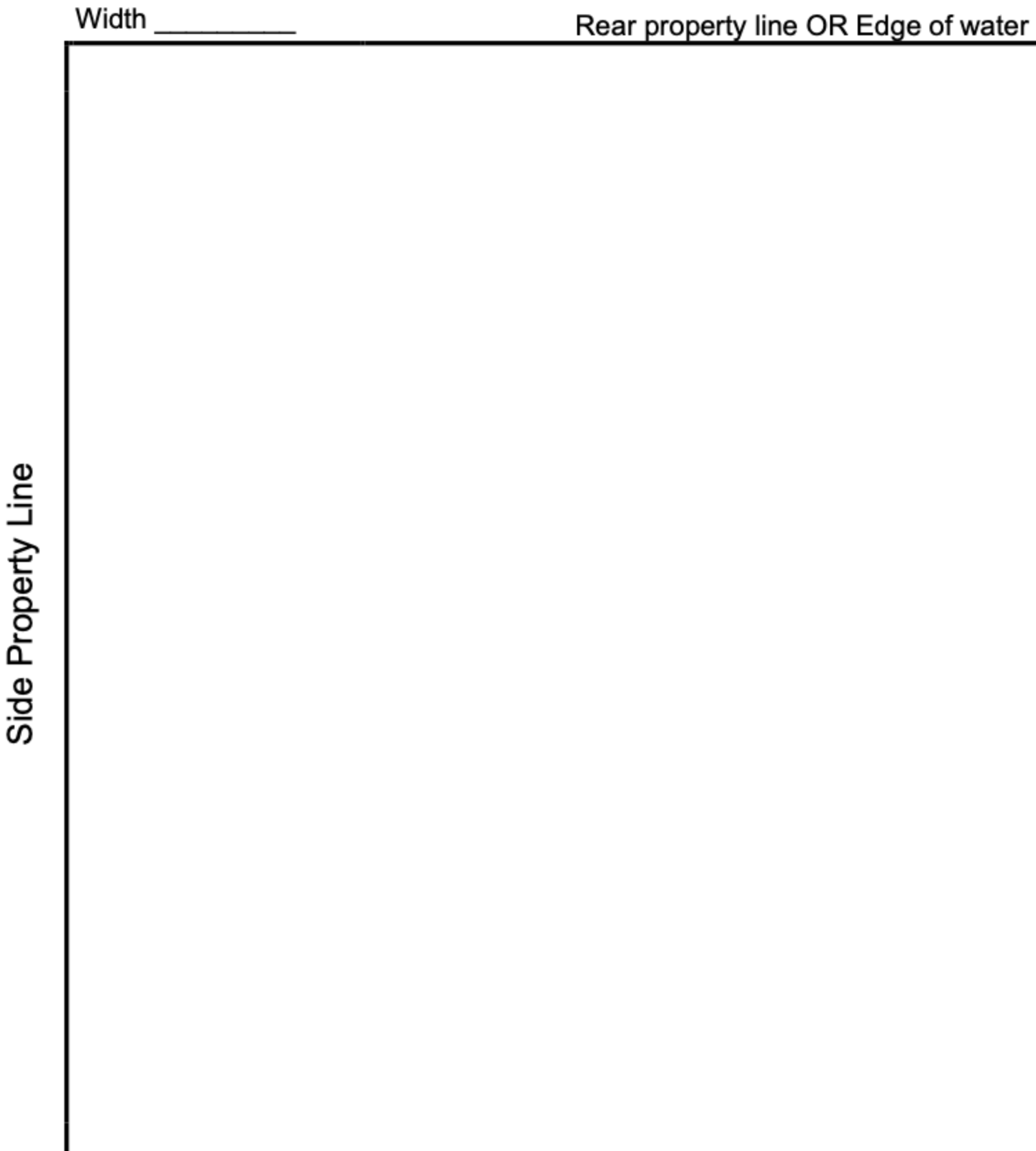
NOTE: When showing distances less than 300 feet, please measure and show distance to the **"nearest foot"** (do not estimate). Distances over 300 feet, may be estimated.

▯ LABEL all abutting roads, highways, lakes, streams or wetlands.

▯ LABEL the "USE" of all buildings shown.

▯ SHOW the outside dimensions of all structures on the property.

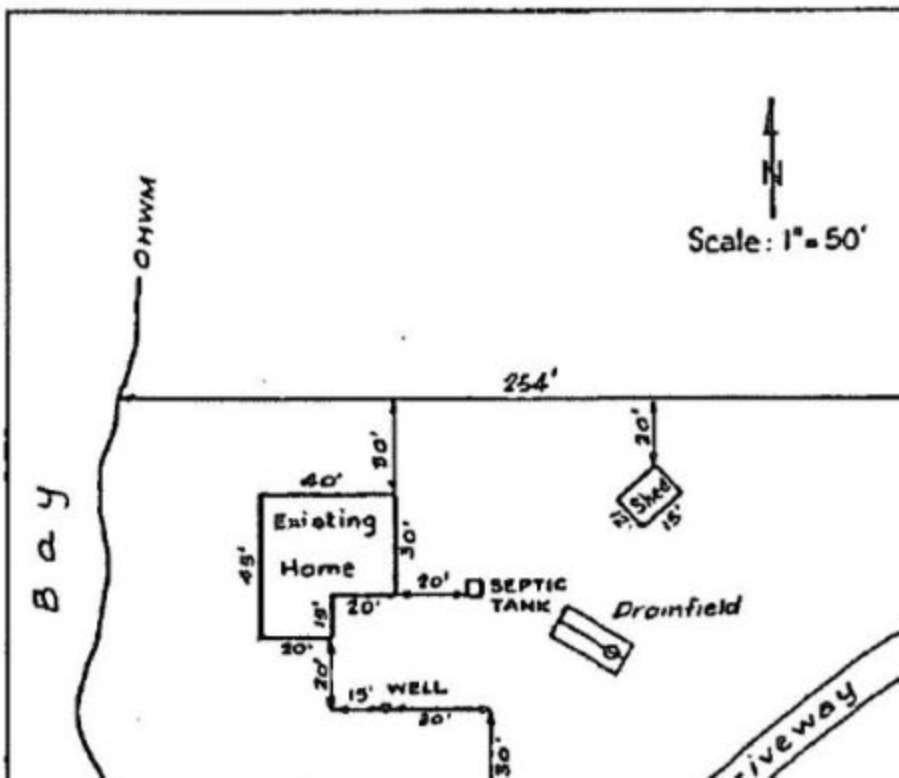
▯ Mark driveway location and length and width on site plan.


Width _____
Rear property line OR Edge of water
Side Property Line

SITE PLAN EXAMPLE

- Boundaries, dimensions, and area of the site.
- Location of public roads and right-of-ways.
- Location of private roads.
- Location of easements.
- Location of navigable waters.
- Location and dimensions of all existing structures.
- Location of existing or proposed well and waste water disposal system.
- Location and dimension of all proposed structures and additions.
- Location of rockholes.

- Location of proposed and existing road access points, parking and loading areas
- Distances from proposed project to:
  - Abutting public roads and right-of-ways.
  - Private roads.
  - Property lines.
  - Well
  - Waste water disposal system.
  - Ordinary high water mark (OHWM) of navigable waters.
- Indicate North arrow.



Please upload all needed attachments

** SEE ATTACHED DOCUMENTS**

According to 2009 Wisconsin Act 373, no permit may be issued until the property owner signs the statement below acknowledging that s/he received the following notice:

You are responsible for complying with state and federal laws concerning construction near or on wetlands, lakes, and streams. Wetlands that are not associated with open water can be difficult to identify. Failure to comply may result in removal or modification of construction that violates the law or other penalties or costs. For more information, visit the Department of Natural Resources wetlands identification web page at http://dnr.wi.gov/wetlands/locating.html or contact the Department of Natural Resources service center.

By signing this form, I acknowledge I have received this notice.

Signature

Quick Reference Official's Contact List:

BENJAMIN ANDREWS – Zoning Administrator - E-Mail: administrator@sisterbaywi.gov / Tele: 920-854-4118

BRETT GUILETTE – Building Inspector - E-Mail: brettg.isllc@gmail.com / Tele: 920-495-3232

I, the undersigned, hereby apply for a Land Use Permit and certify that all the information both above and attached is true and correct to the best of my knowledge. I affirm that all work performed will be done in accordance with the Sister Bay Zoning Code and with all other applicable laws and regulations. I hereby authorize the Zoning Administrator to enter the above-described property for purposes of obtaining information pertinent to my application request and to conduct land use code inspections.

Signature

Payment

For Administration use only

Plan Commission Review ☐ Approve ☐ Decline

CONDITIONS OF APPROVAL

_____

_____

_____

Estimated Impact Fee

_____

Utilities Approval: ☐ Approved ☐ Declined

Zoning Administrator Review

_____

Structural Analysis Report

Structure	: 180 Foot Guyed Tower
VB Site Name	: Sister Bay
VB Site Number	: US-WI-5179
Deal Number	: P-072424
Proposed Carrier	: Cellco Partnership d/b/a Verizon Wireless
Carrier Site Name	: Sister Bay
Carrier Site Number	: 5000975304
Site Location	: 2530 South Bay Shore Drive Sister Bay, WI 54234 (Door County) 45.18651600, -87.13473600
Date	: May 27, 2025
Max Member Stress Level	: 102.6% (Tower) 36.0% (Guy Anchor Foundation) 78.1% (Mast Foundation)
Result	: **CONDITIONAL PASS***

For this analysis to be valid, Verizon must have the existing equipment removed at levels 143.5', 129', 115' and 156.5' before installing the proposed equipment.

Prepared for:

VERTICAL BRIDGE ENGINEERING, LLC

Prepared by:

AZIMUTH ENGINEERING GROUP

Table of Contents

Introduction

We have completed our structural analysis of the proposed equipment installation on the foregoing tower to determine its ability to support the new loads proposed by Cellco Partnership d/b/a Verizon Wireless. The objective of the analysis was to determine if the tower meets the current structural codes and standards with the proposed equipment installation.

Existing Structural Information

The following documents for the existing structure were made available for our structural analysis.

Tower & Foundation Information	Sabre Communications Corporation, Job No. 02-05202, dated June 22, 2001
Geotechnical Information	Coleman Engineering Geotechnical Investigation Job No. G-01127 dated May 22, 2001
Previous Structural Analysis	Vertical Bridge Engineering, LLC, Project No. US-WI-5179, dated September 18, 2024
Existing Equipment Information	Vertical Bridge Collocation Application #P-072424 Version 3, dated April 18, 2025
Tower Reinforcement Information	Tower has not been previously modified

Final Proposed Equipment Loading for Cellco Partnership d/b/a Verizon Wireless

The following proposed loading was obtained from the Vertical Bridge Collocation Application:

Antenna/Equipment					Coax	
Mount (ft)	RAD (ft)	Qty	Antenna	Type	Qty	Size/Type
155.0	-	**3**	**Sector Frames**	**Mount**	**3**	**1.625" Hybrid**
	155.0	**3**	**Ericsson AIR 6419 B77D**	**Panel**		
		3	**Andrew NNSS- 65C-HG- R2B**	**Panel**		
		3	**Ericsson AIR 3283**	**Panel**		
		3	**Ericsson RRU 4490**	**RRU**		
		3	**Raycap RVZDC-3315-PF-48**	**Squid**		

Notes:
1. Proposed equipment shown in bold.
2. Other existing loading can be found on the tower profile attached.
3. Nsight's remaining reserved rights of 27,000 sq.in. are considered in the analysis.

Design Criteria

The tower was analyzed using tnxTower (Version 8.3.0.5) tower analysis software using the following design criteria.

State	Wisconsin
City/County Building Code	IBC 2015
TIA/EIA Standard Code	TIA-222-H
Basic Wind Speed	105 mph (V_{ult})
Basic Wind Speed w/Ice	50 mph w/1.50" Ice
Exposure Category	D
Topographic Category (height)	1 (0 ft.)
Risk Category	II
S_s	0.046
Seismic Design Category	A

Analysis Results

Based on the foregoing information, our structural analysis determined that the existing tower **is structurally capable of supporting the proposed equipment loads without modification**. The existing tower foundation has also been evaluated and **were found to be structurally capable of supporting the proposed equipment load**.

Assumptions

The below assumptions are true, complete, and accurate.

1. The existing tower has been maintained to manufacturer's specifications and is in good condition.
2. Foundations are considered to have been properly designed for the original design loads.
3. All member connections are considered to have been designed to meet the load carrying capacity of the connected member.
4. Antenna mount loads have been estimated based on generally accepted industry standards.
5. The mounts for the proposed antennas have been analyzed and designed by others.
6. See additional assumptions contained in the report attached.
7. Tower is within acceptable engineering tolerance at 105%.
8. Foundations are within acceptable engineering tolerance at 110%.

Conclusions

The existing tower described above **has sufficient capacity** to support the proposed loading based on the governing Building Code. The existing tower foundation has also been evaluated and **is acceptable**. A seismic analysis has been performed on this tower and does not control.

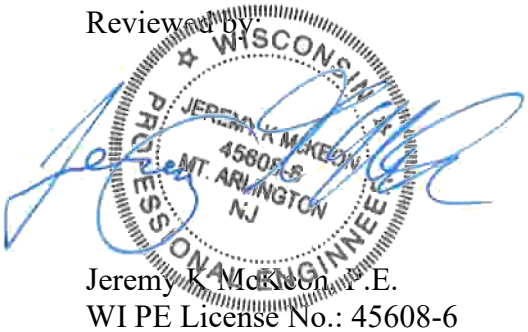
We appreciate the opportunity of providing our continuing professional services to you. If you have any questions or need further assistance, please call us anytime at 636-373-2968.

Sincerely,

Analysis by:

Silviu Sacuiu
Structural Engineer

Reviewed by:



Jeremy K McKeon, P.E.
WI PE License No.: 45608-6

Standard Conditions

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but not necessarily limited, to:

- Information supplied by the client regarding the structure itself, the antenna and transmission line loading on the structure and its components, or relevant information.

- Information from drawings in possession of Azimuth Engineering Group or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to Azimuth Engineering Group and used in the performance of our engineering services is correct and complete. In the absence of information contrary, we consider that all structures were constructed in accordance with the drawings and specifications and are in an un-corroded condition and have not deteriorated; and we, therefore consider that their capacity has not significantly changed from the original design condition.

All services will be performed to the codes and standards specified by the client, and we do not imply to meet any other code and standard requirements unless explicitly agreed to in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes and standards, the client shall specify the exact requirements. In the absence of information to the contrary, all work will be performed in accordance with the revision of ANSI/TIA/EIA-222-H requested.

All services are performed, results obtained, and recommendations made in accordance with the generally accepted engineering principles and practices. Azimuth Engineering Group and its affiliates are not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

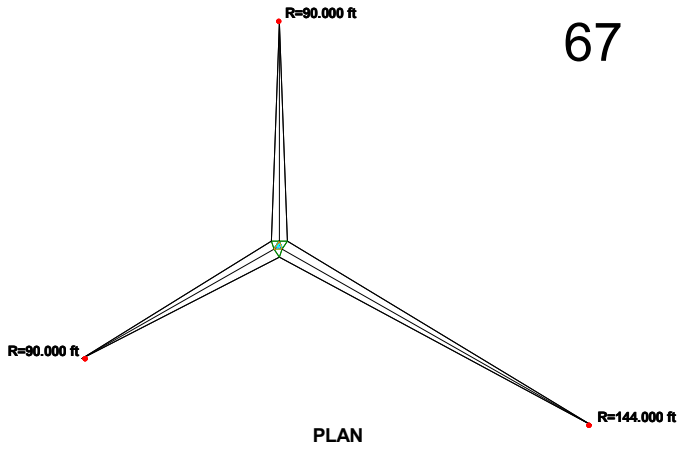
Disclaimer of Warranties

The engineering services by Azimuth Engineering Group in connection with this Structural Analysis are limited to a computer analysis of the tower structure, size and capacity of its members. Azimuth Engineering Group does not analyze the fabrication, including welding, except as may be expressly included in this report.

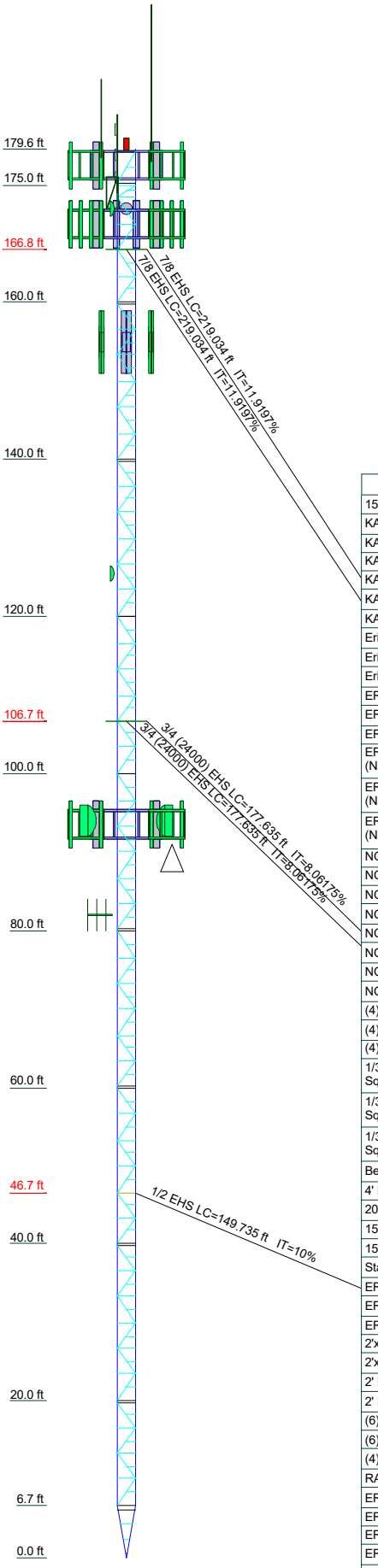
The purpose of this report is to assess the feasibility of adding appurtenances usually accompanied by transmission lines. Any mention of structural modifications are reasonable estimates and should not be used a precise construction document. Precise modification drawings are obtainable from Azimuth Engineering Group but are beyond the scope of this report.

Azimuth Engineering Group makes no warranties, express or implied, in connection with this report and disclaims any liability arising from material, fabrication and erection of this tower, or installation and compliance with legal and permitting requirements of the proposed equipment. Azimuth Engineering Group will not be responsible whatsoever for or on account of punitive, special, consequential or incidental damage sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of Azimuth Engineering Group pursuant to this report will be limited to the total fee received for preparation of this report.

Attachment 1: Calculations



Section		T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12
Legs				SR 2 1/4	SR 2 1/2		SR 1 3/8		SR 2 3/4				
Leg Grade								A572-50					
Diagonals	N.A.						SR 1 1/2	SR 1 1/4	SR 1	SR 1 1/4	SR 1	SR 1 1/4	N.A.
Diagonal Grade	N.A.							A36					
Top Girts	12 x 3/8			N.A.			SR 7/8						
Bottom Girts	12 x 3/8		B	2x1/2			SR 7/8						
Horizontals	9x3/8			N.A.			SR 7/8						
Sec. Horizontals	N.A.							SR 3/4					
Top Guy Pull-Offs								N.A.		3x3/8	N.A.	N.A.	
Face Width (ft)													
# Panels @ (ft)	4 @ 1.89		D	4 @ 3.33334				42 @ 3.30556				4 @ 3.29083	
Weight (lb)	16083.4	314.7	136.4	1631.7	1550.6	1550.6	2552.4	1690.6	1569.8	1725.1	1569.8	1132.5	659.0



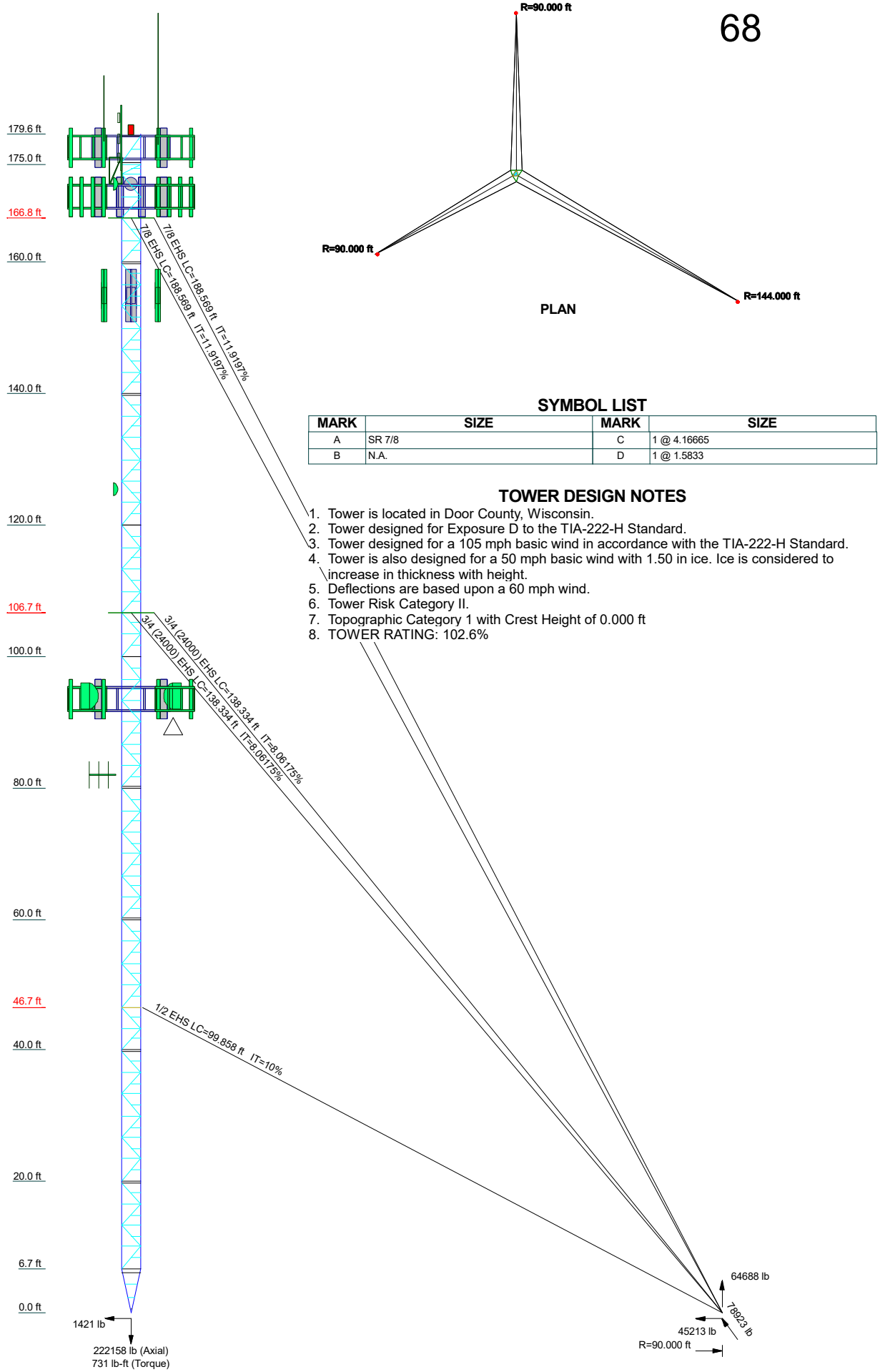
DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
15' Platform with handrails (Nsight)	180	COMMSCOPE NNH4-65B-R6 (ATT)	170
KATHREIN 840370966 (Nsight)	180	ERICSSON RRU 4890 (ATT)	170
KATHREIN 840370966 (Nsight)	180	ERICSSON RRU 4890 (ATT)	170
KATHREIN 840370966 (Nsight)	180	ERICSSON RRU 4890 (ATT)	170
KATHREIN 80010922 (Nsight)	180	ERICSSON RRUS 4478 B12A (ATT)	170
KATHREIN 80010922 (Nsight)	180	ERICSSON RRUS 4478 B12A (ATT)	170
KATHREIN 80010922 (Nsight)	180	ERICSSON RRUS 4478 B12A (ATT)	170
Ericsson 840590003 (Nsight)	180	Sector Frame (SitePro VFA12) (ATT)	170
Ericsson 840590003 (Nsight)	180	Sector Frame (SitePro VFA12) (ATT)	170
Ericsson 840590003 (Nsight)	180	Sector Frame (SitePro VFA12) (ATT)	170
ERICSSON RADIO 4415 B66 (Nsight)	180	COMMSCOPE NNH4-65B-R6 (ATT)	170
ERICSSON RADIO 4415 B66 (Nsight)	180	COMMSCOPE NNH4-65B-R6 (ATT)	170
ERICSSON RADIO 4415 B66 (Nsight)	180	COMMSCOPE NNH4-65B-R6 (ATT)	170
ERICSSON RADIO 4449 B13/B5 (Nsight)	180	4.0 STD Mount Pipe (72") (ATT)	170
		4.0 STD Mount Pipe (72") (ATT)	170
ERICSSON RADIO 4449 B13/B5 (Nsight)	180	4.0 STD Mount Pipe (72") (ATT)	170
		(6) 2.5 STD Mount Pipe (120") (ATT)	170
ERICSSON RADIO 4449 B13/B5 (Nsight)	180	ERICSSON AIR 6419 B77D (ATT)	168
		ERICSSON AIR 6419 B77D (ATT)	168
NOKIA AHFIB B2/B66 (Nsight)	180	ERICSSON AIR 6419 B77D (ATT)	168
NOKIA AHFIB B2/B66 (Nsight)	180	Sector Mount [SM 602-3]	155
NOKIA AHFIB B2/B66 (Nsight)	180	AIR 6419 B77D w/Mount Pipe	155
NOKIA AZHL (Nsight)	180	AIR 6419 B77D w/Mount Pipe	155
NOKIA AZHL (Nsight)	180	AIR 6419 B77D w/Mount Pipe	155
NOKIA AHCA-B5 (Nsight)	180	AIR 3283 w/Mount Pipe	155
NOKIA AHCA-B5 (Nsight)	180	AIR 3283 w/Mount Pipe	155
NOKIA AHCA-B5 (Nsight)	180	AIR 3283 w/Mount Pipe	155
(4) 2.0 STD Mount Pipe (96") (Nsight)	180	NNSS- 65C-HG-R2B w/Mount Pipe	155
(4) 2.0 STD Mount Pipe (96") (Nsight)	180	NNSS- 65C-HG-R2B w/Mount Pipe	155
(4) 2.0 STD Mount Pipe (96") (Nsight)	180	NNSS- 65C-HG-R2B w/Mount Pipe	155
1/3 RESERVED LOADING (27000 Sqin)	180	4490	155
1/3 RESERVED LOADING (27000 Sqin)	180	4490	155
1/3 RESERVED LOADING (27000 Sqin)	180	4490	155
Beacon	179.5	RVZDC-3315-PF-48	155
4' Lightning Rod	179.5	RVZDC-3315-PF-48	155
20' Omni (Unknown)	179	RVZDC-3315-PF-48	155
15' Omni (Unknown)	179	2.375" x 8-ft Mount Pipe	155
15' Dipole (Unknown)	174	2.375" x 8-ft Mount Pipe	155
Stand Off (Unknown)	174	2.375" x 8-ft Mount Pipe	155
ERICSSON AIR 6419 B77G (ATT)	172	2'x2.4" Pipe mount (Cellcom)	125.5
ERICSSON AIR 6419 B77G (ATT)	172	1.5' Dish (Cellcom)	125.5
ERICSSON AIR 6419 B77G (ATT)	172	Jaybeam A-18A24E (Bug Tussel)	125
2'x2.4" Pipe mount (Bug Tussel)	172	(3) 2.0 STD Mount Pipe (72") (T-Mobile)	94
2'x2.4" Pipe mount (Bug Tussel)	172	COMMSCOPE FFVV-65C-R3-V1_TMO (T-Mobile)	94
2' Dish (Bug Tussel)	172	COMMSCOPE FFVV-65C-R3-V1_TMO (T-Mobile)	94
2' Dish (Bug Tussel)	172	NOKIA FRIJ (T-Mobile)	94
(6) 2.5 STD Mount Pipe (120") (ATT)	170	NOKIA FRIJ (T-Mobile)	94
(6) 2.5 STD Mount Pipe (120") (ATT)	170	NOKIA FRIJ (T-Mobile)	94
(4) RAYCAP DC6-48-60-18-8C (ATT)	170	NOKIA AHLOA (T-Mobile)	94
RAYCAP DC6-48-60-0-8C (ATT)	170	NOKIA AHLOA (T-Mobile)	94
ERICSSON RRUS 32 B30 (ATT)	170	NOKIA AHLOA (T-Mobile)	94
ERICSSON RRUS 32 B30 (ATT)	170	Raycap ASU9338TYP01 (T-Mobile)	94
ERICSSON RRUS 32 B30 (ATT)	170	Raycap ASU9338TYP01 (T-Mobile)	94
ERICSSON RRUS 4478 B14 (ATT)	170	FibeAir RFU-C (T-Mobile)	94
ERICSSON RRUS 4478 B14 (ATT)	170	FibeAir RFU-C (T-Mobile)	94
ERICSSON RRUS 4478 B14 (ATT)	170	NOKIA AHFIG (T-Mobile)	94
Ericsson RRUS 4426 B66 (15x13.2x5.8) (ATT)	170	NOKIA AHFIG (T-Mobile)	94
		NOKIA AHFIG (T-Mobile)	94
Ericsson RRUS 4426 B66 (15x13.2x5.8) (ATT)	170	NOKIA AEHC (T-Mobile)	94
		NOKIA AEHC (T-Mobile)	94
Ericsson RRUS 4426 B66 (15x13.2x5.8) (ATT)	170	NOKIA AEHC (T-Mobile)	94
COMMSCOPE NNH4-65B-R6 (ATT)	170	ALLIANCE CORPORATION AC-HC505HICAP24I (T-Mobile)	94
COMMSCOPE NNH4-65B-R6 (ATT)	170		

Azimuth Engineering Group **US-WI-5179**
90 E Halsey Road Ste 382
Parsippany, NJ 07054
Phone: 636-373-2968
FAX:

Project: ***Sister Bay***			
Client: Cellco Partnership d/b/a Verizon Wireless		Drawn by: S.Ingale	App'd:
Code: TIA-222-H		Date: 05/20/25	Scale: NTS
Path:			Dwg No. E-1

Section	T12	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs				SR 2 3/4				SR 2 1/2		SR 2 1/4		
Leg Grade						A572-50						
Diagonals	N.A.	SR 1 1/4	SR 1	SR 1 1/4	SR 1	SR 1 1/4	SR 1 1/2		SR 1 3/8			
Diagonal Grade	N.A.					A36						
Top Girts	12 x 3/8					SR 7/8				N.A.		A
Bottom Girts	12 x 3/8					SR 7/8					B	2x1/2
Horizontals	9x3/8					SR 7/8						N.A.
Sec. Horizontals	N.A.					SR 3/4						
Top Guy Pull-Offs			N.A.	3x3/8		N.A.						
Face Width (ft)												3
# Panels @ (ft)	4 @ 1.89	4 @ 3.29083				42 @ 3.30556				4 @ 3.33334	D	C
Weight (lb)	16083.4	659.0	1132.5	1569.8	1725.1	1690.6	1569.8	2552.4	1550.6	1550.6	1631.7	384.4 314.7



PLAN

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	SR 7/8	C	1 @ 4.16665
B	N.A.	D	1 @ 1.5833

TOWER DESIGN NOTES

1. Tower is located in Door County, Wisconsin.
2. Tower designed for Exposure D to the TIA-222-H Standard.
3. Tower designed for a 105 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TOWER RATING: 102.6%

ALL REACTIONS ARE FACTORED

Azimuth Engineerring Group
90 E Halsey Road Ste 382
Parsippany, NJ 07054
Phone: 636-373-2968
FAX:

Job: ***US-WI-5179***			
Project: ***Sister Bay***			
Client: Cellco Partnership d/b/a Verizon Wireless		Drawn by: S.Ingale	App'd:
Code: TIA-222-H		Date: 05/20/25	Scale: NTS
Path:			Dwg No. E-1

tnxTower *Azimuth Engineerring Group* *90 E Halsey Road Ste 382* *Parsippany, NJ 07054* *Phone: 636-373-2968* *FAX:*	**Job** US-WI-5179	
	Project Sister Bay	**Date** 19:06:11 05/20/25
	Client Cellco Partnership d/b/a Verizon Wireless	**Designed by** S.Ingale

Tower Input Data

The main tower is a 3x guyed tower with an overall height of 179.573 ft above the ground line.
The base of the tower is set at an elevation of 0.000 ft above the ground line.
The face width of the tower is 3.000 ft at the top and tapered at the base.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

Tower is located in Door County, Wisconsin.
Tower base elevation above sea level: 700.438 ft.
Basic wind speed of 105 mph.
Risk Category II.
Exposure Category D.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.000 ft.
Nominal ice thickness of 1.5000 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50.000 °F.
Deflections calculated using a wind speed of 60 mph.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
Safety factor used in guy design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Assume Legs Pinned	√	Calculate Redundant Bracing Forces
	Consider Moments - Horizontals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Consider Moments - Diagonals	√	Use Clear Spans For Wind Area	√	SR Leg Bolts Resist Compression
	Use Moment Magnification	√	Use Clear Spans For KL/r		All Leg Panels Have Same Allowable
√	Use Code Stress Ratios	√	Retension Guys To Initial Tension		Offset Girt At Foundation
√	Use Code Safety Factors - Guys	√	Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Escalate Ice	√	Use Azimuth Dish Coefficients	√	Include Angle Block Shear Check
	Always Use Max Kz	√	Project Wind Area of Appurtenances		Use TIA-222-H Bracing Resist. Exemption
	Kz In Exposure D Hurricane Region		Alternative Appurt. EPA Calculation		Use TIA-222-H Tension Splice Exemption
√	Include Bolts In Member Capacity	√	Autocalc Torque Arm Areas		Poles
	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Include Shear-Torsion Interaction
√	Secondary Horizontal Braces Leg	√	Sort Capacity Reports By Component		Always Use Sub-Critical Flow
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Use Top Mounted Sockets
√	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Pole Without Linear Attachments
	SR Members Are Concentric		Ignore KL/ry For 60 Deg. Angle Legs		Pole With Shroud Or No Appurtenances
	Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules		Outside and Inside Corner Radii Are Known
	Use Special Wind Profile				

tnxTower	Job: US-WI-5179	
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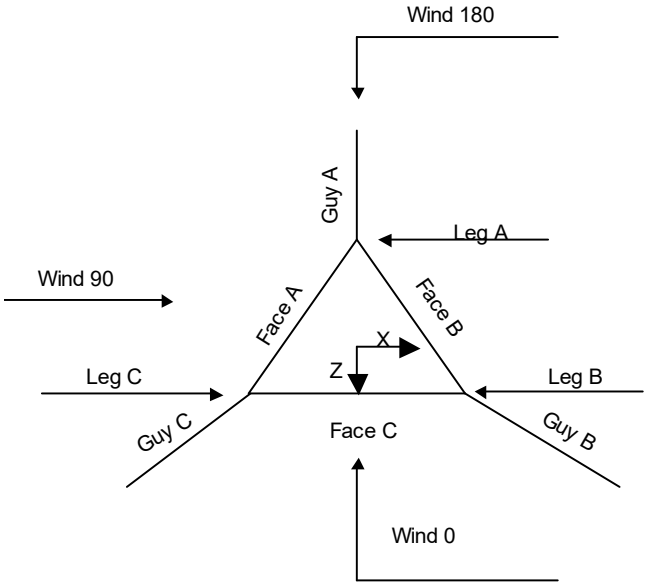
	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale



Corner & Starmount Guyed Tower

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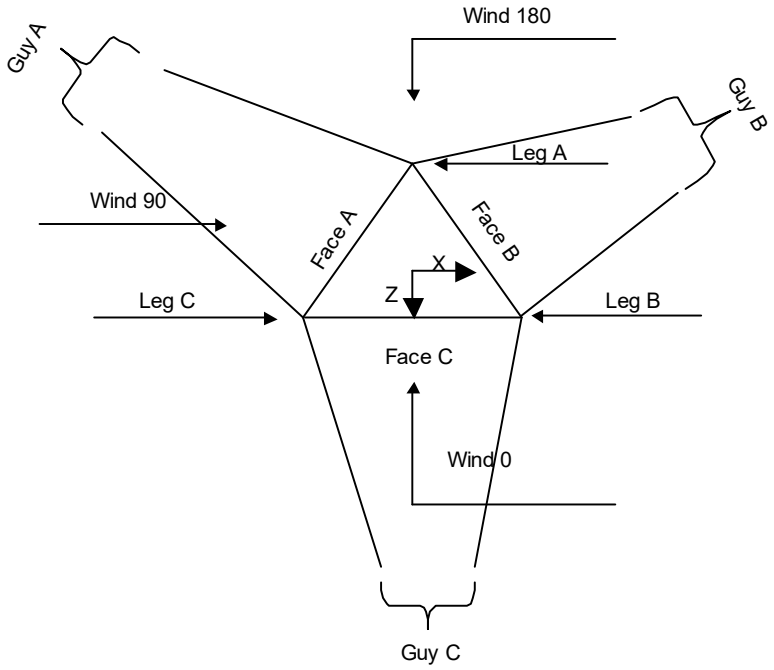

Face Guyed

Tower Section Geometry

Tower Section	*Tower Elevation* ft	*Assembly Database*	*Description*	*Section Width* ft	*Number of Sections*	*Section Length* ft
T1	179.573-175.000			3.000	1	4.573
T2	175.000-173.417			3.000	1	1.583
T3	173.417-160.000			3.000	1	13.417
T4	160.000-140.000			3.000	1	20.000
T5	140.000-120.000			3.000	1	20.000
T6	120.000-100.000			3.000	1	20.000
T7	100.000-80.000			3.000	1	20.000
T8	80.000-60.000			3.000	1	20.000
T9	60.000-40.000			3.000	1	20.000
T10	40.000-20.000			3.000	1	20.000
T11	20.000-6.670			3.000	1	13.330
T12	6.670-0.000			3.000	1	6.670

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Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	179.573-175.000	4.167	K Brace Left	No	Yes+Steps	2.2500	2.6250
T2	175.000-173.417	1.583	K Brace Left	No	Yes+Steps	0.0000	0.0000
T3	173.417-160.000	3.333	K Brace Left	No	Yes+Steps	0.0000	1.0000
T4	160.000-140.000	3.306	K Brace Left	No	Yes+Steps	1.0000	1.0000
T5	140.000-120.000	3.306	K Brace Left	No	Yes+Steps	1.0000	1.0000
T6	120.000-100.000	3.306	K Brace Left	No	Yes+Steps	1.0000	1.0000
T7	100.000-80.000	3.306	K Brace Left	No	Yes+Steps	1.0000	1.0000
T8	80.000-60.000	3.306	K Brace Left	No	Yes+Steps	1.0000	1.0000
T9	60.000-40.000	3.306	K Brace Left	No	Yes+Steps	1.0000	1.0000
T10	40.000-20.000	3.306	K Brace Left	No	Yes+Steps	1.0000	1.0000
T11	20.000-6.670	3.291	K Brace Left	No	Yes+Steps	1.0000	1.0000
T12	6.670-0.000	1.890	K Brace Left	No	Yes	6.0000	6.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 179.573-175.000	Solid Round	2 1/4	A572-50 (50 ksi)	Solid Round	1 3/8	A36 (36 ksi)
T2 175.000-173.417	Solid Round	2 1/4	A572-50 (50 ksi)	Solid Round	1 3/8	A36 (36 ksi)
T3 173.417-160.000	Solid Round	2 1/4	A572-50 (50 ksi)	Solid Round	1 3/8	A36 (36 ksi)
T4 160.000-140.000	Solid Round	2 1/2	A572-50 (50 ksi)	Solid Round	1 3/8	A36 (36 ksi)
T5 140.000-120.000	Solid Round	2 1/2	A572-50 (50 ksi)	Solid Round	1 3/8	A36 (36 ksi)
T6 120.000-100.000	Solid Round	2 3/4	A572-50 (50 ksi)	Solid Round	1 1/2	A36 (36 ksi)
T7 100.000-80.000	Solid Round	2 3/4	A572-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T8 80.000-60.000	Solid Round	2 3/4	A572-50 (50 ksi)	Solid Round	1	A36 (36 ksi)
T9 60.000-40.000	Solid Round	2 3/4	A572-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T10 40.000-20.000	Solid Round	2 3/4	A572-50 (50 ksi)	Solid Round	1	A36 (36 ksi)
T11 20.000-6.670	Solid Round	2 3/4	A572-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T12 6.670-0.000	Solid Round	2 3/4	A572-50 (50 ksi)	Solid Round		A36 (36 ksi)

tnxTower	Job: US-WI-5179	
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Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 179.573-175.000	Solid Round	7/8	A36 (36 ksi)	Flat Bar	2x1/2	A36 (36 ksi)
T3 173.417-160.000	Solid Round		A36 (36 ksi)	Solid Round	7/8	A36 (36 ksi)
T4 160.000-140.000	Solid Round	7/8	A36 (36 ksi)	Solid Round	7/8	A36 (36 ksi)
T5 140.000-120.000	Solid Round	7/8	A36 (36 ksi)	Solid Round	7/8	A36 (36 ksi)
T6 120.000-100.000	Solid Round	7/8	A36 (36 ksi)	Solid Round	7/8	A36 (36 ksi)
T7 100.000-80.000	Solid Round	7/8	A36 (36 ksi)	Solid Round	7/8	A36 (36 ksi)
T8 80.000-60.000	Solid Round	7/8	A36 (36 ksi)	Solid Round	7/8	A36 (36 ksi)
T9 60.000-40.000	Solid Round	7/8	A36 (36 ksi)	Solid Round	7/8	A36 (36 ksi)
T10 40.000-20.000	Solid Round	7/8	A36 (36 ksi)	Solid Round	7/8	A36 (36 ksi)
T11 20.000-6.670	Solid Round	7/8	A36 (36 ksi)	Solid Round	7/8	A36 (36 ksi)
T12 6.670-0.000	Flat Bar	12 x 3/8	A36 (36 ksi)	Flat Bar	12 x 3/8	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1 179.573-175.000	None	Flat Bar		A36 (36 ksi)	Solid Round	7/8	A36 (36 ksi)
T2 175.000-173.417	None	Flat Bar		A36 (36 ksi)	Solid Round	7/8	A36 (36 ksi)
T3 173.417-160.000	None	Flat Bar		A36 (36 ksi)	Solid Round	7/8	A36 (36 ksi)
T4 160.000-140.000	None	Flat Bar		A36 (36 ksi)	Solid Round	7/8	A36 (36 ksi)
T5 140.000-120.000	None	Flat Bar		A36 (36 ksi)	Solid Round	7/8	A36 (36 ksi)
T6 120.000-100.000	None	Flat Bar		A36 (36 ksi)	Solid Round	7/8	A36 (36 ksi)
T7 100.000-80.000	None	Flat Bar		A36 (36 ksi)	Solid Round	7/8	A36 (36 ksi)
T8 80.000-60.000	None	Flat Bar		A36 (36 ksi)	Solid Round	7/8	A36 (36 ksi)
T9 60.000-40.000	None	Flat Bar		A36 (36 ksi)	Solid Round	7/8	A36 (36 ksi)
T10 40.000-20.000	None	Flat Bar		A36 (36 ksi)	Solid Round	7/8	A36 (36 ksi)
T11 20.000-6.670	None	Flat Bar		A36 (36 ksi)	Solid Round	7/8	A36 (36 ksi)
T12 6.670-0.000	None	Flat Bar		A36 (36 ksi)	Flat Bar	9x3/8	A36 (36 ksi)

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Tower Section Geometry *(cont'd)*

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T1 179.573-175.000	Solid Round	3/4	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T2 175.000-173.417	Solid Round	3/4	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T3 173.417-160.000	Solid Round	3/4	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T4 160.000-140.000	Solid Round	3/4	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T5 140.000-120.000	Solid Round	3/4	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T6 120.000-100.000	Solid Round	3/4	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T7 100.000-80.000	Solid Round	3/4	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T8 80.000-60.000	Solid Round	3/4	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T9 60.000-40.000	Solid Round	3/4	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T10 40.000-20.000	Solid Round	3/4	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T11 20.000-6.670	Solid Round	3/4	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 179.573-175.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T2 175.000-173.417	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T3 173.417-160.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T4 160.000-140.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T5 140.000-120.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T6 120.000-100.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000

tnxTower	Job: US-WI-5179	
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	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T7 100.000-80.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T8 80.000-60.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T9 60.000-40.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T10 40.000-20.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T11 20.000-6.670	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T12 6.670-0.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1 179.573-175.000	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 175.000-173.417	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 173.417-160.000	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 160.000-140.000	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T5 140.000-120.000	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T6 120.000-100.000	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T7 100.000-80.000	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T8 80.000-60.000	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T9 60.000-40.000	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T10 40.000-20.000	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T11 20.000-6.670	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T12 6.670-0.000	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

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	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 179.573-175.000	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1
T2 175.000-173.417	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1
T3 173.417-160.000	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1
T4 160.000-140.000	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1
T5 140.000-120.000	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1
T6 120.000-100.000	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1
T7 100.000-80.000	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1
T8 80.000-60.000	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1
T9 60.000-40.000	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1
T10 40.000-20.000	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1
T11 20.000-6.670	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1
T12 6.670-0.000	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 179.573-175.000	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)

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Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T2 175.000-173.417	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T3 173.417-160.000	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T4 160.000-140.000	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T5 140.000-120.000	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T6 120.000-100.000	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T7 100.000-80.000	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T8 80.000-60.000	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)

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Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T9 60.000-40.000	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T10 40.000-20.000	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T11 20.000-6.670	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T12 6.670-0.000	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)

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Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg Bolt Size in	Leg No.	Diagonal Bolt Size in	Diagonal No.	Top Girt Bolt Size in	Top Girt No.	Bottom Girt Bolt Size in	Bottom Girt No.	Mid Girt Bolt Size in	Mid Girt No.	Long Horizontal Bolt Size in	Long Horizontal No.	Short Horizontal Bolt Size in	Short Horizontal No.
T1 179.573-175.000	Flange	0.8750 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2 175.000-173.417	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T3 173.417-160.000	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T4 160.000-140.000	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T5 140.000-120.000	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T6 120.000-100.000	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T7 100.000-80.000	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T8 80.000-60.000	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T9 60.000-40.000	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T10 40.000-20.000	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T11 20.000-6.670	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T12 6.670-0.000	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0

Guy Data

Guy Elevation ft	Guy Grade		Guy Size	Initial Tension lb	%	Guy Modulus ksi	Guy Weight plf	L_u ft	Anchor Radius ft	Anchor Azimuth Adj. °	Anchor Elevation ft	End Fitting Efficiency %
166.75	EHS	A	7/8	9500.000	11.91 97%	24000.000	1.581	188.406	90.000	0.0000	0.000	100%
		B	7/8	9500.000	97%	24000.000	1.581	218.848	144.000	0.0000	0.000	100%
		C	7/8	9500.000	11.91 97% 11.91 97%	24000.000	1.581	188.406	90.000	0.0000	0.000	100%
106.694	EHS	A	3/4 (24000)	4700.000	8.061 75%	24000.000	1.155	138.255	90.000	0.0000	0.000	100%
		B	3/4 (24000)	4700.000	75%	24000.000	1.155	177.539	144.000	0.0000	0.000	100%
		C	3/4 (24000)	4700.000	8.061 75% 8.061 75%	24000.000	1.155	138.255	90.000	0.0000	0.000	100%

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46.6944	EHS	A	1/2	2690.000	10%	23000.000	0.517	99.781	90.000	0.0000	0.000	100%
		B	1/2	2690.000	10%	23000.000	0.517	149.622	144.000	0.0000	0.000	100%
		C	1/2	2690.000	10%	23000.000	0.517	99.781	90.000	0.0000	0.000	100%

Guy Data *(cont'd)*

Guy Elevation ft	*Mount Type*	*Torque-Arm Spread ft*	*Torque-Arm Leg Angle °*	*Torque-Arm Style*	*Torque-Arm Grade*	*Torque-Arm Type*	*Torque-Arm Size*
166.75	Torque Arm	7.000	0.0000	Channel	A36 (36 ksi)	Channel	C15x33.9
106.694	Torque Arm	7.000	0.0000	Channel	A36 (36 ksi)	Channel	C15x33.9
46.6944	Corner						

Guy Data *(cont'd)*

Guy Elevation ft	*Diagonal Grade*	*Diagonal Type*	*Upper Diagonal Size*	*Lower Diagonal Size*	*Is Strap.*	*Pull-Off Grade*	*Pull-Off Type*	*Pull-Off Size*
166.750	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Solid Round	
106.694	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Solid Round	
46.694	A572-50 (50 ksi)	Solid Round			Yes	A36 (36 ksi)	Flat Bar	3x3/8

Guy Data *(cont'd)*

Guy Elevation ft	*Cable Weight A lb*	*Cable Weight B lb*	*Cable Weight C lb*	*Cable Weight D lb*	*Tower Intercept A ft*	*Tower Intercept B ft*	*Tower Intercept C ft*	*Tower Intercept D ft*
166.75	297.869	345.998	297.869		2.916 2.9 sec/pulse	3.934 3.4 sec/pulse	2.916 2.9 sec/pulse	
106.694	159.685	205.057	159.685		2.320 2.6 sec/pulse	3.825 3.4 sec/pulse	2.320 2.6 sec/pulse	
46.6944	51.587	77.355	51.587		0.953 1.7 sec/pulse	2.144 2.5 sec/pulse	0.953 1.7 sec/pulse	

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Guy Data *(cont'd)*

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm K_x	Torque Arm K_y	Pull Off K_x	Pull Off K_y	Diagonal K_x	Diagonal K_y
166.75	Yes	Yes	1	1	1	1	1	1
106.694	Yes	Yes	1	1	1	1	1	1
46.6944	No	No			1	1	1	1

Guy Data *(cont'd)*

Guy Elevation ft	Torque-Arm Bolt Size in	Torque-Arm Number	Torque-Arm Net Width Deduct in	Torque-Arm U	Pull Off Bolt Size in	Pull Off Number	Pull Off Net Width Deduct in	Pull Off U	Diagonal Bolt Size in	Diagonal Number	Diagonal Net Width Deduct in	Diagonal U
166.75	0.8750 A325N	2	0.0000	0.75	0.0000 A325N	0	0.0000	1	0.0000 A325N	0	0.0000	1
106.694	0.8750 A325N	2	0.0000	0.75	0.0000 A325N	0	0.0000	1	0.0000 A325N	0	0.0000	1
46.6944	0.6250 A325N	0	0.0000	0.75	0.0000 A325N	0	0.0000	1	0.0000 A325N	0	0.0000	1

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q_z ksf	q_z Ice ksf	Ice Thickness in
166.75	A	83.375	0.032	0.007	1.6457
	B	83.375	0.032	0.007	1.6457
	C	83.375	0.032	0.007	1.6457
106.694	A	53.347	0.030	0.007	1.5738
	B	53.347	0.030	0.007	1.5738
	C	53.347	0.030	0.007	1.5738
46.6944	A	23.347	0.026	0.006	1.4490
	B	23.347	0.026	0.006	1.4490
	C	23.347	0.026	0.006	1.4490

Guy-Tensioning Information

Guy Elevation ft		H ft	V ft	Temperature At Time Of Tensioning: 0 F Initial Tension lb	0 F Intercept ft	20 F Initial Tension lb	20 F Intercept ft	40 F Initial Tension lb	40 F Intercept ft	60 F Initial Tension lb	60 F Intercept ft	80 F Initial Tension lb	80 F Intercept ft	100 F Initial Tension lb	100 F Intercept ft	120 F Initial Tension lb	120 F Intercept ft
166.75	A	88.05	166.75	10422	2.66	10114	2.74	9807	2.83	9500	2.92	9194	3.01	8889	3.11	8584	3.22
	B	142.02	166.75	11238	3.33	10655	3.51	10075	3.71	9500	3.93	8930	4.18	8366	4.46	7810	4.77
	C	88.05	166.75	10422	2.66	10114	2.74	9807	2.83	9500	2.92	9194	3.01	8889	3.11	8584	3.22
106.694	A	88.05	106.69	5919	1.85	5508	1.98	5102	2.14	4700	2.32	4304	2.53	3917	2.78	3541	3.07
	B	142.02	106.69	6522	2.77	5897	3.06	5288	3.40	4700	3.83	4142	4.33	3626	4.94	3161	5.65
	C	88.05	106.69	5919	1.85	5508	1.98	5102	2.14	4700	2.32	4304	2.53	3917	2.78	3541	3.07
46.6944	A	88.27	46.69	3721	0.69	3376	0.76	3032	0.85	2690	0.95	2352	1.09	2020	1.27	1698	1.51
	B	142.27	46.69	3850	1.50	3458	1.67	3070	1.88	2690	2.14	2321	2.48	1971	2.92	1649	3.49
	C	88.27	46.69	3721	0.69	3376	0.76	3032	0.85	2690	0.95	2352	1.09	2020	1.27	1698	1.51

tnxTower	Job: US-WI-5179	
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Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
LDF4-50A(1/2") (Unknown)	B	No	No	Ar (CaAa)	82.000 - 4.000	0.0000	0.17	1	1	0.5000	0.6300		0.150
LDF7-50A(1-5/8") (Bug Tussel)	A	No	No	Ar (CaAa)	125.000 - 4.000	2.0000	-0.1	1	1	0.5000	1.9800		0.820
LDF4.5-50(5/8") (Bug Tussel)	A	No	No	Ar (CaAa)	172.000 - 4.000	4.0000	-0.1	2	2	0.5000	0.8650		0.150
LDF5-50A(7/8") (Unknown)	B	No	No	Ar (CaAa)	174.000 - 4.000	0.0000	0.22	1	1	0.5000	1.0900		0.330
ATT													
3/8" RET (AT&T)	C	No	No	Ar (CaAa)	170.000 - 4.000	-1.0000	0.39	1	1	0.5000	0.4400		0.080
0.92" DC Cable (AT&T)	C	No	No	Ar (CaAa)	170.000 - 4.000	-1.0000	0.43	2	2	0.5000	0.9200		0.520
0.78" DC Cable (AT&T)	C	No	No	Ar (CaAa)	170.000 - 4.000	0.0000	0.44	8	4	0.5000	0.7800		0.480
0.12" Fiber (AT&T)	C	No	No	Ar (CaAa)	170.000 - 4.000	-1.0000	0.41	2	2	0.5000	0.1200		0.050
0.18" Fiber (AT&T)	C	No	No	Ar (CaAa)	170.000 - 4.000	-1.0000	0.37	2	2	0.5000	0.1800		0.060
Sprint													
T-Mobile													
LDF5-50A(7/8") (T-Mobile)	C	No	No	Ar (CaAa)	105.000 - 6.000	0.0000	-0.32	2	2	0.5000	1.0900		0.330
NSN High Cap HCS Fiber (T-Mobile)	C	No	No	Ar (CaAa)	105.000 - 6.000	0.0000	-0.4	2	2	0.5000	1.9800		2.300
****													
1.63 Coax (Nsight)	A	No	No	Ar (CaAa)	178.000 - 4.000	0.0000	0.35	6	3	0.5000	1.9800		0.820
0.5" DC Cable (Nsight)	B	No	No	Ar (CaAa)	178.000 - 4.000	0.0000	0.33	18	6	0.5000	0.5000		0.520
0.375" Hybrid (Nsight)	A	No	No	Ar (CaAa)	178.000 - 4.000	0.0000	0.25	3	3	0.5000	0.3750		0.080
1-5/8" Hybrid	C	No	No	Ar (CaAa)	155.000 - 4.000	0.0000	0.25	3	3	0.5000	1.9800		1.900

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Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T1	179.573-175.000	A	0.000	0.000	3.901	0.000	15.480
		B	0.000	0.000	2.700	0.000	28.080
		C	0.000	0.000	0.000	0.000	0.000
T2	175.000-173.417	A	0.000	0.000	2.059	0.000	8.170
		B	0.000	0.000	1.489	0.000	15.012
		C	0.000	0.000	0.000	0.000	0.000
T3	173.417-160.000	A	0.000	0.000	19.524	0.000	72.830
		B	0.000	0.000	13.537	0.000	130.008
		C	0.000	0.000	9.120	0.000	51.800
T4	160.000-140.000	A	0.000	0.000	29.470	0.000	109.200
		B	0.000	0.000	20.180	0.000	193.800
		C	0.000	0.000	27.150	0.000	189.100
T5	140.000-120.000	A	0.000	0.000	30.460	0.000	113.300
		B	0.000	0.000	20.180	0.000	193.800
		C	0.000	0.000	30.120	0.000	217.600
T6	120.000-100.000	A	0.000	0.000	33.430	0.000	125.600
		B	0.000	0.000	20.180	0.000	193.800
		C	0.000	0.000	33.190	0.000	243.900
T7	100.000-80.000	A	0.000	0.000	33.430	0.000	125.600
		B	0.000	0.000	20.306	0.000	194.100
		C	0.000	0.000	42.400	0.000	322.800
T8	80.000-60.000	A	0.000	0.000	33.430	0.000	125.600
		B	0.000	0.000	21.440	0.000	196.800
		C	0.000	0.000	42.400	0.000	322.800
T9	60.000-40.000	A	0.000	0.000	33.430	0.000	125.600
		B	0.000	0.000	21.440	0.000	196.800
		C	0.000	0.000	42.400	0.000	322.800
T10	40.000-20.000	A	0.000	0.000	33.430	0.000	125.600
		B	0.000	0.000	21.440	0.000	196.800
		C	0.000	0.000	42.400	0.000	322.800
T11	20.000-6.670	A	0.000	0.000	22.281	0.000	83.712
		B	0.000	0.000	14.290	0.000	131.167
		C	0.000	0.000	28.260	0.000	215.146
T12	6.670-0.000	A	0.000	0.000	4.463	0.000	16.768
		B	0.000	0.000	2.862	0.000	26.273
		C	0.000	0.000	4.432	0.000	32.574

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T1	179.573-175.000	A	1.775	0.000	0.000	7.536	0.000	106.021
		B		0.000	0.000	4.082	0.000	83.716
		C		0.000	0.000	0.000	0.000	0.000
T2	175.000-173.417	A	1.772	0.000	0.000	3.974	0.000	55.863
		B		0.000	0.000	2.423	0.000	47.937
		C		0.000	0.000	0.000	0.000	0.000
T3	173.417-160.000	A	1.764	0.000	0.000	44.464	0.000	568.237
		B		0.000	0.000	24.400	0.000	459.814
		C		0.000	0.000	39.717	0.000	426.710
T4	160.000-140.000	A	1.745	0.000	0.000	67.805	0.000	854.831
		B		0.000	0.000	36.169	0.000	679.521
		C		0.000	0.000	100.925	0.000	1169.109

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	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T5	140.000-120.000	A	1.720	0.000	0.000	69.996	0.000	885.498
		B		0.000	0.000	35.898	0.000	671.658
		C		0.000	0.000	107.324	0.000	1257.895
T6	120.000-100.000	A	1.692	0.000	0.000	77.415	0.000	996.659
		B		0.000	0.000	35.587	0.000	662.694
		C		0.000	0.000	116.867	0.000	1359.781
T7	100.000-80.000	A	1.658	0.000	0.000	76.577	0.000	975.863
		B		0.000	0.000	36.009	0.000	661.797
		C		0.000	0.000	147.042	0.000	1697.490
T8	80.000-60.000	A	1.617	0.000	0.000	75.550	0.000	950.701
		B		0.000	0.000	42.498	0.000	731.351
		C		0.000	0.000	144.873	0.000	1652.806
T9	60.000-40.000	A	1.564	0.000	0.000	74.215	0.000	918.482
		B		0.000	0.000	41.700	0.000	710.146
		C		0.000	0.000	142.054	0.000	1595.703
T10	40.000-20.000	A	1.486	0.000	0.000	72.275	0.000	872.594
		B		0.000	0.000	40.538	0.000	680.037
		C		0.000	0.000	137.955	0.000	1514.600
T11	20.000-6.670	A	1.370	0.000	0.000	46.251	0.000	537.596
		B		0.000	0.000	25.869	0.000	424.518
		C		0.000	0.000	87.892	0.000	932.074
T12	6.670-0.000	A	1.193	0.000	0.000	8.676	0.000	94.857
		B		0.000	0.000	4.829	0.000	76.723
		C		0.000	0.000	12.797	0.000	128.275

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	179.573-175.000	0.7901	-2.9799	0.5196	-2.0879
T2	175.000-173.417	1.1860	-3.6195	0.4818	-1.3984
T3	173.417-160.000	-2.0755	-2.5805	-2.7123	-0.7158
T4	160.000-140.000	-3.4814	-1.5293	-3.9759	0.2766
T5	140.000-120.000	-3.7702	-1.3613	-4.2077	0.3735
T6	120.000-100.000	-3.4460	-1.1342	-3.8837	0.4837
T7	100.000-80.000	-2.0148	-0.3958	-2.4824	1.1635
T8	80.000-60.000	-1.8823	-0.3959	-2.1824	1.1374
T9	60.000-40.000	-1.8213	-0.3832	-2.1068	1.0763
T10	40.000-20.000	-1.8823	-0.3959	-2.2124	1.1016
T11	20.000-6.670	-1.8614	-0.3910	-2.1985	1.0422
T12	6.670-0.000	-0.7794	-0.2842	-0.4737	0.0254

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	25	1.63 Coax	175.00 - 178.00	0.6000	0.4518
T1	26	0.5" DC Cable	175.00 - 178.00	0.6000	0.4518

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	27	0.375" Hybrid	175.00 - 178.00	0.6000	0.4518
T2	8	LDF5-50A(7/8")	173.42 - 174.00	0.6000	0.2986
T2	25	1.63 Coax	173.42 - 175.00	0.6000	0.2986
T2	26	0.5" DC Cable	173.42 - 175.00	0.6000	0.2986
T2	27	0.375" Hybrid	173.42 - 175.00	0.6000	0.2986
T3	7	LDF4.5-50(5/8")	160.00 - 172.00	0.6000	0.4659
T3	8	LDF5-50A(7/8")	160.00 - 173.42	0.6000	0.4659
T3	14	3/8" RET	160.00 - 170.00	0.6000	0.4659
T3	15	0.92" DC Cable	160.00 - 170.00	0.6000	0.4659
T3	16	0.78" DC Cable	160.00 - 170.00	0.6000	0.4659
T3	17	0.12" Fiber	160.00 - 170.00	0.6000	0.4659
T3	18	0.18" Fiber	160.00 - 170.00	0.6000	0.4659
T3	25	1.63 Coax	160.00 - 173.42	0.6000	0.4659
T3	26	0.5" DC Cable	160.00 - 173.42	0.6000	0.4659
T3	27	0.375" Hybrid	160.00 - 173.42	0.6000	0.4659
T4	7	LDF4.5-50(5/8")	140.00 - 160.00	0.6000	0.4687
T4	8	LDF5-50A(7/8")	140.00 - 160.00	0.6000	0.4687
T4	14	3/8" RET	140.00 - 160.00	0.6000	0.4687
T4	15	0.92" DC Cable	140.00 - 160.00	0.6000	0.4687
T4	16	0.78" DC Cable	140.00 - 160.00	0.6000	0.4687
T4	17	0.12" Fiber	140.00 - 160.00	0.6000	0.4687
T4	18	0.18" Fiber	140.00 - 160.00	0.6000	0.4687
T4	25	1.63 Coax	140.00 - 160.00	0.6000	0.4687
T4	26	0.5" DC Cable	140.00 - 160.00	0.6000	0.4687
T4	27	0.375" Hybrid	140.00 - 160.00	0.6000	0.4687
T4	28	1-5/8" Hybrid	140.00 - 155.00	0.6000	0.4687
T5	2	LDF7-50A(1-5/8")	120.00 - 125.00	0.6000	0.4731
T5	7	LDF4.5-50(5/8")	120.00 - 140.00	0.6000	0.4731
T5	8	LDF5-50A(7/8")	120.00 - 140.00	0.6000	0.4731
T5	14	3/8" RET	120.00 - 140.00	0.6000	0.4731
T5	15	0.92" DC Cable	120.00 - 140.00	0.6000	0.4731

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T5	16	0.78" DC Cable	120.00 - 140.00	0.6000	0.4731
T5	17	0.12" Fiber	120.00 - 140.00	0.6000	0.4731
T5	18	0.18" Fiber	120.00 - 140.00	0.6000	0.4731
T5	25	1.63 Coax	120.00 - 140.00	0.6000	0.4731
T5	26	0.5" DC Cable	120.00 - 140.00	0.6000	0.4731
T5	27	0.375" Hybrid	120.00 - 140.00	0.6000	0.4731
T5	28	1-5/8" Hybrid	120.00 - 140.00	0.6000	0.4731
T6	2	LDF7-50A(1-5/8")	100.00 - 120.00	0.6000	0.4674
T6	7	LDF4.5-50(5/8")	100.00 - 120.00	0.6000	0.4674
T6	8	LDF5-50A(7/8")	100.00 - 120.00	0.6000	0.4674
T6	14	3/8" RET	100.00 - 120.00	0.6000	0.4674
T6	15	0.92" DC Cable	100.00 - 120.00	0.6000	0.4674
T6	16	0.78" DC Cable	100.00 - 120.00	0.6000	0.4674
T6	17	0.12" Fiber	100.00 - 120.00	0.6000	0.4674
T6	18	0.18" Fiber	100.00 - 120.00	0.6000	0.4674
T6	22	LDF5-50A(7/8")	100.00 - 105.00	0.6000	0.4674
T6	23	NSN High Cap HCS Fiber	100.00 - 105.00	0.6000	0.4674
T6	25	1.63 Coax	100.00 - 120.00	0.6000	0.4674
T6	26	0.5" DC Cable	100.00 - 120.00	0.6000	0.4674
T6	27	0.375" Hybrid	100.00 - 120.00	0.6000	0.4674
T6	28	1-5/8" Hybrid	100.00 - 120.00	0.6000	0.4674
T7	1	LDF4-50A(1/2")	80.00 - 82.00	0.6000	0.4807
T7	2	LDF7-50A(1-5/8")	80.00 - 100.00	0.6000	0.4807
T7	7	LDF4.5-50(5/8")	80.00 - 100.00	0.6000	0.4807
T7	8	LDF5-50A(7/8")	80.00 - 100.00	0.6000	0.4807
T7	14	3/8" RET	80.00 - 100.00	0.6000	0.4807
T7	15	0.92" DC Cable	80.00 - 100.00	0.6000	0.4807
T7	16	0.78" DC Cable	80.00 - 100.00	0.6000	0.4807
T7	17	0.12" Fiber	80.00 - 100.00	0.6000	0.4807
T7	18	0.18" Fiber	80.00 - 100.00	0.6000	0.4807
T7	22	LDF5-50A(7/8")	80.00 - 100.00	0.6000	0.4807
T7	23	NSN High Cap HCS Fiber	80.00 - 100.00	0.6000	0.4807
T7	25	1.63 Coax	80.00 - 100.00	0.6000	0.4807
T7	26	0.5" DC Cable	80.00 - 100.00	0.6000	0.4807
T7	27	0.375" Hybrid	80.00 - 100.00	0.6000	0.4807
T7	28	1-5/8" Hybrid	80.00 - 100.00	0.6000	0.4807
T8	1	LDF4-50A(1/2")	60.00 - 80.00	0.6000	0.4953
T8	2	LDF7-50A(1-5/8")	60.00 - 80.00	0.6000	0.4953
T8	7	LDF4.5-50(5/8")	60.00 - 80.00	0.6000	0.4953
T8	8	LDF5-50A(7/8")	60.00 - 80.00	0.6000	0.4953
T8	14	3/8" RET	60.00 - 80.00	0.6000	0.4953

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T8	15	0.92" DC Cable	60.00 - 80.00	0.6000	0.4953
T8	16	0.78" DC Cable	60.00 - 80.00	0.6000	0.4953
T8	17	0.12" Fiber	60.00 - 80.00	0.6000	0.4953
T8	18	0.18" Fiber	60.00 - 80.00	0.6000	0.4953
T8	22	LDF5-50A(7/8")	60.00 - 80.00	0.6000	0.4953
T8	23	NSN High Cap HCS Fiber	60.00 - 80.00	0.6000	0.4953
T8	25	1.63 Coax	60.00 - 80.00	0.6000	0.4953
T8	26	0.5" DC Cable	60.00 - 80.00	0.6000	0.4953
T8	27	0.375" Hybrid	60.00 - 80.00	0.6000	0.4953
T8	28	1-5/8" Hybrid	60.00 - 80.00	0.6000	0.4953
T9	1	LDF4-50A(1/2")	40.00 - 60.00	0.6000	0.4771
T9	2	LDF7-50A(1-5/8")	40.00 - 60.00	0.6000	0.4771
T9	7	LDF4.5-50(5/8")	40.00 - 60.00	0.6000	0.4771
T9	8	LDF5-50A(7/8")	40.00 - 60.00	0.6000	0.4771
T9	14	3/8" RET	40.00 - 60.00	0.6000	0.4771
T9	15	0.92" DC Cable	40.00 - 60.00	0.6000	0.4771
T9	16	0.78" DC Cable	40.00 - 60.00	0.6000	0.4771
T9	17	0.12" Fiber	40.00 - 60.00	0.6000	0.4771
T9	18	0.18" Fiber	40.00 - 60.00	0.6000	0.4771
T9	22	LDF5-50A(7/8")	40.00 - 60.00	0.6000	0.4771
T9	23	NSN High Cap HCS Fiber	40.00 - 60.00	0.6000	0.4771
T9	25	1.63 Coax	40.00 - 60.00	0.6000	0.4771
T9	26	0.5" DC Cable	40.00 - 60.00	0.6000	0.4771
T9	27	0.375" Hybrid	40.00 - 60.00	0.6000	0.4771
T9	28	1-5/8" Hybrid	40.00 - 60.00	0.6000	0.4771
T10	1	LDF4-50A(1/2")	20.00 - 40.00	0.6000	0.5186
T10	2	LDF7-50A(1-5/8")	20.00 - 40.00	0.6000	0.5186
T10	7	LDF4.5-50(5/8")	20.00 - 40.00	0.6000	0.5186
T10	8	LDF5-50A(7/8")	20.00 - 40.00	0.6000	0.5186
T10	14	3/8" RET	20.00 - 40.00	0.6000	0.5186
T10	15	0.92" DC Cable	20.00 - 40.00	0.6000	0.5186
T10	16	0.78" DC Cable	20.00 - 40.00	0.6000	0.5186
T10	17	0.12" Fiber	20.00 - 40.00	0.6000	0.5186
T10	18	0.18" Fiber	20.00 - 40.00	0.6000	0.5186
T10	22	LDF5-50A(7/8")	20.00 - 40.00	0.6000	0.5186
T10	23	NSN High Cap HCS Fiber	20.00 - 40.00	0.6000	0.5186
T10	25	1.63 Coax	20.00 - 40.00	0.6000	0.5186
T10	26	0.5" DC Cable	20.00 - 40.00	0.6000	0.5186
T10	27	0.375" Hybrid	20.00 - 40.00	0.6000	0.5186
T10	28	1-5/8" Hybrid	20.00 - 40.00	0.6000	0.5186
T11	1	LDF4-50A(1/2")	6.67 - 20.00	0.6000	0.5261
T11	2	LDF7-50A(1-5/8")	6.67 - 20.00	0.6000	0.5261
T11	7	LDF4.5-50(5/8")	6.67 - 20.00	0.6000	0.5261
T11	8	LDF5-50A(7/8")	6.67 - 20.00	0.6000	0.5261
T11	14	3/8" RET	6.67 - 20.00	0.6000	0.5261
T11	15	0.92" DC Cable	6.67 - 20.00	0.6000	0.5261
T11	16	0.78" DC Cable	6.67 - 20.00	0.6000	0.5261
T11	17	0.12" Fiber	6.67 - 20.00	0.6000	0.5261
T11	18	0.18" Fiber	6.67 - 20.00	0.6000	0.5261
T11	22	LDF5-50A(7/8")	6.67 - 20.00	0.6000	0.5261
T11	23	NSN High Cap HCS Fiber	6.67 - 20.00	0.6000	0.5261
T11	25	1.63 Coax	6.67 - 20.00	0.6000	0.5261
T11	26	0.5" DC Cable	6.67 - 20.00	0.6000	0.5261
T11	27	0.375" Hybrid	6.67 - 20.00	0.6000	0.5261
T11	28	1-5/8" Hybrid	6.67 - 20.00	0.6000	0.5261
T12	1	LDF4-50A(1/2")	4.00 - 6.67	0.3423	0.1213
T12	2	LDF7-50A(1-5/8")	4.00 - 6.67	0.3423	0.1213
T12	7	LDF4.5-50(5/8")	4.00 - 6.67	0.3423	0.1213
T12	8	LDF5-50A(7/8")	4.00 - 6.67	0.3423	0.1213
T12	14	3/8" RET	4.00 - 6.67	0.3423	0.1213
T12	15	0.92" DC Cable	4.00 - 6.67	0.3423	0.1213
T12	16	0.78" DC Cable	4.00 - 6.67	0.3423	0.1213

tnxTower	Job: US-WI-5179	
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	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T12	17	0.12" Fiber	4.00 - 6.67	0.3423	0.1213
T12	18	0.18" Fiber	4.00 - 6.67	0.3423	0.1213
T12	22	LDF5-50A(7/8")	6.00 - 6.67	0.3423	0.1213
T12	23	NSN High Cap HCS Fiber	6.00 - 6.67	0.3423	0.1213
T12	25	1.63 Coax	4.00 - 6.67	0.3423	0.1213
T12	26	0.5" DC Cable	4.00 - 6.67	0.3423	0.1213
T12	27	0.375" Hybrid	4.00 - 6.67	0.3423	0.1213
T12	28	1-5/8" Hybrid	4.00 - 6.67	0.3423	0.1213

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
SRL302AHD*2	C	From Leg	1.000	0.0000	82.000	No Ice	6.600	6.600	25.000
(Unknown)			0.000			1/2" Ice	8.833	8.833	72.444
			0.000			1" Ice	11.083	11.083	133.785
						2" Ice	15.633	15.633	298.769
Jaybeam A-18A24E	C	From Leg	0.200	0.0000	125.000	No Ice	7.500	0.694	20.000
(Bug Tussel)			0.000			1/2" Ice	7.837	0.880	55.097
			0.000			1" Ice	8.181	1.073	94.407
						2" Ice	8.893	1.482	186.444
2'x2.4" Pipe mount	C	From Leg	0.100	0.0000	125.500	No Ice	0.350	0.350	7.300
(Cellcom)			0.000			1/2" Ice	0.480	0.480	11.000
			0.000			1" Ice	0.640	0.640	16.610
						2" Ice	0.870	0.870	22.100
2'x2.4" Pipe mount	A	From Leg	0.100	0.0000	172.000	No Ice	0.350	0.350	7.300
(Bug Tussel)			0.000			1/2" Ice	0.480	0.480	11.000
			0.000			1" Ice	0.640	0.640	16.610
						2" Ice	0.870	0.870	22.100
2'x2.4" Pipe mount	B	From Leg	0.100	0.0000	172.000	No Ice	0.350	0.350	7.300
(Bug Tussel)			0.000			1/2" Ice	0.480	0.480	11.000
			0.000			1" Ice	0.640	0.640	16.610
						2" Ice	0.870	0.870	22.100
15' Dipole	C	From Leg	0.000	0.0000	174.000	No Ice	3.500	3.500	20.000
(Unknown)			0.000			1/2" Ice	5.500	5.500	25.000
			5.000			1" Ice	7.500	7.500	30.000
						2" Ice	11.500	11.500	40.000
Stand Off	C	From Leg	1.000	0.0000	174.000	No Ice	2.820	6.040	155.000
(Unknown)			0.000			1/2" Ice	4.580	9.400	239.000
			0.000			1" Ice	6.340	12.760	323.000
						2" Ice	9.860	19.480	491.000
******									
15' Platform with handrails	C	From Leg	0.000	0.0000	180.000	No Ice	40.620	40.620	2060.000
(Nsight)			0.000			1/2" Ice	47.280	47.280	2787.000
			-2.500			1" Ice	54.600	54.600	3651.000
						2" Ice	71.890	71.890	5769.000
KATHREIN 840370966	A	From Leg	3.000	0.0000	180.000	No Ice	13.661	7.189	116.000
(Nsight)			0.000			1/2" Ice	14.263	7.776	189.253
			-2.500			1" Ice	14.872	8.370	270.611
						2" Ice	16.111	9.581	457.514

tnxTower	Job: US-WI-5179	
Azimuth Engineerring Group 90 E Halsey Road Ste 382 Parsippany, NJ 07054 Phone: 636-373-2968 FAX:	Project: Sister Bay	Date: 19:06:11 05/20/25
	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
KATHREIN 840370966	B	From Leg	3.000	0.0000	180.000	No Ice	13.661	7.189	116.000
(Nsight)			0.000			1/2" Ice	14.263	7.776	189.253
			-2.500			1" Ice	14.872	8.370	270.611
						2" Ice	16.111	9.581	457.514
KATHREIN 840370966	C	From Leg	3.000	0.0000	180.000	No Ice	13.661	7.189	116.000
(Nsight)			0.000			1/2" Ice	14.263	7.776	189.253
			-2.500			1" Ice	14.872	8.370	270.611
						2" Ice	16.111	9.581	457.514
KATHREIN 80010922	A	From Leg	3.000	0.0000	180.000	No Ice	2.472	1.266	17.000
(Nsight)			0.000			1/2" Ice	2.719	1.504	31.355
			-2.500			1" Ice	2.974	1.750	49.328
						2" Ice	3.503	2.263	96.007
KATHREIN 80010922	B	From Leg	3.000	0.0000	180.000	No Ice	2.472	1.266	17.000
(Nsight)			0.000			1/2" Ice	2.719	1.504	31.355
			-2.500			1" Ice	2.974	1.750	49.328
						2" Ice	3.503	2.263	96.007
KATHREIN 80010922	C	From Leg	3.000	0.0000	180.000	No Ice	2.472	1.266	17.000
(Nsight)			0.000			1/2" Ice	2.719	1.504	31.355
			-2.500			1" Ice	2.974	1.750	49.328
						2" Ice	3.503	2.263	96.007
Ericsson 840590003	A	From Leg	3.000	0.0000	180.000	No Ice	19.880	7.645	112.000
(Nsight)			0.000			1/2" Ice	20.525	8.235	216.640
			-2.500			1" Ice	21.177	8.832	329.673
						2" Ice	22.501	10.048	581.699
Ericsson 840590003	B	From Leg	3.000	0.0000	180.000	No Ice	19.880	7.645	112.000
(Nsight)			0.000			1/2" Ice	20.525	8.235	216.640
			-2.500			1" Ice	21.177	8.832	329.673
						2" Ice	22.501	10.048	581.699
Ericsson 840590003	C	From Leg	3.000	0.0000	180.000	No Ice	19.880	7.645	112.000
(Nsight)			0.000			1/2" Ice	20.525	8.235	216.640
			-2.500			1" Ice	21.177	8.832	329.673
						2" Ice	22.501	10.048	581.699
ERICSSON RADIO 4415 B66	A	From Leg	3.000	0.0000	180.000	No Ice	1.856	0.870	50.000
(Nsight)			0.000			1/2" Ice	2.027	0.997	64.153
			-2.500			1" Ice	2.204	1.134	81.252
						2" Ice	2.582	1.432	123.871
ERICSSON RADIO 4415 B66	B	From Leg	3.000	0.0000	180.000	No Ice	1.856	0.870	50.000
(Nsight)			0.000			1/2" Ice	2.027	0.997	64.153
			-2.500			1" Ice	2.204	1.134	81.252
						2" Ice	2.582	1.432	123.871
ERICSSON RADIO 4415 B66	C	From Leg	3.000	0.0000	180.000	No Ice	1.856	0.870	50.000
(Nsight)			0.000			1/2" Ice	2.027	0.997	64.153
			-2.500			1" Ice	2.204	1.134	81.252
						2" Ice	2.582	1.432	123.871
ERICSSON RADIO 4449 B13/B5	A	From Leg	3.000	0.0000	180.000	No Ice	1.980	1.710	70.000
(Nsight)			0.000			1/2" Ice	2.157	1.877	90.640
			-2.500			1" Ice	2.341	2.051	114.235
						2" Ice	2.733	2.423	171.070
ERICSSON RADIO 4449 B13/B5	B	From Leg	3.000	0.0000	180.000	No Ice	1.980	1.710	70.000
(Nsight)			0.000			1/2" Ice	2.157	1.877	90.640
			-2.500			1" Ice	2.341	2.051	114.235
						2" Ice	2.733	2.423	171.070
ERICSSON RADIO 4449 B13/B5	C	From Leg	3.000	0.0000	180.000	No Ice	1.980	1.710	70.000
(Nsight)			0.000			1/2" Ice	2.157	1.877	90.640
			-2.500			1" Ice	2.341	2.051	114.235
						2" Ice	2.733	2.423	171.070
NOKIA AHFIB B2/B66	A	From Leg	3.000	0.0000	180.000	No Ice	2.850	1.524	65.000

tnxTower	Job: US-WI-5179	
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	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
(Nsight)			0.000			1/2" Ice	3.072	1.705	85.911
			-2.500			1" Ice	3.303	1.893	109.994
						2" Ice	3.785	2.290	168.454
NOKIA AHFIB B2/B66	B	From Leg	3.000	0.0000	180.000	No Ice	2.850	1.524	65.000
(Nsight)			0.000			1/2" Ice	3.072	1.705	85.911
			-2.500			1" Ice	3.303	1.893	109.994
						2" Ice	3.785	2.290	168.454
NOKIA AHFIB B2/B66	C	From Leg	3.000	0.0000	180.000	No Ice	2.850	1.524	65.000
(Nsight)			0.000			1/2" Ice	3.072	1.705	85.911
			-2.500			1" Ice	3.303	1.893	109.994
						2" Ice	3.785	2.290	168.454
NOKIA AZHL	A	From Leg	3.000	0.0000	180.000	No Ice	1.786	0.859	51.000
(Nsight)			0.000			1/2" Ice	1.952	0.981	65.989
			-2.500			1" Ice	2.126	1.110	83.849
						2" Ice	2.497	1.391	128.087
NOKIA AZHL	B	From Leg	3.000	0.0000	180.000	No Ice	1.786	0.859	51.000
(Nsight)			0.000			1/2" Ice	1.952	0.981	65.989
			-2.500			1" Ice	2.126	1.110	83.849
						2" Ice	2.497	1.391	128.087
NOKIA AHCA-B5	A	From Leg	3.000	0.0000	180.000	No Ice	1.286	0.720	35.000
(Nsight)			0.000			1/2" Ice	1.428	0.834	46.565
			-2.500			1" Ice	1.577	0.955	60.089
						2" Ice	1.898	1.220	94.605
NOKIA AHCA-B5	B	From Leg	3.000	0.0000	180.000	No Ice	1.286	0.720	35.000
(Nsight)			0.000			1/2" Ice	1.428	0.834	46.565
			-2.500			1" Ice	1.577	0.955	60.089
						2" Ice	1.898	1.220	94.605
NOKIA AHCA-B5	C	From Leg	3.000	0.0000	180.000	No Ice	1.286	0.720	35.000
(Nsight)			0.000			1/2" Ice	1.428	0.834	46.565
			-2.500			1" Ice	1.577	0.955	60.089
						2" Ice	1.898	1.220	94.605
(4) 2.0 STD Mount Pipe (96")	A	From Leg	3.000	0.0000	180.000	No Ice	1.900	1.900	28.000
(Nsight)			0.000			1/2" Ice	2.728	2.728	42.620
			-2.500			1" Ice	3.401	3.401	62.241
						2" Ice	4.396	4.396	117.939
(4) 2.0 STD Mount Pipe (96")	B	From Leg	3.000	0.0000	180.000	No Ice	1.900	1.900	28.000
(Nsight)			0.000			1/2" Ice	2.728	2.728	42.620
			-2.500			1" Ice	3.401	3.401	62.241
						2" Ice	4.396	4.396	117.939
(4) 2.0 STD Mount Pipe (96")	C	From Leg	3.000	0.0000	180.000	No Ice	1.900	1.900	28.000
(Nsight)			0.000			1/2" Ice	2.728	2.728	42.620
			-2.500			1" Ice	3.401	3.401	62.241
						2" Ice	4.396	4.396	117.939
******									
20' Omni	B	From Leg	3.000	0.0000	179.000	No Ice	4.750	4.750	60.000
(Unknown)			0.000			1/2" Ice	6.778	6.778	95.415
			9.000			1" Ice	8.823	8.823	143.441
						2" Ice	12.963	12.963	277.940
15' Omni	C	From Leg	3.000	0.0000	179.000	No Ice	3.562	3.562	50.000
(Unknown)			0.000			1/2" Ice	5.091	5.091	76.633
			4.500			1" Ice	6.635	6.635	112.824
						2" Ice	9.775	9.775	214.490
ATT									
Sector Frame (SitePro VFA12)	A	From Leg	2.000	0.0000	170.000	No Ice	13.200	9.200	658.000
			0.000			1/2" Ice	19.500	14.600	804.000
(ATT)			0.000			1" Ice	25.800	19.500	1015.000
						2" Ice	38.400	29.300	1437.000

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	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
Sector Frame (SitePro VFA12) (ATT)	B	From Leg	2.000 0.000 0.000	0.0000	170.000	No Ice 1/2" Ice 1" Ice 2" Ice	13.200 19.500 25.800 38.400	9.200 14.600 19.500 29.300	658.000 804.000 1015.000 1437.000
Sector Frame (SitePro VFA12) (ATT)	C	From Leg	2.000 0.000 0.000	0.0000	170.000	No Ice 1/2" Ice 1" Ice 2" Ice	13.200 19.500 25.800 38.400	9.200 14.600 19.500 29.300	658.000 804.000 1015.000 1437.000
4.0 STD Mount Pipe (72") (ATT)	A	From Leg	0.500 0.000 0.000	0.0000	170.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.901 2.619 2.998 3.782	1.901 2.619 2.998 3.782	65.000 83.896 107.268 167.451
4.0 STD Mount Pipe (72") (ATT)	B	From Leg	0.500 0.000 0.000	0.0000	170.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.901 2.619 2.998 3.782	1.901 2.619 2.998 3.782	65.000 83.896 107.268 167.451
4.0 STD Mount Pipe (72") (ATT)	C	From Leg	0.500 0.000 0.000	0.0000	170.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.901 2.619 2.998 3.782	1.901 2.619 2.998 3.782	65.000 83.896 107.268 167.451
(6) 2.5 STD Mount Pipe (120") (ATT)	A	From Leg	3.000 0.000 0.000	0.0000	170.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.875 3.907 4.956 6.188	2.875 3.907 4.956 6.188	58.000 78.999 106.552 181.931
(6) 2.5 STD Mount Pipe (120") (ATT)	B	From Leg	3.000 0.000 0.000	0.0000	170.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.875 3.907 4.956 6.188	2.875 3.907 4.956 6.188	58.000 78.999 106.552 181.931
(6) 2.5 STD Mount Pipe (120") (ATT)	C	From Leg	3.000 0.000 0.000	0.0000	170.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.875 3.907 4.956 6.188	2.875 3.907 4.956 6.188	58.000 78.999 106.552 181.931
(4) RAYCAP DC6-48-60-18-8C (ATT)	C	From Leg	3.000 0.000 0.000	0.0000	170.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.145 1.792 2.002 2.451	1.145 1.792 2.002 2.451	26.000 46.588 69.771 125.129
RAYCAP DC6-48-60-0-8C (ATT)	C	From Leg	3.000 0.000 0.000	0.0000	170.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.145 1.792 2.002 2.451	1.145 1.792 2.002 2.451	26.000 46.588 69.771 125.129
ERICSSON RRUS 32 B30 (ATT)	A	From Leg	3.000 0.000 0.000	0.0000	170.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.731 2.953 3.182 3.663	1.668 1.855 2.049 2.458	53.000 73.957 98.206 157.059
ERICSSON RRUS 32 B30 (ATT)	B	From Leg	3.000 0.000 0.000	0.0000	170.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.731 2.953 3.182 3.663	1.668 1.855 2.049 2.458	53.000 73.957 98.206 157.059
ERICSSON RRUS 32 B30 (ATT)	C	From Leg	3.000 0.000 0.000	0.0000	170.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.731 2.953 3.182 3.663	1.668 1.855 2.049 2.458	53.000 73.957 98.206 157.059
ERICSSON RRUS 4478 B14 (ATT)	A	From Leg	3.000 0.000 0.000	0.0000	170.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.843 2.012 2.190 2.566	1.059 1.197 1.342 1.656	60.000 75.777 94.286 139.976
ERICSSON RRUS 4478 B14	B	From Leg	3.000	0.0000	170.000	No Ice	1.843	1.059	60.000

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	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
(ATT)			0.000			1/2" Ice	2.012	1.197	75.777
			0.000			1" Ice	2.190	1.342	94.286
						2" Ice	2.566	1.656	139.976
ERICSSON RRUS 4478 B14	C	From Leg	3.000	0.0000	170.000	No Ice	1.843	1.059	60.000
(ATT)			0.000			1/2" Ice	2.012	1.197	75.777
			0.000			1" Ice	2.190	1.342	94.286
						2" Ice	2.566	1.656	139.976
Ericsson RRUS 4426 B66	A	From Leg	3.000	0.0000	170.000	No Ice	1.650	0.727	48.000
(15x13.2x5.8)			0.000			1/2" Ice	1.810	0.844	61.252
(ATT)			0.000			1" Ice	1.978	0.971	76.501
						2" Ice	2.336	1.246	114.973
Ericsson RRUS 4426 B66	B	From Leg	3.000	0.0000	170.000	No Ice	1.650	0.727	48.000
(15x13.2x5.8)			0.000			1/2" Ice	1.810	0.844	61.252
(ATT)			0.000			1" Ice	1.978	0.971	76.501
						2" Ice	2.336	1.246	114.973
Ericsson RRUS 4426 B66	C	From Leg	3.000	0.0000	170.000	No Ice	1.650	0.727	48.000
(15x13.2x5.8)			0.000			1/2" Ice	1.810	0.844	61.252
(ATT)			0.000			1" Ice	1.978	0.971	76.501
						2" Ice	2.336	1.246	114.973
COMMSCOPE	A	From Leg	3.000	0.0000	170.000	No Ice	6.889	2.368	97.000
NNH4-65B-R6			0.000			1/2" Ice	12.766	6.207	168.741
(ATT)			0.000			1" Ice	13.268	6.671	247.520
						2" Ice	14.293	7.622	425.766
COMMSCOPE	B	From Leg	3.000	0.0000	170.000	No Ice	6.889	2.368	97.000
NNH4-65B-R6			0.000			1/2" Ice	12.766	6.207	168.741
(ATT)			0.000			1" Ice	13.268	6.671	247.520
						2" Ice	14.293	7.622	425.766
COMMSCOPE	C	From Leg	3.000	0.0000	170.000	No Ice	6.889	2.368	97.000
NNH4-65B-R6			0.000			1/2" Ice	12.766	6.207	168.741
(ATT)			0.000			1" Ice	13.268	6.671	247.520
						2" Ice	14.293	7.622	425.766
ERICSSON AIR 6419 B77D	A	From Leg	3.000	0.0000	168.000	No Ice	4.178	2.440	63.000
(ATT)			0.000			1/2" Ice	4.445	2.659	95.039
			0.000			1" Ice	4.718	2.885	130.874
						2" Ice	5.288	3.359	214.861
ERICSSON AIR 6419 B77D	B	From Leg	3.000	0.0000	168.000	No Ice	4.178	2.440	63.000
(ATT)			0.000			1/2" Ice	4.445	2.659	95.039
			0.000			1" Ice	4.718	2.885	130.874
						2" Ice	5.288	3.359	214.861
ERICSSON AIR 6419 B77D	C	From Leg	3.000	0.0000	168.000	No Ice	4.178	2.440	63.000
(ATT)			0.000			1/2" Ice	4.445	2.659	95.039
			0.000			1" Ice	4.718	2.885	130.874
						2" Ice	5.288	3.359	214.861
ERICSSON RRU 4890	A	From Leg	3.000	0.0000	170.000	No Ice	2.084	0.918	46.000
(ATT)			0.000			1/2" Ice	2.279	1.064	59.746
			0.000			1" Ice	2.474	1.210	75.974
						2" Ice	2.864	1.503	116.656
ERICSSON RRU 4890	B	From Leg	3.000	0.0000	170.000	No Ice	2.084	0.918	46.000
(ATT)			0.000			1/2" Ice	2.279	1.064	59.746
			0.000			1" Ice	2.474	1.210	75.974
						2" Ice	2.864	1.503	116.656
ERICSSON RRU 4890	C	From Leg	3.000	0.0000	170.000	No Ice	2.084	0.918	46.000
(ATT)			0.000			1/2" Ice	2.279	1.064	59.746
			0.000			1" Ice	2.474	1.210	75.974
						2" Ice	2.864	1.503	116.656
ERICSSON RRUS 4478	A	From Leg	3.000	0.0000	170.000	No Ice	2.043	1.058	54.000
B12A			0.000			1/2" Ice	2.223	1.196	70.119

tnxTower	Job: US-WI-5179	
Azimuth Engineerring Group 90 E Halsey Road Ste 382 Parsippany, NJ 07054 Phone: 636-373-2968 FAX:	Project: Sister Bay	Date: 19:06:11 05/20/25
	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
(ATT)			0.000			1" Ice	2.411	1.347	89.134
						2" Ice	2.807	1.672	136.031
ERICSSON RRUS 4478	B	From Leg	3.000	0.0000	170.000	No Ice	2.043	1.058	54.000
B12A			0.000			1/2" Ice	2.223	1.196	70.119
(ATT)			0.000			1" Ice	2.411	1.347	89.134
						2" Ice	2.807	1.672	136.031
ERICSSON RRUS 4478	C	From Leg	3.000	0.0000	170.000	No Ice	2.043	1.058	54.000
B12A			0.000			1/2" Ice	2.223	1.196	70.119
(ATT)			0.000			1" Ice	2.411	1.347	89.134
						2" Ice	2.807	1.672	136.031
ERICSSON AIR 6419 B77G	A	From Leg	3.000	0.0000	172.000	No Ice	3.668	1.653	66.000
(ATT)			0.000			1/2" Ice	3.915	1.843	91.592
			0.000			1" Ice	4.169	2.039	120.443
						2" Ice	4.699	2.453	189.303
ERICSSON AIR 6419 B77G	B	From Leg	3.000	0.0000	172.000	No Ice	3.668	1.653	66.000
(ATT)			0.000			1/2" Ice	3.915	1.843	91.592
			0.000			1" Ice	4.169	2.039	120.443
						2" Ice	4.699	2.453	189.303
ERICSSON AIR 6419 B77G	C	From Leg	3.000	0.0000	172.000	No Ice	3.668	1.653	66.000
(ATT)			0.000			1/2" Ice	3.915	1.843	91.592
			0.000			1" Ice	4.169	2.039	120.443
						2" Ice	4.699	2.453	189.303
COMMSCOPE	A	From Leg	3.000	0.0000	170.000	No Ice	6.889	2.368	97.000
NNH4-65B-R6			0.000			1/2" Ice	12.766	6.207	168.741
(ATT)			0.000			1" Ice	13.268	6.671	247.520
						2" Ice	14.293	7.622	425.766
COMMSCOPE	B	From Leg	3.000	0.0000	170.000	No Ice	6.889	2.368	97.000
NNH4-65B-R6			0.000			1/2" Ice	12.766	6.207	168.741
(ATT)			0.000			1" Ice	13.268	6.671	247.520
						2" Ice	14.293	7.622	425.766
COMMSCOPE	C	From Leg	3.000	0.0000	170.000	No Ice	6.889	2.368	97.000
NNH4-65B-R6			0.000			1/2" Ice	12.766	6.207	168.741
(ATT)			0.000			1" Ice	13.268	6.671	247.520
						2" Ice	14.293	7.622	425.766
Sprint									
T-Mobile									
Sector Frame	A	From Leg	2.000	0.0000	93.500	No Ice	18.200	17.300	368.000
(T-Mobile)			0.000			1/2" Ice	23.600	23.800	589.000
			0.000			1" Ice	29.000	30.300	810.000
						2" Ice	39.800	43.300	1252.000
Sector Frame	B	From Leg	2.000	0.0000	93.500	No Ice	18.200	17.300	368.000
(T-Mobile)			0.000			1/2" Ice	23.600	23.800	589.000
			0.000			1" Ice	29.000	30.300	810.000
						2" Ice	39.800	43.300	1252.000
Modified Sector Frame	C	From Leg	2.000	0.0000	93.500	No Ice	16.280	10.620	474.300
(T-Mobile)			0.000			1/2" Ice	21.500	15.160	663.182
			0.000			1" Ice	26.720	19.700	852.064
						2" Ice	37.160	28.780	1229.828
COMMSCOPE	A	From Leg	3.000	0.0000	94.000	No Ice	10.656	3.552	125.000
FFVV-65C-R3-V1_TMO			0.000			1/2" Ice	21.766	9.956	243.675
(T-Mobile)			0.000			1" Ice	22.427	10.565	371.396
						2" Ice	23.769	11.805	653.555
COMMSCOPE	B	From Leg	3.000	0.0000	94.000	No Ice	10.656	3.552	125.000
FFVV-65C-R3-V1_TMO			0.000			1/2" Ice	21.766	9.956	243.675
(T-Mobile)			0.000			1" Ice	22.427	10.565	371.396
						2" Ice	23.769	11.805	653.555
COMMSCOPE	C	From Leg	3.000	0.0000	94.000	No Ice	10.656	3.552	125.000

tnxTower	Job: US-WI-5179	
Azimuth Engineerring Group 90 E Halsey Road Ste 382 Parsippany, NJ 07054 Phone: 636-373-2968 FAX:	Project: Sister Bay	Date: 19:06:11 05/20/25
	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
FFVV-65C-R3-V1_TMO			0.000			1/2" Ice	21.766	9.956	243.675
(T-Mobile)			0.000			1" Ice	22.427	10.565	371.396
						2" Ice	23.769	11.805	653.555
NOKIA FRIJ	A	From Leg	3.000	0.0000	94.000	No Ice	2.425	1.010	44.000
(T-Mobile)			0.000			1/2" Ice	2.628	1.164	60.478
			0.000			1" Ice	2.837	1.325	79.679
						2" Ice	3.278	1.668	127.323
NOKIA FRIJ	B	From Leg	3.000	0.0000	94.000	No Ice	2.425	1.010	44.000
(T-Mobile)			0.000			1/2" Ice	2.628	1.164	60.478
			0.000			1" Ice	2.837	1.325	79.679
						2" Ice	3.278	1.668	127.323
NOKIA FRIJ	C	From Leg	3.000	0.0000	94.000	No Ice	2.425	1.010	44.000
(T-Mobile)			0.000			1/2" Ice	2.628	1.164	60.478
			0.000			1" Ice	2.837	1.325	79.679
						2" Ice	3.278	1.668	127.323
NOKIA AHLOA	A	From Leg	3.000	0.0000	94.000	No Ice	2.229	1.391	84.000
(T-Mobile)			0.000			1/2" Ice	2.422	1.552	102.090
			0.000			1" Ice	2.623	1.720	123.273
						2" Ice	3.048	2.082	175.091
NOKIA AHLOA	B	From Leg	3.000	0.0000	94.000	No Ice	2.229	1.391	84.000
(T-Mobile)			0.000			1/2" Ice	2.422	1.552	102.090
			0.000			1" Ice	2.623	1.720	123.273
						2" Ice	3.048	2.082	175.091
NOKIA AHLOA	C	From Leg	3.000	0.0000	94.000	No Ice	2.229	1.391	84.000
(T-Mobile)			0.000			1/2" Ice	2.422	1.552	102.090
			0.000			1" Ice	2.623	1.720	123.273
						2" Ice	3.048	2.082	175.091
Raycap ASU9338TYP01	A	From Leg	3.000	0.0000	94.000	No Ice	3.213	1.039	19.000
(T-Mobile)			0.000			1/2" Ice	3.435	1.183	40.507
			0.000			1" Ice	3.664	1.335	65.137
						2" Ice	4.146	1.658	124.548
Raycap ASU9338TYP01	B	From Leg	3.000	0.0000	94.000	No Ice	3.213	1.039	19.000
(T-Mobile)			0.000			1/2" Ice	3.435	1.183	40.507
			0.000			1" Ice	3.664	1.335	65.137
						2" Ice	4.146	1.658	124.548
FibeAir RFU-C	B	From Leg	3.000	0.0000	94.000	No Ice	0.901	0.425	11.000
(T-Mobile)			0.000			1/2" Ice	1.021	0.513	18.673
			0.000			1" Ice	1.147	0.609	28.207
						2" Ice	1.423	0.824	53.633
FibeAir RFU-C	C	From Leg	3.000	0.0000	94.000	No Ice	0.901	0.425	11.000
(T-Mobile)			0.000			1/2" Ice	1.021	0.513	18.673
			0.000			1" Ice	1.147	0.609	28.207
						2" Ice	1.423	0.824	53.633
NOKIA AHFIG	A	From Leg	3.000	0.0000	94.000	No Ice	3.082	1.404	79.000
(T-Mobile)			0.000			1/2" Ice	3.313	1.586	100.369
			0.000			1" Ice	3.552	1.775	124.553
						2" Ice	4.052	2.175	183.342
NOKIA AHFIG	B	From Leg	3.000	0.0000	94.000	No Ice	3.082	1.404	79.000
(T-Mobile)			0.000			1/2" Ice	3.313	1.586	100.369
			0.000			1" Ice	3.552	1.775	124.553
						2" Ice	4.052	2.175	183.342
NOKIA AHFIG	C	From Leg	3.000	0.0000	94.000	No Ice	3.082	1.404	79.000
(T-Mobile)			0.000			1/2" Ice	3.313	1.586	100.369
			0.000			1" Ice	3.552	1.775	124.553
						2" Ice	4.052	2.175	183.342
NOKIA AEHC	A	From Leg	3.000	0.0000	94.000	No Ice	6.741	2.600	99.000
(T-Mobile)			0.000			1/2" Ice	7.068	2.839	143.197

tnxTower	Job: US-WI-5179	
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	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			0.000			1" Ice	7.403	3.084	191.699
						2" Ice	8.094	3.596	303.000
NOKIA AEHC	B	From Leg	3.000	0.0000	94.000	No Ice	6.741	2.600	99.000
(T-Mobile)			0.000			1/2" Ice	7.068	2.839	143.197
			0.000			1" Ice	7.403	3.084	191.699
						2" Ice	8.094	3.596	303.000
NOKIA AEHC	C	From Leg	3.000	0.0000	94.000	No Ice	6.741	2.600	99.000
(T-Mobile)			0.000			1/2" Ice	7.068	2.839	143.197
			0.000			1" Ice	7.403	3.084	191.699
						2" Ice	8.094	3.596	303.000
ALLIANCE	C	From Leg	0.000	0.0000	94.000	No Ice	1.268	0.798	9.000
CORPORATION			0.000			1/2" Ice	1.414	0.919	19.549
AC-HC505HICAP24I			0.000			1" Ice	1.568	1.049	32.569
(T-Mobile)						2" Ice	1.897	1.339	66.085
(3) 2.0 STD Mount Pipe (72")	A	From Leg	3.000	0.0000	94.000	No Ice	1.425	1.425	22.000
(T-Mobile)			0.000			1/2" Ice	1.925	1.925	32.787
			0.000			1" Ice	2.294	2.294	47.674
						2" Ice	3.060	3.060	90.238
(3) 2.0 STD Mount Pipe (72")	B	From Leg	3.000	0.0000	94.000	No Ice	1.425	1.425	22.000
(T-Mobile)			0.000			1/2" Ice	1.925	1.925	32.787
			0.000			1" Ice	2.294	2.294	47.674
						2" Ice	3.060	3.060	90.238
(2) 2.0 STD Mount Pipe	C	From Leg	3.000	0.0000	94.000	No Ice	2.375	2.375	37.000
(120")			0.000			1/2" Ice	3.403	3.403	54.452
(T-Mobile)			0.000			1" Ice	4.448	4.448	78.808
						2" Ice	5.911	5.911	147.639
***									
Beacon	C	None		0.0000	179.500	No Ice	2.250	2.250	35.000
						1/2" Ice	2.500	2.500	450.000
						1" Ice	2.750	2.750	865.000
						2" Ice	3.250	3.250	1695.000
4' Lightning Rod	C	From Leg	0.000	0.0000	179.500	No Ice	0.590	0.590	8.000
			0.000			1/2" Ice	0.610	0.610	10.400
			2.000			1" Ice	0.630	0.630	12.800
						2" Ice	0.670	0.670	17.600
**									
Sector Mount [SM 602-3]	C	None		0.0000	155.000	No Ice	33.110	33.110	1540.500
						1/2" Ice	44.900	44.900	2158.770
						1" Ice	56.690	56.690	2777.040
						2" Ice	80.270	80.270	4013.580
AIR 6419 B77D w/Mount	A	From Leg	3.000	0.0000	155.000	No Ice	5.468	4.347	100.200
Pipe			0.000			1/2" Ice	6.294	5.395	154.257
			0.000			1" Ice	7.022	6.294	212.616
						2" Ice	8.264	7.764	352.529
AIR 6419 B77D w/Mount	B	From Leg	3.000	0.0000	155.000	No Ice	5.468	4.347	100.200
Pipe			0.000			1/2" Ice	6.294	5.395	154.257
			0.000			1" Ice	7.022	6.294	212.616
						2" Ice	8.264	7.764	352.529
AIR 6419 B77D w/Mount	C	From Leg	3.000	0.0000	155.000	No Ice	5.468	4.347	100.200
Pipe			0.000			1/2" Ice	6.294	5.395	154.257
			0.000			1" Ice	7.022	6.294	212.616
						2" Ice	8.264	7.764	352.529
AIR 3283 w/Mount Pipe	A	From Leg	3.000	0.0000	155.000	No Ice	8.832	7.192	95.200
			0.000			1/2" Ice	9.631	8.346	178.483
			0.000			1" Ice	10.357	9.351	267.604
						2" Ice	11.654	11.034	473.650
AIR 3283 w/Mount Pipe	B	From Leg	3.000	0.0000	155.000	No Ice	8.832	7.192	95.200

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	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			0.000			1/2" Ice	9.631	8.346	178.483
			0.000			1" Ice	10.357	9.351	267.604
						2" Ice	11.654	11.034	473.650
AIR 3283 w/Mount Pipe	C	From Leg	3.000	0.0000	155.000	No Ice	8.832	7.192	95.200
			0.000			1/2" Ice	9.631	8.346	178.483
			0.000			1" Ice	10.357	9.351	267.604
						2" Ice	11.654	11.034	473.650
NNSS- 65C-HG-R2B w/Mount Pipe	A	From Leg	3.000	0.0000	155.000	No Ice	17.073	10.100	113.200
			0.000			1/2" Ice	17.698	11.522	229.399
			0.000			1" Ice	18.331	12.796	354.243
						2" Ice	19.618	15.017	640.153
NNSS- 65C-HG-R2B w/Mount Pipe	B	From Leg	3.000	0.0000	155.000	No Ice	17.073	10.100	113.200
			0.000			1/2" Ice	17.698	11.522	229.399
			0.000			1" Ice	18.331	12.796	354.243
						2" Ice	19.618	15.017	640.153
NNSS- 65C-HG-R2B w/Mount Pipe	C	From Leg	3.000	0.0000	155.000	No Ice	17.073	10.100	113.200
			0.000			1/2" Ice	17.698	11.522	229.399
			0.000			1" Ice	18.331	12.796	354.243
						2" Ice	19.618	15.017	640.153
4490	A	From Leg	3.000	0.0000	155.000	No Ice	2.695	1.221	68.000
			0.000			1/2" Ice	2.901	1.372	88.152
			0.000			1" Ice	3.113	1.531	111.304
						2" Ice	3.561	1.874	167.390
4490	B	From Leg	3.000	0.0000	155.000	No Ice	2.695	1.221	68.000
			0.000			1/2" Ice	2.901	1.372	88.152
			0.000			1" Ice	3.113	1.531	111.304
						2" Ice	3.561	1.874	167.390
4490	C	From Leg	3.000	0.0000	155.000	No Ice	2.695	1.221	68.000
			0.000			1/2" Ice	2.901	1.372	88.152
			0.000			1" Ice	3.113	1.531	111.304
						2" Ice	3.561	1.874	167.390
RVZDC-3315-PF-48	A	From Leg	3.000	0.0000	155.000	No Ice	4.063	2.989	26.900
			0.000			1/2" Ice	4.321	3.223	62.916
			0.000			1" Ice	4.587	3.465	102.897
						2" Ice	5.141	3.970	195.534
RVZDC-3315-PF-48	B	From Leg	3.000	0.0000	155.000	No Ice	4.063	2.989	26.900
			0.000			1/2" Ice	4.321	3.223	62.916
			0.000			1" Ice	4.587	3.465	102.897
						2" Ice	5.141	3.970	195.534
RVZDC-3315-PF-48	C	From Leg	3.000	0.0000	155.000	No Ice	4.063	2.989	26.900
			0.000			1/2" Ice	4.321	3.223	62.916
			0.000			1" Ice	4.587	3.465	102.897
						2" Ice	5.141	3.970	195.534
2.375" x 8-ft Mount Pipe	A	From Leg	3.000	0.0000	155.000	No Ice	1.900	1.900	29.200
			0.000			1/2" Ice	2.728	2.728	43.540
			0.000			1" Ice	3.401	3.401	63.161
						2" Ice	4.396	4.396	118.859
2.375" x 8-ft Mount Pipe	B	From Leg	3.000	0.0000	155.000	No Ice	1.900	1.900	29.200
			0.000			1/2" Ice	2.728	2.728	43.540
			0.000			1" Ice	3.401	3.401	63.161
						2" Ice	4.396	4.396	118.859
2.375" x 8-ft Mount Pipe	C	From Leg	3.000	0.0000	155.000	No Ice	1.900	1.900	29.200
			0.000			1/2" Ice	2.728	2.728	43.540
			0.000			1" Ice	3.401	3.401	63.161
						2" Ice	4.396	4.396	118.859
**									
1/3 RESERVED LOADING	A	From Leg	3.000	0.0000	180.000	No Ice	12.790	12.790	136.000

tnxTower	Job: US-WI-5179	
Azimuth Engineerring Group 90 E Halsey Road Ste 382 Parsippany, NJ 07054 Phone: 636-373-2968 FAX:	Project: Sister Bay	Date: 19:06:11 05/20/25
	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
(27000 Sqin)			0.000			1/2" Ice	15.000	15.000	205.000
			0.000			1" Ice	17.210	17.210	274.000
						2" Ice	21.630	21.630	412.000
1/3 RESERVED LOADING	B	From Leg	3.000	0.0000	180.000	No Ice	12.790	12.790	136.000
(27000 Sqin)			0.000			1/2" Ice	15.000	15.000	205.000
			0.000			1" Ice	17.210	17.210	274.000
						2" Ice	21.630	21.630	412.000
1/3 RESERVED LOADING	C	From Leg	3.000	0.0000	180.000	No Ice	12.790	12.790	136.000
(27000 Sqin)			0.000			1/2" Ice	15.000	15.000	205.000
			0.000			1" Ice	17.210	17.210	274.000
						2" Ice	21.630	21.630	412.000

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight lb
1.5' Dish	C	Paraboloid w/o	From	0.600	0.0000		125.500	2.000	No Ice	6.250	30.000
(Cellcom)		Radome	Leg	0.000					1/2" Ice	6.500	40.000
				0.000					1" Ice	6.800	50.000
									2" Ice	7.300	70.000
2' Dish	C	Paraboloid w/o	From	0.600	0.0000		172.000	2.000	No Ice	6.250	30.000
(Bug Tussel)		Radome	Leg	0.000					1/2" Ice	6.500	40.000
				0.000					1" Ice	6.800	50.000
									2" Ice	7.300	70.000
2' Dish	A	Paraboloid w/o	From	0.600	0.0000		172.000	2.000	No Ice	6.250	30.000
(Bug Tussel)		Radome	Leg	0.000					1/2" Ice	6.500	40.000
				0.000					1" Ice	6.800	50.000
									2" Ice	7.300	70.000
Valuline	B	Paraboloid	From	4.000	0.0000		94.000	4.000	No Ice	12.570	71.000
VHLP4-11W-6WH/A		w/Shroud (HP)	Leg	0.000					1/2" Ice	13.100	138.000
(T-Mobile)				0.000					1" Ice	13.620	205.000
									2" Ice	14.680	340.000
Valuline	C	Paraboloid	From	4.000	0.0000		94.000	4.000	No Ice	12.570	71.000
VHLP4-11W-6WH/A		w/Shroud (HP)	Leg	0.000					1/2" Ice	13.100	138.000
(T-Mobile)				0.000					1" Ice	13.620	205.000
									2" Ice	14.680	340.000

tnxTower	Job: US-WI-5179	
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	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Tower Pressures - No Ice

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	177.286	1.583	0.037	14.576	A	0.469	2.471	1.715	58.32	3.901	0.000
179.573-175.0					B	0.469	2.471		58.32	2.700	0.000
00					C	0.469	2.559		56.63	0.000	0.000
T2	174.208	1.578	0.037	5.047	A	0.000	1.163	0.594	51.04	2.059	0.000
175.000-173.4					B	0.000	1.163		51.04	1.489	0.000
17					C	0.000	1.251		47.46	0.000	0.000
T3	166.708	1.566	0.037	42.766	A	0.000	7.984	5.031	63.02	19.524	0.000
173.417-160.0					B	0.000	7.984		63.02	13.537	0.000
00					C	0.000	8.335		60.36	9.120	0.000
T4	150.000	1.538	0.036	64.167	A	0.000	12.614	8.333	66.06	29.470	0.000
160.000-140.0					B	0.000	12.614		66.06	20.180	0.000
00					C	0.000	13.138		63.43	27.150	0.000
T5	130.000	1.500	0.035	64.167	A	0.000	12.614	8.333	66.06	30.460	0.000
140.000-120.0					B	0.000	12.614		66.06	20.180	0.000
00					C	0.000	13.138		63.43	30.120	0.000
T6	110.000	1.457	0.034	64.583	A	0.000	13.673	9.167	67.04	33.430	0.000
120.000-100.0					B	0.000	13.673		67.04	20.180	0.000
00					C	0.000	14.193		64.59	33.190	0.000
T7	90.000	1.407	0.033	64.583	A	0.000	13.158	9.167	69.67	33.430	0.000
100.000-80.00					B	0.000	13.158		69.67	20.306	0.000
0					C	0.000	13.677		67.02	42.400	0.000
T8	70.000	1.347	0.031	64.583	A	0.000	12.642	9.167	72.51	33.430	0.000
80.000-60.000					B	0.000	12.642		72.51	21.440	0.000
					C	0.000	13.162		69.64	42.400	0.000
T9	50.000	1.270	0.030	64.583	A	0.693	13.158	9.167	66.18	33.430	0.000
60.000-40.000					B	0.693	13.158		66.18	21.440	0.000
					C	0.693	13.677		63.79	42.400	0.000
T10	30.000	1.162	0.027	64.583	A	0.000	12.642	9.167	72.51	33.430	0.000
40.000-20.000					B	0.000	12.642		72.51	21.440	0.000
					C	0.000	13.162		69.64	42.400	0.000
T11	13.335	1.030	0.024	43.045	A	0.000	8.833	6.110	69.16	22.281	0.000
20.000-6.670					B	0.000	8.833		69.16	14.290	0.000
					C	0.000	9.180		66.55	28.260	0.000
T12	3.335	1.030	0.024	11.572	A	4.452	3.158	3.158	41.50	4.463	0.000
6.670-0.000					B	4.452	3.158		41.50	2.862	0.000
					C	4.452	3.158		41.50	4.432	0.000

Tower Pressure - With Ice

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z ksf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	177.286	1.583	0.008	1.7746	15.929	A	0.469	8.264	4.420	50.61	7.536	0.000
179.573-175.000						B	0.469	8.264		50.61	4.082	0.000
						C	0.469	8.768		47.85	0.000	0.000
T2	174.208	1.578	0.008	1.7715	5.514	A	0.000	3.868	1.529	39.53	3.974	0.000
175.000-173.417						B	0.000	3.868		39.53	2.423	0.000
						C	0.000	4.371		34.98	0.000	0.000

tnxTower	Job: US-WI-5179	
Azimuth Engineerring Group 90 E Halsey Road Ste 382 Parsippany, NJ 07054 Phone: 636-373-2968 FAX:	Project: Sister Bay	Date: 19:06:11 05/20/25
	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Section Elevation ft	z ft	K_Z	q_z ksf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T3	166.708	1.566	0.008	1.7637	46.710	A	0.000	24.949	12.919	51.78	44.464	0.000
173.417-160.000						B	0.000	24.949		51.78	24.400	0.000
						C	0.000	26.954		47.93	39.717	0.000
T4	150.000	1.538	0.008	1.7452	69.984	A	0.000	37.182	19.968	53.70	67.805	0.000
160.000-140.000						B	0.000	37.182		53.70	36.169	0.000
						C	0.000	40.142		49.74	100.925	0.000
T5	130.000	1.500	0.008	1.7204	69.901	A	0.000	36.833	19.803	53.76	69.996	0.000
140.000-120.000						B	0.000	36.833		53.76	35.898	0.000
						C	0.000	39.759		49.81	107.324	0.000
T6	110.000	1.457	0.008	1.6919	70.223	A	0.000	37.398	20.446	54.67	77.415	0.000
120.000-100.000						B	0.000	37.398		54.67	35.587	0.000
						C	0.000	40.262		50.78	116.867	0.000
T7	90.000	1.407	0.007	1.6583	70.111	A	0.000	36.411	20.222	55.54	76.577	0.000
100.000-80.000						B	0.000	36.411		55.54	36.009	0.000
						C	0.000	39.228		51.55	147.042	0.000
T8	70.000	1.347	0.007	1.6171	69.974	A	0.000	35.318	19.948	56.48	75.550	0.000
80.000-60.000						B	0.000	35.318		56.48	42.498	0.000
						C	0.000	38.079		52.39	144.873	0.000
T9	50.000	1.270	0.007	1.5636	69.795	A	0.693	35.806	19.591	53.68	74.215	0.000
60.000-40.000						B	0.693	35.806		53.68	41.700	0.000
						C	0.693	38.492		50.00	142.054	0.000
T10	30.000	1.162	0.006	1.4858	69.536	A	0.000	33.476	19.072	56.97	72.275	0.000
40.000-20.000						B	0.000	33.476		56.97	40.538	0.000
						C	0.000	36.055		52.90	137.955	0.000
T11	13.335	1.030	0.005	1.3701	46.089	A	0.000	21.841	12.197	55.84	46.251	0.000
20.000-6.670						B	0.000	21.841		55.84	25.869	0.000
						C	0.000	23.453		52.01	87.892	0.000
T12 6.670-0.000	3.335	1.030	0.005	1.1928	12.931	A	4.452	6.910	5.898	51.91	8.676	0.000
						B	4.452	6.910		51.91	4.829	0.000
						C	4.452	6.910		51.91	12.797	0.000

Tower Pressure - Service

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	177.286	1.583	0.012	14.576	A	0.469	2.471	1.715	58.32	3.901	0.000
179.573-175.0					B	0.469	2.471		58.32	2.700	0.000
00					C	0.469	2.559		56.63	0.000	0.000
T2	174.208	1.578	0.012	5.047	A	0.000	1.163	0.594	51.04	2.059	0.000
175.000-173.4					B	0.000	1.163		51.04	1.489	0.000
17					C	0.000	1.251		47.46	0.000	0.000
T3	166.708	1.566	0.012	42.766	A	0.000	7.984	5.031	63.02	19.524	0.000
173.417-160.0					B	0.000	7.984		63.02	13.537	0.000
00					C	0.000	8.335		60.36	9.120	0.000
T4	150.000	1.538	0.012	64.167	A	0.000	12.614	8.333	66.06	29.470	0.000
160.000-140.0					B	0.000	12.614		66.06	20.180	0.000
00					C	0.000	13.138		63.43	27.150	0.000
T5	130.000	1.500	0.011	64.167	A	0.000	12.614	8.333	66.06	30.460	0.000
140.000-120.0					B	0.000	12.614		66.06	20.180	0.000
00					C	0.000	13.138		63.43	30.120	0.000
T6	110.000	1.457	0.011	64.583	A	0.000	13.673	9.167	67.04	33.430	0.000

tnxTower	Job: US-WI-5179	
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	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
120.000-100.0					B	0.000	13.673		67.04	20.180	0.000
00					C	0.000	14.193		64.59	33.190	0.000
T7	90.000	1.407	0.011	64.583	A	0.000	13.158	9.167	69.67	33.430	0.000
100.000-80.00					B	0.000	13.158		69.67	20.306	0.000
0					C	0.000	13.677		67.02	42.400	0.000
T8	70.000	1.347	0.010	64.583	A	0.000	12.642	9.167	72.51	33.430	0.000
80.000-60.000					B	0.000	12.642		72.51	21.440	0.000
					C	0.000	13.162		69.64	42.400	0.000
T9	50.000	1.270	0.010	64.583	A	0.693	13.158	9.167	66.18	33.430	0.000
60.000-40.000					B	0.693	13.158		66.18	21.440	0.000
					C	0.693	13.677		63.79	42.400	0.000
T10	30.000	1.162	0.009	64.583	A	0.000	12.642	9.167	72.51	33.430	0.000
40.000-20.000					B	0.000	12.642		72.51	21.440	0.000
					C	0.000	13.162		69.64	42.400	0.000
T11	13.335	1.030	0.008	43.045	A	0.000	8.833	6.110	69.16	22.281	0.000
20.000-6.670					B	0.000	8.833		69.16	14.290	0.000
					C	0.000	9.180		66.55	28.260	0.000
T12	3.335	1.030	0.008	11.572	A	4.452	3.158	3.158	41.50	4.463	0.000
6.670-0.000					B	4.452	3.158		41.50	2.862	0.000
					C	4.452	3.158		41.50	4.432	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	43.560	314.734	A	0.202	2.59	0.037	1	1	1.889	234.686	51.321	B
179.573-175.0			B	0.202	2.59		1	1	1.889			
00			C	0.208	2.57		1	1	1.943			
T2	23.182	136.355	A	0.23	2.497	0.037	1	1	0.675	96.550	60.980	B
175.000-173.4			B	0.23	2.497		1	1	0.675			
17			C	0.248	2.444		1	1	0.731			
T3	254.638	917.585	A	0.187	2.641	0.037	1	1	4.569	906.028	67.530	B
173.417-160.0		TA	B	0.187	2.641		1	1	4.569			
00		714.142	C	0.195	2.613		1	1	4.781			
T4	492.100	1550.638	A	0.197	2.607	0.036	1	1	7.239	1591.632	79.582	C
160.000-140.0			B	0.197	2.607		1	1	7.239			
00			C	0.205	2.58		1	1	7.558			
T5	524.700	1550.638	A	0.197	2.607	0.035	1	1	7.239	1623.358	81.168	C
140.000-120.0			B	0.197	2.607		1	1	7.239			
00			C	0.205	2.58		1	1	7.558			
T6	563.300	1838.273	A	0.212	2.557	0.034	1	1	7.884	1718.653	85.933	C
120.000-100.0		TA	B	0.212	2.557		1	1	7.884			
00		714.142	C	0.22	2.531		1	1	8.207			
T7	642.500	1690.639	A	0.204	2.584	0.033	1	1	7.568	1799.456	89.973	C
100.000-80.00			B	0.204	2.584		1	1	7.568			
0			C	0.212	2.557		1	1	7.887			
T8	645.200	1569.848	A	0.196	2.61	0.031	1	1	7.254	1724.348	86.217	C
80.000-60.000			B	0.196	2.61		1	1	7.254			
			C	0.204	2.583		1	1	7.570			
T9	645.200	1725.092	A	0.214	2.548	0.030	1	1	8.287	1680.886	84.044	C
60.000-40.000			B	0.214	2.548		1	1	8.287			
			C	0.223	2.523		1	1	8.609			
T10	645.200	1569.848	A	0.196	2.61	0.027	1	1	7.254	1488.089	74.404	C
40.000-20.000			B	0.196	2.61		1	1	7.254			
			C	0.204	2.583		1	1	7.570			

tnxTower	Job: US-WI-5179	
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	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T11	430.026	1132.483	A	0.205	2.579	0.024	1	1	5.083	888.869	66.682	C
20.000-6.670			B	0.205	2.579		1	1	5.083			
			C	0.213	2.552		1	1	5.296			
T12	75.614	659.010	A	0.658	1.78	0.024	1	1	6.921	313.544	47.008	C
6.670-0.000			B	0.658	1.78		1	1	6.921			
			C	0.658	1.78		1	1	6.921			
Sum Weight:	4985.220	16083.426								14066.098		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	43.560	314.734	A	0.202	2.59	0.037	0.8	1	1.796	230.230	50.347	C
179.573-175.0			B	0.202	2.59		0.8	1	1.796			
00			C	0.208	2.57		0.8	1	1.849			
T2	23.182	136.355	A	0.23	2.497	0.037	0.8	1	0.675	99.713	62.978	C
175.000-173.4			B	0.23	2.497		0.8	1	0.675			
17			C	0.248	2.444		0.8	1	0.731			
T3	254.638	917.585	A	0.187	2.641	0.037	0.8	1	4.569	919.323	68.521	C
173.417-160.0		TA	B	0.187	2.641		0.8	1	4.569			
00		714.142	C	0.195	2.613		0.8	1	4.781			
T4	492.100	1550.638	A	0.197	2.607	0.036	0.8	1	7.239	1572.467	78.623	A
160.000-140.0			B	0.197	2.607		0.8	1	7.239			
00			C	0.205	2.58		0.8	1	7.558			
T5	524.700	1550.638	A	0.197	2.607	0.035	0.8	1	7.239	1604.664	80.233	A
140.000-120.0			B	0.197	2.607		0.8	1	7.239			
00			C	0.205	2.58		0.8	1	7.558			
T6	563.300	1838.273	A	0.212	2.557	0.034	0.8	1	7.884	1700.971	85.049	A
120.000-100.0		TA	B	0.212	2.557		0.8	1	7.884			
00		714.142	C	0.22	2.531		0.8	1	8.207			
T7	642.500	1690.639	A	0.204	2.584	0.033	0.8	1	7.568	1782.212	89.111	A
100.000-80.00			B	0.204	2.584		0.8	1	7.568			
0			C	0.212	2.557		0.8	1	7.887			
T8	645.200	1569.848	A	0.196	2.61	0.031	0.8	1	7.254	1707.668	85.383	A
80.000-60.000			B	0.196	2.61		0.8	1	7.254			
			C	0.204	2.583		0.8	1	7.570			
T9	645.200	1725.092	A	0.214	2.548	0.030	0.8	1	8.148	1656.866	82.843	A
60.000-40.000			B	0.214	2.548		0.8	1	8.148			
			C	0.223	2.523		0.8	1	8.470			
T10	645.200	1569.848	A	0.196	2.61	0.027	0.8	1	7.254	1473.694	73.685	A
40.000-20.000			B	0.196	2.61		0.8	1	7.254			
			C	0.204	2.583		0.8	1	7.570			
T11	430.026	1132.483	A	0.205	2.579	0.024	0.8	1	5.083	880.469	66.052	A
20.000-6.670			B	0.205	2.579		0.8	1	5.083			
			C	0.213	2.552		0.8	1	5.296			
T12	75.614	659.010	A	0.658	1.78	0.024	0.8	1	6.031	281.095	42.143	A
6.670-0.000			B	0.658	1.78		0.8	1	6.031			
			C	0.658	1.78		0.8	1	6.031			
Sum Weight:	4985.220	16083.426								13909.373		

tnxTower	Job: US-WI-5179	
Azimuth Engineerring Group 90 E Halsey Road Ste 382 Parsippany, NJ 07054 Phone: 636-373-2968 FAX:	Project: Sister Bay	Date: 19:06:11 05/20/25
	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	43.560	314.734	A	0.202	2.59	0.037	0.85	1	1.819	236.216	51.656	C
179.573-175.0			B	0.202	2.59		0.85	1	1.819			
00			C	0.208	2.57		0.85	1	1.872			
T2	23.182	136.355	A	0.23	2.497	0.037	0.85	1	0.675	101.865	64.337	C
175.000-173.4			B	0.23	2.497		0.85	1	0.675			
17			C	0.248	2.444		0.85	1	0.731			
T3	254.638	917.585	A	0.187	2.641	0.037	0.85	1	4.569	914.959	68.196	C
173.417-160.0		TA	B	0.187	2.641		0.85	1	4.569			
00		714.142	C	0.195	2.613		0.85	1	4.781			
T4	492.100	1550.638	A	0.197	2.607	0.036	0.85	1	7.239	1577.752	78.888	B
160.000-140.0			B	0.197	2.607		0.85	1	7.239			
00			C	0.205	2.58		0.85	1	7.558			
T5	524.700	1550.638	A	0.197	2.607	0.035	0.85	1	7.239	1609.819	80.491	B
140.000-120.0			B	0.197	2.607		0.85	1	7.239			
00			C	0.205	2.58		0.85	1	7.558			
T6	563.300	1838.273	A	0.212	2.557	0.034	0.85	1	7.884	1705.979	85.299	B
120.000-100.0		TA	B	0.212	2.557		0.85	1	7.884			
00		714.142	C	0.22	2.531		0.85	1	8.207			
T7	642.500	1690.639	A	0.204	2.584	0.033	0.85	1	7.568	1787.048	89.352	B
100.000-80.00			B	0.204	2.584		0.85	1	7.568			
0			C	0.212	2.557		0.85	1	7.887			
T8	645.200	1569.848	A	0.196	2.61	0.031	0.85	1	7.254	1712.296	85.615	B
80.000-60.000			B	0.196	2.61		0.85	1	7.254			
			C	0.204	2.583		0.85	1	7.570			
T9	645.200	1725.092	A	0.214	2.548	0.030	0.85	1	8.183	1663.460	83.173	B
60.000-40.000			B	0.214	2.548		0.85	1	8.183			
			C	0.223	2.523		0.85	1	8.505			
T10	645.200	1569.848	A	0.196	2.61	0.027	0.85	1	7.254	1477.689	73.884	B
40.000-20.000			B	0.196	2.61		0.85	1	7.254			
			C	0.204	2.583		0.85	1	7.570			
T11	430.026	1132.483	A	0.205	2.579	0.024	0.85	1	5.083	882.828	66.229	B
20.000-6.670			B	0.205	2.579		0.85	1	5.083			
			C	0.213	2.552		0.85	1	5.296			
T12	75.614	659.010	A	0.658	1.78	0.024	0.85	1	6.253	289.477	43.400	B
6.670-0.000			B	0.658	1.78		0.85	1	6.253			
			C	0.658	1.78		0.85	1	6.253			
Sum Weight:	4985.220	16083.426								13959.387		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	189.738	674.393	A	0.548	1.845	0.008	1	1	6.354	113.176	24.749	C
179.573-175.0			B	0.548	1.845		1	1	6.354			
00			C	0.58	1.818		1	1	6.880			
T2	103.799	306.739	A	0.701	1.776	0.008	1	1	3.141	58.427	36.902	C
175.000-173.4			B	0.701	1.776		1	1	3.141			

tnxTower	Job: US-WI-5179	
Azimuth Engineerring Group 90 E Halsey Road Ste 382 Parsippany, NJ 07054 Phone: 636-373-2968 FAX:	Project: Sister Bay	Date: 19:06:11 05/20/25
	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
17			C	0.793	1.811		1	1	3.845			
T3	1454.761	1918.050	A	0.534	1.86	0.008	1	1	17.564	511.464	38.121	C
173.417-160.0		TA	B	0.534	1.86		1	1	17.564			
00		1492.574	C	0.577	1.82		1	1	19.662			
T4	2703.461	3028.151	A	0.531	1.863	0.008	1	1	26.116	868.153	43.408	C
160.000-140.0			B	0.531	1.863		1	1	26.116			
00			C	0.574	1.823		1	1	29.198			
T5	2815.051	2996.091	A	0.527	1.867	0.008	1	1	25.780	872.560	43.628	C
140.000-120.0			B	0.527	1.867		1	1	25.780			
00			C	0.569	1.827		1	1	28.802			
T6	3019.135	3299.037	A	0.533	1.861	0.008	1	1	26.294	893.264	44.663	C
120.000-100.0		TA	B	0.533	1.861		1	1	26.294			
00		1457.745	C	0.573	1.823		1	1	29.278			
T7	3335.150	3067.223	A	0.519	1.876	0.007	1	1	25.328	933.848*	46.692	C
100.000-80.00			B	0.519	1.876		1	1	25.328			
0			C	0.56	1.835		1	1	28.200			
T8	3334.858	2855.312	A	0.505	1.894	0.007	1	1	24.284	892.162*	44.608	C
80.000-60.000			B	0.505	1.894		1	1	24.284			
			C	0.544	1.849		1	1	27.029			
T9	3224.331	3063.557	A	0.523	1.872	0.007	1	1	25.672	839.309*	41.965	C
60.000-40.000			B	0.523	1.872		1	1	25.672			
			C	0.561	1.833		1	1	28.407			
T10	3067.231	2700.241	A	0.481	1.925	0.006	1	1	22.601	765.106*	38.255	C
40.000-20.000			B	0.481	1.925		1	1	22.601			
			C	0.519	1.877		1	1	25.064			
T11	1894.188	1833.016	A	0.474	1.936	0.005	1	1	14.661	448.041	33.611	C
20.000-6.670			B	0.474	1.936		1	1	14.661			
			C	0.509	1.889		1	1	16.179			
T12	299.855	1084.669	A	0.879	1.895	0.005	1	1	11.004	108.356	16.245	C
6.670-0.000			B	0.879	1.895		1	1	11.004			
			C	0.879	1.895		1	1	11.004			
Sum Weight:	25441.557	29776.798			*2.1A_g limit					7303.866		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	189.738	674.393	A	0.548	1.845	0.008	0.8	1	6.260	114.680	25.078	C
179.573-175.0			B	0.548	1.845		0.8	1	6.260			
00			C	0.58	1.818		0.8	1	6.786			
T2	103.799	306.739	A	0.701	1.776	0.008	0.8	1	3.141	59.373	37.499	C
175.000-173.4			B	0.701	1.776		0.8	1	3.141			
17			C	0.793	1.811		0.8	1	3.845			
T3	1454.761	1918.050	A	0.534	1.86	0.008	0.8	1	17.564	507.594	37.833	C
173.417-160.0		TA	B	0.534	1.86		0.8	1	17.564			
00		1492.574	C	0.577	1.82		0.8	1	19.662			
T4	2703.461	3028.151	A	0.531	1.863	0.008	0.8	1	26.116	836.444	41.822	A
160.000-140.0			B	0.531	1.863		0.8	1	26.116			
00			C	0.574	1.823		0.8	1	29.198			
T5	2815.051	2996.091	A	0.527	1.867	0.008	0.8	1	25.780	842.337	42.117	A
140.000-120.0			B	0.527	1.867		0.8	1	25.780			

tnxTower	Job: US-WI-5179	
Azimuth Engineerring Group 90 E Halsey Road Ste 382 Parsippany, NJ 07054 Phone: 636-373-2968 FAX:	Project: Sister Bay	Date: 19:06:11 05/20/25
	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
00			C	0.569	1.827		0.8	1	28.802			
T6	3019.135	3299.037	A	0.533	1.861	0.008	0.8	1	26.294	864.160	43.208	A
120.000-100.0		TA	B	0.533	1.861		0.8	1	26.294			
00		1457.745	C	0.573	1.823		0.8	1	29.278			
T7	3335.150	3067.223	A	0.519	1.876	0.007	0.8	1	25.328	915.370	45.769	A
100.000-80.00			B	0.519	1.876		0.8	1	25.328			
0			C	0.56	1.835		0.8	1	28.200			
T8	3334.858	2855.312	A	0.505	1.894	0.007	0.8	1	24.284	892.162*	44.608	A
80.000-60.000			B	0.505	1.894		0.8	1	24.284			
			C	0.544	1.849		0.8	1	27.029			
T9	3224.331	3063.557	A	0.523	1.872	0.007	0.8	1	25.534	824.913	41.246	A
60.000-40.000			B	0.523	1.872		0.8	1	25.534			
			C	0.561	1.833		0.8	1	28.268			
T10	3067.231	2700.241	A	0.481	1.925	0.006	0.8	1	22.601	761.205	38.060	A
40.000-20.000			B	0.481	1.925		0.8	1	22.601			
			C	0.519	1.877		0.8	1	25.064			
T11	1894.188	1833.016	A	0.474	1.936	0.005	0.8	1	14.661	437.964	32.856	A
20.000-6.670			B	0.474	1.936		0.8	1	14.661			
			C	0.509	1.889		0.8	1	16.179			
T12	299.855	1084.669	A	0.879	1.895	0.005	0.8	1	10.113	100.519	15.070	A
6.670-0.000			B	0.879	1.895		0.8	1	10.113			
			C	0.879	1.895		0.8	1	10.113			
Sum Weight:	25441.557	29776.798			*2.1A_g limit					7156.722		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	189.738	674.393	A	0.548	1.845	0.008	0.85	1	6.284	116.634	25.506	C
179.573-175.0			B	0.548	1.845		0.85	1	6.284			
00			C	0.58	1.818		0.85	1	6.809			
T2	103.799	306.739	A	0.701	1.776	0.008	0.85	1	3.141	59.947	37.862	C
175.000-173.4			B	0.701	1.776		0.85	1	3.141			
17			C	0.793	1.811		0.85	1	3.845			
T3	1454.761	1918.050	A	0.534	1.86	0.008	0.85	1	17.564	513.064	38.241	C
173.417-160.0		TA	B	0.534	1.86		0.85	1	17.564			
00		1492.574	C	0.577	1.82		0.85	1	19.662			
T4	2703.461	3028.151	A	0.531	1.863	0.008	0.85	1	26.116	834.799	41.740	B
160.000-140.0			B	0.531	1.863		0.85	1	26.116			
00			C	0.574	1.823		0.85	1	29.198			
T5	2815.051	2996.091	A	0.527	1.867	0.008	0.85	1	25.780	838.239	41.912	B
140.000-120.0			B	0.527	1.867		0.85	1	25.780			
00			C	0.569	1.827		0.85	1	28.802			
T6	3019.135	3299.037	A	0.533	1.861	0.008	0.85	1	26.294	858.274	42.914	B
120.000-100.0		TA	B	0.533	1.861		0.85	1	26.294			
00		1457.745	C	0.573	1.823		0.85	1	29.278			
T7	3335.150	3067.223	A	0.519	1.876	0.007	0.85	1	25.328	903.709	45.185	B
100.000-80.00			B	0.519	1.876		0.85	1	25.328			
0			C	0.56	1.835		0.85	1	28.200			
T8	3334.858	2855.312	A	0.505	1.894	0.007	0.85	1	24.284	885.866	44.293	B
80.000-60.000			B	0.505	1.894		0.85	1	24.284			

tnxTower	Job: US-WI-5179	
Azimuth Engineerring Group 90 E Halsey Road Ste 382 Parsippany, NJ 07054 Phone: 636-373-2968 FAX:	Project: Sister Bay	Date: 19:06:11 05/20/25
	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F lb	w plf	Ctrl. Face
			C	0.544	1.849		0.85	1	27.029			
T9	3224.331	3063.557	A	0.523	1.872	0.007	0.85	1	25.568	814.835	40.742	B
60.000-40.000			B	0.523	1.872		0.85	1	25.568			
			C	0.561	1.833		0.85	1	28.303			
T10	3067.231	2700.241	A	0.481	1.925	0.006	0.85	1	22.601	750.812	37.541	B
40.000-20.000			B	0.481	1.925		0.85	1	22.601			
			C	0.519	1.877		0.85	1	25.064			
T11	1894.188	1833.016	A	0.474	1.936	0.005	0.85	1	14.661	431.736	32.388	B
20.000-6.670			B	0.474	1.936		0.85	1	14.661			
			C	0.509	1.889		0.85	1	16.179			
T12	299.855	1084.669	A	0.879	1.895	0.005	0.85	1	10.336	102.334	15.342	B
6.670-0.000			B	0.879	1.895		0.85	1	10.336			
			C	0.879	1.895		0.85	1	10.336			
Sum Weight:	25441.557	29776.798								7110.250		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F lb	w plf	Ctrl. Face
T1	43.560	314.734	A	0.202	2.59	0.012	1	1	1.889	76.632	16.758	B
179.573-175.0			B	0.202	2.59		1	1	1.889			
00			C	0.208	2.57		1	1	1.943			
T2	23.182	136.355	A	0.23	2.497	0.012	1	1	0.675	31.527	19.912	B
175.000-173.4			B	0.23	2.497		1	1	0.675			
17			C	0.248	2.444		1	1	0.731			
T3	254.638	917.585	A	0.187	2.641	0.012	1	1	4.569	295.846	22.051	B
173.417-160.0		TA	B	0.187	2.641		1	1	4.569			
00		714.142	C	0.195	2.613		1	1	4.781			
T4	492.100	1550.638	A	0.197	2.607	0.012	1	1	7.239	519.717	25.986	C
160.000-140.0			B	0.197	2.607		1	1	7.239			
00			C	0.205	2.58		1	1	7.558			
T5	524.700	1550.638	A	0.197	2.607	0.011	1	1	7.239	530.076	26.504	C
140.000-120.0			B	0.197	2.607		1	1	7.239			
00			C	0.205	2.58		1	1	7.558			
T6	563.300	1838.273	A	0.212	2.557	0.011	1	1	7.884	561.193	28.060	C
120.000-100.0		TA	B	0.212	2.557		1	1	7.884			
00		714.142	C	0.22	2.531		1	1	8.207			
T7	642.500	1690.639	A	0.204	2.584	0.011	1	1	7.568	587.577	29.379	C
100.000-80.00			B	0.204	2.584		1	1	7.568			
0			C	0.212	2.557		1	1	7.887			
T8	645.200	1569.848	A	0.196	2.61	0.010	1	1	7.254	563.053	28.153	C
80.000-60.000			B	0.196	2.61		1	1	7.254			
			C	0.204	2.583		1	1	7.570			
T9	645.200	1725.092	A	0.214	2.548	0.010	1	1	8.287	548.861	27.443	C
60.000-40.000			B	0.214	2.548		1	1	8.287			
			C	0.223	2.523		1	1	8.609			
T10	645.200	1569.848	A	0.196	2.61	0.009	1	1	7.254	485.907	24.295	C
40.000-20.000			B	0.196	2.61		1	1	7.254			
			C	0.204	2.583		1	1	7.570			
T11	430.026	1132.483	A	0.205	2.579	0.008	1	1	5.083	290.243	21.774	C
20.000-6.670			B	0.205	2.579		1	1	5.083			
			C	0.213	2.552		1	1	5.296			

tnxTower	Job: US-WI-5179	
Azimuth Engineerring Group 90 E Halsey Road Ste 382 Parsippany, NJ 07054 Phone: 636-373-2968 FAX:	Project: Sister Bay	Date: 19:06:11 05/20/25
	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T12	75.614	659.010	A	0.658	1.78	0.008	1	1	6.921	102.382	15.350	C
6.670-0.000			B	0.658	1.78		1	1	6.921			
			C	0.658	1.78		1	1	6.921			
Sum Weight:	4985.220	16083.426								4593.012		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	43.560	314.734	A	0.202	2.59	0.012	0.8	1	1.796	75.177	16.440	C
179.573-175.0			B	0.202	2.59		0.8	1	1.796			
00			C	0.208	2.57		0.8	1	1.849			
T2	23.182	136.355	A	0.23	2.497	0.012	0.8	1	0.675	32.559	20.564	C
175.000-173.4			B	0.23	2.497		0.8	1	0.675			
17			C	0.248	2.444		0.8	1	0.731			
T3	254.638	917.585	A	0.187	2.641	0.012	0.8	1	4.569	300.187	22.374	C
173.417-160.0		TA	B	0.187	2.641		0.8	1	4.569			
00		714.142	C	0.195	2.613		0.8	1	4.781			
T4	492.100	1550.638	A	0.197	2.607	0.012	0.8	1	7.239	513.459	25.673	A
160.000-140.0			B	0.197	2.607		0.8	1	7.239			
00			C	0.205	2.58		0.8	1	7.558			
T5	524.700	1550.638	A	0.197	2.607	0.011	0.8	1	7.239	523.972	26.199	A
140.000-120.0			B	0.197	2.607		0.8	1	7.239			
00			C	0.205	2.58		0.8	1	7.558			
T6	563.300	1838.273	A	0.212	2.557	0.011	0.8	1	7.884	555.419	27.771	A
120.000-100.0		TA	B	0.212	2.557		0.8	1	7.884			
00		714.142	C	0.22	2.531		0.8	1	8.207			
T7	642.500	1690.639	A	0.204	2.584	0.011	0.8	1	7.568	581.947	29.097	A
100.000-80.00			B	0.204	2.584		0.8	1	7.568			
0			C	0.212	2.557		0.8	1	7.887			
T8	645.200	1569.848	A	0.196	2.61	0.010	0.8	1	7.254	557.606	27.880	A
80.000-60.000			B	0.196	2.61		0.8	1	7.254			
			C	0.204	2.583		0.8	1	7.570			
T9	645.200	1725.092	A	0.214	2.548	0.010	0.8	1	8.148	541.017	27.051	A
60.000-40.000			B	0.214	2.548		0.8	1	8.148			
			C	0.223	2.523		0.8	1	8.470			
T10	645.200	1569.848	A	0.196	2.61	0.009	0.8	1	7.254	481.206	24.060	A
40.000-20.000			B	0.196	2.61		0.8	1	7.254			
			C	0.204	2.583		0.8	1	7.570			
T11	430.026	1132.483	A	0.205	2.579	0.008	0.8	1	5.083	287.500	21.568	A
20.000-6.670			B	0.205	2.579		0.8	1	5.083			
			C	0.213	2.552		0.8	1	5.296			
T12	75.614	659.010	A	0.658	1.78	0.008	0.8	1	6.031	91.786	13.761	A
6.670-0.000			B	0.658	1.78		0.8	1	6.031			
			C	0.658	1.78		0.8	1	6.031			
Sum Weight:	4985.220	16083.426								4541.836		

tnxTower	Job: US-WI-5179	
Azimuth Engineerring Group 90 E Halsey Road Ste 382 Parsippany, NJ 07054 Phone: 636-373-2968 FAX:	Project: Sister Bay	Date: 19:06:11 05/20/25
	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	43.560	314.734	A	0.202	2.59	0.012	0.85	1	1.819	77.132	16.867	C
179.573-175.0			B	0.202	2.59		0.85	1	1.819			
00			C	0.208	2.57		0.85	1	1.872			
T2	23.182	136.355	A	0.23	2.497	0.012	0.85	1	0.675	33.262	21.008	C
175.000-173.4			B	0.23	2.497		0.85	1	0.675			
17			C	0.248	2.444		0.85	1	0.731			
T3	254.638	917.585	A	0.187	2.641	0.012	0.85	1	4.569	298.762	22.268	C
173.417-160.0		TA	B	0.187	2.641		0.85	1	4.569			
00		714.142	C	0.195	2.613		0.85	1	4.781			
T4	492.100	1550.638	A	0.197	2.607	0.012	0.85	1	7.239	515.184	25.759	B
160.000-140.0			B	0.197	2.607		0.85	1	7.239			
00			C	0.205	2.58		0.85	1	7.558			
T5	524.700	1550.638	A	0.197	2.607	0.011	0.85	1	7.239	525.655	26.283	B
140.000-120.0			B	0.197	2.607		0.85	1	7.239			
00			C	0.205	2.58		0.85	1	7.558			
T6	563.300	1838.273	A	0.212	2.557	0.011	0.85	1	7.884	557.054	27.853	B
120.000-100.0		TA	B	0.212	2.557		0.85	1	7.884			
00		714.142	C	0.22	2.531		0.85	1	8.207			
T7	642.500	1690.639	A	0.204	2.584	0.011	0.85	1	7.568	583.526	29.176	B
100.000-80.00			B	0.204	2.584		0.85	1	7.568			
0			C	0.212	2.557		0.85	1	7.887			
T8	645.200	1569.848	A	0.196	2.61	0.010	0.85	1	7.254	559.117	27.956	B
80.000-60.000			B	0.196	2.61		0.85	1	7.254			
			C	0.204	2.583		0.85	1	7.570			
T9	645.200	1725.092	A	0.214	2.548	0.010	0.85	1	8.183	543.171	27.159	B
60.000-40.000			B	0.214	2.548		0.85	1	8.183			
			C	0.223	2.523		0.85	1	8.505			
T10	645.200	1569.848	A	0.196	2.61	0.009	0.85	1	7.254	482.511	24.126	B
40.000-20.000			B	0.196	2.61		0.85	1	7.254			
			C	0.204	2.583		0.85	1	7.570			
T11	430.026	1132.483	A	0.205	2.579	0.008	0.85	1	5.083	288.270	21.626	B
20.000-6.670			B	0.205	2.579		0.85	1	5.083			
			C	0.213	2.552		0.85	1	5.296			
T12	75.614	659.010	A	0.658	1.78	0.008	0.85	1	6.253	94.523	14.171	B
6.670-0.000			B	0.658	1.78		0.85	1	6.253			
			C	0.658	1.78		0.85	1	6.253			
Sum Weight:	4985.220	16083.426								4558.167		

Force Totals (Does not include forces on guys)

Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Torques lb-ft
Leg Weight	10088.279			
Bracing Weight	5995.147			
Total Member Self-Weight	16083.426			
Guy Weight	3112.854			
Total Weight	39821.299			
Wind 0 deg - No Ice		497.630	-33212.817	-5878.234
Wind 30 deg - No Ice		17026.701	-28534.607	-7851.793

tnxTower	Job: US-WI-5179	
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	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Torques lb-ft
Wind 60 deg - No Ice		28640.921	-16411.262	1662.429
Wind 90 deg - No Ice		32190.665	-335.681	9129.062
Wind 120 deg - No Ice		28445.361	15883.714	4841.462
Wind 150 deg - No Ice		16338.548	28469.221	1052.303
Wind 180 deg - No Ice		-63.717	32918.012	6244.338
Wind 210 deg - No Ice		-16397.944	28526.280	8131.978
Wind 240 deg - No Ice		-28334.242	16394.173	-1548.296
Wind 270 deg - No Ice		-31866.244	-10.846	-9618.655
Wind 300 deg - No Ice		-28108.925	-16030.540	-5321.699
Wind 330 deg - No Ice		-16563.458	-28336.100	-842.895
Member Ice	13693.373			
Guy Ice	11299.842			
Total Weight Ice	116204.315			
Wind 0 deg - Ice		129.475	-14707.368	-3107.398
Wind 30 deg - Ice		7423.653	-12609.924	-2835.491
Wind 60 deg - Ice		12516.949	-7194.554	606.828
Wind 90 deg - Ice		14352.817	-87.292	3532.033
Wind 120 deg - Ice		12423.252	7032.871	3048.713
Wind 150 deg - Ice		7187.628	12493.997	2276.551
Wind 180 deg - Ice		-16.578	14497.322	3218.507
Wind 210 deg - Ice		-7165.492	12443.736	2908.325
Wind 240 deg - Ice		-12268.266	7092.894	-577.755
Wind 270 deg - Ice		-14075.579	-2.776	-3659.417
Wind 300 deg - Ice		-12337.610	-7071.870	-3173.041
Wind 330 deg - Ice		-7245.949	-12459.245	-2221.871
Total Weight	39821.299			
Wind 0 deg - Service		162.491	-10845.002	-1919.423
Wind 30 deg - Service		5559.739	-9317.423	-2563.851
Wind 60 deg - Service		9352.137	-5358.779	542.834
Wind 90 deg - Service		10511.237	-109.610	2980.918
Wind 120 deg - Service		9288.281	5186.519	1580.885
Wind 150 deg - Service		5335.036	9296.072	343.609
Wind 180 deg - Service		-20.806	10748.739	2038.968
Wind 210 deg - Service		-5354.431	9314.704	2655.340
Wind 240 deg - Service		-9251.997	5353.199	-505.566
Wind 270 deg - Service		-10405.304	-3.541	-3140.785
Wind 300 deg - Service		-9178.425	-5234.462	-1737.698
Wind 330 deg - Service		-5408.476	-9252.604	-275.231

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice+1.0 Guy
3	1.2 Dead+1.0 Wind 30 deg - No Ice+1.0 Guy
4	1.2 Dead+1.0 Wind 60 deg - No Ice+1.0 Guy
5	1.2 Dead+1.0 Wind 90 deg - No Ice+1.0 Guy
6	1.2 Dead+1.0 Wind 120 deg - No Ice+1.0 Guy
7	1.2 Dead+1.0 Wind 150 deg - No Ice+1.0 Guy
8	1.2 Dead+1.0 Wind 180 deg - No Ice+1.0 Guy
9	1.2 Dead+1.0 Wind 210 deg - No Ice+1.0 Guy
10	1.2 Dead+1.0 Wind 240 deg - No Ice+1.0 Guy
11	1.2 Dead+1.0 Wind 270 deg - No Ice+1.0 Guy

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Comb. No.	Description
12	1.2 Dead+1.0 Wind 300 deg - No Ice+1.0 Guy
13	1.2 Dead+1.0 Wind 330 deg - No Ice+1.0 Guy
14	1.2 Dead+1.0 Ice+1.0 Temp+Guy
15	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy
16	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy
17	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy
18	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy
19	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy
20	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy
21	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy
22	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy
23	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy
24	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy
25	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy
26	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy
27	Dead+Wind 0 deg - Service+Guy
28	Dead+Wind 30 deg - Service+Guy
29	Dead+Wind 60 deg - Service+Guy
30	Dead+Wind 90 deg - Service+Guy
31	Dead+Wind 120 deg - Service+Guy
32	Dead+Wind 150 deg - Service+Guy
33	Dead+Wind 180 deg - Service+Guy
34	Dead+Wind 210 deg - Service+Guy
35	Dead+Wind 240 deg - Service+Guy
36	Dead+Wind 270 deg - Service+Guy
37	Dead+Wind 300 deg - Service+Guy
38	Dead+Wind 330 deg - Service+Guy

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
T1	179.573 - 175	Leg	Max Tension	8	6785.319	-26.184	301.753
			Max. Compression	23	-12136.843	146.120	-103.829
			Max. Mx	5	-8040.517	-467.895	-17.529
			Max. My	2	-4904.775	42.703	415.941
			Max. Vy	5	3447.597	-467.895	-17.529
			Max. Vx	2	-2829.836	42.671	360.086
		Diagonal	Max Tension	5	10009.613	0.000	0.000
			Max. Compression	11	-9968.476	0.000	0.000
			Max. Mx	22	3174.632	24.928	0.000
			Max. My	5	-1006.764	0.000	-0.176
			Max. Vy	22	-19.420	0.000	0.000
			Max. Vx	5	-0.137	0.000	0.000
		Secondary Horizontal	Max Tension	5	0.012	-0.529	-0.003
			Max. Compression	24	-0.013	-2.017	-0.000
			Max. Mx	26	-0.006	-2.056	0.000
			Max. My	5	0.012	-0.529	-0.003
			Max. Vy	26	6.829	-2.056	0.000
			Max. Vx	5	0.002	-0.529	-0.003
		Top Girt	Max Tension	12	2923.025	0.000	0.000
			Max. Compression	6	-2967.893	0.000	0.000
			Max. Mx	15	565.000	9.225	0.000
			Max. My	5	-2954.057	0.000	0.000
			Max. Vy	15	-12.300	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000
		Bottom Girt	Max Tension	11	3440.463	0.000	0.000

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	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Compression	5	-3567.299	0.000	0.000
			Max. Mx	15	-52.141	13.951	0.000
			Max. My	5	-3567.299	0.000	0.000
			Max. Vy	15	-18.601	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000
T2	175 - 173.417	Leg	Max Tension	12	9255.781	304.784	194.431
			Max. Compression	23	-13660.978	-178.711	37.092
			Max. Mx	5	3333.712	-579.333	204.675
			Max. My	9	6332.237	138.458	-627.969
			Max. Vy	6	385.131	-540.337	75.280
			Max. Vx	9	347.439	138.458	-627.969
		Diagonal	Max Tension	5	6520.420	0.000	0.000
			Max. Compression	11	-6651.454	0.000	0.000
			Max. Mx	22	2004.641	16.400	0.000
			Max. My	5	-471.303	0.000	-0.042
			Max. Vy	22	-19.339	0.000	0.000
			Max. Vx	5	0.050	0.000	0.000
		Horizontal	Max Tension	11	2424.702	0.000	0.000
			Max. Compression	5	-2020.585	0.000	0.000
			Max. Mx	15	491.812	9.206	0.000
			Max. My	5	-2020.585	0.000	0.000
			Max. Vy	15	-12.275	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000
		Secondary Horizontal	Max Tension	5	0.012	-0.531	-0.003
			Max. Compression	24	-0.014	-2.015	-0.000
			Max. Mx	26	-0.007	-2.052	0.000
			Max. My	5	0.012	-0.531	-0.003
			Max. Vy	26	6.814	-2.052	0.000
			Max. Vx	5	0.002	-0.531	-0.003
T3	173.417 - 160	Leg	Max Tension	12	27334.490	-852.513	-462.890
			Max. Compression	22	-42424.262	-428.581	516.266
			Max. Mx	5	13259.768	-5637.385	2307.187
			Max. My	8	22741.331	-15.620	-6214.902
			Max. Vy	11	2655.817	127.303	-214.789
			Max. Vx	8	2411.260	-15.620	-6214.902
		Diagonal	Max Tension	5	11747.445	0.000	0.000
			Max. Compression	11	-12644.920	0.000	0.000
			Max. Mx	22	4340.396	21.636	0.000
			Max. My	5	-1230.792	0.000	-0.113
			Max. Vy	22	-19.298	0.000	0.000
			Max. Vx	5	0.101	0.000	0.000
		Horizontal	Max Tension	13	12121.519	0.000	0.000
			Max. Compression	7	-10815.714	0.000	0.000
			Max. Mx	24	-544.442	9.159	0.000
			Max. My	5	34.678	0.000	0.000
			Max. Vy	24	12.212	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000
		Secondary Horizontal	Max Tension	24	0.016	0.000	0.000
			Max. Compression	24	-0.027	-2.040	-0.001
			Max. Mx	25	-0.024	-2.067	-0.001
			Max. My	2	-0.000	0.211	0.004
			Max. Vy	25	6.794	-2.067	-0.001
			Max. Vx	11	0.002	-0.427	-0.004
		Bottom Girt	Max Tension	10	1055.213	0.000	0.000
			Max. Compression	1	0.000	0.000	0.000
			Max. Mx	24	893.936	9.159	0.000
			Max. My	5	652.444	0.000	0.000
			Max. Vy	24	12.212	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000

tnxTower	Job: US-WI-5179	
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	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
		Guy A	Bottom Tension	8	24096.327		
			Top Tension	8	24358.380		
			Top Cable Vert	8	21625.407		
			Top Cable Norm	8	11210.372		
			Top Cable Tan	8	0.189		
			Bot Cable Vert	8	-21161.569		
			Bot Cable Norm	8	11524.786		
			Bot Cable Tan	8	16.185		
		Guy B	Bottom Tension	12	18920.680		
			Top Tension	12	19183.465		
			Top Cable Vert	12	14761.995		
			Top Cable Norm	12	12251.074		
			Top Cable Tan	12	5.122		
			Bot Cable Vert	12	-14217.453		
			Bot Cable Norm	12	12484.236		
			Bot Cable Tan	12	4.796		
		Guy C	Bottom Tension	4	23789.791		
			Top Tension	4	24051.890		
			Top Cable Vert	4	21355.512		
			Top Cable Norm	4	11065.051		
			Top Cable Tan	4	12.628		
			Bot Cable Vert	4	-20891.670		
			Bot Cable Norm	4	11379.468		
			Bot Cable Tan	4	3.368		
		Torque Arm Top	Max Tension	11	14092.094	-10712.664	-0.000
			Max. Compression	11	-7123.586	0.000	0.000
			Max. Mx	9	118.585	-73734.158	0.000
			Max. My	5	-7061.155	-71538.989	0.003
			Max. Vy	9	21067.010	-73734.158	0.000
			Max. Vx	5	0.001	-71538.989	0.001
T4	160 - 140	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	17	-45860.779	-232.958	-273.464
			Max. Mx	5	-24326.943	781.954	237.068
			Max. My	9	-27988.583	11.212	718.453
			Max. Vy	11	2654.708	-94.012	-195.590
			Max. Vx	3	1887.843	256.694	-14.280
		Diagonal	Max Tension	13	4026.666	0.000	0.000
			Max. Compression	11	-4384.285	0.000	0.000
			Max. Mx	21	85.851	21.347	0.000
			Max. My	5	832.288	0.000	-0.098
			Max. Vy	21	-19.128	0.000	0.000
			Max. Vx	5	0.088	0.000	0.000
		Horizontal	Max Tension	3	1244.623	0.000	0.000
			Max. Compression	13	-852.678	0.000	0.000
			Max. Mx	16	320.933	9.047	0.000
			Max. My	5	-797.569	0.000	0.000
			Max. Vy	16	-12.063	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000
		Secondary Horizontal	Max Tension	17	0.017	-1.992	-0.000
			Max. Compression	17	-0.010	0.000	0.000
			Max. Mx	25	-0.002	-2.018	0.000
			Max. My	5	0.011	-0.513	-0.002
			Max. Vy	25	6.689	-2.018	0.000
			Max. Vx	5	0.002	-0.513	-0.002
		Top Girt	Max Tension	10	248.803	0.000	0.000
			Max. Compression	4	-574.917	0.000	0.000
			Max. Mx	24	-317.770	9.047	0.000
			Max. My	5	-454.804	0.000	0.000
			Max. Vy	24	-12.063	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000

tnxTower	Job: US-WI-5179	
Azimuth Engineerring Group 90 E Halsey Road Ste 382 Parsippany, NJ 07054 Phone: 636-373-2968 FAX:	Project: Sister Bay	Date: 19:06:11 05/20/25
	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
		Bottom Girt	Max Tension	3	263.783	0.000	0.000
			Max. Compression	5	-7.853	0.000	0.000
			Max. Mx	16	220.593	9.047	0.000
			Max. My	5	-7.853	0.000	0.000
			Max. Vy	16	-12.063	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000
T5	140 - 120	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-58692.799	-225.850	242.284
			Max. Mx	16	-47288.932	432.175	-63.874
			Max. My	19	-48544.168	-179.897	371.059
			Max. Vy	5	3224.436	-234.149	-175.702
			Max. Vx	3	-2880.175	247.921	119.203
		Diagonal	Max Tension	9	4913.229	0.000	0.000
			Max. Compression	3	-5886.010	0.000	0.000
			Max. Mx	21	317.467	21.102	0.000
			Max. My	5	-506.266	0.000	-0.087
			Max. Vy	21	-18.909	0.000	0.000
			Max. Vx	5	0.078	0.000	0.000
		Horizontal	Max Tension	3	586.301	0.000	0.000
			Max. Compression	9	-21.247	0.000	0.000
			Max. Mx	14	398.913	8.900	0.000
			Max. My	5	288.067	0.000	0.000
			Max. Vy	14	11.866	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000
		Secondary Horizontal	Max Tension	17	0.018	-1.958	-0.000
			Max. Compression	17	-0.011	0.000	0.000
			Max. Mx	25	0.000	-1.982	0.000
			Max. My	5	0.011	-0.512	-0.002
			Max. Vy	25	6.569	-1.982	0.000
			Max. Vx	5	0.001	-0.512	-0.002
		Top Girt	Max Tension	9	376.859	0.000	0.000
			Max. Compression	3	-87.488	0.000	0.000
			Max. Mx	16	134.581	8.900	0.000
			Max. My	5	371.018	0.000	0.000
			Max. Vy	16	11.866	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000
		Bottom Girt	Max Tension	3	324.283	0.000	0.000
			Max. Compression	9	-52.600	0.000	0.000
			Max. Mx	14	212.343	8.900	0.000
			Max. My	5	-35.217	0.000	0.000
			Max. Vy	14	11.866	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000
T6	120 - 100	Leg	Max Tension	4	16900.169	681.816	-192.035
			Max. Compression	6	-78489.633	-287.773	419.069
			Max. Mx	5	8169.679	-2972.627	800.982
			Max. My	8	16109.649	174.776	-3069.743
			Max. Vy	11	4531.761	267.153	-325.539
			Max. Vx	3	3485.882	210.659	383.707
		Diagonal	Max Tension	5	7153.627	0.000	0.000
			Max. Compression	11	-8053.906	0.000	0.000
			Max. Mx	21	769.873	23.182	0.000
			Max. My	5	-1482.004	0.000	-0.077
			Max. Vy	21	-20.773	0.000	0.000
			Max. Vx	5	0.069	0.000	0.000
		Horizontal	Max Tension	9	8521.445	0.000	0.000
			Max. Compression	7	-7851.916	0.000	0.000
			Max. Mx	25	201.642	8.732	0.000
			Max. My	5	420.239	0.000	0.000
			Max. Vy	25	11.642	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000

tnxTower	Job: US-WI-5179	
Azimuth Engineerring Group 90 E Halsey Road Ste 382 Parsippany, NJ 07054 Phone: 636-373-2968 FAX:	Project: Sister Bay	Date: 19:06:11 05/20/25
	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
		Secondary Horizontal	Max Tension	17	0.015	-1.921	-0.000
			Max. Compression	17	-0.009	0.000	0.000
			Max. Mx	25	0.001	-1.935	0.000
			Max. My	5	0.008	-0.509	-0.001
			Max. Vy	25	6.429	-1.935	0.000
			Max. Vx	5	0.001	-0.509	-0.001
		Top Girt	Max Tension	9	441.171	0.000	0.000
			Max. Compression	3	-160.207	0.000	0.000
			Max. Mx	14	199.159	8.732	0.000
			Max. My	5	420.417	0.000	0.000
			Max. Vy	14	11.642	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000
		Bottom Girt	Max Tension	7	768.614	0.000	0.000
			Max. Compression	1	0.000	0.000	0.000
			Max. Mx	14	532.138	8.732	0.000
			Max. My	5	684.369	0.000	0.000
			Max. Vy	14	11.642	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000
		Guy A	Bottom Tension	8	13249.277		
			Top Tension	8	13372.051		
			Top Cable Vert	8	10383.846		
			Top Cable Norm	8	8425.407		
			Top Cable Tan	8	1.322		
			Bot Cable Vert	8	-10123.948		
			Bot Cable Norm	8	8546.866		
			Bot Cable Tan	8	9.444		
		Guy B	Bottom Tension	12	9816.191		
			Top Tension	12	9939.170		
			Top Cable Vert	12	6079.365		
			Top Cable Norm	12	7863.104		
			Top Cable Tan	12	2.575		
			Bot Cable Vert	12	-5776.220		
			Bot Cable Norm	12	7936.805		
			Bot Cable Tan	12	2.461		
		Guy C	Bottom Tension	4	13440.690		
			Top Tension	4	13563.463		
			Top Cable Vert	4	10531.068		
			Top Cable Norm	4	8547.752		
			Top Cable Tan	4	8.426		
			Bot Cable Vert	4	-10271.172		
			Bot Cable Norm	4	8669.209		
			Bot Cable Tan	4	0.303		
		Torque Arm Top	Max Tension	3	10135.969	0.000	0.000
			Max. Compression	3	-5520.404	0.000	0.000
			Max. Mx	4	-4119.157	-35674.626	0.000
			Max. My	5	-1913.590	-17118.013	0.001
			Max. Vy	4	10229.664	-35674.626	0.000
			Max. Vx	5	0.000	-17118.013	0.000
T7	100 - 80	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	18	-67905.060	-275.123	-516.003
			Max. Mx	19	-64493.827	638.017	-12.224
			Max. My	20	-60011.491	-180.085	-590.155
			Max. Vy	11	4530.476	-110.451	-325.086
			Max. Vx	3	3486.211	373.393	93.208
		Diagonal	Max Tension	5	6488.423	0.000	0.000
			Max. Compression	11	-7819.918	0.000	0.000
			Max. Mx	17	-1430.267	18.288	0.000
			Max. My	19	-1181.875	0.000	-0.050
			Max. Vy	17	-16.387	0.000	0.000
			Max. Vx	19	-0.044	0.000	0.000

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	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
		Horizontal	Max Tension	5	1927.334	0.000	0.000
			Max. Compression	11	-1001.665	0.000	0.000
			Max. Mx	14	652.058	8.536	0.000
			Max. My	5	-122.916	0.000	0.000
			Max. Vy	14	-11.382	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000
		Secondary Horizontal	Max Tension	17	0.012	-1.878	-0.000
			Max. Compression	17	-0.007	0.000	0.000
			Max. Mx	17	0.005	-1.887	0.000
			Max. My	5	0.005	-0.507	-0.000
			Max. Vy	17	6.271	-1.887	0.000
			Max. Vx	5	0.000	-0.507	-0.000
		Top Girt	Max Tension	10	446.070	0.000	0.000
			Max. Compression	4	-162.510	0.000	0.000
			Max. Mx	14	213.093	8.536	0.000
			Max. My	5	-130.127	0.000	0.000
			Max. Vy	14	-11.382	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000
		Bottom Girt	Max Tension	20	409.048	0.000	0.000
			Max. Compression	1	0.000	0.000	0.000
			Max. Mx	14	310.429	8.536	0.000
			Max. My	5	295.658	0.000	0.000
			Max. Vy	14	-11.382	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000
T8	80 - 60	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	20	-70007.793	612.469	-2.201
			Max. Mx	19	-68242.396	624.616	-14.076
			Max. My	19	-68652.742	296.120	553.014
			Max. Vy	5	727.919	-204.526	-358.043
			Max. Vx	3	-604.505	358.950	7.891
		Diagonal	Max Tension	5	388.899	0.000	0.000
			Max. Compression	3	-1642.992	0.000	0.000
			Max. Mx	18	-355.173	14.060	0.000
			Max. My	19	-1052.548	0.000	-0.045
			Max. Vy	18	-12.598	0.000	0.000
			Max. Vx	19	0.041	0.000	0.000
		Horizontal	Max Tension	20	727.270	0.000	0.000
			Max. Compression	1	0.000	0.000	0.000
			Max. Mx	14	627.763	8.302	0.000
			Max. My	20	687.389	0.000	-0.000
			Max. Vy	14	11.069	0.000	0.000
			Max. Vx	20	-0.000	0.000	0.000
		Secondary Horizontal	Max Tension	18	0.015	-1.823	-0.000
			Max. Compression	18	-0.009	0.000	0.000
			Max. Mx	25	0.005	-1.830	-0.000
			Max. My	5	0.005	-0.507	-0.000
			Max. Vy	25	6.081	-1.830	-0.000
			Max. Vx	5	0.000	-0.507	-0.000
		Top Girt	Max Tension	19	346.041	0.000	0.000
			Max. Compression	1	0.000	0.000	0.000
			Max. Mx	14	307.099	8.302	0.000
			Max. My	5	290.199	0.000	0.000
			Max. Vy	14	11.069	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000
		Bottom Girt	Max Tension	20	356.329	0.000	0.000
			Max. Compression	1	0.000	0.000	0.000
			Max. Mx	14	317.750	8.302	0.000
			Max. My	20	321.994	0.000	-0.000
			Max. Vy	14	11.069	0.000	0.000

tnxTower	Job: US-WI-5179	
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	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Vx	20	-0.000	0.000	0.000
T9	60 - 40	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	20	-73882.105	648.921	-4.904
			Max. Mx	19	-68632.373	675.245	-12.871
			Max. My	19	-71462.184	351.063	603.832
			Max. Vy	5	726.995	-265.160	-359.459
			Max. Vx	7	-793.947	-254.850	283.208
		Diagonal	Max Tension	9	1211.356	0.000	0.000
			Max. Compression	3	-2681.565	0.000	0.000
			Max. Mx	18	-1426.011	17.436	0.000
			Max. My	20	-695.688	0.000	-0.061
			Max. Vy	18	-15.624	0.000	0.000
			Max. Vx	20	0.055	0.000	0.000
		Horizontal	Max Tension	18	1426.208	0.000	0.000
			Max. Compression	1	0.000	0.000	0.000
			Max. Mx	14	1132.518	8.003	0.000
			Max. My	20	713.087	0.000	-0.000
			Max. Vy	14	10.671	0.000	0.000
			Max. Vx	20	-0.000	0.000	0.000
		Secondary Horizontal	Max Tension	18	0.016	-1.751	-0.000
			Max. Compression	18	-0.010	0.000	0.000
			Max. Mx	25	0.003	-1.760	0.000
			Max. My	5	0.005	-0.506	-0.000
			Max. Vy	25	5.841	-1.760	0.000
			Max. Vx	5	0.000	-0.506	-0.000
		Top Girt	Max Tension	21	379.985	0.000	0.000
			Max. Compression	1	0.000	0.000	0.000
			Max. Mx	14	318.337	8.003	0.000
			Max. My	20	283.891	0.000	-0.000
			Max. Vy	14	10.671	0.000	0.000
			Max. Vx	20	-0.000	0.000	0.000
		Bottom Girt	Max Tension	21	396.652	0.000	0.000
			Max. Compression	1	0.000	0.000	0.000
			Max. Mx	25	307.047	8.003	0.000
			Max. My	20	297.515	0.000	-0.000
			Max. Vy	25	10.671	0.000	0.000
			Max. Vx	20	-0.000	0.000	0.000
		Guy A	Bottom Tension	21	6572.006		
			Top Tension	21	6756.803		
			Top Cable Vert	21	3326.006		
			Top Cable Norm	21	5881.501		
			Top Cable Tan	21	3.904		
			Bot Cable Vert	21	-2897.302		
			Bot Cable Norm	21	5898.889		
			Bot Cable Tan	21	3.904		
		Guy B	Bottom Tension	25	5483.881		
			Top Tension	25	5668.748		
			Top Cable Vert	25	2045.295		
			Top Cable Norm	25	5286.916		
			Top Cable Tan	25	0.036		
			Bot Cable Vert	25	-1428.161		
			Bot Cable Norm	25	5294.649		
			Bot Cable Tan	25	0.036		
		Guy C	Bottom Tension	17	6619.308		
			Top Tension	17	6804.102		
			Top Cable Vert	17	3348.056		
			Top Cable Norm	17	5923.370		
			Top Cable Tan	17	4.037		
			Bot Cable Vert	17	-2919.353		
			Bot Cable Norm	17	5940.758		

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	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Bot Cable Tan	17	4.037		
		Top Guy Pull-Off	Max Tension	18	2668.267	0.000	0.000
			Max. Compression	1	0.000	0.000	0.000
			Max. Mx	14	2118.809	15.026	0.000
			Max. My	20	2565.375	0.000	-0.000
			Max. Vy	14	20.035	0.000	0.000
			Max. Vx	20	-0.000	0.000	0.000
T10	40 - 20	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	20	-76399.742	674.441	0.434
			Max. Mx	19	-74211.887	684.947	-8.119
			Max. My	19	-74050.539	328.230	603.500
			Max. Vy	5	-661.223	-219.880	-360.323
			Max. Vx	7	-791.439	-217.148	349.363
		Diagonal	Max Tension	10	579.217	0.000	0.000
			Max. Compression	7	-2049.754	0.000	0.000
			Max. Mx	18	-557.507	12.965	0.000
			Max. My	19	-900.757	0.000	-0.047
			Max. Vy	18	-11.617	0.000	0.000
			Max. Vx	19	0.042	0.000	0.000
		Horizontal	Max Tension	20	776.886	0.000	0.000
			Max. Compression	1	0.000	0.000	0.000
			Max. Mx	15	630.946	7.583	0.000
			Max. My	20	742.696	0.000	-0.000
			Max. Vy	15	10.111	0.000	0.000
			Max. Vx	20	-0.000	0.000	0.000
		Secondary Horizontal	Max Tension	18	0.017	-1.649	-0.001
			Max. Compression	18	-0.010	0.000	0.000
			Max. Mx	26	0.003	-1.660	0.000
			Max. My	2	0.001	-0.502	0.001
			Max. Vy	26	5.504	-1.660	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Top Girt	Max Tension	19	372.215	0.000	0.000
			Max. Compression	1	0.000	0.000	0.000
			Max. Mx	25	310.473	7.583	0.000
			Max. My	20	342.533	0.000	-0.000
			Max. Vy	25	10.111	0.000	0.000
			Max. Vx	20	-0.000	0.000	0.000
		Bottom Girt	Max Tension	16	371.983	0.000	0.000
			Max. Compression	1	0.000	0.000	0.000
			Max. Mx	25	340.245	7.583	0.000
			Max. My	20	344.842	0.000	-0.000
			Max. Vy	25	10.111	0.000	0.000
			Max. Vx	20	-0.000	0.000	0.000
T11	20 - 6.67	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	20	-76401.319	680.802	-13.577
			Max. Mx	18	-75047.912	-1427.844	500.812
			Max. My	20	-75113.866	255.167	-1500.976
			Max. Vy	18	9112.057	-1427.844	500.812
			Max. Vx	21	10282.686	263.928	-1489.425
		Diagonal	Max Tension	8	871.033	0.000	0.000
			Max. Compression	12	-1841.594	0.000	0.000
			Max. Mx	18	309.103	15.748	0.000
			Max. My	19	-429.625	0.000	-0.062
			Max. Vy	18	-14.145	0.000	0.000
			Max. Vx	19	-0.056	0.000	0.000
		Horizontal	Max Tension	18	792.898	0.000	0.000
			Max. Compression	1	0.000	0.000	0.000
			Max. Mx	25	683.460	6.990	0.000
			Max. My	20	752.778	0.000	-0.000
			Max. Vy	25	-9.320	0.000	0.000

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	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Vx	20	0.000	0.000	0.000
		Secondary Horizontal	Max Tension	18	0.016	-1.506	-0.001
			Max. Compression	18	-0.010	0.000	0.000
			Max. Mx	26	0.003	-1.517	0.000
			Max. My	2	0.000	-0.526	0.001
			Max. Vy	26	5.026	-1.517	0.000
			Max. Vx	2	-0.000	-0.526	0.001
		Top Girt	Max Tension	20	407.781	0.000	0.000
			Max. Compression	1	0.000	0.000	0.000
			Max. Mx	25	298.870	6.990	0.000
			Max. My	20	330.108	0.000	-0.000
			Max. Vy	25	-9.320	0.000	0.000
			Max. Vx	20	0.000	0.000	0.000
		Bottom Girt	Max Tension	18	5921.092	0.000	0.000
			Max. Compression	1	0.000	0.000	0.000
			Max. Mx	24	5611.611	6.990	0.000
			Max. My	20	5903.216	0.000	-0.000
			Max. Vy	24	-9.320	0.000	0.000
			Max. Vx	20	0.000	0.000	0.000
T12	6.67 - 0	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	20	-77934.526	-188.692	283.617
			Max. Mx	19	-75009.247	-3147.145	275.651
			Max. My	8	-45009.178	-104.935	409.812
			Max. Vy	19	8990.198	-3147.145	275.651
			Max. Vx	8	-1184.560	-430.742	343.727
		Horizontal	Max Tension	12	6.402	-317.416	-10.372
			Max. Compression	20	-77.921	155.947	17.419
			Max. Mx	8	-0.571	-610.540	-27.686
			Max. My	8	3.265	-570.311	-28.809
			Max. Vy	8	-917.488	-610.540	-27.686
			Max. Vx	8	-54.323	-580.038	-28.653
		Top Girt	Max Tension	18	5385.432	-2202.396	-22.263
			Max. Compression	1	0.000	0.000	0.000
			Max. Mx	19	5382.793	-2231.221	-23.400
			Max. My	7	3573.726	-1511.238	-27.450
			Max. Vy	20	-374.325	-2137.025	-25.952
			Max. Vx	20	-23.702	-2200.880	-26.732
		Bottom Girt	Max Tension	1	0.000	0.000	0.000
			Max. Compression	19	-1598.263	-240.583	18.306
			Max. Mx	8	-1000.177	-995.042	-29.918
			Max. My	8	-1000.177	-995.042	-29.918
			Max. Vy	8	-5745.734	-995.042	-29.918
			Max. Vx	8	-265.421	-995.042	-29.918

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Mast	Max. Vert	19	222157.892	-282.477	-149.735
	Max. H_x	12	123447.926	1223.354	723.158
	Max. H_z	2	137012.587	249.766	1125.209
	Max. M_x	1	0.000	70.594	44.967
	Max. M_z	1	0.000	70.594	44.967
	Max. Torsion	2	639.407	249.766	1125.209
	Min. Vert	37	110729.242	452.756	269.572

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Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
	Min. H_x	4	136293.705	-803.790	517.620
	Min. H_z	8	136137.488	35.555	-1044.866
	Min. M_x	1	0.000	70.594	44.967
	Min. M_z	1	0.000	70.594	44.967
	Min. Torsion	8	-730.883	35.555	-1044.866
Guy C @ 90 ft Elev 0 ft Azimuth 240 deg	Max. Vert	10	-3628.201	-1690.652	973.311
	Max. H_x	10	-3628.201	-1690.652	973.311
	Max. H_z	4	-64688.267	-39176.529	22571.250
	Min. Vert	4	-64688.267	-39176.529	22571.250
	Min. H_x	4	-64688.267	-39176.529	22571.250
	Min. H_z	10	-3628.201	-1690.652	973.311
Guy B @ 144 ft Elev 0 ft Azimuth 120 deg	Max. Vert	6	-1000.893	1207.251	697.608
	Max. H_x	12	-40821.453	38877.119	22423.956
	Max. H_z	12	-40821.453	38877.119	22423.956
	Min. Vert	12	-40821.453	38877.119	22423.956
	Min. H_x	6	-1000.893	1207.251	697.608
	Min. H_z	6	-1000.893	1207.251	697.608
Guy A @ 90 ft Elev 0 ft Azimuth 0 deg	Max. Vert	2	-3608.584	-5.030	-1915.901
	Max. H_x	24	-36107.654	866.922	-27154.734
	Max. H_z	2	-3608.584	-5.030	-1915.901
	Min. Vert	8	-64565.395	1.436	-45050.460
	Min. H_x	18	-35714.186	-960.094	-27319.248
	Min. H_z	8	-64565.395	1.436	-45050.460

Tower Mast Reaction Summary

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
Dead Only	111400.361	-70.594	-44.967	0.000	0.000	4.453
1.2 Dead+1.0 Wind 0 deg - No Ice+1.0 Guy	137012.587	-249.766	-1125.209	0.000	0.000	-639.407
1.2 Dead+1.0 Wind 30 deg - No Ice+1.0 Guy	137120.011	421.001	-836.531	0.000	0.000	-234.965
1.2 Dead+1.0 Wind 60 deg - No Ice+1.0 Guy	136293.705	803.790	-517.620	0.000	0.000	352.383
1.2 Dead+1.0 Wind 90 deg - No Ice+1.0 Guy	144734.926	734.835	-99.118	0.000	0.000	490.913
1.2 Dead+1.0 Wind 120 deg - No Ice+1.0 Guy	149311.086	681.236	426.341	0.000	0.000	465.626
1.2 Dead+1.0 Wind 150 deg - No Ice+1.0 Guy	145382.013	373.316	861.471	0.000	0.000	616.550
1.2 Dead+1.0 Wind 180 deg - No Ice+1.0 Guy	136137.488	-35.555	1044.866	0.000	0.000	730.883
1.2 Dead+1.0 Wind 210 deg - No Ice+1.0 Guy	137034.717	-492.554	781.301	0.000	0.000	255.580
1.2 Dead+1.0 Wind 240 deg - No Ice+1.0 Guy	136528.795	-971.512	300.308	0.000	0.000	-329.199
1.2 Dead+1.0 Wind 270 deg - No Ice+1.0 Guy	128012.364	-1158.189	-233.161	0.000	0.000	-428.756
1.2 Dead+1.0 Wind 300 deg -	123447.926	-1223.354	-723.158	0.000	0.000	-445.683

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Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
No Ice+1.0 Guy 1.2 Dead+1.0 Wind 330 deg -	128264.554	-876.920	-1103.554	0.000	0.000	-593.066
No Ice+1.0 Guy 1.2 Dead+1.0 Ice+1.0 Temp+Guy	213383.819	-185.788	-133.978	0.000	0.000	5.876
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy	213523.184	-246.691	-748.764	0.000	0.000	-316.651
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy	216791.750	34.744	-608.432	0.000	0.000	-61.584
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy	219289.286	227.486	-352.953	0.000	0.000	167.469
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy	220953.874	316.281	-89.843	0.000	0.000	294.980
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy	222157.892	282.477	149.735	0.000	0.000	381.149
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy	220981.353	123.570	329.002	0.000	0.000	460.355
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy	219279.482	-167.229	384.318	0.000	0.000	361.016
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy	216689.728	-476.796	289.531	0.000	0.000	81.219
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy	213494.164	-687.676	94.848	0.000	0.000	-154.786
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy	211518.571	-741.330	-161.455	0.000	0.000	-275.639
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy	210922.028	-687.954	-429.265	0.000	0.000	-365.790
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy	211478.859	-515.721	-660.007	0.000	0.000	-432.338
Dead+Wind 0 deg - Service+Guy	111383.950	-113.637	-475.028	0.000	0.000	-182.921
Dead+Wind 30 deg - Service+Guy	112152.331	112.255	-383.647	0.000	0.000	-27.907
Dead+Wind 60 deg - Service+Guy	112695.179	268.694	-205.670	0.000	0.000	112.097
Dead+Wind 90 deg - Service+Guy	112870.077	317.308	-6.245	0.000	0.000	114.879
Dead+Wind 120 deg - Service+Guy	113077.906	312.825	186.687	0.000	0.000	127.155
Dead+Wind 150 deg - Service+Guy	112915.310	185.096	329.271	0.000	0.000	197.052
Dead+Wind 180 deg - Service+Guy	112665.695	-38.926	359.675	0.000	0.000	199.530
Dead+Wind 210 deg - Service+Guy	112108.048	-268.189	284.348	0.000	0.000	38.971
Dead+Wind 240 deg - Service+Guy	111360.845	-432.321	121.678	0.000	0.000	-98.280
Dead+Wind 270 deg - Service+Guy	110905.484	-465.535	-78.428	0.000	0.000	-109.006
Dead+Wind 300 deg - Service+Guy	110729.242	-452.756	-269.572	0.000	0.000	-130.140
Dead+Wind 330 deg - Service+Guy	110862.075	-328.313	-428.087	0.000	0.000	-188.017

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Solution Summary

Load Comb.	Sum of Applied Forces PX lb	PY lb	PZ lb	Sum of Reactions PX lb	PY lb	PZ lb	% Error
1	-0.000	-39820.853	-0.000	-0.267	39820.951	-0.120	0.001%
2	704.114	-47352.408	-36995.050	-704.088	47352.377	36993.859	0.002%
3	19011.165	-47162.529	-31971.799	-19011.232	47162.516	31971.180	0.001%
4	31813.188	-46972.650	-18481.199	-31812.702	46972.641	18481.725	0.001%
5	35658.154	-47071.097	-487.547	-35657.776	47071.081	487.776	0.001%
6	31349.348	-47205.744	17560.331	-31349.089	47205.732	-17560.182	0.001%
7	17940.773	-47071.097	31548.086	-17940.350	47071.081	-31547.855	0.001%
8	-270.202	-46972.651	36700.244	270.844	46972.644	-36700.110	0.001%
9	-18382.409	-47162.530	31963.472	18381.882	47162.518	-31963.231	0.001%
10	-31506.510	-47352.410	18464.110	31505.615	47352.383	-18463.567	0.002%
11	-35333.732	-47253.963	141.020	35333.050	47253.947	-140.524	0.001%
12	-31012.912	-47119.315	-17707.157	31012.330	47119.307	17707.163	0.001%
13	-18165.683	-47253.962	-31414.965	18165.797	47253.939	31413.824	0.002%
14	-0.000	-123544.170	0.000	0.825	123544.160	0.477	0.001%
15	371.571	-123765.855	-19005.279	-370.378	123765.843	19005.335	0.001%
16	9681.965	-123544.167	-16521.436	-9681.009	123544.154	16522.088	0.001%
17	16118.002	-123322.480	-9553.171	-16115.850	123322.435	9554.726	0.002%
18	18283.030	-123444.435	-262.903	-18282.048	123444.410	263.564	0.001%
19	15714.095	-123607.577	8932.840	-15712.796	123607.542	-8932.088	0.001%
20	9000.650	-123444.435	15985.466	-8999.574	123444.410	-15984.938	0.001%
21	-258.674	-123322.481	18795.233	259.306	123322.470	-18794.961	0.001%
22	-9423.805	-123544.169	16355.248	9424.845	123544.155	-16354.741	0.001%
23	-15869.319	-123765.856	9451.511	15870.254	123765.845	-9450.515	0.001%
24	-18005.791	-123643.902	172.836	18005.480	123643.892	-170.955	0.002%
25	-15628.453	-123480.759	-8971.838	15627.852	123480.754	8971.282	0.001%
26	-9058.971	-123643.901	-15950.714	9059.216	123643.897	15950.195	0.000%
27	229.915	-39882.854	-12080.016	-229.900	39882.852	12079.465	0.001%
28	6207.727	-39820.852	-10439.771	-6206.435	39820.841	10440.160	0.003%
29	10387.980	-39758.850	-6034.677	-10387.268	39758.843	6035.070	0.002%
30	11643.479	-39790.998	-159.199	-11642.407	39790.986	159.844	0.003%
31	10236.522	-39834.965	5733.986	-10236.224	39834.962	-5733.817	0.001%
32	5858.212	-39790.998	10301.416	-5857.021	39790.985	-10300.787	0.003%
33	-88.229	-39758.851	11983.753	88.912	39758.844	-11983.360	0.002%
34	-6002.419	-39820.853	10437.052	6003.337	39820.842	-10436.224	0.003%
35	-10287.840	-39882.855	6029.097	10287.418	39882.853	-6028.886	0.001%
36	-11537.545	-39850.707	46.047	11536.930	39850.705	-46.001	0.001%
37	-10126.665	-39806.739	-5781.929	10126.138	39806.738	5781.598	0.001%
38	-5931.652	-39850.707	-10257.948	5931.375	39850.705	10257.244	0.002%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	9	0.00000001	0.00004604
2	Yes	13	0.00000001	0.00008582
3	Yes	13	0.00000001	0.00004583
4	Yes	12	0.00000001	0.00003338
5	Yes	14	0.00000001	0.00005876
6	Yes	15	0.00000001	0.00005364
7	Yes	14	0.00000001	0.00005780
8	Yes	12	0.00000001	0.00003239
9	Yes	13	0.00000001	0.00004168
10	Yes	13	0.00000001	0.00007350

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11	Yes	12	0.00000001	0.00005345
12	Yes	9	0.00000001	0.00007162
13	Yes	12	0.00000001	0.00007631
14	Yes	11	0.00000001	0.00004586
15	Yes	10	0.00000001	0.00003993
16	Yes	11	0.00000001	0.00004675
17	Yes	11	0.00000001	0.00009780
18	Yes	12	0.00000001	0.00005138
19	Yes	12	0.00000001	0.00006148
20	Yes	12	0.00000001	0.00005319
21	Yes	12	0.00000001	0.00003376
22	Yes	11	0.00000001	0.00004799
23	Yes	10	0.00000001	0.00004316
24	Yes	9	0.00000001	0.00006880
25	Yes	9	0.00000001	0.00006692
26	Yes	10	0.00000001	0.00003145
27	Yes	8	0.00000001	0.00005476
28	Yes	8	0.00000001	0.00006539
29	Yes	9	0.00000001	0.00005128
30	Yes	9	0.00000001	0.00008289
31	Yes	10	0.00000001	0.00003105
32	Yes	9	0.00000001	0.00009115
33	Yes	9	0.00000001	0.00005005
34	Yes	8	0.00000001	0.00006352
35	Yes	8	0.00000001	0.00005427
36	Yes	8	0.00000001	0.00005520
37	Yes	8	0.00000001	0.00005890
38	Yes	8	0.00000001	0.00006354

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	179.573 - 175	2.372	33	0.1229	0.1387
T2	175 - 173.417	2.252	33	0.1204	0.1150
T3	173.417 - 160	2.213	33	0.1184	0.1114
T4	160 - 140	1.927	33	0.0980	0.0864
T5	140 - 120	1.532	29	0.1025	0.0698
T6	120 - 100	1.138	31	0.0823	0.0513
T7	100 - 80	0.913	31	0.0408	0.0460
T8	80 - 60	0.792	31	0.0365	0.0516
T9	60 - 40	0.634	31	0.0422	0.0425
T10	40 - 20	0.447	31	0.0454	0.0419
T11	20 - 6.67	0.244	31	0.0538	0.0367
T12	6.67 - 0	0.084	31	0.0585	0.0361

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
180.000	15' Platform with handrails	33	2.372	0.1229	0.1387	22802
179.500	Beacon	33	2.370	0.1229	0.1383	22802
179.000	20' Omni	33	2.356	0.1227	0.1353	22802
174.000	15' Dipole	33	2.227	0.1192	0.1127	21583

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Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
172.000	2' Dish	33	2.179	0.1163	0.1083	19607
170.000	Sector Frame (SitePro VFA12)	33	2.133	0.1130	0.1041	19345
168.000	ERICSSON AIR 6419 B77D	33	2.090	0.1095	0.1000	20615
166.750	Guy	33	2.064	0.1072	0.0975	21626
155.000	Sector Mount [SM 602-3]	29	1.826	0.0966	0.0807	38756
125.500	1.5' Dish	29	1.232	0.0919	0.0560	34340
125.000	Jaybeam A-18A24E	29	1.223	0.0911	0.0555	32989
106.694	Guy	31	0.971	0.0528	0.0456	29161
94.000	Valuline VHLP4-11W-6WH/A	31	0.873	0.0355	0.0481	53740
93.500	Sector Frame	31	0.870	0.0353	0.0483	57063
82.000	SRL302AHD*2	31	0.804	0.0358	0.0517	49106
46.694	Guy	31	0.511	0.0443	0.0423	97941

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	179.573 - 175	9.435	6	0.4487	0.5408
T2	175 - 173.417	8.976	6	0.4459	0.4764
T3	173.417 - 160	8.823	6	0.4417	0.4600
T4	160 - 140	7.659	6	0.3905	0.3791
T5	140 - 120	6.005	6	0.3923	0.3023
T6	120 - 100	4.443	6	0.3194	0.2193
T7	100 - 80	3.398	6	0.1799	0.1937
T8	80 - 60	2.773	6	0.1524	0.1997
T9	60 - 40	2.122	6	0.1608	0.1651
T10	40 - 20	1.449	6	0.1574	0.1524
T11	20 - 6.67	0.775	6	0.1741	0.1193
T12	6.67 - 0	0.266	7	0.1861	0.1133

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
180.000	15' Platform with handrails	6	9.435	0.4487	0.5408	7932
179.500	Beacon	6	9.427	0.4487	0.5397	7932
179.000	20' Omni	6	9.377	0.4488	0.5320	7932
174.000	15' Dipole	6	8.879	0.4434	0.4657	7428
172.000	2' Dish	6	8.690	0.4368	0.4473	6883
170.000	Sector Frame (SitePro VFA12)	6	8.507	0.4290	0.4315	6855
168.000	ERICSSON AIR 6419 B77D	6	8.331	0.4204	0.4181	7504
166.750	Guy	6	8.223	0.4150	0.4106	8059
155.000	Sector Mount [SM 602-3]	6	7.246	0.3846	0.3597	20401
125.500	1.5' Dish	6	4.836	0.3518	0.2391	10269
125.000	Jaybeam A-18A24E	6	4.799	0.3492	0.2371	9909
106.694	Guy	6	3.684	0.2202	0.1947	8633
94.000	Valuline VHLP4-11W-6WH/A	6	3.188	0.1597	0.1976	15711
93.500	Sector Frame	6	3.172	0.1587	0.1980	16624
82.000	SRL302AHD*2	6	2.831	0.1517	0.2016	15437
46.694	Guy	6	1.672	0.1612	0.1621	40840

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Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load per Bolt lb	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	179.573	Leg	A325N	0.8750	2	3392.660	41556.000	0.082 ✔	1	Bolt Tension
T2	175	Leg	A325N	0.7500	4	2313.950	30101.400	0.077 ✔	1	Bolt Tension
T3	173.417	Leg	A325N	0.7500	4	3414.560	30101.400	0.113 ✔	1	Bolt Tension
		Torque Arm Top@166.75	A325N	0.8750	2	7046.050	27059.400	0.260 ✔	1	Bolt Shear
T4	160	Leg	A325N	0.7500	4	3636.220	30101.400	0.121 ✔	1	Bolt Tension
T5	140	Leg	A325N	0.7500	4	4891.070	30101.400	0.162 ✔	1	Bolt Tension
T6	120	Leg	A325N	0.7500	4	5412.910	30101.400	0.180 ✔	1	Bolt Tension
		Torque Arm Top@106.694	A325N	0.8750	2	5067.980	27059.400	0.187 ✔	1	Bolt Shear
T7	100	Leg	A325N	0.7500	4	5658.750	30101.400	0.188 ✔	1	Bolt Tension
T8	80	Leg	A325N	0.7500	4	5833.980	30101.400	0.194 ✔	1	Bolt Tension
T9	60	Leg	A325N	0.7500	4	6156.840	30101.400	0.205 ✔	1	Bolt Tension
T10	40	Leg	A325N	0.7500	4	6366.650	30101.400	0.212 ✔	1	Bolt Tension
T11	20	Leg	A325N	0.7500	4	6259.490	30101.400	0.208 ✔	1	Bolt Tension
T12	6.67	Leg	A325N	0.7500	4	6368.060	30101.400	0.212 ✔	1	Bolt Tension

Guy Design Data

Section No.	Elevation ft	Size	Initial Tension lb	Breaking Load lb	Actual T_u lb	Allowable ϕT_n lb	Required S.F.	Actual S.F.
T3	166.750 (A) (451)	7/8 EHS	9500.000	79699.844	23743.801	47820.000	1.000	2.014 ✔
	166.750 (A) (452)	7/8 EHS	9500.000	79699.844	24358.400	47820.000	1.000	1.963 ✔
	166.750 (B) (447)	7/8 EHS	9500.000	79699.844	19183.500	47820.000	1.000	2.493 ✔
	166.750 (B) (448)	7/8 EHS	9500.000	79699.844	18590.100	47820.000	1.000	2.572 ✔
	166.750 (C) (443)	7/8 EHS	9500.000	79699.844	23987.600	47820.000	1.000	1.994 ✔
	166.750 (C) (444)	7/8 EHS	9500.000	79699.844	24051.900	47820.000	1.000	1.988 ✔
T6	106.694 (A) (463)	3/4 (24000) EHS	4700.000	58299.914	12939.000	34980.000	1.000	2.703 ✔
	106.694 (A) (464)	3/4 (24000) EHS	4700.000	58299.914	13372.100	34980.000	1.000	2.616 ✔
	106.694 (B) (459)	3/4 (24000) EHS	4700.000	58299.914	9939.170	34980.000	1.000	3.519 ✔
	106.694 (B)	3/4 (24000)	4700.000	58299.914	9574.020	34980.000	1.000	3.654 ✔

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Section No.	Elevation ft	Size	Initial Tension lb	Breaking Load lb	Actual T_u lb	Allowable ϕT_n lb	Required S.F.	Actual S.F.
	(460)	EHS						
	106.694 (C) (455)	3/4 (24000) EHS	4700.000	58299.914	13174.100	34980.000	1.000	2.655 ✔
	106.694 (C) (456)	3/4 (24000) EHS	4700.000	58299.914	13563.500	34980.000	1.000	2.579 ✔
T9	46.694 (A) (472)	1/2 EHS	2690.000	26900.043	6756.800	16140.000	1.000	2.389 ✔
	46.694 (B) (471)	1/2 EHS	2690.000	26900.043	5668.750	16140.000	1.000	2.847 ✔
	46.694 (C) (467)	1/2 EHS	2690.000	26900.043	6804.100	16140.000	1.000	2.372 ✔

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	179.573 - 175	2 1/4	4.573	4.167	88.9 K=1.00	3.9761	-10958.800	100408.000	0.109 [1] ✔
T2	175 - 173.417	2 1/4	1.583	1.583	33.8 K=1.00	3.9761	-13661.000	164604.000	0.083 [1] ✔
T3	173.417 - 160	2 1/4	13.417	3.333	71.1 K=1.00	3.9761	-42424.301	123621.000	0.343 [1] ✔
T4	160 - 140	2 1/2	20.000	3.306	63.5 K=1.00	4.9087	-45860.801	164541.000	0.279 [1] ✔
T5	140 - 120	2 1/2	20.000	3.306	63.5 K=1.00	4.9087	-56435.301	164541.000	0.343 [1] ✔
T6	120 - 100	2 3/4	20.000	3.306	57.7 K=1.00	5.9396	-78489.602	209536.000	0.375 [1] ✔
T7	100 - 80	2 3/4	20.000	3.306	57.7 K=1.00	5.9396	-66678.398	209536.000	0.318 [1] ✔
T8	80 - 60	2 3/4	20.000	3.306	57.7 K=1.00	5.9396	-69418.797	209536.000	0.331 [1] ✔
T9	60 - 40	2 3/4	20.000	3.306	57.7 K=1.00	5.9396	-72748.602	209536.000	0.347 [1] ✔
T10	40 - 20	2 3/4	20.000	3.306	57.7 K=1.00	5.9396	-75671.102	209536.000	0.361 [1] ✔
T11	20 - 6.67	2 3/4	13.330	3.291	57.4 K=1.00	5.9396	-75527.500	209990.000	0.360 [1] ✔
T12	6.67 - 0	2 3/4	6.891	1.953	34.1 K=1.00	5.9396	-77934.500	245516.000	0.317 [1] ✔

[1] P_u / ϕP_n controls

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Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	179.573 - 175	1 3/8	5.134	4.813	117.6 K=0.70	1.4849	-9968.480	23223.600	0.429 [1] ✓
T2	175 - 173.417	1 3/8	3.392	3.180	85.2 K=0.77	1.4849	-6651.450	32832.898	0.203 [1] ✓
T3	173.417 - 160	1 3/8	4.485	4.204	102.7 K=0.70	1.4849	-12644.900	27600.801	0.458 [1] ✓
T4	160 - 140	1 3/8	4.464	4.154	101.5 K=0.70	1.4849	-4384.280	27968.199	0.157 [1] ✓
T5	140 - 120	1 3/8	4.464	4.154	101.5 K=0.70	1.4849	-5886.010	27968.199	0.210 [1] ✓
T6	120 - 100	1 1/2	4.464	4.123	92.4 K=0.70	1.7672	-8053.910	36543.699	0.220 [1] ✓
T7	100 - 80	1 1/4	4.464	4.123	110.8 K=0.70	1.2272	-7819.920	20828.000	0.375 [1] ✓
T8	80 - 60	1	4.464	4.123	138.5 K=0.70	0.7854	-1642.990	9245.650	0.178 [1] ✓
T9	60 - 40	1 1/4	4.464	4.123	110.8 K=0.70	1.2272	-2681.570	20828.000	0.129 [1] ✓
T10	40 - 20	1	4.464	4.123	138.5 K=0.70	0.7854	-2049.750	9245.650	0.222 [1] ✓
T11	20 - 6.67	1 1/4	4.453	4.113	110.6 K=0.70	1.2272	-1841.590	20893.699	0.088 [1] ✓

[1] P_u / ϕP_n controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T2	175 - 173.417	7/8	3.000	2.813	108.0 K=0.70	0.6013	-2020.580	10543.300	0.192 [1] ✓
T3	173.417 - 160	7/8	3.000	2.813	108.0 K=0.70	0.6013	-10815.700	10543.300	1.026 [1] ✓
T4	160 - 140	(1.03 CR) - 46 7/8	3.000	2.792	107.2 K=0.70	0.6013	-852.678	10639.200	0.080 [1] ✓
T5	140 - 120	7/8	3.000	2.792	107.2 K=0.70	0.6013	-1055.750	10639.200	0.099 [1] ✓
T6	120 - 100	7/8	3.000	2.771	106.4 K=0.70	0.6013	-7851.920	10735.400	0.731 [1] ✓
T7	100 - 80	7/8	3.000	2.771	106.4 K=0.70	0.6013	-1176.150	10735.400	0.110 [1] ✓
T8	80 - 60	7/8	3.000	2.771	106.4 K=0.70	0.6013	-1212.570	10735.400	0.113 [1] ✓
T9	60 - 40	7/8	3.000	2.771	106.4 K=0.70	0.6013	-1279.680	10735.400	0.119 [1] ✓

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Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T10	40 - 20	7/8	3.000	2.771	106.4 K=0.70	0.6013	-1323.280	10735.400	0.123 [1] ✓
T11	20 - 6.67	7/8	3.000	2.771	106.4 K=0.70	0.6013	-1323.310	10735.400	0.123 [1] ✓
T12	6.67 - 0	9x3/8	1.925	1.696	188.0 K=1.00	3.3750	-1383.030	21574.801	0.064 [1] ✓

[1] P_u / ϕP_n controls

Secondary Horizontal Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T1	179.573 - 175	3/4	1.500	1.406	83.3 K=0.92	0.4418	-0.013	9937.790	0.000 [1] ✓
T2	175 - 173.417	3/4	1.500	1.406	83.3 K=0.92	0.4418	-0.014	9937.790	0.000 [1] ✓
T3	173.417 - 160	3/4	1.500	1.406	83.3 K=0.92	0.4418	-0.027	9937.790	0.000 [1] ✓
T4	160 - 140	3/4	1.500	1.396	83.1 K=0.93	0.4418	-0.010	9952.590	0.000 [1] ✓
T5	140 - 120	3/4	1.500	1.396	83.1 K=0.93	0.4418	-0.011	9952.590	0.000 [1] ✓
T6	120 - 100	3/4	1.500	1.386	82.9 K=0.93	0.4418	-0.009	9967.950	0.000 [1] ✓
T7	100 - 80	3/4	1.500	1.386	82.9 K=0.93	0.4418	-0.007	9967.950	0.000 [1] ✓
T8	80 - 60	3/4	1.500	1.386	82.9 K=0.93	0.4418	-0.009	9967.950	0.000 [1] ✓
T9	60 - 40	3/4	1.500	1.386	82.9 K=0.93	0.4418	-0.010	9967.950	0.000 [1] ✓
T10	40 - 20	3/4	1.500	1.386	82.9 K=0.93	0.4418	-0.010	9967.950	0.000 [1] ✓
T11	20 - 6.67	3/4	1.500	1.386	82.9 K=0.93	0.4418	-0.010	9967.950	0.000 [1] ✓

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T1	179.573 - 175	7/8	3.000	2.813	108.0 K=0.70	0.6013	-2967.890	10543.300	0.281 [1] ✓
T4	160 - 140	7/8	3.000	2.792	107.2	0.6013	-824.928	10639.200	0.078 [1]

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Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
					K=0.70				✔
T5	140 - 120	7/8	3.000	2.792	107.2 K=0.70	0.6013	-1055.750	10639.200	0.099 [1] ✔
T6	120 - 100	7/8	3.000	2.771	106.4 K=0.70	0.6013	-1359.480	10735.400	0.127 [1] ✔
T7	100 - 80	7/8	3.000	2.771	106.4 K=0.70	0.6013	-1176.150	10735.400	0.110 [1] ✔
T8	80 - 60	7/8	3.000	2.771	106.4 K=0.70	0.6013	-1212.570	10735.400	0.113 [1] ✔
T9	60 - 40	7/8	3.000	2.771	106.4 K=0.70	0.6013	-1279.680	10735.400	0.119 [1] ✔
T10	40 - 20	7/8	3.000	2.771	106.4 K=0.70	0.6013	-1323.280	10735.400	0.123 [1] ✔
T11	20 - 6.67	7/8	3.000	2.771	106.4 K=0.70	0.6013	-1323.310	10735.400	0.123 [1] ✔
T12	6.67 - 0	12 x 3/8	2.775	2.546	282.2 K=1.00	4.5000	-1383.030	12763.600	0.108 [1] ✔
		KL/R > 200 (C) - 432							

[1] P_u / ϕP_n controls

Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	179.573 - 175	2x1/2	3.000	2.813	233.8 K=1.00	1.0000	-3567.300	4131.910	0.863 [1] ✔
		KL/R > 200 (C) - 7							
T3	173.417 - 160	7/8	3.000	2.813	108.0 K=0.70	0.6013	-825.529	10543.300	0.078 [1] ✔
T4	160 - 140	7/8	3.000	2.792	107.2 K=0.70	0.6013	-824.928	10639.200	0.078 [1] ✔
T5	140 - 120	7/8	3.000	2.792	107.2 K=0.70	0.6013	-1055.750	10639.200	0.099 [1] ✔
T6	120 - 100	7/8	3.000	2.771	106.4 K=0.70	0.6013	-1359.480	10735.400	0.127 [1] ✔
T7	100 - 80	7/8	3.000	2.771	106.4 K=0.70	0.6013	-1176.150	10735.400	0.110 [1] ✔
T8	80 - 60	7/8	3.000	2.771	106.4 K=0.70	0.6013	-1212.570	10735.400	0.113 [1] ✔
T9	60 - 40	7/8	3.000	2.771	106.4 K=0.70	0.6013	-1279.680	10735.400	0.119 [1] ✔
T10	40 - 20	7/8	3.000	2.771	106.4 K=0.70	0.6013	-1323.280	10735.400	0.123 [1] ✔
T11	20 - 6.67	7/8	3.000	2.771	106.4 K=0.70	0.6013	-1323.310	10735.400	0.123 [1] ✔
T12	6.67 - 0	12 x 3/8	0.225	0.000	0.0 K=1.00	4.5000	-1598.260	145800.000	0.011 [1] ✔

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[1] P_u / ϕP_n controls

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T3	173.417 - 160 (445)	C15x33.9	3.512	3.418	45.4 K=1.00	9.9600	-6982.780	289557.000	0.024
T3	173.417 - 160 (446)	C15x33.9	3.512	3.418	45.4 K=1.00	9.9600	-7038.580	289557.000	0.024
T3	173.417 - 160 (449)	C15x33.9	3.512	3.418	45.4 K=1.00	9.9600	-5120.460	289557.000	0.018
T3	173.417 - 160 (450)	C15x33.9	3.512	3.418	45.4 K=1.00	9.9600	-5211.950	289557.000	0.018
T3	173.417 - 160 (453)	C15x33.9	3.512	3.418	45.4 K=1.00	9.9600	-4561.170	289557.000	0.016
T3	173.417 - 160 (454)	C15x33.9	3.512	3.418	45.4 K=1.00	9.9600	-4781.980	289557.000	0.017
T6	120 - 100 (457)	C15x33.9	3.512	3.397	45.1 K=1.00	9.9600	-3799.250	289939.000	0.013
T6	120 - 100 (458)	C15x33.9	3.512	3.397	45.1 K=1.00	9.9600	-4076.110	289939.000	0.014
T6	120 - 100 (461)	C15x33.9	3.512	3.397	45.1 K=1.00	9.9600	-4119.230	289939.000	0.014
T6	120 - 100 (462)	C15x33.9	3.512	3.397	45.1 K=1.00	9.9600	-3409.140	289939.000	0.012
T6	120 - 100 (465)	C15x33.9	3.512	3.397	45.1 K=1.00	9.9600	-2950.600	289939.000	0.010
T6	120 - 100 (466)	C15x33.9	3.512	3.397	45.1 K=1.00	9.9600	-3637.790	289939.000	0.013

Torque-Arm Top Bending Design Data

Section No.	Elevation ft	Size	M_{ux} lb-ft	ϕM_{nx} lb-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} lb-ft	ϕM_{ny} lb-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T3	173.417 - 160 (445)	C15x33.9	-72686.000	136080.000	0.534	-0.001	12595.500	0.000
T3	173.417 - 160 (446)	C15x33.9	-73336.750	136080.000	0.539	0.001	12595.500	0.000
T3	173.417 - 160 (449)	C15x33.9	-73049.667	136080.000	0.537	-0.000	12595.500	0.000
T3	173.417 - 160 (450)	C15x33.9	-50327.083	136080.000	0.370	-0.000	12595.500	0.000
T3	173.417 - 160 (453)	C15x33.9	-50591.000	136080.000	0.372	-0.000	12595.500	0.000
T3	173.417 - 160 (454)	C15x33.9	-72938.583	136080.000	0.536	0.000	12595.500	0.000
T6	120 - 100 (457)	C15x33.9	-35472.083	136080.000	0.261	0.000	12595.500	0.000
T6	120 - 100 (458)	C15x33.9	-34819.667	136080.000	0.256	0.000	12595.500	0.000
T6	120 - 100 (461)	C15x33.9	-35674.667	136080.000	0.262	0.000	12595.500	0.000
T6	120 - 100 (462)	C15x33.9	-20277.500	136080.000	0.149	-0.000	12595.500	0.000
T6	120 - 100 (465)	C15x33.9	-20426.750	136080.000	0.150	-0.000	12595.500	0.000
T6	120 - 100 (466)	C15x33.9	-34519.250	136080.000	0.254	0.000	12595.500	0.000

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Section No.	Elevation ft	Size	M_{ux} lb-ft	ϕM_{nx} lb-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} lb-ft	ϕM_{ny} lb-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$

Torque-Arm Top Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T3	173.417 - 160 (445)	C15x33.9	0.024	0.534	0.000	0.546 ✔	1.000	✔
T3	173.417 - 160 (446)	C15x33.9	0.024	0.539	0.000	0.551 ✔	1.000	✔
T3	173.417 - 160 (449)	C15x33.9	0.018	0.537	0.000	0.546 ✔	1.000	✔
T3	173.417 - 160 (450)	C15x33.9	0.018	0.370	0.000	0.379 ✔	1.000	✔
T3	173.417 - 160 (453)	C15x33.9	0.016	0.372	0.000	0.380 ✔	1.000	✔
T3	173.417 - 160 (454)	C15x33.9	0.017	0.536	0.000	0.544 ✔	1.000	✔
T6	120 - 100 (457)	C15x33.9	0.013	0.261	0.000	0.267 ✔	1.000	✔
T6	120 - 100 (458)	C15x33.9	0.014	0.256	0.000	0.263 ✔	1.000	✔
T6	120 - 100 (461)	C15x33.9	0.014	0.262	0.000	0.269 ✔	1.000	✔
T6	120 - 100 (462)	C15x33.9	0.012	0.149	0.000	0.155 ✔	1.000	✔
T6	120 - 100 (465)	C15x33.9	0.010	0.150	0.000	0.155 ✔	1.000	✔
T6	120 - 100 (466)	C15x33.9	0.013	0.254	0.000	0.260 ✔	1.000	✔

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	179.573 - 175	2 1/4	4.573	0.219	4.7	3.9761	6785.320	178924.000	0.038 [1] ✔
T2	175 - 173.417	2 1/4	1.583	1.583	33.8	3.9761	9255.780	178924.000	0.052 [1] ✔
T3	173.417 - 160	2 1/4	13.417	3.333	71.1	3.9761	27334.500	178924.000	0.153 [1] ✔
T6	120 - 100	2 3/4	20.000	3.306	57.7	5.9396	16900.199	267281.000	0.063 [1] ✔

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Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$

[1] P_u / ϕP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	179.573 - 175	1 3/8	5.134	4.813	168.0	1.4849	10009.600	48110.500	0.208 [1]
T2	175 - 173.417	1 3/8	3.392	3.180	111.0	1.4849	6520.420	48110.500	0.136 [1]
T3	173.417 - 160	1 3/8	4.485	4.204	146.8	1.4849	11747.400	48110.500	0.244 [1]
T4	160 - 140	1 3/8	4.464	4.154	145.0	1.4849	4026.670	48110.500	0.084 [1]
T5	140 - 120	1 3/8	4.464	4.154	145.0	1.4849	4913.230	48110.500	0.102 [1]
T6	120 - 100	1 1/2	4.464	4.123	131.9	1.7672	7153.630	57255.500	0.125 [1]
T7	100 - 80	1 1/4	4.464	4.123	158.3	1.2272	6488.420	39760.801	0.163 [1]
T8	80 - 60	1	4.464	4.123	197.9	0.7854	388.899	25446.900	0.015 [1]
T9	60 - 40	1 1/4	4.464	4.123	158.3	1.2272	1211.360	39760.801	0.030 [1]
T10	40 - 20	1	4.464	4.123	197.9	0.7854	579.217	25446.900	0.023 [1]
T11	20 - 6.67	1 1/4	4.453	4.113	157.9	1.2272	871.033	39760.801	0.022 [1]

[1] P_u / ϕP_n controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T2	175 - 173.417	7/8	3.000	2.813	154.3	0.6013	2424.700	19482.801	0.124 [1]
T3	173.417 - 160	7/8	3.000	2.813	154.3	0.6013	12121.500	19482.801	0.622 [1]
T4	160 - 140	(1.03 CR) - 46 7/8	3.000	2.792	153.1	0.6013	1244.620	19482.801	0.064 [1]
T5	140 - 120	7/8	3.000	2.792	153.1	0.6013	1055.750	19482.801	0.054 [1]

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Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T6	120 - 100	7/8	3.000	2.771	152.0	0.6013	8521.440	19482.801	0.437 [1]
T7	100 - 80	7/8	3.000	2.771	152.0	0.6013	1927.330	19482.801	0.099 [1]
T8	80 - 60	7/8	3.000	2.771	152.0	0.6013	1212.570	19482.801	0.062 [1]
T9	60 - 40	7/8	3.000	2.771	152.0	0.6013	1426.210	19482.801	0.073 [1]
T10	40 - 20	7/8	3.000	2.771	152.0	0.6013	1323.280	19482.801	0.068 [1]
T11	20 - 6.67	7/8	3.000	2.771	152.0	0.6013	1323.310	19482.801	0.068 [1]
T12	6.67 - 0	9x3/8	1.075	0.846	93.8	3.3750	1383.030	109350.000	0.013 [1]

[1] P_u / ϕP_n controls

Secondary Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	179.573 - 175	3/4	1.500	1.406	90.0	0.4418	0.012	14313.900	0.000 [1]
T2	175 - 173.417	3/4	1.500	1.406	90.0	0.4418	0.012	14313.900	0.000 [1]
T3	173.417 - 160	3/4	1.500	1.406	90.0	0.4418	0.016	14313.900	0.000 [1]
T4	160 - 140	3/4	1.500	1.396	89.3	0.4418	0.017	14313.900	0.000 [1]
T5	140 - 120	3/4	1.500	1.396	89.3	0.4418	0.018	14313.900	0.000 [1]
T6	120 - 100	3/4	1.500	1.386	88.7	0.4418	0.015	14313.900	0.000 [1]
T7	100 - 80	3/4	1.500	1.386	88.7	0.4418	0.012	14313.900	0.000 [1]
T8	80 - 60	3/4	1.500	1.386	88.7	0.4418	0.015	14313.900	0.000 [1]
T9	60 - 40	3/4	1.500	1.386	88.7	0.4418	0.016	14313.900	0.000 [1]
T10	40 - 20	3/4	1.500	1.386	88.7	0.4418	0.017	14313.900	0.000 [1]
T11	20 - 6.67	3/4	1.500	1.386	88.7	0.4418	0.016	14313.900	0.000 [1]

[1] P_u / ϕP_n controls

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Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	179.573 - 175	7/8	3.000	2.813	154.3	0.6013	2923.020	19482.801	0.150 [1] ✔
T4	160 - 140	7/8	3.000	2.792	153.1	0.6013	824.928	19482.801	0.042 [1] ✔
T5	140 - 120	7/8	3.000	2.792	153.1	0.6013	1055.750	19482.801	0.054 [1] ✔
T6	120 - 100	7/8	3.000	2.771	152.0	0.6013	1359.480	19482.801	0.070 [1] ✔
T7	100 - 80	7/8	3.000	2.771	152.0	0.6013	1176.150	19482.801	0.060 [1] ✔
T8	80 - 60	7/8	3.000	2.771	152.0	0.6013	1212.570	19482.801	0.062 [1] ✔
T9	60 - 40	7/8	3.000	2.771	152.0	0.6013	1279.680	19482.801	0.066 [1] ✔
T10	40 - 20	7/8	3.000	2.771	152.0	0.6013	1323.280	19482.801	0.068 [1] ✔
T11	20 - 6.67	7/8	3.000	2.771	152.0	0.6013	1323.310	19482.801	0.068 [1] ✔
T12	6.67 - 0	12 x 3/8	2.775	2.546	282.2	4.5000	5385.430	145800.000	0.037 [1] ✔

[1] P_u / ϕP_n controls

Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	179.573 - 175	2x1/2	3.000	2.813	233.8	1.0000	3440.460	32400.000	0.106 [1] ✔
T3	173.417 - 160	7/8	3.000	2.813	154.3	0.6013	1055.210	19482.801	0.054 [1] ✔
T4	160 - 140	7/8	3.000	2.792	153.1	0.6013	824.928	19482.801	0.042 [1] ✔
T5	140 - 120	7/8	3.000	2.792	153.1	0.6013	1055.750	19482.801	0.054 [1] ✔
T6	120 - 100	7/8	3.000	2.771	152.0	0.6013	1359.480	19482.801	0.070 [1] ✔
T7	100 - 80	7/8	3.000	2.771	152.0	0.6013	1176.150	19482.801	0.060 [1] ✔
T8	80 - 60	7/8	3.000	2.771	152.0	0.6013	1212.570	19482.801	0.062 [1] ✔
T9	60 - 40	7/8	3.000	2.771	152.0	0.6013	1279.680	19482.801	0.066 [1] ✔
T10	40 - 20	7/8	3.000	2.771	152.0	0.6013	1323.280	19482.801	0.068 [1] ✔

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Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T11	20 - 6.67	7/8	3.000	2.771	152.0	0.6013	5921.090	19482.801	0.304 [1] ✔
T12	6.67 - 0	12 x 3/8	0.225	0.000	0.0	4.5000	1383.030	145800.000	0.009 [1] ✔

[1] P_u / ϕP_n controls

Top Guy Pull-Off Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T9	60 - 40	3x3/8	3.000	2.771	307.1	1.1250	2668.270	36450.000	0.073 [1]

[1] P_u / ϕP_n controls

Top Guy Pull-Off Bending Design Data

Section No.	Elevation ft	Size	M_{ux} lb-ft	ϕM_{nx} lb-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} lb-ft	ϕM_{ny} lb-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T9	60 - 40	3x3/8	0.000	2278.125	0.000	0.000	284.766	0.000

Top Guy Pull-Off Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T9	60 - 40	3x3/8	0.073	0.000	0.000	0.073 [1] ✔	1.000	✔

[1] P_u / ϕP_n controls

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T3	173.417 - 160 (445)	C15x33.9	3.512	3.418	45.4	7.1700	4721.650	311895.000	0.015
T3	173.417 - 160	C15x33.9	3.512	3.418	45.4	7.1700	3954.060	311895.000	0.013

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Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T3	173.417 - 160 (446)	C15x33.9	3.512	3.418	45.4	7.1700	92.114	311895.000	0.000
T3	173.417 - 160 (449)	C15x33.9	3.512	3.418	45.4	7.1700	4251.490	311895.000	0.014
T3	173.417 - 160 (450)	C15x33.9	3.512	3.418	45.4	7.1700	4730.880	311895.000	0.015
T3	173.417 - 160 (453)	C15x33.9	3.512	3.418	45.4	7.1700	118.585	311895.000	0.000
T3	173.417 - 160 (454)	C15x33.9	3.512	3.418	45.4	7.1700	1400.790	311895.000	0.004
T6	120 - 100 (457)	C15x33.9	3.512	3.397	45.1	7.1700	1350.100	311895.000	0.004
T6	120 - 100 (458)	C15x33.9	3.512	3.397	45.1	7.1700	976.637	311895.000	0.003
T6	120 - 100 (461)	C15x33.9	3.512	3.397	45.1	7.1700	1620.770	311895.000	0.005
T6	120 - 100 (462)	C15x33.9	3.512	3.397	45.1	7.1700	1781.960	311895.000	0.006
T6	120 - 100 (465)	C15x33.9	3.512	3.397	45.1	7.1700	1136.300	311895.000	0.004
T6	120 - 100 (466)	C15x33.9	3.512	3.397	45.1	7.1700	1136.300	311895.000	0.004

Torque-Arm Top Bending Design Data

Section No.	Elevation ft	Size	M_{ux} lb-ft	ϕM_{nx} lb-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} lb-ft	ϕM_{ny} lb-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T3	173.417 - 160 (445)	C15x33.9	-60005.000	136080.000	0.441	-0.000	12595.500	0.000
T3	173.417 - 160 (446)	C15x33.9	-58719.500	136080.000	0.432	-0.000	12595.500	0.000
T3	173.417 - 160 (449)	C15x33.9	-73585.250	136080.000	0.541	-0.000	12595.500	0.000
T3	173.417 - 160 (450)	C15x33.9	-40454.750	136080.000	0.297	0.000	12595.500	0.000
T3	173.417 - 160 (453)	C15x33.9	-41743.750	136080.000	0.307	0.000	12595.500	0.000
T3	173.417 - 160 (454)	C15x33.9	-73734.167	136080.000	0.542	0.000	12595.500	0.000
T6	120 - 100 (457)	C15x33.9	-32814.000	136080.000	0.241	0.000	12595.500	0.000
T6	120 - 100 (458)	C15x33.9	-32226.833	136080.000	0.237	0.000	12595.500	0.000
T6	120 - 100 (461)	C15x33.9	-32651.083	136080.000	0.240	-0.000	12595.500	0.000
T6	120 - 100 (462)	C15x33.9	-20173.417	136080.000	0.148	-0.000	12595.500	0.000
T6	120 - 100 (465)	C15x33.9	-20331.167	136080.000	0.149	-0.000	12595.500	0.000
T6	120 - 100 (466)	C15x33.9	-31762.500	136080.000	0.233	0.000	12595.500	0.000

Torque-Arm Top Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T3	173.417 - 160 (445)	C15x33.9	0.015	0.441	0.000	0.449 ✔	1.000	✔
T3	173.417 - 160 (446)	C15x33.9	0.013	0.432	0.000	0.438 ✔	1.000	✔
T3	173.417 - 160 (449)	C15x33.9	0.000	0.541	0.000	0.541 ✔	1.000	✔

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Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T3	173.417 - 160 (450)	C15x33.9	0.014	0.297	0.000	0.304	1.000	✔
T3	173.417 - 160 (453)	C15x33.9	0.015	0.307	0.000	0.314	1.000	✔
T3	173.417 - 160 (454)	C15x33.9	0.000	0.542	0.000	0.542	1.000	✔
T6	120 - 100 (457)	C15x33.9	0.004	0.241	0.000	0.243	1.000	✔
T6	120 - 100 (458)	C15x33.9	0.004	0.237	0.000	0.239	1.000	✔
T6	120 - 100 (461)	C15x33.9	0.003	0.240	0.000	0.242	1.000	✔
T6	120 - 100 (462)	C15x33.9	0.005	0.148	0.000	0.151	1.000	✔
T6	120 - 100 (465)	C15x33.9	0.006	0.149	0.000	0.152	1.000	✔
T6	120 - 100 (466)	C15x33.9	0.004	0.233	0.000	0.235	1.000	✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T1	179.573 - 175	Leg	2 1/4	1	-10958.800	100408.000	10.9	Pass
T2	175 - 173.417	Leg	2 1/4	14	-13661.000	164604.000	8.3	Pass
T3	173.417 - 160	Leg	2 1/4	24	-42424.301	123621.000	34.3	Pass
T4	160 - 140	Leg	2 1/2	58	-45860.801	164541.000	27.9	Pass
T5	140 - 120	Leg	2 1/2	107	-56435.301	164541.000	34.3	Pass
T6	120 - 100	Leg	2 3/4	155	-78489.602	209536.000	37.5	Pass
T7	100 - 80	Leg	2 3/4	202	-66678.398	209536.000	31.8	Pass
T8	80 - 60	Leg	2 3/4	250	-69418.797	209536.000	33.1	Pass
T9	60 - 40	Leg	2 3/4	300	-72748.602	209536.000	34.7	Pass
T10	40 - 20	Leg	2 3/4	348	-75671.102	209536.000	36.1	Pass
T11	20 - 6.67	Leg	2 3/4	396	-75527.500	209990.000	36.0	Pass
T12	6.67 - 0	Leg	2 3/4	430	-77934.500	245516.000	31.7	Pass
T1	179.573 - 175	Diagonal	1 3/8	10	-9968.480	23223.600	42.9	Pass
T2	175 - 173.417	Diagonal	1 3/8	20	-6651.450	32832.898	20.3	Pass
T3	173.417 - 160	Diagonal	1 3/8	47	-12644.900	27600.801	45.8	Pass
T4	160 - 140	Diagonal	1 3/8	102	-4384.280	27968.199	15.7	Pass
T5	140 - 120	Diagonal	1 3/8	117	-5886.010	27968.199	21.0	Pass
T6	120 - 100	Diagonal	1 1/2	170	-8053.910	36543.699	22.0	Pass
T7	100 - 80	Diagonal	1 1/4	246	-7819.920	20828.000	37.5	Pass
T8	80 - 60	Diagonal	1	261	-1642.990	9245.650	17.8	Pass
T9	60 - 40	Diagonal	1 1/4	323	-2681.570	20828.000	12.9	Pass
T10	40 - 20	Diagonal	1	391	-2049.750	9245.650	22.2	Pass
T11	20 - 6.67	Diagonal	1 1/4	403	-1841.590	20893.699	8.8	Pass
T2	175 - 173.417	Horizontal	7/8	17	-2020.580	10543.300	19.2	Pass
T3	173.417 - 160	Horizontal	7/8	46	-10815.700	10543.300	102.6	Pass
T4	160 - 140	Horizontal	7/8	100	-852.678	10639.200	8.0	Pass
T5	140 - 120	Horizontal	7/8	120	-1055.750	10639.200	9.9	Pass
T6	120 - 100	Horizontal	7/8	176	-7851.920	10735.400	73.1	Pass
T7	100 - 80	Horizontal	7/8	217	-1176.150	10735.400	11.0	Pass
T8	80 - 60	Horizontal	7/8	264	-1212.570	10735.400	11.3	Pass
T9	60 - 40	Horizontal	7/8	312	-1279.680	10735.400	11.9	Pass

tnxTower	Job: US-WI-5179	
Azimuth Engineerring Group 90 E Halsey Road Ste 382 Parsippany, NJ 07054 Phone: 636-373-2968 FAX:	Project: Sister Bay	Date: 19:06:11 05/20/25
	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T10	40 - 20	Horizontal	7/8	360	-1323.280	10735.400	12.3	Pass
T11	20 - 6.67	Horizontal	7/8	409	-1323.310	10735.400	12.3	Pass
T12	6.67 - 0	Horizontal	9x3/8	441	-1383.030	21574.801	6.4	Pass
T1	179.573 - 175	Secondary Horizontal	3/4	13	-0.013	9937.790	0.1	Pass
T2	175 - 173.417	Secondary Horizontal	3/4	23	-0.014	9937.790	0.1	Pass
T3	173.417 - 160	Secondary Horizontal	3/4	50	-0.027	9937.790	0.1	Pass
T4	160 - 140	Secondary Horizontal	3/4	70	0.017	14313.900	0.1	Pass
T5	140 - 120	Secondary Horizontal	3/4	118	0.017	14313.900	0.1	Pass
T6	120 - 100	Secondary Horizontal	3/4	180	0.012	14313.900	0.1	Pass
T7	100 - 80	Secondary Horizontal	3/4	228	0.011	14313.900	0.1	Pass
T8	80 - 60	Secondary Horizontal	3/4	290	0.012	14313.900	0.1	Pass
T9	60 - 40	Secondary Horizontal	3/4	338	0.015	14313.900	0.1	Pass
T10	40 - 20	Secondary Horizontal	3/4	386	0.015	14313.900	0.1	Pass
T11	20 - 6.67	Secondary Horizontal	3/4	420	0.016	14313.900	0.1	Pass
T1	179.573 - 175	Top Girt	7/8	4	-2967.890	10543.300	28.1	Pass
T4	160 - 140	Top Girt	7/8	61	-824.928	10639.200	7.8	Pass
T5	140 - 120	Top Girt	7/8	110	-1055.750	10639.200	9.9	Pass
T6	120 - 100	Top Girt	7/8	157	-1359.480	10735.400	12.7	Pass
T7	100 - 80	Top Girt	7/8	207	-1176.150	10735.400	11.0	Pass
T8	80 - 60	Top Girt	7/8	254	-1212.570	10735.400	11.3	Pass
T9	60 - 40	Top Girt	7/8	302	-1279.680	10735.400	11.9	Pass
T10	40 - 20	Top Girt	7/8	350	-1323.280	10735.400	12.3	Pass
T11	20 - 6.67	Top Girt	7/8	399	-1323.310	10735.400	12.3	Pass
T12	6.67 - 0	Top Girt	12 x 3/8	432	-1383.030	12763.600	10.8	Pass
T1	179.573 - 175	Bottom Girt	2x1/2	7	-3567.300	4131.910	86.3	Pass
T3	173.417 - 160	Bottom Girt	7/8	30	-825.529	10543.300	7.8	Pass
T4	160 - 140	Bottom Girt	7/8	64	-824.928	10639.200	7.8	Pass
T5	140 - 120	Bottom Girt	7/8	113	-1055.750	10639.200	9.9	Pass
T6	120 - 100	Bottom Girt	7/8	160	-1359.480	10735.400	12.7	Pass
T7	100 - 80	Bottom Girt	7/8	210	-1176.150	10735.400	11.0	Pass
T8	80 - 60	Bottom Girt	7/8	257	-1212.570	10735.400	11.3	Pass
T9	60 - 40	Bottom Girt	7/8	305	-1279.680	10735.400	11.9	Pass
T10	40 - 20	Bottom Girt	7/8	353	-1323.280	10735.400	12.3	Pass
T11	20 - 6.67	Bottom Girt	7/8	402	5921.090	19482.801	30.4	Pass
T12	6.67 - 0	Bottom Girt	12 x 3/8	436	-1598.260	145800.000	6.6	Pass
T3	173.417 - 160	Guy A@166.75	7/8	452	24358.400	47820.000	50.9	Pass
T6	120 - 100	Guy A@106.694	3/4 (24000)	464	13372.100	34980.000	38.2	Pass
T9	60 - 40	Guy A@46.6944	1/2	472	6756.800	16140.000	41.9	Pass
T3	173.417 - 160	Guy B@166.75	7/8	447	19183.500	47820.000	40.1	Pass
T6	120 - 100	Guy B@106.694	3/4 (24000)	459	9939.170	34980.000	28.4	Pass
T9	60 - 40	Guy B@46.6944	1/2	471	5668.750	16140.000	35.1	Pass
T3	173.417 - 160	Guy C@166.75	7/8	444	24051.900	47820.000	50.3	Pass
T6	120 - 100	Guy C@106.694	3/4 (24000)	456	13563.500	34980.000	38.8	Pass
T9	60 - 40	Guy C@46.6944	1/2	467	6804.100	16140.000	42.2	Pass
T9	60 - 40	Top Guy Pull-Off@46.6944	3x3/8	470	2668.270	36450.000	7.3	Pass
T3	173.417 - 160	Torque Arm Top@166.75	C15x33.9	446	-7038.580	289557.000	55.1	Pass
T6	120 - 100	Torque Arm Top@106.694	C15x33.9	461	-4119.230	289939.000	26.9	Pass

Summary		
Leg (T6)	37.5	Pass
Diagonal (T3)	45.8	Pass
Horizontal (T3)	102.6	Pass
Secondary Horizontal (T1)	0.1	Pass
Top Girt (T1)	28.1	Pass

tnxTower	Job: US-WI-5179	
Azimuth Engineerring Group 90 E Halsey Road Ste 382 Parsippany, NJ 07054 Phone: 636-373-2968 FAX:	Project: Sister Bay	Date: 19:06:11 05/20/25
	Client: Cellco Partnership d/b/a Verizon Wireless	Designed by: S.Ingale

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
						Bottom Girt (T1)	86.3	Pass
						Guy A (T3)	50.9	Pass
						Guy B (T3)	40.1	Pass
						Guy C (T3)	50.3	Pass
						Top Guy Pull-Off (T9)	7.3	Pass
						Torque Arm Top (T3)	55.1	Pass
						Bolt Checks	26.0	Pass
						RATING =	**102.6**	**Pass**

Pier and Pad Foundation

Site Number :	US-WI-5179
Site Name:	Sister Bay

TIA-222 Revision:	H
Tower Type:	Guyed

Top & Bot. Pad Rein. Different?:	☑
Block Foundation?:	☐
Rectangular Pad?:	☐

Superstructure Analysis Reactions		
Compression, P_{comp}:	222.16	kips
Base Shear, Vu_comp:	0.32	kips
Moment, M_u:	0	ft-kips
Tower Height, **H**:	179.57	ft
BP Dist. Above Fdn, bp_{dist}:	2	in
Bolt Circle / Bearing Plate Width, **BC**:	6	in

Pier Properties		
Pier Shape:	Circular	
Pier Diameter, **dpier**:	2.5	ft
Ext. Above Grade, **E**:	0.5	ft
Pier Rebar Size, **Sc**:	7	
Pier Rebar Quantity, **mc**:	6	
Pier Tie/Spiral Size, **St**:	3	
Pier Tie/Spiral Quantity, **mt**:	3	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties		
Depth, **D**:	4	ft
Pad Width, W_1:	5	ft
Pad Thickness, **T**:	1.5	ft
Pad Rebar Size (Top dir.2), Sp_{top2}:	0	
Pad Rebar Quantity (Top dir. 2), mp_{top2}:	0	
Pad Rebar Size (Bottom dir. 2), Sp_2:	7	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	7	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties		
Rebar Grade, **Fy**:	60	ksi
Concrete Compressive Strength, **F'c**:	3	ksi
Dry Concrete Density, **δc**:	150	pcf

Soil Properties		
Total Soil Unit Weight, **γ**:	115	pcf
Ultimate Net Bearing, Qnet:	20.000	ksf
Cohesion, **Cu**:	0.000	ksf
Friction Angle, **ϕ**:	30	degrees
SPT Blow Count, N_{blows}:		
Base Friction, **μ**:	0.1	
Neglected Depth, **N**:	4.00	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	N/A	ft

Foundation Analysis Checks	Capacity	Demand	Rating	Check
Lateral (Sliding) (kips)	10.73	0.32	**3.0%**	**Pass**
Bearing Pressure (ksf)	12.28	9.59	**78.1%**	**Pass**
*Overturning (kip*ft)*	150.89	1.49	**1.0%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	336.23	0.96	**0.3%**	**Pass**
Pier Compression (kip)	2343.24	224.81	**9.6%**	**Pass**
*Pad Flexure (kip*ft)*	243.13	35.10	**14.4%**	**Pass**
Pad Shear - 1-way (kips)	67.47	4.92	**7.3%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.164	0.036	**21.8%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	243.13	0.58	**0.2%**	**Pass**

Structural Rating:	**21.8%**
Soil Rating:	**78.1%**

Guyed Anchor Block Foundation

Site Number:	US-WI-5179
Site Name:	Sister Bay
Location:	Guy A @ 90 ft (Elev 0 ft)
TIA-222 Revision:	H

Design Reactions		
Shear, **S**:	45.05	kips
Uplift, **Ua**:	64.57	kips
Resultant Force, **Rf**:	78.73	kips
Tower Height, **H**:	179.57	ft
Guy Anchor Radius, **R**:	90.00	ft
Resultant Angle to Horizontal, **θ**:	55.1	deg

Guy Anchor Properties		
Depth to Bottom of Deadman, **Da**:	6	ft
Anchor Width, **Wa**:	7	ft
Anchor Thickness, **Ta**:	4	ft
Anchor Length, **La**:	29	ft
Concrete Volume, **Vc**:	30.1	yd^3
Toe Width, **toe**:	0	ft
Guyed Anchor Top Rebar Size, **Sat**:	9	
No. of Bars in Top of Block:	7	
Guyed Anchor Front Rebar Size, **Saf**:	9	
No. of Bars in Front of Block:	7	
Stirrup Size:	4	

Material Properties		
Rebar Grade, **Fy**:	60	ksi
Concrete Strength, **F'c**:	3	ksi
Wt. Avg.Concrete Density, **δx**:	0.150	kcf
Clear Cover, **cc**:	3	in

Design Checks	Capacity	Demand	Rating	Check
Lateral Capacity (kips):	125.47	45.05	**35.9%**	**Pass**
Uplift Capacity (kips):	186.44	64.57	**34.6%**	**Pass**
*Lateral Flexural Capacity (ft*kips):*	2463.94	163.31	**6.6%**	**Pass**
*Uplift Flexural Capacity (ft*kips):*	1353.10	234.05	**17.3%**	**Pass**

Anchor Shaft Rating:	**N/A**
Structural Rating:	**17.3%**
Soil Rating:	**35.9%**

Neglect Depth, **Neg**:	5	ft
Groundwater Level, **gw**:	n/a	ft

Soil Properties:			No. of Soil Layers:	1		
Layer	**φ, deg**	**cu, ksf**	**δ, pcf**		**Ultimate fs (ksf)**	**N (blows/ft)**
1	30	0.000	115	6.00	0.900	Layer 1

Guyed Anchor Block Foundation

Site Number:	US-WI-5179
Site Name:	Sister Bay
Location:	Guy B @ 144 ft (Elev 0 ft)
TIA-222 Revision:	H

Design Reactions		
Shear, **S**:	44.88	kips
Uplift, **Ua**:	40.82	kips
Resultant Force, **Rf**:	60.67	kips
Tower Height, **H**:	179.57	ft
Guy Anchor Radius, **R**:	144.00	ft
Resultant Angle to Horizontal, **θ**:	42.3	deg

Guy Anchor Properties		
Depth to Bottom of Deadman, **Da**:	6	ft
Anchor Width, **Wa**:	5	ft
Anchor Thickness, **Ta**:	3	ft
Anchor Length, **La**:	24	ft
Concrete Volume, **Vc**:	13.3	yd^3
Toe Width, **toe**:	0	ft
Guyed Anchor Top Rebar Size, **Sat**:	8	
No. of Bars in Top of Block:	5	
Guyed Anchor Front Rebar Size, **Saf**:	8	
No. of Bars in Front of Block:	4	
Stirrup Size:	4	

Material Properties		
Rebar Grade, **Fy**:	60	ksi
Concrete Strength, **F'c**:	3	ksi
Wt. Avg.Concrete Density, **δx**:	0.150	kcf
Clear Cover, **cc**:	3	in

Design Checks	Capacity	Demand	Rating	Check
Lateral Capacity (kips):	88.83	44.88	**50.5%**	**Pass**
Uplift Capacity (kips):	120.63	40.82	**33.8%**	**Pass**
*Lateral Flexural Capacity (ft*kips):*	781.64	134.64	**17.2%**	**Pass**
*Uplift Flexural Capacity (ft*kips):*	555.03	122.46	**22.1%**	**Pass**

Anchor Shaft Rating:	**N/A**
Structural Rating:	**22.1%**
Soil Rating:	**50.5%**

Neglect Depth, **Neg**:	5	ft
Groundwater Level, **gw**:	n/a	ft

Soil Properties: — **No. of Soil Layers:** 1

Layer	φ, deg	cu, ksf	δ, pcf		Ultimate fs (ksf)	N (blows/ft)
1	30	0.000	115	6.00	0.900	Layer 1

Guyed Anchor Block Foundation

Site Number:	US-WI-5179
Site Name:	Sister Bay
Location:	Guy C @ 90 ft (Elev 0 ft)
TIA-222 Revision:	H

Design Reactions		
Shear, **S**:	45.21	kips
Uplift, **Ua**:	64.69	kips
Resultant Force, **Rf**:	78.92	kips
Tower Height, **H**:	179.57	ft
Guy Anchor Radius, **R**:	90.00	ft
Resultant Angle to Horizontal, **θ**:	55.0	deg

Guy Anchor Properties		
Depth to Bottom of Deadman, **Da**:	6	ft
Anchor Width, **Wa**:	7	ft
Anchor Thickness, **Ta**:	4	ft
Anchor Length, **La**:	29	ft
Concrete Volume, **Vc**:	30.1	yd^3
Toe Width, **toe**:	0	ft
Guyed Anchor Top Rebar Size, **Sat**:	9	
No. of Bars in Top of Block:	7	
Guyed Anchor Front Rebar Size, **Saf**:	9	
No. of Bars in Front of Block:	7	
Stirrup Size:	4	

Material Properties		
Rebar Grade, **Fy**:	60	ksi
Concrete Strength, **F'c**:	3	ksi
Wt. Avg.Concrete Density, **δx**:	0.150	kcf
Clear Cover, **cc**:	3	in

Design Checks	Capacity	Demand	Rating	Check
Lateral Capacity (kips):	125.47	45.21	**36.0%**	**Pass**
Uplift Capacity (kips):	186.44	64.69	**34.7%**	**Pass**
*Lateral Flexural Capacity (ft*kips):*	2463.94	163.90	**6.7%**	**Pass**
*Uplift Flexural Capacity (ft*kips):*	1353.10	234.49	**17.3%**	**Pass**

Anchor Shaft Rating:	**N/A**
Structural Rating:	**17.3%**
Soil Rating:	**36.0%**

Neglect Depth, **Neg**:	5	ft
Groundwater Level, **gw**:	n/a	ft

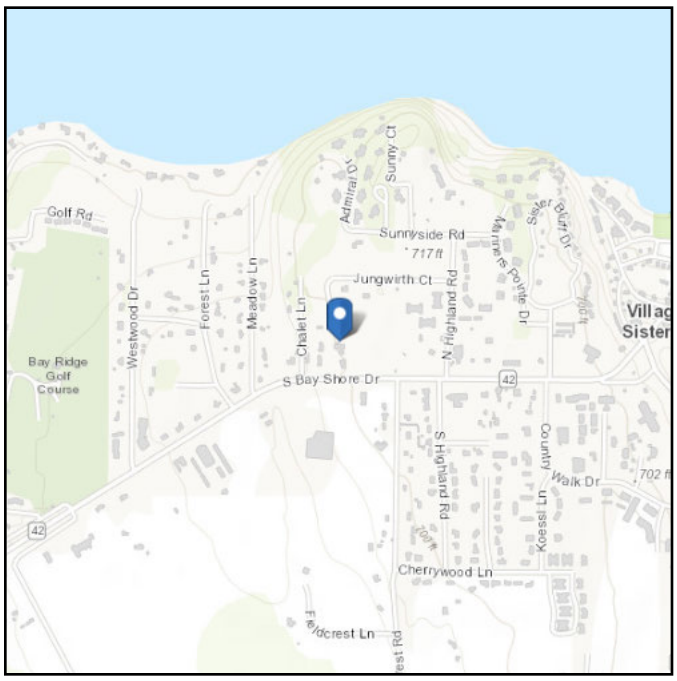
Soil Properties:			No. of Soil Layers:	1		
Layer	**φ, deg**	**cu, ksf**	**δ, pcf**		**Ultimate fs (ksf)**	**N (blows/ft)**
1	30	0.000	115	6.00	0.900	Layer 1

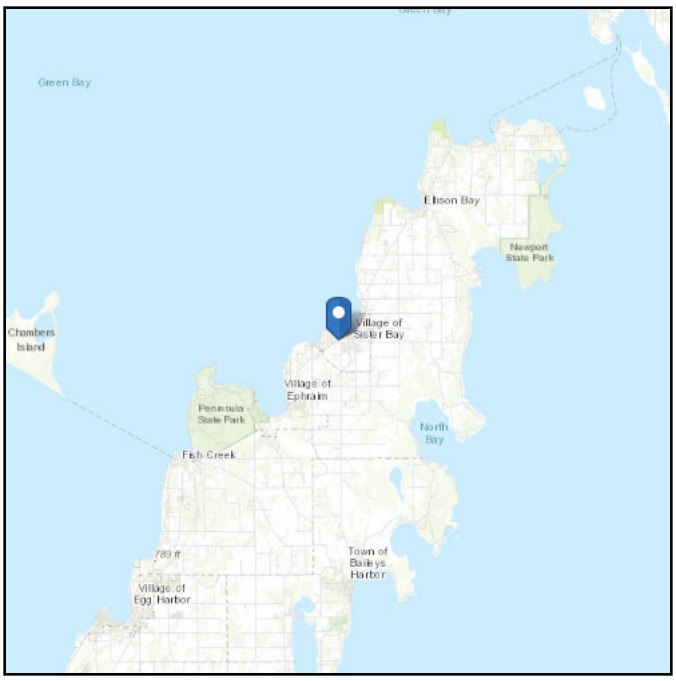
ASCE Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Stiff Soil

Latitude: 45.186516
Longitude: -87.134736
Elevation: 700.4379636771374 ft (NAVD 88)





Wind

Results:

Wind Speed	105 Vmph
10-year MRI	71 Vmph
25-year MRI	78 Vmph
50-year MRI	84 Vmph
100-year MRI	89 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: Tue May 20 2025

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 not in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2.

Seismic

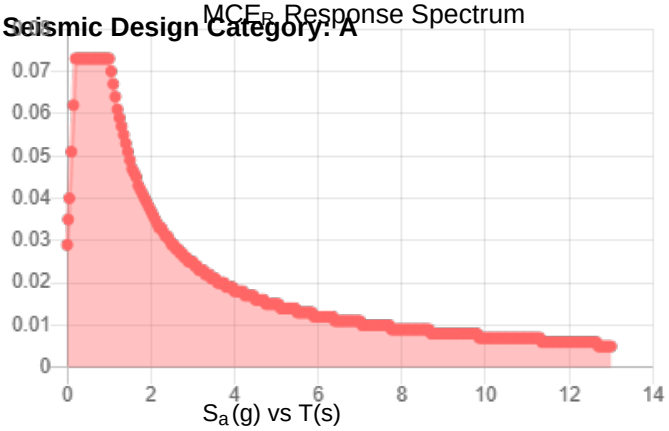
Site Soil Class: D - Stiff Soil

Results:

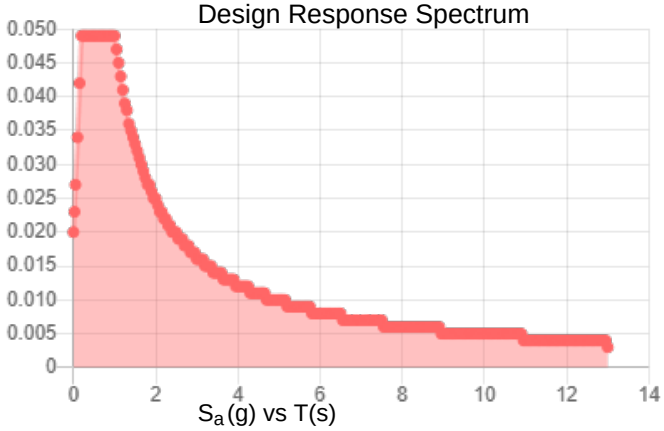
S_S :	0.046	S_{D1} :	0.049
S_1 :	0.031	T_L :	12
F_a :	1.6	PGA :	0.022
F_v :	2.4	PGA_M :	0.035
S_{MS} :	0.073	F_{PGA} :	1.6
S_{M1} :	0.074	I_e :	1
S_{DS} :	0.049	C_v :	0.7

Seismic Design Category: A

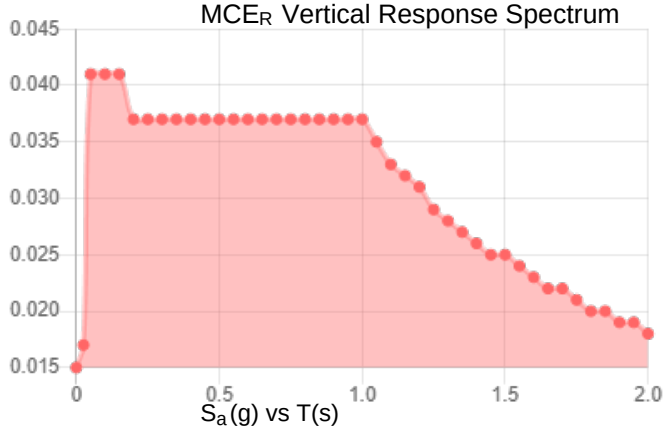
MCE_R Response Spectrum



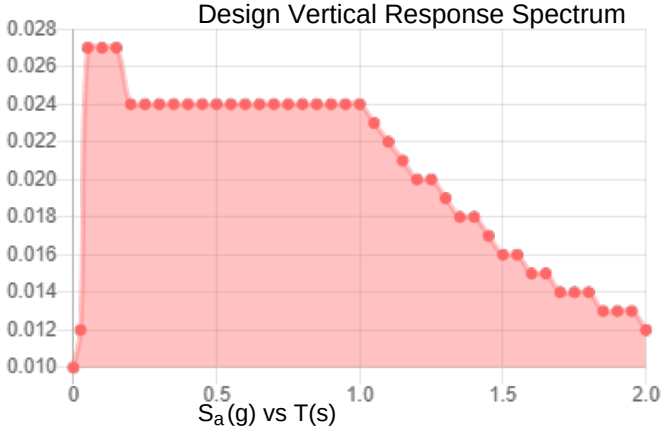
Design Response Spectrum



MCE_R Vertical Response Spectrum



Design Vertical Response Spectrum



Data Accessed: **Tue May 20 2025**

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:	1.50 in.
Concurrent Temperature:	-5 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Tue May 20 2025

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.

Attachment 2: Collocation Application

COLOCATION APPLICATION - P-072424
US-WI-5179
Version 3
Cellco Partnership d/b/a Verizon Wireless

Vertical Bridge REIT, LLC.
750 Park of Commerce Dr, ste 200
Boca Raton, FL 33487

SUMMARY

PRIMARY INFO

Application #:	P-072424
Application Version:	3 (Submitted: 4/18/2025 12:21:00 PM)
Application Type:	Broadband
Application Name:	Verizon - Sister Bay
Lease Type:	New Lease
ASR Number:	
Description:	Installing three (3) panel antennas, six (6) AIR antennas, three (3) RRUs, three(3) Raycap OVP boxes and three(3) hybrid lines at a requested CL of 155' and utilizing a 15' x 24' leased area.

VERTICAL BRIDGE SITE INFO

VB Site #:	US-WI-5179
VB Site Name:	Sister Bay
Latitude:	45.18651600
Longitude:	-87.13473600
Structure Type:	Guyed Tower
Structure Height:	180.1200
Site Address:	2530 South Bay Shore Drive - Sister Bay, WI 54234

VERTICAL BRIDGE DEAL TEAM

RLM:	Bill Maxwell Bill.Maxwell@verticalbridge.com (419) 779-0343	**LPM:**	Mereida Bowens Mereida.Bowens@verticalbridge.com	**ROM:**	Bill O'Rourke Bill.ORourke@verticalbridge.com (612) 443-8376

TENANT LEGAL INFO

Tenant Legal Name:	Cellco Partnership d/b/a Verizon Wireless
State of Registration:	Delaware
Type of Entity:	Partnership
Carrier NOC #:	8002646620
Tenant Site #:	5000975304
Tenant Site Name:	Sister Bay

APPLICANT

Name:	Cindi Sievertson
Address:	600 Busse Hwy Park Ridge, IL 60068
Phone Number:	(847) 698-6400
Email Address:	cindis@terraltd.com

FINAL LEASED RIGHTS CONFIGURATION TOTALS

This is a summary of your remaining existing equipment plus the new equipment.

FINAL EQUIPMENT

QTY	Equipment Type
3	RRU
3	Surge Arrestor/Raycap/Squid
9	Panel

FINAL LINES

QTY	Line Type
3	Hybrid

FREQUENCY & TECHNOLOGY INFO

COLOCATION APPLICATION - P-072424
US-WI-5179
Version 3
Cellco Partnership d/b/a Verizon Wireless

Vertical Bridge REIT, LLC.
750 Park of Commerce Dr, ste 200
Boca Raton, FL 33487

Type of Tehnology:	Broadband Wireless
Is TX Frequency Licensed:	Yes
TX Frequency:	1870-1885, 1885-1890, 3700-3720, 3720-3740, 3740-3760, 3760-3780, 3780-3800, 3800-3820, 3820-3840
Is RX Frequency Licensed:	Yes
RX Frequency:	1950-1965, 1965-1970, 3700-3720, 3720-3740, 3740-3760, 3760-3780, 3780-3800, 3800-3820, 3820-3840

MOUNT & STRUCTURAL ANALYSIS

MOUNT ANALYSIS

Provided by Tenant:	No
To Be Run by VB:	Yes
Include Mount Mapping:	No

STRUCTURAL HARD COPIES

Required:	No
Number of Hard Copies:	

CONTACTS

INVOICE CONTACT

Attention To	Name	Address	Phone Number 1	Phone Number 2	Email 1	Email 2
	Cindi Sievertson	600 Busse Hwy #100 Park Ridge, IL 60068	(312) 953-0016		cindis@terraltd.com	

PO CONTACT

Name	Phone	Email
Cindi Sievertson	(847) 653-6869	cindis@terraltd.com

LEASING CONTACT

Name	Phone	Email
Octavio Herrerra	(847) 619-4142	octavio.herrerra@verizonwireless.com

NOTICE CONTACT

Notice To	Attention To	Name	Address
Verizon Wireless		Network Real Estate	180 Washington Valley Road Bedminster, NJ 07921

RF CONTACT

Name	Phone	Email
Trisha Bhuyan	(847) 619-4142	trisha.bhuyan@verizonwireless.com

COLOCATION APPLICATION - P-072424
US-WI-5179
Version 3
Cellco Partnership d/b/a Verizon Wireless

Vertical Bridge REIT, LLC.
750 Park of Commerce Dr, ste 200
Boca Raton, FL 33487

TENANT CONSTRUCTION MANAGER CONTACT

Name	Phone	Email
Jon Bartell	(920) 585-9845	jon.bartell2@verizonwireless.com

EMERGENCY CONTACT

Name	Phone	Email
Verizon Wireless NOC	(800) 264-6620	octavio.herrera@verizonwireless.com

LINE & EQUIPMENT

NEW LINE(S)

Qty	Line Type	Line Diameter(In.)	Line Location	Comments
3	Hybrid	1.625	Exterior	Installing three (3) hybrid lines

NEW EQUIPMENT

Qty	Equipment Type	Mount RAD Height	Equipment RAD Height (H')	Mount Type	Manfacturer	Model Number	Dimensions (H"xW"xD")	Weight (Lbs.)	Azimuth	Comments
3	Panel	155.00	155.00	Sector Frames	Ericsson	AIR6419 (B77D)	31.20 x 16.10 x 9.10	71.00	30-130-235	
3	RRU	155.00	155.00	Sector Frames	Ericsson	4490	20.60 x 15.70 x 7.00	68.00	30-130-235	
3	Panel	155.00	155.00	Sector Frames	Ericsson	AIR3283	47.20 x 20.00 x 12.90	118.00	30-130-235	
3	Surge Arrestor/ Raycap/ Squid	155.00	155.00	Sector Frames	Raycap	RVZDC-3315- PF- 48	19.18 x 16.73 x 11.60	22.00	30-130-235	
3	Panel	155.00	155.00	Sector Frames	Andrew	NNSS- 65C-HG- R2B	96.00 x 19.60 x 7.80	84.00	30-130-235	

ADDITIONAL SITE REQUIREMENTS

GROUND & INTERIOR SPACE REQUIREMENTS

Requirement Type	Total Lease Area (L x W)	Cabinet Required	Cabinet Area (L x W)	Shelter Required	Shelter Pad (L x W)	Comments
New	15.00 x 24.00	Yes	4.00 x 11.00			

GENERATOR REQUIREMENTS

Requirement Type	Fuel Type	Kilowatt Size	Pad Dimensions (L x D)	Generator Manufacturer	Fuel Tank Manufacturer	Comments
New	Diesel	30	4.00 x 10.00	Generac	Generac	

AC POWER REQUIREMENTS

Meter Type	Additional Details	Comments
New Tenant Meter		

BACKHAUL REQUIREMENTS

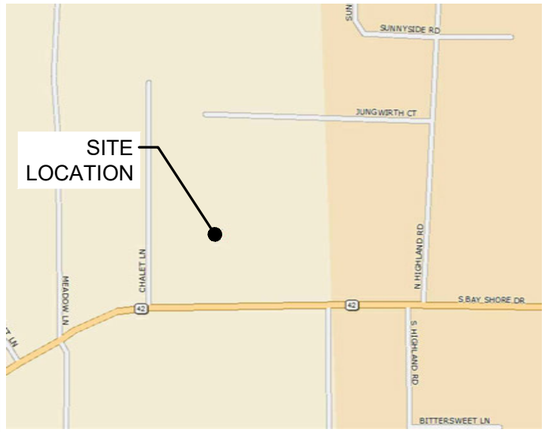
Requirement Type	Cable Type	Number of Points of Entry	Riser Size (Inches)	Comments
Not Required				

CONSULTANT TEAM

PROJECT CONSULTANT:	TERRA CONSULTING GROUP, LTD. 600 BUSSE HIGHWAY PARK RIDGE, IL 60068 (847) 698-6400
SURVEYOR:	MERIDIAN SURVEYING, LLC N9637 FRIENDSHIP DRIVE KAUKAUNA, WI 54130 (920) 993-0881
STRUCTURAL: (TOWER ANALYSIS)	BY OTHERS
STRUCTURAL ANALYSIS DATE:	05/21/2025

VICINITY MAP

N.T.S.



REGIONAL MAP

N.T.S.

PROJECT TYPE

PROPOSED LESSEE ANTENNAS TO BE MOUNTED ON EXISTING GUYED TOWER WITH PROPOSED 7.5'-0" x 4'-0" CONCRETE EQUIPMENT PAD AT BASE.

PROJECT INFORMATION

SITE COORDINATES:	LATITUDE: 45° 11' 11.45" N (PER 1A CERTIFICATION) LONGITUDE: 87° 08' 05.20" W (PER 1A CERTIFICATION)
ELEVATION:	±700.1' AMSL(1A)
P.I.N. #:	1810006312844G1
ADDRESS:	2530 SOUTH SHORE DRIVE SISTER BAY, WI 54234
UTILITIES:	POWER: WISCONSIN PUBLIC SERVICE FIBER: TRANSPORT BY OTHERS
JURISDICTION:	VILLAGE OF SISTER BAY
OCCUPANCY:	UNINHABITED
CONSTRUCTION TYPE:	CO LO
PROPERTY OWNER:	LUNDQUIST PROPERTIES LLC PO BOX 145 SISTER BAY, WI 54234
TOWER OWNER:	VERTICAL BRIDGE 750 PARK OF COMMERCE DR SUITE 200 BOCA RATON, FL 33487
CONTACT PERSON:	BILL MAXWELL (419) 779-0343
APPLICANT:	VERIZON WIRELESS 1701 GOLF ROAD, TOWER 2, SUITE 400 ROLLING MEADOWS, IL 60008
CONSTRUCTION MANAGER:	JON BARTELL (920) 585-9845
REAL ESTATE MANAGER:	SAMUEL WORRELL (908) 216-3822

GENERATOR TYPE:	DIESEL (30KW TERTIARY)
MAKE:	KOHLER
MODEL #:	30REOZK TANK, 203 GAL 76.18X31.89X41 UL142

verizon

1701 GOLF ROAD, TOWER 2, SUITE 400
ROLLING MEADOWS, ILLINOIS 60008
PHONE: (847) 619-5397 FAX: (847) 706-7415

MDG LOCATION NUMBER: 5000975304
FUZE ID NUMBER: 17481177
SITE NAME: SISTER_BAY
2530 SOUTH SHORE DRIVE SISTER BAY, WI 54234

DIGGERS HOTLINE
"Call 3 Work Days Before You Dig!"
TOLL FREE 1-800-242-8511
MILW. AREA (414) 259-1181
TDD 1-800-542-2289

OTHER UTILITIES NOT INCLUDED IN DIGGERS HOTLINE AND LOCAL UTILITY DISTRICTS AND COMPANIES SHALL ALSO BE NOTIFIED

WISCONSIN
JOHN J. ZIMMERMANN
E-29548
PARK RIDGE, IL
PROFESSIONAL ENGINEER

1-12-26

DRAWING INDEX

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C-3	EQUIPMENT PAD FOUNDATION PLAN	-
C-4	GENERATOR FOUNDATION PLAN	-
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SP-1	SPECIFICATIONS	-
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P-1	EXISTING SITE PHOTOS	-
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22" x 34" IS FULL SCALE.
11" x 17" IS HALF SCALE.

ATTACHMENTS

1 of 4	SITE SURVEY	1
2 of 4	SITE SURVEY	1
3 of 4	SITE SURVEY	1
4 of 4	SITE SURVEY	1
	RFDS (BY OTHERS)	

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MGD LOC# 5000975304
FUZE ID#: 17481177

SISTER_BAY

2530 SOUTH BAY SHORE DR
SISTER BAY, WI 54234

DRAWN BY:	AMW
CHECKED BY:	TAZ
DATE:	08/26/2025
PROJECT #:	33-3714

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

LEGEND

- = 1" IRON PIPE FOUND
- = COUNTY MONUMENT FOUND
- = METAL POST
- = GROUNDING PORT
- = FIBER OPTIC POST
- = TELEPHONE MANHOLE
- = TELEPHONE PEDESTAL
- = ELECTRIC METER
- = EXISTING POWER POLE
- = EXISTING GUY ANCHOR

PROPERTY LINE	
FENCE LINE	
UNDERGROUND ELECTRIC	UGE
UNDERGROUND FIBER	UGF
UNDERGROUND TELCO	UGT
UNDERGROUND GAS LINE	GAS
OVERHEAD ELECTRIC	OHE
OVERHEAD FIBER	OHF
OVERHEAD TELCO	OHT
OVERHEAD UTILITY LINE	OHE-OHF
STORM SEWER LINE	
SANITARY SEWER LINE	
WATERMAIN LINE	W
BURIED GAS LINE	G
EDGE OF BUSH/TREES	

SURVEY PERFORMED BY:

MERIDIAN SURVEYING, LLC

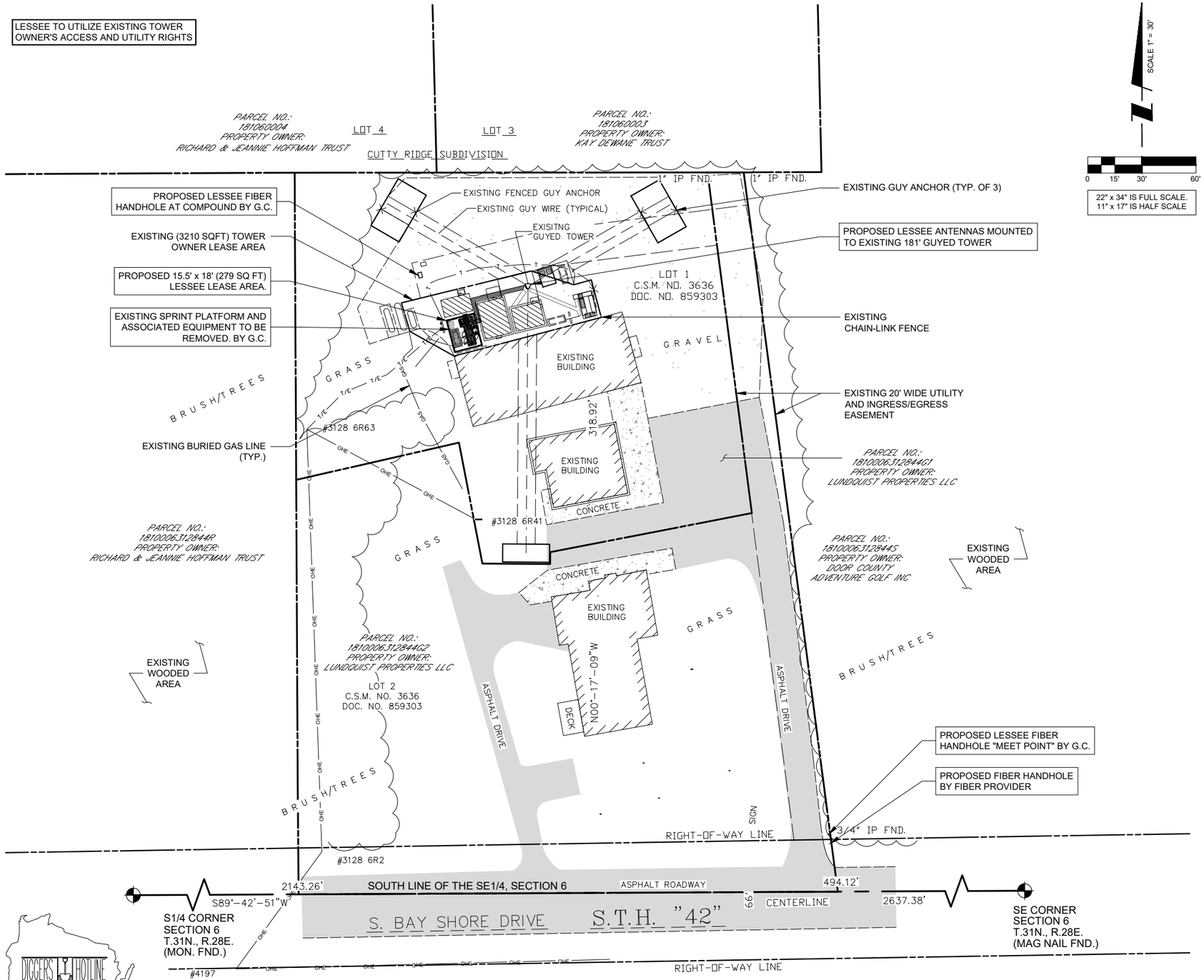
N8774 Firelane 1 — Office: 920-993-0881
Menasha, WI 54952 — Fax: 920-273-6037

BM#1) FOUND CHISELED SQUARE AT NORTHWEST CORNER OF CONCRETE PAD; ±1' ABOVE GROUND LEVEL ELEVATION: 700.931'

DATUM. INFO IF ON SURVEY

GENERAL SITE NOTES

1. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING PAVEMENT. CONTRACTOR SHALL PHOTOGRAPH AND VIDEOTAPE EXISTING PAVEMENT PRIOR TO CONSTRUCTION. ANY DAMAGE CAUSED DURING CONSTRUCTION SHALL BE REPLACED TO EXISTING OR BETTER CONDITION AT NO ADDITIONAL COST.
2. THE CONTRACTOR WILL, UPON BECOMING AWARE OF SUBSURFACE OR LATENT PHYSICAL CONDITIONS DIFFERING FROM THOSE DISCLOSED BY THE ORIGINAL SOIL INVESTIGATION WORK, PROMPTLY NOTIFY THE OWNER VERBALLY AND IN WRITING, AS TO THE NATURE OF THE DIFFERING CONDITIONS. NO CLAIM BY THE CONTRACTOR FOR ANY CONDITIONS DIFFERING FROM THOSE ANTICIPATED IN THE PLANS AND SPECIFICATIONS AND DISCLOSED BY THE SOIL STUDIES WILL BE ALLOWED UNLESS THE CONTRACTOR HAS SO NOTIFIED THE OWNER, VERBALLY AND IN WRITING, AS REQUIRED ABOVE, OF SUCH DIFFERING SUBSURFACE CONDITIONS.
3. CONTRACTOR TO PROVIDE APPROXIMATE 50'X50' STAGING AREA AND TEMPORARY ROAD. CONTRACTOR SHALL COORDINATE WITH ANTENNA CONTRACTOR, A STAGING AREA AND TEMPORARY ROAD THAT IS ACCEPTABLE TO THE OWNER. STAGING AREA AND TEMPORARY ROAD SHALL BE RESTORED TO EXISTING CONDITIONS AS NECESSARY UPON COMPLETION OF THE PROJECT.
4. BEFORE AND DURING CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE ADEQUATE EROSION CONTROL AS NECESSARY IN THE FORM OF SILT FENCES FOR THE SITE AND BALES AROUND ANY EXISTING MANHOLES, INLETS, OR CATCH BASINS SUSCEPTIBLE TO EROSION. EROSION CONTROL MEASURES SHALL BE PERIODICALLY INSPECTED TO ENSURE PROPER FUNCTION. EROSION CONTROL SHALL BE REMOVED UPON COMPLETION OF WORK.



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TDD 1-800-542-2289

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1 LOCATION PLAN

verizon
1701 GOLF ROAD,
TOWER 2, SUITE 400
ROLLING MEADOWS, IL 60008
PHONE: (847) 619-5397
FAX: (847) 706-7415

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has joined Colliers Engineering & Design

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MGD LOC# 5000975304
FUZE ID#: 17481177

SISTER_BAY

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SISTER BAY, WI 54234

DRAWN BY:	AMW
CHECKED BY:	TAZ
DATE:	08/26/2025
PROJECT #:	33-3714

SHEET TITLE
LOCATION PLAN

SHEET NUMBER
LP

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ELEVATION: 700.931'

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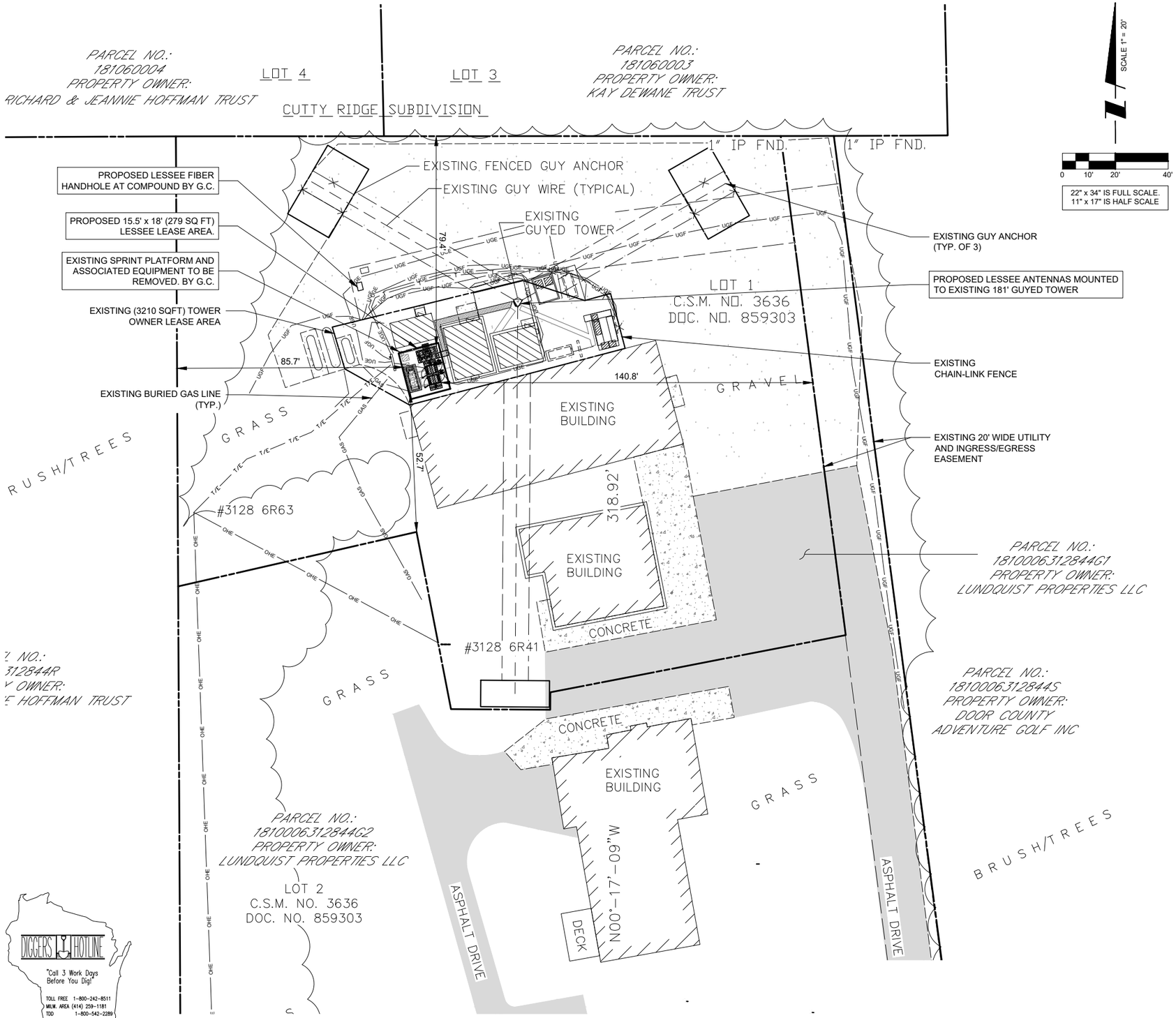

1 SITE PLAN

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verizon
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TOWER 2, SUITE 400
ROLLING MEADOWS, IL 60008
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MGD LOC# 5000975304
FUZE ID#: 17481177

SISTER_BAY

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SISTER BAY, WI 54234

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SHEET TITLE
SITE PLAN

SHEET NUMBER
C-0

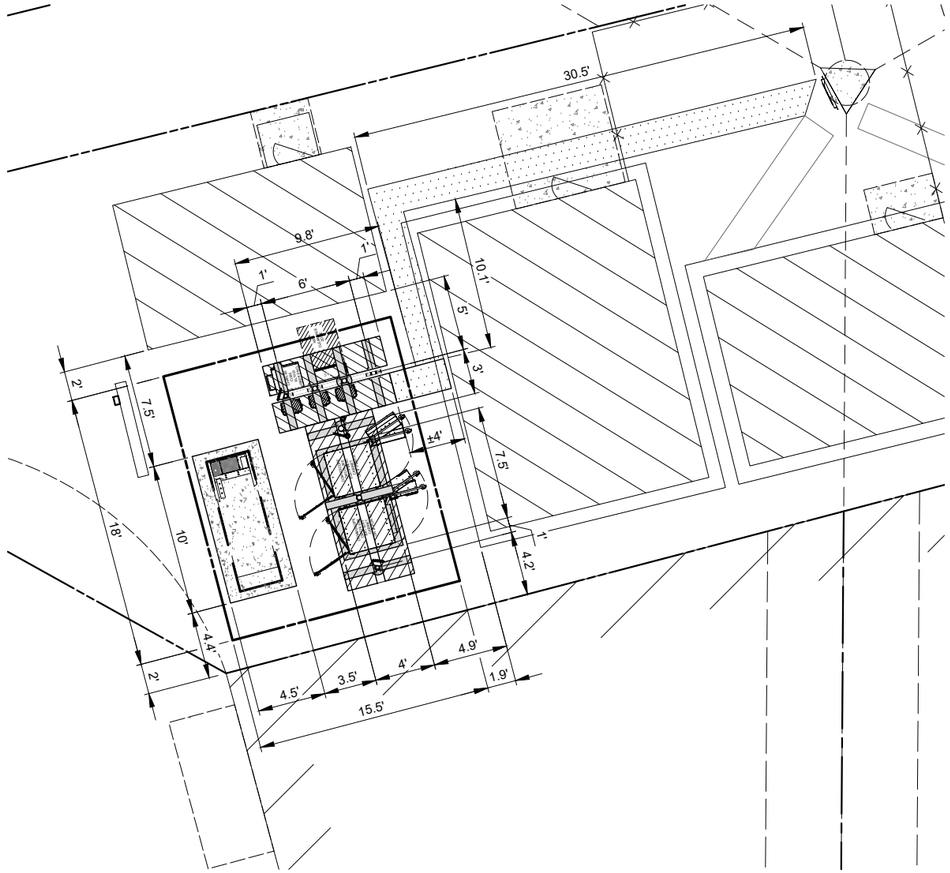
VERIZON WIRELESS SURVEY AND SITE PLANS ARE PENDING RECORD TOWER OWNER LEASE AREA AND EASEMENT LOCATIONS. PROPOSED UTILITIES NEED TO BE ROUTED WITHIN RECORD ROUTES/EASEMENTS. UTILITY ROUTES SHOWN ARE PENDING THAT INFORMATION

LESSEE TO UTILIZE EXISTING TOWER OWNER'S ACCESS AND UTILITY RIGHTS

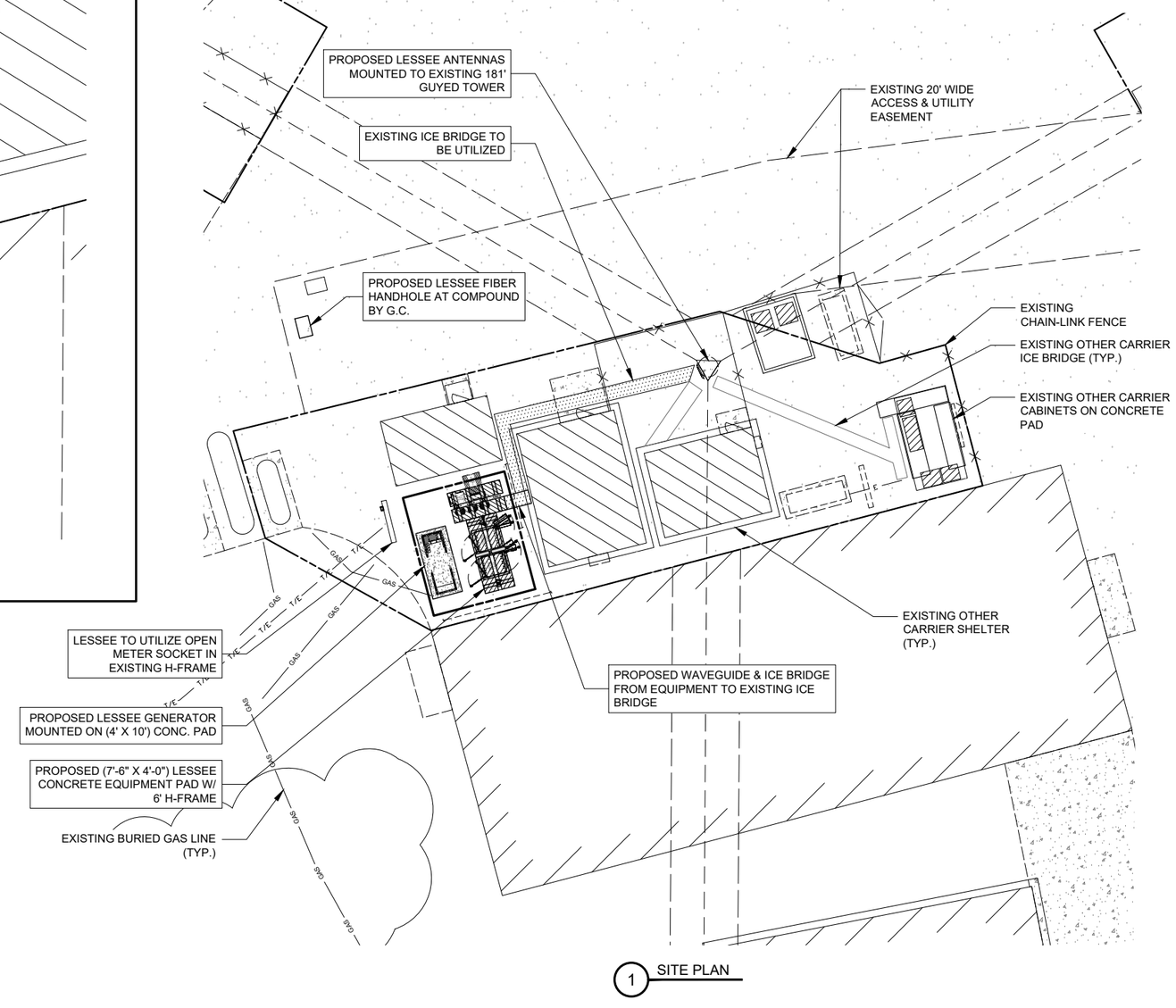
SCALE 1" = 10'

0 5' 10' 20'

22" x 34" IS FULL SCALE.
11" x 17" IS HALF SCALE



2 SITE DIMENSION PLAN
SCALE: 1" = 5'



1 SITE PLAN

SURVEY PERFORMED BY:

MERIDIAN
SURVEYING, LLC
N8774 Firelane 1 Office: 920-993-0881
Menasha, WI 54952 Fax: 920-273-6037

BM#1) FOUND CHISELED SQUARE AT NORTHWEST CORNER OF CONCRETE PAD; ±1' ABOVE GROUND LEVEL
ELEVATION: 700.931'

DATUM. INFO IF ON SURVEY

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ENLARGED SITE PLAN

SHEET NUMBER
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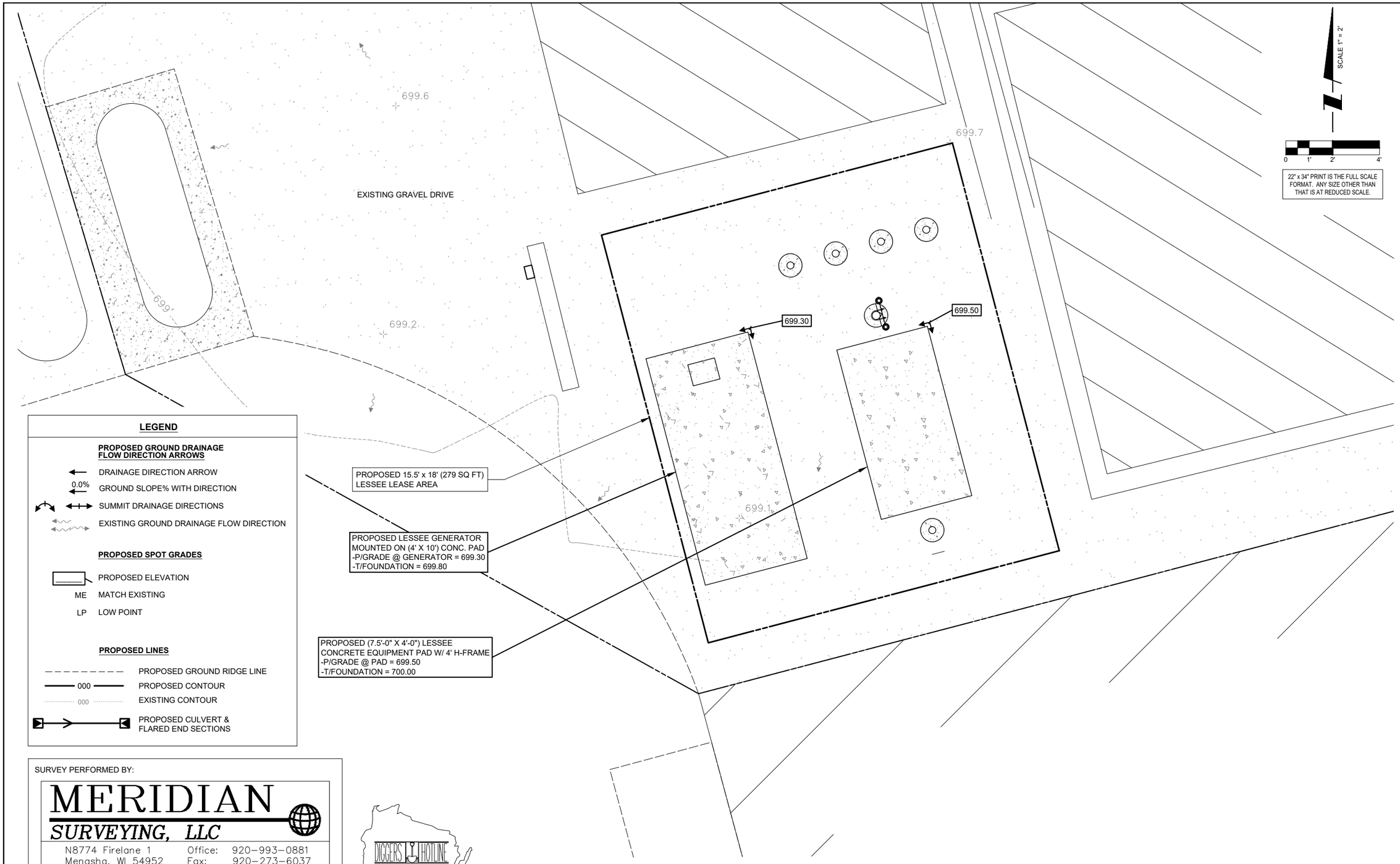

LEGEND

PROPOSED GROUND DRAINAGE FLOW DIRECTION ARROWS

- DRAINAGE DIRECTION ARROW
- 0.0% GROUND SLOPE% WITH DIRECTION
- SUMMIT DRAINAGE DIRECTIONS
- EXISTING GROUND DRAINAGE FLOW DIRECTION

PROPOSED SPOT GRADES

- PROPOSED ELEVATION
- ME MATCH EXISTING
- LP LOW POINT

PROPOSED LINES

- PROPOSED GROUND RIDGE LINE
- 000 PROPOSED CONTOUR
- 000 EXISTING CONTOUR
- PROPOSED CULVERT & FLARED END SECTIONS

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1 SITE GRADING PLAN
SCALE: 1" = 2'

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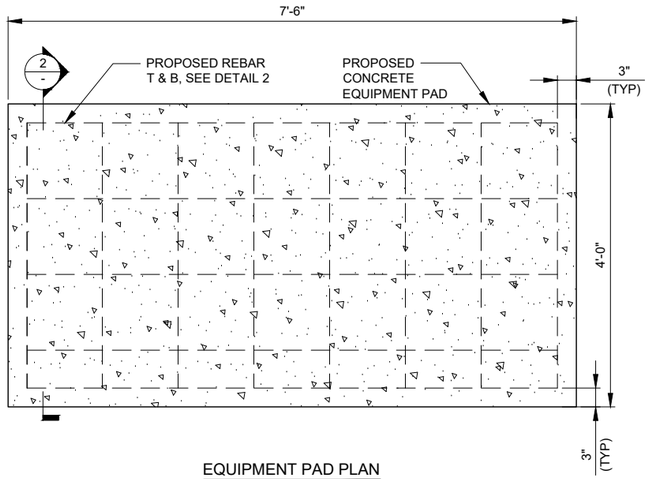
PROJECT #:	33-3714

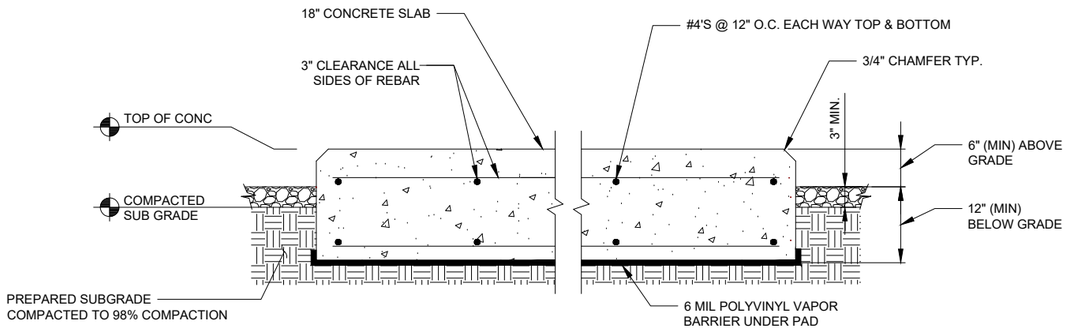
SHEET TITLE
SITE GRADING PLAN
(SHEET 1 OF 1)

SHEET NUMBER
C-2



EQUIPMENT PAD PLAN

1 EQUIPMENT SLAB DETAIL
SCALE: N.T.S.



NOTES:

1. SLAB TO BE LEVEL (±) 1/4".
2. FOUNDATION SHALL HAVE A MINIMUM 6" PROJECTION ABOVE GRADE.
3. CONCRETE STRENGTH SHALL BE A MINIMUM OF 4000 PSI @ 28 DAYS.

2 EQUIPMENT PAD DETAIL
SCALE: N.T.S.

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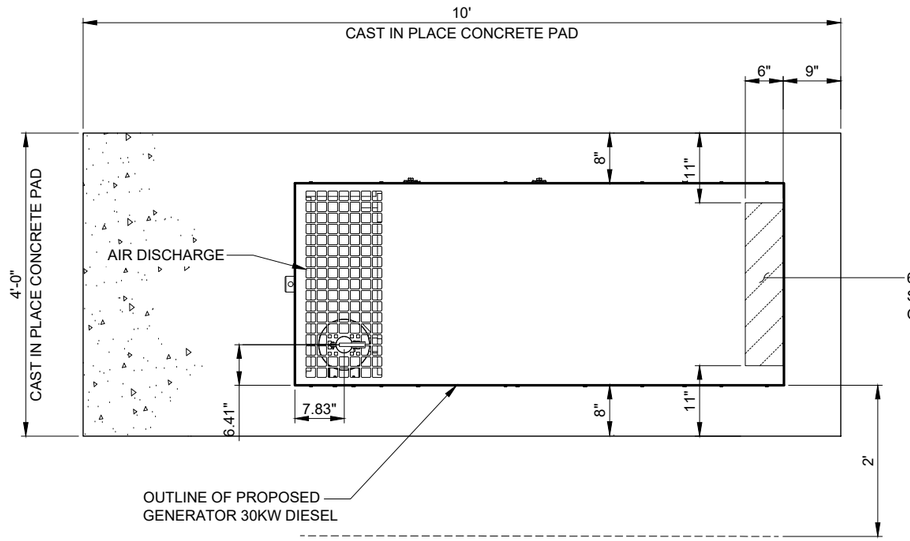
SHEET TITLE
FOUNDATION DETAILS

SHEET NUMBER
C-3

NOTES:
1. IF TANK IS ORDERED, ENCLOSURE MOUNT DIRECTLY TO TANK.
2. THE RIGHT SIDE OF THE GENERATOR IS SERVICE ACCESSIBLE.
3. 6 AMP BATTERY CHARGER
4. 120VAC ENGINE BLOCK HEATER
5. GENERATOR MUST BE GROUNDED.
6. SOUND ATTENUATED ENCLOSURE STANDARD WITH GENERATOR.
7. MUST ALLOW FREE FLOW OF DISCHARGE AIR AND EXHAUST.
8. MUST ALLOW FREE FLOW OF INTAKE AIR.
9. EASY ACCESS SERVICE PANEL IS LOCATED ON THE RIGHT SIDE OF THE GENERATOR ONLY.
10. BASE TANK REQUIRES ALL STUB-UPS TO BE IN THE REAR TANK STUB-UP AREA.
11. TANK EQUIPPED WITH FIRE SAFETY VALVE ON FUEL SUPPLY LINE.
12. IT IS THE RESPONSIBILITY OF THE INSTALLATION TECHNICIAN TO ENSURE THAT THE GENERATOR INSTALLATION COMPLIES WITH ALL APPLICABLE CODES, STANDARDS, AND REGULATIONS.
13. GENERATOR IS INSTALLED ON A UL-142 RATE DOUBLE WALL SUBBASE FUEL TANK.

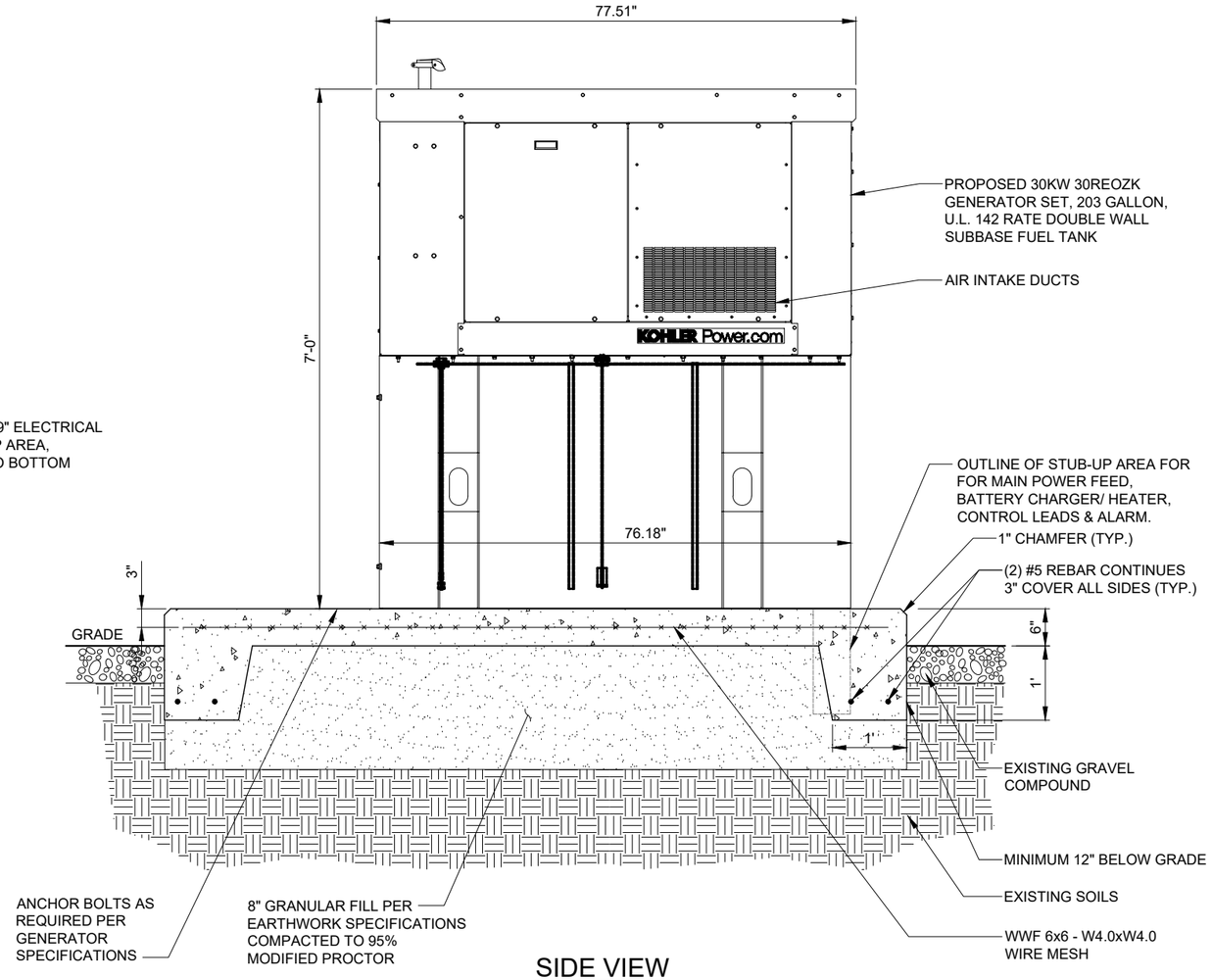


PLAN VIEW

1 TYPICAL FOUNDATION DETAIL
SCALE: 1" = 1'

DIGGERS HOTLINE
"Call 3 Work Days Before You Dig!"
TOLL FREE 1-800-242-8511
MILW. AREA (414) 259-1181
TDD 1-800-542-2289

OTHER UTILITIES NOT INCLUDED IN DIGGERS HOTLINE AND LOCAL UTILITY DISTRICTS AND COMPANIES SHALL ALSO BE NOTIFIED



SIDE VIEW

2 TYPICAL FOUNDATION DETAIL
SCALE: 1" = 1'

NOTES:
1. SEE GENERATOR MANUFACTURE'S DRAWINGS FOR PHYSICAL LOCATION OF FUEL LINES, CONTROL AND POWER INTERCONNECTIONS AND OTHER INTERFACES THAT ARE TO CAST INTO THE CONCRETE. THE PREFERRED METHOD IS TO BRING THE CONDUIT THROUGH THE PAD TO THE UNDERSIDE OF THE GENERATOR (MINIMIZES RODENT DAMAGE). FINISH CONNECTIONS WITH FLEXIBLE CONDUIT PER GENERATOR MANUFACTURES SPECS. RIGID CONDUITS SHALL BE SECURED TO THE EXISTING SLAB, THEN BURIED BETWEEN SLAB AND SHELTER.
2. -THE GENERATOR SHALL BE LOCATED A MIN 5' AWAY FROM A COMBUSTIBLE WALL.
   -THE GENERATOR SHALL BE LOCATED A MIN OF 3' AWAY FROM A NON-COMBUSTIBLE WALL.

verizon
1701 GOLF ROAD,
TOWER 2, SUITE 400
ROLLING MEADOWS, IL 60008
PHONE: (847) 619-5397
FAX: (847) 706-7415

TERRA CONSULTING GROUP
has joined Colliers Engineering & Design

REVISIONS

NO.	DESCRIPTION	DATE	BY
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2	UPDATED PER COMMENTS	10/30/25	AMK/TJS
3	ISSUED FOR FINALS	12/12/25	TJS
4	REVISED PER COMMENTS	01/13/26	PP

MGD LOC# 5000975304
FUZE ID#: 17481177

SISTER_BAY

2530 SOUTH BAY SHORE DR
SISTER BAY, WI 54234

DRAWN BY:	AMW
CHECKED BY:	TAZ
DATE:	08/26/2025
PROJECT #:	33-3714

SHEET TITLE
GENERATOR FOUNDATION DETAILS

SHEET NUMBER
C-4

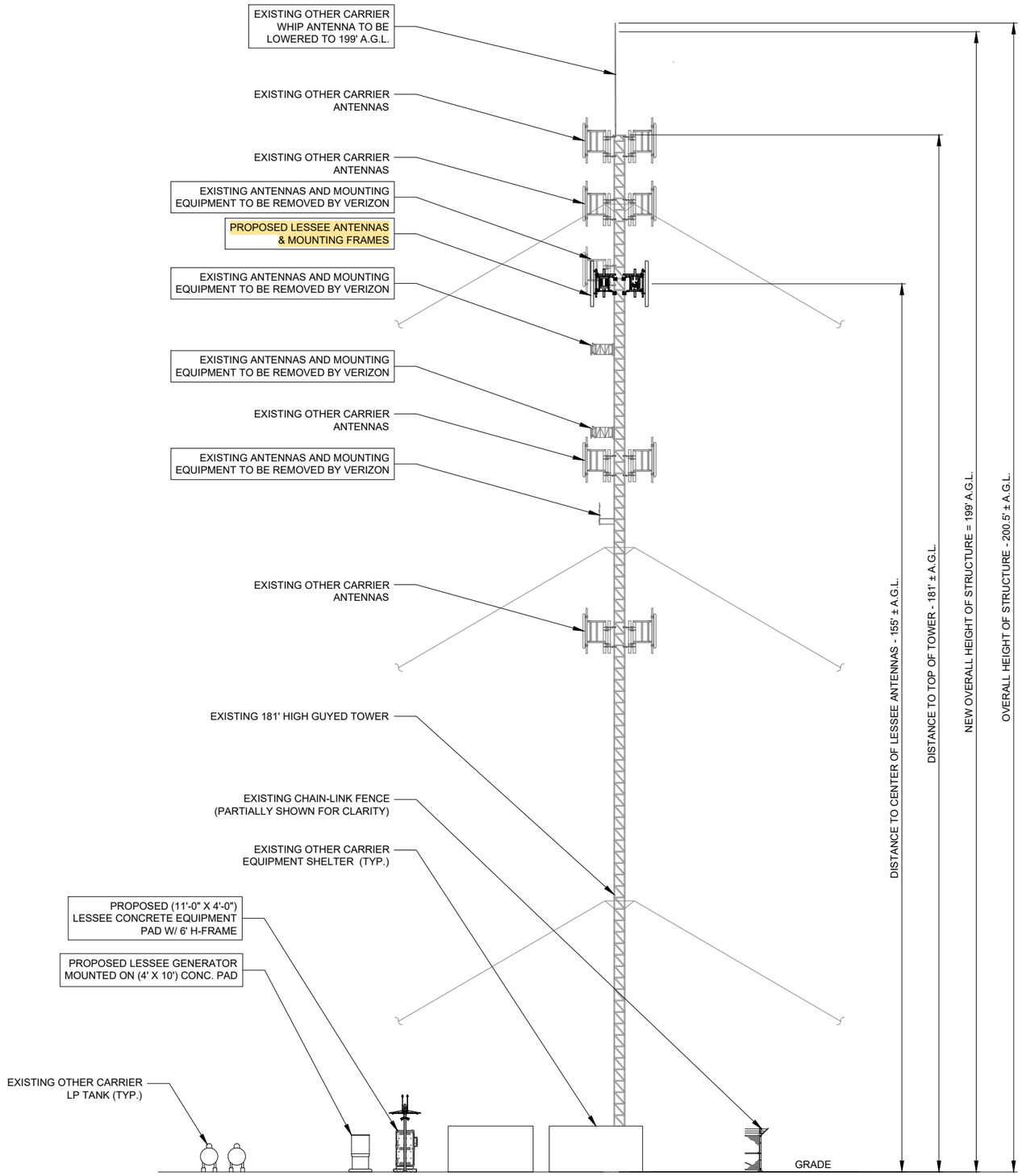
NOTES:

THIS DRAWING IS FOR EXHIBIT AND LAYOUT PURPOSES ONLY.

REFER TO STRUCTURAL ANALYSIS REPORT PROVIDED BY TOWER OWNER.

G.C. TO ADJUST HEIGHT OF MOUNT BY ±6" AS NEEDED TO AVOID CLIMBING FACILITIES. G.C. IS NOT TO REMOVE OR DAMAGE CLIMBING FACILITIES DURING INSTALLATION.

FINAL TOWER CONFIGURATION TO HAVE NO APPURTENANCE EXCEEDING FAA REGISTERED HEIGHT OF 199' A.G.L



1 SOUTH ELEVATION
SCALE: 3/32" = 1'-0"

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SISTER BAY, WI 54234

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DATE:	08/26/2025
PROJECT #:	33-3714

SHEET TITLE
SITE ELEVATION

SHEET NUMBER
ANT-1

Antenna Summary

Added

1900	CBAND	Make	Atoll Model	Item Description	Centerline	Tip Height	Azimuth	Inst. Type	Quantity	Item ID
		COMMSCOPE	NNSS-65C-HG-R2B TD		155	159	30(A)(A) 130(B)(B) 235(C)(C)	SPARE	3	
	5G	Ericsson	AIR6419		155	156.2	30(A) 130(B) 235(C)	PHYSICAL	3	
LTE		Ericsson	AIR3283		155	157	30(A) 130(B) 235(C)	PHYSICAL	3	

Removed

1900	CBAND	Make	Atoll Model	Item Description	Centerline	Tip Height	Azimuth	Inst. Type	Quantity	Item ID

No data available.

Retained

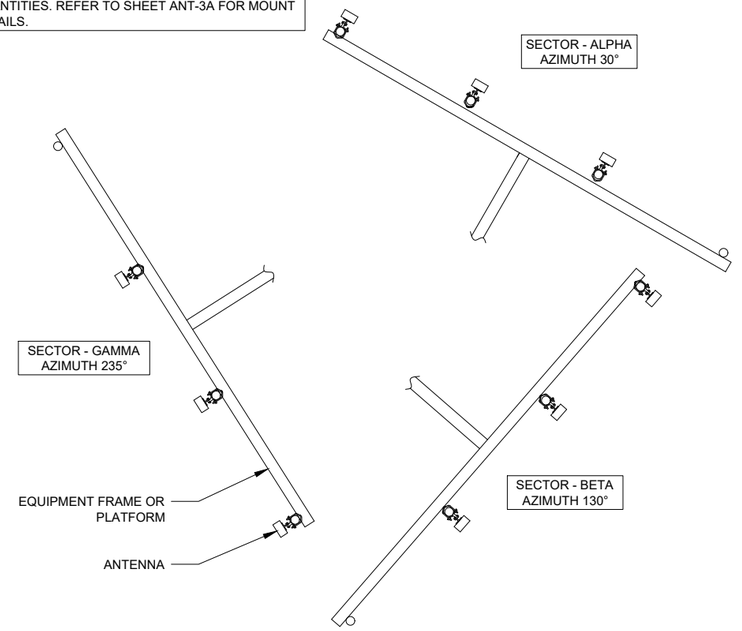
1900	CBAND	Make	Atoll Model	Item Description	Centerline	Tip Height	Azimuth	Inst. Type	Quantity	Item ID

No data available.

Added: 9 | Removed: 0 | Retained: 0

1 ANTENNA SUMMARY
N.T.S.

NOTE:
THIS DETAIL IS SCHEMATIC AND IS INTENDED TO IDENTIFY ANTENNA AZIMUTHS. REFER TO DETAILS 1 & 2 ON THIS SHEET FOR EQUIPMENT MODELS AND QUANTITIES. REFER TO SHEET ANT-3A FOR MOUNT DETAILS.



3 ANTENNA PLAN SCHEMATIC
N.T.S.

Equipment Summary

Added

Equipment Type	Location	1900	CBAND	Make	Atoll Model	Item Description	Cable Length	Cable Size	Install Type	Quantity	Item ID
RRU	Tower	LTE		ERICSSON INC	AIR3283 B25+B66	AIR 3283 B25 B66			PHYSICAL	0	1900486642
RRU	Tower		5G	ERICSSON INC	AIR6419_B77D	AIR 6419 B77D Radio Unit			PHYSICAL	0	1900483699
RRU	Tower			ERICSSON INC	4490	DB Radio 4490HP B5+B13- Rem Radio Unit			SPARE	3	1900483084
Alarm	Tower			RAYCAP INC	3315-ALM-RS485	RETROFIT FOR THE 6OVP DIST BOX			PHYSICAL	3	1900070685
OVP Box	Tower			RAYCAP INC	RVZDC-3315-PF-48	TOWER TOP AND BASE POWER PROTECTION FIBE			PHYSICAL	3	1900422667
Hybrid Cable	Tower			HUBER & SUHNER INC	6X12 STD HYB (6AWG)_xxx FT W/GLAND			1-5/8 inch	PHYSICAL	3	

Removed

Equipment Type	Location	1900	CBAND	Make	Atoll Model	Item Description	Cable Length	Cable Size	Install Type	Quantity	Item ID

No data available.

Retained

Equipment Type	Location	1900	CBAND	Make	Atoll Model	Item Description	Cable Length	Cable Size	Install Type	Quantity	Item ID

No data available.

2 EQUIPMENT SUMMARY
N.T.S.

verizon
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MGD LOC# 5000975304
FUZE ID#: 17481177

SISTER_BAY

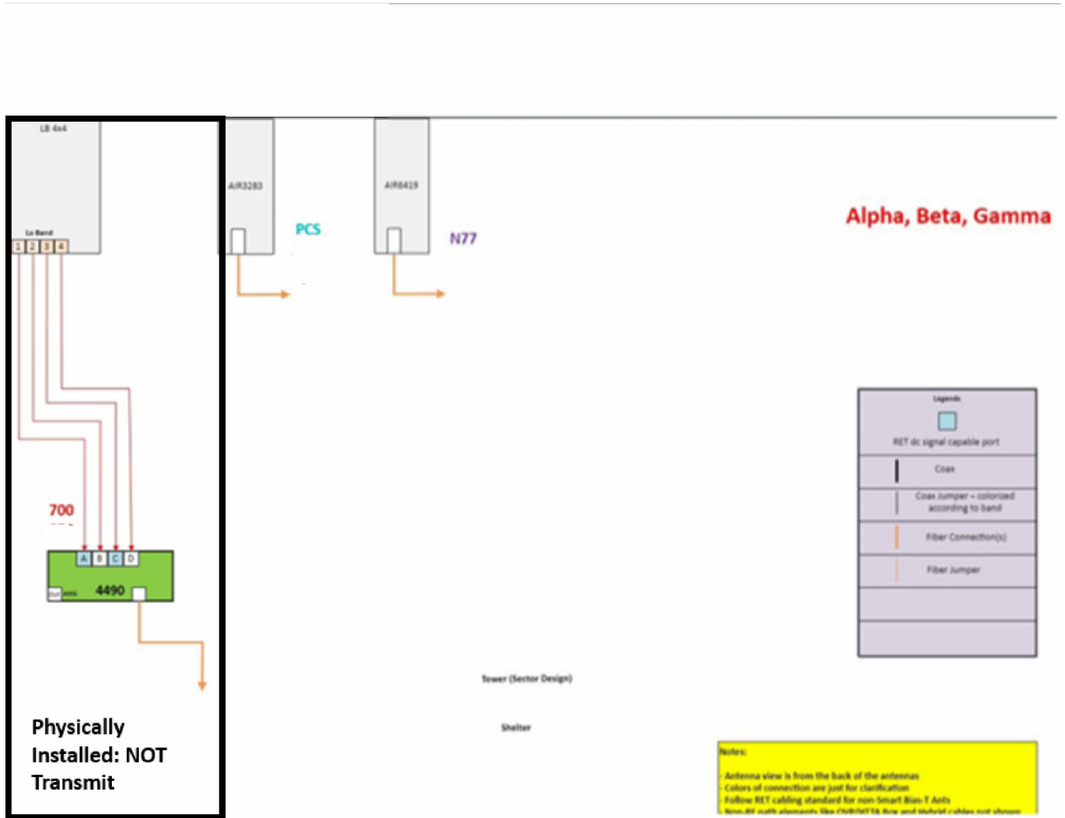
2530 SOUTH BAY SHORE DR
SISTER BAY, WI 54234

DRAWN BY:	AMW
CHECKED BY:	TAZ
DATE:	08/26/2025
PROJECT #:	33-3714

SHEET TITLE
ANTENNA INFORMATION

SHEET NUMBER
ANT-2

	HYBRID LENGTH ESTIMATE				
	AT GROUND		AT STRUCTURE		
SECTOR	HOR (±)	VER (±)	HOR (±)	RAYCAP CL (±)	TOTAL (±)
ALPHA	65'	8'	8'	155'	236'
BETA	65'	8'	8'	155'	236'
GAMMA	65'	8'	8'	155'	236'



1 CABLE DIAGRAM
N.T.S.

RF EMISSIONS REPORT REQUIRED

☒ YES ☐ NO

DATE OF REPORT: _____11-09-2025_____

SITE INFORMATION			
Site Name	SISTER_BAY	Multi-Licensee/Carrier Facility	YES
Site ID	617498115	Is Verizon a Significant RFE Contributor in Co-Locator Areas Requiring Mitigation?	NO
Street Address	2530 South Bay Shore Dr		
City, State, Zip	Sister Bay, WI, 54234		
Structure Type	Guyed Tower		
Broadcast (AM/FM/TV) Co-Locators	NO	Assessment Date	11/09/25
Total # Access Points	1	Assessment Purpose	NEW SITE
Original Report Date	11/09/17	# Total Report Revisions	0
RFE Compliance Status	SITE COMPLIANT AS DESIGNED (no additional mitigation required)	Report Revision Date	N/A

VERIZON'S HIGHEST RF EMISSIONS IN ACCESSIBLE AREAS FOR THIS SITE
BELOW the General Population MPE limit

VENDOR INFORMATION			
Company name: Telnet Inc. Company Address: 7630 Standish Place, Rockville, MD 20855	Assessor name: Ahmed Al Jubouri	Phone	(301) 840 7110 ext. 188
		Mobile	832 773 3229
		Email	ahmed.jubouri@telnet-inc.com

RFE assessment summary

Description of all Compliance Requirements(s):
Access: N/A.

NOTE TO RF, G.C. & IMPLEMENTATION:
RAYCAP CHART IS CURRENTLY BEING UPDATED BY VERIZON WIRELESS. PRIOR TO FINAL AND CONSTRUCTION, CHART TO BE INSERTED. GC TO NOTIFY VERIZON WIRELESS IF THIS NOTE IS STILL ON THE DRAWINGS PRIOR TO CONSTRUCTION.

Raycap Layout - Raycap Per Sector

POWER

3	700 RRU	6	700 RRU2/A2
2	PCSLT RRU	5	PCSLT RRU2/A2
1	AWS RRU	4	AWS RRU2/A2

FIBER

1	2	3	4	5	6
AWS RRU	AWS RRU2/A2	PCSLTE RRU	PCSLTE RRU/A2	700 RRU	700 RRU/A2
7	8	9	10	11	12

2 RAYCAP TABLE
N.T.S.

verizon
1701 GOLF ROAD,
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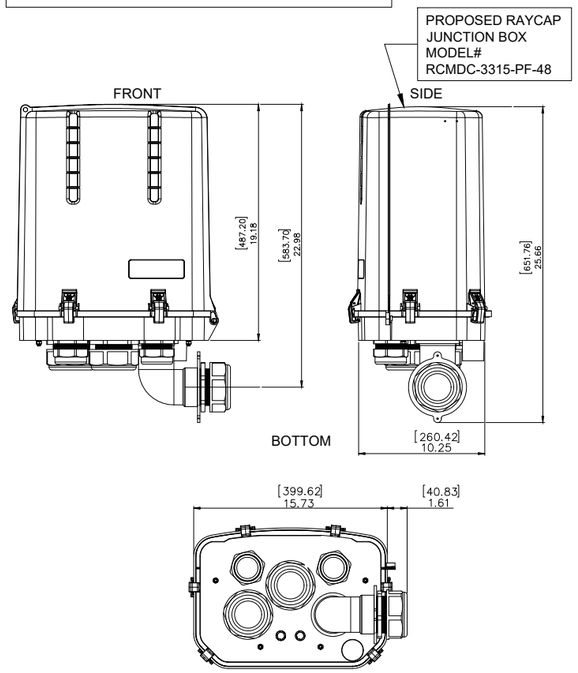
PROJECT #:	33-3714

SHEET TITLE
ANTENNA INFORMATION

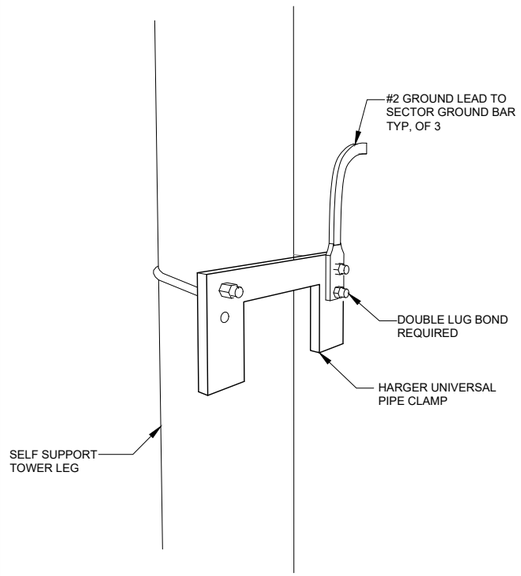
SHEET NUMBER
ANT-2A

SPECIFICATIONS	DC SURGE PROTECTION FOR RRU/INTEGRATED ANTENNA RADIO HEAD
APPLICATION:	TOWER / BASE / ROOFTOP / ROOFTOP DISTRIBUTION MODELS
WEIGHT:	32LBS (14.51 KG)

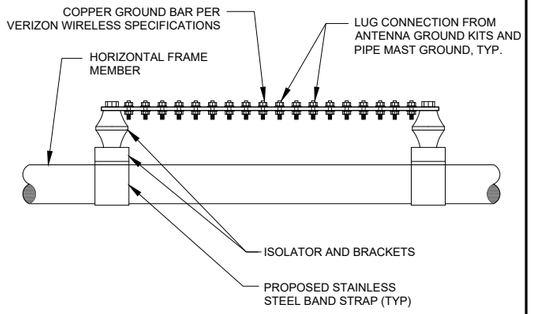
[mm]
INCHES



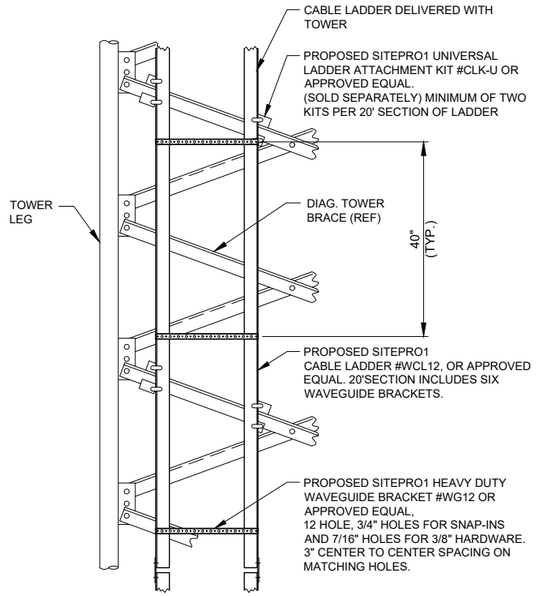
1 RAYCAP JUNCTION BOX DETAIL
SCALE: N.T.S.



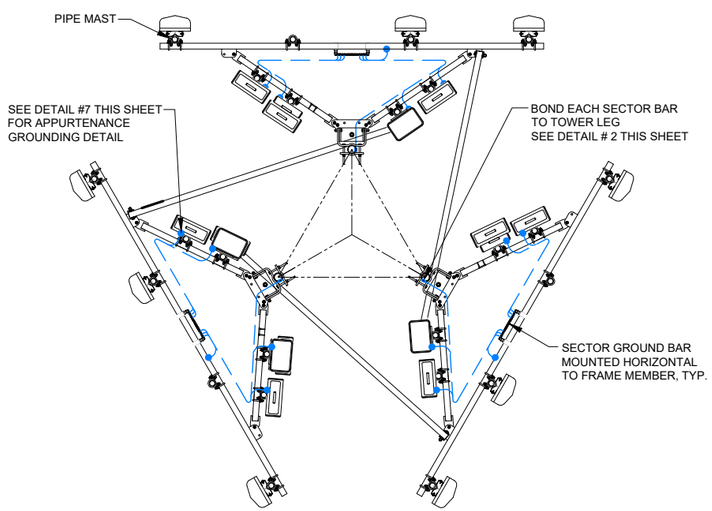
2 SELF SUPPORT TOWER (ROUND MEMBER)
SCALE: N.T.S.



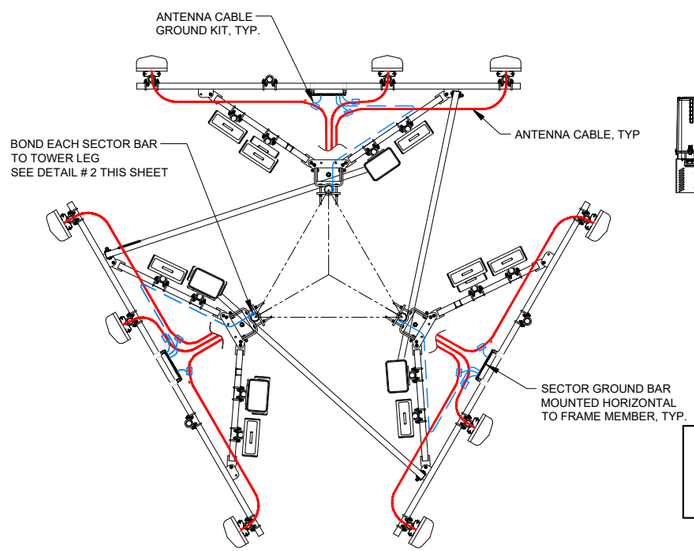
3 GROUND BAR AT SECTOR
N.T.S.



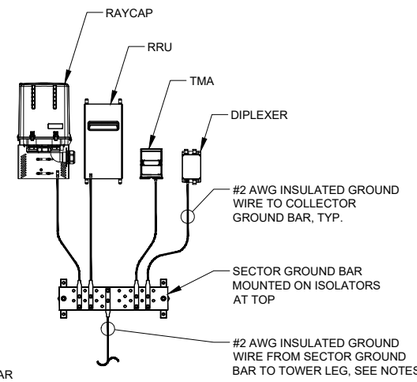
4 TRANSMISSION LINE HANGER
N.T.S.



5 EQUIPMENT GROUNDING AT ANTENNA ELEVATION
N.T.S.



6 ANTENNA CABLE GROUNDING AT ANTENNA ELEVATION
N.T.S.



7 TYPICAL APPURTENANCE GROUNDING AT ANTENNA LEVEL
N.T.S.

THIS DETAIL IS CONCEPTUAL TO DEMONSTRATE GROUNDING AT THE ANTENNA LEVEL. VERIFY EQUIPMENT, MOUNTING FRAME, AND AZIMUTH WITH ANT-1 SHEET & ECR.

APPROVED UL LISTED GROUND CLAMPS	
APPLICATION	UL LISTED HARGER PART #
METAL FLANGE	213, 213T, 213TTP
PIPE MEMBER	CPC SERIES (SIZED TO FIT DIAMETER OF PIPE)
LARGER PIPE MEMBER	UPC SERIES (UNIVERSAL PIPE CLAMP) SIZED TO FIT DIAMETER OF PIPE
TO TOWER LEG	HARGER UNIVERSAL PIPE CLAMP

NOTES:

1. THE BOND BETWEEN THE SECTOR BAR AND THE TOWER IS TO BE MECHANICALLY BONDED TO TOWER LEG. THE MECHANICAL BOND IS TO BE A UL APPROVED MECHANICAL CONNECTION CLAMP.
2. GROUND CONNECTIONS MUST BE DOUBLE HOLE CONNECTION. SPECIAL EXCEPTION ONLY TO EQUIPMENT THAT WILL NOT ALLOW FOR A DOUBLE HOLE CONNECTION.

verizon
1701 GOLF ROAD,
TOWER 2, SUITE 400
ROLLING MEADOWS, IL 60008
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MGD LOC# 5000975304
FUZE ID#: 17481177

SISTER_BAY

2530 SOUTH BAY SHORE DR
SISTER BAY, WI 54234

DRAWN BY:	AMW
CHECKED BY:	TAZ
DATE:	08/26/2025
PROJECT #:	33-3714

SHEET TITLE
SITE DETAILS

SHEET NUMBER
ANT-3

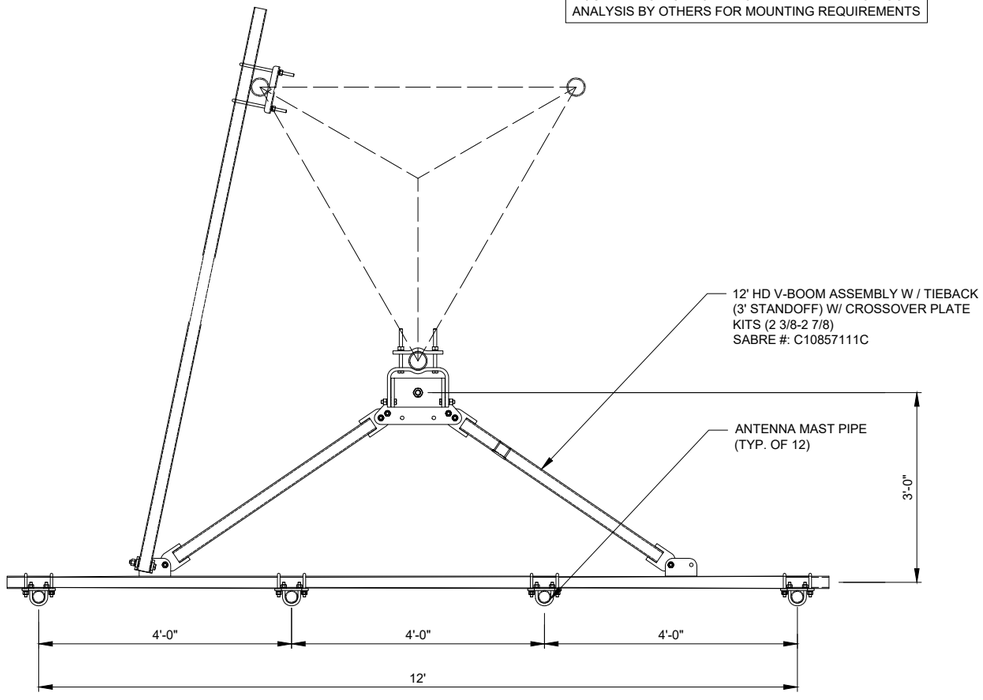
VERIZON WIRELESS NSTD-445 ANTENNA MOUNTING SYSTEM CLASSIFICATION STANDARD ASSUMPTIONS:

- MAXIMUM ALLOWABLE VERTICAL OFFSET FROM MOUNT CENTERLINE TO ANTENNA CENTERLINE IS 6".
- MOUNT PIPES ARE ASSUMED TO BE EQUALLY SPACED ON EACH SECTOR, WITH AN ALLOWABLE 6" MAXIMUM HORIZONTAL OFFSET FROM EQUAL SYMMETRIC SPACING.
- ALL APPURTENANCES/EQUIPMENT MUST BE ATTACHED TO MOUNT PIPES ON MOUNT FACE (NOT ON SECTOR FRAME ARMS).
- ANTENNAS MOUNTED ON SIDE-BY-SIDE BRACKETS ARE NOT PERMITTED.
- MAXIMUM NUMBER OF MOUNT PIPES IS INDICATED IN MOUNT CLASSIFICATION.
- IF SITE CONDITIONS ARE OUTSIDE OF THESE PARAMETERS, CONTACT ENGINEER OF RECORD FOR ALTERNATIVE OPTIONS.

NOTES:
1. 7/8" O.D. MOUNTING PIPES MUST BE PURCHASED SEPARATELY.
2. QUANTITIES SHOWN IN LISTS OF MATERIAL ARE FOR ONE (1) V-BOOM ONLY
3. THIS V-BOOM WILL MOUNT TO THE FOLLOWING: 1 1/2" Ø TO 5 9/16"Ø ROUND LEG.
4. TIEBACK MUST BE CONNECTED TO A RIGID MEMBER THAT PROVIDES ADEQUATE SUPPORT WITHIN THE LIMITS NOTED ABOVE IN THE TIEBACK ANGLE RANGE DETAIL UNLESS APPROVED BY THE ENGINEER OF RECORD

NOTE:
G.C. TO PROVIDE AND INSTALL MOUNT WITH PIPES

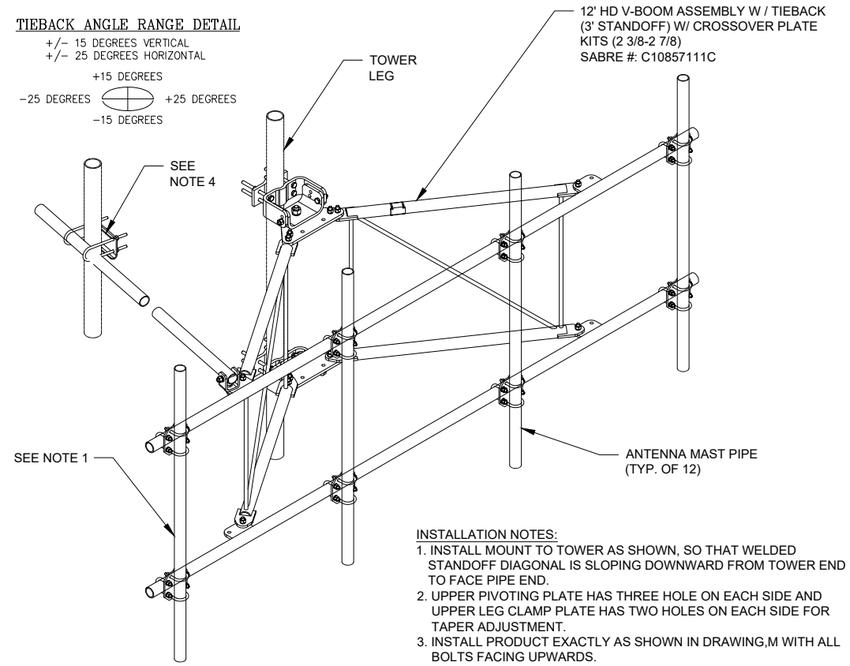
NOTE:
MOUNT SPECIFICATION BY OTHERS. REFER TO MOUNT ANALYSIS BY OTHERS FOR MOUNTING REQUIREMENTS



MOUNTING OPTION
SHOWING MOUNTING PIPE PLACEMENTS

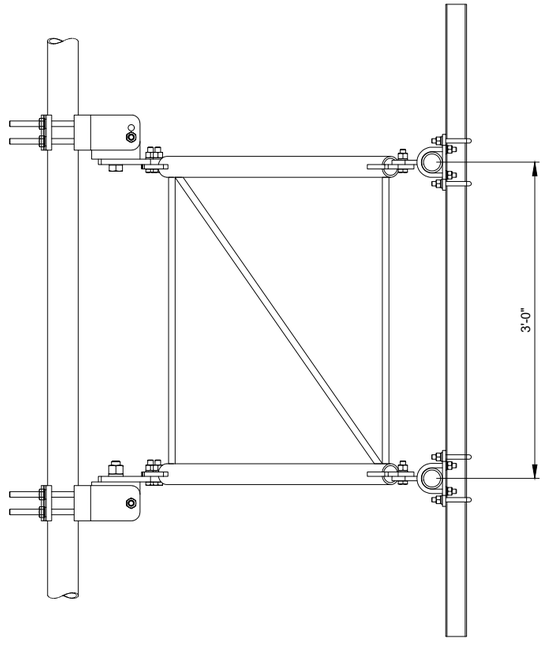
NOTES:
1. UNLESS SPECIFIED DIFFERENTLY IN RFDS, G.C. TO MOUNT ANTENNAS WITH 700 TECHNOLOGY ON OPPOSITE ENDS OF FRAME.
2. ANTENNAS & EQUIPMENT TO BE INSTALLED PER MOUNT MANUFACTURER'S RECOMMENDED MOUNTING LOCATIONS
3. G.C. TO ADJUST HEIGHT OF PLATFORM BY ±6" AS NEEDED TO AVOID CLIMBING FACILITIES. G.C. IS NOT TO REMOVE ORDAMAGE CLIMBING FACILITIES DURING INSTALLATION.

1 PLAN VIEW
N.T.S.



INSTALLATION NOTES:
1. INSTALL MOUNT TO TOWER AS SHOWN, SO THAT WELDED STANDOFF DIAGONAL IS SLOPING DOWNWARD FROM TOWER END TO FACE PIPE END.
2. UPPER PIVOTING PLATE HAS THREE HOLE ON EACH SIDE AND UPPER LEG CLAMP PLATE HAS TWO HOLES ON EACH SIDE FOR TAPER ADJUSTMENT.
3. INSTALL PRODUCT EXACTLY AS SHOWN IN DRAWING,M WITH ALL BOLTS FACING UPWARDS.

2 ISOMETRIC VIEW
N.T.S.



3 PROPOSED PLATFORM SUPPORT SIDE VIEW
N.T.S.

verizon
1701 GOLF ROAD,
TOWER 2, SUITE 400
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MGD LOC# 5000975304
FUZE ID#: 17481177

SISTER_BAY

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SISTER BAY, WI 54234

DRAWN BY:	AMW
CHECKED BY:	TAZ
DATE:	08/26/2025
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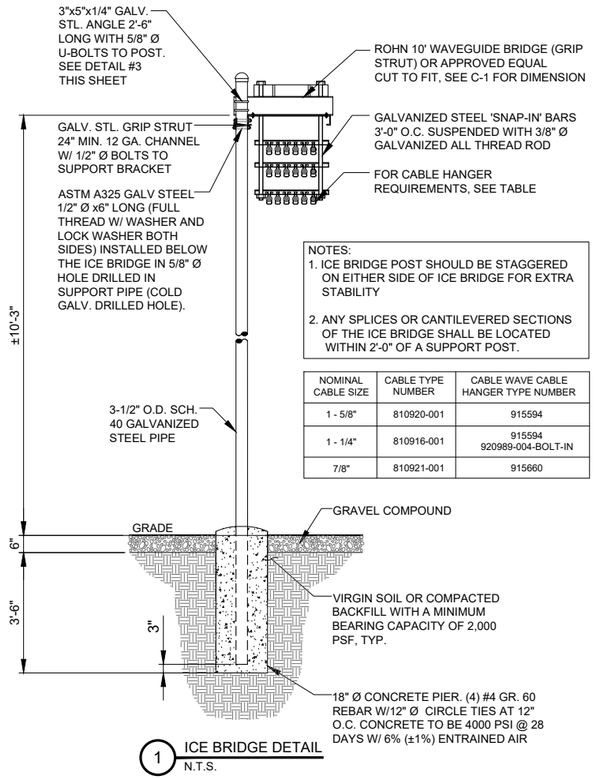
SHEET TITLE
ANTENNA MOUNTING DETAILS

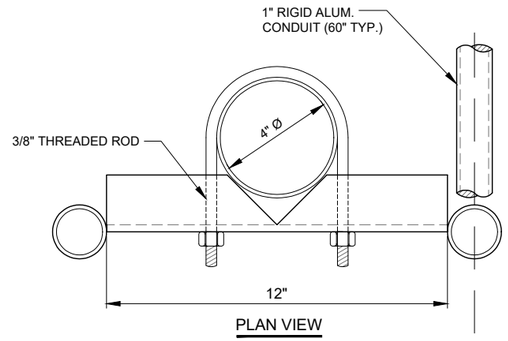
SHEET NUMBER
ANT-3A



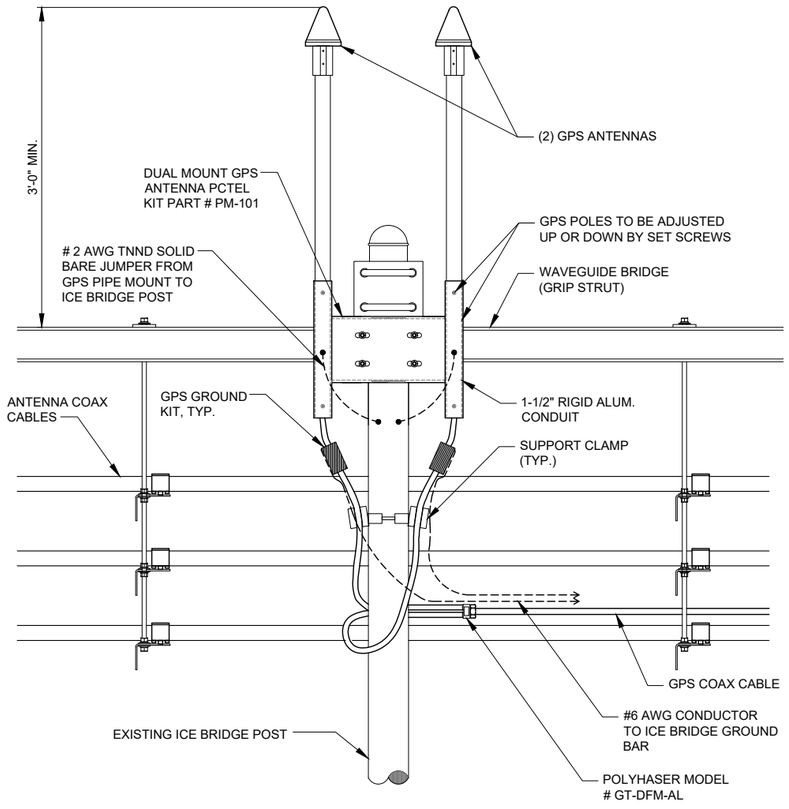
NOTES:
1. ICE BRIDGE POST SHOULD BE STAGGERED ON EITHER SIDE OF ICE BRIDGE FOR EXTRA STABILITY
2. ANY SPLICES OR CANTILEVERED SECTIONS OF THE ICE BRIDGE SHALL BE LOCATED WITHIN 2'-0" OF A SUPPORT POST.

NOMINAL CABLE SIZE	CABLE TYPE NUMBER	CABLE WAVE CABLE HANGER TYPE NUMBER
1 - 5/8"	810920-001	915594
1 - 1/4"	810916-001	915594 920989-004-BOLT-IN
7/8"	810921-001	915660

1 ICE BRIDGE DETAIL
N.T.S.

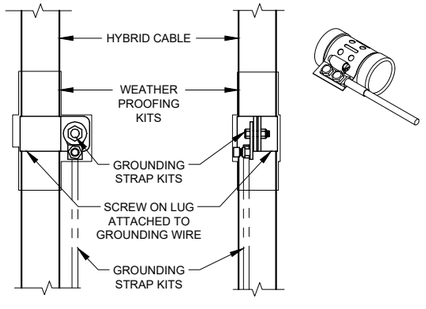


PLAN VIEW



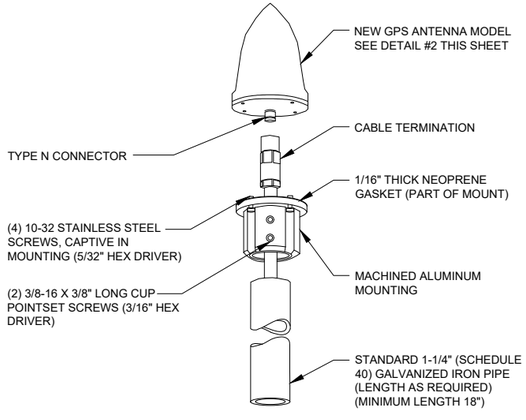
2 GPS MOUNTING DETAIL
N.T.S.

NOTES:
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. THIS DETAIL IS TYPICAL FOR EACH CABLE WHERE IT IS SPECIFIED TO BE GROUNDED
3. CABLE TO BE GROUNDED AT ANTENNA LEVEL AND PRIOR TO ENTERING SHELTER ENTRY PANEL.
4. CABLE ALSO TO BE GROUNDED TO GROUND BAR AT TOWER BASE IF APPLICABLE.
5. USE ONLY TIN PLATED GROUNDING KITS.



4 COAX/ HYBRID GROUND KIT DETAIL
N.T.S.

NOTE:
INSTALL EACH GPS ON THE CLOSEST ICE BRIDGE POSTS TO SHELTER (TYP. AT 2 LOCATIONS).



3 TYPICAL GPS DETAIL
N.T.S.

verizon
1701 GOLF ROAD,
TOWER 2, SUITE 400
ROLLING MEADOWS, IL 60008
PHONE: (847) 619-5397
FAX: (847) 706-7415

TERRA CONSULTING GROUP
has joined Colliers Engineering & Design

REVISIONS

NO.	DESCRIPTION	DATE	BY
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3	ISSUED FOR FINALS	12/12/25	TJS
4	REVISED PER COMMENTS	01/13/26	PP

MGD LOC# 5000975304
FUZE ID#: 17481177

SISTER_BAY

2530 SOUTH BAY SHORE DR
SISTER BAY, WI 54234

DRAWN BY:	AMW
CHECKED BY:	TAZ
DATE:	08/26/2025
PROJECT #:	33-3714

SHEET TITLE
SITE DETAILS

SHEET NUMBER
ANT-4

NOTES:

1. THIS IS AN UNMANNED STORAGE AND EQUIPMENT PAD ONLY.
2. PAD SHALL BE PLACED ACCORDING TO STATE AND LOCAL CODE FROM ANY PROPERTY LINE, INTERIOR LOT LINE OR ANY OTHER BUILDING.
3. ALL ITEMS NOTED AS "FIELDWORK" SHALL BE INSTALLED AND TESTED AT THE FACTORY THEN REMOVED FOR TRANSPORT AND REINSTALLED AT THE FINAL SITE.
4. PAD NOT DESIGNED FOR INSTALLATION IN A FLOOD PRONE AREA.
5. THIS PAD DOES NOT CONTAIN PLUMBING FACILITIES.
6. THIS ENCLOSURE IS CLASSIFIED AS USE S-2 (IBC, FBC), U (OBC)
   2006-2015 INTERNATIONAL BUILDING CODE
   2009-2012 UNIFORM MECHANICAL CODE
   2006-2015 INTERNATIONAL MECHANICAL CODE
   2004 CHICAGO BUILDING CODE
7. CONCRETE PAD AND ASSOCIATED EQUIPMENT IS PROVIDED BY OWNER UNDER SEPARATE CONTRACT. EQUIPMENT ENCLOSURE INFORMATION INDICATED HEREIN IS PROVIDED FOR REFERENCE ONLY AND IS TAKEN FROM MANUFACTURER'S AVAILABLE DATA. REFER TO CIVIL, STRUCTURAL AND ELECTRICAL DRAWINGS FOR WORK TO BE PERFORMED UNDER THIS CONTRACT.
8. REFER TO SITE PLAN ON SHEET C-1 FOR EXACT LOCATION AND ORIENTATION OF PAD AND H-FRAME

DESIGN PARAMETERS
USE GROUP: S-2 (IBC, FBC)
U (OBC)
CONSTRUCTION TYPE: V-B (IBC, FBC)

OCCUPANCY CATEGORY: II

ROOF LIVE LOAD: 81 PSF

FLOOR LIVE LOAD: 986 PSF

GROUND SNOW LOAD: 96 PSF (N/A FOR FBC 2014)

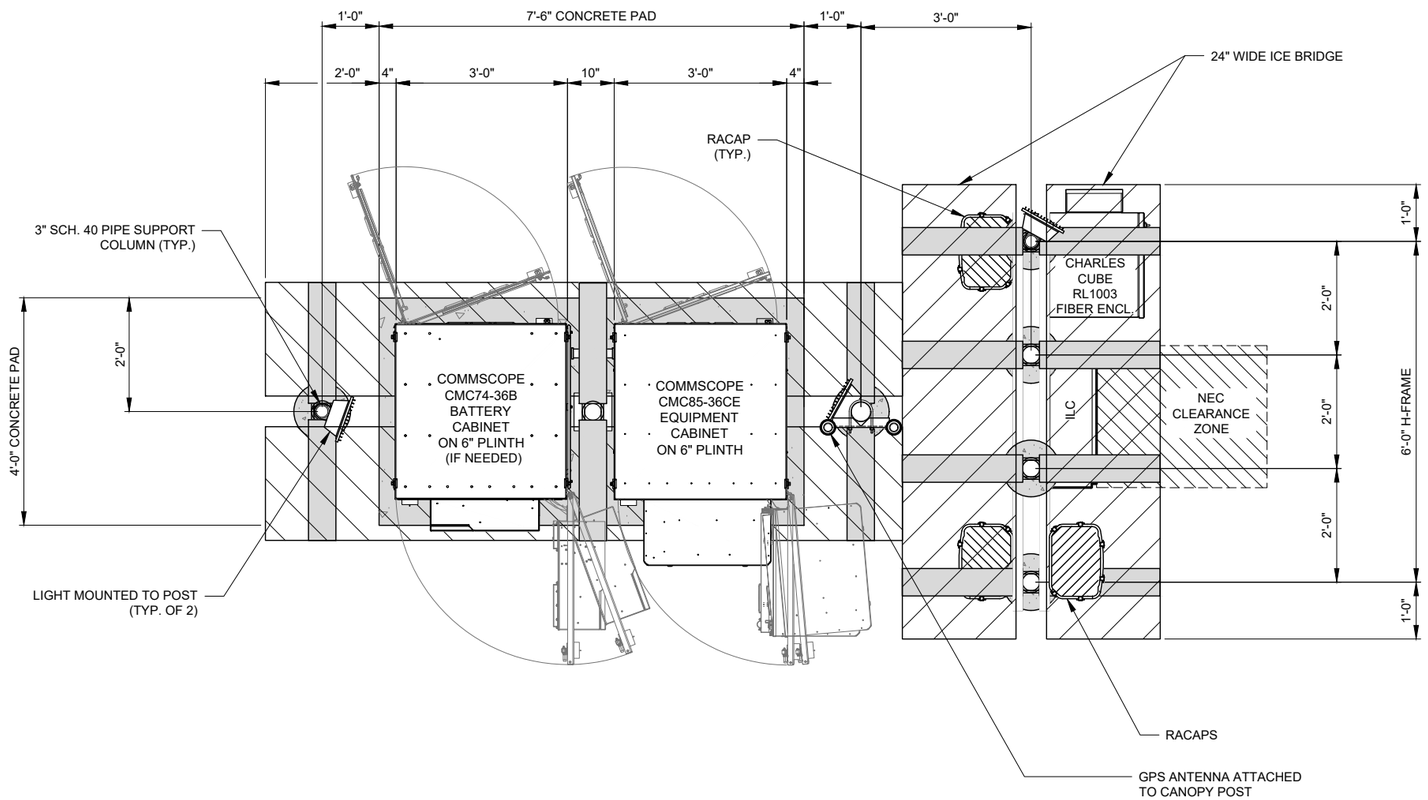
WIND SPEED: 150 MPH/EXPOSURE C

SEISMIC ZONE FOR SBC & UBC: 4
SEISMIC DESIGN CATEGORY FOR IBC: E (IBC)
USE GROUP-III (OBC)
SITE CLASS-D (OBC)

BULLET RESISTANCE LEVEL 4 FOR 4" CONCRETE PER IBC
CONCRETE f'c: 5000 PSI AT 28 DAYS
CONCRETE UNIT WEIGHT: 115 PCF

LEGEND
= CANOPY/CONCRETE PAD
= ICE BRIDGE

NOTE:
REFER TO SITE PLAN ON SHEET C-1 FOR EXACT LOCATION AND ORIENTATION OF PAD AND H-FRAME



1 EQUIPMENT PAD - LAYOUT PLAN
SCALE: 3/4" = 1'-0"

verizon
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MGD LOC#
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SISTER_BAY

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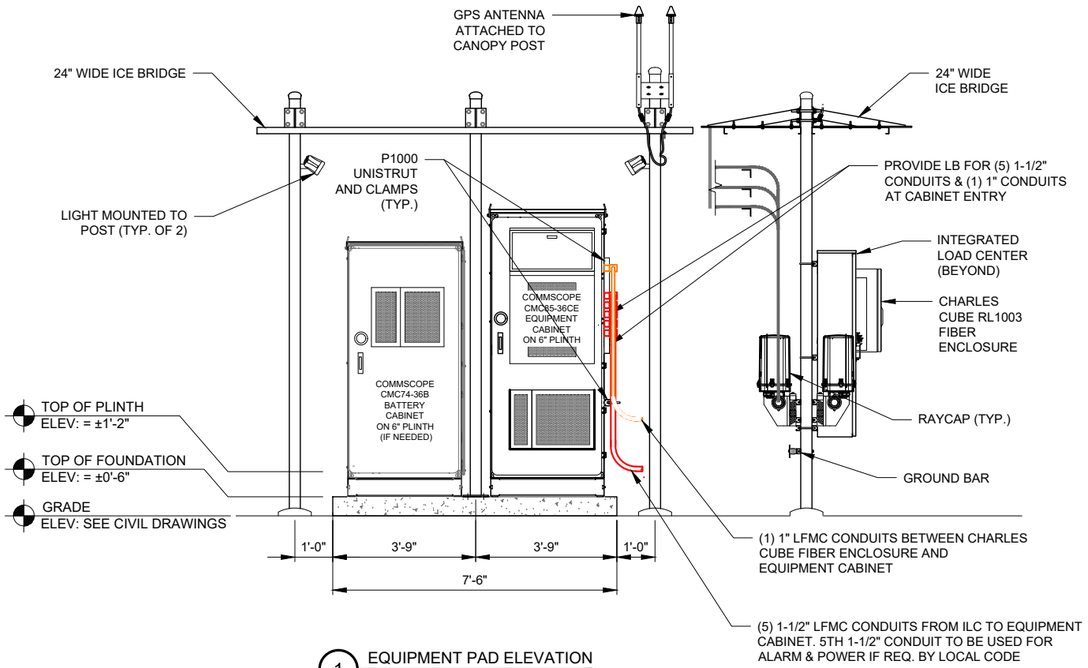
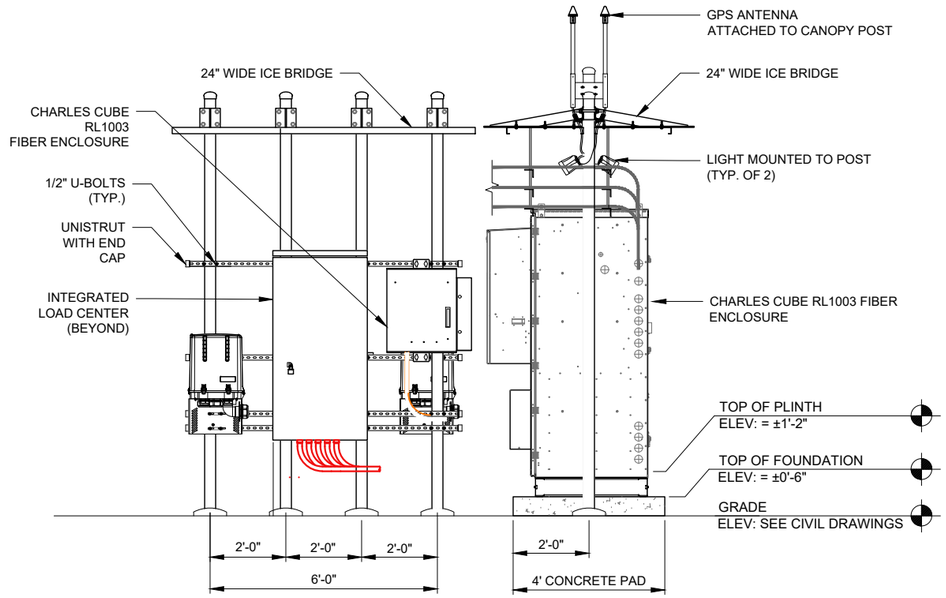
SHEET TITLE
EQUIPMENT
PAD
PLAN & NOTES

SHEET NUMBER
B-1

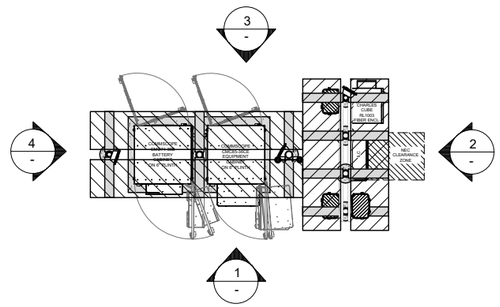


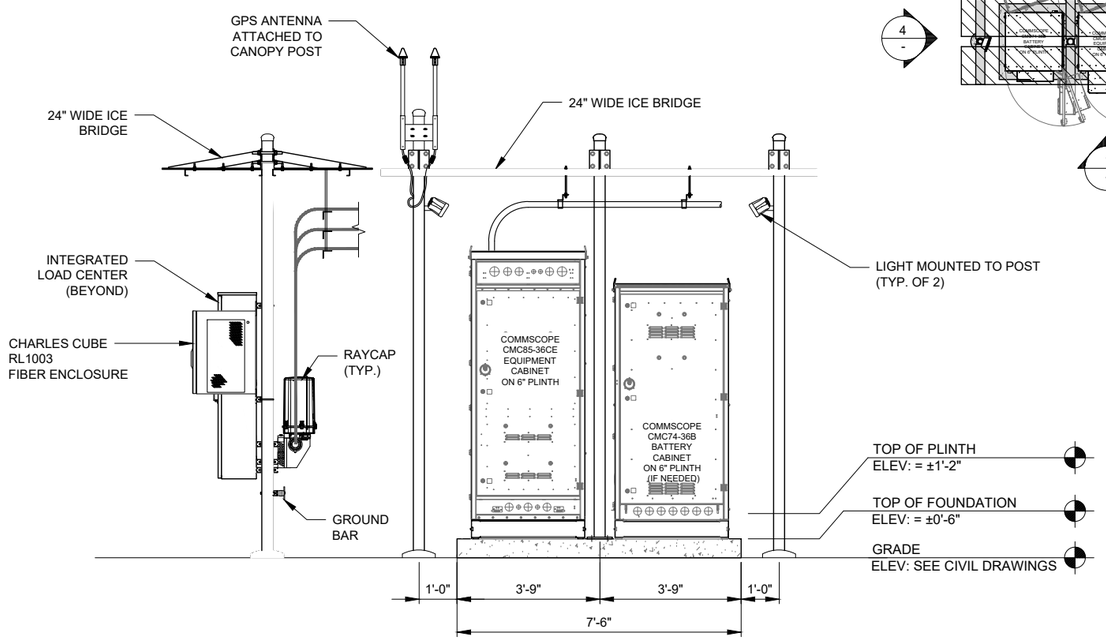
1 EQUIPMENT PAD ELEVATION
SCALE: N.T.S.



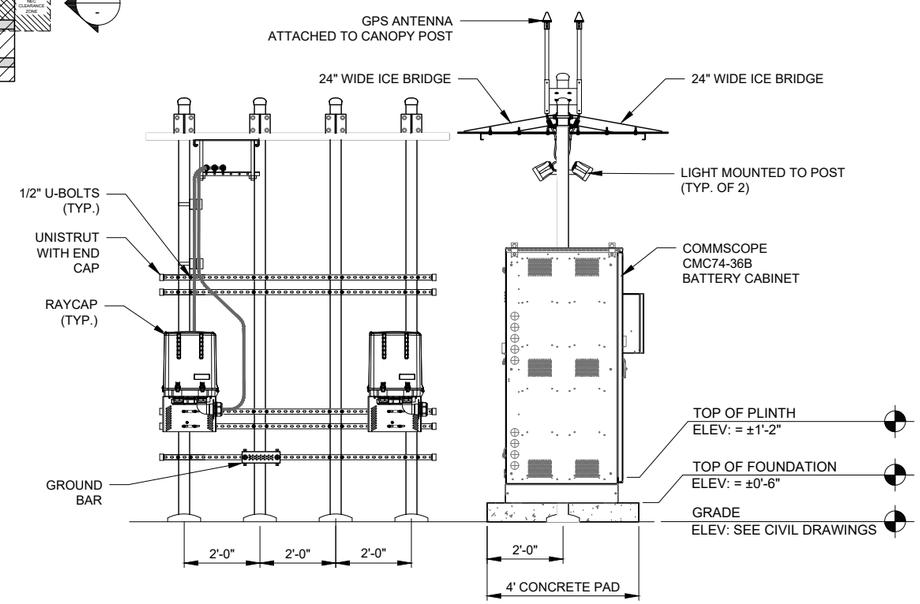
2 EQUIPMENT PAD ELEVATION
SCALE: N.T.S.

NOTE:
EQUIPMENT PAD AND H-FRAME SHOWN SIDE BY SIDE FOR CLARITY. REFER TO SITE PLAN ON SHEET C-1 FOR EXACT LOCATION AND ORIENTATION OF PAD AND H-FRAME





3 EQUIPMENT PAD ELEVATION
SCALE: N.T.S.



4 EQUIPMENT PAD ELEVATION
SCALE: N.T.S.

NOTE: FOR REFERENCE ONLY

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ROLLING MEADOWS, IL 60008
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MGD LOC# 5000975304
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SISTER_BAY

2530 SOUTH BAY SHORE DR
SISTER BAY, WI 54234

DRAWN BY:	AMW
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SHEET TITLE
EQUIPMENT PAD ELEVATIONS

SHEET NUMBER
B-2

UTILITY NOTES:

WORK INCLUDES:

THESE NOTES AND ACCOMPANYING DRAWINGS COMPLEMENT THE PROVISIONS AND INSTALLATIONS BY THE ELECTRICAL CONTRACTOR, OF ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED TO INSTALL THE ELECTRICAL WORK COMPLETE IN CONNECTION WITH THIS VERIZON WIRELESS SITE AND SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:

1. THE PROVISIONS, INSTALLATION, AND CONNECTION OF A GROUNDING ELECTRODE SYSTEM COMPLETE WITH A BUILDING AND SECONDARY GROUNDING, CELLULAR TELEPHONE COMMUNICATIONS TOWER AND CONNECTIONS TO THE INCOMING ELECTRICAL DISTRIBUTION EQUIPMENT.
2. THE PROVISION AND INSTALLATION OF AN OVERHEAD ELECTRICAL SERVICE OR UNDERGROUND ELECTRICAL SERVICE AND ALL ASSOCIATED WIRE AND CONDUIT AS REQUIRED AND/OR INDICATED ON PLANS.
3. THE PROVISION, INSTALLATION OF CONDUIT AND CONNECTIONS FOR LOCAL TELEPHONE SERVICE.
4. THE FURNISHING AND INSTALLATION OF THE ELECTRICAL SERVICE ENTRANCE CONDUCTORS, CONDUITS, METER SOCKET, AND CONNECTIONS TO THE SERVICE EQUIPMENT WITHIN THE ENCLOSURE.
5. TWO INCH (2") AND THREE INCH (3") DIAMETER PVC CONDUITS SCHEDULE 40.
6. ALL PVC CONDUITS SHOULD BE LEFT WITH NYLON PULL CORD FOR FUTURE USE.
7. EXCAVATION, TRENCHING, AND BACKFILLING FOR CONDUIT(S), CABLE(S), AND EXTERNAL GROUNDING SYSTEM.

CODES, PERMITS, AND FEES:

1. ALL REQUIRED PERMITS, LICENSES, INSPECTIONS AND APPROVALS SHALL BE SECURED AND ALL FEES FOR SAME PAID BY CONTRACTOR.
2. THE INSTALLATION SHALL COMPLY WITH ALL APPLICABLE CODES: STATE, LOCAL AND NATIONAL, AND THE DESIGN, PERFORMANCE CHARACTERISTICS AND METHODS OF CONSTRUCTION OF ALL ITEMS AND EQUIPMENT SHALL BE IN ACCORDANCE WITH THE LATEST ISSUE OF THE VARIOUS APPLICABLE STANDARD SPECIFICATIONS OF THE FOLLOWING AUTHORITIES:

N.E.C.	NATIONAL ELECTRIC CODE
A.N.S.I.	AMERICAN NATIONAL STANDARDS INSTITUTE
I.E.E.E.	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
A.S.T.M.	AMERICAN SOCIETY FOR TESTING MATERIALS
N.E.M.A.	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
U.L.	UNDERWRITERS LABORATORIES, INC.
N.F.P.A.	NATIONAL FIRE PROTECTION ASSOCIATION

RACEWAYS AND WIRING:

1. WIRING OF EVERY KIND MUST BE INSTALLED IN CONDUIT, UNLESS NOTED OTHERWISE, OR AS APPROVED BY THE ENGINEER.
2. UNLESS OTHERWISE SPECIFIED, ALL WIRING SHALL BE COPPER (CU) TYPE THWN, SIZED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
3. RACEWAYS SHALL BE GALVANIZED STEEL, SIZED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, UNLESS OTHERWISE NOTED. ALL RACEWAYS SHALL BE APPROVED FOR THE INSTALLATION.
4. PULL OR JUNCTION BOXES SHALL BE PROVIDED AS REQUIRED TO FACILITATE INSTALLATION OF RACEWAYS AND WIRING. PROVIDE JUNCTION AND PULLBOXES FOR CONDUIT RUNS WITH MORE THAN (360) DEGREES OF BENDS.
5. PROVIDE A COMPLETE RACEWAY AND WIRING INSTALLATION, PERMANENTLY AND EFFECTIVELY GROUNDED IN ACCORDANCE WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE AND LOCAL CODES.
6. ELECTRICAL PANELBOARD TO BE FURNISHED BY VERIZON WIRELESS AND INSTALLED BY THE GENERAL CONTRACTOR/ELECTRICAL CONTRACTOR.
7. ALL STEEL CONDUIT SHALL BE BONDED AT BOTH ENDS WITH GROUNDING BUSHING.

GENERAL NOTES:

SEE DETAILS AND SCHEDULES ON DRAWINGS AND SPECIFICATIONS FOR MEANING OF ABBREVIATIONS AND ADDITIONAL REQUIREMENTS AND INFORMATION. CHECK ARCHITECTURAL, STRUCTURAL AND OTHER MECHANICAL AND ELECTRICAL DRAWINGS FOR SCALE, SPACE LIMITATIONS, COORDINATION, AND ADDITIONAL INFORMATION, ETC. REPORT ANY DISCREPANCIES, CONFLICTS, ETC. TO ENGINEER BEFORE SUBMITTING BID. ALL EQUIPMENT FURNISHED BY OTHERS (FBO) SHALL BE PROVIDED WITH PROPER MOTOR STARTERS, DISCONNECTS, CONTROLS, ETC. BY THE ELECTRICAL CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE. THE ELECTRICAL CONTRACTOR SHALL INSTALL AND COMPLETELY WIRE ALL ASSOCIATED EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S WIRE DIAGRAMS AND AS REQUIRED FOR A COMPLETE OPERATING INSTALLATION. ELECTRICAL CONTRACTOR SHALL VERIFY AND COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF (FBO) EQUIPMENT PRIOR TO ROUGH-IN OF CONDUIT AND WIRING TO AVOID CONFLICTS.

COORDINATION WITH UTILITY COMPANY:

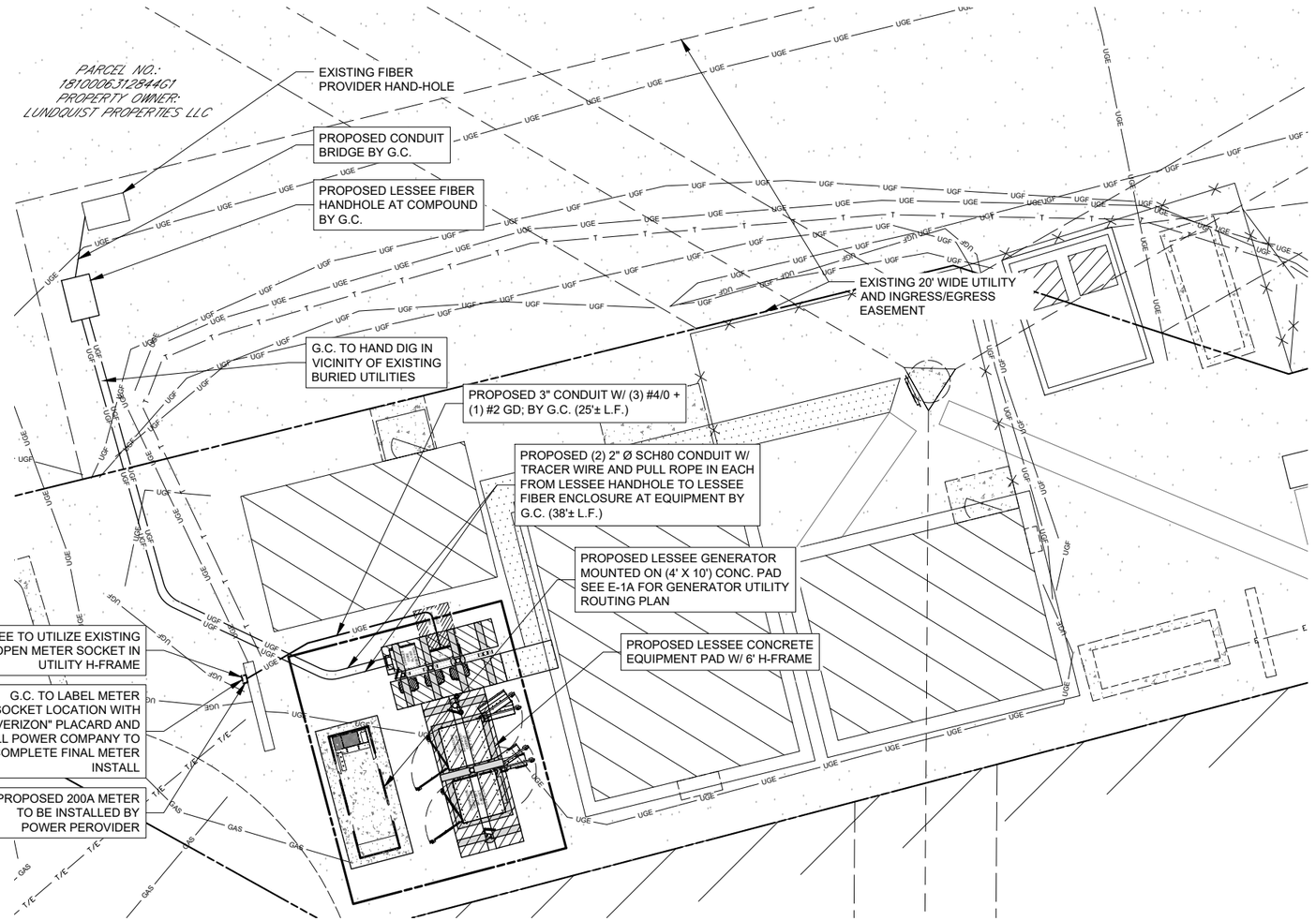
THE ELECTRICAL CONTRACTOR SHALL COORDINATE COMPLETE ELECTRICAL SERVICE WITH LOCAL UTILITY COMPANY FOR A COMPLETE OPERATIONS SYSTEM, INCLUDING TRANSFORMER CONNECTIONS, CONCRETE TRANSFORMER PADS, IF REQUIRED, METER SOCKETS, PRIMARY CABLE RACEWAY REQUIREMENTS, SECONDARY SERVICE, ETC. PRIOR TO SUBMITTING BID TO INCLUDE ALL LABOR AND MATERIALS. THE ELECTRICAL CONTRACTOR SHALL INCLUDE IN THE BID ANY OPTIONAL OR EXCESS FACILITY CHARGES ASSOCIATED WITH PROVIDING ELECTRICAL SERVICE FROM LOCAL UTILITY COMPANY. VERIFY BEFORE BIDDING TO INCLUDE ALL COSTS. THE ELECTRICAL CONTRACTOR SHALL VERIFY THE AVAILABLE FAULT CURRENT WITH THE LOCAL UTILITY COMPANY PRIOR TO SUBMITTING BID. ADJUST A.I.C. RATINGS OF ALL OVER CURRENT PROTECTION DEVICES IN DISTRIBUTION EQUIPMENT AS REQUIRED TO COORDINATE WITH AVAILABLE FAULT CURRENT FROM LOCAL UTILITY COMPANY. ALL GROUNDING RODS PROVIDED BY THE POWER OR TELEPHONE UTILITY COMPANIES MUST BE TIED INTO THE MAIN EXTERNAL GROUND RING.

UTILITY CONTACTS:

POWER: WISCONSIN PUBLIC SERVICE FIBER: TRANSPORT BY OTHERS
PHONE: (800) 242-9772
EMAIL: NEWSERVICEINSTALLATION@WISCONSINPUBLICSERVICE.COM
REFERENCE: 2530 SOUTH BAY SHORE ROAD, SISTER BAY, WI 54234

ELECTRICAL CONTRACTOR SHALL COORDINATE WITH POWER COMPANY FOR ENTRY INTO FENCED AREA BY EITHER MAILING A KEY TO A SLAVE LOCKED CHAIN AT THE FENCE GATE OR CALLING AND LEAVING A COMBINATION.

FOR CONTINUATION AND CONNECTION OF ELECTRIC AND FIBER SERVICE. COORDINATE WITH ELECTRIC AND FIBER COMPANY.



DIGGERS HOTLINE
"Call 3 Work Days Before You Dig!"
TOLL FREE 1-800-242-8511
MILW. AREA (414) 259-1181
TDD 1-800-542-2289

OTHER UTILITIES NOT INCLUDED IN DIGGERS HOTLINE AND LOCAL UTILITY DISTRICTS AND COMPANIES SHALL ALSO BE NOTIFIED

1 SITE UTILITY ROUTING PLAN

NOTES:
GENERAL CONTRACTOR & ELECTRICAL CONTRACTOR TO USE EXPANSION COUPLINGS FOR ALL UTILITY CONNECTIONS ASSOCIATED WITH THE EQUIPMENT PAD. UTILIZE A CARLON EXPANSION COUPLING (WWW.CARLON.COM, OR EQUAL) W/ A MINIMUM OF 4" TRAVEL LENGTH. GROUND CONDUCTORS FROM PAD TO BELOW GRADE TO BE INSTALLED WITH A SLACK LOOP TO ACCOUNT FOR ANY POSSIBLE FROST HEAVE.

NOTE:
CONTRACTOR TO VERIFY ROUTES WITH LOCAL UTILITY COMPANY PRIOR TO INSTALLATION.

verizon
1701 GOLF ROAD,
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ROLLING MEADOWS, IL 60008
PHONE: (847) 619-5397
FAX: (847) 706-7415

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MGD LOC# 5000975304
FUZE ID#: 17481177

SISTER_BAY

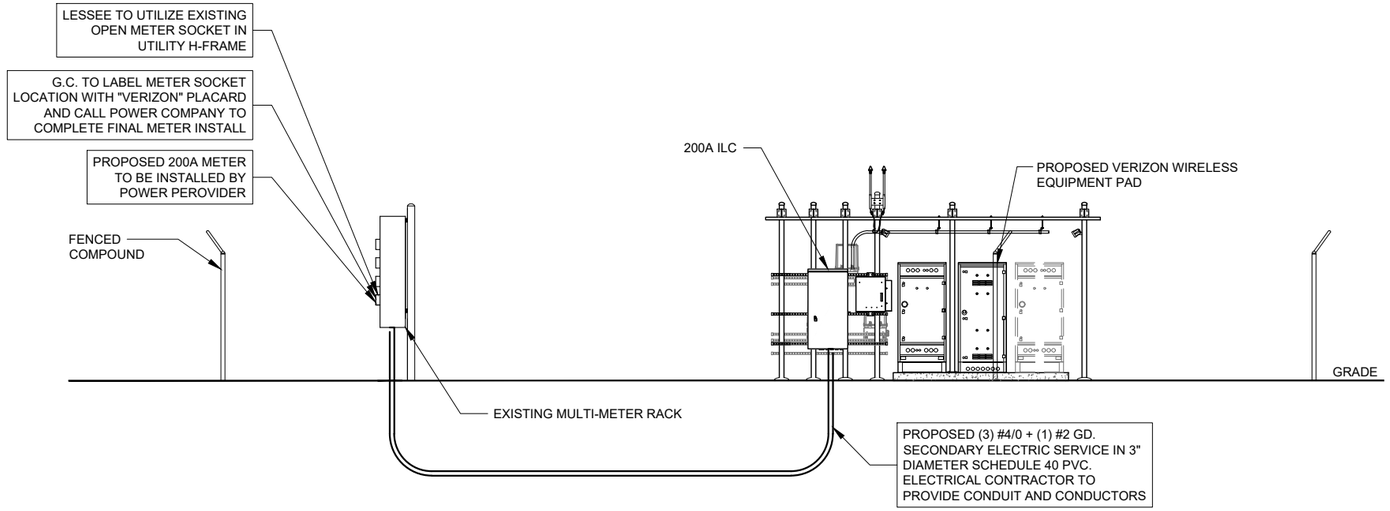
2530 SOUTH BAY SHORE DR
SISTER BAY, WI 54234

DRAWN BY:	AMW
CHECKED BY:	TAZ
DATE:	08/26/2025
PROJECT #:	33-3714

SHEET TITLE
ENLARGED UTILITY ROUTING PLAN

SHEET NUMBER
E-1

- DESIGN PENDING POWER COORDINATION



ELECTRICAL SERVICE: 200 AMP 120/240V SINGLE PHASE 3 WIRE

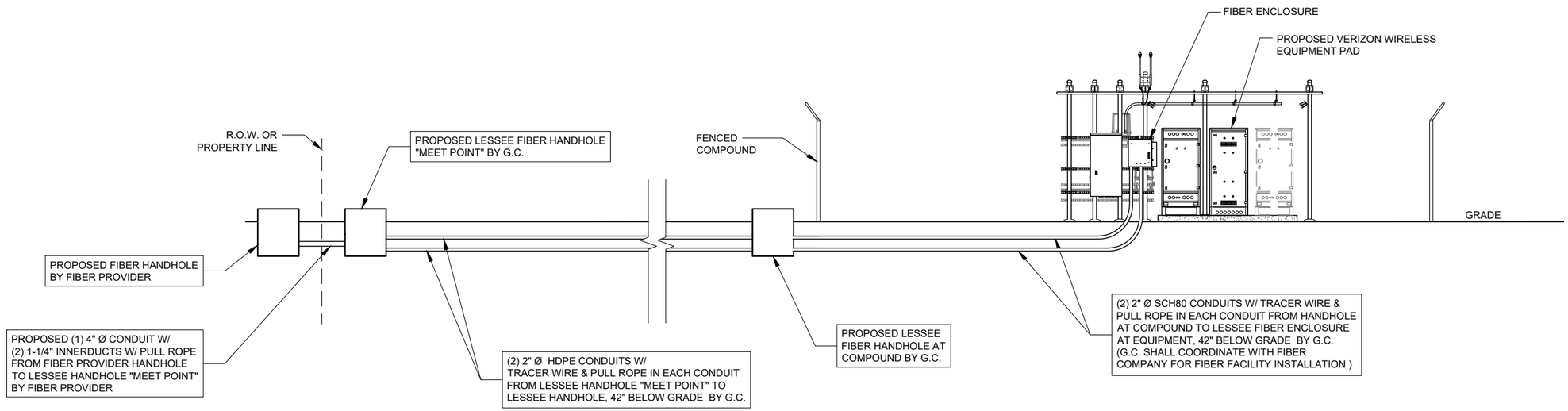
1 POWER RISER DIAGRAM
SCALE: N.T.S.

CONTRACTOR SHALL BUILD INTO THE PRICE OF THE BID THE COST OF TWO (2) MOBILIZATIONS:

1) POWER/FIBER PERMIT PULLED PRIOR TO BUILDING PERMIT AND PRELIMINARY WORK (SMART JACK ON A STICK, ETC) COMPLETED PRIOR TO GENERAL CONSTRUCTION

2) RETURN TO COMPLETE GENERAL ELECTRICAL CONSTRUCTION

- TRANSPORT BY OTHERS



NOTE: VERIFY FIBER ROUTING REQUIREMENTS WITH FIBER COMPANY

2 FIBER RISER DIAGRAM
SCALE: N.T.S.

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SHEET TITLE
UTILITY RISER DIAGRAMS

SHEET NUMBER
E-1A

NOTES:

1) SEE DETAILS ON EXISTING GROUND GRID AND GENERATOR GROUND GRID FOR REQUIRED GROUNDING SYSTEM.

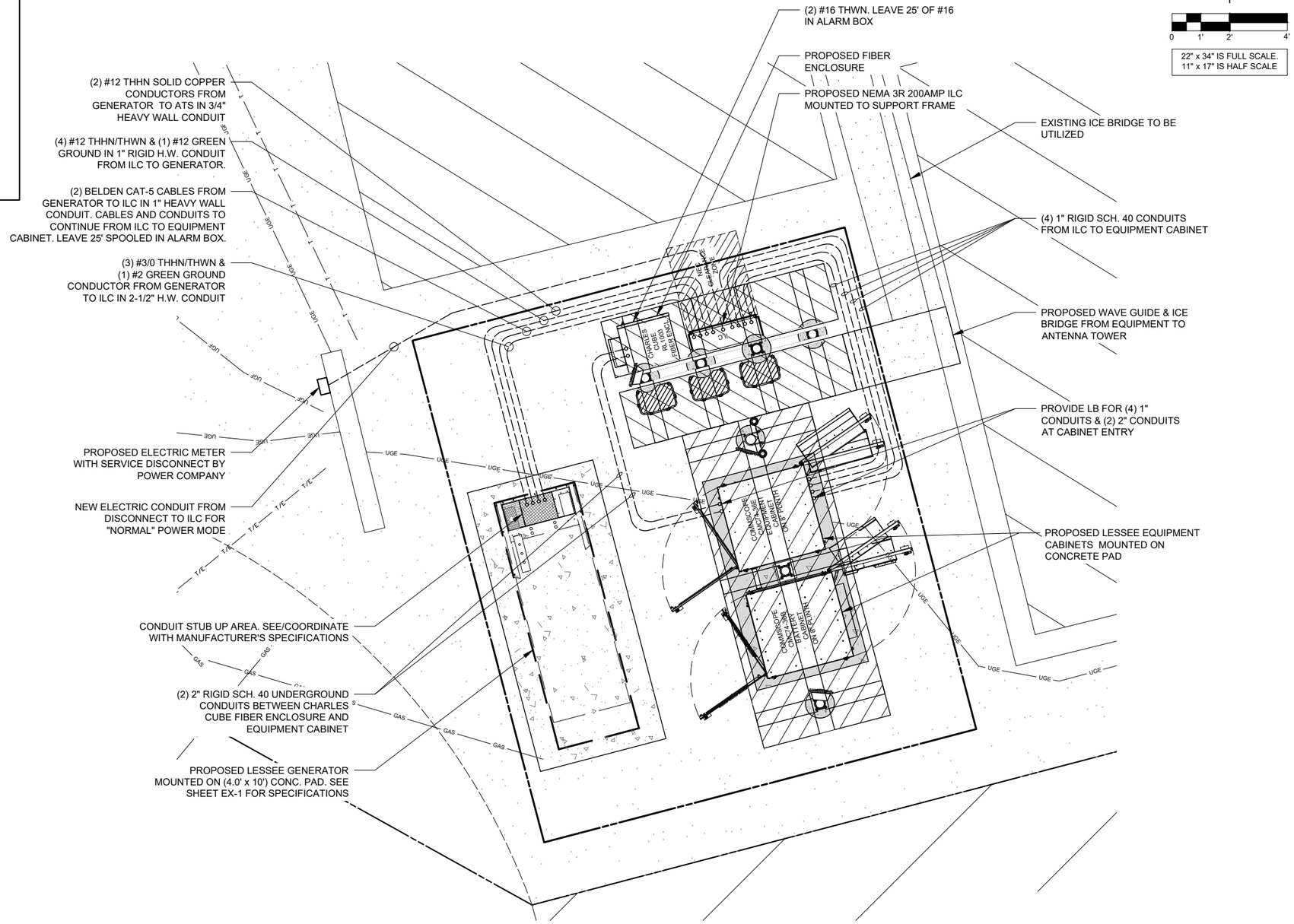
2) NEW AUTOMATIC TRANSFER SWITCH, INSTALLED AND WIRED BY E.C. CONNECT EXTERNAL GROUND LUG AND GROUNDING CONDUCTOR THAT WAS REMOVED FROM MANUAL TRANSFER SWITCH.

3) E.C. MUST LOCATE GROUND GRID INSTALLED FOR NEW EQUIPMENT PAD & PROVIDE THE ATTACHMENT OF THE GENERATOR GROUND TO THE EQUIPMENT GRID FOR SINGLE POINT GROUNDING.

4) E.C. TO EXTEND #2 TINNED SOLID COPPER GROUND CONDUCTORS FROM (2) LOCATIONS ON GENERATOR FRAME (SEE MANUFACTURERS RECOMMENDATIONS) PROVIDE GROUND LUGS ON GENERATOR AS REQUIRED. EXTEND #1/0 STRANDED GROUND CONDUCTOR AND CONNECT TO COPPER CLAD GROUND RODS VIA HEAVY DUTY EXOTHERMIC TERMINATIONS AND THEN EXTENDED AND ATTACH TO BUILDING GROUND GRID VIA EXOTHERMIC TERMINATIONS.

5) NEW GENERATOR FURNISHED BY LESSEE. INSTALLED AND WIRED BY E.C. DELIVERED AND SET BY CONTRACTOR.

6) E.C. MUST MONITOR DC POWER WHEN ON BATTERY BACK-UP DURING PORTIONS OF CONSTRUCTION. IF LEVEL FALLS BELOW RECOMMENDED LEVEL 2256 DC, E.C. MUST TURN ON THE MAIN POWER. THE CELL SITE CANNOT GO OFF LINE AT ANYTIME.



SCALE 1" = 2'

0 1' 2' 4'

22" x 34" IS FULL SCALE.
11" x 17" IS HALF SCALE

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OTHER UTILITIES NOT INCLUDED IN DIGGERS HOTLINE AND LOCAL UTILITY DISTRICTS AND COMPANIES SHALL ALSO BE NOTIFIED

NOTE:
CONTRACTOR TO VERIFY ROUTES WITH LOCAL UTILITY COMPANY PRIOR TO INSTALLATION.

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SISTER BAY, WI 54234

DRAWN BY:	AMW
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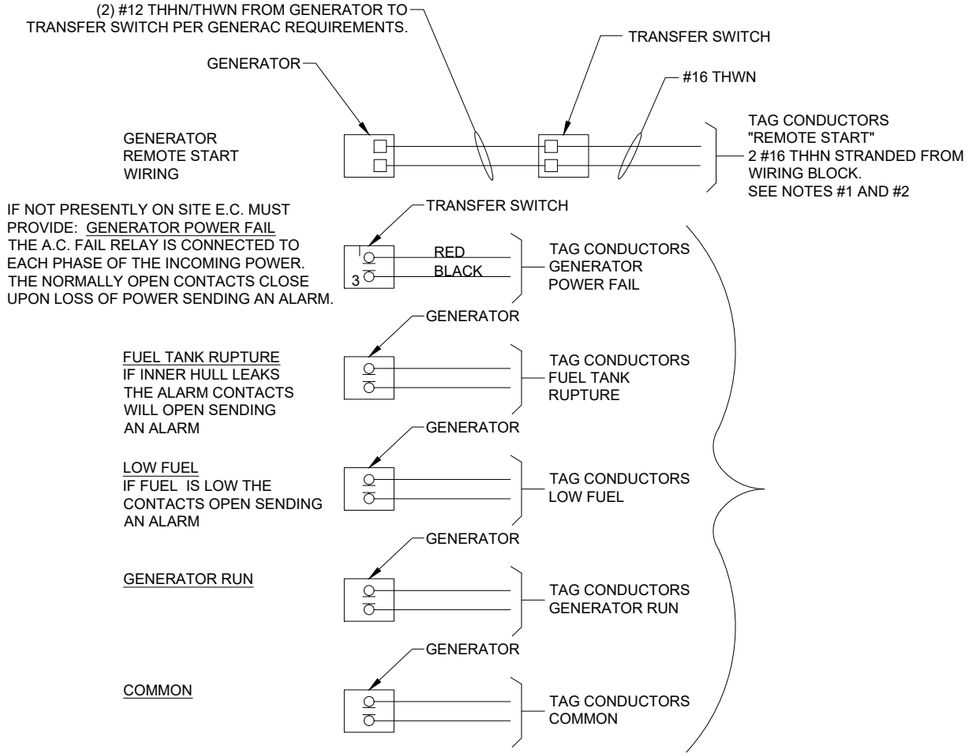
SHEET TITLE
EQUIPMENT UTILITY ROUTING PLAN

SHEET NUMBER
E-1B



1 ALARM WIRING
N.T.S.

NOTES:

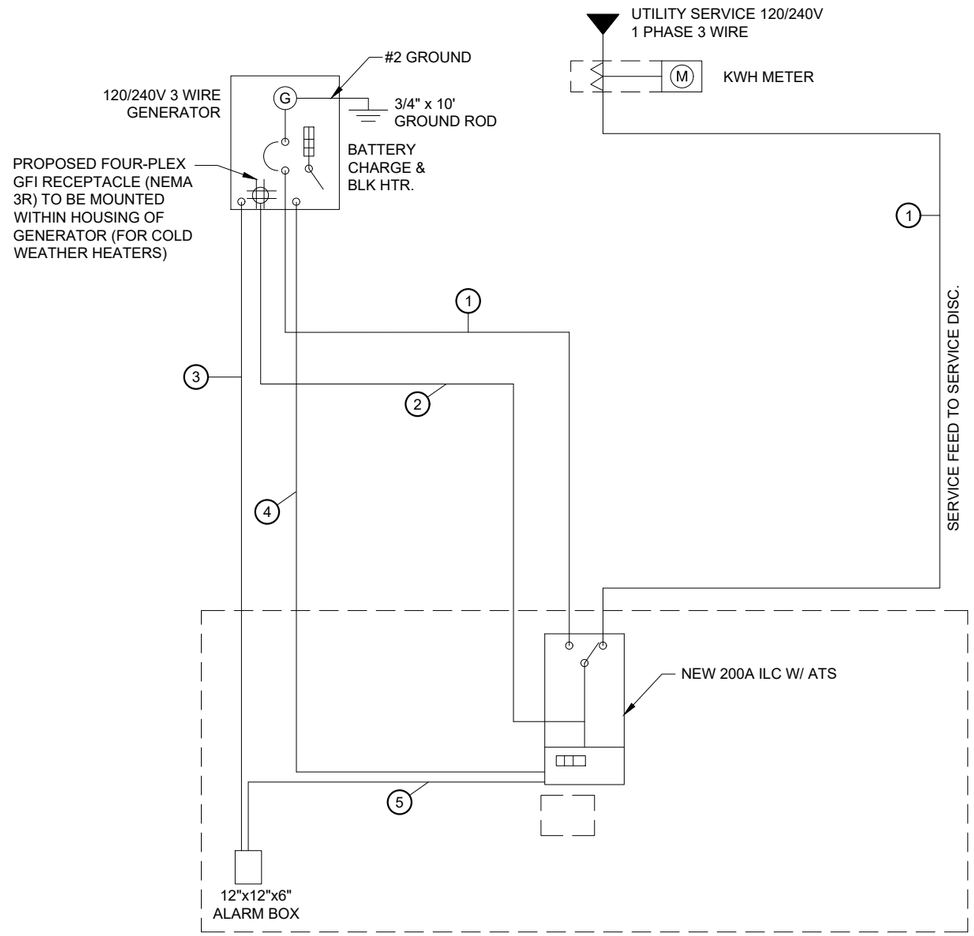
1) E.C. TO PULL A #16 AWG SOLID RED AND A #16 AWG SOLID BLACK FROM THE TRANSFER SWITCH TO ALARM WIRING BLOCK FOR REMOTE START.

2) E.C. TO PULL ALL ALARM LEADS TO EXISTING ALARM WIRING BLOCK. LEAVE A MINIMUM OF 24" PIGTAILS AT ALARM WIRING BLOCK AND TAG CONDUCTORS AS INDICATED, TERMINATIONS ON ALARM POINT WIRING BLOCK BY OTHERS. CONDUCTORS CAN BE RUN EXPOSED. THEY SHALL BE NEATLY BUNDLED USING NYLON TIES AND SUPPORTED AT 2'-0" INTERVALS FOR A NEAT INSTALLATION.

KEY

1. (3) #3/0 & (1) #2 GND IN 2-1/2" C
2. (4) #12 & (1) #12 GND IN 1" C (SEE NOTE)
3. (2) CAT-5 BELDEN IN 1" C FROM GENERATOR TO ALARM BOX. LEAVE 25' SPOOLED IN ALARM BOX
4. (2) #12 THWN IN 3/4" C
5. (2) #16 THWN. LEAVE 25' OF #16 IN ALARM BOX

NOTE:
E.C. TO PROVIDE (2) 20A 1-POLE CIRCUIT BREAKERS FOR BATTERY CHARGER AND JACKET HEATER



2 NEW SINGLE LINE DIAGRAM
N.T.S.

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4	REVISED PER COMMENTS	01/13/26	PP

MGD LOC# 5000975304
FUZE ID#: 17481177

SISTER_BAY

2530 SOUTH BAY SHORE DR
SISTER BAY, WI 54234

DRAWN BY:	AMW
CHECKED BY:	TAZ
DATE:	08/26/2025
PROJECT #:	33-3714

SHEET TITLE
GENERATOR SINGLE LINE DIAGRAM & ALARM WIRING

SHEET NUMBER
E-1C

GROUNDING ELECTRODE SYSTEM NOTES:

1. ALL GROUNDING CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC PROCESS CONNECTIONS SHALL INCLUDE ALL CABLE TO CABLE, SPLICES, ETC. ALL CABLE TO GROUND RODS, GROUND RODS SPLICES AND LIGHTNING PROTECTION SYSTEM AS INDICATED. GROUND FOUNDATION ONLY AS INDICATED BY PM. ALL MATERIALS USED (MOLDS, WELDING, METAL, TOOLS, ETC.) SHALL BE BY EXOTHERMIC PROCESS AND INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND PROCEDURES. GROUND CONDUCTOR SHALL HAVE A MINIMUM 24" BENDING RADIUS.
2. ALL EXOTHERMIC CONNECTIONS ON GALVANIZED SURFACES SHALL BE CLEANED THOROUGHLY AND COLORED TO MATCH SURFACE WITH (2) TWO COATS OF SHERWIN-WILLIAMS GALVITE (WHITE) PAINT B50W3 (OR EQUAL) OR SHERWIN- WILLIAMS SILVERBRITE (ALUMINUM) B59S11 (OR EQUAL).
3. ALL ELECTRICAL & MECHANICAL GROUND CONNECTIONS SHALL HAVE ANTI-OXIDANT COMPOUND APPLIED TO CONNECTION
4. FENCE/GATE: GROUND FENCE POSTS WITHIN 6 FEET OF PLATFORM AND 25 FEET OF TOWER AS INDICATED ON DRAWINGS. GROUND EACH GATE POST AND CORNER POST. GROUND CONNECTIONS TO FENCE POSTS SHALL BE MADE BY THE EXOTHERMIC PROCESS AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND PROCEDURES. ALL OTHER CONNECTIONS FOR THE GROUND GRID SYSTEM SHALL BE MADE BY THE EXOTHERMIC PROCESS, AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND PROCEDURES.
6. UTILITY COMPANY COORDINATION: ELECTRICAL CONTRACTOR SHALL CONFIRM THAT ALL WORK IS IN ACCORDANCE WITH THE RULES OF THE LOCAL UTILITY COMPANY BEFORE SUBMITTING THE BID. THE CONTRACTOR SHALL CHECK WITH THE UTILITY COMPANIES SUPPLYING SERVICE TO THIS PROJECT AND SHALL DETERMINE FROM THEM ALL EQUIPMENT AND CHARGES WHICH THEY WILL REQUIRE AND SHALL INCLUDE THE COST IN THE BID.
7. GROUND TEST: GROUND TESTS SHALL BE PERFORMED AS REQUIRED BY LESSEE STANDARD PROCEDURES. GROUND GRID RESISTANCE SHALL NOT EXCEED 5 OHMS.
8. CONTRACTOR SHALL SUBMIT THE GROUND RESISTANCE TEST REPORT AS FOLLOWS:
   1. ONE (1) COPY TO OWNER REPRESENTATIVE
   2. ONE (1) COPY TO ENGINEER
   3. ONE (1) COPY TO KEEP INSIDE EQUIPMENT ENCLOSURE

TYPICAL KEYED GROUNDING NOTES

(1) #2 AWG TNND SOLID BARE COPPER CONDUCTOR 42" BELOW GRADE (TYPICAL) MINIMUM 24" BENDING RADIUS

(2) PLATFORM CORNER POST, STEEL COLUMN, STEEL BEAM & CANOPY GROUND.

(3) CABINET GROUND BOLTED TO UNIT HOUSING

(4) DISCONNECT AND ELECTRIC SERVICE GROUND TO GROUND ROD

(5) 5/8" x 10' COPPER CLAD GROUND ROD

(6) GROUND CHAIN LINK FENCE (TYPICAL) EXOTHERMIC CONNECTION (TYPE VS) GROUND FENCE POSTS WITHIN 6 FEET OF EQUIPMENT AND 25 FEET OF TOWER. (SEE DETAIL, SHEET E-5)

(7) MAINTAIN TWO FOOT DISTANCE OFF OF STRUCTURES

(8) GROUND COAXIAL ANTENNA CABLES TO GROUND BAR BY ANTENNA CONTRACTOR. TERMINATE CABLES 1'-0" FROM PLATFORM AND INSTALL LIGHTNING SURGE ARRESTORS ON EACH CABLE GROUND.

(9) EXOTHERMICALLY WELD COPPER GROUND BAR TAIL TO HALO GROUND RING (EXOTHERMIC CONNECTION TYPE TA) BY ANTENNA CONTRACTOR. FINAL CONNECTION BY ELECTRICAL CONTRACTOR.

(10) EXISTING GROUND BAR AT TOWER

(11) GROUND CABLE WAVEGUIDE BRIDGE (TYP.) BY ELECTRICAL CONTRACTOR.

(12) PROPOSED PERIPHERAL GROUND RING SHOULD BE INSTALLED 1' TO 2' INSIDE THE FENCE LINE, THE TOWER GROUND RING SHOULD BE INSTALLED A MINIMUM 2' OFF ANY STRUCTURES.

(13) EXISTING TOWER OR COMPOUND COPPER GROUND RING (V.I.F.)

(14) GATE JUMPERS (SEE DETAIL, SHEET E-4)

(15) BOND EXISTING / PROPOSED TOWER GROUND RING TO PROPOSED EQUIPMENT GROUND RING WITH #2 AWG TNND SOLID COPPER CONDUCTOR IN 2 LOCATIONS.

(16) TWO #2 LEADS FROM THE EGR TO THE GROUND BAR AT UTILITY FRAME. CADWELD AT EGR AND DOUBLE HOLE LUGS ON H-FRAME.

(17) BOND RAYCAP TO MGB.

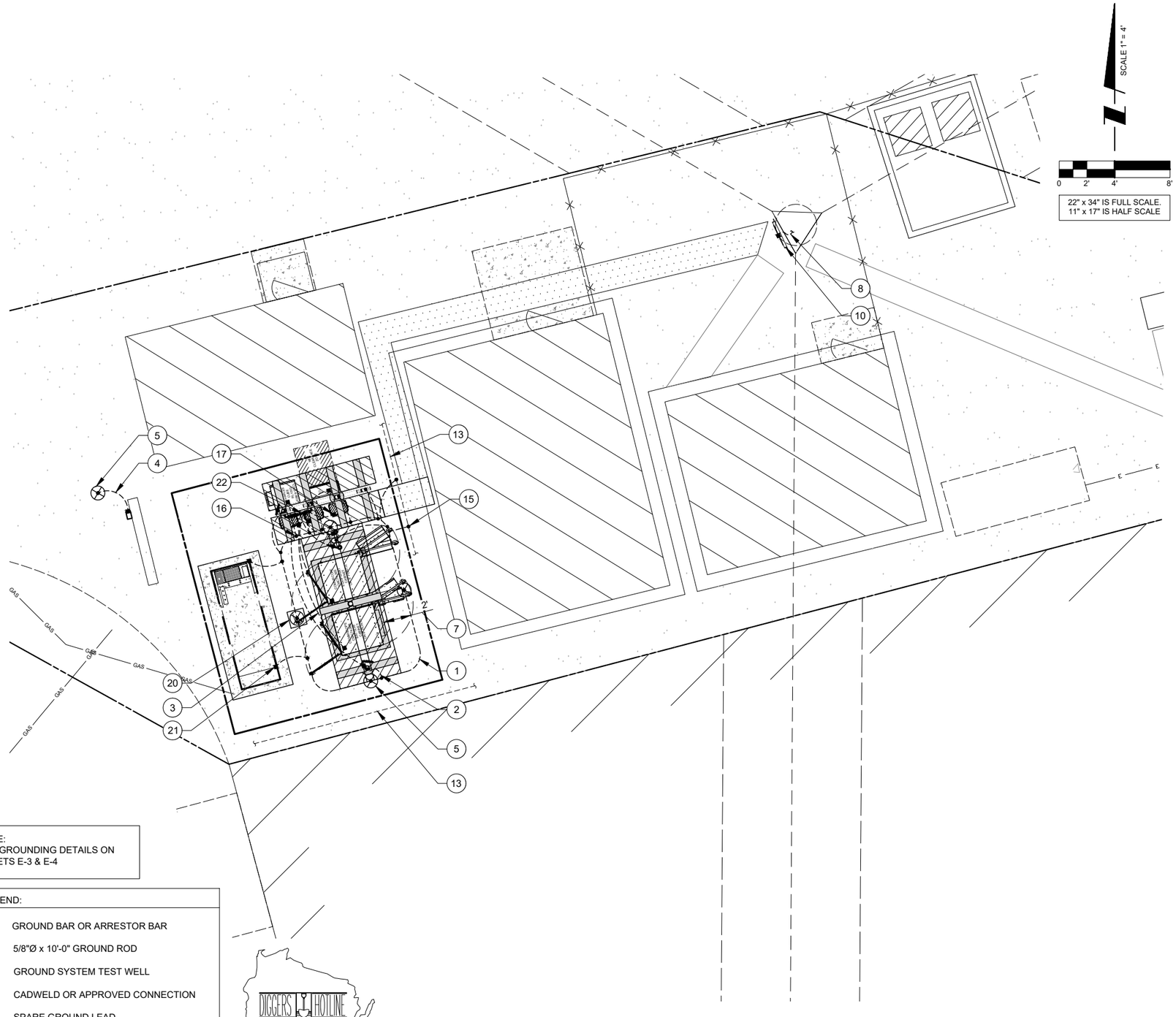
(18) EACH TOWER FOUNDATION REBAR MESH/CAGE TO BE BONDED TO TOWER GROUND RING WITH #2 TNND SOLID COPPER CONDUCTOR

(19) EACH TOWER FOUNDATION TO HAVE AT LEAST ONE ANCHOR BOLT BONDED TO TOWER GROUND RING WITH #2 TNND SOLID COPPER CONDUCTOR

(20) COPPER CLAD GROUND ROD WITH INSPECTION WELL TOP OF GROUND ROD MAX 24" BURY.

(21) EXTEND GROUND CONDUCTORS IN 1/2" RIGID H.W. CONDUIT ADJACENT TO PAD, OFFSET AND ATTACH TO EXTERIOR OF GENERATOR HOUSING AND EXTEND TO GROUND LUGS AS REQUIRED, VERIFY LOCATION WITH GENERAC.

(22) MGB MOUNTED ON H-FRAME.



NOTE:
SEE GROUNDING DETAILS ON SHEETS E-3 & E-4

LEGEND:

- GROUND BAR OR ARRESTOR BAR
- 5/8"Ø x 10'-0" GROUND ROD
- GROUND SYSTEM TEST WELL
- CADWELD OR APPROVED CONNECTION
- SPARE GROUND LEAD
- MECHANICAL CONNECTION
- EXISTING GROUNDING
- NEW GROUNDING

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OTHER UTILITIES NOT INCLUDED IN DIGGERS HOTLINE AND LOCAL UTILITY DISTRICTS AND COMPANIES SHALL ALSO BE NOTIFIED

1 SITE GROUNDING PLAN
SCALE: 1" = 4'

verizon
1701 GOLF ROAD,
TOWER 2, SUITE 400
ROLLING MEADOWS, IL 60008
PHONE: (847) 619-5397
FAX: (847) 706-7415

TERRA CONSULTING GROUP
has joined Colliers Engineering & Design

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SISTER_BAY

2530 SOUTH BAY SHORE DR
SISTER BAY, WI 54234

DRAWN BY:	AMW
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DATE:	08/26/2025
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SHEET TITLE
SITE GROUNDING PLAN

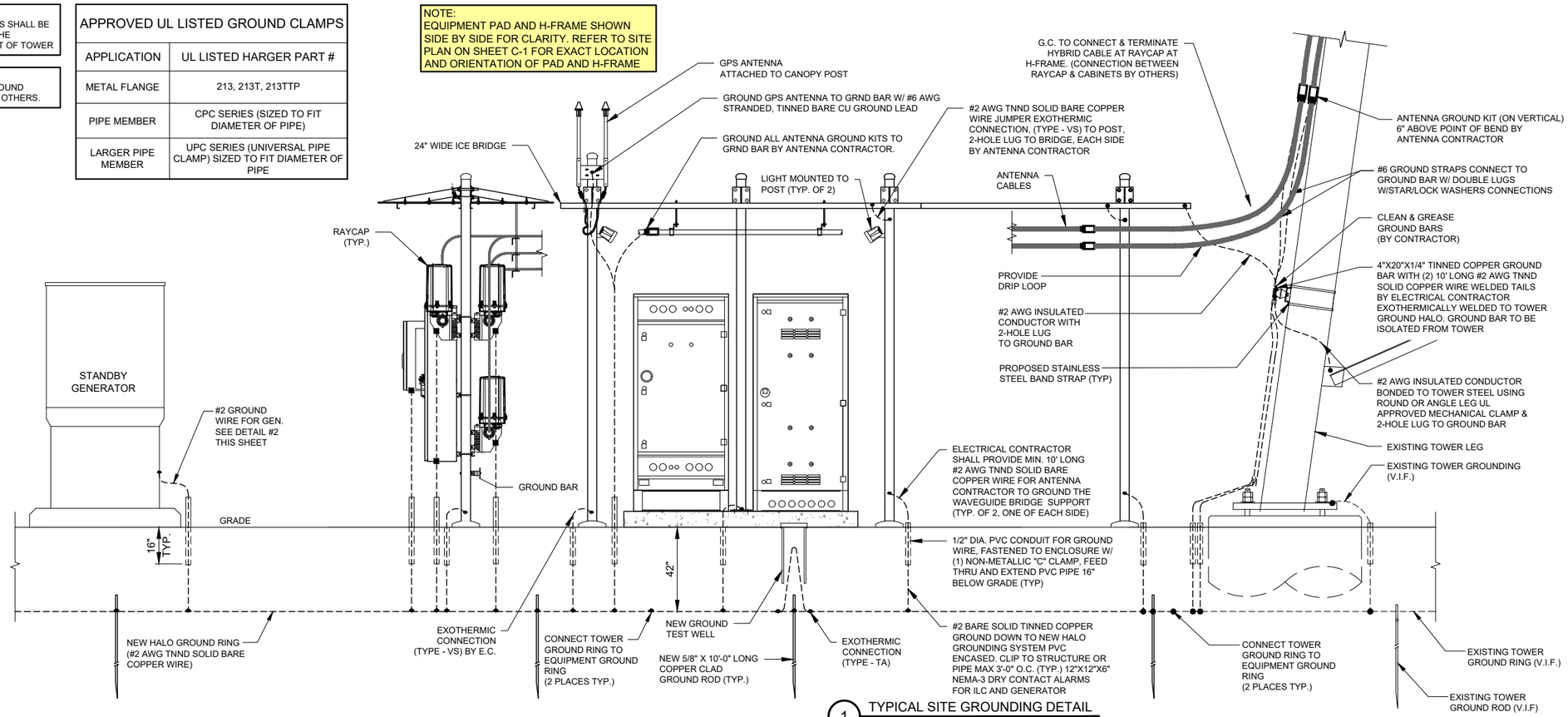
SHEET NUMBER
E-2

NOTE:
ANTENNA CABLES SHALL BE GROUNDED AT THE ANTENNA HEIGHT OF TOWER

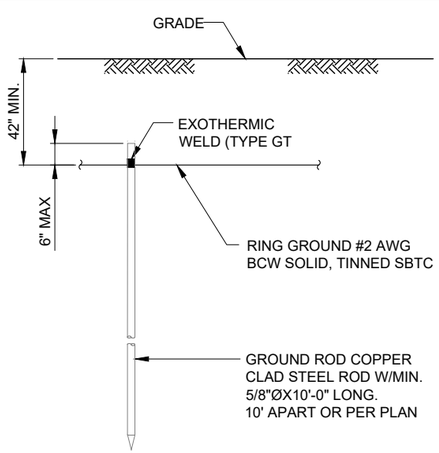
NOTE:
ALL CABINET GROUND CONNECTION BY OTHERS.

APPROVED UL LISTED GROUND CLAMPS	
APPLICATION	UL LISTED HARGER PART #
METAL FLANGE	213, 213T, 213TTP
PIPE MEMBER	CPC SERIES (SIZED TO FIT DIAMETER OF PIPE)
LARGER PIPE MEMBER	UPC SERIES (UNIVERSAL PIPE CLAMP) SIZED TO FIT DIAMETER OF PIPE

NOTE:
EQUIPMENT PAD AND H-FRAME SHOWN SIDE BY SIDE FOR CLARITY. REFER TO SITE PLAN ON SHEET C-1 FOR EXACT LOCATION AND ORIENTATION OF PAD AND H-FRAME



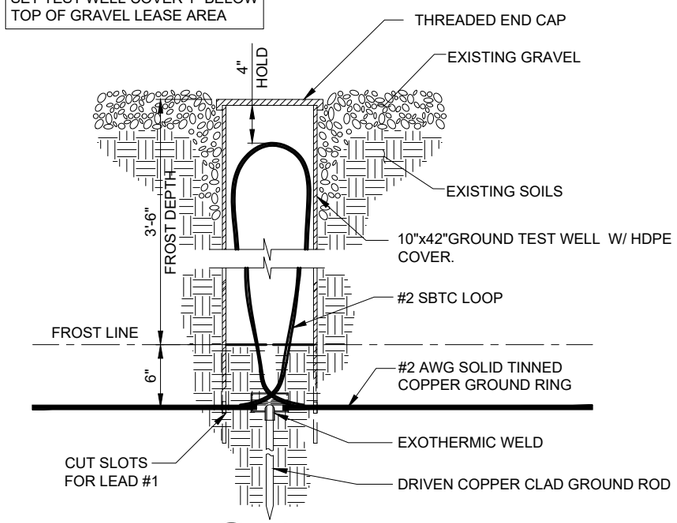
1 TYPICAL SITE GROUNDING DETAIL
SCALE: N.T.S.



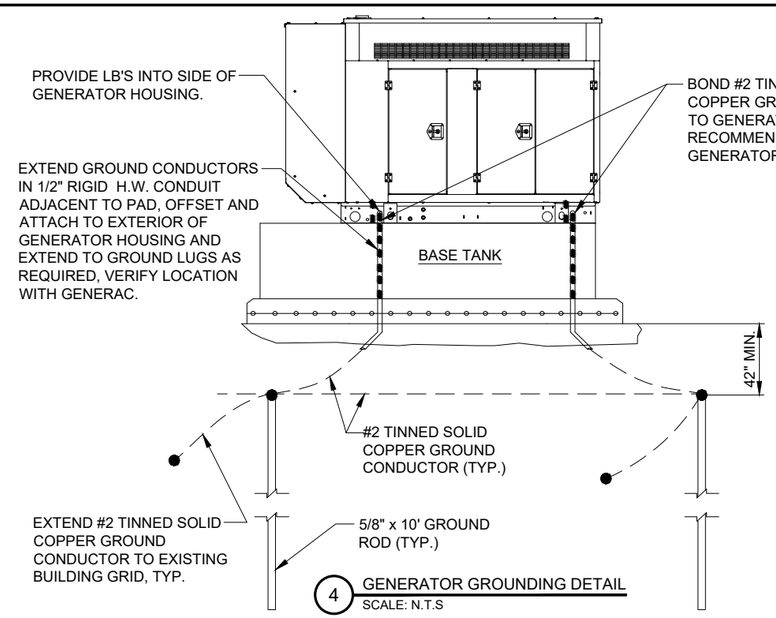
NOTE:
GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL.

2 GROUND ROD DETAIL
SCALE: N.T.S.

NOTE:
SET TEST WELL COVER 1" BELOW TOP OF GRAVEL LEASE AREA



3 TEST WELL DETAIL
SCALE: N.T.S.



4 GENERATOR GROUNDING DETAIL
SCALE: N.T.S

verizon
1701 GOLF ROAD,
TOWER 2, SUITE 400
ROLLING MEADOWS, IL 60008
PHONE: (847) 619-5397
FAX: (847) 706-7415

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SISTER BAY, WI 54234

DRAWN BY:	AMW
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PROJECT #:	33-3714

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
E-3

GROUNDING ELECTRODE SYSTEM NOTES:

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5. AFTER INSTALLATION OF THE CANOPY AT THE DOOR, GC/EC IS TO BOND THE CANOPY TO THE DOOR FRAME WITH A #2 CONDUCTOR. USE DOUBLE-LUG CONNECTION. PREP AND PAINT SURFACE TO MATCH AFTER INSTALLATION.
6. UTILITY COMPANY COORDINATION: ELECTRICAL CONTRACTOR SHALL CONFIRM THAT ALL WORK IS IN ACCORDANCE WITH THE RULES OF THE LOCAL UTILITY COMPANY BEFORE SUBMITTING THE BID, THE CONTRACTOR SHALL CHECK WITH THE UTILITY COMPANIES SUPPLYING SERVICE TO THIS PROJECT AND SHALL DETERMINE FROM THEM ALL EQUIPMENT AND CHARGES WHICH THEY WILL REQUIRE AND SHALL INCLUDE THE COST IN THE BID.
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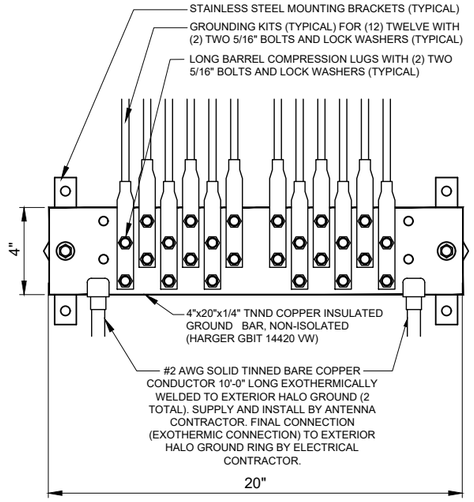
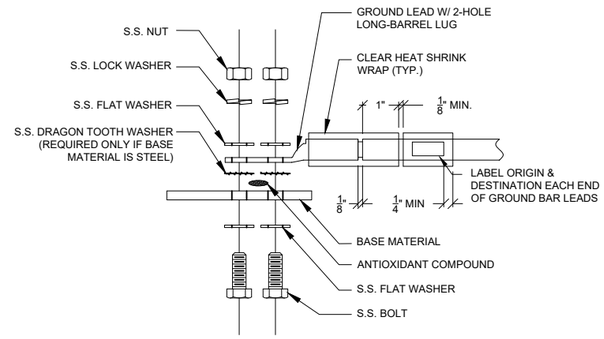
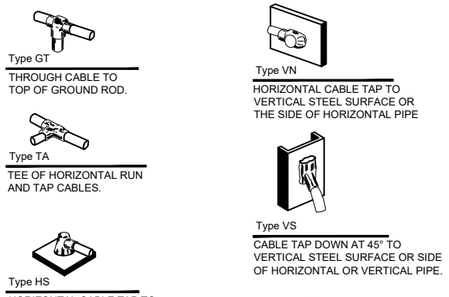


1 EXTERIOR GROUND BAR DETAIL
N.T.S.

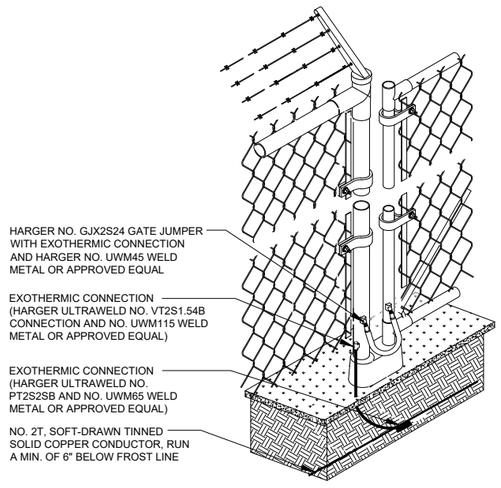
NOTES:
1. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING BELLEVILLES. COAT ALL SURFACES WITH KOPR-SHIELD BEFORE MATING.
2. FOR GROUND BOND TO STEEL ONLY: INSERT A DRAGON TOOTH WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH KOPR-SHIELD.
3. GROUND BARS, INSTALL BOLT HEAD TOWARD WALL
4. ENCLOSURES, INSTALL BOLT HEAD ON OUTSIDE OF ENCLOSURE



2 GROUND LUG INSTALLATION DETAIL
N.T.S.



3 EXOTHERMIC WELD DETAILS
EXOTHERMIC AND HARGER ULTRAWELD OR APPROVED EQUAL



4 FENCE GROUNDING DETAIL
N.T.S.

5 NO DETAIL
SCALE: N.T.S.

verizon
1701 GOLF ROAD,
TOWER 2, SUITE 400
ROLLING MEADOWS, IL 60008
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SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
E-4

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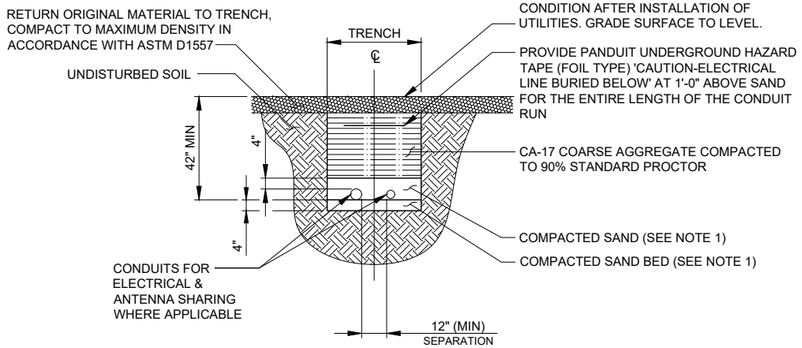
TDD 1-800-542-2289

OTHER UTILITIES NOT INCLUDED IN DIGGERS HOTLINE AND LOCAL UTILITY DISTRICTS AND COMPANIES SHALL ALSO BE NOTIFIED

NOTES:

1. LEAN CONCRETE, RED-COLORED TOP, MAY BE USED IN PLACE OF COMPACTED SAND.
2. BURY CONDUITS 42" BELOW GRADE OR 6" BELOW FROST LINE, WHICHEVER IS GREATER
3. CONDUIT SIZE, TYPE, QUANTITY AND SEPARATION DIMENSION TO BE VERIFIED WITH LOCAL UTILITY COMPANY REQUIREMENTS



3 UTILITY TRENCH DETAIL
SCALE: N.T.S.

1 NO DETAIL
SCALE: N.T.S.

VERIZON WIRELESS PANEL "A" SCHEDULE

MAIN: 200A VOLTAGE: 120/240 PHASE: 1 WIRE: 3

TO AUTOMATIC TRANSFER SWITCH

200A/2

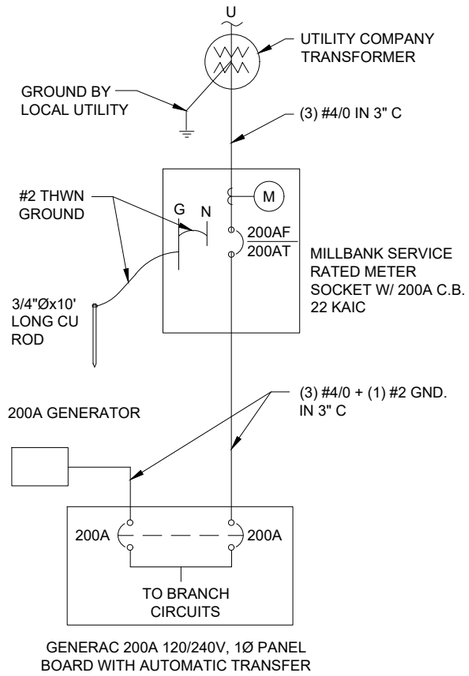
DESCRIPTION	BRKR.	WATTS	S/G	A	B	S/N	WATTS	BRKR.	DESCRIPTION
RECTIFIER 1	40/2	1250 1250	1			2	1250 1250	40/2	RECTIFIER 5
			3			4			
RECTIFIER 2	40/2	1250 1250	5			6	1250 1250	40/2	RECTIFIER 6
			7			8			
RECTIFIER 3	40/2	1250 1250	9			10	1250 1250	40/2	RECTIFIER 7
			11			12			
RECTIFIER 4	40/2	1250 1250	13			14	1250 1250	40/2	RECTIFIER 8
			15			16			
EXIST. HVAC UNIT #1	TBD	TBD	17			18	TBD	TBD	EXIST. HVAC UNIT #2
			19			20			
LIGHTING	20/1		21			22		20/1	SPARE
EXIST. RECEPTACLES	20/1		23			24		20/1	SPARE
SPACE			25			26			SPACE
SPACE			27			28			SPACE
SPACE			29			30			SPACE
SPACE			31			32			SPACE
SPACE			33			34			SPACE
SPACE			35			36			SPACE
SPARE	20/1		37			38	360	20/1	GFCI RECEPTACLE *
SPARE	20/1		39			40	1200	20/1	EQUIPMENT
GEN BATTERY CHARGER *	20/1	1000	41			42	1000	20/1	GEN. GFCI RECEPTACLE *
			SURGE ARRESTOR						
SUBTOTALS:		6000 5000					6360 6200		
TOTAL:							23.56kW (98.2A)		

SURFACE MOUNTED NEMA 3R w/ DOOR
22K AIC BREAKERS
(CONTRACTOR SHALL VERIFY AIC RATINGS W/ LOCAL POWER CO.)

4 PANEL BOARD SCHEDULE
N.T.S.

NOTE:
1. VERIZON WIRELESS EQUIPMENT ENGINEERING TO SUPPLY BREAKER FOR RADIO AND POWER CABINETS

2. GENERAL CONTRACTOR TO SUPPLY BREAKERS NOTED WITH " * "



GENERAC 200A 120/240V, 1Ø PANEL BOARD WITH AUTOMATIC TRANSFER

2 SINGLE LINE DIAGRAM
N.T.S.

verizon
1701 GOLF ROAD,
TOWER 2, SUITE 400
ROLLING MEADOWS, IL 60008
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SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-5

GENERAL

THE CONSTRUCTION DOCUMENT DRAWINGS ARE INTERRELATED. WHEN PERFORMING THE WORK, EACH CONTRACTOR MUST REFER TO ALL DRAWINGS. COORDINATION IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

DIVISION 1: GENERAL REQUIREMENTS

SECTION 01700 - PROJECT CLOSEOUT

PART 1 - GENERAL

A. OBTAIN AND SUBMIT RELEASES ENABLING THE OWNER UNRESTRICTED USE OF THE WORK AND ACCESS TO SERVICES AND UTILITIES; INCLUDE OCCUPANCY PERMITS, OPERATING CERTIFICATES AND SIMILAR RELEASES.

B. SUBMIT RECORD DRAWINGS, DAMAGE OR SETTLEMENT SURVEY, PROPERTY SURVEY, AND SIMILAR FINAL RECORD INFORMATION.

C. COMPLETE FINAL CLEAN UP REQUIREMENTS. TOUCH UP AND OTHERWISE REPAIR AND RESTORE MARRED EXPOSED FINISHES.

PART 2 - FINAL CLEANING

1. COMPLETE THE FOLLOWING CLEANING OPERATIONS BEFORE REQUESTING INSPECTION FOR CERTIFICATION OF COMPLETION.
   a. CLEAN THE PROJECT SITE, YARD AND GROUNDS, IN AREAS DISTURBED BY CONSTRUCTION ACTIVITIES, INCLUDING LANDSCAPE DEVELOPMENT AREAS, OF RUBBISH, WASTE MATERIALS, LITTER AND FOREIGN SUBSTANCES. SWEEP PAVED AREAS BROOM CLEAN. REMOVE PETRO-CHEMICAL SPILLS, STAINS AND OTHER FOREIGN DEPOSITS, RAKE GROUNDS THAT ARE NEITHER PLANTED NOR PAVED, TO A SMOOTH EVEN-TEXTURED SURFACE.
   b. REMOVE TOOLS, CONSTRUCTION EQUIPMENT, MACHINERY AND SURPLUS MATERIAL FROM THE SITE
   c. REMOVE SNOW AND ICE TO PROVIDE SAFE ACCESS TO THE SITE AND EQUIPMENT ENCLOSURE.
   d. CLEAN EXPOSED EXTERIOR AND INTERIOR HARD-SURFACED FINISHES TO A DIRT-FREE CONDITION, FREE OF STAINS, FILMS AND SIMILAR FOREIGN SUBSTANCES. AVOID DISTURBING NATURAL WEATHERING OF EXTERIOR SURFACES.
   e. REMOVE DEBRIS FROM LIMITED ACCESS SPACES, INCLUDING ROOFS, EQUIPMENT ENCLOSURE, MANHOLES, AND SIMILAR SPACES.
   f. TOUCH-UP AND OTHERWISE REPAIR AND RESTORE MARRED EXPOSED FINISHES AND SURFACES. REPLACE FINISHES AND SURFACES THAT CAN NOT BE SATISFACTORILY REPAIRED OR RESTORED, OR THAT SHOW EVIDENCE OF REPAIR OR RESTORATION. DO NOT PAINT OVER “UL” AND SIMILAR LABELS, INCLUDING ELECTRICAL NAME PLATES.
   g. LEAVE THE PROJECT CLEAN AND READY FOR OCCUPANCY
2. REMOVAL OF PROTECTION: REMOVE TEMPORARY PROTECTION AND FACILITIES INSTALLED DURING CONSTRUCTION TO PROTECT PREVIOUSLY COMPLETED INSTALLATIONS DURING THE REMAINDER OF THE CONSTRUCTION PERIOD.

DIVISION 2: SITE WORK

SECTION 02200 - EARTHWORK AND DRAINAGE

PART 1 - GENERAL

1. WORK INCLUDED: SEE SITE PLAN.
2. SEQUENCING
   a. CONSTRUCT TEMPORARY CONSTRUCTION AREA ALONG EAST FENCE LINE.
   b. GRADE, SEED, FERTILIZE, AND MULCH ALL AREAS DISTURBED BY CONSTRUCTION (INCLUDING UNDERGROUND UTILITY EASEMENTS) IMMEDIATELY AFTER BRINGING LEASE AREA AND ACCESS DRIVE W/ TURNAROUND TO BASE COURSE ELEVATION, WATER TO ENSURE GROWTH

PART 2 - EXECUTION

1. INSPECTIONS: LOCAL BUILDING INSPECTORS SHALL BE NOTIFIED NO LESS THAN 48 HOURS IN ADVANCE OF CONCRETE POURS, UNLESS OTHERWISE SPECIFIED BY JURISDICTION.
2. PREPARATION
   a. CLEAR TREES, BRUSH AND DEBRIS FROM SITE AS REQUIRED.
   b. PRIOR TO OTHER EXCAVATION AND CONSTRUCTION, GRUB ORGANIC MATERIAL TO A MINIMUM OF SIX INCHES (6”) BELOW GRADE.
   c. UNLESS OTHERWISE INSTRUCTED BY OWNER, TRANSPORT ALL REMOVED TREES, BRUSH AND DEBRIS FROM THE PROPERTY TO AN AUTHORIZED LANDFILL.
   d. PRIOR TO PLACEMENT OF FILL OR BASE MATERIALS, ROLL THE SOIL.
   e. WHERE UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED, LINE THE AREAS WITH STABILIZER MAT PRIOR TO PLACEMENT OF FILL OR BASE MATERIAL.
3. INSTALLATION
   a. GRADE OR FILL THE SITE AS REQUIRED IN ORDER THAT UPON DISTRIBUTION OF SOILS, RESULTING FROM EXCAVATIONS, THE RESULTING GRADE WILL CORRESPOND WITH SAID SUB-BASE COURSE. ELEVATIONS ARE TO BE CALCULATED FROM BENCHMARK, FINISHED GRADES, OR INDICATED SLOPES.
   b. CLEAR EXCESS SPOILS, IF ANY, FROM JOB SITE AND DO NOT SPREAD BEYOND THE LIMITS OF PROJECT AREA UNLESS AUTHORIZED BY PROJECT MANAGER AND AGREED TO BY LANDOWNER.
   c. AVOID CREATING DEPRESSIONS WHERE WATER MAY POND.
   d. THE CONTRACT SHALL INCLUDE GRADING, BANKING, AND DITCHING, UNLESS OTHERWISE INDICATED.
   e. PLACE FILL OR STONE IN SIX INCH (6”) MAXIMUM LIFTS, AND COMPACT BEFORE PLACING NEXT LIFT.
   f. THE TOP SURFACE COURSE, SHALL EXTEND A MINIMUM OF ONE FOOT (1') BEYOND THE SITE FENCE (UNLESS OTHERWISE NOTED) AND SHALL COVER THE AREA AS INDICATED.
   g. APPLY SEED, FERTILIZER, AND STRAW COVER TO ALL OTHER DISTURBED AREAS, DITCHES, AND DRAINAGE SWALES, NOT OTHERWISE RIPRAP.
   h. UNDER NO CIRCUMSTANCES WILL DITCHES, SWALES, OR CULVERTS BE PLACED SO THAT THEY DIRECT WATER TOWARDS, OR PERMIT STANDING WATER IMMEDIATELY ADJACENT TO SHELTER OR EQUIPMENT. IF DESIGNS OR ELEVATIONS ARE IN CONFLICT WITH THIS, ADVISE CONSTRUCTION MANAGER IMMEDIATELY.
   i. APPLY SEED, FERTILIZER, AND STRAW COVER TO ALL OTHER DISTURBED AREAS, DITCHES, AND DRAINAGE SWALES, NOT OTHERWISE RIPRAP.
   j.
   k. IN DITCHES WITH SLOPES GREATER THAN 10% MOUND DIVERSIONARY HEADWALLS IN THE DITCH AT CULVERT ENTRANCES. POSITION THE HEADWALL AT AN ANGLE NO GREATER THAN THAT 60° OFF THE DITCH LINE. RIPRAP THE UPSTREAM SIDE OF THE HEADWALL AS WELL AS THE DITCH FOR SIX FEET (6') ABOVE THE CULVERT ENTRANCE.
   l. APPLY SEED AND FERTILIZER TO SURFACE CONDITIONS WHICH WILL ENCOURAGE ROOTING. RAKE AREAS TO BE SEEDED TO EVEN THE SURFACE AND LOOSEN THE SOIL.
   m. SOW SEED IN TWO DIRECTIONS IN TWICE THE QUANTITY RECOMMENDED BY THE SEED PRODUCER.
   n. ENSURE GROWTH OF SEEDED AND LANDSCAPED AREAS, BY WATERING, UP TO THE POINT OF RELEASE FROM THE CONTRACT. CONTINUE TO REWORK THE BARE AREAS UNTIL COMPLETE COVERAGE IS OBTAINED.
4. FIELD QUALITY CONTROL: COMPACT SOILS TO MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D-1557. AREAS OF SETTLEMENT WILL BE EXCAVATED AND REFILLED AT CONTRACTOR'S EXPENSE. INDICATE PERCENTAGE OF COMPACTION ACHIEVED ON AS-BUILT DRAWINGS.
5. PROTECTION
   a. PROTECT SEEDED AREAS FROM EROSION BY SPREADING STRAW TO A UNIFORM LOOSE DEPTH OF 1-2 INCHES, STAKE AND TIE DOWN AS REQUIRED. USE OF EROSION CONTROL MESH OR MULCH NET WILL BE AN ACCEPTABLE ALTERNATIVE.
   b. PROTECT ALL EXPOSED AREAS AGAINST WASHOUTS AND SOIL EROSION. PLACE STRAW BALES AT THE INLET APPROACH TO ALL NEW OR EXISTING CULVERTS. WHERE THE SITE OR ROAD AREAS HAVE BEEN ELEVATED IMMEDIATELY ADJACENT TO THE RAIL LINE, STAKE EROSION CONTROL FABRIC FULL LENGTH IN THE SWALE TO PREVENT CONTAMINATION OF THE RAIL BALLAST. ALL EROSION CONTROL METHODS SHALL CONFORM TO APPLICABLE BUILDING CODE REQUIREMENTS.

SECTION 02830 - FENCING AND GATE(S)

PART 1 - GENERAL

1. WORK INCLUDED - SEE PLAN FOR SITE AND LOCATION OF FENCE
2. QUALITY ASSURANCE
   a. ALL STEEL MATERIALS UTILIZED IN CONJUNCTION WITH THIS SPECIFICATION WILL BE GALVANIZED OR STAINLESS STEEL. WEIGHT OF ZINC COATING ON THE FABRIC SHALL NOT BE LESS THAN 12 OUNCES PER SQUARE FOOT OF MATERIAL COVERED. POSTS SHALL BE HOT-DIPPED IN GRADE “E” ZINC, 18 OUNCES PER SQUARE FOOT.
3. SEQUENCING
   a. IF THE SITE AREA HAS BEEN BROUGHT UP TO SURFACE COURSE ELEVATION (PRIOR TO THE FENCE CONSTRUCTION), FENCE POST EXCAVATION SPOILS MUST BE CONTROLLED TO PRECLUDE CONTAMINATION OF SAID SURFACE COURSE.
4. SUBMITTALS
   a. MANUFACTURER'S DESCRIPTIVE LITERATURE.
   b. CERTIFICATE OR STATEMENT OF COMPLIANCE WITH THE SPECIFICATIONS.

PART 2 - PRODUCTS

1. FENCE MATERIAL
   a. ALL FABRIC WIRE, RAILS, HARDWARE, AND OTHER STEEL MATERIALS SHALL BE HOT-DIPPED GALVANIZED.
   b. FABRIC SHALL BE SEVEN-FOOT (7’) HIGH OR TO MATCH EXISTING FENCE TWO-INCH CHAIN LINK MESH OF NO. 9 GAUGE (0.148”) WIRE. THE FABRIC SHALL HAVE A KNUCKLED FINISH FOR THE TOP SELVAGES. FABRIC SHALL CONFORM TO THE SPECIFICATIONS OF ASTM A-392 CLASS 1.
   c. ALL POSTS SHALL BE SCHEDULE - 40 MECHANICAL SERVICE PIPE AND SHALL BE TYPE 1 ASTM A-128 AND OF THE FOLLOWING DIAMETER
      i. LINE 2” SCHEDULE 40 (2 3/8” O.D.)
      ii. CORNER 3” SCHEDULE 40 (3 1/2” O.D.)
      iii. GATE 3” SCHEDULE 40 (3 1/2” O.D.)
   d. ALL TOP AND BRACE RAILS SHALL BE 1" DIAMETER SCHEDULE - 40 MECHANICAL - SERVICE PIPE.
   e. GATE FRAMES AND BRACES SHALL BE 1.90 INCH DIAMETER SCHEDULE 40 MECHANICAL - SERVICE PIPE. FRAMES SHALL HAVE WELDED CORNERS.
   f. GATE FRAMES SHALL HAVE A FULL-HEIGHT VERTICAL BRACE, AND A FULL-WIDTH HORIZONTAL BRACE, SECURED IN PLACE BY USE OF GATE BRACE CLAMPS.
   g. GATE HINGES SHALL BE MERCHANTS METAL MODEL 64386 HINGE ADAPTER WITH MODEL 6409, 188-DEGREE ATTACHMENT.
   h. A NO. 7 GAUGE ZINC COATED TENSION WIRE SHALL BE USED AT THE BOTTOM OF THE FABRIC, TERMINATED WITH BAND CLIPS AT CORNER AND GATE POSTS.
   i. A SIX-INCH BY 1/2-INCH DIAMETER EYEBOLT TO HOLD TENSION WIRE SHALL BE PLACED AT LINE POSTS.
   j. STRETCHER BARS SHALL BE 3/16-INCH BY 3/4-INCH OR HAVE EQUIVALENT CROSS-SECTIONAL AREA.
   k. ALL CORNER GATE AND PANELS SHALL HAVE A 3/8-INCH TRUSS ROD WITH TURNBUCKLES.
   l. ALL POST EXCEPT GATE POSTS SHALL HAVE A COMBINATION CAP AND BARBED WIRE SUPPORTING ARM. GATE POSTS SHALL HAVE A DOME CAP.
   m. OTHER HARDWARE INCLUDES BUT MAY NOT BE LIMITED TO TIE CLIPS, BAND CLIPS, AND TENSION BAND CLIPS.
   n. ALL CAPS SHALL BE MALLEABLE IRON, DOME OR ACORN SHAPED AS REQUIRED BY PIPE SIZE.

PART 3 - EXECUTION

1. INSPECTION: TO CONFIRM PROPER DEPTH AND DIAMETER OF POST HOLE EXCAVATIONS. ALL POST HOLES WILL BE EXCAVATED AS PER CONSTRUCTION DOCUMENTS,
2. INSTALLATION
   a. FOUNDATIONS SHALL HAVE A MINIMUM SIX INCH (6”) CONCRETE COVER UNDER POST.
   b. ALL FENCE POSTS SHALL BE VERTICALLY PLUMB; ON QUARTER INCH (1/4”)
   c. AT CORNER POSTS, GATE POSTS, AND SIDES OF GATE FRAME, FABRIC SHALL BE ATTACHED WITH STRETCHER AND TENSION BAND-CLIPS AT FIFTEEN (15) INCH INTERVALS.
   d. AT LINE POSTS, FABRIC SHALL BE ATTACHED WITH BAND-CLIPS AT FIFTEEN (15) INCH INTERVALS.
   e. FABRIC SHALL BE ATTACHED TO BRACE RAILS, TENSION WIRE AND TRUSS RODS WITH TIE-CLIPS AT TWO FOOT (2’) INTERVALS.
   f. A MAXIMUM GAP OF ONE INCH WILL BE PERMITTED BETWEEN TIE CHAIN LINE FABRIC AND THE FINAL GRADE.
   g. GATE SHALL BE INSTALLED SO LOCKS ARE ACCESSIBLE FROM BOTH SIDES.
   h. GATE HINGE BOLTS SHALL HAVE THEIR THREADS PEENED OR WELDED TO PREVENT UNAUTHORIZED REMOVAL.
   i. CONCRETE TO BE A MINIMUM OF 4,000 PSI AT 7 DAYS. CEMENT SHALL EXCEED ASTM C150, TYPE IIIA.
3. PROTECTION: UPON COMPLETION OF ERECTION, INSPECT FENCE MATERIAL AND PAINT FIELD CUTS OR GALVANIZING BREAKS WITH ZINC-BASED PAINT, COLOR TO MATCH THE GALVANIZED METAL. APPLICABLE STANDARDS:

ASTM-A120	SPECIFICATION FOR PIPE, STEEL, BLACK AND HOT-DIPPED ZINC COATED (GALVANIZED) WELDED AND SEAMLESS, FOR ORDINARY USES.
ASTM-A123	ZINC (HOT-DIP GALVANIZED) COATING ON IRON AND STEEL PRODUCTS.
ASTM-A153	STANDARD SPECIFICATION FOR ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE.
ASTM-A392 LINK	SPECIFICATION FOR ZINC-COATED STEEL CHAIN FENCE FABRIC.
ASTM-A491	SPECIFICATION FOR ALUMINUM-COATED STEEL CHAIN LINK FENCE FABRIC
ASTM-A525 PROCESS.	STANDARD SPECIFICATION FOR STEEL SHEET ZINC COATED (GALVANIZED) BY THE HOT-DIPPED
ASTM-A570	SPECIFICATION FOR HOT-ROLLED CARBON STEEL SHEET AND STRIP. STRUCTURAL QUALITY.

A. FEDERAL SPECIFICATION RR-F-191-FENCING, WIRE AND POST METAL (AND GATES, CHAIN LINK FENCE FABRIC, AND ACCESSORIES)

DIVISION 3: CONCRETE

SECTION 03000 - BASIC CONCRETE MATERIALS AND METHODS

PART 1 - GENERAL

1. WORK INCLUDED: FORMWORK, REINFORCEMENT, ACCESSORIES, CAST-IN-PLACE CONCRETE, FINISHING, AND CURING.
2. INSPECTIONS
   a. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING BUILDING DEPARTMENT INSPECTIONS REQUIRED FOR HIS SCOPE OF WORK.
   b. ALL REINFORCING STEEL SHALL BE INSPECTED AND APPROVED BY THE LESSEE’S CONSTRUCTION MANAGER PRIOR TO PLACEMENT OF CONCRETE.
   c. THE LESSEE’S CONSTRUCTION MANAGER SHALL BE NOTIFIED NO LESS THAN 48 HOURS IN ADVANCE OF CONCRETE POURS.
3. QUALITY ASSURANCE
   a. CONSTRUCT AND ERECT CONCRETE FORMWORK IN ACCORDANCE WITH ACI 301 AND ASTM 318.
   b. PERFORM CONCRETE REINFORCING WORK IN ACCORDANCE WITH ACI 301, ACI 318, AND ASTM A184.
   c. PERFORM CAST-IN-PLACE CONCRETE WORK IN ACCORDANCE WITH ACI 301, ACI 318, AND ACI 117-90.
   d. OPEN FOUNDATION TRENCHES SHALL BE INSPECTED BY MES PRIOR TO CONCRETE INSTALLATION.
4. SUBMITTALS: SUBMIT CONCRETE MIX AND REINFORCING STEEL SHOP DRAWINGS FOR APPROVAL BY LESSEE CONSTRUCTION MANAGER/ENGINEER. THE SHOP DRAWING SHALL BE SUBMITTED IN THE FORM OF TWO (2) CONCRETE MIX DESIGN INFORMATION SHEETS AND TWO (2) BLUELINE DRAWINGS FOR REINFORCING STEEL.

PART 2 - PRODUCTS

1. REINFORCEMENT MATERIALS
   a. REINFORCEMENT STEEL, ASTM A615, 60 ksi YIELD GRADE, DEFORMED BILLET STEEL BARS, PLAIN FINISH.
   b. WELDED STEEL WIRE FABRIC ASTM A185 PLAIN TYPE IN FLAT SHEETS, PLAIN FINISH.
   c. CHAIRS, BOLSTERS, BAR SUPPORTS, SPACERS. SIZED AND SHAPED FOR SUPPORTS OR REINFORCING.
   d. FABRICATE CONCRETE REINFORCING IN ACCORDANCE WITH ACI 315, ACI 318, ASTM A184.
2. CONCRETE MATERIALS
   a. CEMENT: ASTM C150, PORTLAND TYPE
   b. FINE AND COURSE AGGREGATES: ASTM C33 - MAXIMUM SIZE OF CONCRETE AGGREGATE SHALL NOT EXCEED; ONE INCH (1”) SIZE SUITABLE FOR INSTALLATION METHOD UTILIZED OR ONE-THIRD (1/3) CLEAR DISTANCE BEHIND OR BETWEEN REINFORCING.
   c. WATER: CLEAN AND NOT DETRIMENTAL TO CONCRETE
   d. AIR ENTRAINING ADMIXTURE: ASTM C260
   e. BONDING AGENT: LATEX EMULSION FOR BONDING NEW TO OLD CONCRETE AS MANUFACTURED BY DAYTON SUPERIOR.
   f. NON-SHRINK GROUT: PREMIXED COMPOUND CONSISTING OF NONMETALLIC AGGREGATE. CEMENT, WATER REDUCING AND PLASTICISING AGENTS.
3. CONCRETE MIX
   a. CONCRETE MATERIALS SHALL CONFORM TO THE APPROPRIATE A.C.I. REQUIREMENTS FOR EXPOSED STRUCTURAL CONCRETE.
   b. MIX AND DELIVER CONCRETE IN ACCORDANCE WITH ASTM C94, ALT. 3.
   c. PROPORTIONS OF CONCRETE MATERIALS SHALL BE SUITABLE FOR THE INSTALLATION METHOD UTILIZED AND SHALL RESULT IN DURABLE CONCRETE FOR LOCAL ANTICIPATED AGGRESSIVE ACTIONS. THE DURABILITY REQUIREMENTS OF ACI 318 CHAPTER 4 SHALL BE SATISFIED BASED ON THE CONDITIONS EXPECTED AT THE SITE. PROVIDE CONCRETE AS FOLLOWS:
      i. COMPRESSIVE STRENGTH: 4000 psi AT 7 DAYS. SEE SHEET 2-1 FOR CAISSON CONCRETE COMPRESSIVE STRENGTH.
      ii. SLUMP: 3 INCHES

PART 3 - EXECUTION

1. INSERTS, EMBEDDED COMPONENTS AND OPENINGS
   a. THE CONSTRACTOR SHALL COORDINATE AND CROSS-CHECK ARCHITECTURAL, BUILDING & ELECTRICAL DRAWINGS FOR OPENINGS, SLEEVES, ANCHORS, HANGERS, AND OTHER ITEMS RELATED TO CONCRETE WORK AND SHALL ASSUME FULL RESPONSIBILITY FOR THE PROPER LOCATION BEFORE PLACING CONCRETE.
   b. PROVIDE FORMED OPENINGS WHERE REQUIRED FOR WORK TO BE EMBEDDED IN AND PASSING THROUGH CONCRETE MEMBERS.
   c. COORDINATE WORK OF OTHER SECTIONS IN FORMING AND SETTING OPENING, SLOTS, RECESSES, CHASES, SLEEVES, BOLTS, ANCHORS, AND OTHER INSERTS.
   d. INSTALL CONRETE ACCESSORIES STRAIGHT, LEVEL AND PLUMB.
2. REINFORCEMENT PLACEMENT
   a. PLACEMENT REINFORCEMENT, SUPPORTED AND SECURED AGAINST DISPLACEMENT.
   b. ENSURE REINFORCING IS CLEAN, FREE OF LOOSE SCALE, DIRT, OR OTHER FOREIGN COATINGS.
   c. WELDING IS PROHIBITED ON REINFORCING STEEL AND EMBEDMENTS.
   d. MINIMUM CONCRETE COVER FOR REINFORCING SHALL BE THREE INCHES (3”) UNLESS OTHERWISE NOTED.
   e. CONCRETE COVER FROM TOP OF FOUNDATION TO ENDS OF VERTICAL REINFORCEMENT SHALL NOT EXCEED THREE INCHES (3”) NOR BE LESS THAN TWO INCHES (2”).
3. PLACING CONCRETE
   a. VIBRATE ALL CONCRETE.
   b. ALL CONCRETE WORK SHALL ADHERE TO THE LATEST A.C.I. STANDARDS FOR WINTER POURING AND CURING PROCECURES IF SEASONAL CONDITIONS APPLY.
4. CURING
   a. AFTER PLACEMENT, PROTECT CONCRETE FROM PREMATURE DRYING.
   b. MAINTAIN CONCRETE WITH MINIMAL MOISTURE LOSS AT RELATIVELY CONSTANT TEMPERATURE FOR A PERIOD NECESSARY FOR HYDRATION OF CEMENT AND HARDENING OF CONCRETE.
5. PROVIDE HAND RUBBED SMOOTH FINISH TO ALL EXPOSED VERTICAL FORMED CONCRETE SURFACES.
6. FIELD QUALITY CONTROL
   a. SUBMIT THREE (3) CONCRETE TEST CYLINDERS - TAKEN FOR EVERY 15 CUBIC YARD OR LESS. SUBMIT CONCRETE TESTS TO THE PROJECT MANAGER IN ACCORDANCE WITH ASTM, C-31 AND C-39.
   b. SUBMIT ONE (1) ADDITIONAL TEST CYLINDER - TAKEN DURING COLD WEATHER POURS, AND CURED ON JOB SITE UNDER SAME CONDITIONS AS CONCRETE IT REPRESENTS.
   c. SUBMIT ONE (1) SLUMP TEST - TAKEN FOR EACH SET OF TEST CYLINDERS TAKEN.
7. DEFECTIVE CONCRETE: MODIFY OR REPLACE CONCRETE NOT CONFORMING TO REQUIRED LINES, DETAILS OR ELEVATIONS AT COST OF GC, AS DIRECTED BY ARCHITECT/ENGINEER.

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TERRA CONSULTING GROUP
has joined Colliers Engineering & Design

REVISIONS

NO.	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	09/12/25	APD
1	UPDATED PER POWER COORDINATION	10/09/25	MM
2	UPDATED PER COMMENTS	10/30/25	AMK/TJS
3	ISSUED FOR FINALS	12/12/25	TJS
4	REVISED PER COMMENTS	01/13/26	PP

MGD LOC# 5000975304
FUZE ID#: 17481177

SISTER_BAY

2530 SOUTH BAY SHORE DR
SISTER BAY, WI 54234

DRAWN BY:	AMW
CHECKED BY:	TAZ
DATE:	08/26/2025
PROJECT #:	33-3714

SHEET TITLE

SPECIFICATIONS

SHEET NUMBER

SP-1

DIVISION 5: METALS

SECTION 05000 - METALS

PART 1 - GENERAL

1. SECTION INCLUDES:

   STRUCTURAL STEEL FRAMING MEMBERS, BASE PLATES, PLATES, BARS, AND GROUTING UNDER BASE PLATES.

2. SUBMITTALS:

   SHOP DRAWINGS: INDICATE SIZES, SPACING, AND LOCATIONS OF STRUCTURAL MEMBERS, OPENINGS, CONNECTIONS, CAMBERS, LOADS, AND WELDED SECTIONS.

3. QUALITY ASSURANCE

   A. FABRICATE STRUCTURAL STEEL MEMBERS IN ACCORDANCE WITH AISC SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS.

   B. PERFORM DESIGN UNDER DIRECT SUPERVISION OF A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE.

PART 2 - PRODUCTS

1. MATERIALS:

   A. STRUCTURAL STEEL MEMBERS: ASTM A572, GRADE 50

   B. STRUCTURAL TUBING: ASTM A500, GRADE B

   C. PIPE: ASTM A53, TYPE E OR S, GRADE B

   D. BOLTS, NUTS, AND WASHERS: ASTM A325

   E. ANCHOR BOLTS: ASTM A307

   F. WELDING MATERIALS: AWS 01.1, TYPE REQUIRED FOR MATERIALS BEING WELDED

   G. GROUT: NON - SHRINK TYPE, PREMIXED COMPOUND CONSISTING OF NONMETALLIC AGGREGATE, CEMENT, WATER REDUCING AND PLASTICIZING ADDITIVES, CAPABLE OF DEVELOPING A MINIMUM COMPRESSIVE STRENGTH OF 7000 PSI AT 28 DAYS.

   H. SHOP AND TOUCH-UP PRIMER: SSPC 15, TYPE 1, RED OXIDE

   I. TOUCH-UP PRIMER FOR GALV. SURFACES: ZINC RICH TYPE

2. FABRICATION:

   CONTINUOUSLY SEAL JOINTED MEMBERS BY CONTINUOUS WELDS. GRIND EXPOSED WELDS SMOOTH.

3. FINISH:

   A. PREPARE STRUCTURAL COMPONENT SURFACES IN ACCORDANCE WITH SSPC SP-1 TO SP-10 PROCEDURES.

   B. STRUCTURAL STEEL MEMBERS SHALL BE HOT DIPPED GALVANIZED.

PART 3 - EXECUTION

1. EXAMINATION AND PREPARATION:

   VERIFY THAT THE FIELD CONDITIONS ARE ACCEPTABLE.

2. ERECTION:

   A. ALLOW FOR ERECTION LOADS. PROVIDE TEMPORARY BRACING TO MAINTAIN FRAMING IN ALIGNMENT UNTIL COMPLETION OF ERECTION AND INSTALLATION OF PERMANENT BRIDGING AND BRACING.

   B. FIELD WELD COMPONENTS INDICATED ON SHOP DRAWINGS.

   C. DO NOT FIELD CUT OR ALTER STRUCTURAL MEMBERS WITHOUT APPROVAL OF THE ARCHITECT/ENGINEER.

   D. AFTER ERECTION, TOUCH-UP WELDS, ABRASIONS, AND SURFACES NOT SHOP PRIMED OR GALVANIZED WITH TOUCH-UP PRIMERS AS SPECIFIED UNDER SECTION 05000, 0METALS, PART 2 - PRODUCTS, H & I. SURFACES TO BE IN CONTACT WITH CONCRETE NOT INCLUDED.

3. FIELD QUALITY CONTROL:

   FIELD INSPECTION OF MEMBERS, CONNECTIONS, WELDS, AND TORQUING

DIVISION 16: ELECTRICAL

SECTION 16050 - BASIC ELECTRICAL MATERIALS AND METHODS

1. CONTRACTOR SHALL REVIEW THE CONTRACT DOCUMENTS PRIOR TO ORDERING THE ELECTRICAL EQUIPMENT AND STARTING THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE ARCHITECT LISTING ANY DISCREPANCIES OR CONFLICTING INFORMATION.
2. ELECTRICAL PLANS, DETAILS AND DIAGRAMS ARE DIAGRAMMATIC ONLY. VERIFY EXACT LOCATIONS AND MOUNTING HEIGHTS OF ELECTRICAL EQUIPMENT WITH OWNER PRIOR TO INSTALLATION.
3. EACH CONDUCTOR OF EVERY SYSTEM SHALL BE PERMANENTLY TAGGED IN EACH PANEL BOARD, PULL BOX, JUNCTION BOX, SWITCH BOX, ETC. THE TYPE OF TAGGING METHODS SHALL BE IN COMPLIANCE WITH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (O.S.H.A).
4. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN GOOD WORKING CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. MATERIALS SHALL BE LISTED "J" WHERE APPLICABLE. MATERIALS SHALL MEET WITH APPROVAL OF ALL GOVERNING BODIES HAVING JURISDICTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA, NBFU, AND 'UL" LISTED.
5. ALL CONDUIT SHALL HAVE A PULL CORD.
6. PROVIDE PROJECT MANAGER WITH ONE SET OF COMPLETE ELECTRICAL "AS INSTALLED" DRAWINGS AT THE COMPLETION OF THE JOB, SHOWING ACTUAL DIMENSIONS, ROUTINGS, AND CIRCUITS.
7. ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED, AND A MINIMUM OF 10,000 A.I.C.
8. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY UBC, NEC AND ALL APPLICABLE CODES.
9. PATCH, REPAIR AND PAINT ANY AREA THAT HAS BEEN DAMAGED IN THE COURSE OF THE ELECTRICAL WORK.
10. PLASTIC PLATES FOR ALL SWITCHES, RECEPTACLES, TELEPHONE AND BLANKED OUTLETS SHALL HAVE ENGRAVED LETTERING WHERE INDICATED ON THE DRAWINGS. WEATHERPROOF RECEPTACLES SHALL HAVE SIERRA #WPD-8 LIFT COVERPLATES.

SECTION 16400 - SERVICE AND DISTRIBUTION

1. WIRE AND CABLE CONDUCTORS SHALL BE COPPER, 600V, TYPE THHN OR THWN, WITH A MIN. SIZE OF #12 AWG, COLOR CODED. ALL RECTIFIER DROPS SHALL BE STRANDED TO ACCEPT CRIMP CONNECTORS.
2. ALL CHEMICAL GROUND RODS SHALL BE "UL" APPROVED.
3. METER SOCKET AMPERES, VOLTAGE, NUMBER OF PHASES SHALL BE AS NOTED ON THE DRAWINGS. MANUFACTURED BY MILBANK OR APPROVED EQUAL, AND SHALL BE UTILITY COMPANY APPROVED.
4. CONDUIT:

   A. RIGID CONDUIT SHALL BE U.L LABEL GALVANIZED ZINC COATED WITH GALVANIZED ZINC INTERIOR AND SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS, IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR. RIGID CONDUIT IN CONTACT WITH EARTH SHALL BE ½ LAPPED WRAPPED WITH HUNTS WRAP PROCESS NO. 3.

   B. ELECTRICAL METALLIC TUBING SHALL HAVE U.L. LABEL, FITTING SHALL BE GLAND RING COMPRESSION TYPE.

   C. FLEXIBLE METALLIC CONDUIT SHALL HAVE U.L. LISTED LABEL AND MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE "JAKE" OR SQUEEZE" TYPE. ALL FLEXIBLE CONDUITS SHALL HAVE FULL LENGTH GROUND WIRE.

   D. ALL UNDERGROUND CONDUIT SHALL BE AS NOTED ON THE DRAWINGS AT A MINIMUM DEPTH OF 42" BELOW GRADE. IT IS REQUIRED AND WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO NOTIFY J.U.L.I.E. AT 1-800-892-0123 OR OTHER SUCH NOTIFYING AGENCY FORTY-EIGHT (48) HOURS PRIOR TO DIGGING.

5. CONTRACTOR TO COORDINATE WITH UTILITY COMPANY FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE SITE. THE TEMPORARY POWER AND ALL HOOKUP COSTS ARE TO BE PAID BY THE CONTRACTOR.
6. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS WITH WHITE ON BLUE BACKGROUND LETTERING (MINIMUM LETTER HEIGHT SHALL BE ONE FORTH INCH (1/4'). NAMEPLATES SHALL BE FASTENED WITH STAINLESS STEEL SCREWS, NOT ADHESIVE.
7. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL POTENTIAL GROUNDING TESTS BY AN INDEPENDENT TESTING SERVICE ENGAGED BY THE CONTRACTOR SHALL BE SUBMITTED FOR APPROVAL. SUBMIT TEST REPORTS TO PROJECT MANAGER. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION.
8. GROUNDING ELECTRODE SYSTEM

   A. PREPARATION

1. SURFACE PREPARATION:

   ALL CONNECTIONS SHALL BE MADE TO BARE METAL. ALL PAINTS SURFACES SHALL BE FIELD INSPECTED AND MODIFIED TO ENSURE PROPER CONTACT. NO WASHERS ARE ALLOWED BETWEEN THE ITEMS BEING GROUNDED. ALL CONNECTIONS ARE TO HAVE A NO-OXIDIZING GENT APPLIED PRIOR TO INSTALLATION.

2. GROUND BAR PREPARATION:

   ALL COPPER GROUND BARS SHALL BE CLEANED, POLISHED AND A NON-OXIDIZING AGENT APPLIED. NO FINGERPRINTS OR DISCOLORED COPPER WILL BE PERMITTED.

3. SLEEVES:

   ALL GROUNDING CONDUCTORS SHALL RUN THROUGH PVC SLEEVES WHEREVER CONDUCTORS RUN THROUGH WALLS, FLOORS OR CEILINGS. IF CONDUCTORS MUST RUN THROUGH EMT, BOTH ENDS OF CONDUIT SHALL BE GROUNDED. SEAL BOTH ENDS OF CONDUIT WITH SILICONE CAULK.

   B. GROUND BARS

1. ALL GROUND BARS SHALL BE ONE FORTH INCH (1/4" THICK TINNED COPPER PLATE AND OF AND OF SIZE INDICATED ON DRAWINGS.
2. ALL CONNECTIONS TO THE GROUND BAR SHALL OBSERVE THE FOLLOWING SEQUENCE:

   A. BOLT-HEAD

   B. 2-HOLE LUG

   C. TINNED COPPER BUSS BAR

   D. STAR WASHER

   E. NUT

   C. EXTERNAL CONNECTIONS

1. ALL BURIED GROUNDING CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC WELD PROCESS. CONNECTIONS SHALL INCLUDE ALL CABLE TO CABLE, SPLICES, TEE'S, CROSSES, ETC. ALL CABLE TO GROUND RODS, GROUND ROD SPLICES AND LIGHTNING PROTECTION SYSTEMS ARE TO BE AS INDICATED. ALL MATERIALS USED (MOLDS, WELDING METAL, TOOLS, ETC.) SHALL BE BY "CADWELD" AND INSTALLED PER MANUFACTURER'S RECOMMENDED PROCEDURES.
2. ALL ABOVE GRADE GROUNDING AND BONDING CONDUCTORS SHALL BE CONNECTED BY TWO HOLE CRIMP TYPE (COMPRESSION) CONNECTIONS (EXCEPT FOR THE ACEG AND GROUND ROD) MECHANICAL CONNECTIONS, FITTINGS OR CONNECTIONS THAT DEPEND SOLELY ON SOLDIER SHALL NOT BE USED. ALL CABLE TO CABLE CONNECTIONS SHALL BE HIGH PRESSURE DOUBLE CRIMP TYPE CONNECTIONS. CONNECTIONS TO STRUCTURAL STEEL SHALL BE EXOTHERMIC WELDS.

   D. GROUND RODS

   ALL GROUND RODS SHALL BE 5/8 -INCH DIAMETER X 10' -0" LONG "COPPERWELD" OR APPROVED EQUAL, OF THE NUMBER AND LOCATIONS INDICATED. GROUND RODS SHALL BE DRIVEN FULL LENGTH VERTICAL IN UNDISTURBED EARTH.

   E. GROUND RODS

   ALL GROUND RODS SHALL BE STANDARD TINNED SOLID BARE COPPER ANNEALED, AND OF SIZE INDICATED ON DRAWINGS UNLESS NOTED OTHERWISE.

   F. LUGS

1. LUGS SHALL BE 2 - HOLE, LONG BARREL, STRAND COPPER UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS. LUGS SHALL BE THOMAS AND BETTS SERIES #548_ _BE OR EQUIVALENT

A. 535 MCM DLO	54880BE
B. 262 MCM DLO	54872BE
C. #1/0 DLO	54862BE
D. #4/0 THWN AND BARE	54866BE
E. #2/0 THWN	54862BE
F. #2 THHN	54207BE
G. #6 DLO	54205BE

2. WHEN THE DIRECTION OF THE CONDUCTOR MUST CHANGE, IT SHALL BE DONE GRADUALLY. THE CURVATURE OF THE TURN SHALL BE DONE IN ACCORDANCE WITH THE FOLLOWING CHART:

	GROUNDING CONDUCTOR SIZE	MINIMUM BENDING RADIUS TO INSIDE EDGE
NO.	6 AWG TO NO. 4 AWG	6 INCHES
NO.	2 AWG TO NO. 1/0 AWG	8 INCHES
NO.	2/0 AWG TO 4/0 MCM	12 INCHES
	250 MCM TO 750 MCM	24 INCHES

   G. GROUND RING

1. THE EXTERNAL GROUND RING ENCIRCLING THE TOWER (IF APPLICABLE) AND BETWEEN THE EQUIPMENT SHELTER PLATFORM ANCHORS SHALL BE MINIMUM NO. 2 SOLID TINNED BARE COPPER CONDUCTOR IN DIRECT CONTACT WITH THE EARTH AT THE DEPTH INDICATED ON THE DRAWINGS. CONDUCTOR BENDS SHALL HAVE A MINIMUM BENDING RADIUS OF EIGHT INCHES (8").

2. ALL EXTERNAL GROUND RINGS ARE TO BE JOINED TOGETHER AND ALL CONNECTIONS MUST BE CADWELDED. NO LUNGS OR CLAMPS WILL BE ACCEPTED.

   H. FENCE/GATE

   GROUND EACH GATE POST, CORNER POST AND GATE AS INDICATED ON DRAWING GROUND CONNECTIONS TO FENCE POST AND ALL OTHER CONNECTIONS FOR THE GROUND GRID SYSTEM SHALL BE MADE BY EXOTHERMIC WELD PROCESS, AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND PROCEDURES, AND SPRAYED WITH COLD-GALVANIZED PAINT.

3. I.E.E.E. FALL POTENTIAL TESTS

   A. FOR RAW LAND SITE

1. GROUND TESTS SHALL BE PERFORMED AS INDICATED ON DRAWINGS. A BIDDLE GROUND OHMER OR THE METHOD OF USING TWO AUXILIARY GROUND RODS (AS DESCRIBED IN I.E.E.E. STANDARDS NO. 81-1983, PART 1) MAY BE USED. THE I.E.E.E. METHOD REQUIRES THE USE OF AN A.C. TEST CURRENT. THE AUXILIARY TEST RODS MUST BE SUFFICIENTLY FAR AWAY FROM THE ROD UNDER TEST SO THAT THE REGIONS IN WHICH THEIR RESISTANCE IS LOCALIZED DO NOT OVERLAP. THE TEST POINT WILL BE GROUND ROD AND WILL CONSIST OF THE THREE POINT FALL OF POTENTIAL MEGGER TEST METHOD, USING THE BIDDLE NULL-BALANCE EARTH TESTER (MEGGER #250220-2 OR EQUIVALENT)
2. CONTRACTOR TO CONDUCT GROUND RESISTANCE TEST IN THE FORMAT AS FOLLOWS:

   B. EQUIPMENT PAD

1. FIRST TEST - SHALL BE WITH FOUR GROUND RODS INSTALLED, ONE AT EACH CORNER OF THE PAD BUT NOT CONNECTED TO THE MAIN GROUNDING BUS. FURNISH WIRE TO CONNECT (TEMPORARY CLAMP) ALL FOUR GROUND RODS TOGETHER TO MAKE A SYSTEM TEST AFTER EACH ROD IS INDIVIDUALLY TESTED. IF ANY INDIVIDUAL ROD TESTS 35 OHMS OR MORE, THE ELECTRICAL CONTRACTOR AND OWNER'S REPRESENTATIVE SHOULD BE NOTIFIED SO THAT THE ROD CAN BE DRIVEN DEEPER UNTIL ALL FOUR RODS HAVE A RESISTANCE OF 10 OHMS OR LESS ON A DRY DAY.
2. SECOND TEST- SHALL BE WITH THE GROUND RODS CONNECTED, WITH DRY SOIL AND WHEN NO STANDING WATER HAS BEEN PRESENT FOR THE PAST TEN (10) DAYS. THE MAXIMUM ALLOWABLE READING IS 5 OHMS TO GROUND. IF THE RESISTANCE OF THE ENTIRE SYSTEM EXCEEDS 5 OHMS, NOTIFY THE CONTRACTOR AND OWNER'S REPRESENTATIVE SO THAT ADDITIONAL AND/OR DEEPER RODS CAN BE INSTALLED.

   C. TOWER

1. FIRST TEST - SHALL BE WITH THREE GROUND RODS INSTALLED (MINIMUM), EQUALLY SPACED AROUND THE TOWER FOUNDATION, BUT NOT CONNECTED TO THE SHELTER PAD EXTERNAL GROUND RING. FURNISH WIRE TO CONNECT (TEMPORARY CLAMP) ALL THREE GROUND RODS TOGETHER TO MAKE A SYSTEM TEST AFTER EACH ROD IS INDIVIDUALLY TESTED. IF ANY INDIVIDUAL ROD TESTS 25 OHMS OR MORE, NOTIFY THE CONTRACTOR AND OWNER'S REPRESENTATIVE SO THAT THE ROD CAN BE DRIVEN DEEPER UNTIL ALL THREE (3) RODS HAVE A RESISTANCE OF 10 OHMS OR LESS ON A DRY DAY.
2. SECOND TEST- SHALL BE WITH THE GROUND RODS CONNECTED, WITH DRY SOIL AND WHEN NO STANDING WATER HAS BEEN PRESENT FOR THE PAST (10) DAYS, THE MAXIMUM ALLOWABLE READING IS 5 OHMS THE ELECTRICAL CONTRACTOR AND OWNER'S REPRESENTATIVE SHOULD BE NOTIFIED SO THAT EITHER ADDITIONAL AND/OR DEEPER RODS CAN BE INSTALLED.

   D. EQUIPMENT PAD AND TOWER

1. AFTER THE EQUIPMENT PAD AND TOWER GROUND RESISTANCE TEST IS COMPLETED, CONTRACTOR SHALL TIE EQUIPMENT PAD EXTERNAL GROUND RING AND TOWER EXTERNAL GROUND RING TOGETHER. AFTER FIRST AND SECOND TEST ALL CONNECTIONS MUST BE MADE USING EXOTHERMIC WELD. NO LUGS OR CLAMPS WILL BE ACCEPTED.
2. AFTER ALL THE EXTERNAL GROUND RINGS ARE TIED TOGETHER, COMPETE A MEGGER CHECKER OF THE GROUND SYSTEM SHOULD BE DONE. THE MAXIMUM ALLOWABLE LEADING IS 5 OHMS TO GROUND.

10. GROUNDING RESISTANCE TEST REPORT

UPON COMPLETION OF THE TESTING FOR EACH SITE, A TEST REPORT SHOWING RESISTANCE IN OHMS WITH AUXILIARY POTENTIAL ELECTRODES AT 5 FEET AND 10 FEET INTERVALS UNTIL THE AVERAGE RESISTANCE STARTS INCREASING AND ALSO NOTE THAT 10-15 PHOTOS MUST BE TAKEN TO PROOF ENTIRE EXTERNAL GROUND RING SYSTEM BEFORE BACKFILL. TWO (2) SETS OF TEST DOCUMENTS AREA OF THE INDEPENDENT TESTING SERVICE TO BE BOUND AND SUBMITTED WITHIN ONE (1) WEEK OF WORK COMPLETION.

SECTION 16503 - POLES, POSTS, AND STANDARDS (SINGLE MAST AND SELF SUPPORTING TOWERS)

1. GENERAL

   A. LIGHTNING ROD AND EXTENSION PIPE INCLUDING ALL APPURTENANCES, TO BE FURNISHED BY OWNER, IF REQUIRED

   B. PROVIDE TEMPORARY LIGHTING FOR TOWER AS PER FAA REGULATIONS DURING CONSTRUCTION, IF REQUIRED.

   C. GROUNDING:

   GROUND TOWER WITH A MINIMUM OF #2 AWG TINNE SOLID BARE COPPER CONDUCTOR CADWELDED TO TOWER BASE PLATE. TWO (2) GROUNDING LEADS PER TOWER BASE PLATE.

   NO EXOTHERMIC WELDS SHALL BE ATTACHED DIRECTLY TO THE MONOPOLE TOWER SHAFT

SECTION 16745- TELECOMMUNICATIONS WIRING COMPONENT

(COAXIAL ANTENNA CABLE)

1. GENERAL

   A. ALL MATERIALS, PRODUCTS OR PROCEDURES INCORPORATED INTO WORK SHALL BE NEW AND OF STANDARD COMMERCIAL QUALITY.

   B. CERTAIN MATERIALS AND PRODUCTS WILL BE SUPPLIED BY THE OWNER (REFER TO GENERAL CONDITIONS FOR THE LIST OF OWNER FURNISHED EQUIPMENT, MATERIALS AND SUPPLIES FOR THESE ITEMS). THE CONTRACTOR IS RESPONSIBLE FOR PICKUP AND DELIVERY OF ALL SUCH MATERIALS

   C. ALL OTHER MATERIALS AND PRODUCTS SPECIFIED IN THE CONTRACT DOCUMENTS SHALL BE SUPPLIED BY THE CONTRACTOR.

2. MATERIALS

   a. COAXIAL CABLE:

1. INSTALL COAXIAL CABLE AND TERMINATIONS BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS WITH COAXIAL CABLES SUPPORTED AT NO MORE THAN 3'-0" O.C. WEATHERPROOF ALL CONNECTORS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE FEET (3') IN EXCESS OF EQUIPMENT LOCATION UNLESS OTHERWISE STATED.
2. ALL COAX RUN LENGTHS GREATER THAN 175 FEET SHALL BE 1-5/8", ALL COAX. RUN LENGTH BETWEEN 101 FEET AND 174 FEET SHALL BE 1-1/4", AND IN LENGTH LESS THAN OR EQUAL TO 100 FEET SHALL BE 7/8".
3. ANTENNA AND COAXIAL CABLE GROUNDING

   a. ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS)

4. COAXIAL CABLE IDENTIFICATION

   a. TO PROVIDE EASY IDENTIFICATION AND UNIFORM MARKING OF ANTENNA CABLING, PLASTIC TAGS SHALL BE USED AT THE FOLLOWING LOCATIONS:

1. FIRST LOCATION IS AT THE END OF THE COAX NEAREST THE ANTENNA (WHERE THE COAXIAL CABLE AND JUMPER ARE CONNECTED).
2. SECOND LOCATION IS INSIDE THE EQUIPMENT SHELTER NEAR THE WAVEGUIDE ENTRY PORT.

   b. USE ANDREW CABLE TIES (PT. # 7290) TO SECURE IDENTIFICATION TAGS.

5. TESTING

   LESSEE SHALL PROVIDE AN INDEPENDENT TESTING AGENCY TO PERFORM THE COAXIAL SWEEP TEST & REPORT. THE CONTRACTOR IS TO PROVIDE ONE CLIMBER / QUALIFIED PERSONNEL TO ASSIST IN ANY REPAIRS AND WEATHERPROOFING ONCE THE TEST IS COMPLETE. THE CONTRACTOR IS TO PROVIDE LESSEE WITH A MINIMUM OF 48 HOURS NOTICE PRIOR TO THE TIME OF THE SWEEP TEST.

verizon
1701 GOLF ROAD,
TOWER 2, SUITE 400
ROLLING MEADOWS, IL 60008
PHONE: (847) 619-5397
FAX: (847) 706-7415

TERRA CONSULTING GROUP
has joined Colliers Engineering & Design

REVISIONS

NO	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	09/12/25	APD
1	UPDATED PER POWER COORDINATION	10/09/25	MM
2	UPDATED PER COMMENTS	10/30/25	AMK/TJS
3	ISSUED FOR FINALS	12/12/25	TJS
4	REVISED PER COMMENTS	01/13/26	PP

MGD LOC# 5000975304
FUZE ID#: 17481177

SISTER_BAY

2530 SOUTH BAY SHORE DR
SISTER BAY, WI 54234

DRAWN BY:	AMW
CHECKED BY:	TAZ
DATE:	08/26/2025
PROJECT #:	33-3714

SHEET TITLE

SPECIFICATIONS

SHEET NUMBER

SP-2

1 EXISTING OVERALL SITE
SCALE: N.T.S.

2 EXISTING ACCESS DRIVE
SCALE: N.T.S.

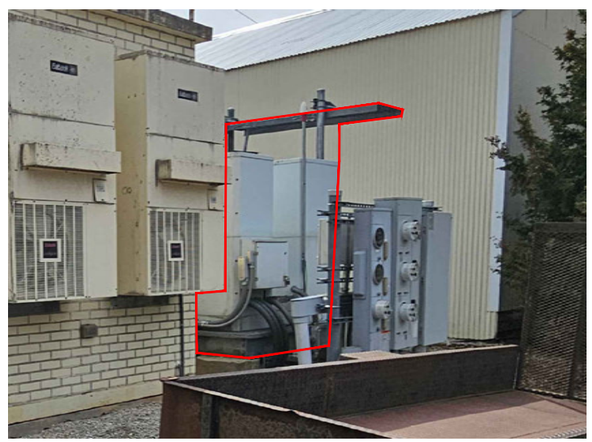
3 EXISTING ACCESS GATE
SCALE: N.T.S.

4 EXISTING SITE SIGNAGE ON FENCE
SCALE: N.T.S.

5 EXISTING POWER POLE/TRANSFORMER
SCALE: N.T.S.

6 EXISTING METER CENTER/ FRAME
SCALE: N.T.S.

7 EXISTING OPEN TOWER PORT
SCALE: N.T.S.



8 EXISTING EQUIP. PLTFM. TO BE REMOVED
SCALE: N.T.S.

verizon
1701 GOLF ROAD,
TOWER 2, SUITE 400
ROLLING MEADOWS, IL 60008
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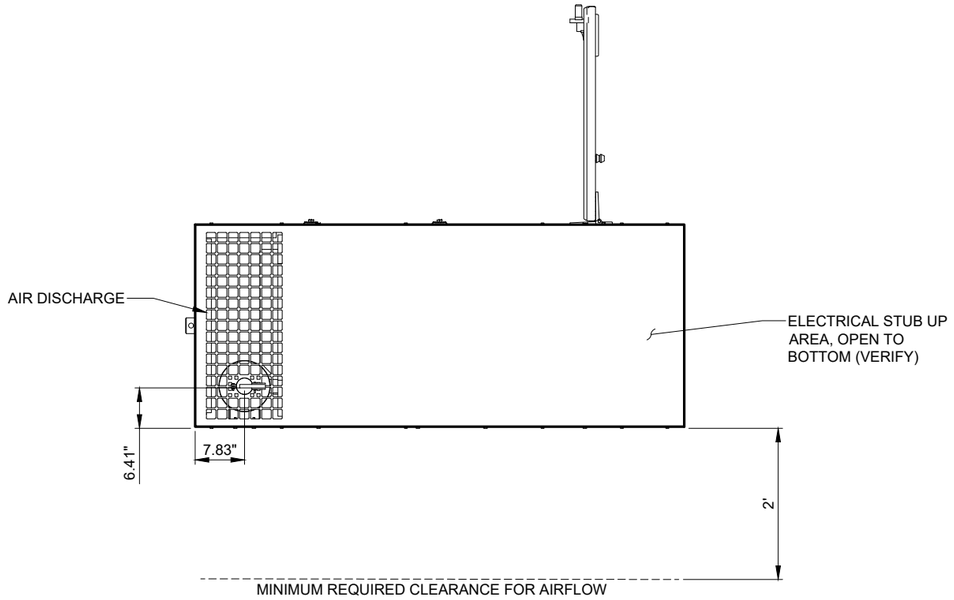
2530 SOUTH BAY SHORE DR
SISTER BAY, WI 54234

DRAWN BY:	AMW
CHECKED BY:	TAZ
DATE:	08/26/2025
PROJECT #:	33-3714

SHEET TITLE
EXISTING SITE PHOTOS

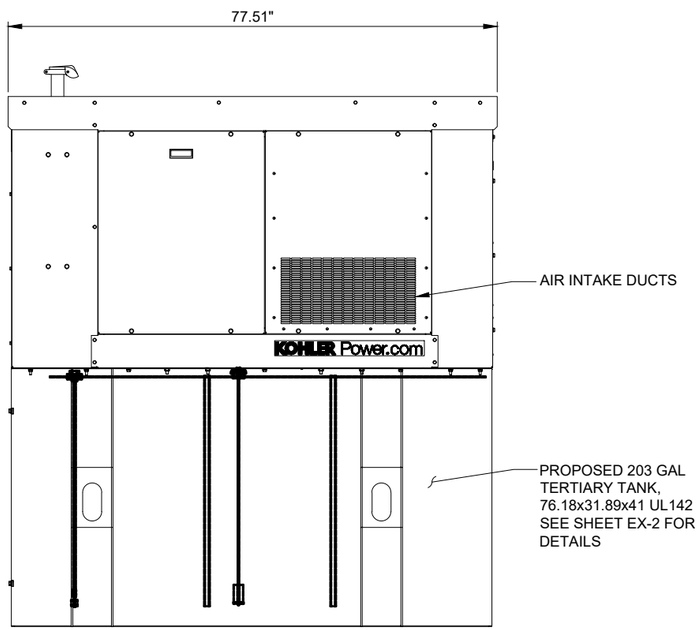
SHEET NUMBER
P-1



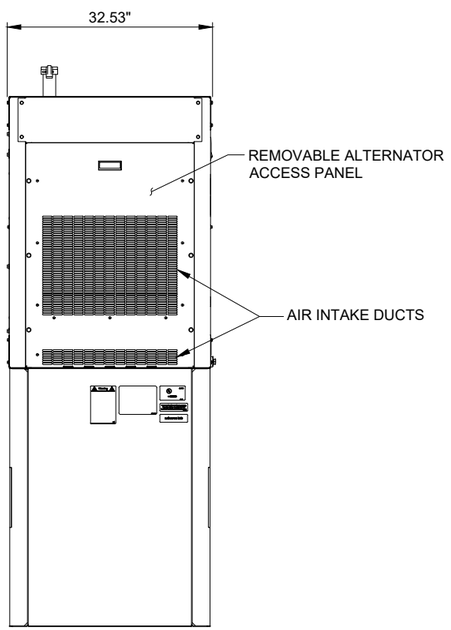
TOP OR PLAN VIEW

NOTES:

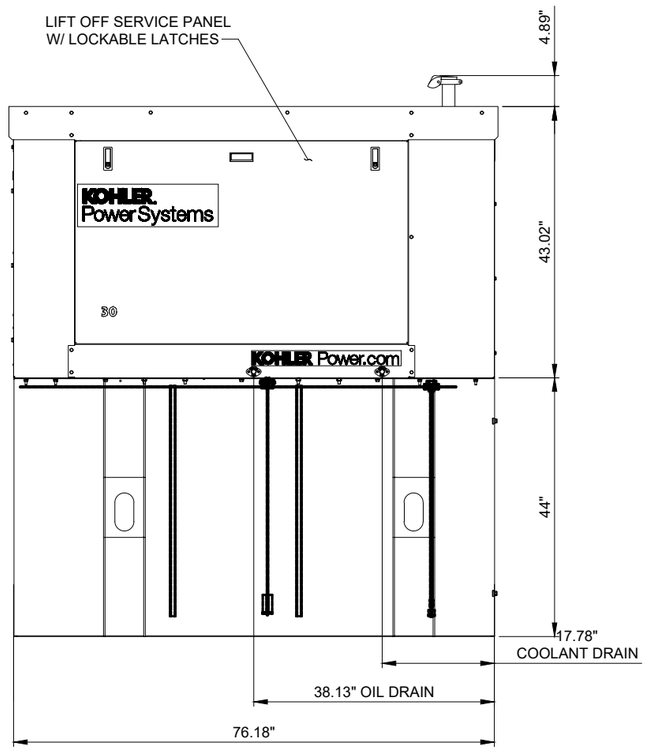
1. IF TANK IS ORDERED, ENCLOSURE MOUNT DIRECTLY TO TANK.
2. THE RIGHT SIDE OF THE GENERATOR IS SERVICE ACCESSIBLE.
3. 6 AMP BATTERY CHARGER
4. 120VAC ENGINE BLOCK HEATER
5. GENERATOR MUST BE GROUNDED.
6. SOUND ATTENUATED ENCLOSURE STANDARD WITH GENERATOR.
7. MUST ALLOW FREE FLOW OF DISCHARGE AIR AND EXHAUST.
8. MUST ALLOW FREE FLOW OF INTAKE AIR.
9. EASY ACCESS SERVICE PANEL IS LOCATED ON THE RIGHT SIDE OF THE GENERATOR ONLY.
10. BASE TANK REQUIRES ALL STUB-UPS TO BE IN THE REAR TANK STUB-UP AREA.
11. TANK EQUIPPED WITH FIRE SAFETY VALVE ON FUEL SUPPLY LINE.
12. IT IS THE RESPONSIBILITY OF THE INSTALLATION TECHNICIAN TO ENSURE THAT THE GENERATOR INSTALLATION COMPLIES WITH ALL APPLICABLE CODES, STANDARDS, AND REGULATIONS.
13. GENERATOR IS INSTALLED ON A UL-142 RATE DOUBLE WALL SUBBASE FUEL TANK.



LEFT SIDE VIEW



REAR VIEW



RIGHT SIDE VIEW

1 KOHLER 30kW DIESEL GENERATOR
MODEL: 30RE0ZK 30KW DIESEL 120/240 1-PH
OUTDOOR TERTIARY 203 GALLON TANK

WEIGHT DATA: (INCLUDING EMPTY FUEL TANK)
GENERATOR : 2114 LBS

verizon
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MGD LOC# 5000975304
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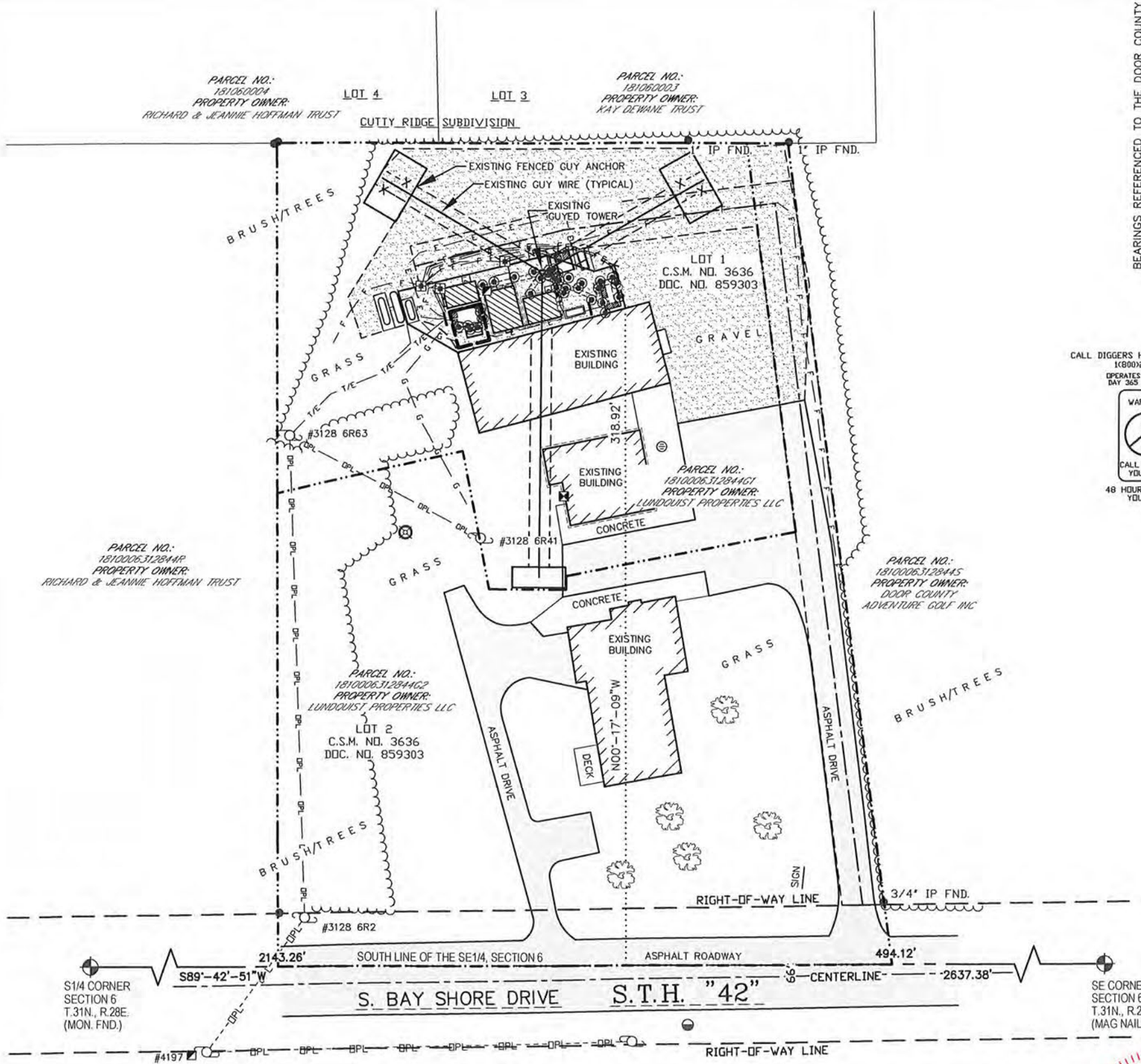
SISTER_BAY

2530 SOUTH BAY SHORE DR
SISTER BAY, WI 54234

DRAWN BY:	AMW
CHECKED BY:	TAZ
DATE:	08/26/2025
PROJECT #:	33-3714

SHEET TITLE
GENERATOR CUT-SHEET

SHEET NUMBER
EX-1

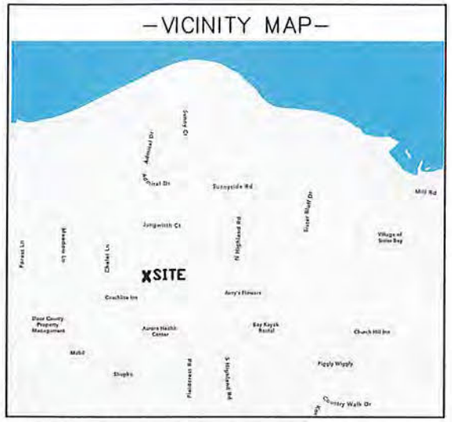


GRAPHIC SCALE
1 inch = 60 ft.
0 30 60 120

BEARINGS REFERENCED TO THE DOOR COUNTY COORDINATE SYSTEM AND THE SOUTH LINE OF THE SE1/4, SECTION 6, T.31N., R.28E., WHICH BEARS: S89°-42'-51"W

CALL DIGGERS HOTLINE TOLL FREE
1(800)242-8511
OPERATES 24 HOURS A DAY 365 DAYS A YEAR
WARNING
CALL BEFORE YOU DIG
48 HOURS BEFORE YOU DIG

-VICINITY MAP-



EXISTING TOWER BASE

LATITUDE: 45°-11'-11.45"
LONGITUDE: 87°-08'-05.20"
(Per North American Datum of 83/91)

Top of Whip Antenna Elevation: 900.5'
(Highest Point)
Top of Tower Elevation: 881.0'
Ground Elevation: 700.1'
(Per North American Vertical Datum of 1988)

-LEGEND-

- = 1" IRON PIPE FOUND (OR AS NOTED)
- = COUNTY MONUMENT FOUND
- = METAL POST
- = GROUNDING PORT
- = CONDUIT
- = WELL HEAD
- = MANHOLE
- = EXISTING POWER POLE
- = FIBER OPTIC VAULT
- = TELEPHONE PEDESTAL
- = ELECTRIC METER
- T — T = BURIED TELEPHONE
- E — E = BURIED ELECTRIC
- OPL — OPL = OVERHEAD ELECTRIC
- T/E — T/E = BURIED TELE. & ELEC.
- G — G = BURIED GAS LINE
- F — F = BURIED FIBER OPTIC LINE
- X = CHAINLINK FENCE LINE
- = EDGE OF BRUSH/WOODS
- = PROPERTY LINE
- = EXISTING TREE

WISCONSIN
STEVEN C DEJONG
S-2791
FREEDOM
WIS.
LAND SURVEYOR

SURVEYOR'S CERTIFICATE

I, Steven C. DeJong, Professional Land Surveyor of Meridian Surveying, LLC., certify that I have surveyed the described property and that the map shown is a true and accurate representation thereof to the best of my knowledge and belief.

Dated this 9TH day of DECEMBER, 2025.

WISCONSIN PROFESSIONAL LAND SURVEYOR
Steven C. DeJong, S-2791

SURVEYED FOR:

TERRA CONSULTING GROUP, LTD.
600 Busse Highway
Park Ridge, IL 60068
OFFICE: (847) 698-6400
FAX: (678) 444-4472

SURVEYED FOR:

verizon
1701 GOLF ROAD
TOWER 2, SUITE 400
ROLLING MEADOWS, IL 60008

MERIDIAN
SURVEYING, LLC
N9637 Friendship Drive Office: 920-993-0881
Kaukauna, WI 54130 Fax: 920-273-6037

SITE NAME:
SISTER BAY

SITE NUMBER:
5000975304

SITE ADDRESS:
2530 SOUTH BAY SHORE DR.
SISTER BAY, WI 54234

PROPERTY OWNER:
LUNDQUIST PROPERTIES LLC.
PO BOX 145
SISTER BAY, WI 54234

TOWER OWNER:
NSIGHT TOWER HOLDINGS, LLC.
450 SECURITY BLVD.
GREEN BAY, WI 54307

PARCEL NO.: 1810006312844G1 & 1810006312844G2

DEED REFERENCE: DOC. NO. 692573

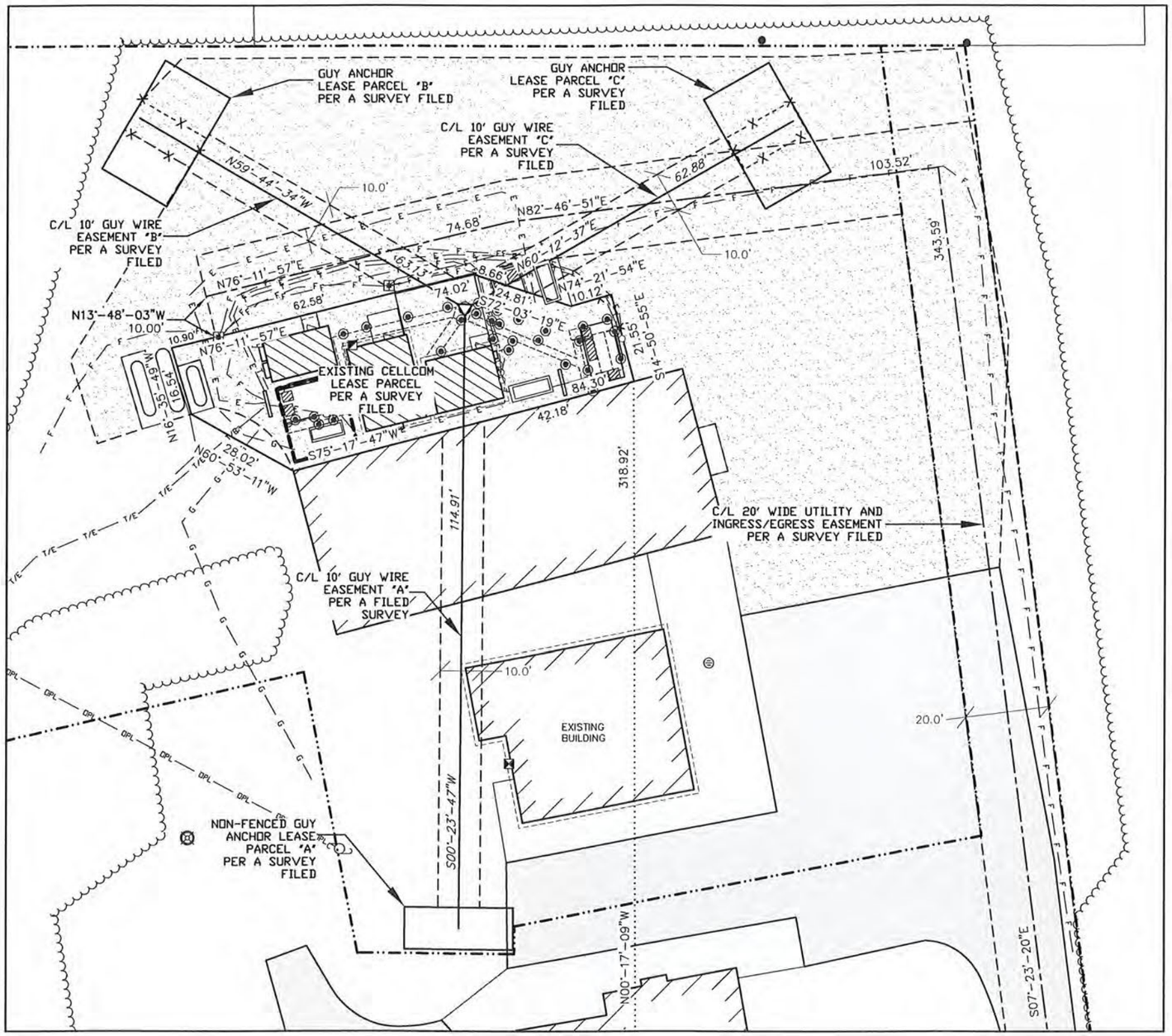
LEASE EXHIBIT

FOR
VERIZON WIRELESS PERSONAL COMMUNICATIONS LP d/b/a VERIZON WIRELESS

BEING A PART OF THE SE1/4 OF THE SE1/4, SECTION 6, T.31N., R.28E., VILLAGE OF SISTER BAY, DOOR COUNTY, WISCONSIN

NO.	DATE	DESCRIPTION	BY
3	12-4-25	Added Lease Area	KR
2	9-10-25	Added Title Report Review	JB
1	6-11-25	Preliminary Survey	KR

DRAWN BY: KR	FIELD WORK DATE: 5-28-25
CHECKED BY: C.A.K.	FIELD BOOK: X
JOB NO.: 16212	SHEET 1 OF 5



GRAPHIC SCALE
1 inch = 30 ft.
0 15 30 60

SURVEY NOTES:

- THE LOCATION OF THE EXISTING UTILITIES, AS SHOWN ON THIS PLAN, ARE APPROXIMATE ONLY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ACTUAL LOCATION AND DEPTH OF ALL EXISTING UTILITIES. THE OWNER AND THE SURVEYOR SHALL NOT BE RESPONSIBLE FOR ANY OMISSION OR VARIATION FROM THE LOCATION SHOWN.
- DIGGERS HOTLINE TICKET NO. 20252030226.
- PRIVATE UTILITIES MARKED ON 5-28-2025.
- THIS IS NOT A BOUNDARY SURVEY 'OF THE PARENT PARCEL. THIS SURVEY REPRESENTS THE LEASE AREA AND EASEMENTS ONLY.
- ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD MAPS, THE EXISTING TELECOMMUNICATIONS SITE IS LOCATED IN ZONE "X", FIRM PANEL NO. 55029C0192D, DATED MAY 8 2024, AND IS NOT IN A SPECIAL FLOOD HAZARD AREA. ZONE "X" IS DESIGNATED AS: "AREA OF MINIMAL FLOOD HAZARD".

WETLAND NOTE:
- THE PRESENCE AND LOCATION OF WETLANDS HAS NOT BEEN DETERMINED ON THIS PROPERTY. WETLANDS SHOULD ONLY BE DETERMINED BY ACTUAL FIELD DELINEATION PERFORMED BY A QUALIFIED WETLAND SPECIALIST.

-LEGEND-

- = 1" IRON PIPE FOUND (OR AS NOTED)
- = COUNTY MONUMENT FOUND
- = METAL POST
- = GROUNDING PORT
- = CONDUIT
- = WELL HEAD
- = MANHOLE
- = EXISTING POWER POLE
- = FIBER OPTIC VAULT
- = TELEPHONE PEDESTAL
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- X — = CHAINLINK FENCE LINE
- = EDGE OF BRUSH/WOODS
- = PROPERTY LINE
- = EXISTING TREE

BEARINGS REFERENCED TO THE DOOR COUNTY COORDINATE SYSTEM AND THE SOUTH LINE OF THE SE1/4, SECTION 6, T.31N., R.28E., WHICH BEARS: S89°-42'-51"W

N

WISCONSIN
STEVEN C DEJONG S-2791 FREEDOM WIS.
LAND SURVEYOR

SURVEYOR'S CERTIFICATE
I, Steven C. DeJong, Professional Land Surveyor of Meridian Surveying, LLC., certify that I have surveyed the described property and that the map shown is a true and accurate representation thereof to the best of my knowledge and belief.

Dated this 9TH day of DECEMBER, 2025.

WISCONSIN PROFESSIONAL LAND SURVEYOR
Steven C. DeJong, S-2791

SURVEYED FOR:
TERRA CONSULTING GROUP, LTD.
600 Busse Highway
Park Ridge, IL 60068
OFFICE: (847) 698-6400
FAX: (678) 444-4472

SURVEYED FOR:
verizon
1701 GOLF ROAD
TOWER 2, SUITE 400
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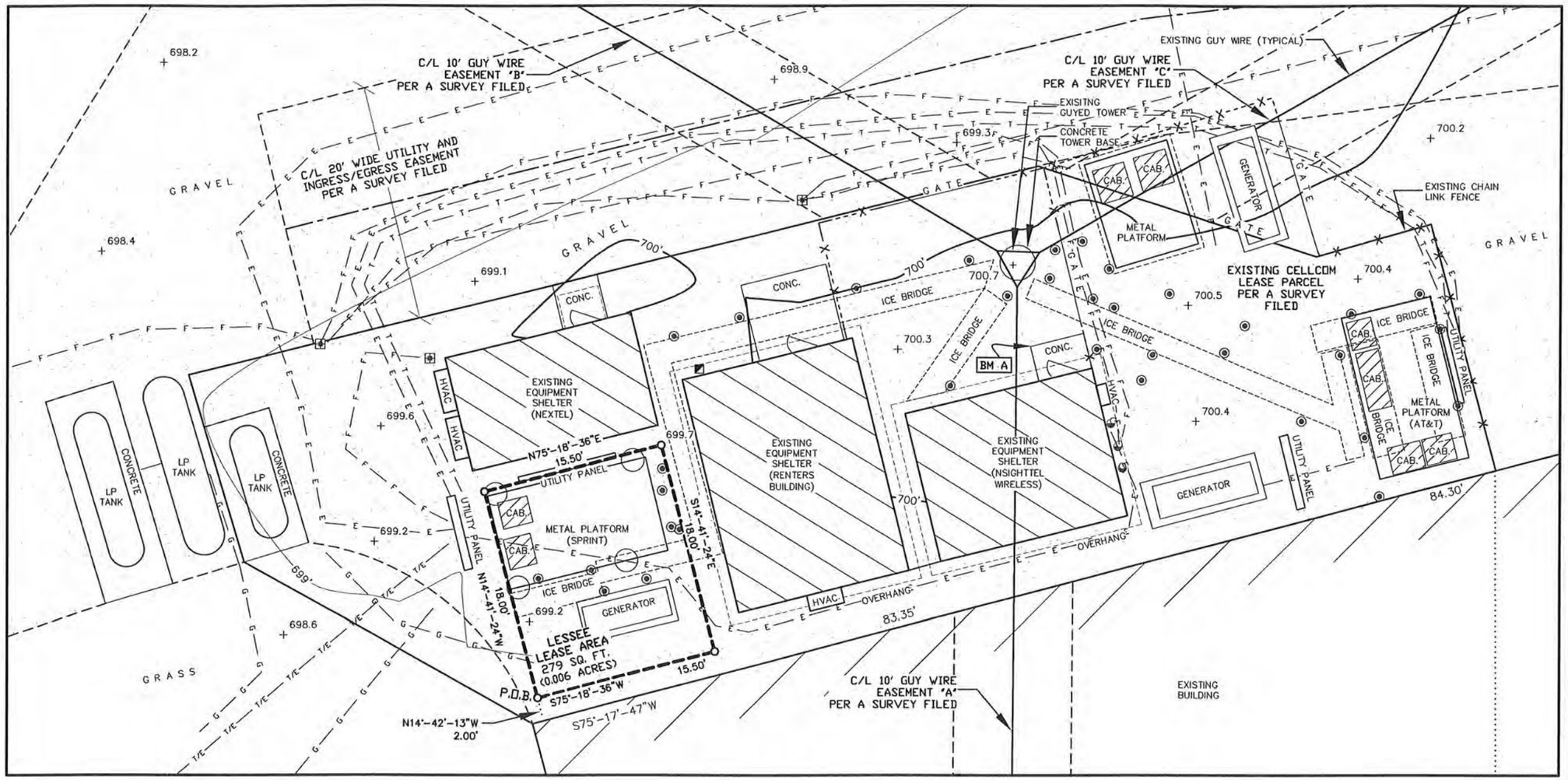
FOR
VERIZON WIRELESS PERSONAL COMMUNICATIONS LP d/b/a VERIZON WIRELESS

BEING A PART OF THE SE1/4 OF THE SE1/4, SECTION 6, T.31N., R.28E., VILLAGE OF SISTER BAY, DOOR COUNTY, WISCONSIN

NO.	DATE	DESCRIPTION	BY
3	12-4-25	Added Lease Area	KR
2	9-10-25	Added Title Report Review	JB
1	6-11-25	Preliminary Survey	KR

DRAWN BY: KR	FIELD WORK DATE: 5-28-25
CHECKED BY: C.A.K.	FIELD BOOK: x
JOB NO.: 16212	SHEET 2 OF 5



—LEGEND—

- = 1" IRON PIPE FOUND (OR AS NOTED)
- = COUNTY MONUMENT FOUND
- = METAL POST
- = GROUNDING PORT
- = CONDUIT
- = WELL HEAD
- = MANHOLE
- = EXISTING POWER POLE
- = FIBER OPTIC VAULT
- = TELEPHONE PEDESTAL
- = ELECTRIC METER
- — T — T — = BURIED TELEPHONE
- — E — E — = BURIED ELECTRIC
- — OPL — OPL — = OVERHEAD ELECTRIC
- — T/E — T/E — = BURIED TELE. & ELEC.
- — G — G — = BURIED GAS LINE
- — F — F — = BURIED FIBER OPTIC LINE
- —---X— = CHAINLINK FENCE LINE
- = EDGE OF BRUSH/WOODS
- = PROPERTY LINE
- = EXISTING TREE

BENCHMARK INFORMATION
SITE BENCHMARK: (BM A)
FOUND CHISELED SQUARE AT NORTHWEST CORNER OF CONCRETE PAD; ±1' ABOVE GROUND LEVEL
ELEVATION: 700.931'

BEARINGS REFERENCED TO THE DOOR COUNTY COORDINATE SYSTEM AND THE SOUTH LINE OF THE SE1/4, SECTION 6, T.31N., R.28E., WHICH BEARS: S89°-42'-51"W

GRAPHIC SCALE
1 inch = 10 ft.
0 5 10 20

WISCONSIN STEVEN C DEJONG S-2791 FREEDOM WIS. LAND SURVEYOR

SURVEYOR'S CERTIFICATE
I, Steven C. DeJong, Professional Land Surveyor of Meridian Surveying, LLC., certify that I have surveyed the described property and that the map shown is a true and accurate representation thereof to the best of my knowledge and belief.

Dated this 9TH day of DECEMBER, 2025.

WISCONSIN PROFESSIONAL LAND SURVEYOR
Steven C. DeJong, S-2791

SURVEYED FOR:
TERRA CONSULTING GROUP, LTD.
600 Busse Highway
Park Ridge, IL 60068
OFFICE: (847) 698-6400
FAX: (678) 444-4472

SURVEYED FOR:
verizon
1701 GOLF ROAD
TOWER 2, SUITE 400
ROLLING MEADOWS, IL 60008

MERIDIAN SURVEYING, LLC
N9637 Friendship Drive Office: 920-993-0881
Kaukauna, WI 54130 Fax: 920-273-6037

SITE NAME:
SISTER BAY

SITE NUMBER:
5000975304

SITE ADDRESS:
2530 SOUTH BAY SHORE DR.
SISTER BAY, WI 54234

PROPERTY OWNER:
LUNDQUIST PROPERTIES LLC.
PO BOX 145
SISTER BAY, WI 54234

TOWER OWNER:
NSIGHT TOWER HOLDINGS, LLC.
450 SECURITY BLVD.
GREEN BAY, WI 54307

PARCEL NO.: 1810006312844G1 & 1810006312844G2

DEED REFERENCE: DOC. NO. 692573

LEASE EXHIBIT

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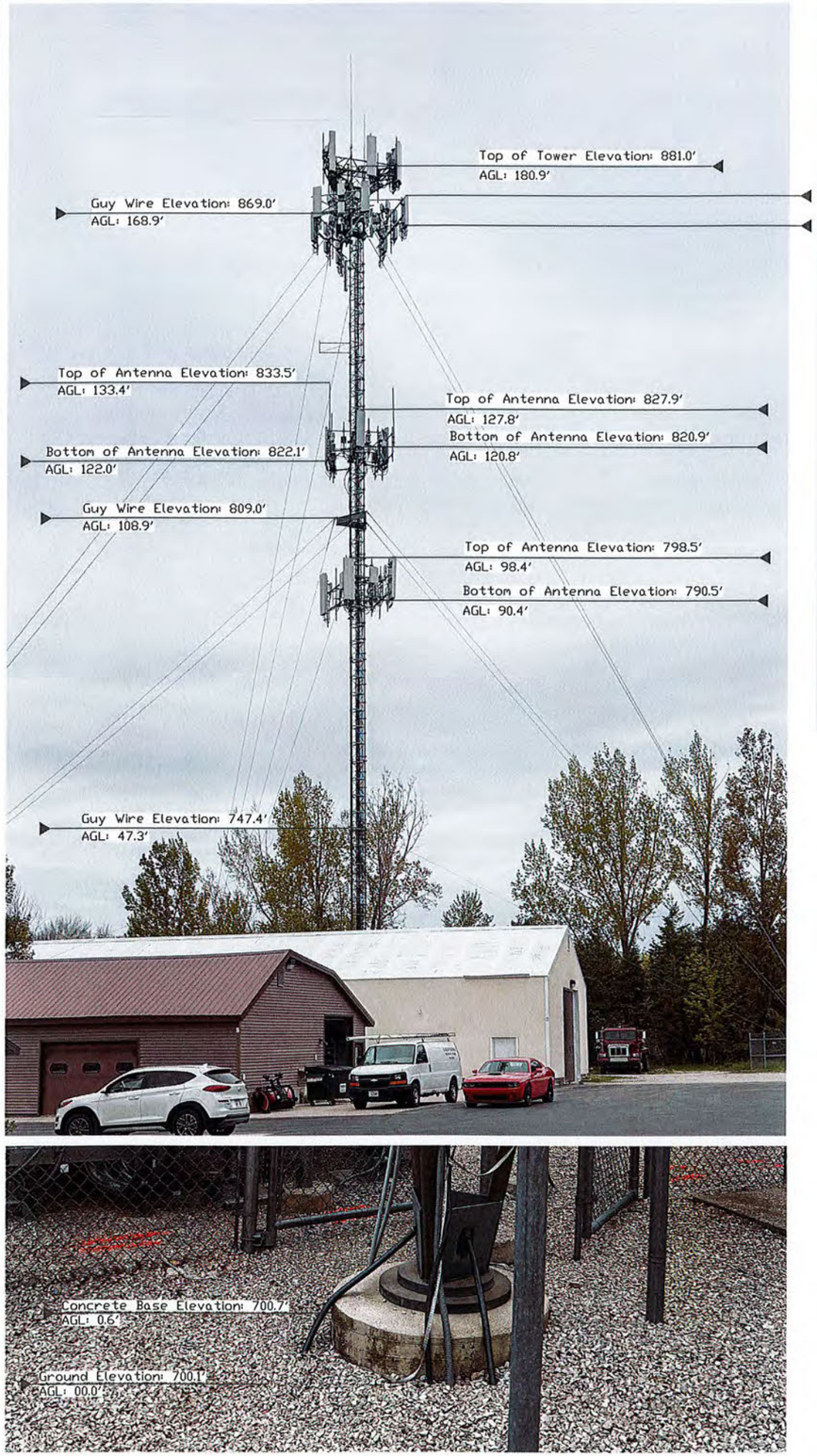

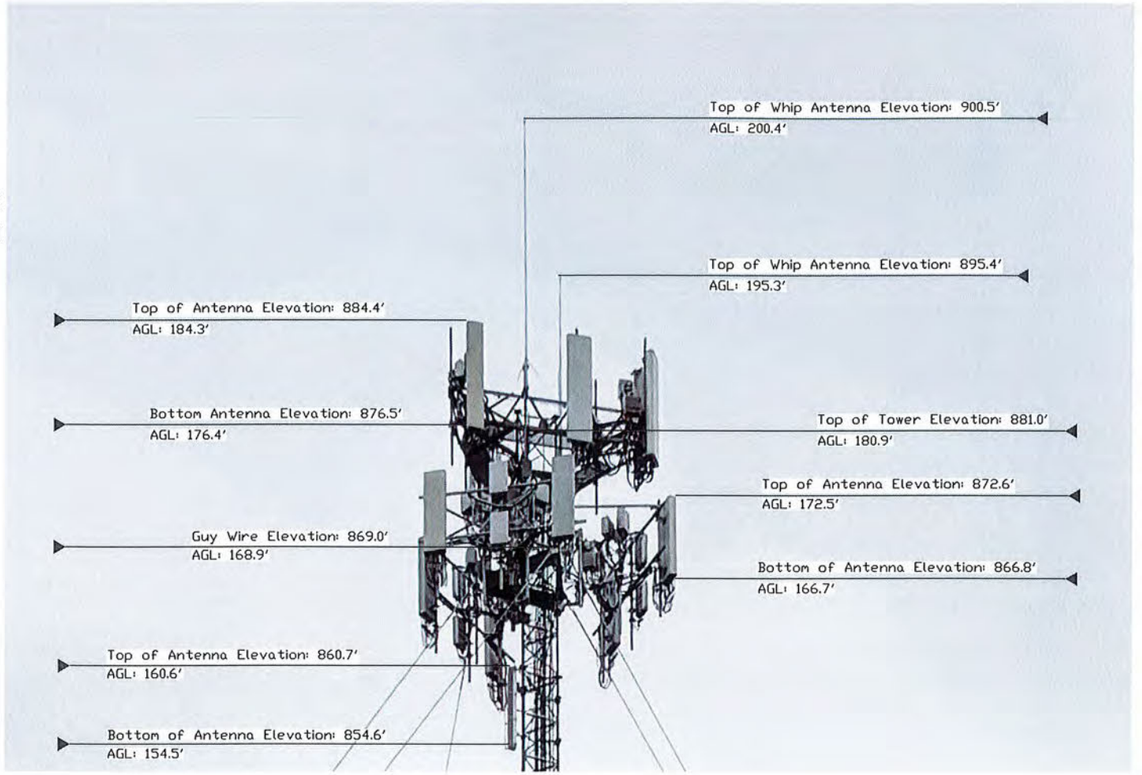

WISCONSIN
STEVEN C DEJONG
S-2791
FREEDOM WIS.
LAND SURVEYOR

DECEMBER 9, 2025

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LESSEE LEASE AREA

A PART OF THE SOUTHEAST QUARTER (SE1/4) OF THE SOUTHEAST QUARTER (SE1/4) OF SECTION SIX (6), TOWNSHIP THIRTY-ONE (31) NORTH, RANGE TWENTY-EIGHT (28) EAST, VILLAGE OF SISTER BAY, DOOR COUNTY, WISCONSIN CONTAINING 279 SQUARE FEET (0.006 ACRES) OF LAND AND BEING DESCRIBED BY:
COMMENCING AT THE SOUTHEAST CORNER OF SAID SECTION 6; THENCE S89°-42'-51"W 494.12 FEET ALONG THE SOUTH LINE OF THE SE1/4 OF SAID SECTION 6; THENCE N00°-17'-09"W 318.92 FEET; THENCE S75°-17'-47"W 83.35 FEET; THENCE N14°-42'-13"W 2.00 FEET TO THE POINT OF BEGINNING; THENCE N14°-41'-24"W 18.00 FEET; THENCE N75°-18'-36"E 15.50 FEET; THENCE S14°-41'-24"E 18.00 FEET; THENCE S75°-18'-36"W 15.50 FEET TO THE POINT OF BEGINNING, BEING SUBJECT TO ANY AND ALL EASEMENTS AND RESTRICTIONS OF RECORD.

PARENT PARCEL

ALL THAT PARCEL OF LAND IN THE SISTER BAY IN THE COUNTY OF DOOR AND STATE OF WISCONSIN AS MORE FULLY DESCRIBED IN DEED DOCUMENT NUMBER 692573 DOCUMENT NUMBER 689490 AND PARCEL # 1810006312844G1, BEING KNOWN AND DESIGNATED AS: LOT 1 AND LOT 2 OF CERTIFIED SURVEY MAP NO. 3636 RECORDED 1/25/2023, DOCUMENT NO. 8593036, DOOR COUNTY RECORDS.

PARCEL NUMBER: 1810006312844G1

BEING THE SAME PROPERTY ACQUIRED BY MICHAEL LUNDQUIST BY DEED OF ARLINE L. LUNDQUIST, DATED 03/02/2006 AND RECORDED 03/20/2006 IN DOCUMENT NUMBER : 692573 BEING THE SAME PROPERTY ACQUIRED BY LUNDQUIST PROPERTIES, LLC BY DEED OF MICHAEL L. LUNDQUIST AND HIS SUCCESSOR , AS TRUSTEE OF THE LUNDQUIST REVOCABLE TRUST, DATED JULY 11, 2005, DATED 12/01/2005 AND RECORDED 12/13/2005 IN DOCUMENT NUMBER : 689490

TITLE REPORT REVIEW

TITLE REPORT: AMC SETTLEMENT SERVICES

COMMITMENT NO. 50037909

EFFECTIVE DATE: AUGUST 13, 2025

FEE SIMPLE TITLE VESTED IN: MICHAEL LUNDQUIST

NOTE: THE STATEMENT OF APPLICABILITY REFERS TO THE TOWER EASEMENT PREMISES AND ANY EASEMENT PREMISES PERTINENT THEREUNTO WHERE SPECIFIC ENCUMBRANCES AFFECT THE TOWER EASEMENT PREMISES AND/OR A PERTINENT EASEMENT PREMISES, THEY ARE IDENTIFIED AS SUCH.

SCHEDULE B-II

(1-9) THESE ARE GENERAL STATEMENTS AND NOT SPECIFIC ENCUMBRANCES.

(10) SUBJECT TO SURVEYORS AFFIDAVIT FROM LEE E. TELFER, DATED 06/06/1985 AS SET FORTH IN DOCUMENT NO. 453512, RECORDED 06/12/1985, DOOR COUNTY RECORDS. **DOES APPLY AND CORRECTS AN ERROR IN A SURVEY. THIS HAS BEEN ACCOUNTED FOR.**

(11) SUBJECT TO EASEMENT AGREEMENT BY AND BETWEEN MICHAEL LUNDQUIST AND ARLINE L. LUNDQUIST AS SET FORTH IN DOCUMENT NO. 597911, RECORDED 12/16/1989, DOOR COUNTY RECORDS. **DOES APPLY BUT IS BLANKET IN NATURE AND CANNOT BE PLOTTED.**

(12) MEMORANDUM OF LEASE BETWEEN MICHAEL L. LUNDQUIST, LESSOR AND NORTHEAST TOWER, LLC, LESSEE, RECORDED 10/09/2002 IN DOCUMENT NO. 637345, IN DOOR COUNTY RECORDS. **DOES APPLY BUT IS BLANKET IN NATURE AND CANNOT BE PLOTTED.**

MEMORANDUM OF LEASE AGREEMENT BETWEEN NORTHEAST TOWER, LLC, LESSOR AND NEXTEL WIP LEASE CORP., LESSEE, RECORDED 02/19/2003 IN DOCUMENT NO. 644808, IN DOOR COUNTY RECORDS. **DOES APPLY BUT IS BLANKET IN NATURE AND CANNOT BE PLOTTED.**

(13) SUBJECT TO ANY MATTERS AS MAY BE SHOWN ON PLAT OF THE TRANSPORTATION PROJECT PLAT NO: 4140-21-00-4.33 AS SET FORTH IN DOCUMENT NO. 730334, RECORDED 06/12/2009 IN DOOR COUNTY RECORDS. **THE PRESENT DAY RIGHT OF WAY IS PLOTTED AND SHOWN.**

(14) IMPROVEMENT DEED FROM NSIGHT TOWER HOLDINGS, LLC, TO NSIGHTTEL WIRELESS, LLC, RECORDED 01/04/2016, DOCUMENT NO. 792937, IN DOOR COUNTY RECORDS. **DOES APPLY BUT IS NOT A SURVEY RELATED MATTER.**

MEMORANDUM OF MASTER PREPAID LEASE BETWEEN VERTICAL BRIDGE TOWERS, LLC, LESSOR AND NSIGHT TOWER HOLDINGS, LLC, LESSEE, RECORDED 05/09/2016, IN DOCUMENT NO. 795515 IN DOOR COUNTY RECORDS. **DOES APPLY BUT IS NOT A SURVEY RELATED MATTER.**

LIMITED POWER OF ATTORNEY, RECORDED 05/09/2016, DOCUMENT NO. 795514, IN DOOR COUNTY RECORDS. **DOES APPLY BUT IS NOT A SURVEY RELATED MATTER.**

CORRECTION INSTRUMENT, RECORDED 06/23/2016, DOCUMENT NO. 796588 IN DOOR COUNTY RECORDS. **DOES APPLY BUT IS NOT A SURVEY RELATED MATTER.**

(15) SUBJECT TO EASEMENT AND ASSIGNMENT OF LEASE AGREEMENT FROM LUNDQUIST PROPERTIES, LLC TO BRT GROUP, LLC AS SET FORTH IN DOCUMENT NO. 808581, RECORDED 10/18/2017, DOOR COUNTY RECORDS. **DOES APPLY BUT IS BLANKET IN NATURE AND CANNOT BE PLOTTED.**

WISCONSIN
STEVEN C DEJONG
S-2791
FREEDOM WIS.
DANE SURVEYOR
DECEMBER 9, 2025

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verizon fuze | RFDS

MIDWEST > Upper Midwest > Illinois/Wisconsin > Wisconsin > SISTER_BAY

RF Submit by: Bhuyan, Trisha - trisha.bhuyan@verizonwireless.com - 4/7/2025, 11:22:26 AM

EE Submit by: Tutt, Bradley - bradley.tutt@verizonwireless.com - 4/7/2025, 12:36:11 PM

Project Details

FUZE Project ID:	17481177
Project Name:	TRADITIONAL Capacity
Project Alt Name:	SISTER_BAY - MKT 209 - MCR
Project Type:	Initial Build
Modification Type:	
Designed Sector Carrier 4G:	9
Designed Sector Carrier 5G:	N/A
Additional Sector Carrier 4G:	N/A
Additional Sector Carrier 5G:	N/A
FP Solution Type & Tech Type:	MCR;4G_700,4G_PCS,5G_L-Sub6
Carrier Aggregation:	false
MPT Id:	
eCIP-0:	false
Suffix:	

Location Information

Site ID:	617498115
E-NodeB ID:	
MDG Location ID:	5000975304
PSLC:	
Switch Name:	
Tower Owner:	
Tower Type:	Guyed structure
Site Type:	MACRO
Site Sub Type:	TRADITIONAL
Street Address:	2530 South Bay Shore Dr
City:	Sister Bay
State:	WI
Zip Code:	54234
County:	Door
Latitude:	45.1864 / 45° 11' 11.04" N
Longitude:	-87.134 / 87° 8' 2.4" W

RFDS Project Scope: 4/7/25 EE Tower equip BOM submitted.(BAT)
LRA Cellcom

Antenna Summary

Added

1900	CBAND	Make	Atoll Model	Item Description	Centerline	Tip Height	Azimuth	Inst. Type	Quantity	Item ID
		COMMSCOPE	NNSS-65C-HG-R2B TD		155	159	30(A)(A) 130(B)(B) 235(C)(C)	SPARE	3	
	5G	Ericsson	AIR6419		155	156.2	30(A) 130(B) 235(C)	PHYSICAL	3	
LTE		Ericsson	AIR3283		155	157	30(A) 130(B) 235(C)	PHYSICAL	3	

Removed

1900	CBAND	Make	Atoll Model	Item Description	Centerline	Tip Height	Azimuth	Inst. Type	Quantity	Item ID

No data available.

Retained

1900	CBAND	Make	Atoll Model	Item Description	Centerline	Tip Height	Azimuth	Inst. Type	Quantity	Item ID

No data available.

Added: 9 **Removed:** 0 **Retained:** 0

Equipment Summary

Added

Equipment Type	Location	1900	CBAND	Make	Atoll Model	Item Description	Cable Length	Cable Size	Install Type	Quantity	Item ID
RRU	Tower	LTE		ERICSSON INC	AIR3283 B25+B66	AIR 3283 B25 B66			PHYSICAL	0	1900486642
RRU	Tower		5G	ERICSSON INC	AIR6419_B77D	AIR 6419 B77D Radio Unit			PHYSICAL	0	1900483699
RRU	Tower			ERICSSON INC	4490	DB Radio 4490HP B5+B13- Rem Radio Unit			SPARE	3	1900483084
Alarm	Tower			RAYCAP INC	3315-ALM-RS485	RETROFIT FOR THE 6OVP DIST BOX			PHYSICAL	3	1900070685
OVP Box	Tower			RAYCAP INC	RVZDC-3315-PF-48	TOWER TOP AND BASE POWER PROTECTION FIBE			PHYSICAL	3	1900422667
Hybrid Cable	Tower			HUBER & SUHNER INC	6X12 STD HYB (6AWG)_xxx FT W/GLAND			1-5/8 inch	PHYSICAL	3	

Removed

Equipment Type	Location	1900	CBAND	Make	Atoll Model	Item Description	Cable Length	Cable Size	Install Type	Quantity	Item ID

No data available.

Retained

Equipment Type	Location	1900	CBAND	Make	Atoll Model	Item Description	Cable Length	Cable Size	Install Type	Quantity	Item ID

No data available.

Service Info

1900 MHz LTE

	PRIM		
Sector	01	02	03
Azimuth	30	130	235
Cell / ENode B ID			
Antenna Model	AIR3283	AIR3283	AIR3283
Antenna Make	Ericsson	Ericsson	Ericsson
Antenna Centerline(Ft)	155	155	155
Mechanical Down-Tilt(Deg.)	0	0	0
Electrical Down-Tilt	2	2	2
Tip Height	157	157	157
Regulatory Power	543.14	543.14	543.14
DLEARFCN	900	900	900
Channel Bandwidth(MHz)	20	20	20
Total ERP (W)	5959.11	5959.11	5959.11
TMA Make			
TMA Model			
RRU Make	Ericsson	Ericsson	Ericsson
RRU Model	AIR3283 B25+B66	AIR3283 B25+B66	AIR3283 B25+B66
Number of Tx, Rx Lines	2,2	2,2	2,2
Position	2	2	2
Transmitter Id	23840339	23840345	23840351
Source	ATOLL_API	ATOLL_API	ATOLL_API

CBAND

	PRIM		
Sector	0001	0002	0003
Azimuth	30	130	235
Cell / ENode B ID			
Antenna Model	AIR6419	AIR6419	AIR6419
Antenna Make	Ericsson	Ericsson	Ericsson
Antenna Centerline(Ft)	155	155	155
Mechanical Down-Tilt(Deg.)	0	0	0
Electrical Down-Tilt	6	6	6
Tip Height	156.2	156.2	156.2
Regulatory Power	918.71	918.71	918.71
DLEARFCN	650006, 654652	650006, 654652	650006, 654652
Channel Bandwidth(MHz)	100,40	100,40	100,40
Total ERP (W)	37239.17	37239.17	37239.17
TMA Make			
TMA Model			
RRU Make	Ericsson	Ericsson	Ericsson
RRU Model	AIR6419_B77D	AIR6419_B77D	AIR6419_B77D
Number of Tx, Rx Lines	2,2	2,2	2,2
Position	3	3	3
Transmitter Id	23840356	23840357	23840358
Source	ATOLL_API	ATOLL_API	ATOLL_API

Service Comments

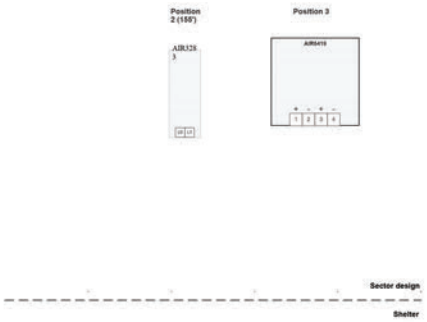
Callsigns Per Antenna

Sector	Antenna Make	Antenna Model	Ant CL Height AGL	Tip Height	Azimuth (TN)	Elec Tilt	Mech Tilt	Gain	Beam Width	Regulatory Power	Callsigns								
											700	850	1900	2100	28 GHz	31 GHz	39 GHz	CBRS	CBAND
0001	Ericsson	AIR6419	155	156.2	30	6	0	23.61	102.4	918.71									WRNG712 WRNG713 WRNG714
01	Ericsson	AIR3283	155	157	30	2	0	17.37	65	543.14			KNLF240 KNLG975						
0003	Ericsson	AIR6419	155	156.2	235	6	0	23.61	102.4	918.71									WRNG712 WRNG713 WRNG714
03	Ericsson	AIR3283	155	157	235	2	0	17.37	65	543.14			KNLF240 KNLG975						
0002	Ericsson	AIR6419	155	156.2	130	6	0	23.61	102.4	918.71									WRNG708 WRNG709 WRNG710 WRNG711 WRNG712
0002	Ericsson	AIR6419	155	156.2	130	6	0	23.61	102.4	918.71									WRNG712 WRNG713 WRNG714
02	Ericsson	AIR3283	155	157	130	2	0	17.37	65	543.14			KNLF240 KNLG975						
0001	Ericsson	AIR6419	155	156.2	30	6	0	23.61	102.4	918.71									WRNG708 WRNG709 WRNG710 WRNG711 WRNG712
0003	Ericsson	AIR6419	155	156.2	235	6	0	23.61	102.4	918.71									WRNG708 WRNG709 WRNG710 WRNG711 WRNG712

Callsigns

Callsign	Market	Radio Code	Market Number	Block	State	County	Licensee Name	Wholly Owned	Total MHZ	Freq Range 1	Freq Range 2	Freq Range 3	Freq Range 4	Regulatory Power	Threshold (W)	POPs /Sq Mi	Status	Action	Approved for Insvc
KNLG975	*Green Bay, WI*	*CW*	*BTA173*	*E*	*55029*	*Door*	*Alltel Corporation*	*Yes*	*10.000*	*1885.000-1890.000*	*1965.000-1970.000*	*.000-.000*	*.000-.000*	*543.14*	*3280*	*62.38*	*Active*	*added*	*Yes*
WRHG566	Green Bay, WI	UU	PEA209	M10	55029	Door	Cellco Partnership	Yes	100.000	38500.000-38600.000	.000-.000	.000-.000	.000-.000		0	62.38	Active		Yes
WRHG571	Green Bay, WI	UU	PEA209	M6	55029	Door	Cellco Partnership	Yes	100.000	38100.000-38200.000	.000-.000	.000-.000	.000-.000		0	62.38	Active		Yes
WRHG565	Green Bay, WI	UU	PEA209	M1	55029	Door	Cellco Partnership	Yes	100.000	37600.000-37700.000	.000-.000	.000-.000	.000-.000		0	62.38	Active		Yes
WRHG573	Green Bay, WI	UU	PEA209	M8	55029	Door	Cellco Partnership	Yes	100.000	38300.000-38400.000	.000-.000	.000-.000	.000-.000		0	62.38	Active		Yes
WQVN955	Green Bay, WI-MI	AT	BEA059	I	55029	Door	Cellco Partnership	Yes	10.000	1765.000-1770.000	2165.000-2170.000	.000-.000	.000-.000		3280	62.38	Active		Yes
WRHG576	Green Bay, WI	UU	PEA209	N2	55029	Door	Cellco Partnership	Yes	100.000	38700.000-38800.000	.000-.000	.000-.000	.000-.000		0	62.38	Active		Yes
WRHG574	Green Bay, WI	UU	PEA209	M9	55029	Door	Cellco Partnership	Yes	100.000	38400.000-38500.000	.000-.000	.000-.000	.000-.000		0	62.38	Active		Yes
WQGB355	Wisconsin 10 - Door	AW	CMA717	A	55029	Door	Cellco Partnership	Yes	20.000	1710.000-1720.000	2110.000-2120.000	.000-.000	.000-.000		3280	62.38	Active		Yes
WRHG567	Green Bay, WI	UU	PEA209	M2	55029	Door	Cellco Partnership	Yes	100.000	37700.000-37800.000	.000-.000	.000-.000	.000-.000		0	62.38	Active		Yes
WRHG570	Green Bay, WI	UU	PEA209	M5	55029	Door	Cellco Partnership	Yes	100.000	38000.000-38100.000	.000-.000	.000-.000	.000-.000		0	62.38	Active		Yes
WRNG710	*Green Bay, WI*	*PM*	*PEA209*	*A3*	*55029*	*Door*	*Cellco Partnership*	*Yes*	*20.000*	*3740.000-3760.000*	*.000-.000*	*.000-.000*	*.000-.000*	*918.71*	*1640*	*62.38*	*Active*	*added*	*Yes*
WQVN954	Green Bay, WI-MI	AT	BEA059	H	55029	Door	Cellco Partnership	Yes	10.000	1760.000-1765.000	2160.000-2165.000	.000-.000	.000-.000		3280	62.38	Active		Yes
WRNG712	*Green Bay, WI*	*PM*	*PEA209*	*A5*	*55029*	*Door*	*Cellco Partnership*	*Yes*	*20.000*	*3780.000-3800.000*	*.000-.000*	*.000-.000*	*.000-.000*	*918.71*	*1640*	*62.38*	*Active*	*added*	*Yes*
WQPW449	Great Lakes	AW	REA003	D	55029	Door	Cellco Partnership	Yes	10.000	1735.000-1740.000	2135.000-2140.000	.000-.000	.000-.000		3280	62.38	Active		Yes
WRHG577	Green Bay, WI	UU	PEA209	N3	55029	Door	Cellco Partnership	Yes	100.000	38800.000-38900.000	.000-.000	.000-.000	.000-.000		0	62.38	Active		Yes
WRHG569	Green Bay, WI	UU	PEA209	M4	55029	Door	Cellco Partnership	Yes	100.000	37900.000-38000.000	.000-.000	.000-.000	.000-.000		0	62.38	Active		Yes
WQJQ691	Great Lakes	WU	REA003	C	55029	Door	Cellco Partnership	Yes	22.000	746.000-757.000	776.000-787.000	.000-.000	.000-.000		2000	62.38	Active		Yes
WRHG572	Green Bay, WI	UU	PEA209	M7	55029	Door	Cellco Partnership	Yes	100.000	38200.000-38300.000	.000-.000	.000-.000	.000-.000		0	62.38	Active		Yes
WRNG713	*Green Bay, WI*	*PM*	*PEA209*	*B1*	*55029*	*Door*	*Cellco Partnership*	*Yes*	*20.000*	*3800.000-3820.000*	*.000-.000*	*.000-.000*	*.000-.000*	*918.71*	*1640*	*62.38*	*Active*	*added*	*Yes*
KNLF240	*Milwaukee*	*CW*	*MTA020*	*B*	*55029*	*Door*	*Cellco Partnership*	*Yes*	*30.000*	*1870.000-1885.000*	*1950.000-1965.000*	*.000-.000*	*.000-.000*	*543.14*	*3280*	*62.38*	*Active*	*added*	*Yes*
WRNG714	*Green Bay, WI*	*PM*	*PEA209*	*B2*	*55029*	*Door*	*Cellco Partnership*	*Yes*	*20.000*	*3820.000-3840.000*	*.000-.000*	*.000-.000*	*.000-.000*	*918.71*	*1640*	*62.38*	*Active*	*added*	*Yes*

WRNG708	*Green Bay, WI*	*PM*	*PEA209*	*A1*	*55029*	*Door*	*Cellco Partnership*	*Yes*	*20.000*	*3700.000-3720.000*	*.000-.000*	*.000-.000*	*.000-.000*	*918.71*	*1640*	*62.38*	*Active*	*added*	*Yes*
WRNG709	*Green Bay, WI*	*PM*	*PEA209*	*A2*	*55029*	*Door*	*Cellco Partnership*	*Yes*	*20.000*	*3720.000-3740.000*	*.000-.000*	*.000-.000*	*.000-.000*	*918.71*	*1640*	*62.38*	*Active*	*added*	*Yes*
WRHG575	Green Bay, WI	UU	PEA209	N1	55029	Door	Cellco Partnership	Yes	100.000	38600.000-38700.000	.000-.000	.000-.000	.000-.000		0	62.38	Active		Yes
WRHG568	Green Bay, WI	UU	PEA209	M3	55029	Door	Cellco Partnership	Yes	100.000	37800.000-37900.000	.000-.000	.000-.000	.000-.000		0	62.38	Active		Yes
WRNG711	*Green Bay, WI*	*PM*	*PEA209*	*A4*	*55029*	*Door*	*Cellco Partnership*	*Yes*	*20.000*	*3760.000-3780.000*	*.000-.000*	*.000-.000*	*.000-.000*	*918.71*	*1640*	*62.38*	*Active*	*added*	*Yes*



Alpha
(Proposed)

Legends

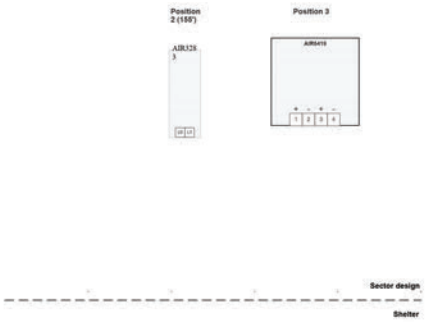
RET dc signal capable port

700/850(LB)
700(LT)
850(CB)
AWS(AW)
PCS(PC)
AWS/PCS(HB)
28GHz(U28)
39GHz(U39)
L-Sub6(S6)
CBRS(RS)
LAA(LA)
Fiber
AISG
DC

Coax
Coax Jumper
Sectors Shared Equipments

Notes:

-Antenna view is from the back of the antennas
-Colors of connections are just for clarification
-Size of objects in drawing doesn't reflect equipment true dimensions



Beta
(Proposed)

Legends

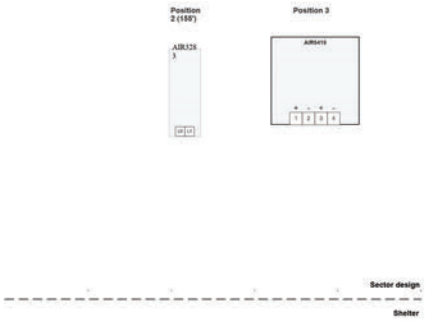
RET dc signal capable port

700/850(LB)
700(LT)
850(CB)
AWS(AW)
PCS(PC)
AWS/PCS(HB)
28GHz(U28)
39GHz(U39)
L-Sub6(S6)
CBRS(RS)
LAA(LA)
Fiber
AISG
DC

Coax
Coax Jumper
Sectors Shared Equipments

Notes:

-Antenna view is from the back of the antennas
-Colors of connections are just for clarification
-Size of objects in drawing doesn't reflect equipment true dimensions



Gamma
(Proposed)

Legends

RET dc signal capable port

700/850(LB)
700(LT)
850(CB)
AWS(AW)
PCS(PC)
AWS/PCS(HB)
28GHz(U28)
39GHz(U39)
L-Sub6(S6)
CBRS(RS)
LAA(LA)
Fiber
AISG
DC

Coax
Coax Jumper
Sectors Shared Equipments

Notes:

-Antenna view is from the back of the antennas
-Colors of connections are just for clarification
-Size of objects in drawing doesn't reflect equipment true dimensions