CITY PLAN COMMISSION AGENDA

October 29, 2024 at 4:00 PM

City Hall, 3rd Floor - Council Chambers, 828 Center Avenue, Sheboygan, WI

Persons with disabilities who need accommodations to attend this meeting should contact the Department of City Development, (920) 459-3377. Persons other than commission, committee, and board members who wish to participate remotely shall provide notice to the City Development Department at 920-459-3377 at least 24 hours before the meeting so that the person may be provided a remote link for that purpose.

OPENING OF MEETING

1. Roll Call
2. Pledge of Allegiance
3. Identify potential conflict of interest

MINUTES

4. Approval of the Plan Commission minutes from October 15, 2024.

PUBLIC HEARINGS

5. Public hearing regarding conditional use application by Sheboygan County Warming Center to operate a warming center at St. Luke Methodius Church located at 623 Ontario Avenue.
6. Public hearing regarding conditional use application by The Towers, LLC to construct a new 135'-10" high communication tower at 2219 Sauk Trail Road.

ITEMS FOR DISCUSSION AND POSSIBLE ACTION

7. Gen. Ord. No. 20-24-25 by Alderpersons Belanger and La Fave amending the City of Sheboygan Official Zoning Map of the Sheboygan Zoning Ordinance to change the Use District Classification of property located at 2258 Calumet Drive from Class Neighborhood Residential (NR-6) to Class Urban Commercial (UC) Classification. REFER TO CITY PLAN COMMISSION
8. R. O. No. 73-24-25 by City Clerk submitting an application from Pao Yang for amendment to the official zoning map for the City of Sheboygan from Pao Yang for property located at 2258 Calumet Drive – Parcel No. 59281621470. REFER TO CITY PLAN COMMISSION
9. Conditional use application by Sheboygan County Warming Center to operate a warming center at St. Luke Methodius Church located at 623 Ontario Avenue.
10. Conditional Use application by The Towers, LLC to construct a new 135'-10" high communication tower at 2219 Sauk Trail Road.
11. Concept Plan by Rachel Kohler to construct three new single-family homes, a family hall building, and a pool and gym building located at 120 Vollrath Boulevard.

NEXT MEETING

12. November 12, 2024

ADJOURN

13. Motion to Adjourn

In compliance with Wisconsin's Open Meetings Law, this agenda was posted in the following locations more than 24 hours prior to the time of the meeting:

City Hall • Mead Public Library
Sheboygan County Administration Building • City's website

CITY OF SHEBOYGAN

CITY PLAN COMMISSION MINUTES

Tuesday, October 15, 2024

MEMBERS PRESENT: Mayor Ryan Sorenson**,** Alderperson John Belanger, Marilyn Montemayor, Kevin Jump, Braden Schmidt and Kimberly Meller
EXCUSED: Jerry Jones
STAFF/OFFICIALS PRESENT: City Administrator Casey Bradley, Finance Director Kaitlyn Krueger, Associate Planner Ellise Rose and Building Inspection Specialist Linnae Wierus

OPENING OF MEETING

1. Roll Call

   Mayor Sorenson called the meeting to order at 4 PM.

2. Pledge of Allegiance

   The Pledge of Allegiance was recited.

3. Identify potential conflict of interest

   No committee member had a conflict.

MINUTES

4. Approval of the Plan Commission minutes from September 24, 2024.

   MOTION TO APPROVE THE MINUTES OF THE PREVIOUS MEETING HELD ON SEPTEMBER 24, 2024.
   Motion made by Alderperson John Belanger, seconded by Kimberly Meller
   Voting yea: Mayor Ryan Sorenson**,** Alderperson John Belanger, Marilyn Montemayor, Kevin Jump, Braden Schmidt and Kimberly Meller

   Motion carried.

PUBLIC HEARINGS

5. Public hearing regarding application for Conditional Use with exceptions by Sara Wolske to construct a new apartment at 1211 Superior Avenue. UC zone

   Bryan Kelly spoke about the need for housing in the City of Sheboygan.

   MOTION TO CLOSE THE PUBLIC HEARING.
   Motion made by Alderperson John Belanger, seconded by Braden Schmidt
   Voting yea: Mayor Ryan Sorenson**,** Alderperson John Belanger, Marilyn Montemayor, Kevin Jump, Braden Schmidt and Kimberly Meller

   Motion carried.

6. Public Hearing regarding application for Conditional Use with exceptions by Jeff Rittenhouse to construct new 2nd floor apartments at 1226 N. 8th Street. CC zone

Bryan Kelly spoke about the need for housing in the City of Sheboygan.

MOTION TO CLOSE THE PUBLIC HEARING.
Motion made by Alderperson John Belanger, seconded by Braden Schmidt
Voting yea: Mayor Ryan Sorenson**,** Alderperson John Belanger, Marilyn Montemayor, Kevin Jump, Braden Schmidt and Kimberly Meller

Motion carried.

ITEMS FOR DISCUSSION AND POSSIBLE ACTION

7. Application for Conditional Use with exceptions by Sara Wolske to construct a new apartment at 1211 Superior Avenue. UC zone

MOTION TO APPROVE WITH THE FOLLOWING CONDITIONS.
Motion made by Alderperson John Belanger, seconded by Braden Schmidt
Voting yea: Mayor Ryan Sorenson**,** Alderperson John Belanger, Marilyn Montemayor, Kevin Jump, Braden Schmidt and Kimberly Meller

1. Prior to building permit issuance, the applicant shall obtain all licenses/permits as well as meet all required codes including but not limited to building, plumbing, electrical, HVAC, fire, etc. An occupancy permit will be granted only at such time as the applicant has met all requirements.
2. If using dumpsters, dumpster(s) shall be screened/enclosed and constructed of like materials and colors of the facility. If using chain link fencing, the applicant shall install Privacy Decorative Slatting (PDS) material in order to effectively screen the dumpster.
3. Outdoor storage of materials, products or equipment shall be prohibited.
4. All lighting shall be installed per Section 105-932 of the City of Sheboygan Zoning Ordinance. There shall be no spillover light onto adjacent properties or the streets.
5. Applicant will provide adequate public access along streets and the parking lot/alley and will take all appropriate actions to minimize the time period that the street will be closed/affected.
6. It will be the applicant's responsibility to work with all private and public utilities in order to provide easements and/or relocate utilities as necessary.
7. Absolutely no portion of the building and/or site improvements shall cross the property lines including but not limited to buildings, balconies, decks, foundations, walls, gutters, eaves, roof, parking, fencing/retaining walls, signs, landscaping, etc. unless an encroachment is obtained permitting use of public right-of-way.
8. Any work within City of Sheboygan Public rights-of-way shall be discussed with the City Engineering Department and constructed to standard City specifications (including, but not limited to, driveway openings, curb, gutter, sidewalk, pavement, utilities, street trees, etc.).
9. If there are to be any exterior renovations to the facility, the applicant will be required to obtain Architectural Review Board approval prior to receiving a building permit for such renovation.
10. If operating as a short-term rental, the applicant will be required to file the proper room tax paper work with the City of Sheboygan.
11. If there are any amendments to the conditional use, the applicant will be required to submit a new conditional use application reflecting those amendments.

Motion carried.

8. Application for Conditional Use with exceptions by Jeff Rittenhouse to construct new 2nd floor apartments at 1226 N. 8th Street. CC zone

MOTION TO APPROVE WITH THE FOLLOWING CONDITIONS.
Motion made by Alderperson John Belanger, seconded by Braden Schmidt
Voting yea: Mayor Ryan Sorenson**,** Alderperson John Belanger, Marilyn Montemayor, Kevin Jump, Braden Schmidt and Kimberly Meller

1. Prior to building permit issuance, the applicant shall obtain all licenses/permits as well as meet all required codes including but not limited to building, plumbing, electrical, HVAC, fire, etc. An occupancy permit will be granted only at such time as the applicant has met all requirements.
2. If using dumpsters, dumpster(s) shall be screened/enclosed and constructed of like materials and colors of the facility. If using chain link fencing, the applicant shall install Privacy Decorative Slatting (PDS) material in order to effectively screen the dumpster.
3. Outdoor storage of materials, products or equipment shall be prohibited.
4. All lighting shall be installed per Section 105-932 of the City of Sheboygan Zoning Ordinance. There shall be no spillover light onto adjacent properties or the streets.
5. Applicant will provide adequate public access along streets and the parking lot/alley and will take all appropriate actions to minimize the time period that the street will be closed/affected.
6. It will be the applicant's responsibility to work with all private and public utilities in order to provide easements and/or relocate utilities as necessary.
7. Absolutely no portion of the new building and/or site improvements shall cross the property lines including but not limited to buildings, balconies, decks, foundations, walls, gutters, eaves, roof, parking, fencing/retaining walls, signs, landscaping, etc. unless an encroachment is obtained permitting use of public right-of-way.
8. Any work within City of Sheboygan Public rights-of-way shall be discussed with the City Engineering Department and constructed to standard City specifications (including, but not limited to, driveway openings, curb, gutter, sidewalk, pavement, utilities, street trees, etc.).
9. Applicant shall obtain the necessary sign permits prior to installation. Proposed signage shall meet the 8th Street design guidelines.
10. If there are to be any exterior renovations to the facility, the applicant will be required to obtain Architectural Review Board approval prior to receiving a building permit for such renovation.
11. If operating as a short-term rental, the applicant will be required to file the proper room tax paper work with the City of Sheboygan.
12. If there are any amendments to the conditional use, the applicant will be required to submit a new conditional use application reflecting those amendments.

Motion carried.

9. R. O. No. 66-24-25 by City Administrator Casey Bradley submitting Capital Improvements Program (CIP) Requests for the years 2025-2029. REFER TO CITY PLAN COMMISSION

MOTION TO RECOMMEND APPROVAL TO THE COMMON COUNCIL.
Motion made by Alderperson John Belanger, seconded by Braden Schmidt
Voting yea: Mayor Ryan Sorenson**,** Alderperson John Belanger, Marilyn Montemayor, Kevin Jump, Braden Schmidt and Kimberly Meller

Motion carried.

NEXT MEETING

10. October 29, 2024

The next meeting is scheduled to be held on October 29, 2024.

ADJOURN

11. Motion to Adjourn

MOTION TO ADJOURN AT 4:15 PM
Motion made by Alderperson John Belanger, seconded by Braden Schmidt
Voting yea: Mayor Ryan Sorenson**,** Alderperson John Belanger, Marilyn Montemayor, Kevin Jump, Braden Schmidt and Kimberly Meller

CITY OF SHEBOYGAN

REQUEST FOR CITY PLAN COMMISSION CONSIDERATION

ITEM DESCRIPTION: Conditional use application by Sheboygan County Warming Center to operate a warming center at St. Luke Methodius Church located at 623 Ontario Avenue. UR-12 Zone

REPORT PREPARED BY: Ellise Rose, Associate Planner

REPORT DATE: October 21, 2024 **MEETING DATE:** October 29, 2024

FISCAL SUMMARY:

Budget Line Item:	N/A
Budget Summary:	N/A
Budgeted Expenditure:	N/A
Budgeted Revenue:	N/A

STATUTORY REFERENCE:

Wisconsin Statutes:	N/A
Municipal Code:	N/A

BACKGROUND / ANALYSIS:

Sheboygan County Warming Center is proposing to operate a warming center at St. Luke Methodius Church located at 623 Ontario Avenue. The applicant states the following about the project:

- The proposed use is to provide temporary, safe shelter for adults (over 18) individuals who may be homeless because of emergencies of any kind, including transients who will be housed on an overnight basis pending availability.
- We are using the Fellowship Hall, Parlor and a room on the first floor (Nursery Room), bathrooms and kitchen.
- This site was selected because of location -this church is located down town and in a high traffic area for homeless. The church has a dwindling congregation and adequate space available.
- Guests are welcome to arrive between 6:00 PM and 8:00 PM. After this time, admission will only be granted with a police referral. Once signed in, guests who leave the premises will not be allowed to re-enter.
- A warm meal and a cot for sleeping will be provided, with lights out by 10:00 PM. Wake-up time is at 6:15 AM, followed by a light breakfast. All guests are expected to depart by 7:30 AM.
- The projected number of residents (based on 2023-2024 season) is between 30-45 guests nightly, 3-4 employees and 3-4 volunteers nightly.
- The square footage is: Men’s area 100’ x 30’ Women’s Area 63’ x 48’.

- At this time there are no renovations.
- Signage will be small yard signs.
- Currently the church houses the Community Café, BabyCare and a food pantry. We feel the Warming Center will fit in perfectly as this location already sees many low-income and homeless individuals in this area.
- We will ensure our guests do not congregate outside more than 15 minutes before posted opening times. In inclement weather this location has an area where the guests can wait inside and should not be loitering around the facility.
- There is undeniable need in our Community for a warming center especially in colder months, to protect vulnerable populations, including those without stable housing.
- Much like the Community Cafe and food pantry, the warming center would be managed in a way that minimizes disruption. We will ensure it remains clean, well-supervised, and orderly.
- A warming center contributes to the overall well-being of the community, reducing health risks associated with extreme cold and providing a safe space for those in need.
- This downtown location is where most of our clientele are located. There is plenty of room inside to accommodate anybody that is outdoors during the cold winter months.
- Supporting the City's Vision for a strong, inclusive community we are creating a strong, inclusive community that addresses the needs of all its residents. By providing temporary shelter to individuals experiencing homelessness, our proposal directly contributes to this goal by offering a safe space for vulnerable populations, promoting human dignity, and fostering community well-being. This aligns with the city's vision of inclusiveness and social support for all members of society.
- We are adding in addressing housing and homelessness issues. The Warming Center is providing safe, affordable housing and addressing homelessness. The temporary shelter helps meet an urgent need for emergency housing, especially in response to unforeseen crises. By offering a short-term solution for those facing homelessness, the project supports the city's housing objectives and complements efforts to prevent chronic homelessness.
- Our proposed shelter operates in collaboration with local authorities (e.g., police referrals after hours), contributing to a safer, more structured response to homelessness. This reduces the likelihood of vulnerable individuals remaining unsheltered overnight, which can reduce risks to both the individuals and the broader community. The alignment with public safety goals is evident in the controlled admittance process, managed operating hours, and provision of basic services like meals and sleeping arrangements.
- We feel we are utilizing existing community resources efficiently by making effective use of existing space within the church, a resource already available in the community. Repurposing underutilized spaces within existing structures is often encouraged by city plans, as it reduces the need for new construction and makes efficient use of community assets. This supports the city's goal of sustainable and resource-conscious development.
- We do not believe neighborhood character will be severely affected. Obviously, it will be a higher traffic area before opening and after closing but we do not believe it will have a big impact.

- We believe that this project is in alignment with the neighborhood and the property. Downtown is where many of the homeless are and instead of having them laying on benches or trying to set up other encampments we are housing them in a dignified manner.

STAFF COMMENTS:

The Plan Commission may want to have the applicant address:

- How the warming center interacts with Church activities?
- During what months will the warming center be operated?

ACTION REQUESTED:

Staff recommends approval of the conditional use permit subject to the following conditions:

1. Prior to operation/occupancy of the warming center, the applicant shall obtain an occupancy permit as well as meet all required codes including but not limited to building, plumbing, electrical, HVAC, fire, health, State of Wisconsin, etc. An occupancy permit will be granted only at such time as the applicant has met all requirements.
2. City Development staff will issue a building permit only if the applicant has adequately satisfied all Sheboygan Fire Department issues and/or concerns.
3. The warming center is permitted to operate yearly at St. Luke Methodius Church.
4. This conditional use permit is for the warming center use only. No other temporary use may operate from this facility/site. This use permit is not transferable and any future proposal would require a new conditional use permit to operate from this property.
5. Applicant shall adequately monitor/regulate and maintain this property.
6. In no instance shall the use create a nuisance for neighboring properties (noise, hours of operation, garbage, loitering, etc.).
7. Applicant shall obtain the necessary sign permits prior to installation. If staff has any concerns with proposed signage design, the matter may be brought back to the Plan Commission for their consideration.
8. All new lighting shall be installed per Section 105-932 of the City of Sheboygan Zoning Ordinance. There shall be no spillover light onto adjacent streets and/or properties.
9. Dumpsters shall be screened/enclosed and constructed of like materials and colors of the facility. If using chain link fencing, the applicant shall install Privacy Decorative Slatting (PDS) material in order to effectively screen/enclose the dumpsters. Dumpster enclosure shall be completed prior to issuance of an occupancy permit.
10. Outdoor storage of materials, products or equipment shall be prohibited.
11. If there are to be any renovation to the exterior of the facility, the applicant will be required to obtain approval from the Architectural Review Board prior to receiving a building permit for such renovation.
12. If there are any amendments to the approved use and/or site plan, the applicant will be required to submit a new site plan and/or conditional use application reflecting those amendments.

ATTACHMENTS:

Conditional Use Permit Application and required attachments.

City of Sheboygan spirit on the lake	**CITY OF SHEBOYGAN** **APPLICATION FOR CONDITIONAL USE**	**Fee:** $250.00 **Review Date:** _____ **Zoning:** _____

Read all instructions before completing. If additional space is needed, attach additional pages.

SECTION 1: Applicant/ Permittee Information			
Applicant Name (Ind., Org. or Entity) Sheboygan County Warming Center	Authorized Representative Lizabeth Kroll	Title Board Member	
Mailing Address PO Box 63	City Sheboygan	State WI	ZIP Code 53081
Email Address sheb.co.wc@gmail.com	Phone Number (incl. area code) 920-946-9880		
SECTION 2: Landowner Information (complete these fields when project site owner is different than applicant)			
Applicant Name (Ind., Org. or Entity) St. Luke UMC	Contact Person Ruth Hallstead	Title Pastor	
Mailing Address 623 Ontario Avenue	City Sheboygan	State WI	ZIP Code 53081
Email Address pastor@stluke.net	Phone Number (incl. area code) 920-458-4025		
SECTION 3: Project or Site Location			
Project Address/Description 623 Ontario Avenue, Sheboygan, WI		Parcel No. 59281105980	

SECTION 4: Proposed Conditional Use	
Name of Proposed/Existing Business:	St. Luke United Methodist Church
Existing Zoning:	Urban Residential -12th District
Present Use of Parcel:	Church, Community Cafe,
Proposed Use of Parcel:	Warming Center, Church, Community Cafe
Present Use of Adjacent Properties:	Hotel/Short term home for Co-ops & Interns, Condos

SECTION 5: Certification and Permission

Certification: I hereby certify that I am the owner or authorized representative of the owner of the property which is the subject of this Permit Application. I certify that the information contained in this form and attachments is true and accurate. I certify that the project will be in compliance with all permit conditions. I understand that failure to comply with any or all of the provisions of the permit may result in permit revocation and a fine and/or forfeiture under the provisions of applicable laws.

Permission: I hereby give the City permission to enter and inspect the property at reasonable times, to evaluate this notice and application, and to determine compliance with any resulting permit coverage.

Name of Owner/Authorized Representative (please print)	Title	Phone Number
Ruth Hallstead	Pastor	920-458-4025
Signature of Applicant		Date Signed

Complete application is to be filed with the Department of City Development, 828 Center Avenue, Suite 208. To be placed on the agenda of the City Plan Commission, application must be filed three weeks prior to date of meeting – check with City Development on application submittal deadline date. Applications will not be processed if all required attachments and filing fee of $250 (payable to the City of Sheboygan) are not submitted along with a complete and legible application. Application filing fee is non-refundable.

A. Name of project/development. Sheboygan County Warming Center

B. Summary of the Conditional Use and general operation of proposed use:

• Description of existing use – Used as a Church Fellowship Hall and Community Cafe

• Description of proposed use (indoor, outdoor, etc.), why was this site selected? – Indoor use to provide temporary, safe shelter for adults (over 18) individuals who may be homeless because of emergencies of any kind, including transients who will be housed on an overnight basis pending availability. We are using the Fellowship Hall, Parlor and a room on the first floor (Nursery Room), bathrooms and kitchen. This site was selected because of location -this church is located down town and in a high traffic area for homeless. The church has a dwindling congregation and they adequate space available.

• All services, products, etc. to be provided - Guests are welcome to arrive between 6:00 PM and 8:00 PM. After this time, admission will only be granted with a police referral. Once signed in, guests who leave the premises will not be allowed to re-enter. A warm meal and a cot for sleeping will be provided, with lights out by 10:00 PM. Wake-up time is at 6:15 AM, followed by a light breakfast. All guests are expected to depart by 7:30 AM.

• Projected number of residents, employees, and/or daily customers- Residents (based on 2023-2024 season) between 30-45 guests nightly, 3-4 employees and 3-4 volunteers nightly.

• Proposed number of dwelling units, floor area, landscape area, and parking area expressed in – We anticipate 30-45 guests nightly.

square feet and acreage to the nearest one-hundredth of an acre – the square footage is: Men's area 100' x 30' Womens Area 63' x 48'.

• Description of proposed building and all new site improvements (square footage of new and

existing structure(s), traffic, ingress/egress, parking, sidewalk, retaining walls, storm drainage,

landscaping, lighting, dumpster enclosure, screening of mechanicals, etc.)- NA

• A written description of the proposed general orientation, design, arrangement, texture,

material and color of the building or structure and how it is compatible with the development

and redevelopment in and around the area- NA

• An explanation of any interior and/or exterior renovations – at this time no renovations

• Is access appropriate and is their sufficient customers/resident off-street parking? Yes

• Proposed signage – small yard signs

• Project timeline and estimated value of project – NA

• Compatibility of the proposed use and design with adjacent and other properties in the area. – Currently the church houses the Community Café, BabyCare and a food pantry. We feel the Warming

Center will fit in perfectly as this location already sees many low-income and homeless individuals in this area.

• How will you insure that the business will not become a nuisance to adjacent properties (i.e. parking, noise, smells, hours of operations, etc. – We will ensure our guests do not congregate outside more than 15 minutes before posted opening times. In inclement weather this location has an area where the guests can wait inside and should not be loitering around the facility.

• Other information that would be considered pertinent by the Plan Commission. – There is undeniable need in our Community for a warming center especially in colder months, to protect vulnerable populations, including those without stable housing.

Much like the Community Cafe and food pantry, the warming center would be managed in a way that minimizes disruption. We will ensure it remains clean, well-supervised, and orderly.

A warming center contributes to the overall well-being of the community, reducing health risks associated with extreme cold and providing a safe space for those in need.

C. If applicable, please describe any exceptions/variances that are required for this project (i.e.

setbacks, parking, landscaping, etc.) NA

D. Written justification for the proposed conditional use, indicating reasons why the applicant believes the proposed conditional use is appropriate: - This downtown location where most of our clientele are located. Plenty of room inside to accommodate anybody that is outdoors during the cold winter months.

a) How is the proposed conditional use (independent of its location) in harmony with the purposes, goals, objectives, policies and standards of the City of Sheboygan Comprehensive Master Plan? –

Supporting the City's Vision for a strong, inclusive community we are creating a strong, inclusive community that addresses the needs of all its residents. By providing temporary shelter to individuals experiencing homelessness, our proposal directly contributes to this goal by offering a safe space for vulnerable populations, promoting human dignity, and fostering community well-being. This aligns with the city's vision of inclusiveness and social support for all members of society.

We are adding in addressing housing and homelessness issues. The Warming Center is providing safe, affordable housing and addressing homelessness. The temporary shelter helps meet an urgent need for emergency housing, especially in response to unforeseen crises. By offering a short-term solution for those facing homelessness, the project supports the city's housing objectives and complements efforts to prevent chronic homelessness.

Our proposed shelter operates in collaboration with local authorities (e.g., police referrals after hours), contributing to a safer, more structured response to homelessness. This reduces the likelihood of vulnerable individuals remaining unsheltered overnight, which can reduce risks to both the individuals and the broader community. The alignment with public safety goals is evident in the controlled admittance process, managed operating hours, and provision of basic services like meals and sleeping arrangements.

We feel we are utilizing existing community resources efficiently by making effective use of existing space within the church, a resource already available in the community. Repurposing underutilized

spaces within existing structures is often encouraged by city plans, as it reduces the need for new construction and makes efficient use of community assets. This supports the city's goal of sustainable and resource-conscious development.

b) Does the conditional use, in its proposed location, result in any substantial or undue adverse impact on nearby property the character of the neighborhood, environment, traffic, public improvements, public property or rights-of-way? - No, we do not believe it will be severely affected. Obviously, it will be a higher traffic area before opening and after closing but we do not believe it will have a big impact.

c) How does the proposed conditional use maintain the desired consistency of land uses in relation to the setting within which the property is located? – We believe it is in alignment with the neighborhood and the property. Downtown is where many of the homeless are and instead of having them laying on benches or trying to set up other encampments we are housing them in a dignified manner.

d) Is the proposed conditional use located in an area that will be adequately served by utilities, or services provided by public agencies- Yes, it does.

CITY OF SHEBOYGAN

REQUEST FOR CITY PLAN COMMISSION CONSIDERATION

ITEM DESCRIPTION: Conditional Use application by The Towers, LLC to construct a new 135'-10" high communication tower at 2219 Sauk Trail Road. UI Zone

REPORT PREPARED BY: Ellise Rose, Associate Planner

REPORT DATE: October 21, 2024 **MEETING DATE:** October 29, 2024

FISCAL SUMMARY:

Budget Line Item:	N/A
Budget Summary:	N/A
Budgeted Expenditure:	N/A
Budgeted Revenue:	N/A

STATUTORY REFERENCE:

Wisconsin Statutes:	N/A
Municipal Code:	N/A

BACKGROUND / ANALYSIS:

The Tower, LLC is proposing to construct a new 135'-10" high communication tower at 2219 Sauk Trail Road. The applicant states the following about the proposed project:

- The existing use of this space is a grass/gravel area for the current business (Four Seasons Property Service, LLC).
- The proposed use is a cell tower to provide cellular coverage for the City of Sheboygan. Tower and compound are designed for up to 3 total carriers.
- The project includes a new monopole in a new 50'x50' chain link fence compound. Verizon Wireless to collocate on tower and inside compound.
- Antenna center will be at 120'
- Ground equipment located in southwest corner of compound.

The biggest concern with any tower proposal is the potential for collapse and potential life safety issues to adjoining properties and structures. The applicant has provided a fall certification letter from Brandon Sevier, P.E. from B&T Engineering, Inc., stamped by professional engineer Brad Milanowski, that states:

- It is our understanding that this Monopole structure will be designed such that, if a failure were to occur due to a significant storm or other event, the pole would fall within a radius

of 30’ from the base of the structure. Although the pole would not be designed to fail, stronger sections that required by analysis would be provided in the lower sections of the pole, resulting in an increased safety factor in the lower sections. In the highly unlikely event that this pole were to experience operational failure due to catastrophic wind loading, the design would enable the pole to fail through compression buckling. Failure in this manner would result in the upper portion of the pole buckling and folding over the lower portion, resulting in a fall radius of 30’ from the base of the pole.

- It should be understood that this opinion does not consider unpredictable extreme catastrophic events for which the structure is not designed. However, any damage to surrounding property caused by the pole failing during such an event would be relatively insignificant when compared to the damage caused to the surrounding property by the event itself.

ACTION REQUESTED:

Staff recommends approval of the conditional use permit subject to the following conditions:

1. The applicant shall obtain all necessary permits/licenses from all required agencies to construct the communications tower, associated mechanical equipment, fencing, paving, etc. as proposed.
2. Submittal and approval of a proposed storm drainage plan prior to building permit issuance.
3. The applicant shall pave the parking and/or access drives that lead to the tower.
4. Applicant shall design the tower based on the engineering documentation that was used concerning the towers design and buckling capabilities.
5. The wireless communication tower and equipment shall be properly maintained.
6. Towers shall have a non-reflective surface and a neutral color that is the same or similar color as the supporting structure to be as visually unobtrusive as possible, or, if required by the FAA, be painted pursuant to the FAA’s requirements.
7. If the tower has been discontinued for a period of six consecutive months or longer it is hereby declared “abandoned.” If there are two or more users of this wireless telecommunications tower, then this abandonment is not effective until all users cease using this wireless telecommunications tower.
8. Abandoned facilities, as defined in condition 7 above, shall be removed by the property owner within ninety (90) days from date of abandonment. If the wireless telecommunications tower is not removed within said ninety (90) days, the City may remove the wireless telecommunications tower at the property owner’s expense.
9. Any future installations and/or providers wishing to collocate on this wireless telecommunications tower or modify existing equipment shall be required to obtain the appropriate collocation permit prior to installation and operation.

ATTACHMENTS:

Conditional Use Permit Application and required attachments.

RAMAKER
employee-owned

October 3, 2024

Planning & Development
City of Sheboygan City Hall
828 Center Avenue, Suite 208
Sheboygan, WI 53081
(920) 459-3377
development@sheboyganwi.gov

SUBJECT: ZONING APPLICATION COVER LETTER FOR PARCEL # 59281425610

To Whom It May Concern:

I am writing this letter to inform you that Ramaker & Associates, Inc. is submitting this application on behalf of The Towers, LLC. I have included with this cover letter the enclosures listed at the bottom of this letter. Please direct any zoning related questions, concerns, and/or requests to the individual listed below.

Brad Witmer
(608) 644-2241
bwitmer@ramaker.com

Please note, per Wisconsin State Statute 66.0404(2)(d), we consider this application as complete upon receipt unless we are otherwise notified. Please feel free to call or email should you have any questions and/or concerns.

Sincerely,

Chad Morgan
Project Manager
Ramaker & Associates, Inc.

Enclosures:
Application
Check for Application Fees ($3,000)
Construction Drawings
Mount Analysis
FAA DNH
FCC Letter
Verizon Affidavit including Project Narrative
Tower Inventory
Fall Certified Letter
NTP

City of Sheboygan spirit on the lake	**CITY OF SHEBOYGAN APPLICATION TO OBTAIN A ZONING PERMIT FOR COLLOCATION OR EQUIPMENT MODIFICATION ON AN EXISTING COMMUNICATION TOWER OR CONSTRUCTION OF A NEW COMMUNICATION TOWER**	**Fee:** _____ **Review date:** _____

Read all instructions before completing. If additional space is needed, attach additional pages.

SECTION 1: Tower Owner Information

Name (Ind., Org. or Entity)	Authorized Representative	Title	
The Towers, LLC	Daniel Kalina	Project Manager	
Mailing Address	**City**	**State**	**ZIP Code**
750 Park of Commerce Drive, Suite 200	Boca Raton	FL	33487
Email Address	**Phone Number (incl. area code)**		
daniel.kalina@verticalbridge.com	(630) 946-7741		

SECTION 2: Applicant Information

Name (Ind., Org. or Entity)	Contact Person	Title	
The Towers, LLC	Daniel Kalina	Project Manager	
Mailing Address	**City**	**State**	**ZIP Code**
750 Park of Commerce Drive, Suite 200	Boca Raton	FL	33487
Email Address	**Phone Number (incl. area code)**		
daniel.kalina@verticalbridge.com	(630) 946-7741		

SECTION 3: Property Owner Information

Name	Contact Person		
Matthew J & Lisa A Dross	Matthew Dross		
Mailing Address	**City**	**State**	**Zip**
N6425 Sherry Ln	Sheboygan	WI	53083
Email Address	**Phone Number (incl. area code)**		
md75@sbcglobal.net	(920) 912-8020		

SECTION 4: Description of the Subject Site/Proposed Project

☐ COLLOCATION OR EQUIPMENT MODIFICATION
☒ NEW TOWER

Name of Proposed/Existing Business:
The Towers, LLC/Four Seasons Property Service, LLC

Address of Affected Property:	Parcel Number:
2219 Sauk Trail Rd., Sheboygan, WI 53083	59281425610

Brief Description of Existing Operation or Use:
Existing grass/gravel area for current business (Four Seasons Property Service, LLC).

Brief Description of Proposed Operation or Use:
Cell tower to provide cellular coverage for the City of Sheboygan. Tower and compound are designed for up to 3 total carriers.

SECTION 5: Tower Information (Monopole, Self-Support Lattice, Guyed)

Brief Description of type of structure: Monopole Tower

Current Tower Height Above Ground Level: 135'-10"

Maximum Tower Height (Design Potential): 155'-10"

Base/Ground Elevation: 640' AMSL

Number of Carriers Currently on Tower: 1

Maximum Number of Carriers (Design Potential): 3

Proposed Tower/Equipment Modification (Brief Description):

New monopole in a new 50'x50' chain link fence compound. Verizon Wireless to collocate on tower and inside compound.

SECTION 6: Collocation Information

Location and Height of Proposed Collocation:

Antenna center at 120'. Ground equipment located in southwest corner of compound.

Provide information about existing collocation spots and carriers (if any). Please provide carrier name and their height on the tower:

120'-0" - Verizon Wireless
110'-0" - No Carrier
100'-0" - No Carrier

SECTION 7: Communication Tower Collocation/Modification Project Narrative

In a separate letter, please describe the proposed collocation/equipment modification project. Explain why the site was selected, the objectives of the project (such as fill coverage gap, install new updated equipment, etc.) and timeline for completion. If the proposal is part of a project to update equipment at other sites in the city, please describe the larger project. Applicant may want to attach a separate word document for the required narrative.

SECTION 5: Certification and Permission

Certification: I hereby certify that I am the owner or authorized representative of the owner of the property which is the subject of this Zoning Permit Application. I certify that the information contained in this form and attachments are true and accurate. I certify that the project will be in compliance with all conditions. I understand that failure to comply with any or all of the provisions of the permit may result in permit revocation and a fine and/or forfeiture under the provisions of applicable laws.

Permission: I hereby give the City permission to enter and inspect the property at reasonable times, to evaluate this notice and application, and to determine compliance with any resulting permit coverage.

Name of Owner/Authorized Representative (please print)	Title	Phone Number
Chad Morgan o/b/o The Towers, LLC	Project Manager	(608) 644-2250

Signature of Applicant	Date Signed
Chad Morgan	10/03/2024

Complete application is to be filed with the Department of City Development, 828 Center Avenue, Suite 208. If required to be placed on the agenda of the City Plan Commission, application must be filed three weeks prior to date of meeting – check with City Development on application submittal deadline date. Applications will not be processed if all required attachments and filing fee (payable to the City of Sheboygan) are not submitted along with a complete and legible application. Application filing fee is non-refundable.

RAMAKER
employee-owned

September 12, 2024

Planning & Development
City of Sheboygan
City Hall
828 Center Avenue, Suite 208
Sheboygan, WI 53081
(920) 459-3377
development@sheboyganwi.gov

SUBJECT: FCC LICENSE AND REGISTRATION NUMBERS (US-WI-5737 – Business Drive)

To Whom It May Concern:

The FCC does not require each antenna structure to be registered. The FCC requires an antenna structure must be registered in the FCC's Antenna Structure Registration (ASR) system if the antenna structure is more than 200 feet above the ground level or may interfere with the flight path of a nearby airport unless it meets an exception criteria outlined in 47 CFR17.7(e).

The proposed antenna structure is 125'-10" above ground level with a10'-0" tall lightning rod attached to the top; the total tower height will be 135'-10" above ground level. A DETERMINATION OF NO HAZARD TO AIR NAVIGATION 2024-AGL-8000-OE was completed by the FAA on 07/30/2024. The proposed antenna structure was run through TOWAIR and the results returned as follows. "Structure does not require registration. There are no airports within 8 kilometers (5 miles) of the coordinates you provided." With the above facts, it was deemed a FCC license and/or registration is not applicable for the proposed antenna structure.

Please feel free to call or email if you have any questions and/or comments.

Sincerely,

Chad Morgan

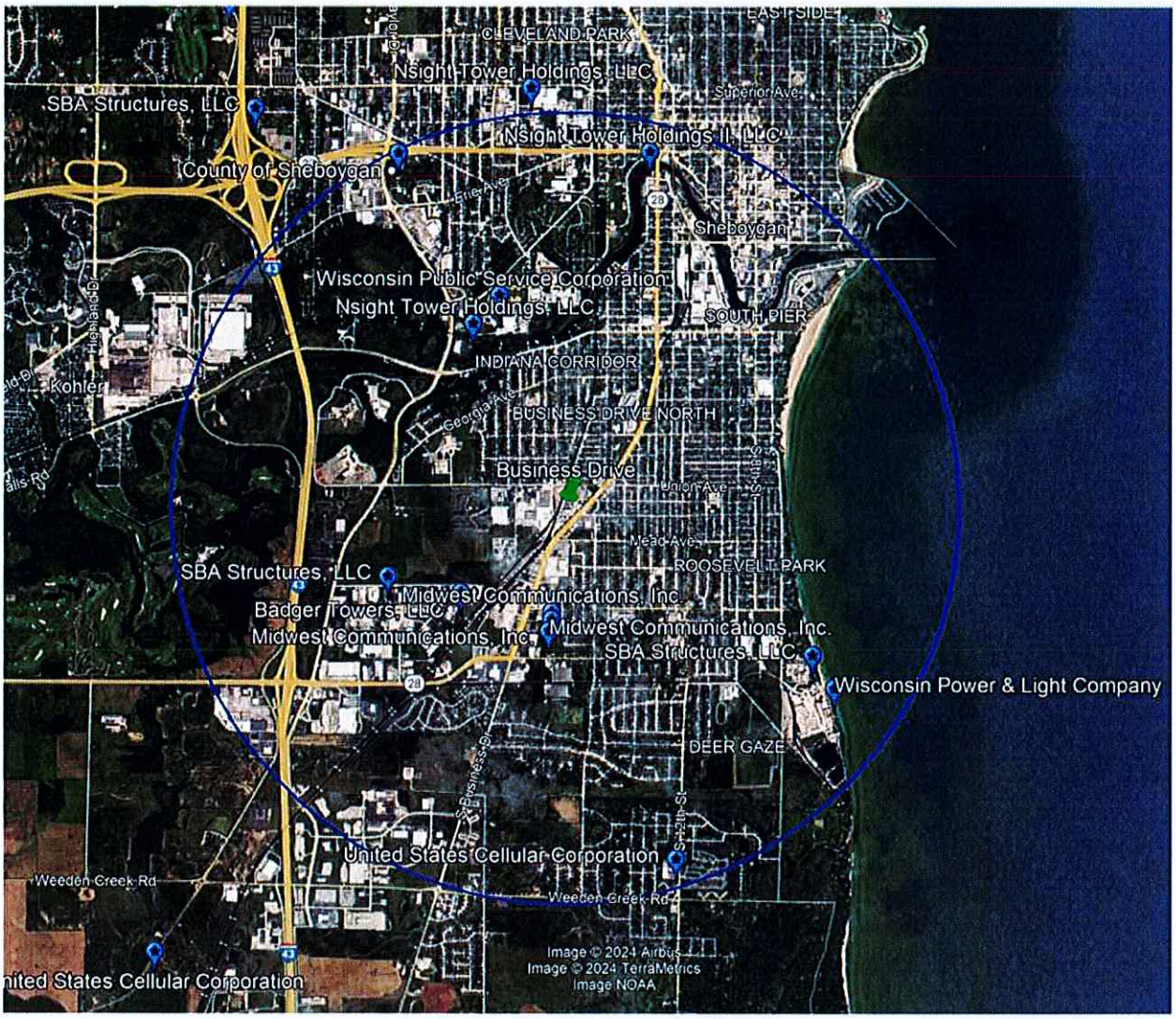
Chad Morgan
Project Manager
Ramaker & Associates, Inc.

RAMAKER
employee-owned

Tower Inventory (2-Mile Radius)

Site address: 2219 Sauk Trail Rd., Sheboygan, WI 53083
Site Name: US-WI-5737 – Business Drive

Map



FCC Antenna Structure Registration Study Results

Proposed tower location: Green Pin

Two-mile radius around proposed tower location: Blue circle

Latitude:	43° 43' 49.32" North (43.730367°)
Longitude:	87° 43' 56.23" West (-87.732286°)
Parcel ID:	59281425610
Jurisdiction:	City of Sheboygan

Existing tower locations: Blue Stars

Midwest Communications, Inc. tower:

FCC Registration:	1034761
Latitude:	43° 43' 16.00" North (43.721111°)
Longitude:	87° 44' 01.00" West (-87.733611°)
Tower Height:	89.0 meters AGL (292.0 feet AGL)
Distance to Proposed:	0.64 miles

Midwest Communications, Inc. tower:

FCC Registration:	1034762
Latitude:	43° 43' 14.00" North (43.720556°)
Longitude:	87° 44' 01.00" West (-87.733611°)
Tower Height:	89.0 meters AGL (292.0 feet AGL)
Distance to Proposed:	0.68 miles

Midwest Communications, Inc. tower:

FCC Registration:	1034763
Latitude:	43° 43' 11.00" North (43.719722°)
Longitude:	87° 44' 02.00" West (-87.733889°)
Tower Height:	89.0 meters AGL (292.0 feet AGL)
Distance to Proposed:	0.74 miles

Badger Towers LLC tower:

FCC Registration:	1042752
Latitude:	43° 43' 21.00" North (43.722500°)
Longitude:	87° 44' 34.00" West (-87.742778°)
Tower Height:	57.9 meters AGL (190.0 feet AGL)
Distance to Proposed:	0.75 miles

Nsight Tower Holdings, LLC tower:

FCC Registration:	1280489
Latitude:	43° 44' 31.60" North (43.742111°)
Longitude:	87° 44' 29.80" West (-87.741611°)
Tower Height:	30.5 meters AGL (100.1 feet AGL)

Distance to Proposed: 0.93 miles

SBA Structures, LLC tower:
FCC Registration: 1048876
Latitude: 43° 43' 25.30" North (43.723694°)
Longitude: 87° 45' 00.70" West (-87.750194°)
Tower Height: 57.0 meters AGL (187.0 feet AGL)
Distance to Proposed: 1.01 miles

Wisconsin Public Service Corporation tower:
FCC Registration: 1307067
Latitude: 43° 44' 38.90" North (43.744139°)
Longitude: 87° 44' 20.10" West (-87.738917°)
Tower Height: 60.7 meters AGL (199.1 feet AGL)
Distance to Proposed: 1.01 miles

SBA Structures, LLC tower:
FCC Registration: 1227847
Latitude: 43° 43' 04.70" North (43.717972°)
Longitude: 87° 42' 25.90" West (-87.707194°)
Tower Height: 61.0 meters AGL (200.1 feet AGL)
Distance to Proposed: 1.52 miles

Wisconsin Power & Light Company tower:
FCC Registration: 1035401
Latitude: 43° 42' 56.00" North (43.715556°)
Longitude: 87° 42' 18.00" West (-87.705000°)
Tower Height: 167.0 meters AGL (547.9 feet AGL)
Distance to Proposed: 1.71 miles

Nsight Tower Holdings, LLC tower:
FCC Registration: 1288098
Latitude: 43° 45' 16.70" North (43.754639°)
Longitude: 87° 43' 25.30" West (-87.723694°)
Tower Height: 18.3 meters AGL (60.0 feet AGL)
Distance to Proposed: 1.73 miles

County of Sheboygan tower:
FCC Registration: 1297511
Latitude: 43° 45' 16.30" North (43.754528°)
Longitude: 87° 44' 57.10" West (-87.749194°)
Tower Height: 79.0 meters AGL (259.2 feet AGL)
Distance to Proposed: 1.87 miles

United States Cellular Corporation tower:
FCC Registration: 1244115
Latitude: 43° 42' 11.20" North (43.703111°)

Longitude:	87° 43' 15.40" West (-87.720944°)
Tower Height:	41.1 meters AGL (134.8 feet AGL)
Distance to Proposed:	1.97 miles

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AGL-8000-OE

Item 6.

Issued Date: 07/30/2024

Julie Heffernan
The Towers, LLC
7500 Park of Commerce Dr
Suite 200
Boca Raton, FL 33487

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Antenna Tower US-WI-5737 - Business Drive
Location:	Sheboygan, WI
Latitude:	43-43-49.32N NAD 83
Longitude:	87-43-56.23W
Heights:	640 feet site elevation (SE)
	135 feet above ground level (AGL)
	775 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

Emissions from this site must be in compliance with the parameters set by collaboration between the FAA and telecommunications companies and reflected in the FAA 5G C band compatibility evaluation process (such as power, frequencies, and tilt angle). Operational use of this frequency band is not objectionable provided the Wireless Providers (WP) obtain and adhere to the parameters established by the FAA 5G C band compatibility evaluation process. **Failure to comply with this condition will void this determination of no hazard.**

See attachment for additional condition(s) or information.
Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 01/30/2026 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the appli

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Communications Commission (FCC) because the structure is subject to their licensing authority.

If we can be of further assistance, please contact our office at (817) 222-4832, or Michael.J-CTR.Costanzi@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AGL-8000-OE.

Signature Control No: 623986182-628639707 (DNE)
Michael Costanzi
Technician

Attachment(s)
Additional Information
Frequency Data
Map(s)

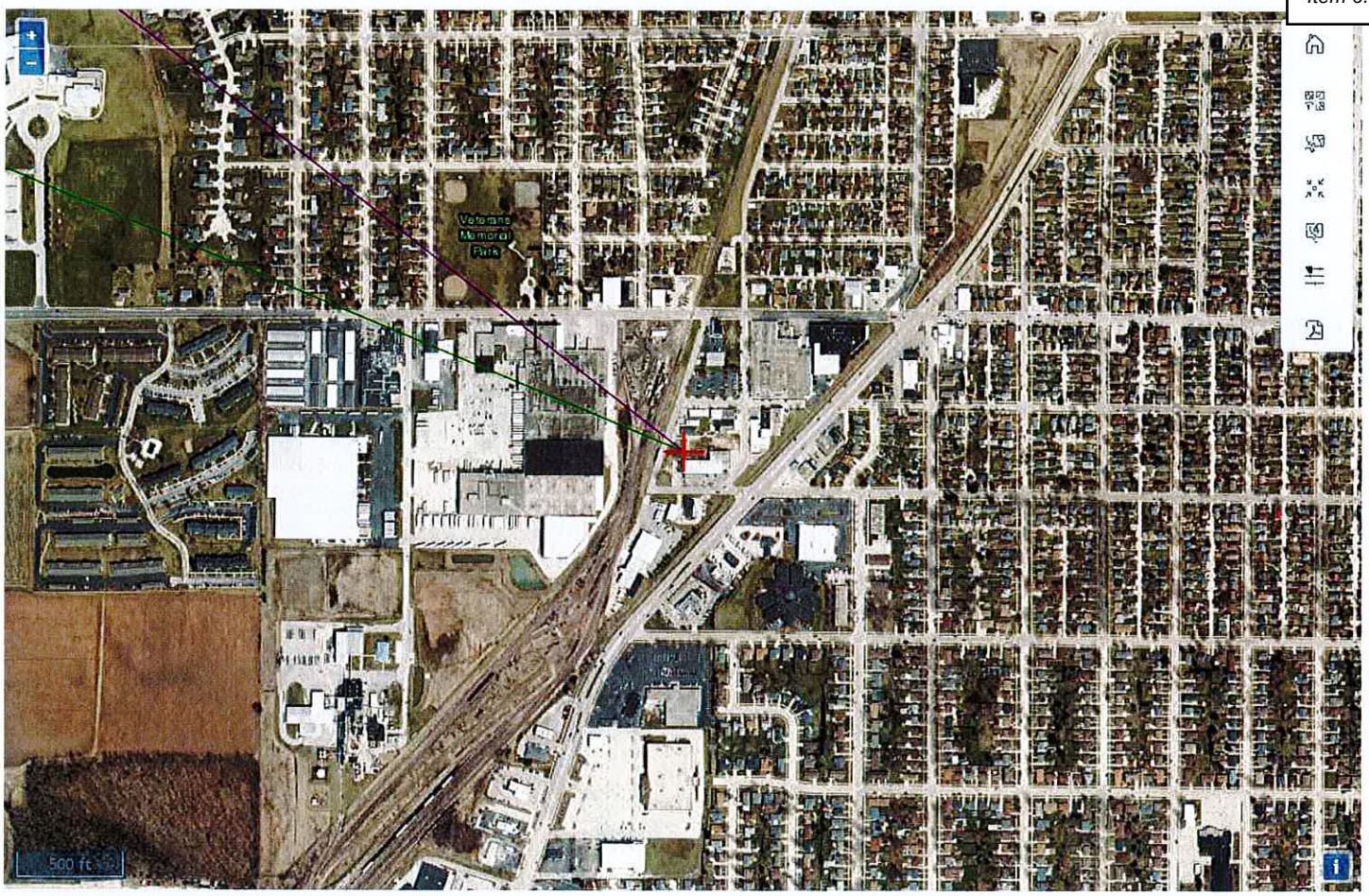
cc: FCC

***The FAA recognizes emissions in 3.7-3.98 GHz at this location will result in Electromagnetic Interference (EMI) as described in Airworthiness Directives (AD) 2021-23-12 and 2021-23-13. NAS services including airport and helicopter operations within a radius of 42 NM will be impacted by 5G RF emissions. Operational use of this frequency band is not objectionable provided the Wireless Providers obtain and adhere to the parameters established by the FAA 5G C band compatibility evaluation process.

Frequency Data for ASN 2024-AGL-8000-OE

LOW FREQUENCY	HIGH FREQUENCY	FREQUENCY UNIT	ERP	ERP UNIT
6	7	GHz	55	dBW
6	7	GHz	42	dBW
10	11.7	GHz	55	dBW
10	11.7	GHz	42	dBW
17.7	19.7	GHz	55	dBW
17.7	19.7	GHz	42	dBW
21.2	23.6	GHz	55	dBW
21.2	23.6	GHz	42	dBW
614	698	MHz	2000	W
614	698	MHz	1000	W
698	806	MHz	1000	W
806	901	MHz	500	W
806	824	MHz	500	W
824	849	MHz	500	W
851	866	MHz	500	W
869	894	MHz	500	W
896	901	MHz	500	W
901	902	MHz	7	W
929	932	MHz	3500	W
930	931	MHz	3500	W
931	932	MHz	3500	W
932	932.5	MHz	17	dBW
935	940	MHz	1000	W
940	941	MHz	3500	W
1670	1675	MHz	500	W
1710	1755	MHz	500	W
1850	1910	MHz	1640	W
1850	1990	MHz	1640	W
1930	1990	MHz	1640	W
1990	2025	MHz	500	W
2110	2200	MHz	500	W
2305	2360	MHz	2000	W
2305	2310	MHz	2000	W
2345	2360	MHz	2000	W
2496	2690	MHz	500	W
3700	3980	MHz	3280	W

Verified Map for ASN 2024-AGL-8000-OE



July 19, 2024

Daniel Kalina
The Towers, LLC
750 Park Of Commerce Drive, Suite 200
Boca Raton, Florida 33487

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

Subject: **Fall Certification Letter**
Arcosa Designation: **Arcosa Project Number:** B104
Arcosa Site Name: Business Drive (US-WI-5737)
Engineering Firm Designation: **B+T Project Number:** 172029.001.01.0001

Site Data: **Business Drive (US-WI-5737)**
125' ext 145' Monopole

To Whom it May Concern:

As Requested by Arcosa Telecom Structures on behalf of VB BTS, LLC, B+T Group is pleased to submit this "Fall Certification Letter" for the 125' ext 145' Monopole to be constructed at the **Business Drive (US-WI-5737)** site.

This pole will be designed in accordance with the TIA 222-H standard for Sheboygan County, WI. The pole will be designed to support antennas and transmission lines for four wireless carriers. The design criteria are more particularly described as follows:

Design Wind Speed: 106mph 3-sec gust (no ice), 40mph 3-sec gust (1.5" ice)
Structure Class: II
Exposure Category: C
Topographic Category: 1

140'—Wireless Carrier 1 FUTURE (CaAa= 30,000 sq in w/ (12) 1 5/8" transmission lines
120'—Wireless Carrier 2 (CaAa= 42,000 sq in w/ (18) 1 5/8" transmission lines
109'—Wireless Carrier 3 (CaAa= 30,000 sq in w/ (12) 1 5/8" transmission lines
99'—Wireless Carrier 4 (CaAa= 30,000 sq in w/ (12) 1 5/8" transmission lines

It is our understanding that this Monopole structure will be designed such that, if a failure were to occur due to a significant storm or other event, the pole would fall within a radius of 30' from the base of the structure. Although the pole would not be designed to fail, stronger sections that required by analysis would be provided in the lower sections of the pole, resulting in an increased safety factor in the lower sections. In the highly unlikely event that this pole were to experience operational failure due to catastrophic wind loading, the design would enable the pole to fail through compression buckling. Failure in this manner would result in the upper portion of the pole buckling and folding over the lower portion, resulting in a fall radius of 30' from the base of the pole.
It should be understood that this opinion does not consider unpredictable extreme catastrophic events for which the structure is not designed. However, any damage to surrounding property caused by the pole failing during such an event would be relatively insignificant when compared to the damage caused to the surrounding property by the event itself.

Please contact us should you have any questions concerning the safety and design of the monopole.

Letter prepared by: Brandon Sevier, P.E.
Submitted by: B&T Engineering, Inc.

Brad Milanowski, P.E.
Engineer of Record

WISCONSIN
BRAD R. MILANOWSKI
E-44812-6
TULSA
OK
PROFESSIONAL ENGINEER
7/19/2024

verizon

PJF PAUL J. FORD & COMPANY

Paul J. Ford and Company
250 East Broad Street Suite 600
Columbus, OH 43215
(614) 221-6679
PJFmount@pauljford.com

New Antenna Mount Analysis Report and PMI Requirements

Mount Analysis

SMART Tool Project #: 10240076

Paul J. Ford Project #: A24324-1180.001.7195

June 27, 2024

Site Information	*Site ID:*	*5000954019-VZW / BUSINESS DRIVE*
	Site Name:	*BUSINESS DRIVE*
	Carrier Name:	*Verizon Wireless*
	Address:	*2219 Sauk Trail Road Sheboygan, Wisconsin 53083, Sheboygan County*
	Latitude:	*43.730365°*
	Longitude:	*-87.732356°*
Structure Information	*Tower Type:*	*125-Ft Monopole*
	Mount Type:	*12.50-Ft Platform W/ Support Rails*

FUZE ID # 2612115

Analysis Results

12.50-Ft Platform W/ Support Rails: **20.2% Pass w/ New Install** (RMQP-4096-HK)

***Antennas and equipment to be installed in compliance with PMI Requirements of this mount analysis.**

******Contractor PMI Requirements*:**
Included at the end of this MA report
Available & Submitted via portal at https://pmi.vzwsmart.com
For additional questions and support, please reach out to: pmisupport@pauljford.com

Report Prepared By: Rebekah M Dorris, PE

RMD

06/27/2024

Executive Summary:

The objective of this report is to determine the capacity of the proposed antenna support mount at the subject facility for the final wireless telecommunications configuration, per the applicable codes and standards. The proposed mount was assumed to be installed properly to the existing tower per the manufacturer's instructions. Paul J. Ford and Company cannot verify that the proposed mount will fit properly and is not liable for any fit-up issues during installation.

This analysis is inclusive of the mount structure only and does not address the structural capacity of the supporting structure. This mounting frame was not analyzed as an anchor attachment point for fall protection. All climbing activities are required to have a fall protection plan completed by a competent person.

Sources of Information:

Document Type	**Remarks**
Radio Frequency Data Sheet (RFDS)	*Verizon RFDS, 2612115, dated 5/13/2024*
Mount Specification	*RMQP-4096-HK,*

Analysis Criteria:

Codes and Standards:	ANSI/TIA-222-H	
Wind Parameters:	Basic Wind Speed (Ultimate 3-sec. Gust), V_{ULT}:	106 mph
	Ice Wind Speed (3-sec. Gust):	40 mph
	Design Ice Thickness:	1.50 in
	Risk Category:	II
	Exposure Category:	C
	Topographic Category:	1
	Topographic Feature Considered:	N/A
	Topographic Method:	N/A
	Ground Elevation Factor, K_e:	0.977
Seismic Parameters:	S_S:	0.060 g
	S_1:	0.041 g
Maintenance Parameters:	Wind Speed (3-sec. Gust):	30 mph
	Maintenance Live Load, Lv:	250 lbs.
	Maintenance Live Load, Lm:	500 lbs.
Analysis Software:	RISA-3D (V17.0.3)	

Final Loading Configuration:

The following equipment has been considered for the analysis of the mounts:

Mount Elevation (ft)	Equipment Elevation (ft)	Quantity	Manufacturer	Model	Status
120.00+/-	120.00	3	Ericsson	AIR 6419 B77	Added
		6	Commscope	NHH-65B-R2B	
		3	Ericsson	Radio 4890	
		3	Ericsson	Radio 4490	
		3	Raycap	RVZDC-3315-PF-48	

It is acceptable to install up to any three (3) of the OVP model numbers listed below as required at any location other than the mount face without affecting the structural capacity of the mount. If OVP units are installed on the mount face, a mount re-analysis may be required.

Model Number	Ports	AKA
RHSDC-1064-PF-48	2	OVP-2
RC3DC-3315-PF-48	6	OVP-6
RC3DC-3300-PF-48	6	OVP-6
RC3DC-4750-PF-48	6	OVP-6
RHSDC-6627-PF-48	12	OVP-12
RHSDC-6600-PF-48	12	OVP-12

Standard Conditions:

1. All engineering services are performed on the basis that the information provided to Paul J. Ford and Company and used in this analysis is current and correct. The existing equipment loading has been applied at locations determined from the supplied documentation. Any deviation from the loading locations specified in this report shall be communicated to Paul J. Ford and Company to verify deviation will not adversely impact the analysis.

2. Mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer's specifications.

3. For mount analyses completed from other data sources (including new replacement mounts) and not specifically mapped in accordance with the NSTD-446 Standard, the mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer's specifications.

4. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.

5. The mount was checked up to, and including, the bolts that fasten it to the mount collar/attachment and threaded rod connections in collar members if applicable. Local deformation and interaction between the mount collar/attachment and the supporting tower structure are outside the scope of this analysis.

6. All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. Paul J. Ford and Company is not responsible for the conclusion, opinions, and recommendations made by others based on the information supplied.

7. Structural Steel Grades have been assumed as follows, if applicable, unless otherwise noted in this analysis:
   - Channel, Solid Round, Angle, Unistrut — ASTM A53 (GR 35)
   - Pipe — ASTM A53 (GR 35)
   - HSS (Rectangular), Plate — Q235 Gr B (Fy = 34 ksi, Fu = 58 ksi)
   - HSS (Round) — ASTM A53 (GR 35)
   - Connection Bolts — ASTM A325
   - Threaded Rods — SAE J429 (GR2)
   - U-Bolts — SAE J429 (GR2)

Discrepancies between in-field conditions and the assumptions listed above may render this analysis invalid unless explicitly approved by Paul J. Ford and Company.

Analysis Results:

Component	Utilization %	Pass/Fail
Face Horizontals	*10.3%*	*Pass*
Support Rails	*6.6%*	*Pass*
Grating Support Members	*11.9%*	*Pass*
Standoff Members	*20.2%*	*Pass*
Kick-Brace	*9.5%*	*Pass*
Corner Plates	*13.5%*	*Pass*
Mount Pipes	*11.5%*	*Pass*
Mount to Tower Connection	*16.7%*	*Pass*

Structure Rating – *(Controlling Utilization of all Components)*	**20.2%**

Mount Connection Envelope Reactions:

Connection Description	Elev. AGL (Ft)	Node Label	Envelope Wind Reactions				Envelope Wind + Ice Reactions			
			Axial (Lbs)	Lateral (Lbs)	Moment (K-Ft)	Torsion (K-Ft)	Axial (Lbs)	Lateral (Lbs)	Moment (K-Ft)	Torsion (K-Ft)
Sector A standoff	121.5	N65	452	3011	0.587	0.969	1169	3910	1.469	0.274
Sector B Standoff	121.5	N172 A	406	2950	0.600	0.898	998	3899	1.408	0.265
Sector C Standoff	121.5	N176 A	402	2943	0.598	0.879	989	3887	1.395	0.260
A Kick brace	189.5	N172C	755	1523	0.000	0.000	1793	3620	0.000	0.000
B Kick brace	189.5	N4_1	755	1522	0.000	0.000	1788	3610	0.000	0.000
C Kick brace	189.5	N7	747	1504	0.000	0.000	1790	3613	0.000	0.000

Notes:
- Axial loads act along the axis of the tower leg
- Lateral reactions act perpendicular to the tower leg
- Moment loads introduce bending moment to the tower leg
- Torsion loads introduce twisting moment to the tower leg

Mount Steel (EPA)a per ANSI/TIA-222-H Section 2.6.11.2:

Ice Thickness (In)	Mount Pipes Excluded		Mount Pipes Included	
	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)
0	28.1	28.1	50.7	50.7
0.5	36.4	36.4	67.1	67.1
1	44.0	44.0	82.8	82.8

Notes:
- (EPA)a values listed above may be used in the absence of more precise information
- (EPA)a values in the table above include 3 sector(s).
- Ka factors included in (EPA)a calculations

Requirements:

The proposed antenna mounts are **SUFFICIENT** for the final loading configuration (attachment 2) upon completion of the mount replacement (attachment 3) and requirements below.

- Contractor shall install the proposed mount (SitePro1 Part # RMQP-4096-HK) in accordance with manufacture specification and the New Mount Sketch. Contact EOR if these documents are not available.
- Contractor shall install (3) 48" P2.0 STD mount pipes 1'-0" from mount collar on standoff. (3) VZWSMART-MSK6 kit will be required for installation.
- Contractor shall install wire rope guide

ANSI/ASSP rigging plan review services compliant with the requirements of ANSI/TIA 322 are available for a Construction Class IV site or other, if required. Separate review fees will apply.

Attachments:

1. **Contractor Required Post Installation Inspection (PMI) Report Deliverables**
2. Antenna Placement Diagrams
3. Mount Manufacturer Drawings
4. Analysis Calculations

Mount Desktop – Post Modification Inspection (PMI) Report Requirements

Documents & Photos Required from Contractor – New Mount Passing MA

Electronic pdf version of this can be downloaded at https://pmi.vzwsmart.com
For additional questions and support, please reach out to pmisupport@pauljford.com

MDG #: 5000954019 SMART Project #: 10240076 Fuze Project ID: 2612115

Purpose – to provide SMART Tool structural vendor the proper documentation in order to complete the required Mount Desktop review of the Post Modification Inspection Report.

- Contractor is responsible for making certain the photos provided as noted below provide confirmation that the installation was completed in accordance with this Passing Mount Analysis.
- Contractor shall relay any data that can impact the performance of the mount, this includes safety issues.

Base Requirements:

- If installation will cause damage to the structure, the climbing facility, or safety climb if present or any installed system, SMART Tool vendor to be notified prior to install. Any special photos outside of the standard requirements will be indicated on the drawings.
- Provide "as built mount drawings" showing contractor's name, contact information, preparer's signature, and date. Any deviations from the drawings (Proposed modification) shall be shown. NOTE: If loading is different than what is conveyed in the passing mount analysis (MA) contact the SMART Tool vendor immediately.
- Each photo should be time and date stamped.
- Photos should be high resolution.
- Contractor shall ensure that the safety climb wire rope is supported and not adversely impacted by the install of the modification components. This may involve the install of wire rope guides, or other items to protect the wire rope. If there is conflict, contact the SMART Tool engineer for recommendations.
- The PMI can be accessed at the following portal: ***https://pmi.vzwsmart.com***

Photo Requirements:

- *Photos taken at ground level*
  - Photo of Gate Signs showing the tower owner, site name, and number.
  - Overall tower structure after installation.
  - Photos of the mount after installation; if the mounts are at different rad elevations, pictures must be provided for all elevations that equipment was installed.
- *Photos taken at Mount Elevation*
  - Photos showing the safety climb wire rope above and below the mount prior to installation.
  - Photos showing the climbing facility and safety climb if present.
  - Photos showing each individual sector after installation of mounts. Each entire sector shall be in one photo to show the interconnection of members.

    - These photos shall also certify that the placement and geometry of the equipment on the mount is as depicted in the antenna placement diagram in this form.
  - Photos that show the model number of each antenna and piece of equipment installed per sector.
  - Photos of each installed mount; pictures shall also include connection hardware (U-bolts, bolts, nuts, all-threaded rods, etc.)
  - Photos showing the installed mount elevation.

Antenna & Equipment Placement and Geometry Confirmation:

- The contractor shall certify that the antenna & equipment placement and geometry is in accordance with the sketch and table as included in the mount analysis and noted below.

☐ The contractor certifies that the photos support and the equipment on the mount is as depicted on the sketch and table included in this form and with the mount analysis provided.

OR

☐ The contractor notes that the equipment on the mount is not in accordance with the sketch and has noted the differences below and provided photo documentation of any alterations.

Special Instructions / Validation as required from the MA or any other information the contractor deems necessary to share that was identified:

Issue:

- Contractor shall install the proposed mount (SitePro1 Part # RMQP-4096-HK) in accordance with manufacture specification and the New Mount Sketch. Contact EOR if these documents are not available.
- Contractor shall install (3) 48" P2.0 STD mount pipes 1'-0" from mount collar on standoff. (3) VZWSMART-MSK6 kit will be required for installation.
- Contractor shall install wire rope guide

Response:

Special Instruction Confirmation:

☐ The contractor has read and acknowledges the above special instructions.

Contractor certifies that the climbing facility / safety climb was not damaged prior to starting work:

☐ Yes ☐ No

Contractor certifies no new damage created during the current installation:

☐ Yes ☐ No

Contractor to certify the condition of the safety climb and verify no damage when leaving the site:

☐ Safety Climb in Good Condition ☐ Safety Climb Damaged

Comments:

New Mount Certification:

☐ The contractor certifies that the New Mount installed is as specified in the Passing Mount Analysis.

☐ The contractor notes that the New Mount installed is not as specified and engineering approval was received for the New Mount installed.

Contractor to provide measurement from top of the highest equipment/steel to the bottom of the lowest equipment/steel by documenting it using the most appropriate illustration below along with supporting photos:

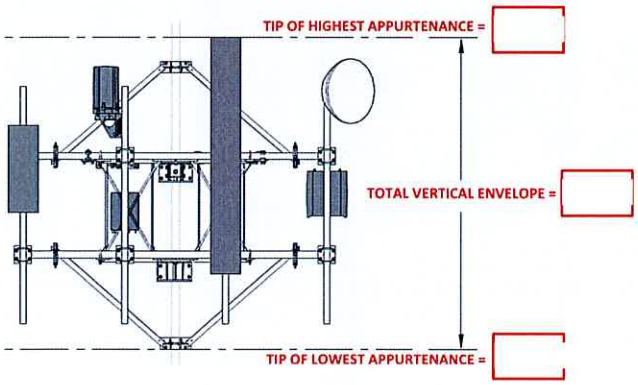


Illustration #1

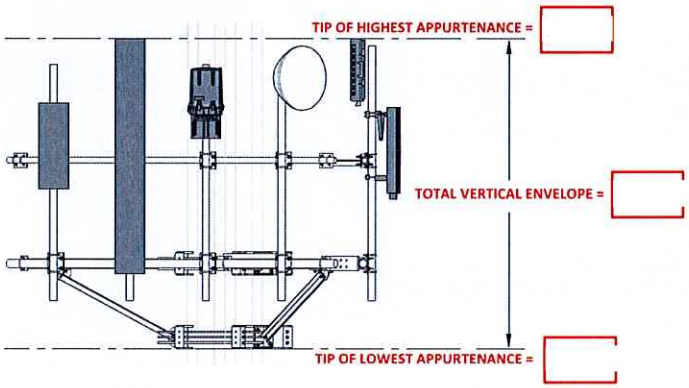
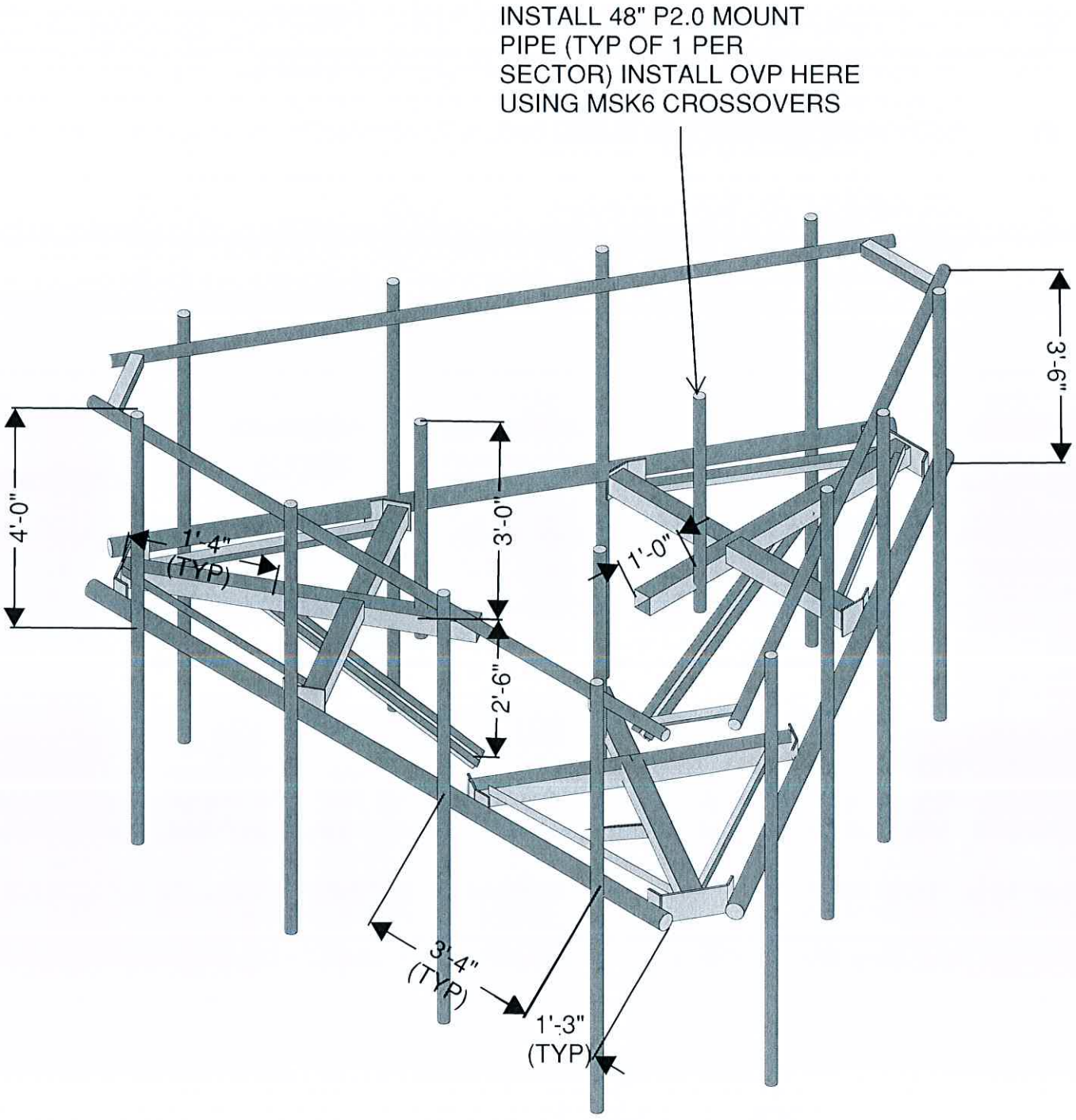


Illustration #2

Certifying Individual:

Company:	
Employee Name:	
Contact Phone:	
Email:	
Date:	

NEW MOUNT SKETCH



MOUNT FRONT ELEVATION VIEW (TYP. ALL SECTORS)

N.T.S.

Sector: A

Structure Type: Monopole

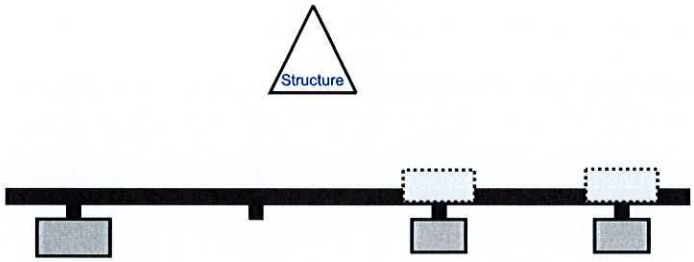
Mount Elev: 120.00

10240076

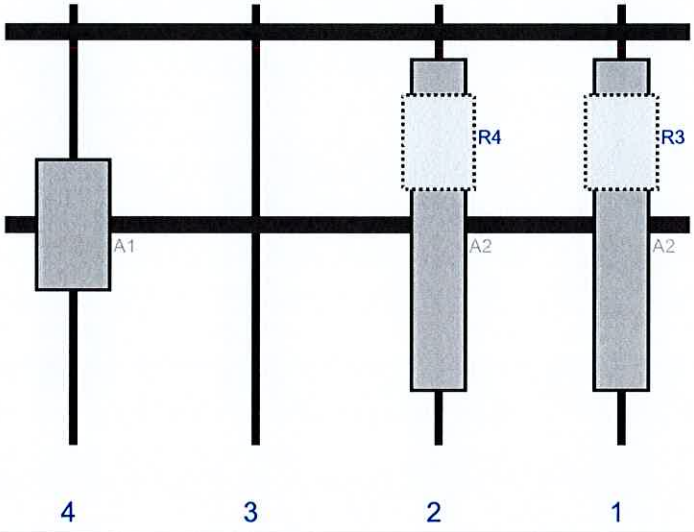
6/27/2024

Page: 1

Plan View



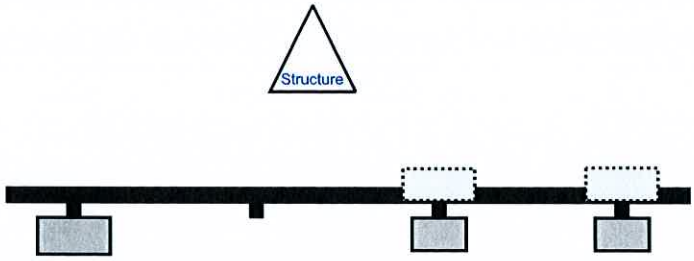
Front View - Looking at Structure



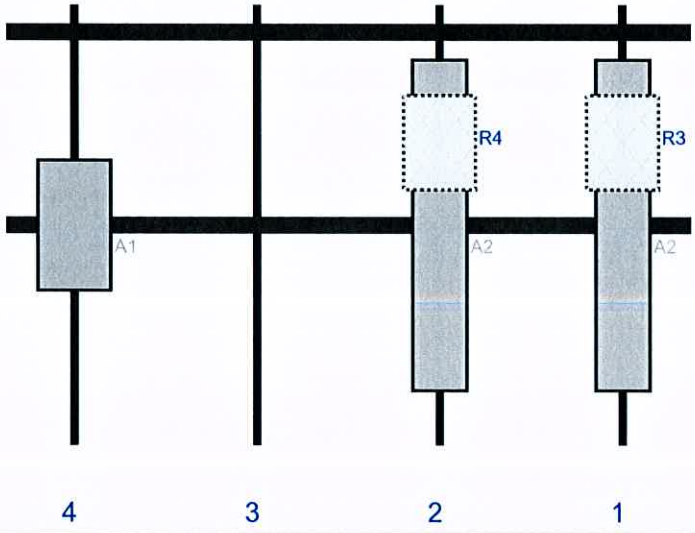
4 3 2 1

ef#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
2	NHH-65B-R2B	72	11.9	135	1	a	Front	48	0	Added	
3	Radio 4890	20.6	15.7	135	1	a	Behind	30	0	Added	
2	NHH-65B-R2B	72	11.9	95	2	a	Front	48	0	Added	
4	Radio 4490	20.6	15.7	95	2	a	Behind	30	0	Added	
1	AIR 6419 B77	28.3	16.1	15	4	a	Front	48	0	Added	
P5A	RVZDC-3315-PF-48	29.5	16.5		Member					Added	

Plan View



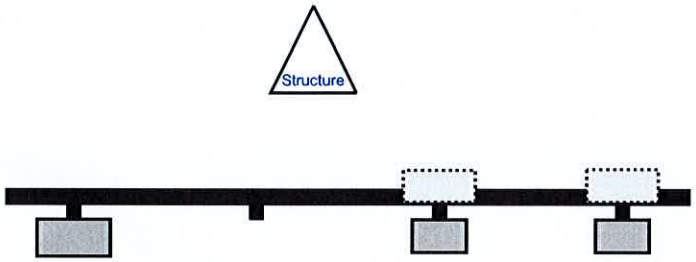
Front View - Looking at Structure



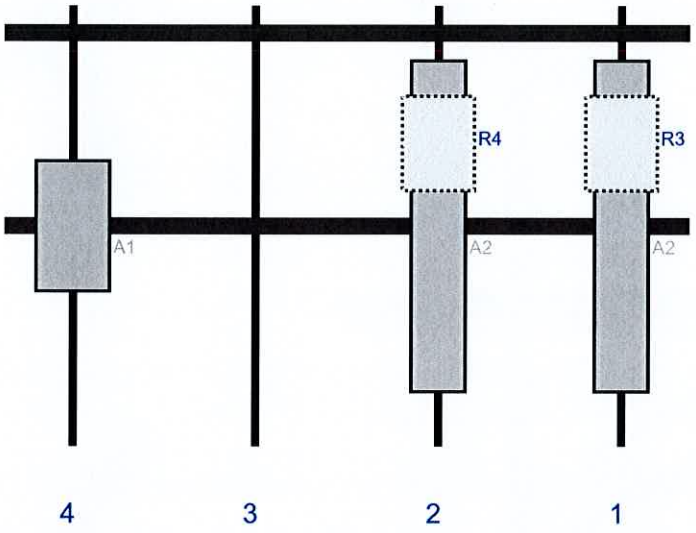
4 3 2 1

Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
R2	NHH-65B-R2B	72	11.9	135	1	a	Front	48	0	Added	
R3	Radio 4890	20.6	15.7	135	1	a	Behind	30	0	Added	
R2	NHH-65B-R2B	72	11.9	95	2	a	Front	48	0	Added	
R4	Radio 4490	20.6	15.7	95	2	a	Behind	30	0	Added	
R1	AIR 6419 B77	28.3	16.1	15	4	a	Front	48	0	Added	
RP5A	RVZDC-3315-PF-48	29.5	16.5		Member					Added	

Plan View



Front View - Looking at Structure



4 3 2 1

ef#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
2	NHH-65B-R2B	72	11.9	135	1	a	Front	48	0	Added	
3	Radio 4890	20.6	15.7	135	1	a	Behind	30	0	Added	
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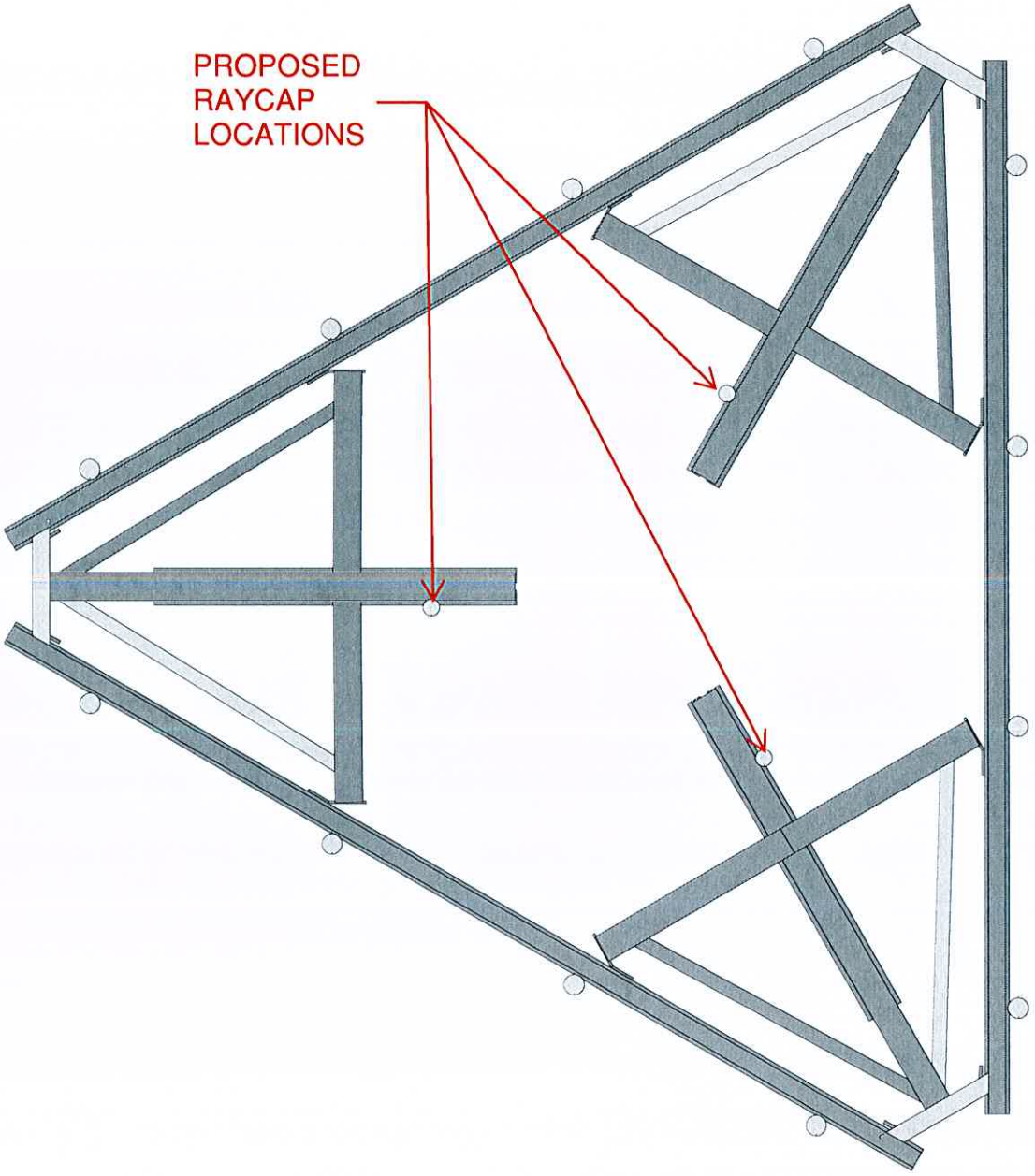
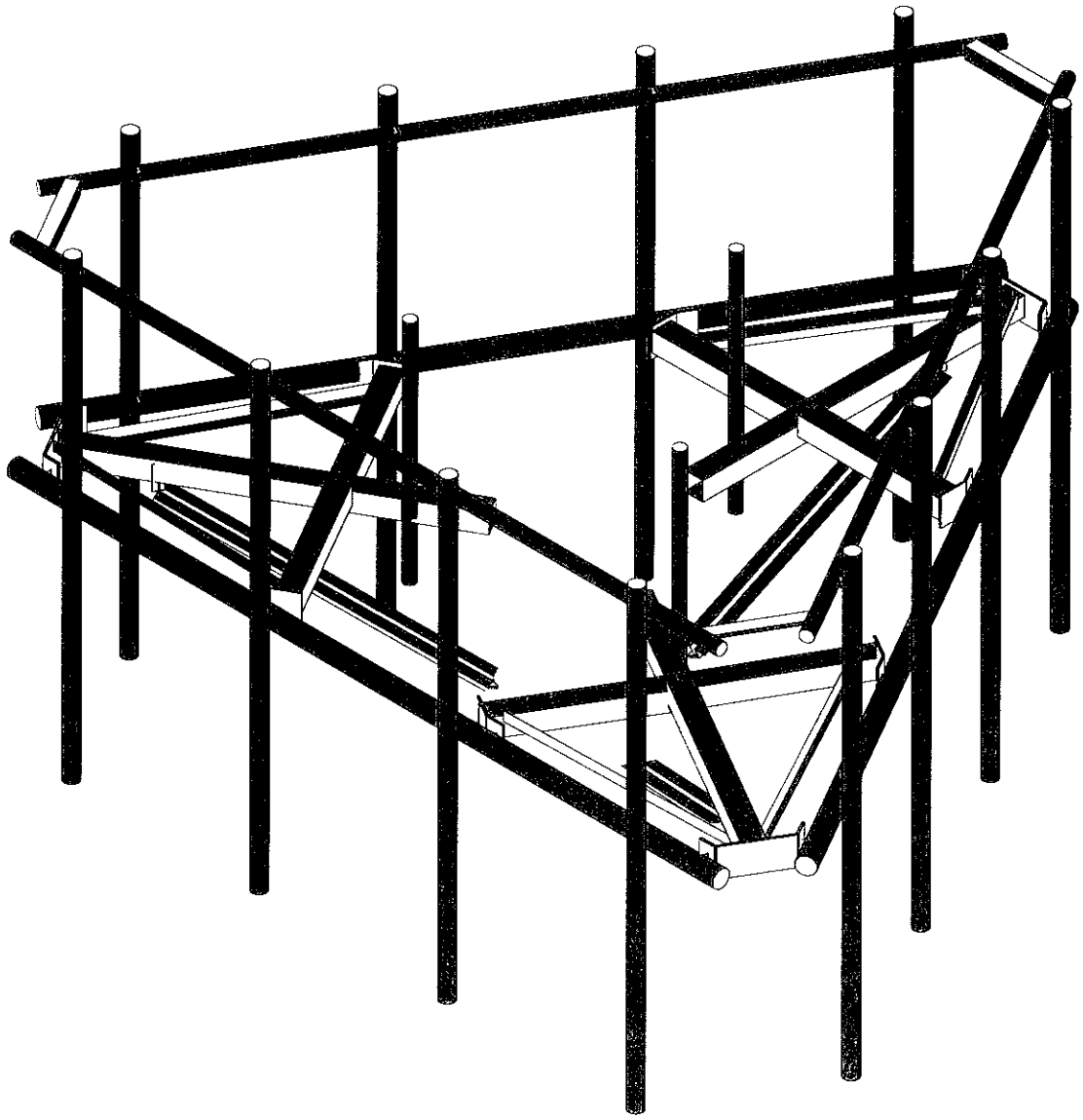
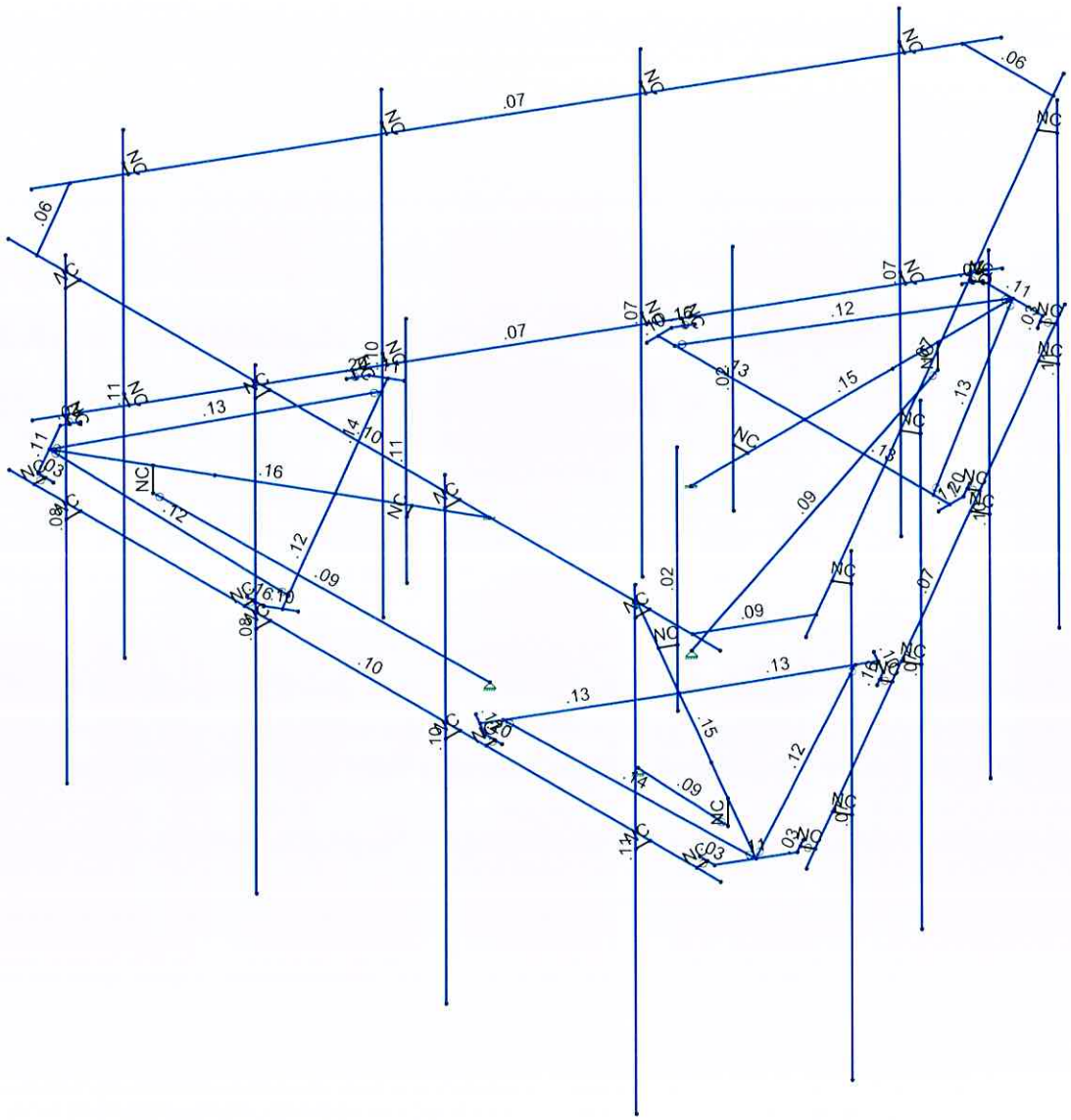
4	Radio 4490	20.6	15.7	95	2	a	Behind	30	0	Added	
1	AIR 6419 B77	28.3	16.1	15	4	a	Front	48	0	Added	
P5A	RVZDC-3315-PF-48	29.5	16.5		Member					Added	



Envelope Only Solution

Paul J. Ford		AL - 1





Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Tower Engineering Solutio...		SK - 2
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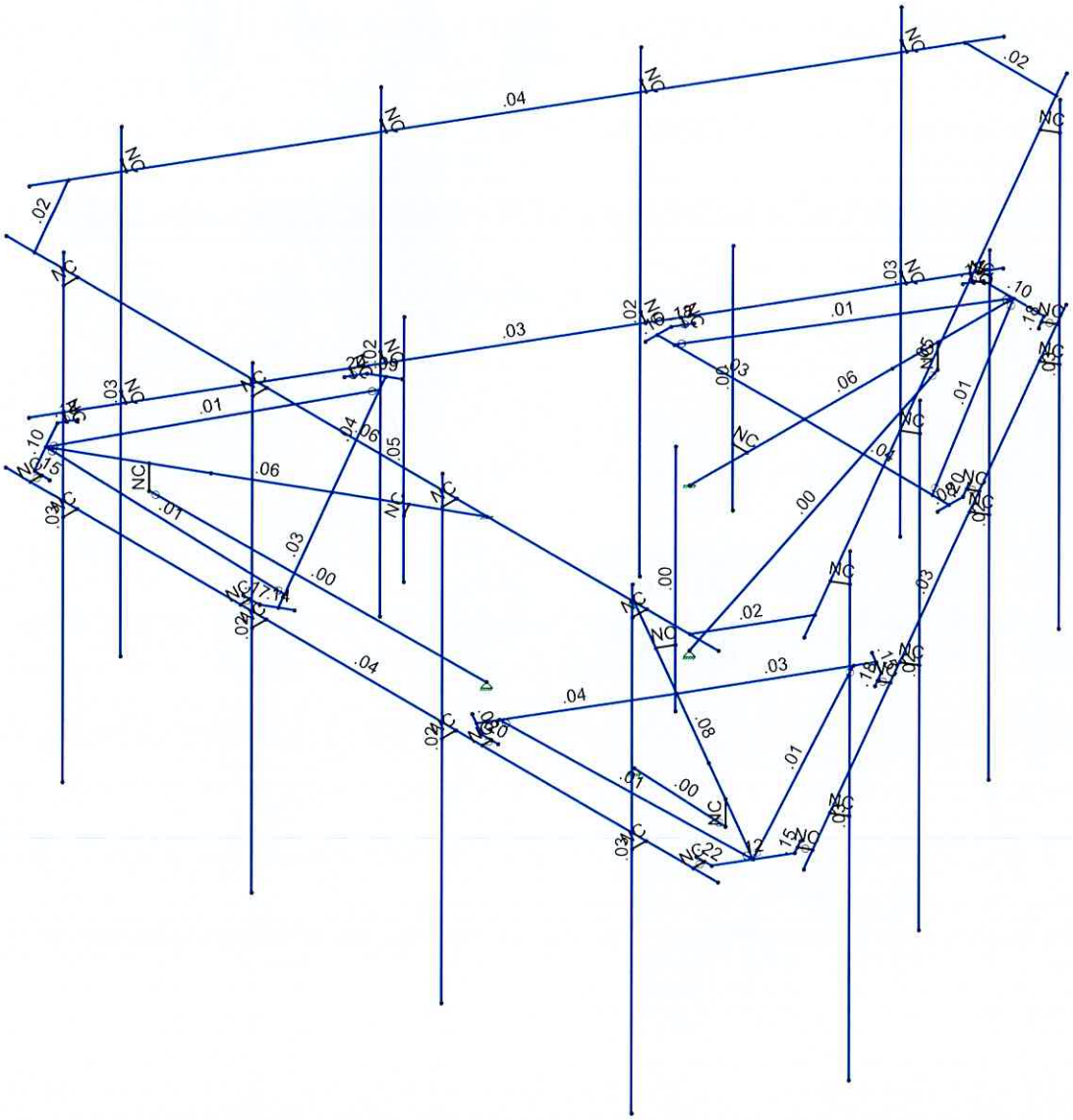
Project No. 10240076		5000954019-VZW_MT_LO_H.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

Tower Engineering Solutio...		SK - 3
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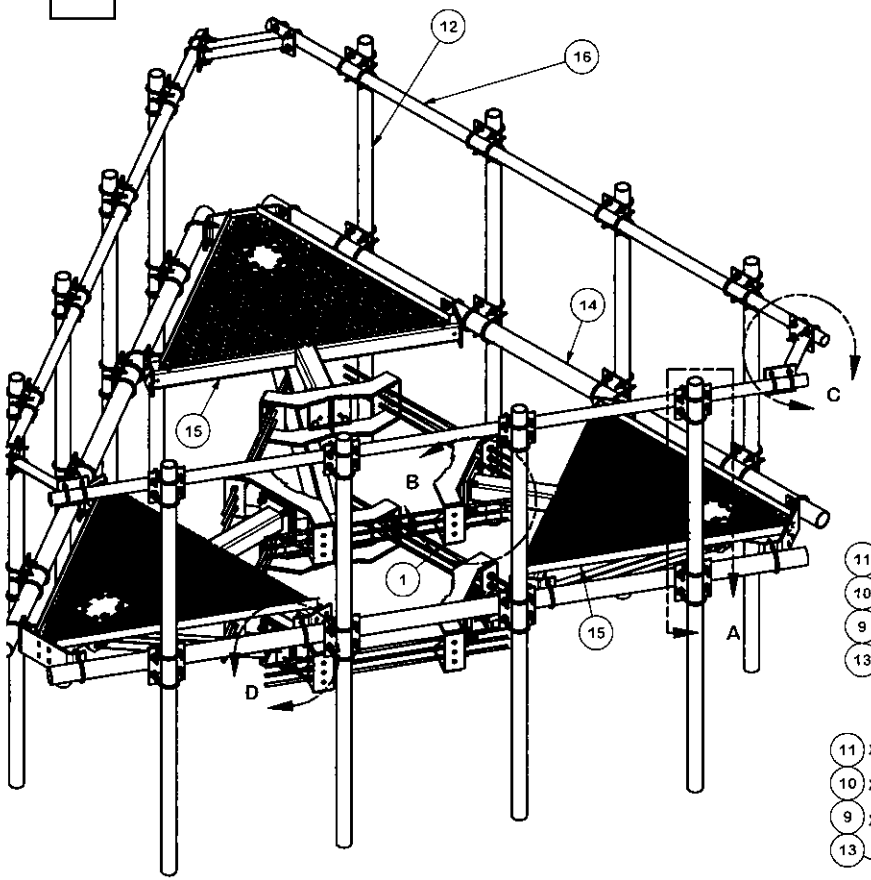
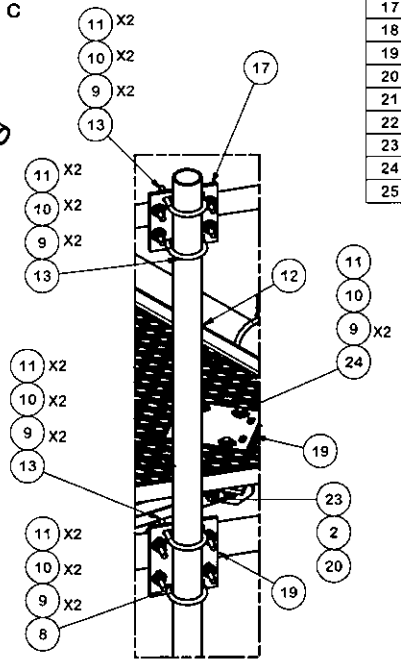
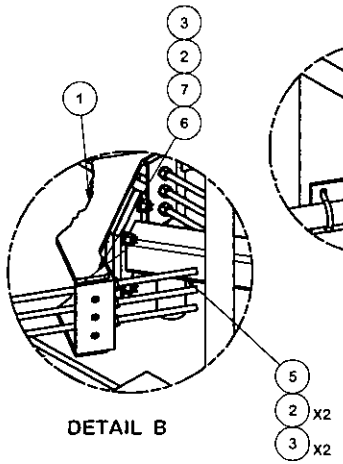
Project No. 10240076		5000954019-VZW_MT_LO_H.r3d



PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET W
1	6	X-LWRM	RING MOUNT WELDMENT		68.81	412.8
2	66	G58LW	5/8" HDG LOCKWASHER		0.03	1.72
3	60	A58NUT	5/8" HDG A325 HEX NUT		0.13	7.79
4	18	G58R-24	5/8" x 24" THREADED ROD (HDG.)		2.09	37.63
5	18	G58R-48	5/8" x 48" THREADED ROD (HDG.)		4.18	75.27
6	24	A58234	5/8" x 2-3/4" HDG A325 HEX BOLT	2 3/4 in	0.36	8.54
7	24	A58FW	5/8" HDG A325 FLATWASHER		0.03	0.82
8	36	X-UB1306	1/2" X 3-5/8" X 6" X 3" U-BOLT (HDG.)		0.83	29.82
9	264	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	9.00
10	252	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	3.50
11	252	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	18.05
12	12	P3096	2-7/8" X 96" (2-1/2" SCH 40) GALVANIZED PIPE	96 in	49.24	590.8
13	48	X-UB1300	1/2" X 3" X 5" X 2" U-BOLT (HDG.)		0.70	33.45
14	3	P3150	3-1/2" X 150" (3" SCH 40) GALVANIZED PIPE	150 in	94.80	284.4
15	3	X-SV196	LOW PROFILE PLATFORM CORNER		212.10	636.3
16	3	P2150	2-3/8" O.D. X 150" SCH 40 GALVANIZED PIPE	150 in	45.77	137.3
17	12	SCX2	CROSSOVER PLATE	7 in	4.80	57.56
18	36	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.63	22.51
19	15	SCX4	CROSSOVER PLATE	8 1/2 in	6.02	90.32
20	6	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	0.78
21	6	X-253993	PLATFORM REINFORCEMENT KIT ANGLE	52 25/32 in	14.33	85.99
22	6	X-TBW	T-BRACKET WELDMENT		13.60	81.60
23	6	G5802	5/8" x 2" HDG HEX BOLT GR5		0.27	1.62
24	12	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	5 1/2 in	0.41	4.91
25	3	X-AHCP	ANGLE HANDRAIL CORNER PLATE		12.92	38.76
					TOTAL WT. #	2669.0



DETAIL A



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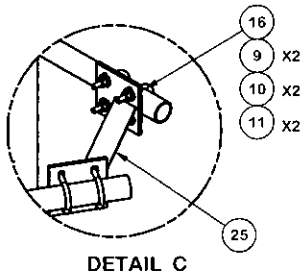
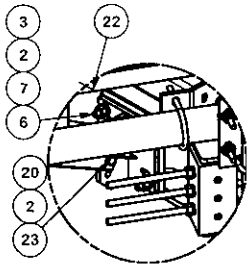


DETAIL C



DETAIL D

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
DRILLED AND GAS CUT HOLES *(± 0.030")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

DESCRIPTION
12' 6" LOW PROFILE PLATFORM
WITH TWELVE 2-7/8" ANTENNA MOUNTING
PIPES, AND SUPPORT RAIL

SITE PRO 1 — A valmont COMPANY

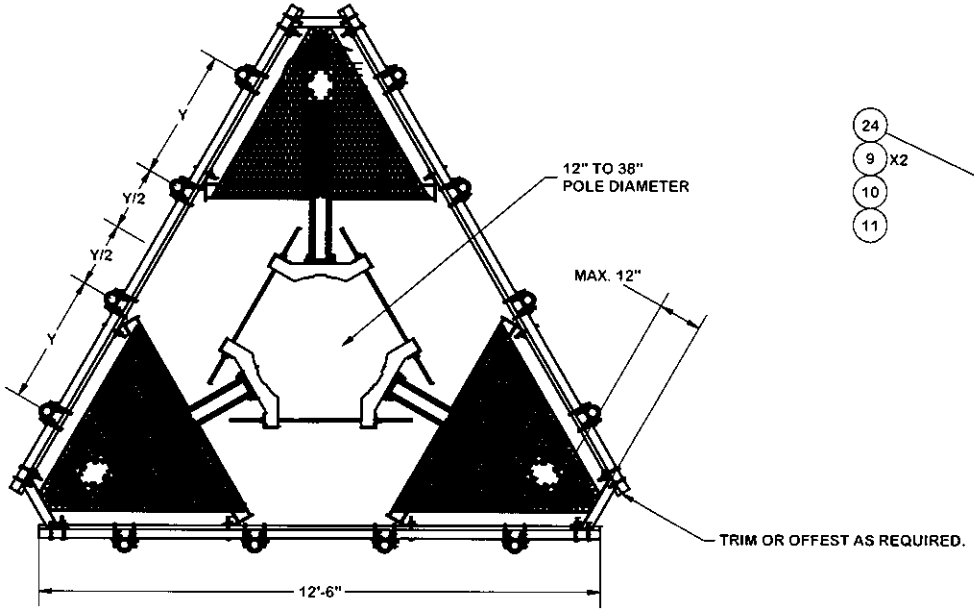
Engineering Support Team: 1-888-753-7446

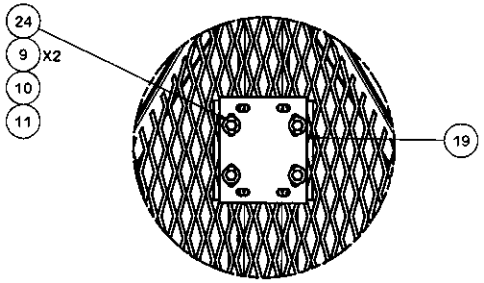
Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
4488	CEK 3/24/2014		RMQP-4096-HK
CLASS / SUB: 81 / 02	DRAWING USAGE: CUSTOMER	CHECKED BY: BMC 7/14/2014	DWG. NO.: RMQP-4096-HK

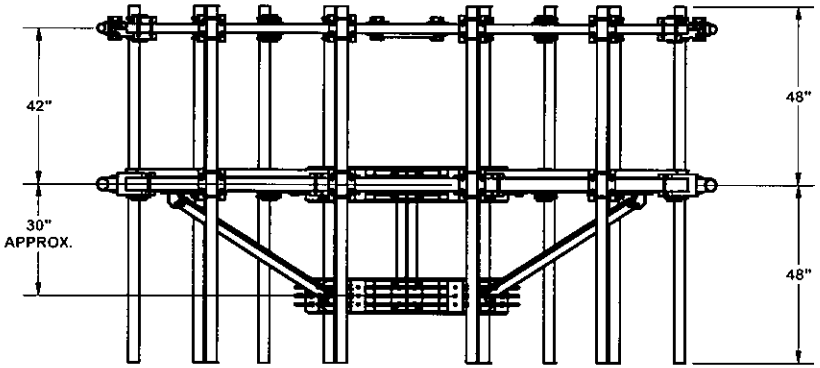
REVISION HISTORY

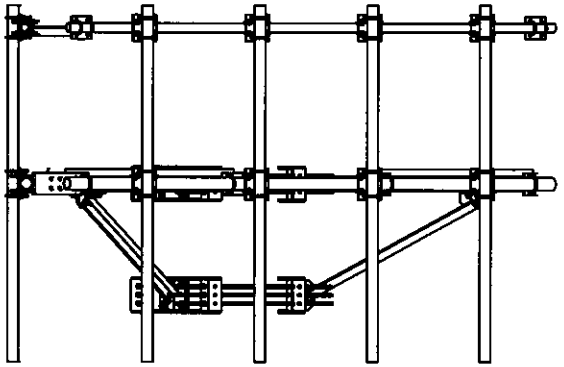
V	DESCRIPTION OF REVISIONS	CPD	BY	DATE
	RELOCATED MOUNT PIPE POSITIONS	4488	JET	5/23/2021
	CHANGED X-253992 TO X-TBW		CEK	9/20/2018
	REPLACED HCP WITH X-AHCP	4488	CEK	7/14/2014





DETAIL E





	RELOCATED MOUNT PIPE POSITIONS	4488	JET	5/23/2021
	CHANGED X-253992 TO X-TBW		CEK	9/20/2018
	REPLACED HCP WITH X-AHCP	4488	CEK	7/14/2014
V	DESCRIPTION OF REVISIONS	CPD	BY	DATE

REVISION HISTORY

TOLERANCE NOTES

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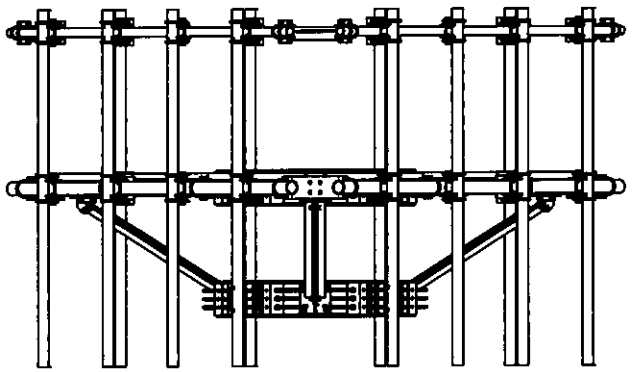
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

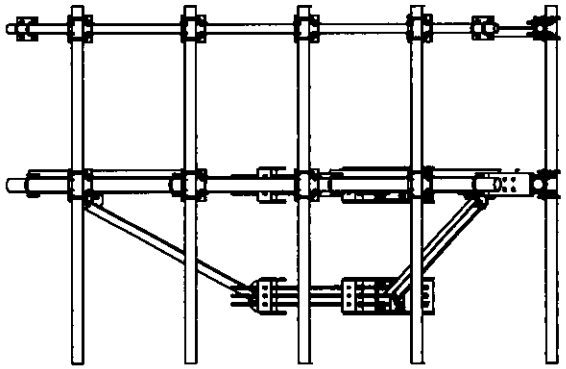
DESCRIPTION
12' 6" LOW PROFILE PLATFORM
WITH TWELVE 2-7/8" ANTENNA MOUNTING
PIPES, AND SUPPORT RAIL

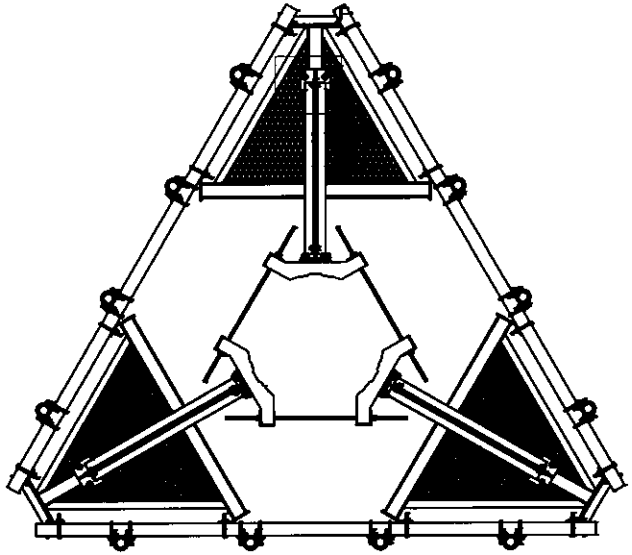
CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
4488	CEK 3/24/2014		RMQP-4096-HK

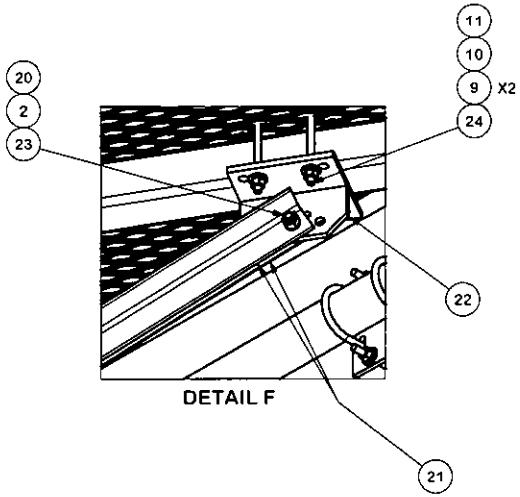
CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	02	CUSTOMER	BMC 7/14/2014	RMQP-4096-HK

STEPPRO 1
A valmont COMPANY
Engineering Support Team: 1-888-753-7446
Locations: New York, NY Atlanta, GA Los Angeles, CA Plymouth, IN Salem, OR Dallas, TX









DETAIL F

V	DESCRIPTION OF REVISIONS	CPD	BY	DATE
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	CHANGED X-253992 TO X-TBW		CEK	9/20/2018
	REPLACED HCP WITH X-AHCP	4488	CEK	7/14/2014

REVISION HISTORY

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LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
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DESCRIPTION
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PIPES, AND SUPPORT RAIL

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Locations:
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Atlanta, GA
Los Angeles, CA
Plymouth, IN
Salem, OR
Dallas, TX

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
4488	CEK 3/24/2014		RMQP-4096-HK

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	02	CUSTOMER	BMC 7/14/2014	RMQP-4096-HK

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (ft/sec^2)	32.2
Wall Mesh Size (in)	24
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 15th(360-16): LRFD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	None
Cold Formed Steel Code	None
Wood Code	None
Wood Temperature	< 100F
Concrete Code	None
Masonry Code	None
Aluminum Code	None - Building
Stainless Steel Code	None

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	Yes
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8

(Global) Model Settings, Continued

Seismic Code	ASCE 7-10
Seismic Base Elevation (ft)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	4
Cd X	4
Rho Z	1
Rho X	1

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E..	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
3	Q235 Gr B	29000	11154	.3	.65	.49	34	1.4	58	1.3
4	Q235 Gr B_1	29000	11154	.3	.65	.49	34	1.4	58	1.3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	HR1	W10X33	Beam	None	A36 Gr.36	Typical	9.71	36.6	171	.583

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	CBA1	N1	N2			PIPE_3.0	None	None	A53 Gr.B	Typical
2	CBA2	N124	N125			PIPE_2.0	None	None	A53 Gr.B	Typical
3	CBB1	N45	N46			PIPE_3.0	None	None	A53 Gr.B	Typical
4	CBB2	N128	N129			PIPE_2.0	None	None	A53 Gr.B	Typical
5	CBC1	N20	N21			PIPE_3.0	None	None	A53 Gr.B	Typical
6	CBC2	N126	N127			PIPE_2.0	None	None	A53 Gr.B	Typical
7	M2	N16	N4		270	L2x2x3	None	None	A53 Gr.B	Typical
8	M3	N16	N6			L2x2x3	None	None	A53 Gr.B	Typical
9	M4	N41	N8		270	L2x2x3	None	None	A53 Gr.B	Typical
10	M5	N41	N10			L2x2x3	None	None	A53 Gr.B	Typical
11	M6	N66	N12		270	L2x2x3	None	None	A53 Gr.B	Typical
12	M7	N66	N14			L2x2x3	None	None	A53 Gr.B	Typical
13	M9	N17	N22			PL1/2x6	None	None	Q235 Gr B	Typical
14	M10	N18	N19			RIGID	None	None	RIGID	Typical
15	M12	N24	N22			PL1/2x6	None	None	Q235 Gr B	Typical
16	M13	N23	N24			PL1/2x6	None	None	Q235 Gr B	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
17	M14	N25	N26			RIGID	None	None	RIGID	Typical
18	M15	N29	N27			PL3/8x6	None	None	Q235 Gr B	Typical
19	M16	N28	N29			PL3/8x6	None	None	Q235 Gr B	Typical
20	M17	N30	N35			HSS4X4X4	None	None	Q235 Gr B	Typical
21	M18	N33	N31			PL3/8x6	None	None	Q235 Gr B	Typical
22	M19	N32	N33			PL3/8x6	None	None	Q235 Gr B	Typical
23	M20	N34	N35			HSS4X4X4	None	None	Q235 Gr B	Typical
24	M21	N36	N37			RIGID	None	None	RIGID	Typical
25	M22	N39	N38			RIGID	None	None	RIGID	Typical
26	M24	N42	N47			PL1/2x6	None	None	Q235 Gr B	Typical
27	M25	N43	N44			RIGID	None	None	RIGID	Typical
28	M27	N49	N47			PL1/2x6	None	None	Q235 Gr B	Typical
29	M28	N48	N49			PL1/2x6	None	None	Q235 Gr B	Typical
30	M29	N50	N51			RIGID	None	None	RIGID	Typical
31	M30	N54	N52			PL3/8x6	None	None	Q235 Gr B	Typical
32	M31	N53	N54			PL3/8x6	None	None	Q235 Gr B	Typical
33	M32	N55	N60			HSS4X4X4	None	None	Q235 Gr B	Typical
34	M33	N58	N56			PL3/8x6	None	None	Q235 Gr B	Typical
35	M34	N57	N58			PL3/8x6	None	None	Q235 Gr B	Typical
36	M35	N59	N60			HSS4X4X4	None	None	Q235 Gr B	Typical
37	M36	N62	N61			RIGID	None	None	RIGID	Typical
38	M37	N64	N63			RIGID	None	None	RIGID	Typical
39	M38	N65	N66			HSS4X4X4	None	None	Q235 Gr B	Typical
40	M39	N67	N70			PL1/2x6	None	None	Q235 Gr B	Typical
41	M40	N68	N69			RIGID	None	None	RIGID	Typical
42	M41	N72	N70			PL1/2x6	None	None	Q235 Gr B	Typical
43	M42	N71	N72			PL1/2x6	None	None	Q235 Gr B	Typical
44	M43	N73	N74			RIGID	None	None	RIGID	Typical
45	M44	N77	N75			PL3/8x6	None	None	Q235 Gr B	Typical
46	M45	N76	N77			PL3/8x6	None	None	Q235 Gr B	Typical
47	M47	N81	N79			PL3/8x6	None	None	Q235 Gr B	Typical
48	M48	N80	N81			PL3/8x6	None	None	Q235 Gr B	Typical
49	M50	N85	N84			RIGID	None	None	RIGID	Typical
50	M51	N86	N87			RIGID	None	None	RIGID	Typical
51	M52	N89	N88			RIGID	None	None	RIGID	Typical
52	M64	N114	N113			RIGID	None	None	RIGID	Typical
53	M65	N116	N115			RIGID	None	None	RIGID	Typical
54	M67	N120	N119			RIGID	None	None	RIGID	Typical
55	M68	N122	N121			RIGID	None	None	RIGID	Typical
56	M70A	N126A	N125A			RIGID	None	None	RIGID	Typical
57	M71A	N128A	N127A			RIGID	None	None	RIGID	Typical
58	M73	N131	N130		90	L2.5x2.5x4	None	None	A53 Gr.B	Typical
59	M73A	N132A	N131A			RIGID	None	None	RIGID	Typical
60	M74	N133	N132		90	L2.5x2.5x4	None	None	A53 Gr.B	Typical
61	M74A	N134A	N133A			RIGID	None	None	RIGID	Typical
62	M75	N135	N134		90	L2.5x2.5x4	None	None	A53 Gr.B	Typical
63	M76	N137	N136			RIGID	None	None	RIGID	Typical
64	M76A	N138	N137A			RIGID	None	None	RIGID	Typical
65	M77	N140	N139			RIGID	None	None	RIGID	Typical
66	M79	N144	N143			RIGID	None	None	RIGID	Typical
67	M80	N146	N145			RIGID	None	None	RIGID	Typical
68	M82	N150	N149			RIGID	None	None	RIGID	Typical
69	M83	N152	N151			RIGID	None	None	RIGID	Typical
70	M85A	N156A	N155A			RIGID	None	None	RIGID	Typical
71	M86A	N158A	N157			RIGID	None	None	RIGID	Typical
72	M88	N162	N161			RIGID	None	None	RIGID	Typical
73	M89	N164	N163			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
74	M91	N168	N167			RIGID	None	None	RIGID	Typical
75	M92	N170	N169			RIGID	None	None	RIGID	Typical
76	M93	N172A	N16			HSS4X4X4	None	None	Q235 Gr B	Typical
77	M94	N174	N173			RIGID	None	None	RIGID	Typical
78	M95	N176	N175			RIGID	None	None	RIGID	Typical
79	M95A	N176A	N41			HSS4X4X4	None	None	Q235 Gr B	Typical
80	M95C	N78	N171B			HSS4X4X4	None	None	Q235 Gr B	Typical
81	M96A	N82	N171B			HSS4X4X4	None	None	Q235 Gr B	Typical
82	MP1A	N177	N178			PIPE_2.5	None	None	A53 Gr.B	Typical
83	MP1B	N153	N154A			PIPE_2.5	None	None	A53 Gr.B	Typical
84	MP1C	N129A	N130A			PIPE_2.5	None	None	A53 Gr.B	Typical
85	MP2A	N171	N172			PIPE_2.5	None	None	A53 Gr.B	Typical
86	MP2B	N147	N148			PIPE_2.5	None	None	A53 Gr.B	Typical
87	MP2C	N123	N124A			PIPE_2.5	None	None	A53 Gr.B	Typical
88	MP3A	N165	N166			PIPE_2.5	None	None	A53 Gr.B	Typical
89	MP3B	N141	N142			PIPE_2.5	None	None	A53 Gr.B	Typical
90	MP3C	N117	N118			PIPE_2.5	None	None	A53 Gr.B	Typical
91	MP4A	N159B	N160A			PIPE_2.5	None	None	A53 Gr.B	Typical
92	MP4B	N135A	N136A			PIPE_2.5	None	None	A53 Gr.B	Typical
93	MP4C	N111	N112			PIPE_2.5	None	None	A53 Gr.B	Typical
94	M97	N172B	N173A			RIGID	None	None	RIGID	Typical
95	MP5B	N174A	N175A			PIPE_2.0	None	None	A53 Gr.B	Typical
96	M99	N176B	N177A			RIGID	None	None	RIGID	Typical
97	MP5A	N178A	N179			PIPE_2.0	None	None	A53 Gr.B	Typical
98	M101	N180	N181			RIGID	None	None	RIGID	Typical
99	MP5C	N182	N183			PIPE_2.0	None	None	A53 Gr.B	Typical
100	M98	N173A_1	N172C			LL2.5x2.5x3x3	None	None	A53 Gr.B	Typical
101	M99_1	N174A_1	N173A_1		120	RIGID	None	None	RIGID	Typical
102	M3_1	N5	N4_1			LL2.5x2.5x3x3	None	None	A53 Gr.B	Typical
103	M4_1	N6_1	N5		120	RIGID	None	None	RIGID	Typical
104	M5_1	N8_1	N7			LL2.5x2.5x3x3	None	None	A53 Gr.B	Typical
105	M6_1	N9	N8_1		120	RIGID	None	None	RIGID	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	CBA1						Yes	** NA **			None
2	CBA2						Yes	** NA **			None
3	CBB1						Yes	** NA **			None
4	CBB2						Yes	** NA **			None
5	CBC1						Yes	** NA **			None
6	CBC2						Yes	** NA **			None
7	M2	BenPIN	BenPIN				Yes	** NA **			None
8	M3	BenPIN	BenPIN				Yes	** NA **			None
9	M4	BenPIN	BenPIN				Yes	** NA **			None
10	M5	BenPIN	BenPIN				Yes	** NA **			None
11	M6	BenPIN	BenPIN				Yes	** NA **			None
12	M7	BenPIN	BenPIN				Yes	** NA **			None
13	M9						Yes	** NA **			None
14	M10	BenPIN					Yes	** NA **			None
15	M12						Yes	** NA **			None
16	M13						Yes	** NA **			None
17	M14	BenPIN					Yes	** NA **			None
18	M15						Yes	** NA **			None
19	M16						Yes	** NA **			None
20	M17						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
21	M18						Yes	** NA **			None
22	M19						Yes	** NA **			None
23	M20						Yes	** NA **			None
24	M21		BenPIN				Yes	** NA **			None
25	M22	BenPIN					Yes	** NA **			None
26	M24						Yes	** NA **			None
27	M25	BenPIN					Yes	** NA **			None
28	M27						Yes	** NA **			None
29	M28						Yes	** NA **			None
30	M29	BenPIN					Yes	** NA **			None
31	M30						Yes	** NA **			None
32	M31						Yes	** NA **			None
33	M32						Yes	** NA **			None
34	M33						Yes	** NA **			None
35	M34						Yes	** NA **			None
36	M35						Yes	** NA **			None
37	M36	BenPIN					Yes	** NA **			None
38	M37	BenPIN					Yes	** NA **			None
39	M38						Yes	** NA **			None
40	M39						Yes	** NA **			None
41	M40	BenPIN					Yes	** NA **			None
42	M41						Yes	** NA **			None
43	M42						Yes	** NA **			None
44	M43	BenPIN					Yes	** NA **			None
45	M44						Yes	** NA **			None
46	M45						Yes	** NA **			None
47	M47						Yes	** NA **			None
48	M48						Yes	** NA **			None
49	M50	BenPIN					Yes	** NA **			None
50	M51		BenPIN				Yes	** NA **			None
51	M52						Yes	** NA **			None
52	M64						Yes	** NA **			None
53	M65						Yes	** NA **			None
54	M67						Yes	** NA **			None
55	M68						Yes	** NA **			None
56	M70A						Yes	** NA **			None
57	M71A						Yes	** NA **			None
58	M73						Yes	** NA **			None
59	M73A						Yes	** NA **			None
60	M74						Yes	** NA **			None
61	M74A						Yes	** NA **			None
62	M75						Yes	** NA **			None
63	M76						Yes	** NA **			None
64	M76A						Yes	** NA **			None
65	M77						Yes	** NA **			None
66	M79						Yes	** NA **			None
67	M80						Yes	** NA **			None
68	M82						Yes	** NA **			None
69	M83						Yes	** NA **			None
70	M85A						Yes	** NA **			None
71	M86A						Yes	** NA **			None
72	M88						Yes	** NA **			None
73	M89						Yes	** NA **			None
74	M91						Yes	** NA **			None
75	M92						Yes	** NA **			None
76	M93						Yes	** NA **			None
77	M94						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
78	M95						Yes	** NA **			None
79	M95A						Yes	** NA **			None
80	M95C						Yes	** NA **			None
81	M96A						Yes	** NA **			None
82	MP1A						Yes	** NA **			None
83	MP1B						Yes	** NA **			None
84	MP1C						Yes	** NA **			None
85	MP2A						Yes	** NA **			None
86	MP2B						Yes	** NA **			None
87	MP2C						Yes	** NA **			None
88	MP3A						Yes	** NA **			None
89	MP3B						Yes	** NA **			None
90	MP3C						Yes	** NA **			None
91	MP4A						Yes	** NA **			None
92	MP4B						Yes	** NA **			None
93	MP4C						Yes	** NA **			None
94	M97						Yes	** NA **			None
95	MP5B						Yes	** NA **			None
96	M99						Yes	** NA **			None
97	MP5A						Yes	** NA **			None
98	M101						Yes	** NA **			None
99	MP5C						Yes	** NA **			None
100	M98	BenPIN					Yes	** NA **			None
101	M99_1						Yes	** NA **			None
102	M3_1	BenPIN					Yes	** NA **			None
103	M4_1						Yes	** NA **			None
104	M5_1	BenPIN					Yes	** NA **			None
105	M6_1						Yes	** NA **			None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
1	CBA1	PIPE_3.0	12.5			Lbyy						Lateral
2	CBA2	PIPE_2.0	12.5			Lbyy						Lateral
3	CBB1	PIPE_3.0	12.5			Lbyy						Lateral
4	CBB2	PIPE_2.0	12.5			Lbyy						Lateral
5	CBC1	PIPE_3.0	12.5			Lbyy						Lateral
6	CBC2	PIPE_2.0	12.5			Lbyy						Lateral
7	M2	L2x2x3	4.32			Lbyy						Lateral
8	M3	L2x2x3	4.32			Lbyy						Lateral
9	M4	L2x2x3	4.32			Lbyy						Lateral
10	M5	L2x2x3	4.32			Lbyy						Lateral
11	M6	L2x2x3	4.323			Lbyy						Lateral
12	M7	L2x2x3	4.323			Lbyy						Lateral
13	M9	PL1/2x6	.265			Lbyy						Lateral
14	M12	PL1/2x6	1.059			Lbyy						Lateral
15	M13	PL1/2x6	.265			Lbyy						Lateral
16	M15	PL3/8x6	.447			Lbyy						Lateral
17	M16	PL3/8x6	.292			Lbyy						Lateral
18	M17	HSS4X4X4	2.559			Lbyy						Lateral
19	M18	PL3/8x6	.447			Lbyy						Lateral
20	M19	PL3/8x6	.292			Lbyy						Lateral
21	M20	HSS4X4X4	2.559			Lbyy						Lateral
22	M24	PL1/2x6	.265			Lbyy						Lateral
23	M27	PL1/2x6	1.059			Lbyy						Lateral
24	M28	PL1/2x6	.265			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
25	M30	PL3/8x6	.447			Lbyy						Lateral
26	M31	PL3/8x6	.292			Lbyy						Lateral
27	M32	HSS4X4X4	2.559			Lbyy						Lateral
28	M33	PL3/8x6	.447			Lbyy						Lateral
29	M34	PL3/8x6	.292			Lbyy						Lateral
30	M35	HSS4X4X4	2.559			Lbyy						Lateral
31	M38	HSS4X4X4	5.668			Lbyy						Lateral
32	M39	PL1/2x6	.265			Lbyy						Lateral
33	M41	PL1/2x6	1.059			Lbyy						Lateral
34	M42	PL1/2x6	.265			Lbyy						Lateral
35	M44	PL3/8x6	.447			Lbyy						Lateral
36	M45	PL3/8x6	.292			Lbyy						Lateral
37	M47	PL3/8x6	.447			Lbyy						Lateral
38	M48	PL3/8x6	.292			Lbyy						Lateral
39	M73	L2.5x2.5x4	1.598									Lateral
40	M74	L2.5x2.5x4	1.598									Lateral
41	M75	L2.5x2.5x4	1.598									Lateral
42	M93	HSS4X4X4	5.668			Lbyy						Lateral
43	M95A	HSS4X4X4	5.668			Lbyy						Lateral
44	M95C	HSS4X4X4	2.559									Lateral
45	M96A	HSS4X4X4	2.559									Lateral
46	MP1A	PIPE_2.5	8									Lateral
47	MP1B	PIPE_2.5	8									Lateral
48	MP1C	PIPE_2.5	8									Lateral
49	MP2A	PIPE_2.5	8									Lateral
50	MP2B	PIPE_2.5	8									Lateral
51	MP2C	PIPE_2.5	8									Lateral
52	MP3A	PIPE_2.5	8									Lateral
53	MP3B	PIPE_2.5	8									Lateral
54	MP3C	PIPE_2.5	8									Lateral
55	MP4A	PIPE_2.5	8									Lateral
56	MP4B	PIPE_2.5	8									Lateral
57	MP4C	PIPE_2.5	8									Lateral
58	MP5B	PIPE_2.0	4									Lateral
59	MP5A	PIPE_2.0	4									Lateral
60	MP5C	PIPE_2.0	4									Lateral
61	M98	LL2.5x2.5x3...	4.809									Lateral
62	M3_1	LL2.5x2.5x3...	4.809									Lateral
63	M5_1	LL2.5x2.5x3...	4.809									Lateral

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Antenna D	None					96			
2	Antenna Di	None					96			
3	Antenna Wo (0 Deg)	None					96			
4	Antenna Wo (30 Deg)	None					96			
5	Antenna Wo (60 Deg)	None					96			
6	Antenna Wo (90 Deg)	None					96			
7	Antenna Wo (120 Deg)	None					96			
8	Antenna Wo (150 Deg)	None					96			
9	Antenna Wo (180 Deg)	None					96			
10	Antenna Wo (210 Deg)	None					96			
11	Antenna Wo (240 Deg)	None					96			
12	Antenna Wo (270 Deg)	None					96			
13	Antenna Wo (300 Deg)	None					96			

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
14	Antenna Wo (330 Deg)	None					96			
15	Antenna Wi (0 Deg)	None					96			
16	Antenna Wi (30 Deg)	None					96			
17	Antenna Wi (60 Deg)	None					96			
18	Antenna Wi (90 Deg)	None					96			
19	Antenna Wi (120 Deg)	None					96			
20	Antenna Wi (150 Deg)	None					96			
21	Antenna Wi (180 Deg)	None					96			
22	Antenna Wi (210 Deg)	None					96			
23	Antenna Wi (240 Deg)	None					96			
24	Antenna Wi (270 Deg)	None					96			
25	Antenna Wi (300 Deg)	None					96			
26	Antenna Wi (330 Deg)	None					96			
27	Antenna Wm (0 Deg)	None					96			
28	Antenna Wm (30 Deg)	None					96			
29	Antenna Wm (60 Deg)	None					96			
30	Antenna Wm (90 Deg)	None					96			
31	Antenna Wm (120 Deg)	None					96			
32	Antenna Wm (150 Deg)	None					96			
33	Antenna Wm (180 Deg)	None					96			
34	Antenna Wm (210 Deg)	None					96			
35	Antenna Wm (240 Deg)	None					96			
36	Antenna Wm (270 Deg)	None					96			
37	Antenna Wm (300 Deg)	None					96			
38	Antenna Wm (330 Deg)	None					96			
39	Structure D	None		-1					3	
40	Structure Di	None						63	3	
41	Structure Wo (0 Deg)	None						126		
42	Structure Wo (30 Deg)	None						126		
43	Structure Wo (60 Deg)	None						126		
44	Structure Wo (90 Deg)	None						126		
45	Structure Wo (120 D...	None						126		
46	Structure Wo (150 D...	None						126		
47	Structure Wo (180 D...	None						126		
48	Structure Wo (210 D...	None						126		
49	Structure Wo (240 D...	None						126		
50	Structure Wo (270 D...	None						126		
51	Structure Wo (300 D...	None						126		
52	Structure Wo (330 D...	None						126		
53	Structure Wi (0 Deg)	None						126		
54	Structure Wi (30 Deg)	None						126		
55	Structure Wi (60 Deg)	None						126		
56	Structure Wi (90 Deg)	None						126		
57	Structure Wi (120 De...	None						126		
58	Structure Wi (150 De...	None						126		
59	Structure Wi (180 De...	None						126		
60	Structure Wi (210 De...	None						126		
61	Structure Wi (240 De...	None						126		
62	Structure Wi (270 De...	None						126		
63	Structure Wi (300 De...	None						126		
64	Structure Wi (330 De...	None						126		
65	Structure Wm (0 Deg)	None						126		
66	Structure Wm (30 De...	None						126		
67	Structure Wm (60 De...	None						126		
68	Structure Wm (90 De...	None						126		
69	Structure Wm (120 D...	None						126		
70	Structure Wm (150 D...	None						126		

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
71	Structure Wm (180 D...	None						126		
72	Structure Wm (210 D...	None						126		
73	Structure Wm (240 D...	None						126		
74	Structure Wm (270 D...	None						126		
75	Structure Wm (300 D...	None						126		
76	Structure Wm (330 D...	None						126		
77	Lm1	None					1			
78	Lm2	None					1			
79	Lv1	None					1			
80	Lv2	None					1			
81	Antenna Ev	None					96			
82	Antenna Eh (0 Deg)	None					64			
83	Antenna Eh (90 Deg)	None					64			
84	Structure Ev	ELY		-.013					3	
85	Structure Eh (0 Deg)	ELZ			-.032				3	
86	Structure Eh (90 Deg)	ELX	.032						3	
87	BLC 39 Transient Are...	None						21		
88	BLC 40 Transient Are...	None						21		
89	BLC 84 Transient Are...	None						21		
90	BLC 85 Transient Are...	None						21		
91	BLC 86 Transient Are...	None						21		

Load Combinations

	Description	Sol...	PD...	SR...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
1	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	3	1	41	1												
2	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	4	1	42	1												
3	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	5	1	43	1												
4	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	6	1	44	1												
5	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	7	1	45	1												
6	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	8	1	46	1												
7	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	9	1	47	1												
8	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	10	1	48	1												
9	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	11	1	49	1												
10	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	12	1	50	1												
11	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	13	1	51	1												
12	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	14	1	52	1												
13	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	15	1	53	1								
14	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	16	1	54	1								
15	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	17	1	55	1								
16	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	18	1	56	1								
17	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	19	1	57	1								
18	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	20	1	58	1								
19	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	21	1	59	1								
20	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	22	1	60	1								
21	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	23	1	61	1								
22	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	24	1	62	1								
23	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	25	1	63	1								
24	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	26	1	64	1								
25	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	77	1.5	27	1	65	1										
26	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	77	1.5	28	1	66	1										
27	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	77	1.5	29	1	67	1										
28	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	77	1.5	30	1	68	1										
29	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	77	1.5	31	1	69	1										
30	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	77	1.5	32	1	70	1										
31	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	77	1.5	33	1	71	1										

Load Combinations (Continued)

	Description	Sol..	PD..	SR..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..
32	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	77	1.5	34	1	72	1										
33	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	77	1.5	35	1	73	1										
34	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	77	1.5	36	1	74	1										
35	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	77	1.5	37	1	75	1										
36	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	77	1.5	38	1	76	1										
37	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	78	1.5	27	1	65	1										
38	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	78	1.5	28	1	66	1										
39	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	78	1.5	29	1	67	1										
40	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	78	1.5	30	1	68	1										
41	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	78	1.5	31	1	69	1										
42	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	78	1.5	32	1	70	1										
43	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	78	1.5	33	1	71	1										
44	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	78	1.5	34	1	72	1										
45	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	78	1.5	35	1	73	1										
46	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	78	1.5	36	1	74	1										
47	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	78	1.5	37	1	75	1										
48	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	78	1.5	38	1	76	1										
49	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	79	1.5														
50	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	80	1.5														
51	1.4D	Yes	Y		1	1.4	39	1.4																
52	1.2D + 1.0..	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	1	83		ELZ	1	ELX					
53	1.2D + 1.0..	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	.866	83	.5	ELZ	.866	ELX	.5				
54	1.2D + 1.0..	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	.5	83	.866	ELZ	.5	ELX	.866				
55	1.2D + 1.0..	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82		83	1	ELZ		ELX	1				
56	1.2D + 1.0..	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	-.5	83	.866	ELZ	-.5	ELX	.866				
57	1.2D + 1.0..	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	-.866	83	.5	ELZ	-.866	ELX	.5				
58	1.2D + 1.0..	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	-1	83		ELZ	-1	ELX					
59	1.2D + 1.0..	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	-.866	83	-.5	ELZ	-.866	ELX	-.5				
60	1.2D + 1.0..	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	-.5	83	-.866	ELZ	-.5	ELX	-.866				
61	1.2D + 1.0..	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82		83	-1	ELZ		ELX	-1				
62	1.2D + 1.0..	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	.5	83	-.866	ELZ	.5	ELX	-.866				
63	1.2D + 1.0..	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	.866	83	-.5	ELZ	.866	ELX	-.5				
64	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	1	83		ELZ	1	ELX					
65	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	.866	83	.5	ELZ	.866	ELX	.5				
66	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	.5	83	.866	ELZ	.5	ELX	.866				
67	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82		83	1	ELZ		ELX	1				
68	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	-.5	83	.866	ELZ	-.5	ELX	.866				
69	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	-.866	83	.5	ELZ	-.866	ELX	.5				
70	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	-1	83		ELZ	-1	ELX					
71	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	-.866	83	-.5	ELZ	-.866	ELX	-.5				
72	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	-.5	83	-.866	ELZ	-.5	ELX	-.866				
73	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82		83	-1	ELZ		ELX	-1				
74	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	.5	83	-.866	ELZ	.5	ELX	-.866				
75	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	.866	83	-.5	ELZ	.866	ELX	-.5				

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N65	max	3412.514	22	1168.507	20	230.442	2	-.184	75	.969	11	-.348	66
2		min	-488.251	4	301.932	65	-1972.383	20	-.72	17	-.958	5	-1.287	21
3	N172A	max	253.946	11	998.379	16	446.926	12	-.214	12	.898	7	1.131	15
4		min	-3371.318	17	274.696	73	-2009.625	18	-.972	30	-.887	1	.311	73
5	N176A	max	579.28	9	988.566	24	3886.664	13	1.385	24	.879	3	.187	15
6		min	-570.973	3	273.165	69	-326.363	7	.378	70	-.868	9	-.035	9
7	N166A	max	0	75	0	75	0	75	0	75	0	75	0	75
8		min	0	1	0	1	0	1	0	1	0	1	0	1

Envelope Joint Reactions (Continued)

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
9	N168A	max	0	75	0	75	0	75	0	75	0	75	0	75
10		min	0	1	0	1	0	1	0	1	0	1	0	1
11	N170A	max	0	75	0	75	0	75	0	75	0	75	0	75
12		min	0	1	0	1	0	1	0	1	0	1	0	1
13	N172C	max	3135.772	18	1792.95	18	1810.024	17	0	75	0	75	0	75
14		min	866.056	74	493.389	74	500.015	74	0	1	0	1	0	1
15	N4_1	max	30.169	10	1787.937	14	-998.248	70	0	75	0	75	0	75
16		min	-30.158	4	492.53	70	-3609.653	13	0	1	0	1	0	1
17	N7	max	-865.78	66	1789.639	22	1808.004	22	0	75	0	75	0	75
18		min	-3129.131	21	493.236	66	499.859	66	0	1	0	1	0	1
19	Totals:	max	3251.773	10	8431.387	17	3239.787	1						
20		min	-3251.773	4	2339.926	74	-3239.789	7						

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn y...	phi*Mn z...	Cb	Eqn
1	M48	PL3/8x6	.202	.118	4	.202	.292	y	20	65364.6...	68850	.538	8.606	2....	H1-1b
2	M19	PL3/8x6	.201	.118	12	.200	.292	y	16	65364.6...	68850	.538	8.606	2....	H1-1b
3	M34	PL3/8x6	.201	.118	8	.197	.292	y	24	65364.6...	68850	.538	8.606	2....	H1-1b
4	M38	HSS4X4X4	.161	0	24	.057	1.004	y	23	93367.2...	103122	11.96	11.96	3....	H1-1b
5	M31	PL3/8x6	.159	.118	6	.178	.292	y	22	65364.6...	68850	.538	8.606	1....	H1-1b
6	M16	PL3/8x6	.159	.118	10	.180	.292	y	14	65364.6...	68850	.538	8.606	1....	H1-1b
7	M45	PL3/8x6	.158	.118	2	.174	.292	y	18	65364.6...	68850	.538	8.606	1....	H1-1b
8	M93	HSS4X4X4	.154	0	14	.081	0	y	30	93367.2...	103122	11.96	11.96	3....	H1-1b
9	M95A	HSS4X4X4	.152	0	16	.055	4.369	y	15	93367.2...	103122	11.96	11.96	3....	H1-1b
10	M96A	HSS4X4X4	.136	2.559	22	.044	2.559	y	21	101054....	103122	11.96	11.96	1....	H1-1b
11	M3	L2x2x3	.135	2.16	6	.010	4.32	y	15	9165.131	22743	.542	1.066	1....	H2-1
12	M7	L2x2x3	.135	2.161	10	.010	4.323	y	19	9153.553	22743	.542	1.067	1....	H2-1
13	M5	L2x2x3	.135	2.16	2	.010	4.32	y	23	9165.131	22743	.542	1.066	1....	H2-1
14	M20	HSS4X4X4	.134	2.559	18	.044	2.559	y	17	101053....	103122	11.96	11.96	1....	H1-1b
15	M35	HSS4X4X4	.133	2.559	14	.044	2.559	y	13	101053....	103122	11.96	11.96	1.7	H1-1b
16	M17	HSS4X4X4	.127	2.559	15	.035	2.559	y	15	101053....	103122	11.96	11.96	1....	H1-1b
17	M32	HSS4X4X4	.126	2.559	23	.035	2.559	y	22	101053....	103122	11.96	11.96	1....	H1-1b
18	M95C	HSS4X4X4	.124	2.559	19	.034	2.559	y	19	101054....	103122	11.96	11.96	1....	H1-1b
19	M6	L2x2x3	.119	2.296	20	.011	4.323	z	13	9153.553	22743	.542	1.042	1....	H2-1
20	M2	L2x2x3	.118	2.295	16	.011	4.32	z	21	9165.131	22743	.542	1.042	1....	H2-1
21	M4	L2x2x3	.118	2.295	24	.011	4.32	z	17	9165.131	22743	.542	1.042	1....	H2-1
22	MP1B	PIPE_2.5	.115	4	9	.035	4		10	30038.4...	50715	3.596	3.596	1....	H1-1b
23	MP1A	PIPE_2.5	.109	4	28	.035	4		6	30038.4...	50715	3.596	3.596	1....	H1-1b
24	MP5A	PIPE_2.0	.108	3	23	.054	3		8	26521.4...	32130	1.872	1.872	2....	H1-1b
25	M12	PL1/2x6	.108	.529	11	.119	.529	y	42	62633.4...	91800	.956	11.475	1....	H1-1b
26	M41	PL1/2x6	.108	.529	3	.104	.529	y	20	62633.4...	91800	.956	11.475	1....	H1-1b
27	MP1C	PIPE_2.5	.108	4	1	.035	4		2	30038.4...	50715	3.596	3.596	1....	H1-1b
28	M27	PL1/2x6	.108	.529	7	.105	.529	y	14	62633.4...	91800	.956	11.475	1....	H1-1b
29	M18	PL3/8x6	.107	.237	11	.084	.237	y	14	60939.9...	68850	.538	8.606	1....	H1-1b
30	M33	PL3/8x6	.106	.237	7	.081	.237	y	22	60939.9...	68850	.538	8.606	1....	H1-1b
31	M47	PL3/8x6	.106	.237	3	.088	.237	y	18	60939.9...	68850	.538	8.606	1....	H1-1b
32	M15	PL3/8x6	.105	.237	12	.149	.237	y	21	60939.9...	68850	.538	8.606	1....	H1-1b
33	M44	PL3/8x6	.104	.237	4	.145	.237	y	17	60939.9...	68850	.538	8.606	1....	H1-1b
34	M30	PL3/8x6	.104	.237	6	.146	.237	y	17	60939.9...	68850	.538	8.606	1....	H1-1b
35	CBA2	PIPE_2.0	.103	7.943	29	.057	11.979		38	6295.422	32130	1.872	1.872	3....	H1-1b
36	MP2C	PIPE_2.5	.100	4	1	.022	4		8	30038.4...	50715	3.596	3.596	2....	H1-1b
37	MP2B	PIPE_2.5	.100	4	9	.022	4		4	30038.4...	50715	3.596	3.596	1....	H1-1b
38	MP2A	PIPE_2.5	.100	4	5	.022	4		10	30038.4...	50715	3.596	3.596	1....	H1-1b
39	CBA1	PIPE_3.0	.098	7.943	35	.038	11.979		43	28250.5...	65205	5.749	5.749	2....	H1-1b
40	M98	LL2.5x2.5x...	.095	4.809	17	.003	4.809	y	19	42564.3...	56700	3.844	2.479	1	H1-1b*

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn y...	phi*Mn z...	Cb	Eqn
41	M5_1	LL2.5x2.5x...	.095	4.809	21	.003	0	y	23	42564.3...	56700	3.844	2.479	1	H1-1b*
42	M3_1	LL2.5x2.5x...	.095	4.809	13	.003	4.809	y	23	42564.3...	56700	3.844	2.479	1	H1-1b*
43	M75	L2.5x2.5x4	.090	0	37	.016	1.598	z	1	34569.0...	37485	1.083	2.467	2....	H2-1
44	MP3A	PIPE_2.5	.083	4	34	.019	4		7	30038.4...	50715	3.596	3.596	1....	H1-1b
45	MP4A	PIPE_2.5	.075	4	23	.029	.5		7	30038.4...	50715	3.596	3.596	1....	H1-1b
46	MP4C	PIPE_2.5	.075	4	6	.029	.5		3	30038.4...	50715	3.596	3.596	1....	H1-1b
47	MP4B	PIPE_2.5	.075	4	2	.029	.5		11	30038.4...	50715	3.596	3.596	1....	H1-1b
48	MP3C	PIPE_2.5	.074	4	19	.019	4		3	30038.4...	50715	3.596	3.596	2....	H1-1b
49	MP3B	PIPE_2.5	.073	4	15	.019	4		11	30038.4...	50715	3.596	3.596	1....	H1-1b
50	CBC2	PIPE_2.0	.066	4.688	18	.048	1.172		38	6295.422	32130	1.872	1.872	3....	H1-1b
51	CBC1	PIPE_3.0	.066	11.328	15	.031	11.979		15	28250.5...	65205	5.749	5.749	2....	H1-1b
52	CBB1	PIPE_3.0	.065	11.328	23	.031	11.979		23	28250.5...	65205	5.749	5.749	2....	H1-1b
53	CBB2	PIPE_2.0	.065	11.198	9	.043	11.979		6	6295.422	32130	1.872	1.872	4....	H1-1b
54	M73	L2.5x2.5x4	.061	1.598	2	.016	1.598	z	9	34569.0...	37485	1.083	2.467	2....	H2-1
55	M74	L2.5x2.5x4	.060	1.598	10	.016	1.598	z	5	34569.0...	37485	1.083	2.467	2....	H2-1
56	M13	PL1/2x6	.032	.138	4	.224	.265	y	43	89622.19	91800	.956	11.475	2....	H1-1b
57	M9	PL1/2x6	.032	.138	6	.146	.265	y	16	89622.19	91800	.956	11.475	2....	H1-1b
58	M42	PL1/2x6	.032	.138	8	.184	.265	y	23	89622.19	91800	.956	11.475	2....	H1-1b
59	M24	PL1/2x6	.032	.138	2	.145	.265	y	24	89622.19	91800	.956	11.475	2....	H1-1b
60	M39	PL1/2x6	.032	.138	10	.147	.265	y	20	89622.19	91800	.956	11.475	2....	H1-1b
61	M28	PL1/2x6	.032	.138	12	.184	.265	y	15	89622.19	91800	.956	11.475	2....	H1-1b
62	MP5B	PIPE_2.0	.017	3	2	.002	3		2	26521.4...	32130	1.872	1.872	1....	H1-1b
63	MP5C	PIPE_2.0	.017	3	6	.002	3		6	26521.4...	32130	1.872	1.872	1....	H1-1b

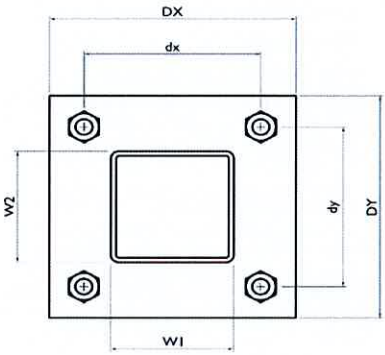
VzW SMART Tool© Vendor

Client:	VERIZON WIRELESS	Date:	6/27/2024
Site Name:	0		
MDG #:	0		
Fuze ID #:	0	Page:	1

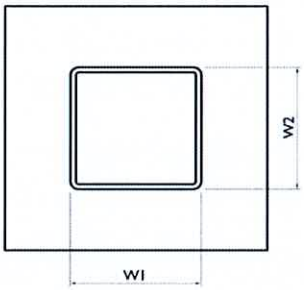
Version 2.00

I. Mount-to-Tower Connection Check

Custom Orientation Required	No
Tower Connection Bolt Checks	Yes
Bolt Orientation	Parallel
Bolt Quantity per Reaction:	4
d_x (in) *(Delta X of typ. bolt config. sketch)* :	6
d_y (in) *(Delta Y of typ. bolt config. sketch)* :	6
Bolt Type:	A325N
Bolt Diameter (in):	0.625
Required Tensile Strength / bolt (kips):	2.6
Required Shear Strength / bolt (kips):	0.3
Tensile Capacity / bolt (kips):	20.7
Shear Capacity / bolt (kips):	12.4
Bolt Overall Utilization:	**12.7%**



Tower Connection Baseplate Checks	Yes
Connecting Standoff Member Shape:	Rect Tube
Weld Stiffener Configuration:	No Stiffeners
Plate Width, D_x (in):	8
Plate Height, D_y (in):	8
W1(in):	4
W2 (in):	4
Member Thickness (in):	0.25
Stiffener location a_1 (in):	
Stiffener location b_1 (in):	
Stiffener location a_2 (in):	
Stiffener location b_2 (in):	
F_y (ksi, plate):	35
Plate Thickness (in):	0.75
Length of Yield Line, L_y (in):	5.85
Bolt Eccentricity, e (in):	1.65
M_u (kip-in):	4.33
Phi*M_n (kip-in):	25.91
Plate Bending Utilization:	**16.7%**

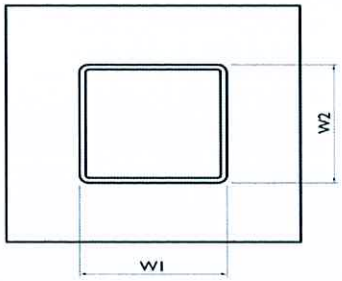


VzW SMART Tool© Vendor

Client:	VERIZON WIRELESS	Date:	6/27/2024
Site Name:	0		
MDG #:	0		
Fuze ID #:	0	Page:	2

Version 2.00

Tower Connection Weld Checks	Yes
Weld Shape:	Rectangle
Weld Stiffener Configuration:	None
Stiffener Notch Length, n (in):	
Weld Size (1/16 in):	6
W1 (in):	4
W2 (in):	4
Weld Total Length (in):	16.00
Z_x (in^3/in):	21.33
Z_y (in^3/in):	21.33
J_p (in^4/in):	85.33
c_x (in)	2.25
c_y (in)	2.25
Required combined strength (kip/in):	0.80
Weld Capacity (kip/in):	8.35
Weld Utilization:	**9.5%**

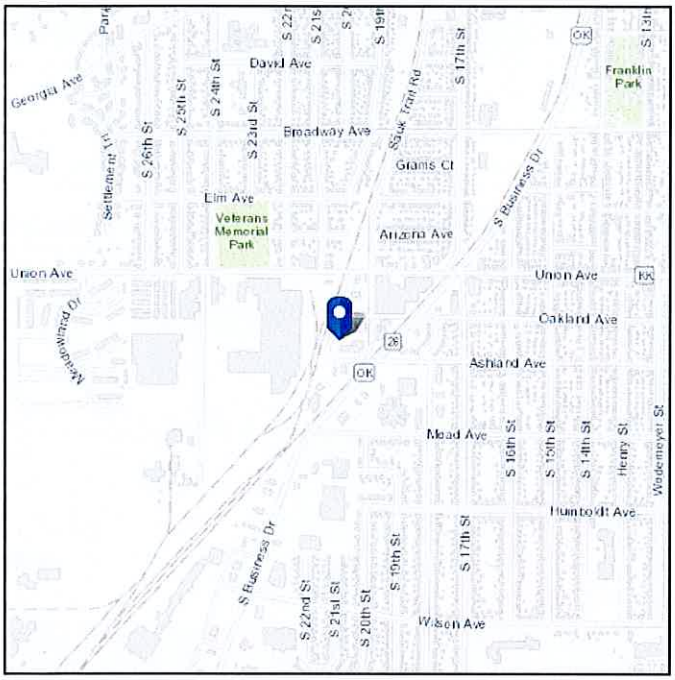


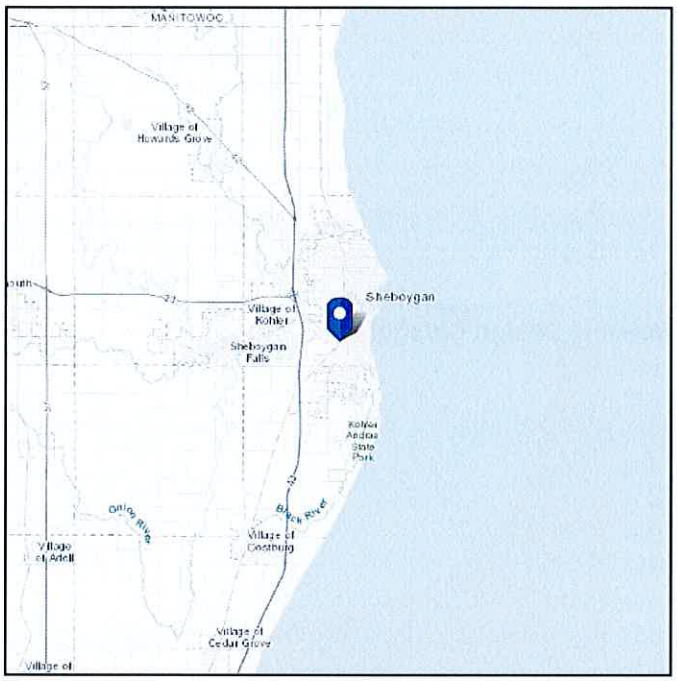
ASCE Hazards Report

Address:
No Address at This Location

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

Latitude: 43.730365
Longitude: -87.732356
Elevation: 640.4581550222194 ft (NAVD 88)





Wind

Results:

Wind Speed	106 Vmph
10-year MRI	72 Vmph
25-year MRI	80 Vmph
50-year MRI	85 Vmph
100-year MRI	90 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: Thu Jun 27 2024

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.

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

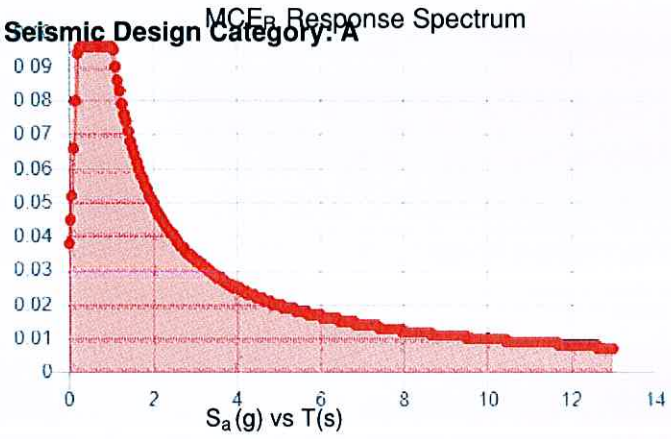
Seismic

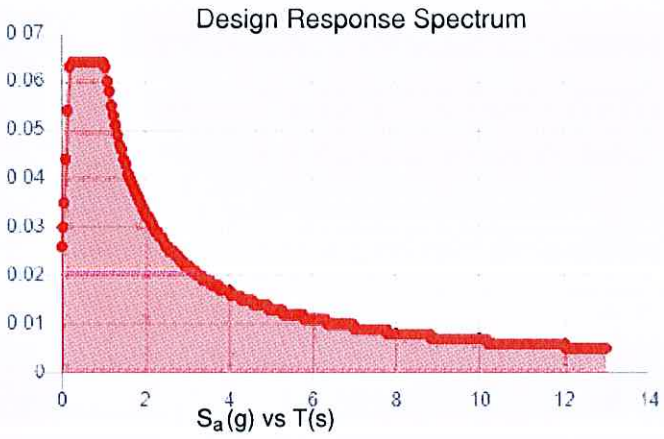
Site Soil Class: D - Default (see Section 11.4.3)

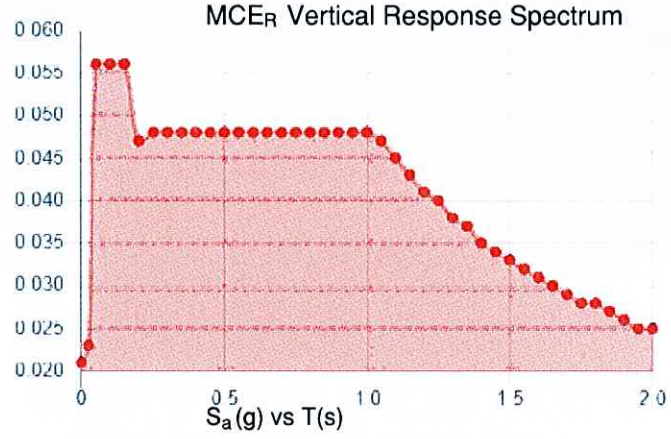
Results:

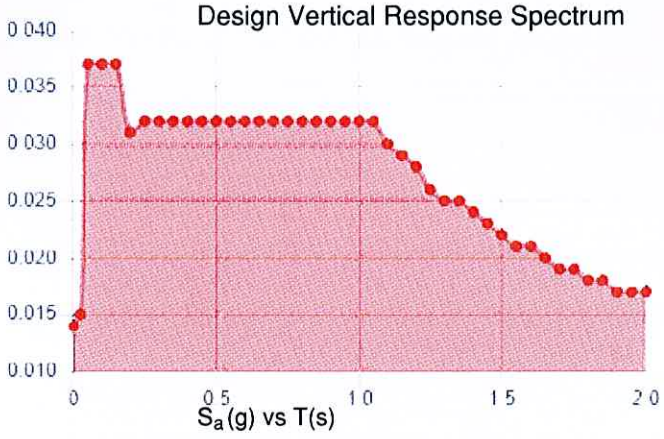
S_S :	0.06	S_{D1} :	0.066
S_1 :	0.041	T_L :	12
F_a :	1.6	PGA :	0.029
F_v :	2.4	PGA_M :	0.046
S_{MS} :	0.096	F_{PGA} :	1.6
S_{M1} :	0.099	I_e :	1
S_{DS} :	0.064	C_v :	0.7

Seismic Design Category: A









Data Accessed: Thu Jun 27 2024

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.

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Ice

Results:

Ice Thickness:	1.50 in.
Concurrent Temperature:	-5 F
Gust Speed	40 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Thu Jun 27 2024

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.

AFFIDAVIT

SWORN STATEMENT OF NEED FOR A NEW MOBILE SERVICE SUPPORT STRUCTURE FOR BUSINESS DRIVE LOCATED AT 2219 SAUK TRAIL RD., SHEBOYGAN, WI 53083 IN SUPPORT OF NEW TOWER CONSTRUCTION PURSUANT TO WIS. STAT. §66.0404

STATE OF WISCONSIN §
§
COUNTY OF SHEBOYGAN §

BEFORE ME, the undersigned authority, this day personally appeared Kunjan Mehta, who being by me first duly sworn, on oath says as follows:

1. My name is Kunjan Mehta. I am an Engr III Cslt-Radio Frequency Global Network and Technology for Verizon Wireless ("Verizon") in the Illinois/Wisconsin Market. As a radio frequency specialist, I am trained to identify lack of capacity in coverage in wireless communications systems and to assess the ability of proposed antenna sites to remedy lack of capacity in signal coverage.

2. Verizon is a federally licensed provider of wireless communications services with a national footprint.

3. Verizon will locate its personal wireless service equipment on this proposed tower and in the proposed ground equipment area. The proposed facilities are located within areas where Verizon has identified a need to install a wireless telecommunications facility in order to provide reliable wireless service. The search area for the proposed facility was determined by the fact that wireless service needs significant improvement throughout the surrounding. Furthermore, it was determined that the areas served by the facility would interact well with those of existing and planned facilities in the surrounding area.

4. Verizon would have a lack in the required capacity to provide reliable coverage in the City of Sheboygan if existing towers were to be used outside of the Verizon search ring. The proposed tower locations fulfill network requirements within this area. A lack of capacity could result in the inability to adequately transmit or receive calls, or by interrupted or disconnected calls.

5. The lack in the required capacity to provide reliable coverage that would be created in the City of Sheboygan if the proposed tower/equipment is not constructed, as shown in Exhibit A, would prevent Verizon from providing seamless wireless service to current and future public and private users of its wireless communication system including police, fire, ambulance and emergency response personnel.

6. Since wireless communication is used with increasing frequency to report crimes, accidents, fires, medical emergencies and other threats to people or property, a lack of the required capacity represents a demonstrable threat to public health, safety and welfare.

7. Exhibit A is a true and accurate simulation of existing radio frequency coverage in the area of the proposed site and shows the location of Verizon's proposed site in the City of Sheboygan. Exhibit B is a true and accurate simulation of radio frequency coverage of the proposed site with antennas at 120' on a 125' standard Monopole (with the highest point being 135' at the tip of a 10' lightning rod) and surrounding areas. The Proposed Tower is intended to provide coverage for up to three carriers. This evidence conclusively demonstrates Verizon's need for the proposed tower.

8. The proposed tower will provide needed coverage into the surrounding commercial and residential developments around the proposed site. When coupled with Verizon's existing system, the minimum antenna centerline height at the proposed site necessary to meet Verizon's radio frequency coverage and capacity objectives is as listed in section #7. The proposed tower and related ground equipment, as designed, will substantially accomplish Verizon's radio frequency goals in the area while minimizing any aesthetic impact to the community.

9. Natural and man-made features such as large buildings, hills, trees, and ridge lines all affect the way a signal travels and can distort or obstruct radio signals. Radio signals will either bounce off, bounce back or be absorbed by these obstructions. These constraints severely limit the suitability of sites for purposes of remedying a lack of capacity in signal coverage.

10. Exhibit C is a true and accurate representation of the search ring provided by Verizon to search for tower locations that meet the needs of Verizon's communications network. The search ring center is shown in Exhibit C and depicted as a red pin and the search ring is depicted as a red circle. The location of the proposed tower is shown in Exhibit C and depicted by the green pin.

11. We have performed an FCC Antenna Structure Registration Search for a quarter-mile radius around the coordinates of the proposed site. The results of this search are attached and incorporated herein by reference as Exhibit D. There were no towers within the search radius to meet the coverage objective. This additional evidence further demonstrates the need for the proposed tower.

Vertical Bridge US-WI-5737 – Business Drive
Verizon MDG ID 5000954019
2219 Sauk Trail Rd., Sheboygan, WI 53083
RF Affidavit

DATED THIS 6 DAY OF August, 2024.

Kunjan

KUNJAN MEHTA
ENGR III CSLT-RADIO FREQUENCY
GLOBAL NETWORK AND TECHNOLOGY
VERIZON WIRELESS

SUBSCRIBED AND SWORN BEFORE ME THIS
6th DAY OF August, 2024.

Sharon A Petrielli

NOTARY PUBLIC,

STATE OF: ILLINOIS

MY COMMISSION EXPIRES: 7-22-2025

COUNTY OF: Cook

SHARON A PETRIELLI
Official Seal
Notary Public - State of Illinois
My Commission Expires Jul 22, 2025

EXHIBIT A

To Affidavit of Kunjan Mehta

See attached Propagation Map showing Current Coverage with Existing Antennas

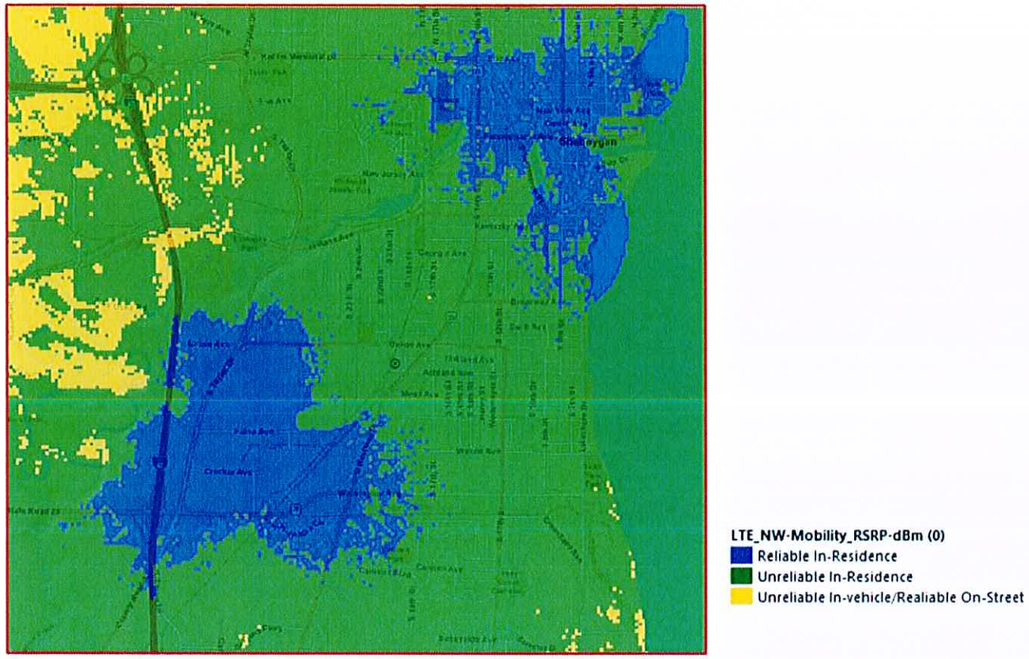


EXHIBIT B

To Affidavit of Kunjan Mehta

See attached Propagation Map with Proposed Monopole, Antennas at 120' and Current Coverage with Existing Antennas

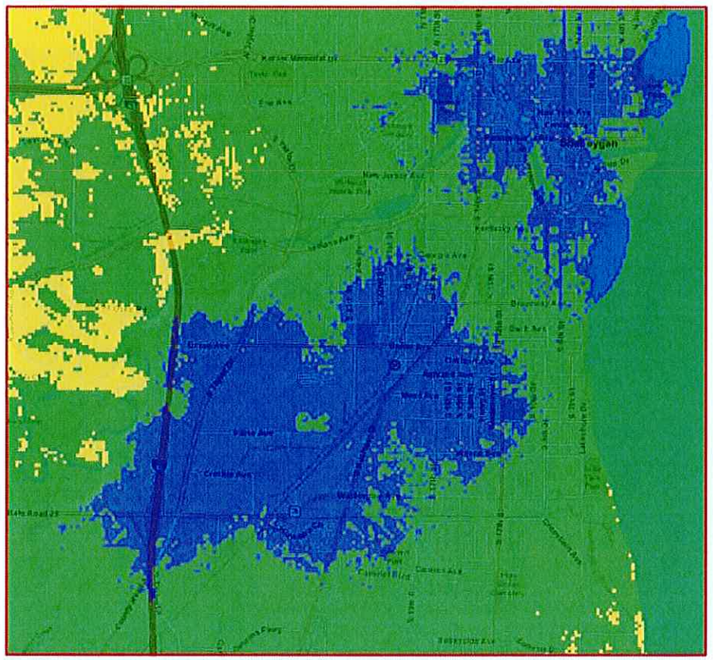


EXHIBIT C

To Affidavit of Kunjan Mehta

.25 Mile Search Radius Map: From RF Search Center

Center of RF .25 Mile Search Ring: Red Pin, Red Circle

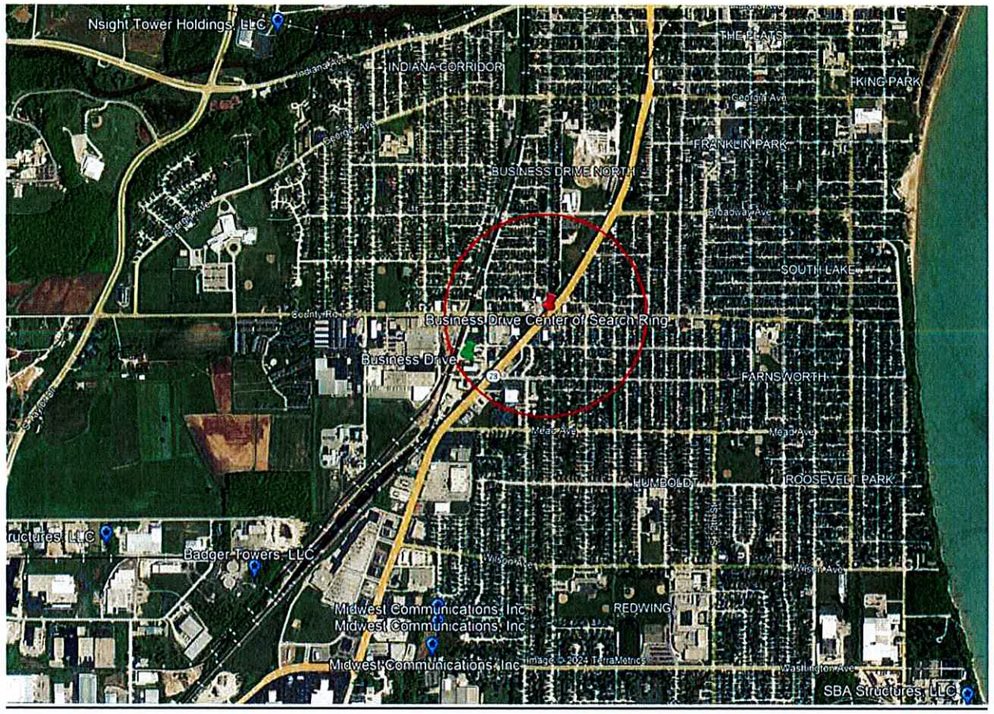


EXHIBIT D

To Affidavit of Kunjan Mehta

FCC Antenna Structure Registration Study Results

Center of RF Quarter-Mile Search Ring: Exhibit C Red Pin, Red Circle

Latitude:	43° 43' 55.56" North (43.732099°)
Longitude:	87° 43' 41.61" West (-87.728226°)

Proposed tower location: **Exhibit C Green Pin**

Latitude:	43° 43' 49.32" North (43.730367°)
Longitude:	87° 43' 56.23" West (-87.732286°)
Parcel ID:	59281425610
Jurisdiction:	City of Sheboygan

Existing tower locations: **Exhibit C Blue Stars**

No existing towers within search ring.

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

VZW SITE NAME
BUSINESS DRIVE

MDG LOCATION #
5000954019

FUZE PROJECT #
2612115

125' MONOPOLE

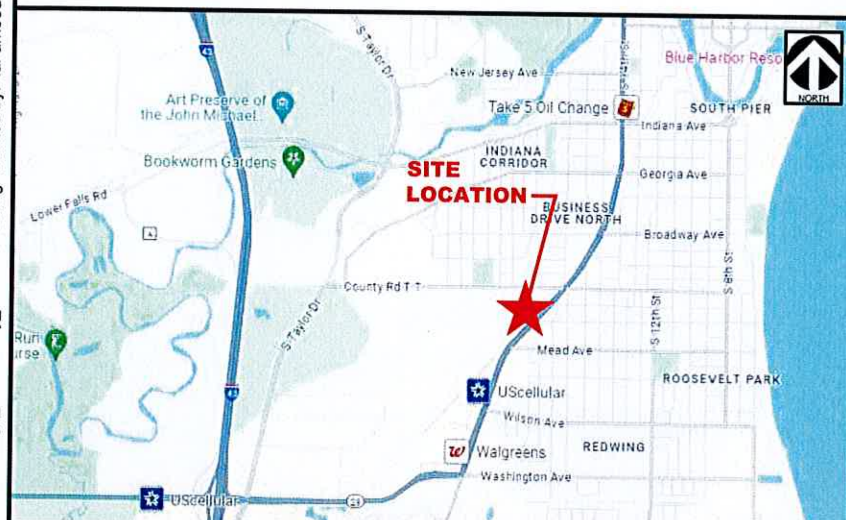
verticalbridge

VB SITE NAME
BUSINESS DRIVE

VB SITE #
US-WI-5737

ADDRESS
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083

VICINITY MAP:



AERIAL MAP:

APPROVALS:

CONSTRUCTION MANAGER:	
LANDLORD:	

PROJECT INFORMATION:

SITE ADDRESS:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SITE COORDINATES:
LATITUDE: 43° 43' 49.32" N (43.730367°)
LONGITUDE: 87° 43' 56.23" W (-87.732286°)

GROUND ELEVATION:
640' AMSL

PARCEL OWNER:
MATHEW J. DROSS & LISA A. DROSS
PARCEL ID: 59281425610

ZONING:
CURRENT ZONING: CLASS 2 COMMERCIAL
JURISDICTION: CITY OF SHEBOYGAN

LESSOR:
VERTICAL BRIDGE
750 PARK OF COMMERCE DRIVE, SUITE 200
BOCA RATON, FL 33487

LESSEE:
VERIZON WIRELESS
1701 GOLF ROAD, TOWER 2, SUITE 400
ROLLING MEADOWS, IL 60008
CONTACT: KATHY COGSWELL
EMAIL: kathryn.cogswell@Verizonwireless.com
PHONE: (847) 841-0694

A&E FIRM
RAMAKER
855 COMMUNITY DRIVE
SAUK CITY, WI 53583
CONTACT: MIKE REEVE
EMAIL: mreeve@ramaker.com
PHONE: (608) 643-4100

FIBER PROVIDER
AT&T
PHONE: (855) 781-7542

ELECTRIC PROVIDER
ALLIANT ENERGY
CONTACT: JOSH ANDREWS
EMAIL: joshuaandrews@alliantenergy.com
PHONE: (920) 459-6345

SCOPE OF WORK:

- (9) PROPOSED PANEL ANTENNAS WITH (1) PROPOSED ANTENNA SECTOR PLATFORM
- (6) PROPOSED TOP OF TOWER RRHs, (3) RRHs INTEGRATED WITH PANEL ANTENNAS
- (3) PROPOSED TOP OF TOWER OVP BOX WITH (3) ALARMS
- (1) PROPOSED 4'X11' EQUIPMENT CONCRETE PAD WITH ICE BRIDGE CANOPY
- (2) PROPOSED EQUIPMENT CABINETS
- (1) PROPOSED 4'-0"X10' GENERATOR CONCRETE PAD
- (1) PROPOSED GENERATOR
- (1) PROPOSED 6' UTILITY STAND WITH ICE BRIDGE CANOPY
- (3) PROPOSED OVP BOX AT 6' UTILITY STAND
- (1) PROPOSED ILC CABINET
- (1) PROPOSED CHARLES CUBE
- (1) PROPOSED CONTACT ALARM BOX
- (3) PROPOSED 1.58" HYBRID CABLES WITH ICE BRIDGE
- INSTALL EQUIPMENT POWER AND FIBER

CODE COMPLIANCE:

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE ALL CODES REFERENCED ON PAGE GN-1 AND AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

PROJECT DESCRIPTION:
CONSTRUCTION OF TELECOMMUNICATIONS AND PUBLIC UTILITY FACILITY, CONSISTING OF A LATTICE TOWER, SPACE FOR CARRIER EQUIPMENT, AND UTILITY BACKBOARD WITHIN A FENCED COMPOUND. NO WATER OR SEWER IS REQUIRED. THIS WILL BE AN UNMANNED FACILITY.

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SHEET INDEX

ATTACHMENTS

verticalbridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

RAMAKER employee-owned
(608) 643-4100 www.ramaker.com

Certification & Seal:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Wisconsin.

WISCONSIN MICHAEL L. PINSKE 36387 MIDDLETON, WI PROFESSIONAL ENGINEER

Signature: [signature] Date: 9/30/2024

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
TITLE SHEET

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: T-1

VERTICAL BRIDGE CONSTRUCTION SCOPE OF WORK

1.00 PERMITTING
A. CONTRACTOR IS RESPONSIBLE FOR ELECTRICAL PERMITS AND ALL REQUIRED INSPECTIONS.

2.00 SITE CLEARING
A. CONTRACTOR SHALL CLEAR ACCESS EASEMENT AND LEASE AREA OF ALL TREES AND STUMPS. REMOVE AND DISPOSE OF ALL DEBRIS. CONTRACTOR SHALL NOT DISTURB AREA OUTSIDE OF LIMITS OF DISTURBANCE.

B. IF REQUIRED PER UTILITY COORDINATION CONTRACTOR SHALL CLEAR UTILITY EASEMENTS OF ALL TREES AND STUMPS. REMOVE AND DISPOSE OF ALL DEBRIS.

C. CONTRACTOR SHALL INSTALL SILT FENCE PRIOR TO THE START OF CONSTRUCTION.

D. ALL DEBRIS OR MATERIALS TO BE LEFT ON SITE WILL BE CLEARED WITH THE LAND OWNER ON A SIGNED DOCUMENT.

3.00 ACCESS ROAD
A. CONTRACTOR SHALL COMPLETE GRAVEL ACCESS DRIVE TO TOWER COMPOUND PER CONSTRUCTION DRAWINGS OR AT A MINIMUM OF VERTICAL BRIDGE STANDARDS.

B. 18" CULVERT PIPE IS VERTICAL BRIDGE MINIMUM STANDARD UNLESS DOT ENFORCED SIZE IS REQUESTED. SEE CONSTRUCTION DRAWINGS GRADING PLAN FOR SITE CULVERT LOCATION(S) AND SIZES.

4.00 COMPOUND FENCE
A. CONTRACTOR SHALL INSTALL STYMIE LOCK SYSTEM AND VERTICAL BRIDGE LOCK ON COMPOUND GATE. VERTICAL BRIDGE LOCK COMBO (0951)

B. CONTRACTOR SHALL INSTALL MUSHROOM AND GATE STOPS.

C. CONTRACTOR SHALL INSTALL 50'x50'x6' CHAINLINK FENCE WITH (3) RUNS OF BARBED WIRE ON TOP FOR MONOPOLE AND GUYED TOWERS. (75'x75'x6' FENCED COMPOUND FOR SST TOWER SITES)

5.00 TOWER AND FOUNDATION
A. CONTRACTOR SHALL COORDINATE DELIVERY OF ANCHOR BOLTS, TEMPLATE AND TOWER STEEL WITH TOWER VENDOR.

B. CONTRACTOR SHALL UTILIZE SUPPLIED FOUNDATION DESIGN FOR TOWER. REBAR AND CONCRETE INSTALLATION SHALL BE INSPECTED AND TESTED BY A 3RD PARTY COMPANY AND SUBMIT TEST AND INSPECTION REPORTS TO VERTICAL BRIDGE. (SPOILS FROM FOUNDATION SHALL BE REMOVED FROM SITE)

C. 3 DAY / 7 DAY / 28 DAY BREAK TEST REQUIRED. BREAK TEST MUST BE SUBMITTED FOR REVIEW PRIOR TO TOWER STACK.

D. CONTRACTOR SHALL INSTALL TOWER, ALL ASSOCIATED STEP BOLTS, SAFETY CLIMB EQUIPMENT, LIGHTNING ROD, WAVEGUIDE LADDER AND ALL MISCELLANEOUS TOWER PARTS.

E. CONTRACTOR SHALL CONFORM TO SUPPLIED FAA HEIGHT VERIFICATION.

6.00 TOWER LIGHTING
A. TOWER LIGHTING EQUIPMENT SHALL BE INSTALLED BY LIGHTING MANUFACTURE.

B. CONTRACTOR SHALL SUPPLY AND INSTALL 100A SUB-PANEL WITH (3) 20 AMP BREAKERS FOR TOWER LIGHTING IF REQUIRED.

C. CONTRACTOR SHALL SUPPLY AND INSTALL (1) GFI OUTLET AT SUB-PANEL LOCATION FOR TOWER LIGHTING IF REQUIRED.

D. CONTRACTOR SHALL SUPPLY AND INSTALL (1) 2" CONDUIT FROM SUB-PANEL LOCATION TO TOWER LEG WITH WEATHER-HEAD IF REQUIRED.

7.00 UTILITY H-FRAME CONSTRUCTION
A. CONTRACTOR SHALL SUPPLY AND INSTALL A 4-GANG 800 AMP METER PANEL ON A NEW 8' H-FRAME.

B. H-FRAME TO BE CONSTRUCTED TO HOLD 4-GANG METER BASE ON FRONT WITH METERS FACING OUT OF COMPOUND.

C. H-FRAME TO BE CONSTRUCTED TO HOLD TOWER LIGHTING SUB-PANEL AND LIGHTING CONTROLLER ON FRONT ALONGSIDE METER BASE.

D. CONTRACTOR SHALL SUPPLY GFCI ALL WEATHER RECEPTACLES ON H-FRAME.

E. CONTRACTOR SHALL SUPPLY AND INSTALL 500-WATT METAL MALIDE FLOOD LIGHT 120 VOLT WITH TIMER SWITCH.

8.00 POWER SERVICE
A. CONTRACTOR SHALL USE PROVIDED UTILITY REPORT AND CONSTRUCTION DRAWINGS TO BID POWER FROM POWER DEMARC.

B. CONTRACTOR SHALL BE IN CONSTANT COMMUNICATION WITH POWER COMPANY UNTIL POWER IS ACQUIRED AT MULTI-METER FRAME.

C. CONTRACTOR SHALL NOTIFY UTILITY PROVIDER OF START OF CONSTRUCTION.

D. CONTRACTOR SHALL CONDUCT A SECOND POWER WALK WITH UTILITY PROVIDER AT START OF CONSTRUCTION.

E. IF CHANGES TO THE SCOPE OF WORK ARE MADE BY THE UTILITY PROVIDER AFTER CONSTRUCTION START, CONTRACTOR SHALL NOTIFY VERTICAL BRIDGE CM/PM IMMEDIATELY.

9.00 VERIZON TELCO/FIBER SERVICE INSTALL BY VERTICAL BRIDGE
A. CONTRACTOR SHALL SUPPLY AND INSTALL A SEPARATE HAND-HOLE AT THE ROW, AT THE COMPOUND AND EVERY 300' (OR AT ANY BEND) WITH 2" CONDUIT FOR THE LIT FIBER PER THE CONSTRUCTION DRAWINGS.
MARK HAND-HOLES LIT FIBER

B. CONTRACTOR SHALL SUPPLY AND INSTALL A SEPARATE HAND-HOLE AT THE ROW, AT THE COMPOUND AND EVERY 300' (OR AT ANY BEND) WITH 2" CONDUIT FOR THE DARK FIBER PER THE CONSTRUCTION DRAWINGS.
MARK HAND-HOLES DARK FIBER FIBER

C. **FIBER TO FOLLOW ACCESS ROAD TO ROW ALWAYS!**

CONTRACTOR NOTES

VERTICAL BRIDGE CM NOTES

1. NOISE PRODUCING CONSTRUCTION ACTIVITIES SHALL TAKE PLACE ONLY ON WEEKDAYS (MONDAY THROUGH SATURDAY, NON-HOLIDAY) BETWEEN THE HOURS OF 6:00 A.M. & 6:00 P.M., EXCEPT IN TIMES OF EMERGENCY REPAIR
2. GENERAL CONTRACTOR TO REFERENCE THE VERTICAL BRIDGE UTILITY COORDINATION REPORT (UCR) FOR POWER COMPANY REQUIREMENTS REGARDING POWER CONDUITS.
3. SPECIFIC GROUND EQUIPMENT LIGHTING REQUIRED TO ADDRESS CONSERVATION MEASURES OF NORTHERN LONG EARED BAT. SEE SHEETS VW B-2 & VW E-7.

VERTICAL BRIDGE CONSTRUCTION SCOPE OF WORK CON'T.

10.00 VERIZON CIVILS
A. CONTRACTOR SHALL PROVIDE LUMP SUM FEE FOR ALL VERIZON LINE ITEMS UNDER TENANT CIVILS ON BID DOCUMENT. THIS INCLUDES SET AND CONNECTIONS OF VERIZON'S EQUIPMENT/GENERATOR PADS, FUEL TANKS, EQUIPMENT/GENERATOR ELECTRICAL, TELCO/FIBER CONDUITS, EQUIPMENT GROUNDING AND ICE BRIDGE.

11.00 VERIZON ANTENNA MOUNT(S)
A. CONTRACTOR SHALL PROVIDE SEPARATE LINE ITEM FOR ANTENNA MOUNT INSTALLATION UNDER TENANT MOUNT. CONTRACTOR SHALL ORDER THE ANTENNA MOUNT AND CONFIRM THE ITEM DESCRIPTION THROUGH VERIZON.

B. CONTRACTOR WILL BE REQUIRED TO ORDER ANTENNA MOUNT ASAP TO AVOID ANY DELAYS TO STACK THE TOWER.

VERIZON CONSTRUCTION SCOPE OF WORK

1.00 VERIZON ANTENNA AND LINES
A. CONTRACTOR SHALL PROVIDE LUMP SUM FEE FOR ALL VERIZON ANTENNA AND LINES WITH EQUIPMENT UNDER TENANT CIVILS ON BID DOCUMENT. VERIZON TO PROVIDE ALL EQUIPMENT FOR ANTENNA AND LINE INSTALLATION. CONTRACTOR SHALL PROVIDE CONSUMABLE MATERIALS AS NEEDED TO COMPLETED THE CO-LOCATION.

B. CONTRACTOR SHALL SUPPLY AND INSTALL HYBRID CABLES.

2.00 STARTUP COMMISSIONING
A. CONTRACTOR SHALL PROVIDE LUMP SUM FEE UNDER BID CLARIFICATION/EXCEPTIONS SECTION FOR COMMISSIONING AND START-UPS (AS REQUIRED BY "STANDARD VERIZON INSTALL). VERIZON IS RESPONSIBLE FOR PAYMENT OF THESE SERVICES.

3.00 VERIZON POWER SERVICE
A. CONTRACTOR/VERIZON CM RESPONSIBLE FOR SETTING UP VERIZON'S POWER ACCOUNT OR TRANSFER OF INITIAL SERVICE ACCOUNT FROM VERTICAL BRIDGE TO VERIZON.
1. CONTRACTOR RESPONSIBLE FOR REPORTING POWER UPDATES.
2. CONTRACTOR RESPONSIBLE FOR TRACKING AND CONFIRMING METER SET.
3. PHOTO CONFORMATION REQUIRED.

B. VERIZON POWER SERVICE SHALL BE 200 AMPS
C. TYPICAL VERIZON ELECTRICAL POWER SERVICE INSTALL. SEE CONSTRUCTION DRAWINGS FOR POWER ROUTING.

VERTICAL BRIDGE TIMELINE EXPECTATIONS

- ONCE NTP HAS BEEN ISSUED, CONTRACTOR HAS (3) BUSINESS DAYS TO PROVIDE A SCHEDULE TO VERITCAL BRIDGE CONSTRUCTION MANAGER AND PROJECT MANAGER.
- CONSTRUCTION STARTS WITHIN 7 DAYS OF NTP RECEIPT.
- DAILY SAFETY REPORTS ARE REQUIRED.
- DAILY SITE UPDATES WITH PHOTOS ARE REQUIRED.
- TOWER STACKED (OTHVR) WITHIN 28 DAYS OF NTP RECEIPT.
- CLOSEOUT APPROVAL WITHIN 60 DAYS OF NTP RECEIPT.

verticalbridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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Certification & Seal:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Wisconsin.

WISCONSIN
MICHAEL L. PINSKE
36387
MIDDLETON, WI
PROFESSIONAL ENGINEER

Signature: Date: 9/30/2024

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY
DATE ISSUED: 06/25/2024

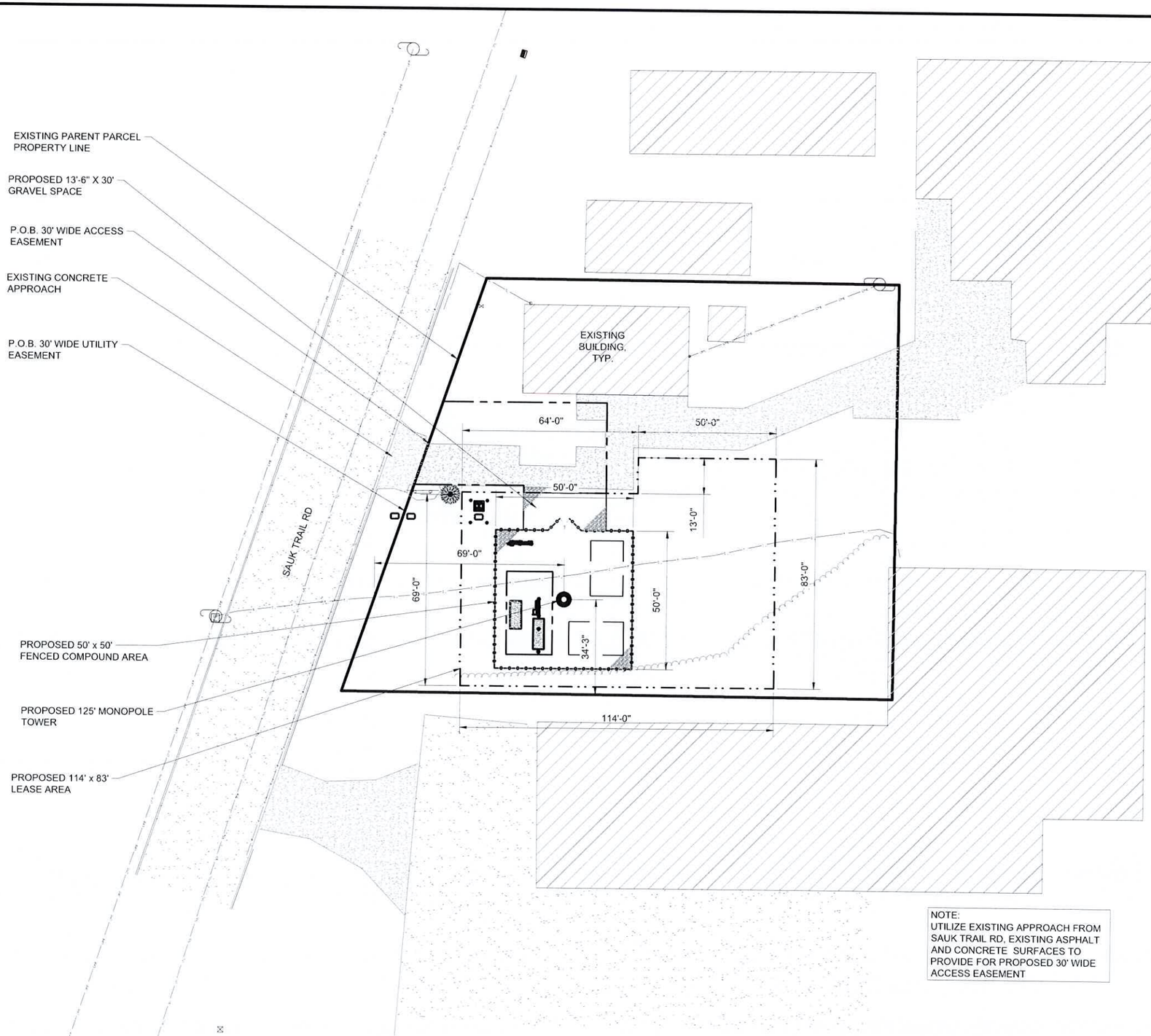
PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
SCOPE OF WORK

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: SOW



NOTE:
UTILIZE EXISTING APPROACH FROM SAUK TRAIL RD. EXISTING ASPHALT AND CONCRETE SURFACES TO PROVIDE FOR PROPOSED 30' WIDE ACCESS EASEMENT

LOCATION PLAN
SCALE: 1" = 40'
1

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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ISSUE PHASE: PRELIMINARY
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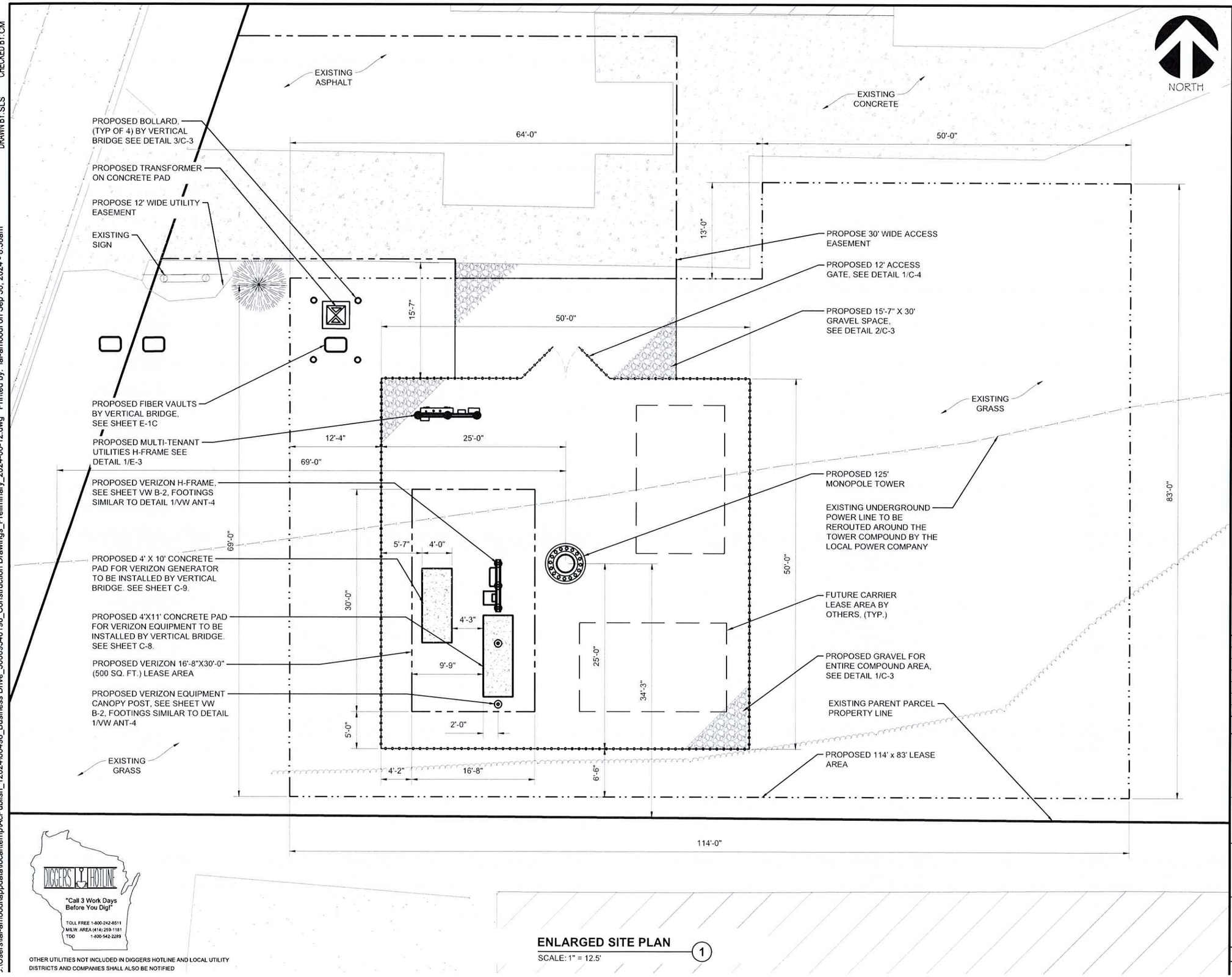
PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
LOCATION PLAN

0 20' 40' 80'
11" x 17" - 1" = 40'
22" x 34" - 1" = 20'

PROJECT NUMBER: 60498
SHEET NUMBER: LP



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

ENLARGED SITE PLAN (1)
SCALE: 1" = 12.5'

verticalbridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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WISCONSIN MICHAEL L. PINSKE 36387 MIDDLETON, WI PROFESSIONAL ENGINEER

Signature: 9/30/2024 Date:

MARK	DATE	DESCRIPTION
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ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
ENLARGED SITE PLAN

0 6.25' 12.5' 25'
11" x 17" - 1" = 12.5'
22" x 34" - 1" = 6.25'

PROJECT NUMBER 60498
SHEET NUMBER C-1

DRAWN BY: SLS CHECKED BY: CM

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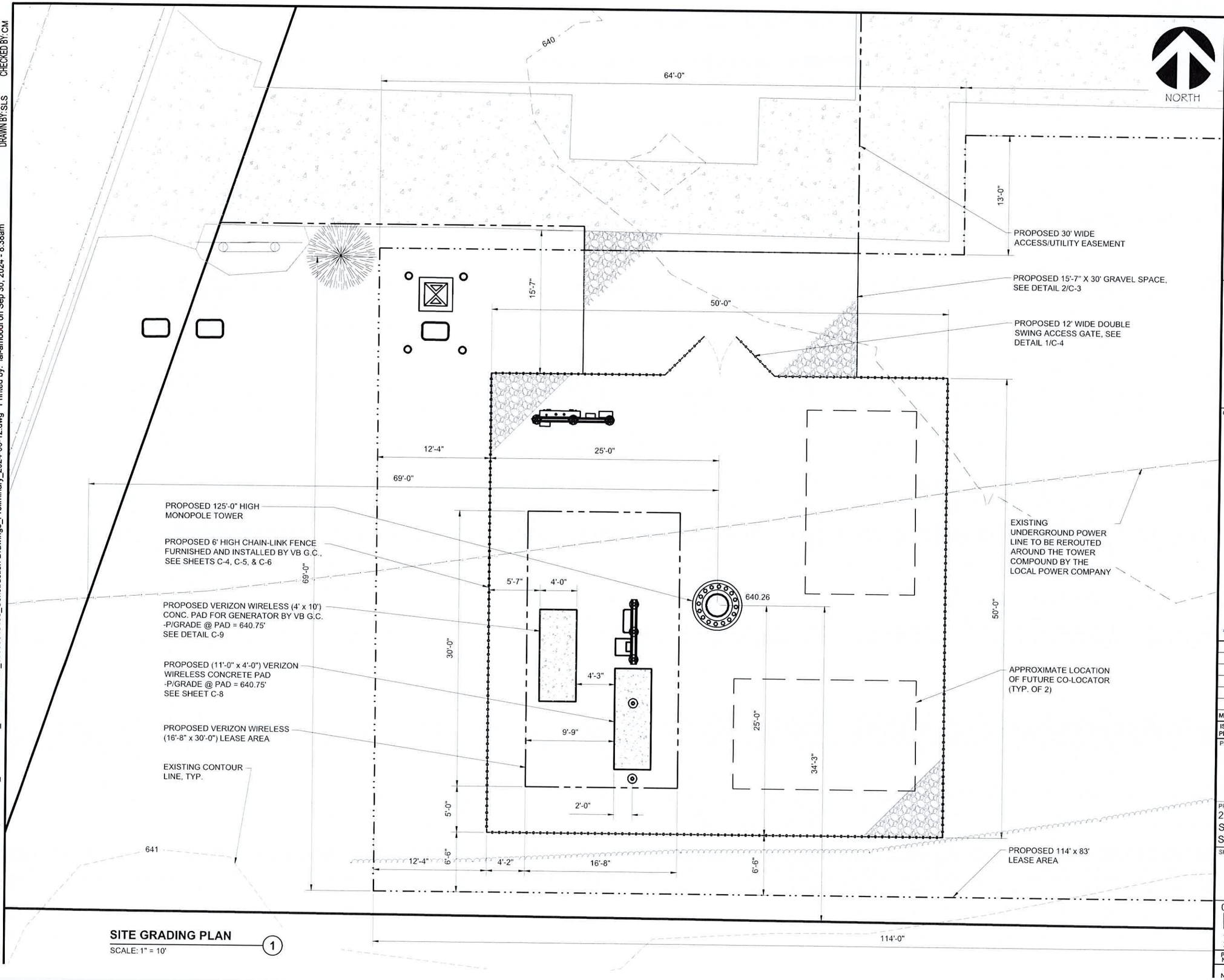

SITE GRADING PLAN
SCALE: 1" = 10'
1

vertical bridge

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d/b/a VERIZON WIRELESS

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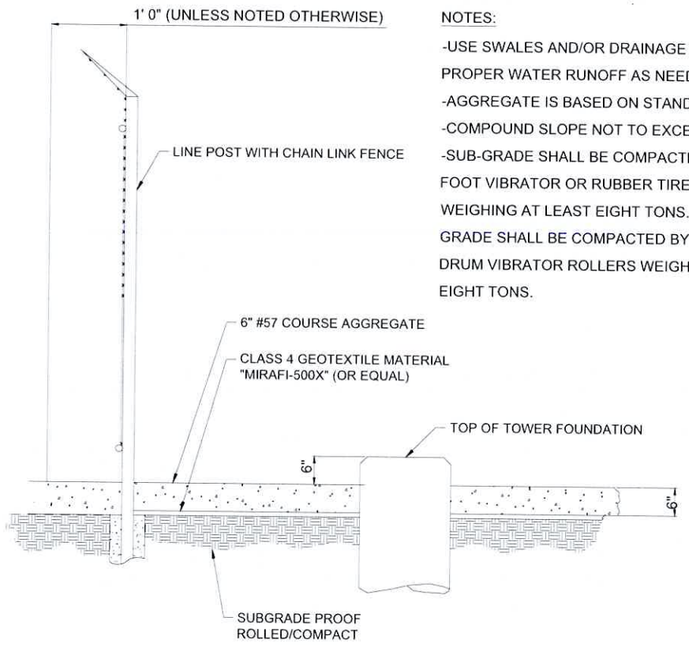
PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
SITE GRADING PLAN

0 5' 10' 20'
11" x 17" - 1" = 10'
22" x 34" - 1" = 5'

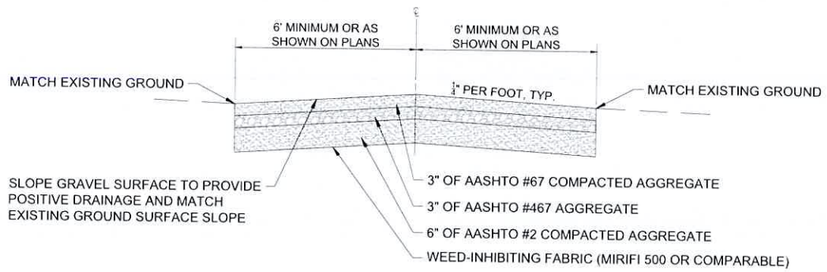
PROJECT NUMBER: 60498
SHEET NUMBER: C-2



NOTES:

-USE SWALES AND/OR DRAINAGE DITCHES FOR PROPER WATER RUNOFF AS NEEDED.
-AGGREGATE IS BASED ON STANDARD AASHTO.
-COMPOUND SLOPE NOT TO EXCEED 5%.
-SUB-GRADE SHALL BE COMPACTED BY SHEEPS FOOT VIBRATOR OR RUBBER TIRED ROLLERS WEIGHING AT LEAST EIGHT TONS. -FINISHED GRADE SHALL BE COMPACTED BY SMOOTH DRUM VIBRATOR ROLLERS WEIGHING AT LEAST EIGHT TONS.

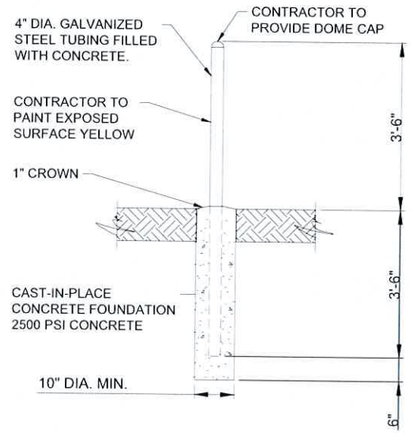
SITE COMPOUND SURFACING DETAIL (1)
SCALE: NTS



NOTES:

1.) THE TURN-AROUND AREA SHALL BE CONSTRUCTED PER THE TYPICAL ACCESS DRIVE SECTION AS SHOWN ABOVE.

TYPICAL ACCESS DRIVE SECTION (2)
SCALE: NTS



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

BOLLARD DETAIL (3)
SCALE: NTS

Item 6.

vertical bridge

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PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
ACCESS ROAD DETAILS

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: C-3

DRAWN BY: SLS CHECKED BY: CM

GRADING & EXCAVATING NOTES:

1. ALL EXCAVATIONS ON WHICH CONCRETE IS TO BE PLACED SHALL BE SUBSTANTIALLY HORIZONTAL ON UNDISTURBED AND UNFROZEN SOIL AND BE FREE FROM LOOSE MATERIAL AND EXCESS GROUNDWATER. DEWATERING FOR EXCESS GROUNDWATER SHALL BE PROVIDED IF REQUIRED.
2. CONCRETE FOUNDATIONS SHALL NOT BE PLACED ON ORGANIC MATERIAL. IF SOUND SOIL IS NOT REACHED AT THE DESIGNATED EXCAVATION DEPTH, THE UNSATISFACTORY SOIL SHALL BE EXCAVATED TO ITS FULL DEPTH AND EITHER BE REPLACED WITH MECHANICALLY COMPACTED GRANULAR MATERIAL OR THE EXCAVATION BE FILLED WITH CONCRETE OF THE SAME QUALITY SPECIFIED FOR THE FOUNDATION.
3. ANY EXCAVATION OVER THE REQUIRED DEPTH SHALL BE FILLED WITH EITHER MECHANICALLY COMPACTED GRANULAR MATERIAL OR CONCRETE OF THE SAME QUALITY SPECIFIED FOR THE FOUNDATION. CRUSHED STONE MAY BE USED TO STABILIZE THE BOTTOM OF THE EXCAVATION. STONE, IF USED, SHALL NOT BE USED AS COMPILING CONCRETE THICKNESS.
4. AFTER COMPLETION OF THE FOUNDATION AND OTHER CONSTRUCTION BELOW GRADE, AND BEFORE BACKFILLING, ALL EXCAVATIONS SHALL BE CLEAN OF UNSUITABLE MATERIAL SUCH AS VEGETATION, TRASH, DEBRIS, AND SO FORTH.
5. -USE APPROVED MATERIALS CONSISTING OF EARTH, LOAM, SANDY CLAY, SAND -BE FREE FROM CLODS OR STONES OVER 2-1/2" MAXIMUM DIMENSIONS -BE PLACED IN 6" LAYERS AND COMPACTED TO 95% STANDARD PROCTOR EXCEPT IN GRASSED/BANDSCAPED AREAS, WHERE 90% STANDARD PROCTOR
6. REMOVE ALL VEGETATION, TOPSOIL, DEBRIS, WET AND UNSATISFACTORY SOIL MATERIALS, OBSTRUCTIONS, AND DELETERIOUS MATERIALS FROM GROUND SURFACE PRIOR TO PLACING FILLS, PLOW, STRIP, OR BREAK UP SLOPED SURFACES STEEPER THAN 1 VERTICAL TO 4 HORIZONTAL SO FILL MATERIAL WILL BOND WITH EXISTING SURFACE. WHEN SUBGRADE OR EXISTING GROUND SURFACE TO RECEIVE FILL HAS A DENSITY LESS THAN THAT REQUIRED FOR FILL, BREAK UP GROUND SURFACE TO DEPTH REQUIRED, PULVERIZE, MOISTURE-CONDITION OR AERATE SOIL AND RECOMPACT TO REQUIRED DENSITY.
7. PROTECT EXISTING GRAVEL SURFACING AND SUBGRADE IN AREAS WHERE EQUIPMENT LOADS WILL OPERATE USE PLANKING OR OTHER SUITABLE MATERIALS DESIGNED TO SPREAD EQUIPMENT LOADS, REPAIR DAMAGE TO EXISTING GRAVEL SURFACING OR SUBGRADE WHERE SUCH DAMAGE IS DUE TO THE CONTRACTOR'S OPERATIONS. DAMAGED GRAVEL SURFACING SHALL BE RESTORED TO MATCH THE ADJACENT UNDAMAGED GRAVEL SURFACING AND SHALL BE OF THE SAME THICKNESS
8. REPLACE EXISTING GRAVEL SURFACING ON AREAS FROM WHICH GRAVEL SURFACING IS REMOVED DURING CONSTRUCTION OPERATIONS. GRAVEL SURFACING IS REMOVED DURING CONSTRUCTION OPERATIONS. GRAVEL SURFACING SHALL BE REPLACED TO MATCH EXISTING ADJACENT GRAVEL SURFACING AND SHALL BE OF THE SAME THICKNESS. SURFACES OF GRAVEL SURFACING SHALL BE FREE FROM CORRUGATIONS AND WAVES. EXISTING GRAVEL SURFACING MAY BE EXCAVATED SEPARATELY AND REUSED IF INJURIOUS AMOUNTS OF EARTH, ORGANIC MATTER, OR OTHER DELETERIOUS MATERIALS ARE REMOVED PRIOR TO REUSE. FURNISH ALL ADDITIONAL GRAVEL RESURFACING MATERIAL AS REQUIRED. BEFORE GRAVEL SURFACING IS REPLACED, SUBGRADE SHALL BE GRADED TO CONFORM TO REQUIRED SUBGRADE ELEVATIONS, AND LOOSE OR DISTURBED MATERIALS SHALL BE THOROUGHLY COMPACTED. DEPRESSIONS IN THE SUBGRADE SHALL BE FILLED AND COMPACTED WITH APPROVED SELECTED MATERIAL. GRAVEL SURFACING MATERIAL MAY BE USED FOR FILLING DEPRESSIONS IN THE SUBGRADE, SUBJECT TO ENGINEER'S APPROVAL.
9. DAMAGE TO EXISTING STRUCTURES AND UTILITIES RESULTING FROM CONTRACTOR'S NEGLIGENCE SHALL BE REPAIRED/REPLACED TO OWNER'S SATISFACTION AT CONTRACTOR'S EXPENSE.
10. CONTRACTOR SHALL COORDINATE THE CONSTRUCTION SCHEDULE WITH PROPERTY OWNER SO AS TO AVOID INTERRUPTIONS TO PROPERTY OWNER'S OPERATIONS.
11. ENSURE POSITIVE DRAINAGE DURING AND AFTER COMPLETION OF CONSTRUCTION.
12. ALL CUT AND FILL SLOPES SHALL BE MAXIMUM 2 HORIZONTAL TO 1 VERTICAL
13. CONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING SITE VEHICLE TRAFFIC AS TO NOT ALLOW VEHICLES LEAVING THE SITE TO TRACK MUD ONTO PUBLIC STREETS. THE CONTRACTOR IS RESPONSIBLE FOR CLEANING PUBLIC STREETS DUE TO MUDDY VEHICLES LEAVING THE SITE.

GENERAL EROSION & SEDIMENT CONTROL NOTES:

1. THE SOIL EROSION AND SEDIMENT CONTROL MEASURES AND DETAILS AS SHOWN HEREIN AND STIPULATED WITHIN STATE STANDARDS SHALL BE FOLLOWED AND INSTALLED IN A MANNER SO AS TO MINIMIZE SEDIMENT LEAVING THE SITE.
2. PRIOR TO COMMENCING LAND DISTURBANCE ACTIVITY, THE LIMITS OF LAND DISTURBING SHALL BE CLEARLY AND ACCURATELY DEMARCATED WITH STAKES, RIBBONS, OR OTHER APPROPRIATE MEANS.
3. EROSION CONTROL DEVICES SHALL BE INSTALLED BEFORE GROUND DISTURBANCE OCCURS. THE LOCATION OF SOME OF THE EROSION CONTROL DEVICES MAY HAVE TO BE ALTERED FROM SHOWN ON THE APPROVED PLANS IF DRAINAGE PATTERNS DURING CONSTRUCTION ARE DIFFERENT FROM THE FINAL PROPOSED DRAINAGE PATTERNS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACCOMPLISH EROSION CONTROL FOR ALL DRAINAGE PATTERNS CREATED AT VARIOUS STAGES DURING CONSTRUCTION. ANY DIFFICULTY IN CONTROLLING EROSION DURING ANY PHASE OF CONSTRUCTION SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
4. THE LOCATION OF SOME OF THE EROSION CONTROL DEVICES MAY HAVE TO BE ALTERED FROM THAT SHOWN ON THE PLANS IF DRAINAGE PATTERNS DURING CONSTRUCTION ARE DIFFERENT FROM THE FINAL PROPOSED DRAINAGE PATTERNS. ANY DIFFICULTY IN CONTROLLING EROSION DURING ANY PHASE OF CONSTRUCTION SHALL BE REPORTED TO THE ENGINEERING IMMEDIATELY.
5. CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL MEASURES UNTIL PERMANENT VEGETATION HAS BEEN ESTABLISHED. CONTRACTOR SHALL CLEAN OUT ALL SEDIMENT PONDS WHEN REQUIRED BY THE ENGINEER OR THE LOCAL JURISDICTION INSPECTOR. CONTRACTOR SHALL INSPECT EROSION CONTROL MEASURES AT THE END OF EACH WORKING DAY TO ENSURE MEASURES ARE FUNCTIONING PROPERLY.
6. THE CONTRACTOR SHALL REMOVE ACCUMULATED SILT WHEN THE SILT IS WITHIN 12" OF THE TOP OF THE SILT FENCE.
7. FAILURE TO INSTALL, OPERATE OR MAINTAIN ALL EROSION CONTROL MEASURES WILL RESULT IN ALL CONSTRUCTION BEING STOPPED ON THE JOB SITE UNTIL SUCH MEASURES ARE CORRECTED.
8. SILT BARRIERS TO BE PLACED AT DOWNSTREAM TOE OF ALL CUT AND FILL SLOPES.
9. ALL CUT AND FILL SLOPES MUST BE SURFACED ROUGHENED AND VEGETATED WITHIN SEVEN (7) DAYS OF THEIR CONSTRUCTION.
10. CONTRACTOR SHALL REMOVE ALL EROSION & SEDIMENT CONTROL MEASURES AFTER COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF PERMANENT GROUND COVER.
11. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND-DISTURBING ACTIVITIES.

SEEDING GUIDELINES:

FINAL STABILIZATION OF ALL DISTURBED AREAS, UNLESS OTHERWISE NOTED, SHALL BE LOAMED AND SEEDED. LOAM SHALL BE PLACED AT A MINIMUM COMPACTED DEPTH OF 4". RECOMMENDED SEEDING DATES FOR PERMANENT VEGETATION SHALL BE BETWEEN JUNE15 THROUGH AUGUST 1 AND SEPTEMBER 15 THROUGH OCTOBER 15. TEMPORARY VEGETATIVE MEASURES SHALL CONSIST OF AN ANNUAL OR PERENNIAL RYE GRASS WITH RECOMMENDED SEEDING DATES BEING FROM JUNE 1 THROUGH AUGUST 15 AND SEPTEMBER 30 THROUGH NOVEMBER 30.

EVALUATE PROPOSED COVER

MATERIAL BEFORE SPREADING COVER MATERIAL OVER THE DESIGNATED AREA, OBTAIN A REPRESENTATIVE SOIL SAMPLE AND SUBMIT TO A REPUTABLE SOIL TESTING LABORATORY FOR CHEMICAL AND PHYSICAL ANALYSIS. THE PRELIMINARY TEST IS NECESSARY TO DETERMINE THE REQUIRED INORGANIC AND/OR ORGANIC AMENDMENTS THAT ARE NEEDED TO ASSIST IN ESTABLISHING THE SEED MIXTURE IN AN ENVIRONMENTALLY AND ECONOMICALLY SOUND MANNER. THE RESULTS WILL GIVE THE COVER MATERIAL CHARACTERISTICS SUCH AS A pH AND FERTILIZATION NEEDS. THESE RESULTS SHALL BE KEPT ON-SITE BY THE CONTRACTOR AND AVAILABLE FOR REVIEW BY THE COUNTY.

SEED BED PREPARATION

PROPOSED COVER MATERIAL SHOULD BE SPREAD EVENLY OVER THE SITE AREA IN A MINIMUM 4" LIFT VIA BULLDOZER/BUCKET LOADER, USING THE INFORMATION FROM THE SOIL ANALYSIS, CAREFULLY CALCULATE THE QUANTITIES OF LIMESTONE AND PRE-PLANT FERTILIZER NEEDED PRIOR TO APPLYING. PRE-PLANT AMENDMENTS CAN BE APPLIED WITH A BROADCAST AND/OR DROP SEEDER AND INCORPORATED WITH AN OFFSET DISK, YORK RAKE, AND/OR HAND RAKE. AFTER INCORPORATION THE PRE-PLANT SOIL AMENDMENTS, THE SEED BED SHOULD BE SMOOTH AND FIRM PRIOR TO SEEDING. THE FOLLOWING SEED MIXTURES SHALL BE USED AS NOTED:

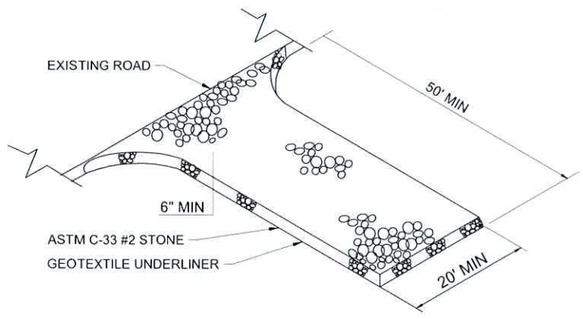
SEED MIXTURE SPECIES/VARIETY	LBS/ACRE
CREEPING RED FESCUE	20
KENTUCKY BLUEGRASS	20
PERENNIAL RYEGRASS	5

SEED TIME AND METHOD

THE PREFERRED TIME FOR SEEDING THE COOL SEASON MIXTURE IS LATE SUMMER. SOIL AND AIR TEMPERATURES ARE IDEAL FOR SEED GERMINATION AND SEEDING GROWTH. WEED COMPETITION IS REDUCED BECAUSE SEEDS OF MANY WEED SPECIES GERMINATE EARLIER IN THE GROWING SEASON. ADDITIONALLY, HERBICIDE USE IS GREATLY REDUCED. HOWEVER, SEEDING MAY BE DONE AT ANY OF THE ABOVE NOTED TIMES.

MULCHING

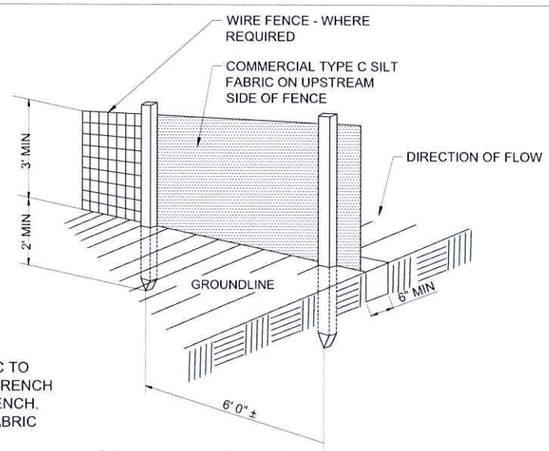
NEWLY SEEDED AREAS SHOULD BE MULCHED TO INSURE ADEQUATE MOISTURE FOR SUCCESSFUL TURF ESTABLISHMENT AND TO PROTECT AGAINST SURFACE MOVEMENT OF SEDIMENT-BOUND AGROCHEMICALS AND SOIL EROSION. IF MULCHING PROCEDURES ARE NOT SPECIFIED ON PLANS, COMMERCIALLY AVAILABLE MULCHES CAN BE USED.



CONSTRUCTION EXIT DETAIL (1)

SCALE: NTS

NOTE:
1. DIG TRENCH
2. LAY IN FABRIC TO BOTTOM OF TRENCH
3. BACKFILL TRENCH, COVERING FABRIC



SILT FENCE DETAIL (2)

SCALE: NTS

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
5. ALL SILT FENCE MATERIALS MUST BE LISTED ON THE CURRENT STATES. D.O.T. QUALIFIED PRODUCTS LIST.

POSTS: STEEL EITHER T OR U TYPE.

FENCE: WOVEN WIRE, 14 GA. 6" MAX. MESH OPENING.

FILTER CLOTH: FILTER X, MIRAFI 100X' STABILINKA T140N OR APPROVED EQUAL.

PREFABRICATED UNIT: GEOFAB, ENVIROFENCE OR APPROVED EQUAL.

Item 6.

verticalbridge

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ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

PROJECT TITLE:

BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

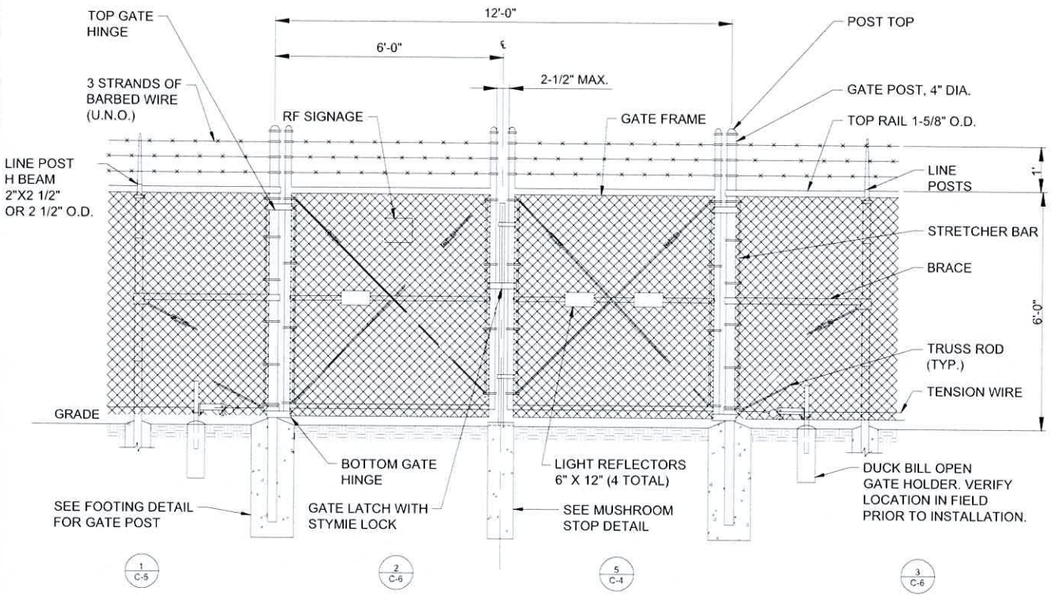
SHEET TITLE:

DRAINAGE, GRADING & EROSION CONTROL NOTES AND DETAILS

SCALE: NONE

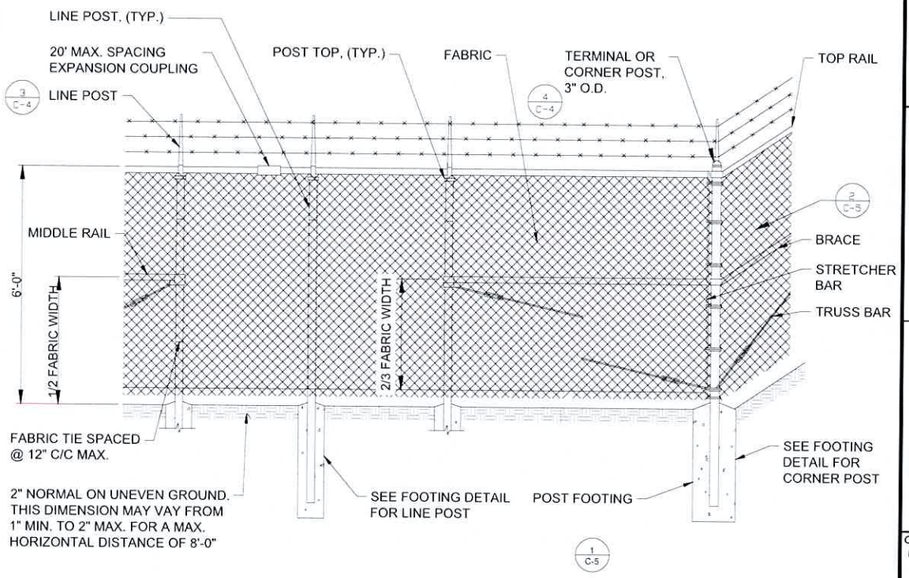
PROJECT NUMBER: 60498

SHEET NUMBER: C-3A

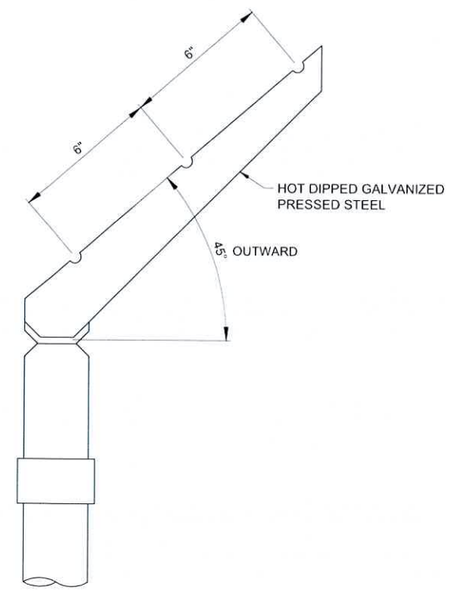


NOTE:
FENCE SECURITY - NUTS ON ALL BOLTS SHALL BE TOWARD THE INTERIOR OF THE COMPOUND

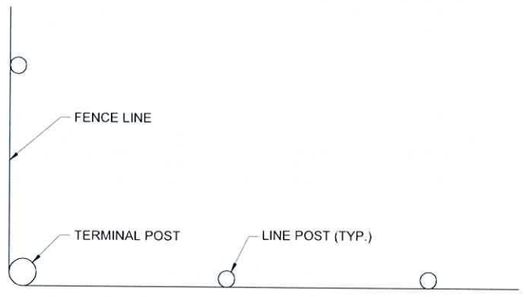
VEHICLE GATE DETAIL (1)
SCALE: NTS



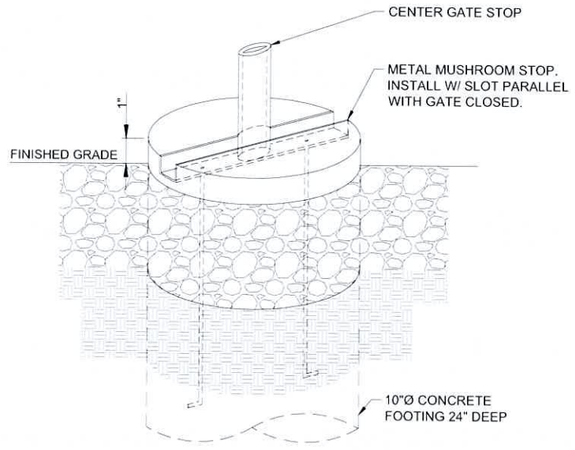
POST / CORNER POST DETAIL (2)
SCALE: NTS



BARBED WIRE ARM OF LINE POST (3)
SCALE: NTS



INSTALLATION @ CORNERS (4)
SCALE: NTS



MUSHROOM STOP DETAIL (5)
SCALE: NTS

vertical bridge

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PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
FENCE DETAILS

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: C-4

DRAWN BY:SLS CHECKED BY:CM

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NOTES:

ZINC COATING - THE WEIGHT OF THE COATING SHALL NOT BE LESS THAN 1.2 OUNCES PER SQUARE FOOT OF ACTUAL SURFACE COVERED. ALL FERROUS METALS USED AS PART OF THE FENCE INSTALLATION SHALL BE HOT DIPPED GALVANIZED OF STAINLESS STEEL. ALL SCREWS, BOLTS, LOCK WASHERS, NUTS, ETC. SHALL BE HOT DIP GALVANIZED OR MADE OF STAINLESS STEEL.

FABRIC - STANDARD INDUSTRIAL GRADE #9 GAUGE WITH 2 INCH MESH ZINC COATED CHAIN LINK WITH A BREAKING STRENGTH OF NOT LESS THAN 1290 LBS SHALL BE USED. THE FABRIC SHALL BE ZINC COATED BY THE HOT DIP PROCESS AFTER FABRICATION.

METAL POSTS - METAL POSTS (LINE, CORNER, TERMINAL, GATE POSTS, MIDDLE RAILS, BRACES AND TOP RAIL) SHALL BE HOT DIP GALVANIZED SCHEDULE 40 TUBULAR STEEL WITH AN OUTSIDE DIAMETER AS INDICATED ON THIS DRAWING. A POST TOP FITTING OF GALVANIZED STEEL WILL BE INSTALLED TO EXCLUDE MOISTURE.

POST CAPS - ALL POST CAPS TO USE THE BARBED WIRE OUTRIGGER BRACKET AND SHALL BE ATTACHED TO THE POST WITH TAMPER RESISTANT SCREWS, BRADS, OR BOLTS.

TOP RAIL - A MINIMUM OF ONE COUPLING IN EACH STRAIGHT RUN OF TOP RAIL, SHALL HAVE A HEAVY SPRING INSERTED WITHIN THE COUPLING TO TAKE UP EXPANSION AND CONTRACTION OF THE TOP RAIL. THE TOP RAIL SHALL BE FASTENED TO TERMINAL POSTS WITH PRESSED STEEL CONNECTIONS.

MIDDLE RAIL - THE MIDDLE RAIL SHALL BE OF THE SAME MATERIAL AS THE TOP RAIL AND INSTALLED WITH HOT DIP GALVANIZED FITTINGS ATTACHED TO THE POSTS.

BRACE RAIL - BRACE RAIL MATERIAL SHALL BE OF THE MATERIAL AS THE TOP RAIL AND LOCATED 2/3 OF THE DISTANCE UP FROM THE BOTTOM OF THE FABRIC. BRACE RAILS SHALL BE SECURELY FASTENED TO POSTS BY SUITABLE PRESSED STEEL CONNECTIONS.

TRUSS RODS - SHALL BE 3/8" ROUND GALVANIZED STEEL RODS WITH GALVANIZED TURNBUCKLES. THE ZINC COATING SHALL NOT BE NOT LESS THAN 1.2 OUNCES PER SQUARE FOOT OF SURFACE.

TENSION WIRE - THE TENSION WIRE SHALL BE OF #7 GAUGE HOT DIP GALVANIZED SPRING TENSION WIRE WITH A BREAKING STRENGTH OF NOT LESS THAN 1900 LBS. THIS WIRE SHALL BE KEPT TAUT WITH GALVANIZED TURNBUCKLES AND ATTACHED TO POSTS WITH GALVANIZED HARDWARE OR CABLE CLAMPS.

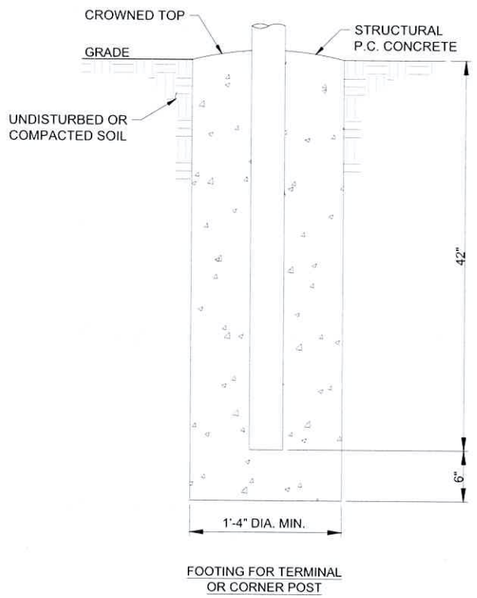
FABRIC TIES - THE FABRIC TIES SHALL BE ALUMINUM WIRE. NOT LESS THAN #9 GAGE.

STRETCHER BARS - THE STRETCHER BARS SHALL BE FLAT GALVANIZED STEEL BARS NOT LESS THAN 5/16" x 3/4" AND NOT LESS THAN 2" SHORTER THAN THE FABRIC. STRETCHER BAR BANDS SHALL BE FLAT GALVANIZED STEEL BARS NOT LESS THANK 5/16" x 1 1/2" WITH 5/16" DIAMETER GALVANIZED CARRIAGE BOLT.

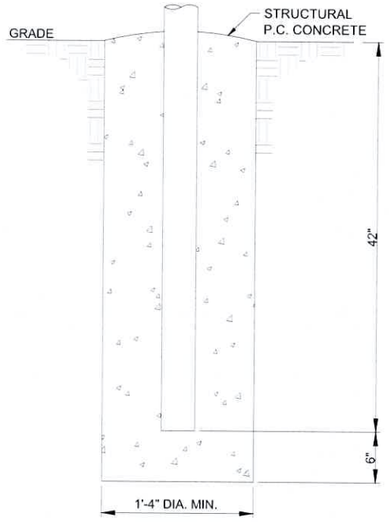
BARBED WIRE - BARBED WIRE OF GALVANIZED STEEL (OR ALUMINUM) CONSISTING OF 12 1/2 GAGE WIRE WITH 4-POINT BARBS OF 14 GAGE WIRE SPACED 5 INCHES APART.

GATE FRAMES SHALL BE CONSTRUCTED OF 2 1/2" OUTSIDE DIAMETER HEAVY DUTY GALVANIZED STEEL PIPE. THE GATES SHALL BE ASSEMBLED USING CORNER FITTINGS OF HEAVY PRESSED STEEL OR MALLEABLE CASTINGS OR MAY BE WELDED IF THE ENTIRE GATE FRAME IS HOT DIP GALVANIZED AFTER THE WELDING. ALL GATES SHALL BE EQUIPPED WITH HEAVY DUTY GALVANIZED STEEL TYPE HINGES WITH LARGE BEARING SURFACES OF ADEQUATE STRENGTH TO SUPPORT THE GATE. THE HINGES SHALL NOT TWIST OR TURN UNDER THE ACTION OF THE GATE. GATES WILL PROVIDE A FULL RANGE OF MOTION AND BE EASILY OPENED AND CLOSED BY ONE PERSON. GATE LATCH SHALL BE CARGO PROTECTORS, INC MODEL FL-100. LATCH SHALL BE EQUIPPED TO RECIEVE A PADLOCK.

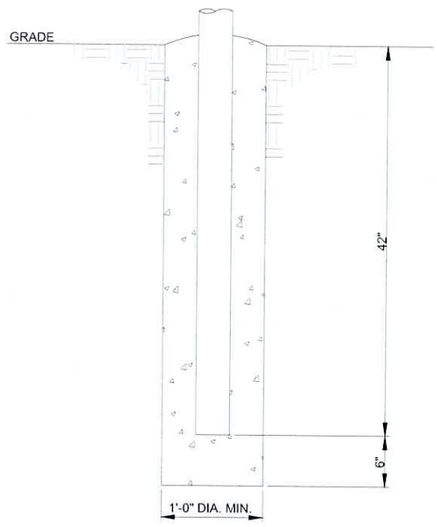
PROVIDE R.F. WARNING SIGNAGE ON ALL GATES.



FOOTING FOR TERMINAL OR CORNER POST

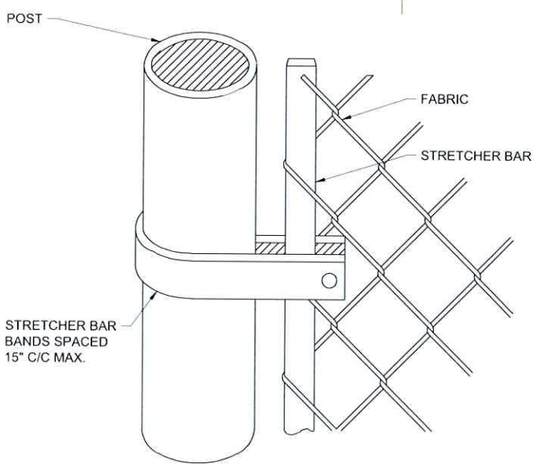


FOOTING FOR GATE POST

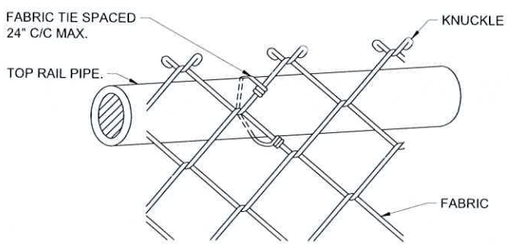


FOOTING FOR LINE POST

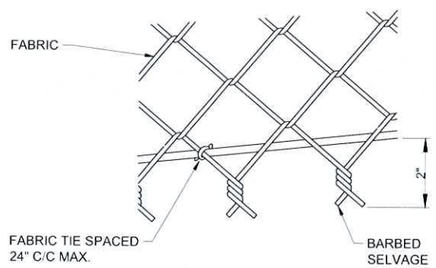
POSTS FOOTINGS (1)
SCALE: NTS



METHOD OF FASTENING STRETCHER BAR TO POST



METHOD OF TYING FABRIC TO PIPE



METHOD OF TYING FABRIC TO TENSION WIRE

FABRIC / BAR CONNECTIONS (2)
SCALE: NTS

Item 6.

vertical bridge

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36387
MIDDLETON, WI
PROFESSIONAL ENGINEER

Signature: Date: 9/30/2024

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PROJECT TITLE:
BUSINESS DRIVE

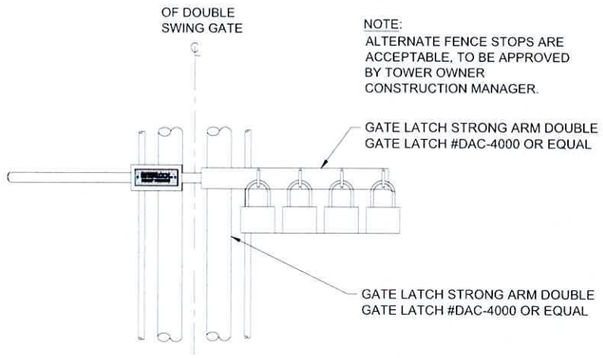
PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
FENCE DETAILS

SCALE: NONE

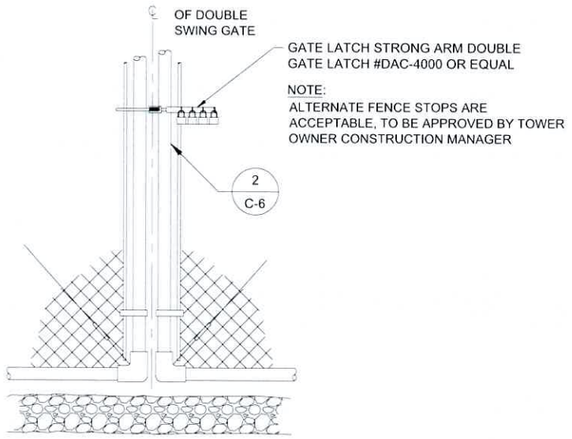
PROJECT NUMBER 60498
SHEET NUMBER C-5

DRAWN BY: SLS CHECKED BY: CM

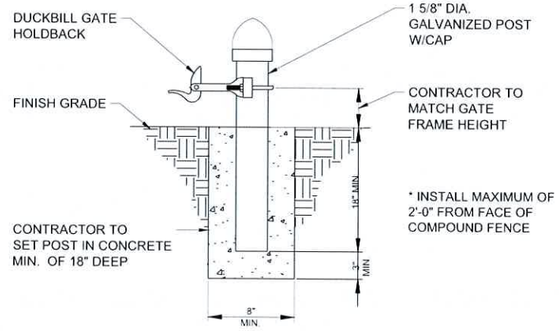


GATE LATCH DETAIL (1)
SCALE: NTS

NOT USED (3)
SCALE: 1" = NTS



GATE LATCH DETAIL (2)
SCALE: NTS



GATE KEEPER DETAIL (4)
SCALE: NTS

verticalbridge

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2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

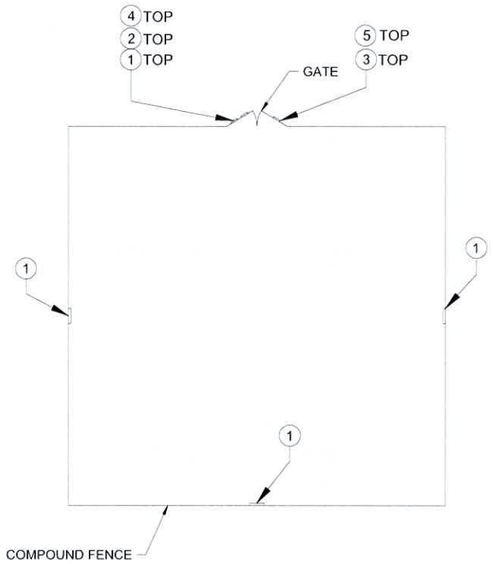
SHEET TITLE:
FENCE DETAILS

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: C-6

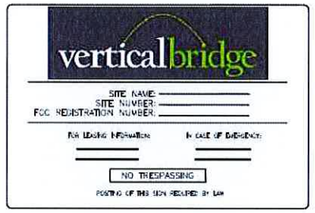
NOTE: SEE TYPICAL SIGNS AND SPECIFICATIONS DETAIL ON THIS SHEET FOR SIGN DESIGNATIONS.

NORTH



NOTE: SEE TYPICAL SIGNS AND SPECIFICATIONS DETAIL ON THIS SHEET FOR SIGN DESIGNATIONS.

OVERALL SIGN PLACEMENT PLAN VIEW (1)
SCALE: NTS



OWNER CONTACT SIGN
WHITE BACKGROUND, BLACK/RED LETTERING
MOUNTING LOCATION: GATE
QUANTITY: 2

③ OWNER CONTACT SIGN

AUTHORIZED PERSONNEL SIGN
WHITE/BLUE BACKGROUND, WHITE/BLACK LETTERING
MOUNTING LOCATION: GATE & BASE OF TOWER
QUANTITY: 1
WHERE ACCESS GATE INSTALLED (QTY: 2)

② AUTHORIZED PERSONAL SIGN

DANGER NO TRESPASSING SIGN
WHITE/BLACK BACKGROUND, BLACK/WHITE LETTERING
MOUNTING LOCATION: GATE & BASE OF TOWER
QUANTITY: 1
WHERE ACCESS GATE INSTALLED (QTY: 2)

① NO-TRESSPASSING SIGN

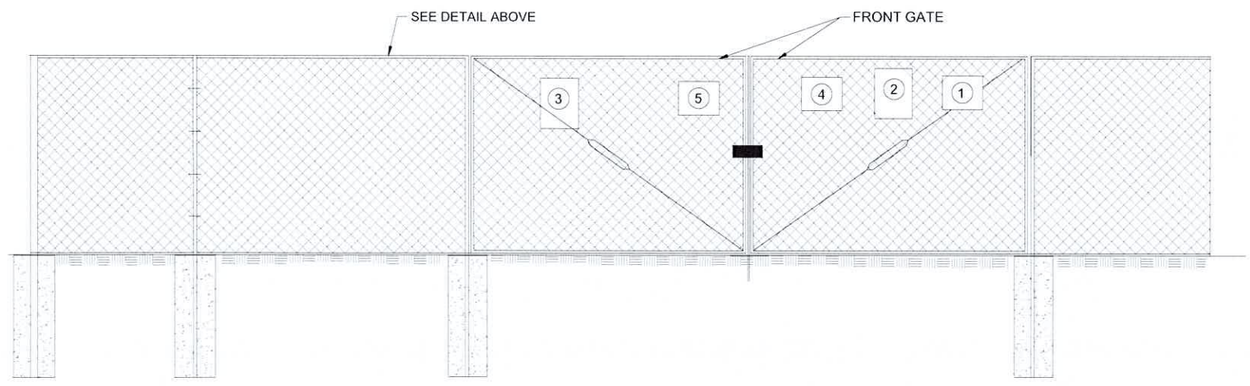
FCC REGISTRATION SIGN
WHITE/GREEN BACKGROUND, WHITE/BLACK LETTERING
MOUNTING LOCATION: GATE & BASE OF TOWER
QUANTITY: 2

⑤ FCC REGISTRATION SIGN

1 NOTICE RF SIGN (BLUE)
WHITE/BLUE BACKGROUND, WHITE/BLACK LETTERING
MOUNTING LOCATION: GATE & CENTERLINE OF FENCING AROUND SITE. (QTY: 4)
WHERE ACCESS GATE INSTALLED (QTY: 5)

④ NOTICE RF SIGN (BLUE)

TYPICAL SIGNS AND SPECIFICATIONS (2)
SCALE: NTS



SITE SIGNAGE FRONT GATE VIEW (3)
SCALE: NTS

SIGNAGE NOTES:
1. SIGNS SHALL BE FABRICATED FROM CORROSION RESISTANT PRESSED METAL, AND PAINTED WITH LONG LASTING UV RESISTANT COATINGS.
2. SIGNS (EXCEPT WHERE NOTED OTHERWISE) SHALL BE MOUNTED TO THE TOWER, GATE, AND FENCE USING A MINIMUM OF 9 GAUGE ALUMINUM WIRE, HOG RINGS (AS UTILIZED IN FENCE INSTALLATIONS) OR BRACKETS WHERE NECESSARY. BRACKETS SHALL BE OF SIMILAR METAL AS THE STRUCTURE TO AVOID GALVANIC CORROSION.

Item 6.

verticalbridge

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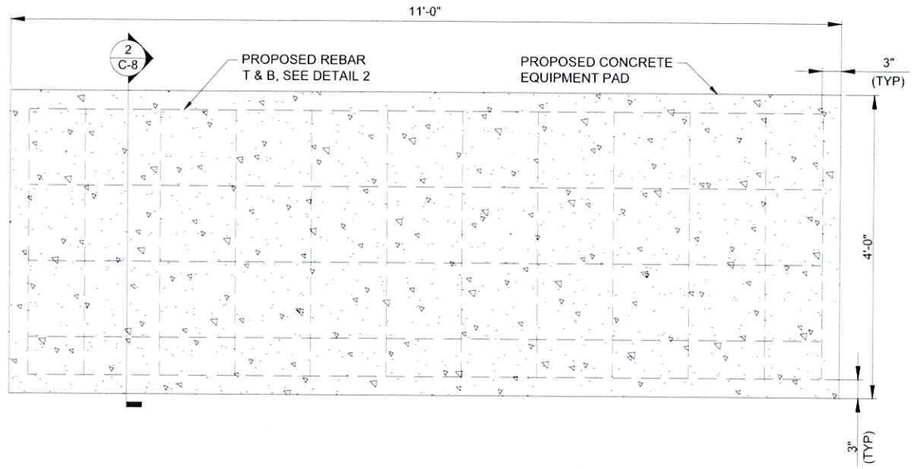
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
SITE SIGNAGE DETAILS

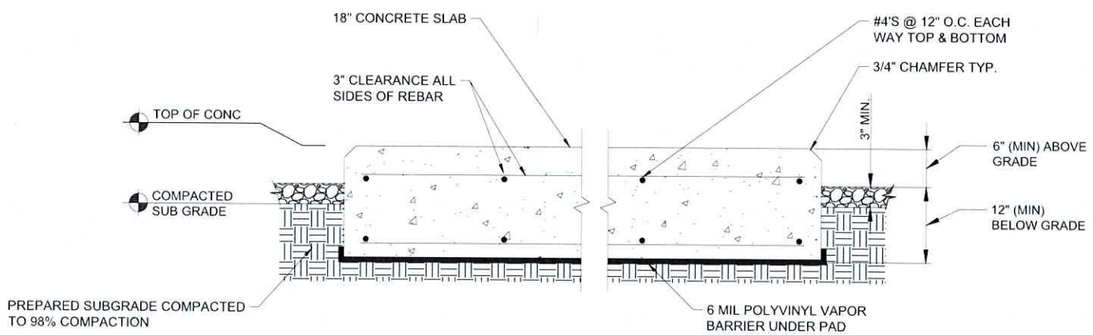
SCALE: NONE

PROJECT NUMBER 60498
SHEET NUMBER C-7

DRAWN BY: SLS CHECKED BY: CM



EQUIPMENT SLAB DETAIL 1
SCALE: NTS



NOTES:

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

EQUIPMENT PAD DETAIL 2
SCALE: NTS

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SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
FOUNDATION DETAILS

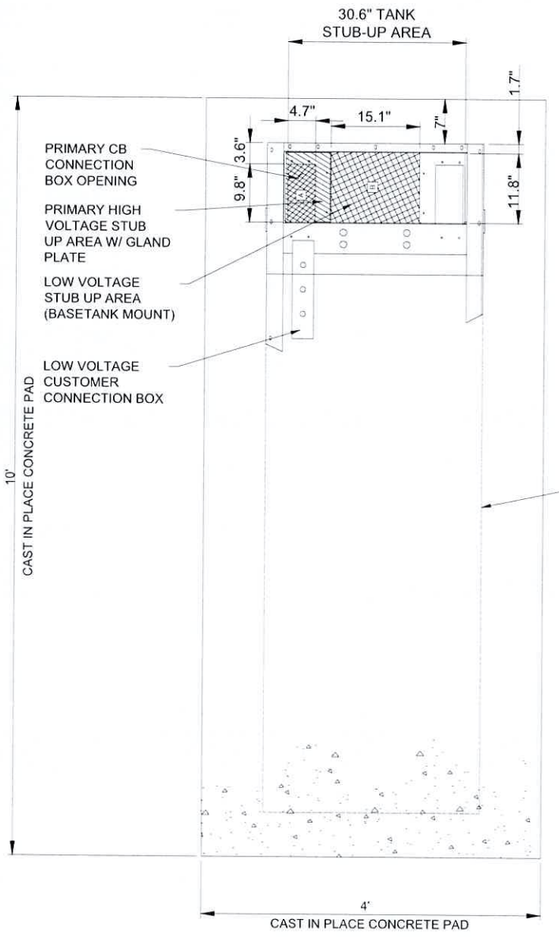
SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: C-8

RECOMMENDED ELECTRICAL STUB-UPS
(SEE DETAILED VIEW & TOP VIEW)

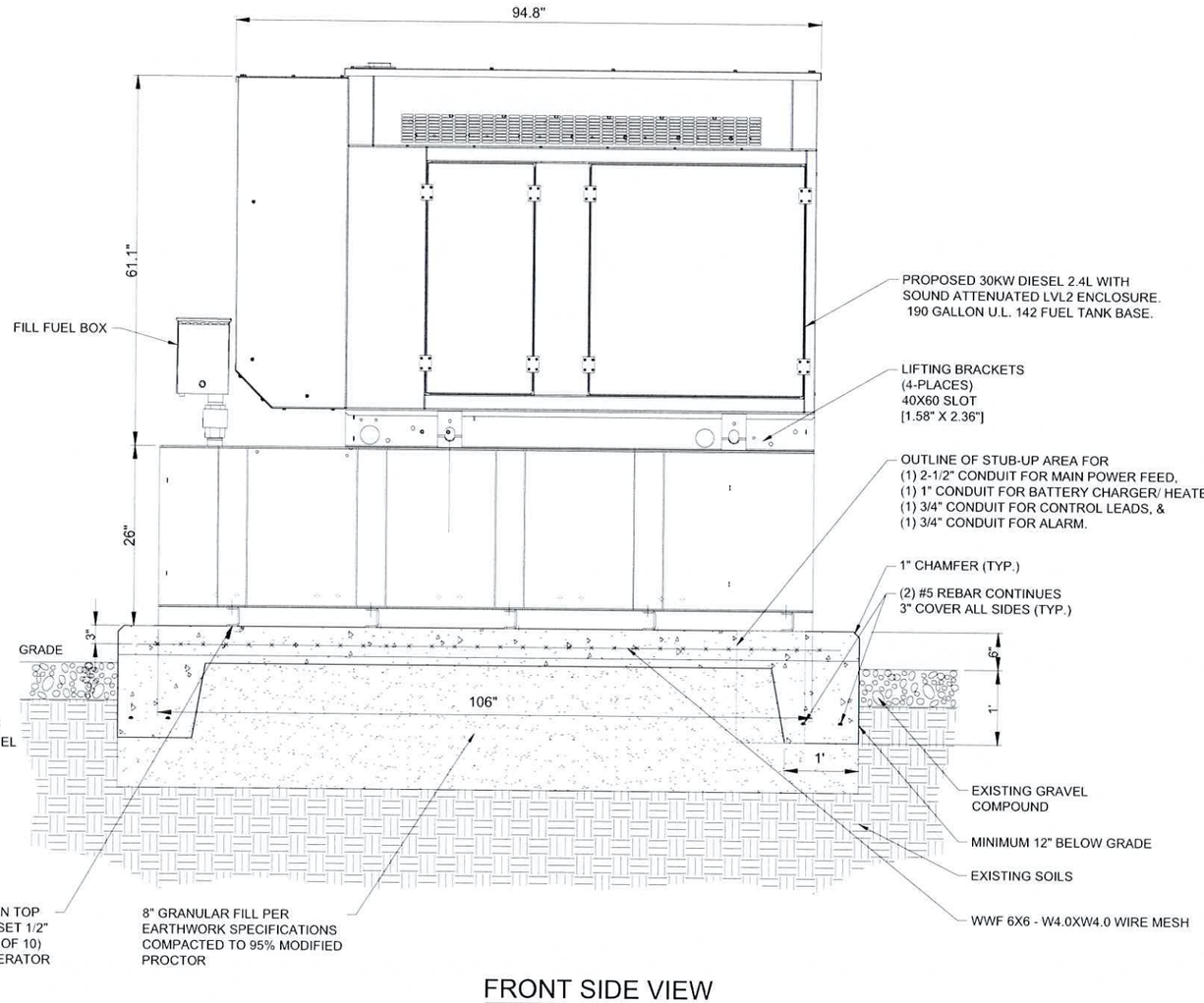
(LOW VOLTAGE STUB UP)
1. TRANSFER SWITCH/COMMUNICATIONS CONDUITS. COMMUNICATIONS AND 2-WIRE START MUST NOT BE RUN IN CONDUIT W/ AC WIRING.

(HIGH VOLTAGE STUB UP)
1. AC LOAD LEAD CONDUIT AREA.
2. 120/240 VAC FROM UTILITY FOR OPTIONAL LOADS SUCH AS GFCI OUTLET, BLOCK HEATER, BATTERY CHARGER, AND OTHER 120/240 VAC OPTIONS. (GLAND PLATE INCLUDED)



PLAN VIEW

TYPICAL GENERAC FOUNDATION DETAIL (1)
SCALE: NTS



FRONT SIDE VIEW

TYPICAL GENERAC FOUNDATION DETAIL (2)
SCALE: NTS

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.

verticalbridge

CELLCO PARTNERSHIP
d/b/a VERIZON WIRELESS

RAMAKER
employee-owned
(608) 643-4100 www.ramaker.com

Certification & Seal:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Wisconsin.

WISCONSIN
MICHAEL L. PINSKE
36387
MIDDLETON, WI
PROFESSIONAL ENGINEER

Signature: Date: 9/30/2024

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY
DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
GENERATOR FOUNDATION DETAILS

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: C-9

DRAWN BY: SLS CHECKED BY: CM

Printed by: ial-amoodi on Sep 30, 2024 - 8:38am

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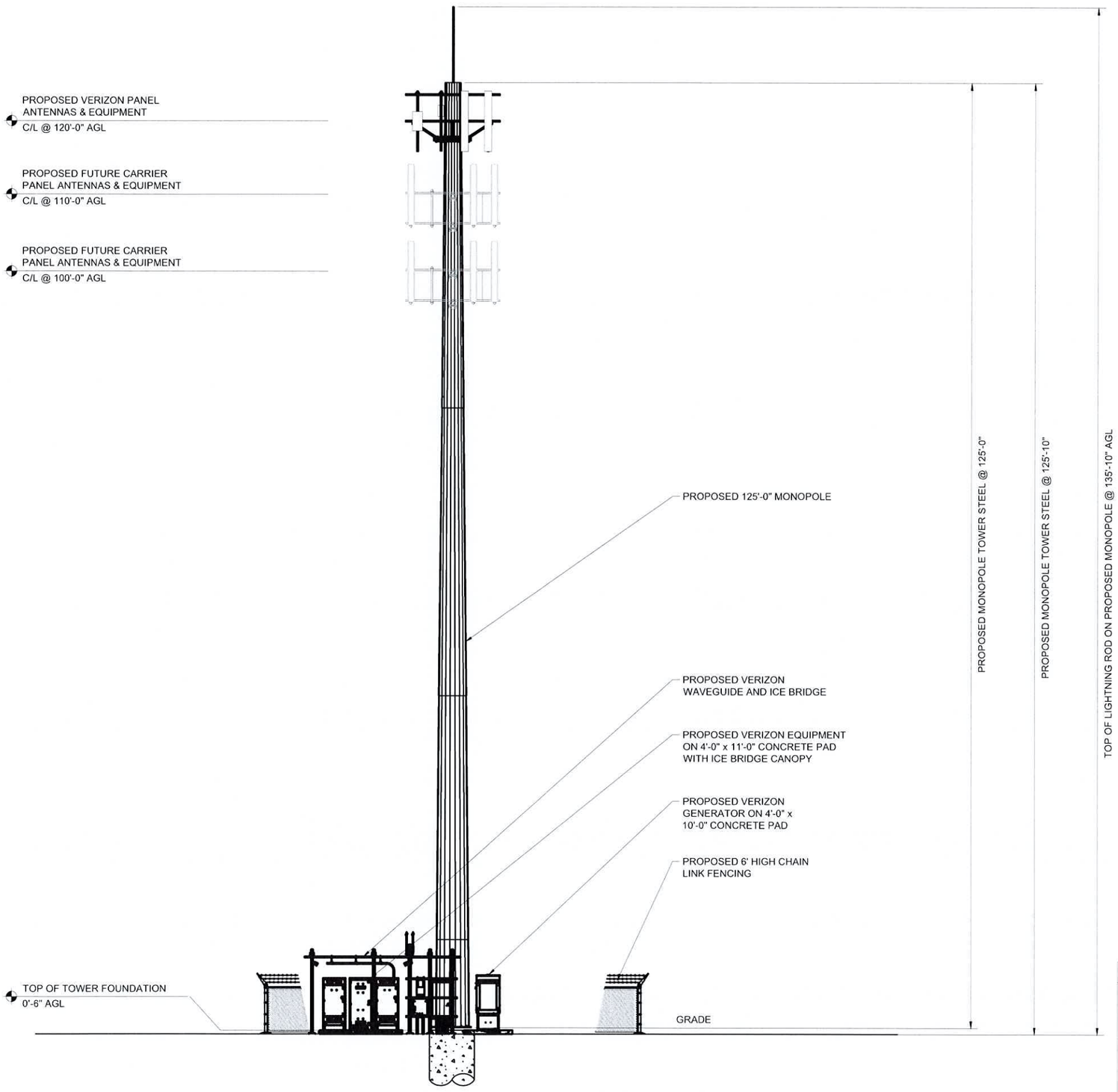

SITE ELEVATION (1)
SCALE: 1" = 20'

STRUCTURAL NOTES:

1. RAMAKER SCOPE OF WORK DOES NOT INCLUDE A STRUCTURAL EVALUATION OF THIS TOWER OR STRUCTURE.
2. STRUCTURAL CALCULATIONS WERE PREPARED BY OTHERS AND THOSE CALCULATIONS CERTIFY THE CAPACITY OF THE STRUCTURE AND ANTENNA MOUNTS FOR THE DEPLOYMENT OF THE EQUIPMENT. CONTRACTOR TO COORDINATE WITH THE PROJECT MANAGER TO OBTAIN A COPY.
3. CONTRACTOR MUST COMPLY WITH STRUCTURAL ANALYSIS AND MOUNT ANALYSIS RECOMMENDATIONS FOR ALL NEW LOADING.

Item 6.

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PROFESSIONAL ENGINEER

Signature: 9/30/2024 Date:

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
SITE ELEVATION

0 10' 20' 40'
11" x 17" - 1" = 20'
22" x 34" - 1" = 10'

PROJECT NUMBER: 60498
SHEET NUMBER: ANT-1

DRAWN BY:SLS CHECKED BY:CM

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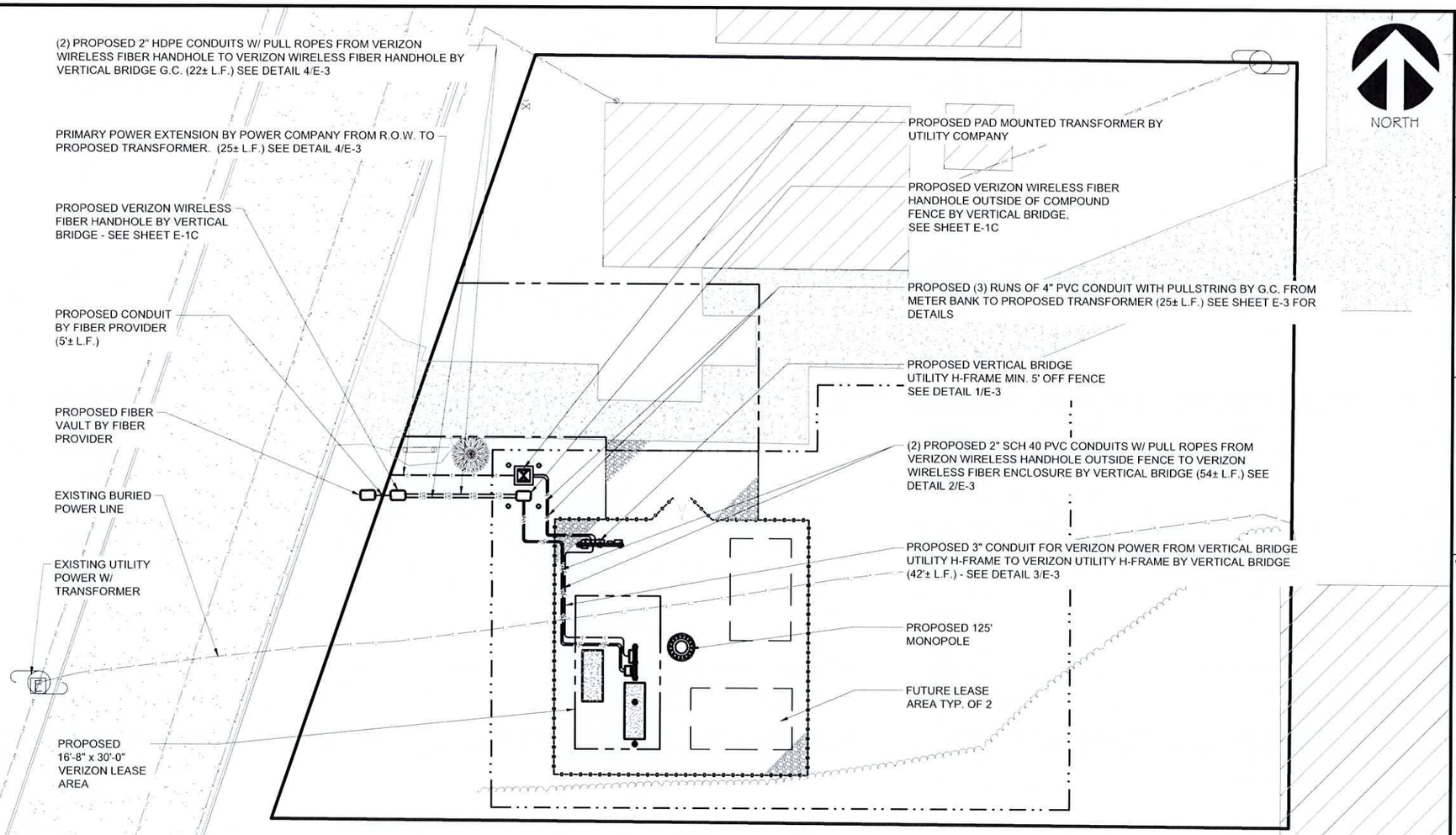

COORDINATION WITH UTILITY COMPANY

THE ELECTRICAL CONTRACTOR SHALL COORDINATE COMPLETE ELECTRICAL SERVICE WITH LOCAL UTILITY COMPANIES FOR A COMPLETE OPERATIONS SYSTEM, INCLUDING TRANSFORMER CONNECTIONS, CONCRETE TRANSFORMER PADS PRIOR TO SUBMITTING BID TO INCLUDE ALL LABOR AND MATERIALS

CONDUITS 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.
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.

CODES AND STANDARDS

ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
NEC	NATIONAL ELECTRICAL CODE, LATEST ADOPTED EDITION
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
UL	UNDERWRITERS LABORATORIES, INC.

UTILITY PROVIDER INFORMATION

POWER COMPANY: ALIANT ENERGY
PHONE: (920) 459-6345

FIBER COMPANY: AT&T
PHONE: (855) 781-7542

UTILITY ROUTING PLAN (1)
SCALE: 1" = 40'

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CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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MICHAEL L. PINSKE
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MIDDLETON, WI
PROFESSIONAL ENGINEER

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MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY
DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
UTILITY ROUTING PLAN

0 20' 40' 80'
11" x 17" - 1" = 40'
22" x 34" - 1" = 20'

PROJECT NUMBER: 60498
SHEET NUMBER: E-1

DRAWN BY: SLS CHECKED BY: CM

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NORTH

PRIMARY POWER EXTENSION BY POWER COMPANY FROM R.O.W. TO PROPOSED TRANSFORMER. (25± L.F.) SEE DETAIL 4/E-3

PROPOSED PAD MOUNTED TRANSFORM BY UTILITY COMPANY

PROPOSED (3) RUNS OF 4" PVC CONDUIT WITH PULLSTRING BY G.C. FROM METER BANK TO PROPOSED TRANSFORMER. CONDUCTORS BY UTILITY COMPANY. (25± L.F.) SEE SHEET E-3 FOR DETAILS

PROPOSED FIBER HANDHOLE (BY VB G.C.) SEE DETAIL E-1C

PROPOSED MULTI-GANG METER H-FRAME, MINIMUM 5' CLEARANCE TO FENCE SEE DETAIL 1/E-3

(2) PROPOSED 2" HDPE CONDUITS W/ PULL ROPE FROM VERIZON WIRELESS FIBER HANDHOLE TO VERIZON WIRELESS HANDHOLE AT FENCE (22± L.F.) SEE DETAIL 4/E-3

(2) PROPOSED 2" SCH 40 PVC W/ PULL ROPE FROM VERIZON WIRELESS FIBER HANDHOLE TO FIBER BOX AT RACK, 42" BELOW GRADE BY VERTICAL BRIDGE. G.C. SHALL COORDINATE WITH FIBER COMPANY FOR FIBER FACILITY INSTALLATION (54± L.F.) SEE DETAIL 4/E-3

PROPOSED 3" SCH 40 PVC CONDUIT FOR VERIZON POWER; BY VERTICAL BRIDGE G.C. (41± L.F.) SEE DETAIL 3/E-3

PROPOSED VERIZON H-FRAME, SEE SHEET VW B-2, FOOTINGS SIMILAR TO DETAIL 1/VW ANT-4

PROPOSED VERIZON WIRELESS (16'-8' x 30'-0") LEASE AREA

PROPOSED (4' X 10') VERIZON WIRELESS GENERATOR CONC. PAD. PAD TO BE INSTALLED BY VERTICAL BRIDGE, SEE SHEET C-9

PROPOSED (4'-0" X 11'-0") VERIZON WIRELESS CONCRETE PAD FOR EQUIPMENT. PAD TO BE INSTALLED BY VERTICAL BRIDGE PRIOR TO COLOCATION, SEE SHEET C-8

PROPOSED VERIZON EQUIPMENT CANOPY POST, SEE SHEET VW B-2. FOOTINGS SIMILAR TO DETAIL 1/VW ANT-4

ENLARGED UTILITY ROUTING PLAN (1)
SCALE: 1" = 7.5'

COORDINATION WITH UTILITY COMPANY

THE ELECTRICAL CONTRACTOR SHALL COORDINATE COMPLETE ELECTRICAL SERVICE WITH LOCAL UTILITY COMPANIES FOR A COMPLETE OPERATIONS SYSTEM, INCLUDING TRANSFORMER CONNECTIONS, CONCRETE TRANSFORMER PADS PRIOR TO SUBMITTING BID TO INCLUDE ALL LABOR AND MATERIALS

CONDUITS AND WIRING

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4. PULL OR JUNCTION BOXES SHALL BE PROVIDED AS REQUIRED TO FACILITATE INSTALLATION OF RACEWAYS AND WIRING.
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.

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UL	UNDERWRITERS LABORATORIES, INC.

UTILITY PROVIDER INFORMATION

POWER COMPANY: ALIANT ENERGY
PHONE: (920) 459-6345

FIBER COMPANY: AT&T
PHONE: (855) 781-7542

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

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

RAMAKER
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Certification & Seal:
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MICHAEL L. PINSKE
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MIDDLETON, WI
PROFESSIONAL ENGINEER

Signature: 9/30/2024 Date:

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY
DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
ENLARGED UTILITY ROUTING PLAN

0 3.75' 7.5' 15'
11" x 17" - 1" = 7.5'
22" x 34" - 1" = 3.75'

PROJECT NUMBER: 60498
SHEET NUMBER: E-1A

DRAWN BY: SLS CHECKED BY: CM

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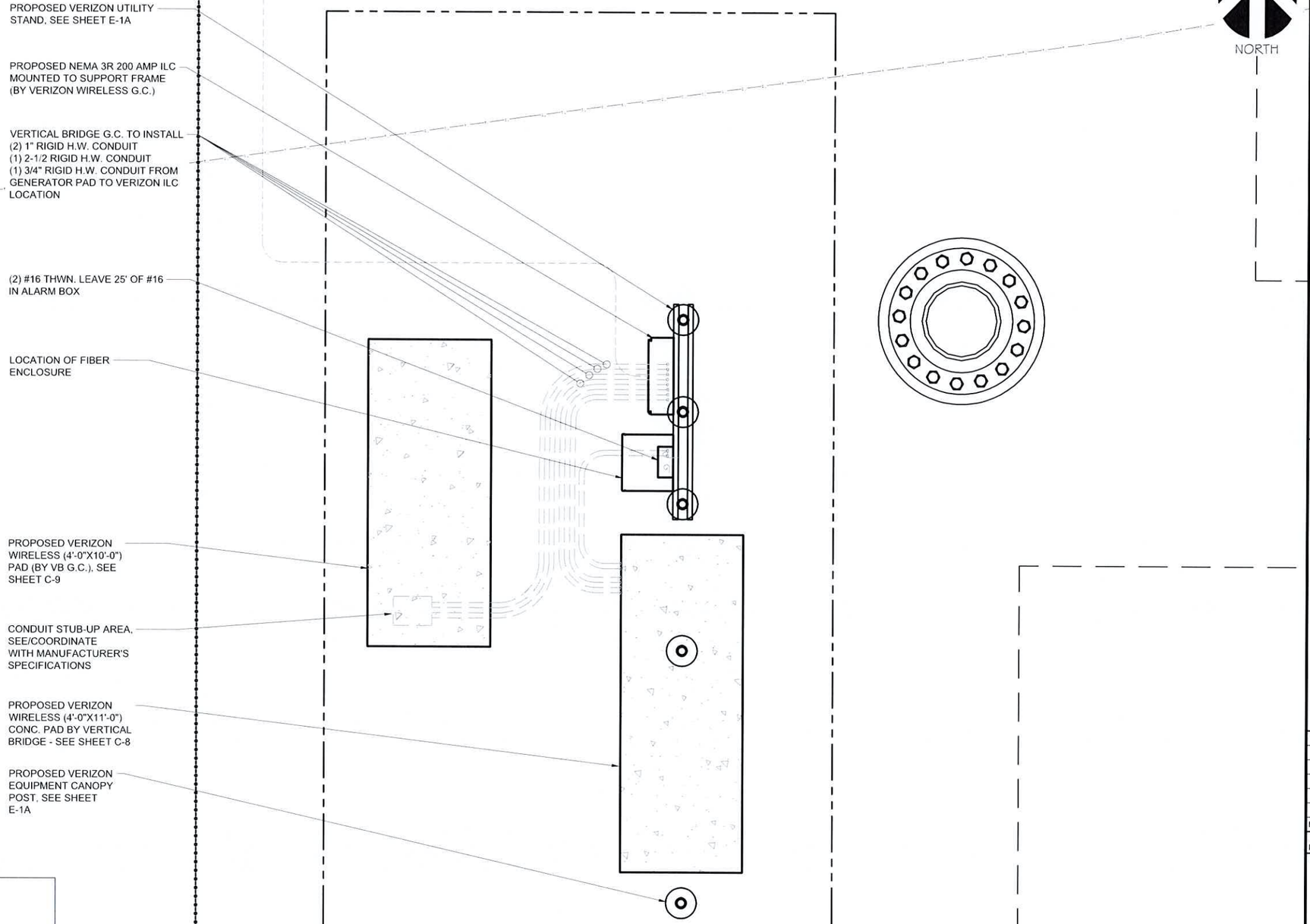

GENERATOR UTILITY ROUTING PLAN
SCALE: 1" = 3.75'
1

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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d/b/a VERIZON WIRELESS

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Signature: Date: 9/30/2024

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY
DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
GENERATOR UTILITY ROUTING PLAN

0 1.875' 3.75' 7.5'
11" x 17" - 1" = 3.75'
22" x 34" - 1" = 1.875'

PROJECT NUMBER: 60498
SHEET NUMBER: E-1B

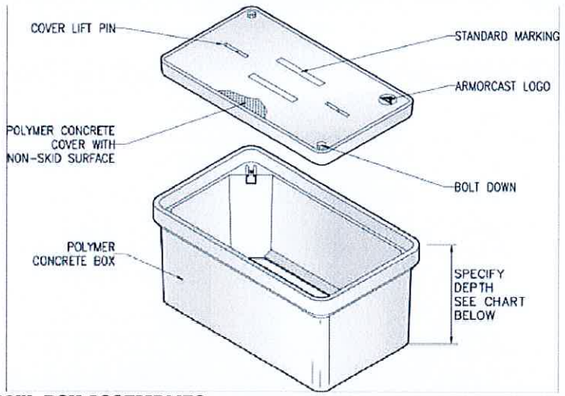
17" x 30" BOX ASSEMBLY

12" to 30" DEPTHS

POLYMER CONCRETE — ARMORCAST PRODUCTS COMPANY

A6001640

UL LISTED FILE #E364252



17"W x 30"L BOX ASSEMBLIES Specify Depth Below

DESCRIPTION	NOMINAL SIZE W x L x D	LOAD RATING	ANSI TIER	PART NUMBER	APPROX. WEIGHT	PALLET QTY.
Box & Cover Assembly	17" x 30" x 12"	10K	8	A6001640APCX12	114 lbs.	12
	17" x 30" x 12"	20K	15 / 22	A6001640TAPCX12 / A6001640HDAPCX12	140 lbs.	12
Box & Cover Assembly	17" x 30" x 18"	10K	8	A6001640APCX18	140 lbs.	6
	17" x 30" x 18"	20K	15 / 22	A6001640TAPCX18 / A6001640HDAPCX18	166 lbs.	6
Box & Cover Assembly	17" x 30" x 22"	10K	8	A6001640APCX22	154 lbs.	6
	17" x 30" x 22"	20K	15 / 22	A6001640TAPCX22 / A6001640HDAPCX22	180 lbs.	6
Box & Cover Assembly	17" x 30" x 24"	10K	8	A6001640APCX24	165 lbs.	6
	17" x 30" x 24"	20K	15 / 22	A6001640TAPCX24 / A6001640HDAPCX24	190 lbs.	6
Box & Cover Assembly	17" x 30" x 28"	10K	8	A6001640APCX28	184 lbs.	3
	17" x 30" x 28"	20K	15 / 22	A6001640TAPCX28 / A6001640HDAPCX28	210 lbs.	3
Box & Cover Assembly	17" x 30" x 30"	10K	8	A6001640APCX30	191 lbs.	3
	17" x 30" x 30"	20K	15 / 22	A6001640TAPCX30 / A6001640HDAPCX30	221 lbs.	3

COMPONENTS

MORE COVER VARIATIONS ARE AVAILABLE IN OUR "COVER SECTION"

DESCRIPTION	NOMINAL SIZE W x L x D	LOAD RATING	ANSI TIER	PART NUMBER	APPROX. WEIGHT	PALLET QTY.
Replacement Covers	17" x 30"	10K	8	A6001643	44 lbs.	30
	17" x 30"	20K	15 / 22	A6001947T / A6001947HD	70 lbs.	30
Replacement Boxes	17" x 30" x 12"	10K / 20K	22	A6001640PCX12	70 lbs.	12
	17" x 30" x 18"	10K / 20K	22	A6001640PCX18	96 lbs.	6
	17" x 30" x 22"	10K / 20K	22	A6001640PCX22	110 lbs.	6
	17" x 30" x 24"	10K / 20K	22	A6001640PCX24	121 lbs.	6
	17" x 30" x 28"	10K / 20K	22	A6001640PCX28	140 lbs.	3
	17" x 30" x 30"	10K / 20K	22	A6001640PCX30	151 lbs.	3

- Boxes are Open Bottom and Stackable, also available with Solid Bottoms.
- For sizes not shown please contact Armorcast Products for more information.

THIS PRODUCT IS LISTED TO APPLICABLE UL STANDARDS AND REQUIRMENTS BY UL.

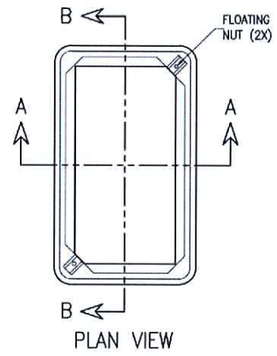
17" x 30" BOX ASSEMBLY

STANDARD DIMENSIONS

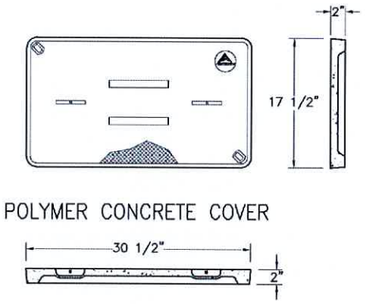
ARMORCAST PRODUCTS COMPANY — **POLYMER CONCRETE**

A6001640

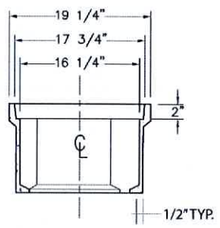
UL LISTED FILE #E364252



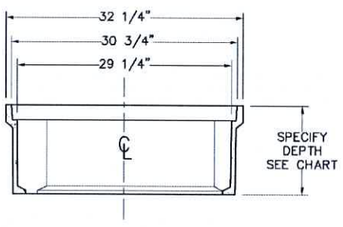
PLAN VIEW



POLYMER CONCRETE COVER



SECTION A–A



SECTION B–B

Armorcast Products Company reserves the right to update or discontinue product information at any time without notice.

THIS PRODUCT IS LISTED TO APPLICABLE UL STANDARDS AND REQUIRMENTS BY UL.

POLYMER CONCRETE BOXES

VAULT SPECIFICATIONS (1)
SCALE: NONE

Item 6.

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

RAMAKER employee-owned
(608) 643-4100 www.ramaker.com

Certification # Seal:
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WISCONSIN MICHAEL L. PINSKE 36387 MIDDLETON, WI PROFESSIONAL ENGINEER

Signature: 9/30/2024 Date:

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY — DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
VAULT SPEC. SHEET

SCALE: NONE

PROJECT NUMBER 60498
SHEET NUMBER E-1C

94

DRAWN BY: SLS CHECKED BY: GM

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KEYED NOTES

KEY	DESCRIPTION
1	SYSTEM GROUND RESISTANCE SHALL NOT EXCEED 5 OHMS. A THREE POINT SYSTEM RESISTANCE TEST SHALL BE PERFORMED BY THE CONTRACTOR IN ACCORDANCE WITH VERTICAL BRIDGE SPECIFICATIONS. A. PERFORM THREE TESTS AT EACH SITE. B. CONTRACTOR SHALL PROVIDE A WRITTEN REPORT CONSISTING OF THE FOLLOWING: SITE NAME, ADDRESS AND IDENTIFICATION NUMBER, DESCRIPTION OF SITE SOIL AND MOISTURE CONDITION, DESCRIPTION OF WEATHER, MODEL NUMBER OF TESTING EQUIPMENT, DATE OF LAST CALIBRATION, SITE SKETCH SHOWING LOCATION OF TEST PROBES AND ALL FIELD DATA COLLECTED (READINGS, RANGE, TEST, MILLIAMPS, ETC.) C. CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER IF THERE ARE ANY DIFFICULTIES PERFORMING SYSTEM RESISTANCE TESTS OR IF MEASUREMENTS ARE ABOVE 5 OHMS. THE CONSTRUCTION MANAGER SHALL PROVIDE INSTRUCTION TO THE CONTRACTOR TO INSTALL ADDITIONAL GROUNDING MEASURES TO MEET THE 5 OHM REQUIREMENT.
2	PROPOSED TOWER GROUND RING BURIED TO A DEPTH OF 30" OR 6" BELOW THE FROST LINE, WHICHEVER IS GREATER.
3	BOND PROPOSED TOWER TO TOWER GROUND RING (3 PLACES TOTAL).
4	SERVICE ENTRANCE GROUND ROD.
5	BOND GROUND RING(S) TO SITE CORNER POST (TYP. x 4).
6	BOND GATE POST TO PROPOSED GROUND RING (TYP. x 2).
7	BOND FLEXIBLE JUMPER TO GATE (TYP. x 2).
8	BOND PROPOSED H-FRAME TO GROUND RING (TYP. x 8).

EXTERIOR GROUNDING NOTES:

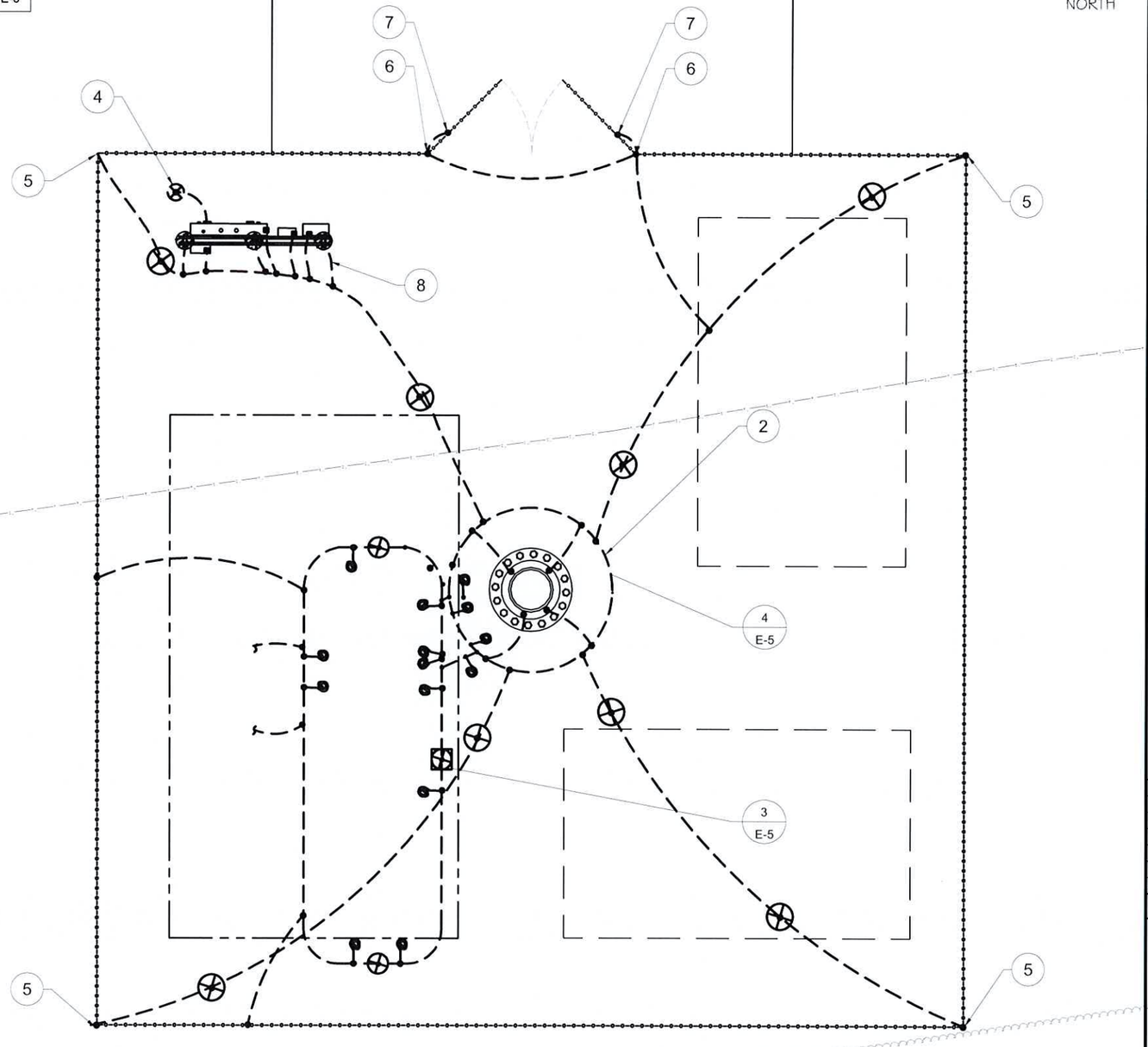
1. GROUNDING SHALL CONFORM WITH VERTICAL BRIDGE STANDARDS AND PER FEDERAL, STATE AND LOCAL CODES. IN THE EVENT OF A CONFLICT, MEET THE MOST STRINGENT REQUIREMENT.
2. GROUND RODS PAST METER SHALL BE COPPER CLAD STEEL 5/8 INCH DIAMETER X 10 FEET IN LENGTH (MIN.)
3. ALL GROUND CONDUCTORS PAST METER SHALL BE #2 AWG SOLID BARE TINNED COPPER. MINIMUM BEND RADIUS FOR CONDUCTOR SHALL BE 8 INCHES.
4. GROUND RODS SHALL BE SPACED NOT MORE THAN 16'-0" AND NOT LESS THAN 6'-0" APART EXCEPT FOR THE TOWER GROUND RING WHICH SHALL COMPLY WITH TIA/EIA 222 (REV G).
5. CONTRACTOR SHALL ADD ADDITIONAL RODS AND CONDUCTORS OR APPROVED GROUND ENHANCING MATERIAL TO ACHIEVE LESS THAN 5 OHMS RESISTANCE TO GROUND.
6. MAINTAIN 2'-0" (TOWER) AND 3'-0" (SHELTER) BETWEEN GROUND RINGS AND FOUNDATIONS.
7. ALL GROUNDING INSTALLATIONS SHALL BE INSPECTED AND APPROVED BY ANY JURISDICTION HAVING INSPECTION & APPROVAL AUTHORITY (IF REQUIRED) AND VERTICAL BRIDGE BEFORE PLACING ANY BACKFILL.
8. ALL GROUNDING SPLICES AND CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC WELD PROCESS (CADWELD OR EQUIVALENT). COAT ALL WELDS WITH A ZINC RICH PAINT.

THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING THE SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED.

SYMBOLS LEGEND

- GROUND ROD WITH ACCESS
- GROUND ROD
- EXOTHERMIC CONNECTION
- VZW GROUND LEAD
- MECHANICAL CONNECTION
- GROUND BAR
- GROUND WIRE

NOTE:
SEE GROUNDING DETAILS ON SHEETS E-3 & E-5



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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

SITE GROUNDING PLAN (1)
SCALE: 1" = 7.5'

Item 6.

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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Certification & Seal:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Wisconsin.

WISCONSIN
MICHAEL L. PINSKE
36387
MIDDLETON, WI
PROFESSIONAL ENGINEER

Signature: Date: 9/30/2024

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

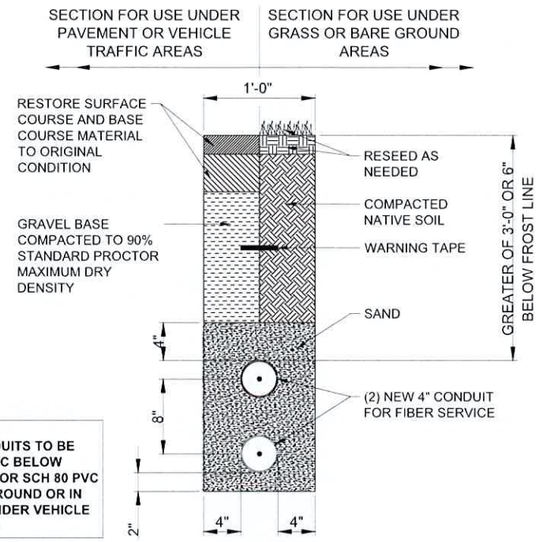
PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

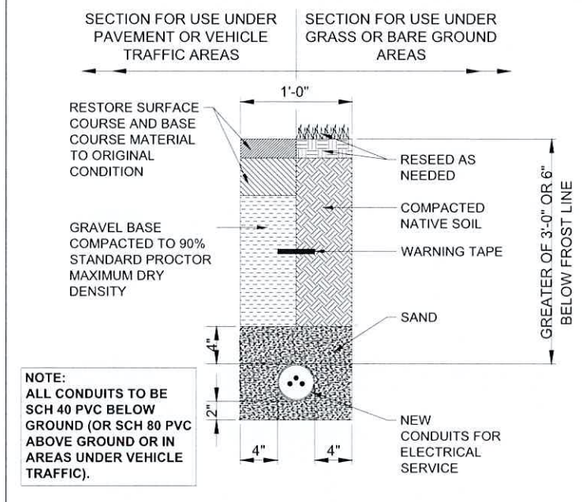
SHEET TITLE:
SITE GROUNDING & NOTES

0 3.75' 7.5' 15'
11" x 17" - 1" = 7.5'
22" x 34" - 1" = 3.75'

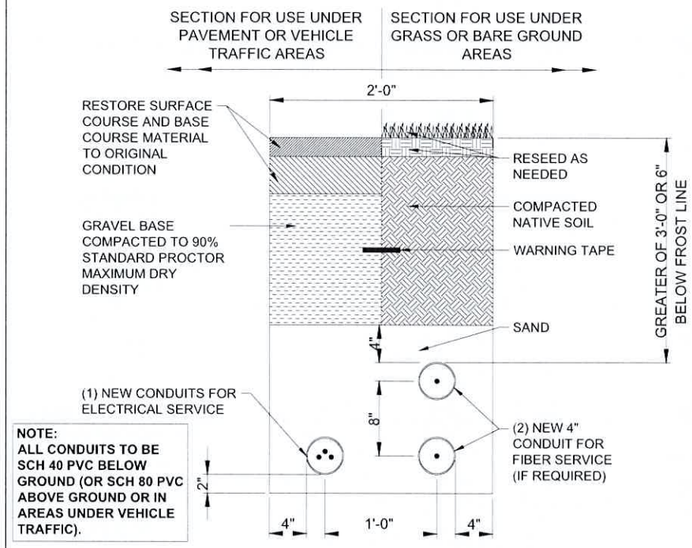
PROJECT NUMBER: 60498
SHEET NUMBER: E-2



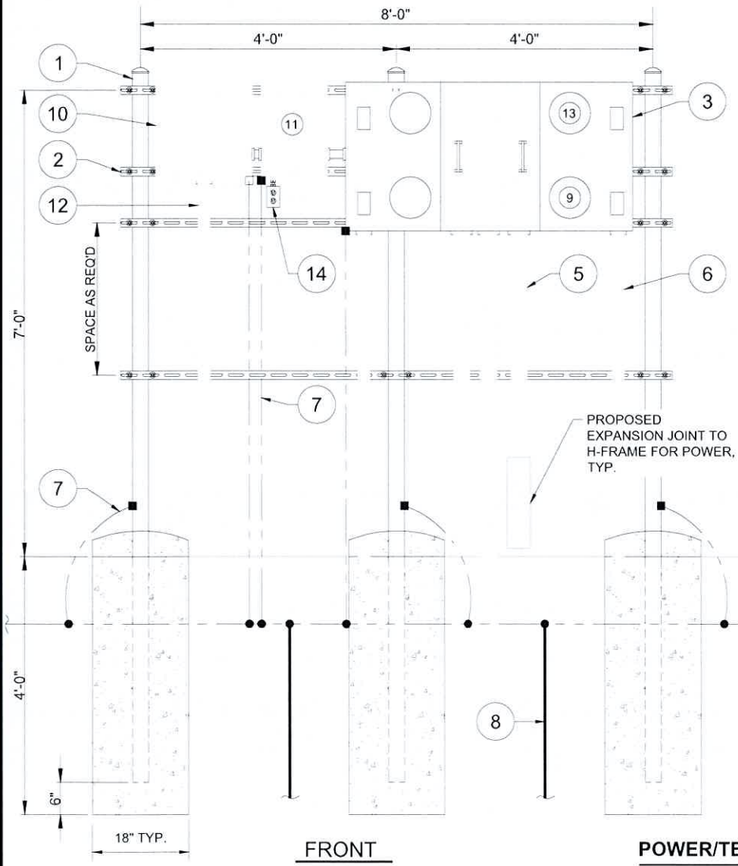
FIBER TRENCH DETAIL (IF REQUIRED) 2
SCALE: NTS

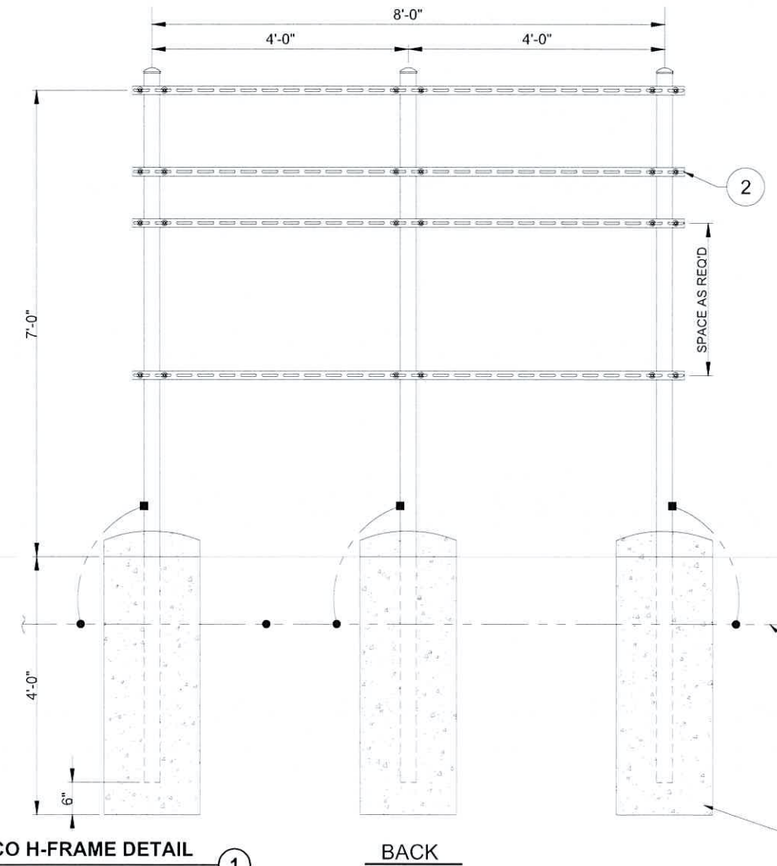


ELECTRICAL TRENCH DETAIL 3
SCALE: NTS



JOINT UTILITY TRENCH DETAIL 4
SCALE: NTS





POWER/TELCO H-FRAME DETAIL 1
SCALE: NTS

KEYED NOTES

1. 3-1/2" SCH 40 GALVANIZED PIPE W/ END CAP (TYP.)
2. P1000 UNISTRUT U-BOLTED TO POSTS W/ END CAP (TYP.)
3. PROPOSED 4-GANG MULTI-TENANT METER CENTER. 800A, 120/240V 1 Ø, 3W, NEMA 3R ENCLOSURE. (SQUARE D MODEL #EZM1800TB OR #EZML114225 AS REQUIRED BY POWER PROVIDER)
4. SERVICE GROUND CONDUCTOR(S) IN 1" PVC SIZED PER NEC 4 BASED ON ACTUAL SERVICE CONDUCTORS INSTALLED.
5. (3) 4" PVC TO POWER SOURCE/TRANSFORMER (TYP.)
6. 3" CONDUIT TO VERIZON WIRELESS EQUIPMENT (TYP.)
7. #2 AWG SOLID TINNED GROUND LEAD TO EQUIPMENT GROUND RING (TYP.)
8. SERVICE ENTRANCE GROUND ROD 5/8" X 8'-0" COPPER CLAD (TYP. OF 2)
9. VERIZON WIRELESS METER
10. E1 TOWER LIGHT CONTROLLER & PHOTOCELL (IF TOWER IS LIT)
11. PROPOSED 125A LOAD CENTER WITH (2) 20 AMP BREAKERS, 120/240V, 1Ø, 3W, NEMA 3R ENCLOSURE. SQUARE D OR APPROVED EQUAL. (IF TOWER IS LIT)
12. 2-1/2" SCH. 40 PVC CONDUIT TO CLOSEST TOWER LEG (IF TOWER IS LIT)
13. TOWER OWNER'S METER (IF TOWER IS LIT)
14. 120/240V 2-GANG COMMERCIAL GRADE OUTDOOR ELECTRICAL BOX W/ (2) 20A COMMERCIAL GRADE DUPLEX RECEPTACLE (IF TOWER IS LIT)

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PROFESSIONAL ENGINEER

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BUSINESS DRIVE

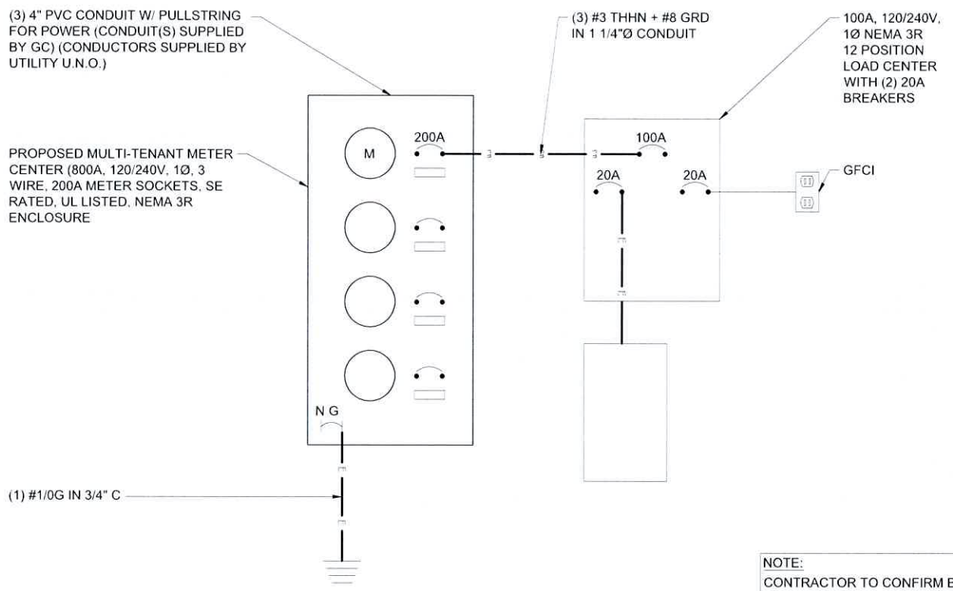
PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
UTILITY DETAILS

SCALE: NONE

PROJECT NUMBER 60498
SHEET NUMBER E-3

96



NOTE:
CONTRACTOR TO CONFIRM BREAKER SIZE WITH TOWER LIGHTING MANUFACTURER

SINGLE LINE DIAGRAM (POWER) (1)
SCALE: NTS

NOTES AND SPECIFICATIONS

1. ELECTRIC UTILITY WILL PROVIDE METER AND INCOMING SERVICE LATERAL CONDUCTORS. ALL ELECTRICAL WORK SHALL COMPLY WITH NEC, STATE AND LOCAL CODES.
2. CONTRACTOR SHALL OBTAIN OWNER/TENANT EQUIPMENT DRAWINGS AND REVIEW FOR
3. ADDITIONAL DETAILS AND REQUIREMENTS THAT MAY NOT BE SHOWN IN THESE DRAWINGS. CONTRACTOR SHALL COMPLY WITH ANY ADDITIONAL OWNER/TENANT SPECIFICATIONS AND REQUIREMENTS THAT MAY BE ADDRESSED IN THE EQUIPMENT DRAWINGS.
4. PRIOR TO PURCHASING EQUIPMENT, THE CONTRACTOR SHALL CONTACT THE ELECTRIC UTILITY AND OBTAIN IN WRITING THE MAXIMUM AVAILABLE FAULT CURRENT AT THE UTILITY SERVICE POINT. PROVIDE MAX AFC SIGNAGE AS REQUIRED PER ENC 110.24. THE CONTRACTOR SHALL ENSURE ALL ELECTRICAL EQUIPMENT, CIRCUIT BREAKERS, DISCONNECTS, FUSES, AND PANELBOARDS HAVE A FAULT CURRENT INTERRUPTING RATING GREATER THAN THE AVAILABLE FAULT CURRENT. IN NO CASE SHALL THE FAULT CURRENT INTERRUPTING RATING BE LESS THAN 10,000 AMPS.
5. THE GROUNDED SERVICE CONDUCTOR (NEUTRAL CONDUCTOR) SHALL BE GROUNDED AT THE SERVICE DISCONNECT ONLY.
6. ALL POWER CIRCUITS SHALL USE COPPER CONDUCTORS WITH THHN/THWN INSULATION. ALL TERMINATIONS SHALL BE RATED FOR AT LEAST 75°C.
7. CONTRACTOR SHALL PROVIDE GROUND FAULT CIRCUIT INTERRUPTER (GFCI) TYPE RECEPTACLES FOR ALL UTILITY RECEPTACLES.
8. CONTRACTOR SHALL ENSURE ALL NEUTRAL CONDUCTORS HAVE WHITE INSULATION AND EQUIPMENT GROUND CONDUCTORS HAVE GREEN INSULATION. COLOR TAPE IDENTIFICATION OF THESE CONDUCTORS IS NOT ALLOWED.
9. PER NEC ARTICLE 702 PROVIDE SIGNAGE AS FOLLOWS:

AT SERVICE DISCONNECT:

WARNING - SHOCK HAZARD EXISTS IF GROUNDING ELECTRODE CONDUCTOR OR BONDING JUMPER CONNECTION IN THIS EQUIPMENT IS REMOVED WHILE ALTERNATE SOURCE(S) IS ENERGIZED

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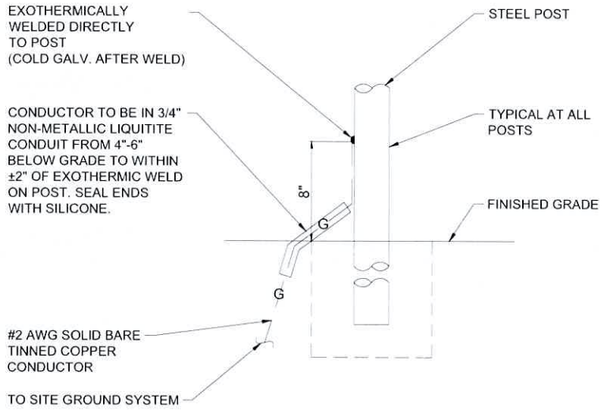
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

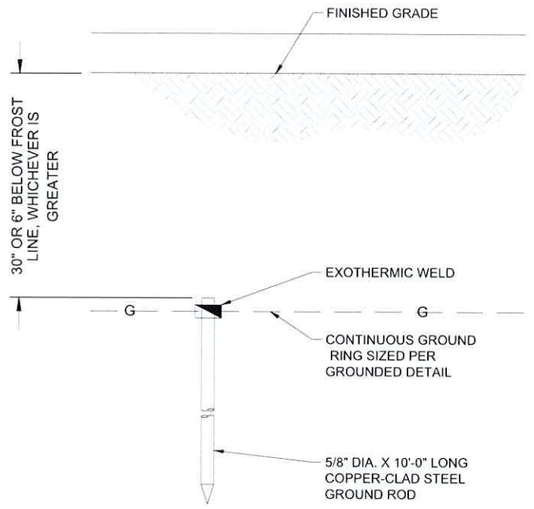
SHEET TITLE:
SINGLE LINE DIAGRAM

SCALE: NONE

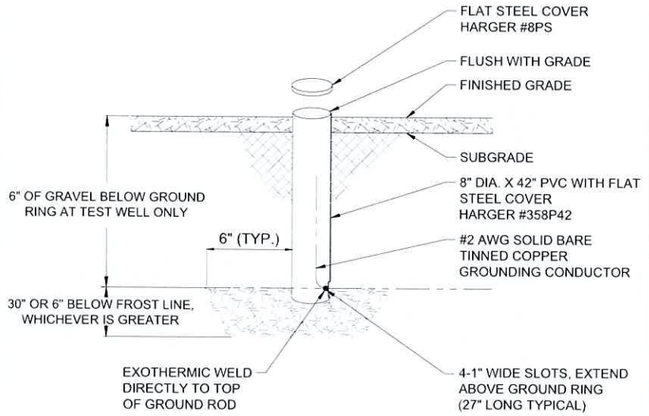
PROJECT NUMBER: 60498
SHEET NUMBER: E-4



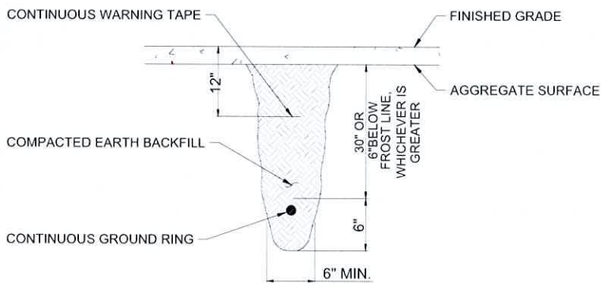
POST GROUNDING DETAIL (1)
SCALE: NTS



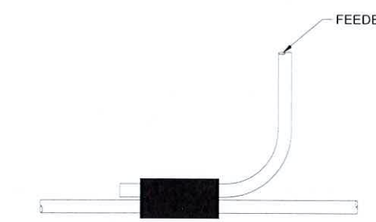
GROUND ROD DETAIL (2)
SCALE: NTS



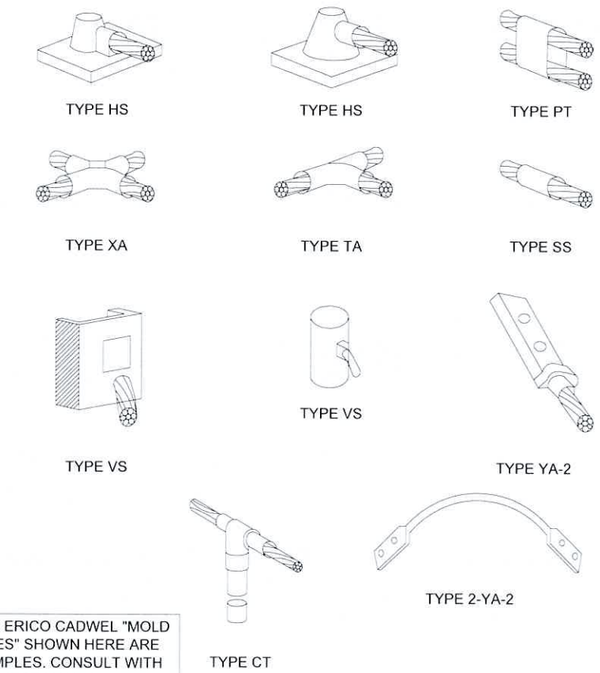
GROUND TEST WELL DETAIL (3)
SCALE: NTS



TRENCH DETAIL FOR GROUND RING (4)
SCALE: NTS

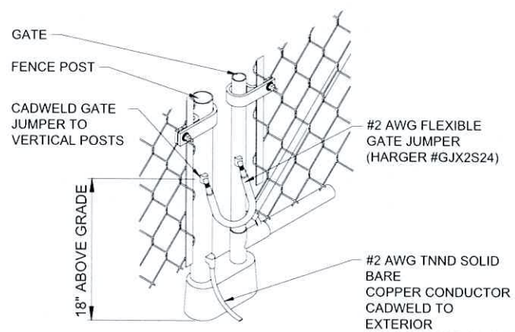


GROUND CONDUCTOR CONNECTION (5)
SCALE: NTS



NOTE: ERICO CADWEL "MOLD TYPES" SHOWN HERE ARE EXAMPLES. CONSULT WITH PROJECT MANAGER FOR SPECIFIC MOLDS TO BE USED FOR THIS PROJECT

EXOTHERMIC WELD DETAIL (6)
SCALE: NTS



CORNER AND GATE POST DETAIL (7)
SCALE: NTS

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BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
GROUNDING DETAILS

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: E-5

GENERAL PROJECT NOTES

1. THE ENGINEER SHALL BE RESPONSIBLE FOR PROVIDING ALL FIELD LAYOUT ON A ONE TIME BASIS.
2. THE CONTRACTOR SHALL TOPSOIL AND SEED ALL DISTURBED AREAS.
3. THE PLANS SHOW SOME KNOWN SUBSURFACE STRUCTURES, ABOVE-GROUND STRUCTURES AND/OR UTILITIES BELIEVED TO EXIST IN THE WORKING AREA, EXACT LOCATION OF WHICH MAY VARY FROM THE LOCATIONS INDICATED. IN PARTICULAR, THE CONTRACTOR IS WARNED THAT THE EXACT OR EVEN APPROXIMATE LOCATION OF SUCH PIPELINES, SUBSURFACE STRUCTURES AND/OR UTILITIES IN THE AREA MAY BE SHOWN OR MAY NOT BE SHOWN; AND IT SHALL BE HIS RESPONSIBILITY TO PROCEED WITH GREAT CARE IN EXECUTING ANY WORK. 48 HOURS BEFORE YOU DIG, DRILL OR BLAST, CALL 811.
4. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT THE EXPRESSED APPROVAL OF THE ENGINEER.
5. THE CONTRACTOR IS INSTRUCTED TO COOPERATE WITH ANY AND ALL OTHER CONTRACTORS PERFORMING WORK ON THIS JOB SITE DURING THE PERFORMANCE OF THIS CONTRACT.
6. THE CONTRACTOR SHALL RESTORE ALL PUBLIC OR PRIVATE PROPERTY DAMAGED OR REMOVED TO AT LEAST AS GOOD OF CONDITION AS BEFORE DISTURBED AS DETERMINED BY THE ENGINEER.
7. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIRED PERMITS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING, AND INCURRING THE COST OF ALL REQUIRED PERMITS, INSPECTIONS, CERTIFICATES, ETC.
9. THE CONTRACTOR SHALL PROTECT EXISTING PROPERTY LINE MONUMENTATION. ANY MONUMENTATION DISTURBED OR DESTROYED, AS JUDGED BY THE ENGINEER OR OWNER SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE UNDER THE SUPERVISION OF THE STATE LICENSED LAND SURVEYOR.
10. IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE ALL PLAN SHEETS AND SPECIFICATIONS, AND COORDINATE WORK WITH ALL CONTRACTS FOR THE SITE.
11. ALL TRENCH EXCAVATION AND ANY REQUIRED SHEETING AND SHORING SHALL BE DONE IN ACCORDANCE WITH THE LATEST REVISIONS OF THE JURISDICTIONS STATE CODE AND OSHA REGULATIONS FOR CONSTRUCTION.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING AND THE MAINTENANCE OF SURFACE DRAINAGE DURING THE COURSE OF WORK.
13. ALL UTILITY WORK INVOLVING CONNECTIONS TO EXISTING SYSTEMS SHALL BE COORDINATED WITH THE ENGINEER AND THE UTILITY OWNER. NOTIFY THE ENGINEER AND THE UTILITY OWNER 24 HOURS BEFORE EACH AND EVERY CONNECTION TO EXISTING SYSTEMS IS MADE.
14. MAINTAIN FLOW FOR ALL EXISTING UTILITIES
15. ALL SITE FILL SHALL MEET SELECTED FILL STANDARDS UNLESS NOTED OTHERWISE ON THE DRAWINGS.
16. CONTRACTOR TO GRADE ALL AREAS ON THE SITE TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE COMPOUND AND THE TOWER.
17. THE CONTRACTOR SHALL TAKE TIES TO ALL UTILITY CONNECTIONS AND PROVIDE MARKED-UP AS-BUILT PLANS. AS-BUILT PLANS SHALL BE REVIEWED BY THE OWNER AND HIS REPRESENTATIVES, AND THE CONTRACTOR SHALL PROVIDE ANY CORRECTION OR ADMISSIONS TO THE SATISFACTION OF THE OWNER AND HIS REPRESENTATIVES BEFORE UTILITIES WILL BE ACCEPTED. AS-BUILTS SHALL INCLUDE ALL POWER, TELEPHONE, GROUNDING, ETC.
18. TOWER FOOTING DIMENSIONS SHALL BE VERIFIED WITH THE TOWER MANUFACTURER AND THE TOWER PLANS.

GENERAL CONSTRUCTION NOTES

1. GENERAL
   - A. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.
   - B. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE UNDERGROUND UTILITIES.
   - C. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE APPROVAL.
   - D. EACH CONTRACTOR SHALL COOPERATE WITH THE OWNER'S REPRESENTATIVE, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
   - E. PAINT ALL ANTENNAS, MOUNTING HARDWARE, CABLES, CABLE TRAYS, ETC. TO MATCH EXISTING STRUCTURE PER OWNER REQUIREMENTS. OWNER SHALL APPROVE COLOR. ALL DAMAGED, MARRED, SCRAPED, ABRADED, ETC. AREAS OF EXISTING PAINT SHALL BE REPAIRED PER OWNERS REQUIREMENTS. OWNER SHALL APPROVE COLOR.
   - F.

2. EXCAVATIONS/FOUNDATION
   - A. FOUNDATION EXCAVATION SHALL BE HAND-TRIMMED TO REMOVE LOOSE MATERIALS.
   - B. EXTERIOR FOUNDATION BACKFILL SHALL BE SELECTED GRANULAR FILL.
   - C. ALL STRUCTURAL BACKFILL AND SUBBASE UNDER SLABS-ON-GRADE AND FOOTINGS SHALL BE "SW" OR BETTER PER ASTM D-2487 COMPACTED TO A MINIMUM 95% STANDARD PROCTOR DENSITY PER ASTM D 698.
   - D. DO NOT PLACE FOOTINGS IN WATER OR ON FROZEN GROUND.
   - E. SOIL BEARING SURFACES, PREVIOUSLY ACCEPTED BY GEOTECHNICAL ENGINEER, WHICH ARE ALLOWED TO BECOME SATURATED, FROZEN OR DISTURBED SHALL BE REWORKED TO SATISFACTION OF GEOTECHNICAL ENGINEER.
   - F. DO NO ALLOW GROUND BENEATH FOOTINGS TO FREEZE.
   - G. FOOTING EXCAVATIONS SHALL BE CUT NEAT.

3. CONCRETE
   - A. DESIGN AND CONSTRUCTION OF ALL CONCRETE ELEMENTS SHALL CONFORM TO THE LATEST EDITIONS OF THE FOLLOWING APPLICABLE CODES: ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS"; ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE";
   - B. MIX DESIGN SHALL BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO PLACING CONCRETE.
   - C. CONCRETE SHALL BE NORMAL WEIGHT, 6% AIR ENTRAINED (±1.5%) WITH A MAXIMUM 4" SLUMP, AND HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI UNLESS OTHERWISE NOTED.
   - D. MAXIMUM AGGREGATE SIZE SHALL BE 1".
   - E. THE FOLLOWING MATERIALS SHALL BE USED:

PORTLAND CEMENT:	ASTM C 150,
TYPE I REINFORCEMENT:	ASTM A 615,
GRADE 60 NORMAL WEIGHT AGGREGATE:	ASTM C 33
WATER:	DRINKABLE
ADMIXTURES:	NON-CHLORIDE CONTAINING

   - F. REINFORCING SHALL CONFORM TO ASTM A-615 WITH SUPPLEMENT. MINIMUM YIELD STRENGTH Fy=60 KSI. REINFORCING DETAILS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ACI 315.
   - G. CONCRETE COVER AROUND REINFORCING BARS (U.N.O.) SHALL BE:

1. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED EARTH	3"
2. CONCRETE EXPOSED TO EARTH, WEATHER	2"
3. SLABS	3/4"
4. ALL OTHER CONCRETE	1 1/2"

   - H. UNLESS INDICATED OTHERWISE ON THE DRAWINGS, REINFORCEMENT SPLICES SHALL MEET CLASS B, TENSION LAP REQUIREMENTS IN ACCORDANCE WITH ALL PROVISIONS OF ACI 318 LATEST EDITION, UNLESS NOTED OTHERWISE.

GENERAL CONSTRUCTION NOTES CONT.

   - I. CURING COMPOUNDS SHALL CONFORM TO ASTM C-309.
   - J. ADMIXTURES SHALL CONFORM TO THE APPROPRIATE ASTM STANDARD AS REFERENCED IN ACI-301
   - K. DO NOT WELD OR TACKWELD REINFORCING STEEL.
   - L. ALL DOWELS, ANCHOR BOLTS, EMBEDDED STEEL, ELECTRICAL CONDUITS, PIPE SLEEVES, PIPING, WATERSTOPS, INSERTS, GROUNDS AND ALL OTHER EMBEDDED ITEMS AND FORMED DETAILS SHALL BE IN PLACE BEFORE START OF CONCRETE PLACEMENT.
   - M. LOCATE ADDITIONAL CONSTRUCTION JOINTS REQUIRED TO FACILITATE CONSTRUCTION AS ACCEPTABLE TO ENGINEER. PLACE REINFORCEMENT CONTINUOUSLY THROUGH JOINT.
   - N. REINFORCEMENT SHALL BE COLD BENT WHENEVER BENDING IS REQUIRED.
   - O. PLACE CONCRETE IN A UNIFORM MANNER TO PREVENT THE FORMATION OF COLD JOINTS AND OTHER PLANES OF WEAKNESS. VIBRATE THE CONCRETE TO FULLY EMBED REINFORCING. DO NOT USE VIBRATORS TO TRANSPORT CONCRETE THROUGH CHUTES OR FORMWORK.
   - P. DO NOT PLACE CONCRETE IN WATER, ICE, OR ON FROZEN GROUND.
   - Q. DO NOT ALLOW CONCRETE SUBBASE TO FREEZE DURING CONCRETE CURING AND SETTING PERIOD, OR FOR A MINIMUM OF 14 DAYS AFTER PLACEMENT.
   - R. FOR COLD-WEATHER AND HOT-WEATHER CONCRETE PLACEMENT, CONFORM TO APPLICABLE ACI CODES AND RECOMMENDATIONS. IN EITHER CASE, MATERIALS CONTAINING CHLORIDE, CALCIUM, SALTS, ETC. SHALL NOT BE USED. PROTECT FRESH CONCRETE FROM WEATHER FOR 7 DAYS MINIMUM.
   - S. PROVIDE A STEEL TROWEL FINISH TO THE SLAB.

4. ANTENNA SUPPORT BRACKET NOTES (IF APPLICABLE)
   - A. DESIGN RESPONSIBILITY OF ANTENNA MOUNTING BRACKETS AND POLES AND ALL COMPONENTS THERE OF AND ATTACHMENT THERE TO SHALL BE THE RESPONSIBILITY OF THE MANUFACTURER. MFR SHALL PROVIDE TO THE ENGINEER FOR APPROVAL, DRAWINGS DETAILING ALL COMPONENTS OF THE ASSEMBLY, INCLUDING CONNECTIONS, DESIGN LOADS, AND ALL OTHER PERTINENT DATA.
   - B. BRACKETS SHALL BE DESIGNED TO SUPPORT CURRENT AND FUTURE PANEL ANTENNAS AND COAXIAL CABLES AS SHOWN.

5. STRUCTURAL STEEL NOTES
   - A. STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
   - B. STEEL ANGLES, BASE PLATES, BEARING PLATES AND MISC. FABRICATION SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF ASTM-A36 WITH A MINIMUM YIELD STRESS OF 36 KSI. ALL STEEL TUBES AND PIPES SHALL BE A500 STEEL MINIMUM.
   - C. ALL DINGS, SCRAPES, MARS, AND WELDS IN THE FINISHED AREAS SHALL BE REPAIRED BY FIELD TOUCH-UP PRIOR TO COMPLETION OF THE WORK.
   - D. ALL EXTERIOR STRUCTURAL STEEL SHALL BE, WHEN DELIVERED, HOT-DIP GALVANIZED ACCORDING TO ASTM A123, TOUCH-UP FIELD WELDS AND ABRADED AREAS W/2 COATS OF GALVANIZED PAINT, ZRC COLD GALVANIZING COMPOUND OR APPROVED EQUAL.
   - E. DO NOT PLACE HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.
   - F. CONNECTIONS:
     1. BOLTED CONNECTIONS SHALL USE BEARING TYPE GALVANIZED ASTM A325 BOLTS AND SHALL HAVE A MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
     2. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. GALVANIZED ASTM A307 BOLTS UNLESS NOTED OTHERWISE.
   - G. SAFETY NOTES:
     1. THE CONTRACTOR WILL ADHERE TO ALL SAFETY REGULATIONS, LOCAL, STATE AND FEDERAL.
     2. THE CONTRACTORS WILL CONDUCT DAILY SAFETY TAILGATE MEETINGS IN ADDITION TO WEEKLY SAFETY MEETINGS. THESE REPORTS WILL BE MADE AVAILABLE TO THE OWNER UPON REQUEST.
     3. ALL WORKERS & VISITORS TO THE SITE SHALL WEAR HARD HATS & ANY OTHER SAFETY EQUIPMENT REQUIRED BY THE WORK BEING PERFORMED ON THE SITE.

GENERAL GROUNDING NOTES:

1. ALL GROUND CABLE IN CONCRETE OR THROUGH WALL SHALL BE IN 3/4" PVC CONDUIT. NO METALLIC CONDUIT SHALL BE USED FOR GROUNDING CONDUCTOR SLEEVES.
2. GROUND ALL EXPOSED METALLIC OBJECTS USING A TWO-HOLE NEMA DRILLED CONNECTOR SUCH AS THOMAS & BETTS #32207 OR APPROVED EQUAL.
3. THE CONTRACTOR SHALL NOTIFY THE VERTICAL BRIDGE REPRESENTATIVE WHEN THE GROUND RING IS INSTALLED SO THAT THE REPRESENTATIVE CAN INSPECT GROUNDING BEFORE IT IS CONCEALED.
4. ALL EXTERIOR GROUND CONDUCTORS INCLUDED GROUND RING SHALL BE #2 AWG SOLID BARE TINNED COPPER. MAKE ALL GROUND CONNECTIONS AS SHORT AND DIRECT AS POSSIBLE. AVOID SHARP BENDS. THE RADIUS OF ANY BEND SHALL NOT BE LESS THAN 8" AND THE INCLUSIVE ANGLE OF ANY BEND SHALL NOT EXCEED 90°. GROUNDING CONDUCTORS SHALL BE ROUTED DOWNWARD TOWARD THE BURIED GROUND RING.
5. ALL BELOW GROUND EXTERNAL CONNECTIONS SHALL BE EXOTHERMICALLY WELDED. ALL EXOTHERMIC WELDS TO BURIED GROUND RING SHALL BE THE PARALLEL, EXCEPT FOR THE GROUND RODS WHICH ARE TEE-TYPE EXOTHERMIC WELDS. REPAIR ALL GALVANIZED SURFACES THAT HAVE BEEN DAMAGED BY EXOTHERMIC WELDING. USE SPRAY GALVANIZED SUCH AS HOLUB LECTROSOL #15-501.
6. WHERE MECHANICAL CONNECTORS (TWO-HOLE OR CLAMP) ARE USED, APPLY A LIBERAL PROTECTIVE COATING OF A CONDUCTIVE ANTI-OXIDE COMPOUND ON ALL CONNECTORS, PROVIDE LOCK WASHERS ON ALL MECHANICAL CONNECTORS. USE STAINLESS STEEL HARDWARE THROUGHOUT. THOROUGHLY REMOVE ALL PAINT AND CLEAN ALL DIRT FROM SURFACES REQUIRING GROUND CONNECTORS, REPAINT TO MATCH EXISTING AFTER CONNECTION IS MADE TO MAINTAIN CORROSION RESISTANCE. ALL GROUND CONNECTIONS SHALL BE APPROVED FOR THE TYPES OF METALS BEING ATTACHED TO.
7. THE CONTRACTOR SHALL COORDINATE AS REQUIRED TO HAVE UTILITY COMPANY REPRESENTATIVE AT THE SITE TO DISCONNECT THE UTILITY NEUTRAL FROM GROUNDING SYSTEM DURING FINAL INSPECTION SO THAT REQUIRED TESTING ON THE GROUND SYSTEM CAN BE PERFORMED. THE CONTRACTOR SHALL PROVIDE NOTICE TO THE VERTICAL BRIDGE REPRESENTATIVE (TWO) DAYS PRIOR TO FINAL TESTING. IF THE CONTRACTOR SHALL PAY THE COST FOR AN INDEPENDENT GROUNDING CONSULTANT TO PERFORM THE GROUND RESISTANCE TEST. GROUNDING CONSULTANT SHALL BE SELECTED BY THE VERTICAL BRIDGE REPRESENTATIVE. IF THE UTILITY COMPANY REPRESENTATIVE FAILS TO APPEAR DUE TO NO FAULT THE CONTRACTOR, NO PENALTY APPLY.
8. ALL MOUNTING HARDWARE SHALL BE STAINLESS STEEL.
9. THE GROUND CONDUCTORS SHALL BE RUN STRAIGHT FOR MINIMUM INDUCTANCE AND VOLTAGE DROP, SINCE CABLE BENDS INCREASE INDUCTANCE, THE MINIMUM REQUIRED BENDING RADIUS IS 8 INCHES WHEN BENDS ARE UNAVOIDABLE. ALL METAL WORK WITHIN 10 FEET OF THE GROUND RING SHALL BE DIRECTLY BONDED TO THIS GROUND SYSTEM, WITHOUT USING SERIES OR DAISY CHAIN CONNECTION ARRANGEMENTS.
10. PAINT, ENAMEL LACQUER AND OTHER ELECTRICALLY NON-CONDUCTIVE COATING SHALL BE REMOVED FROM THREADS AND SURFACE AREAS WHERE CONNECTIONS ARE MADE TO ENSURE GOOD ELECTRICAL CONTINUITY.
11. CONNECTIONS BETWEEN DISSIMILAR METALS SHALL NOT BE MADE UNLESS THE CONDUCTORS ARE SEPARATED BY A SUITABLE MATERIAL THAT IS A PART OF THE ATTACHMENT DEVICE LISTED AND APPROVED FOR USE WITH THE SPECIFIC DISSIMILAR METALS MAY BE USED FOR THE PURPOSE.
12. ALL BELOW GRADE GROUND SYSTEM CONDUCTORS SHALL BE A MINIMUM DEPTH OF 30" (OR 6" BELOW THE FROST LINE, WHICHEVER IS GREATER).
13. CONTRACTOR TO COORDINATE WITH TOWER CONTRACTOR TO PROVIDE, RUN AND TERMINATE POWER & CONTROL WIRES WITHIN CONDUITS FROM LIGHTENING CONTROLLER TO ELECTRICAL AND CONTROL PANELS.
14. INTERMEDIATE COAX, GROUNDING TO BE INSTALLED ON VERTICAL RUNS THAT EXCEED 200 FEET IN LENGTH. CONTRACTOR SHALL COORDINATE WITH VERTICAL CONSTRUCTION MANAGER ON LOCATION OF INTERMEDIATE GROUNDING LOCATION.

GENERAL NOTES

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITY COMPANY OR OTHER PUBLIC AUTHORITIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY OR MUNICIPAL AUTHORITIES.
3. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK. MINOR OMISSIONS OR ERRORS IN THE BID DOCUMENTS SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR THE OVERALL INTENT OF THESE DRAWINGS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED AS A RESULT OF CONSTRUCTION OF THIS FACILITY.
5. THE SCOPE OF WORK FOR THIS PROJECT S-IALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
6. THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING A BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
7. THE CONTRACTOR SHALL VERIFY ANTENNA ELEVATION AND AZIMUTH WITH RF ENGINEERING PRIOR TO INSTALLATION.
8. TRANSMITTER EQUIPMENT AND ANTENNAS ARE DESIGNED TO MEET ANSI/EIA/TIA 222-G REQUIREMENTS.
9. ALL STRUCTURAL ELEMENTS SHALL BE HOT DIPPED GALVANIZED STEEL.
10. CONTRACTOR SHALL MAKE A UTILITY "ONE CALL" TO LOCATE ALL UTILITIES PRIOR TO EXCAVATING.
11. IF ANY UNDERGROUND UTILITIES OR STRUCTURES EXIST BENEATH THE PROJECT AREA, CONTRACTOR MUST LOCATE THEM AND CONTACT THE APPLICANT AND OWNER'S REPRESENTATIVE.
12. OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION BY TECHNICIANS APPROXIMATELY TWICE A MONTH.
13. PRIOR TO THE INSTALLATION OF THE PROPOSED EQUIPMENT OR MODIFICATION TO THE EXISTING STRUCTURE, A STRUCTURAL ANALYSIS SHALL BE PERFORMED BY THE OWNER'S AGENT TO CERTIFY THAT THE EXISTING/PROPOSED COMMUNICATION STRUCTURE AND COMPONENTS ARE STRUCTURALLY ADEQUATE TO SUPPORT ALL EXISTING AND PROPOSED ANTENNAS, COAXIAL CABLES AND OTHER APPURTENANCES.
14. PROPERTY LINE INFORMATION WAS PREPARED USING DEEDS, TAX MAPS AND PLANS OF RECORD AND SHOULD NOT BE CONSTRUED AS AN ACCURATE BOUNDARY SURVEY.
15. THIS PLAN IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.
16. THE PROPOSED FACILITY WILL CAUSE ONLY A "DE MINIMIS" INCREASE IN STORM WATER RUNOFF, THEREFORE NO DRAINAGE STRUCTURES ARE PROPOSED.
17. NO SIGNIFICANT NOISE, SMOKE, DUST OR ODOR WILL RESULT FROM THIS FACILITY.
18. THE FACILITY IS UNMANNED AND NOT INTENDED FOR HUMAN HABITATION (NO HANDICAP ACCESS IS REQUIRED).
19. THE FACILITY IS UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SANITARY SERVICE.
20. POWER TO THE FACILITY WILL BE MONITORED BY A SEPARATE METER.

APPLICABLE CODES AND STANDARDS

1. ANSI/TIA-222-H-1: STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES, LATEST EDITION
2. ANSI/TIA-322-2016: LOADING, ANALYSIS, DESIGN, INSTALLATION, ALTERATION AND MAINTENANCE OF COMMUNICATION STRUCTURES, LATEST EDITION
3. ANSI/TIA-222 STRUCTURAL-H-1: STRUCTURAL STANDARD, LATEST EDITION
4. 2015 IBC: INTERNATIONAL BUILDING CODE
5. 2015 IBC: INTERNATIONAL MECHANICAL CODE
6. NFPA 70, NATIONAL ELECTRICAL CODE (2017 NEC)
7. NFPA 780, LIGHTNING PROTECTION CODE (2017 NEC)
8. 2015 IBC: INTERNATIONAL FUEL GAS CODE
9. 2015 IFC: FIRE CODE
10. ACI 318: AMERICAN CONCRETE INSTITUTE, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (2014 ACI)
11. CRSI: CONCRETE REINFORCING STEEL INSTITUTE, MANUAL OF STANDARD PRACTICE, LATEST EDITION
12. AISC: AMERICAN INSTITUTE OF STEEL CONSTRUCTION, MANUAL OF STEEL CONSTRUCTION, LATEST EDITION
13. AWS: AMERICAN WELDING SOCIETY D1.1, STRUCTURAL WELDING CODE, LATEST EDITION

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Certification & Seal:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Wisconsin.

WISCONSIN
MICHAEL L. PINSKE
36387
MIDDLETON, WI
PROFESSIONAL ENGINEER

Signature: Date: 9/30/2024

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
GENERAL & GROUNDING NOTES

SCALE: NONE

PROJECT NUMBER: 60498

EXISTING OVERALL SITE 1
SCALE: NTS

EXISTING ACCESS DRIVE 2
SCALE: NTS

EXISTING POWER POLE / TRANSFORMER 3
SCALE: NTS

EXISTING FIBER PEDESTAL 4
SCALE: NTS

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PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
EXISTING SITE PHOTOS

SCALE: NONE

PROJECT NUMBER: 60498
SHEET: P-1

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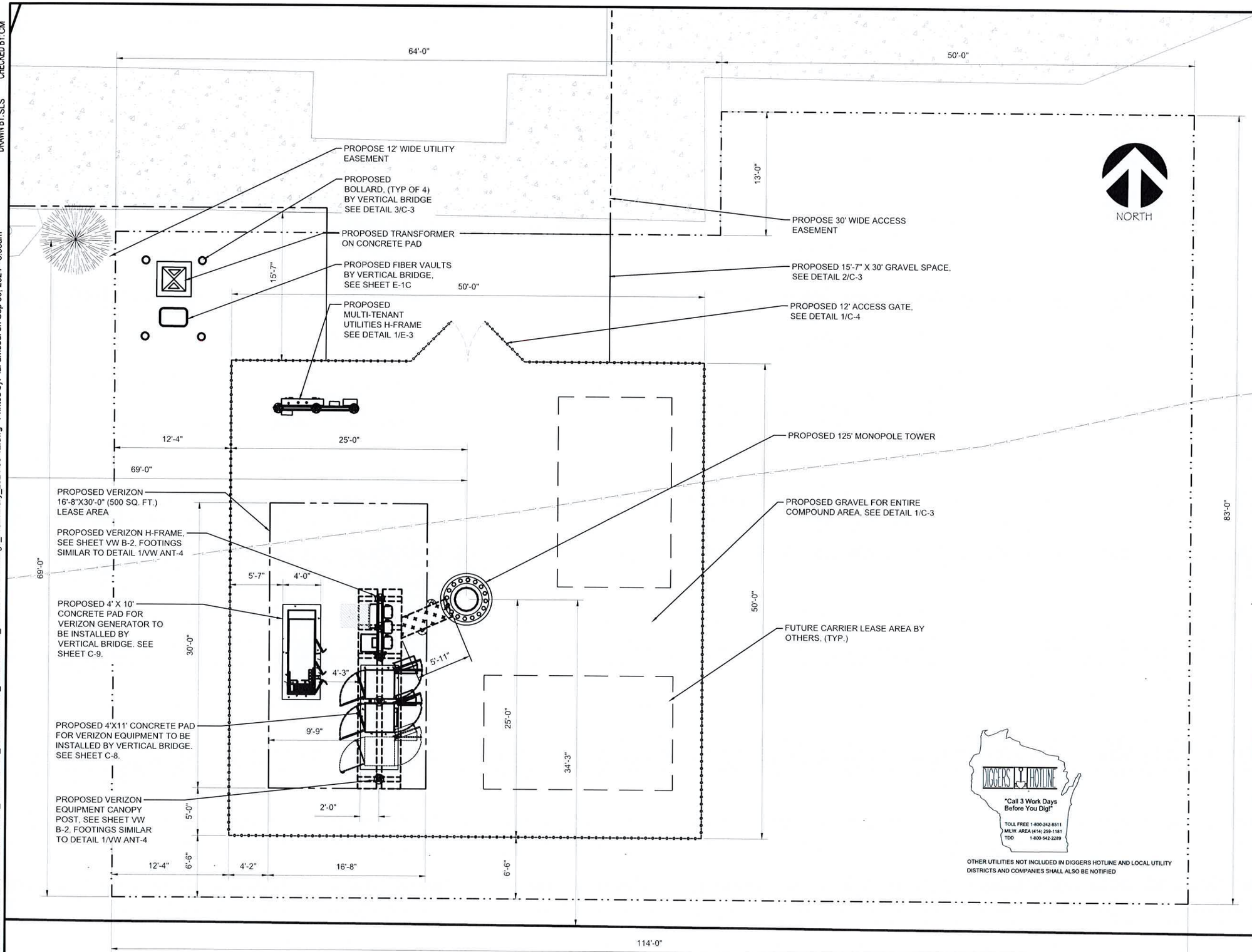

ENLARGED SITE PLAN
SCALE: 1" = 10' (1)

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

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WISCONSIN MICHAEL L. PINSKE 36387 MIDDLETON, WI PROFESSIONAL ENGINEER

Signature: 9/30/2024 Date:

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ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
ENLARGED SITE PLAN

0 5' 10' 20'
11" x 17" - 1" = 10'
22" x 34" - 1" = 5'

PROJECT NUMBER 60498
SHEET NUMBER VW C-1

DRAWN BY:SLS CHECKED BY:CM

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SITE WORK GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
2. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION
   B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING & EXCAVATION.
3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
5. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, OWNER AND/OR LOCAL UTILITIES.
6. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION
7. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE.
8. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
9. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
10. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
11. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
12. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
13. ALL REMOVED SPOILS TO BE UTILIZED FOR BACKFILL SHALL BE PROTECTED FROM FREEZE

STRUCTURAL STEEL NOTES:

1. ALL STEEL WORK SHALL BE PAINTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND IN ACCORDANCE WITH ASTM A36 UNLESS OTHERWISE NOTED.
2. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION". PAINTED SURFACES SHALL BE TOUCHED UP.
3. BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE (3/4"Ø) CONNECTIONS AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
4. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.
5. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS.

CONCRETE AND REINFORCING STEEL NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. SLAB FOUNDATION DESIGN ASSUMING ALLOWABLE SOIL BEARING PRESSURE OF 2000 PSF.
3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

   CONCRETE CAST AGAINST EARTH.....3 IN.
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER .....2 IN.
   #5 AND SMALLER & WWF .....1 1/2 IN.

   CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
   SLAB AND WALL .....3/4 IN.
   BEAMS AND COLUMNS.....1 1/2 IN.

5. A CHAMFER 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
6. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR ENGINEERING APPROVAL WHEN DRILLING HOLES ON CONCRETE. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.
7. COLD WEATHER CONCRETING (BELOW 40°). SHALL COMPLY WITH ACI 301. CONTRACTOR SHALL NEVER PLACE CONCRETE ON FROZEN SUBGRADE AND REBAR TEMPERATURE SHALL NEVER BE BELLOW 32°F DURING CONCRETE PLACEMENT. STEEL TEMPERATURE CAN BE RAISED BY BATHING IT IN WATER UNTIL ICE DOES NOT FORM ON BARS. CONCRETE MATERIALS MAY BE HEATED, BUT MIX TEMPERATURE SHALL BE BETWEEN 50°F & 70°F AT TIME OF PLACING. ALL CONCRETE EXPOSED TO FREEZING DURING PLACEMENT OR DURING SERVICE LIFE SHALL BE AIR ENTRAINED. INSULATED BLANKETS (OR APPROVED EQUAL METHOD) SHALL BE PLACED OVER FRESHLY FINISHED CONCRETE TO ALLOW PROPER CURING/COMBAT FREEZING. THE CONCRETE TEMP. SHOULD BE MAINTAINED AT 50°F FOR FIVE (5) DAYS OR 70° FOR THREE (3) DAYS. CONCRETE SHALL NOT BE ALLOWED TO FREEZE BEFORE IT HAS REACHED A STRENGTH OF AT LEAST 500 PSI

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY: CONTRACTOR - TO BE DETERMINED SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION) OWNER - CENTRAL STATES TOWERS OEM - ORIGINAL EQUIPMENT MANUFACTURE
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO SCALE AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
7. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.
8. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING.
9. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
10. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
11. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
12. CONSTRUCTION SHALL COMPLY WITH "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF CINGULAR GSM SITES.'

APPLICABLE BUILDING CODES AND STANDARDS:

SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
2003 INTERNATIONAL BUILDING CODE (2003 IBC OR LATEST EDITION)
2008 NATIONAL ELECTRICAL CODE (NEC 2008)
UNDERWRITER LABORATORIES APPROVED ELECTRICAL PRODUCTS LIFE SAFETY CODE NFPA-101
SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING

AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, ASD.

TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) EIA-222-G, EXPOSURE CATEGORY C, STRUCTURE CLASS II, TOPO CATEGORY 1. STRUCTURAL STANDARD FOR STRUCTURAL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES.

INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE, AND SURFACE POTENTIALS OF A GROUND SYSTEM IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONICS IEEE C62.41, RECOMMENDED PRACTICES ON SURGE VOLTAGES IN LOW VOLTAGE AC POWER CIRCUITS (FOR LOCATION CATEGORY "C3" AND HIGH SYSTEM EXPOSURE")

TIA 607 COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELCORDIA GR-1503 COAXIAL CABLE CONNECTIONS

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENTS SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN GENERAL REQUIREMENTS AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

Item 6.

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Certification & Seal:
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PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
GENERAL NOTES

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: VW C-2

102

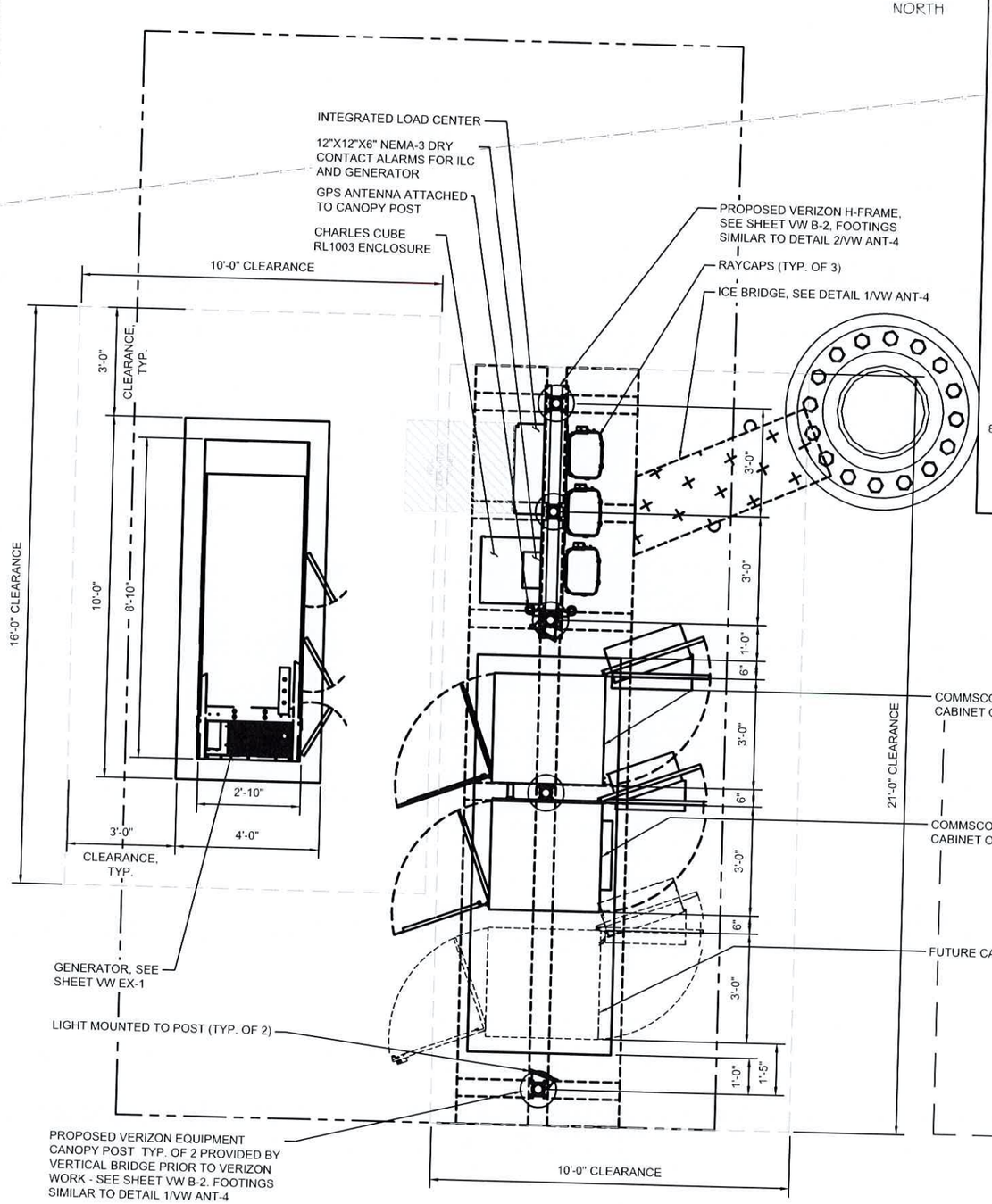
DRAWN BY:SLS CHECKED BY:CM

C:\Users\ial-amoodi\appdata\local\temp\AcPublish_12024\60498_Business Drive_500095401 98_Construction Drawings_Preliminary_2024-06-12.dwg Printed by: ial-amoodi on Sep 30, 2024 - 8:38am

NOTE:
CONCRETE PAD TO BE INSTALLED BY VERTICAL BRIDGE PRIOR TO COLOCATION

NOTE:
FOR MORE EQUIPMENT INFORMATION SEE SHEET VW B-2

NORTH



EQUIPMENT PAD - LAYOUT PLAN (1)
SCALE: 1" = 3.75'

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. 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
8. 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.

verticalbridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

RAMAKER
employee-owned
(608) 643-4100 www.ramaker.com

Certification & Seal:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Wisconsin.

WISCONSIN
MICHAEL L. PINSKE
36387
MIDDLETON, WI
PROFESSIONAL ENGINEER

Signature: Date: 9/30/2024

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

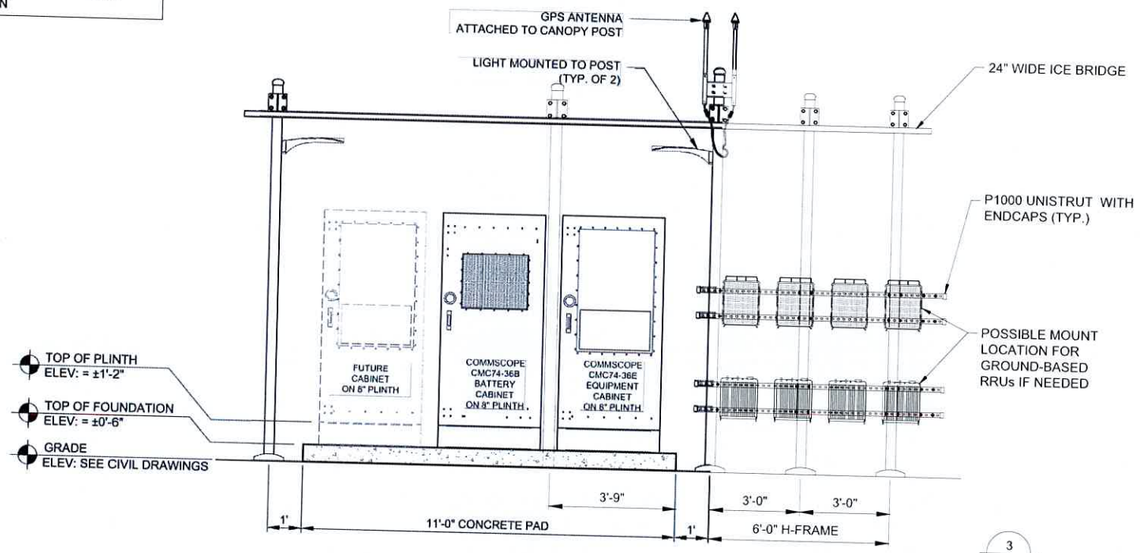
PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
EQUIPMENT PAD PLAN & NOTES

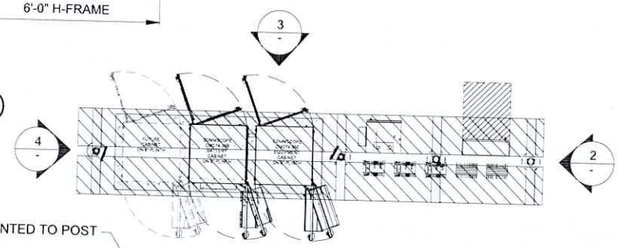
0 1.875' 3.75' 7.5'
11" x 17" - 1" = 3.75'
22" x 34" - 1" = 1.875'

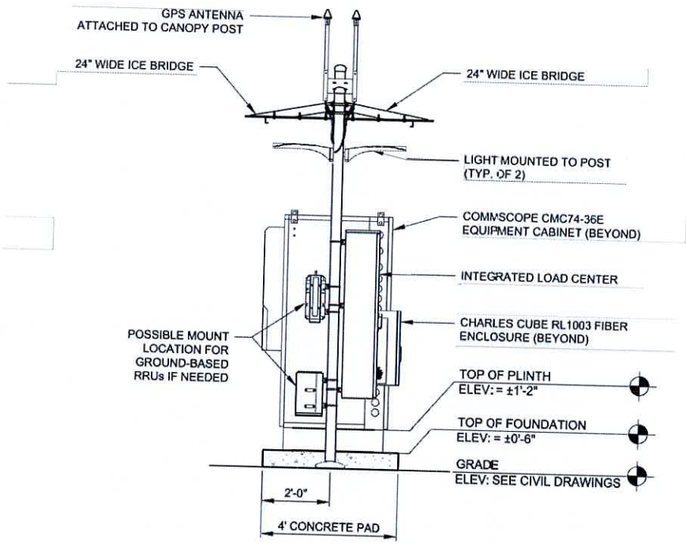
PROJECT NUMBER: 60498

NOTE:
CONCRETE PAD TO BE INSTALLED BY VERTICAL BRIDGE PRIOR TO COLOCATION

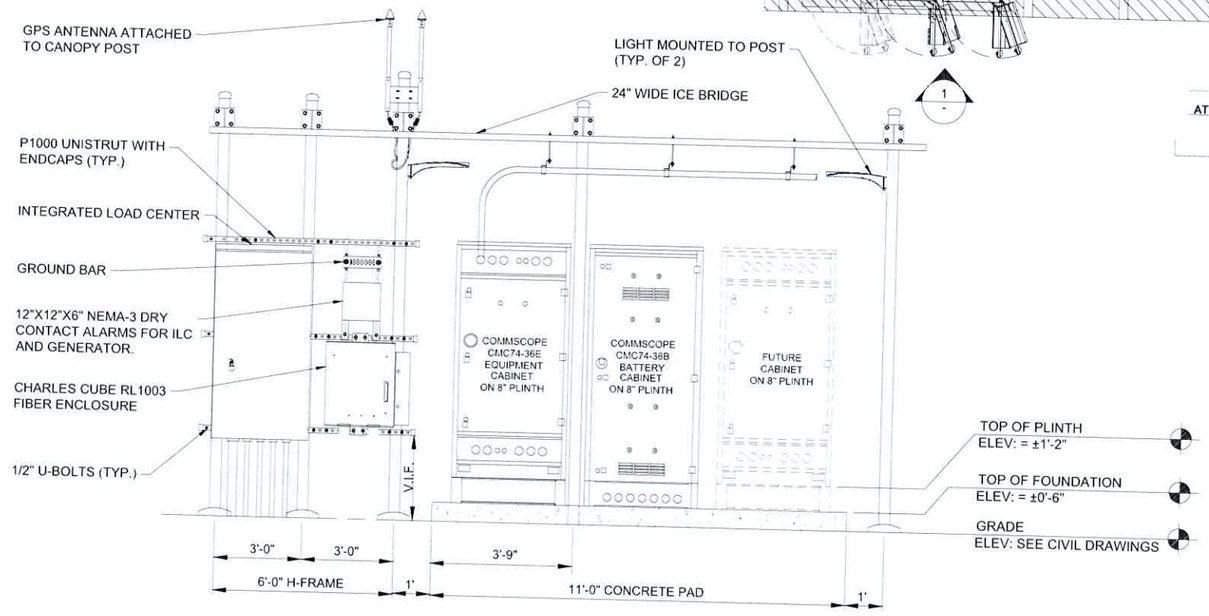


EQUIPMENT PAD ELEVATION 1
SCALE: NTS

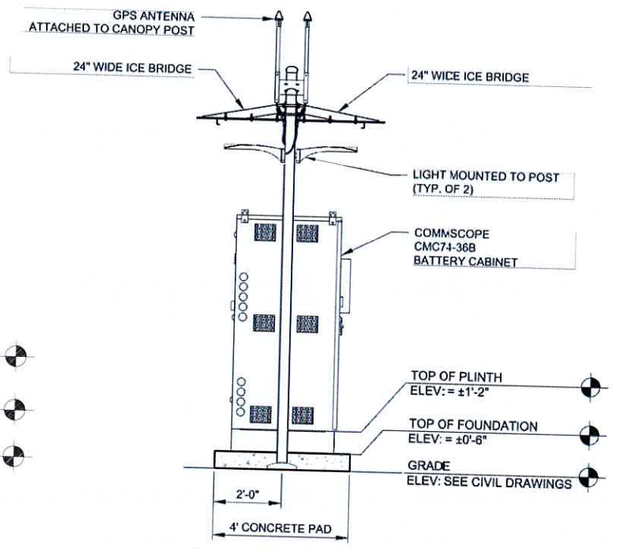




EQUIPMENT PAD ELEVATION 2
SCALE: NTS



EQUIPMENT PAD ELEVATION 3
SCALE: NTS



EQUIPMENT PAD ELEVATION 4
SCALE: NTS

NOTE: FOR REFERENCE ONLY

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
EQUIPMENT PAD ELEVATIONS

SCALE: NONE

PROJECT NUMBER: 60498

DRAWN BY: SLS CHECKED BY: CM

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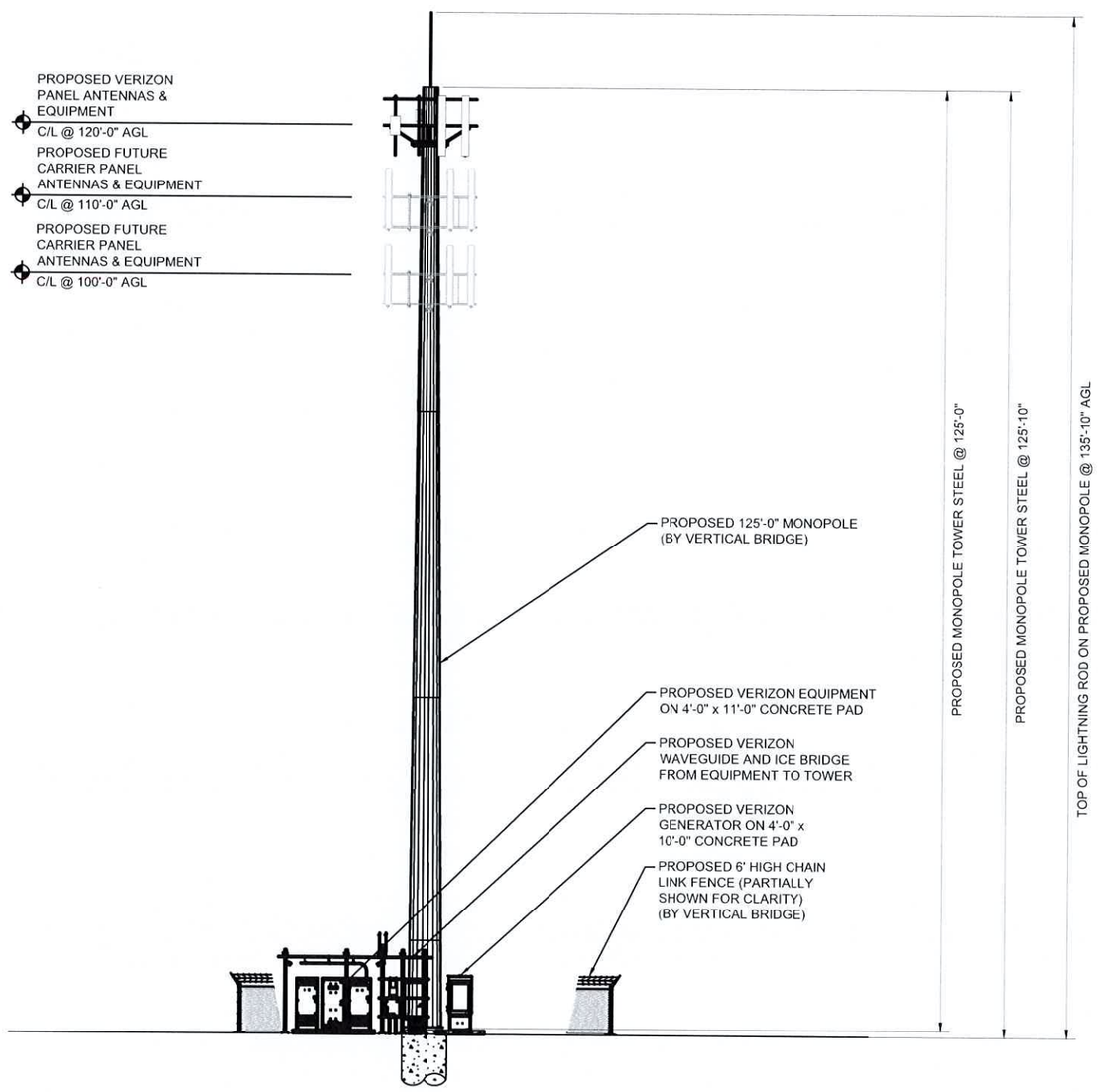
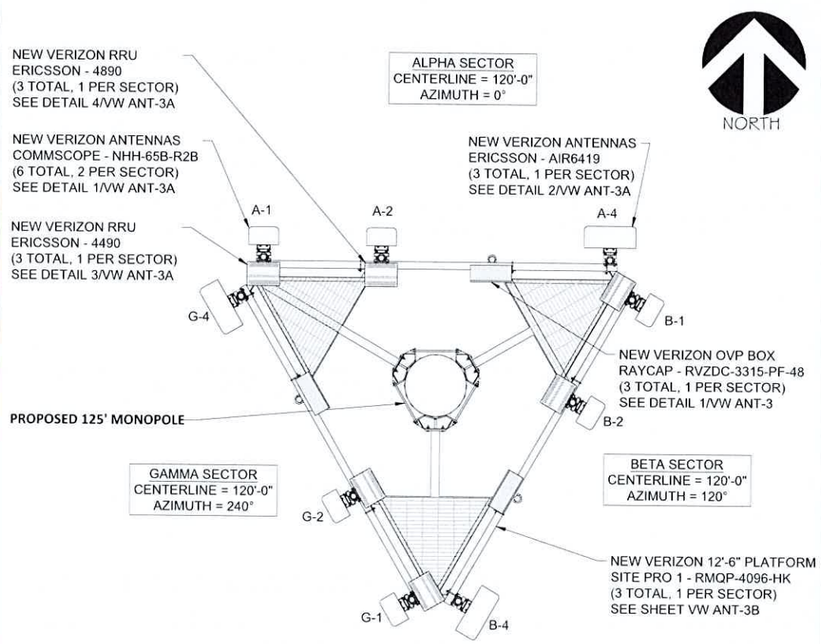


SITE ELEVATION
SCALE: 1" = 20' (1)

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.

STRUCTURAL NOTES:

1. RAMAKER SCOPE OF WORK DOES NOT INCLUDE A STRUCTURAL EVALUATION OF THIS TOWER OR STRUCTURE.
2. STRUCTURAL CALCULATIONS WERE PREPARED BY OTHERS AND THOSE CALCULATIONS CERTIFY THE CAPACITY OF THE STRUCTURE AND ANTENNA MOUNTS FOR THE DEPLOYMENT OF THE EQUIPMENT. CONTRACTOR TO COORDINATE WITH THE PROJECT MANAGER TO OBTAIN A COPY.
3. CONTRACTOR MUST COMPLY WITH STRUCTURAL ANALYSIS AND MOUNT ANALYSIS RECOMMENDATIONS FOR ALL NEW LOADING.



PROPOSED ANTENNA LAYOUT
SCALE: 1" = 5' (2)

Item 6.

verticalbridge

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BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
SITE ELEVATION

SCALE:
AS NOTED

PROJECT NUMBER: 60498
SHEET NUMBER: VW ANT-1

Added

700	1900	AWS	Make	Atoll Model	Item Description	Centerline	Tip Height	Azimuth	Inst. Type	Quantity	Item ID
			Ericsson	AIR6419		120	121.2	0(1) 120(2) 240(3)	PHYSICAL	3	
LTE	LTE	LTE	COMMSCOPE	NHH-65B-R2B	HEX PORT, AWS/PCS/700/850, 6 FT, 65 HBW,	120	123	0(1) 120(2) 240(3)	PHYSICAL	6	1900056292

Removed

700	1900	AWS	Make	Atoll Model	Item Description	Centerline	Tip Height	Azimuth	Inst. Type	Quantity	Item ID

No data available.

Retained

700	1900	AWS	Make	Atoll Model	Item Description	Centerline	Tip Height	Azimuth	Inst. Type	Quantity	Item ID

No data available.

ANTENNA SUMMARY (1)
SCALE: NTS

Added

Equipment Type	Location	700	1900	AWS	Make	Atoll Model	Item Description	Cable Length	Cable Size	Install Type	Quantity	Item ID
RRU	Tower				ERICSSON INC	AIR6419_B77D	AIR 6419 B77D Radio Unit			PHYSICAL	0	1900483699
RRU	Tower		LTE	LTE	ERICSSON INC	4890	DB Radio 4890HP B2+B66- Rem Radio Unit			PHYSICAL	3	1900483775
RRU	Tower	LTE			ERICSSON INC	4490	DB Radio 4490HP B5+B13- Rem Radio Unit			PHYSICAL	3	1900483084
Hybrid Cable	Tower				COMMSCOPET-001	HFT1206-24SV4-xxxG			1-5/8 inch	PHYSICAL	3	
Alarm	Tower				RAYCAPINC-001	3315-ALM-RS485	RETROFIT FOR THE 6OVP DIST BOX			PHYSICAL	3	000000001900070
OVP Box	Tower				RAYCAPINC-001	RVZDC-3315-PF-48	TOWER TOP AND BASE POWER PROTECTION FIBE			PHYSICAL	3	000000001900422

Removed

Equipment Type	Location	700	1900	AWS	Make	Atoll Model	Item Description	Cable Length	Cable Size	Install Type	Quantity	Item ID

No data available.

Retained

Equipment Type	Location	700	1900	AWS	Make	Atoll Model	Item Description	Cable Length	Cable Size	Install Type	Quantity	Item ID

EQUIPMENT SUMMARY (2)
SCALE: NTS

vertical bridge

CELLCO PARTNERSHIP
d/b/a VERIZON WIRELESS

RAMAKER
employee-owned
(608) 643-4100 www.ramaker.com

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BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
ANTENNA INFORMATION

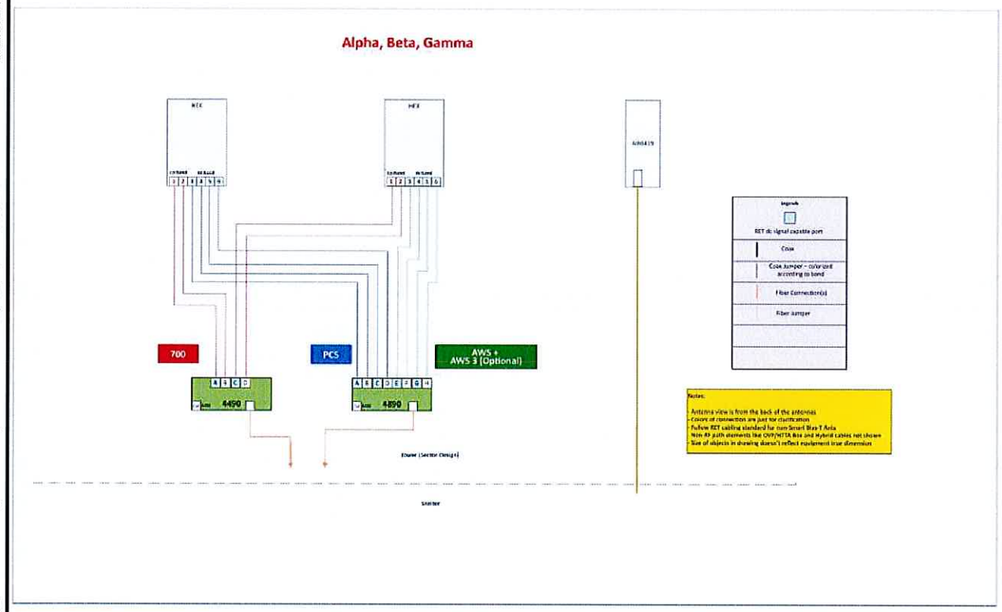
SCALE: NONE

PROJECT NUMBER 60498
SHEET NUMBER VW ANT-2

RF EMISSIONS REPORT REQUIRED

☐ YES ☒ NO

DATE OF REPORT: _____



CABLE DIAGRAM
SCALE: NTS (1)

HYBRID LENGTH ESTIMATE					
	AT GROUND		AT STRUCTURE		
SECTOR	HOR (±)	VER (±)	HOR (±)	RAYCAP CL (±)	TOTAL (±)
ALPHA	10'	10'	20'	120'	160'
BETA	10'	10'	20'	120'	160'
GAMMA	10'	10'	20'	120'	160'

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
2	PCSLT RRU
1	AWS RRU

6	700 RRU2/A2
5	PCSLT RRU2/A2
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**

RAYCAP TABLE
SCALE: NTS (2)

Item 6.

vertical bridge

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SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

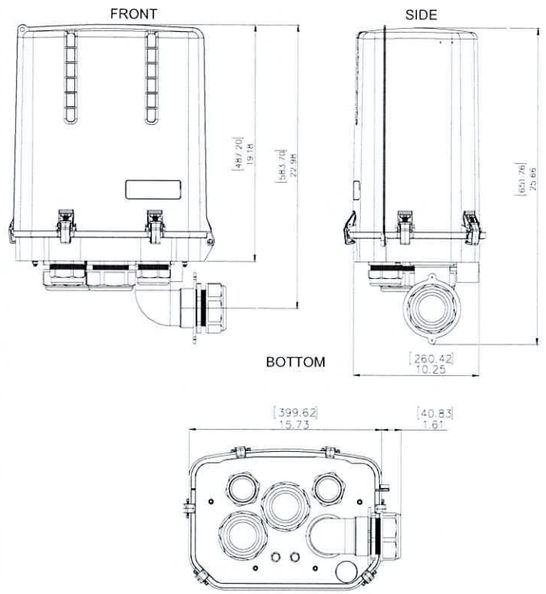
SHEET TITLE:
ANTENNA INFORMATION

SCALE: NONE

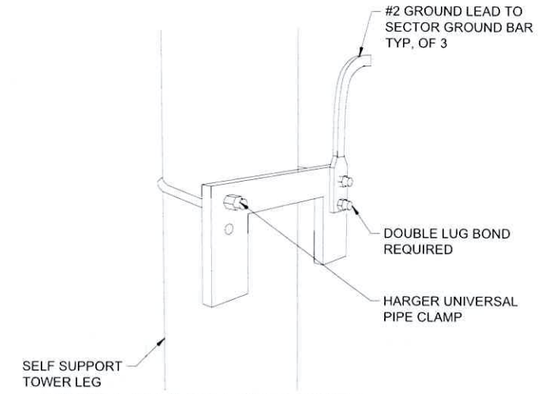
PROJECT NUMBER 60498
SHEET NUMBER VW ANT-2A

EQUIPMENT:	RAYCAP JUNCTION BOX
MODEL #:	RVZDC-3315-PF-48
ALARM BOARD UPGRADE:	RAYCAP 3315-ALM-RS485
SPECIFICATIONS	DC SURGE PROTECTION FOR RRU/INTEGRATED ANTENNA RADIO HEAD
APPLICATION:	TOWER / BASE / ROOFTOP / ROOFTOP DISTRIBUTION MODELS
WEIGHT:	32LBS (14.51 KG)

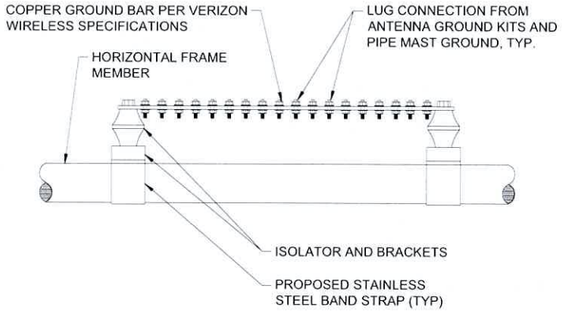
[mm]
INCHES



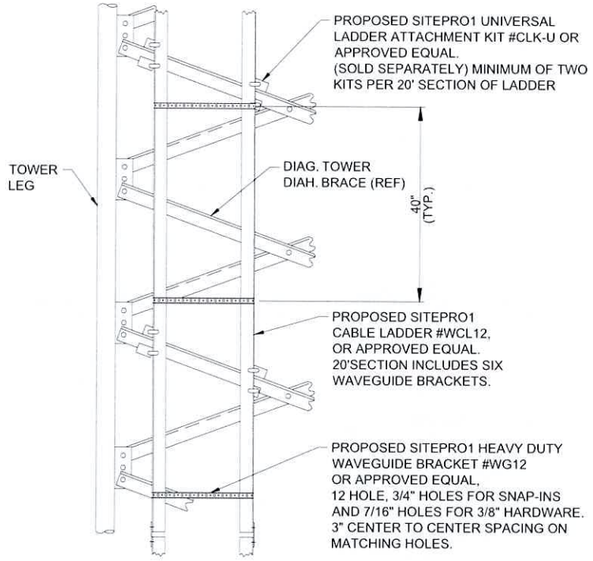
RAYCAP JUNCTION BOX DETAIL (1)
SCALE: NTS



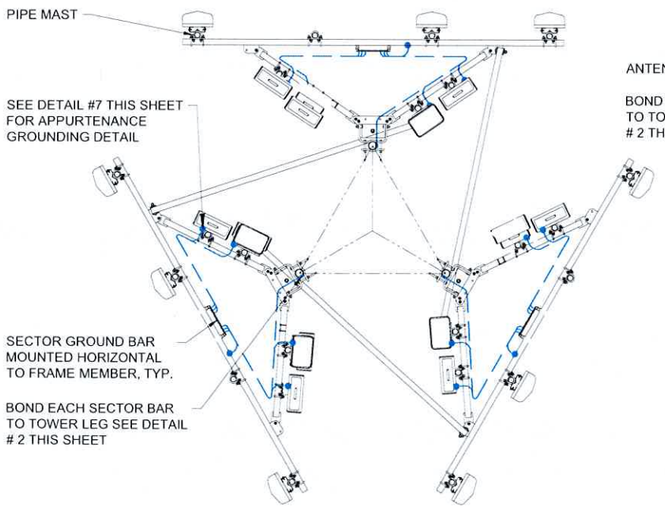
TYPICAL SELF SUPPORT TOWER (ROUND MEMBER) (2)
SCALE: NTS



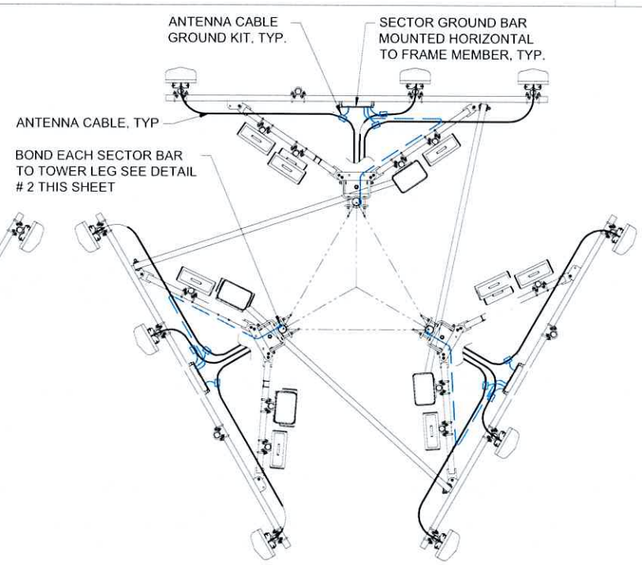
TYPICAL GROUND BAR AT SECTOR (3)
SCALE: NTS



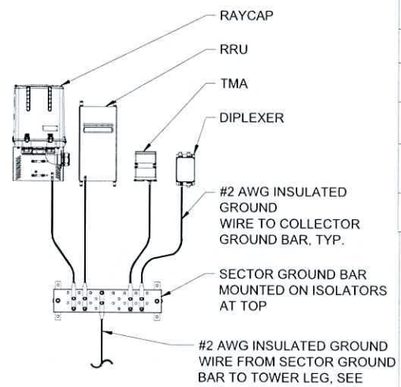
TYPICAL TRANSMISSION LINE HANGER (4)
SCALE: NTS



TYPICAL EQUIPMENT GROUNDING AT ANTENNA ELEVATION (5)
SCALE: NTS



TYPICAL ANTENNA CABLE GROUNDING AT ANTENNA ELEVATION (6)
SCALE: NTS



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

TYPICAL APPURTENANCE GROUNDING AT ANTENNA LEVEL (7)
SCALE: NTS

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.

Item 6.

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
SITE DETAILS

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: VW ANT-3

DRAWN BY:SLS CHECKED BY:CM

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COMMSCOPE NHH-65B-R2B

DIMENSIONS (HXWXD):
96"X11.9"X7.10"
WEIGHT (LBS): 51.6.0

COMMSCOPE ANTENNA DETAIL (1)
SCALE: NTS

ERICSSON - AIR6419

DIMENSIONS (HXWXD):
31.3" X 16.1" X 9.8"
WEIGHT (LBS): 71.0

ERICSSON ANTENNA DETAIL (2)
SCALE: NTS

ERICSSON RRUS 4490HP 44B5 44B13 C

DIMENSIONS, HXWXD:	20.6" X 15.7" X 7.0"
WEIGHT, WITHOUT MOUNTING KIT:	~68.4 LBS (~31 KG)

ERICSSON 4490 RRU DETAIL (3)
SCALE: NTS

ERICSSON RRUS 4890HP 48B2 48B66 S

DIMENSIONS, HXWXD:	20.6" X 15.7" X 7.2"
WEIGHT, WITHOUT MOUNTING KIT:	~69.5 LBS (~31.5 KG)

ERICSSON 4890 RRU DETAIL (4)
SCALE: NTS

NOT USED (5)
SCALE: NTS

NOT USED (6)
SCALE: NTS

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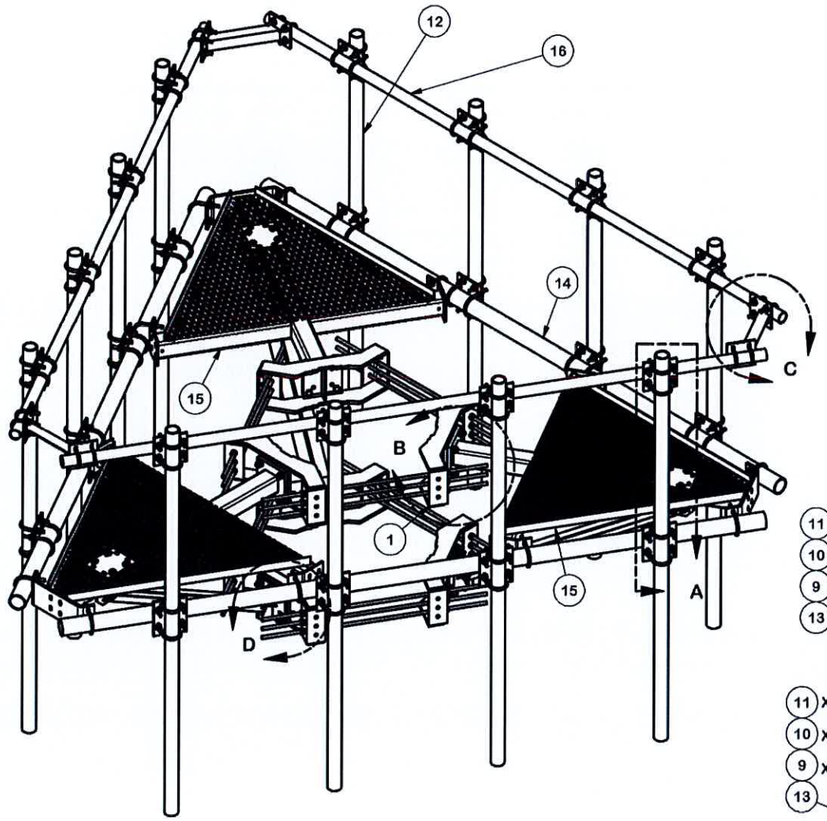
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

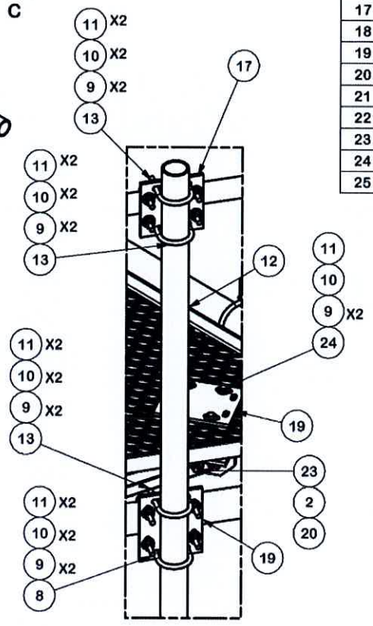
SHEET TITLE:
ANTENNA INFORMATION

SCALE: NONE

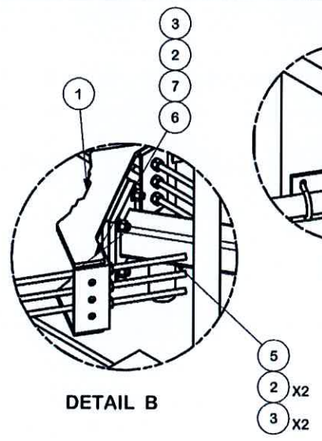
PROJECT NUMBER 60498
SHEET NUMBER VW ANT-3A



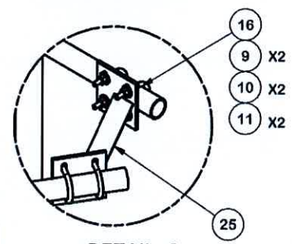
DETAIL A



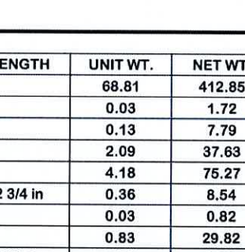
DETAIL B



DETAIL C



DETAIL D



PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	6	X-LWRM	RING MOUNT WELDMENT		68.81	412.85
2	66	G58LW	5/8" HDG LOCKWASHER		0.03	1.72
3	60	A58NUT	5/8" HDG A325 HEX NUT		0.13	7.79
4	18	G58R-24	5/8" x 24" THREADED ROD (HDG.)		2.09	37.63
5	18	G58R-48	5/8" x 48" THREADED ROD (HDG.)		4.18	75.27
6	24	A58234	5/8" x 2-3/4" HDG A325 HEX BOLT	2 3/4 in	0.36	8.54
7	24	A58FW	5/8" HDG A325 FLATWASHER		0.03	0.82
8	36	X-UB1306	1/2" X 3-5/8" X 6" X 3" U-BOLT (HDG.)		0.83	29.82
9	264	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	9.00
10	252	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	3.50
11	252	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	18.05
12	12	P3096	2-7/8" X 96" (2-1/2" SCH 40) GALVANIZED PIPE	96 in	49.24	590.88
13	48	X-UB1300	1/2" X 3" X 5" X 2" U-BOLT (HDG.)		0.70	33.45
14	3	P3150	3-1/2" X 150" (3" SCH 40) GALVANIZED PIPE	150 in	94.80	284.40
15	3	X-SV196	LOW PROFILE PLATFORM CORNER		212.10	636.31
16	3	P2150	2-3/8" O.D. X 150" SCH 40 GALVANIZED PIPE	150 in	45.77	137.31
17	12	SCX2	CROSSOVER PLATE	7 in	4.80	57.56
18	36	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.63	22.51
19	15	SCX4	CROSSOVER PLATE	8 1/2 in	6.02	90.32
20	6	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	0.78
21	6	X-253993	PLATFORM REINFORCEMENT KIT ANGLE	52 25/32 in	14.33	85.99
22	6	X-TBW	T-BRACKET WELDMENT		13.60	81.60
23	6	G5802	5/8" x 2" HDG HEX BOLT GR5		0.27	1.62
24	12	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	5 1/2 in	0.41	4.91
25	3	X-AHCP	ANGLE HANDRAIL CORNER PLATE		12.92	38.76
					TOTAL WT. #	2669.03

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
C	RELOCATED MOUNT PIPE POSITIONS	4488	JET	5/23/2021
B	CHANGED X-253992 TO X-TBW		CEK	9/20/2018
A	REPLACED HCP WITH X-AHCP	4488	CEK	7/14/2014

REVISION HISTORY

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
DRILLED AND GAS CUT HOLES *(± 0.030")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

DESCRIPTION
12' 6" LOW PROFILE PLATFORM
WITH TWELVE 2-7/8" ANTENNA MOUNTING
PIPES, AND SUPPORT RAIL

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
4488	CEK 3/24/2014		RMQP-4096-HK
CLASS 81 / SUB 02	DRAWING USAGE: CUSTOMER	CHECKED BY: BMC 7/14/2014	DWG. NO.: RMQP-4096-HK

SITE PRO 1 — A valmont COMPANY
Engineering Support Team: 1-888-753-7446
Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

PAGE 1 OF 3

ANTENNA MOUNTING DETAILS (1)
SCALE: NTS

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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Certification # Seal:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Wisconsin.

WISCONSIN — MICHAEL L. PINSKE — 36387 — MIDDLETON, WI — PROFESSIONAL ENGINEER

Signature: 9/30/2024 Date:

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY — DATE ISSUED: 06/25/2024

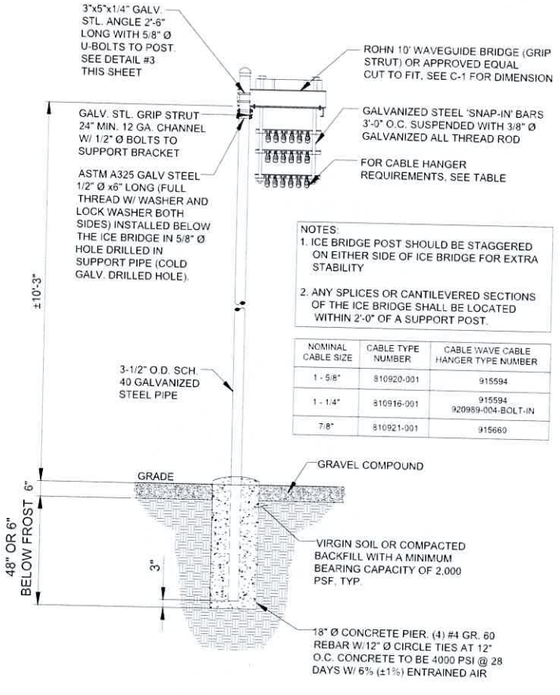
PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
ANTENNA MOUNTING DETAILS

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: VW ANT-3B

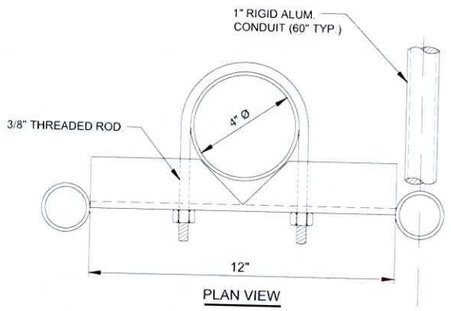


NOTES:
1. ICE BRIDGE POST SHOULD BE STAGGERED ON EITHER SIDE OF ICE BRIDGE FOR EXTRA STABILITY
2. ANY SPLICES OR CANTILEVERED SECTIONS OF THE ICE BRIDGE SHALL BE LOCATED WITHIN 2'-0" OF A SUPPORT POST.

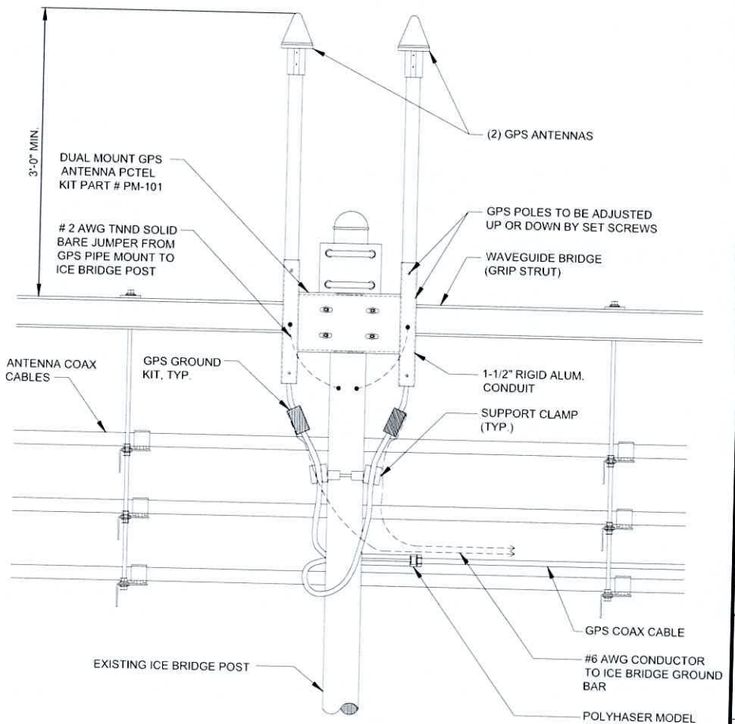
NOMINAL CABLE SIZE	CABLE TYPE NUMBER	CABLE WAVE CABLE HANGER TYPE NUMBER
1 - 5/8"	810920-001	915594
1 - 1/4"	810916-001	915594 920989-004-BOLT-IN
7/8"	810921-001	915660

ICE BRIDGE DETAIL
SCALE: NTS — 1

NOT USED
SCALE: NTS — 2

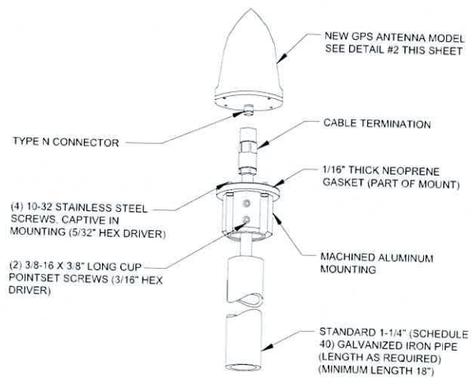


PLAN VIEW



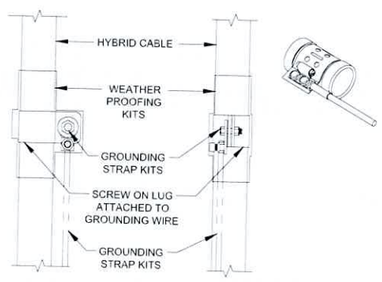
GPS MOUNTING DETAIL
SCALE: NTS — 3

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



TYPICAL GPS DETAIL
SCALE: NTS — 4

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.



COAX/ HYBRID GROUND KIT DETAIL
SCALE: NTS — 5

vertical bridge

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PROFESSIONAL ENGINEER

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ISSUE PHASE: PRELIMINARY — DATE ISSUED: 06/25/2024

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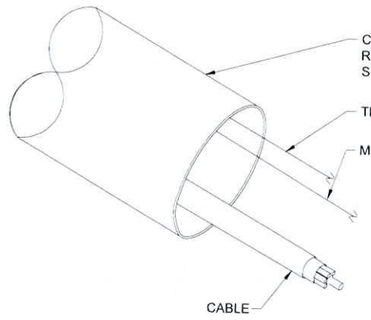
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
SITE DETAILS

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: VV-ANT-4



NOTE:
1) TRACER WIRE TO BE PLACED IN BOTH POWER AND FIBER CONDUITS
2) GROUND TRACER WIRE AT POLE VIA BEAM CLAMP AT EQUIPMENT. DO NOT BOND TRACER WIRE AT BOTH ENDS.

TRACER WIRE DETAIL (2)
SCALE: NTS

PRIMARY POWER EXTENSION BY POWER COMPANY FROM R.O.W. TO PROPOSED TRANSFORMER. G.C. TO INSTALL CONDUIT. (25± L.F.) SEE DETAIL 4/E-3

(2) PROPOSED 2" HDPE W/ PULL ROPE FROM VERIZON WIRELESS FIBER HANDHOLE AT R.O.W. TO VERIZON WIRELESS HANDHOLE AT FENCE (22± L.F.), SEE DETAIL 4/E-3

(2) PROPOSED SETS OF (3) - 500 KCMIL CU IN 3" SCH. 40 PVC BY G.C. FROM METER BANK TO PROPOSED TRANSFORMER (25± L.F.), SEE DETAIL 3/E-3

(2) PROPOSED 2" SCH 40 CONDUITS W/ PULL ROPES FROM VERIZON WIRELESS HANDHOLE OUTSIDE FENCE TO VERIZON WIRELESS FIBER ENCLOSURE BY VERTICAL BRIDGE (54± L.F.) SEE DETAIL 2/E-3

PROPOSED VERTICAL BRIDGE UTILITY H-FRAME MIN. 5' OFF FENCE - SEE DETAIL 1/E-3

PROPOSED 3" SCH 40 PVC CONDUIT FOR VERIZON POWER FROM VERTICAL BRIDGE UTILITY H-FRAME TO VERIZON UTILITY H-FRAME BY VERTICAL BRIDGE (54± L.F.) - SEE DETAIL 3/E-3

PROPOSED 125' MONOPOLE TOWER

PROPOSED VERIZON H-FRAME EQUIPMENT RACK - SEE SHEET VW B-2, FOOTINGS SIMILAR TO DETAIL 1/VW ANT-4

PROPOSED NEMA 3R 200AMP ILC MOUNTED TO SUPPORT FRAME BY VERIZON WIRELESS

PROPOSED VERIZON WIRELESS 16'-8" x 30' LEASE AREA

PROPOSED CHARLES CUBE RL1003 ENCLOSURE BY VERIZON

PROPOSED VERIZON GENERATOR ON CONCRETE PAD

NORTH

UTILITY ROUTING PLAN (1)
SCALE: 1" = 7.5'

COORDINATION WITH UTILITY COMPANY

THE ELECTRICAL CONTRACTOR SHALL COORDINATE COMPLETE ELECTRICAL SERVICE WITH LOCAL UTILITY COMPANIES FOR A COMPLETE OPERATIONS SYSTEM, INCLUDING TRANSFORMER CONNECTIONS, CONCRETE TRANSFORMER PADS PRIOR TO SUBMITTING BID TO INCLUDE ALL LABOR AND MATERIALS

CONDUITS 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.
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.

CODES AND STANDARDS

ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
NEC	NATIONAL ELECTRICAL CODE, LATEST ADOPTED EDITION
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
UL	UNDERWRITERS LABORATORIES, INC.

UTILITY PROVIDER INFORMATION

POWER COMPANY: ALIANT ENERGY
PHONE: (800) 255-4268

FIBER COMPANY: AT&T
PHONE: (855) 781-7542

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

verticalbridge

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PROFESSIONAL ENGINEER

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A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY
DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

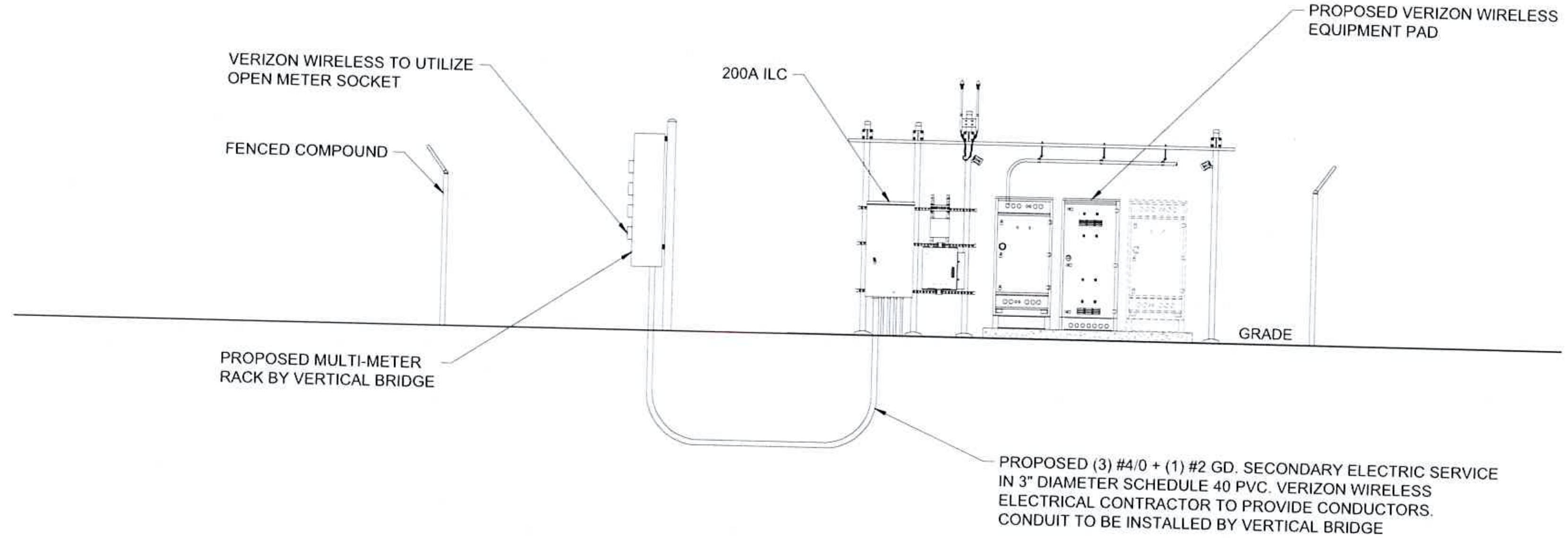
SHEET TITLE:
UTILITY ROUTING PLAN

0 3.75' 7.5' 15'
11" x 17" - 1" = 7.5'
22" x 34" - 1" = 3.75'

PROJECT NUMBER: 60498
SHEET NUMBER: VW E-1

Item 6.

- DESIGN PENDING POWER COORDINATION



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

POWER RISER DIAGRAM (1)

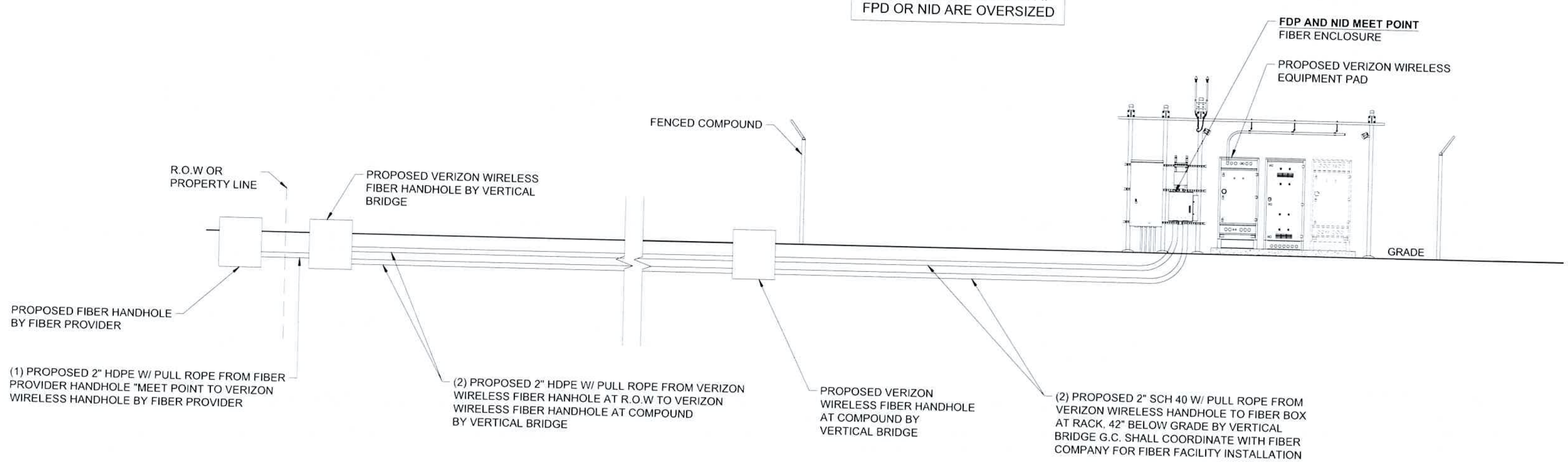
SCALE: NTS

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

- DESIGN PENDING FIBER COORDINATION

NOTE:
ADDITIONAL COORDINATION REQUIRED WITH VERIZON IF FPD OR NID ARE OVERSIZED



NOTE: VERIFY FIBER ROUTING REQUIREMENTS WITH FIBER COMPANY

FIBER RISER DIAGRAM (2)

SCALE: NTS

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Signature: [signature] Date: 9/30/2024

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PROJECT TITLE:

BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:

UTILITY RISER DIAGRAMS

SCALE: NONE

PROJECT NUMBER: 60498

SHEET

DRAWN BY: SLS CHECKED BY: CM

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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.

NORTH

NEW ELECTRIC CONDUIT FROM DISCONNECT TO ILC FOR "NORMAL" POWER MODE (CONDUITS TO BE INSTALLED BY VERTICAL BRIDGE), SEE DETAIL 2 & SHEET E-1.

(2) BELDEN CAT-5 CABLE FROM GENERATOR TO ILC IN 1" HEAVY WALL CONDUIT. CABLES AND CONDUITS TO CONTINUE FROM ILC TO EQUIPMENT CABINET. LEAVE 25' SPOOLED IN ALARM BOX (CONDUIT FROM GENERATOR TO ILC TO BE INSTALLED BY VERTICAL BRIDGE. CONDUIT FROM ILC TO CABINET TO BE INSTALLED BY VERIZON G.C.)

(3) #3/0 THHN/THWN & (1) #2 GREEN GROUND CONDUCTOR FROM GENERATOR TO ILC IN 2-1/2" H.W. CONDUIT (CONDUITS TO BE INSTALLED BY VERTICAL BRIDGE)

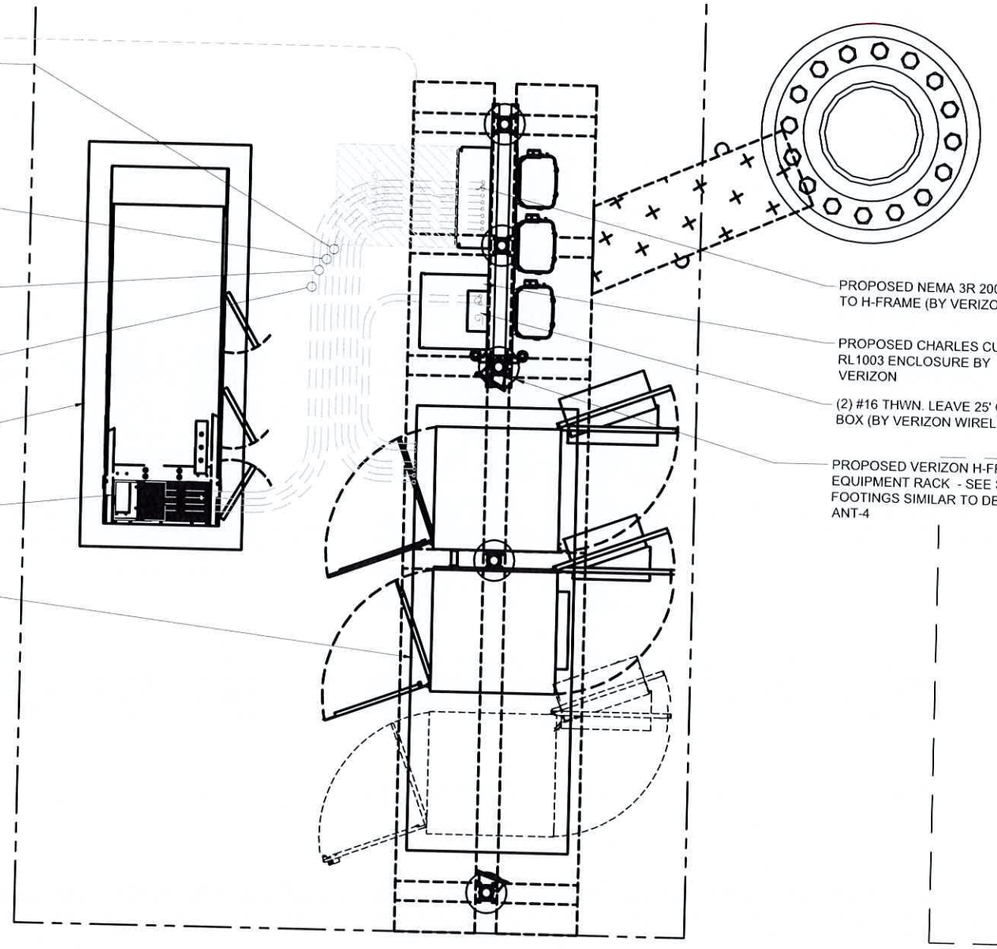
(2) #12 THHN SOLID COPPER CONDUCTORS FROM GENERATOR TO ATS IN 3/4" HEAVY WALL CONDUIT (CONDUITS TO BE INSTALLED BY VERTICAL BRIDGE)

(4) #12 THHN/THWN & (1) #12 GREEN GROUND IN 1" RIGID H.W. CONDUIT FROM ILC TO GENERATOR. (CONDUITS TO BE INSTALLED BY VERTICAL BRIDGE)

PROPOSED 4' X 10' CONCRETE PAD FOR VERIZON GENERATOR PROVIDED BY VERTICAL BRIDGE. SEE SHEET C-9.

CONDUIT STUB UP AREA. SEE/ COORDINATE WITH MANUFACTURER'S SPECIFICATIONS, SEE SHEET VW EX-1

PROPOSED 4'X11' CONCRETE PAD FOR VERIZON EQUIPMENT PROVIDED BY VERTICAL BRIDGE. SEE SHEET C-8.



PROPOSED NEMA 3R 200 AMP ILC MOUNTED TO H-FRAME (BY VERIZON WIRELESS G.C.)

PROPOSED CHARLES CUBE RL1003 ENCLOSURE BY VERIZON

(2) #16 THWN. LEAVE 25' OF #16 IN ALARM BOX (BY VERIZON WIRELESS G.C.)

PROPOSED VERIZON H-FRAME EQUIPMENT RACK - SEE SHEET VW B-2, FOOTINGS SIMILAR TO DETAIL 1/VW ANT-4

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

GENERATOR UTILITY ROUTING PLAN (1)
SCALE: 1" = 3.75'

verticalbridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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Signature: 9/30/2024 Date:

MARK	DATE	DESCRIPTION
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ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
GENERATOR UTILITY ROUTING PLAN

0 1.875' 3.75' 7.5'
11" x 17" - 1" = 3.75'
22" x 34" - 1" = 1.875'

PROJECT NUMBER: 60498
SHEET: VW E-1R

(2) #12 THHN/THWN FROM GENERATOR TO TRANSFER SWITCH PER GENERAC REQUIREMENTS.

TRANSFER SWITCH

GENERATOR

#16 THWN

GENERATOR REMOTE START WIRING

TAG CONDUCTORS "REMOTE START" 2 #16 THHN STRANDED FROM WIRING BLOCK. SEE NOTES #1 AND #2

IF NOT PRESENTLY ON SITE E.C. MUST PROVIDE: GENERATOR POWER FAIL THE A.C. FAIL RELAY IS CONNECTED TO EACH PHASE OF THE INCOMING POWER. THE NORMALLY OPEN CONTACTS CLOSE UPON LOSS OF POWER SENDING AN ALARM.

TRANSFER SWITCH

3 RED BLACK

TAG CONDUCTORS GENERATOR POWER FAIL

GENERATOR

FUEL TANK RUPTURE
IF INNER HULL LEAKS THE ALARM CONTACTS WILL OPEN SENDING AN ALARM

TAG CONDUCTORS FUEL TANK RUPTURE

GENERATOR

LOW FUEL
IF FUEL IS LOW THE CONTACTS OPEN SENDING AN ALARM

TAG CONDUCTORS LOW FUEL

GENERATOR

GENERATOR RUN

TAG CONDUCTORS GENERATOR RUN

GENERATOR

COMMON

TAG CONDUCTORS COMMON

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.

ALARM WIRING (1)
SCALE: NTS

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

UTILITY SERVICE 120/240V 1 PHASE 3 WIRE

M KWH METER

#2 GROUND

120/240V 3 WIRE GENERATOR

G

3/4" x 10' GROUND ROD

BATTERY CHARGE & BLK HTR.

PROPOSED FOUR-PLEX GFI RECEPTACLE (NEMA 3R) TO BE MOUNTED WITHIN HOUSING OF GENERATOR (FOR COLD WEATHER HEATERS)

1

2

3

4

5

NEW 200A ILC W/ ATS

SERVICE FEED TO SERVICE DISC.

12"x12"x6" ALARM BOX

NEW SINGLE LINE DIAGRAM (2)
SCALE: NTS

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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SHEBOYGAN COUNTY

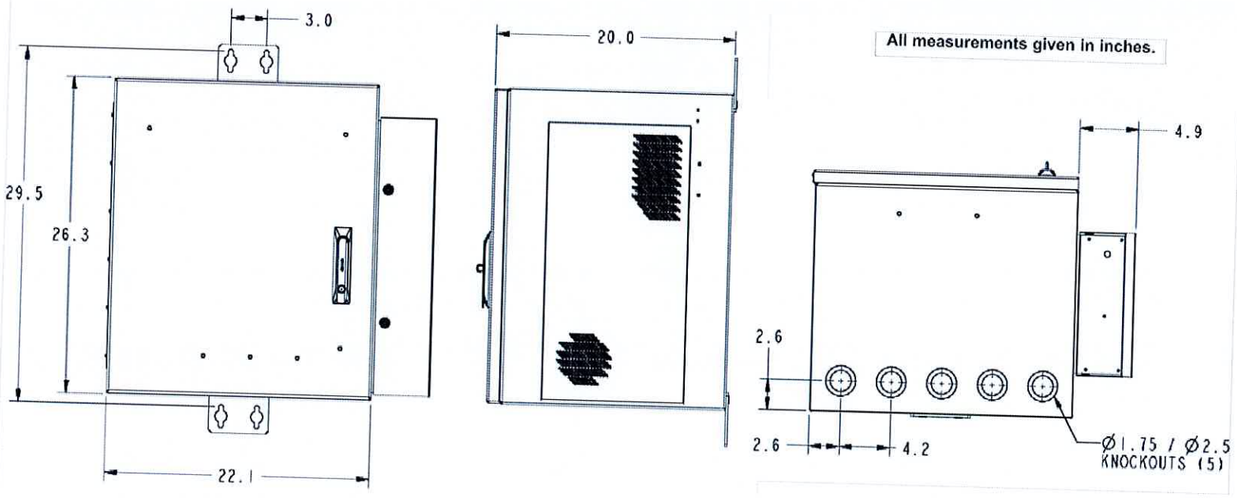
SHEET TITLE:
GENERATOR SINGLE LINE DIAGRAM & ALARM WIRING

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: VW E-1C

Charles Universal Broadband Enclosures (CUBE)
RL1000 Series Backhaul Cabinets

All measurements given in inches.



FRONT VIEW | SIDE VIEW | BOTTOM VIEW

CUBE Accessories

	CI Part #
Pole Mount Kit	97-CABPMTKIT
H-Frame Hardware Kit	97-001971-A
Slide-Out Tray	97-001990-A
10" Plinth Kit	97-002127-A

INNOVATIVE ENCLOSED SOLUTIONS™	Charles Industries, Ltd.	Phone: (847) 806-6300 Fax: (847) 806-6231 Web: www.charlesindustries.com	Charles

OG-OSP021-K16

OVERALL DIMENSION	26"H X 22"W X 20"D
RACK SPACE	14RU
RACK WIDTH	19" EIA STANDARD
HOLE SPACING ON RACKS	1" TAPPED 12-24
BONDING & GROUNDING	(1) 8 POSITION, 2-HOLE GROUND BARS
FUSE PANEL	(1) WALLMOUNT 10 POSITION GMT TYPE
CABLE ENTRANCE	(5) 1.75/2.5" DOUBLE KNOCKOUTS
COLOR	OFF-WHITE
CONSTRUCTION	WELDED ALUMINUM
WEIGHT (EMPTY)	80 LBS.
MOUNTING	WALL OR H-FRAME, POLE MOUNT WITH OPTIONAL KIT
THERMAL MANAGEMENT	17 W/°F HEAT EXCHANGER, 24 VDC POWER
MANUFACTURER	CHARLES INDUSTRIES
MODEL	CUBE-RL1003
DIMENSIONS	26.3" X 22.1" X 20.0" (H X W X D)
ACCESSORIES:	
POLE MOUNT KIT	97-CABPMKIT
H-FRAME HARDWARE KIT	97-001971-A
SLIDE OUT TRAY	97-001991-A
10" PLINTH KIT	97-002127-A

verticalbridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

RAMAKER employee-owned
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Certification & Seal:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Wisconsin.

WISCONSIN MICHAEL L. PINSKE 36387 MIDDLETON, WI PROFESSIONAL ENGINEER

Signature: Date: 9/30/2024

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
FIBER CABINET SPEC SHEET

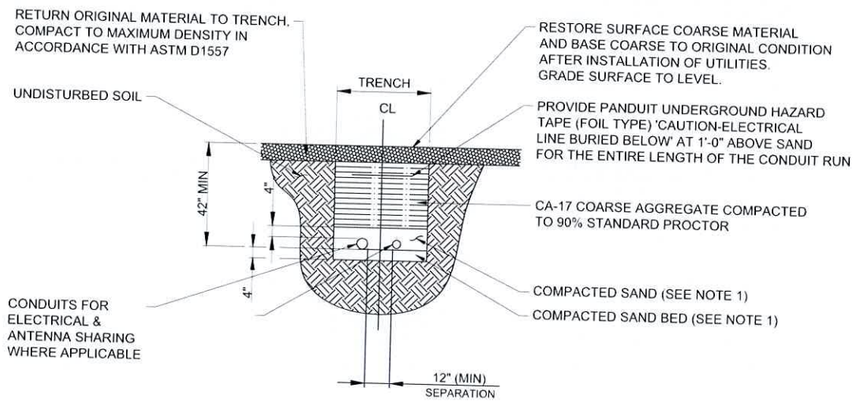
SCALE: NONE

PROJECT NUMBER: 60498

SHEET NUMBER: 116

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.



UTILITY TRENCH DETAIL (1)
SCALE: NTS

VERIZON WIRELESS PANEL "A" SCHEDULE

MAIN: 400 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	1			2	1250	40/2	RECTIFIER 5
		1250	3			4	1250		
RECTIFIER 2	40/2	1250	5			6	1250	40/2	RECTIFIER 6
		1250	7			8	1250		
RECTIFIER 3	40/2	1250	9			10	1250	40/2	RECTIFIER 7
		1250	11			12	1250		
RECTIFIER 4	40/2	1250	13			14	1250	40/2	RECTIFIER 8
		1250	15			16	1250		
SPACE			17			18		20/1	SPARE
SPACE			19			20		20/1	SPARE
SPACE			21			22			SPACE
SPACE			23			24			SPACE
SPACE			25			26			SPACE
SPACE			27			28			SPACE
SPACE			29			30			SPACE
SPACE			31			32			SPACE
SPACE			33			34			SPACE
SPACE			35			36			SPACE
LIGHTS	20/1		37			38	360	20/1	GFCI RECEPTACLE *
SMOKE DETECTORS	20/1		39			40	1200	20/1	EQUIPMENT
EMERG LIGHTS/ EQUIP	20/1		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.)

PANEL BOARD SCHEDULE (2)
SCALE: NTS

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

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

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
ELECTRICAL DETAILS

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: VW-E-2

ELECTRICAL INSTALLATION NOTES

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS THE NATIONAL ELECTRICAL CODE (N.E.C.), AND ALL APPLICABLE LOCAL CODES.
2. WIRING RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE N.E.C.
3. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE N.E.C.
4. CABLES SHALL NOT BE ROUTED THROUGH LADDER CABLE TRAY RUNGS.
5. EACH END OF EVERY POWER PHASE CONDUCTOR (I.E., HOTS), GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH N.E.C. & OSHA
6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH PLASTIC TAPE PER COLOR SCHEDULE, ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E. PANEL BOARD AND CIRCUIT ID'S).
7. PANEL BOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
8. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
9. POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#14 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE NOTED.
11. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 AWG OR LARGER) 600 V, OIL RESISTANT THHN OR THHN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR LOCATION USED,UNLESS OTHERWISE SPECIFIED.
12. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE)
13. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND N.E.C.
14. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40, OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
15. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
16. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.
17. RIGID NONMETALLIC CONDUIT(I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED; IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.
18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SETSCREWS FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND N.E.C.
21. WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL) AND RATED NEMA 1 (OR BETTER).
22. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1(OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS
23. METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED; OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
24. NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
25. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
26. THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY

GROUNDING NOTES

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE N.E.C.
2. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT & PROVIDE TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
5. METAL RACEWAY SHALL NOT BE USED AS THE N.E.C. REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE N.E.C., SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
6. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
7. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 AWG SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
8. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
9. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
10. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
11. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR & EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
12. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
13. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
14. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS, IF REQUIRED BY EQUIPMENT INSTALLATION INSTRUCTIONS (NEC 110-3 (B)).
15. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
16. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TOT HE GROUND RING, IN ACCORDANCE WITH THE N.E.C.
17. BOND ALL METALLIC OBJECTS WITHIN 6 FT. OF MAIN GROUND WIRES WITH (1) #2 AWG TIN-PLATED COPPER GROUND CONDUCTOR.
18. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE SUED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.

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PROFESSIONAL ENGINEER

Signature: Date: 9/30/2024

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
ELECTRICAL AND GROUNDING NOTES

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: VW E-3

KEYED NOTES

KEY	DESCRIPTION
1	SYSTEM GROUND RESISTANCE SHALL NOT EXCEED 5 OHMS. A THREE POINT SYSTEM RESISTANCE TEST SHALL BE PERFORMED BY THE CONTRACTOR IN ACCORDANCE WITH VERTICAL BRIDGE SPECIFICATIONS. A. PERFORM THREE TESTS AT EACH SITE. B. CONTRACTOR SHALL PROVIDE A WRITTEN REPORT CONSISTING OF THE FOLLOWING: SITE NAME, ADDRESS AND IDENTIFICATION NUMBER, DESCRIPTION OF SITE SOIL AND MOISTURE CONDITION, DESCRIPTION OF WEATHER, MODEL NUMBER OF TESTING EQUIPMENT, DATE OF LAST CALIBRATION, SITE SKETCH SHOWING LOCATION OF TEST PROBES AND ALL FIELD DATA COLLECTED (READINGS, RANGE, TEST, MILLIAMPS, ETC.) C. CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER IF THERE ARE ANY DIFFICULTIES PERFORMING SYSTEM RESISTANCE TESTS OR IF MEASUREMENTS ARE ABOVE 5 OHMS. THE CONSTRUCTION MANAGER SHALL PROVIDE INSTRUCTION TO THE CONTRACTOR TO INSTALL ADDITIONAL GROUNDING MEASURES TO MEET THE 5 OHM REQUIREMENT.
2	PROPOSED TOWER GROUND RING BURIED TO A DEPTH OF 30" OR 6" BELOW THE FROST LINE, WHICHEVER IS GREATER.
3	BOND PROPOSED TOWER TO TOWER GROUND RING (3 PLACES TOTAL).
4	SERVICE ENTRANCE GROUND ROD.
5	BOND GROUND RING(S) TO SITE CORNER POST (TYP. x 4).
6	BOND GATE POST TO PROPOSED GROUND RING (TYP. x 2).
7	BOND FLEXIBLE JUMPER TO GATE (TYP. x 2).
8	BOND PROPOSED H-FRAME TO GROUND RING (TYP. x 8).

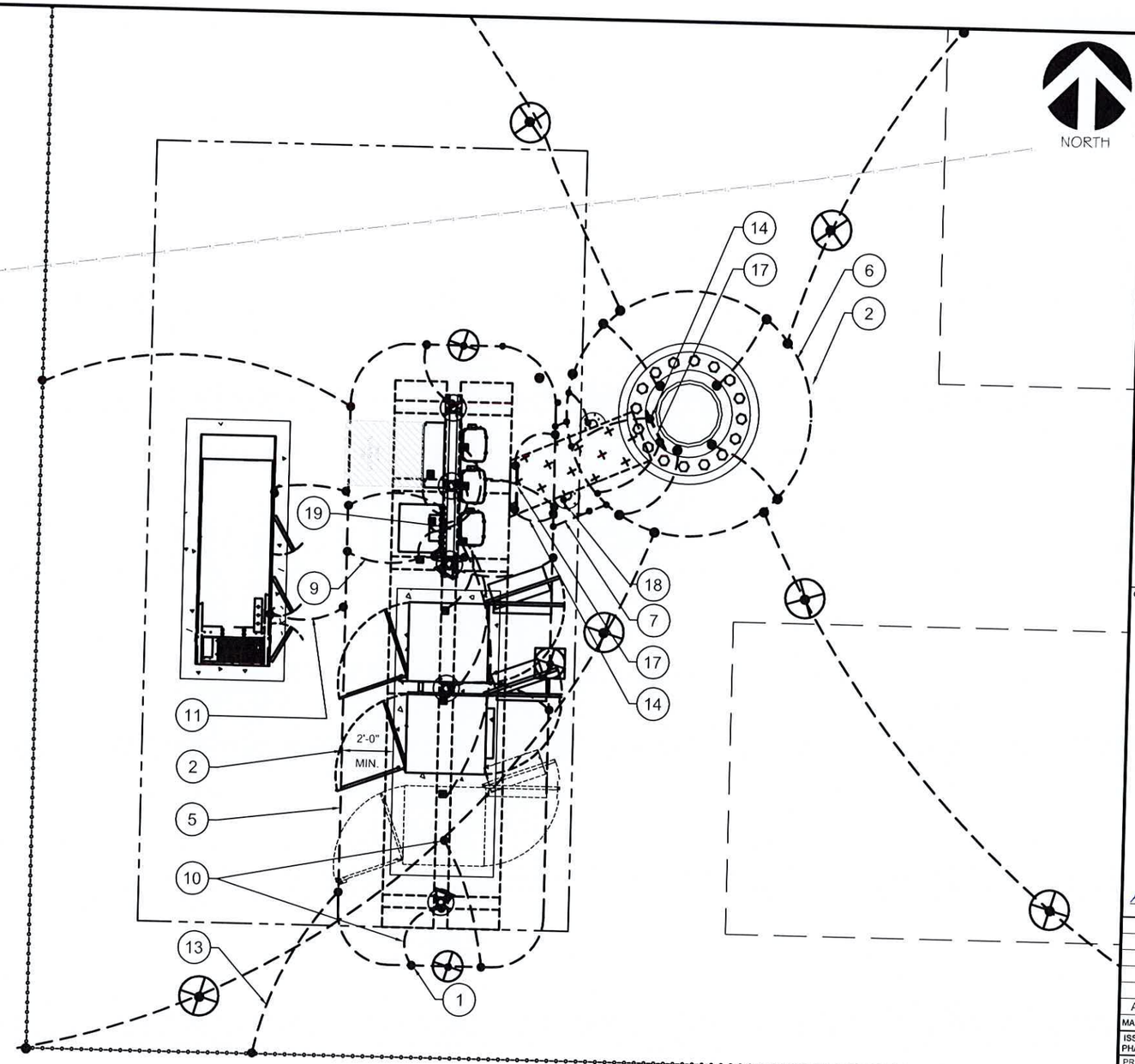
EXTERIOR GROUNDING NOTES:

1. GROUNDING SHALL CONFORM WITH VERTICAL BRIDGE STANDARDS AND PER FEDERAL, STATE AND LOCAL CODES. IN THE EVENT OF A CONFLICT, MEET THE MOST STRINGENT REQUIREMENT.
2. GROUND RODS PAST METER SHALL BE COPPER CLAD STEEL 5/8 INCH DIAMETER X 10 FEET IN LENGTH (MIN.)
3. ALL GROUND CONDUCTORS PAST METER SHALL BE #2 AWG SOLID BARE TINNED COPPER. MINIMUM BEND RADIUS FOR CONDUCTOR SHALL BE 8 INCHES.
4. GROUND RODS SHALL BE SPACED NOT MORE THAN 16'-0" AND NOT LESS THAN 6'-0" APART EXCEPT FOR THE TOWER GROUND RING WHICH SHALL COMPLY WITH TIA/EIA 222 (REV G).
5. CONTRACTOR SHALL ADD ADDITIONAL RODS AND CONDUCTORS OR APPROVED GROUND ENHANCING MATERIAL TO ACHIEVE LESS THAN 5 OHMS RESISTANCE TO GROUND.
6. MAINTAIN 2'-0" (TOWER) AND 3'-0" (SHELTER) BETWEEN GROUND RINGS AND FOUNDATIONS.
7. ALL GROUNDING INSTALLATIONS SHALL BE INSPECTED AND APPROVED BY ANY JURISDICTION HAVING INSPECTION & APPROVAL AUTHORITY (IF REQUIRED) AND VERTICAL BRIDGE BEFORE PLACING ANY BACKFILL.
8. ALL GROUNDING SPLICES AND CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC WELD PROCESS (CADWELD OR EQUIVALENT). COAT ALL WELDS WITH A ZINC RICH PAINT.

THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING THE SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED.

SYMBOLS LEGEND

- GROUND ROD WITH ACCESS
- GROUND ROD
- EXOTHERMIC CONNECTION
- VZW GROUND LEAD
- MECHANICAL CONNECTION
- GROUND BAR
- GROUND WIRE



VERIZON WIRELESS GROUNDING PLAN (1)
SCALE: 1" = 5'

NOTE:
SEE GROUNDING DETAILS ON SHEET E-5

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY
DATE ISSUED: 06/25/2024

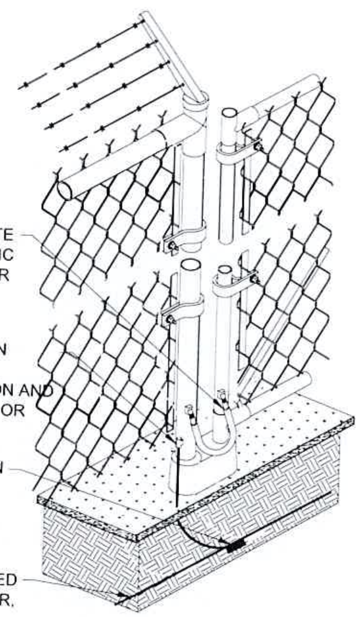
PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

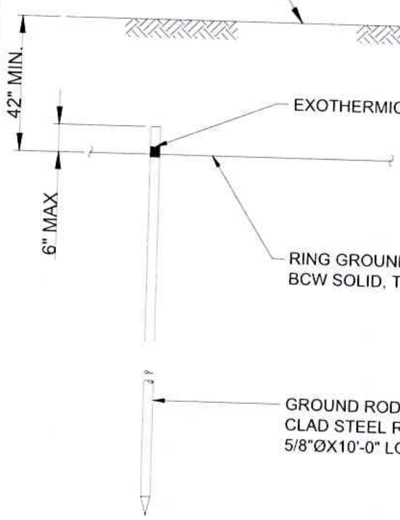
SHEET TITLE:
SITE GROUNDING & NOTES

0 2.5' 5' 10'
11" x 17" - 1" = 5'
22" x 34" - 1" = 2.5'

PROJECT NUMBER: 60498
SHEET NUMBER: VWE-4

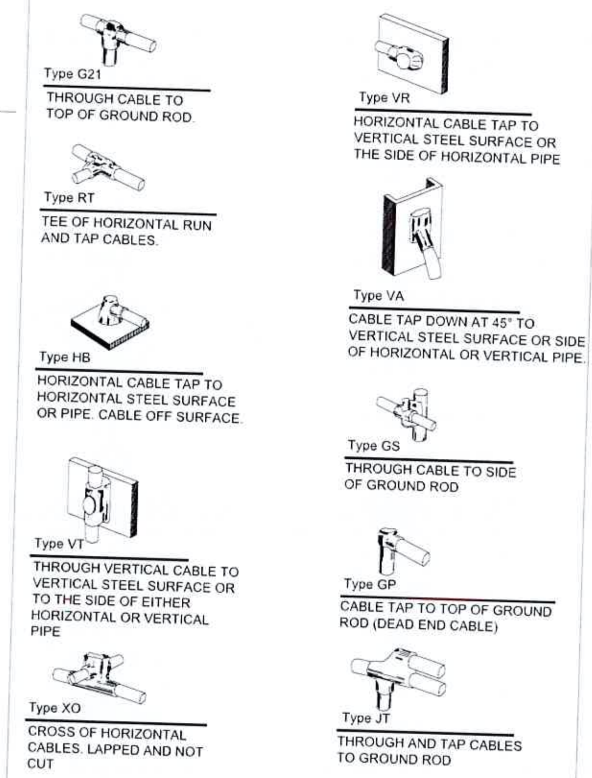


FENCE GROUNDING DETAIL (1)
SCALE: NTS



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

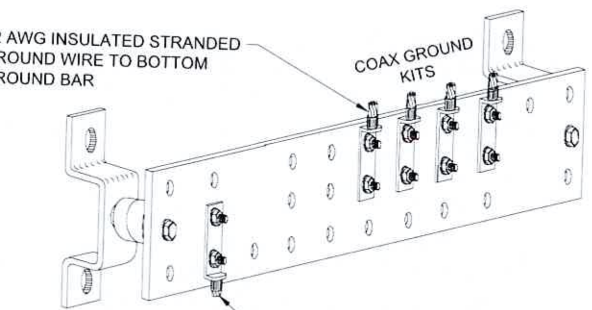
GROUND ROD DETAIL (2)
SCALE: NTS



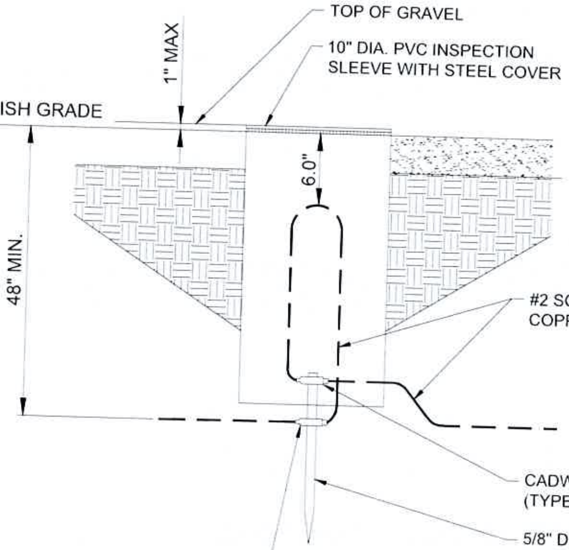
EXOTHERMIC WELD DETAIL (3)
SCALE: NTS

NOTES:

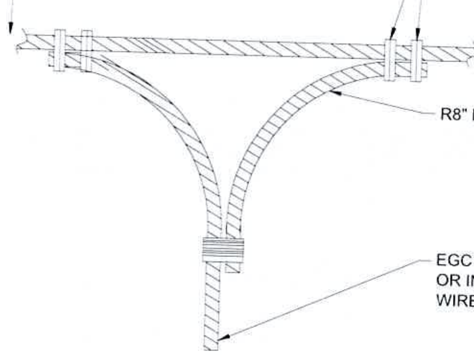
1. PROPOSED HARGER 2x14.5" GROUND BAR (PN/ TGBR14214.5VER) MOUNT DIRECTLY TO TOWER STEEL.
2. INSULATORS TO BE NEWTON CAT. NO. 3015-8 OR APPROVED EQUAL
3. 5/8" LOCK WASHERS; NEWTON CAT. NO. A-6056 OR APPROVED EQUAL
4. 5/8" - 11 X 1" M.M.C.S. BOLTS; NEWTON CAT. NO. 3012-1 OR APPROVED EQUAL
5. COAT ALL SURFACES WITH 'KOPER SHIELD' BEFORE MATING
6. ALL HARDWARE TO BE STAINLESS STEEL UNLESS OTHERWISE NOTED
7. NUTS TO FACE OUT



GROUND COLLECTOR BAR (4)
SCALE: NTS



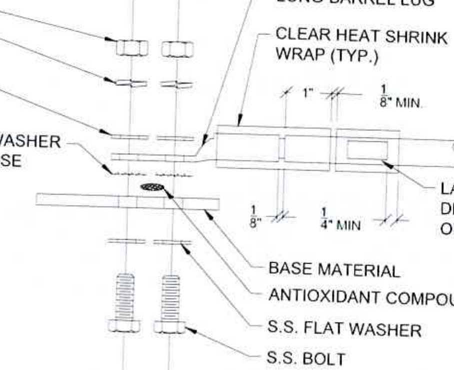
INSPECTION SLEEVE DETAIL (5)
SCALE: NTS



HALO NON-DIRECTIONAL GROUND RING SPLICE DETAIL (6)
SCALE: NTS

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



GROUND LIG INSTALLATION DETAIL (7)
SCALE: NTS

verticalbridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

RAMAKER employee-owned
(608) 643-4100 www.ramaker.com

Certification & Seal:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Wisconsin.

WISCONSIN — MICHAEL L. PINSKE 36387 MIDDLETON, WI — PROFESSIONAL ENGINEER

Signature: [signature] Date: 9/30/2024

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
GROUNDING DETAILS

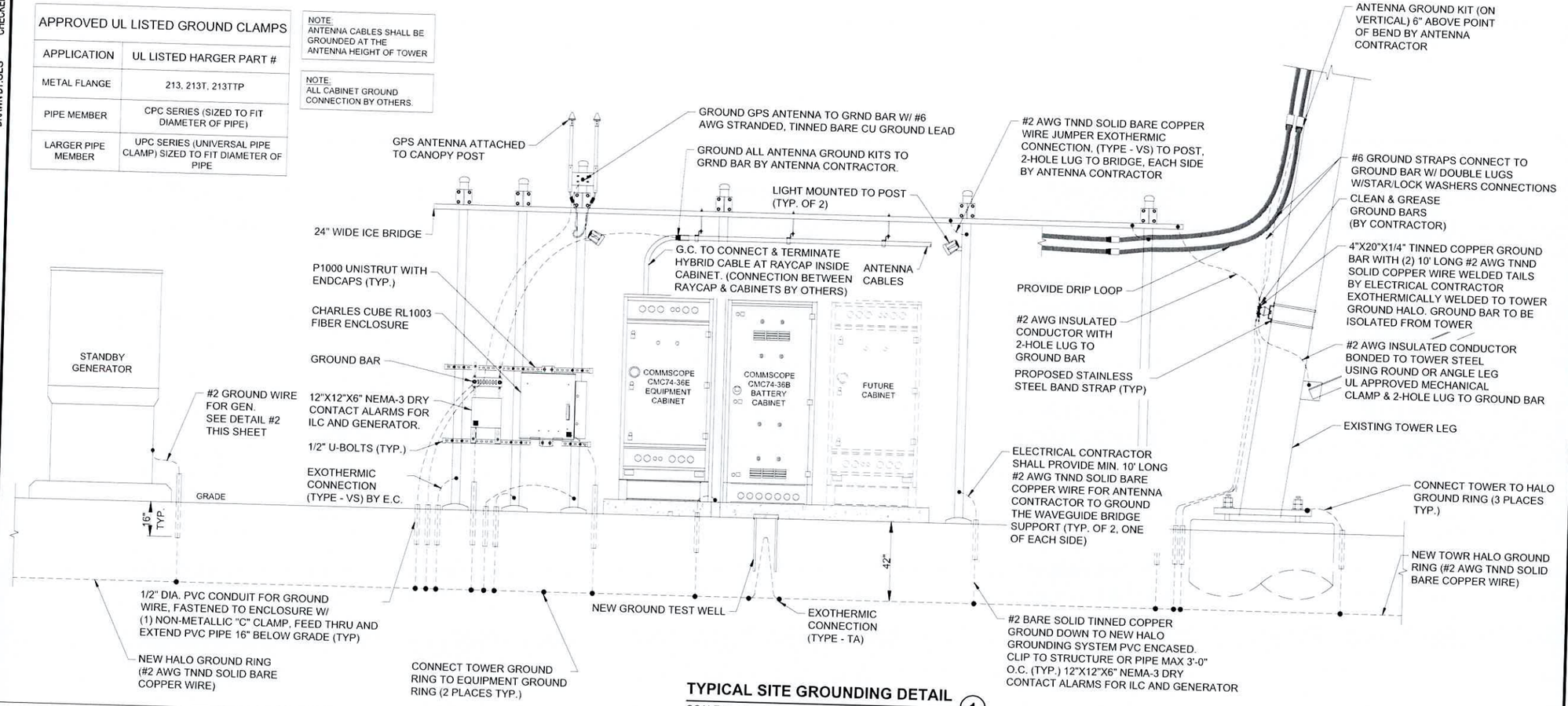
SCALE: NONE

PROJECT NUMBER: 60498

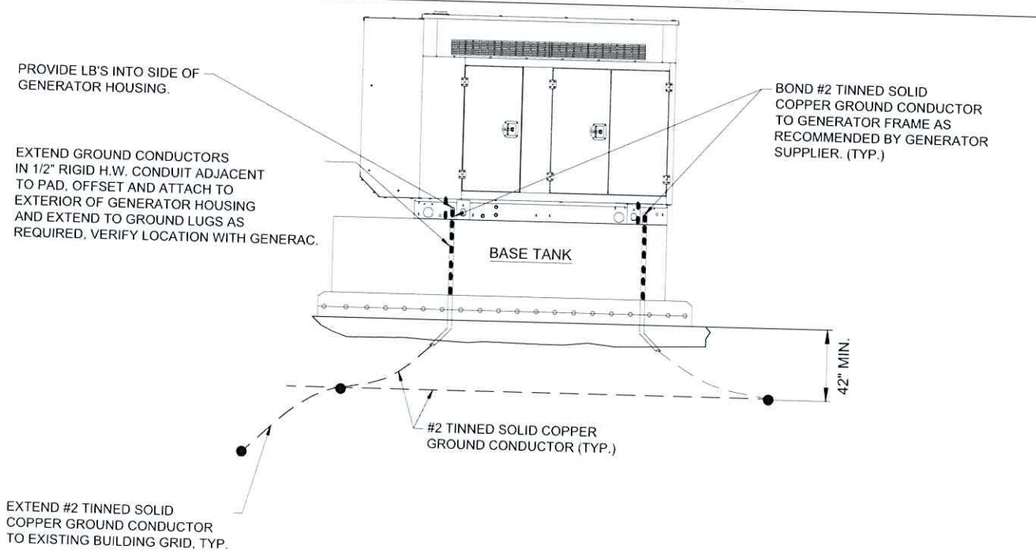
APPROVED UL LISTED GROUND CLAMPS	
APPLICATION	UL LISTED HARGER PART #
METAL FLANGE	213, 213T, 213TTP
PIPE MEMBER	CPC SERIES (SIZED TO FIT DIAMETER OF PIPE)
LARGER PIPE MEMBER	UPC SERIES (UNIVERSAL PIPE CLAMP) SIZED TO FIT DIAMETER OF PIPE

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

NOTE:
ALL CABINET GROUND CONNECTION BY OTHERS.



TYPICAL SITE GROUNDING DETAIL (1)
SCALE: NTS



GENERATOR GROUNDING DETAIL (2)
SCALE: NTS

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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MICHAEL L. PINSKE
36387
MIDDLETON, WI
PROFESSIONAL ENGINEER

Signature: 9/30/2024 Date:

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY
DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

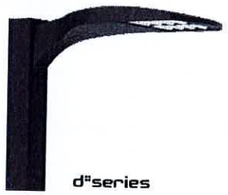
PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
GROUNDING & ELECTRICAL DETAILS

SCALE: NONE

PROJECT NUMBER: 60498

SHEET



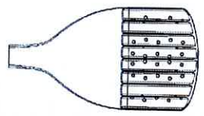
D-Series Size 0
LED Area Luminaire

Catalog Number
Notes
Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

EPA:	0.44 ft² (0.04 m²)
Length:	26.18" (66.5 cm)
Width:	14.06" (35.7 cm)
Height H1:	2.26" (5.7 cm)
Height H2:	7.46" (18.9 cm)
Weight:	23 lbs (10.4 kg)

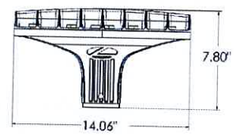


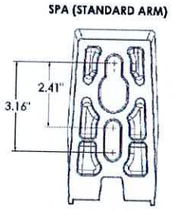
Introduction

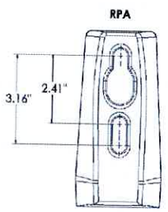
The modern styling of the D-Series features a highly refined aesthetic that blends seamlessly with its environment. The D-Series offers the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

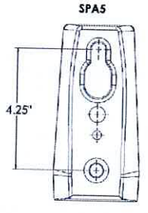
The photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. D-Series outstanding photometry aids in reducing the number of poles required in area lighting applications, with typical energy savings of 70% and expected service life of over 100,000 hours.

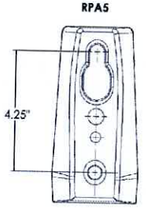
DSX0 with RPA, RPA5, SPA5, SPA8N mount
Weight: 25 lbs

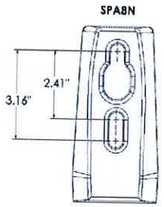












Ordering Information

EXAMPLE: DSX0 LED P6 40K 70CRI T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

DSX0 LED

Series	LEDs	Color temperature[1]	Color Rendering Index[2]	Distribution	Voltage	Mounting
DSX0 LED	**Forward optics** P1 P5 P2 P6 P3 P7 P4 **Rotated optics** P10[7] P12[7] P11[7] P13[7]	(this section 70CRI only) 30K 3000K 40K 4000K 50K 5000K (this section 80CRI only, extended lead times apply) 27K 2700K 30K 3000K 35K 3500K 40K 4000K 50K 5000K	70CRI 70CRI 70CRI 80CRI 80CRI 80CRI 80CRI 80CRI	AFR Automotive front row T1S Type I short T2M Type II medium T3M Type III medium T3LG Type III low glare[3] T4M Type IV medium T4LG Type IV low glare[3] TFTM Forward throw medium T5M Type V medium T5LG Type V low glare T5W Type V wide BLC3 Type III backlight control[3] BLC4 Type IV backlight control[3] LCCO Left corner cutoff[3] RCCO Right corner cutoff[3]	MVOLT (120V-277V)[4] HVOLT (347V-480V)[5,6] XVOLT (277V-480V)[7,8]	**Shipped included** SPA Square pole mounting (#8 drilling, 3.5" min. SQ pole) RPA Round pole mounting (#8 drilling, 3" min. RND pole) SPA5 Square pole mounting (#5 drilling, 3" min. SQ pole)[9] RPA5 Round pole mounting (#5 drilling, 3" min. RND pole)[9] SPA8N Square narrow pole mounting (#8 drilling, 3" min. SQ pole) WBA Wall bracket[10] MA Mast arm adapter (mounts on 2 3/8" OD horizontal tenon)

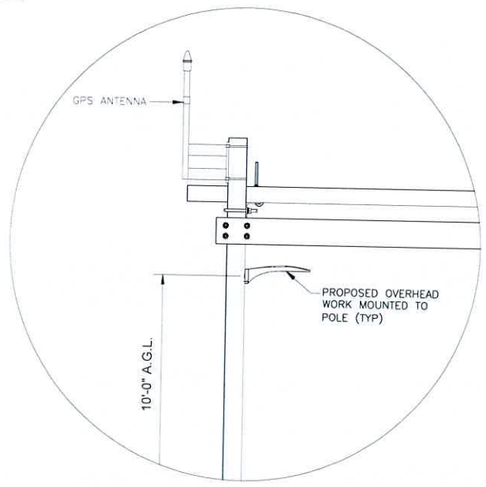
Control options		Other options		Finish (required)	
Shipped installed		**Shipped installed**		DDBXD	Dark Bronze
NLTAIR2 PIRHN	nLight AIR gen 2 enabled with bi-level motion / ambient sensor, 8–40' mounting height, ambient sensor enabled at 2fc[11,12,13,14,15]	HS	Houseside shield (black finish standard)[20]	DBLXD	Black
PIR	High/low, motion/ambient sensor, 8–40' mounting height, ambient sensor enabled at 2fc[13,14,15]	L90	Left rotated optics[1]	DNAXD	Natural Aluminum
PER	NEMA twist-lock receptacle only (controls ordered separate)[16]	R90	Right rotated optics[1]	DWHXD	White
PER5	Five-pin receptacle only (controls ordered separate)[14,17]	CCE	Coastal Construction[21]	DDBTXD	Textured dark bronze
PER7	Seven-pin receptacle only (controls ordered separate)[14,18]	HA	50°C ambient operation[22]	DBLBXD	Textured black
FAO	Field adjustable output[12,19]	**Shipped separately**		DNATXD	Textured natural aluminum
BL30	Bi-level switched dimming, 30%[14,15]	EGSR	External Glare Shield (reversible, field install required, matches housing finish)	DWHGXD	Textured white
BL50	Bi-level switched dimming, 50%[14,15]	BSDB	Bird Spikes (field install required)		
DMG	0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately)[17]				

LIGHT FIXTURE (1)
SCALE: N/A

External Glare Shield (EGS)

EGSR

NOTE:
THE PURPOSE OF THE LIGHTING IS FOR WORKER SAFETY DURING EMERGENCY MAINTENANCE. THE LIGHT WILL BE PLACED ON MOTION SENSORS. THE EXTERNAL GLARE SHIELD (EGS) IS REQUIRED TO BE INSTALLED ON THE LIGHT FIXTURE. THE LIGHT FIXTURE WILL BE MOUNTED TO THE SOUTHEAST EQUIPMENT CANOPY SUPPORT POLE.



MOUNTING DETAIL (2)
SCALE: N/A

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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PROFESSIONAL ENGINEER

Signature: Date: 9/30/2024

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
LIGHTING SPECIFICATIONS

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: VW E-7

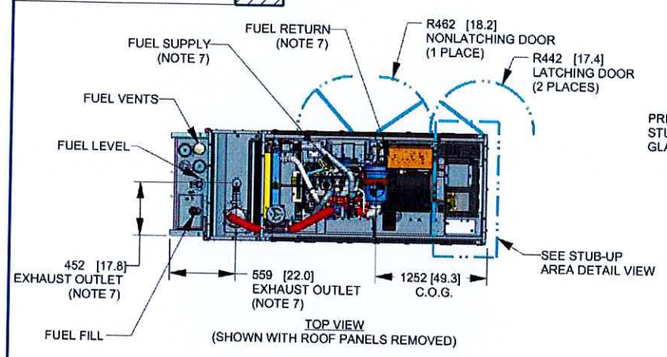
GENERATOR TYPE:	DIESEL (PENDING ENVIRONMENTAL VERIFICATION)
MAKE:	GENERAC
MODEL #:	SD030-1PE-190JT - STANDARD GENERAC SD030 30kw DIESEL - 190 GALLON

SH 1/1 | REV B | WINDCHILL VERSION B.3

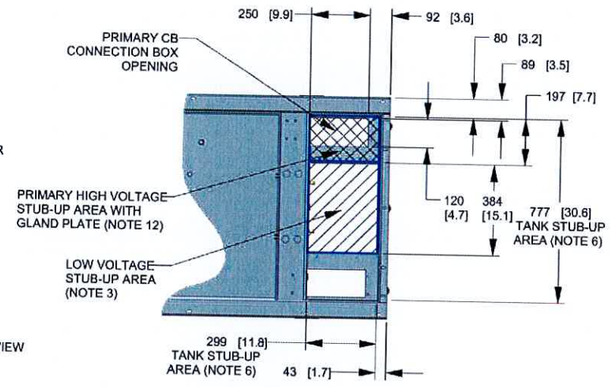
RECOMMENDED ELECTRICAL STUB-UP

(HIGH VOLTAGE STUB-UP) AC LOAD LEAD CONDUIT

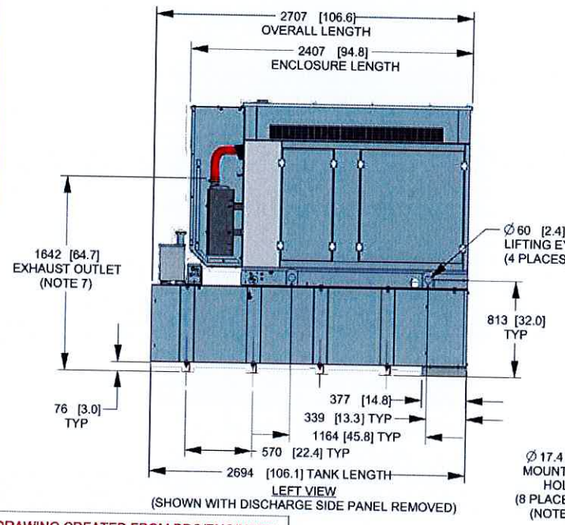
(LOW VOLTAGE STUB-UP)



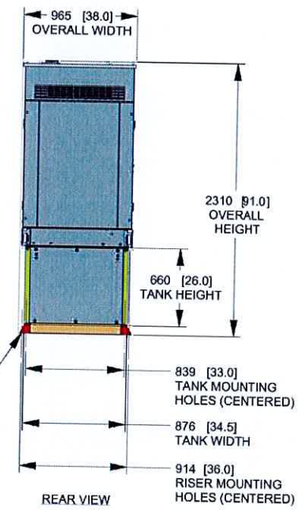
TOP VIEW
(SHOWN WITH ROOF PANELS REMOVED)



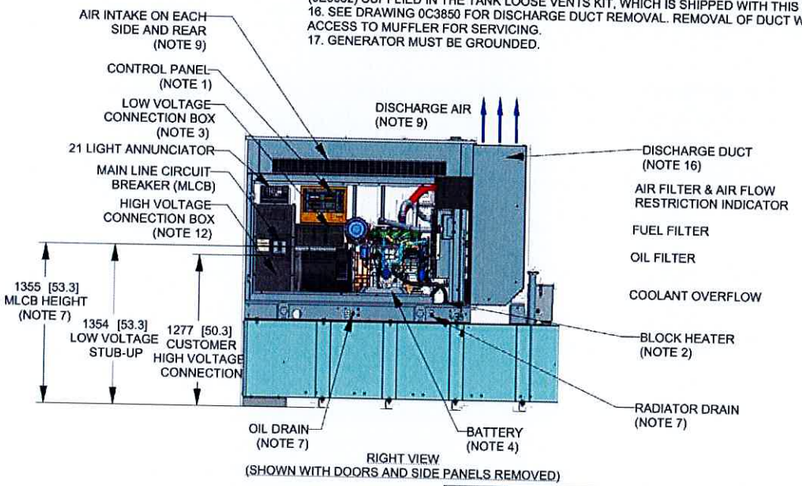
STUB-UP AREA VIEW
(2X SCALE)



LEFT VIEW
(SHOWN WITH DISCHARGE SIDE PANEL REMOVED)



REAR VIEW



RIGHT VIEW
(SHOWN WITH DOORS AND SIDE PANELS REMOVED)

DRAWING CREATED FROM PRO/ENGINEER 3D FILE. ECO MODIFICATION TO BE APPLIED TO SOLID MODEL ONLY.

WEIGHT DATA: (INCLUDES FUEL TANK)
GENERATOR: 1358 [2995]
GENERATOR WITH SHIPPING SKID: 1424 [3139]

WEIGHT: KG [LBS]
DIMENSIONS: MM [INCHES]

NOTES:
1. CONTROL PANEL INCLUDES BATTERY CHARGER WITH THREE PRONG CORD
2. 1500W 120 VAC ENGINE BLOCK HEATER WITH THREE PRONG CORD.
3. CONNECTION POINTS FOR CONTROL WIRES PROVIDED IN THE LOW VOLTAGE CONNECTION BOX. BOTTOM HAS KNOCKOUTS FOR 1/2" AND 3/4" CONDUIT FITTINGS. (USE LOW VOLTAGE STUB-UP AREA).
4. BATTERY (12 VOLT NEGATIVE GROUND SYSTEM).
5. MAIN LINE CIRCUIT BREAKER (MLCB) (MLCB HEIGHT MAY VARY WITH CB SELECTION) AC LOAD LEADS CONNECT DIRECTLY TO BOTTOM OF BREAKER.
6. CENTER OF GRAVITY & WEIGHT MAY SHIFT SLIGHTLY DUE TO UNIT OPTIONS.
7. ENGINE SERVICE CONNECTIONS:
   INLET DIESEL = 3/8" NPT
   RETURN DIESEL = 3/8" NPT
   OIL DRAIN = 1/2" NPT
   RADIATOR DRAIN = 1/2" NPT
   EXHAUST OUTLET = 2.5" I.D.
8. STUB-UPS: BASE TANK REQUIRES ALL STUB-UPS TO BE IN THE REAR TANK STUB-UP AREA.
9. GENERATOR SET MUST BE INSTALLED SUCH THAT FRESH COOLING AIR IS AVAILABLE AND DISCHARGE AIR IS NOT RECIRCULATED. SEE SPEC SHEET FOR MINIMUM AIR FLOW AND MAXIMUM RESTRICTION REQUIREMENTS.
10. BOTTOM OF GENERATOR SET MUST BE CLOSED TO PREVENT PEST INTRUSION AND RECIRCULATION OF DISCHARGE AIR AND/OR IMPROPER COOLING AIR FLOW.
11. BOLTS OR STUDS USED TO MOUNT UNIT TO PAD SHALL BE 5/8-11 GRADE 5. USE STANDARD SAE TORQUE SPECS.
12. HIGH VOLTAGE STUB-UP AREA INCLUDES THE AC LOAD LEAD CONNECTIONS TO MLCB, NEUTRAL CONNECTION AND AUXILIARY 120/240V CONNECTION.
13. 190 GALLON USEABLE CAPACITY BASETANK STANDARD WITH GENERATOR.
14. IT IS THE RESPONSIBILITY OF THE INSTALLATION TECHNICIAN TO ENSURE THAT THE GENERATOR INSTALLATION COMPLIES WITH ALL APPLICABLE CODES, STANDARDS, AND REGULATIONS.
15. UNIT IS SHIPPED WITH FUEL SUPPLY AND RETURN LINES DISCONNECTED AND PLUGGED BETWEEN ENGINE AND FUEL TANK. THIS HAS BEEN DONE TO FACILITATE PRESSURE TESTING OF THE TANK IN THE FIELD. FOR INFORMATION REGARDING CONNECTING THE FUEL SUPPLY AND RETURN LINES PRIOR TO START UP, SEE THE FUEL TANK FIELD TESTING PROCEDURE (0E5082) SUPPLIED IN THE TANK LOOSE VENTS KIT, WHICH IS SHIPPED WITH THIS GENERATOR.
16. SEE DRAWING 0C3850 FOR DISCHARGE DUCT REMOVAL. REMOVAL OF DUCT WILL PROVIDE ACCESS TO MUFFLER FOR SERVICING.
17. GENERATOR MUST BE GROUNDED.

INSTALLATION DRAWING

ELECTRONICALLY APPROVED INSIDE WINDCHILL

GENERAC

TITLE: INSTALL D2.2L G22 30KW SSS L2A Y02 EXT

ISSUE DATE: 12/18/17

SIZE	CAGE NO	DWG NO	REV
B	N/A	10000019074	B

SCALE 0.025 | WT-KG SEE ABOVE | SHEET 1 of 1

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

RAMAKER employee-owned
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WISCONSIN MICHAEL L. PINSKE 36387 MIDDLETON, WI PROFESSIONAL ENGINEER

Signature: Date: 9/30/2024

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY | DATE ISSUED: 06/25/2024

PROJECT TITLE: BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE: GENERATOR CUT-SHEET

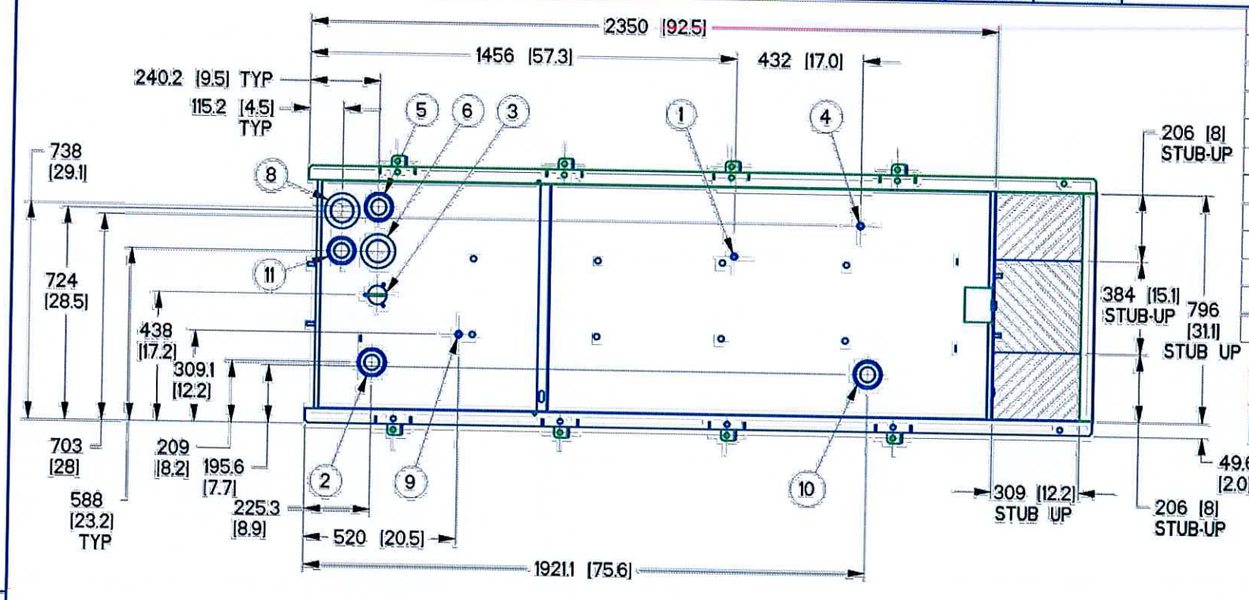
SCALE: NONE

PROJECT NUMBER: 60498

SHEET NUMBER: VW FX-1

GENERATOR TYPE:	DIESEL (PENDING ENVIRONMENTAL VERIFICATION)
MAKE:	GENERAC
MODEL #:	SD030-1PE-190JT - STANDARD GENERAC SD030 30kw DIESEL - 190 GALLON

SH 1/1 REV B WINDCHILL VERSION B.2



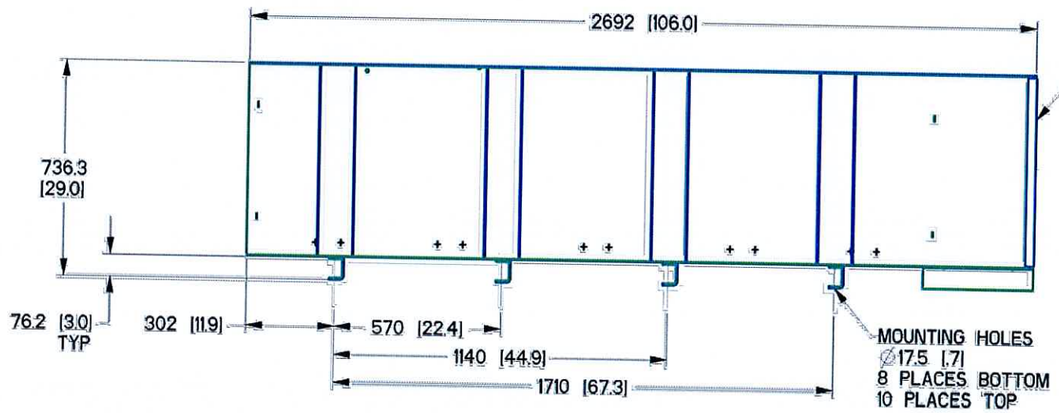
I/N	TANK FITTING	PROVIDING FUNCTION
1	3/8" NPT COUPLING	FUEL SUPPLY
2	2" NPT WELD FLANGE	FUEL FILL
3		FUEL LEVEL
4	3/8" NPT COUPLING	FUEL RETURN
5	2" NPT WELD FLANGE	VENT
6	3" NPT WELD FLANGE	INNER EMERGENCY VENT
7	1/2" NPT HALF COUPLING	RUPTURE BASIN LEAK SENSOR
8	3" NPT WELD FLANGE	OUTER EMERGENCY VENT
9	3/8" NPT COUPLING	5 GALLON SPILL/FILL DRAIN
10	2" NPT WELD FLANGE	90% FUEL SWITCH
11	2" NPT WELD FLANGE	RUPTURE BASIN ALARM

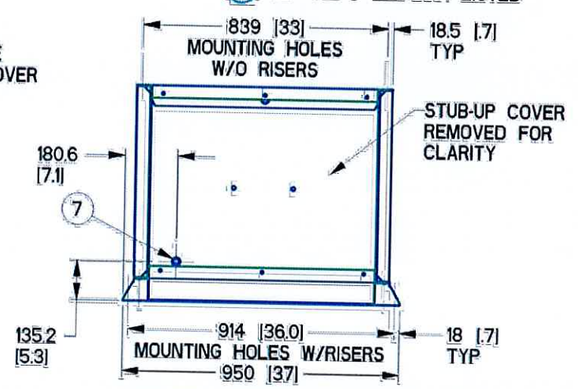
LOW VOLTAGE STUB-UP
HIGH VOLTAGE STUB-UP

TANK P/N	10000016357
TOTAL CAPACITY	757 [200]
USABLE CAPACITY	720 [190]
EST. DRY WEIGHT	420 [924]

CAPACITY: LITER [GALLONS]
WEIGHT: KILOGRAMS [POUNDS]
LENGTH: MM [INCH]

UL 142 / ULC-S601 LISTED





DRAWING CREATED FROM PRO/ENGINEER 3D FILE. ECO MODIFICATION TO BE APPLIED TO SOLID MODEL ONLY.

INSTALLATION DRAWING

ELECTRONICALLY APPROVED INSIDE WINDCHILL

GENERAC

TITLE: INSTALL D2.2L BASETANK 190G A EXT Y02 MDEQ

ISSUE DATE:

SIZE	CAGE NO	DWG NO	REV
B	N/A	10000019086	B
SCALE 0.063	WT-KG 0.000	SHEET 1 of 1	

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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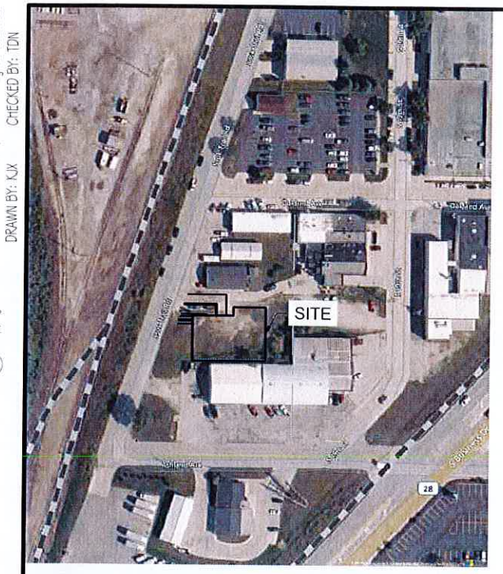
PROJECT TITLE: BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE: GENERATOR CUT-SHEET

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: VW EX-2



VICINITY MAP
NOT TO SCALE

PARENT PARCEL DESCRIPTION PER TITLE REPORT

LOTS 13, 14, 15 AND 16, BLOCK 6, SOUTH SHEBOYGAN ADDITION, ACCORDING TO THE RECORDED PLAT THEREOF, IN THE CITY OF SHEBOYGAN, SHEBOYGAN COUNTY, WISCONSIN, AND THE WEST1/2 OF THE VACATED NORTH-SOUTH ALLEY ADJACENT TO THE EAST SIDE OF SAID LOTS.

PARCEL ID#: 59281425610

THIS BEING THE SAME PROPERTY CONVEYED TO MATTHEW J. DROSS AND LISA A. DROSS, HUSBAND AND WIFE FROM TIMOTHY T. KACHELMEIER, A SINGLE PERSON IN A WARRANTY DEED DATED MARCH 29, 2013, AND RECORDED APRIL 2, 2013, AS INSTRUMENT NO. 1965755, IN SHEBOYGAN COUNTY, WISCONSIN.

SURVEYOR'S NOTES

1) ALL EASEMENTS AND/OR LEASE AREAS SHOWN AND NOT LABELED AS EXISTING SHALL BE PENDING UNTIL RECORDED.
2) AN ATTEMPT WAS MADE TO LOCATE ALL PROPERTY CORNERS AND MONUMENTS. WHERE NO MONUMENTS WERE FOUND, THE PROPERTY LINE WAS DRAWN BASED ON RECORDED AND/OR FILED DOCUMENTS.
3) NOT TO BE USED AS CONSTRUCTION DRAWINGS.
4) LOCATION OF UTILITIES EXISTING ON OR SERVING THE SURVEYED PROPERTY WAS DETERMINED BY OBSERVED EVIDENCE. EVIDENCE FROM PLANS PROVIDED TO THE SURVEYOR OR MARKINGS PURSUANT TO A UTILITY LOCATE REQUESTED BY THE SURVEYOR. WISCONSIN DIGGER'S HOTLINE UTILITY LOCATE NUMBER 20242123159.
5) FIELDWORK WAS PERFORMED BY RAMAKER & ASSOCIATES AND REVIEWED BY TRENT D. NELSON, WISCONSIN SURVEYOR NUMBER 3132-8.
6) THE PURPOSE OF THIS SURVEY IS TO ESTABLISH AND DESCRIBE A LEASE AREA AND ASSOCIATED EASEMENTS FOR TELECOMMUNICATIONS EQUIPMENT. THIS IS NOT A BOUNDARY SURVEY OF THE PARENT PARCEL & THEREFORE RESETTING MISSING PROPERTY IRONS IS OUTSIDE THE SCOPE OF THE WORK BEING PERFORMED.
7) AT TIME OF SURVEY, THERE WERE NO ENCROACHMENTS AFFECTING THE 'THE TOWERS, LLC' LEASE AREA OR ASSOCIATED EASEMENTS.
8) THE 'THE TOWERS, LLC' LEASE AREA AND ASSOCIATED EASEMENTS LIE WITHIN THE PARENT PARCEL.
9) THE 'THE TOWERS, LLC' 30' WIDE ACCESS & 12' WIDE UTILITY EASEMENTS TERMINATES AT THE PUBLIC RIGHT-OF-WAY OF SAUK TRAIL ROAD.
10) PARENT PARCEL DESCRIPTION FROM RECORDED AND/OR FILED DOCUMENTS.
11) THIS MAP WAS PREPARED WITH THE AID OF A TITLE REPORT BY TOWER TITLE, LLC, FILE NUMBER: VTB-180142-C, DOCUMENT DATE: 04/25/2024.
12) BEARINGS ARE REFERENCED TO THE NORTH LINE OF THE NW1/4 OF SECTION 34, T15N, R23E, MEASURED TO BEAR N89°50'03"W BY GPS GRID USING THE WISCONSIN COUNTY COORDINATE SYSTEM, SHEBOYGAN COUNTY, U.S. FOOT.
13) VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988.
14) F.E.M.A. FLOOD PANEL MAP NUMBER 55117C0351F, ZONE X, AREA OF MINIMAL FLOOD HAZARD.

TITLE REPORT REVIEW

PREPARED BY: TOWER TITLE, LLC
COMMITMENT NUMBER: VTB-180142-C
COMMITMENT DATE: 04/25/2024

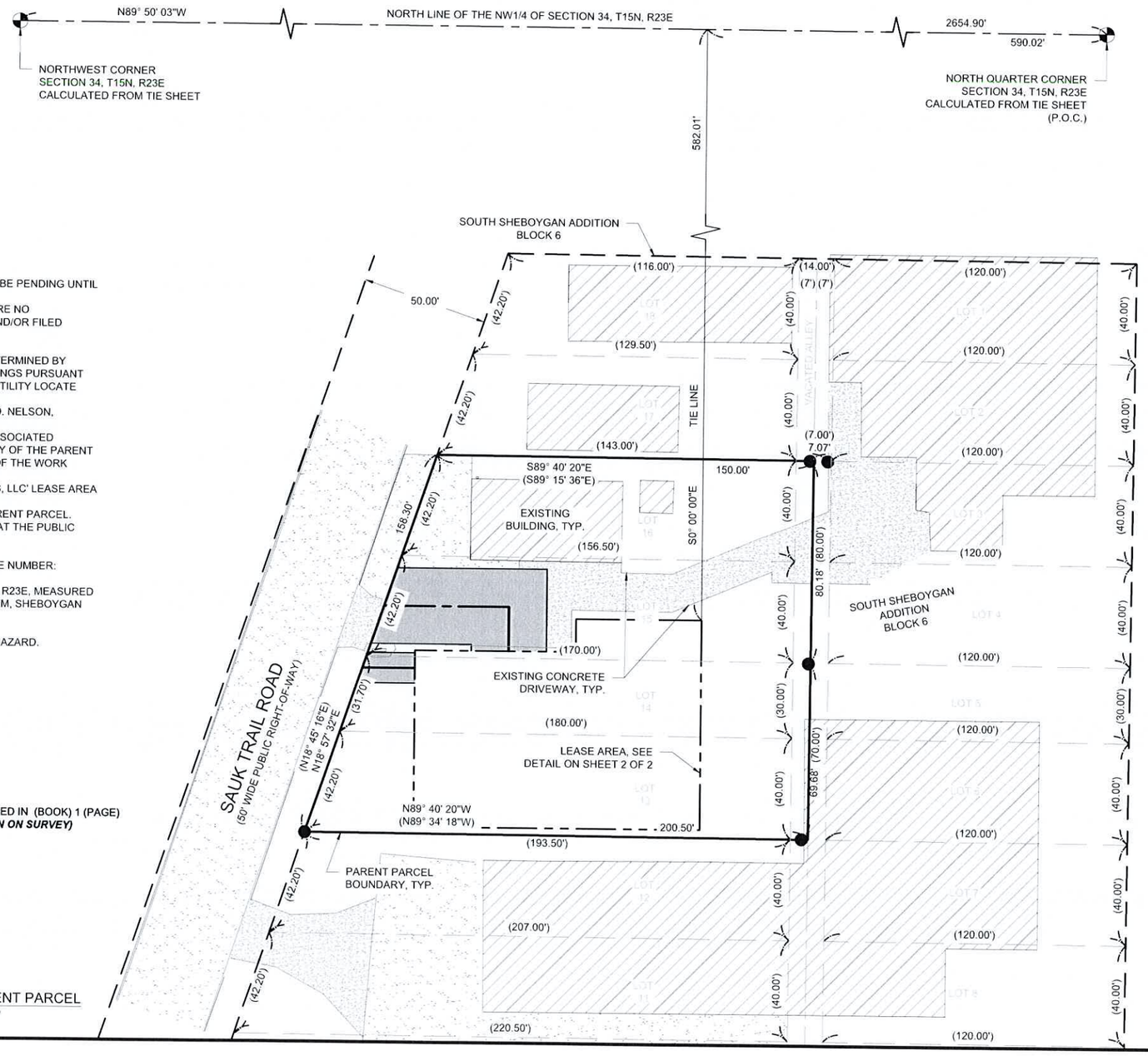
SCHEDULE B - PART II EXCEPTIONS:

1.-9. ***THE EXCEPTION DESCRIBES THE PARENT PARCEL SHOWN HERE WITHIN.***

10. ANY AND ALL MATTERS DISCLOSED ON THE MAP ENTITLED "SOUTH SHEBOYGAN" RECORDED IN (BOOK) 1 (PAGE) 83, IN SHEBOYGAN COUNTY, WISCONSIN. ***(EXISTING SOUTH SHEBOYGAN ADDITION IS SHOWN ON SURVEY)***

LEGEND

- SECTION CORNER
- P.O.C. ( ) — 1" IRON PIPE, FOUND; POINT OF COMMENCEMENT; RECORDED AS INFO.
- PARENT PARCEL BOUNDARY
- EXISTING RIGHT-OF-WAY
- EXISTING LOT LINE
- LEASE AREA
- EASEMENT SIDELINE
- EASEMENT CENTERLINE
- SECTION LINE
- QUARTER SECTION LINE
- QUARTER-QUARTER SECTION LINE
- EXISTING ASPHALT
- EXISTING CONCRETE



PARENT PARCEL
AS NOTED

RAMAKER
employee-owned
(608) 643-4100 www.ramaker.com

THE TOWERS, LLC

NORTH

Certification & Seal:
I hereby certify to: Vertical Bridge REIT, LLC, a Delaware limited liability company, its subsidiaries, and their respective successors and/or assigns; and (ii) Toronto Dominion (Texas) LLC, as Administrative Agent, for itself and on behalf of the lenders parties from time to time to that certain Second Amended and Restated Loan Agreement dated June 17, 2016 with Vertical Bridge Holdco, LLC, as borrower, and Vertical Bridge Holdco Parent, LLC, as parent, as may be amended, restated, modified or renewed, their successors and assigns as their interests may appear; and Tower Title, LLC; that this Survey Document was prepared and the related Survey Work was performed by me or under my direct personal supervision and that I am a duly Licensed Land Surveyor under the Laws of the State of Wisconsin.

WISCONSIN
TRENT D NELSON
3132-8
WAUTOMA, WI
LAND SURVEYOR

Trent D. Nelson, PLS
License Number: 3132-8

REV	DATE	DESCRIPTION

ISSUE PHASE: FINAL
DATE ISSUED: 07/11/2024

PROJECT TITLE:
BUSINESS DRIVE
THE TOWERS, LLC
US-WI-5737

PROJECT ADDRESS:
2219 SAUK TRAIL ROAD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
LEASE SURVEY

SCALE:
0 25' 50' 100'
11" x 17" - 1" = 50'
22" x 34" - 1" = 25'

PROJECT NUMBER: 60498
SHEET NUMBER: 1 OF 2

DRAWN BY: KJK CHECKED BY: TDN

LEASE AREA METES & BOUNDS DESCRIPTION

A PORTION OF LAND LOCATED IN LOTS 13,14 AND 15 OF BLOCK 6 OF SOUTH SHEBOYGAN ADDITION LOCATED IN THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER (NE1/4-NW1/4) OF SECTION THIRTY-FOUR (34), TOWNSHIP FIFTEEN (15) NORTH, RANGE TWENTY-THREE (23) EAST, CITY OF SHEBOYGAN, SHEBOYGAN COUNTY, WISCONSIN AND BEING FURTHER DESCRIBED AS FOLLOWS:

COMMENCING AT A CALCULATED MONUMENT LOCATING THE NORTH CORNER OF SAID SECTION 34; THENCE N89°50'03"W, 590.02 FEET ALONG THE NORTH LINE OF SAID SECTION 34; THENCE S0°00'00"E, 582.01 FEET TO THE POINT OF BEGINNING; THENCE N90°00'00"W, 50.00 FEET; THENCE S0°00'00"W, 13.00 FEET; THENCE N90°00'00"W, 64.00 FEET; THENCE S0°00'00"E, 70.00 FEET; THENCE N90°00'00"E, 114.00 FEET; THENCE N0°00'00"E, 83.00 FEET TO THE POINT OF BEGINNING. SAID LEASE AREA CONTAINS 8,630 SQUARE FEET (0.20 ACRES) AND IS SUBJECT TO ANY AND ALL EASEMENTS OR AGREEMENTS, RECORDED OR UNRECORDED.

30' WIDE ACCESS EASEMENT CENTERLINE DESCRIPTION

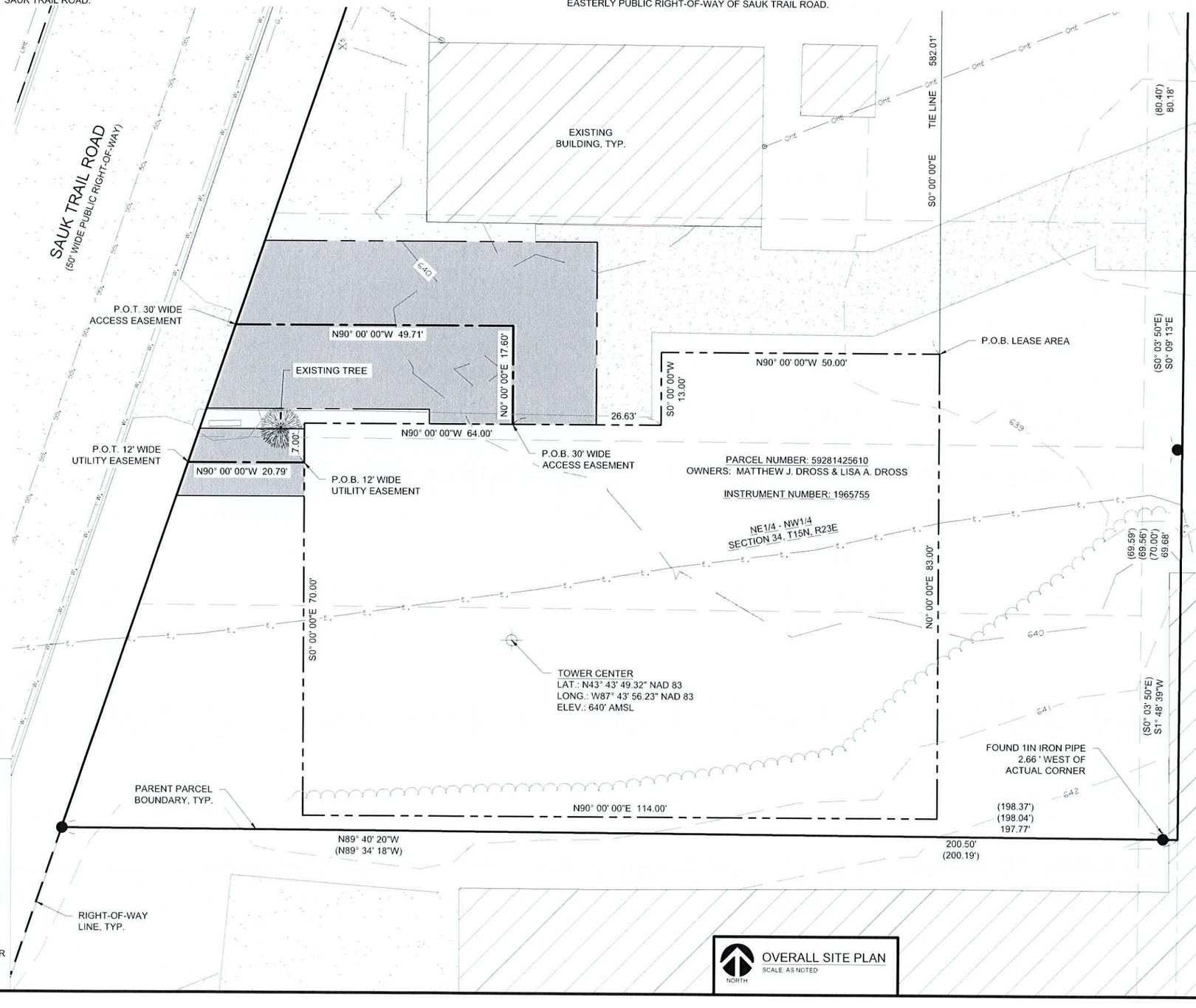
A PORTION OF LAND LOCATED IN LOT 15 OF BLOCK 6 OF SOUTH SHEBOYGAN ADDITION LOCATED IN THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER (NE1/4-NW1/4) OF SECTION THIRTY-FOUR (34), TOWNSHIP FIFTEEN (15) NORTH, RANGE TWENTY-THREE (23) EAST, CITY OF SHEBOYGAN, SHEBOYGAN COUNTY, WISCONSIN AND WHOSE CENTERLINE IS FURTHER DESCRIBED AS FOLLOWS:

COMMENCING AT A CALCULATED MONUMENT LOCATING THE NORTH CORNER OF SAID SECTION 34; THENCE N89°50'03"W, 590.02 FEET ALONG THE NORTH LINE OF THE NW1/4 OF SAID SECTION 34; THENCE S0°00'00"E, 582.01 FEET TO THE NORTHEAST CORNER OF THE AFOREMENTIONED LEASE AREA; THENCE N90°00'00"W, 50.00 FEET; THENCE S0°00'00"W, 13.00 FEET; THENCE N90°00'00"W, 26.63 FEET TO THE POINT OF BEGINNING; THENCE N0°00'00"E, 17.60 FEET; THENCE N90°00'00"W, 49.71 FEET TO EASTERLY PUBLIC RIGHT-OF-WAY OF SAUK TRAIL ROAD AND THE POINT OF TERMINATION. SAID ACCESS EASEMENT CENTERLINE CONTAINS 67.31 LINEAR FEET, MORE OR LESS, AND IS SUBJECT TO ANY AND ALL EASEMENTS OR AGREEMENTS, RECORDED OR UNRECORDED. SIDELINES OF SAID EASEMENT SHALL BE LENGTHENED OR SHORTENED TO TERMINATE AT THE EASTERLY PUBLIC RIGHT-OF-WAY OF SAUK TRAIL ROAD.

12' WIDE UTILITY EASEMENT CENTERLINE DESCRIPTION

A PORTION OF LAND LOCATED IN LOTS 14 AND 15 OF BLOCK 6 OF SOUTH SHEBOYGAN ADDITION LOCATED IN THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER (NE1/4-NW1/4) OF SECTION THIRTY-FOUR (34), TOWNSHIP FIFTEEN (15) NORTH, RANGE TWENTY-THREE (23) EAST, CITY OF SHEBOYGAN, SHEBOYGAN COUNTY, WISCONSIN AND WHOSE CENTERLINE IS FURTHER DESCRIBED AS FOLLOWS:

COMMENCING AT A CALCULATED MONUMENT LOCATING THE NORTH CORNER OF SAID SECTION 34; THENCE N89°50'03"W, 590.02 FEET ALONG THE NORTH LINE OF THE NW1/4 OF SAID SECTION 34; THENCE S0°00'00"E, 582.01 FEET TO THE NORTHEAST CORNER OF THE AFOREMENTIONED LEASE AREA; THENCE N90°00'00"W, 50.00 FEET; THENCE S0°00'00"W, 13.00 FEET; THENCE N90°00'00"W, 64.00 FEET TO THE NORTHWEST CORNER OF THE AFOREMENTIONED LEASE AREA; THENCE S0°00'00"E, 7.00 FEET ALONG THE WEST LINE OF THE AFOREMENTIONED LEASE AREA TO THE POINT OF BEGINNING; THENCE N90°00'00"W, 20.79 FEET TO EASTERLY PUBLIC RIGHT-OF-WAY OF SAUK TRAIL ROAD AND THE POINT OF TERMINATION. SAID ACCESS EASEMENT CENTERLINE CONTAINS 20.79 LINEAR FEET, MORE OR LESS, AND IS SUBJECT TO ANY AND ALL EASEMENTS OR AGREEMENTS, RECORDED OR UNRECORDED. SIDELINES OF SAID EASEMENT SHALL BE LENGTHENED OR SHORTENED TO BEGIN AT THE WEST LINE OF THE AFOREMENTIONED LEASE AREA AND TERMINATE AT THE EASTERLY PUBLIC RIGHT-OF-WAY OF SAUK TRAIL ROAD.



LEGEND

- P.O.B. / P.O.T. ( ) — 1 INCH IRON PIPE, FOUND / POINT OF BEGINNING / POINT OF TERMINATION RECORDED AS INFO.
- PARENT PARCEL BOUNDARY
- EXISTING RIGHT-OF-WAY
- EXISTING LOT LINE
- LEASE AREA
- EASEMENT SIDELINE
- EASEMENT CENTERLINE
- SECTION LINE
- QUARTER SECTION LINE
- QUARTER-QUARTER SECTION LINE
- EXISTING TREELINE
- EXISTING OVERHEAD ELECTRIC
- EXISTING BURIED ELECTRIC
- EXISTING BURIED NATURAL GAS
- EXISTING BURIED WATER
- EXISTING BURIED SANITARY SEWER
- EXISTING WATER VALVE
- EXISTING ASPHALT
- EXISTING CONCRETE

OVERALL SITE PLAN
SCALE: AS NOTED

RAMAKER
employee-owned
(608) 643-4100 www.ramaker.com

THE TOWERS, LLC

NORTH

Certification & Seal:
I hereby certify to: Vertical Bridge REIT, LLC, a Delaware limited liability company, its subsidiaries, and their respective successors and/or assigns; and (ii) Toronto Dominion (Texas) LLC, as Administrative Agent, for itself and on behalf of the lenders parties from time to time to that certain Second Amended and Restated Loan Agreement dated June 17, 2016 with Vertical Bridge Holdco, LLC, as borrower, and Vertical Bridge Holdco Parent, LLC, as parent, as may be amended, restated, modified or renewed, their successors and assigns as their interests may appear; and Tower Title, LLC; that this Survey Document was prepared and the related Survey Work was performed by me or under my direct personal supervision and that I am a duly Licensed Land Surveyor under the Laws of the State of Wisconsin.

WISCONSIN
TRENT D NELSON
3132-8
WAUTOMA, WI
LAND SURVEYOR

Trent D. Nelson, PLS
License Number: 3132-8

REV	DATE	DESCRIPTION

ISSUE PHASE: FINAL
DATE ISSUED: 07/11/2024

PROJECT TITLE:
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THE TOWERS, LLC
US-WI-5737

PROJECT ADDRESS:
2219 SAUK TRAIL ROAD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
LEASE SURVEY

SCALE:
0 10' 20' 40'
11" x 17" - 1" = 20'
22" x 34" - 1" = 10'

PROJECT NUMBER: 60498
SHEET NUMBER: 2 OF 2

Vertical Bridge REIT, LLC
750 Park of Commerce Drive, Suite 200
Boca Raton, FL 33487

Date: September 23, 2024

To: Planning and Zoning Administrator
City of Sheboygan
828 Center Avenue, Suite 208
Sheboygan, WI 53081
(920) 459-3274
elke.daugherty@sheboyganwi.gov

Notice to Proceed

Vertical Bridge Site Number: US-WI-5737
Vertical Bridge Site Name: Business Drive

The Towers, LLC (Vertical Bridge), as the Tower Owner, hereby grants to Ramaker its consent to proceed with the project titled "Business Drive" located at Parcel 59281425610 located at Address of 2219 Sauk Trail Rd., Sheboygan, WI 53081. This includes any activities relating to zoning. Ramaker is our agent, and we are hereby directing our agent to obtain zoning approval for this project.

This Notice to Proceed is effective immediately.

Sincerely,

DocuSigned by:
5F230FE153ED402...

John Stevens, Vice President of Development

CITY OF SHEBOYGAN
GENERAL ORDINANCE 20-24-25

BY ALDERPERSONS BELANGER AND LA FAVE.

OCTOBER 21, 2024.

AN ORDINANCE amending the City of Sheboygan Official Zoning Map of the Sheboygan Zoning Ordinance to change the Use District Classification of property located at 2258 Calumet Drive from Class Neighborhood Residential (NR-6) to Class Urban Commercial (UC) Classification.

THE COMMON COUNCIL OF THE CITY OF SHEBOYGAN DO ORDAIN AS FOLLOWS:

SECTION 1: AMENDMENT Chapter 105 of the Sheboygan Zoning Ordinance establishing zoning districts and prescribing zoning standards and regulations is hereby *amended* as follows:

The Official Zoning Map of the City of Sheboygan thereof and Use District Classification of the following described lands from Class Neighborhood Residential (NR-6) to Class Urban Commercial (UC) Classification:

Property located at 2258 Calumet Drive – Parcel No. 59281621470:

KOHLS SUBD LOT 19, CITY OF SHEBOYGAN, SHEBOYGAN COUNTY, WISCONSIN

SECTION 2: REPEALER CLAUSE All ordinances or resolutions or parts thereof in conflict with the provisions of this ordinance are hereby repealed to the extent of such conflict.

SECTION 3: EFFECTIVE DATE This Ordinance shall be in effect from and after its passage and publication according to law.

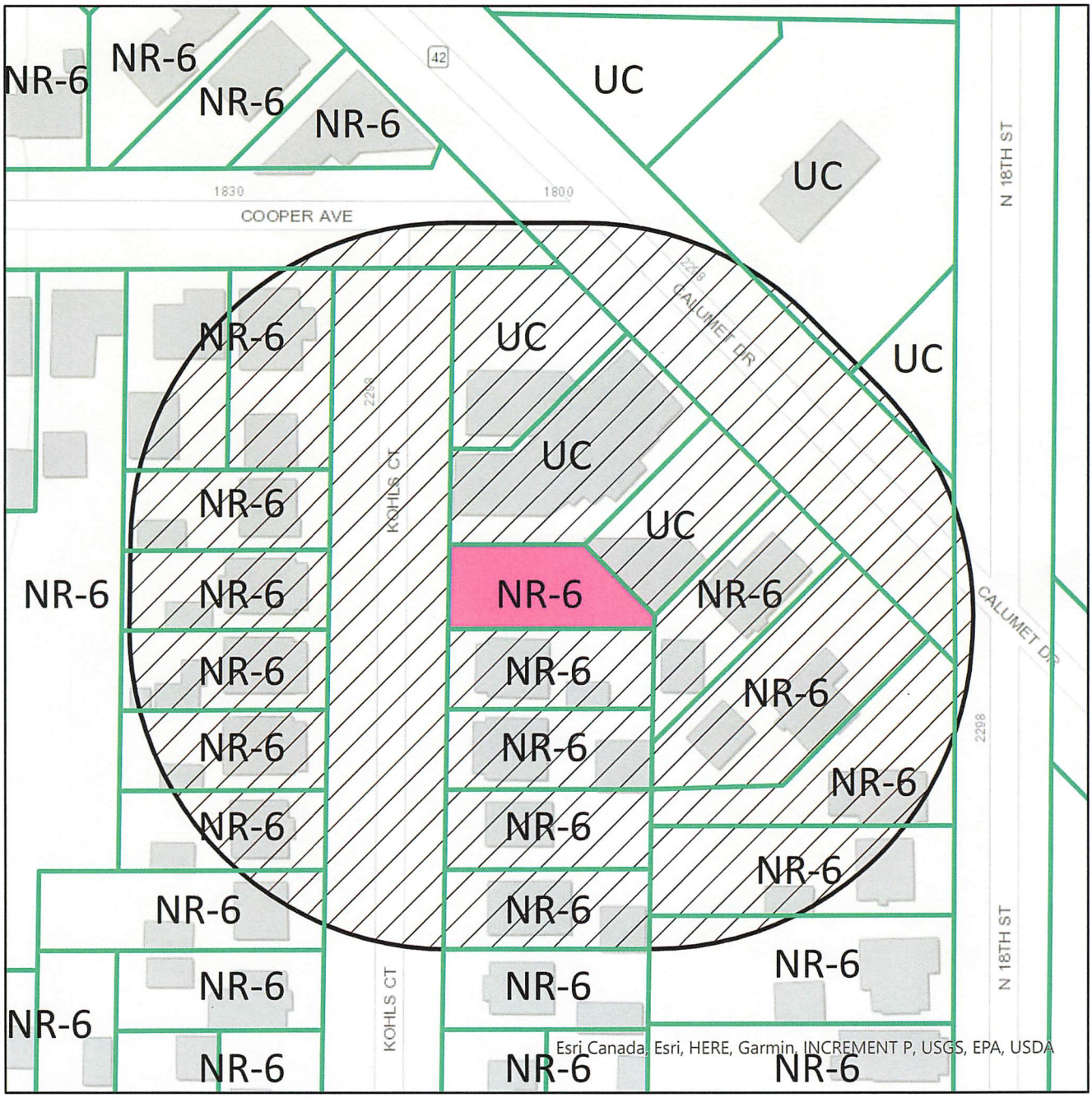
PASSED AND ADOPTED BY THE CITY OF SHEBOYGAN COMMON COUNCIL

_____.

Presiding Officer	Attest
_____	_____
Ryan Sorenson, Mayor, City of Sheboygan	Meredith DeBruin, City Clerk, City of Sheboygan

PROPOSED REZONE
FROM NEIGHBORHOOD RESIDENTIAL (NR-6)
TO URBAN COMMERCIAL (UC)

KOHLS SUBD LOT 19, CITY OF SHEBOYGAN, SHEBOYGAN COUNTY, WISCONSIN.



0 50 100 200 Feet

N
W E
S

CITY OF SHEBOYGAN
R. O. 73-24-25

BY CITY CLERK.

OCTOBER 21, 2024.

Submitting an application from Pao Yang for amendment to the official zoning map for the City of Sheboygan from Pao Yang for property located at 2258 Calumet Drive – Parcel No. 59281621470.

OFFICE USE ONLY
APPLICATION NO.: _____
RECEIPT NO.: _____
FILING FEE: $200.00 (Payable to City of Sheboygan)

Item 8.

CITY OF SHEBOYGAN
APPLICATION FOR
AMENDMENT OF OFFICIAL ZONING MAP

(Requirements Per Section 105.996)
Revised January 2024

Completed application is to be filed with the Office of the City Clerk, City Hall, 828 Center Avenue. Application will not be processed if all required attachments and filing fee of $200 (payable to the City of Sheboygan) is not submitted along with a complete and legible application. Application filing fee is non-refundable.

1. APPLICANT INFORMATION

APPLICANT: PAO YANG PHONE NO.: (920) 254-5055

ADDRESS: 2258 Calumet Dr E-MAIL: trend.styles.salon@att.net

OWNER OF SITE: PAO YANG PHONE NO.: (920) 254-5055

2. DESCRIPTION OF THE SUBJECT SITE

ADDRESS OF PROPERTY AFFECTED: 2258 Calumet Dr

LEGAL DESCRIPTION: warehouse

PARCEL NO. 59281621470 MAP NO. _____

EXISTING ZONING DISTRICT CLASSIFICATION: Neighborhood Residential-6 (NR-6)

PROPOSED ZONING DISTRICT CLASSIFICATION: Urban Commercial (UC)

BRIEF DESCRIPTION OF THE **EXISTING** OPERATION OR USE:

Storage

BRIEF DESCRIPTION OF THE **PROPOSED** OPERATION OR USE:

coin operated laundry mat

3. JUSTIFICATION OF THE PROPOSED ZONING MAP AMENDMENT

How does the proposed Official Zoning Map amendment further the purposes of the Zoning Ordinance as outlined in Section 15.005 and, for flood plains or wetlands, the applicable rules and regulations of the Wisconsin Department of Natural Resources and the Federal Emergency Management Agency? _____

It's not in any flood zone or wet land

Which of the following factors has arisen that are not properly addressed on the current Official Zoning Map? (Provide explanation in space provided below.)

- ☐ The designations of the Official Zoning Map should be brought into conformity with the Comprehensive Master Plan.
- ☐ A mistake was made in mapping on the Official Zoning Map. (An area is developing in a manner and purpose different from that for which it is mapped.) *NOTE: If this reason is cited, it must be demonstrated that the discussed inconsistency between actual land use and designated zoning is not intended, as the City may intend to stop an undesirable land use pattern from spreading.*
- ☒ Factors have changed, (such as the availability of new data, the presence of new roads or other infrastructure, additional development, annexation, or other zoning changes), making the subject property more appropriate for a different zoning district.
- ☐ Growth patterns or rates have changed, thereby creating the need for an amendment to the Official Zoning Map.
- ☐ Explain: _____

How does the proposed amendment to the Official Zoning Map maintain the desired consistency of land uses, land use intensities, and land use impacts as related to the environs of the subject property? In area already zone for commercial. There are structures on the property currently

Indicate reasons why the applicant believes the proposed map amendment is in harmony with the recommendations of the City of Sheboygan Comprehensive Plan.

majority of the warehouse is located on a commercial zone

4. CERTIFICATE

I hereby certify that all the above statements and attachments submitted hereto are true and correct to the best of my knowledge and belief.

APPLICANT'S SIGNATURE

9/25/24
DATE

PAO YANG
PRINT ABOVE NAME

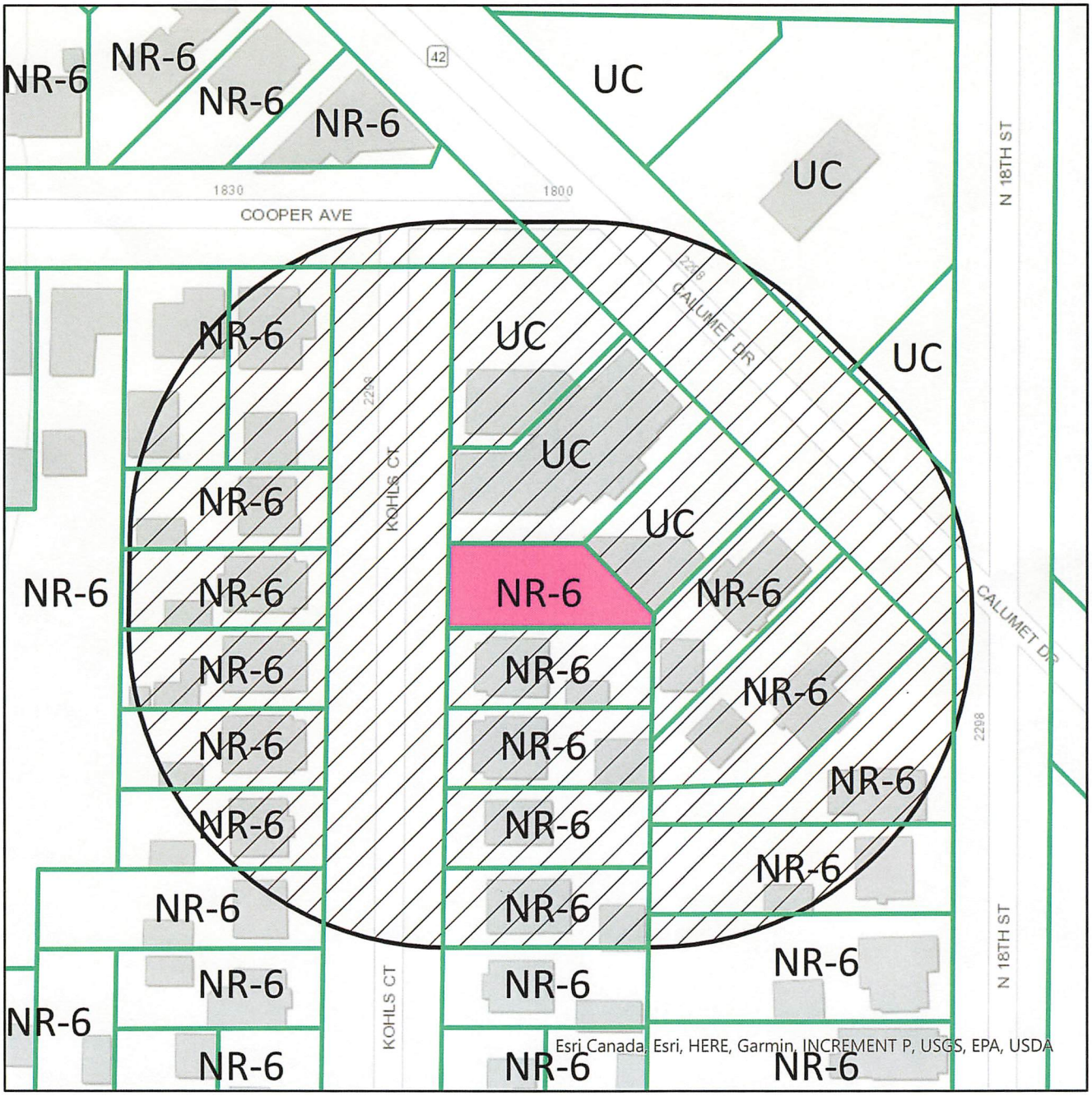
APPLICATION SUBMITTAL REQUIREMENTS

A copy of the current zoning map of the subject property and vicinity showing:

- [x] The property proposed to be rezoned.
- [x] All lot dimensions of the subject property.
- [x] All other lands within 100 feet of the subject property.
- [x] Map size not more than 11" X 17" and map scale not less than 1" = 600'.
- [x] Graphic scale and north arrow.

PROPOSED REZONE
FROM NEIGHBORHOOD RESIDENTIAL (NR-6)
TO URBAN COMMERCIAL (UC)

KOHLS SUBD LOT 19, CITY OF SHEBOYGAN, SHEBOYGAN COUNTY, WISCONSIN.



0 50 100 200 Feet

N W E S

CLK322B

City Of Sheboygan
City Clerk's Office

**** General Receipt ****

Receipt No: 241220
License No: 0000
Date: 10/10/2024
Received By: MKC
Received From: YANG SON, LLC DBA TREND STYLES SALON
Memo: REZONE
Method of Payment: $200.00 Check No. 1171
Total Received: $200.00

Fee Description	Fee
Zoning Change	200.00

This document signifies receipt of fees in the amount indicated above.

CITY OF SHEBOYGAN

REQUEST FOR CITY PLAN COMMISSION CONSIDERATION

ITEM DESCRIPTION: Conditional use application by Sheboygan County Warming Center to operate a warming center at St. Luke Methodius Church located at 623 Ontario Avenue. UR-12 Zone

REPORT PREPARED BY: Ellise Rose, Associate Planner

REPORT DATE: October 21, 2024 **MEETING DATE:** October 29, 2024

FISCAL SUMMARY:

Budget Line Item:	N/A
Budget Summary:	N/A
Budgeted Expenditure:	N/A
Budgeted Revenue:	N/A

STATUTORY REFERENCE:

Wisconsin Statutes:	N/A
Municipal Code:	N/A

BACKGROUND / ANALYSIS:

Sheboygan County Warming Center is proposing to operate a warming center at St. Luke Methodius Church located at 623 Ontario Avenue. The applicant states the following about the project:

- The proposed use is to provide temporary, safe shelter for adults (over 18) individuals who may be homeless because of emergencies of any kind, including transients who will be housed on an overnight basis pending availability.
- We are using the Fellowship Hall, Parlor and a room on the first floor (Nursery Room), bathrooms and kitchen.
- This site was selected because of location -this church is located down town and in a high traffic area for homeless. The church has a dwindling congregation and adequate space available.
- Guests are welcome to arrive between 6:00 PM and 8:00 PM. After this time, admission will only be granted with a police referral. Once signed in, guests who leave the premises will not be allowed to re-enter.
- A warm meal and a cot for sleeping will be provided, with lights out by 10:00 PM. Wake-up time is at 6:15 AM, followed by a light breakfast. All guests are expected to depart by 7:30 AM.
- The projected number of residents (based on 2023-2024 season) is between 30-45 guests nightly, 3-4 employees and 3-4 volunteers nightly.
- The square footage is: Men’s area 100’ x 30’ Women’s Area 63’ x 48’.

- At this time there are no renovations.
- Signage will be small yard signs.
- Currently the church houses the Community Café, BabyCare and a food pantry. We feel the Warming Center will fit in perfectly as this location already sees many low-income and homeless individuals in this area.
- We will ensure our guests do not congregate outside more than 15 minutes before posted opening times. In inclement weather this location has an area where the guests can wait inside and should not be loitering around the facility.
- There is undeniable need in our Community for a warming center especially in colder months, to protect vulnerable populations, including those without stable housing.
- Much like the Community Cafe and food pantry, the warming center would be managed in a way that minimizes disruption. We will ensure it remains clean, well-supervised, and orderly.
- A warming center contributes to the overall well-being of the community, reducing health risks associated with extreme cold and providing a safe space for those in need.
- This downtown location is where most of our clientele are located. There is plenty of room inside to accommodate anybody that is outdoors during the cold winter months.
- Supporting the City's Vision for a strong, inclusive community we are creating a strong, inclusive community that addresses the needs of all its residents. By providing temporary shelter to individuals experiencing homelessness, our proposal directly contributes to this goal by offering a safe space for vulnerable populations, promoting human dignity, and fostering community well-being. This aligns with the city's vision of inclusiveness and social support for all members of society.
- We are adding in addressing housing and homelessness issues. The Warming Center is providing safe, affordable housing and addressing homelessness. The temporary shelter helps meet an urgent need for emergency housing, especially in response to unforeseen crises. By offering a short-term solution for those facing homelessness, the project supports the city's housing objectives and complements efforts to prevent chronic homelessness.
- Our proposed shelter operates in collaboration with local authorities (e.g., police referrals after hours), contributing to a safer, more structured response to homelessness. This reduces the likelihood of vulnerable individuals remaining unsheltered overnight, which can reduce risks to both the individuals and the broader community. The alignment with public safety goals is evident in the controlled admittance process, managed operating hours, and provision of basic services like meals and sleeping arrangements.
- We feel we are utilizing existing community resources efficiently by making effective use of existing space within the church, a resource already available in the community. Repurposing underutilized spaces within existing structures is often encouraged by city plans, as it reduces the need for new construction and makes efficient use of community assets. This supports the city's goal of sustainable and resource-conscious development.
- We do not believe neighborhood character will be severely affected. Obviously, it will be a higher traffic area before opening and after closing but we do not believe it will have a big impact.

- We believe that this project is in alignment with the neighborhood and the property. Downtown is where many of the homeless are and instead of having them laying on benches or trying to set up other encampments we are housing them in a dignified manner.

STAFF COMMENTS:

The Plan Commission may want to have the applicant address:

- How the warming center interacts with Church activities?
- During what months will the warming center be operated?

ACTION REQUESTED:

Staff recommends approval of the conditional use permit subject to the following conditions:

1. Prior to operation/occupancy of the warming center, the applicant shall obtain an occupancy permit as well as meet all required codes including but not limited to building, plumbing, electrical, HVAC, fire, health, State of Wisconsin, etc. An occupancy permit will be granted only at such time as the applicant has met all requirements.
2. City Development staff will issue a building permit only if the applicant has adequately satisfied all Sheboygan Fire Department issues and/or concerns.
3. The warming center is permitted to operate yearly at St. Luke Methodius Church.
4. This conditional use permit is for the warming center use only. No other temporary use may operate from this facility/site. This use permit is not transferable and any future proposal would require a new conditional use permit to operate from this property.
5. Applicant shall adequately monitor/regulate and maintain this property.
6. In no instance shall the use create a nuisance for neighboring properties (noise, hours of operation, garbage, loitering, etc.).
7. Applicant shall obtain the necessary sign permits prior to installation. If staff has any concerns with proposed signage design, the matter may be brought back to the Plan Commission for their consideration.
8. All new lighting shall be installed per Section 105-932 of the City of Sheboygan Zoning Ordinance. There shall be no spillover light onto adjacent streets and/or properties.
9. Dumpsters shall be screened/enclosed and constructed of like materials and colors of the facility. If using chain link fencing, the applicant shall install Privacy Decorative Slatting (PDS) material in order to effectively screen/enclose the dumpsters. Dumpster enclosure shall be completed prior to issuance of an occupancy permit.
10. Outdoor storage of materials, products or equipment shall be prohibited.
11. If there are to be any renovation to the exterior of the facility, the applicant will be required to obtain approval from the Architectural Review Board prior to receiving a building permit for such renovation.
12. If there are any amendments to the approved use and/or site plan, the applicant will be required to submit a new site plan and/or conditional use application reflecting those amendments.

ATTACHMENTS:

Conditional Use Permit Application and required attachments.

City of Sheboygan spirit on the lake	**CITY OF SHEBOYGAN** **APPLICATION FOR CONDITIONAL USE**	**Fee:** $250.00 **Review Date:** _____ **Zoning:** _____

Read all instructions before completing. If additional space is needed, attach additional pages.

SECTION 1: Applicant/ Permittee Information			
Applicant Name (Ind., Org. or Entity) Sheboygan County Warming Center	Authorized Representative Lizabeth Kroll	Title Board Member	
Mailing Address PO Box 63	City Sheboygan	State WI	ZIP Code 53081
Email Address sheb.co.wc@gmail.com	Phone Number (incl. area code) 920-946-9880		
SECTION 2: Landowner Information (complete these fields when project site owner is different than applicant)			
Applicant Name (Ind., Org. or Entity) St. Luke UMC	Contact Person Ruth Hallstead	Title Pastor	
Mailing Address 623 Ontario Avenue	City Sheboygan	State WI	ZIP Code 53081
Email Address pastor@stluke.net	Phone Number (incl. area code) 920-458-4025		
SECTION 3: Project or Site Location			
Project Address/Description 623 Ontario Avenue, Sheboygan, WI		Parcel No. 59281105980	

SECTION 4: Proposed Conditional Use	
Name of Proposed/Existing Business:	St. Luke United Methodist Church
Existing Zoning:	Urban Residential -12th District
Present Use of Parcel:	Church, Community Cafe,
Proposed Use of Parcel:	Warming Center, Church, Community Cafe
Present Use of Adjacent Properties:	Hotel/Short term home for Co-ops & Interns, Condos

SECTION 5: Certification and Permission

Certification: I hereby certify that I am the owner or authorized representative of the owner of the property which is the subject of this Permit Application. I certify that the information contained in this form and attachments is true and accurate. I certify that the project will be in compliance with all permit conditions. I understand that failure to comply with any or all of the provisions of the permit may result in permit revocation and a fine and/or forfeiture under the provisions of applicable laws.

Permission: I hereby give the City permission to enter and inspect the property at reasonable times, to evaluate this notice and application, and to determine compliance with any resulting permit coverage.

Name of Owner/Authorized Representative (please print)	Title	Phone Number
Ruth Hallstead	Pastor	920-458-4025
Signature of Applicant		Date Signed

Complete application is to be filed with the Department of City Development, 828 Center Avenue, Suite 208. To be placed on the agenda of the City Plan Commission, application must be filed three weeks prior to date of meeting – check with City Development on application submittal deadline date. Applications will not be processed if all required attachments and filing fee of $250 (payable to the City of Sheboygan) are not submitted along with a complete and legible application. Application filing fee is non-refundable.

A. Name of project/development. Sheboygan County Warming Center

B. Summary of the Conditional Use and general operation of proposed use:

• Description of existing use – Used as a Church Fellowship Hall and Community Cafe

• Description of proposed use (indoor, outdoor, etc.), why was this site selected? – Indoor use to provide temporary, safe shelter for adults (over 18) individuals who may be homeless because of emergencies of any kind, including transients who will be housed on an overnight basis pending availability. We are using the Fellowship Hall, Parlor and a room on the first floor (Nursery Room), bathrooms and kitchen. This site was selected because of location -this church is located down town and in a high traffic area for homeless. The church has a dwindling congregation and they adequate space available.

• All services, products, etc. to be provided - Guests are welcome to arrive between 6:00 PM and 8:00 PM. After this time, admission will only be granted with a police referral. Once signed in, guests who leave the premises will not be allowed to re-enter. A warm meal and a cot for sleeping will be provided, with lights out by 10:00 PM. Wake-up time is at 6:15 AM, followed by a light breakfast. All guests are expected to depart by 7:30 AM.

• Projected number of residents, employees, and/or daily customers- Residents (based on 2023-2024 season) between 30-45 guests nightly, 3-4 employees and 3-4 volunteers nightly.

• Proposed number of dwelling units, floor area, landscape area, and parking area expressed in – We anticipate 30-45 guests nightly.

square feet and acreage to the nearest one-hundredth of an acre – the square footage is: Men's area 100' x 30' Womens Area 63' x 48'.

• Description of proposed building and all new site improvements (square footage of new and

existing structure(s), traffic, ingress/egress, parking, sidewalk, retaining walls, storm drainage,

landscaping, lighting, dumpster enclosure, screening of mechanicals, etc.)- NA

• A written description of the proposed general orientation, design, arrangement, texture,

material and color of the building or structure and how it is compatible with the development

and redevelopment in and around the area- NA

• An explanation of any interior and/or exterior renovations – at this time no renovations

• Is access appropriate and is their sufficient customers/resident off-street parking? Yes

• Proposed signage – small yard signs

• Project timeline and estimated value of project – NA

• Compatibility of the proposed use and design with adjacent and other properties in the area. – Currently the church houses the Community Café, BabyCare and a food pantry. We feel the Warming

Center will fit in perfectly as this location already sees many low-income and homeless individuals in this area.

• How will you insure that the business will not become a nuisance to adjacent properties (i.e. parking, noise, smells, hours of operations, etc. – We will ensure our guests do not congregate outside more than 15 minutes before posted opening times. In inclement weather this location has an area where the guests can wait inside and should not be loitering around the facility.

• Other information that would be considered pertinent by the Plan Commission. – There is undeniable need in our Community for a warming center especially in colder months, to protect vulnerable populations, including those without stable housing.

Much like the Community Cafe and food pantry, the warming center would be managed in a way that minimizes disruption. We will ensure it remains clean, well-supervised, and orderly.

A warming center contributes to the overall well-being of the community, reducing health risks associated with extreme cold and providing a safe space for those in need.

C. If applicable, please describe any exceptions/variances that are required for this project (i.e.

setbacks, parking, landscaping, etc.) NA

D. Written justification for the proposed conditional use, indicating reasons why the applicant believes the proposed conditional use is appropriate: - This downtown location where most of our clientele are located. Plenty of room inside to accommodate anybody that is outdoors during the cold winter months.

a) How is the proposed conditional use (independent of its location) in harmony with the purposes, goals, objectives, policies and standards of the City of Sheboygan Comprehensive Master Plan? –

Supporting the City's Vision for a strong, inclusive community we are creating a strong, inclusive community that addresses the needs of all its residents. By providing temporary shelter to individuals experiencing homelessness, our proposal directly contributes to this goal by offering a safe space for vulnerable populations, promoting human dignity, and fostering community well-being. This aligns with the city's vision of inclusiveness and social support for all members of society.

We are adding in addressing housing and homelessness issues. The Warming Center is providing safe, affordable housing and addressing homelessness. The temporary shelter helps meet an urgent need for emergency housing, especially in response to unforeseen crises. By offering a short-term solution for those facing homelessness, the project supports the city's housing objectives and complements efforts to prevent chronic homelessness.

Our proposed shelter operates in collaboration with local authorities (e.g., police referrals after hours), contributing to a safer, more structured response to homelessness. This reduces the likelihood of vulnerable individuals remaining unsheltered overnight, which can reduce risks to both the individuals and the broader community. The alignment with public safety goals is evident in the controlled admittance process, managed operating hours, and provision of basic services like meals and sleeping arrangements.

We feel we are utilizing existing community resources efficiently by making effective use of existing space within the church, a resource already available in the community. Repurposing underutilized

spaces within existing structures is often encouraged by city plans, as it reduces the need for new construction and makes efficient use of community assets. This supports the city's goal of sustainable and resource-conscious development.

b) Does the conditional use, in its proposed location, result in any substantial or undue adverse impact on nearby property the character of the neighborhood, environment, traffic, public improvements, public property or rights-of-way? - No, we do not believe it will be severely affected. Obviously, it will be a higher traffic area before opening and after closing but we do not believe it will have a big impact.

c) How does the proposed conditional use maintain the desired consistency of land uses in relation to the setting within which the property is located? – We believe it is in alignment with the neighborhood and the property. Downtown is where many of the homeless are and instead of having them laying on benches or trying to set up other encampments we are housing them in a dignified manner.

d) Is the proposed conditional use located in an area that will be adequately served by utilities, or services provided by public agencies- Yes, it does.

CITY OF SHEBOYGAN

REQUEST FOR CITY PLAN COMMISSION CONSIDERATION

ITEM DESCRIPTION: Conditional Use application by The Towers, LLC to construct a new 135'-10" high communication tower at 2219 Sauk Trail Road. UI Zone

REPORT PREPARED BY: Ellise Rose, Associate Planner

REPORT DATE: October 21, 2024 **MEETING DATE:** October 29, 2024

FISCAL SUMMARY:

Budget Line Item:	N/A
Budget Summary:	N/A
Budgeted Expenditure:	N/A
Budgeted Revenue:	N/A

STATUTORY REFERENCE:

Wisconsin Statutes:	N/A
Municipal Code:	N/A

BACKGROUND / ANALYSIS:

The Tower, LLC is proposing to construct a new 135'-10" high communication tower at 2219 Sauk Trail Road. The applicant states the following about the proposed project:

- The existing use of this space is a grass/gravel area for the current business (Four Seasons Property Service, LLC).
- The proposed use is a cell tower to provide cellular coverage for the City of Sheboygan. Tower and compound are designed for up to 3 total carriers.
- The project includes a new monopole in a new 50'x50' chain link fence compound. Verizon Wireless to collocate on tower and inside compound.
- Antenna center will be at 120'
- Ground equipment located in southwest corner of compound.

The biggest concern with any tower proposal is the potential for collapse and potential life safety issues to adjoining properties and structures. The applicant has provided a fall certification letter from Brandon Sevier, P.E. from B&T Engineering, Inc., stamped by professional engineer Brad Milanowski, that states:

- It is our understanding that this Monopole structure will be designed such that, if a failure were to occur due to a significant storm or other event, the pole would fall within a radius

of 30’ from the base of the structure. Although the pole would not be designed to fail, stronger sections that required by analysis would be provided in the lower sections of the pole, resulting in an increased safety factor in the lower sections. In the highly unlikely event that this pole were to experience operational failure due to catastrophic wind loading, the design would enable the pole to fail through compression buckling. Failure in this manner would result in the upper portion of the pole buckling and folding over the lower portion, resulting in a fall radius of 30’ from the base of the pole.

- It should be understood that this opinion does not consider unpredictable extreme catastrophic events for which the structure is not designed. However, any damage to surrounding property caused by the pole failing during such an event would be relatively insignificant when compared to the damage caused to the surrounding property by the event itself.

ACTION REQUESTED:

Staff recommends approval of the conditional use permit subject to the following conditions:

1. The applicant shall obtain all necessary permits/licenses from all required agencies to construct the communications tower, associated mechanical equipment, fencing, paving, etc. as proposed.
2. Submittal and approval of a proposed storm drainage plan prior to building permit issuance.
3. The applicant shall pave the parking and/or access drives that lead to the tower.
4. Applicant shall design the tower based on the engineering documentation that was used concerning the towers design and buckling capabilities.
5. The wireless communication tower and equipment shall be properly maintained.
6. Towers shall have a non-reflective surface and a neutral color that is the same or similar color as the supporting structure to be as visually unobtrusive as possible, or, if required by the FAA, be painted pursuant to the FAA’s requirements.
7. If the tower has been discontinued for a period of six consecutive months or longer it is hereby declared “abandoned.” If there are two or more users of this wireless telecommunications tower, then this abandonment is not effective until all users cease using this wireless telecommunications tower.
8. Abandoned facilities, as defined in condition 7 above, shall be removed by the property owner within ninety (90) days from date of abandonment. If the wireless telecommunications tower is not removed within said ninety (90) days, the City may remove the wireless telecommunications tower at the property owner’s expense.
9. Any future installations and/or providers wishing to collocate on this wireless telecommunications tower or modify existing equipment shall be required to obtain the appropriate collocation permit prior to installation and operation.

ATTACHMENTS:

Conditional Use Permit Application and required attachments.

October 3, 2024

Planning & Development
City of Sheboygan City Hall
828 Center Avenue, Suite 208
Sheboygan, WI 53081
(920) 459-3377
development@sheboyganwi.gov

SUBJECT: ZONING APPLICATION COVER LETTER FOR PARCEL # 59281425610

To Whom It May Concern:

I am writing this letter to inform you that Ramaker & Associates, Inc. is submitting this application on behalf of The Towers, LLC. I have included with this cover letter the enclosures listed at the bottom of this letter. Please direct any zoning related questions, concerns, and/or requests to the individual listed below.

Brad Witmer
(608) 644-2241
bwitmer@ramaker.com

Please note, per Wisconsin State Statute 66.0404(2)(d), we consider this application as complete upon receipt unless we are otherwise notified. Please feel free to call or email should you have any questions and/or concerns.

Sincerely,

Chad Morgan
Project Manager
Ramaker & Associates, Inc.

Enclosures:
Application
Check for Application Fees ($3,000)
Construction Drawings
Mount Analysis
FAA DNH
FCC Letter
Verizon Affidavit including Project Narrative
Tower Inventory
Fall Certified Letter
NTP

City of Sheboygan spirit on the lake	**CITY OF SHEBOYGAN APPLICATION TO OBTAIN A ZONING PERMIT FOR COLLOCATION OR EQUIPMENT MODIFICATION ON AN EXISTING COMMUNICATION TOWER OR CONSTRUCTION OF A NEW COMMUNICATION TOWER**	**Fee:** _____ **Review date:** _____

Read all instructions before completing. If additional space is needed, attach additional pages.

SECTION 1: Tower Owner Information

Name (Ind., Org. or Entity)	Authorized Representative	Title	
The Towers, LLC	Daniel Kalina	Project Manager	
Mailing Address	**City**	**State**	**ZIP Code**
750 Park of Commerce Drive, Suite 200	Boca Raton	FL	33487
Email Address	**Phone Number (incl. area code)**		
daniel.kalina@verticalbridge.com	(630) 946-7741		

SECTION 2: Applicant Information

Name (Ind., Org. or Entity)	Contact Person	Title	
The Towers, LLC	Daniel Kalina	Project Manager	
Mailing Address	**City**	**State**	**ZIP Code**
750 Park of Commerce Drive, Suite 200	Boca Raton	FL	33487
Email Address	**Phone Number (incl. area code)**		
daniel.kalina@verticalbridge.com	(630) 946-7741		

SECTION 3: Property Owner Information

Name	Contact Person		
Matthew J & Lisa A Dross	Matthew Dross		
Mailing Address	**City**	**State**	**Zip**
N6425 Sherry Ln	Sheboygan	WI	53083
Email Address	**Phone Number (incl. area code)**		
md75@sbcglobal.net	(920) 912-8020		

SECTION 4: Description of the Subject Site/Proposed Project

☐ COLLOCATION OR EQUIPMENT MODIFICATION
☒ NEW TOWER

Name of Proposed/Existing Business:
The Towers, LLC/Four Seasons Property Service, LLC

Address of Affected Property:	Parcel Number:
2219 Sauk Trail Rd., Sheboygan, WI 53083	59281425610

Brief Description of Existing Operation or Use:
Existing grass/gravel area for current business (Four Seasons Property Service, LLC).

Brief Description of Proposed Operation or Use:
Cell tower to provide cellular coverage for the City of Sheboygan. Tower and compound are designed for up to 3 total carriers.

SECTION 5: Tower Information (Monopole, Self-Support Lattice, Guyed)

Brief Description of type of structure: Monopole Tower

Current Tower Height Above Ground Level: 135'-10"

Maximum Tower Height (Design Potential): 155'-10"

Base/Ground Elevation: 640' AMSL

Number of Carriers Currently on Tower: 1

Maximum Number of Carriers (Design Potential): 3

Proposed Tower/Equipment Modification (Brief Description):

New monopole in a new 50'x50' chain link fence compound. Verizon Wireless to collocate on tower and inside compound.

SECTION 6: Collocation Information

Location and Height of Proposed Collocation:

Antenna center at 120'. Ground equipment located in southwest corner of compound.

Provide information about existing collocation spots and carriers (if any). Please provide carrier name and their height on the tower:

120'-0" - Verizon Wireless
110'-0" - No Carrier
100'-0" - No Carrier

SECTION 7: Communication Tower Collocation/Modification Project Narrative

In a separate letter, please describe the proposed collocation/equipment modification project. Explain why the site was selected, the objectives of the project (such as fill coverage gap, install new updated equipment, etc.) and timeline for completion. If the proposal is part of a project to update equipment at other sites in the city, please describe the larger project. Applicant may want to attach a separate word document for the required narrative.

SECTION 5: Certification and Permission

Certification: I hereby certify that I am the owner or authorized representative of the owner of the property which is the subject of this Zoning Permit Application. I certify that the information contained in this form and attachments are true and accurate. I certify that the project will be in compliance with all conditions. I understand that failure to comply with any or all of the provisions of the permit may result in permit revocation and a fine and/or forfeiture under the provisions of applicable laws.

Permission: I hereby give the City permission to enter and inspect the property at reasonable times, to evaluate this notice and application, and to determine compliance with any resulting permit coverage.

Name of Owner/Authorized Representative (please print)	Title	Phone Number
Chad Morgan o/b/o The Towers, LLC	Project Manager	(608) 644-2250

Signature of Applicant	Date Signed
Chad Morgan	10/03/2024

Complete application is to be filed with the Department of City Development, 828 Center Avenue, Suite 208. If required to be placed on the agenda of the City Plan Commission, application must be filed three weeks prior to date of meeting – check with City Development on application submittal deadline date. Applications will not be processed if all required attachments and filing fee (payable to the City of Sheboygan) are not submitted along with a complete and legible application. Application filing fee is non-refundable.

RAMAKER
employee-owned

September 12, 2024

Planning & Development
City of Sheboygan
City Hall
828 Center Avenue, Suite 208
Sheboygan, WI 53081
(920) 459-3377
development@sheboyganwi.gov

SUBJECT: FCC LICENSE AND REGISTRATION NUMBERS (US-WI-5737 – Business Drive)

To Whom It May Concern:

The FCC does not require each antenna structure to be registered. The FCC requires an antenna structure must be registered in the FCC's Antenna Structure Registration (ASR) system if the antenna structure is more than 200 feet above the ground level or may interfere with the flight path of a nearby airport unless it meets an exception criteria outlined in 47 CFR17.7(e).

The proposed antenna structure is 125'-10" above ground level with a10'-0" tall lightning rod attached to the top; the total tower height will be 135'-10" above ground level. A DETERMINATION OF NO HAZARD TO AIR NAVIGATION 2024-AGL-8000-OE was completed by the FAA on 07/30/2024. The proposed antenna structure was run through TOWAIR and the results returned as follows. "Structure does not require registration. There are no airports within 8 kilometers (5 miles) of the coordinates you provided." With the above facts, it was deemed a FCC license and/or registration is not applicable for the proposed antenna structure.

Please feel free to call or email if you have any questions and/or comments.

Sincerely,

Chad Morgan

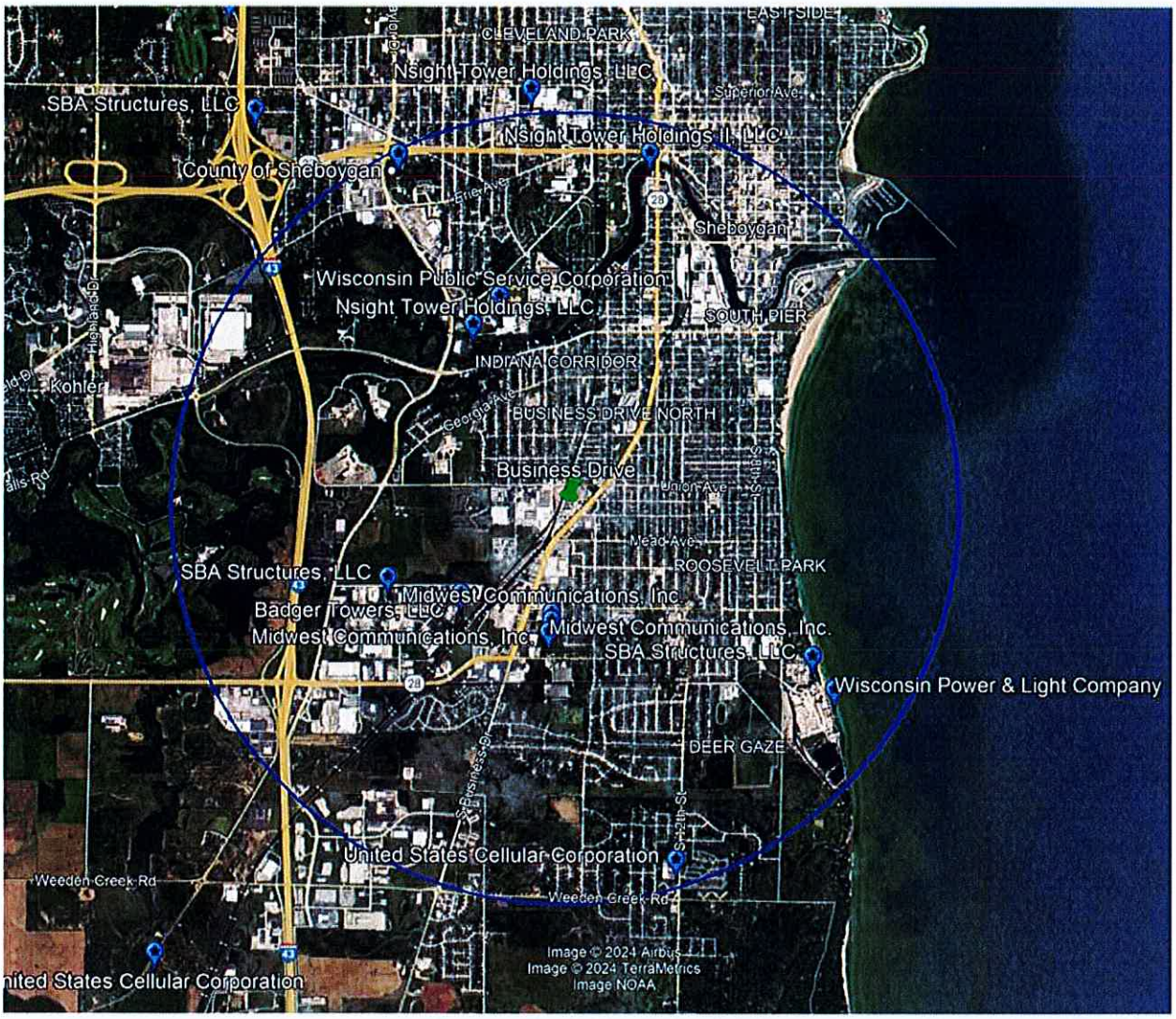
Chad Morgan
Project Manager
Ramaker & Associates, Inc.

RAMAKER
employee-owned

Tower Inventory (2-Mile Radius)

Site address: 2219 Sauk Trail Rd., Sheboygan, WI 53083
Site Name: US-WI-5737 – Business Drive

Map



FCC Antenna Structure Registration Study Results

Proposed tower location: Green Pin

Two-mile radius around proposed tower location: Blue circle

Latitude:	43° 43' 49.32" North (43.730367°)
Longitude:	87° 43' 56.23" West (-87.732286°)
Parcel ID:	59281425610
Jurisdiction:	City of Sheboygan

Existing tower locations: Blue Stars

Midwest Communications, Inc. tower:

FCC Registration:	1034761
Latitude:	43° 43' 16.00" North (43.721111°)
Longitude:	87° 44' 01.00" West (-87.733611°)
Tower Height:	89.0 meters AGL (292.0 feet AGL)
Distance to Proposed:	0.64 miles

Midwest Communications, Inc. tower:

FCC Registration:	1034762
Latitude:	43° 43' 14.00" North (43.720556°)
Longitude:	87° 44' 01.00" West (-87.733611°)
Tower Height:	89.0 meters AGL (292.0 feet AGL)
Distance to Proposed:	0.68 miles

Midwest Communications, Inc. tower:

FCC Registration:	1034763
Latitude:	43° 43' 11.00" North (43.719722°)
Longitude:	87° 44' 02.00" West (-87.733889°)
Tower Height:	89.0 meters AGL (292.0 feet AGL)
Distance to Proposed:	0.74 miles

Badger Towers LLC tower:

FCC Registration:	1042752
Latitude:	43° 43' 21.00" North (43.722500°)
Longitude:	87° 44' 34.00" West (-87.742778°)
Tower Height:	57.9 meters AGL (190.0 feet AGL)
Distance to Proposed:	0.75 miles

Nsight Tower Holdings, LLC tower:

FCC Registration:	1280489
Latitude:	43° 44' 31.60" North (43.742111°)
Longitude:	87° 44' 29.80" West (-87.741611°)
Tower Height:	30.5 meters AGL (100.1 feet AGL)

Distance to Proposed: 0.93 miles

SBA Structures, LLC tower:
FCC Registration: 1048876
Latitude: 43° 43' 25.30" North (43.723694°)
Longitude: 87° 45' 00.70" West (-87.750194°)
Tower Height: 57.0 meters AGL (187.0 feet AGL)
Distance to Proposed: 1.01 miles

Wisconsin Public Service Corporation tower:
FCC Registration: 1307067
Latitude: 43° 44' 38.90" North (43.744139°)
Longitude: 87° 44' 20.10" West (-87.738917°)
Tower Height: 60.7 meters AGL (199.1 feet AGL)
Distance to Proposed: 1.01 miles

SBA Structures, LLC tower:
FCC Registration: 1227847
Latitude: 43° 43' 04.70" North (43.717972°)
Longitude: 87° 42' 25.90" West (-87.707194°)
Tower Height: 61.0 meters AGL (200.1 feet AGL)
Distance to Proposed: 1.52 miles

Wisconsin Power & Light Company tower:
FCC Registration: 1035401
Latitude: 43° 42' 56.00" North (43.715556°)
Longitude: 87° 42' 18.00" West (-87.705000°)
Tower Height: 167.0 meters AGL (547.9 feet AGL)
Distance to Proposed: 1.71 miles

Nsight Tower Holdings, LLC tower:
FCC Registration: 1288098
Latitude: 43° 45' 16.70" North (43.754639°)
Longitude: 87° 43' 25.30" West (-87.723694°)
Tower Height: 18.3 meters AGL (60.0 feet AGL)
Distance to Proposed: 1.73 miles

County of Sheboygan tower:
FCC Registration: 1297511
Latitude: 43° 45' 16.30" North (43.754528°)
Longitude: 87° 44' 57.10" West (-87.749194°)
Tower Height: 79.0 meters AGL (259.2 feet AGL)
Distance to Proposed: 1.87 miles

United States Cellular Corporation tower:
FCC Registration: 1244115
Latitude: 43° 42' 11.20" North (43.703111°)

Longitude:	87° 43' 15.40" West (-87.720944°)
Tower Height:	41.1 meters AGL (134.8 feet AGL)
Distance to Proposed:	1.97 miles

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No
2024-AGL-8000-OE

Item 10.

Issued Date: 07/30/2024

Julie Heffernan
The Towers, LLC
7500 Park of Commerce Dr
Suite 200
Boca Raton, FL 33487

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Antenna Tower US-WI-5737 - Business Drive
Location:	Sheboygan, WI
Latitude:	43-43-49.32N NAD 83
Longitude:	87-43-56.23W
Heights:	640 feet site elevation (SE)
	135 feet above ground level (AGL)
	775 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

Emissions from this site must be in compliance with the parameters set by collaboration between the FAA and telecommunications companies and reflected in the FAA 5G C band compatibility evaluation process (such as power, frequencies, and tilt angle). Operational use of this frequency band is not objectionable provided the Wireless Providers (WP) obtain and adhere to the parameters established by the FAA 5G C band compatibility evaluation process. **Failure to comply with this condition will void this determination of no hazard.**

See attachment for additional condition(s) or information.
Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 01/30/2026 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the appl

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Communications Commission (FCC) because the structure is subject to their licensing authority.

If we can be of further assistance, please contact our office at (817) 222-4832, or Michael.J-CTR.Costanzi@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AGL-8000-OE.

Signature Control No: 623986182-628639707 (DNE)
Michael Costanzi
Technician

Attachment(s)
Additional Information
Frequency Data
Map(s)

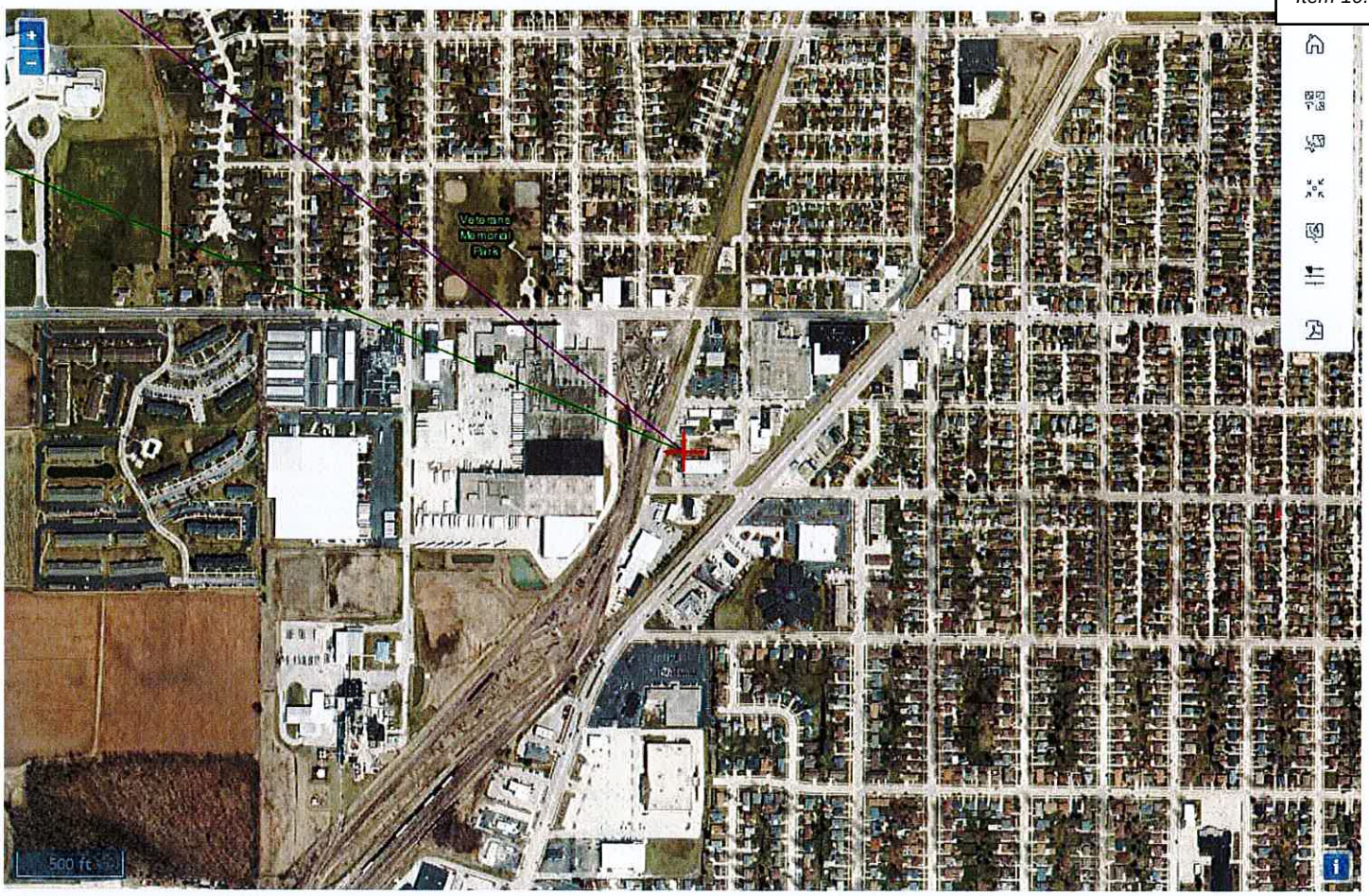
cc: FCC

***The FAA recognizes emissions in 3.7-3.98 GHz at this location will result in Electromagnetic Interference (EMI) as described in Airworthiness Directives (AD) 2021-23-12 and 2021-23-13. NAS services including airport and helicopter operations within a radius of 42 NM will be impacted by 5G RF emissions. Operational use of this frequency band is not objectionable provided the Wireless Providers obtain and adhere to the parameters established by the FAA 5G C band compatibility evaluation process.

Frequency Data for ASN 2024-AGL-8000-OE

LOW FREQUENCY	HIGH FREQUENCY	FREQUENCY UNIT	ERP	ERP UNIT
6	7	GHz	55	dBW
6	7	GHz	42	dBW
10	11.7	GHz	55	dBW
10	11.7	GHz	42	dBW
17.7	19.7	GHz	55	dBW
17.7	19.7	GHz	42	dBW
21.2	23.6	GHz	55	dBW
21.2	23.6	GHz	42	dBW
614	698	MHz	2000	W
614	698	MHz	1000	W
698	806	MHz	1000	W
806	901	MHz	500	W
806	824	MHz	500	W
824	849	MHz	500	W
851	866	MHz	500	W
869	894	MHz	500	W
896	901	MHz	500	W
901	902	MHz	7	W
929	932	MHz	3500	W
930	931	MHz	3500	W
931	932	MHz	3500	W
932	932.5	MHz	17	dBW
935	940	MHz	1000	W
940	941	MHz	3500	W
1670	1675	MHz	500	W
1710	1755	MHz	500	W
1850	1910	MHz	1640	W
1850	1990	MHz	1640	W
1930	1990	MHz	1640	W
1990	2025	MHz	500	W
2110	2200	MHz	500	W
2305	2360	MHz	2000	W
2305	2310	MHz	2000	W
2345	2360	MHz	2000	W
2496	2690	MHz	500	W
3700	3980	MHz	3280	W

Verified Map for ASN 2024-AGL-8000-OE



July 19, 2024

Daniel Kalina
The Towers, LLC
750 Park Of Commerce Drive, Suite 200
Boca Raton, Florida 33487

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

Subject: **Fall Certification Letter**
Arcosa Designation: **Arcosa Project Number:** B104
Arcosa Site Name: Business Drive (US-WI-5737)
Engineering Firm Designation: **B+T Project Number:** 172029.001.01.0001

Site Data: **Business Drive (US-WI-5737)**
125' ext 145' Monopole

To Whom it May Concern:

As Requested by Arcosa Telecom Structures on behalf of VB BTS, LLC, B+T Group is pleased to submit this "Fall Certification Letter" for the 125' ext 145' Monopole to be constructed at the **Business Drive (US-WI-5737)** site.

This pole will be designed in accordance with the TIA 222-H standard for Sheboygan County, WI. The pole will be designed to support antennas and transmission lines for four wireless carriers. The design criteria are more particularly described as follows:

Design Wind Speed: 106mph 3-sec gust (no ice), 40mph 3-sec gust (1.5" ice)
Structure Class: II
Exposure Category: C
Topographic Category: 1

140'—Wireless Carrier 1 FUTURE (CaAa= 30,000 sq in w/ (12) 1 5/8" transmission lines
120'—Wireless Carrier 2 (CaAa= 42,000 sq in w/ (18) 1 5/8" transmission lines
109'—Wireless Carrier 3 (CaAa= 30,000 sq in w/ (12) 1 5/8" transmission lines
99'—Wireless Carrier 4 (CaAa= 30,000 sq in w/ (12) 1 5/8" transmission lines

It is our understanding that this Monopole structure will be designed such that, if a failure were to occur due to a significant storm or other event, the pole would fall within a radius of 30' from the base of the structure. Although the pole would not be designed to fail, stronger sections that required by analysis would be provided in the lower sections of the pole, resulting in an increased safety factor in the lower sections. In the highly unlikely event that this pole were to experience operational failure due to catastrophic wind loading, the design would enable the pole to fail through compression buckling. Failure in this manner would result in the upper portion of the pole buckling and folding over the lower portion, resulting in a fall radius of 30' from the base of the pole.
It should be understood that this opinion does not consider unpredictable extreme catastrophic events for which the structure is not designed. However, any damage to surrounding property caused by the pole failing during such an event would be relatively insignificant when compared to the damage caused to the surrounding property by the event itself.

Please contact us should you have any questions concerning the safety and design of the monopole.

Letter prepared by: Brandon Sevier, P.E.
Submitted by: B&T Engineering, Inc.

Brad Milanowski, P.E.
Engineer of Record

WISCONSIN
BRAD R. MILANOWSKI
E-44812-6
TULSA
OK
PROFESSIONAL ENGINEER
7/19/2024

verizon

PJF PAUL J. FORD & COMPANY

Paul J. Ford and Company
250 East Broad Street Suite 600
Columbus, OH 43215
(614) 221-6679
PJFmount@pauljford.com

New Antenna Mount Analysis Report and PMI Requirements

Mount Analysis

SMART Tool Project #: 10240076

Paul J. Ford Project #: A24324-1180.001.7195

June 27, 2024

Site Information	*Site ID:*	*5000954019-VZW / BUSINESS DRIVE*
	Site Name:	*BUSINESS DRIVE*
	Carrier Name:	*Verizon Wireless*
	Address:	*2219 Sauk Trail Road Sheboygan, Wisconsin 53083, Sheboygan County*
	Latitude:	*43.730365°*
	Longitude:	*-87.732356°*
Structure Information	*Tower Type:*	*125-Ft Monopole*
	Mount Type:	*12.50-Ft Platform W/ Support Rails*

FUZE ID # 2612115

Analysis Results

12.50-Ft Platform W/ Support Rails: **20.2% Pass w/ New Install** (RMQP-4096-HK)

***Antennas and equipment to be installed in compliance with PMI Requirements of this mount analysis.**

******Contractor PMI Requirements*:**
Included at the end of this MA report
Available & Submitted via portal at https://pmi.vzwsmart.com
For additional questions and support, please reach out to:
pmisupport@pauljford.com

Report Prepared By: Rebekah M Dorris, PE

RMD

06/27/2024

Executive Summary:

The objective of this report is to determine the capacity of the proposed antenna support mount at the subject facility for the final wireless telecommunications configuration, per the applicable codes and standards. The proposed mount was assumed to be installed properly to the existing tower per the manufacturer's instructions. Paul J. Ford and Company cannot verify that the proposed mount will fit properly and is not liable for any fit-up issues during installation.

This analysis is inclusive of the mount structure only and does not address the structural capacity of the supporting structure. This mounting frame was not analyzed as an anchor attachment point for fall protection. All climbing activities are required to have a fall protection plan completed by a competent person.

Sources of Information:

Document Type	**Remarks**
Radio Frequency Data Sheet (RFDS)	*Verizon RFDS, 2612115, dated 5/13/2024*
Mount Specification	*RMQP-4096-HK,*

Analysis Criteria:

Codes and Standards:	ANSI/TIA-222-H	
Wind Parameters:	Basic Wind Speed (Ultimate 3-sec. Gust), V_{ULT}:	106 mph
	Ice Wind Speed (3-sec. Gust):	40 mph
	Design Ice Thickness:	1.50 in
	Risk Category:	II
	Exposure Category:	C
	Topographic Category:	1
	Topographic Feature Considered:	N/A
	Topographic Method:	N/A
	Ground Elevation Factor, K_e:	0.977
Seismic Parameters:	S_S:	0.060 g
	S_1:	0.041 g
Maintenance Parameters:	Wind Speed (3-sec. Gust):	30 mph
	Maintenance Live Load, Lv:	250 lbs.
	Maintenance Live Load, Lm:	500 lbs.
Analysis Software:	RISA-3D (V17.0.3)	

Final Loading Configuration:

The following equipment has been considered for the analysis of the mounts:

Mount Elevation (ft)	Equipment Elevation (ft)	Quantity	Manufacturer	Model	Status
120.00+/-	120.00	3	Ericsson	AIR 6419 B77	Added
		6	Commscope	NHH-65B-R2B	
		3	Ericsson	Radio 4890	
		3	Ericsson	Radio 4490	
		3	Raycap	RVZDC-3315-PF-48	

It is acceptable to install up to any three (3) of the OVP model numbers listed below as required at any location other than the mount face without affecting the structural capacity of the mount. If OVP units are installed on the mount face, a mount re-analysis may be required.

Model Number	Ports	AKA
RHSDC-1064-PF-48	2	OVP-2
RC3DC-3315-PF-48	6	OVP-6
RC3DC-3300-PF-48	6	OVP-6
RC3DC-4750-PF-48	6	OVP-6
RHSDC-6627-PF-48	12	OVP-12
RHSDC-6600-PF-48	12	OVP-12

Standard Conditions:

1. All engineering services are performed on the basis that the information provided to Paul J. Ford and Company and used in this analysis is current and correct. The existing equipment loading has been applied at locations determined from the supplied documentation. Any deviation from the loading locations specified in this report shall be communicated to Paul J. Ford and Company to verify deviation will not adversely impact the analysis.

2. Mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer's specifications.

3. For mount analyses completed from other data sources (including new replacement mounts) and not specifically mapped in accordance with the NSTD-446 Standard, the mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer's specifications.

4. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.

5. The mount was checked up to, and including, the bolts that fasten it to the mount collar/attachment and threaded rod connections in collar members if applicable. Local deformation and interaction between the mount collar/attachment and the supporting tower structure are outside the scope of this analysis.

6. All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. Paul J. Ford and Company is not responsible for the conclusion, opinions, and recommendations made by others based on the information supplied.

7. Structural Steel Grades have been assumed as follows, if applicable, unless otherwise noted in this analysis:
   - Channel, Solid Round, Angle, Unistrut — ASTM A53 (GR 35)
   - Pipe — ASTM A53 (GR 35)
   - HSS (Rectangular), Plate — Q235 Gr B (Fy = 34 ksi, Fu = 58 ksi)
   - HSS (Round) — ASTM A53 (GR 35)
   - Connection Bolts — ASTM A325
   - Threaded Rods — SAE J429 (GR2)
   - U-Bolts — SAE J429 (GR2)

Discrepancies between in-field conditions and the assumptions listed above may render this analysis invalid unless explicitly approved by Paul J. Ford and Company.

Analysis Results:

Component	Utilization %	Pass/Fail
Face Horizontals	*10.3%*	*Pass*
Support Rails	*6.6%*	*Pass*
Grating Support Members	*11.9%*	*Pass*
Standoff Members	*20.2%*	*Pass*
Kick-Brace	*9.5%*	*Pass*
Corner Plates	*13.5%*	*Pass*
Mount Pipes	*11.5%*	*Pass*
Mount to Tower Connection	*16.7%*	*Pass*

Structure Rating – *(Controlling Utilization of all Components)*	**20.2%**

Mount Connection Envelope Reactions:

Connection Description	Elev. AGL (Ft)	Node Label	Envelope Wind Reactions				Envelope Wind + Ice Reactions			
			Axial (Lbs)	Lateral (Lbs)	Moment (K-Ft)	Torsion (K-Ft)	Axial (Lbs)	Lateral (Lbs)	Moment (K-Ft)	Torsion (K-Ft)
Sector A standoff	121.5	N65	452	3011	0.587	0.969	1169	3910	1.469	0.274
Sector B Standoff	121.5	N172 A	406	2950	0.600	0.898	998	3899	1.408	0.265
Sector C Standoff	121.5	N176 A	402	2943	0.598	0.879	989	3887	1.395	0.260
A Kick brace	189.5	N172C	755	1523	0.000	0.000	1793	3620	0.000	0.000
B Kick brace	189.5	N4_1	755	1522	0.000	0.000	1788	3610	0.000	0.000
C Kick brace	189.5	N7	747	1504	0.000	0.000	1790	3613	0.000	0.000

Notes:
- Axial loads act along the axis of the tower leg
- Lateral reactions act perpendicular to the tower leg
- Moment loads introduce bending moment to the tower leg
- Torsion loads introduce twisting moment to the tower leg

Mount Steel (EPA)a per ANSI/TIA-222-H Section 2.6.11.2:

Ice Thickness (In)	Mount Pipes Excluded		Mount Pipes Included	
	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)
0	28.1	28.1	50.7	50.7
0.5	36.4	36.4	67.1	67.1
1	44.0	44.0	82.8	82.8

Notes:
- (EPA)a values listed above may be used in the absence of more precise information
- (EPA)a values in the table above include 3 sector(s).
- Ka factors included in (EPA)a calculations

Requirements:

The proposed antenna mounts are **SUFFICIENT** for the final loading configuration (attachment 2) upon completion of the mount replacement (attachment 3) and requirements below.

- Contractor shall install the proposed mount (SitePro1 Part # RMQP-4096-HK) in accordance with manufacture specification and the New Mount Sketch. Contact EOR if these documents are not available.
- Contractor shall install (3) 48" P2.0 STD mount pipes 1'-0" from mount collar on standoff. (3) VZWSMART-MSK6 kit will be required for installation.
- Contractor shall install wire rope guide

ANSI/ASSP rigging plan review services compliant with the requirements of ANSI/TIA 322 are available for a Construction Class IV site or other, if required. Separate review fees will apply.

Attachments:

1. **Contractor Required Post Installation Inspection (PMI) Report Deliverables**
2. Antenna Placement Diagrams
3. Mount Manufacturer Drawings
4. Analysis Calculations

Mount Desktop – Post Modification Inspection (PMI) Report Requirements

Documents & Photos Required from Contractor – New Mount Passing MA

Electronic pdf version of this can be downloaded at https://pmi.vzwsmart.com
For additional questions and support, please reach out to pmisupport@pauljford.com

MDG #: 5000954019 SMART Project #: 10240076 Fuze Project ID: 2612115

Purpose – to provide SMART Tool structural vendor the proper documentation in order to complete the required Mount Desktop review of the Post Modification Inspection Report.

- Contractor is responsible for making certain the photos provided as noted below provide confirmation that the installation was completed in accordance with this Passing Mount Analysis.
- Contractor shall relay any data that can impact the performance of the mount, this includes safety issues.

Base Requirements:

- If installation will cause damage to the structure, the climbing facility, or safety climb if present or any installed system, SMART Tool vendor to be notified prior to install. Any special photos outside of the standard requirements will be indicated on the drawings.
- Provide "as built mount drawings" showing contractor's name, contact information, preparer's signature, and date. Any deviations from the drawings (Proposed modification) shall be shown. NOTE: If loading is different than what is conveyed in the passing mount analysis (MA) contact the SMART Tool vendor immediately.
- Each photo should be time and date stamped.
- Photos should be high resolution.
- Contractor shall ensure that the safety climb wire rope is supported and not adversely impacted by the install of the modification components. This may involve the install of wire rope guides, or other items to protect the wire rope. If there is conflict, contact the SMART Tool engineer for recommendations.
- The PMI can be accessed at the following portal: ***https://pmi.vzwsmart.com***

Photo Requirements:

- *Photos taken at ground level*
  - Photo of Gate Signs showing the tower owner, site name, and number.
  - Overall tower structure after installation.
  - Photos of the mount after installation; if the mounts are at different rad elevations, pictures must be provided for all elevations that equipment was installed.
- *Photos taken at Mount Elevation*
  - Photos showing the safety climb wire rope above and below the mount prior to installation.
  - Photos showing the climbing facility and safety climb if present.
  - Photos showing each individual sector after installation of mounts. Each entire sector shall be in one photo to show the interconnection of members.

- These photos shall also certify that the placement and geometry of the equipment on the mount is as depicted in the antenna placement diagram in this form.
- Photos that show the model number of each antenna and piece of equipment installed per sector.
- Photos of each installed mount; pictures shall also include connection hardware (U-bolts, bolts, nuts, all-threaded rods, etc.)
- Photos showing the installed mount elevation.

Antenna & Equipment Placement and Geometry Confirmation:

- The contractor shall certify that the antenna & equipment placement and geometry is in accordance with the sketch and table as included in the mount analysis and noted below.

☐ The contractor certifies that the photos support and the equipment on the mount is as depicted on the sketch and table included in this form and with the mount analysis provided.

OR

☐ The contractor notes that the equipment on the mount is not in accordance with the sketch and has noted the differences below and provided photo documentation of any alterations.

Special Instructions / Validation as required from the MA or any other information the contractor deems necessary to share that was identified:

Issue:

- Contractor shall install the proposed mount (SitePro1 Part # RMQP-4096-HK) in accordance with manufacture specification and the New Mount Sketch. Contact EOR if these documents are not available.
- Contractor shall install (3) 48" P2.0 STD mount pipes 1'-0" from mount collar on standoff. (3) VZWSMART-MSK6 kit will be required for installation.
- Contractor shall install wire rope guide

Response:

Special Instruction Confirmation:

☐ The contractor has read and acknowledges the above special instructions.

Contractor certifies that the climbing facility / safety climb was not damaged prior to starting work:

☐ Yes ☐ No

Contractor certifies no new damage created during the current installation:

☐ Yes ☐ No

Contractor to certify the condition of the safety climb and verify no damage when leaving the site:

☐ Safety Climb in Good Condition ☐ Safety Climb Damaged

Comments:

New Mount Certification:

☐ The contractor certifies that the New Mount installed is as specified in the Passing Mount Analysis.

☐ The contractor notes that the New Mount installed is not as specified and engineering approval was received for the New Mount installed.

Contractor to provide measurement from top of the highest equipment/steel to the bottom of the lowest equipment/steel by documenting it using the most appropriate illustration below along with supporting photos:

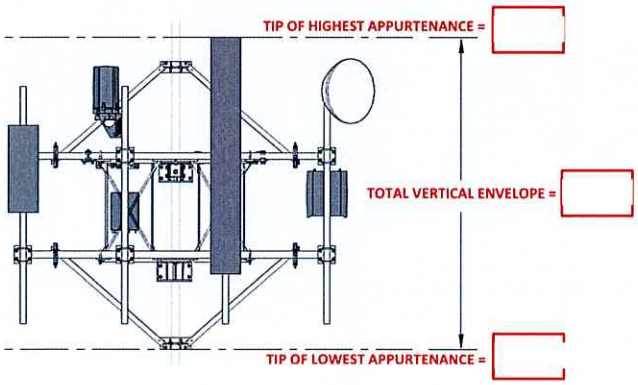


Illustration #1

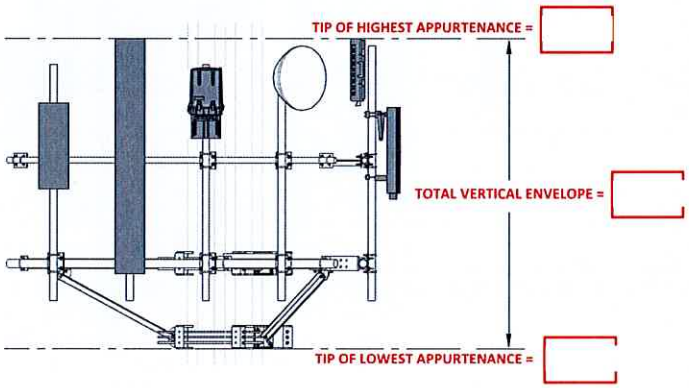
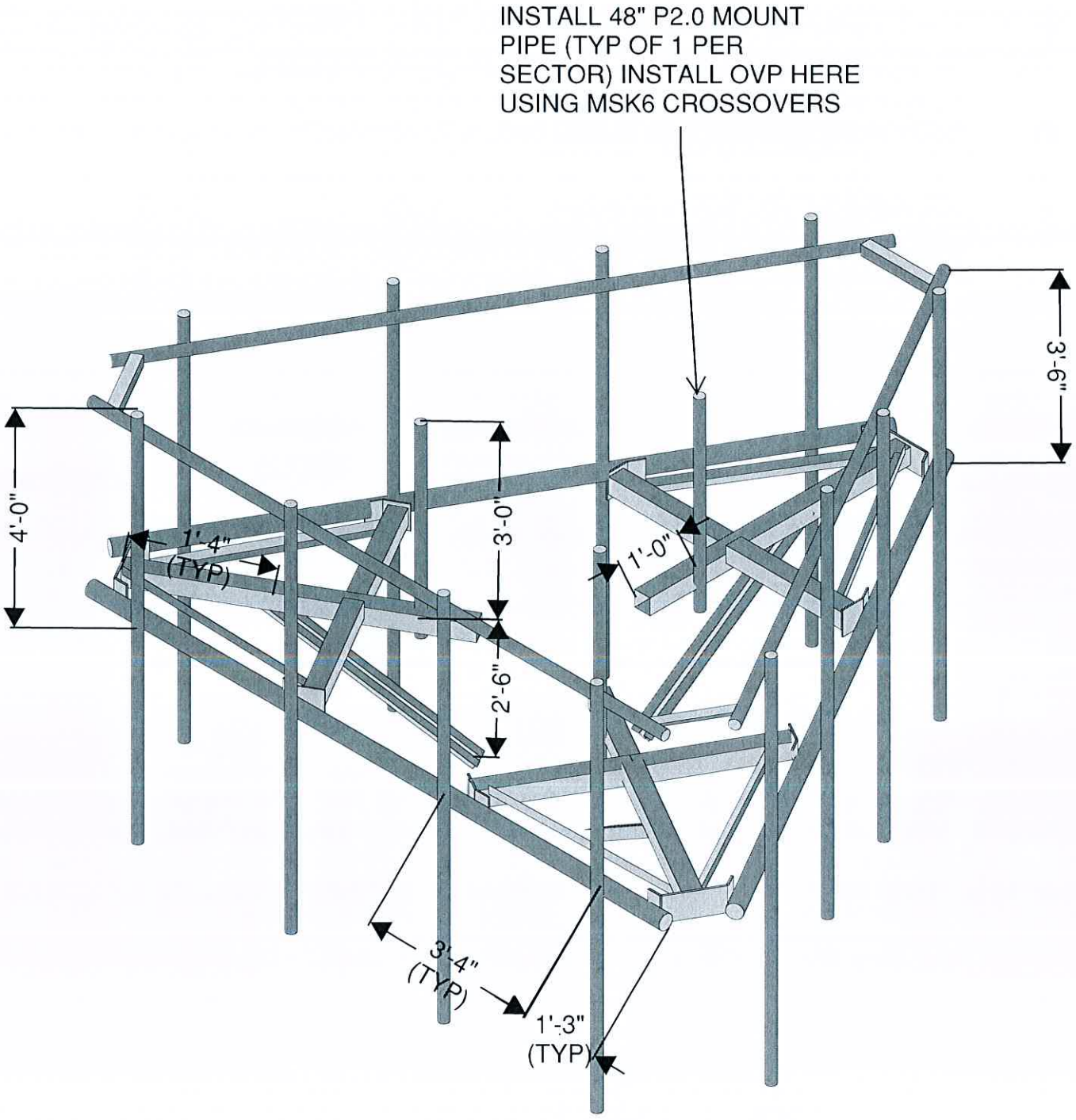


Illustration #2

Certifying Individual:

Company:	
Employee Name:	
Contact Phone:	
Email:	
Date:	

NEW MOUNT SKETCH



MOUNT FRONT ELEVATION VIEW (TYP. ALL SECTORS)

N.T.S.

Sector: A

Structure Type: Monopole

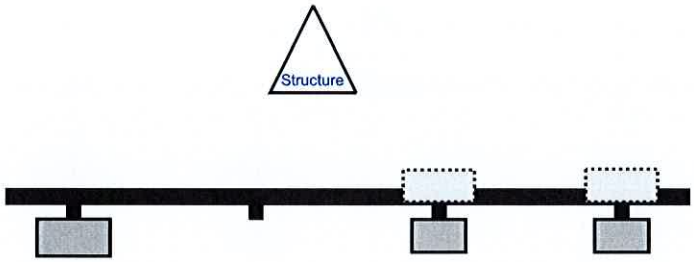
Mount Elev: 120.00

10240076

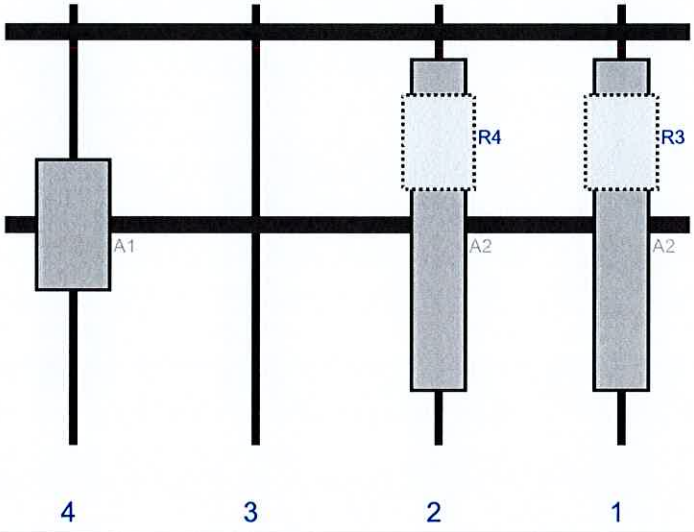
6/27/2024

Page: 1

Plan View



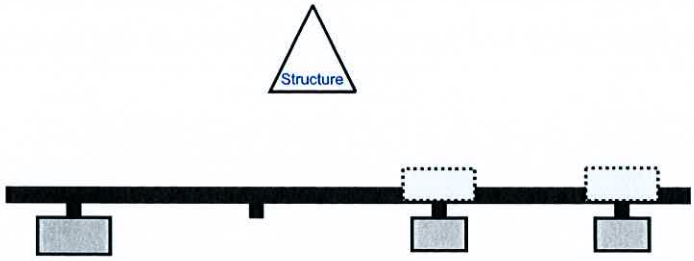
Front View - Looking at Structure



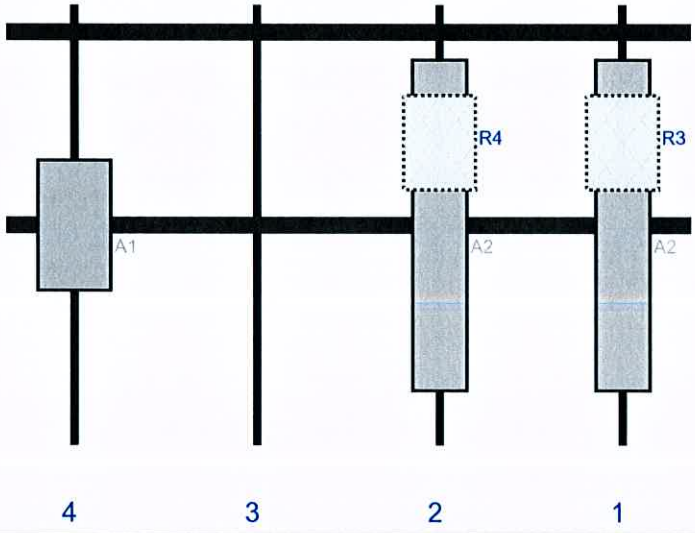
4 3 2 1

ef#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
2	NHH-65B-R2B	72	11.9	135	1	a	Front	48	0	Added	
3	Radio 4890	20.6	15.7	135	1	a	Behind	30	0	Added	
2	NHH-65B-R2B	72	11.9	95	2	a	Front	48	0	Added	
4	Radio 4490	20.6	15.7	95	2	a	Behind	30	0	Added	
1	AIR 6419 B77	28.3	16.1	15	4	a	Front	48	0	Added	
P5A	RVZDC-3315-PF-48	29.5	16.5		Member					Added	

Plan View



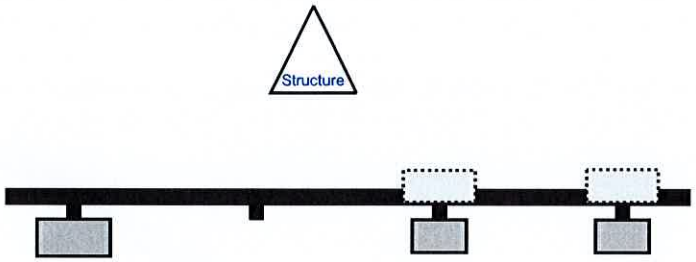
Front View - Looking at Structure



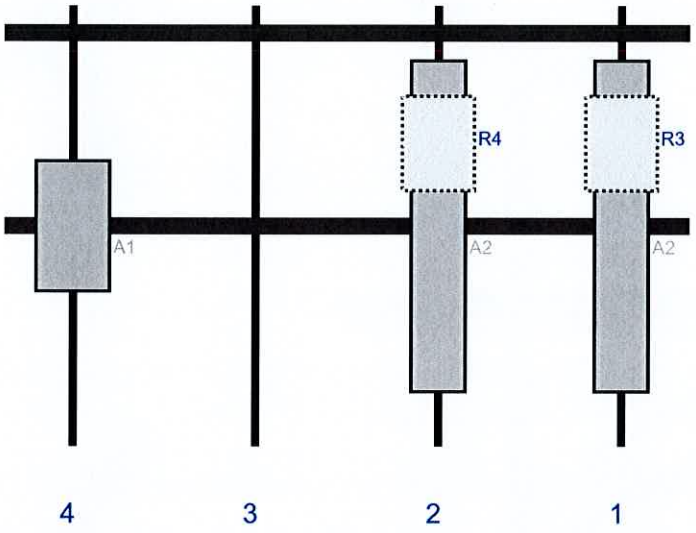
4 3 2 1

Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
R2	NHH-65B-R2B	72	11.9	135	1	a	Front	48	0	Added	
R3	Radio 4890	20.6	15.7	135	1	a	Behind	30	0	Added	
R2	NHH-65B-R2B	72	11.9	95	2	a	Front	48	0	Added	
R4	Radio 4490	20.6	15.7	95	2	a	Behind	30	0	Added	
A1	AIR 6419 B77	28.3	16.1	15	4	a	Front	48	0	Added	
MP5A	RVZDC-3315-PF-48	29.5	16.5		Member					Added	

Plan View



Front View - Looking at Structure



4 3 2 1

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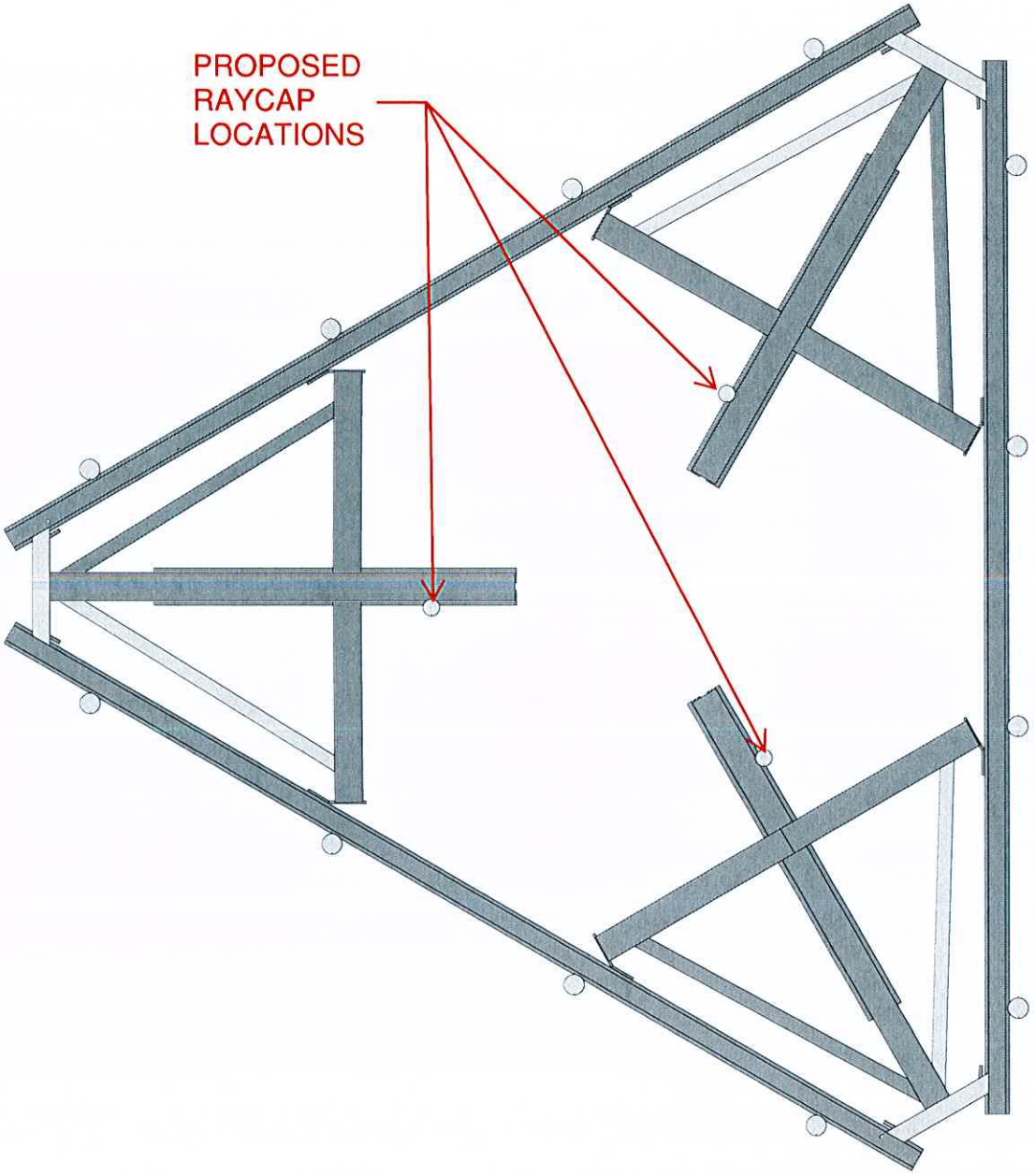
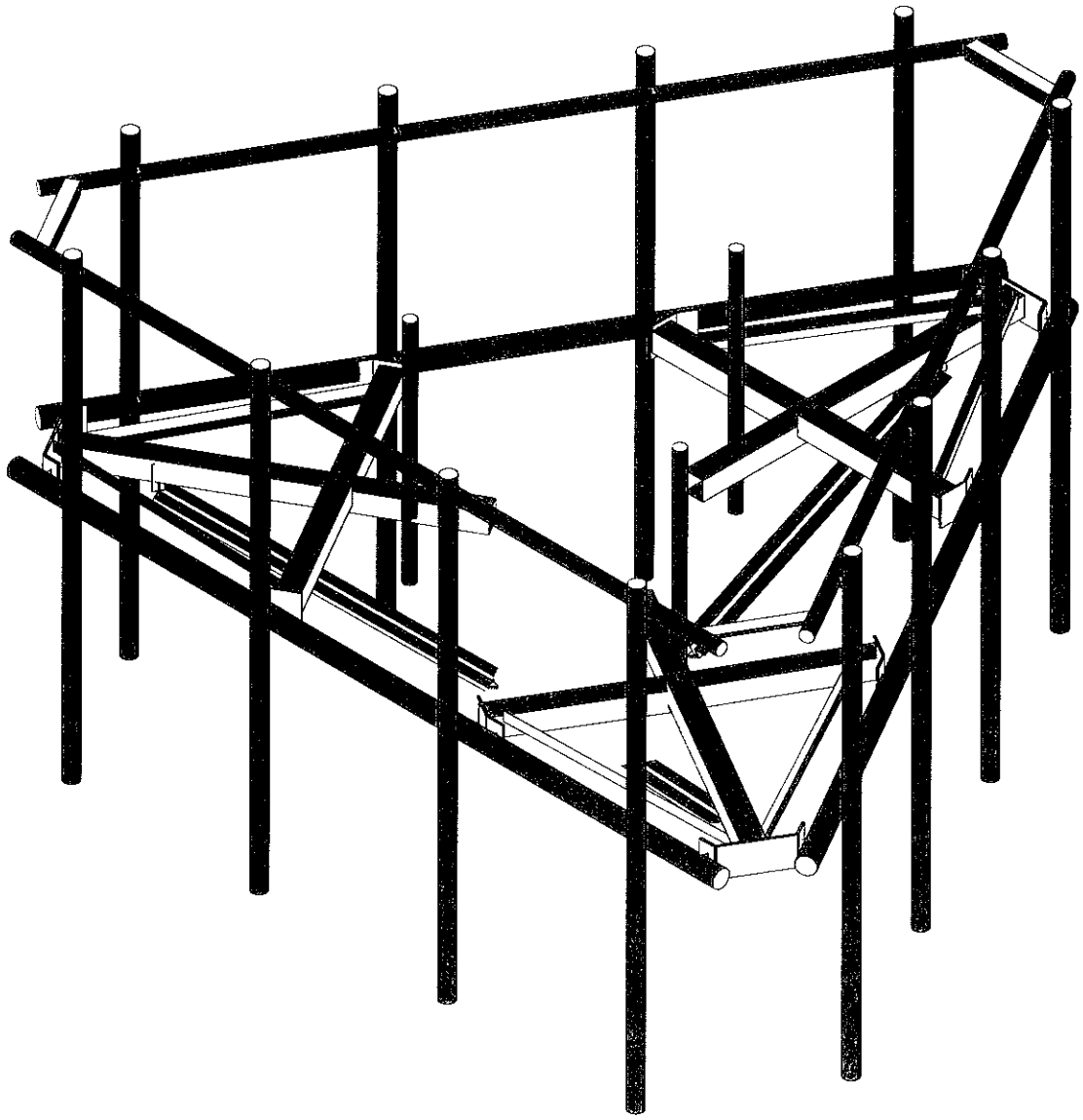
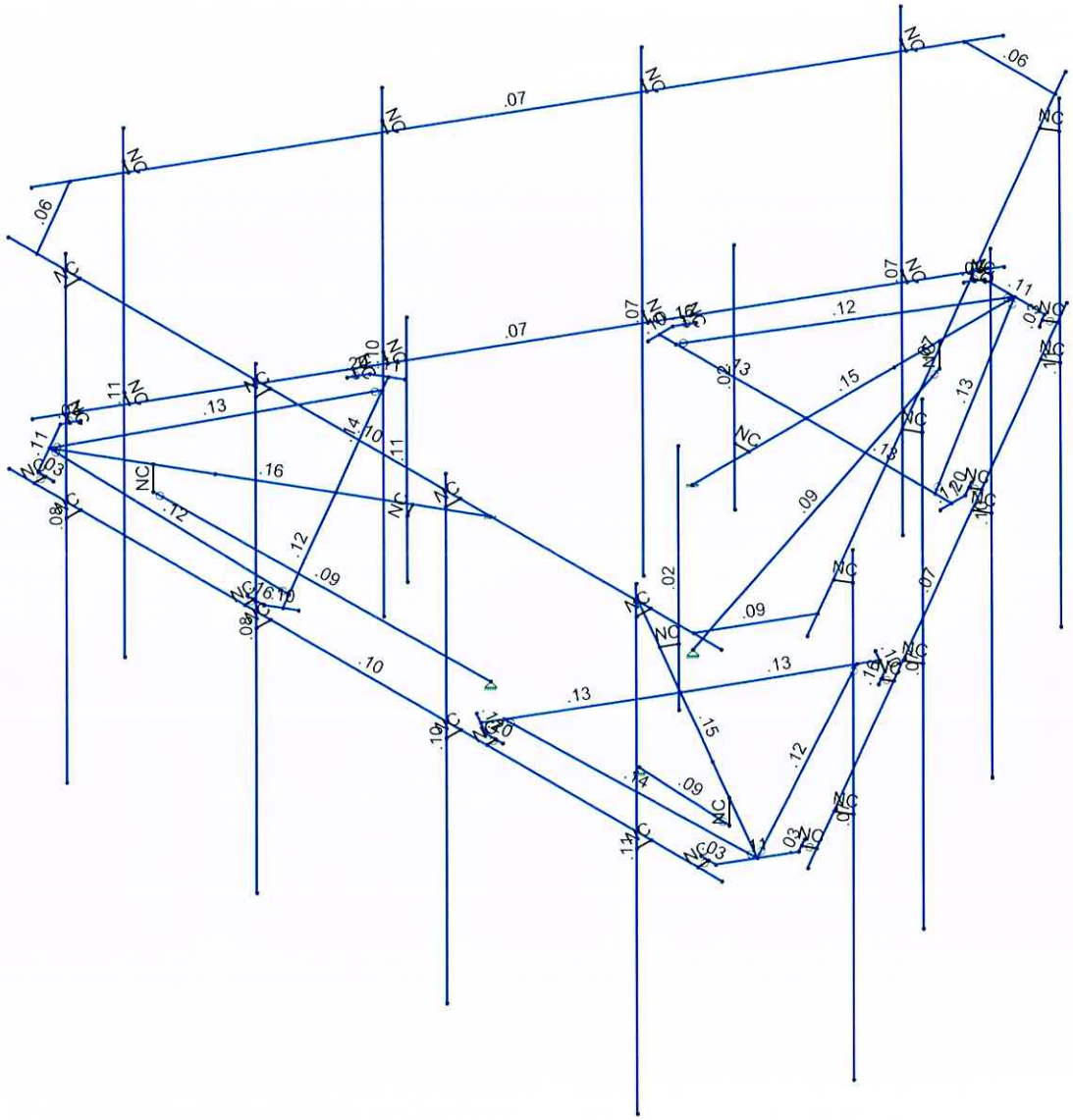
P5A	RVZDC-3315-PF-48	29.5	16.5		Member					Added	



Envelope Only Solution

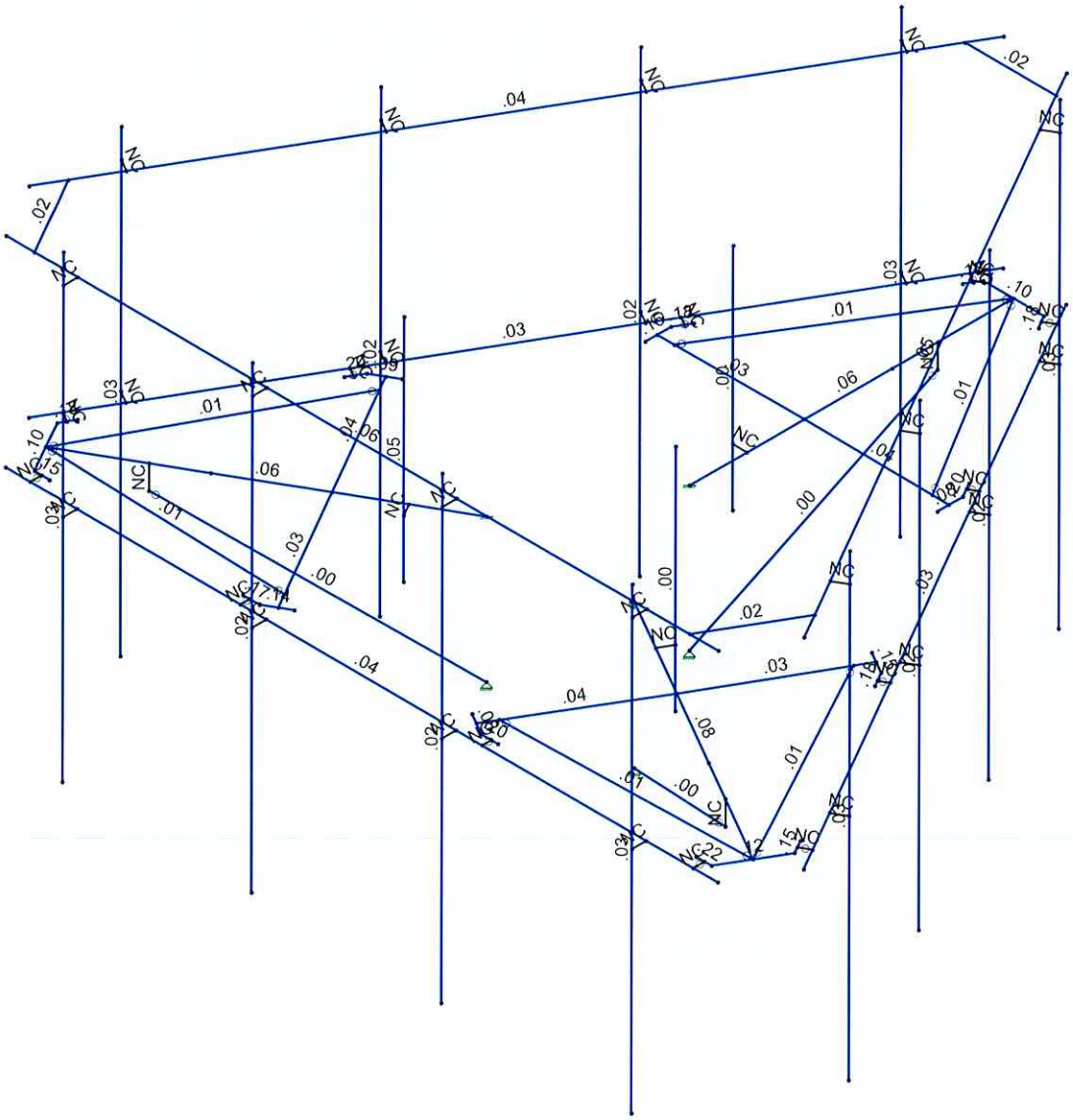
Paul J. Ford		AL - 1





Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Tower Engineering Solutio...		SK - 2
RMD	5000954019-VZW_MT_LO_H	June 27, 2024 at 1:19 PM
Project No. 10240076		5000954019-VZW_MT_LO_H.s2...



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

Tower Engineering Solutio...		SK - 3
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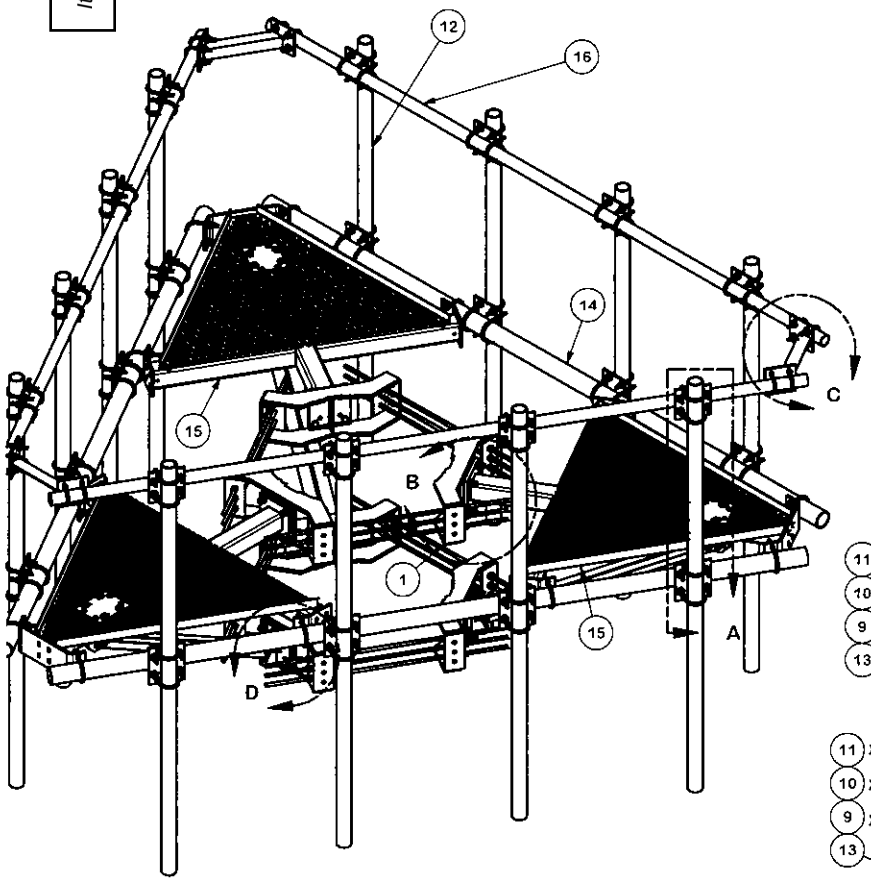
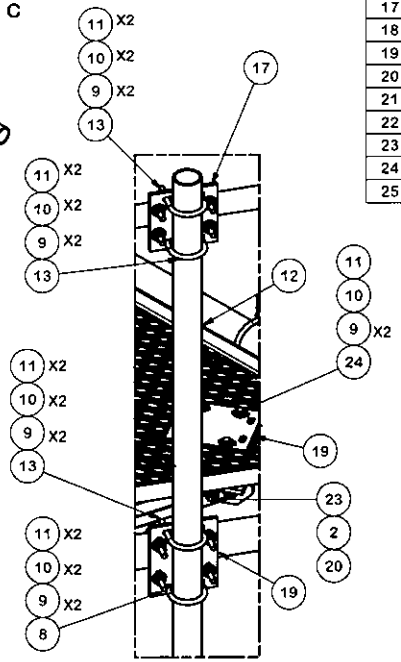
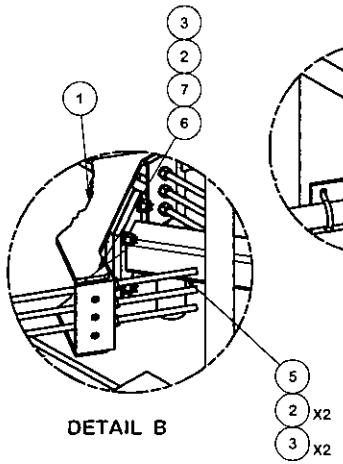
Project No. 10240076		5000954019-VZW_MT_LO_H.r3



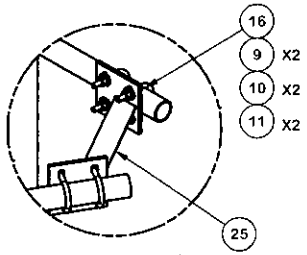
PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET W
1	6	X-LWRM	RING MOUNT WELDMENT		68.81	412.8
2	66	G58LW	5/8" HDG LOCKWASHER		0.03	1.72
3	60	A58NUT	5/8" HDG A325 HEX NUT		0.13	7.79
4	18	G58R-24	5/8" x 24" THREADED ROD (HDG.)		2.09	37.63
5	18	G58R-48	5/8" x 48" THREADED ROD (HDG.)		4.18	75.27
6	24	A58234	5/8" x 2-3/4" HDG A325 HEX BOLT	2 3/4 in	0.36	8.54
7	24	A58FW	5/8" HDG A325 FLATWASHER		0.03	0.82
8	36	X-UB1306	1/2" X 3-5/8" X 6" X 3" U-BOLT (HDG.)		0.83	29.82
9	264	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	9.00
10	252	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	3.50
11	252	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	18.05
12	12	P3096	2-7/8" X 96" (2-1/2" SCH 40) GALVANIZED PIPE	96 in	49.24	590.8
13	48	X-UB1300	1/2" X 3" X 5" X 2" U-BOLT (HDG.)		0.70	33.45
14	3	P3150	3-1/2" X 150" (3" SCH 40) GALVANIZED PIPE	150 in	94.80	284.4
15	3	X-SV196	LOW PROFILE PLATFORM CORNER		212.10	636.3
16	3	P2150	2-3/8" O.D. X 150" SCH 40 GALVANIZED PIPE	150 in	45.77	137.3
17	12	SCX2	CROSSOVER PLATE	7 in	4.80	57.56
18	36	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.63	22.51
19	15	SCX4	CROSSOVER PLATE	8 1/2 in	6.02	90.32
20	6	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	0.78
21	6	X-253993	PLATFORM REINFORCEMENT KIT ANGLE	52 25/32 in	14.33	85.99
22	6	X-TBW	T-BRACKET WELDMENT		13.60	81.60
23	6	G5802	5/8" x 2" HDG HEX BOLT GR5		0.27	1.62
24	12	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	5 1/2 in	0.41	4.91
25	3	X-AHCP	ANGLE HANDRAIL CORNER PLATE		12.92	38.76
					TOTAL WT. #	2669.0



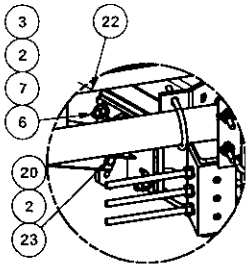
DETAIL A



DETAIL B



DETAIL C



DETAIL D

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
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BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

DESCRIPTION
12' 6" LOW PROFILE PLATFORM
WITH TWELVE 2-7/8" ANTENNA MOUNTING
PIPES, AND SUPPORT RAIL

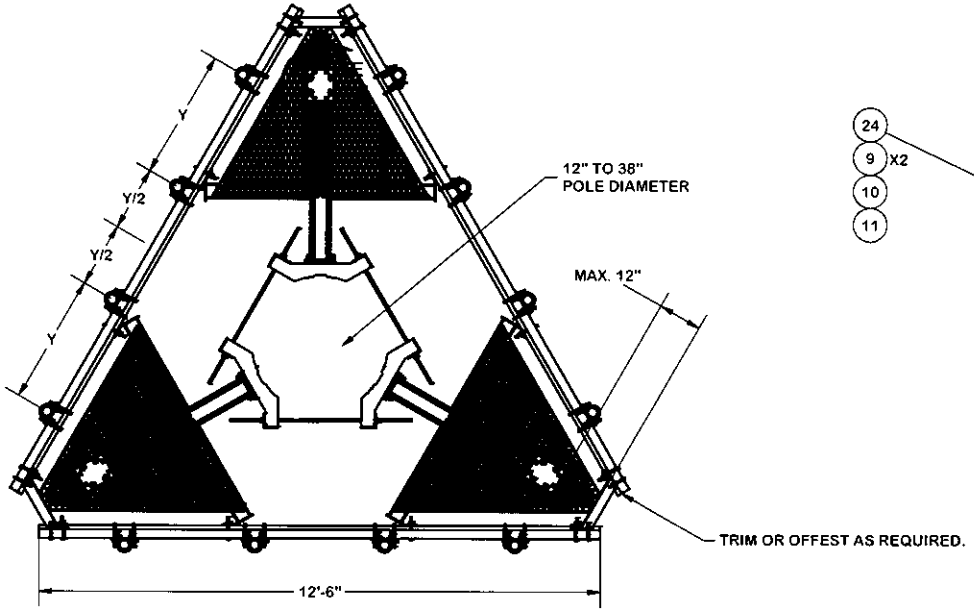
SITE PRO 1 — A valmont COMPANY

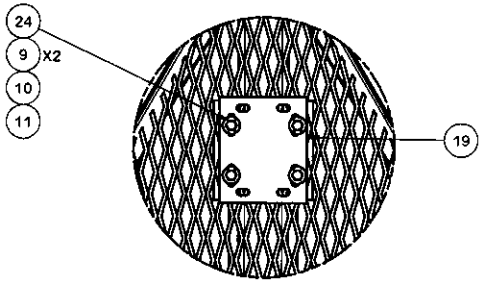
Engineering Support Team: 1-888-753-7446

Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

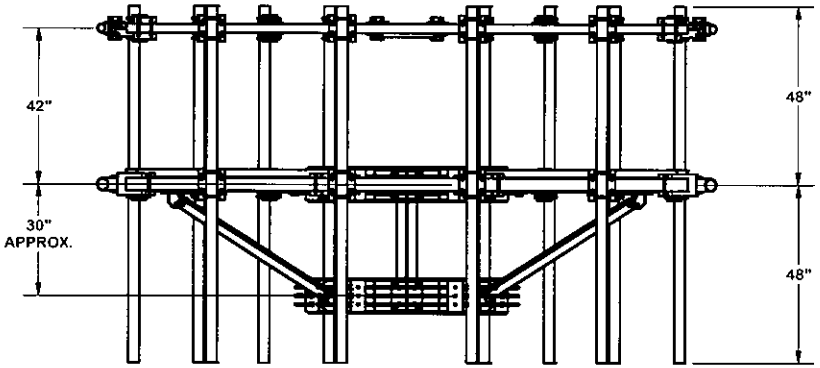
CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
4488	CEK 3/24/2014		RMQP-4096-HK
CLASS / SUB: 81 / 02	DRAWING USAGE: CUSTOMER	CHECKED BY: BMC 7/14/2014	DWG. NO.: RMQP-4096-HK

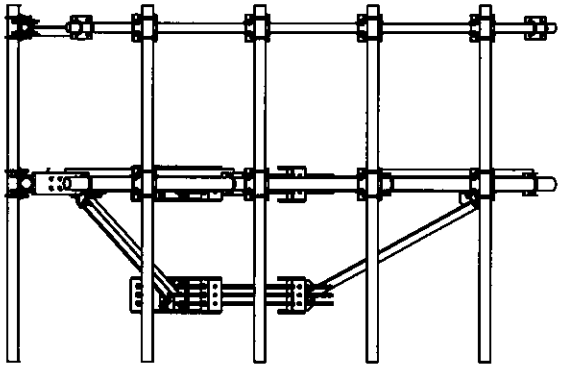
V	DESCRIPTION OF REVISIONS	CPD	BY	DATE
	REVISION HISTORY			
	RELOCATED MOUNT PIPE POSITIONS	4488	JET	5/23/2021
	CHANGED X-253992 TO X-TBW		CEK	9/20/2018
	REPLACED HCP WITH X-AHCP	4488	CEK	7/14/2014





DETAIL E





	RELOCATED MOUNT PIPE POSITIONS	4488	JET	5/23/2021
	CHANGED X-253992 TO X-TBW		CEK	9/20/2018
	REPLACED HCP WITH X-AHCP	4488	CEK	7/14/2014
V	DESCRIPTION OF REVISIONS	CPD	BY	DATE

REVISION HISTORY

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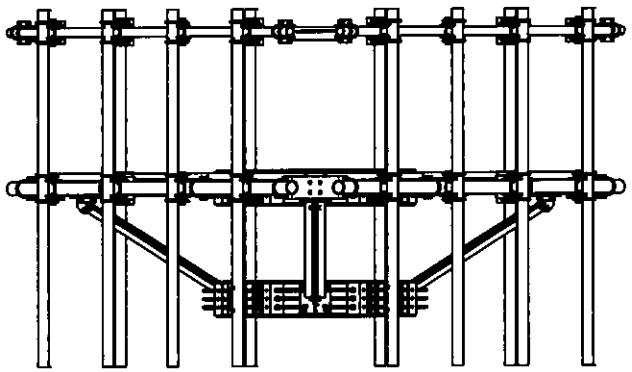
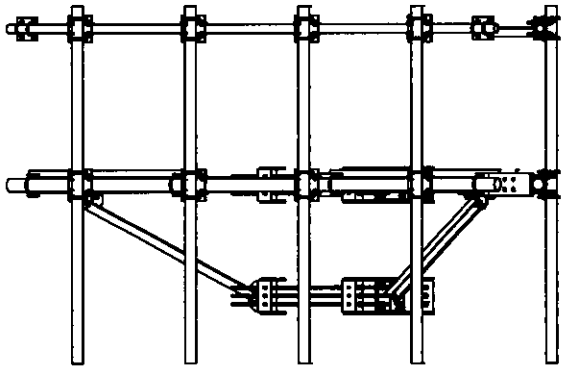
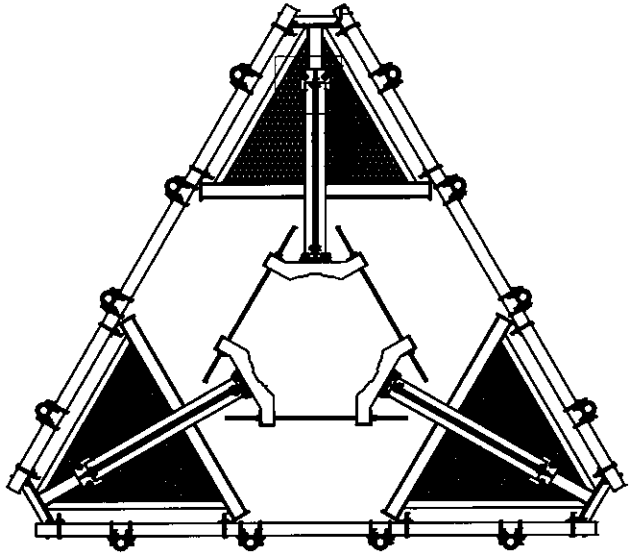
STEPRO 1
A valmont COMPANY
Engineering Support Team: 1-888-753-7446
Locations: New York, NY Atlanta, GA Los Angeles, CA Plymouth, IN Salem, OR Dallas, TX

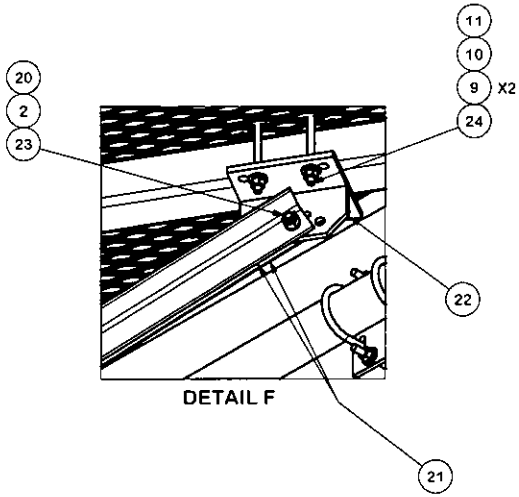
CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
4488	CEK 3/24/2014		RMQP-4096-HK

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	02	CUSTOMER	BMC 7/14/2014	RMQP-4096-HK









DETAIL F

V	DESCRIPTION OF REVISIONS	CPD	BY	DATE
	RELOCATED MOUNT PIPE POSITIONS	4488	JET	5/23/2021
	CHANGED X-253992 TO X-TBW		CEK	9/20/2018
	REPLACED HCP WITH X-AHCP	4488	CEK	7/14/2014

REVISION HISTORY

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4488	CEK 3/24/2014		RMQP-4096-HK

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	02	CUSTOMER	BMC 7/14/2014	RMQP-4096-HK

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (ft/sec^2)	32.2
Wall Mesh Size (in)	24
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 15th(360-16): LRFD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	None
Cold Formed Steel Code	None
Wood Code	None
Wood Temperature	< 100F
Concrete Code	None
Masonry Code	None
Aluminum Code	None - Building
Stainless Steel Code	None

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	Yes
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8

(Global) Model Settings, Continued

Seismic Code	ASCE 7-10
Seismic Base Elevation (ft)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	4
Cd X	4
Rho Z	1
Rho X	1

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E..	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
3	Q235 Gr B	29000	11154	.3	.65	.49	34	1.4	58	1.3
4	Q235 Gr B_1	29000	11154	.3	.65	.49	34	1.4	58	1.3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	HR1	W10X33	Beam	None	A36 Gr.36	Typical	9.71	36.6	171	.583

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	CBA1	N1	N2			PIPE_3.0	None	None	A53 Gr.B	Typical
2	CBA2	N124	N125			PIPE_2.0	None	None	A53 Gr.B	Typical
3	CBB1	N45	N46			PIPE_3.0	None	None	A53 Gr.B	Typical
4	CBB2	N128	N129			PIPE_2.0	None	None	A53 Gr.B	Typical
5	CBC1	N20	N21			PIPE_3.0	None	None	A53 Gr.B	Typical
6	CBC2	N126	N127			PIPE_2.0	None	None	A53 Gr.B	Typical
7	M2	N16	N4		270	L2x2x3	None	None	A53 Gr.B	Typical
8	M3	N16	N6			L2x2x3	None	None	A53 Gr.B	Typical
9	M4	N41	N8		270	L2x2x3	None	None	A53 Gr.B	Typical
10	M5	N41	N10			L2x2x3	None	None	A53 Gr.B	Typical
11	M6	N66	N12		270	L2x2x3	None	None	A53 Gr.B	Typical
12	M7	N66	N14			L2x2x3	None	None	A53 Gr.B	Typical
13	M9	N17	N22			PL1/2x6	None	None	Q235 Gr B	Typical
14	M10	N18	N19			RIGID	None	None	RIGID	Typical
15	M12	N24	N22			PL1/2x6	None	None	Q235 Gr B	Typical
16	M13	N23	N24			PL1/2x6	None	None	Q235 Gr B	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
17	M14	N25	N26			RIGID	None	None	RIGID	Typical
18	M15	N29	N27			PL3/8x6	None	None	Q235 Gr B	Typical
19	M16	N28	N29			PL3/8x6	None	None	Q235 Gr B	Typical
20	M17	N30	N35			HSS4X4X4	None	None	Q235 Gr B	Typical
21	M18	N33	N31			PL3/8x6	None	None	Q235 Gr B	Typical
22	M19	N32	N33			PL3/8x6	None	None	Q235 Gr B	Typical
23	M20	N34	N35			HSS4X4X4	None	None	Q235 Gr B	Typical
24	M21	N36	N37			RIGID	None	None	RIGID	Typical
25	M22	N39	N38			RIGID	None	None	RIGID	Typical
26	M24	N42	N47			PL1/2x6	None	None	Q235 Gr B	Typical
27	M25	N43	N44			RIGID	None	None	RIGID	Typical
28	M27	N49	N47			PL1/2x6	None	None	Q235 Gr B	Typical
29	M28	N48	N49			PL1/2x6	None	None	Q235 Gr B	Typical
30	M29	N50	N51			RIGID	None	None	RIGID	Typical
31	M30	N54	N52			PL3/8x6	None	None	Q235 Gr B	Typical
32	M31	N53	N54			PL3/8x6	None	None	Q235 Gr B	Typical
33	M32	N55	N60			HSS4X4X4	None	None	Q235 Gr B	Typical
34	M33	N58	N56			PL3/8x6	None	None	Q235 Gr B	Typical
35	M34	N57	N58			PL3/8x6	None	None	Q235 Gr B	Typical
36	M35	N59	N60			HSS4X4X4	None	None	Q235 Gr B	Typical
37	M36	N62	N61			RIGID	None	None	RIGID	Typical
38	M37	N64	N63			RIGID	None	None	RIGID	Typical
39	M38	N65	N66			HSS4X4X4	None	None	Q235 Gr B	Typical
40	M39	N67	N70			PL1/2x6	None	None	Q235 Gr B	Typical
41	M40	N68	N69			RIGID	None	None	RIGID	Typical
42	M41	N72	N70			PL1/2x6	None	None	Q235 Gr B	Typical
43	M42	N71	N72			PL1/2x6	None	None	Q235 Gr B	Typical
44	M43	N73	N74			RIGID	None	None	RIGID	Typical
45	M44	N77	N75			PL3/8x6	None	None	Q235 Gr B	Typical
46	M45	N76	N77			PL3/8x6	None	None	Q235 Gr B	Typical
47	M47	N81	N79			PL3/8x6	None	None	Q235 Gr B	Typical
48	M48	N80	N81			PL3/8x6	None	None	Q235 Gr B	Typical
49	M50	N85	N84			RIGID	None	None	RIGID	Typical
50	M51	N86	N87			RIGID	None	None	RIGID	Typical
51	M52	N89	N88			RIGID	None	None	RIGID	Typical
52	M64	N114	N113			RIGID	None	None	RIGID	Typical
53	M65	N116	N115			RIGID	None	None	RIGID	Typical
54	M67	N120	N119			RIGID	None	None	RIGID	Typical
55	M68	N122	N121			RIGID	None	None	RIGID	Typical
56	M70A	N126A	N125A			RIGID	None	None	RIGID	Typical
57	M71A	N128A	N127A			RIGID	None	None	RIGID	Typical
58	M73	N131	N130		90	L2.5x2.5x4	None	None	A53 Gr.B	Typical
59	M73A	N132A	N131A			RIGID	None	None	RIGID	Typical
60	M74	N133	N132		90	L2.5x2.5x4	None	None	A53 Gr.B	Typical
61	M74A	N134A	N133A			RIGID	None	None	RIGID	Typical
62	M75	N135	N134		90	L2.5x2.5x4	None	None	A53 Gr.B	Typical
63	M76	N137	N136			RIGID	None	None	RIGID	Typical
64	M76A	N138	N137A			RIGID	None	None	RIGID	Typical
65	M77	N140	N139			RIGID	None	None	RIGID	Typical
66	M79	N144	N143			RIGID	None	None	RIGID	Typical
67	M80	N146	N145			RIGID	None	None	RIGID	Typical
68	M82	N150	N149			RIGID	None	None	RIGID	Typical
69	M83	N152	N151			RIGID	None	None	RIGID	Typical
70	M85A	N156A	N155A			RIGID	None	None	RIGID	Typical
71	M86A	N158A	N157			RIGID	None	None	RIGID	Typical
72	M88	N162	N161			RIGID	None	None	RIGID	Typical
73	M89	N164	N163			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
74	M91	N168	N167			RIGID	None	None	RIGID	Typical
75	M92	N170	N169			RIGID	None	None	RIGID	Typical
76	M93	N172A	N16			HSS4X4X4	None	None	Q235 Gr B	Typical
77	M94	N174	N173			RIGID	None	None	RIGID	Typical
78	M95	N176	N175			RIGID	None	None	RIGID	Typical
79	M95A	N176A	N41			HSS4X4X4	None	None	Q235 Gr B	Typical
80	M95C	N78	N171B			HSS4X4X4	None	None	Q235 Gr B	Typical
81	M96A	N82	N171B			HSS4X4X4	None	None	Q235 Gr B	Typical
82	MP1A	N177	N178			PIPE_2.5	None	None	A53 Gr.B	Typical
83	MP1B	N153	N154A			PIPE_2.5	None	None	A53 Gr.B	Typical
84	MP1C	N129A	N130A			PIPE_2.5	None	None	A53 Gr.B	Typical
85	MP2A	N171	N172			PIPE_2.5	None	None	A53 Gr.B	Typical
86	MP2B	N147	N148			PIPE_2.5	None	None	A53 Gr.B	Typical
87	MP2C	N123	N124A			PIPE_2.5	None	None	A53 Gr.B	Typical
88	MP3A	N165	N166			PIPE_2.5	None	None	A53 Gr.B	Typical
89	MP3B	N141	N142			PIPE_2.5	None	None	A53 Gr.B	Typical
90	MP3C	N117	N118			PIPE_2.5	None	None	A53 Gr.B	Typical
91	MP4A	N159B	N160A			PIPE_2.5	None	None	A53 Gr.B	Typical
92	MP4B	N135A	N136A			PIPE_2.5	None	None	A53 Gr.B	Typical
93	MP4C	N111	N112			PIPE_2.5	None	None	A53 Gr.B	Typical
94	M97	N172B	N173A			RIGID	None	None	RIGID	Typical
95	MP5B	N174A	N175A			PIPE_2.0	None	None	A53 Gr.B	Typical
96	M99	N176B	N177A			RIGID	None	None	RIGID	Typical
97	MP5A	N178A	N179			PIPE_2.0	None	None	A53 Gr.B	Typical
98	M101	N180	N181			RIGID	None	None	RIGID	Typical
99	MP5C	N182	N183			PIPE_2.0	None	None	A53 Gr.B	Typical
100	M98	N173A_1	N172C			LL2.5x2.5x3x3	None	None	A53 Gr.B	Typical
101	M99_1	N174A_1	N173A_1		120	RIGID	None	None	RIGID	Typical
102	M3_1	N5	N4_1			LL2.5x2.5x3x3	None	None	A53 Gr.B	Typical
103	M4_1	N6_1	N5		120	RIGID	None	None	RIGID	Typical
104	M5_1	N8_1	N7			LL2.5x2.5x3x3	None	None	A53 Gr.B	Typical
105	M6_1	N9	N8_1		120	RIGID	None	None	RIGID	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	CBA1						Yes	** NA **			None
2	CBA2						Yes	** NA **			None
3	CBB1						Yes	** NA **			None
4	CBB2						Yes	** NA **			None
5	CBC1						Yes	** NA **			None
6	CBC2						Yes	** NA **			None
7	M2	BenPIN	BenPIN				Yes	** NA **			None
8	M3	BenPIN	BenPIN				Yes	** NA **			None
9	M4	BenPIN	BenPIN				Yes	** NA **			None
10	M5	BenPIN	BenPIN				Yes	** NA **			None
11	M6	BenPIN	BenPIN				Yes	** NA **			None
12	M7	BenPIN	BenPIN				Yes	** NA **			None
13	M9						Yes	** NA **			None
14	M10	BenPIN					Yes	** NA **			None
15	M12						Yes	** NA **			None
16	M13						Yes	** NA **			None
17	M14	BenPIN					Yes	** NA **			None
18	M15						Yes	** NA **			None
19	M16						Yes	** NA **			None
20	M17						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
21	M18						Yes	** NA **			None
22	M19						Yes	** NA **			None
23	M20						Yes	** NA **			None
24	M21		BenPIN				Yes	** NA **			None
25	M22	BenPIN					Yes	** NA **			None
26	M24						Yes	** NA **			None
27	M25	BenPIN					Yes	** NA **			None
28	M27						Yes	** NA **			None
29	M28						Yes	** NA **			None
30	M29	BenPIN					Yes	** NA **			None
31	M30						Yes	** NA **			None
32	M31						Yes	** NA **			None
33	M32						Yes	** NA **			None
34	M33						Yes	** NA **			None
35	M34						Yes	** NA **			None
36	M35						Yes	** NA **			None
37	M36	BenPIN					Yes	** NA **			None
38	M37	BenPIN					Yes	** NA **			None
39	M38						Yes	** NA **			None
40	M39						Yes	** NA **			None
41	M40	BenPIN					Yes	** NA **			None
42	M41						Yes	** NA **			None
43	M42						Yes	** NA **			None
44	M43	BenPIN					Yes	** NA **			None
45	M44						Yes	** NA **			None
46	M45						Yes	** NA **			None
47	M47						Yes	** NA **			None
48	M48						Yes	** NA **			None
49	M50	BenPIN					Yes	** NA **			None
50	M51		BenPIN				Yes	** NA **			None
51	M52						Yes	** NA **			None
52	M64						Yes	** NA **			None
53	M65						Yes	** NA **			None
54	M67						Yes	** NA **			None
55	M68						Yes	** NA **			None
56	M70A						Yes	** NA **			None
57	M71A						Yes	** NA **			None
58	M73						Yes	** NA **			None
59	M73A						Yes	** NA **			None
60	M74						Yes	** NA **			None
61	M74A						Yes	** NA **			None
62	M75						Yes	** NA **			None
63	M76						Yes	** NA **			None
64	M76A						Yes	** NA **			None
65	M77						Yes	** NA **			None
66	M79						Yes	** NA **			None
67	M80						Yes	** NA **			None
68	M82						Yes	** NA **			None
69	M83						Yes	** NA **			None
70	M85A						Yes	** NA **			None
71	M86A						Yes	** NA **			None
72	M88						Yes	** NA **			None
73	M89						Yes	** NA **			None
74	M91						Yes	** NA **			None
75	M92						Yes	** NA **			None
76	M93						Yes	** NA **			None
77	M94						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
78	M95						Yes	** NA **			None
79	M95A						Yes	** NA **			None
80	M95C						Yes	** NA **			None
81	M96A						Yes	** NA **			None
82	MP1A						Yes	** NA **			None
83	MP1B						Yes	** NA **			None
84	MP1C						Yes	** NA **			None
85	MP2A						Yes	** NA **			None
86	MP2B						Yes	** NA **			None
87	MP2C						Yes	** NA **			None
88	MP3A						Yes	** NA **			None
89	MP3B						Yes	** NA **			None
90	MP3C						Yes	** NA **			None
91	MP4A						Yes	** NA **			None
92	MP4B						Yes	** NA **			None
93	MP4C						Yes	** NA **			None
94	M97						Yes	** NA **			None
95	MP5B						Yes	** NA **			None
96	M99						Yes	** NA **			None
97	MP5A						Yes	** NA **			None
98	M101						Yes	** NA **			None
99	MP5C						Yes	** NA **			None
100	M98	BenPIN					Yes	** NA **			None
101	M99_1						Yes	** NA **			None
102	M3_1	BenPIN					Yes	** NA **			None
103	M4_1						Yes	** NA **			None
104	M5_1	BenPIN					Yes	** NA **			None
105	M6_1						Yes	** NA **			None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
1	CBA1	PIPE_3.0	12.5			Lbyy						Lateral
2	CBA2	PIPE_2.0	12.5			Lbyy						Lateral
3	CBB1	PIPE_3.0	12.5			Lbyy						Lateral
4	CBB2	PIPE_2.0	12.5			Lbyy						Lateral
5	CBC1	PIPE_3.0	12.5			Lbyy						Lateral
6	CBC2	PIPE_2.0	12.5			Lbyy						Lateral
7	M2	L2x2x3	4.32			Lbyy						Lateral
8	M3	L2x2x3	4.32			Lbyy						Lateral
9	M4	L2x2x3	4.32			Lbyy						Lateral
10	M5	L2x2x3	4.32			Lbyy						Lateral
11	M6	L2x2x3	4.323			Lbyy						Lateral
12	M7	L2x2x3	4.323			Lbyy						Lateral
13	M9	PL1/2x6	.265			Lbyy						Lateral
14	M12	PL1/2x6	1.059			Lbyy						Lateral
15	M13	PL1/2x6	.265			Lbyy						Lateral
16	M15	PL3/8x6	.447			Lbyy						Lateral
17	M16	PL3/8x6	.292			Lbyy						Lateral
18	M17	HSS4X4X4	2.559			Lbyy						Lateral
19	M18	PL3/8x6	.447			Lbyy						Lateral
20	M19	PL3/8x6	.292			Lbyy						Lateral
21	M20	HSS4X4X4	2.559			Lbyy						Lateral
22	M24	PL1/2x6	.265			Lbyy						Lateral
23	M27	PL1/2x6	1.059			Lbyy						Lateral
24	M28	PL1/2x6	.265			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
25	M30	PL3/8x6	.447			Lbyy						Lateral
26	M31	PL3/8x6	.292			Lbyy						Lateral
27	M32	HSS4X4X4	2.559			Lbyy						Lateral
28	M33	PL3/8x6	.447			Lbyy						Lateral
29	M34	PL3/8x6	.292			Lbyy						Lateral
30	M35	HSS4X4X4	2.559			Lbyy						Lateral
31	M38	HSS4X4X4	5.668			Lbyy						Lateral
32	M39	PL1/2x6	.265			Lbyy						Lateral
33	M41	PL1/2x6	1.059			Lbyy						Lateral
34	M42	PL1/2x6	.265			Lbyy						Lateral
35	M44	PL3/8x6	.447			Lbyy						Lateral
36	M45	PL3/8x6	.292			Lbyy						Lateral
37	M47	PL3/8x6	.447			Lbyy						Lateral
38	M48	PL3/8x6	.292			Lbyy						Lateral
39	M73	L2.5x2.5x4	1.598									Lateral
40	M74	L2.5x2.5x4	1.598									Lateral
41	M75	L2.5x2.5x4	1.598									Lateral
42	M93	HSS4X4X4	5.668			Lbyy						Lateral
43	M95A	HSS4X4X4	5.668			Lbyy						Lateral
44	M95C	HSS4X4X4	2.559									Lateral
45	M96A	HSS4X4X4	2.559									Lateral
46	MP1A	PIPE_2.5	8									Lateral
47	MP1B	PIPE_2.5	8									Lateral
48	MP1C	PIPE_2.5	8									Lateral
49	MP2A	PIPE_2.5	8									Lateral
50	MP2B	PIPE_2.5	8									Lateral
51	MP2C	PIPE_2.5	8									Lateral
52	MP3A	PIPE_2.5	8									Lateral
53	MP3B	PIPE_2.5	8									Lateral
54	MP3C	PIPE_2.5	8									Lateral
55	MP4A	PIPE_2.5	8									Lateral
56	MP4B	PIPE_2.5	8									Lateral
57	MP4C	PIPE_2.5	8									Lateral
58	MP5B	PIPE_2.0	4									Lateral
59	MP5A	PIPE_2.0	4									Lateral
60	MP5C	PIPE_2.0	4									Lateral
61	M98	LL2.5x2.5x3...	4.809									Lateral
62	M3_1	LL2.5x2.5x3...	4.809									Lateral
63	M5_1	LL2.5x2.5x3...	4.809									Lateral

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Antenna D	None					96			
2	Antenna Di	None					96			
3	Antenna Wo (0 Deg)	None					96			
4	Antenna Wo (30 Deg)	None					96			
5	Antenna Wo (60 Deg)	None					96			
6	Antenna Wo (90 Deg)	None					96			
7	Antenna Wo (120 Deg)	None					96			
8	Antenna Wo (150 Deg)	None					96			
9	Antenna Wo (180 Deg)	None					96			
10	Antenna Wo (210 Deg)	None					96			
11	Antenna Wo (240 Deg)	None					96			
12	Antenna Wo (270 Deg)	None					96			
13	Antenna Wo (300 Deg)	None					96			

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
14	Antenna Wo (330 Deg)	None					96			
15	Antenna Wi (0 Deg)	None					96			
16	Antenna Wi (30 Deg)	None					96			
17	Antenna Wi (60 Deg)	None					96			
18	Antenna Wi (90 Deg)	None					96			
19	Antenna Wi (120 Deg)	None					96			
20	Antenna Wi (150 Deg)	None					96			
21	Antenna Wi (180 Deg)	None					96			
22	Antenna Wi (210 Deg)	None					96			
23	Antenna Wi (240 Deg)	None					96			
24	Antenna Wi (270 Deg)	None					96			
25	Antenna Wi (300 Deg)	None					96			
26	Antenna Wi (330 Deg)	None					96			
27	Antenna Wm (0 Deg)	None					96			
28	Antenna Wm (30 Deg)	None					96			
29	Antenna Wm (60 Deg)	None					96			
30	Antenna Wm (90 Deg)	None					96			
31	Antenna Wm (120 Deg)	None					96			
32	Antenna Wm (150 Deg)	None					96			
33	Antenna Wm (180 Deg)	None					96			
34	Antenna Wm (210 Deg)	None					96			
35	Antenna Wm (240 Deg)	None					96			
36	Antenna Wm (270 Deg)	None					96			
37	Antenna Wm (300 Deg)	None					96			
38	Antenna Wm (330 Deg)	None					96			
39	Structure D	None		-1					3	
40	Structure Di	None						63	3	
41	Structure Wo (0 Deg)	None						126		
42	Structure Wo (30 Deg)	None						126		
43	Structure Wo (60 Deg)	None						126		
44	Structure Wo (90 Deg)	None						126		
45	Structure Wo (120 D...	None						126		
46	Structure Wo (150 D...	None						126		
47	Structure Wo (180 D...	None						126		
48	Structure Wo (210 D...	None						126		
49	Structure Wo (240 D...	None						126		
50	Structure Wo (270 D...	None						126		
51	Structure Wo (300 D...	None						126		
52	Structure Wo (330 D...	None						126		
53	Structure Wi (0 Deg)	None						126		
54	Structure Wi (30 Deg)	None						126		
55	Structure Wi (60 Deg)	None						126		
56	Structure Wi (90 Deg)	None						126		
57	Structure Wi (120 De...	None						126		
58	Structure Wi (150 De...	None						126		
59	Structure Wi (180 De...	None						126		
60	Structure Wi (210 De...	None						126		
61	Structure Wi (240 De...	None						126		
62	Structure Wi (270 De...	None						126		
63	Structure Wi (300 De...	None						126		
64	Structure Wi (330 De...	None						126		
65	Structure Wm (0 Deg)	None						126		
66	Structure Wm (30 De...	None						126		
67	Structure Wm (60 De...	None						126		
68	Structure Wm (90 De...	None						126		
69	Structure Wm (120 D...	None						126		
70	Structure Wm (150 D...	None						126		

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
71	Structure Wm (180 D...	None						126		
72	Structure Wm (210 D...	None						126		
73	Structure Wm (240 D...	None						126		
74	Structure Wm (270 D...	None						126		
75	Structure Wm (300 D...	None						126		
76	Structure Wm (330 D...	None						126		
77	Lm1	None					1			
78	Lm2	None					1			
79	Lv1	None					1			
80	Lv2	None					1			
81	Antenna Ev	None					96			
82	Antenna Eh (0 Deg)	None					64			
83	Antenna Eh (90 Deg)	None					64			
84	Structure Ev	ELY		-.013					3	
85	Structure Eh (0 Deg)	ELZ			-.032				3	
86	Structure Eh (90 Deg)	ELX	.032						3	
87	BLC 39 Transient Are...	None						21		
88	BLC 40 Transient Are...	None						21		
89	BLC 84 Transient Are...	None						21		
90	BLC 85 Transient Are...	None						21		
91	BLC 86 Transient Are...	None						21		

Load Combinations

	Description	Sol...	PD...	SR...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
1	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	3	1	41	1												
2	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	4	1	42	1												
3	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	5	1	43	1												
4	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	6	1	44	1												
5	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	7	1	45	1												
6	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	8	1	46	1												
7	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	9	1	47	1												
8	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	10	1	48	1												
9	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	11	1	49	1												
10	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	12	1	50	1												
11	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	13	1	51	1												
12	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	14	1	52	1												
13	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	15	1	53	1								
14	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	16	1	54	1								
15	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	17	1	55	1								
16	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	18	1	56	1								
17	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	19	1	57	1								
18	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	20	1	58	1								
19	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	21	1	59	1								
20	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	22	1	60	1								
21	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	23	1	61	1								
22	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	24	1	62	1								
23	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	25	1	63	1								
24	1.2D + 1.0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	26	1	64	1								
25	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	77	1.5	27	1	65	1										
26	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	77	1.5	28	1	66	1										
27	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	77	1.5	29	1	67	1										
28	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	77	1.5	30	1	68	1										
29	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	77	1.5	31	1	69	1										
30	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	77	1.5	32	1	70	1										
31	1.2D + 1.5...	Yes	Y		1	1.2	39	1.2	77	1.5	33	1	71	1										

Load Combinations (Continued)

	Description	Sol..	PD..	SR..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..
32	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	77	1.5	34	1	72	1										
33	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	77	1.5	35	1	73	1										
34	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	77	1.5	36	1	74	1										
35	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	77	1.5	37	1	75	1										
36	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	77	1.5	38	1	76	1										
37	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	78	1.5	27	1	65	1										
38	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	78	1.5	28	1	66	1										
39	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	78	1.5	29	1	67	1										
40	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	78	1.5	30	1	68	1										
41	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	78	1.5	31	1	69	1										
42	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	78	1.5	32	1	70	1										
43	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	78	1.5	33	1	71	1										
44	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	78	1.5	34	1	72	1										
45	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	78	1.5	35	1	73	1										
46	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	78	1.5	36	1	74	1										
47	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	78	1.5	37	1	75	1										
48	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	78	1.5	38	1	76	1										
49	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	79	1.5														
50	1.2D + 1.5..	Yes	Y		1	1.2	39	1.2	80	1.5														
51	1.4D	Yes	Y		1	1.4	39	1.4																
52	1.2D + 1.0..	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	1	83		ELZ	1	ELX					
53	1.2D + 1.0..	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	.866	83	.5	ELZ	.866	ELX	.5				
54	1.2D + 1.0..	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	.5	83	.866	ELZ	.5	ELX	.866				
55	1.2D + 1.0..	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82		83	1	ELZ		ELX	1				
56	1.2D + 1.0..	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	-.5	83	.866	ELZ	-.5	ELX	.866				
57	1.2D + 1.0..	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	-.866	83	.5	ELZ	-.866	ELX	.5				
58	1.2D + 1.0..	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	-1	83		ELZ	-1	ELX					
59	1.2D + 1.0..	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	-.866	83	-.5	ELZ	-.866	ELX	-.5				
60	1.2D + 1.0..	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	-.5	83	-.866	ELZ	-.5	ELX	-.866				
61	1.2D + 1.0..	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82		83	-1	ELZ		ELX	-1				
62	1.2D + 1.0..	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	.5	83	-.866	ELZ	.5	ELX	-.866				
63	1.2D + 1.0..	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	.866	83	-.5	ELZ	.866	ELX	-.5				
64	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	1	83		ELZ	1	ELX					
65	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	.866	83	.5	ELZ	.866	ELX	.5				
66	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	.5	83	.866	ELZ	.5	ELX	.866				
67	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82		83	1	ELZ		ELX	1				
68	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	-.5	83	.866	ELZ	-.5	ELX	.866				
69	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	-.866	83	.5	ELZ	-.866	ELX	.5				
70	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	-1	83		ELZ	-1	ELX					
71	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	-.866	83	-.5	ELZ	-.866	ELX	-.5				
72	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	-.5	83	-.866	ELZ	-.5	ELX	-.866				
73	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82		83	-1	ELZ		ELX	-1				
74	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	.5	83	-.866	ELZ	.5	ELX	-.866				
75	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	.866	83	-.5	ELZ	.866	ELX	-.5				

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N65	max	3412.514	22	1168.507	20	230.442	2	-.184	75	.969	11	-.348	66
2		min	-488.251	4	301.932	65	-1972.383	20	-.72	17	-.958	5	-1.287	21
3	N172A	max	253.946	11	998.379	16	446.926	12	-.214	12	.898	7	1.131	15
4		min	-3371.318	17	274.696	73	-2009.625	18	-.972	30	-.887	1	.311	73
5	N176A	max	579.28	9	988.566	24	3886.664	13	1.385	24	.879	3	.187	15
6		min	-570.973	3	273.165	69	-326.363	7	.378	70	-.868	9	-.035	9
7	N166A	max	0	75	0	75	0	75	0	75	0	75	0	75
8		min	0	1	0	1	0	1	0	1	0	1	0	1

Envelope Joint Reactions (Continued)

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
9	N168A	max	0	75	0	75	0	75	0	75	0	75	0	75
10		min	0	1	0	1	0	1	0	1	0	1	0	1
11	N170A	max	0	75	0	75	0	75	0	75	0	75	0	75
12		min	0	1	0	1	0	1	0	1	0	1	0	1
13	N172C	max	3135.772	18	1792.95	18	1810.024	17	0	75	0	75	0	75
14		min	866.056	74	493.389	74	500.015	74	0	1	0	1	0	1
15	N4_1	max	30.169	10	1787.937	14	-998.248	70	0	75	0	75	0	75
16		min	-30.158	4	492.53	70	-3609.653	13	0	1	0	1	0	1
17	N7	max	-865.78	66	1789.639	22	1808.004	22	0	75	0	75	0	75
18		min	-3129.131	21	493.236	66	499.859	66	0	1	0	1	0	1
19	Totals:	max	3251.773	10	8431.387	17	3239.787	1						
20		min	-3251.773	4	2339.926	74	-3239.789	7						

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn y...	phi*Mn z...	Cb	Eqn
1	M48	PL3/8x6	.202	.118	4	.202	.292	y	20	65364.6...	68850	.538	8.606	2....	H1-1b
2	M19	PL3/8x6	.201	.118	12	.200	.292	y	16	65364.6...	68850	.538	8.606	2....	H1-1b
3	M34	PL3/8x6	.201	.118	8	.197	.292	y	24	65364.6...	68850	.538	8.606	2....	H1-1b
4	M38	HSS4X4X4	.161	0	24	.057	1.004	y	23	93367.2...	103122	11.96	11.96	3....	H1-1b
5	M31	PL3/8x6	.159	.118	6	.178	.292	y	22	65364.6...	68850	.538	8.606	1....	H1-1b
6	M16	PL3/8x6	.159	.118	10	.180	.292	y	14	65364.6...	68850	.538	8.606	1....	H1-1b
7	M45	PL3/8x6	.158	.118	2	.174	.292	y	18	65364.6...	68850	.538	8.606	1....	H1-1b
8	M93	HSS4X4X4	.154	0	14	.081	0	y	30	93367.2...	103122	11.96	11.96	3....	H1-1b
9	M95A	HSS4X4X4	.152	0	16	.055	4.369	y	15	93367.2...	103122	11.96	11.96	3....	H1-1b
10	M96A	HSS4X4X4	.136	2.559	22	.044	2.559	y	21	101054....	103122	11.96	11.96	1....	H1-1b
11	M3	L2x2x3	.135	2.16	6	.010	4.32	y	15	9165.131	22743	.542	1.066	1....	H2-1
12	M7	L2x2x3	.135	2.161	10	.010	4.323	y	19	9153.553	22743	.542	1.067	1....	H2-1
13	M5	L2x2x3	.135	2.16	2	.010	4.32	y	23	9165.131	22743	.542	1.066	1....	H2-1
14	M20	HSS4X4X4	.134	2.559	18	.044	2.559	y	17	101053....	103122	11.96	11.96	1....	H1-1b
15	M35	HSS4X4X4	.133	2.559	14	.044	2.559	y	13	101053....	103122	11.96	11.96	1.7	H1-1b
16	M17	HSS4X4X4	.127	2.559	15	.035	2.559	y	15	101053....	103122	11.96	11.96	1....	H1-1b
17	M32	HSS4X4X4	.126	2.559	23	.035	2.559	y	22	101053....	103122	11.96	11.96	1....	H1-1b
18	M95C	HSS4X4X4	.124	2.559	19	.034	2.559	y	19	101054....	103122	11.96	11.96	1....	H1-1b
19	M6	L2x2x3	.119	2.296	20	.011	4.323	z	13	9153.553	22743	.542	1.042	1....	H2-1
20	M2	L2x2x3	.118	2.295	16	.011	4.32	z	21	9165.131	22743	.542	1.042	1....	H2-1
21	M4	L2x2x3	.118	2.295	24	.011	4.32	z	17	9165.131	22743	.542	1.042	1....	H2-1
22	MP1B	PIPE_2.5	.115	4	9	.035	4		10	30038.4...	50715	3.596	3.596	1....	H1-1b
23	MP1A	PIPE_2.5	.109	4	28	.035	4		6	30038.4...	50715	3.596	3.596	1....	H1-1b
24	MP5A	PIPE_2.0	.108	3	23	.054	3		8	26521.4...	32130	1.872	1.872	2....	H1-1b
25	M12	PL1/2x6	.108	.529	11	.119	.529	y	42	62633.4...	91800	.956	11.475	1....	H1-1b
26	M41	PL1/2x6	.108	.529	3	.104	.529	y	20	62633.4...	91800	.956	11.475	1....	H1-1b
27	MP1C	PIPE_2.5	.108	4	1	.035	4		2	30038.4...	50715	3.596	3.596	1....	H1-1b
28	M27	PL1/2x6	.108	.529	7	.105	.529	y	14	62633.4...	91800	.956	11.475	1....	H1-1b
29	M18	PL3/8x6	.107	.237	11	.084	.237	y	14	60939.9...	68850	.538	8.606	1....	H1-1b
30	M33	PL3/8x6	.106	.237	7	.081	.237	y	22	60939.9...	68850	.538	8.606	1....	H1-1b
31	M47	PL3/8x6	.106	.237	3	.088	.237	y	18	60939.9...	68850	.538	8.606	1....	H1-1b
32	M15	PL3/8x6	.105	.237	12	.149	.237	y	21	60939.9...	68850	.538	8.606	1....	H1-1b
33	M44	PL3/8x6	.104	.237	4	.145	.237	y	17	60939.9...	68850	.538	8.606	1....	H1-1b
34	M30	PL3/8x6	.104	.237	6	.146	.237	y	17	60939.9...	68850	.538	8.606	1....	H1-1b
35	CBA2	PIPE_2.0	.103	7.943	29	.057	11.979		38	6295.422	32130	1.872	1.872	3....	H1-1b
36	MP2C	PIPE_2.5	.100	4	1	.022	4		8	30038.4...	50715	3.596	3.596	2....	H1-1b
37	MP2B	PIPE_2.5	.100	4	9	.022	4		4	30038.4...	50715	3.596	3.596	1....	H1-1b
38	MP2A	PIPE_2.5	.100	4	5	.022	4		10	30038.4...	50715	3.596	3.596	1....	H1-1b
39	CBA1	PIPE_3.0	.098	7.943	35	.038	11.979		43	28250.5...	65205	5.749	5.749	2....	H1-1b
40	M98	LL2.5x2.5x...	.095	4.809	17	.003	4.809	y	19	42564.3...	56700	3.844	2.479	1	H1-1b*

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn y...	phi*Mn z...	Cb	Eqn
41	M5_1	LL2.5x2.5x...	.095	4.809	21	.003	0	y	23	42564.3...	56700	3.844	2.479	1	H1-1b*
42	M3_1	LL2.5x2.5x...	.095	4.809	13	.003	4.809	y	23	42564.3...	56700	3.844	2.479	1	H1-1b*
43	M75	L2.5x2.5x4	.090	0	37	.016	1.598	z	1	34569.0...	37485	1.083	2.467	2....	H2-1
44	MP3A	PIPE_2.5	.083	4	34	.019	4		7	30038.4...	50715	3.596	3.596	1....	H1-1b
45	MP4A	PIPE_2.5	.075	4	23	.029	.5		7	30038.4...	50715	3.596	3.596	1....	H1-1b
46	MP4C	PIPE_2.5	.075	4	6	.029	.5		3	30038.4...	50715	3.596	3.596	1....	H1-1b
47	MP4B	PIPE_2.5	.075	4	2	.029	.5		11	30038.4...	50715	3.596	3.596	1....	H1-1b
48	MP3C	PIPE_2.5	.074	4	19	.019	4		3	30038.4...	50715	3.596	3.596	2....	H1-1b
49	MP3B	PIPE_2.5	.073	4	15	.019	4		11	30038.4...	50715	3.596	3.596	1....	H1-1b
50	CBC2	PIPE_2.0	.066	4.688	18	.048	1.172		38	6295.422	32130	1.872	1.872	3....	H1-1b
51	CBC1	PIPE_3.0	.066	11.328	15	.031	11.979		15	28250.5...	65205	5.749	5.749	2....	H1-1b
52	CBB1	PIPE_3.0	.065	11.328	23	.031	11.979		23	28250.5...	65205	5.749	5.749	2....	H1-1b
53	CBB2	PIPE_2.0	.065	11.198	9	.043	11.979		6	6295.422	32130	1.872	1.872	4....	H1-1b
54	M73	L2.5x2.5x4	.061	1.598	2	.016	1.598	z	9	34569.0...	37485	1.083	2.467	2....	H2-1
55	M74	L2.5x2.5x4	.060	1.598	10	.016	1.598	z	5	34569.0...	37485	1.083	2.467	2....	H2-1
56	M13	PL1/2x6	.032	.138	4	.224	.265	y	43	89622.19	91800	.956	11.475	2....	H1-1b
57	M9	PL1/2x6	.032	.138	6	.146	.265	y	16	89622.19	91800	.956	11.475	2....	H1-1b
58	M42	PL1/2x6	.032	.138	8	.184	.265	y	23	89622.19	91800	.956	11.475	2....	H1-1b
59	M24	PL1/2x6	.032	.138	2	.145	.265	y	24	89622.19	91800	.956	11.475	2....	H1-1b
60	M39	PL1/2x6	.032	.138	10	.147	.265	y	20	89622.19	91800	.956	11.475	2....	H1-1b
61	M28	PL1/2x6	.032	.138	12	.184	.265	y	15	89622.19	91800	.956	11.475	2....	H1-1b
62	MP5B	PIPE_2.0	.017	3	2	.002	3		2	26521.4...	32130	1.872	1.872	1....	H1-1b
63	MP5C	PIPE_2.0	.017	3	6	.002	3		6	26521.4...	32130	1.872	1.872	1....	H1-1b

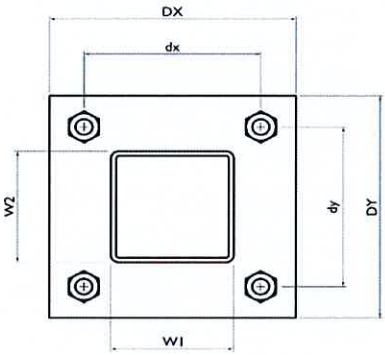
VzW SMART Tool© Vendor

Client:	VERIZON WIRELESS	Date:	6/27/2024
Site Name:	0		
MDG #:	0		
Fuze ID #:	0	Page:	1

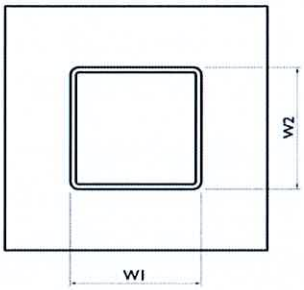
Version 2.00

I. Mount-to-Tower Connection Check

Custom Orientation Required	No
Tower Connection Bolt Checks	Yes
Bolt Orientation	Parallel
Bolt Quantity per Reaction:	4
d_x (in) *(Delta X of typ. bolt config. sketch)* :	6
d_y (in) *(Delta Y of typ. bolt config. sketch)* :	6
Bolt Type:	A325N
Bolt Diameter (in):	0.625
Required Tensile Strength / bolt (kips):	2.6
Required Shear Strength / bolt (kips):	0.3
Tensile Capacity / bolt (kips):	20.7
Shear Capacity / bolt (kips):	12.4
Bolt Overall Utilization:	**12.7%**



Tower Connection Baseplate Checks	Yes
Connecting Standoff Member Shape:	Rect Tube
Weld Stiffener Configuration:	No Stiffeners
Plate Width, D_x (in):	8
Plate Height, D_y (in):	8
W1(in):	4
W2 (in):	4
Member Thickness (in):	0.25
Stiffener location a_1 (in):	
Stiffener location b_1 (in):	
Stiffener location a_2 (in):	
Stiffener location b_2 (in):	
F_y (ksi, plate):	35
Plate Thickness (in):	0.75
Length of Yield Line, L_y (in):	5.85
Bolt Eccentricity, e (in):	1.65
M_u (kip-in):	4.33
Phi*M_n (kip-in):	25.91
Plate Bending Utilization:	**16.7%**

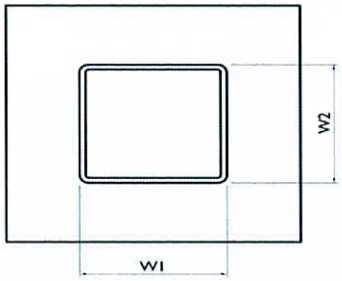


VzW SMART Tool© Vendor

Client:	VERIZON WIRELESS	Date:	6/27/2024
Site Name:	0		
MDG #:	0		
Fuze ID #:	0	Page:	2

Version 2.00

Tower Connection Weld Checks	Yes
Weld Shape:	Rectangle
Weld Stiffener Configuration:	None
Stiffener Notch Length, n (in):	
Weld Size (1/16 in):	6
W1 (in):	4
W2 (in):	4
Weld Total Length (in):	16.00
Z_x (in^3/in):	21.33
Z_y (in^3/in):	21.33
J_p (in^4/in):	85.33
c_x (in)	2.25
c_y (in)	2.25
Required combined strength (kip/in):	0.80
Weld Capacity (kip/in):	8.35
Weld Utilization:	**9.5%**

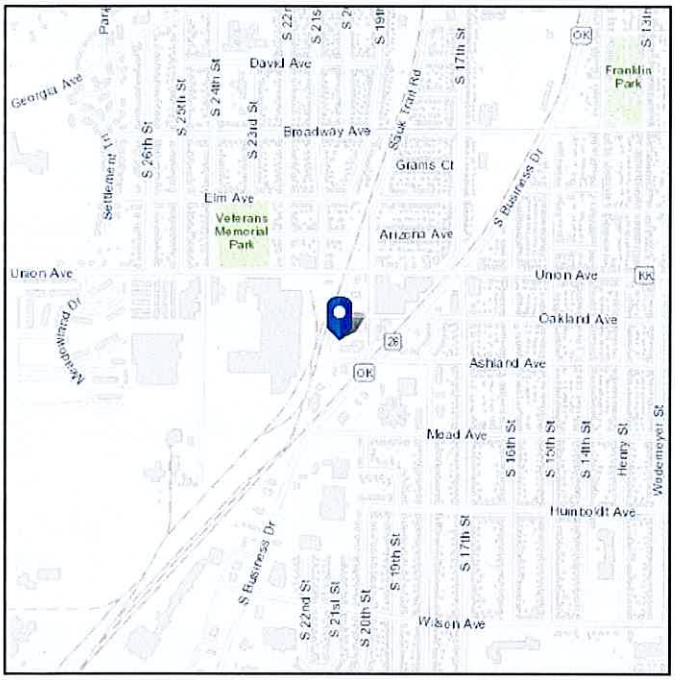


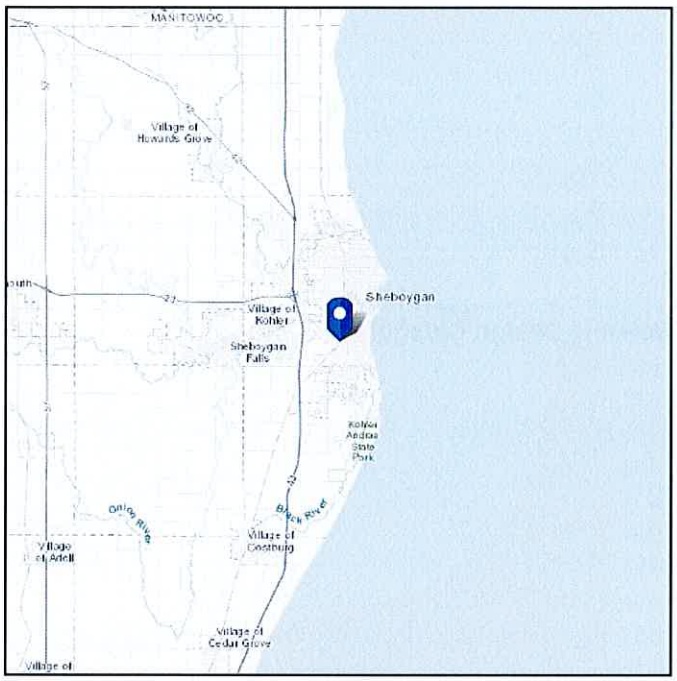
ASCE Hazards Report

Address:
No Address at This Location

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

Latitude: 43.730365
Longitude: -87.732356
Elevation: 640.4581550222194 ft (NAVD 88)





Wind

Results:

Wind Speed	106 Vmph
10-year MRI	72 Vmph
25-year MRI	80 Vmph
50-year MRI	85 Vmph
100-year MRI	90 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: Thu Jun 27 2024

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.

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

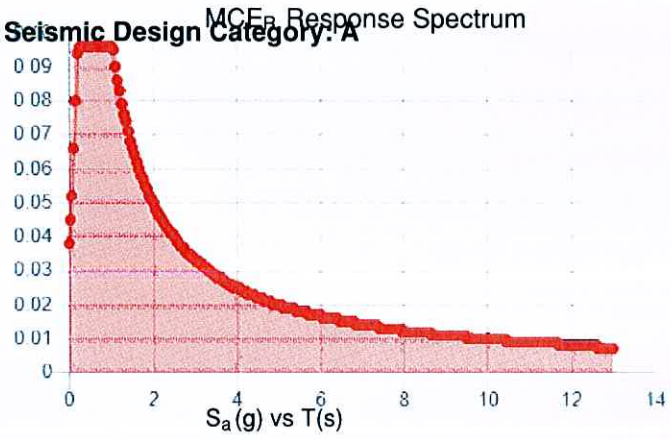
Seismic

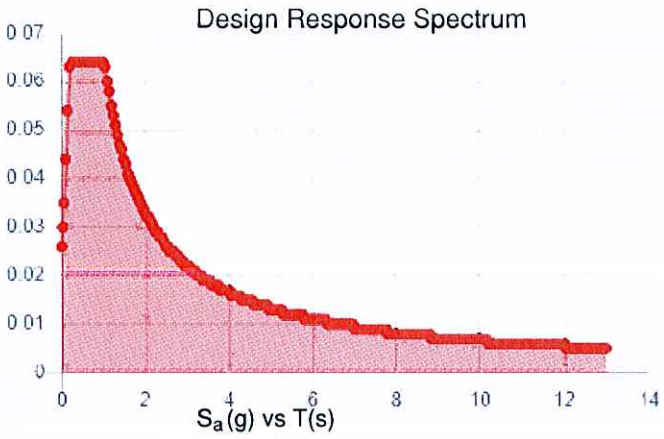
Site Soil Class: D - Default (see Section 11.4.3)

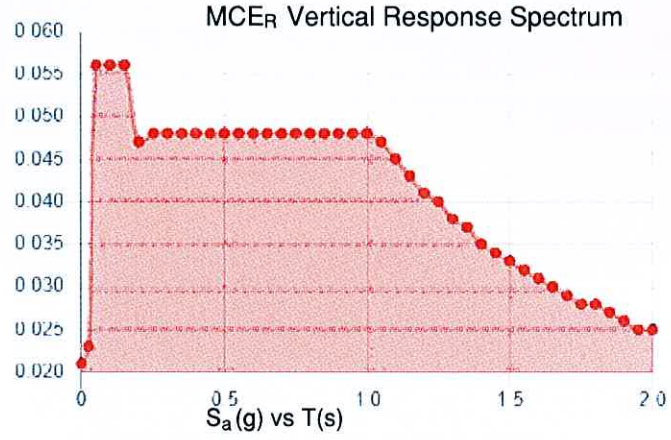
Results:

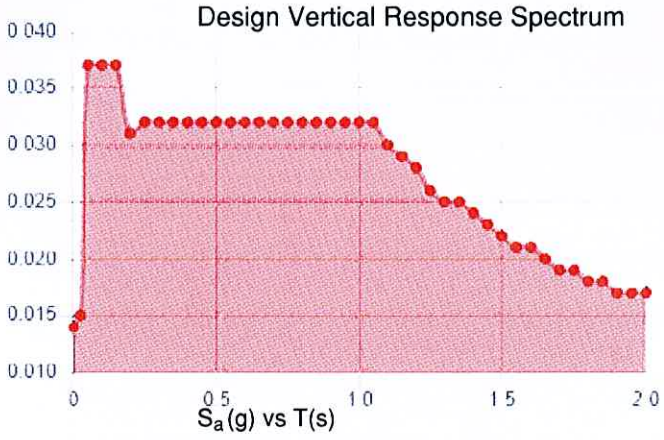
S_S :	0.06	S_{D1} :	0.066
S_1 :	0.041	T_L :	12
F_a :	1.6	PGA :	0.029
F_v :	2.4	PGA_M :	0.046
S_{MS} :	0.096	F_{PGA} :	1.6
S_{M1} :	0.099	I_e :	1
S_{DS} :	0.064	C_v :	0.7

Seismic Design Category: A









Data Accessed: Thu Jun 27 2024

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.

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Ice

Results:

Ice Thickness:	1.50 in.
Concurrent Temperature:	-5 F
Gust Speed	40 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Thu Jun 27 2024

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.

Vertical Bridge US-WI-5737 – Business Drive
Verizon MDG ID 5000954019
2219 Sauk Trail Rd., Sheboygan, WI 53083
RF Affidavit

AFFIDAVIT
SWORN STATEMENT OF NEED FOR A NEW MOBILE SERVICE SUPPORT STRUCTURE FOR BUSINESS DRIVE LOCATED AT 2219 SAUK TRAIL RD., SHEBOYGAN, WI 53083 IN SUPPORT OF NEW TOWER CONSTRUCTION PURSUANT TO WIS. STAT. §66.0404

STATE OF WISCONSIN §
§
COUNTY OF SHEBOYGAN §

BEFORE ME, the undersigned authority, this day personally appeared Kunjan Mehta, who being by me first duly sworn, on oath says as follows:

1. My name is Kunjan Mehta. I am an Engr III Cslt-Radio Frequency Global Network and Technology for Verizon Wireless ("Verizon") in the Illinois/Wisconsin Market. As a radio frequency specialist, I am trained to identify lack of capacity in coverage in wireless communications systems and to assess the ability of proposed antenna sites to remedy lack of capacity in signal coverage.

2. Verizon is a federally licensed provider of wireless communications services with a national footprint.

3. Verizon will locate its personal wireless service equipment on this proposed tower and in the proposed ground equipment area. The proposed facilities are located within areas where Verizon has identified a need to install a wireless telecommunications facility in order to provide reliable wireless service. The search area for the proposed facility was determined by the fact that wireless service needs significant improvement throughout the surrounding. Furthermore, it was determined that the areas served by the facility would interact well with those of existing and planned facilities in the surrounding area.

4. Verizon would have a lack in the required capacity to provide reliable coverage in the City of Sheboygan if existing towers were to be used outside of the Verizon search ring. The proposed tower locations fulfill network requirements within this area. A lack of capacity could result in the inability to adequately transmit or receive calls, or by interrupted or disconnected calls.

5. The lack in the required capacity to provide reliable coverage that would be created in the City of Sheboygan if the proposed tower/equipment is not constructed, as shown in Exhibit A, would prevent Verizon from providing seamless wireless service to current and future public and private users of its wireless communication system including police, fire, ambulance and emergency response personnel.

6. Since wireless communication is used with increasing frequency to report crimes, accidents, fires, medical emergencies and other threats to people or property, a lack of the required capacity represents a demonstrable threat to public health, safety and welfare.

7. Exhibit A is a true and accurate simulation of existing radio frequency coverage in the area of the proposed site and shows the location of Verizon's proposed site in the City of Sheboygan. Exhibit B is a true and accurate simulation of radio frequency coverage of the proposed site with antennas at 120' on a 125' standard Monopole (with the highest point being 135' at the tip of a 10' lightning rod) and surrounding areas. The Proposed Tower is intended to provide coverage for up to three carriers. This evidence conclusively demonstrates Verizon's need for the proposed tower.

8. The proposed tower will provide needed coverage into the surrounding commercial and residential developments around the proposed site. When coupled with Verizon's existing system, the minimum antenna centerline height at the proposed site necessary to meet Verizon's radio frequency coverage and capacity objectives is as listed in section #7. The proposed tower and related ground equipment, as designed, will substantially accomplish Verizon's radio frequency goals in the area while minimizing any aesthetic impact to the community.

9. Natural and man-made features such as large buildings, hills, trees, and ridge lines all affect the way a signal travels and can distort or obstruct radio signals. Radio signals will either bounce off, bounce back or be absorbed by these obstructions. These constraints severely limit the suitability of sites for purposes of remedying a lack of capacity in signal coverage.

10. Exhibit C is a true and accurate representation of the search ring provided by Verizon to search for tower locations that meet the needs of Verizon's communications network. The search ring center is shown in Exhibit C and depicted as a red pin and the search ring is depicted as a red circle. The location of the proposed tower is shown in Exhibit C and depicted by the green pin.

11. We have performed an FCC Antenna Structure Registration Search for a quarter-mile radius around the coordinates of the proposed site. The results of this search are attached and incorporated herein by reference as Exhibit D. There were no towers within the search radius to meet the coverage objective. This additional evidence further demonstrates the need for the proposed tower.

Vertical Bridge US-WI-5737 – Business Drive
Verizon MDG ID 5000954019
2219 Sauk Trail Rd., Sheboygan, WI 53083
RF Affidavit

DATED THIS 6 DAY OF August, 2024.

Kunjan

KUNJAN MEHTA
ENGR III CSLT-RADIO FREQUENCY
GLOBAL NETWORK AND TECHNOLOGY
VERIZON WIRELESS

SUBSCRIBED AND SWORN BEFORE ME THIS
6th DAY OF August, 2024.

Sharon A Petrielli

NOTARY PUBLIC,

STATE OF: ILLINOIS

MY COMMISSION EXPIRES: 7-22-2025

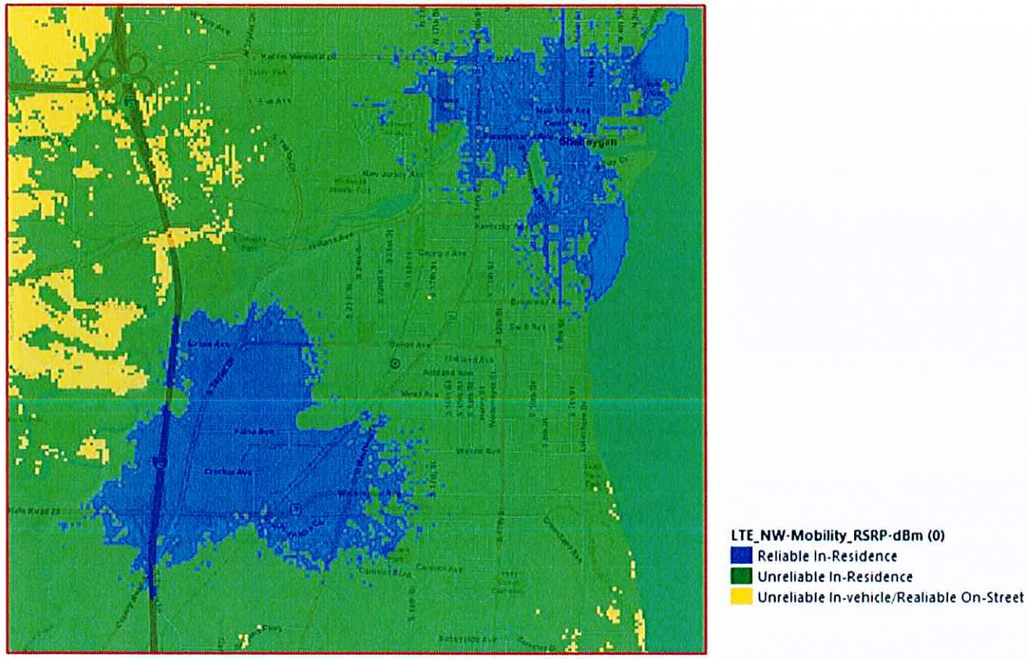
COUNTY OF: Cook

SHARON A PETRIELLI
Official Seal
Notary Public - State of Illinois
My Commission Expires Jul 22, 2025

EXHIBIT A

To Affidavit of Kunjan Mehta

See attached Propagation Map showing Current Coverage with Existing Antennas



Vertical Bridge US-WI-5737 – Business Drive
Verizon MDG ID 5000954019
2219 Sauk Trail Rd., Sheboygan, WI 53083
RF Affidavit

EXHIBIT B

To Affidavit of Kunjan Mehta

See attached Propagation Map with Proposed Monopole, Antennas at 120' and Current Coverage with Existing Antennas

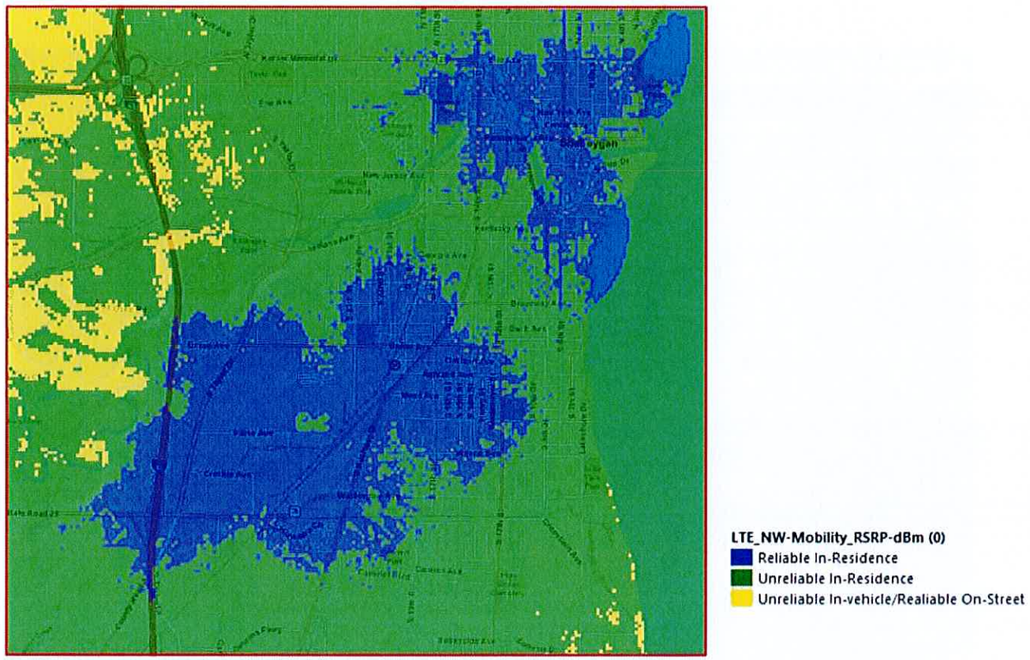


EXHIBIT C

To Affidavit of Kunjan Mehta

.25 Mile Search Radius Map: From RF Search Center

Center of RF .25 Mile Search Ring: Red Pin, Red Circle

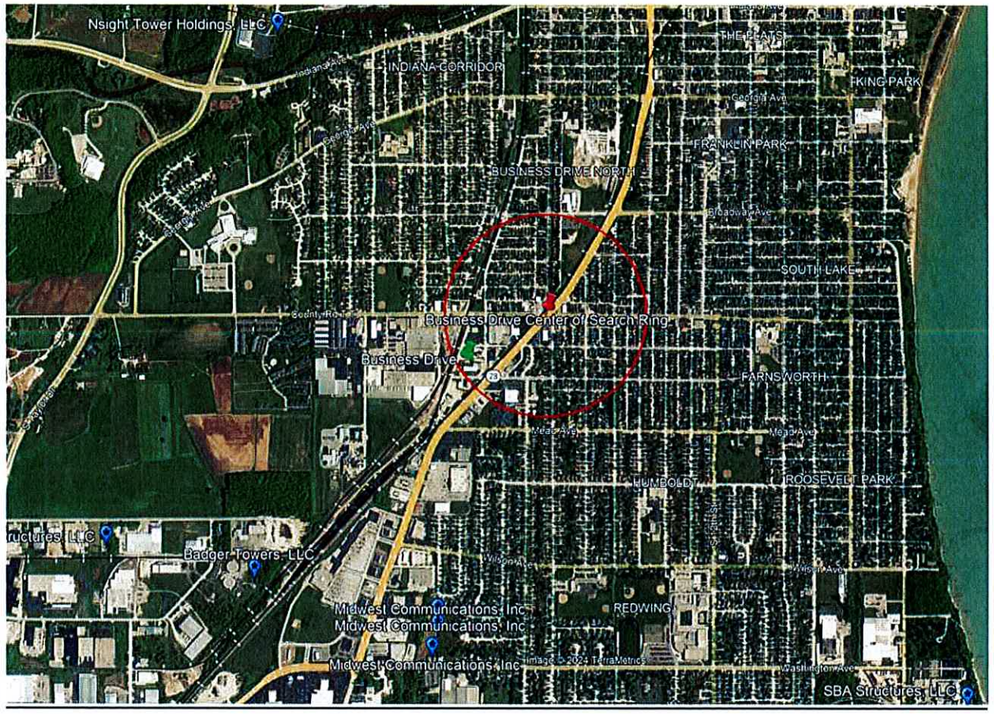


EXHIBIT D

To Affidavit of Kunjan Mehta

FCC Antenna Structure Registration Study Results

Center of RF Quarter-Mile Search Ring: Exhibit C Red Pin, Red Circle

Latitude:	43° 43' 55.56" North (43.732099°)
Longitude:	87° 43' 41.61" West (-87.728226°)

Proposed tower location: **Exhibit C Green Pin**

Latitude:	43° 43' 49.32" North (43.730367°)
Longitude:	87° 43' 56.23" West (-87.732286°)
Parcel ID:	59281425610
Jurisdiction:	City of Sheboygan

Existing tower locations: **Exhibit C Blue Stars**

No existing towers within search ring.

CELLCO PARTNERSHIP
d/b/a VERIZON WIRELESS

VZW SITE NAME
BUSINESS DRIVE

MDG LOCATION #
5000954019

FUZE PROJECT #
2612115

125' MONOPOLE

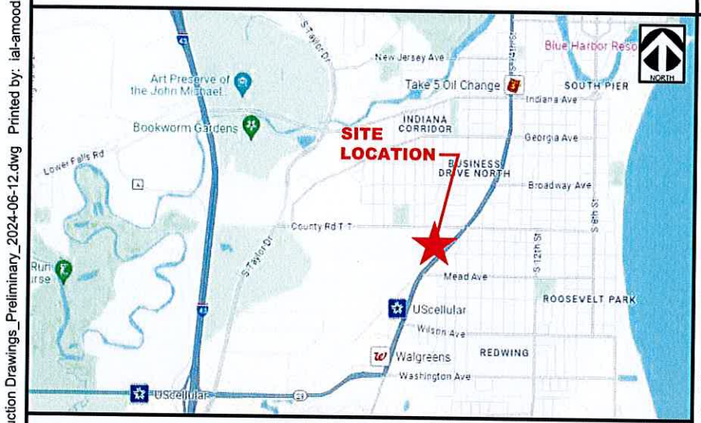
vertical bridge

VB SITE NAME
BUSINESS DRIVE

VB SITE #
US-WI-5737

ADDRESS
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083

VICINITY MAP:



AERIAL MAP:

APPROVALS:

CONSTRUCTION MANAGER:	
LANDLORD:	

PROJECT INFORMATION:

SITE ADDRESS:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SITE COORDINATES:
LATITUDE: 43° 43' 49.32" N (43.730367°)
LONGITUDE: 87° 43' 56.23" W (-87.732286°)

GROUND ELEVATION:
640' AMSL

PARCEL OWNER:
MATHEW J. DROSS & LISA A. DROSS
PARCEL ID: 59281425610

ZONING:
CURRENT ZONING: CLASS 2 COMMERCIAL
JURISDICTION: CITY OF SHEBOYGAN

LESSOR:
VERTICAL BRIDGE
750 PARK OF COMMERCE DRIVE, SUITE 200
BOCA RATON, FL 33487

LESSEE:
VERIZON WIRELESS
1701 GOLF ROAD, TOWER 2, SUITE 400
ROLLING MEADOWS, IL 60008
CONTACT: KATHY COGSWELL
EMAIL: kathryn.cogswell@Verizonwireless.com
PHONE: (847) 841-0694

A&E FIRM
RAMAKER
855 COMMUNITY DRIVE
SAUK CITY, WI 53583
CONTACT: MIKE REEVE
EMAIL: mreeve@ramaker.com
PHONE: (608) 643-4100

FIBER PROVIDER
AT&T
PHONE: (855) 781-7542

ELECTRIC PROVIDER
ALLIANT ENERGY
CONTACT: JOSH ANDREWS
EMAIL: joshuaandrews@alliantenergy.com
PHONE: (920) 459-6345

SCOPE OF WORK:

- (9) PROPOSED PANEL ANTENNAS WITH (1) PROPOSED ANTENNA SECTOR PLATFORM
- (6) PROPOSED TOP OF TOWER RRHs, (3) RRHs INTEGRATED WITH PANEL ANTENNAS
- (3) PROPOSED TOP OF TOWER OVP BOX WITH (3) ALARMS
- (1) PROPOSED 4'X11' EQUIPMENT CONCRETE PAD WITH ICE BRIDGE CANOPY
- (2) PROPOSED EQUIPMENT CABINETS
- (1) PROPOSED 4'-0"X10' GENERATOR CONCRETE PAD
- (1) PROPOSED GENERATOR
- (1) PROPOSED 6' UTILITY STAND WITH ICE BRIDGE CANOPY
- (3) PROPOSED OVP BOX AT 6' UTILITY STAND
- (1) PROPOSED ILC CABINET
- (1) PROPOSED CHARLES CUBE
- (1) PROPOSED CONTACT ALARM BOX
- (3) PROPOSED 1.58" HYBRID CABLES WITH ICE BRIDGE
- INSTALL EQUIPMENT POWER AND FIBER

CODE COMPLIANCE:

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE ALL CODES REFERENCED ON PAGE GN-1 AND AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

811 Know what's below. Call before you dig. www.call811.com

PROJECT DESCRIPTION:
CONSTRUCTION OF TELECOMMUNICATIONS AND PUBLIC UTILITY FACILITY, CONSISTING OF A LATTICE TOWER, SPACE FOR CARRIER EQUIPMENT, AND UTILITY BACKBOARD WITHIN A FENCED COMPOUND. NO WATER OR SEWER IS REQUIRED. THIS WILL BE AN UNMANNED FACILITY.

SHEET INDEX

SHEET NUMBER	SHEET DESCRIPTION
T-1	COVER SHEET
SOW	SCOPE OF WORK
LP	LOCATION PLAN
C-1	ENLARGED SITE PLAN
C-2	SITE GRADING PLAN
C-3	ACCESS ROAD DETAILS
C-3A	DRAINAGE GRADING & EROSION CONTROL NOTES & DETAILS
C-4, C-5, & C-6	FENCE DETAILS
C-7	SITE SIGNAGE DETAILS
C-8	FOUNDATION DETAILS
C-9	GENERATOR FOUNDATION DETAILS
ANT-1	SITE ELEVATION
E-1	UTILITY ROUTING PLAN
E-1A	ENLARGED UTILITY ROUTING PLAN
E-1B	GENERATOR UTILITY ROUTING PLAN
E-1C	VAULT SPEC. SHEET
E-2	SITE GROUNDING & NOTES
E-3	UTILITY DETAILS
E-4	SINGLE LINE DIAGRAM
E-5	GROUNDING DETAILS
GN-1	GENERAL & GROUNDING NOTES
P-1	EXISTING SITE PHOTOS
VW C-1	ENLARGED SITE PLAN
VW C-2	GENERAL NOTES
VW B-1	EQUIPMENT PAD PLAN & NOTES
VW B-2	EQUIPMENT PAD ELEVATION
VW ANT-1	SITE ELEVATION
VW ANT-2 & 2A	ANTENNA INFORMATION
VW ANT-3	SITE DETAILS
VW ANT-3A	ANTENNA INFORMATION
VW ANT-3B	ANTENNA MOUNTING DETAILS
VW ANT-4	SITE DETAILS
VW E-1	UTILITY ROUTING PLAN
VW E-1A	UTILITY RISER DIAGRAMS
VW E-1B	GENERATOR UTILITY ROUTING PLAN
VW E-1C	GENERATOR SINGLE LINE DIAGRAM & ALARM WIRING
VW E-2	ELECTRICAL DETAILS
VW E-3	ELECTRICAL AND GROUNDING NOTES
VW E-4	SITE GROUNDING & NOTES
VW E-5	GROUNDING DETAILS
VW E-6	GROUNDING & ELECTRICAL DETAILS
VW E-7	LIGHTING SPECIFICATIONS
VW EX-1 & 2	GENERATOR CUT-SHEET

ATTACHMENTS

1 OF 2 & 2 OF 2	SURVEY

vertical bridge

CELLCO PARTNERSHIP
d/b/a VERIZON WIRELESS

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employee-owned
(608) 643-4100 www.ramaker.com

Certification & Seal:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Wisconsin.

WISCONSIN
MICHAEL L. PINSKE
36387
MIDDLETON, WI
PROFESSIONAL ENGINEER

Signature: 9/30/2024 Date:

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
TITLE SHEET

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: T-1

VERTICAL BRIDGE CONSTRUCTION SCOPE OF WORK

1.00 PERMITTING
A. CONTRACTOR IS RESPONSIBLE FOR ELECTRICAL PERMITS AND ALL REQUIRED INSPECTIONS.

2.00 SITE CLEARING
A. CONTRACTOR SHALL CLEAR ACCESS EASEMENT AND LEASE AREA OF ALL TREES AND STUMPS. REMOVE AND DISPOSE OF ALL DEBRIS. CONTRACTOR SHALL NOT DISTURB AREA OUTSIDE OF LIMITS OF DISTURBANCE.

B. IF REQUIRED PER UTILITY COORDINATION CONTRACTOR SHALL CLEAR UTILITY EASEMENTS OF ALL TREES AND STUMPS. REMOVE AND DISPOSE OF ALL DEBRIS.

C. CONTRACTOR SHALL INSTALL SILT FENCE PRIOR TO THE START OF CONSTRUCTION.

D. ALL DEBRIS OR MATERIALS TO BE LEFT ON SITE WILL BE CLEARED WITH THE LAND OWNER ON A SIGNED DOCUMENT.

3.00 ACCESS ROAD
A. CONTRACTOR SHALL COMPLETE GRAVEL ACCESS DRIVE TO TOWER COMPOUND PER CONSTRUCTION DRAWINGS OR AT A MINIMUM OF VERTICAL BRIDGE STANDARDS.

B. 18" CULVERT PIPE IS VERTICAL BRIDGE MINIMUM STANDARD UNLESS DOT ENFORCED SIZE IS REQUESTED. SEE CONSTRUCTION DRAWINGS GRADING PLAN FOR SITE CULVERT LOCATION(S) AND SIZES.

4.00 COMPOUND FENCE
A. CONTRACTOR SHALL INSTALL STYMIE LOCK SYSTEM AND VERTICAL BRIDGE LOCK ON COMPOUND GATE. VERTICAL BRIDGE LOCK COMBO (0951)

B. CONTRACTOR SHALL INSTALL MUSHROOM AND GATE STOPS.

C. CONTRACTOR SHALL INSTALL 50'x50'x6' CHAINLINK FENCE WITH (3) RUNS OF BARBED WIRE ON TOP FOR MONOPOLE AND GUYED TOWERS. (75'x75'x6' FENCED COMPOUND FOR SST TOWER SITES)

5.00 TOWER AND FOUNDATION
A. CONTRACTOR SHALL COORDINATE DELIVERY OF ANCHOR BOLTS, TEMPLATE AND TOWER STEEL WITH TOWER VENDOR.

B. CONTRACTOR SHALL UTILIZE SUPPLIED FOUNDATION DESIGN FOR TOWER. REBAR AND CONCRETE INSTALLATION SHALL BE INSPECTED AND TESTED BY A 3RD PARTY COMPANY AND SUBMIT TEST AND INSPECTION REPORTS TO VERTICAL BRIDGE. (SPOILS FROM FOUNDATION SHALL BE REMOVED FROM SITE)

C. 3 DAY / 7 DAY / 28 DAY BREAK TEST REQUIRED. BREAK TEST MUST BE SUBMITTED FOR REVIEW PRIOR TO TOWER STACK.

D. CONTRACTOR SHALL INSTALL TOWER, ALL ASSOCIATED STEP BOLTS, SAFETY CLIMB EQUIPMENT, LIGHTNING ROD, WAVEGUIDE LADDER AND ALL MISCELLANEOUS TOWER PARTS.

E. CONTRACTOR SHALL CONFORM TO SUPPLIED FAA HEIGHT VERIFICATION.

6.00 TOWER LIGHTING
A. TOWER LIGHTING EQUIPMENT SHALL BE INSTALLED BY LIGHTING MANUFACTURE.

B. CONTRACTOR SHALL SUPPLY AND INSTALL 100A SUB-PANEL WITH (3) 20 AMP BREAKERS FOR TOWER LIGHTING IF REQUIRED.

C. CONTRACTOR SHALL SUPPLY AND INSTALL (1) GFI OUTLET AT SUB-PANEL LOCATION FOR TOWER LIGHTING IF REQUIRED.

D. CONTRACTOR SHALL SUPPLY AND INSTALL (1) 2" CONDUIT FROM SUB-PANEL LOCATION TO TOWER LEG WITH WEATHER-HEAD IF REQUIRED.

7.00 UTILITY H-FRAME CONSTRUCTION
A. CONTRACTOR SHALL SUPPLY AND INSTALL A 4-GANG 800 AMP METER PANEL ON A NEW 8' H-FRAME.

B. H-FRAME TO BE CONSTRUCTED TO HOLD 4-GANG METER BASE ON FRONT WITH METERS FACING OUT OF COMPOUND.

C. H-FRAME TO BE CONSTRUCTED TO HOLD TOWER LIGHTING SUB-PANEL AND LIGHTING CONTROLLER ON FRONT ALONGSIDE METER BASE.

D. CONTRACTOR SHALL SUPPLY GFCI ALL WEATHER RECEPTACLES ON H-FRAME.

E. CONTRACTOR SHALL SUPPLY AND INSTALL 500-WATT METAL MALIDE FLOOD LIGHT 120 VOLT WITH TIMER SWITCH.

8.00 POWER SERVICE
A. CONTRACTOR SHALL USE PROVIDED UTILITY REPORT AND CONSTRUCTION DRAWINGS TO BID POWER FROM POWER DEMARC.

B. CONTRACTOR SHALL BE IN CONSTANT COMMUNICATION WITH POWER COMPANY UNTIL POWER IS ACQUIRED AT MULTI-METER FRAME.

C. CONTRACTOR SHALL NOTIFY UTILITY PROVIDER OF START OF CONSTRUCTION.

D. CONTRACTOR SHALL CONDUCT A SECOND POWER WALK WITH UTILITY PROVIDER AT START OF CONSTRUCTION.

E. IF CHANGES TO THE SCOPE OF WORK ARE MADE BY THE UTILITY PROVIDER AFTER CONSTRUCTION START, CONTRACTOR SHALL NOTIFY VERTICAL BRIDGE CM/PM IMMEDIATELY.

9.00 VERIZON TELCO/FIBER SERVICE INSTALL BY VERTICAL BRIDGE
A. CONTRACTOR SHALL SUPPLY AND INSTALL A SEPARATE HAND-HOLE AT THE ROW, AT THE COMPOUND AND EVERY 300' (OR AT ANY BEND) WITH 2" CONDUIT FOR THE LIT FIBER PER THE CONSTRUCTION DRAWINGS.
MARK HAND-HOLES LIT FIBER

B. CONTRACTOR SHALL SUPPLY AND INSTALL A SEPARATE HAND-HOLE AT THE ROW, AT THE COMPOUND AND EVERY 300' (OR AT ANY BEND) WITH 2" CONDUIT FOR THE DARK FIBER PER THE CONSTRUCTION DRAWINGS.
MARK HAND-HOLES DARK FIBER FIBER

C. **FIBER TO FOLLOW ACCESS ROAD TO ROW ALWAYS!**

CONTRACTOR NOTES

VERTICAL BRIDGE CM NOTES

1. NOISE PRODUCING CONSTRUCTION ACTIVITIES SHALL TAKE PLACE ONLY ON WEEKDAYS (MONDAY THROUGH SATURDAY, NON-HOLIDAY) BETWEEN THE HOURS OF 6:00 A.M. & 6:00 P.M., EXCEPT IN TIMES OF EMERGENCY REPAIR
2. GENERAL CONTRACTOR TO REFERENCE THE VERTICAL BRIDGE UTILITY COORDINATION REPORT (UCR) FOR POWER COMPANY REQUIREMENTS REGARDING POWER CONDUITS.
3. SPECIFIC GROUND EQUIPMENT LIGHTING REQUIRED TO ADDRESS CONSERVATION MEASURES OF NORTHERN LONG EARED BAT. SEE SHEETS VW B-2 & VW E-7.

VERTICAL BRIDGE CONSTRUCTION SCOPE OF WORK CON'T.

10.00 VERIZON CIVILS
A. CONTRACTOR SHALL PROVIDE LUMP SUM FEE FOR ALL VERIZON LINE ITEMS UNDER TENANT CIVILS ON BID DOCUMENT. THIS INCLUDES SET AND CONNECTIONS OF VERIZON'S EQUIPMENT/GENERATOR PADS, FUEL TANKS, EQUIPMENT/GENERATOR ELECTRICAL, TELCO/FIBER CONDUITS, EQUIPMENT GROUNDING AND ICE BRIDGE.

11.00 VERIZON ANTENNA MOUNT(S)
A. CONTRACTOR SHALL PROVIDE SEPARATE LINE ITEM FOR ANTENNA MOUNT INSTALLATION UNDER TENANT MOUNT. CONTRACTOR SHALL ORDER THE ANTENNA MOUNT AND CONFIRM THE ITEM DESCRIPTION THROUGH VERIZON.

B. CONTRACTOR WILL BE REQUIRED TO ORDER ANTENNA MOUNT ASAP TO AVOID ANY DELAYS TO STACK THE TOWER.

VERIZON CONSTRUCTION SCOPE OF WORK

1.00 VERIZON ANTENNA AND LINES
A. CONTRACTOR SHALL PROVIDE LUMP SUM FEE FOR ALL VERIZON ANTENNA AND LINES WITH EQUIPMENT UNDER TENANT CIVILS ON BID DOCUMENT. VERIZON TO PROVIDE ALL EQUIPMENT FOR ANTENNA AND LINE INSTALLATION. CONTRACTOR SHALL PROVIDE CONSUMABLE MATERIALS AS NEEDED TO COMPLETED THE CO-LOCATION.

B. CONTRACTOR SHALL SUPPLY AND INSTALL HYBRID CABLES.

2.00 STARTUP COMMISSIONING
A. CONTRACTOR SHALL PROVIDE LUMP SUM FEE UNDER BID CLARIFICATION/EXCEPTIONS SECTION FOR COMMISSIONING AND START-UPS (AS REQUIRED BY "STANDARD VERIZON INSTALL). VERIZON IS RESPONSIBLE FOR PAYMENT OF THESE SERVICES.

3.00 VERIZON POWER SERVICE
A. CONTRACTOR/VERIZON CM RESPONSIBLE FOR SETTING UP VERIZON'S POWER ACCOUNT OR TRANSFER OF INITIAL SERVICE ACCOUNT FROM VERTICAL BRIDGE TO VERIZON.
1. CONTRACTOR RESPONSIBLE FOR REPORTING POWER UPDATES.
2. CONTRACTOR RESPONSIBLE FOR TRACKING AND CONFIRMING METER SET.
3. PHOTO CONFORMATION REQUIRED.

B. VERIZON POWER SERVICE SHALL BE 200 AMPS
C. TYPICAL VERIZON ELECTRICAL POWER SERVICE INSTALL. SEE CONSTRUCTION DRAWINGS FOR POWER ROUTING.

VERTICAL BRIDGE TIMELINE EXPECTATIONS

- ONCE NTP HAS BEEN ISSUED, CONTRACTOR HAS (3) BUSINESS DAYS TO PROVIDE A SCHEDULE TO VERITCAL BRIDGE CONSTRUCTION MANAGER AND PROJECT MANAGER.
- CONSTRUCTION STARTS WITHIN 7 DAYS OF NTP RECEIPT.
- DAILY SAFETY REPORTS ARE REQUIRED.
- DAILY SITE UPDATES WITH PHOTOS ARE REQUIRED.
- TOWER STACKED (OTHVR) WITHIN 28 DAYS OF NTP RECEIPT.
- CLOSEOUT APPROVAL WITHIN 60 DAYS OF NTP RECEIPT.

verticalbridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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(608) 643-4100 www.ramaker.com

Certification & Seal:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Wisconsin.

WISCONSIN
MICHAEL L. PINSKE
36387
MIDDLETON, WI
PROFESSIONAL ENGINEER

Signature: Date: 9/30/2024

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY
DATE ISSUED: 06/25/2024

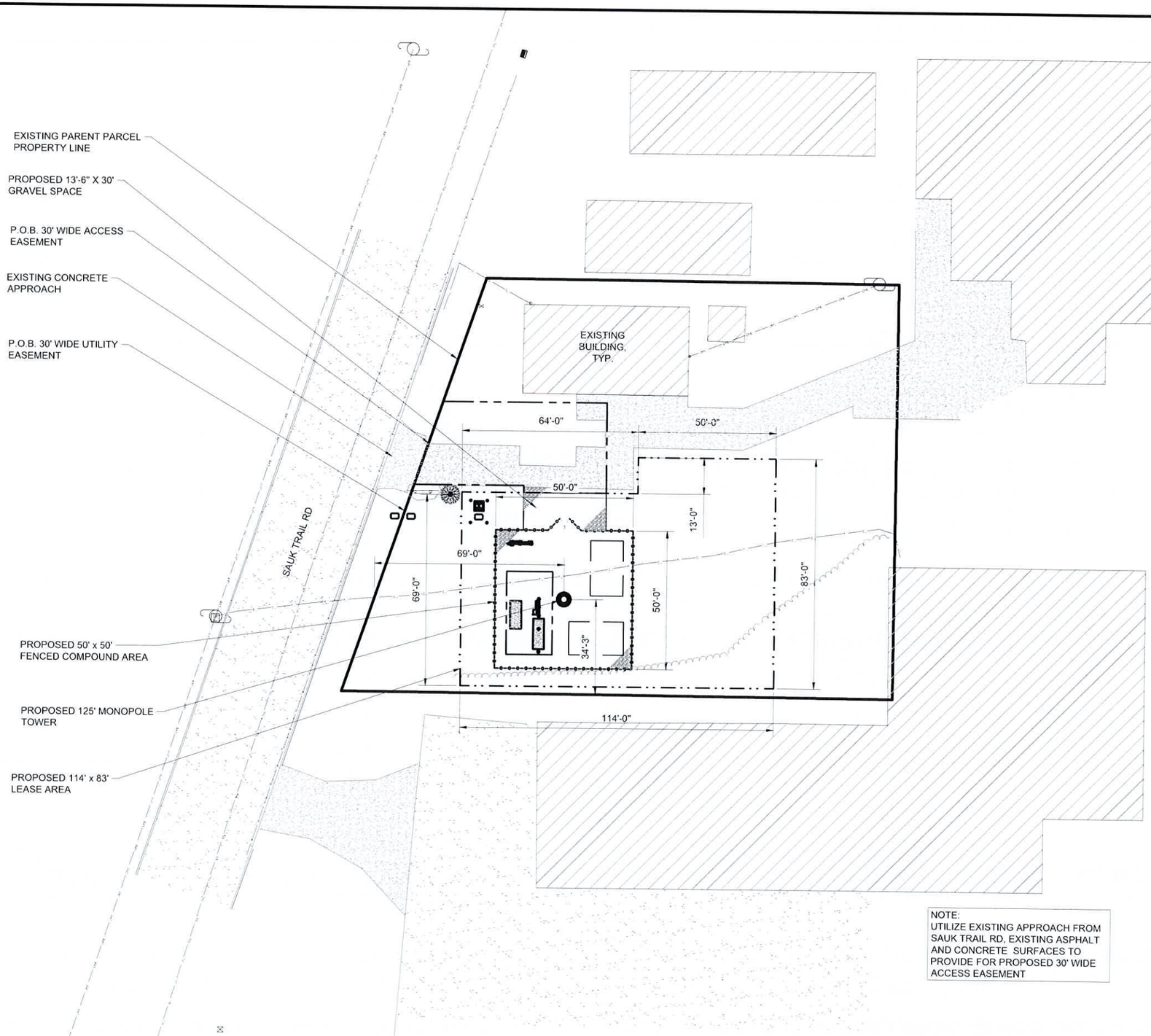
PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
SCOPE OF WORK

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: SOW



NOTE:
UTILIZE EXISTING APPROACH FROM SAUK TRAIL RD. EXISTING ASPHALT AND CONCRETE SURFACES TO PROVIDE FOR PROPOSED 30' WIDE ACCESS EASEMENT

LOCATION PLAN (1)
SCALE: 1" = 40'

NORTH

verticalbridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

RAMAKER
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(608) 643-4100 www.ramaker.com

Certification & Seal:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Wisconsin.

WISCONSIN
MICHAEL L. PINSKE
36387
MIDDLETON, WI
PROFESSIONAL ENGINEER

Signature: 9/30/2024 Date:

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

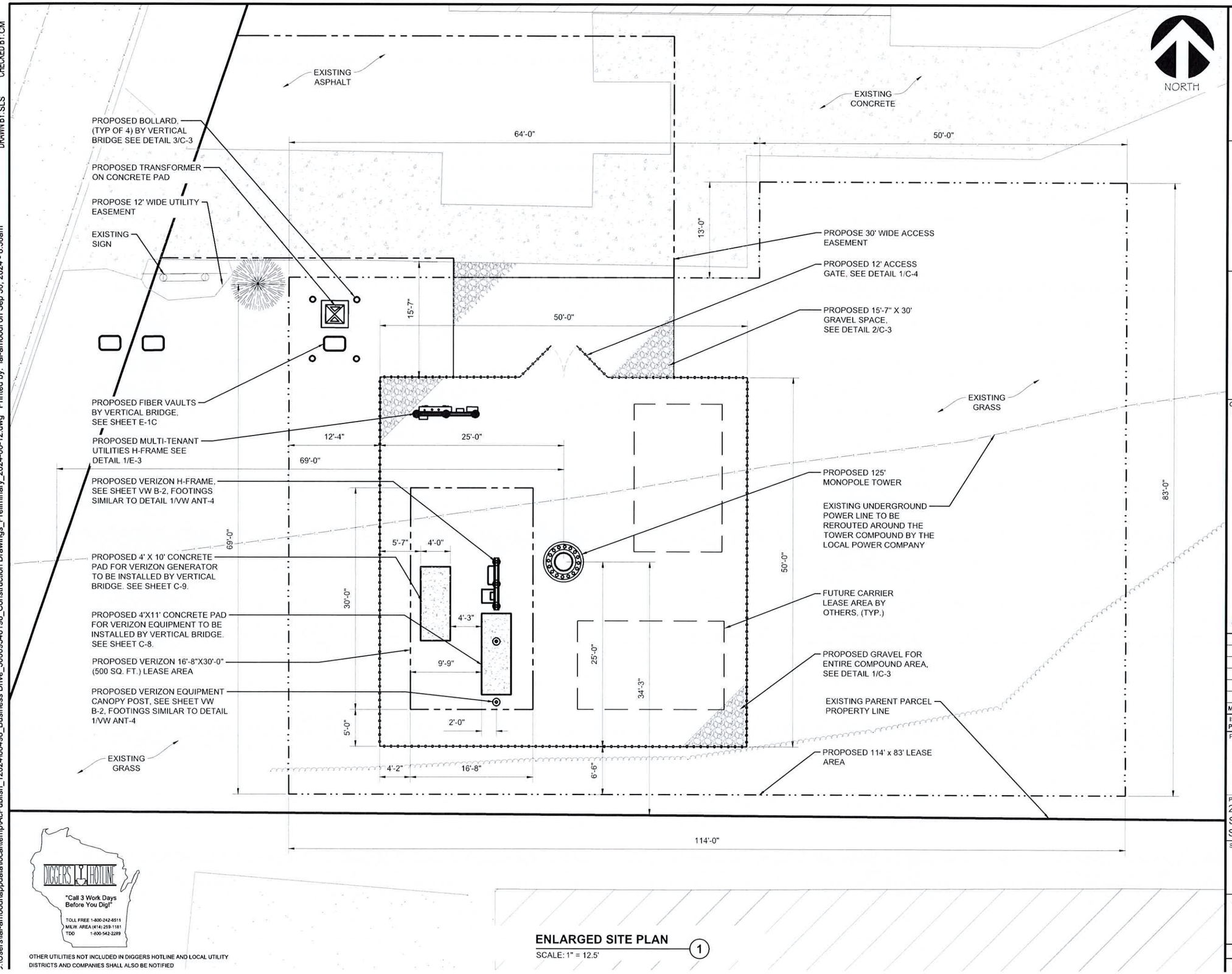
PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
LOCATION PLAN

0 20' 40' 80'
11" x 17" - 1" = 40'
22" x 34" - 1" = 20'

PROJECT NUMBER: 60498
SHEET NUMBER: LP



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

ENLARGED SITE PLAN (1)
SCALE: 1" = 12.5'

verticalbridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

RAMAKER
employee-owned
(608) 643-4100 www.ramaker.com

Certification & Seal:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Wisconsin.

WISCONSIN MICHAEL L. PINSKE 36387 MIDDLETON, WI PROFESSIONAL ENGINEER

Signature: 9/30/2024 Date:

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

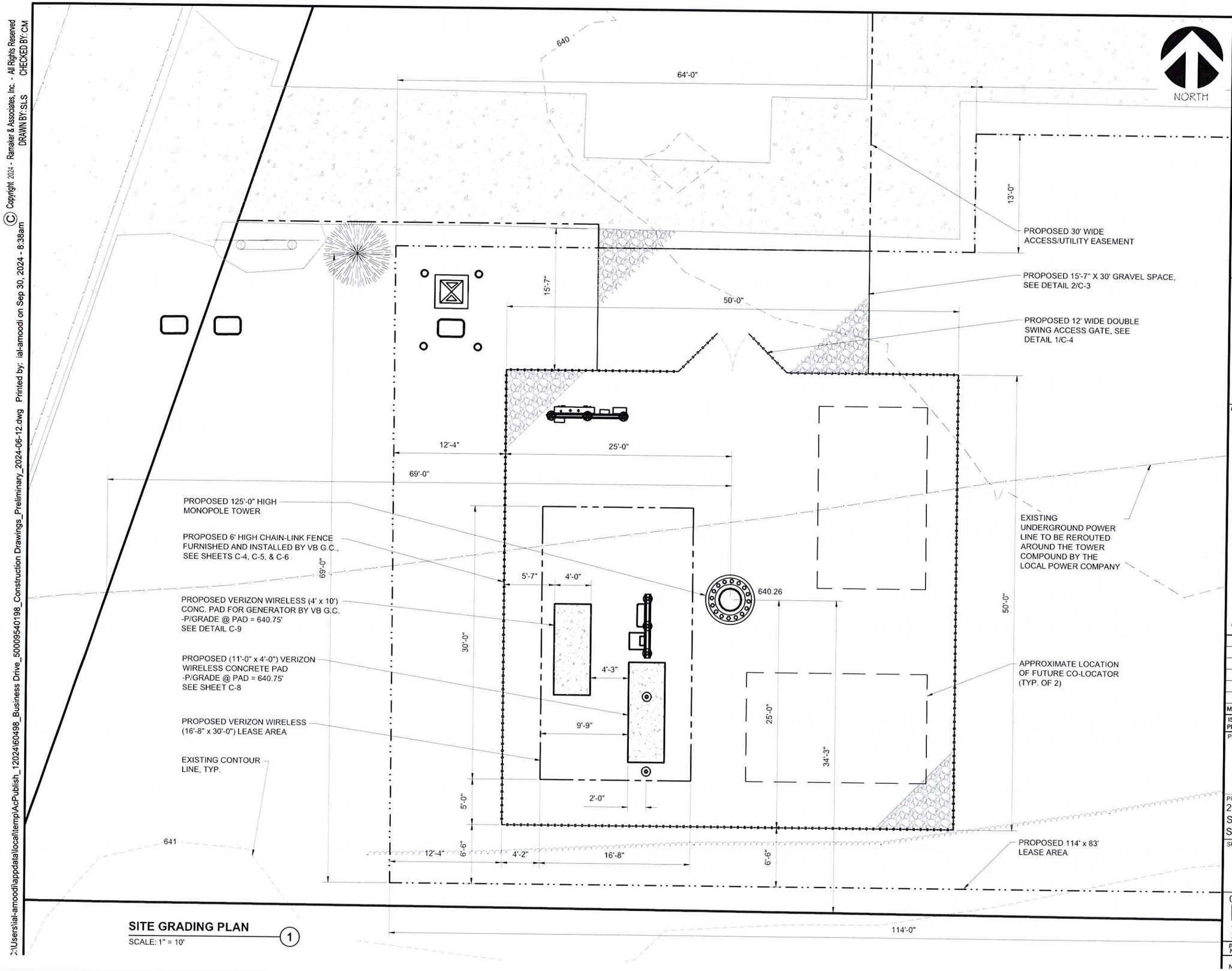
PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
ENLARGED SITE PLAN

0 6.25' 12.5' 25'
11" x 17" - 1" = 12.5'
22" x 34" - 1" = 6.25'

PROJECT NUMBER 60498
SHEET NUMBER C-1



SITE GRADING PLAN
SCALE: 1" = 10'
1

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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Certification & Seal:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Wisconsin.

WISCONSIN
MICHAEL L. PINSKE
36387
MIDDLETON, WI
PROFESSIONAL ENGINEER

Signature: Date: 9/30/2024

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY
DATE ISSUED: 06/25/2024

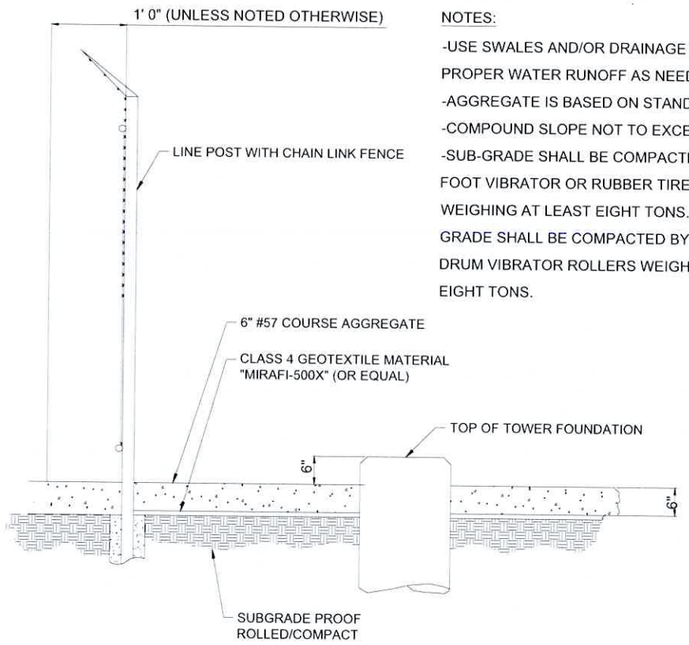
PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
SITE GRADING PLAN

0 5' 10' 20'
11" x 17" - 1" = 10'
22" x 34" - 1" = 5'

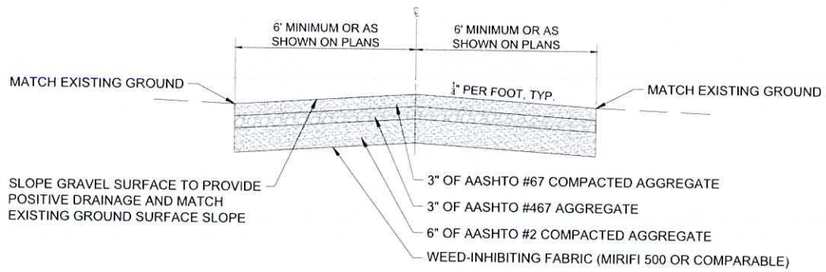
PROJECT NUMBER: 60498
SHEET NUMBER: C-2



NOTES:

-USE SWALES AND/OR DRAINAGE DITCHES FOR PROPER WATER RUNOFF AS NEEDED.
-AGGREGATE IS BASED ON STANDARD AASHTO.
-COMPOUND SLOPE NOT TO EXCEED 5%.
-SUB-GRADE SHALL BE COMPACTED BY SHEEPS FOOT VIBRATOR OR RUBBER TIRED ROLLERS WEIGHING AT LEAST EIGHT TONS. -FINISHED GRADE SHALL BE COMPACTED BY SMOOTH DRUM VIBRATOR ROLLERS WEIGHING AT LEAST EIGHT TONS.

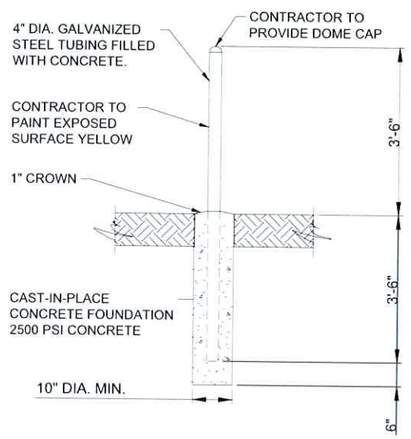
SITE COMPOUND SURFACING DETAIL (1)
SCALE: NTS



NOTES:

1.) THE TURN-AROUND AREA SHALL BE CONSTRUCTED PER THE TYPICAL ACCESS DRIVE SECTION AS SHOWN ABOVE.

TYPICAL ACCESS DRIVE SECTION (2)
SCALE: NTS



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

BOLLARD DETAIL (3)
SCALE: NTS

Item 10.

verticalbridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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WISCONSIN MICHAEL L. PINSKE 36387 MIDDLETON, WI PROFESSIONAL ENGINEER

Signature: Date: 9/30/2024

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY
DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
ACCESS ROAD DETAILS

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: C-3

DRAWN BY: SLS CHECKED BY: CM

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GRADING & EXCAVATING NOTES:

1. ALL EXCAVATIONS ON WHICH CONCRETE IS TO BE PLACED SHALL BE SUBSTANTIALLY HORIZONTAL ON UNDISTURBED AND UNFROZEN SOIL AND BE FREE FROM LOOSE MATERIAL AND EXCESS GROUNDWATER. DEWATERING FOR EXCESS GROUNDWATER SHALL BE PROVIDED IF REQUIRED.
2. CONCRETE FOUNDATIONS SHALL NOT BE PLACED ON ORGANIC MATERIAL. IF SOUND SOIL IS NOT REACHED AT THE DESIGNATED EXCAVATION DEPTH, THE UNSATISFACTORY SOIL SHALL BE EXCAVATED TO ITS FULL DEPTH AND EITHER BE REPLACED WITH MECHANICALLY COMPACTED GRANULAR MATERIAL OR THE EXCAVATION BE FILLED WITH CONCRETE OF THE SAME QUALITY SPECIFIED FOR THE FOUNDATION.
3. ANY EXCAVATION OVER THE REQUIRED DEPTH SHALL BE FILLED WITH EITHER MECHANICALLY COMPACTED GRANULAR MATERIAL OR CONCRETE OF THE SAME QUALITY SPECIFIED FOR THE FOUNDATION. CRUSHED STONE MAY BE USED TO STABILIZE THE BOTTOM OF THE EXCAVATION. STONE, IF USED, SHALL NOT BE USED AS COMPILING CONCRETE THICKNESS.
4. AFTER COMPLETION OF THE FOUNDATION AND OTHER CONSTRUCTION BELOW GRADE, AND BEFORE BACKFILLING, ALL EXCAVATIONS SHALL BE CLEAN OF UNSUITABLE MATERIAL SUCH AS VEGETATION, TRASH, DEBRIS, AND SO FORTH.
5. -USE APPROVED MATERIALS CONSISTING OF EARTH, LOAM, SANDY CLAY, SAND -BE FREE FROM CLODS OR STONES OVER 2-1/2" MAXIMUM DIMENSIONS -BE PLACED IN 6" LAYERS AND COMPACTED TO 95% STANDARD PROCTOR EXCEPT IN GRASSED/BANDSCAPED AREAS, WHERE 90% STANDARD PROCTOR
6. REMOVE ALL VEGETATION, TOPSOIL, DEBRIS, WET AND UNSATISFACTORY SOIL MATERIALS, OBSTRUCTIONS, AND DELETERIOUS MATERIALS FROM GROUND SURFACE PRIOR TO PLACING FILLS, PLOW, STRIP, OR BREAK UP SLOPED SURFACES STEEPER THAN 1 VERTICAL TO 4 HORIZONTAL SO FILL MATERIAL WILL BOND WITH EXISTING SURFACE. WHEN SUBGRADE OR EXISTING GROUND SURFACE TO RECEIVE FILL HAS A DENSITY LESS THAN THAT REQUIRED FOR FILL, BREAK UP GROUND SURFACE TO DEPTH REQUIRED, PULVERIZE, MOISTURE-CONDITION OR AERATE SOIL AND RECOMPACT TO REQUIRED DENSITY.
7. PROTECT EXISTING GRAVEL SURFACING AND SUBGRADE IN AREAS WHERE EQUIPMENT LOADS WILL OPERATE USE PLANKING OR OTHER SUITABLE MATERIALS DESIGNED TO SPREAD EQUIPMENT LOADS, REPAIR DAMAGE TO EXISTING GRAVEL SURFACING OR SUBGRADE WHERE SUCH DAMAGE IS DUE TO THE CONTRACTOR'S OPERATIONS. DAMAGED GRAVEL SURFACING SHALL BE RESTORED TO MATCH THE ADJACENT UNDAMAGED GRAVEL SURFACING AND SHALL BE OF THE SAME THICKNESS
8. REPLACE EXISTING GRAVEL SURFACING ON AREAS FROM WHICH GRAVEL SURFACING IS REMOVED DURING CONSTRUCTION OPERATIONS. GRAVEL SURFACING IS REMOVED DURING CONSTRUCTION OPERATIONS. GRAVEL SURFACING SHALL BE REPLACED TO MATCH EXISTING ADJACENT GRAVEL SURFACING AND SHALL BE OF THE SAME THICKNESS. SURFACES OF GRAVEL SURFACING SHALL BE FREE FROM CORRUGATIONS AND WAVES. EXISTING GRAVEL SURFACING MAY BE EXCAVATED SEPARATELY AND REUSED IF INJURIOUS AMOUNTS OF EARTH, ORGANIC MATTER, OR OTHER DELETERIOUS MATERIALS ARE REMOVED PRIOR TO REUSE. FURNISH ALL ADDITIONAL GRAVEL RESURFACING MATERIAL AS REQUIRED. BEFORE GRAVEL SURFACING IS REPLACED, SUBGRADE SHALL BE GRADED TO CONFORM TO REQUIRED SUBGRADE ELEVATIONS, AND LOOSE OR DISTURBED MATERIALS SHALL BE THOROUGHLY COMPACTED. DEPRESSIONS IN THE SUBGRADE SHALL BE FILLED AND COMPACTED WITH APPROVED SELECTED MATERIAL. GRAVEL SURFACING MATERIAL MAY BE USED FOR FILLING DEPRESSIONS IN THE SUBGRADE, SUBJECT TO ENGINEER'S APPROVAL.
9. DAMAGE TO EXISTING STRUCTURES AND UTILITIES RESULTING FROM CONTRACTOR'S NEGLIGENCE SHALL BE REPAIRED/REPLACED TO OWNER'S SATISFACTION AT CONTRACTOR'S EXPENSE.
10. CONTRACTOR SHALL COORDINATE THE CONSTRUCTION SCHEDULE WITH PROPERTY OWNER SO AS TO AVOID INTERRUPTIONS TO PROPERTY OWNER'S OPERATIONS.
11. ENSURE POSITIVE DRAINAGE DURING AND AFTER COMPLETION OF CONSTRUCTION.
12. ALL CUT AND FILL SLOPES SHALL BE MAXIMUM 2 HORIZONTAL TO 1 VERTICAL
13. CONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING SITE VEHICLE TRAFFIC AS TO NOT ALLOW VEHICLES LEAVING THE SITE TO TRACK MUD ONTO PUBLIC STREETS. THE CONTRACTOR IS RESPONSIBLE FOR CLEANING PUBLIC STREETS DUE TO MUDDY VEHICLES LEAVING THE SITE.

GENERAL EROSION & SEDIMENT CONTROL NOTES:

1. THE SOIL EROSION AND SEDIMENT CONTROL MEASURES AND DETAILS AS SHOWN HEREIN AND STIPULATED WITHIN STATE STANDARDS SHALL BE FOLLOWED AND INSTALLED IN A MANNER SO AS TO MINIMIZE SEDIMENT LEAVING THE SITE.
2. PRIOR TO COMMENCING LAND DISTURBANCE ACTIVITY, THE LIMITS OF LAND DISTURBING SHALL BE CLEARLY AND ACCURATELY DEMARCATED WITH STAKES, RIBBONS, OR OTHER APPROPRIATE MEANS.
3. EROSION CONTROL DEVICES SHALL BE INSTALLED BEFORE GROUND DISTURBANCE OCCURS. THE LOCATION OF SOME OF THE EROSION CONTROL DEVICES MAY HAVE TO BE ALTERED FROM SHOWN ON THE APPROVED PLANS IF DRAINAGE PATTERNS DURING CONSTRUCTION ARE DIFFERENT FROM THE FINAL PROPOSED DRAINAGE PATTERNS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACCOMPLISH EROSION CONTROL FOR ALL DRAINAGE PATTERNS CREATED AT VARIOUS STAGES DURING CONSTRUCTION. ANY DIFFICULTY IN CONTROLLING EROSION DURING ANY PHASE OF CONSTRUCTION SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
4. THE LOCATION OF SOME OF THE EROSION CONTROL DEVICES MAY HAVE TO BE ALTERED FROM THAT SHOWN ON THE PLANS IF DRAINAGE PATTERNS DURING CONSTRUCTION ARE DIFFERENT FROM THE FINAL PROPOSED DRAINAGE PATTERNS. ANY DIFFICULTY IN CONTROLLING EROSION DURING ANY PHASE OF CONSTRUCTION SHALL BE REPORTED TO THE ENGINEERING IMMEDIATELY.
5. CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL MEASURES UNTIL PERMANENT VEGETATION HAS BEEN ESTABLISHED. CONTRACTOR SHALL CLEAN OUT ALL SEDIMENT PONDS WHEN REQUIRED BY THE ENGINEER OR THE LOCAL JURISDICTION INSPECTOR. CONTRACTOR SHALL INSPECT EROSION CONTROL MEASURES AT THE END OF EACH WORKING DAY TO ENSURE MEASURES ARE FUNCTIONING PROPERLY.
6. THE CONTRACTOR SHALL REMOVE ACCUMULATED SILT WHEN THE SILT IS WITHIN 12" OF THE TOP OF THE SILT FENCE.
7. FAILURE TO INSTALL, OPERATE OR MAINTAIN ALL EROSION CONTROL MEASURES WILL RESULT IN ALL CONSTRUCTION BEING STOPPED ON THE JOB SITE UNTIL SUCH MEASURES ARE CORRECTED.
8. SILT BARRIERS TO BE PLACED AT DOWNSTREAM TOE OF ALL CUT AND FILL SLOPES.
9. ALL CUT AND FILL SLOPES MUST BE SURFACED ROUGHENED AND VEGETATED WITHIN SEVEN (7) DAYS OF THEIR CONSTRUCTION.
10. CONTRACTOR SHALL REMOVE ALL EROSION & SEDIMENT CONTROL MEASURES AFTER COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF PERMANENT GROUND COVER.
11. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND-DISTURBING ACTIVITIES.

SEEDING GUIDELINES:

FINAL STABILIZATION OF ALL DISTURBED AREAS, UNLESS OTHERWISE NOTED, SHALL BE LOAMED AND SEEDED. LOAM SHALL BE PLACED AT A MINIMUM COMPACTED DEPTH OF 4". RECOMMENDED SEEDING DATES FOR PERMANENT VEGETATION SHALL BE BETWEEN JUNE15 THROUGH AUGUST 1 AND SEPTEMBER 15 THROUGH OCTOBER 15. TEMPORARY VEGETATIVE MEASURES SHALL CONSIST OF AN ANNUAL OR PERENNIAL RYE GRASS WITH RECOMMENDED SEEDING DATES BEING FROM JUNE 1 THROUGH AUGUST 15 AND SEPTEMBER 30 THROUGH NOVEMBER 30.

EVALUATE PROPOSED COVER

MATERIAL BEFORE SPREADING COVER MATERIAL OVER THE DESIGNATED AREA, OBTAIN A REPRESENTATIVE SOIL SAMPLE AND SUBMIT TO A REPUTABLE SOIL TESTING LABORATORY FOR CHEMICAL AND PHYSICAL ANALYSIS. THE PRELIMINARY TEST IS NECESSARY TO DETERMINE THE REQUIRED INORGANIC AND/OR ORGANIC AMENDMENTS THAT ARE NEEDED TO ASSIST IN ESTABLISHING THE SEED MIXTURE IN AN ENVIRONMENTALLY AND ECONOMICALLY SOUND MANNER. THE RESULTS WILL GIVE THE COVER MATERIAL CHARACTERISTICS SUCH AS A pH AND FERTILIZATION NEEDS. THESE RESULTS SHALL BE KEPT ON-SITE BY THE CONTRACTOR AND AVAILABLE FOR REVIEW BY THE COUNTY.

SEED BED PREPARATION

PROPOSED COVER MATERIAL SHOULD BE SPREAD EVENLY OVER THE SITE AREA IN A MINIMUM 4" LIFT VIA BULLDOZER/BUCKET LOADER, USING THE INFORMATION FROM THE SOIL ANALYSIS, CAREFULLY CALCULATE THE QUANTITIES OF LIMESTONE AND PRE-PLANT FERTILIZER NEEDED PRIOR TO APPLYING. PRE-PLANT AMENDMENTS CAN BE APPLIED WITH A BROADCAST AND/OR DROP SEEDER AND INCORPORATED WITH AN OFFSET DISK, YORK RAKE, AND/OR HAND RAKE. AFTER INCORPORATION THE PRE-PLANT SOIL AMENDMENTS, THE SEED BED SHOULD BE SMOOTH AND FIRM PRIOR TO SEEDING. THE FOLLOWING SEED MIXTURES SHALL BE USED AS NOTED:

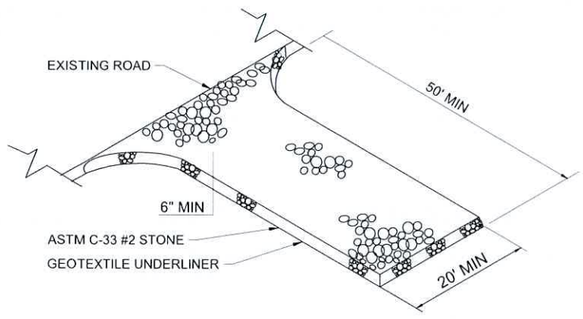
SEED MIXTURE SPECIES/VARIETY	LBS/ACRE
CREEPING RED FESCUE	20
KENTUCKY BLUEGRASS	20
PERENNIAL RYEGRASS	5

SEED TIME AND METHOD

THE PREFERRED TIME FOR SEEDING THE COOL SEASON MIXTURE IS LATE SUMMER. SOIL AND AIR TEMPERATURES ARE IDEAL FOR SEED GERMINATION AND SEEDING GROWTH. WEED COMPETITION IS REDUCED BECAUSE SEEDS OF MANY WEED SPECIES GERMINATE EARLIER IN THE GROWING SEASON. ADDITIONALLY, HERBICIDE USE IS GREATLY REDUCED. HOWEVER, SEEDING MAY BE DONE AT ANY OF THE ABOVE NOTED TIMES.

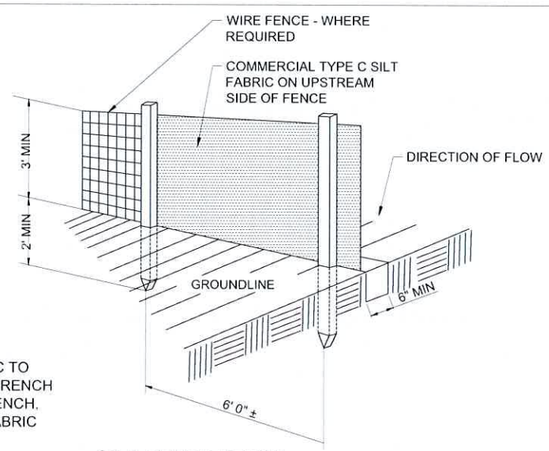
MULCHING

NEWLY SEEDED AREAS SHOULD BE MULCHED TO INSURE ADEQUATE MOISTURE FOR SUCCESSFUL TURF ESTABLISHMENT AND TO PROTECT AGAINST SURFACE MOVEMENT OF SEDIMENT-BOUND AGROCHEMICALS AND SOIL EROSION. IF MULCHING PROCEDURES ARE NOT SPECIFIED ON PLANS, COMMERCIALLY AVAILABLE MULCHES CAN BE USED.



CONSTRUCTION EXIT DETAIL (1)
SCALE: NTS

NOTE:
1. DIG TRENCH
2. LAY IN FABRIC TO BOTTOM OF TRENCH
3. BACKFILL TRENCH, COVERING FABRIC



SILT FENCE DETAIL (2)
SCALE: NTS

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
5. ALL SILT FENCE MATERIALS MUST BE LISTED ON THE CURRENT STATES. D.O.T. QUALIFIED PRODUCTS LIST.

POSTS: STEEL EITHER T OR U TYPE.

FENCE: WOVEN WIRE, 14 GA. 6" MAX. MESH OPENING.

FILTER CLOTH: FILTER X, MIRAFI 100X' STABILINKA T140N OR APPROVED EQUAL.

PREFABRICATED UNIT: GEOFAB, ENVIROFENCE OR APPROVED EQUAL.

Item 10.

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A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

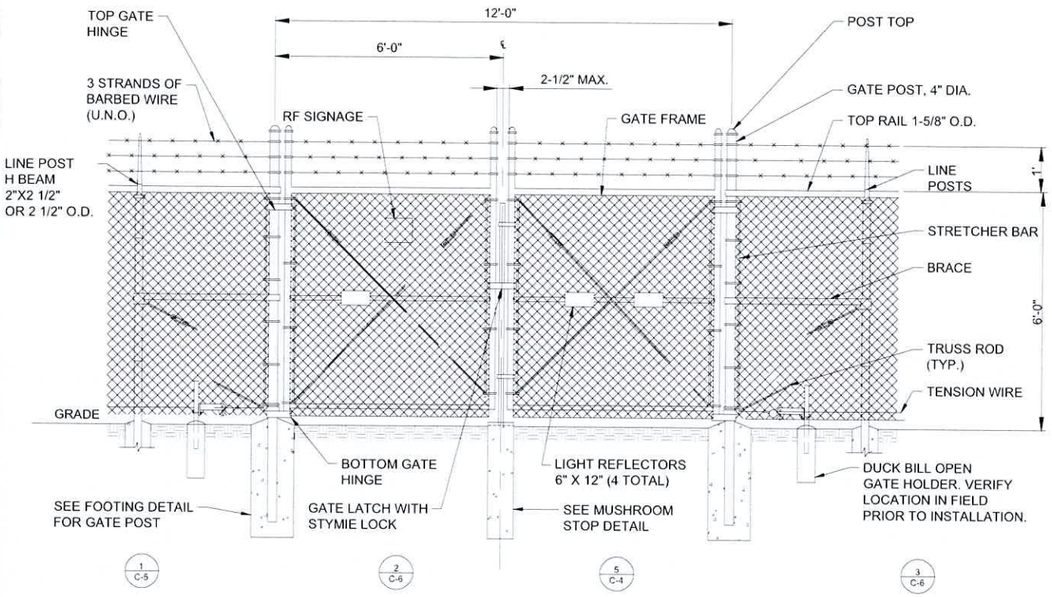
PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
DRAINAGE, GRADING & EROSION CONTROL NOTES AND DETAILS

SCALE: NONE

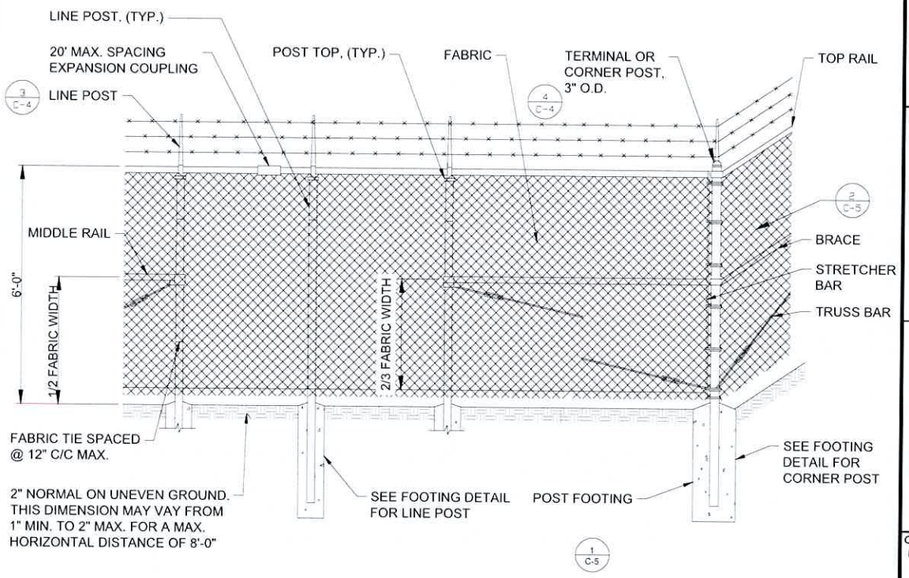
PROJECT NUMBER: 60498
SHEET NUMBER: C-3A

213

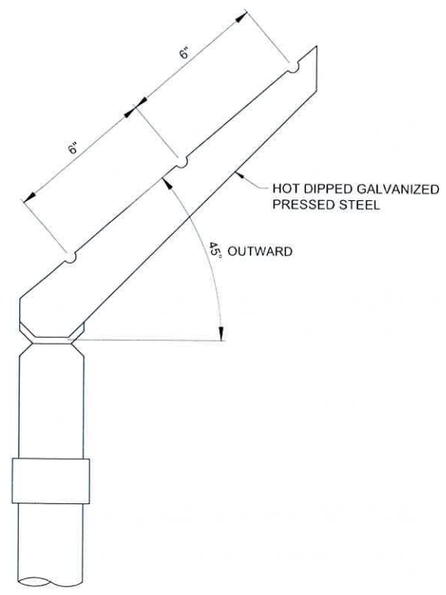


NOTE:
FENCE SECURITY - NUTS ON ALL BOLTS SHALL BE TOWARD THE INTERIOR OF THE COMPOUND

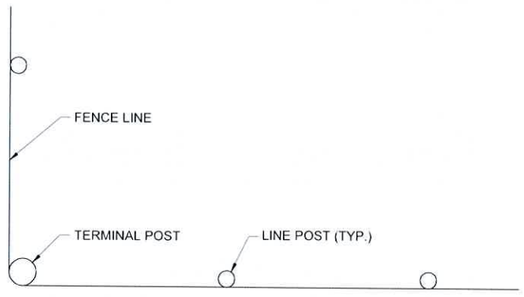
VEHICLE GATE DETAIL (1)
SCALE: NTS



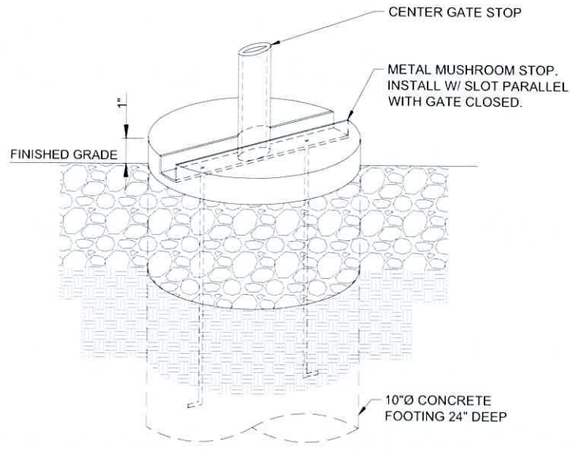
POST / CORNER POST DETAIL (2)
SCALE: NTS



BARBED WIRE ARM OF LINE POST (3)
SCALE: NTS



INSTALLATION @ CORNERS (4)
SCALE: NTS



MUSHROOM STOP DETAIL (5)
SCALE: NTS

vertical bridge

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MARK	DATE	DESCRIPTION
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ISSUE PHASE: PRELIMINARY
DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
FENCE DETAILS

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: C-4

DRAWN BY:SLS CHECKED BY:CM

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NOTES:

ZINC COATING - THE WEIGHT OF THE COATING SHALL NOT BE LESS THAN 1.2 OUNCES PER SQUARE FOOT OF ACTUAL SURFACE COVERED. ALL FERROUS METALS USED AS PART OF THE FENCE INSTALLATION SHALL BE HOT DIPPED GALVANIZED OF STAINLESS STEEL. ALL SCREWS, BOLTS, LOCK WASHERS, NUTS, ETC. SHALL BE HOT DIP GALVANIZED OR MADE OF STAINLESS STEEL.

FABRIC - STANDARD INDUSTRIAL GRADE #9 GAUGE WITH 2 INCH MESH ZINC COATED CHAIN LINK WITH A BREAKING STRENGTH OF NOT LESS THAN 1290 LBS SHALL BE USED. THE FABRIC SHALL BE ZINC COATED BY THE HOT DIP PROCESS AFTER FABRICATION.

METAL POSTS - METAL POSTS (LINE, CORNER, TERMINAL, GATE POSTS, MIDDLE RAILS, BRACES AND TOP RAIL) SHALL BE HOT DIP GALVANIZED SCHEDULE 40 TUBULAR STEEL WITH AN OUTSIDE DIAMETER AS INDICATED ON THIS DRAWING. A POST TOP FITTING OF GALVANIZED STEEL WILL BE INSTALLED TO EXCLUDE MOISTURE.

POST CAPS - ALL POST CAPS TO USE THE BARBED WIRE OUTRIGGER BRACKET AND SHALL BE ATTACHED TO THE POST WITH TAMPER RESISTANT SCREWS, BRADS, OR BOLTS.

TOP RAIL - A MINIMUM OF ONE COUPLING IN EACH STRAIGHT RUN OF TOP RAIL, SHALL HAVE A HEAVY SPRING INSERTED WITHIN THE COUPLING TO TAKE UP EXPANSION AND CONTRACTION OF THE TOP RAIL. THE TOP RAIL SHALL BE FASTENED TO TERMINAL POSTS WITH PRESSED STEEL CONNECTIONS.

MIDDLE RAIL - THE MIDDLE RAIL SHALL BE OF THE SAME MATERIAL AS THE TOP RAIL AND INSTALLED WITH HOT DIP GALVANIZED FITTINGS ATTACHED TO THE POSTS.

BRACE RAIL - BRACE RAIL MATERIAL SHALL BE OF THE MATERIAL AS THE TOP RAIL AND LOCATED 2/3 OF THE DISTANCE UP FROM THE BOTTOM OF THE FABRIC. BRACE RAILS SHALL BE SECURELY FASTENED TO POSTS BY SUITABLE PRESSED STEEL CONNECTIONS.

TRUSS RODS - SHALL BE 3/8" ROUND GALVANIZED STEEL RODS WITH GALVANIZED TURNBUCKLES. THE ZINC COATING SHALL NOT BE NOT LESS THAN 1.2 OUNCES PER SQUARE FOOT OF SURFACE.

TENSION WIRE - THE TENSION WIRE SHALL BE OF #7 GAUGE HOT DIP GALVANIZED SPRING TENSION WIRE WITH A BREAKING STRENGTH OF NOT LESS THAN 1900 LBS. THIS WIRE SHALL BE KEPT TAUT WITH GALVANIZED TURNBUCKLES AND ATTACHED TO POSTS WITH GALVANIZED HARDWARE OR CABLE CLAMPS.

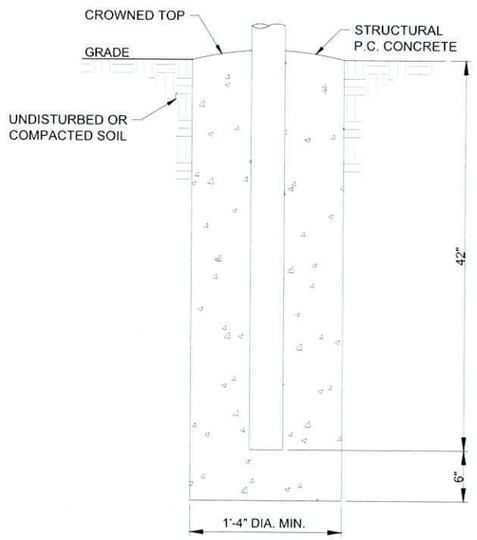
FABRIC TIES - THE FABRIC TIES SHALL BE ALUMINUM WIRE. NOT LESS THAN #9 GAGE.

STRETCHER BARS - THE STRETCHER BARS SHALL BE FLAT GALVANIZED STEEL BARS NOT LESS THAN 5/16" x 3/4" AND NOT LESS THAN 2" SHORTER THAN THE FABRIC. STRETCHER BAR BANDS SHALL BE FLAT GALVANIZED STEEL BARS NOT LESS THANK 5/16" x 1 1/2" WITH 5/16" DIAMETER GALVANIZED CARRIAGE BOLT.

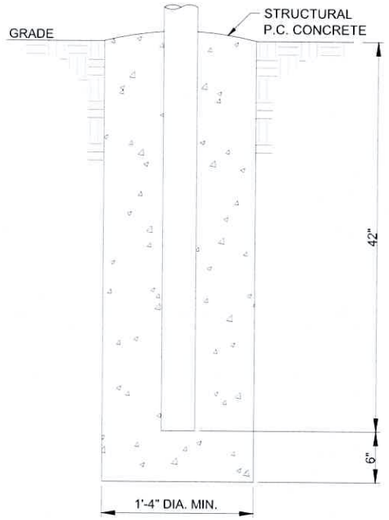
BARBED WIRE - BARBED WIRE OF GALVANIZED STEEL (OR ALUMINUM) CONSISTING OF 12 1/2 GAGE WIRE WITH 4-POINT BARBS OF 14 GAGE WIRE SPACED 5 INCHES APART.

GATE FRAMES SHALL BE CONSTRUCTED OF 2 1/2" OUTSIDE DIAMETER HEAVY DUTY GALVANIZED STEEL PIPE. THE GATES SHALL BE ASSEMBLED USING CORNER FITTINGS OF HEAVY PRESSED STEEL OR MALLEABLE CASTINGS OR MAY BE WELDED IF THE ENTIRE GATE FRAME IS HOT DIP GALVANIZED AFTER THE WELDING. ALL GATES SHALL BE EQUIPPED WITH HEAVY DUTY GALVANIZED STEEL TYPE HINGES WITH LARGE BEARING SURFACES OF ADEQUATE STRENGTH TO SUPPORT THE GATE. THE HINGES SHALL NOT TWIST OR TURN UNDER THE ACTION OF THE GATE. GATES WILL PROVIDE A FULL RANGE OF MOTION AND BE EASILY OPENED AND CLOSED BY ONE PERSON. GATE LATCH SHALL BE CARGO PROTECTORS, INC MODEL FL-100. LATCH SHALL BE EQUIPPED TO RECIEVE A PADLOCK.

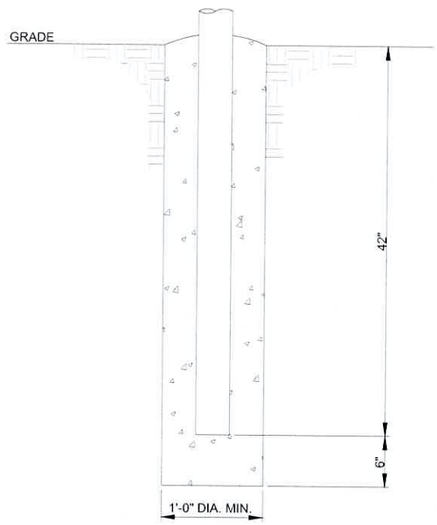
PROVIDE R.F. WARNING SIGNAGE ON ALL GATES.



FOOTING FOR TERMINAL OR CORNER POST

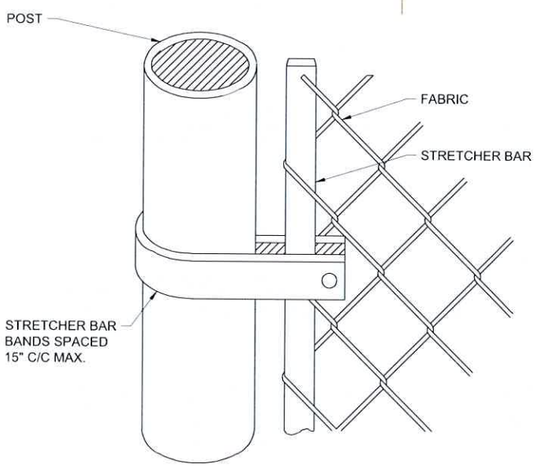


FOOTING FOR GATE POST

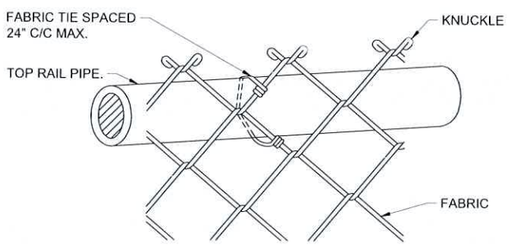


FOOTING FOR LINE POST

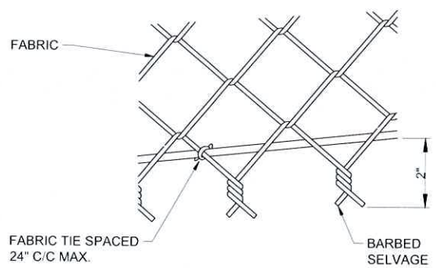
POSTS FOOTINGS (1)
SCALE: NTS



METHOD OF FASTENING STRETCHER BAR TO POST



METHOD OF TYING FABRIC TO PIPE



METHOD OF TYING FABRIC TO TENSION WIRE

FABRIC / BAR CONNECTIONS (2)
SCALE: NTS

Item 10.

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

RAMAKER
employee-owned
(608) 643-4100 www.ramaker.com

Certification & Seal:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Wisconsin.

WISCONSIN
MICHAEL L. PINSKE
36387
MIDDLETON, WI
PROFESSIONAL ENGINEER

Signature: Date: 9/30/2024

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
FENCE DETAILS

SCALE: NONE

PROJECT NUMBER 60498
SHEET NUMBER C-5

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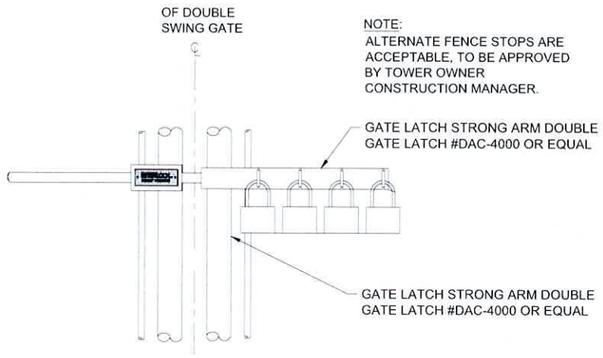
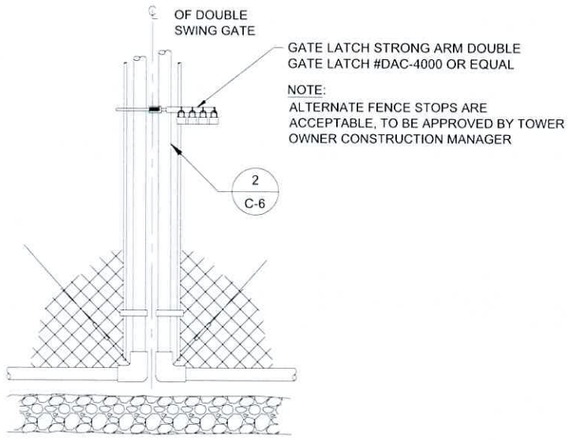
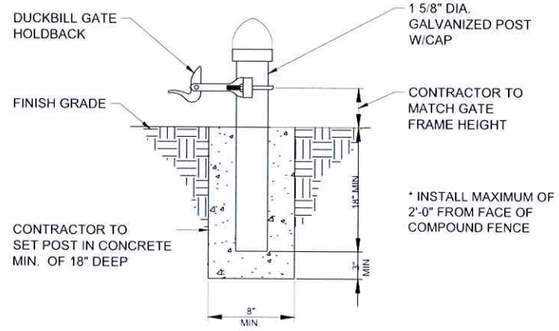


GATE LATCH DETAIL (1)
SCALE: NTS

NOT USED (3)
SCALE: 1" = NTS



GATE LATCH DETAIL (2)
SCALE: NTS



GATE KEEPER DETAIL (4)
SCALE: NTS

Item 10.

vertical bridge

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SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

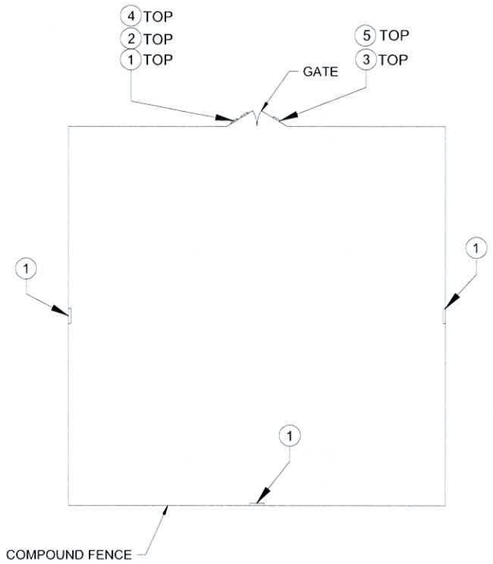
SHEET TITLE:
FENCE DETAILS

SCALE: NONE

PROJECT NUMBER 60498
SHEET NUMBER C-6

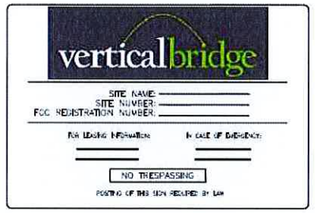
NOTE: SEE TYPICAL SIGNS AND SPECIFICATIONS DETAIL ON THIS SHEET FOR SIGN DESIGNATIONS.

NORTH



NOTE: SEE TYPICAL SIGNS AND SPECIFICATIONS DETAIL ON THIS SHEET FOR SIGN DESIGNATIONS.

OVERALL SIGN PLACEMENT PLAN VIEW (1)
SCALE: NTS



OWNER CONTACT SIGN
WHITE BACKGROUND, BLACK/RED LETTERING
MOUNTING LOCATION: GATE
QUANTITY: 2

③ OWNER CONTACT SIGN

AUTHORIZED PERSONNEL SIGN
WHITE/BLUE BACKGROUND, WHITE/BLACK LETTERING
MOUNTING LOCATION: GATE & BASE OF TOWER
QUANTITY: 1
WHERE ACCESS GATE INSTALLED (QTY: 2)

② AUTHORIZED PERSONAL SIGN

FCC REGISTRATION SIGN
WHITE/GREEN BACKGROUND, WHITE/BLACK LETTERING
MOUNTING LOCATION: GATE & BASE OF TOWER
QUANTITY: 2

⑤ FCC REGISTRATION SIGN

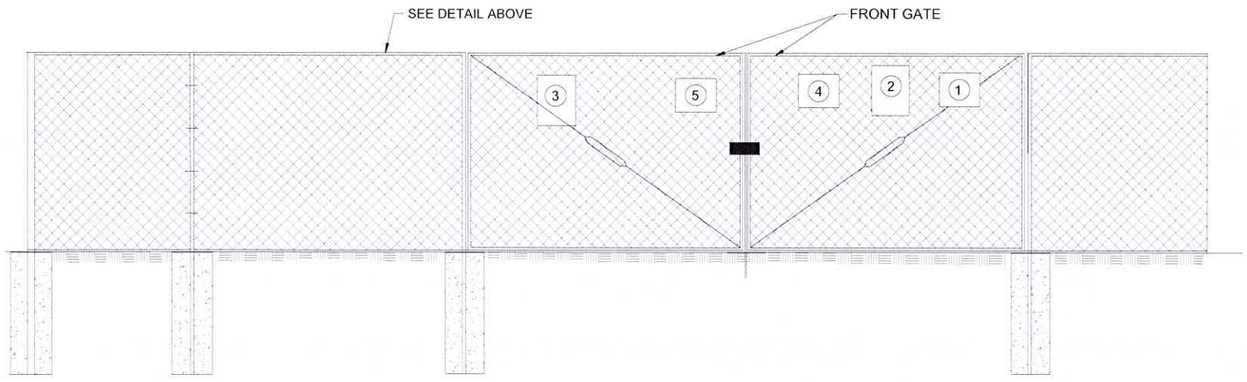
DANGER NO TRESPASSING SIGN
WHITE/BLACK BACKGROUND, BLACK/WHITE LETTERING
MOUNTING LOCATION: GATE & BASE OF TOWER
QUANTITY: 1
WHERE ACCESS GATE INSTALLED (QTY: 2)

① NO-TRESSPASSING SIGN

1 NOTICE RF SIGN (BLUE)
WHITE/BLUE BACKGROUND, WHITE/BLACK LETTERING
MOUNTING LOCATION: GATE & CENTERLINE OF FENCING AROUND SITE. (QTY: 4)
WHERE ACCESS GATE INSTALLED (QTY: 5)

④ NOTICE RF SIGN (BLUE)

TYPICAL SIGNS AND SPECIFICATIONS (2)
SCALE: NTS



SITE SIGNAGE FRONT GATE VIEW (3)
SCALE: NTS

SIGNAGE NOTES:
1. SIGNS SHALL BE FABRICATED FROM CORROSION RESISTANT PRESSED METAL, AND PAINTED WITH LONG LASTING UV RESISTANT COATINGS.
2. SIGNS (EXCEPT WHERE NOTED OTHERWISE) SHALL BE MOUNTED TO THE TOWER, GATE, AND FENCE USING A MINIMUM OF 9 GAUGE ALUMINUM WIRE, HOG RINGS (AS UTILIZED IN FENCE INSTALLATIONS) OR BRACKETS WHERE NECESSARY. BRACKETS SHALL BE OF SIMILAR METAL AS THE STRUCTURE TO AVOID GALVANIC CORROSION.

Item 10.

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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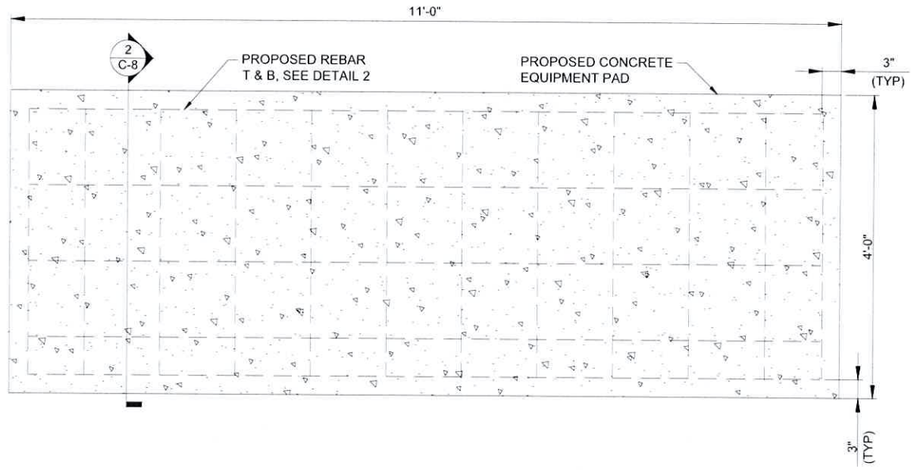
PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

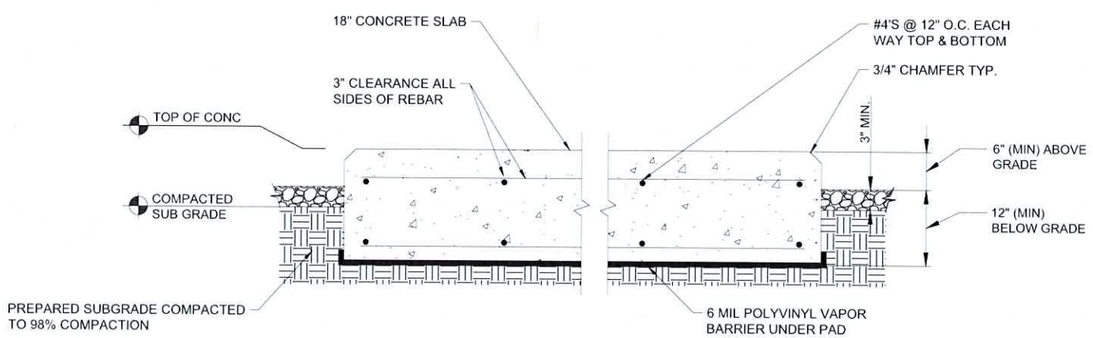
SHEET TITLE:
SITE SIGNAGE DETAILS

SCALE: NONE

PROJECT NUMBER 60498
SHEET NUMBER C-7



EQUIPMENT SLAB DETAIL 1
SCALE: NTS



NOTES:

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

EQUIPMENT PAD DETAIL 2
SCALE: NTS

vertical bridge

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PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
FOUNDATION DETAILS

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: C-8

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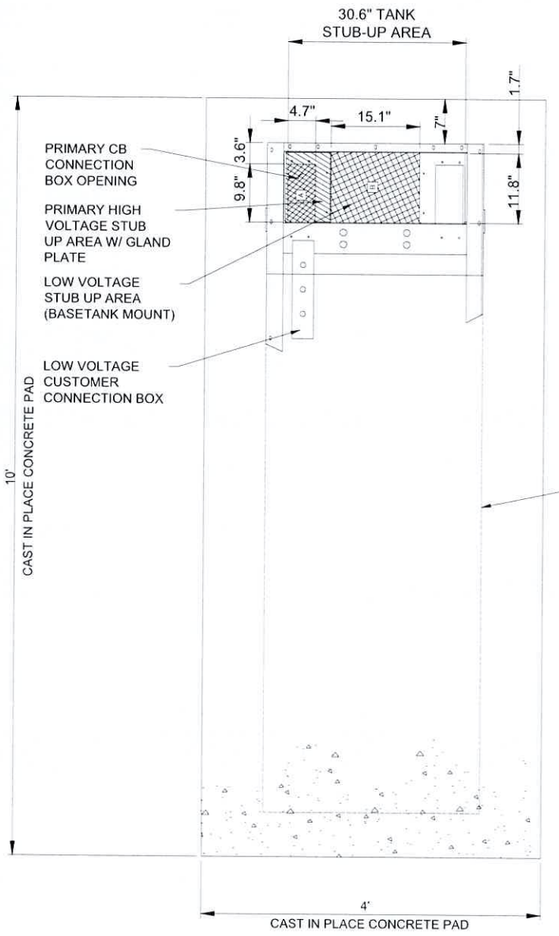
RECOMMENDED ELECTRICAL STUB-UPS
(SEE DETAILED VIEW & TOP VIEW)

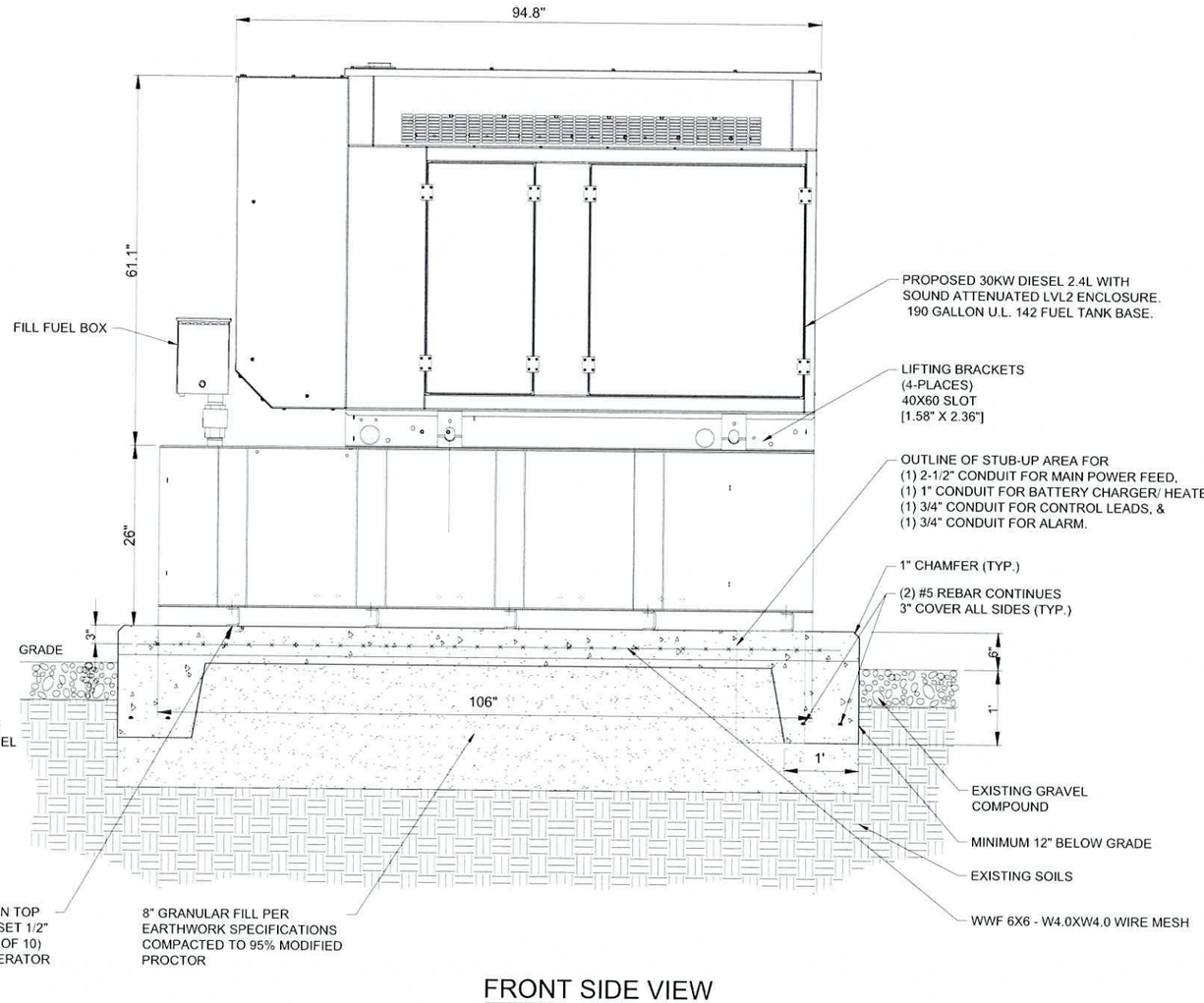
(LOW VOLTAGE STUB UP)
1. TRANSFER SWITCH/COMMUNICATIONS CONDUITS. COMMUNICATIONS AND 2-WIRE START MUST NOT BE RUN IN CONDUIT W/ AC WIRING.

(HIGH VOLTAGE STUB UP)
1. AC LOAD LEAD CONDUIT AREA.
2. 120/240 VAC FROM UTILITY FOR OPTIONAL LOADS SUCH AS GFCI OUTLET, BLOCK HEATER, BATTERY CHARGER, AND OTHER 120/240 VAC OPTIONS. (GLAND PLATE INCLUDED)



PLAN VIEW

TYPICAL GENERAC FOUNDATION DETAIL (1)
SCALE: NTS



FRONT SIDE VIEW

TYPICAL GENERAC FOUNDATION DETAIL (2)
SCALE: NTS

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.

verticalbridge

CELLCO PARTNERSHIP
d/b/a VERIZON WIRELESS

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Signature: Date: 9/30/2024

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ISSUE PHASE: PRELIMINARY
DATE ISSUED: 06/25/2024

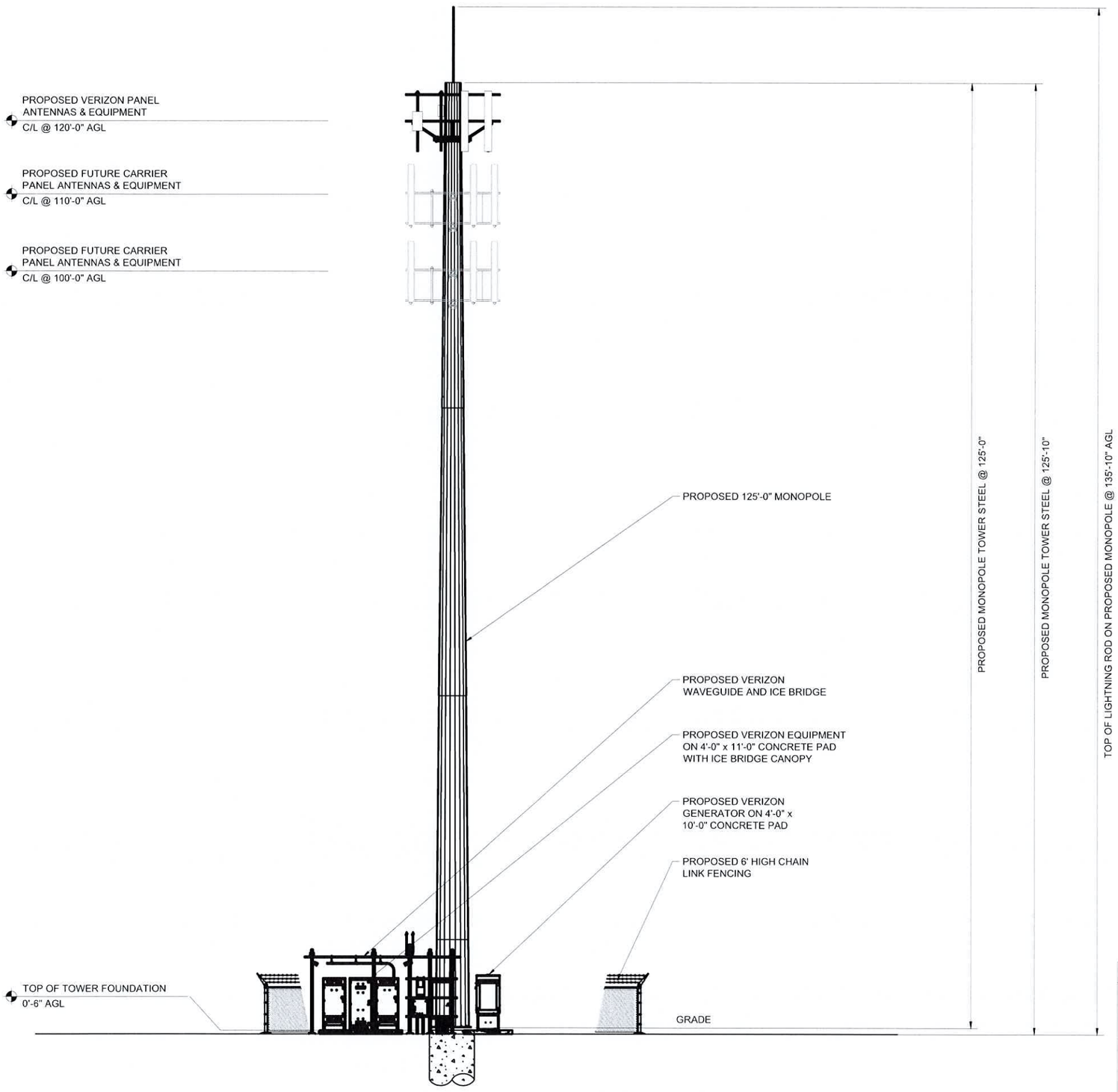
PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
GENERATOR FOUNDATION DETAILS

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: C-9



SITE ELEVATION (1)
SCALE: 1" = 20'

STRUCTURAL NOTES:

1. RAMAKER SCOPE OF WORK DOES NOT INCLUDE A STRUCTURAL EVALUATION OF THIS TOWER OR STRUCTURE.
2. STRUCTURAL CALCULATIONS WERE PREPARED BY OTHERS AND THOSE CALCULATIONS CERTIFY THE CAPACITY OF THE STRUCTURE AND ANTENNA MOUNTS FOR THE DEPLOYMENT OF THE EQUIPMENT. CONTRACTOR TO COORDINATE WITH THE PROJECT MANAGER TO OBTAIN A COPY.
3. CONTRACTOR MUST COMPLY WITH STRUCTURAL ANALYSIS AND MOUNT ANALYSIS RECOMMENDATIONS FOR ALL NEW LOADING.

verticalbridge

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PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
SITE ELEVATION

0 10' 20' 40'
11" x 17" - 1" = 20'
22" x 34" - 1" = 10'

PROJECT NUMBER: 60498
SHEET NUMBER: ANT-1

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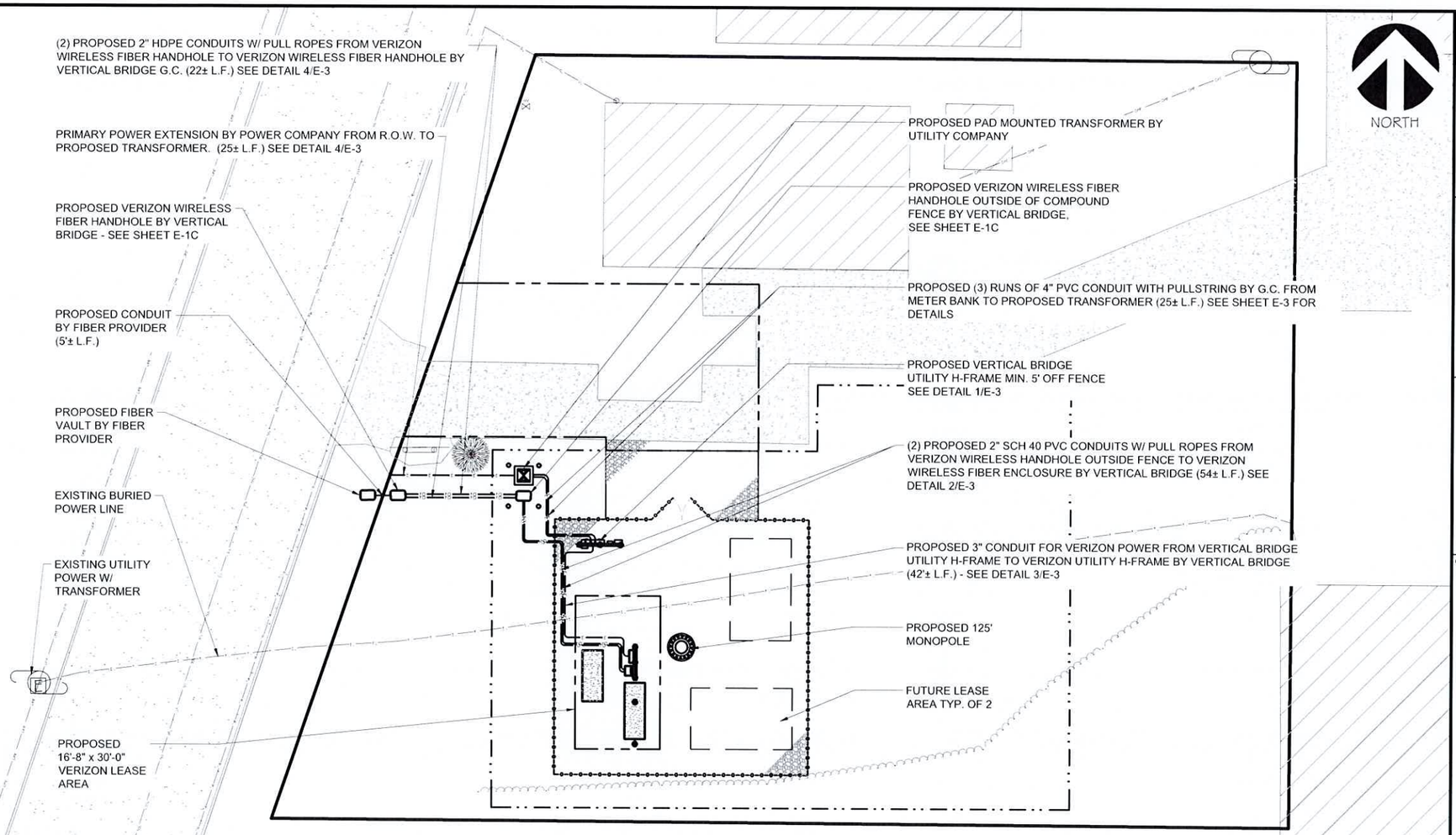

COORDINATION WITH UTILITY COMPANY

THE ELECTRICAL CONTRACTOR SHALL COORDINATE COMPLETE ELECTRICAL SERVICE WITH LOCAL UTILITY COMPANIES FOR A COMPLETE OPERATIONS SYSTEM, INCLUDING TRANSFORMER CONNECTIONS, CONCRETE TRANSFORMER PADS PRIOR TO SUBMITTING BID TO INCLUDE ALL LABOR AND MATERIALS

CONDUITS 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.
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.

CODES AND STANDARDS

ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
NEC	NATIONAL ELECTRICAL CODE, LATEST ADOPTED EDITION
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
UL	UNDERWRITERS LABORATORIES, INC.

UTILITY PROVIDER INFORMATION

POWER COMPANY: ALIANT ENERGY
PHONE: (920) 459-6345

FIBER COMPANY: AT&T
PHONE: (855) 781-7542

UTILITY ROUTING PLAN (1)
SCALE: 1" = 40'

verticalbridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
UTILITY ROUTING PLAN

0 20' 40' 80'
11" x 17" - 1" = 40'
22" x 34" - 1" = 20'

PROJECT NUMBER: 60498
SHEET NUMBER: E-1

221

DRAWN BY: SLS CHECKED BY: CM

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NORTH

PRIMARY POWER EXTENSION BY POWER COMPANY FROM R.O.W. TO PROPOSED TRANSFORMER. (25± L.F.) SEE DETAIL 4/E-3

PROPOSED PAD MOUNTED TRANSFORM BY UTILITY COMPANY

PROPOSED (3) RUNS OF 4" PVC CONDUIT WITH PULLSTRING BY G.C. FROM METER BANK TO PROPOSED TRANSFORMER. CONDUCTORS BY UTILITY COMPANY. (25± L.F.) SEE SHEET E-3 FOR DETAILS

PROPOSED FIBER HANDHOLE (BY VB G.C.) SEE DETAIL E-1C

PROPOSED MULTI-GANG METER H-FRAME, MINIMUM 5' CLEARANCE TO FENCE SEE DETAIL 1/E-3

(2) PROPOSED 2" HDPE CONDUITS W/ PULL ROPE FROM VERIZON WIRELESS FIBER HANDHOLE TO VERIZON WIRELESS HANDHOLE AT FENCE (22± L.F.) SEE DETAIL 4/E-3

(2) PROPOSED 2" SCH 40 PVC W/ PULL ROPE FROM VERIZON WIRELESS FIBER HANDHOLE TO FIBER BOX AT RACK, 42" BELOW GRADE BY VERTICAL BRIDGE. G.C. SHALL COORDINATE WITH FIBER COMPANY FOR FIBER FACILITY INSTALLATION (54± L.F.) SEE DETAIL 4/E-3

PROPOSED 3" SCH 40 PVC CONDUIT FOR VERIZON POWER; BY VERTICAL BRIDGE G.C. (41± L.F.) SEE DETAIL 3/E-3

PROPOSED VERIZON H-FRAME, SEE SHEET VW B-2, FOOTINGS SIMILAR TO DETAIL 1/VW ANT-4

PROPOSED VERIZON WIRELESS (16'-8' x 30'-0") LEASE AREA

PROPOSED (4' X 10') VERIZON WIRELESS GENERATOR CONC. PAD. PAD TO BE INSTALLED BY VERTICAL BRIDGE, SEE SHEET C-9

PROPOSED (4'-0" X 11'-0") VERIZON WIRELESS CONCRETE PAD FOR EQUIPMENT. PAD TO BE INSTALLED BY VERTICAL BRIDGE PRIOR TO COLOCATION, SEE SHEET C-8

PROPOSED VERIZON EQUIPMENT CANOPY POST, SEE SHEET VW B-2. FOOTINGS SIMILAR TO DETAIL 1/VW ANT-4

ENLARGED UTILITY ROUTING PLAN (1)
SCALE: 1" = 7.5'

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PHONE: (855) 781-7542

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

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY
DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
ENLARGED UTILITY ROUTING PLAN

0 3.75' 7.5' 15'
11" x 17" - 1" = 7.5'
22" x 34" - 1" = 3.75'

PROJECT NUMBER: 60498
SHEET NUMBER: E-1A

DRAWN BY: SLS CHECKED BY: CM

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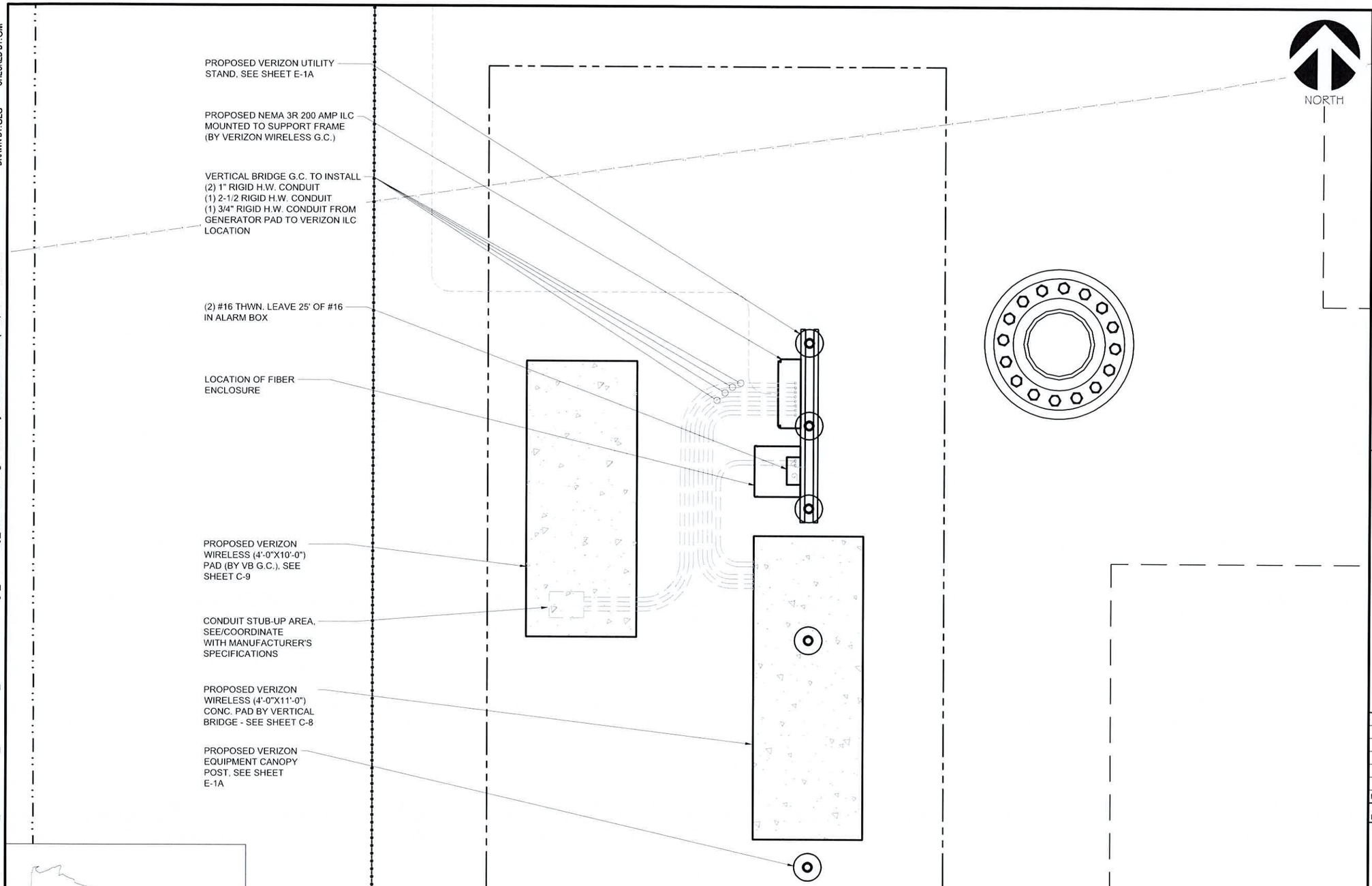

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OTHER UTILITIES NOT INCLUDED IN DIGGERS HOTLINE AND LOCAL UTILITY DISTRICTS AND COMPANIES SHALL ALSO BE NOTIFIED

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

GENERATOR UTILITY ROUTING PLAN
SCALE: 1" = 3.75'
1

verticalbridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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Certification & Seal:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Wisconsin.

WISCONSIN
MICHAEL L. PINSKE
36387
MIDDLETON, WI
PROFESSIONAL ENGINEER

Signature: Date: 9/30/2024

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY
DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
GENERATOR UTILITY ROUTING PLAN

0 1.875' 3.75' 7.5'
11" x 17" - 1" = 3.75'
22" x 34" - 1" = 1.875'

PROJECT NUMBER: 60498
SHEET NUMBER: E-1B

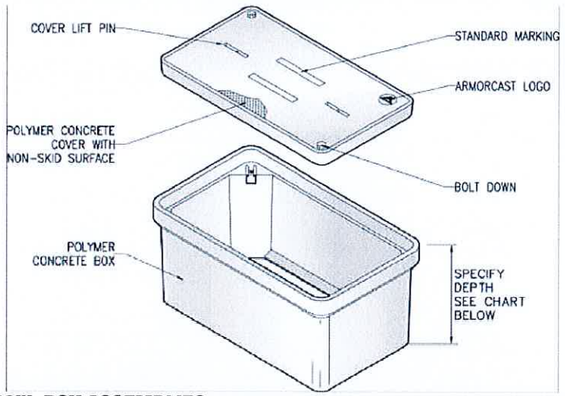
17" x 30" BOX ASSEMBLY

12" to 30" DEPTHS

POLYMER CONCRETE — ARMORCAST PRODUCTS COMPANY

A6001640

UL LISTED FILE #E364252



17"W x 30"L BOX ASSEMBLIES Specify Depth Below

DESCRIPTION	NOMINAL SIZE W x L x D	LOAD RATING	ANSI TIER	PART NUMBER	APPROX. WEIGHT	PALLET QTY.
Box & Cover Assembly	17" x 30" x 12"	10K	8	A6001640APCX12	114 lbs.	12
	17" x 30" x 12"	20K	15 / 22	A6001640TAPCX12 / A6001640HDAPCX12	140 lbs.	12
Box & Cover Assembly	17" x 30" x 18"	10K	8	A6001640APCX18	140 lbs.	6
	17" x 30" x 18"	20K	15 / 22	A6001640TAPCX18 / A6001640HDAPCX18	166 lbs.	6
Box & Cover Assembly	17" x 30" x 22"	10K	8	A6001640APCX22	154 lbs.	6
	17" x 30" x 22"	20K	15 / 22	A6001640TAPCX22 / A6001640HDAPCX22	180 lbs.	6
Box & Cover Assembly	17" x 30" x 24"	10K	8	A6001640APCX24	165 lbs.	6
	17" x 30" x 24"	20K	15 / 22	A6001640TAPCX24 / A6001640HDAPCX24	190 lbs.	6
Box & Cover Assembly	17" x 30" x 28"	10K	8	A6001640APCX28	184 lbs.	3
	17" x 30" x 28"	20K	15 / 22	A6001640TAPCX28 / A6001640HDAPCX28	210 lbs.	3
Box & Cover Assembly	17" x 30" x 30"	10K	8	A6001640APCX30	191 lbs.	3
	17" x 30" x 30"	20K	15 / 22	A6001640TAPCX30 / A6001640HDAPCX30	221 lbs.	3

COMPONENTS

MORE COVER VARIATIONS ARE AVAILABLE IN OUR "COVER SECTION"

DESCRIPTION	NOMINAL SIZE W x L x D	LOAD RATING	ANSI TIER	PART NUMBER	APPROX. WEIGHT	PALLET QTY.
Replacement Covers	17" x 30"	10K	8	A6001643	44 lbs.	30
	17" x 30"	20K	15 / 22	A6001947T / A6001947HD	70 lbs.	30
Replacement Boxes	17" x 30" x 12"	10K / 20K	22	A6001640PCX12	70 lbs.	12
	17" x 30" x 18"	10K / 20K	22	A6001640PCX18	96 lbs.	6
	17" x 30" x 22"	10K / 20K	22	A6001640PCX22	110 lbs.	6
	17" x 30" x 24"	10K / 20K	22	A6001640PCX24	121 lbs.	6
	17" x 30" x 28"	10K / 20K	22	A6001640PCX28	140 lbs.	3
	17" x 30" x 30"	10K / 20K	22	A6001640PCX30	151 lbs.	3

- Boxes are Open Bottom and Stackable, also available with Solid Bottoms.
- For sizes not shown please contact Armorcast Products for more information.

THIS PRODUCT IS LISTED TO APPLICABLE UL STANDARDS AND REQUIRMENTS BY UL.

POLYMER CONCRETE BOXES

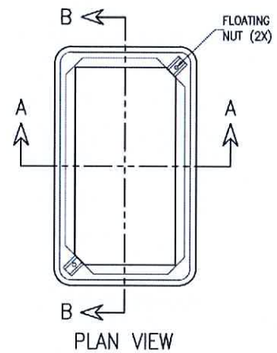
17" x 30" BOX ASSEMBLY

STANDARD DIMENSIONS

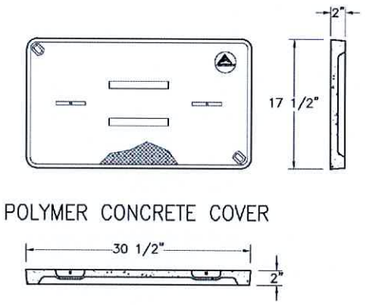
ARMORCAST PRODUCTS COMPANY — **POLYMER CONCRETE**

A6001640

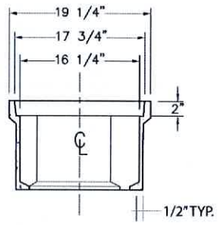
UL LISTED FILE #E364252



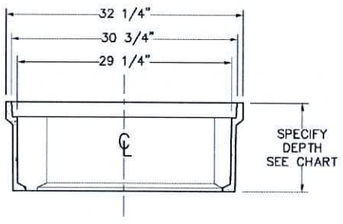
PLAN VIEW



POLYMER CONCRETE COVER



SECTION A–A



SECTION B–B

Armorcast Products Company reserves the right to update or discontinue product information at any time without notice.

THIS PRODUCT IS LISTED TO APPLICABLE UL STANDARDS AND REQUIRMENTS BY UL.

VAULT SPECIFICATIONS (1)
SCALE: NONE

vertical bridge

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d/b/a VERIZON WIRELESS

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Certification # Seal:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Wisconsin.

WISCONSIN MICHAEL L. PINSKE 36387 MIDDLETON, WI PROFESSIONAL ENGINEER

Signature: 9/30/2024 Date:

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
VAULT SPEC. SHEET

SCALE: NONE

PROJECT NUMBER 60498
SHEET NUMBER E-1C

DRAWN BY: SLS CHECKED BY: GM

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KEYED NOTES

KEY	DESCRIPTION
1	SYSTEM GROUND RESISTANCE SHALL NOT EXCEED 5 OHMS. A THREE POINT SYSTEM RESISTANCE TEST SHALL BE PERFORMED BY THE CONTRACTOR IN ACCORDANCE WITH VERTICAL BRIDGE SPECIFICATIONS. A. PERFORM THREE TESTS AT EACH SITE. B. CONTRACTOR SHALL PROVIDE A WRITTEN REPORT CONSISTING OF THE FOLLOWING: SITE NAME, ADDRESS AND IDENTIFICATION NUMBER, DESCRIPTION OF SITE SOIL AND MOISTURE CONDITION, DESCRIPTION OF WEATHER, MODEL NUMBER OF TESTING EQUIPMENT, DATE OF LAST CALIBRATION, SITE SKETCH SHOWING LOCATION OF TEST PROBES AND ALL FIELD DATA COLLECTED (READINGS, RANGE, TEST, MILLIAMPS, ETC.) C. CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER IF THERE ARE ANY DIFFICULTIES PERFORMING SYSTEM RESISTANCE TESTS OR IF MEASUREMENTS ARE ABOVE 5 OHMS. THE CONSTRUCTION MANAGER SHALL PROVIDE INSTRUCTION TO THE CONTRACTOR TO INSTALL ADDITIONAL GROUNDING MEASURES TO MEET THE 5 OHM REQUIREMENT.
2	PROPOSED TOWER GROUND RING BURIED TO A DEPTH OF 30" OR 6" BELOW THE FROST LINE, WHICHEVER IS GREATER.
3	BOND PROPOSED TOWER TO TOWER GROUND RING (3 PLACES TOTAL).
4	SERVICE ENTRANCE GROUND ROD.
5	BOND GROUND RING(S) TO SITE CORNER POST (TYP. x 4).
6	BOND GATE POST TO PROPOSED GROUND RING (TYP. x 2).
7	BOND FLEXIBLE JUMPER TO GATE (TYP. x 2).
8	BOND PROPOSED H-FRAME TO GROUND RING (TYP. x 8).

EXTERIOR GROUNDING NOTES:

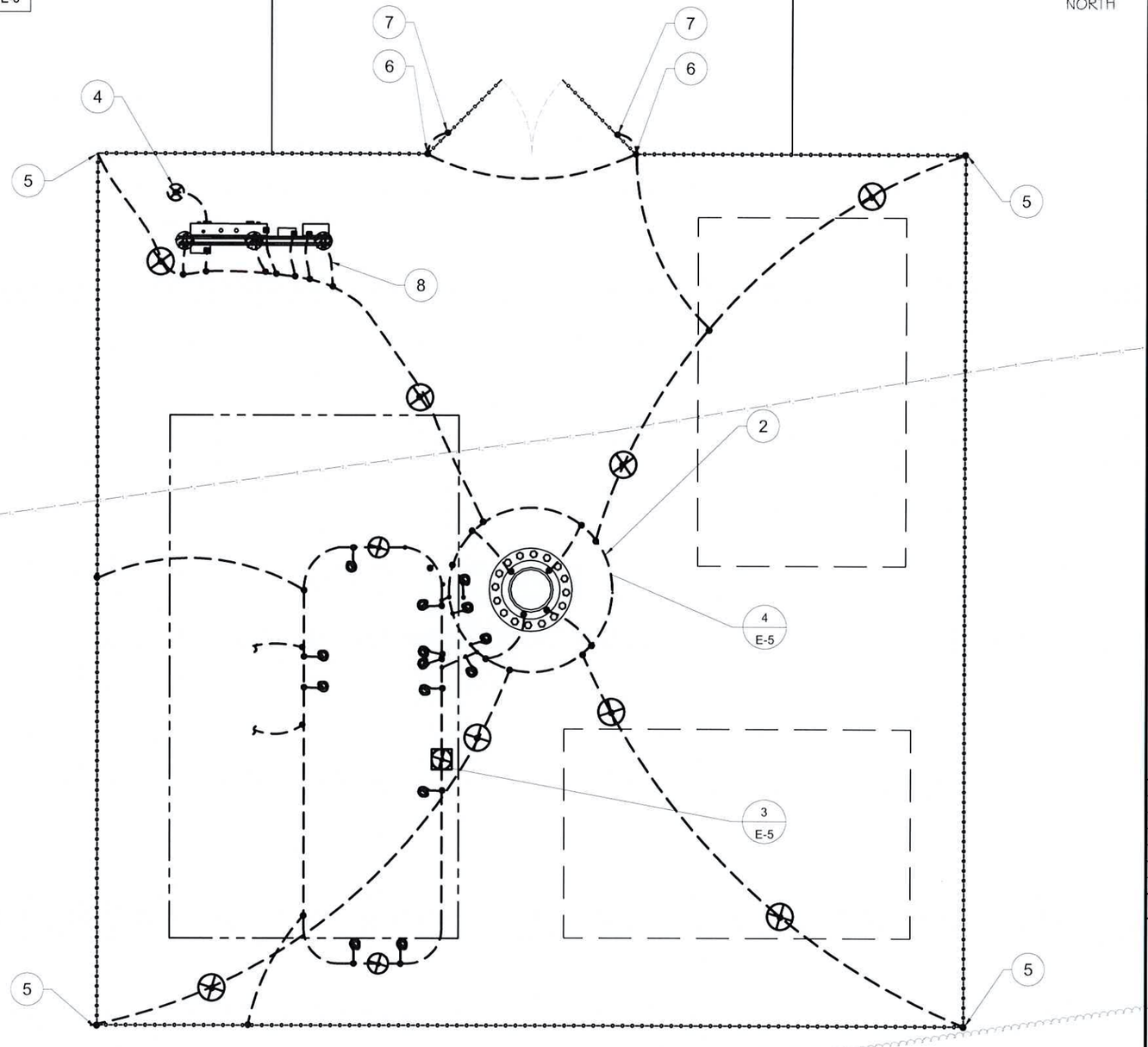
1. GROUNDING SHALL CONFORM WITH VERTICAL BRIDGE STANDARDS AND PER FEDERAL, STATE AND LOCAL CODES. IN THE EVENT OF A CONFLICT, MEET THE MOST STRINGENT REQUIREMENT.
2. GROUND RODS PAST METER SHALL BE COPPER CLAD STEEL 5/8 INCH DIAMETER X 10 FEET IN LENGTH (MIN.)
3. ALL GROUND CONDUCTORS PAST METER SHALL BE #2 AWG SOLID BARE TINNED COPPER. MINIMUM BEND RADIUS FOR CONDUCTOR SHALL BE 8 INCHES.
4. GROUND RODS SHALL BE SPACED NOT MORE THAN 16'-0" AND NOT LESS THAN 6'-0" APART EXCEPT FOR THE TOWER GROUND RING WHICH SHALL COMPLY WITH TIA/EIA 222 (REV G).
5. CONTRACTOR SHALL ADD ADDITIONAL RODS AND CONDUCTORS OR APPROVED GROUND ENHANCING MATERIAL TO ACHIEVE LESS THAN 5 OHMS RESISTANCE TO GROUND.
6. MAINTAIN 2'-0" (TOWER) AND 3'-0" (SHELTER) BETWEEN GROUND RINGS AND FOUNDATIONS.
7. ALL GROUNDING INSTALLATIONS SHALL BE INSPECTED AND APPROVED BY ANY JURISDICTION HAVING INSPECTION & APPROVAL AUTHORITY (IF REQUIRED) AND VERTICAL BRIDGE BEFORE PLACING ANY BACKFILL.
8. ALL GROUNDING SPLICES AND CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC WELD PROCESS (CADWELD OR EQUIVALENT). COAT ALL WELDS WITH A ZINC RICH PAINT.

THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING THE SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED.

SYMBOLS LEGEND

- GROUND ROD WITH ACCESS
- GROUND ROD
- EXOTHERMIC CONNECTION
- VZW GROUND LEAD
- MECHANICAL CONNECTION
- GROUND BAR
- GROUND WIRE

NOTE:
SEE GROUNDING DETAILS ON SHEETS E-3 & E-5



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

SITE GROUNDING PLAN (1)
SCALE: 1" = 7.5'

Item 10.

verticalbridge

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PROFESSIONAL ENGINEER

Signature: Date: 9/30/2024

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ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
SITE GROUNDING & NOTES

0 3.75' 7.5' 15'
11" x 17" - 1" = 7.5'
22" x 34" - 1" = 3.75'

PROJECT NUMBER: 60498
SHEET NUMBER: E-2

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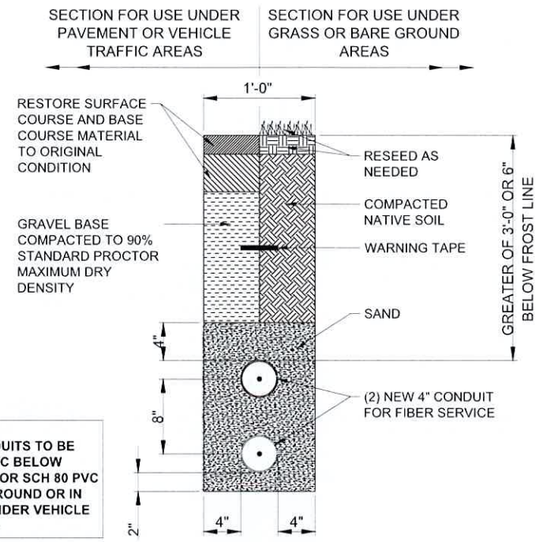
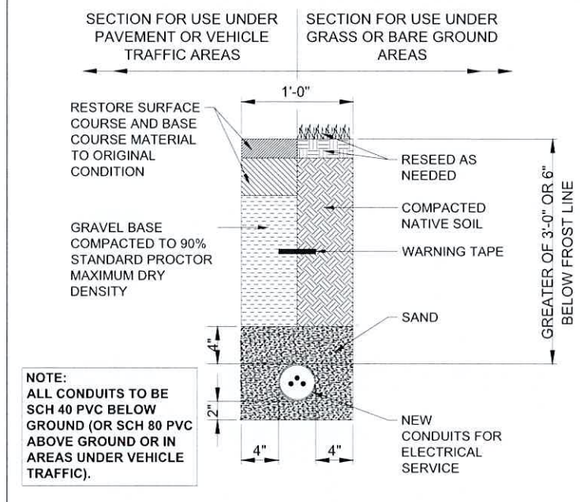
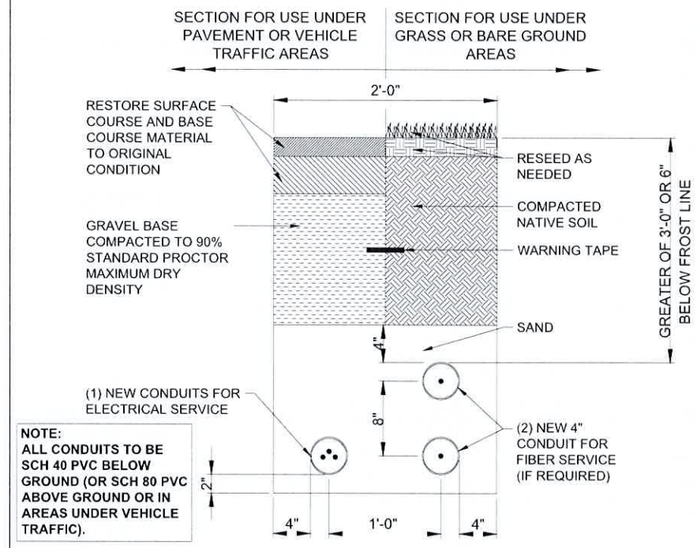


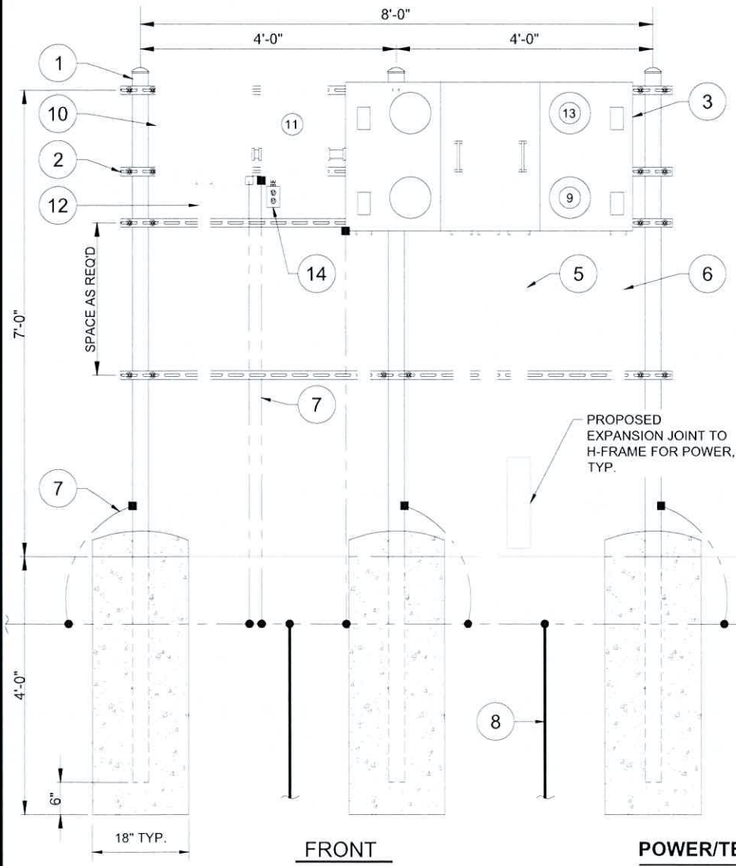
FIBER TRENCH DETAIL (IF REQUIRED) 2
SCALE: NTS

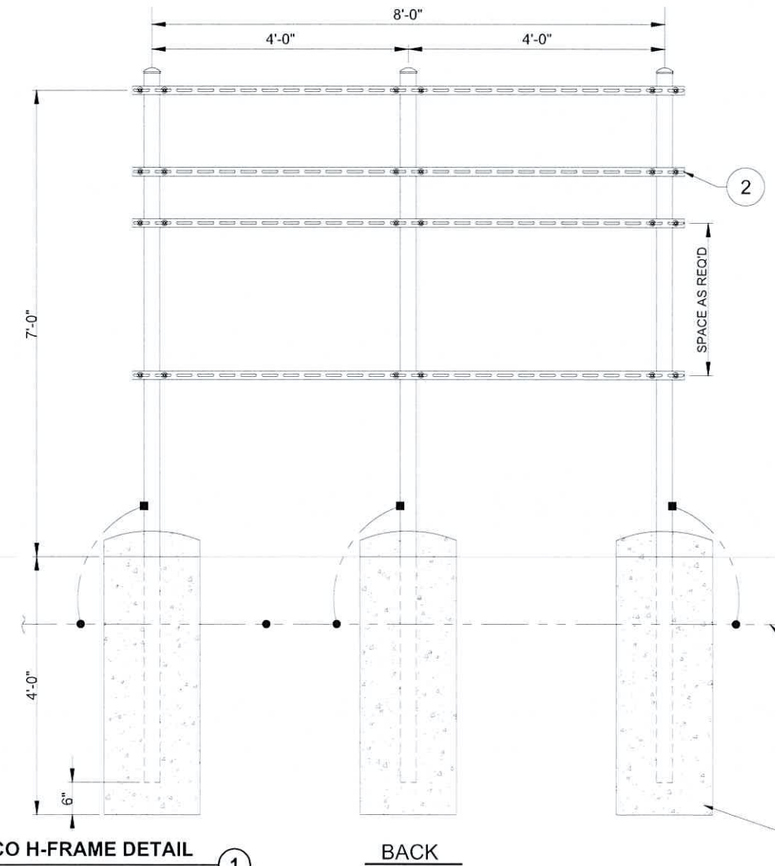


ELECTRICAL TRENCH DETAIL 3
SCALE: NTS



JOINT UTILITY TRENCH DETAIL 4
SCALE: NTS





POWER/TELCO H-FRAME DETAIL 1
SCALE: NTS

KEYED NOTES

1. 3-1/2" SCH 40 GALVANIZED PIPE W/ END CAP (TYP.)
2. P1000 UNISTRUT U-BOLTED TO POSTS W/ END CAP (TYP.)
3. PROPOSED 4-GANG MULTI-TENANT METER CENTER. 800A, 120/240V 1 Ø, 3W, NEMA 3R ENCLOSURE. (SQUARE D MODEL #EZM1800TB OR #EZML114225 AS REQUIRED BY POWER PROVIDER)
4. SERVICE GROUND CONDUCTOR(S) IN 1" PVC SIZED PER NEC 4 BASED ON ACTUAL SERVICE CONDUCTORS INSTALLED.
5. (3) 4" PVC TO POWER SOURCE/TRANSFORMER (TYP.)
6. 3" CONDUIT TO VERIZON WIRELESS EQUIPMENT (TYP.)
7. #2 AWG SOLID TINNED GROUND LEAD TO EQUIPMENT GROUND RING (TYP.)
8. SERVICE ENTRANCE GROUND ROD 5/8" X 8'-0" COPPER CLAD (TYP. OF 2)
9. VERIZON WIRELESS METER
10. E1 TOWER LIGHT CONTROLLER & PHOTOCELL (IF TOWER IS LIT)
11. PROPOSED 125A LOAD CENTER WITH (2) 20 AMP BREAKERS, 120/240V, 1Ø, 3W, NEMA 3R ENCLOSURE. SQUARE D OR APPROVED EQUAL. (IF TOWER IS LIT)
12. 2-1/2" SCH. 40 PVC CONDUIT TO CLOSEST TOWER LEG (IF TOWER IS LIT)
13. TOWER OWNER'S METER (IF TOWER IS LIT)
14. 120/240V 2-GANG COMMERCIAL GRADE OUTDOOR ELECTRICAL BOX W/ (2) 20A COMMERCIAL GRADE DUPLEX RECEPTACLE (IF TOWER IS LIT)

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PROJECT TITLE:
BUSINESS DRIVE

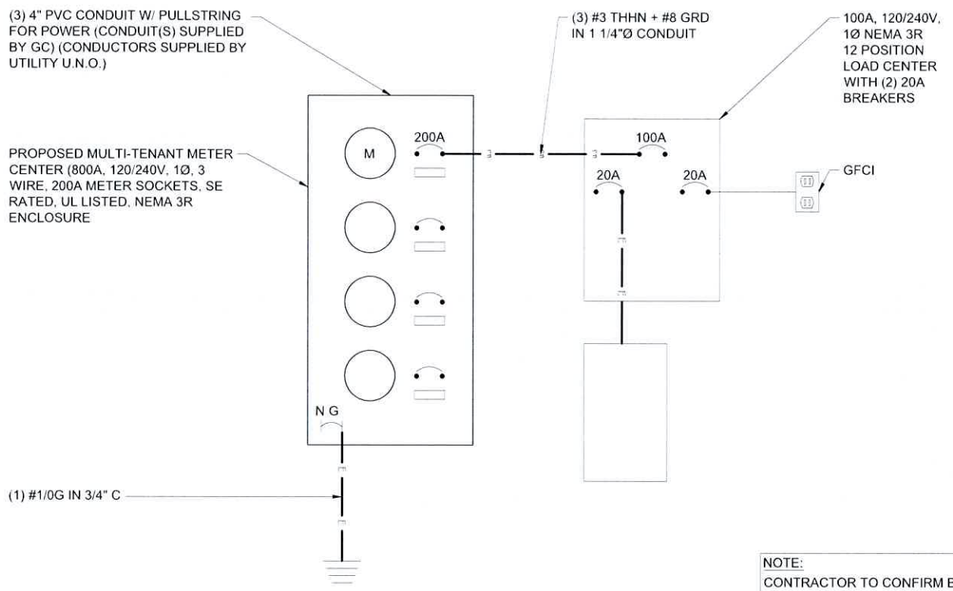
PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
UTILITY DETAILS

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: E-3

DRAWN BY: SLS CHECKED BY: CM



NOTE:
CONTRACTOR TO CONFIRM BREAKER SIZE WITH TOWER LIGHTING MANUFACTURER

SINGLE LINE DIAGRAM (POWER) (1)
SCALE: NTS

NOTES AND SPECIFICATIONS

1. ELECTRIC UTILITY WILL PROVIDE METER AND INCOMING SERVICE LATERAL CONDUCTORS. ALL ELECTRICAL WORK SHALL COMPLY WITH NEC, STATE AND LOCAL CODES.
2. CONTRACTOR SHALL OBTAIN OWNER/TENANT EQUIPMENT DRAWINGS AND REVIEW FOR
3. ADDITIONAL DETAILS AND REQUIREMENTS THAT MAY NOT BE SHOWN IN THESE DRAWINGS. CONTRACTOR SHALL COMPLY WITH ANY ADDITIONAL OWNER/TENANT SPECIFICATIONS AND REQUIREMENTS THAT MAY BE ADDRESSED IN THE EQUIPMENT DRAWINGS.
4. PRIOR TO PURCHASING EQUIPMENT, THE CONTRACTOR SHALL CONTACT THE ELECTRIC UTILITY AND OBTAIN IN WRITING THE MAXIMUM AVAILABLE FAULT CURRENT AT THE UTILITY SERVICE POINT. PROVIDE MAX AFC SIGNAGE AS REQUIRED PER ENC 110.24. THE CONTRACTOR SHALL ENSURE ALL ELECTRICAL EQUIPMENT, CIRCUIT BREAKERS, DISCONNECTS, FUSES, AND PANELBOARDS HAVE A FAULT CURRENT INTERRUPTING RATING GREATER THAN THE AVAILABLE FAULT CURRENT. IN NO CASE SHALL THE FAULT CURRENT INTERRUPTING RATING BE LESS THAN 10,000 AMPS.
5. THE GROUNDED SERVICE CONDUCTOR (NEUTRAL CONDUCTOR) SHALL BE GROUNDED AT THE SERVICE DISCONNECT ONLY.
6. ALL POWER CIRCUITS SHALL USE COPPER CONDUCTORS WITH THHN/THWN INSULATION. ALL TERMINATIONS SHALL BE RATED FOR AT LEAST 75°C.
7. CONTRACTOR SHALL PROVIDE GROUND FAULT CIRCUIT INTERRUPTER (GFCI) TYPE RECEPTACLES FOR ALL UTILITY RECEPTACLES.
8. CONTRACTOR SHALL ENSURE ALL NEUTRAL CONDUCTORS HAVE WHITE INSULATION AND EQUIPMENT GROUND CONDUCTORS HAVE GREEN INSULATION. COLOR TAPE IDENTIFICATION OF THESE CONDUCTORS IS NOT ALLOWED.
9. PER NEC ARTICLE 702 PROVIDE SIGNAGE AS FOLLOWS:

AT SERVICE DISCONNECT:

WARNING - SHOCK HAZARD EXISTS IF GROUNDING ELECTRODE CONDUCTOR OR BONDING JUMPER CONNECTION IN THIS EQUIPMENT IS REMOVED WHILE ALTERNATE SOURCE(S) IS ENERGIZED

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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PROJECT TITLE:
BUSINESS DRIVE

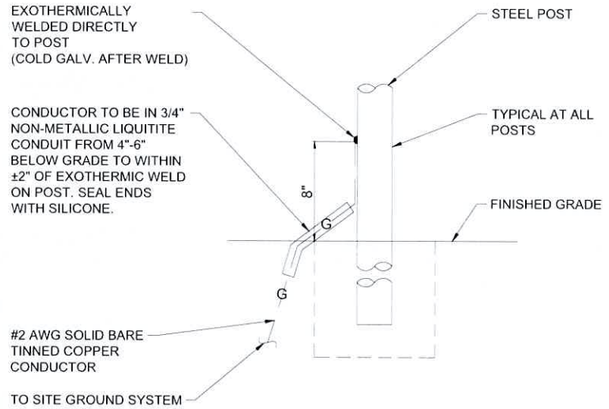
PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
SINGLE LINE DIAGRAM

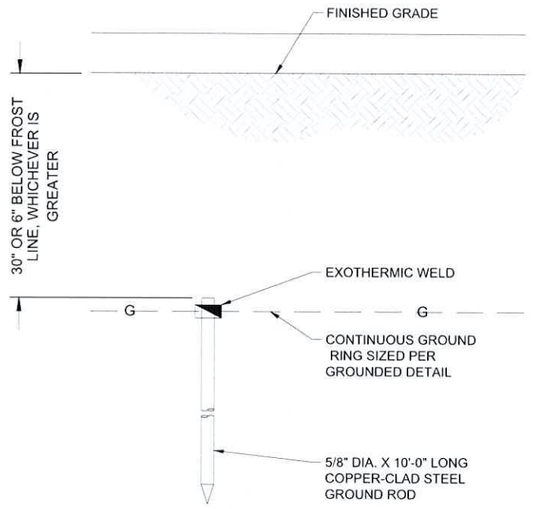
SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: E-4

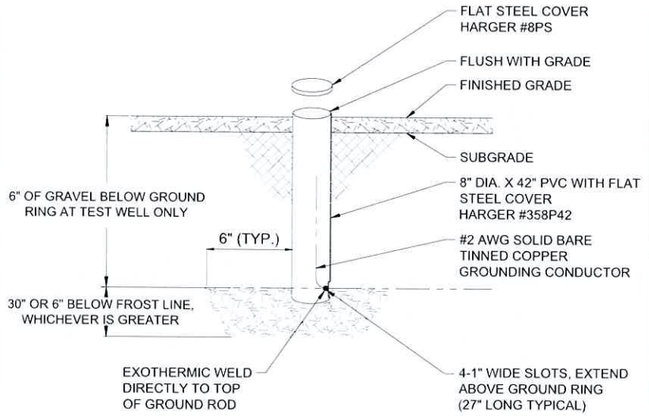
DRAWN BY:SLS CHECKED BY:CM



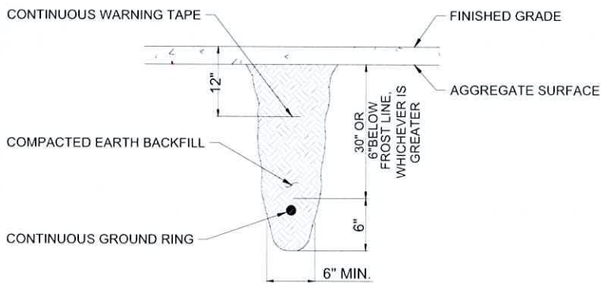
POST GROUNDING DETAIL 1
SCALE: NTS



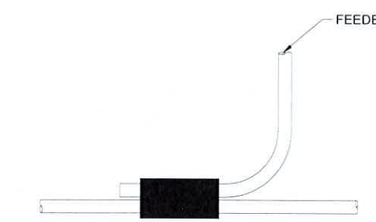
GROUND ROD DETAIL 2
SCALE: NTS



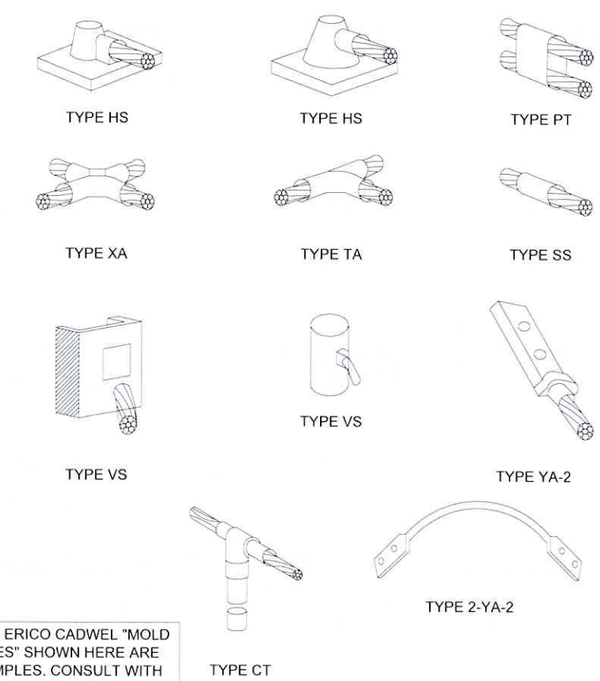
GROUND TEST WELL DETAIL 3
SCALE: NTS



TRENCH DETAIL FOR GROUND RING 4
SCALE: NTS

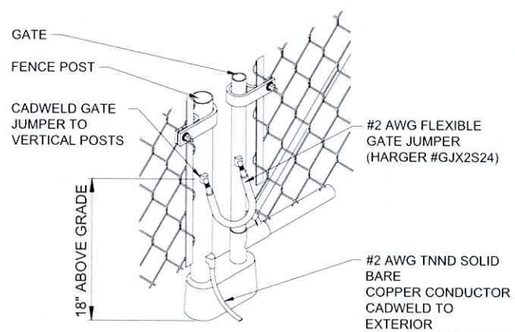


GROUND CONDUCTOR CONNECTION 5
SCALE: NTS



NOTE: ERICO CADWEL "MOLD TYPES" SHOWN HERE ARE EXAMPLES. CONSULT WITH PROJECT MANAGER FOR SPECIFIC MOLDS TO BE USED FOR THIS PROJECT

EXOTHERMIC WELD DETAIL 6
SCALE: NTS



CORNER AND GATE POST DETAIL 7
SCALE: NTS

vertical bridge

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Certification & Seal:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Wisconsin.

WISCONSIN MICHAEL L. PINSKE 36387 MIDDLETON, WI PROFESSIONAL ENGINEER

Signature: 9/30/2024 Date:

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
GROUNDING DETAILS

SCALE: NONE

PROJECT NUMBER 60498
SHEET NUMBER E-5

GENERAL PROJECT NOTES

1. THE ENGINEER SHALL BE RESPONSIBLE FOR PROVIDING ALL FIELD LAYOUT ON A ONE TIME BASIS.
2. THE CONTRACTOR SHALL TOPSOIL AND SEED ALL DISTURBED AREAS.
3. THE PLANS SHOW SOME KNOWN SUBSURFACE STRUCTURES, ABOVE-GROUND STRUCTURES AND/OR UTILITIES BELIEVED TO EXIST IN THE WORKING AREA, EXACT LOCATION OF WHICH MAY VARY FROM THE LOCATIONS INDICATED. IN PARTICULAR, THE CONTRACTOR IS WARNED THAT THE EXACT OR EVEN APPROXIMATE LOCATION OF SUCH PIPELINES, SUBSURFACE STRUCTURES AND/OR UTILITIES IN THE AREA MAY BE SHOWN OR MAY NOT BE SHOWN; AND IT SHALL BE HIS RESPONSIBILITY TO PROCEED WITH GREAT CARE IN EXECUTING ANY WORK. 48 HOURS BEFORE YOU DIG, DRILL OR BLAST, CALL 811.
4. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT THE EXPRESSED APPROVAL OF THE ENGINEER.
5. THE CONTRACTOR IS INSTRUCTED TO COOPERATE WITH ANY AND ALL OTHER CONTRACTORS PERFORMING WORK ON THIS JOB SITE DURING THE PERFORMANCE OF THIS CONTRACT.
6. THE CONTRACTOR SHALL RESTORE ALL PUBLIC OR PRIVATE PROPERTY DAMAGED OR REMOVED TO AT LEAST AS GOOD OF CONDITION AS BEFORE DISTURBED AS DETERMINED BY THE ENGINEER.
7. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIRED PERMITS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING, AND INCURRING THE COST OF ALL REQUIRED PERMITS, INSPECTIONS, CERTIFICATES, ETC.
9. THE CONTRACTOR SHALL PROTECT EXISTING PROPERTY LINE MONUMENTATION. ANY MONUMENTATION DISTURBED OR DESTROYED, AS JUDGED BY THE ENGINEER OR OWNER SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE UNDER THE SUPERVISION OF THE STATE LICENSED LAND SURVEYOR.
10. IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE ALL PLAN SHEETS AND SPECIFICATIONS, AND COORDINATE WORK WITH ALL CONTRACTS FOR THE SITE.
11. ALL TRENCH EXCAVATION AND ANY REQUIRED SHEETING AND SHORING SHALL BE DONE IN ACCORDANCE WITH THE LATEST REVISIONS OF THE JURISDICTIONS STATE CODE AND OSHA REGULATIONS FOR CONSTRUCTION.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING AND THE MAINTENANCE OF SURFACE DRAINAGE DURING THE COURSE OF WORK.
13. ALL UTILITY WORK INVOLVING CONNECTIONS TO EXISTING SYSTEMS SHALL BE COORDINATED WITH THE ENGINEER AND THE UTILITY OWNER. NOTIFY THE ENGINEER AND THE UTILITY OWNER 24 HOURS BEFORE EACH AND EVERY CONNECTION TO EXISTING SYSTEMS IS MADE.
14. MAINTAIN FLOW FOR ALL EXISTING UTILITIES
15. ALL SITE FILL SHALL MEET SELECTED FILL STANDARDS UNLESS NOTED OTHERWISE ON THE DRAWINGS.
16. CONTRACTOR TO GRADE ALL AREAS ON THE SITE TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE COMPOUND AND THE TOWER.
17. THE CONTRACTOR SHALL TAKE TIES TO ALL UTILITY CONNECTIONS AND PROVIDE MARKED-UP AS-BUILT PLANS. AS-BUILT PLANS SHALL BE REVIEWED BY THE OWNER AND HIS REPRESENTATIVES, AND THE CONTRACTOR SHALL PROVIDE ANY CORRECTION OR ADMISSIONS TO THE SATISFACTION OF THE OWNER AND HIS REPRESENTATIVES BEFORE UTILITIES WILL BE ACCEPTED. AS-BUILTS SHALL INCLUDE ALL POWER, TELEPHONE, GROUNDING, ETC.
18. TOWER FOOTING DIMENSIONS SHALL BE VERIFIED WITH THE TOWER MANUFACTURER AND THE TOWER PLANS.

GENERAL CONSTRUCTION NOTES

1. GENERAL
   - A. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.
   - B. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE UNDERGROUND UTILITIES.
   - C. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE APPROVAL.
   - D. EACH CONTRACTOR SHALL COOPERATE WITH THE OWNER'S REPRESENTATIVE, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
   - E. PAINT ALL ANTENNAS, MOUNTING HARDWARE, CABLES, CABLE TRAYS, ETC. TO MATCH EXISTING STRUCTURE PER OWNER REQUIREMENTS. OWNER SHALL APPROVE COLOR. ALL DAMAGED, MARRED, SCRAPED, ABRADED, ETC. AREAS OF EXISTING PAINT SHALL BE REPAIRED PER OWNERS REQUIREMENTS. OWNER SHALL APPROVE COLOR.
   - F.
2. EXCAVATIONS/FOUNDATION
   - A. FOUNDATION EXCAVATION SHALL BE HAND-TRIMMED TO REMOVE LOOSE MATERIALS.
   - B. EXTERIOR FOUNDATION BACKFILL SHALL BE SELECTED GRANULAR FILL.
   - C. ALL STRUCTURAL BACKFILL AND SUBBASE UNDER SLABS-ON-GRADE AND FOOTINGS SHALL BE "SW" OR BETTER PER ASTM D-2487 COMPACTED TO A MINIMUM 95% STANDARD PROCTOR DENSITY PER ASTM D 698.
   - D. DO NOT PLACE FOOTINGS IN WATER OR ON FROZEN GROUND.
   - E. SOIL BEARING SURFACES, PREVIOUSLY ACCEPTED BY GEOTECHNICAL ENGINEER, WHICH ARE ALLOWED TO BECOME SATURATED, FROZEN OR DISTURBED SHALL BE REWORKED TO SATISFACTION OF GEOTECHNICAL ENGINEER.
   - F. DO NO ALLOW GROUND BENEATH FOOTINGS TO FREEZE.
   - G. FOOTING EXCAVATIONS SHALL BE CUT NEAT.
3. CONCRETE
   - A. DESIGN AND CONSTRUCTION OF ALL CONCRETE ELEMENTS SHALL CONFORM TO THE LATEST EDITIONS OF THE FOLLOWING APPLICABLE CODES: ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS"; ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE";
   - B. MIX DESIGN SHALL BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO PLACING CONCRETE.
   - C. CONCRETE SHALL BE NORMAL WEIGHT, 6% AIR ENTRAINED (±1.5%) WITH A MAXIMUM 4" SLUMP, AND HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI UNLESS OTHERWISE NOTED.
   - D. MAXIMUM AGGREGATE SIZE SHALL BE 1".
   - E. THE FOLLOWING MATERIALS SHALL BE USED:

PORTLAND CEMENT:	ASTM C 150,
TYPE I REINFORCEMENT:	ASTM A 615,
GRADE 60 NORMAL WEIGHT AGGREGATE:	ASTM C 33
WATER:	DRINKABLE
ADMIXTURES:	NON-CHLORIDE CONTAINING

   - F. REINFORCING SHALL CONFORM TO ASTM A-615 WITH SUPPLEMENT. MINIMUM YIELD STRENGTH Fy=60 KSI. REINFORCING DETAILS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ACI 315.
   - G. CONCRETE COVER AROUND REINFORCING BARS (U.N.O.) SHALL BE:

1. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED EARTH	3"
2. CONCRETE EXPOSED TO EARTH, WEATHER	2"
3. SLABS	3/4"
4. ALL OTHER CONCRETE	1 1/2"

   - H. UNLESS INDICATED OTHERWISE ON THE DRAWINGS, REINFORCEMENT SPLICES SHALL MEET CLASS B, TENSION LAP REQUIREMENTS IN ACCORDANCE WITH ALL PROVISIONS OF ACI 318 LATEST EDITION, UNLESS NOTED OTHERWISE.

GENERAL CONSTRUCTION NOTES CONT.

   - I. CURING COMPOUNDS SHALL CONFORM TO ASTM C-309.
   - J. ADMIXTURES SHALL CONFORM TO THE APPROPRIATE ASTM STANDARD AS REFERENCED IN ACI-301
   - K. DO NOT WELD OR TACKWELD REINFORCING STEEL.
   - L. ALL DOWELS, ANCHOR BOLTS, EMBEDDED STEEL, ELECTRICAL CONDUITS, PIPE SLEEVES, PIPING, WATERSTOPS, INSERTS, GROUNDS AND ALL OTHER EMBEDDED ITEMS AND FORMED DETAILS SHALL BE IN PLACE BEFORE START OF CONCRETE PLACEMENT.
   - M. LOCATE ADDITIONAL CONSTRUCTION JOINTS REQUIRED TO FACILITATE CONSTRUCTION AS ACCEPTABLE TO ENGINEER. PLACE REINFORCEMENT CONTINUOUSLY THROUGH JOINT.
   - N. REINFORCEMENT SHALL BE COLD BENT WHENEVER BENDING IS REQUIRED.
   - O. PLACE CONCRETE IN A UNIFORM MANNER TO PREVENT THE FORMATION OF COLD JOINTS AND OTHER PLANES OF WEAKNESS. VIBRATE THE CONCRETE TO FULLY EMBED REINFORCING. DO NOT USE VIBRATORS TO TRANSPORT CONCRETE THROUGH CHUTES OR FORMWORK.
   - P. DO NOT PLACE CONCRETE IN WATER, ICE, OR ON FROZEN GROUND.
   - Q. DO NOT ALLOW CONCRETE SUBBASE TO FREEZE DURING CONCRETE CURING AND SETTING PERIOD, OR FOR A MINIMUM OF 14 DAYS AFTER PLACEMENT.
   - R. FOR COLD-WEATHER AND HOT-WEATHER CONCRETE PLACEMENT, CONFORM TO APPLICABLE ACI CODES AND RECOMMENDATIONS. IN EITHER CASE, MATERIALS CONTAINING CHLORIDE, CALCIUM, SALTS, ETC. SHALL NOT BE USED. PROTECT FRESH CONCRETE FROM WEATHER FOR 7 DAYS MINIMUM.
   - S. PROVIDE A STEEL TROWEL FINISH TO THE SLAB.
4. ANTENNA SUPPORT BRACKET NOTES (IF APPLICABLE)
   - A. DESIGN RESPONSIBILITY OF ANTENNA MOUNTING BRACKETS AND POLES AND ALL COMPONENTS THERE OF AND ATTACHMENT THERE TO SHALL BE THE RESPONSIBILITY OF THE MANUFACTURER. MFR SHALL PROVIDE TO THE ENGINEER FOR APPROVAL, DRAWINGS DETAILING ALL COMPONENTS OF THE ASSEMBLY, INCLUDING CONNECTIONS, DESIGN LOADS, AND ALL OTHER PERTINENT DATA.
   - B. BRACKETS SHALL BE DESIGNED TO SUPPORT CURRENT AND FUTURE PANEL ANTENNAS AND COAXIAL CABLES AS SHOWN.
5. STRUCTURAL STEEL NOTES
   - A. STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
   - B. STEEL ANGLES, BASE PLATES, BEARING PLATES AND MISC. FABRICATION SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF ASTM-A36 WITH A MINIMUM YIELD STRESS OF 36 KSI. ALL STEEL TUBES AND PIPES SHALL BE A500 STEEL MINIMUM.
   - C. ALL DINGS, SCRAPES, MARS, AND WELDS IN THE FINISHED AREAS SHALL BE REPAIRED BY FIELD TOUCH-UP PRIOR TO COMPLETION OF THE WORK.
   - D. ALL EXTERIOR STRUCTURAL STEEL SHALL BE, WHEN DELIVERED, HOT-DIP GALVANIZED ACCORDING TO ASTM A123, TOUCH-UP FIELD WELDS AND ABRADED AREAS W/2 COATS OF GALVANIZED PAINT, ZRC COLD GALVANIZING COMPOUND OR APPROVED EQUAL.
   - E. DO NOT PLACE HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.
   - F. CONNECTIONS:
     1. BOLTED CONNECTIONS SHALL USE BEARING TYPE GALVANIZED ASTM A325 BOLTS AND SHALL HAVE A MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
     2. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. GALVANIZED ASTM A307 BOLTS UNLESS NOTED OTHERWISE.
   - G. SAFETY NOTES:
     1. THE CONTRACTOR WILL ADHERE TO ALL SAFETY REGULATIONS, LOCAL, STATE AND FEDERAL.
     2. THE CONTRACTORS WILL CONDUCT DAILY SAFETY TAILGATE MEETINGS IN ADDITION TO WEEKLY SAFETY MEETINGS. THESE REPORTS WILL BE MADE AVAILABLE TO THE OWNER UPON REQUEST.
     3. ALL WORKERS & VISITORS TO THE SITE SHALL WEAR HARD HATS & ANY OTHER SAFETY EQUIPMENT REQUIRED BY THE WORK BEING PERFORMED ON THE SITE.

GENERAL GROUNDING NOTES:

1. ALL GROUND CABLE IN CONCRETE OR THROUGH WALL SHALL BE IN 3/4" PVC CONDUIT. NO METALLIC CONDUIT SHALL BE USED FOR GROUNDING CONDUCTOR SLEEVES.
2. GROUND ALL EXPOSED METALLIC OBJECTS USING A TWO-HOLE NEMA DRILLED CONNECTOR SUCH AS THOMAS & BETTS #32207 OR APPROVED EQUAL.
3. THE CONTRACTOR SHALL NOTIFY THE VERTICAL BRIDGE REPRESENTATIVE WHEN THE GROUND RING IS INSTALLED SO THAT THE REPRESENTATIVE CAN INSPECT GROUNDING BEFORE IT IS CONCEALED.
4. ALL EXTERIOR GROUND CONDUCTORS INCLUDED GROUND RING SHALL BE #2 AWG SOLID BARE TINNED COPPER. MAKE ALL GROUND CONNECTIONS AS SHORT AND DIRECT AS POSSIBLE. AVOID SHARP BENDS. THE RADIUS OF ANY BEND SHALL NOT BE LESS THAN 8" AND THE INCLUSIVE ANGLE OF ANY BEND SHALL NOT EXCEED 90°. GROUNDING CONDUCTORS SHALL BE ROUTED DOWNWARD TOWARD THE BURIED GROUND RING.
5. ALL BELOW GROUND EXTERNAL CONNECTIONS SHALL BE EXOTHERMICALLY WELDED. ALL EXOTHERMIC WELDS TO BURIED GROUND RING SHALL BE THE PARALLEL, EXCEPT FOR THE GROUND RODS WHICH ARE TEE-TYPE EXOTHERMIC WELDS. REPAIR ALL GALVANIZED SURFACES THAT HAVE BEEN DAMAGED BY EXOTHERMIC WELDING. USE SPRAY GALVANIZED SUCH AS HOLUB LECTROSOL #15-501.
6. WHERE MECHANICAL CONNECTORS (TWO-HOLE OR CLAMP) ARE USED, APPLY A LIBERAL PROTECTIVE COATING OF A CONDUCTIVE ANTI-OXIDE COMPOUND ON ALL CONNECTORS, PROVIDE LOCK WASHERS ON ALL MECHANICAL CONNECTORS. USE STAINLESS STEEL HARDWARE THROUGHOUT. THOROUGHLY REMOVE ALL PAINT AND CLEAN ALL DIRT FROM SURFACES REQUIRING GROUND CONNECTORS, REPAINT TO MATCH EXISTING AFTER CONNECTION IS MADE TO MAINTAIN CORROSION RESISTANCE. ALL GROUND CONNECTIONS SHALL BE APPROVED FOR THE TYPES OF METALS BEING ATTACHED TO.
7. THE CONTRACTOR SHALL COORDINATE AS REQUIRED TO HAVE UTILITY COMPANY REPRESENTATIVE AT THE SITE TO DISCONNECT THE UTILITY NEUTRAL FROM GROUNDING SYSTEM DURING FINAL INSPECTION SO THAT REQUIRED TESTING ON THE GROUND SYSTEM CAN BE PERFORMED. THE CONTRACTOR SHALL PROVIDE NOTICE TO THE VERTICAL BRIDGE REPRESENTATIVE (TWO) DAYS PRIOR TO FINAL TESTING. IF THE CONTRACTOR SHALL PAY THE COST FOR AN INDEPENDENT GROUNDING CONSULTANT TO PERFORM THE GROUND RESISTANCE TEST. GROUNDING CONSULTANT SHALL BE SELECTED BY THE VERTICAL BRIDGE REPRESENTATIVE. IF THE UTILITY COMPANY REPRESENTATIVE FAILS TO APPEAR DUE TO NO FAULT THE CONTRACTOR, NO PENALTY APPLY.
8. ALL MOUNTING HARDWARE SHALL BE STAINLESS STEEL.
9. THE GROUND CONDUCTORS SHALL BE RUN STRAIGHT FOR MINIMUM INDUCTANCE AND VOLTAGE DROP, SINCE CABLE BENDS INCREASE INDUCTANCE, THE MINIMUM REQUIRED BENDING RADIUS IS 8 INCHES WHEN BENDS ARE UNAVOIDABLE. ALL METAL WORK WITHIN 10 FEET OF THE GROUND RING SHALL BE DIRECTLY BONDED TO THIS GROUND SYSTEM, WITHOUT USING SERIES OR DAISY CHAIN CONNECTION ARRANGEMENTS.
10. PAINT, ENAMEL LACQUER AND OTHER ELECTRICALLY NON-CONDUCTIVE COATING SHALL BE REMOVED FROM THREADS AND SURFACE AREAS WHERE CONNECTIONS ARE MADE TO ENSURE GOOD ELECTRICAL CONTINUITY.
11. CONNECTIONS BETWEEN DISSIMILAR METALS SHALL NOT BE MADE UNLESS THE CONDUCTORS ARE SEPARATED BY A SUITABLE MATERIAL THAT IS A PART OF THE ATTACHMENT DEVICE LISTED AND APPROVED FOR USE WITH THE SPECIFIC DISSIMILAR METALS MAY BE USED FOR THE PURPOSE.
12. ALL BELOW GRADE GROUND SYSTEM CONDUCTORS SHALL BE A MINIMUM DEPTH OF 30" (OR 6" BELOW THE FROST LINE, WHICHEVER IS GREATER).
13. CONTRACTOR TO COORDINATE WITH TOWER CONTRACTOR TO PROVIDE, RUN AND TERMINATE POWER & CONTROL WIRES WITHIN CONDUITS FROM LIGHTENING CONTROLLER TO ELECTRICAL AND CONTROL PANELS.
14. INTERMEDIATE COAX, GROUNDING TO BE INSTALLED ON VERTICAL RUNS THAT EXCEED 200 FEET IN LENGTH. CONTRACTOR SHALL COORDINATE WITH VERTICAL CONSTRUCTION MANAGER ON LOCATION OF INTERMEDIATE GROUNDING LOCATION.

GENERAL NOTES

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITY COMPANY OR OTHER PUBLIC AUTHORITIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY OR MUNICIPAL AUTHORITIES.
3. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK. MINOR OMISSIONS OR ERRORS IN THE BID DOCUMENTS SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR THE OVERALL INTENT OF THESE DRAWINGS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED AS A RESULT OF CONSTRUCTION OF THIS FACILITY.
5. THE SCOPE OF WORK FOR THIS PROJECT S-IALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
6. THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING A BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
7. THE CONTRACTOR SHALL VERIFY ANTENNA ELEVATION AND AZIMUTH WITH RF ENGINEERING PRIOR TO INSTALLATION.
8. TRANSMITTER EQUIPMENT AND ANTENNAS ARE DESIGNED TO MEET ANSI/EIA/TIA 222-G REQUIREMENTS.
9. ALL STRUCTURAL ELEMENTS SHALL BE HOT DIPPED GALVANIZED STEEL.
10. CONTRACTOR SHALL MAKE A UTILITY "ONE CALL" TO LOCATE ALL UTILITIES PRIOR TO EXCAVATING.
11. IF ANY UNDERGROUND UTILITIES OR STRUCTURES EXIST BENEATH THE PROJECT AREA, CONTRACTOR MUST LOCATE THEM AND CONTACT THE APPLICANT AND OWNER'S REPRESENTATIVE.
12. OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION BY TECHNICIANS APPROXIMATELY TWICE A MONTH.
13. PRIOR TO THE INSTALLATION OF THE PROPOSED EQUIPMENT OR MODIFICATION TO THE EXISTING STRUCTURE, A STRUCTURAL ANALYSIS SHALL BE PERFORMED BY THE OWNER'S AGENT TO CERTIFY THAT THE EXISTING/PROPOSED COMMUNICATION STRUCTURE AND COMPONENTS ARE STRUCTURALLY ADEQUATE TO SUPPORT ALL EXISTING AND PROPOSED ANTENNAS, COAXIAL CABLES AND OTHER APPURTENANCES.
14. PROPERTY LINE INFORMATION WAS PREPARED USING DEEDS, TAX MAPS AND PLANS OF RECORD AND SHOULD NOT BE CONSTRUED AS AN ACCURATE BOUNDARY SURVEY.
15. THIS PLAN IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.
16. THE PROPOSED FACILITY WILL CAUSE ONLY A "DE MINIMIS" INCREASE IN STORM WATER RUNOFF, THEREFORE NO DRAINAGE STRUCTURES ARE PROPOSED.
17. NO SIGNIFICANT NOISE, SMOKE, DUST OR ODOR WILL RESULT FROM THIS FACILITY.
18. THE FACILITY IS UNMANNED AND NOT INTENDED FOR HUMAN HABITATION (NO HANDICAP ACCESS IS REQUIRED).
19. THE FACILITY IS UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SANITARY SERVICE.
20. POWER TO THE FACILITY WILL BE MONITORED BY A SEPARATE METER.

APPLICABLE CODES AND STANDARDS

1. ANSI/TIA-222-H-1: STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES, LATEST EDITION
2. ANSI/TIA-322-2016: LOADING, ANALYSIS, DESIGN, INSTALLATION, ALTERATION AND MAINTENANCE OF COMMUNICATION STRUCTURES, LATEST EDITION
3. ANSI/TIA-222 STRUCTURAL-H-1: STRUCTURAL STANDARD, LATEST EDITION
4. 2015 IBC: INTERNATIONAL BUILDING CODE
5. 2015 IBC: INTERNATIONAL MECHANICAL CODE
6. NFPA 70, NATIONAL ELECTRICAL CODE (2017 NEC)
7. NFPA 780, LIGHTNING PROTECTION CODE (2017 NEC)
8. 2015 IBC: INTERNATIONAL FUEL GAS CODE
9. 2015 IFC: FIRE CODE
10. ACI 318: AMERICAN CONCRETE INSTITUTE, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (2014 ACI)
11. CRSI: CONCRETE REINFORCING STEEL INSTITUTE, MANUAL OF STANDARD PRACTICE, LATEST EDITION
12. AISC: AMERICAN INSTITUTE OF STEEL CONSTRUCTION, MANUAL OF STEEL CONSTRUCTION, LATEST EDITION
13. AWS: AMERICAN WELDING SOCIETY D1.1, STRUCTURAL WELDING CODE, LATEST EDITION

verticalbridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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(608) 643-4100 www.ramaker.com

Certification & Seal:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Wisconsin.

WISCONSIN
MICHAEL L. PINSKE
36387
MIDDLETON, WI
PROFESSIONAL ENGINEER

Signature: Date: 9/30/2024

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY — DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
GENERAL & GROUNDING NOTES

SCALE: NONE

PROJECT NUMBER: 60498

EXISTING OVERALL SITE 1
SCALE: NTS

EXISTING ACCESS DRIVE 2
SCALE: NTS

EXISTING POWER POLE / TRANSFORMER 3
SCALE: NTS

EXISTING FIBER PEDESTAL 4
SCALE: NTS

verticalbridge

CELLCO PARTNERSHIP
d/b/a VERIZON WIRELESS

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MICHAEL L. PINSKE
36387
MIDDLETON, WI
PROFESSIONAL ENGINEER

Signature: Date: 9/30/2024

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A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY
DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
EXISTING SITE PHOTOS

SCALE: NONE

PROJECT NUMBER: 60498
SHEET: R-1

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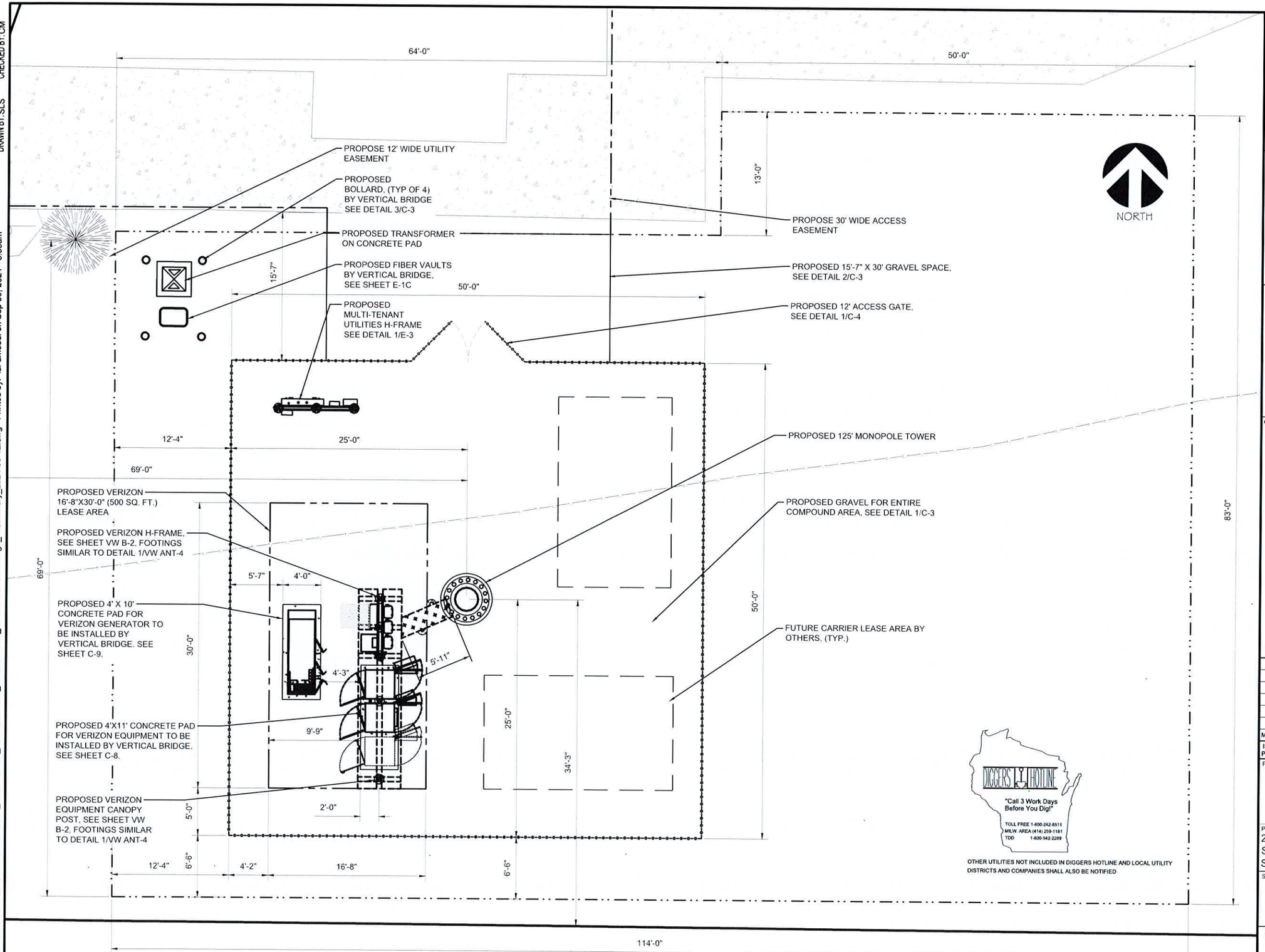

ENLARGED SITE PLAN
SCALE: 1" = 10' (1)

DIGGERS HOTLINE
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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

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WISCONSIN MICHAEL L. PINSKE 36387 MIDDLETON, WI PROFESSIONAL ENGINEER

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ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
ENLARGED SITE PLAN

0 5' 10' 20'
11" x 17" - 1" = 10'
22" x 34" - 1" = 5'

PROJECT NUMBER: 60498
SHEET NUMBER: VW C-1

SITE WORK GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
2. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION
   B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING & EXCAVATION.
3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
5. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, OWNER AND/OR LOCAL UTILITIES.
6. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION
7. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE.
8. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
9. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
10. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
11. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
12. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
13. ALL REMOVED SPOILS TO BE UTILIZED FOR BACKFILL SHALL BE PROTECTED FROM FREEZE

STRUCTURAL STEEL NOTES:

1. ALL STEEL WORK SHALL BE PAINTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND IN ACCORDANCE WITH ASTM A36 UNLESS OTHERWISE NOTED.
2. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION". PAINTED SURFACES SHALL BE TOUCHED UP.
3. BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE (3/4"Ø) CONNECTIONS AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
4. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.
5. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS.

CONCRETE AND REINFORCING STEEL NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. SLAB FOUNDATION DESIGN ASSUMING ALLOWABLE SOIL BEARING PRESSURE OF 2000 PSF.
3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

   CONCRETE CAST AGAINST EARTH.....3 IN.
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER .....2 IN.
   #5 AND SMALLER & WWF .....1 1/2 IN.

   CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
   SLAB AND WALL .....3/4 IN.
   BEAMS AND COLUMNS.....1 1/2 IN.

5. A CHAMFER 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
6. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR ENGINEERING APPROVAL WHEN DRILLING HOLES ON CONCRETE. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.
7. COLD WEATHER CONCRETING (BELOW 40°). SHALL COMPLY WITH ACI 301. CONTRACTOR SHALL NEVER PLACE CONCRETE ON FROZEN SUBGRADE AND REBAR TEMPERATURE SHALL NEVER BE BELLOW 32°F DURING CONCRETE PLACEMENT. STEEL TEMPERATURE CAN BE RAISED BY BATHING IT IN WATER UNTIL ICE DOES NOT FORM ON BARS. CONCRETE MATERIALS MAY BE HEATED, BUT MIX TEMPERATURE SHALL BE BETWEEN 50°F & 70°F AT TIME OF PLACING. ALL CONCRETE EXPOSED TO FREEZING DURING PLACEMENT OR DURING SERVICE LIFE SHALL BE AIR ENTRAINED. INSULATED BLANKETS (OR APPROVED EQUAL METHOD) SHALL BE PLACED OVER FRESHLY FINISHED CONCRETE TO ALLOW PROPER CURING/COMBAT FREEZING. THE CONCRETE TEMP. SHOULD BE MAINTAINED AT 50°F FOR FIVE (5) DAYS OR 70° FOR THREE (3) DAYS. CONCRETE SHALL NOT BE ALLOWED TO FREEZE BEFORE IT HAS REACHED A STRENGTH OF AT LEAST 500 PSI

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY: CONTRACTOR - TO BE DETERMINED SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION) OWNER - CENTRAL STATES TOWERS OEM - ORIGINAL EQUIPMENT MANUFACTURE
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO SCALE AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
7. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.
8. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING.
9. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
10. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
11. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
12. CONSTRUCTION SHALL COMPLY WITH "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF CINGULAR GSM SITES.'

APPLICABLE BUILDING CODES AND STANDARDS:

SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
2003 INTERNATIONAL BUILDING CODE (2003 IBC OR LATEST EDITION)
2008 NATIONAL ELECTRICAL CODE (NEC 2008)
UNDERWRITER LABORATORIES APPROVED ELECTRICAL PRODUCTS LIFE SAFETY CODE NFPA-101
SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING

AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, ASD.

TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) EIA-222-G, EXPOSURE CATEGORY C, STRUCTURE CLASS II, TOPO CATEGORY 1. STRUCTURAL STANDARD FOR STRUCTURAL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES.

INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE, AND SURFACE POTENTIALS OF A GROUND SYSTEM IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONICS IEEE C62.41, RECOMMENDED PRACTICES ON SURGE VOLTAGES IN LOW VOLTAGE AC POWER CIRCUITS (FOR LOCATION CATEGORY "C3" AND HIGH SYSTEM EXPOSURE")

TIA 607 COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELCORDIA GR-1503 COAXIAL CABLE CONNECTIONS

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENTS SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN GENERAL REQUIREMENTS AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

verticalbridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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Certification & Seal:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Wisconsin.

WISCONSIN
MICHAEL L. PINSKE
36387
MIDDLETON, WI
PROFESSIONAL ENGINEER

Signature: Date: 9/30/2024

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
GENERAL NOTES

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: VW C-2

232

DRAWN BY:SLS CHECKED BY:CM

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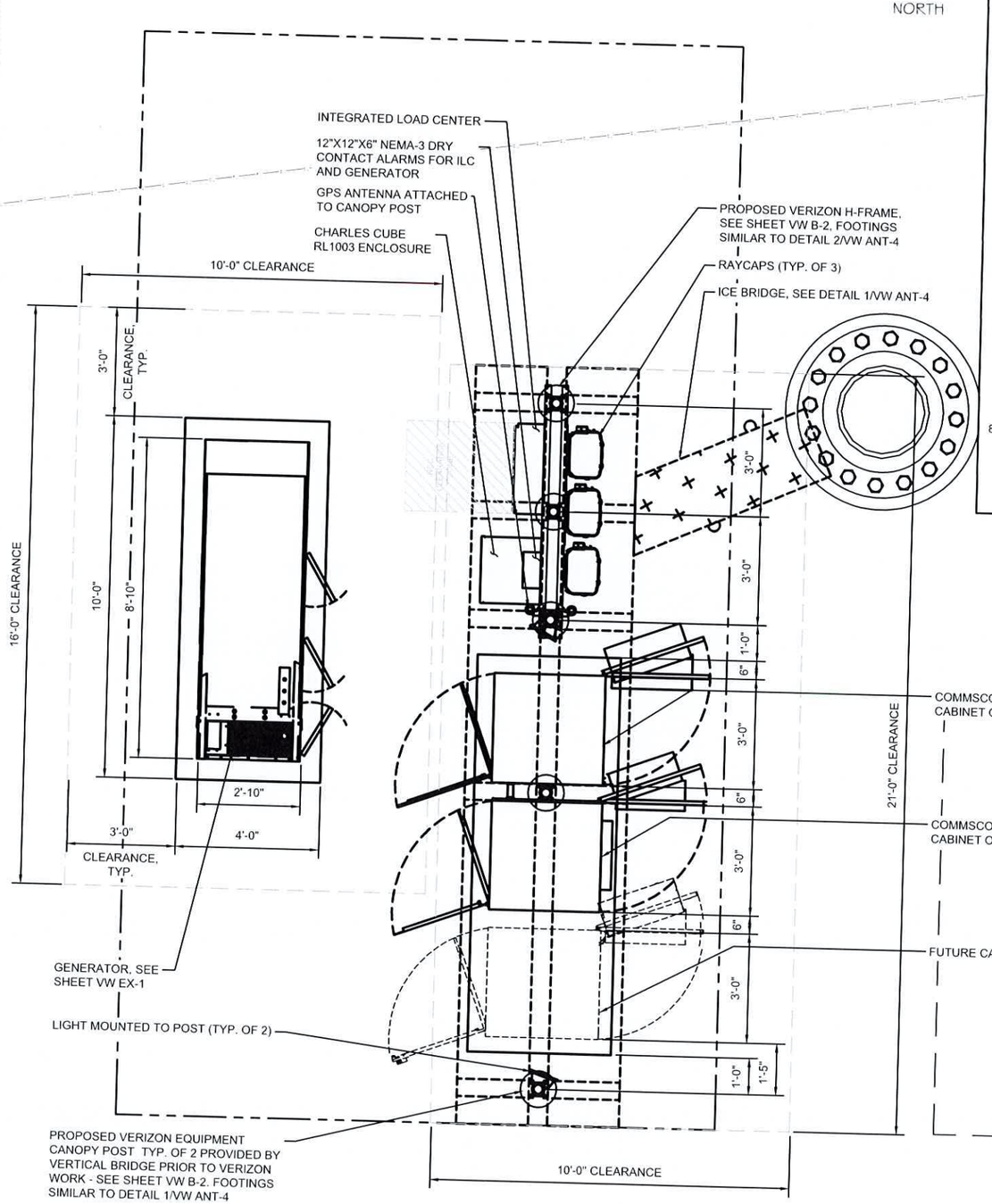
NOTE:
CONCRETE PAD TO BE INSTALLED BY VERTICAL BRIDGE PRIOR TO COLOCATION

NOTE:
FOR MORE EQUIPMENT INFORMATION SEE SHEET VW B-2

NORTH



EQUIPMENT PAD - LAYOUT PLAN (1)
SCALE: 1" = 3.75'

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. 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
8. 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.

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A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

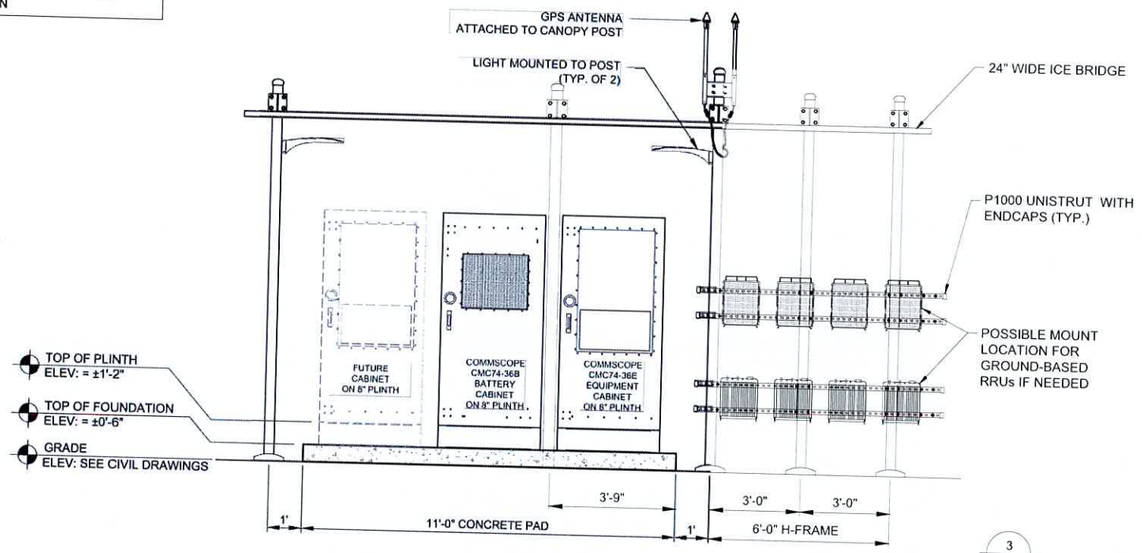
PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
EQUIPMENT PAD PLAN & NOTES

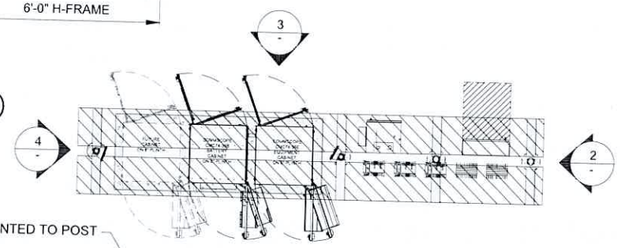
0 1.875' 3.75' 7.5'
11" x 17" - 1" = 3.75'
22" x 34" - 1" = 1.875'

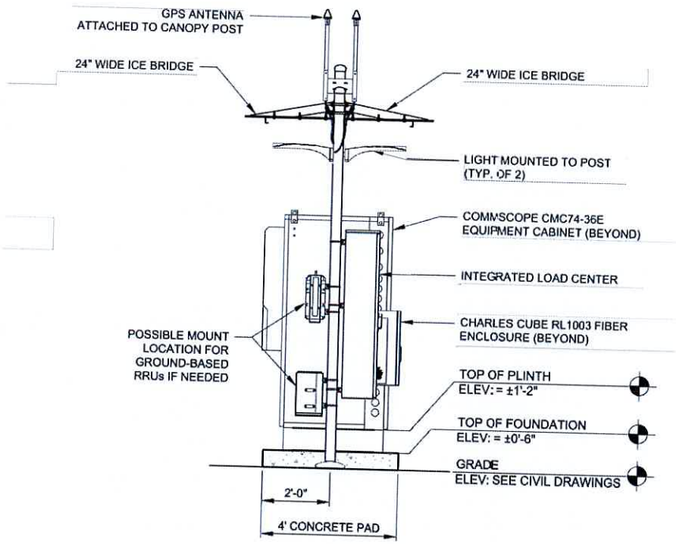
PROJECT NUMBER: 60498

NOTE:
CONCRETE PAD TO BE INSTALLED BY VERTICAL BRIDGE PRIOR TO COLOCATION

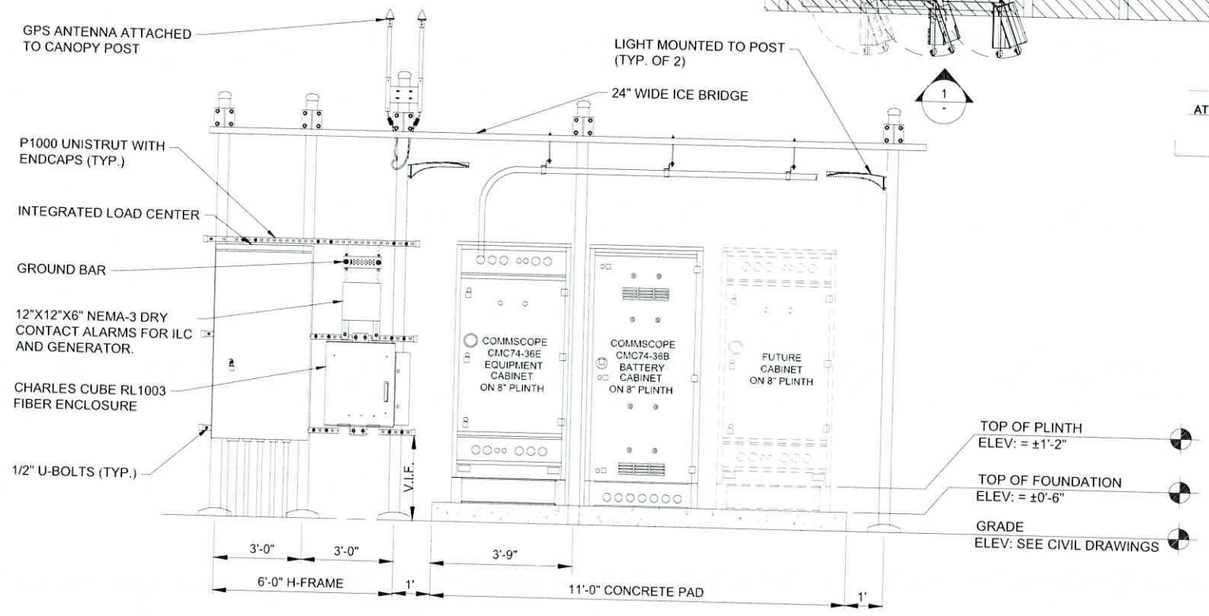


EQUIPMENT PAD ELEVATION (1)
SCALE: NTS

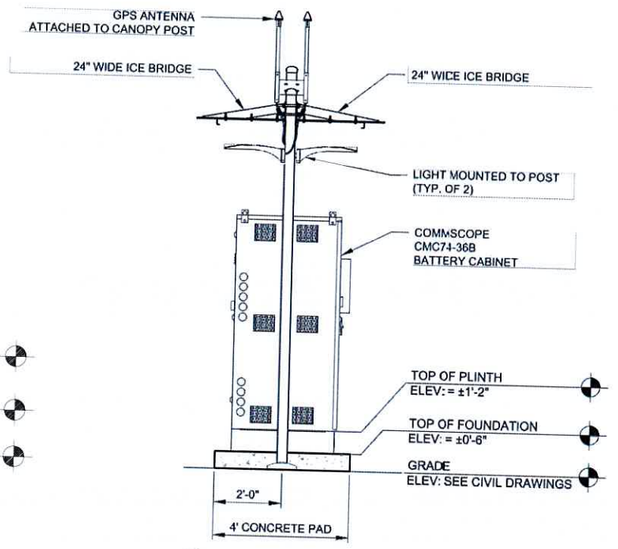




EQUIPMENT PAD ELEVATION (2)
SCALE: NTS



EQUIPMENT PAD ELEVATION (3)
SCALE: NTS



EQUIPMENT PAD ELEVATION (4)
SCALE: NTS

NOTE: FOR REFERENCE ONLY

vertical bridge

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WISCONSIN
MICHAEL L. PINSKE
36387
MIDDLETON, WI
PROFESSIONAL ENGINEER

Signature: Date: 9/30/2024

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY
DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
EQUIPMENT PAD ELEVATIONS

SCALE: NONE

234

PROJECT NUMBER: 60498

DRAWN BY: SLS CHECKED BY: CM

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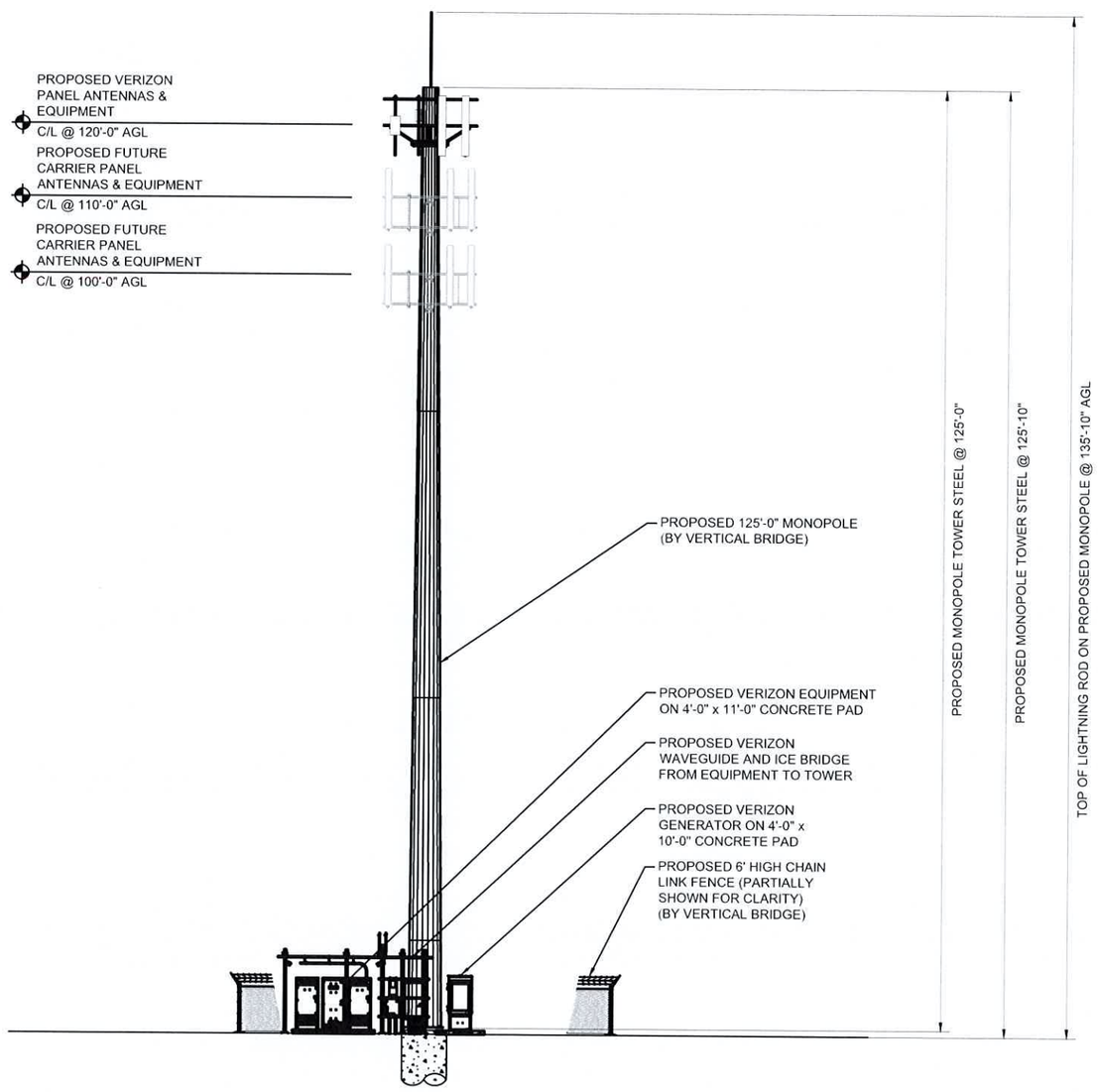
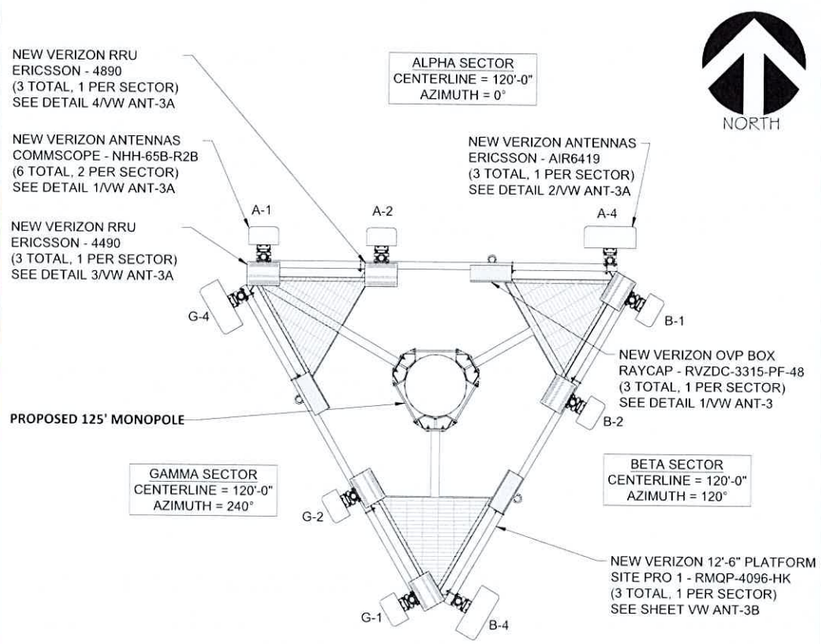


SITE ELEVATION
SCALE: 1" = 20' (1)

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.

STRUCTURAL NOTES:

1. RAMAKER SCOPE OF WORK DOES NOT INCLUDE A STRUCTURAL EVALUATION OF THIS TOWER OR STRUCTURE.
2. STRUCTURAL CALCULATIONS WERE PREPARED BY OTHERS AND THOSE CALCULATIONS CERTIFY THE CAPACITY OF THE STRUCTURE AND ANTENNA MOUNTS FOR THE DEPLOYMENT OF THE EQUIPMENT. CONTRACTOR TO COORDINATE WITH THE PROJECT MANAGER TO OBTAIN A COPY.
3. CONTRACTOR MUST COMPLY WITH STRUCTURAL ANALYSIS AND MOUNT ANALYSIS RECOMMENDATIONS FOR ALL NEW LOADING.



PROPOSED ANTENNA LAYOUT
SCALE: 1" = 5' (2)

verticalbridge

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WISCONSIN MICHAEL L. PINSKE 36387 MIDDLETON, WI PROFESSIONAL ENGINEER

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MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
SITE ELEVATION

SCALE:
AS NOTED

PROJECT NUMBER: 60498
SHEET NUMBER: VW ANT-1

Added

700	1900	AWS	Make	Atoll Model	Item Description	Centerline	Tip Height	Azimuth	Inst. Type	Quantity	Item ID
			Ericsson	AIR6419		120	121.2	0(1) 120(2) 240(3)	PHYSICAL	3	
LTE	LTE	LTE	COMMSCOPE	NHH-65B-R2B	HEX PORT, AWS/PCS/700/850, 6 FT, 65 HBW,	120	123	0(1) 120(2) 240(3)	PHYSICAL	6	1900056292

Removed

700	1900	AWS	Make	Atoll Model	Item Description	Centerline	Tip Height	Azimuth	Inst. Type	Quantity	Item ID

No data available.

Retained

700	1900	AWS	Make	Atoll Model	Item Description	Centerline	Tip Height	Azimuth	Inst. Type	Quantity	Item ID

No data available.

ANTENNA SUMMARY (1)
SCALE: NTS

Added

Equipment Type	Location	700	1900	AWS	Make	Atoll Model	Item Description	Cable Length	Cable Size	Install Type	Quantity	Item ID
RRU	Tower				ERICSSON INC	AIR6419_B77D	AIR 6419 B77D Radio Unit			PHYSICAL	0	1900483699
RRU	Tower		LTE	LTE	ERICSSON INC	4890	DB Radio 4890HP B2+B66- Rem Radio Unit			PHYSICAL	3	1900483775
RRU	Tower	LTE			ERICSSON INC	4490	DB Radio 4490HP B5+B13- Rem Radio Unit			PHYSICAL	3	1900483084
Hybrid Cable	Tower				COMMSCOPET-001	HFT1206-24SV4-xxxG			1-5/8 inch	PHYSICAL	3	
Alarm	Tower				RAYCAPINC-001	3315-ALM-RS485	RETROFIT FOR THE 6OVP DIST BOX			PHYSICAL	3	000000001900070
OVP Box	Tower				RAYCAPINC-001	RVZDC-3315-PF-48	TOWER TOP AND BASE POWER PROTECTION FIBE			PHYSICAL	3	000000001900422

Removed

Equipment Type	Location	700	1900	AWS	Make	Atoll Model	Item Description	Cable Length	Cable Size	Install Type	Quantity	Item ID

No data available.

Retained

Equipment Type	Location	700	1900	AWS	Make	Atoll Model	Item Description	Cable Length	Cable Size	Install Type	Quantity	Item ID

EQUIPMENT SUMMARY (2)
SCALE: NTS

vertical bridge

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PROFESSIONAL ENGINEER

Signature: 9/30/2024 Date:

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
ANTENNA INFORMATION

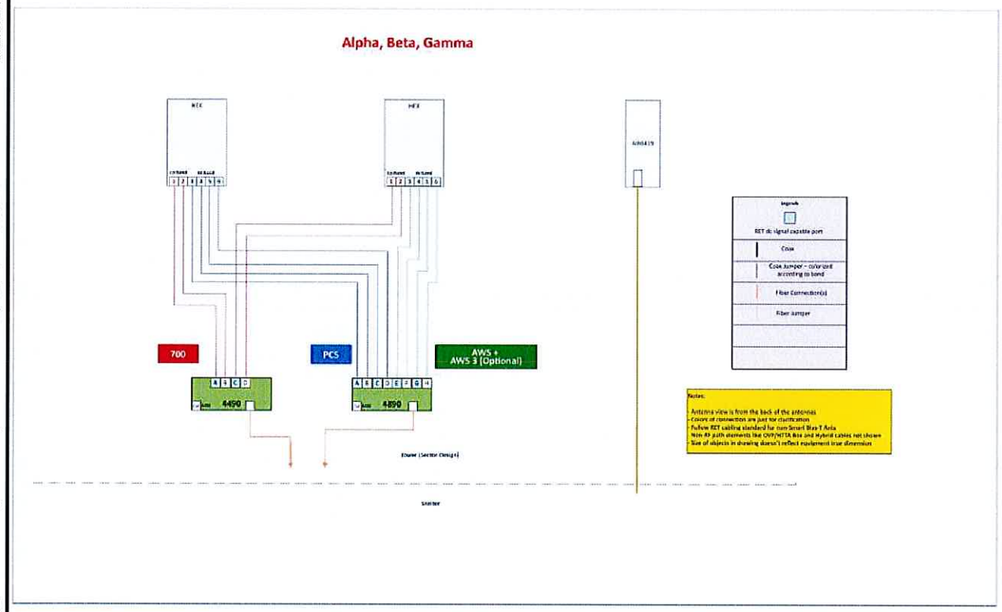
SCALE: NONE

PROJECT NUMBER 60498
SHEET NUMBER VW ANT-2

RF EMISSIONS REPORT REQUIRED

☐ YES ☒ NO

DATE OF REPORT: _____



CABLE DIAGRAM (1)
SCALE: NTS

HYBRID LENGTH ESTIMATE					
	AT GROUND		AT STRUCTURE		
SECTOR	HOR (±)	VER (±)	HOR (±)	RAYCAP CL (±)	TOTAL (±)
ALPHA	10'	10'	20'	120'	160'
BETA	10'	10'	20'	120'	160'
GAMMA	10'	10'	20'	120'	160'

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
2	PCSLT RRU
1	AWS RRU

6	700 RRU2/A2
5	PCSLT RRU2/A2
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**

RAYCAP TABLE (2)
SCALE: NTS

Item 10.

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

RAMAKER
employee-owned
(608) 643-4100 www.ramaker.com

Certification & Seal:
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WISCONSIN
MICHAEL L. PINSKE
36387
MIDDLETON, WI
PROFESSIONAL ENGINEER

Signature: 9/30/2024 Date:

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

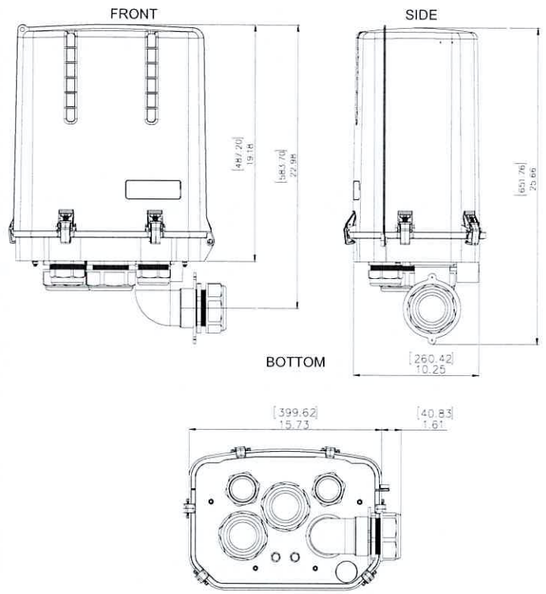
SHEET TITLE:
ANTENNA INFORMATION

SCALE: NONE

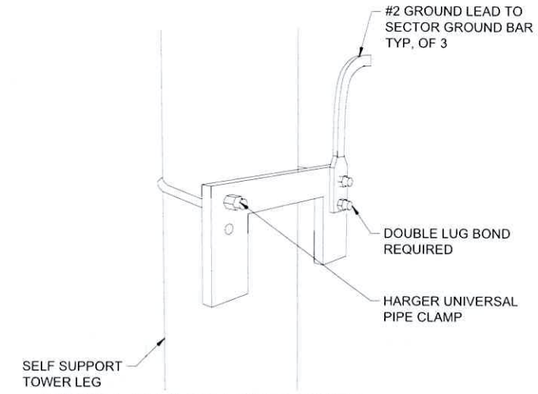
PROJECT NUMBER 60498
SHEET NUMBER VW ANT-2A

EQUIPMENT:	RAYCAP JUNCTION BOX
MODEL #:	RVZDC-3315-PF-48
ALARM BOARD UPGRADE:	RAYCAP 3315-ALM-RS485
SPECIFICATIONS	DC SURGE PROTECTION FOR RRU/INTEGRATED ANTENNA RADIO HEAD
APPLICATION:	TOWER / BASE / ROOFTOP / ROOFTOP DISTRIBUTION MODELS
WEIGHT:	32LBS (14.51 KG)

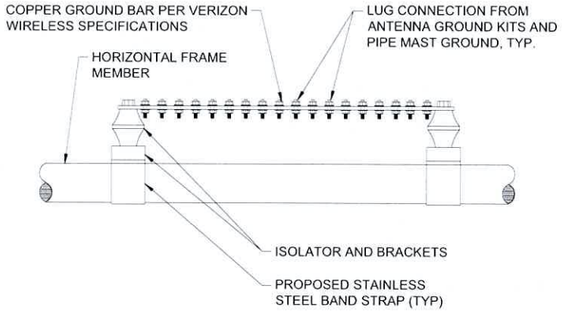
[mm]
INCHES



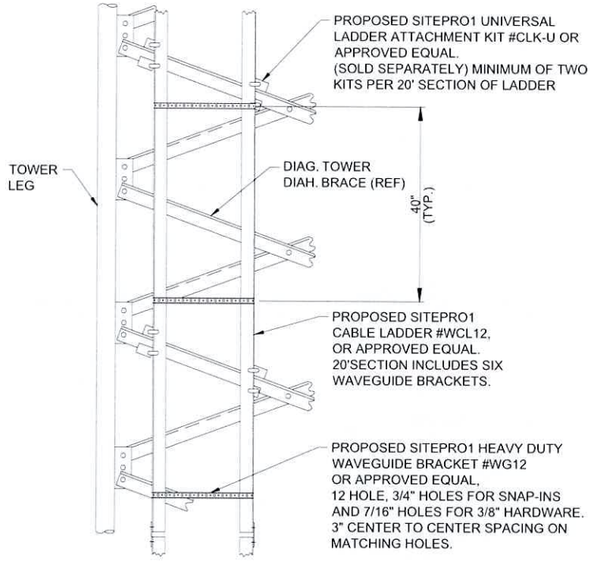
RAYCAP JUNCTION BOX DETAIL (1)
SCALE: NTS



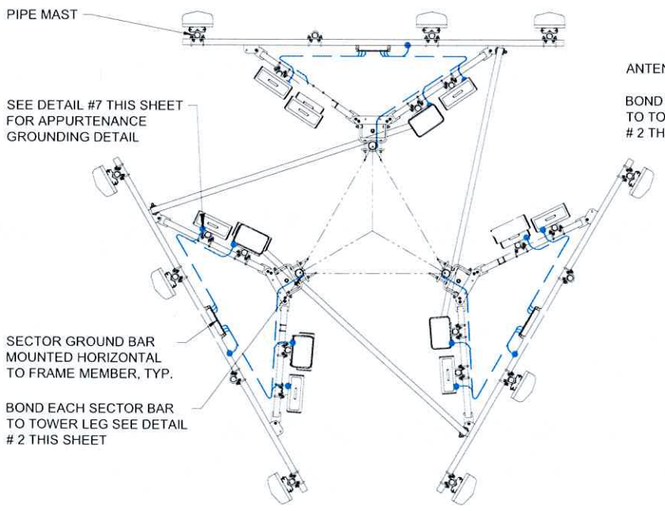
TYPICAL SELF SUPPORT TOWER (ROUND MEMBER) (2)
SCALE: NTS



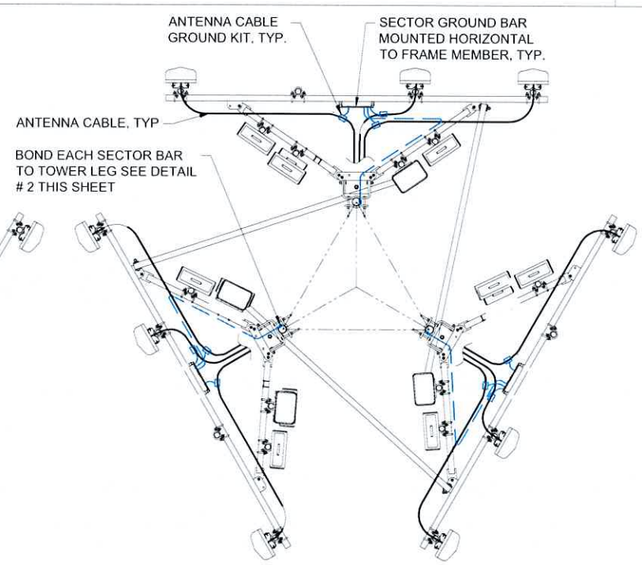
TYPICAL GROUND BAR AT SECTOR (3)
SCALE: NTS



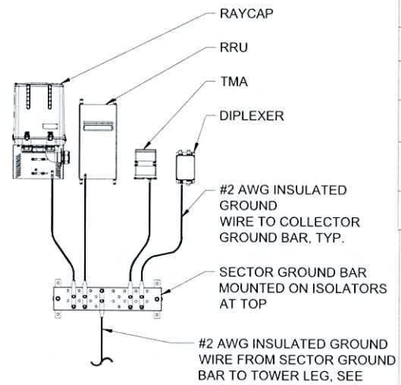
TYPICAL TRANSMISSION LINE HANGER (4)
SCALE: NTS



TYPICAL EQUIPMENT GROUNDING AT ANTENNA ELEVATION (5)
SCALE: NTS



TYPICAL ANTENNA CABLE GROUNDING AT ANTENNA ELEVATION (6)
SCALE: NTS



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

TYPICAL APPURTENANCE GROUNDING AT ANTENNA LEVEL (7)
SCALE: NTS

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.

Item 10.

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
SITE DETAILS

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: VW ANT-3

DRAWN BY:SLS CHECKED BY:CM

C:\Users\tial-amoodi\appdata\local\temp\AcPublish_12024\60498_Business Drive_50009540198_Construction Drawings_Preliminary_2024-06-12.dwg Printed by: tial-amoodi on Sep 30, 2024 - 8:39am

COMMSCOPE NHH-65B-R2B

DIMENSIONS (HXWXD):
96"X11.9"X7.10"
WEIGHT (LBS): 51.6.0

COMMSCOPE ANTENNA DETAIL (1)
SCALE: NTS

ERICSSON - AIR6419

DIMENSIONS (HXWXD):
31.3" X 16.1" X 9.8"
WEIGHT (LBS): 71.0

ERICSSON ANTENNA DETAIL (2)
SCALE: NTS

ERICSSON RRUS 4490HP 44B5 44B13 C

DIMENSIONS, HXWXD:	20.6" X 15.7" X 7.0"
WEIGHT, WITHOUT MOUNTING KIT:	~68.4 LBS (~31 KG)

ERICSSON 4490 RRU DETAIL (3)
SCALE: NTS

ERICSSON RRUS 4890HP 48B2 48B66 S

DIMENSIONS, HXWXD:	20.6" X 15.7" X 7.2"
WEIGHT, WITHOUT MOUNTING KIT:	~69.5 LBS (~31.5 KG)

ERICSSON 4890 RRU DETAIL (4)
SCALE: NTS

NOT USED (5)
SCALE: NTS

NOT USED (6)
SCALE: NTS

Item 10.

verticalbridge

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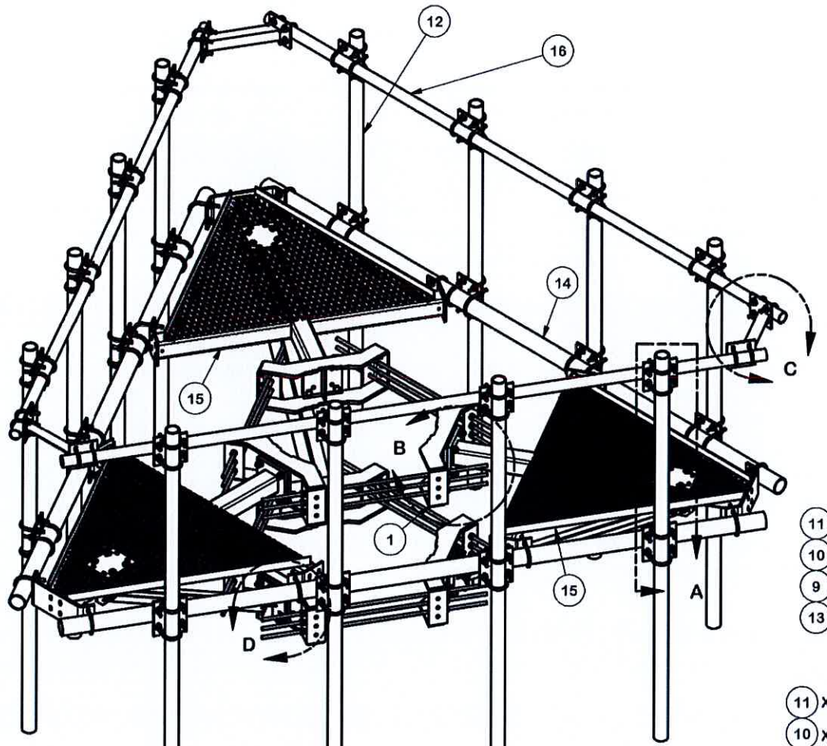
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

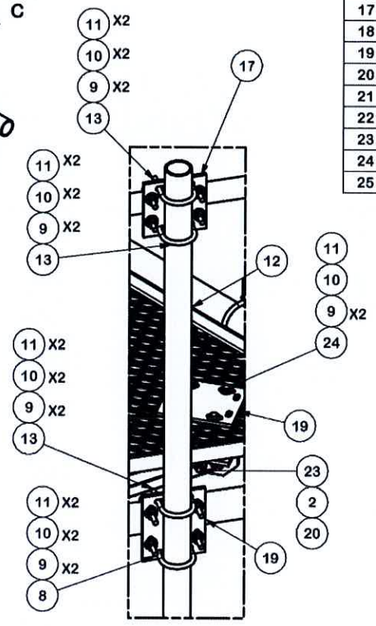
SHEET TITLE:
ANTENNA INFORMATION

SCALE: NONE

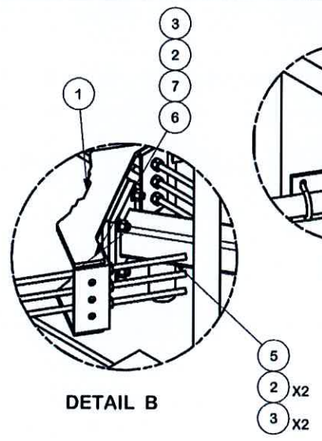
PROJECT NUMBER 60498
SHEET NUMBER VW ANT-3A



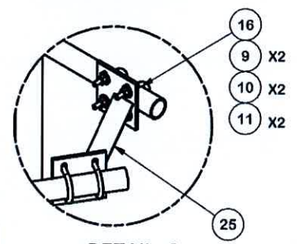
DETAIL A



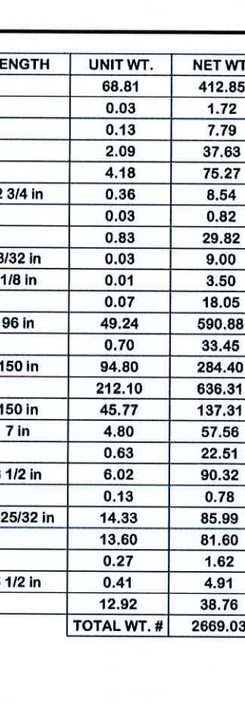
DETAIL B



DETAIL C



DETAIL D



PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	6	X-LWRM	RING MOUNT WELDMENT		68.81	412.85
2	66	G58LW	5/8" HDG LOCKWASHER		0.03	1.72
3	60	A58NUT	5/8" HDG A325 HEX NUT		0.13	7.79
4	18	G58R-24	5/8" x 24" THREADED ROD (HDG.)		2.09	37.63
5	18	G58R-48	5/8" x 48" THREADED ROD (HDG.)		4.18	75.27
6	24	A58234	5/8" x 2-3/4" HDG A325 HEX BOLT	2 3/4 in	0.36	8.54
7	24	A58FW	5/8" HDG A325 FLATWASHER		0.03	0.82
8	36	X-UB1306	1/2" X 3-5/8" X 6" X 3" U-BOLT (HDG.)		0.83	29.82
9	264	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	9.00
10	252	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	3.50
11	252	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	18.05
12	12	P3096	2-7/8" X 96" (2-1/2" SCH 40) GALVANIZED PIPE	96 in	49.24	590.88
13	48	X-UB1300	1/2" X 3" X 5" X 2" U-BOLT (HDG.)		0.70	33.45
14	3	P3150	3-1/2" X 150" (3" SCH 40) GALVANIZED PIPE	150 in	94.80	284.40
15	3	X-SV196	LOW PROFILE PLATFORM CORNER		212.10	636.31
16	3	P2150	2-3/8" O.D. X 150" SCH 40 GALVANIZED PIPE	150 in	45.77	137.31
17	12	SCX2	CROSSOVER PLATE	7 in	4.80	57.56
18	36	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.63	22.51
19	15	SCX4	CROSSOVER PLATE	8 1/2 in	6.02	90.32
20	6	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	0.78
21	6	X-253993	PLATFORM REINFORCEMENT KIT ANGLE	52 25/32 in	14.33	85.99
22	6	X-TBW	T-BRACKET WELDMENT		13.60	81.60
23	6	G5802	5/8" x 2" HDG HEX BOLT GR5		0.27	1.62
24	12	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	5 1/2 in	0.41	4.91
25	3	X-AHCP	ANGLE HANDRAIL CORNER PLATE		12.92	38.76
				TOTAL WT. #		2669.03

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
C	RELOCATED MOUNT PIPE POSITIONS	4488	JET	5/23/2021
B	CHANGED X-253992 TO X-TBW		CEK	9/20/2018
A	REPLACED HCP WITH X-AHCP	4488	CEK	7/14/2014

REVISION HISTORY

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
DRILLED AND GAS CUT HOLES *(± 0.030")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

DESCRIPTION
12' 6" LOW PROFILE PLATFORM
WITH TWELVE 2-7/8" ANTENNA MOUNTING
PIPES, AND SUPPORT RAIL

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
4488	CEK 3/24/2014		RMQP-4096-HK
CLASS 81 / SUB 02	DRAWING USAGE: CUSTOMER	CHECKED BY: BMC 7/14/2014	DWG. NO.: RMQP-4096-HK

PAGE 1 OF 3

SITE PRO 1 — A valmont COMPANY
Engineering Support Team: 1-888-753-7446
Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

ANTENNA MOUNTING DETAILS (1)

SCALE: NTS

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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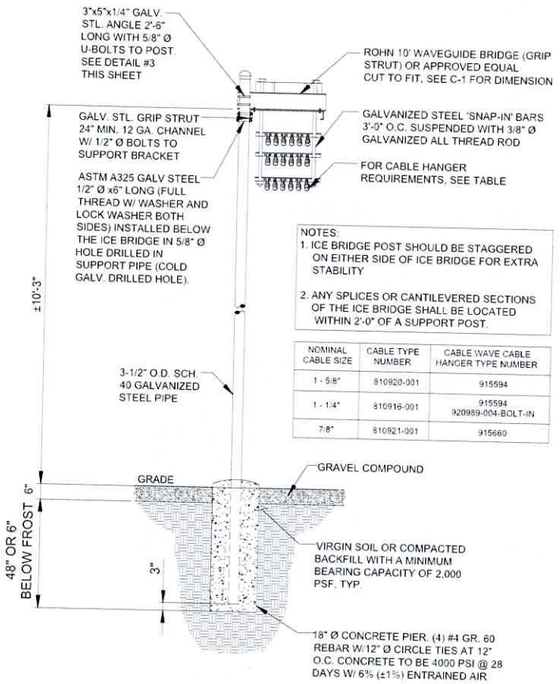
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
ANTENNA MOUNTING DETAILS

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: VW ANT-3B

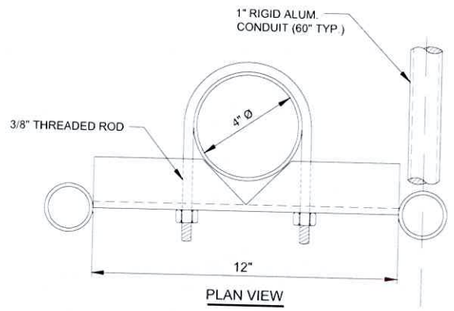


NOTES:
1. ICE BRIDGE POST SHOULD BE STAGGERED ON EITHER SIDE OF ICE BRIDGE FOR EXTRA STABILITY
2. ANY SPLICES OR CANTILEVERED SECTIONS OF THE ICE BRIDGE SHALL BE LOCATED WITHIN 2'-0" OF A SUPPORT POST.

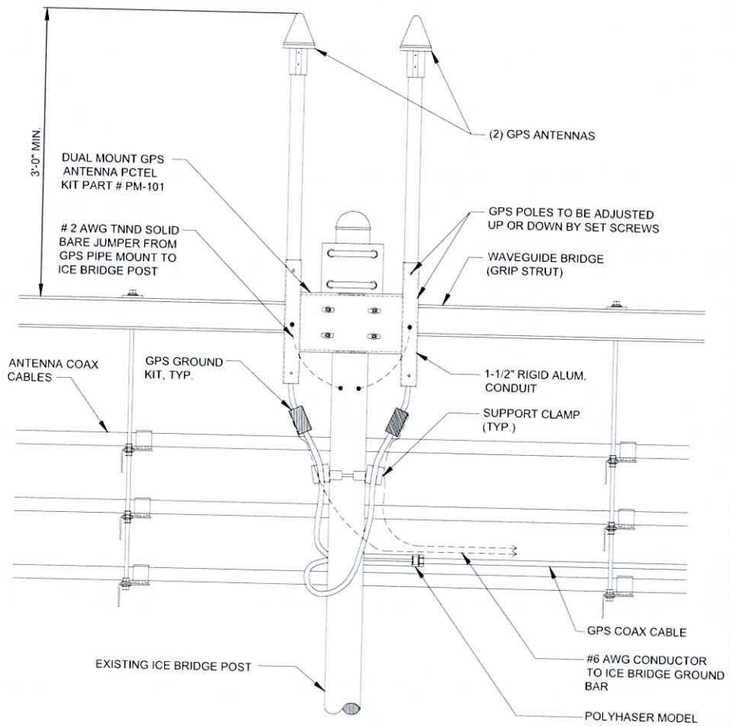
NOMINAL CABLE SIZE	CABLE TYPE NUMBER	CABLE WAVE CABLE HANGER TYPE NUMBER
1 - 5/8"	810920-001	915594
1 - 1/4"	810916-001	915594 920989-004-BOLT-IN
7/8"	810921-001	915660

ICE BRIDGE DETAIL
SCALE: NTS — 1

NOT USED
SCALE: NTS — 2

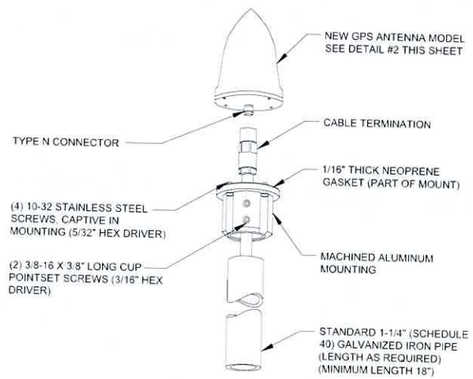


PLAN VIEW



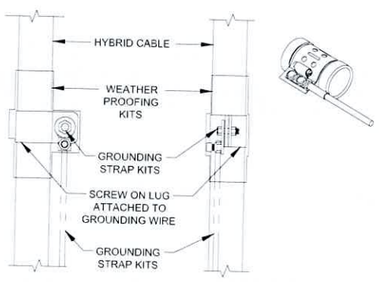
GPS MOUNTING DETAIL
SCALE: NTS — 3

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



TYPICAL GPS DETAIL
SCALE: NTS — 4

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.



COAX/ HYBRID GROUND KIT DETAIL
SCALE: NTS — 5

vertical bridge

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d/b/a VERIZON WIRELESS

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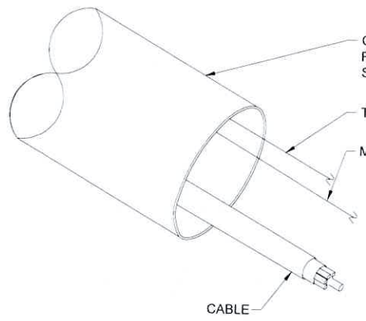
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
SITE DETAILS

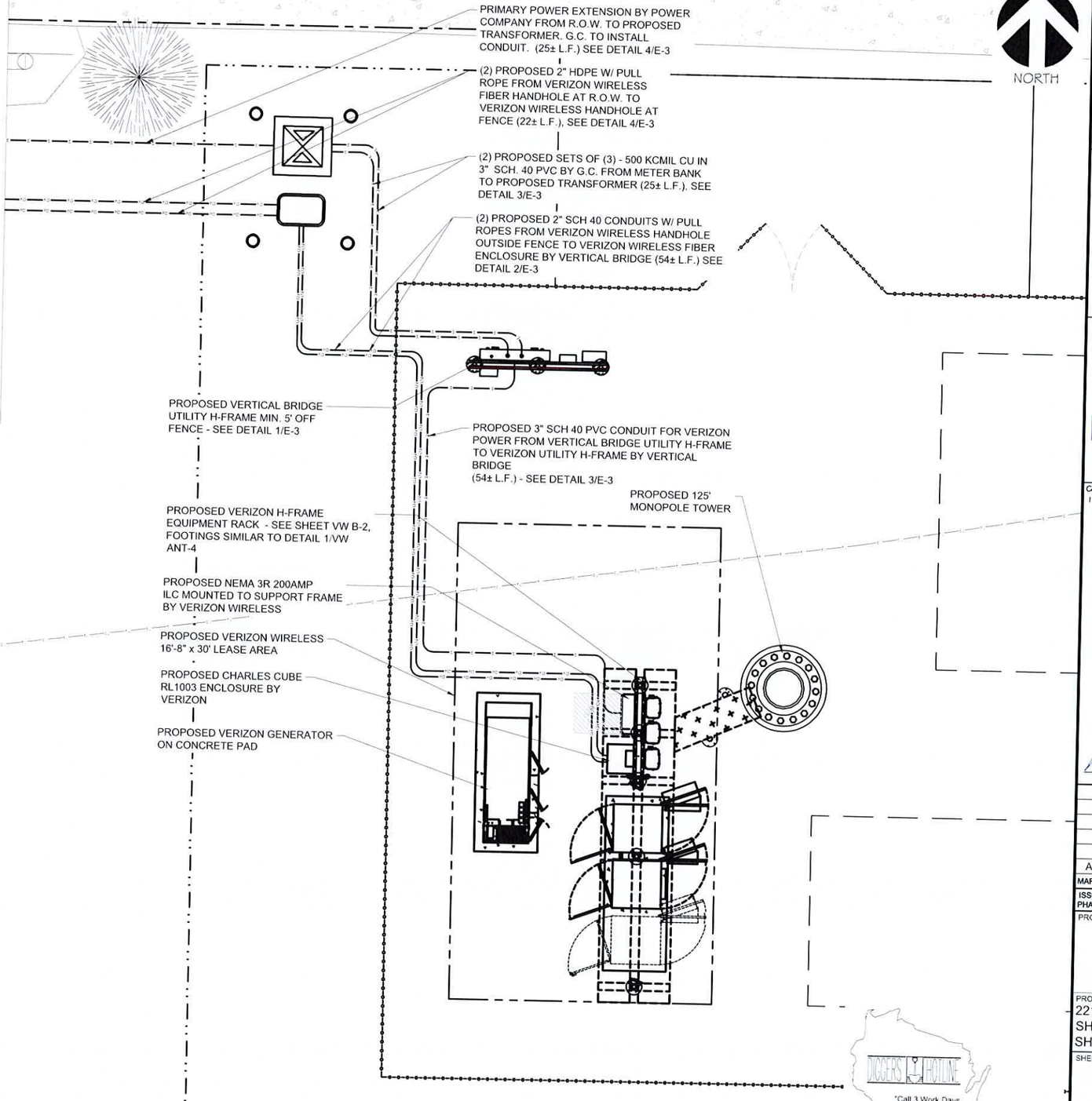
SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: VV-ANT-4



NOTE:
1) TRACER WIRE TO BE PLACED IN BOTH POWER AND FIBER CONDUITS
2) GROUND TRACER WIRE AT POLE VIA BEAM CLAMP AT EQUIPMENT. DO NOT BOND TRACER WIRE AT BOTH ENDS.

TRACER WIRE DETAIL (2)
SCALE: NTS



UTILITY ROUTING PLAN (1)
SCALE: 1" = 7.5'

COORDINATION WITH UTILITY COMPANY

THE ELECTRICAL CONTRACTOR SHALL COORDINATE COMPLETE ELECTRICAL SERVICE WITH LOCAL UTILITY COMPANIES FOR A COMPLETE OPERATIONS SYSTEM, INCLUDING TRANSFORMER CONNECTIONS, CONCRETE TRANSFORMER PADS PRIOR TO SUBMITTING BID TO INCLUDE ALL LABOR AND MATERIALS

CONDUITS 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.
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.

CODES AND STANDARDS

ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
NEC	NATIONAL ELECTRICAL CODE, LATEST ADOPTED EDITION
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
UL	UNDERWRITERS LABORATORIES, INC.

UTILITY PROVIDER INFORMATION

POWER COMPANY: ALIANT ENERGY
PHONE: (800) 255-4268

FIBER COMPANY: AT&T
PHONE: (855) 781-7542

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

verticalbridge

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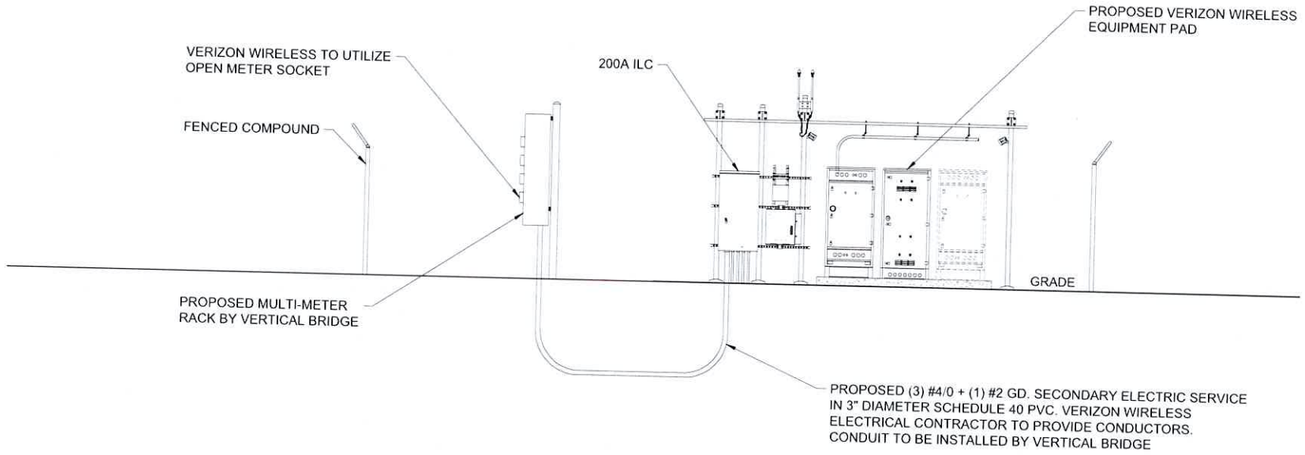
SHEBOYGAN COUNTY

SHEET TITLE:
UTILITY ROUTING PLAN

0 3.75' 7.5' 15'
11" x 17" - 1" = 7.5'
22" x 34" - 1" = 3.75'

PROJECT NUMBER: 60498
SHEET NUMBER: VW E-1

- DESIGN PENDING
  POWER COORDINATION



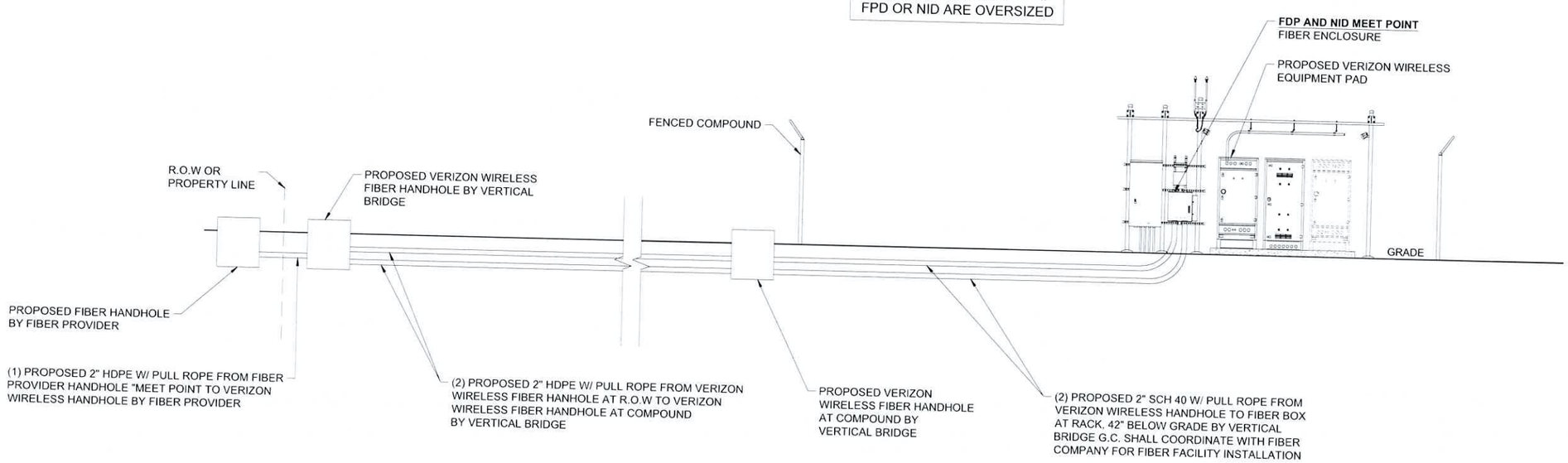
ELECTRICAL SERVICE: 200 AMP 120/240V SINGLE PHASE 3 WIRE

POWER RISER DIAGRAM (1)
SCALE: NTS

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

- DESIGN PENDING
  FIBER COORDINATION

NOTE:
ADDITIONAL COORDINATION REQUIRED WITH VERIZON IF FPD OR NID ARE OVERSIZED



NOTE: VERIFY FIBER ROUTING REQUIREMENTS WITH FIBER COMPANY

FIBER RISER DIAGRAM (2)
SCALE: NTS

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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Certification & Seal:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Wisconsin.

WISCONSIN
MICHAEL L. PINSKE
36387
MIDDLETON, WI
PROFESSIONAL ENGINEER

Signature: Date: 9/30/2024

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY
DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
UTILITY RISER DIAGRAMS

SCALE: NONE

PROJECT NUMBER: 60498

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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.

NORTH

NEW ELECTRIC CONDUIT FROM DISCONNECT TO ILC FOR "NORMAL" POWER MODE (CONDUITS TO BE INSTALLED BY VERTICAL BRIDGE), SEE DETAIL 2 & SHEET E-1.

(2) BELDEN CAT-5 CABLE FROM GENERATOR TO ILC IN 1" HEAVY WALL CONDUIT. CABLES AND CONDUITS TO CONTINUE FROM ILC TO EQUIPMENT CABINET. LEAVE 25' SPOOLED IN ALARM BOX (CONDUIT FROM GENERATOR TO ILC TO BE INSTALLED BY VERTICAL BRIDGE. CONDUIT FROM ILC TO CABINET TO BE INSTALLED BY VERIZON G.C.)

(3) #3/0 THHN/THWN & (1) #2 GREEN GROUND CONDUCTOR FROM GENERATOR TO ILC IN 2-1/2" H.W. CONDUIT (CONDUITS TO BE INSTALLED BY VERTICAL BRIDGE)

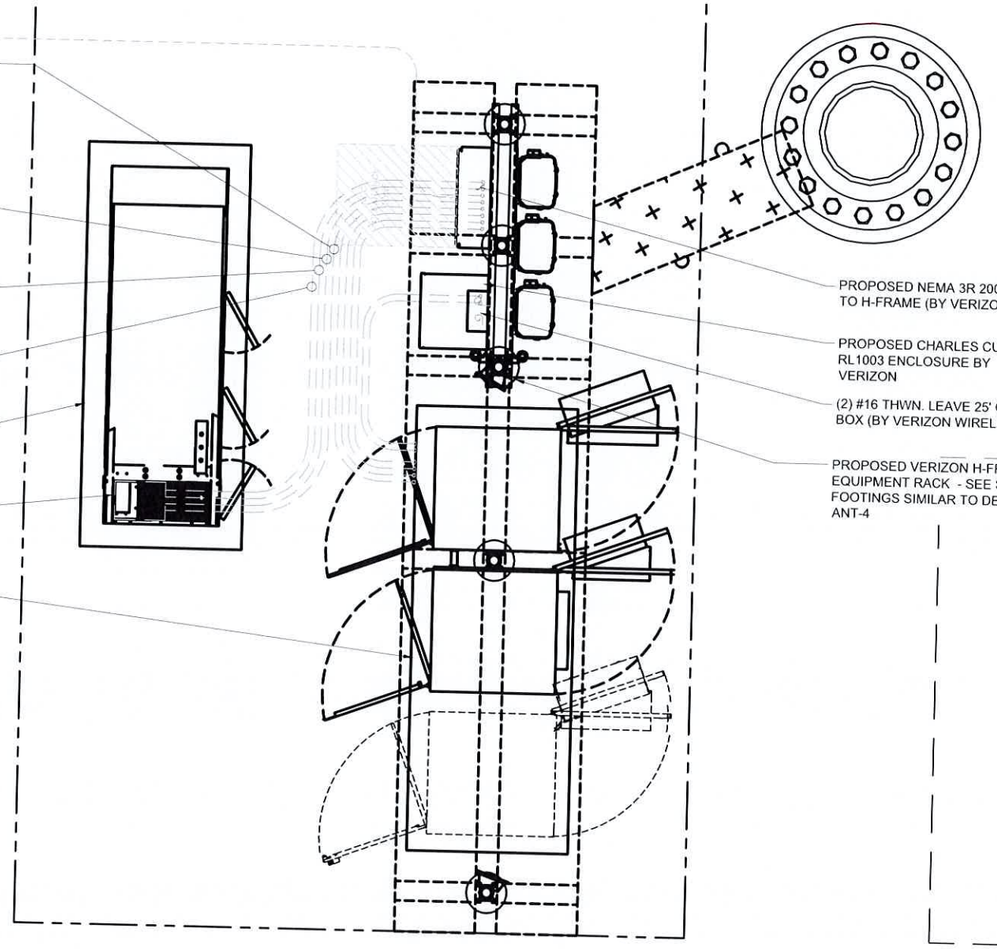
(2) #12 THHN SOLID COPPER CONDUCTORS FROM GENERATOR TO ATS IN 3/4" HEAVY WALL CONDUIT (CONDUITS TO BE INSTALLED BY VERTICAL BRIDGE)

(4) #12 THHN/THWN & (1) #12 GREEN GROUND IN 1" RIGID H.W. CONDUIT FROM ILC TO GENERATOR. (CONDUITS TO BE INSTALLED BY VERTICAL BRIDGE)

PROPOSED 4' X 10' CONCRETE PAD FOR VERIZON GENERATOR PROVIDED BY VERTICAL BRIDGE. SEE SHEET C-9.

CONDUIT STUB UP AREA. SEE/ COORDINATE WITH MANUFACTURER'S SPECIFICATIONS, SEE SHEET VW EX-1

PROPOSED 4'X11' CONCRETE PAD FOR VERIZON EQUIPMENT PROVIDED BY VERTICAL BRIDGE. SEE SHEET C-8.



PROPOSED NEMA 3R 200 AMP ILC MOUNTED TO H-FRAME (BY VERIZON WIRELESS G.C.)

PROPOSED CHARLES CUBE RL1003 ENCLOSURE BY VERIZON

(2) #16 THWN. LEAVE 25' OF #16 IN ALARM BOX (BY VERIZON WIRELESS G.C.)

PROPOSED VERIZON H-FRAME EQUIPMENT RACK - SEE SHEET VW B-2, FOOTINGS SIMILAR TO DETAIL 1/VW ANT-4

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

GENERATOR UTILITY ROUTING PLAN
SCALE: 1" = 3.75' (1)

verticalbridge

CELLCO PARTNERSHIP
d/b/a VERIZON WIRELESS

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PROFESSIONAL ENGINEER

Signature: 9/30/2024 Date:

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
GENERATOR UTILITY ROUTING PLAN

0 1.875' 3.75' 7.5'
11" x 17" - 1" = 3.75'
22" x 34" - 1" = 1.875'

PROJECT NUMBER: 60498
SHEET: VW E-1R

DRAWN BY:SLS CHECKED BY:CM

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(2) #12 THHN/THWN FROM GENERATOR TO TRANSFER SWITCH PER GENERAC REQUIREMENTS.

TRANSFER SWITCH

GENERATOR

#16 THWN

GENERATOR REMOTE START WIRING

TAG CONDUCTORS "REMOTE START" 2 #16 THHN STRANDED FROM WIRING BLOCK. SEE NOTES #1 AND #2

IF NOT PRESENTLY ON SITE E.C. MUST PROVIDE: GENERATOR POWER FAIL THE A.C. FAIL RELAY IS CONNECTED TO EACH PHASE OF THE INCOMING POWER. THE NORMALLY OPEN CONTACTS CLOSE UPON LOSS OF POWER SENDING AN ALARM.

TRANSFER SWITCH

3

RED

BLACK

TAG CONDUCTORS GENERATOR POWER FAIL

GENERATOR

FUEL TANK RUPTURE
IF INNER HULL LEAKS THE ALARM CONTACTS WILL OPEN SENDING AN ALARM

TAG CONDUCTORS FUEL TANK RUPTURE

GENERATOR

LOW FUEL
IF FUEL IS LOW THE CONTACTS OPEN SENDING AN ALARM

TAG CONDUCTORS LOW FUEL

GENERATOR

GENERATOR RUN

TAG CONDUCTORS GENERATOR RUN

GENERATOR

COMMON

TAG CONDUCTORS COMMON

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.

ALARM WIRING (1)
SCALE: NTS

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

UTILITY SERVICE 120/240V 1 PHASE 3 WIRE

M KWH METER

#2 GROUND

120/240V 3 WIRE GENERATOR

G

3/4" x 10' GROUND ROD

BATTERY CHARGE & BLK HTR.

PROPOSED FOUR-PLEX GFI RECEPTACLE (NEMA 3R) TO BE MOUNTED WITHIN HOUSING OF GENERATOR (FOR COLD WEATHER HEATERS)

1

2

3

4

5

SERVICE FEED TO SERVICE DISC.

NEW 200A ILC W/ ATS

12"x12"x6" ALARM BOX

NEW SINGLE LINE DIAGRAM (2)
SCALE: NTS

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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WISCONSIN MICHAEL L. PINSKE 36387 MIDDLETON, WI PROFESSIONAL ENGINEER

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BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

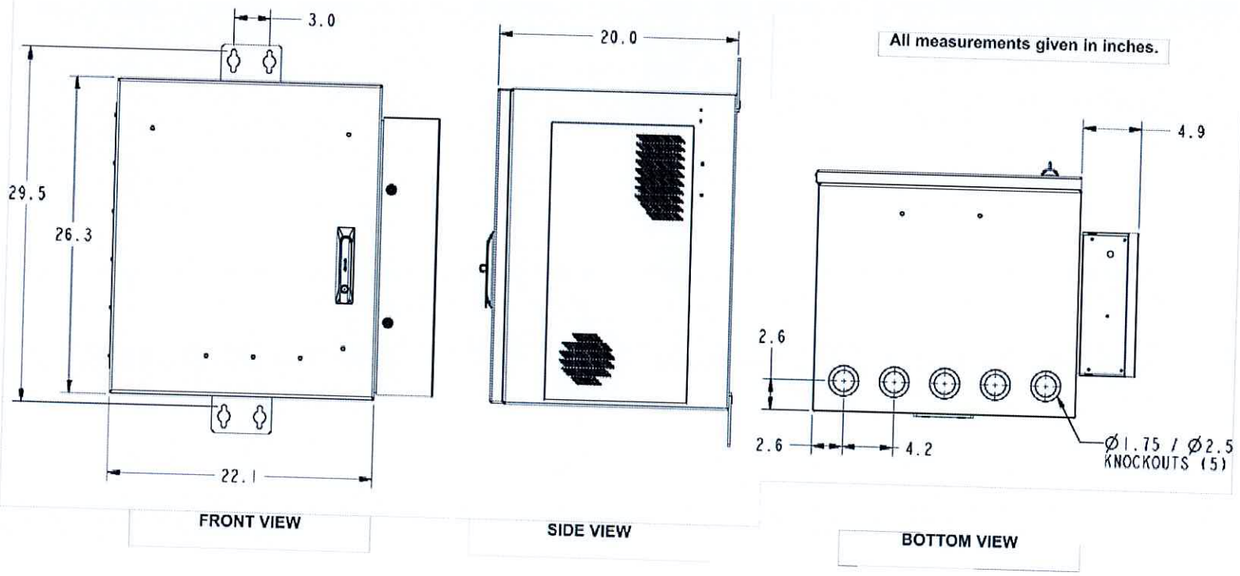
SHEET TITLE:
GENERATOR SINGLE LINE DIAGRAM & ALARM WIRING

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: VW E-1C

Charles Universal Broadband Enclosures (CUBE)
RL1000 Series Backhaul Cabinets

All measurements given in inches.



FRONT VIEW | SIDE VIEW | BOTTOM VIEW

CUBE Accessories

	CI Part #
Pole Mount Kit	97-CABPMTKIT
H-Frame Hardware Kit	97-001971-A
Slide-Out Tray	97-001990-A
10" Plinth Kit	97-002127-A

OVERALL DIMENSION	26"H X 22"W X 20"D
RACK SPACE	14RU
RACK WIDTH	19" EIA STANDARD
HOLE SPACING ON RACKS	1" TAPPED 12-24
BONDING & GROUNDING	(1) 8 POSITION, 2-HOLE GROUND BARS
FUSE PANEL	(1) WALLMOUNT 10 POSITION GMT TYPE
CABLE ENTRANCE	(5) 1.75/2.5" DOUBLE KNOCKOUTS
COLOR	OFF-WHITE
CONSTRUCTION	WELDED ALUMINUM
WEIGHT (EMPTY)	80 LBS.
MOUNTING	WALL OR H-FRAME, POLE MOUNT WITH OPTIONAL KIT
THERMAL MANAGEMENT	17 W/°F HEAT EXCHANGER, 24 VDC POWER
MANUFACTURER	CHARLES INDUSTRIES
MODEL	CUBE-RL1003
DIMENSIONS	26.3" X 22.1" X 20.0" (H X W X D)
ACCESSORIES:	
POLE MOUNT KIT	97-CABPMKIT
H-FRAME HARDWARE KIT	97-001971-A
SLIDE OUT TRAY	97-001991-A
10" PLINTH KIT	97-002127-A

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Charles Industries, Ltd.
Phone: (847) 806-6300
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Web: www.charlesindustries.com

Charles

OG-OSP021-K16

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
FIBER CABINET SPEC SHEET

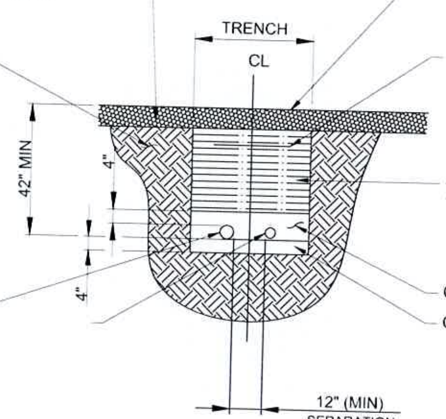
SCALE: NONE

PROJECT NUMBER: 60498

SHEET NUMBER: 246

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.



UTILITY TRENCH DETAIL (1)
SCALE: NTS

VERIZON WIRELESS PANEL "A" SCHEDULE

MAIN: 400 VOLTAGE: 120/240 PHASE: 1 WIRE: 3

TO AUTOMATIC TRANSFER SWITCH → 200A/2

DESCRIPTION	BRKR.	WATTS	S/G	S/N	WATTS	BRKR.	DESCRIPTION
RECTIFIER 1	40/2	1250	1	2	1250	40/2	RECTIFIER 5
		1250	3	4	1250		
RECTIFIER 2	40/2	1250	5	6	1250	40/2	RECTIFIER 6
		1250	7	8	1250		
RECTIFIER 3	40/2	1250	9	10	1250	40/2	RECTIFIER 7
		1250	11	12	1250		
RECTIFIER 4	40/2	1250	13	14	1250	40/2	RECTIFIER 8
		1250	15	16	1250		
SPACE			17	18		20/1	SPARE
SPACE			19	20		20/1	SPARE
SPACE			21	22			SPACE
SPACE			23	24			SPACE
SPACE			25	26			SPACE
SPACE			27	28			SPACE
SPACE			29	30			SPACE
SPACE			31	32			SPACE
SPACE			33	34			SPACE
SPACE			35	36			SPACE
LIGHTS	20/1		37	38	360	20/1	GFCI RECEPTACLE *
SMOKE DETECTORS	20/1		39	40	1200	20/1	EQUIPMENT
EMERG LIGHTS/ EQUIP	20/1		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.)

NOTE:
1. VERIZON WIRELESS EQUIPMENT ENGINEERING TO SUPPLY BREAKER FOR RADIO AND POWER CABINETS
2. GENERAL CONTRACTOR TO SUPPLY BREAKERS NOTED WITH " * "

PANEL BOARD SCHEDULE (2)
SCALE: NTS

verticalbridge

CELLCO PARTNERSHIP
d/b/a VERIZON WIRELESS

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PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
ELECTRICAL DETAILS

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: VW-E-2

DRAWN BY:SLS CHECKED BY:CM

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ELECTRICAL INSTALLATION NOTES

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS THE NATIONAL ELECTRICAL CODE (N.E.C.), AND ALL APPLICABLE LOCAL CODES.
2. WIRING RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE N.E.C.
3. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE N.E.C.
4. CABLES SHALL NOT BE ROUTED THROUGH LADDER CABLE TRAY RUNGS.
5. EACH END OF EVERY POWER PHASE CONDUCTOR (I.E., HOTS), GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH N.E.C. & OSHA
6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH PLASTIC TAPE PER COLOR SCHEDULE, ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E. PANEL BOARD AND CIRCUIT ID'S).
7. PANEL BOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
8. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
9. POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#14 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE NOTED.
11. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 AWG OR LARGER) 600 V, OIL RESISTANT THHN OR THHN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR LOCATION USED,UNLESS OTHERWISE SPECIFIED.
12. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE)
13. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND N.E.C.
14. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40, OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
15. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
16. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.
17. RIGID NONMETALLIC CONDUIT(I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED; IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.
18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SETSCREWS FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND N.E.C.
21. WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL) AND RATED NEMA 1 (OR BETTER).
22. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1(OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS
23. METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED; OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
24. NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
25. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
26. THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY

GROUNDING NOTES

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE N.E.C.
2. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT & PROVIDE TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
5. METAL RACEWAY SHALL NOT BE USED AS THE N.E.C. REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE N.E.C., SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
6. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
7. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 AWG SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
8. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
9. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
10. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
11. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR & EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
12. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
13. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
14. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS, IF REQUIRED BY EQUIPMENT INSTALLATION INSTRUCTIONS (NEC 110-3 (B)).
15. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
16. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TOT HE GROUND RING, IN ACCORDANCE WITH THE N.E.C.
17. BOND ALL METALLIC OBJECTS WITHIN 6 FT. OF MAIN GROUND WIRES WITH (1) #2 AWG TIN-PLATED COPPER GROUND CONDUCTOR.
18. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE SUED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.

Item 10.

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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Certification & Seal:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Wisconsin.

WISCONSIN
MICHAEL L. PINSKE
36387
MIDDLETON, WI
PROFESSIONAL ENGINEER

Signature: Date: 9/30/2024

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
ELECTRICAL AND GROUNDING NOTES

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: VW E-3

248

KEYED NOTES

KEY	DESCRIPTION
1	SYSTEM GROUND RESISTANCE SHALL NOT EXCEED 5 OHMS. A THREE POINT SYSTEM RESISTANCE TEST SHALL BE PERFORMED BY THE CONTRACTOR IN ACCORDANCE WITH VERTICAL BRIDGE SPECIFICATIONS. A. PERFORM THREE TESTS AT EACH SITE. B. CONTRACTOR SHALL PROVIDE A WRITTEN REPORT CONSISTING OF THE FOLLOWING: SITE NAME, ADDRESS AND IDENTIFICATION NUMBER, DESCRIPTION OF SITE SOIL AND MOISTURE CONDITION, DESCRIPTION OF WEATHER, MODEL NUMBER OF TESTING EQUIPMENT, DATE OF LAST CALIBRATION, SITE SKETCH SHOWING LOCATION OF TEST PROBES AND ALL FIELD DATA COLLECTED (READINGS, RANGE, TEST, MILLIAMPS, ETC.) C. CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER IF THERE ARE ANY DIFFICULTIES PERFORMING SYSTEM RESISTANCE TESTS OR IF MEASUREMENTS ARE ABOVE 5 OHMS. THE CONSTRUCTION MANAGER SHALL PROVIDE INSTRUCTION TO THE CONTRACTOR TO INSTALL ADDITIONAL GROUNDING MEASURES TO MEET THE 5 OHM REQUIREMENT.
2	PROPOSED TOWER GROUND RING BURIED TO A DEPTH OF 30" OR 6" BELOW THE FROST LINE, WHICHEVER IS GREATER.
3	BOND PROPOSED TOWER TO TOWER GROUND RING (3 PLACES TOTAL).
4	SERVICE ENTRANCE GROUND ROD.
5	BOND GROUND RING(S) TO SITE CORNER POST (TYP. x 4).
6	BOND GATE POST TO PROPOSED GROUND RING (TYP. x 2).
7	BOND FLEXIBLE JUMPER TO GATE (TYP. x 2).
8	BOND PROPOSED H-FRAME TO GROUND RING (TYP. x 8).

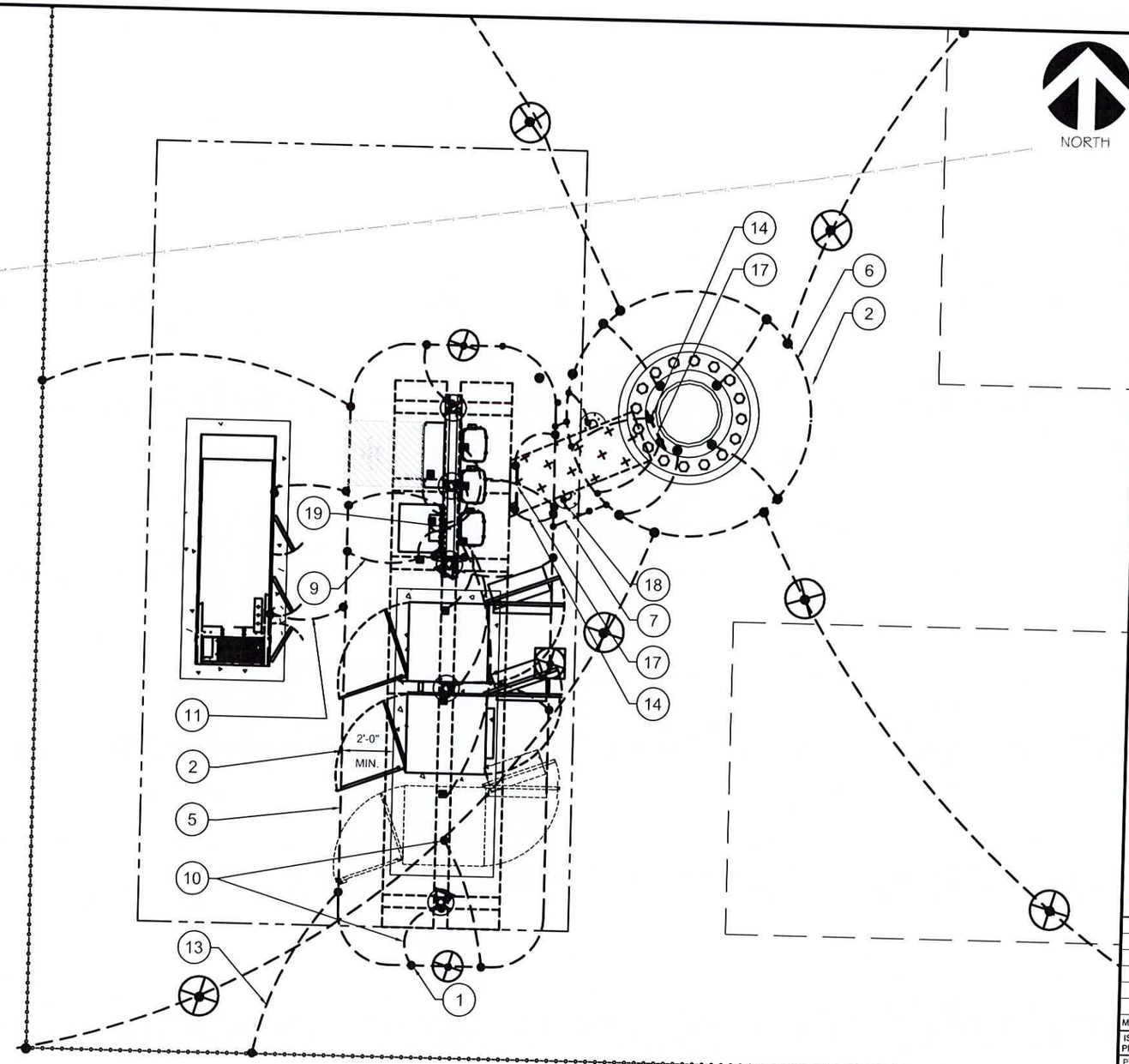
EXTERIOR GROUNDING NOTES:

1. GROUNDING SHALL CONFORM WITH VERTICAL BRIDGE STANDARDS AND PER FEDERAL, STATE AND LOCAL CODES. IN THE EVENT OF A CONFLICT, MEET THE MOST STRINGENT REQUIREMENT.
2. GROUND RODS PAST METER SHALL BE COPPER CLAD STEEL 5/8 INCH DIAMETER X 10 FEET IN LENGTH (MIN.)
3. ALL GROUND CONDUCTORS PAST METER SHALL BE #2 AWG SOLID BARE TINNED COPPER. MINIMUM BEND RADIUS FOR CONDUCTOR SHALL BE 8 INCHES.
4. GROUND RODS SHALL BE SPACED NOT MORE THAN 16'-0" AND NOT LESS THAN 6'-0" APART EXCEPT FOR THE TOWER GROUND RING WHICH SHALL COMPLY WITH TIA/EIA 222 (REV G).
5. CONTRACTOR SHALL ADD ADDITIONAL RODS AND CONDUCTORS OR APPROVED GROUND ENHANCING MATERIAL TO ACHIEVE LESS THAN 5 OHMS RESISTANCE TO GROUND.
6. MAINTAIN 2'-0" (TOWER) AND 3'-0" (SHELTER) BETWEEN GROUND RINGS AND FOUNDATIONS.
7. ALL GROUNDING INSTALLATIONS SHALL BE INSPECTED AND APPROVED BY ANY JURISDICTION HAVING INSPECTION & APPROVAL AUTHORITY (IF REQUIRED) AND VERTICAL BRIDGE BEFORE PLACING ANY BACKFILL.
8. ALL GROUNDING SPLICES AND CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC WELD PROCESS (CADWELD OR EQUIVALENT). COAT ALL WELDS WITH A ZINC RICH PAINT.

THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING THE SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED.

SYMBOLS LEGEND

GROUND ROD WITH ACCESS	MECHANICAL CONNECTION
GROUND ROD	GROUND BAR
EXOTHERMIC CONNECTION	GROUND WIRE
VZW GROUND LEAD	



VERIZON WIRELESS GROUNDING PLAN (1)
SCALE: 1" = 5'

NOTE:
SEE GROUNDING DETAILS ON SHEET E-5

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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WISCONSIN MICHAEL L. PINSKE 36387 MIDDLETON, WI PROFESSIONAL ENGINEER

Signature: Date: 9/30/2024

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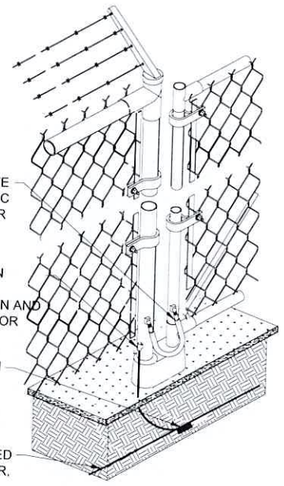
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

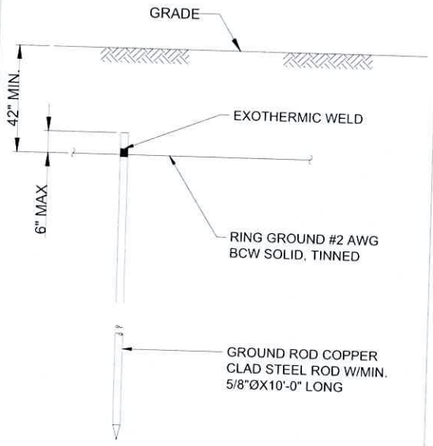
SHEET TITLE:
SITE GROUNDING & NOTES

0 2.5' 5' 10'
11" x 17" - 1" = 5'
22" x 34" - 1" = 2.5'

PROJECT NUMBER: 60498
SHEET NUMBER: VWE-1

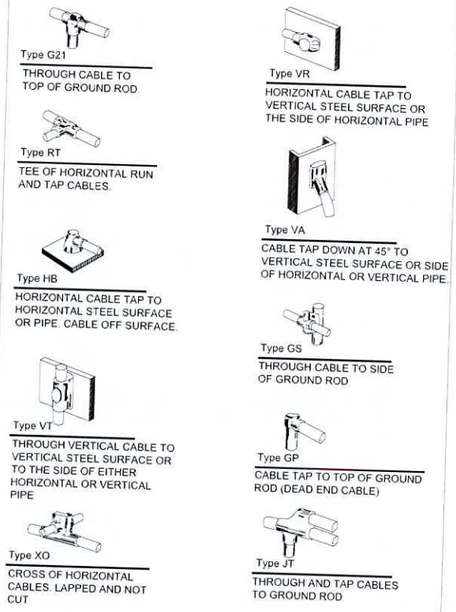


FENCE GROUNDING DETAIL (1)
SCALE: NTS



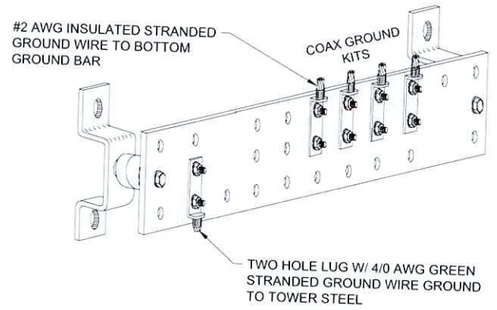
NOTE:
GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL.

GROUND ROD DETAIL (2)
SCALE: NTS

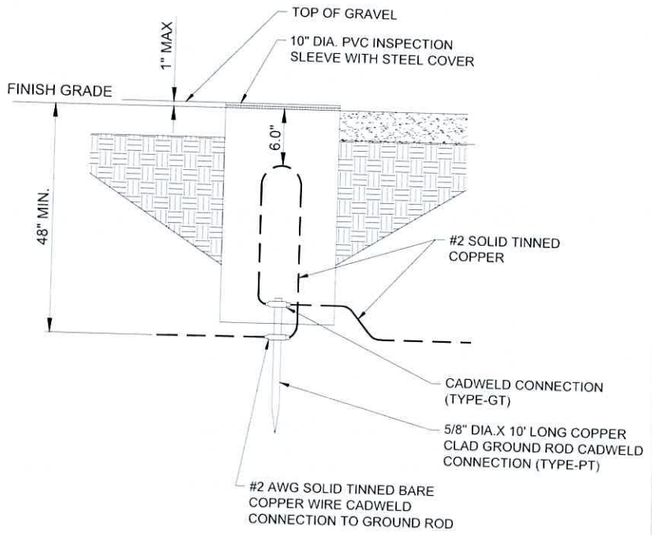


EXOTHERMIC WELD DETAIL (3)
SCALE: NTS

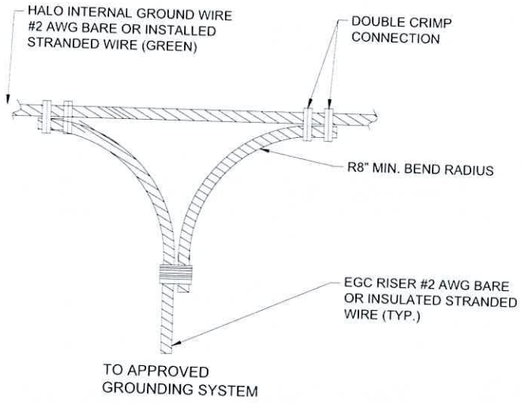
NOTES:
1. PROPOSED HARGER 2x14.5" GROUND BAR (PN/ TGBR14214.5VER) MOUNT DIRECTLY TO TOWER STEEL.
2. INSULATORS TO BE NEWTON CAT. NO. 3015-8 OR APPROVED EQUAL
3. 5/8" LOCK WASHERS; NEWTON CAT. NO. A-6056 OR APPROVED EQUAL
4. 5/8" - 11 X 1" M.M.C.S. BOLTS; NEWTON CAT. NO. 3012-1 OR APPROVED EQUAL
5. COAT ALL SURFACES WITH 'KOPER SHIELD' BEFORE MATING
6. ALL HARDWARE TO BE STAINLESS STEEL UNLESS OTHERWISE NOTED
7. NUTS TO FACE OUT



GROUND COLLECTOR BAR (4)
SCALE: NTS

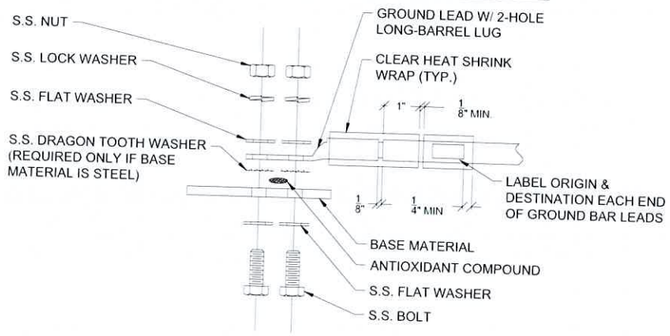


INSPECTION SLEEVE DETAIL (5)
SCALE: NTS



HALO NON-DIRECTIONAL GROUND RING SPLICE DETAIL (6)
SCALE: NTS

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



GROUND LIG INSTALLATION DETAIL (7)
SCALE: NTS

vertical bridge

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MICHAEL L. PINSKE
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MIDDLETON, WI
PROFESSIONAL ENGINEER

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A	9/10/24	REVISED UTILITY NOTES

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PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
GROUNDING DETAILS

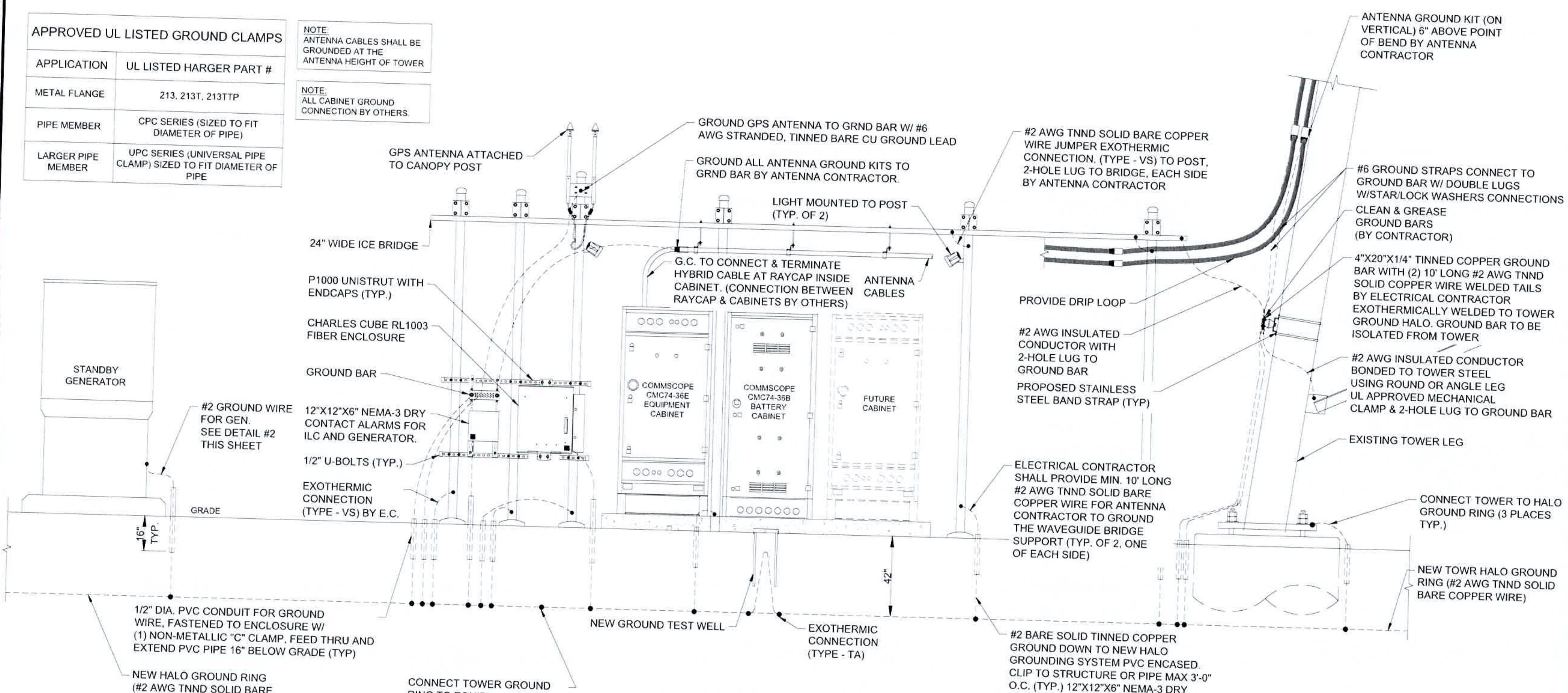
SCALE: NONE

PROJECT NUMBER: 60498

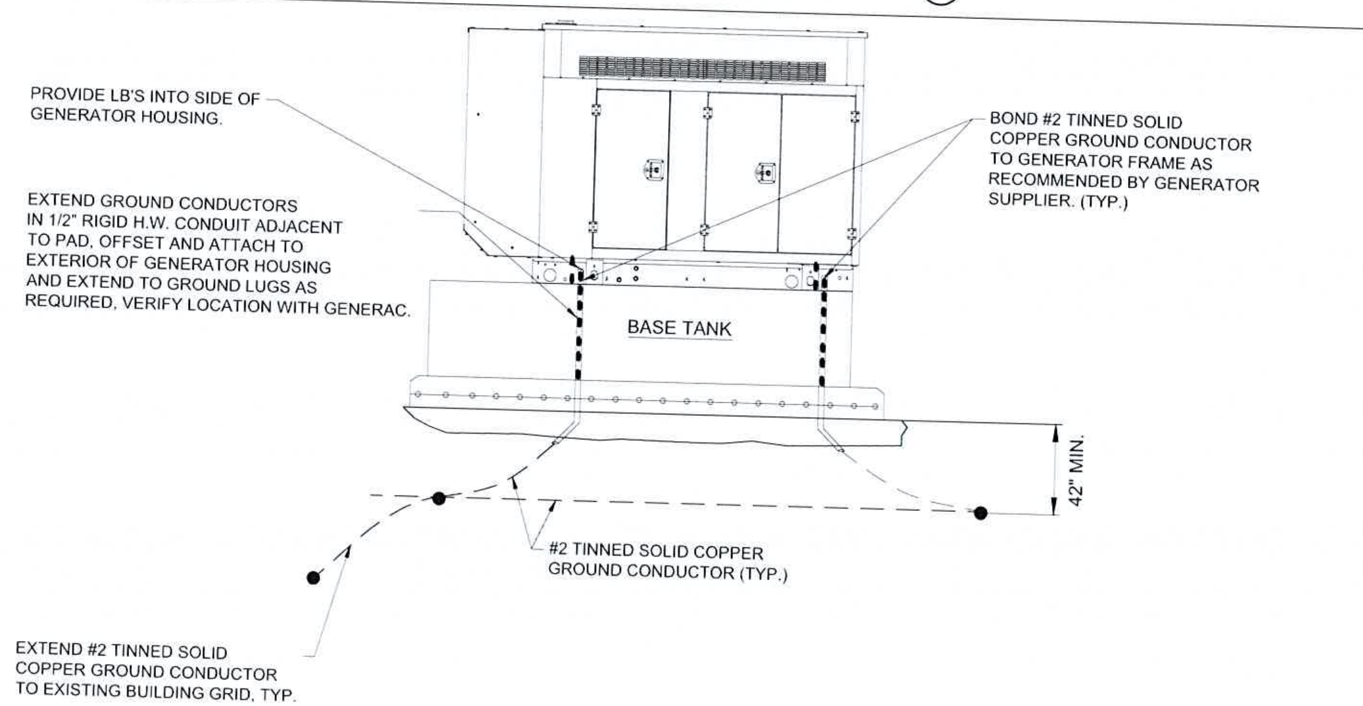
APPROVED UL LISTED GROUND CLAMPS	
APPLICATION	UL LISTED HARGER PART #
METAL FLANGE	213, 213T, 213TTP
PIPE MEMBER	CPC SERIES (SIZED TO FIT DIAMETER OF PIPE)
LARGER PIPE MEMBER	UPC SERIES (UNIVERSAL PIPE CLAMP) SIZED TO FIT DIAMETER OF PIPE

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

NOTE:
ALL CABINET GROUND CONNECTION BY OTHERS.



TYPICAL SITE GROUNDING DETAIL (1)
SCALE: NTS



GENERATOR GROUNDING DETAIL (2)
SCALE: NTS

verticalbridge

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Signature: [signature] Date: 9/30/2024

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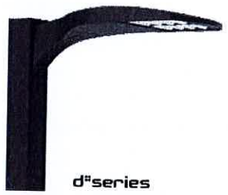
PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
GROUNDING & ELECTRICAL DETAILS

SCALE: NONE

PROJECT NUMBER: 60498
SHEET:



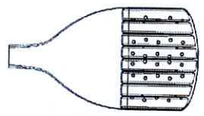
D-Series Size 0
LED Area Luminaire

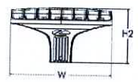
Catalog Number
Notes
Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

EPA:	0.44 ft² (0.04 m²)
Length:	26.18" (66.5 cm)
Width:	14.06" (35.7 cm)
Height H1:	2.26" (5.7 cm)
Height H2:	7.46" (18.9 cm)
Weight:	23 lbs (10.4 kg)



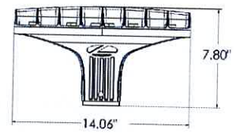


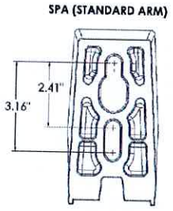
Introduction

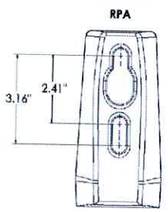
The modern styling of the D-Series features a highly refined aesthetic that blends seamlessly with its environment. The D-Series offers the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

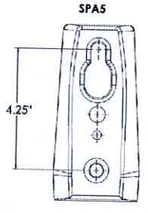
The photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. D-Series outstanding photometry aids in reducing the number of poles required in area lighting applications, with typical energy savings of 70% and expected service life of over 100,000 hours.

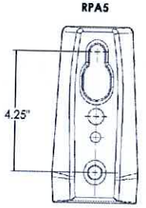
DSX0 with RPA, RPA5, SPA5, SPA8N mount
Weight: 25 lbs

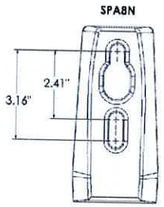












Ordering Information

EXAMPLE: DSX0 LED P6 40K 70CRI T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

DSX0 LED

Series	LEDs	Color temperature[1]	Color Rendering Index[2]	Distribution	Voltage	Mounting
DSX0 LED	**Forward optics** P1 P5, P2 P6, P3 P7, P4 **Rotated optics** P10[7] P12[7], P11[7] P13[7]	(this section 70CRI only) 30K 3000K, 40K 4000K, 50K 5000K; (this section 80CRI only, extended lead times apply) 27K 2700K, 30K 3000K, 35K 3500K, 40K 4000K, 50K 5000K	70CRI, 70CRI, 70CRI, 80CRI, 80CRI, 80CRI, 80CRI, 80CRI	AFR Automotive front row, T1S Type I short, T2M Type II medium, T3M Type III medium, T3LG Type III low glare[3], T4M Type IV medium, T4LG Type IV low glare[3], TFTM Forward throw medium, T5M Type V medium, T5LG Type V low glare, T5W Type V wide, BLC3 Type III backlight control[3], BLC4 Type IV backlight control[3], LCCO Left corner cutoff[3], RCCO Right corner cutoff[3]	MVOLT (120V-277V)[4], HVOLT (347V-480V)[5,6], XVOLT (277V-480V)[7,8]	**Shipped included** SPA Square pole mounting (#8 drilling, 3.5" min. SQ pole), RPA Round pole mounting (#8 drilling, 3" min. RND pole), SPA5 Square pole mounting (#5 drilling, 3" min. SQ pole)[9], RPA5 Round pole mounting (#5 drilling, 3" min. RND pole)[9], SPA8N Square narrow pole mounting (#8 drilling, 3" min. SQ pole), WBA Wall bracket[10], MA Mast arm adapter (mounts on 2 3/8" OD horizontal tenon)

Control options		Other options		Finish (required)	
Shipped installed		**Shipped installed**		DDBXD	Dark Bronze
NLTAIR2 PIRHN	nLight AIR gen 2 enabled with bi-level motion / ambient sensor, 8–40' mounting height, ambient sensor enabled at 2fc[11,12,13,14,15]	HS	Houseside shield (black finish standard)[20]	DBLXD	Black
PIR	High/low, motion/ambient sensor, 8–40' mounting height, ambient sensor enabled at 2fc[13,14,15]	L90	Left rotated optics[1]	DNAXD	Natural Aluminum
PER	NEMA twist-lock receptacle only (controls ordered separate)[16]	R90	Right rotated optics[1]	DWHXD	White
PER5	Five-pin receptacle only (controls ordered separate)[14,17]	CCE	Coastal Construction[21]	DDBTXD	Textured dark bronze
PER7	Seven-pin receptacle only (controls ordered separate)[14,18]	HA	50°C ambient operation[22]	DBLBXD	Textured black
FAO	Field adjustable output[12,19]	**Shipped separately**		DNATXD	Textured natural aluminum
BL30	Bi-level switched dimming, 30%[14,15]	EGSR	External Glare Shield (reversible, field install required, matches housing finish)	DWHGXD	Textured white
BL50	Bi-level switched dimming, 50%[14,15]	BSDB	Bird Spikes (field install required)		
DMG	0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately)[17]				

LITHONIA LIGHTING
COMMERCIAL OUTDOOR

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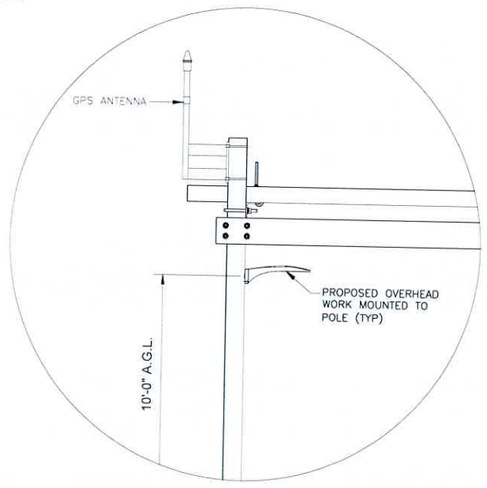
DSX0-LED
Rev. 03/15/23
Page 1 of 9

LIGHT FIXTURE (1)
SCALE: N/A

External Glare Shield (EGS)

EGSR

NOTE:
THE PURPOSE OF THE LIGHTING IS FOR WORKER SAFETY DURING EMERGENCY MAINTENANCE. THE LIGHT WILL BE PLACED ON MOTION SENSORS. THE EXTERNAL GLARE SHIELD (EGS) IS REQUIRED TO BE INSTALLED ON THE LIGHT FIXTURE. THE LIGHT FIXTURE WILL BE MOUNTED TO THE SOUTHEAST EQUIPMENT CANOPY SUPPORT POLE.



MOUNTING DETAIL (2)
SCALE: N/A

Item 10.

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

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PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
LIGHTING SPECIFICATIONS

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: VW E-7

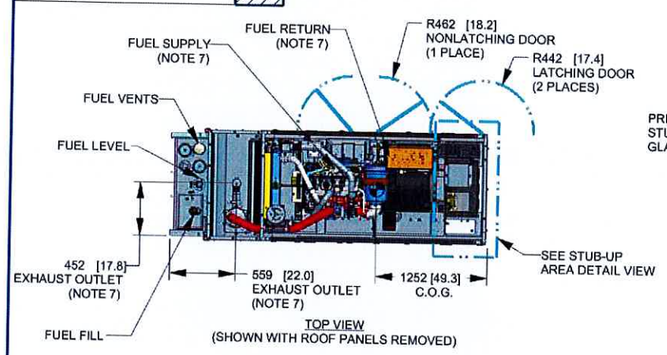
GENERATOR TYPE:	DIESEL (PENDING ENVIRONMENTAL VERIFICATION)
MAKE:	GENERAC
MODEL #:	SD030-1PE-190JT - STANDARD GENERAC SD030 30kw DIESEL - 190 GALLON

SH 1/1 | REV B | WINDCHILL VERSION B.3

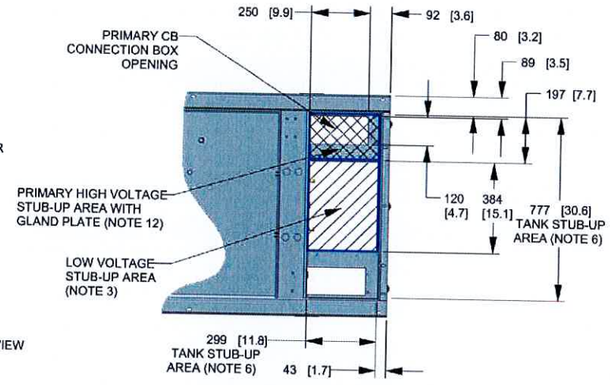
RECOMMENDED ELECTRICAL STUB-UP

(HIGH VOLTAGE STUB-UP) AC LOAD LEAD CONDUIT

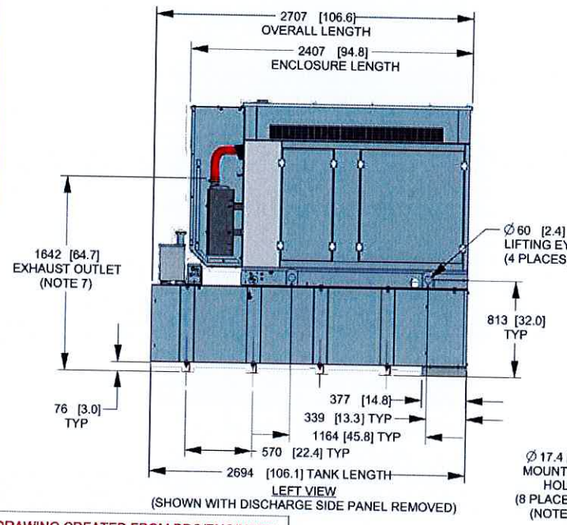
(LOW VOLTAGE STUB-UP)



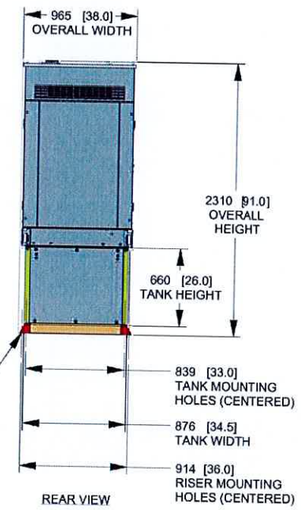
TOP VIEW
(SHOWN WITH ROOF PANELS REMOVED)



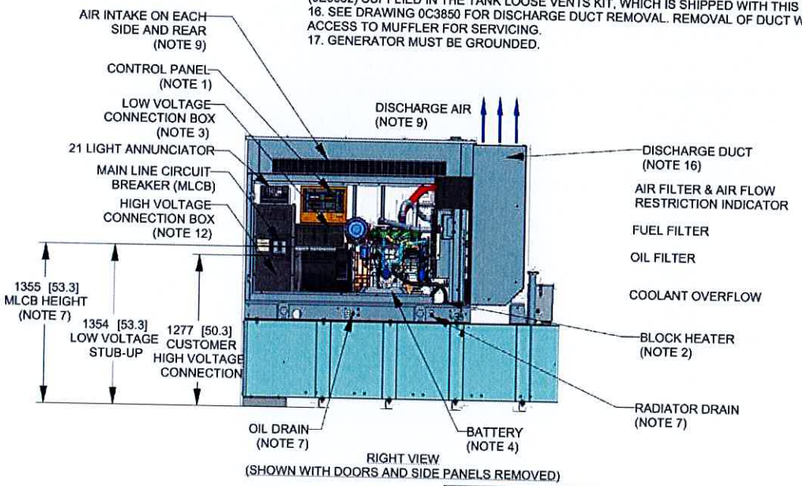
STUB-UP AREA VIEW
(2X SCALE)



LEFT VIEW
(SHOWN WITH DISCHARGE SIDE PANEL REMOVED)



REAR VIEW



RIGHT VIEW
(SHOWN WITH DOORS AND SIDE PANELS REMOVED)

DRAWING CREATED FROM PRO/ENGINEER 3D FILE. ECO MODIFICATION TO BE APPLIED TO SOLID MODEL ONLY.

WEIGHT DATA: (INCLUDES FUEL TANK)
GENERATOR: 1358 [2995]
GENERATOR WITH SHIPPING SKID: 1424 [3139]

WEIGHT: KG [LBS]
DIMENSIONS: MM [INCHES]

NOTES:
1. CONTROL PANEL INCLUDES BATTERY CHARGER WITH THREE PRONG CORD
2. 1500W 120 VAC ENGINE BLOCK HEATER WITH THREE PRONG CORD.
3. CONNECTION POINTS FOR CONTROL WIRES PROVIDED IN THE LOW VOLTAGE CONNECTION BOX. BOTTOM HAS KNOCKOUTS FOR 1/2" AND 3/4" CONDUIT FITTINGS. (USE LOW VOLTAGE STUB-UP AREA).
4. BATTERY (12 VOLT NEGATIVE GROUND SYSTEM).
5. MAIN LINE CIRCUIT BREAKER (MLCB) (MLCB HEIGHT MAY VARY WITH CB SELECTION) AC LOAD LEADS CONNECT DIRECTLY TO BOTTOM OF BREAKER.
6. CENTER OF GRAVITY & WEIGHT MAY SHIFT SLIGHTLY DUE TO UNIT OPTIONS.
7. ENGINE SERVICE CONNECTIONS:
   INLET DIESEL = 3/8" NPT
   RETURN DIESEL = 3/8" NPT
   OIL DRAIN = 1/2" NPT
   RADIATOR DRAIN = 1/2" NPT
   EXHAUST OUTLET = 2.5" I.D.
8. STUB-UPS: BASE TANK REQUIRES ALL STUB-UPS TO BE IN THE REAR TANK STUB-UP AREA.
9. GENERATOR SET MUST BE INSTALLED SUCH THAT FRESH COOLING AIR IS AVAILABLE AND DISCHARGE AIR IS NOT RECIRCULATED. SEE SPEC SHEET FOR MINIMUM AIR FLOW AND MAXIMUM RESTRICTION REQUIREMENTS.
10. BOTTOM OF GENERATOR SET MUST BE CLOSED TO PREVENT PEST INTRUSION AND RECIRCULATION OF DISCHARGE AIR AND/OR IMPROPER COOLING AIR FLOW.
11. BOLTS OR STUDS USED TO MOUNT UNIT TO PAD SHALL BE 5/8-11 GRADE 5. USE STANDARD SAE TORQUE SPECS.
12. HIGH VOLTAGE STUB-UP AREA INCLUDES THE AC LOAD LEAD CONNECTIONS TO MLCB, NEUTRAL CONNECTION AND AUXILIARY 120/240V CONNECTION.
13. 190 GALLON USEABLE CAPACITY BASETANK STANDARD WITH GENERATOR.
14. IT IS THE RESPONSIBILITY OF THE INSTALLATION TECHNICIAN TO ENSURE THAT THE GENERATOR INSTALLATION COMPLIES WITH ALL APPLICABLE CODES, STANDARDS, AND REGULATIONS.
15. UNIT IS SHIPPED WITH FUEL SUPPLY AND RETURN LINES DISCONNECTED AND PLUGGED BETWEEN ENGINE AND FUEL TANK. THIS HAS BEEN DONE TO FACILITATE PRESSURE TESTING OF THE TANK IN THE FIELD. FOR INFORMATION REGARDING CONNECTING THE FUEL SUPPLY AND RETURN LINES PRIOR TO START UP, SEE THE FUEL TANK FIELD TESTING PROCEDURE (0E5082) SUPPLIED IN THE TANK LOOSE VENTS KIT, WHICH IS SHIPPED WITH THIS GENERATOR.
16. SEE DRAWING 0C3850 FOR DISCHARGE DUCT REMOVAL. REMOVAL OF DUCT WILL PROVIDE ACCESS TO MUFFLER FOR SERVICING.
17. GENERATOR MUST BE GROUNDED.

INSTALLATION DRAWING

ELECTRONICALLY APPROVED
INSIDE WINDCHILL

GENERAC

TITLE
INSTALL D2.2L G22
30KW SSS L2A Y02 EXT

ISSUE DATE: 12/18/17

SIZE	CAGE NO	DWG NO	REV
B	N/A	10000019074	B

SCALE 0.025 | WT-KG SEE ABOVE | SHEET 1 of 1

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

RAMAKER
employee-owned
(608) 643-4100 www.ramaker.com

Certification & Seal:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Wisconsin.

WISCONSIN
MICHAEL L. PINSKE
36387
MIDDLETON, WI
PROFESSIONAL ENGINEER

Signature: Date: 9/30/2024

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY | DATE ISSUED: 06/25/2024

PROJECT TITLE:
BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

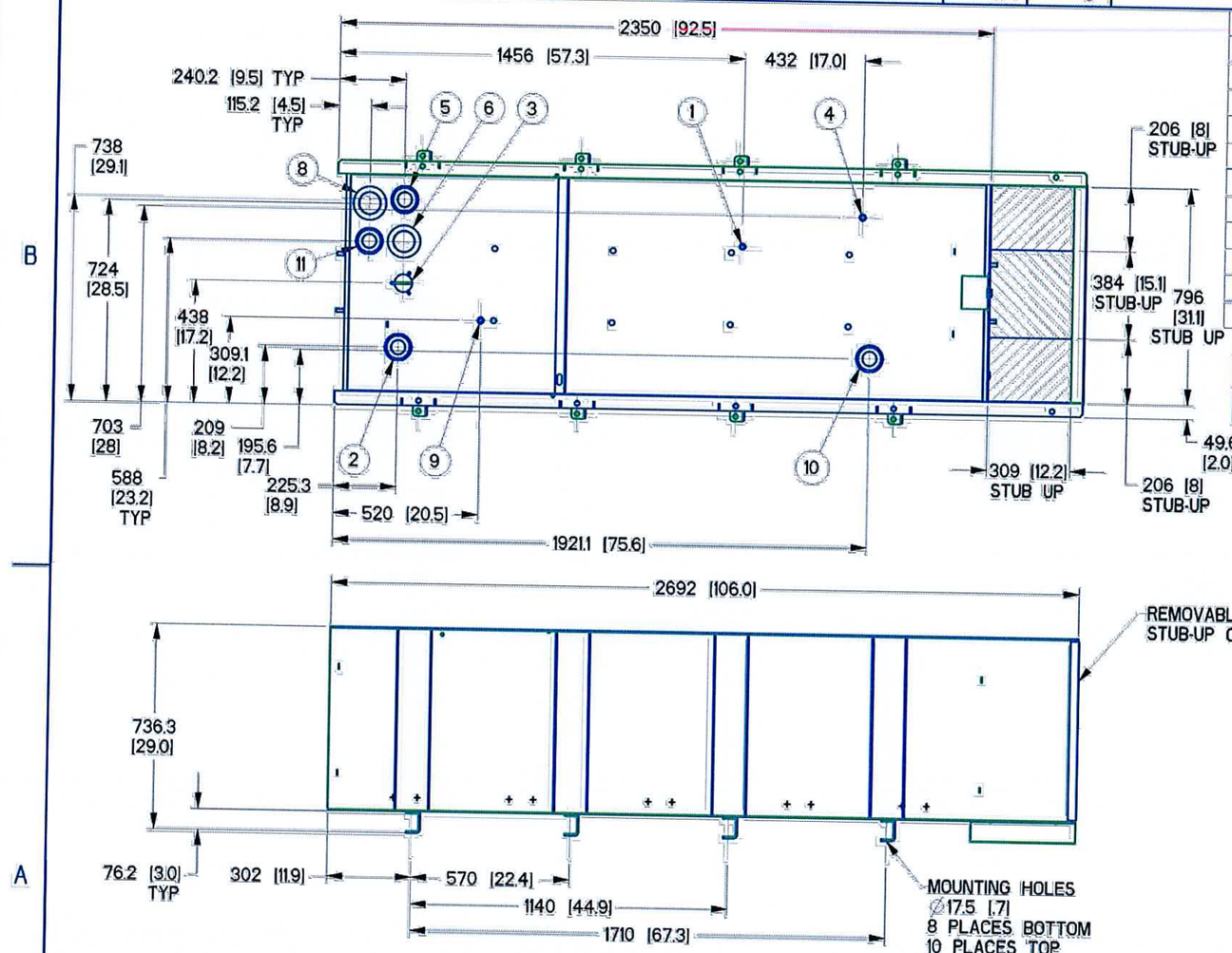
SHEET TITLE:
GENERATOR CUT-SHEET

SCALE: NONE

PROJECT NUMBER 60498
SHEET NUMBER VW FX-1

GENERATOR TYPE:	DIESEL (PENDING ENVIRONMENTAL VERIFICATION)
MAKE:	GENERAC
MODEL #:	SD030-1PE-190JT - STANDARD GENERAC SD030 30kw DIESEL - 190 GALLON

SH 1/1 | REV B | WINDCHILL VERSION B.2



I/N	TANK FITTING	PROVIDING FUNCTION
1	3/8" NPT COUPLING	FUEL SUPPLY
2	2" NPT WELD FLANGE	FUEL FILL
3		FUEL LEVEL
4	3/8" NPT COUPLING	FUEL RETURN
5	2" NPT WELD FLANGE	VENT
6	3" NPT WELD FLANGE	INNER EMERGENCY VENT
7	1/2" NPT HALF COUPLING	RUPTURE BASIN LEAK SENSOR
8	3" NPT WELD FLANGE	OUTER EMERGENCY VENT
9	3/8" NPT COUPLING	5 GALLON SPILL/FILL DRAIN
10	2" NPT WELD FLANGE	90% FUEL SWITCH
11	2" NPT WELD FLANGE	RUPTURE BASIN ALARM

LOW VOLTAGE STUB-UP
HIGH VOLTAGE STUB-UP

TANK P/N	10000016357
TOTAL CAPACITY	757 [200]
USABLE CAPACITY	720 [190]
EST. DRY WEIGHT	420 [924]

CAPACITY: LITER [GALLONS]
WEIGHT: KILOGRAMS [POUNDS]
LENGTH: MM [INCH]

UL 142 / ULC-S601 LISTED

DRAWING CREATED FROM PRO/ENGINEER 3D FILE. ECO MODIFICATION TO BE APPLIED TO SOLID MODEL ONLY.

INSTALLATION DRAWING

ELECTRONICALLY APPROVED INSIDE WINDCHILL

GENERAC

TITLE: INSTALL D2.2L BASETANK 190G A EXT Y02 MDEQ

ISSUE DATE:

SIZE	CAGE NO	DWG NO	REV
B	N/A	10000019086	B
SCALE 0.063	WT-KG 0.000	SHEET 1 of 1	

vertical bridge

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

RAMAKER employee-owned
(608) 643-4100 www.ramaker.com

Certification & Seal:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Wisconsin.

WISCONSIN MICHAEL L. PINSKE 36387 MIDDLETON, WI PROFESSIONAL ENGINEER

Signature: 9/30/2024 Date:

MARK	DATE	DESCRIPTION
A	9/10/24	REVISED UTILITY NOTES

ISSUE PHASE: PRELIMINARY | DATE ISSUED: 06/25/2024

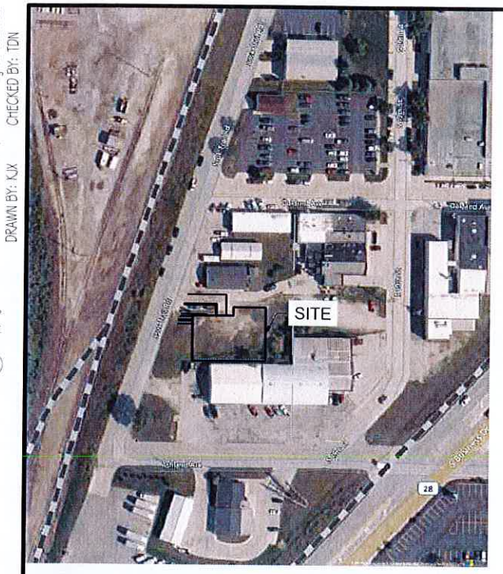
PROJECT TITLE: BUSINESS DRIVE

PROJECT INFORMATION:
2219 SAUK TRAIL RD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE: GENERATOR CUT-SHEET

SCALE: NONE

PROJECT NUMBER: 60498
SHEET NUMBER: VW EX-2



VICINITY MAP
NOT TO SCALE

PARENT PARCEL DESCRIPTION PER TITLE REPORT

LOTS 13, 14, 15 AND 16, BLOCK 6, SOUTH SHEBOYGAN ADDITION, ACCORDING TO THE RECORDED PLAT THEREOF, IN THE CITY OF SHEBOYGAN, SHEBOYGAN COUNTY, WISCONSIN, AND THE WEST1/2 OF THE VACATED NORTH-SOUTH ALLEY ADJACENT TO THE EAST SIDE OF SAID LOTS.

PARCEL ID#: 59281425610

THIS BEING THE SAME PROPERTY CONVEYED TO MATTHEW J. DROSS AND LISA A. DROSS, HUSBAND AND WIFE FROM TIMOTHY T. KACHELMEIER, A SINGLE PERSON IN A WARRANTY DEED DATED MARCH 29, 2013, AND RECORDED APRIL 2, 2013, AS INSTRUMENT NO. 1965755, IN SHEBOYGAN COUNTY, WISCONSIN.

SURVEYOR'S NOTES

1) ALL EASEMENTS AND/OR LEASE AREAS SHOWN AND NOT LABELED AS EXISTING SHALL BE PENDING UNTIL RECORDED.
2) AN ATTEMPT WAS MADE TO LOCATE ALL PROPERTY CORNERS AND MONUMENTS. WHERE NO MONUMENTS WERE FOUND, THE PROPERTY LINE WAS DRAWN BASED ON RECORDED AND/OR FILED DOCUMENTS.
3) NOT TO BE USED AS CONSTRUCTION DRAWINGS.
4) LOCATION OF UTILITIES EXISTING ON OR SERVING THE SURVEYED PROPERTY WAS DETERMINED BY OBSERVED EVIDENCE. EVIDENCE FROM PLANS PROVIDED TO THE SURVEYOR OR MARKINGS PURSUANT TO A UTILITY LOCATE REQUESTED BY THE SURVEYOR. WISCONSIN DIGGER'S HOTLINE UTILITY LOCATE NUMBER 20242123159.
5) FIELDWORK WAS PERFORMED BY RAMAKER & ASSOCIATES AND REVIEWED BY TRENT D. NELSON, WISCONSIN SURVEYOR NUMBER 3132-8.
6) THE PURPOSE OF THIS SURVEY IS TO ESTABLISH AND DESCRIBE A LEASE AREA AND ASSOCIATED EASEMENTS FOR TELECOMMUNICATIONS EQUIPMENT. THIS IS NOT A BOUNDARY SURVEY OF THE PARENT PARCEL & THEREFORE RESETTING MISSING PROPERTY IRONS IS OUTSIDE THE SCOPE OF THE WORK BEING PERFORMED.
7) AT TIME OF SURVEY, THERE WERE NO ENCROACHMENTS AFFECTING THE 'THE TOWERS, LLC' LEASE AREA OR ASSOCIATED EASEMENTS.
8) THE 'THE TOWERS, LLC' LEASE AREA AND ASSOCIATED EASEMENTS LIE WITHIN THE PARENT PARCEL.
9) THE 'THE TOWERS, LLC' 30' WIDE ACCESS & 12' WIDE UTILITY EASEMENTS TERMINATES AT THE PUBLIC RIGHT-OF-WAY OF SAUK TRAIL ROAD.
10) PARENT PARCEL DESCRIPTION FROM RECORDED AND/OR FILED DOCUMENTS.
11) THIS MAP WAS PREPARED WITH THE AID OF A TITLE REPORT BY TOWER TITLE, LLC, FILE NUMBER: VTB-180142-C, DOCUMENT DATE: 04/25/2024.
12) BEARINGS ARE REFERENCED TO THE NORTH LINE OF THE NW1/4 OF SECTION 34, T15N, R23E, MEASURED TO BEAR N89°50'03"W BY GPS GRID USING THE WISCONSIN COUNTY COORDINATE SYSTEM, SHEBOYGAN COUNTY, U.S. FOOT.
13) VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988.
14) F.E.M.A. FLOOD PANEL MAP NUMBER 55117C0351F, ZONE X, AREA OF MINIMAL FLOOD HAZARD.

TITLE REPORT REVIEW

PREPARED BY: TOWER TITLE, LLC
COMMITMENT NUMBER: VTB-180142-C
COMMITMENT DATE: 04/25/2024

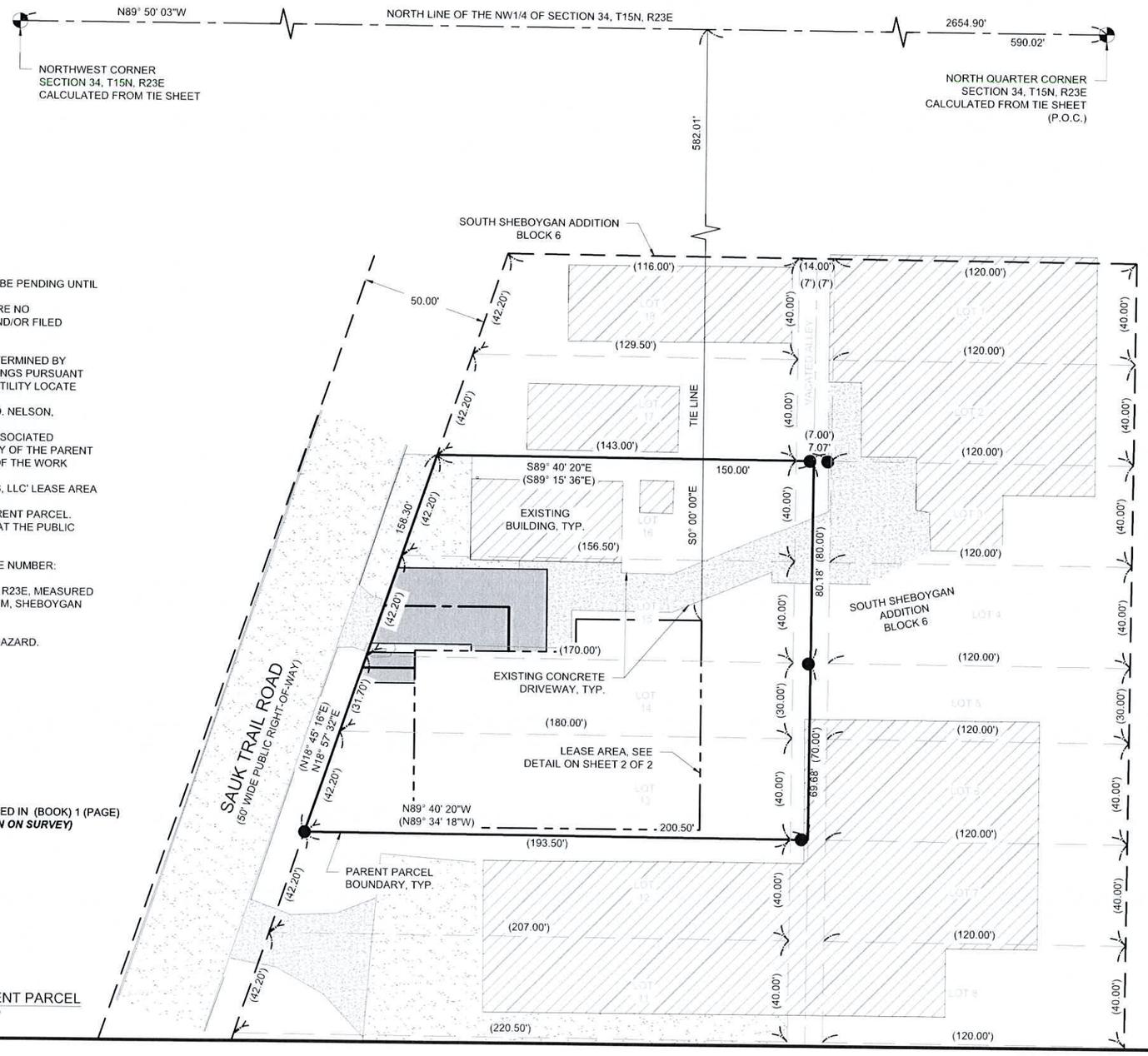
SCHEDULE B - PART II EXCEPTIONS:

1.-9. ***THE EXCEPTION DESCRIBES THE PARENT PARCEL SHOWN HERE WITHIN.***

10. ANY AND ALL MATTERS DISCLOSED ON THE MAP ENTITLED "SOUTH SHEBOYGAN" RECORDED IN (BOOK) 1 (PAGE) 83, IN SHEBOYGAN COUNTY, WISCONSIN. ***(EXISTING SOUTH SHEBOYGAN ADDITION IS SHOWN ON SURVEY)***

LEGEND

- P.O.C. ( ) — SECTION CORNER
- 1" IRON PIPE, FOUND
- POINT OF COMMENCEMENT
- RECORDED AS INFO.
- PARENT PARCEL BOUNDARY
- EXISTING RIGHT-OF-WAY
- EXISTING LOT LINE
- LEASE AREA
- EASEMENT SIDELINE
- EASEMENT CENTERLINE
- SECTION LINE
- QUARTER SECTION LINE
- QUARTER-QUARTER SECTION LINE
- EXISTING ASPHALT
- EXISTING CONCRETE



NORTH
PARENT PARCEL
AS NOTED

RAMAKER
employee-owned
(608) 643-4100 www.ramaker.com

THE TOWERS, LLC

NORTH

Certification & Seal:
I hereby certify to: Vertical Bridge REIT, LLC, a Delaware limited liability company, its subsidiaries, and their respective successors and/or assigns; and (ii) Toronto Dominion (Texas) LLC, as Administrative Agent, for itself and on behalf of the lenders parties from time to time to that certain Second Amended and Restated Loan Agreement dated June 17, 2016 with Vertical Bridge Holdco, LLC, as borrower, and Vertical Bridge Holdco Parent, LLC, as parent, as may be amended, restated, modified or renewed, their successors and assigns as their interests may appear; and Tower Title, LLC; that this Survey Document was prepared and the related Survey Work was performed by me or under my direct personal supervision and that I am a duly Licensed Land Surveyor under the Laws of the State of Wisconsin.

WISCONSIN
TRENT D NELSON
3132-8
WAUTOMA, WI
LAND SURVEYOR

Trent D. Nelson, PLS
License Number: 3132-8

REV	DATE	DESCRIPTION

ISSUE PHASE: FINAL
DATE ISSUED: 07/11/2024

PROJECT TITLE:
BUSINESS DRIVE
THE TOWERS, LLC
US-WI-5737

PROJECT ADDRESS:
2219 SAUK TRAIL ROAD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
LEASE SURVEY

SCALE:
0 25' 50' 100'
11" x 17" - 1" = 50'
22" x 34" - 1" = 25'

PROJECT NUMBER: 60498
SHEET NUMBER: 1 OF 2

DRAWN BY: KJX CHECKED BY: TDN

LEASE AREA METES & BOUNDS DESCRIPTION

A PORTION OF LAND LOCATED IN LOTS 13,14 AND 15 OF BLOCK 6 OF SOUTH SHEBOYGAN ADDITION LOCATED IN THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER (NE1/4-NW1/4) OF SECTION THIRTY-FOUR (34), TOWNSHIP FIFTEEN (15) NORTH, RANGE TWENTY-THREE (23) EAST, CITY OF SHEBOYGAN, SHEBOYGAN COUNTY, WISCONSIN AND BEING FURTHER DESCRIBED AS FOLLOWS:

COMMENCING AT A CALCULATED MONUMENT LOCATING THE NORTH CORNER OF SAID SECTION 34; THENCE N89°50'03"W, 590.02 FEET ALONG THE NORTH LINE OF SAID SECTION 34; THENCE S0°00'00"E, 582.01 FEET TO THE POINT OF BEGINNING; THENCE N90°00'00"W, 50.00 FEET; THENCE S0°00'00"W, 13.00 FEET; THENCE N90°00'00"W, 64.00 FEET; THENCE S0°00'00"E, 70.00 FEET; THENCE N90°00'00"E, 114.00 FEET; THENCE N0°00'00"E, 83.00 FEET TO THE POINT OF BEGINNING. SAID LEASE AREA CONTAINS 8,630 SQUARE FEET (0.20 ACRES) AND IS SUBJECT TO ANY AND ALL EASEMENTS OR AGREEMENTS, RECORDED OR UNRECORDED.

30' WIDE ACCESS EASEMENT CENTERLINE DESCRIPTION

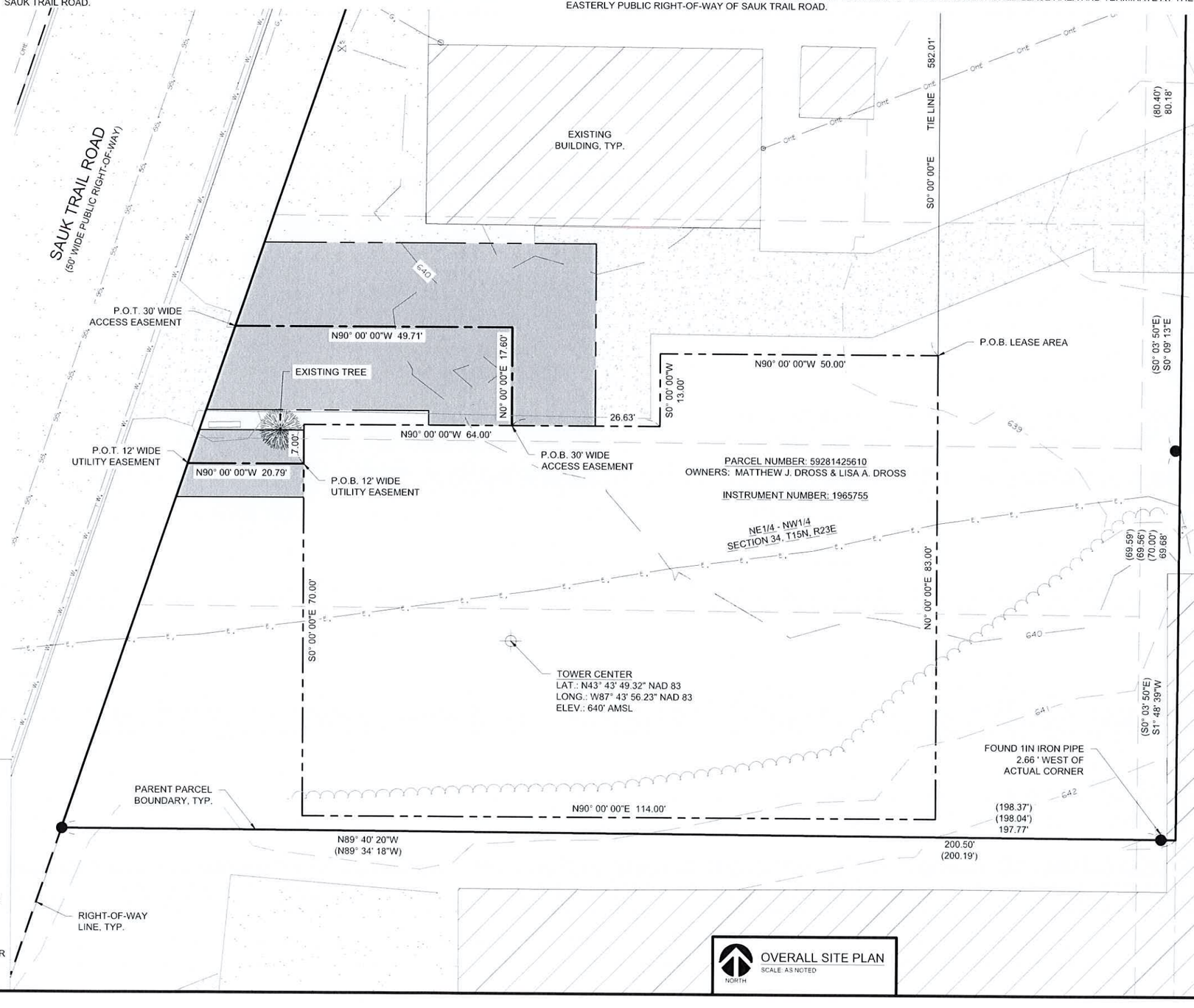
A PORTION OF LAND LOCATED IN LOT 15 OF BLOCK 6 OF SOUTH SHEBOYGAN ADDITION LOCATED IN THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER (NE1/4-NW1/4) OF SECTION THIRTY-FOUR (34), TOWNSHIP FIFTEEN (15) NORTH, RANGE TWENTY-THREE (23) EAST, CITY OF SHEBOYGAN, SHEBOYGAN COUNTY, WISCONSIN AND WHOSE CENTERLINE IS FURTHER DESCRIBED AS FOLLOWS:

COMMENCING AT A CALCULATED MONUMENT LOCATING THE NORTH CORNER OF SAID SECTION 34; THENCE N89°50'03"W, 590.02 FEET ALONG THE NORTH LINE OF THE NW1/4 OF SAID SECTION 34; THENCE S0°00'00"E, 582.01 FEET TO THE NORTHEAST CORNER OF THE AFOREMENTIONED LEASE AREA; THENCE N90°00'00"W, 50.00 FEET; THENCE S0°00'00"W, 13.00 FEET; THENCE N90°00'00"W, 26.63 FEET TO THE POINT OF BEGINNING; THENCE N0°00'00"E, 17.60 FEET; THENCE N90°00'00"W, 49.71 FEET TO EASTERLY PUBLIC RIGHT-OF-WAY OF SAUK TRAIL ROAD AND THE POINT OF TERMINATION. SAID ACCESS EASEMENT CENTERLINE CONTAINS 67.31 LINEAR FEET, MORE OR LESS, AND IS SUBJECT TO ANY AND ALL EASEMENTS OR AGREEMENTS, RECORDED OR UNRECORDED. SIDELINES OF SAID EASEMENT SHALL BE LENGTHENED OR SHORTENED TO TERMINATE AT THE EASTERLY PUBLIC RIGHT-OF-WAY OF SAUK TRAIL ROAD.

12' WIDE UTILITY EASEMENT CENTERLINE DESCRIPTION

A PORTION OF LAND LOCATED IN LOTS 14 AND 15 OF BLOCK 6 OF SOUTH SHEBOYGAN ADDITION LOCATED IN THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER (NE1/4-NW1/4) OF SECTION THIRTY-FOUR (34), TOWNSHIP FIFTEEN (15) NORTH, RANGE TWENTY-THREE (23) EAST, CITY OF SHEBOYGAN, SHEBOYGAN COUNTY, WISCONSIN AND WHOSE CENTERLINE IS FURTHER DESCRIBED AS FOLLOWS:

COMMENCING AT A CALCULATED MONUMENT LOCATING THE NORTH CORNER OF SAID SECTION 34; THENCE N89°50'03"W, 590.02 FEET ALONG THE NORTH LINE OF THE NW1/4 OF SAID SECTION 34; THENCE S0°00'00"E, 582.01 FEET TO THE NORTHEAST CORNER OF THE AFOREMENTIONED LEASE AREA; THENCE N90°00'00"W, 50.00 FEET; THENCE S0°00'00"W, 13.00 FEET; THENCE N90°00'00"W, 64.00 FEET TO THE NORTHWEST CORNER OF THE AFOREMENTIONED LEASE AREA; THENCE S0°00'00"E, 7.00 FEET ALONG THE WEST LINE OF THE AFOREMENTIONED LEASE AREA TO THE POINT OF BEGINNING; THENCE N90°00'00"W, 20.79 FEET TO EASTERLY PUBLIC RIGHT-OF-WAY OF SAUK TRAIL ROAD AND THE POINT OF TERMINATION. SAID ACCESS EASEMENT CENTERLINE CONTAINS 20.79 LINEAR FEET, MORE OR LESS, AND IS SUBJECT TO ANY AND ALL EASEMENTS OR AGREEMENTS, RECORDED OR UNRECORDED. SIDELINES OF SAID EASEMENT SHALL BE LENGTHENED OR SHORTENED TO BEGIN AT THE WEST LINE OF THE AFOREMENTIONED LEASE AREA AND TERMINATE AT THE EASTERLY PUBLIC RIGHT-OF-WAY OF SAUK TRAIL ROAD.



LEGEND

P.O.B.	POINT OF BEGINNING
P.O.T.	POINT OF TERMINATION
( )	RECORDED AS INFO.
	1 INCH IRON PIPE, FOUND
	PARENT PARCEL BOUNDARY
	EXISTING RIGHT-OF-WAY
	EXISTING LOT LINE
	LEASE AREA
	EASEMENT SIDELINE
	EASEMENT CENTERLINE
	SECTION LINE
	QUARTER SECTION LINE
	QUARTER-QUARTER SECTION LINE
	EXISTING TREELINE
OHE	EXISTING OVERHEAD ELECTRIC
E	EXISTING BURIED ELECTRIC
G	EXISTING BURIED NATURAL GAS
W	EXISTING BURIED WATER
SS	EXISTING BURIED SANITARY SEWER
	EXISTING WATER VALVE
	EXISTING ASPHALT
	EXISTING CONCRETE

OVERALL SITE PLAN
SCALE: AS NOTED

RAMAKER
employee-owned
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THE TOWERS, LLC

NORTH

Certification & Seal:
I hereby certify to: Vertical Bridge REIT, LLC, a Delaware limited liability company, its subsidiaries, and their respective successors and/or assigns; and (ii) Toronto Dominion (Texas) LLC, as Administrative Agent, for itself and on behalf of the lenders parties from time to time to that certain Second Amended and Restated Loan Agreement dated June 17, 2016 with Vertical Bridge Holdco, LLC, as borrower, and Vertical Bridge Holdco Parent, LLC, as parent, as may be amended, restated, modified or renewed, their successors and assigns as their interests may appear; and Tower Title, LLC; that this Survey Document was prepared and the related Survey Work was performed by me or under my direct personal supervision and that I am a duly Licensed Land Surveyor under the Laws of the State of Wisconsin.

WISCONSIN
TRENT D NELSON
3132-8
WAUTOMA, WI
LAND SURVEYOR

Trent D. Nelson, PLS
License Number: 3132-8

REV	DATE	DESCRIPTION

ISSUE PHASE: FINAL
DATE ISSUED: 07/11/2024

PROJECT TITLE:
BUSINESS DRIVE
THE TOWERS, LLC
US-WI-5737

PROJECT ADDRESS:
2219 SAUK TRAIL ROAD
SHEBOYGAN, WI 53083
SHEBOYGAN COUNTY

SHEET TITLE:
LEASE SURVEY

SCALE:
0 10' 20' 40'
11" x 17" - 1" = 20'
22" x 34" - 1" = 10'

PROJECT NUMBER: 60498
SHEET NUMBER: 2 OF 2

Vertical Bridge REIT, LLC
750 Park of Commerce Drive, Suite 200
Boca Raton, FL 33487

Date: September 23, 2024

To: Planning and Zoning Administrator
City of Sheboygan
828 Center Avenue, Suite 208
Sheboygan, WI 53081
(920) 459-3274
elke.daugherty@sheboyganwi.gov

Notice to Proceed

Vertical Bridge Site Number: US-WI-5737
Vertical Bridge Site Name: Business Drive

The Towers, LLC (Vertical Bridge), as the Tower Owner, hereby grants to Ramaker its consent to proceed with the project titled "Business Drive" located at Parcel 59281425610 located at Address of 2219 Sauk Trail Rd., Sheboygan, WI 53081. This includes any activities relating to zoning. Ramaker is our agent, and we are hereby directing our agent to obtain zoning approval for this project.

This Notice to Proceed is effective immediately.

Sincerely,

DocuSigned by:
5F230FE153ED402...

John Stevens, Vice President of Development

CITY OF SHEBOYGAN

REQUEST FOR CITY PLAN COMMISSION CONSIDERATION

ITEM DESCRIPTION: Concept Plan by Rachel Kohler to construct three new single-family homes, a family hall building, and a pool and gym building located at 120 Vollrath Boulevard. SR-5 Zone.

REPORT PREPARED BY: Ellise Rose, Program Assistant

REPORT DATE: October 21, 2024 **MEETING DATE:** October 29, 2024

FISCAL SUMMARY:

Budget Line Item:	N/A
Budget Summary:	N/A
Budgeted Expenditure:	N/A
Budgeted Revenue:	N/A

STATUTORY REFERENCE:

Wisconsin Statutes:	N/A
Municipal Code:	N/A

BACKGROUND / ANALYSIS:

Rachel Kohler is proposing to construct three new single-family homes, a family hall building, and a pool and gym building located at 120 Vollrath Boulevard. In order to develop this site, the property must go through the Planned Unit Development (PUD) process. PUD's provide for the possible relaxation of certain development standards pertaining to the underlying standard zoning district. The PUD process shall essentially combine the process for a zoning map amendment with that required for a conditional use, with several additional requirements.

The applicant states the following:

- The project theme for the development of the site is to increase the number of dwellings for the family as they have outgrown the existing residence. The development will provide the necessary living quarters for the family to live in, visit, and gather in reinforcing their connection the property and greater community.
- The buildings reference both the existing structure, the Chalet, and Austrian residential traditions alluding to the family's origins while being modern, site specific, and energy efficient.
- The PUD entails the renovation and expansion of the existing single-family residence known as 'The Chalet'. The Chalet is the original home built on the property in 1919, and it will remain a single-family residence with a new master suite added to the first floor.
- Three (3) new single-family villas are planned for the eastern edge of the property overlooking the lake forming a new shared lawn and garden between them.

- A new family hall and pool building with gym are planned for the southwest area of the property. The family hall will contain the main plant for this building and the incoming services for the property.
- Underground parking for four (4) cars and two (2) more outside are planned below grade. At the first floor will be dining and gathering spaces for the family with private artistic work spaces above on the second floor.
- The adjacent pool building with gym is a one-story structure containing a gym, pool, and sauna.
- The final building will be a new garage built in place of the existing garage. The new garage is planned for two (2) cars and a storage bay at grade with a family apartment above. The apartment will only to be used by extended family and guests visiting the property.
- All dwellings are for private use only and not for hire.
- Site access is being moved from Vollrath Boulevard to Third Street where the driveway was originally built.
- Vehicles will not have access to the entire property and pervious pathways will link the parking area and family hall to the other buildings on the property.
- Approximate residential densities and nonresidential intensities
    - Dwelling units allowed per acre - 5
    - Lot Area = 4.59 acres or 200,242 sf with a BCR of 0.40 = 80,095 sf allowed
    - BCR proposed = 14,864 sf
    - Impervious surface area = 3,345 sf
- The natural features of the property will be retained, enhanced, and densified at the perimeter of the property. New lawns and gardens will be created around and between the various structures creating privacy between the buildings and common spaces for the family to gather in.
- The new buildings all sit at or within the setbacks governing the SR-5 zoning district the property is governed by. The furthest west building is set an additional 58’-0” from the side yard setback to give it separation from the adjacent property at 220 Vollrath Boulevard.
- The new garage with apartment is set to the north of the property 13’-0” off of the property line in the same vicinity of the existing garage being demolished.
- The villas are set to the east of the property far from neighboring residences and only villa three abuts the street setback on the south property line.
- The proposed development maintains the current residential use of the district and character of the existing properties found adjacent to the property on Vollrath Boulevard and Third Street.
- Draft list of zoning standards that will not be met by the proposed PUD
    - Dwelling unit per acre
    - Special use for Private Residential Recreational Facility
    - Bulk regulations for Accessory Structures
    - Minimum Number of Off-Street Parking Spaces

- The land use of the property remains the same, private single-family residential with accessory uses. The modification sought is the granting of a special use for the establishment of private residential recreational facilities on the property.
- The development maintains the character of the SR-5 Suburban Residential District and requires an increase from one (1) dwelling unit per lot to five (5) dwelling units and two (2) private residential recreational facilities exceeding the bulk requirements for accessory structures per 15-4.
- The bulk modifications needed are an increase in the accessory building height and total area allowed.
- Reduce the required parking from 3 spaces per dwelling unit or 15 for the 5 dwelling units to 8 spaces. Additional parking can be accommodated along the new driveway and turnabout, but they are not dedicated parking spaces.

STAFF COMMENTS:

Zoning standards not being met:

- Buildings per lot: In the SR-5 district, only one principal building shall be permitted on any one lot. The applicant is requesting four primary buildings (single-family homes).
- Bulk regulations for Accessory Structures: The exact stands not being met will be determined with a more detailed site plan but may include square footage, height, number of accessory buildings, and use of buildings.
- Minimum Number of Off-Street Parking Spaces: Three spaces per dwelling unit required (15 spaces). Applicant is requesting eight spaces.

ATTACHMENTS:

Concept Plan Attachments

City of Sheboygan spirit on the lake	**CITY OF SHEBOYGAN** **APPLICATION FOR CONDITIONAL USE**	**Fee:** $250.00 **Review Date:** _____ **Zoning:** _____

Read all instructions before completing. If additional space is needed, attach additional pages.

SECTION 1: Applicant/ Permittee Information			
Applicant Name (Ind., Org. or Entity) POI Properties LLC	Authorized Representative Rachel Kohler	Title Sole Member	
Mailing Address 1900 North Howe St	City Chicago	State IL	ZIP Code 60614
Email Address rachel.kohler@thekohopfamily.com	Phone Number (incl. area code) 3124853974		
SECTION 2: Landowner Information (complete these fields when project site owner is different than applicant)			
Applicant Name (Ind., Org. or Entity)	Contact Person	Title	
Mailing Address	City	State	ZIP Code
Email Address	Phone Number (incl. area code)		
SECTION 3: Project or Site Location			
Project Address/Description 120 Vollrath Boulevard, Sheboygan WI 53081		Parcel No.	
SECTION 4: Proposed Conditional Use			
Name of Proposed/Existing Business:			
Existing Zoning:			
Present Use of Parcel:			
Proposed Use of Parcel:			
Present Use of Adjacent Properties:			

SECTION 5: Certification and Permission

Certification: I hereby certify that I am the owner or authorized representative of the owner of the property which is the subject of this Permit Application. I certify that the information contained in this form and attachments is true and accurate. I certify that the project will be in compliance with all permit conditions. I understand that failure to comply with any or all of the provisions of the permit may result in permit revocation and a fine and/or forfeiture under the provisions of applicable laws.

Permission: I hereby give the City permission to enter and inspect the property at reasonable times, to evaluate this notice and application, and to determine compliance with any resulting permit coverage.

Name of Owner/Authorized Representative (please print)	Title	Phone Number
Rachel Kohler	Sole Member	3124853974
Signature of Applicant		Date Signed 10/7/24

Complete application is to be filed with the Department of City Development, 828 Center Avenue, Suite 208. To be placed on the agenda of the City Plan Commission, application must be filed three weeks prior to date of meeting – check with City Development on application submittal deadline date. Applications will not be processed if all required attachments and filing fee of $250 (payable to the City of Sheboygan) are not submitted along with a complete and legible application. Application filing fee is non-refundable.

Tuckey Design Studio

120 Vollrath Boulevard
City of Sheboygan PUD Step II Review
08 October 2024

TABLE OF CONTENTS

Sheboygan Point. 120 Vollrath - Proposed Site Plan

General Notes

— Drawings are to be read in conjunction with all other consultants drawings and specifications.

- Drawings have been drawn in Metric Units (Millimeters) and scaled to Imperial Units (Feet and Inches).

DO NOT SCALE DIRECTLY FROM THESE DRAWINGS

ALL PAPER PAGE SIZES ARE IN INTERNATIONL STANDARD 'A' FORMAT.

Drawing Scale 1 inch= 30ft 0 15 30 60 90 120

Paper Scale 1 in1 inch 0 1/2 1 inch 2 3 4

North

Rev.	Notes	Date	Drawn / Checked
-	DRAFT FIRST ISSUE	18.09.24	JM / JT

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Switzerland

DRAFT

Project: Sheboygan Point
Job Number: 0301
Description: Proposed - Site Plan - Whole site
Scale on A1: 1inch : 30ft
Drawing Number: TDS_301_IM_01_100
Scale at A3: 1inch : 60ft

Outline Design

villa conceptual model & interior

PROPOSED PUD

General project themes and images

The project theme for the development of the site is to increase the number of dwellings for the family as they have outgrown the existing residence. The development will provide the necessary living quarters for the family to live in, visit, and gather in reinforcing their connection the property and greater community.

The buildings reference both the existing structure, the Chalet, and Austrian residential traditions alluding to the family's origins while being modern, site specific, and energy efficient.

Mix of dwelling unit types or land uses

The PUD entails the renovation and expansion of the existing single-family residence known as 'The Chalet'. The Chalet is the original home built on the property in 1919, and it will remain a single-family residence with a new master suite added to the first floor.

Three (3) new single-family villas are planned for the eastern edge of the property overlooking the lake forming a new shared lawn and garden between them.

A new family hall and pool building with gym are planned for the southwest area of the property. The family hall will contain the main plant for this building and the incoming services for the property. Underground parking for four (4) cars and two (2) more outside are planned below grade. At the first floor will be dining and gathering spaces for the family with private artistic work spaces above on the second floor. The adjacent pool building with gym is a one-story structure containing a gym, pool, and sauna.

The final building will be a new garage built in place of the existing garage. The new garage is planned for two (2) cars and a storage bay at grade with a family apartment above. The apartment will only to be used by extended family and guests visiting the property. All dwellings are for private use only and not for hire.

Site access is being moved from Vollrath Boulevard to Third Street where the driveway was originally built. Vehicles will not have access to the entire property and pervious pathways will link the parking area and family hall to the other buildings on the property.

family hall conceptual model & interior

PROPOSED PUD

Approximate residential densities and nonresidential intensities

Dwelling units allowed per acre - 5
Lot Area = 4.59 acres or 200,242 sf with a BCR of 0.40 = 80,095 sf allowed
BCR proposed = 14,864 sf
Impervious surface area = 3,345 sf

Treatment of natural features

The natural features of the property will be retained, enhanced, and densified at the perimeter of the property. New lawns and gardens will be created around and between the various structures creating privacy between the buildings and common spaces for the family to gather in.

Relationship nearby properties and public streets

The new buildings all sit at or within the setbacks governing the SR-5 zoning district the property is governed by. The furthest west building is set an additional 58’-0” from the side yard setback to give it separation from the adjacent property at 220 Vollrath Boulevard.

The new garage with apartment is set to the north of the property 13’-0” off of the property line in the same vicinity of the existing garage being demolished.

The villas are set to the east of the property far from neighboring residence s and only villa three abuts the street setback on the south property line.

Relationship of the project to the comprehensive master plan

The proposed development maintains the current residential use of the district and character of the exiting properties found adjacent to the property on Vollrath Boulevard and Third Street.

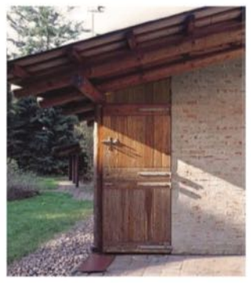
Draft list of zoning standards that will not be met by the proposed PUD

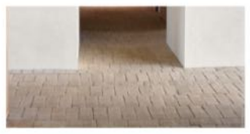
Dwelling unit per acre

Special use for Private Residential Recreational Facility

Bulk regulations for Accessory Structures

Minimum Number of Off-Street Parking Spaces





villa conceptual model & materials

PROPOSED MODIFICATIONS

Land use modifications

The land use of the property remains the same, private single-family residential with accessory uses. The modification sought is the granting of a special use for the establishment of private residential recreational facilities on the property.

Density and intensity modifications

The development maintains the character of the SR-5 Suburban Residential District and requires an increase from one (1) dwelling unit per lot to five (5) dwelling units and two (2) private residential recreational facilities exceeding the bulk requirements for accessory structures per 15-4.

Bulk modifications

The bulk modifications needed are an increase in the accessory building height and total area allowed

Landscaping modifications

No modification is necessary for the development.

Parking and loading modifications

Reduce the required parking from 3 spaces per dwelling unit or 15 for the 5 dwelling units to 8 spaces. Additional parking can be accommodated along the new driveway and turnabout, but they are not dedicated parking spaces.