Sawyer County

Agenda

Zoning Committee Meeting

Friday, April 28, 2023 @ 8:30 AM

Assembly Room; Sawyer County Courthouse

Page

1.

*The public is strongly encouraged to access the public hearing remotely due to public health and safety concerns. To view or participate in the **virtual meeting** from a computer, iPad, or Android device please go to https://zoom.us/j/99413118485. You can also use the dial in number for listening only at 1-312-626-6799 with the Webinar ID: 994 1311 8485. If additional assistance is needed please contact the Zoning & Conservation Department at 715-634-8288 prior to the meeting.*

2. PRELIMINARY MATTERS

a. Call to Order and Roll Call

b. Pledge of Allegiance

c. Voting of Chairman & Vice Chariman

5 - 6 d. State of Committee and Hearing Procedure & Statement of Hearing Notice
Statement of Comm. Hearing & Procedure & Hearing Notice

7 - 8 e. Approval of Previous Meeting Minutes
3-17-2023 ZC Minutes

3. REZONE APPLICATIONS

9 - 16 a. A Public Hearing in the Town of Lenroot. RZN #23-001. Owner: Fred Scheer III. Part of the SE ¼ of the NE ¼, Lot 3 CSM 24-92 #6522; S07, T41N, R08W; Tax ID #16329; Zoned Forestry One (F-1); 5.06 total acres. Purpose of request is to rezone from Forestry One (F-1) to Residential/Recreational One (RR-1) to allow portions of lot to be merged into the adjacent lots, cleaning up lot lines and roads. No new building sites are being created. The surrounding lots are zoned Residential/Recreational One (RR-1).
RZN #23-001, Fred Scheer III pkt.

b. Discussion/Action in the Town of Lenroot. RZN #23-001. Owner: Fred Scheer III. Part of the SE ¼ of the NE ¼, Lot 3 CSM 24-92 #6522; S07, T41N, R08W; Tax ID #16329; Zoned Forestry One (F-1); 5.06

total acres. Purpose of request is to rezone from Forestry One (F-1) to Residential/Recreational One (RR-1) to allow portions of lot to be merged into the adjacent lots, cleaning up lot lines and roads. No new building sites are being created. The surrounding lots are zoned Residential/Recreational One (RR-1).

4. CONDITIONAL USE APPLICATIONS

17 - 82

a. A Public Hearing in the Town of Round Lake. CUP #23-005. Owners: Michael Anderson & Laura Bredemus. Agent: Verizon Central LLC. Part of the SW ¼ of the NW ¼; S05, T41N, R06W; Parcel #024-641-05-2301; Tax ID# 24024; 34.89 total acres; Zoned Agricultural One (A-1). Permit desired for construction of a 275 foot wireless communication tower with 5 foot lightning rod. This will allow Verizon to improve customer experience
CUP #23-005, Michael Anderson; Agent - Verizon Wireless pkt.

b. Discussion/Action in the Town of Round Lake. CUP #23-005. Owners: Michael Anderson & Laura Bredemus. Agent: Verizon Central LLC. Part of the SW ¼ of the NW ¼; S05, T41N, R06W; Parcel #024-641-05-2301; Tax ID# 24024; 34.89 total acres; Zoned Agricultural One (A-1). Permit desired for construction of a 275 foot wireless communication tower with 5 foot lightning rod. This will allow Verizon to improve customer experience.

83 - 150

c. A Public Hearing in the Town of Draper. CUP #23-006. Owners: Lynn Phol & Diane Wasieleski. Agent: Verizon Central LLC. Part of the SE ¼ of the NW ¼; S24, T39N, R03W; Parcel #006-339-24-2401; Tax ID #6012; 39.93 total acres; Zoned Forestry One (F-1). Permit desired for construction of a 275 foot wireless communication tower with 5 foot lightning rod. This will allow Verizon to improve customer experience.
CUP #23-006, Pohl - Wasielski; Agent - Verizon Wireless pkt.

d. Discussion/Action in the Town of Draper. CUP #23-006. Owners: Lynn Phol & Diane Wasieleski. Agent: Verizon Central LLC. Part of the SE ¼ of the NW ¼; S24, T39N, R03W; Parcel #006-339-24-2401; Tax ID #6012; 39.93 total acres; Zoned Forestry One (F-1). Permit desired for construction of a 275 foot wireless communication tower with 5 foot lightning rod. This will allow Verizon to improve customer experience.

151 - 163

e. A Public Hearing in the Town of Lenroot. CUP #23-007. Owners: Jeffery & Cynthia Schmid. Part of the SW ¼ of the SE ¼, Lot 1 CSM 30/92 #7534; S15, T42N, R08W; Tax ID #39913; 5.67 total acres; Zoned Residential/Recreational One (RR-1). Permit desired for the assembly of dairy wash controls. Per Section 17.2 (B) 7 for professional office. No manufacturing will be done on the site, assembly only.
CUP #23-007, Jeffery & Cynthia Schmid pkt.

f. Discussion/Action in the Town of Lenroot. CUP #23-007. Owners: Jeffery & Cynthia Schmid. Part of the SW ¼ of the SE ¼, Lot 1 CSM 30/92 #7534; S15, T42N, R08W; Tax ID #39913; 5.67 total acres;

Zoned Residential/Recreational One (RR-1). Permit desired for the assembly of dairy wash controls. Per Section 17.2 (B) 7 for professional office. No manufacturing will be done on the site, assembly only.

164 - 170 g. A Public Hearing in the Town of Hayward. CUP #23-008. Owners: Reginald & Kimberly Pontillo. Part of the NW ¼ of the SE ¼, Lot 1 CSM 36-243 #8461; S15, T41N, R08W; Parcel #010-841-15-4204; Tax ID #43868. 7.39 total acres; Zoned Forestry One (F-1). Permit desired for an accessory building 32' x 40' 20' in height. Section 4.26 (1) of the Sawyer County Ordinance to build an accessory structure on vacant property w/conditions to build a dwelling within 3 years.
CUP #23-008, Reginald & Kimberly Pontillo pkt.

h. Discussion/Action in the Town of Hayward. CUP #23-008. Owners: Reginald & Kimberly Pontillo. Part of the NW ¼ of the SE ¼, Lot 1 CSM 36-243 #8461; S15, T41N, R08W; Parcel #010-841-15-4204; Tax ID #43868. 7.39 total acres; Zoned Forestry One (F-1). Permit desired for an accessory building 32' x 40' 20' in height. Section 4.26 (1) of the Sawyer County Ordinance to build an accessory structure on vacant property w/conditions to build a dwelling within 3 years.

171 - 188 i. A Public Hearing in the Town of Radisson. CUP #23-009, Owner: Brandon & Natalie Heath. Agent: Nick Petit. The NE ¼ of the SW ¼; S12, T38N, R07W; Parcel #022-738-12-3101; Tax ID 22306; 40 total acres; Zoned Forestry One (F-1). Permit desired for location/operation of non-metallic mining site to include rock crusher and asphalt plant. Actual site to be limited to 5 acres within the NW corner of the 40-acre parcel. Per section 17.8 (B) (8) of the Sawyer County Zoning Ordinance.
CUP #23-009, Brandon Heath, Agent Nick Petit pkt.

j. Discussion/Action in the Town of Radisson. CUP #23-009, Owner: Brandon & Natalie Heath. Agent: Nick Petit. The NE ¼ of the SW ¼; S12, T38N, R07W; Parcel #022-738-12-3101; Tax ID 22306; 40 total acres; Zoned Forestry One (F-1). Permit desired for location/operation of non-metallic mining site to include rock crusher and asphalt plant. Actual mine site to be limited to 5 acres within the 40-acre parcel. Per section 17.8 (B) (8) of the Sawyer County Zoning Ordinance.

189 - 236 k. A Public Hearing in the Town of Radisson. Reclamation Plan for CUP #23-009, Owner: Brandon & Natalie Heath. Agent: Nick Petit. The NE ¼ of the SW ¼; S12, T38N, R07W; Parcel #022-738-12-3101; Tax ID 22306; 40 total acres; Zoned Forestry One (F-1). Permit desired for the Sawyer County NR 135 Reclamation Issuance for location/operation of a non-metallic mineral open pit limited to 5-acres of the actual mine site.
CUP #23-009, Brandon Heath, Agent-Nick Petit pkt. Reclamation Plan

l. Discussion/Action in the Town of Radisson. Reclamation Plan for CUP #23-009, Owner: Brandon & Natalie Heath. Agent: Nick Petit. The NE

¼ of the SW ¼; S12, T38N, R07W; Parcel #022-738-12-3101; Tax ID 22306; 40 total acres; Zoned Forestry One (F-1). Permit desired for the Sawyer County NR 135 Reclamation Issuance for location/operation of a non-metallic mineral open pit limited to the the 5-acres of the actual mine site.

5. NEW BUSINESS

237 - 245

a. Minor corrections to proposed multi-dwelling ordinance amendment needed to send to Towns for review. (Discussion/Possible Action to send to Towns).
Multi-Dwelling Development Option 3 V4.2 clean
Proposed redline for multi-dwelling development V4.2
Summary to Towns for proposed ordinance amendments of multi-dwelling development

b. Consideration of request for Ad Hoc Committee to address Tourist Rooming House/Short-term rentals. (Discussion/Action to send to County Board to form Ad Hoc Committee)

c. Any other business that may become before the Committee.

6. ADJOURNMENT

7.

A quorum of the County Board of Supervisors or of any of its committees may be present at this meeting to listen and observe. Neither the Board nor any of the committees have established attendance at this meeting as an official function of the Board or committee(s) or otherwise made a determination that attendance at the meeting is necessary to carry out the Board or committee's function. The only purpose for other supervisors attending the meeting is to listen to the information presented. Neither the Board nor any committee (other than the committee providing this notice and agenda) will take any official action with respect to this noticed meeting.

SAWYER COUNTY ZONING COMMITTEE
STATEMENT OF COMMITTEE HEARING AND PROCEDURE AND STATEMENT OF HEARING NOTICE

This Sawyer County Zoning Committee ("Zoning Committee") meeting is being held this day and will be called to order at approximately 8:30 a.m. in the Sawyer County Courthouse, 10610 Main Street, Hayward, Wisconsin.

This Statement of Committee Hearing and Procedure and Statement of Hearing Notice is for the public's reference and supplements on the statements on the record under Agenda Item No. 1, "Preliminary Matters." This Statement of Committee Hearing and Procedure and Statement of Hearing Notice is incorporated into the record of today's Zoning Committee meeting.

Nothing in this Statement of Committee Hearing and Procedure and Statement of Hearing Notice modifies or otherwise limits the provisions set forth in the Wisconsin Statutes and other applicable law.

Any persons requiring assistance with this may contact the Sawyer County Zoning Administrator or request assistance at the Zoning Committee meeting during public comments.

Statement of Committee Hearing and Procedure

Individual Public Hearing: Generally, each application requiring a public hearing shall have an individual public hearing conducted just prior to the Agenda item in which the Zoning Committee may take action.

Public Hearing Process: Each public hearing conducted at this Zoning Committee meeting will follow this order: (1) presentation of a summary of the petition set forth in the application or request; (2) submission of a file to the Zoning Committee; and (3) the applicant's statements (or the applicant's representative's statements) and presentation of evidence; (4) public testimony by persons desiring to give pertinent testimony (a "Speaker") in support of the application; (5) public testimony by Speakers in objection to the application; and (6) any rebuttal as permitted by the Zoning Committee Chair. Once the Zoning Committee has the pertinent information, the public hearing will be closed and thereafter the Zoning Committee may deliberate, discuss, pose questions to the Sawyer County staff, legal counsel or the applicant, and take action on the application within the Zoning Committee's discretion.

Hearing Appearance Slip: For all hearings to be conducted at today's Zoning Committee meeting, any Speaker desiring to give pertinent testimony will be afforded to opportunity to do so. A Speaker must complete a Hearing Appearance Slip, which is provided at this meeting next to the meeting Agenda. After completion, the Speaker shall deliver the Hearing Appearance Slip to the Zoning Committee Chair prior to the commencement of the Zoning Committee meeting.

Process and Guidelines for Testimony by Speakers: Prior to speaking, the Speaker must be recognized by the Zoning Committee Chair in order to speak. Once recognized by the Zoning Committee Chair, the Speaker must state their full name and address before giving testimony. The Speaker should also state whether the Speaker represents a client, group, or other association, whether the Speaker is in favor or opposes the proposal on which the testimony is being given, and other pertinent information. Speakers should confine their testimony to the facts and matters presented. Speakers should avoid repetitive testimony, and Speakers are encouraged to state that they agree or disagree with other comments to avoid repetitive testimony. A Speaker's testimony will be limited to three (3) minutes, unless additional time is provided for by the Zoning Committee Chair. Orderly procedures require that each Speaker proceeds without interruption by others. All testimony will be addressed to the Zoning Committee and there will be no questions or arguments between individuals. The Zoning Committee is under no obligation to answer questions posed by the Speaker during the public hearing.

Applications for Rezoning: On applications for a change in zoning designation of property, the decision of the Zoning Committee is a recommendation to the Sawyer County Board of Supervisors for final determination and action. This provision does not modify or otherwise limit the provisions set forth in Wis. Stat. § 59.69 or any other applicable law.

Appeal of Certain Decisions: Any person aggrieved by a decision regarding a conditional use or any other decision in which the County Zoning Committee is the decision making body, a person may commence an action with the Sawyer County Board of Appeals to review the Zoning Committee's decision in whole or in part, within 30 days of the date following the committee's decision letter. This provision does not modify or otherwise limit the provisions set forth in Wis. Stat. § 59.694.

Statement of Hearing Notice

Each public hearing conducted at this Zoning Committee meeting has been published as a Class 2 notice in accordance with Wisconsin Statutes Ch. 985 in the Sawyer County Record and the Sawyer County Gazette, and publically posted within the Sawyer County Courthouse.

Questions

Please contact the Sawyer County Zoning Administrator should you have any questions regarding this Statement of Committee Hearing and Procedure and Statement of Hearing.

MINUTES OF PUBLIC HEARING
Sawyer County Zoning Committee
March 17, 2023

Zoning Committee Members
Jesse Boettcher, Chairman
Ron Buckholtz
Tweed Shuman
Stacey Hessel
John Righeimer
Michael Maestri

Zoning Administration
Jay Kozlowski, Zoning & Conservation Administrator
Kathy Marks, Deputy Zoning & Conservation Administrator

PRELIMINARY MATTERS
1) Call to Order and Roll Call
Boettcher called the Public Hearing before the Sawyer County Zoning Committee to order at 8:30 AM at the Sawyer County Courthouse, 10610 Main St. Hayward, Wisconsin. Roll call finds present: Jesse Boettcher, Ron Buckholtz, Tweed Shuman, Stacey Hessel, Michael Maestri-virtual. From the Zoning Office: Jay Kozlowski and Kathy Marks. Rebecca Roeker, Corporation Council.

2) Pledge of Allegiance.

3) Statement of Committee and Hearing Procedure and Statement of Hearing Notice. Those persons wishing to speak will be afforded the opportunity provided they identify themselves. The Public Hearing Notice was published as a Class 2 Notice in accordance with Chapter 985 of the Wisconsin Statutes in the Sawyer County Record and Sawyer Gazette and posted.

4) Approval of February 17, 2023 minutes. Motion by Buckholtz to approve, 2nd by Hessel. All in favor.

5) Public Comment. Doug Kurtzwiel speaks of the Town elections in April. No other comments.

REZONE APPLICATION
None

CONDITIONAL USE APPLICATION
a) A Public Hearing in the Town of Bass Lake. CUP #23-004. Select Materials LLC. Part of the SW ¼ of the NE ¼ and part of the SW ¼ of the NE ¼, S33, T40N, R09W; Parcel #002-940-33-1304 & 1303; Tax ID #42989 and #42990; Zoned Agricultural One (A-1); 41.182 total acres. Permit desired for the 5 year renewal of CUP #20-024 for a non-metallic mineral extraction operation including rock crusher with amendments. This permit was originally approved on December 15, 2017 and most recently on December 18, 2020. Kozlowski reads the application, Town approval,

Staff report, Property owners within the 300' were notified. Other neighbor's opinion were forwarded to the Committee and read. Motion to go into public hearing by Shuman, 2nd by Buckholtz. All in favor. Darryl Mast, owner of Select Material LLC spoke in favor of the application. Discussion with Committee and Kozlowski. No other comments for the application. Opposition by Jim Paine, Shelly Paine, and Jim Haugen were heard. Discussion held. Motion to come out of Public Hearing by Shuman, 2nd by Hessel. All in favor. Kozlowski reads the discussion/action portion of the application. Discussion held. Motion Buckholtz to approve the application with conditions of: 1) Maintain complains with NR135. 2) Maintain compliance with new Plan of Operation including: site visibility requirements, specified hours of operation and crushing hours, and not to exceed an additional 7 acres of expansion over the next 5 years as part of the renewal. 3) Maintain compliance with Department of Natural Resources Chapter 30. 4) All other Town, County, State and Federal Laws are followed. Findings of Fact: It would not be detrimental to ecology, wild life, wetlands or shorelands. It would not create an air quality, water supply or pollution problem. It would be consistent with the Town and/or County Comprehensive Plan. Second by Hessel. Discussion held. Rebecca Roeker, Corporation Council suggests being more specific. Discussion held. Hessel calls for a vote, than rescinds that vote. Discussion continues. Rebecca Roeker adds Maintain barrier? Buckholtz amends his conditions to add maintaining a visual barrier. Second by Hessel. Roll call finds: Hessel – yes, Boettcher – yes, Shuman yes, Buckholtz – yes, Maestri – yes. All in favor. Motion passes.

NEW BUSINESS

a) Ordinance Amendment for Multi-Dwelling development and definition of a resort. Kozlowski explains the 3 options for the Ordinance change. Motion by Hessel to send option #3 to the Towns for their opinion(s), second by Shuman. Rebecca Roeker, Corporation Council speaks of the Tax Assessments. Discussion continues. Vote shows 4 to 1 in favor to send to Towns.

b) Proposal to change the April 21, 2023 Zoning Committee meeting date to April 28, 2023. Kozlowski explains the need to change the date from April 21, to April 28, 2023 because of conflict of Towns changing their meeting dates for April voting. Motion by Buckholtz, second by Shuman. All in favor.

c) Any other business that may come before the Committee for discussion. Buckholtz gives Thanks to Boettcher for his work as Chairman of the Committee, as does everyone.

d) Any other business that may come before the Committee for discussion. None

ADJOURNMENT

Boettcher adjourns the meeting at 10:00am.

Minutes prepared by Kathy Marks Deputy Sawyer County Zoning & Conservation Administrator

SAWYER COUNTY

Rezone Request
STAFF REPORT

Prepared By: Jay Kozlowski, Sawyer County Zoning & Conservation Administrator

File: # RZN 23-001

Applicant:

Fred C. Scheer III
PO Box 221
Hayward, WI 54843

Property Location & Legal Description:

Town of Lenroot. Part of the SE ¼ of the NE ¼, Lot 3 CSM 24-92 #6522; S07, T41N, R08W; Tax ID #16329; Zoned Forestry One (F-1); 5.06 total acres.

Request: Purpose of request is to rezone from Forestry One (F-1) to Residential/Recreational One (RR-1) to allow portions of lot to be merged into the adjacent lots, cleaning up lot lines and roads. No new additional lots are being created. The Shoreland/Wetland (SW) District overlay is not part of the rezone request.

Summary of Request & Project History:

The applicant is requesting to rezone the above described 5.06 acres from F-1 to RR-1. In conversations with the applicant the rezone is needed to move around adjacent property lines and easement roads. The only way that this above described property can change property lines is by rezoning the property to the adjacent zone district of RR-1 because there would otherwise be a 5-acre minimum lot size if kept within the F-1 District. No additional lots are to be created just moving property line boundaries.

The Town of Lenroot comprehensive plan does show this area as rural residential. Rural residential as defined by the Town of Lenroot comprehensive plan are, "areas where higher density development has occurred or is projected to occur. To accommodate this level of development, 1.5 acre lots with a minimum of 150' on frontage or public roads is recommended." This proposed rezone and future survey map for lot reconfiguration would meet these requirements/recommendations.

The majority of this surrounding land area is RR-1 and F-1 with single family dwelling development.

Findings of Fact for Approval: (choose from list below)

1 It would not be significantly damaging to the rights of others or property values
2 It would not be detrimental to ecology, wild life, wetlands or shorelands.
3 It would not create an air quality, water supply, or pollution problem.
4 It would not create topographical problems such as run off, drainage, erosion, flooding, or vegetative cover removal.
5 It would not create traffic or highway access problems.
6 It would not destroy prime agricultural lands.
7 It would be compatible with the surrounding uses and the area.
8 It would be consistent with the Town and/or County Comprehensive Plan
9 It would not create an objectionable view.

Findings of Fact for Denial: (choose from list below)

1 It would be significantly damaging to the rights of others and property values.
2 It would be detrimental to ecology, wild life, wetlands or shorelands.
3 It would create an air quality, water supply, or pollution problem.
4 It would create topographical problems such as run off, drainage, erosion, flooding, or vegetative cover removal.
5 It would create traffic or highway access problems.
6 It would destroy prime agricultural lands.
7 It would not be compatible with the surrounding uses and the area.
8 It would not be consistent with the Town and/or County Comprehensive Plan
9 It would create an objectionable view.

SAWYER COUNTY

RECEIVED
FEB 13 2023
SAWYER COUNTY
ZONING ADMINISTRATION

Rezone Application # 23-007

Town of Lenroot
Sawyer County

Return Original

To: Sawyer County Zoning and Conservation
10610 Main Street, Suite 49
Hayward, WI 54843

Phone: 715-634-8288
E-mail: Kathy.marks@sawyercountygov.org

Owner: Fred C. Scheer III

Address: P.O. Box 221 Hayward, WI 54843
Phone: 715-699-7294 Email: fcschreer@yahoo.com

Legacy PIN # 014841071403 Acreage: 5.060

Change from District F-1 to RR-1

Property Description: PRT SENE LOT 3 CSM 24/92 #16522; S07, T41N, R08W; TAX ID #16329

Purpose of Request: To rezone to RR1 to allow portions of lot to be merged into adjacent lots cleaning up lot lines and roads. No new build sites are being created. Surrounding lots are zoned RR1.

F Scheer FRED SCHEER

*Please Print & Sign (Property Owner)

The above hereby make application for a rezone. The above certify that the listed information and intentions are true and correct. The above person(s) hereby give permission for access to the property for onsite inspection by Municipal Officials.

Name, Address, Phone & Email of Agent:

FRED SCHEER
14269 W NORDIC LANE PO BOX 221
HAYWARD WI 54843
Phone 715 634 6923 (office) Email: fcschreer@yahoo.com

Office Information: Fee: $500.00 Date of Public Hearing 4-21-23

Real Estate Sawyer County Property Listing

Today's Date: 2/13/2023

Property Status: Current

Created On: 2/6/2007 7:55:28 AM

Description

Updated: 4/1/2020

Tax ID:	16329
PIN:	57-014-2-41-08-07-1 04-000-000030
Legacy PIN:	014841071403
Map ID:	.4.3
Municipality:	(014) TOWN OF LENROOT
STR:	S07 T41N R08W
Description:	PRT SENE LOT 3 CSM 24/92 #6522
Recorded Acres:	5.060
Calculated Acres:	5.060
Lottery Claims:	0
First Dollar:	No
Zoning:	(F-1) Forestry One
ESN:	400

Tax Districts

Updated: 2/6/2007

1	State of Wisconsin
57	Sawyer County
014	Town of Lenroot
572478	Hayward Community School District
001700	Technical College

Recorded Documents

Updated: 7/6/2021

WARRANTY DEED
Date Recorded: 7/2/2021 **433040**

WARRANTY DEED
Date Recorded: 3/7/2003 308902

COVENANTS
Date Recorded: 2/21/2003 308404

CERTIFIED SURVEY MAP
Date Recorded: 12/17/2002 306449

Ownership

Updated: 7/6/2021

FRED C SCHEER III HAYWARD WI

Billing Address:
FRED C SCHEER III
PO BOX 221
HAYWARD WI 54843-0221

Mailing Address:
FRED C SCHEER III
PO BOX 221
HAYWARD WI 54843-0221

Site Address

* indicates Private Road

N/A

Property Assessment

Updated: 2/6/2007

2023 Assessment Detail

Code	Acres	Land	Imp.
G1-RESIDENTIAL	5.060	36,200	0

2-Year Comparison	2022	2023	Change
Land:	36,200	36,200	0.0%
Improved:	0	0	0.0%
Total:	36,200	36,200	0.0%

Property History

N/A

014841071106
11640N
014841082203
014841082204
11620N
014841071209
014841071202
014841071104
014841071105
11608N
014841082202
014841082205
014841071102
014841071103
14224W
NORDIC LN
MOSQUITO BROOK RD
014841071410
14349W
014841071406
14225W
14260W
014841071412
11595N
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Town of Lennard
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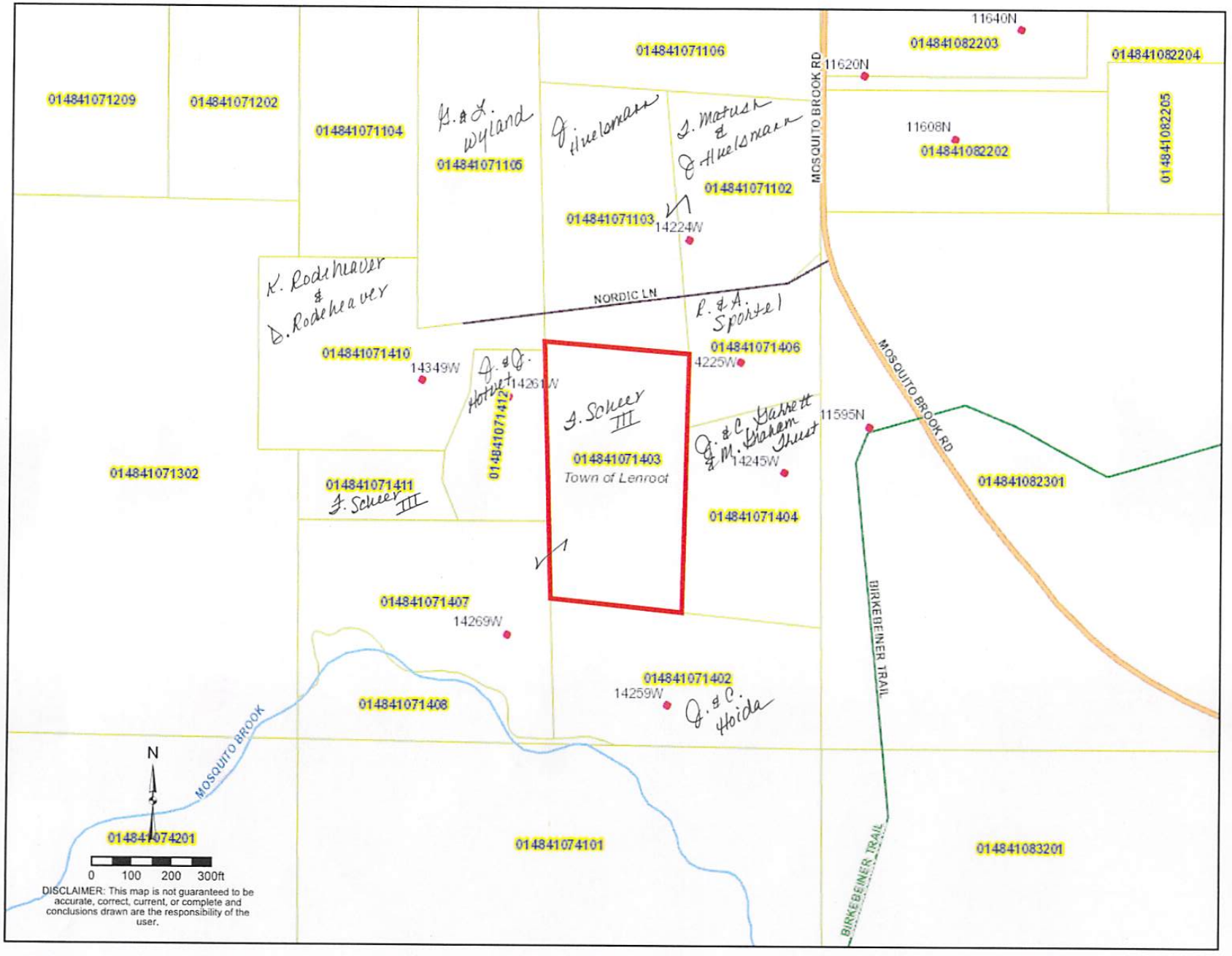
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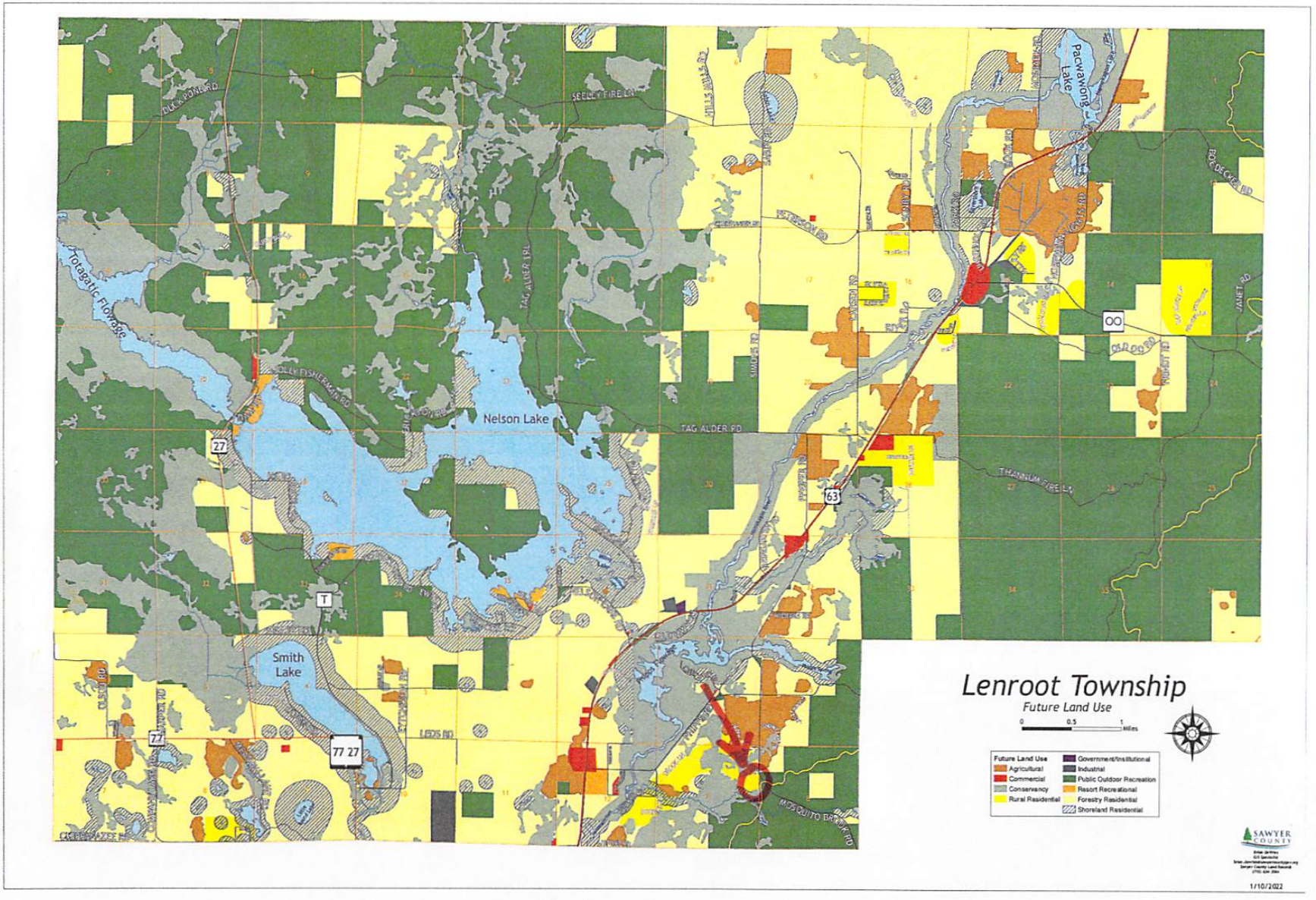
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Smith Lake
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SEELEY FIRE LN
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Lenroot Township
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Government/Institutional
Industrial
Public Outdoor Recreation
Resort Recreational
Forestry Residential
Shoreland Residential
SAWYER COUNTY
1/10/2022

Conditional Use Permit Request
STAFF REPORT

Prepared By: Jay Kozlowski, Sawyer County Zoning & Conservation Administrator

File: # CUP 23-005

Applicant:

Michael Anderson
1023 Parker Ave
Roseville, MN 55113

Agent:

TowerNorth Development, LLC & Verizon Wireless
C/O Mountain, LTD. – Trish Gray

Property Location & Legal Description:

Town of Round Lake. Part of the SW ¼ of the NW ¼; S05, T41N, R06W; Parcel #024-641-05-2301; Tax ID# 24024; 34.89 total acres; Zoned Agricultural One (A-1).

Purpose of Request:

Construction of a 275' wireless communication tower with 5' lightning rod per Section 17.4 (B) (4) of the Sawyer County Zoning Ordinance and Sawyer County Telecommunication Ordinance in conjunction with WI State Stats.

Project History/Summary of Request/Summary of State mobile tower siting regulations:

With the new changes to WI Chapter 66.0404 mobile tower siting regulations including the changes in 2017 and in 2019 Counties are somewhat limited in local regulations as long as the applicant or mobile service provider comply with the provisions and regulations specified in 66.0404. The Sawyer County Telecommunication Ordinance would not be compliant at this point to State Statutes and the State Statutes would need to be followed. The only element that the Sawyer County Zoning Telecommunication Ordinance is utilizing is that a Conditional Use Permit is required for a telecommunication facility.

Per the regulations established in 66.0404(2)(b) the application process which a person must complete to engage in the siting, construction, or modification activities shall be in writing and shall contain all of the following information:

1. The name and business address of, and the contact individual for, the applicant. **(included in attached plans)**

2. The location of the proposed or affected support structure. **(included in attached plans)**

3. The location of the proposed mobile service facility. **(included in attached plans)**

~~**4. If the application is to substantially modify an existing support structure, a construction plan which describes the proposed modifications to the support structure and the equipment and network components, including antennas, transmitters, receivers, base stations, power supplies, cabling, and related equipment associated with the proposed modifications.**~~ (new structure-not applicable)

5. If the application is to construct a new mobile service support structure, a construction plan which describes the proposed mobile service support structure and the equipment and network components, including antennas, transmitters, receivers, base stations, power supplies, cabling, and related equipment to be placed on or around the new mobile service support structure. **(included in attached plans)**

6. If an application is to construct a new mobile service support structure, an explanation as to why the applicant chose the proposed location and why the applicant did not choose collocation, including a sworn statement from an individual who has responsibility over the placement of the mobile service support structure attesting that collocation within the applicant's search ring would not result in the same mobile service functionality, coverage, and capacity; is technically infeasible; or is economically burdensome to the mobile service provider. **(included as separate letter in packet)**

The Sawyer County Zoning Administrator has deemed that the application is complete.

Within 90 days of its receipt of a complete application (January 26, 2023), a political subdivision (Sawyer County) shall complete all of the following or the applicant may consider the application approved, except that the applicant and the political subdivision may agree in writing to an extension of the 90 day period:

1. Review the application to determine whether it complies with all applicable aspects of the political subdivision's building code and, subject to the limitations in this section, zoning ordinances. **(All other determination have been tentatively approved by the Zoning & Conservation Department including setbacks, floodplains, and other County Zoning Ordinances not subject to the limitations described later in this staff report)**

2. Make a final decision whether to approve or disapprove the application.

3. Notify the applicant, in writing, of its final decision.

4. If the decision is to disapprove the application, include with the written notification substantial evidence which supports the decision.

- A political subdivision may disapprove an application if an applicant refuses to evaluate the feasibility of collocation within the applicant's search ring and provide the sworn statement.

- A party who is aggrieved by the final decision of a political subdivision may bring an action in the circuit court of the county in which the proposed activity, which is the subject of the application, is to be located.
- If an applicant provides a political subdivision with an engineering certification showing that a mobile service support structure, or an existing structure, is designed to collapse within a smaller area than the setback or fall zone area required in a zoning ordinance, that zoning ordinance does not apply to such a structure unless the political subdivision provides the applicant with substantial evidence that the engineering certification is flawed. **(The proposed tower height would be 250' and would be located 130' to the closest setback line. The applicant has provided a letter from a professional engineer indicating that even though the tower would be within the fallzone of a setback line that the tower is designed to collapse with a radius less than or equal to 125'. If the committee accepts this engineering certificate a greater setback distance than 130' from a setback line may not be imposed.)**

66.0404(4) Limitations: With regard to an activity described for new construction a political subdivision may not do any of the following:

- Impose environmental testing, sampling, or monitoring requirements, or other compliance measures for radio frequency emissions, on mobile service facilities or mobile radio service providers.
- Enact an ordinance imposing a moratorium on the permitting, construction, or approval of any such activities.
- Enact an ordinance prohibiting the placement of a mobile service support structure in particular locations within the political subdivision.
- Charge a mobile radio service provider a fee in excess of $3,000 for new construction.
- Charge a mobile radio service provider any recurring fee for new construction or a class 2 collocation.
- Permit 3rd party consultants to charge the applicant for any travel expenses incurred in the consultant's review of mobile service permits or applications.
- Disapprove an application to conduct an activity based solely on aesthetic concerns.
- Disapprove an application to conduct a class 2 collocation on aesthetic concerns.
- Enact or enforce an ordinance related to radio frequency signal strength or the adequacy of mobile service quality.
- Impose a surety requirement, unless the requirement is competitively neutral, nondiscriminatory, and commensurate with the historical record for surety requirements for other facilities and structures in the political subdivision which fall into disuse. There is a rebuttable presumption that a surety requirement of $20,000 or less complies with this paragraph.
- Prohibit the placement of emergency power systems.
- Require that a mobile service support structure be placed on property owned by the political subdivision.

- Disapprove an application based solely on the height of the mobile service support structure or on whether the structure requires lighting.
- Condition approval of such activities on the agreement of the structure or mobile service facility owner to provide space on or near the structure for the use of or by the political subdivision at less than the market rate, or to provide the political subdivision other services via the structure or facilities at less than the market rate.
- Limit the duration of any permit that is granted.
- Require an applicant to construct a distributed antenna system instead of either constructing a new mobile service support structure or engaging in collocation.
- Disapprove an application based on an assessment by the political subdivision of the suitability of other locations for conducting the activity.
- Require that a mobile service support structure, existing structure, or mobile service facilities have or be connected to backup battery power.
- Impose a setback or fall zone requirement for a mobile service support structure that is different from a requirement that is imposed on other types of commercial structures.
- Consider an activity a substantial modification if a greater height is necessary to avoid interference with an existing antenna.
- Consider an activity a substantial modification if a greater protrusion is necessary to shelter the antenna from inclement weather or to connect the antenna to the existing structure by cable
- Limit the height of a mobile service support structure to under 200 feet
- Condition the approval of an application on, or otherwise require, the applicant's agreement to indemnify or insure the political subdivision in connection with the political subdivision's exercise of its authority to approve the application.
- Condition the approval of an application on, or otherwise require, the applicant's agreement to permit the political subdivision to place at or collocate with the applicant's support structure any mobile service facilities provided or operated by, whether in whole or in part, a political subdivision or an entity in which a political subdivision has a governance, competitive, economic, financial or other interest.

Additional information for Conditional Use Permits:

Substantial evidence means facts and information, other than merely personal preferences or speculation, directly pertaining to the requirements and conditions an applicant must meet to obtain a conditional use permit and that reasonable persons would accept in support of a conclusion.

If an applicant agrees to meets all of the requirements and conditions specified in the county ordinance or those imposed by the county zoning board, the county shall grant the conditional use permit. Any condition imposed must be related to the purpose of the ordinance and be based on substantial evidence. The conditions must be reasonable and, to the extent practicable, measurable. The applicant must demonstrate that the application and all requirements and conditions established by the county relating to the conditional use are or shall

be satisfied, both of which must be supported by substantial evidence. The county's decision to approve or deny the permit must be supported by substantial evidence.

Possible Conditions for Approval: (choose from list below) (add or delete from list below)

1 Land Use Permit for telecommunication facility is required. **(LUP submitted pending CUP approval)**

2 Prior to issuing the Land Use Permit the applicant or owner of the telecommunication facility shall provide a bond, irrevocable letter of credit, of their suitable financial guarantee as to ensure the removal of facility if it falls into disuse and restoration back to pre-construction state in the amount of $20,000.

3 All other town, County, State, Federal Laws are followed.

Findings of Fact for Approval: (choose from list below)

1 It would not be significantly damaging to the rights of others or property values
2 It would not be detrimental to ecology, wild life, wetlands or shorelands.
3 It would not create an air quality, water supply, or pollution problem.
4 It would not create topographical problems such as run off, drainage, erosion, flooding, or vegetative cover removal.
5 It would not create traffic or highway access problems.
6 It would not destroy prime agricultural lands.
7 It would be compatible with the surrounding uses and the area.
8 It would be compatible with the Town and County Comprehensive Plan
9 It would not create an objectionable view.

Findings of Fact for Denial: (choose from list below)

10 It would be significantly damaging to the rights of others and property values.
11 It would be detrimental to ecology, wild life, wetlands or shorelands.
12 It would create an air quality, water supply, or pollution problem.
13 It would create topographical problems such as run off, drainage, erosion, flooding, or vegetative cover removal.
14 It would create traffic or highway access problems.
15 It would destroy prime agricultural lands.
16 It would not be compatible with the surrounding uses and the area.
17 It would not be compatible with the Town and County Comprehensive Plan.
18 It would create an objectionable view.

SAWYER COUNTY

Conditional Use Public Hearing Application

TO: Sawyer County Zoning and Conservation Administration
10610 Main Street Suite 49
Hayward, Wisconsin 54843
Attn: Kathy Marks E-mail: kathy.marks@sawyercountygov.org

Property Owner Name & Address:
Michael Anderson and Laura Bredemus
1023 Parker Avenue
Roseville, MN 55113

Phone: (651) 440-0365 **Email:** laurabredemus@gmail.com

Property description including Parcel Number:
The Southwest Quarter of the Northwest Quarter, Section 5, Township 41 North, Range 6 West, Town of Round Lake, Sawyer County, Wisconsin. Except that part lying North of Highway 77 and East of Town Road, Also Except part for Highway recorded in Volume 95, page 148 as Document No. 104564A and in Volume 283, page 339 as Document No. 160282. Property tax ID number of 57-024-2-41-06-05-2 03-000-000010.

*Edit: TowerNorth Development LLC and Verizon Central LLC seek Conditional Use Permit

Permit desired for:
Verizon Central LLC ("Verizon") seeks Conditional Use Permit approval to construct a 275-foot wireless communications tower with a five (5) foot lightning rod on the property located on State Highway 77. The purpose of the facility is to allow Verizon to improve its customer experience in the vicinity of the proposed facility. The property is located in Sawyer County and the property is zoned Agricultrual One (A-1)

Laura Bredemus
Laura Bredemus
Owner Print & Sign

Michael J Anderson
Owner Print & Sign

Signature of property owner(s) required. The undersigned person(s) hereby give permission for access to the property for inspection by Municipal Officials, Sawyer County Zoning Staff and Sawyer County Zoning Committee members if needed.

Name, Address, Phone & Email of Agent or Buyer:
TowerNorth Development, LLC and Verizon Wireless
c/o Mountain Ltd. Trish Gray
26 E. Scranton Avenue #188
Lake Bluff, IL 60044
(630)746-5433
pgray@mountainltd.com

Fee: $350.00 Date of Public Hearing:

Rev January 2021

Real Estate Sawyer County Property Listing

Today's Date: 1/26/2023

Property Status: Current
Created On: 2/6/2007 7:55:40 AM

Description

Updated: 11/17/2015

Tax ID:	24024
PIN:	57-024-2-41-06-05-2 03-000-000010
Legacy PIN:	024641052301
Map ID:	.7.1
Municipality:	(024) TOWN OF ROUND LAKE
STR:	S05 T41N R06W
Description:	PRT SWNW
Recorded Acres:	34.890
Calculated Acres:	31.325
Lottery Claims:	0
First Dollar:	No
Zoning:	(A-1) Agricultural One
ESN:	

Tax Districts

Updated: 2/6/2007

1	State of Wisconsin
57	Sawyer County
024	Town of Round Lake
572478	Hayward Community School District
001700	Technical College

Recorded Documents

Updated: 1/18/2023

WARRANTY DEED	
Date Recorded: 5/5/2022	438954
MAP OF SURVEY	
Date Recorded: 12/19/2022	5416-3
JUDGMENT-FINAL	
Date Recorded: 10/12/1995	250760

Ownership

Updated: 5/20/2022

MICHAEL J ANDERSON	ROSEVILLE MN
LAURA M BREDEMUS	ROSEVILLE MN

Billing Address:	**Mailing Address:**
MICHAEL J ANDERSON	**MICHAEL J ANDERSON**
1023 PARKER AVE	1023 PARKER AVE
ROSEVILLE MN 55113	ROSEVILLE MN 55113

Site Address

* Indicates Private Road

N/A

Property Assessment

Updated: 7/16/2019

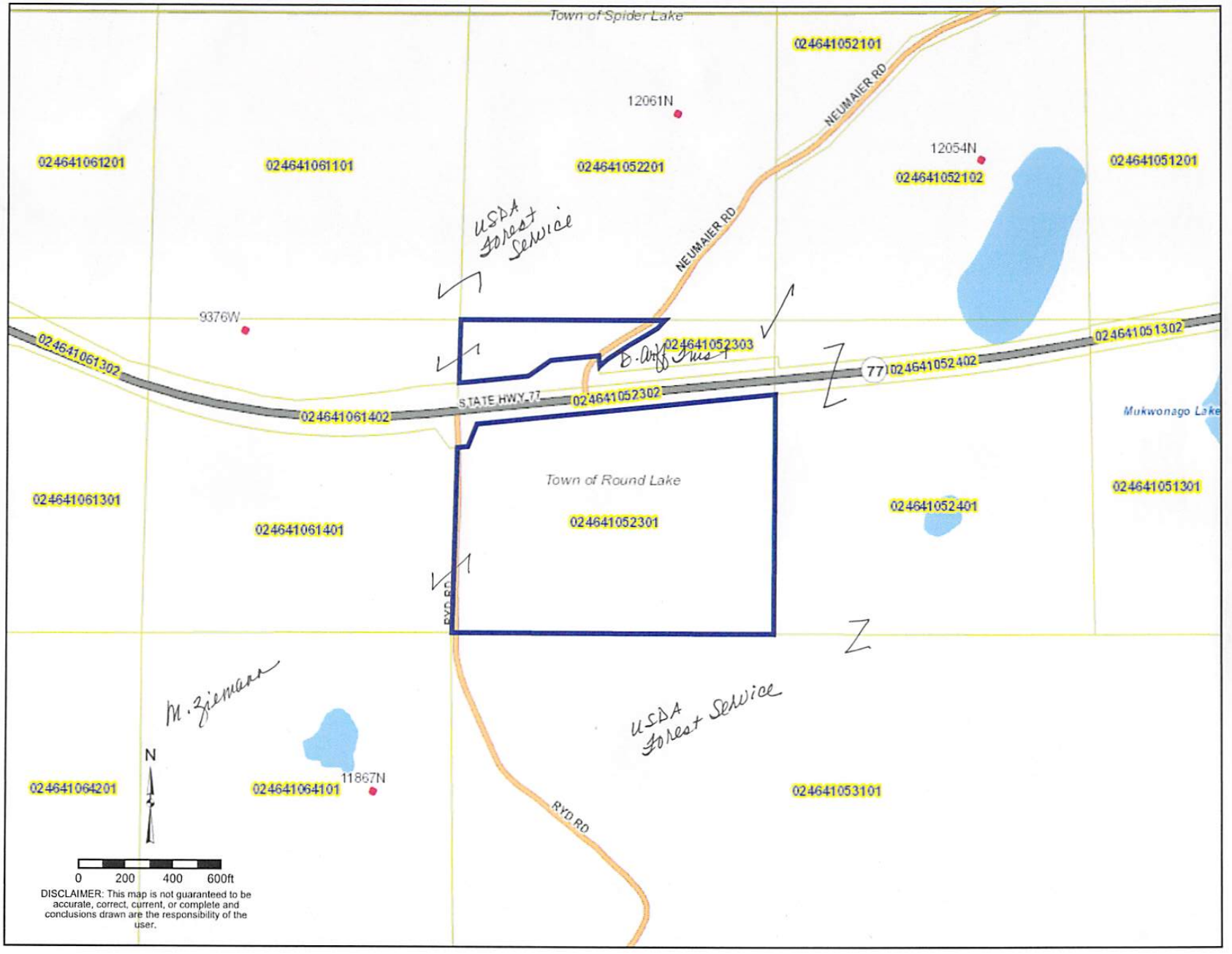
2023 Assessment Detail

Code	Acres	Land	Imp.
G4-AGRICULTURAL	14.890	2,000	0
G8-AGRICULTURAL FOREST	20.000	15,000	0

2-Year Comparison	2022	2023	Change
Land:	17,000	17,000	0.0%
Improved:	0	0	0.0%
Total:	17,000	17,000	0.0%

Property History

N/A


Town of Spider Lake
024641052101
12061N
NEUMAIER RD
12054N
024641061201
024641061101
024641052201
024641052102
024641051201
USDA Forest Service
NEUMAIER RD
9376W
024641061302
024641052303
024641051302
77
024641052402
STATE HWY 77
024641061402
024641052302
Mukwonago Lake
Town of Round Lake
024641061301
024641052401
024641051301
024641061401
024641052301
RYD RD
M. Ziemann
USDA Forest Service
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11867N
024641064101
024641053101
RYD RD
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DISCLAIMER: This map is not guaranteed to be accurate, correct, current, or complete and conclusions drawn are the responsibility of the user.

Town of Spider Lake
024641052101
12061N
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NEUMANER RD
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024641052303
024641051302
77
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STATE HWY 77
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024641061402
Town of Round Lake
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0246410524 02
STATE HWY-77
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0246410614 02
SRV DRD
Town of Round Lake
0246410523 01
0246410614 01
0246410521 01
0246410641 01
0246410531 01

Conditional Use Application for TowerNorth Development, LLC and Verizon Wireless for a 275' Communications Tower located on State Highway 77 Hayward, WI 54843

Chris Barton, Director

515 N. State Street 14th Floor, Chicago , IL 60654

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EXHIBIT B: FALL ZONE LETTER

EXHIBIT C: JUSTIFICATION STATEMENT – NO EXISTING TOWERS

EXHIBIT D: CONDITIONAL USE APPLICATION

SUMMARY OF PROPOSED CONDTIONAL USE APPROVAL FOR A 280' COMMUNICATIONS TOWER

TowerNorth Development, LLC ("TowerNorth") and Verizon Central LLC ("Verizon") seek Conditional Use Permit approval to construct a 275-foot wireless communications tower with a five (5) foot lightning rod on the property located on State Highway 77 with a property tax ID number of 57-024-2-41-06-05-2 03-000-000010. The purpose of the facility is to allow Verizon to improve its customer experience in the vicinity of the proposed facility. The property is located in Sawyer County and the property is zoned Agriculture One (A-1). The property is owned by Michael J. Anderson and Laura M. Bredemus.

Verizon's antenna and ancillary equipment will be mounted at the 270' elevation. The tower will be capable of holding four additional co-locators at lower elevations. The tower will be enclosed within a 75' x 75' fenced area within the 100' x 100' lease area. Within the compound, Verizon will install its ground equipment along with a generator and hand hole/pull box for its fiber equipment. The compound will be enclosed by a fence and accessed only through a locked gate. The site is an unmanned facility; therefore, no water or sewage service is necessary. The tower and compound will be accessed from State Highway 77 (see Exhibit A).

If Sawyer County approves the Conditional Use Permit for TowerNorth and Verizon, the enhancement of Sawyer County's public safety system and the improved E-911 services from Verizon will improve public safety in the County. A few reasons for the need and benefit of the installation to the community are below:

- More than 75% of prospective home buyers prefer strong cellular connections when buying a home (Rootmetrics, June 2015).
- 35% of Americans reach for their smartphone first in the morning (CTIA, July 2015), underscoring the importance of in-building coverage.
- In the United States, mobile data traffic will grow 7-fold from 2014 to 2019, a compound annual growth rate of 47%. (Cisco VNI Mobile Forecast Highlights, 2014-2019, October 2015)
- In the US, there are 355 million wireless devices for 319 million residents. (CTIA, "Facts and Infographics, June 2015).

Robust public safety services enhance the general welfare of the community by reducing emergency responder's response times to life/safety emergencies.

Sabre Industries™
Towers and Poles

December 21, 2022

Liz Rutkowski
Site Development Manager
TowerNorth
750 W Center St, Floor 3
West Bridgewater, MA 02379

RE: Proposed 275' Sabre Self-Supporting Tower for WI1020-A Hwy 77, WI

Dear Ms. Rutkowski,

Upon receipt of order, we propose to design a tower for the above referenced project for a Basic Wind Speed of 106 mph and 50 mph with 1.5" radial ice, Risk Category II, Exposure Category C, and Topographic Category 1 in accordance with the Telecommunications Industry Association Standard ANSI/TIA-222-H, "Structural Standard for Antenna Supporting Structures and Antennas".

When designed according to this standard, the wind pressures and steel strength capacities include several safety factors. Therefore, it is highly unlikely that the tower will fail structurally in a wind event where the design wind speed is exceeded within the range of the built-in safety factors.

Should the wind speed increase beyond the capacity of the built-in safety factors, to the point of failure of one or more structural elements, the most likely location of the failure would be within one or more of the tower members in the upper portion. This would result in a buckling failure mode, where the loaded member would bend beyond its elastic limit (beyond the point where the member would return to its original shape upon removal of the wind load).

Therefore, it is likely that the overall effect of such an extreme wind event would be localized buckling of a tower section. Assuming that the wind pressure profile is similar to that used to design the tower, the tower is most likely to buckle at the location of the highest combined stress ratio in the upper portion of the tower. This would result in the portion of the tower above the failure location "folding over" onto the portion of the tower below the failure location. *Please note that this letter only applies to the above referenced tower designed and manufactured by Sabre Towers & Poles.* In the unlikely event of total separation, this would result in a fall radius less than or equal to 65 feet.

Sincerely,

Amy R. Herbst, P.E.
Senior Design Engineer

Sabre Towers and Poles • 7101 Southbridge Drive • P.O. Box 658 • Sioux City, IA 51102-0658
P: 712-258-6690 **F**: 712-279-0814 **W**: www.SabreTowersandPoles.com

MOUNTAIN, LTD.
26 E. Scranton Avenue, #188
Lake Bluff, IL 60044

January 23, 2023

Sawyer County Zoning
Attn: Jay Kozlowski
10610 Main Street, Suite 49
Hayward, WI 54843

RE: Wisconsin Statutes Chapter 66.0404 Mobile Tower Siting Regulations 2.B.(6) / No Existing Structures that Achieve Verizon's Network Objective / Telecommunications Tower Facility on Parcel #57-024-2-41-06-05-2 03-000-000010/ State Highway 77 Hayward, WI [HWY77 WI1020-A]

Dear Mr. Kozlowski,

After evaluating Verizon Wireless's search area in which it is seeking to install new telecommunication antennas, no existing structures were located that would allow Verizon to achieve its network objective. As a result, the proposed telecommunications tower facility is required to allow Verizon to improve its customer experience and address its network objective.

If you have any questions regarding this request, please contact me directly at (630)746-5433 or pgray@mountainltd.com.

Sincerely,

_____

Trish Gray
Agent on Behalf of Verizon Wireless
MOUNTAIN LTD.

COMPLIANCE WITH SAWYER COUNTY CONDITIONAL USE PERMIT STANDARDS: CHAPTER 66 REGULATION SECTION 66.0404 MOBILE TOWER SITING REGULATIONS

TowerNorth and Verizon have met all the standards pursuant to Wisconsin State Statute Chapter 66 General Municipality Law Subsection IV Regulation Section 66.0404 Mobile Tower Siting Regulations. Per conversation with Jay Kozlowski, Sawyer County Zoning & Conservation Administrator, the Sawyer County Ordinance is out of date and the Wisconsin Statute should be used in conjunction with the Sawyer County Conditional Use Public Hearing Application. Therefore, granting TowerNorth and Verizon's requested conditional use permit approval is the only appropriate determination.

Subdivision 2: New Construction or Substantial Modification of Facilities and Support Structures

A. Subject to the provisions and limitations of this section, a political subdivision may enact a zoning ordinance under s. 59.69, 60.61, or 62.23 to regulate any of the following activities:
   1. The siting and construction of a new mobile service support structure and facilities.
   2. With regard to a class 1 collocation, the substantial modification of an existing support structure and mobile service facilities.

*** TowerNorth and Verizon's proposed installation falls under Subdivision 2.A.1 as a new mobile service support structure and facilities.**

B. If a political subdivision regulates an activity described under par. (a), the regulation shall prescribe the application process which a person must complete to engage in the siting, construction, or modification activities described in par. (a). The application shall be in writing and shall contain all of the following information:
   1. The name and business address of, and the contact individual for, the applicant.

      *** TowerNorth and Verizon have included this information (Page T-1, Exhibit A)**

   2. The location of the proposed or affected support structure.

      *** TowerNorth and Verizon have included this information (Page LP, Exhibit A)**

   3. The location of the proposed mobile service facility.

      *** TowerNorth and Verizon have included this information (Page LP, Exhibit A)**

   4. If the application is to substantially modify an existing support structure, a construction plan which describes the proposed modifications to the support structure and the equipment and network components, including antennas, transmitters, receivers, base stations, power supplies, cabling, and related equipment associated with the proposed modifications.

      *** Not applicable to this application**

5. If the application is to construct a new mobile service support structure, a construction plan which describes the proposed mobile service support structure and the equipment and network components, including antennas, transmitters, receivers, base stations, power supplies, cabling, and related equipment to be placed on or around the new mobile service support structure.

   *** TowerNorth and Verizon have included this information (Pages C-5 thru VW EX-1, Exhibit A)**

6. If an application is to construct a new mobile service support structure, an explanation as to why the applicant chose the proposed location and why the applicant did not choose collocation, including a sworn statement from an individual who has responsibility over the placement of the mobile service support structure attesting that collocation within the applicant's search ring would not result in the same mobile service functionality, coverage, and capacity; is technically infeasible; or is economically burdensome to the mobile service provider.

   *** TowerNorth and Verizon have included this information (Exhibit C)**

C. If an applicant submits to a political subdivision an application for a permit to engage in an activity described under par. (a), which contains all of the information required under par. (b), the political subdivision shall consider the application complete. If the political subdivision does not believe that the application is complete, the political subdivision shall notify the applicant in writing, within 10 days of receiving the application, that the application is not complete. The written notification shall specify in detail the required information that was incomplete. An applicant may resubmit an application as often as necessary until it is complete.

*** All conditional use permit conditions have been met and granting the conditional use is the only proper decision pursuant to the County's ordinance.**

D. Within 90 days of its receipt of a complete application, a political subdivision shall complete all of the following or the applicant may consider the application approved, except that the applicant and the political subdivision may agree in writing to an extension of the 90 day period:

1. Review the application to determine whether it complies with all applicable aspects of the political subdivision's building code and, subject to the limitations in this section, zoning ordinances.
2. Make a final decision whether to approve or disapprove the application.
3. Notify the applicant, in writing, of its final decision.
4. If the decision is to disapprove the application, include with the written notification substantial evidence which supports the decision.

*** All conditional use permit conditions have been met and granting the conditional use is the only proper decision pursuant to the County's ordinance.**

E. A political subdivision may disapprove an application if an applicant refuses to evaluate the feasibility of collocation within the applicant's search ring and provide the sworn statement described under par. (b) 6.

*** Verizon has evaluated the feasibility of collocation within the search ring and provided a sworn statement with this application. (Exhibit C)**

F. A party who is aggrieved by the final decision of a political subdivision under par. (d) 2. may bring an action in the circuit court of the county in which the proposed activity, which is the subject of the application, is to be located.

*** All conditional use permit conditions have been met and granting the conditional use is the only proper decision pursuant to the County's ordinance.**

G. If an applicant provides a political subdivision with an engineering certification showing that a mobile service support structure, or an existing structure, is designed to collapse within a smaller area than the setback or fall zone area required in a zoning ordinance, that zoning ordinance does not apply to such a structure unless the political subdivision provides the applicant with substantial evidence that the engineering certification is flawed.

*** A Fall Zone Letter is included with this submission demonstrating that the tower is designed to collapse within a smaller area than the setback or fall zone area required. (Exhibit B)**

H. A political subdivision may regulate the activities described under par. (a) only as provided in this section.

*** No response needed.**

I. If a political subdivision has in effect on July 2, 2013, an ordinance that applies to the activities described under par. (a) and the ordinance is inconsistent with this section, the ordinance does not apply to, and may not be enforced against, the activity.

*** No response needed.**

Subdivision 3: Collocation on existing support structures

*** No response needed – does not apply to this application.**

Subdivision 4: Limitations

*** No response needed by applicant – Subdivision 4 pertains to the Limitations a political subdivision must abide by and is included for reference only.**

With regard to an activity described in sub. (2) (a) or a class 2 collocation, a political subdivision may not do any of the following:

A. Impose environmental testing, sampling, or monitoring requirements, or other compliance measures for radio frequency emissions, on mobile service facilities or mobile radio service providers.
B. Enact an ordinance imposing a moratorium on the permitting, construction, or approval of any such activities.
C. Enact an ordinance prohibiting the placement of a mobile service support structure in particular locations within the political subdivision.
D. Charge a mobile radio service provider a fee in excess of one of the following amounts:
    1. For a permit for a class 2 collocation, the lesser of $500 or the amount charged by a political subdivision for a building permit for any other type of commercial development or land use development.
    2. For a permit for an activity described in sub. (2) (a), $3,000.
E. Charge a mobile radio service provider any recurring fee for an activity described in sub. (2) (a) or a class 2 collocation.
F. Permit 3rd party consultants to charge the applicant for any travel expenses incurred in the consultant's review of mobile service permits or applications.
G. Disapprove an application to conduct an activity described under sub. (2) (a) based solely on aesthetic concerns.
GM. Disapprove an application to conduct a class 2 collocation on aesthetic concerns.
H. Enact or enforce an ordinance related to radio frequency signal strength or the adequacy of mobile service quality.
I. Impose a surety requirement, unless the requirement is competitively neutral, nondiscriminatory, and commensurate with the historical record for surety requirements for other facilities and structures in the political subdivision which fall into disuse. There is a rebuttable presumption that a surety requirement of $20,000 or less complies with this paragraph.
J. Prohibit the placement of emergency power systems.
K. Require that a mobile service support structure be placed on property owned by the political subdivision.
L. Disapprove an application based solely on the height of the mobile service support structure or on whether the structure requires lighting.
M. Condition approval of such activities on the agreement of the structure or mobile service facility owner to provide space on or near the structure for the use of or by the political subdivision at less than the market rate, or to provide the political subdivision other services via the structure or facilities at less than the market rate.
N. Limit the duration of any permit that is granted.
O. Require an applicant to construct a distributed antenna system instead of either constructing a new mobile service support structure or engaging in collocation.
P. Disapprove an application based on an assessment by the political subdivision of the suitability of other locations for conducting the activity.
Q. Require that a mobile service support structure, existing structure, or mobile service facilities have or be connected to backup battery power.
R. Impose a setback or fall zone requirement for a mobile service support structure that is different from a requirement that is imposed on other types of commercial structures.
S. Consider an activity a substantial modification under sub. (1) (s) 1. or 2. if a greater height is necessary to avoid interference with an existing antenna.

T. Consider an activity a substantial modification under sub. (1) (s) 3. if a greater protrusion is necessary to shelter the antenna from inclement weather or to connect the antenna to the existing structure by cable.
U. Limit the height of a mobile service support structure to under 200 feet.
V. Condition the approval of an application on, or otherwise require, the applicant's agreement to indemnify or insure the political subdivision in connection with the political subdivision's exercise of its authority to approve the application.
W. Condition the approval of an application on, or otherwise require, the applicant's agreement to permit the political subdivision to place at or collocate with the applicant's support structure any mobile service facilities provided or operated by, whether in whole or in part, a political subdivision or an entity in which a political subdivision has a governance, competitive, economic, financial or other interest.

Subdivision 4: Setback Requirements

*** A Fall Zone Letter is included with this submission demonstrating that the tower is designed to collapse within a smaller area than the setback or fall zone area required. (Exhibit B)**

A. Notwithstanding sub. (4) (r), and subject to the provisions of this subsection, a political subdivision may enact an ordinance imposing setback requirements related to the placement of a mobile service support structure that applies to new construction or the substantial modification of facilities and support structures, as described in sub. (2).
B. A setback requirement may apply only to a mobile service support structure that is constructed on or adjacent to a parcel of land that is subject to a zoning ordinance that permits single-family residential use on that parcel. A setback requirement does not apply to an existing or new utility pole, or wireless support structure in a right-of-way that supports a small wireless facility, if the pole or facility meets the height limitations in s. 66.0414 (2) (e) 2. and 3.
C. The setback requirement under par. (b) for a mobile service support structure on a parcel shall be measured from the lot lines of other adjacent and nonadjacent parcels for which single-family residential use is a permitted use under a zoning ordinance.
D. A setback requirement must be based on the height of the proposed mobile service support structure, and the setback requirement may not be a distance that is greater than the height of the proposed structure.

Subdivision 5: Applicability.

If a county enacts an ordinance as described under sub. (2) the ordinance applies only in the unincorporated parts of the county, except that if a town enacts an ordinance as described under sub. (2) after a county has so acted, the county ordinance does not apply, and may not be enforced, in the town, except that if the town later repeals its ordinance, the county ordinance applies in that town.

*** No response needed.**

LANDLORD: _____

LEASING: _____

CONSTRUCTION: _____

Rockford. Merge onto I-90 W toll road. Keep left at the fork to stay on I-90 W toll road entering Wisconsin. Keep right at the fork to continue on I-94 W. Take exit 70 to merge onto US-53 N toward Eau Claire/Superior. Turn right onto US-63 N/US Hwy 63 N.

PROPERTY OWNER: MICHAEL ANDERSON & LAURA BREDI
1023 PARKER AVE.
ROSEVILLE, MN 55113

POWER PROVIDER: JUMP RIVER ELECTRIC COOP, KRAIG

TELCO PROVIDER: -

GENERATOR TYPE: DIESEL
MAKE: GENERAC
MODEL #: SD030-1PE-190JT:
GEN-GENSET-WP-30KW-DSL-1PH-
190G-AHJ-TANK

TowerNorth

750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: (844) 748-8878 FAX: (508) 819-3017

verizon

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

LOCATION NUMBER: 713833
SITE NAME: IL/WI / WI2_HWY77_RSW

SITE NAME: WI2 HWY77 RSW
SITE NUMBER: WI-1020

S.T.H. 77
HAYWARD, WI 54843

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

FIBER COORDINATION IS NOT COMPLETE (PENDING FIBER CONTACT). PRIOR TO CONSTRUCTION, CONTACT DESIGNER FOR UPDATE.

SHEET	DRAWING INDEX
T-1	TITLE SHEET
LP	LOCATION PLAN
C-1	ENGINEERING SITE PLAN
C-2	SITE GRADING PLAN (SHEET 1 OF 1)
C-3	FENCE DETAILS
C-4	SITE DETAILS
C-5	SITE DETAILS
C-6	CONSTRUCTION NOTES
C-7	SITE SIGNAGE
ANT-1	SITE ELEVATION
E-1	ELECTRICAL NOTES
E-2	UTILITY ROUTING PLAN
E-3	H-FRAME DETAILS
E-4	SINGLE LINE DIAGRAM & TRENCH DETAILS
E-5	SITE GROUNDING PLAN
E-6	GROUNDING DETAILS
EX-1	PHOTO EXHIBIT
VW LP	LOCATION PLAN
VW C-1	ENGINEERING SITE PLAN
VW C-2	SITE GRADING PLAN
VW C-3	EQUIPMENT PAD FOUNDATION PLAN
VW C-4	GENERATOR FOUNDATION DETAILS
VW A-1	SITE ELEVATION & ANTENNA LAYOUT
VW A-2	ANTENNA INFORMATION
VW A-2A	ANTENNA INFORMATION
VW A-3	SITE DETAILS
VW A-3A	ANTENNA MOUNTING DETAILS
VW A-4	SITE DETAILS
VW B-1	EQUIPMENT PAD PLAN & NOTES
VW B-2	EQUIPMENT PAD ELEVATIONS
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 AND GROUNDING NOTES
VW E-3	ELECTRICAL DETAILS
VW E-4	SITE GROUNDING PLAN
VW E-5	GROUNDING DETAILS
VW E-6	GROUNDING DETAILS
VW EX-1	GENERATOR CUT-SHEET

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

	ATTACHMENTS
1 OF 2	SITE SURVEY
2 OF 2	SITE SURVEY
	RFDS (BY OTHERS)

UNDERGROUND POWER — UGE — UGE —

BURIED WATER LINE — W — W —

BURIED GAS LINE — G — G — G —

EDGE OF BUSH/TREES

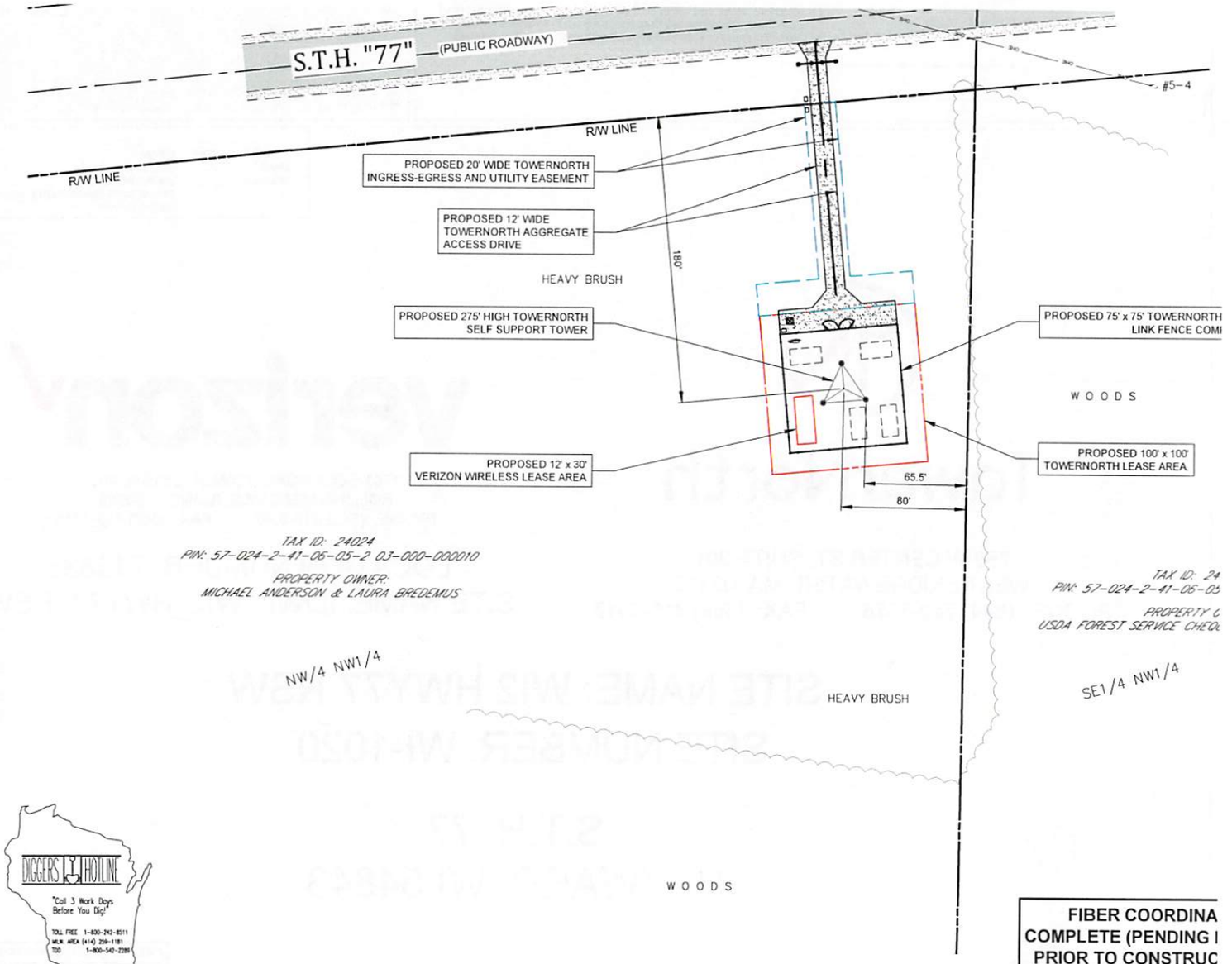
SURVEY PERFORMED BY:

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

BENCHMARK INFORMATION
SITE BENCHMARK: (BM A)
SET 6" NAIL IN SOUTH FACE OF POWER POLE; ±1' ABOVE GROUND LEVEL
ELEVATION: 1442.22'

GENERAL SITE NOTES

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

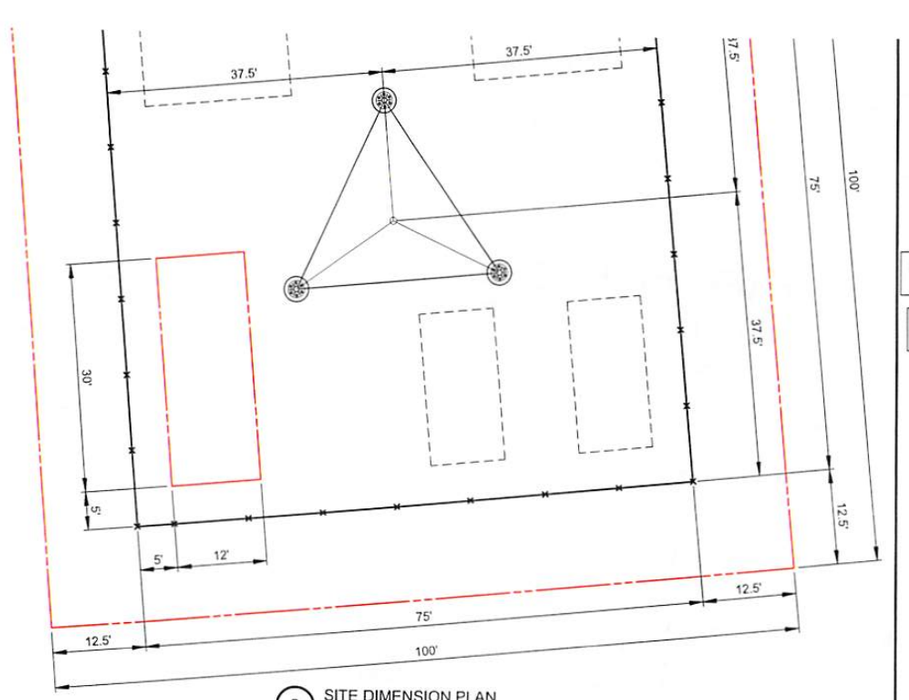


DIGGERS HOTLINE
"Call 3 Work Days Before You Dig!"
TOLL FREE 1-800-242-8511
MILW. AREA (414) 259-1181
TDD 1-800-542-2289

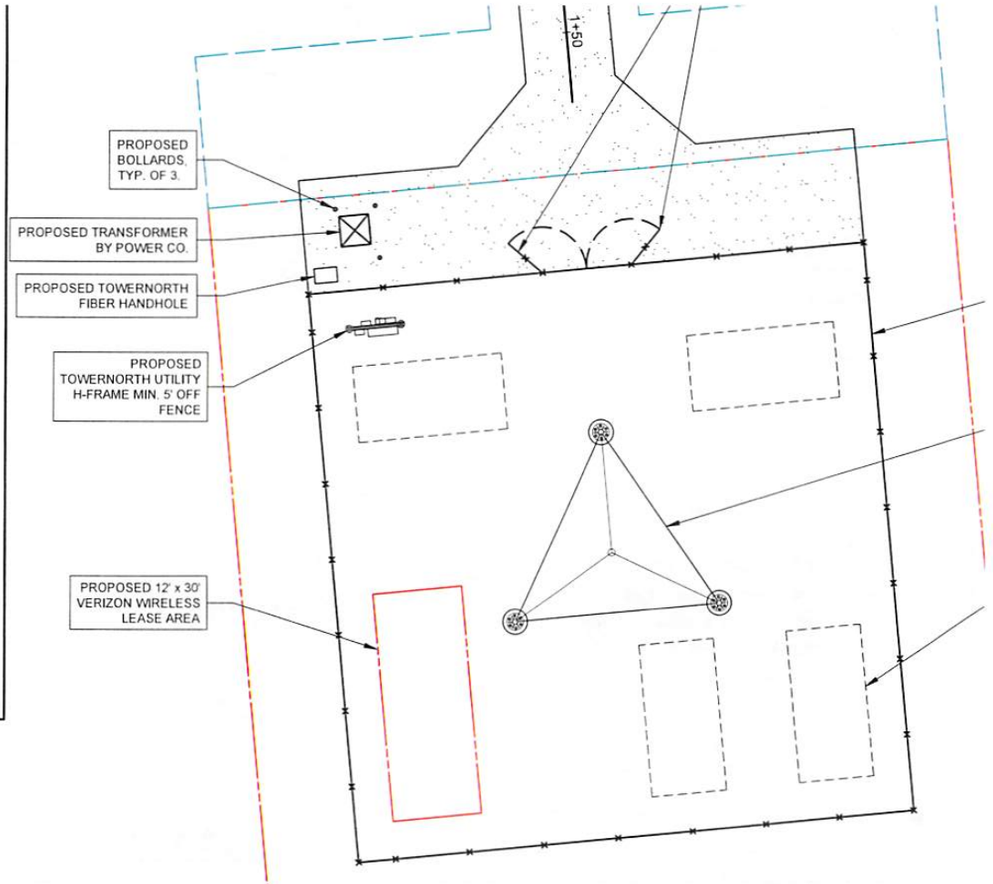
OTHER UTILITIES NOT INCLUDED IN DIGGERS HOTLINE AND LOCAL UTILITY DISTRICTS AND COMPANIES SHALL ALSO BE NOTIFIED

1 LOCATION PLAN

**FIBER COORDINA
COMPLETE (PENDING I
PRIOR TO CONSTRUC
DESIGNER FOR**



2 SITE DIMENSION PLAN
SCALE: 1" = 10'



1 SITE PLAN

PAVEMENT MATERIAL

ACCESS ROAD (HATCHED)

342 S.Y.
8" COMPACTED AGGREGATE BASE COURSE, CA-6
MIRAFI 500X SUBGRADE GEOTEXTILE FABRIC OR APPROVED EQUAL

LEASE SITE

625 S.Y.
8" COMPACTED AGGREGATE BASE COURSE, WITH 3/4" CRUSHED AGGREGATE, NO FINES, OR APPROVED EQUAL. MIRAFI 500X SUBGRADE GEOTEXTILE FABRIC OR APPROVED EQUAL
300 L.F. OF FENCING

THE CONTRACTOR SHALL INCLUDE AS PART OF THE BID, THE COST OF REMOVAL OF ANY SURFACE VEGETATION AND ORGANIC SOILS OR OTHER DELETERIOUS MATERIALS AND THE REPLACEMENT WITH ENGINEERED BACKFILL FOR THE AGGREGATE ACCESS DRIVE AND LEASE SITE, IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT.

SURVEY PERFORMED BY:

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

BENCHMARK INFORMATION
SITE BENCHMARK: (BM A)
SET 6" NAIL IN SOUTH FACE OF POWER POLE; ±1' ABOVE GROUND LEVEL
ELEVATION: 1442.22'

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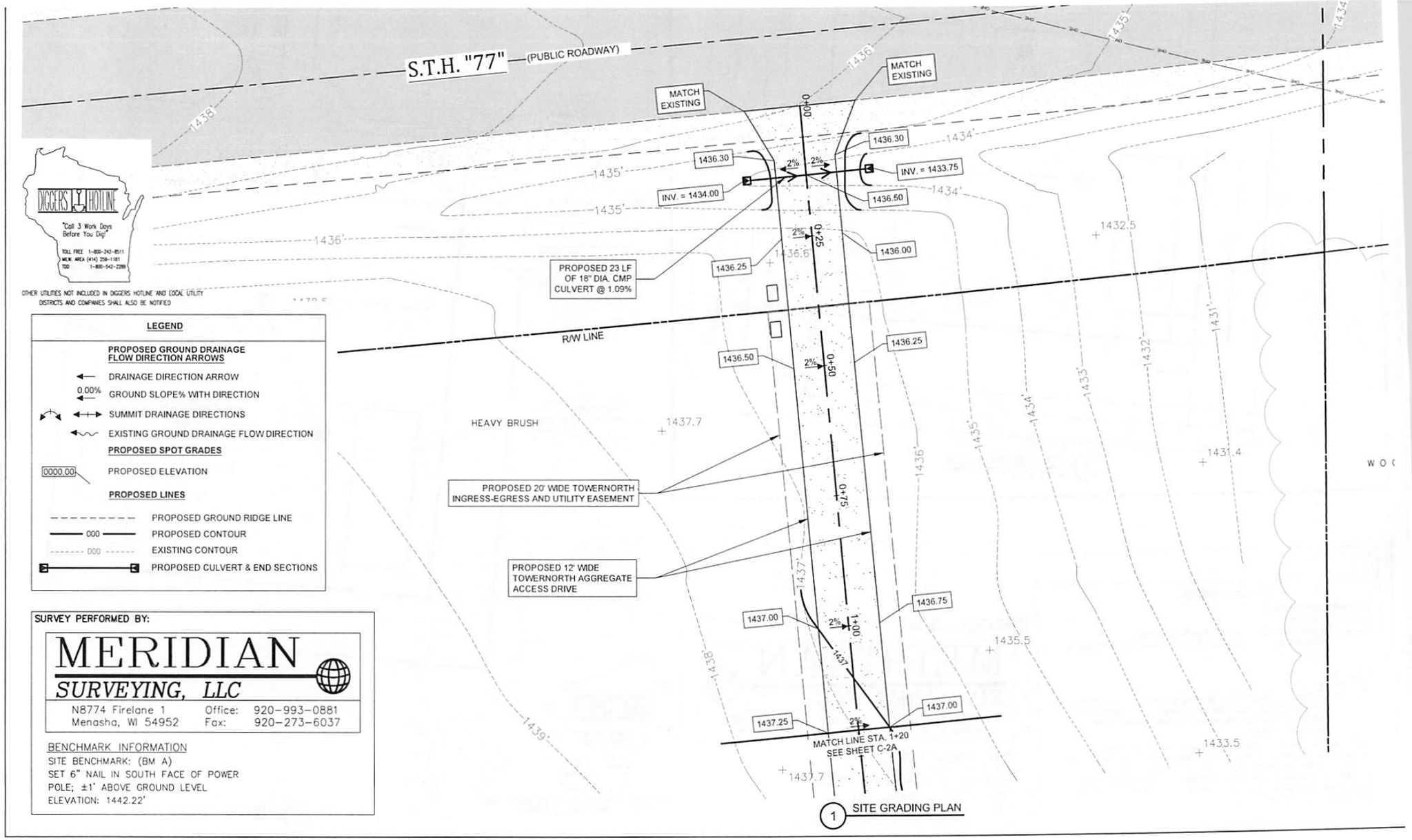
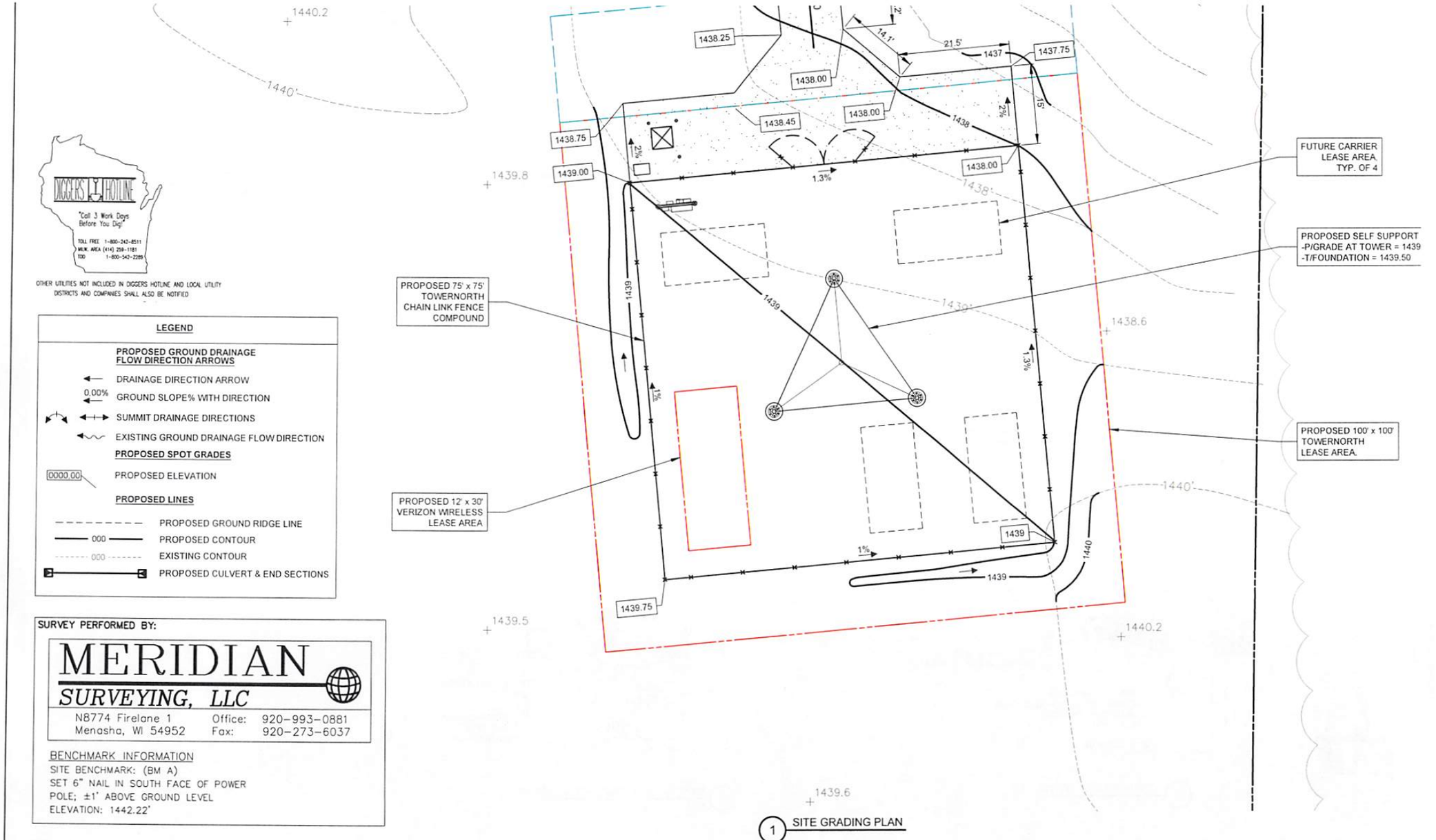
OTHER UTILITIES NOT INCLUDED IN DIGGERS HOTLINE AND LOCAL UTILITY DISTRICTS AND COMPANIES SHALL ALSO BE NOTIFIED


S.T.H. "77" (PUBLIC ROADWAY)
MATCH EXISTING
MATCH EXISTING
0+00
1436.30
1436.30
INV. = 1434.00
2%
2%
INV. = 1433.75
1436.50
0+25
2%
1436.00
1436.25
PROPOSED 23 LF OF 18" DIA. CMP CULVERT @ 1.09%
R/W LINE
1436.50
2%
0+50
1436.25
HEAVY BRUSH
1437.7
PROPOSED 20' WIDE TOWERNORTH INGRESS-EGRESS AND UTILITY EASEMENT
0+75
PROPOSED 12' WIDE TOWERNORTH AGGREGATE ACCESS DRIVE
1437.00
2%
1+00
1436.75
1437.25
2%
1437.00
MATCH LINE STA. 1+20
SEE SHEET C-2A
1437.7
1438'
1439'
1435'
1436'
1434'
1432.5
1431.4
1435.5
1433.5
1431'
1432'
1433'
1434'
1435'
1436'
1437'
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
LEGEND
PROPOSED GROUND DRAINAGE FLOW DIRECTION ARROWS
DRAINAGE DIRECTION ARROW
0.00% GROUND SLOPE% WITH DIRECTION
SUMMIT DRAINAGE DIRECTIONS
EXISTING GROUND DRAINAGE FLOW DIRECTION
PROPOSED SPOT GRADES
0000.00 PROPOSED ELEVATION
PROPOSED LINES
PROPOSED GROUND RIDGE LINE
000 PROPOSED CONTOUR
000 EXISTING CONTOUR
PROPOSED CULVERT & END SECTIONS
SURVEY PERFORMED BY:
MERIDIAN SURVEYING, LLC
N8774 Firelane 1
Menasha, WI 54952
Office: 920-993-0881
Fax: 920-273-6037
BENCHMARK INFORMATION
SITE BENCHMARK: (BM A)
SET 6" NAIL IN SOUTH FACE OF POWER POLE; ±1' ABOVE GROUND LEVEL
ELEVATION: 1442.22'
1 SITE GRADING PLAN


1440.2
1440'
1439.8
1438.6
1439.5
1440.2
1439.6
1438.25
1438.00
1438.45
1438.75
1439.00
1437.75
1437
21.5'
14.1'
15'
2%
1.3%
1%
1439
1439.75
1440
FUTURE CARRIER LEASE AREA TYP. OF 4
PROPOSED SELF SUPPORT
-P/GRADE AT TOWER = 1439
-T/FOUNDATION = 1439.50
PROPOSED 75' x 75' TOWERNORTH CHAIN LINK FENCE COMPOUND
PROPOSED 100' x 100' TOWERNORTH LEASE AREA.
PROPOSED 12' x 30' VERIZON WIRELESS LEASE AREA
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
LEGEND
PROPOSED GROUND DRAINAGE FLOW DIRECTION ARROWS
DRAINAGE DIRECTION ARROW
0.00% GROUND SLOPE% WITH DIRECTION
SUMMIT DRAINAGE DIRECTIONS
EXISTING GROUND DRAINAGE FLOW DIRECTION
PROPOSED SPOT GRADES
0000.00 PROPOSED ELEVATION
PROPOSED LINES
PROPOSED GROUND RIDGE LINE
000 PROPOSED CONTOUR
000 EXISTING CONTOUR
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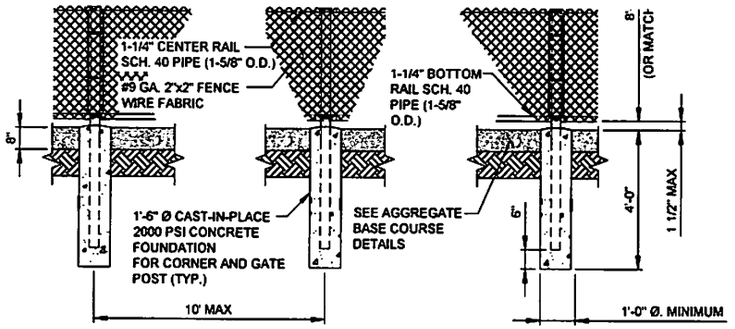
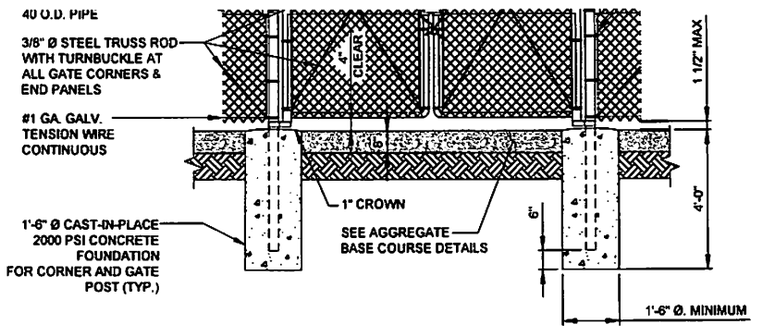
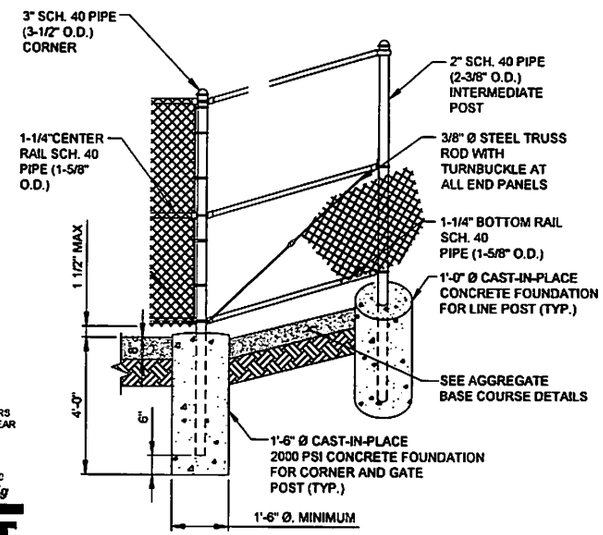


1 FENCE POST DETAILS
N.T.S.

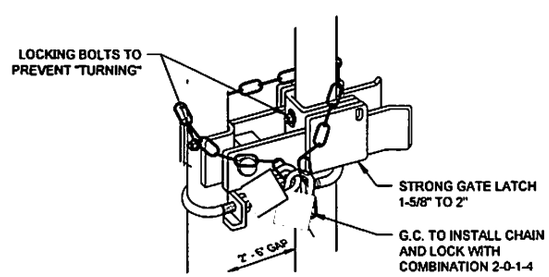


2 12'-0" DOUBLE SWING GATE
N.T.S.



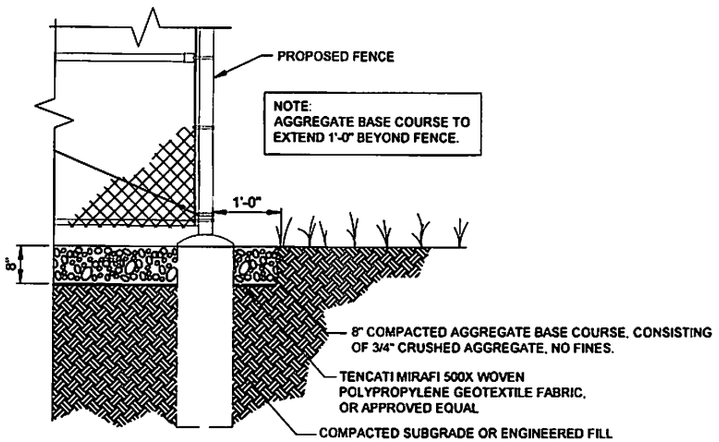
3 CORNER POST DETAIL
N.T.S.

NOTE:
GATE HINGE BOLTS SHALL HAVE THEIR THREADS PEENED OR WELDED TO PREVENT UNAUTHORIZED REMOVAL

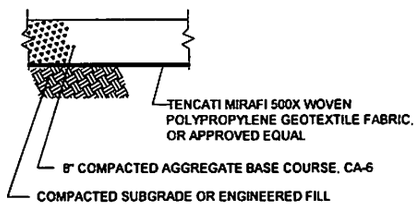


4 STRONG ARM GATE LATCH DETAIL
N.T.S.

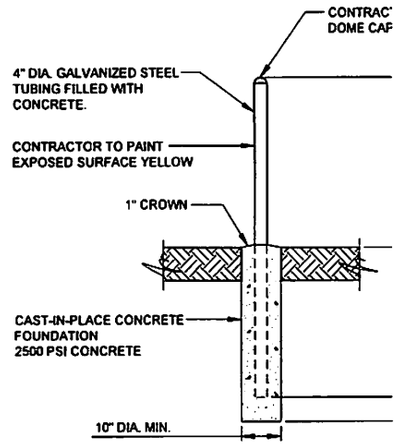
OPERATES 24 HOURS
A DAY 365 DAYS A YEAR
Call Before You Dig
JULIE
ILLINOIS ONE CALL SYSTEM
CALL JULIE TOLL FREE
1(800) 892-0123
48 HOURS BEFORE
YOU DIG



1 AGGREGATE CROSS-SECTION
N.T.S. LEASE SITE



2 AGGREGATE CROSS-SECTION
ACCESS ROAD N.T.S.



3 BOLLARD DETAIL
N.T.S.

OPERATES 24 HOURS
A DAY 365 DAYS A YEAR

Call
Before
You Dig
JULIE
ILLINOIS
ONE CALL SYSTEM

CALL JULIE TOLL FREE
1(800) 892-0123
48 HOURS BEFORE
YOU DIG

TRENCH BACKFILL WITH CRUSHED-RUN STONE MATERIAL IN 9" LIFTS COMPACTED TO 95% MAX. DENSITY, FROM WATERMAIN INSTALLATION.

4" AGGREGATE BASE COURSE, CRUSHED-RUN STONE

NOTES: 1.) INSTALL CULVERT AT THE LOCATION NOTED ON THE GRADING PLAN. FINAL GRADING SHALL CREATE POSITIVE DRAINAGE.

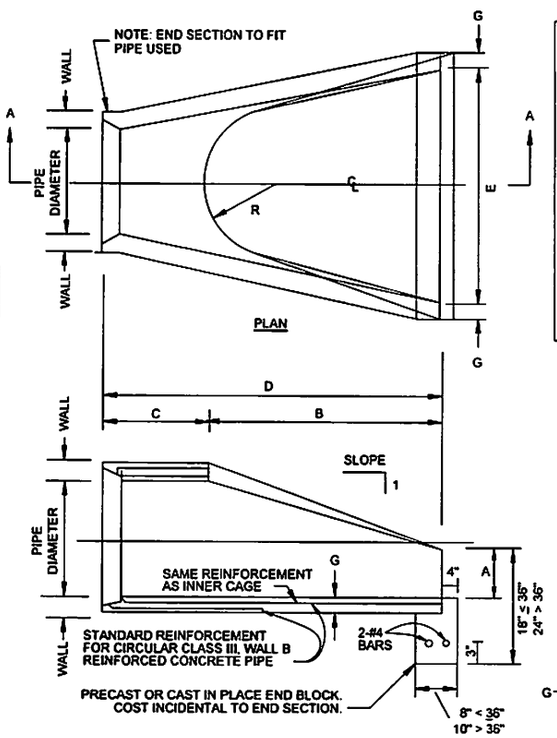
2.) THE CULVERT SHALL NOT BE ANY CLOSER THAN 6' FROM THE EXISTING EDGE OF ROADWAY PAVEMENT. REFER TO PLANS AND DITCH DETAIL.

3.) CULVERT LENGTHS PROVIDED ON THE DITCH PROFILES ARE MEASURE FROM THE END OF THE F.E.S. TO THE END OF THE F.E.S.

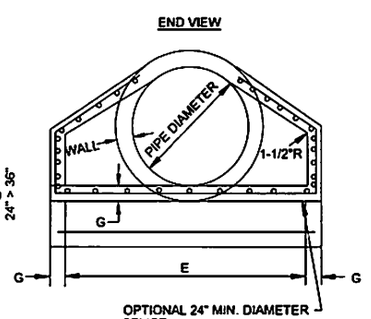
1 ACCESS DRIVE CULVERT DETAIL
N.T.S.

PIPE DIA.	APPRX. QTY. (lbs)	WALL (in)	A (in)	B (in)	C (in)	D (in)	E (in)	G (in)	R (in)	APPROX. SLOPE
12"	530	2	4	24	4'-0 7/8"	6'-0 7/8"	24	2	9	1:2.4
15"	740	2 1/4	6	27	3'-10"	6'-1"	30	2 1/4"	11	1:2.4
18"	990	2 1/2	9	27	3'-10"	6'-1"	36	2 1/2	12	1:2.4
21"	1280	2 3/4	9	35	38	6'-1"	3'-6"	2 3/4	13	1:2.4
24"	1520	3	9 1/2	3'-7 1/2"	30	6'-1 1/2"	4'-0"	3	14	1:2.5

* RADIUS AS FURNISHED BY MANUFACTURER



SECTION A-A



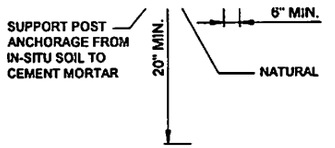
2 PRECAST REINFORCED CONCRETE FLARED END SECTION
N.T.S.

NOTES

1. PRECAST CONCRETE FLARED END SECTIONS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M-170 CLASS 3, WALL B REINFORCED CONCRETE PIPE.

2. PRECAST CONCRETE FLARED END SECTIONS FOR PIPE DIAMETER REQUIRED SHALL BE AS INDICATED ON DETAIL PLAN FOR EACH INDIVIDUAL INSTALLATION.

3. THIS ITEM SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR PRECAST CONCRETE FLARED END SECTION OF THE DIAMETER SPECIFIED WHICH PRICE INCLUDES PROVIDING AND INSTALLATION OF EACH END SECTION SPECIFIED.



POST: STEEL EITHER "T" OR "U" TYPE OR 2
HARDWOOD.

FENCE: WOVEN WIRE, 14 1/2" GAUGE, 6" M
MESH OPENING

FILTER CLOTH: FILTER X, MIRAFI 100X, STABLINKS T140N OR APPROVED EQUAL

PREFABRICATED UNIT: GEOFAB, ENVIROF
OR APROVED EQUAL

NOTE:
DEPENDING UPON CONFIGURATION, ATTA
FABRIC TO WIRE MESH W/HOG RINGS, STE
POSTS W/ TIE WIRES, WOOD POSTS W/ NA

GEOTEXTILE PARAMETERS	
PROPERTY	MINIMUM VALUE (a)
GRAB STRENGTH	180 LBS.
PUNCTURE STRENGTH	75 LBS.
BURST STRENGTH	290 LBS.
TRAPEZOIDAL TEAR	50 LBS.
(a) ALL VALUES REPRESENT MINIMUM ROLL VALUES	

NOTES:
THE FABRIC SHOULD BE PLACED IN ACCORDANCE WITH THE MA
RECOMMENDATIONS. INTERSECTIONS OF SHEETS MUST BE SO
SUFFICIENTLY OVERLAPPED (AT LEAST 24 INCHES) OR AS SPECI
MANUFACTURER). THE GEOTEXTILE SHEETS SHOULD ALSO BE P
REDUCE WRINKLES OR FOLDS. CARE MUST BE EXERCISED TO F
DAMAGE OF THE GEOTEXTILE PRIOR TO, DURING AND AFTER IN
UTILITIES SHOULD BE INSTALLED BEFORE PLACING THE FABRIC.

3 EROSION CONTROL SILT FENCE
N.T.S.

OPERATES 24 HOURS A DAY 365 DAYS A YEAR

Call Before You Dig
JULIE
ILLINOIS ONE CALL SYSTEM

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REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.

4. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

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 CONTRACTOR 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 CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE ENGINEER.

8. CONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER, FIBER, AND GROUNDING CABLES AS SHOWN ON THE POWER & GROUNDING DRAWINGS.

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

10. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY.

11. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

12. CONTRACTOR SHALL HAVE A PRECONSTRUCTION MEETING WITH OWNER TO DISCUSS ALL ASPECTS OF THE CONSTRUCTION SCOPE OF THIS DRAWING TO ENSURE HE IS FAMILIAR AND UNDERSTANDS ALL REQUIREMENTS AND INTENT OF EACH ACTIVITY.

13. THE GENERAL CONTRACTOR MUST VERIFY ALL DIMENSIONS, CONDITIONS AND ELEVATIONS BEFORE STARTING WORK. ALL DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF THE ENGINEER AND SHALL BE RESOLVED BEFORE PROCEEDING WITH THE WORK. ALL WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER IN ACCORDANCE WITH ACCEPTED CONSTRUCTION PRACTICES.

14. IT IS THE INTENTION OF THESE DRAWINGS TO SHOW THE COMPLETE INSTALLATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY BRACING, SHORING, TIES, FORMWORK, ETC. IN ACCORDANCE WITH ALL NATIONAL, STATE AND LOCAL ORDINANCES, TO SAFELY EXECUTE ALL WORK AND SHALL BE RESPONSIBLE FOR SAME. ALL WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES.

15. THE CONTRACTOR SHALL USE ADEQUATE NUMBERS OF SKILLED WORKMEN WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS, AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND METHODS NEEDED FOR PROPER PERFORMANCE OF THE WORK.

16. CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO INDEMNIFY AND HOLD DESIGN ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH PERFORMANCE OF WORK ON THIS PROJECT. ALL WORK SHALL COMPLY WITH OSHA AND STATE SAFETY REQUIREMENTS. PROCEDURES FOR THE PROTECTION OF EXCAVATIONS, EXISTING CONSTRUCTION AND UTILITIES SHALL BE ESTABLISHED PRIOR TO FOUNDATION INSTALLATION.

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 OWNER AND/OR LOCAL UTILITIES.

6. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE.

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

8. NOFILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

9. THE SUB GRADE UNDER THE PROPOSED EQUIPMENT PAD SHALL BE COMPACTED TO 95% PROCTOR AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.

10. 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.

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

CONCRETE AND REINFORCING STEEL NOTES

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ASTM A184 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CONCRETE.

2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF DAYS, UNLESS NOTED OTHERWISE. SLUMP: 2¢MIN./4¢MAX. AIR ENTR 6% BY VOLUME. MAXIMUM COARSE AGGREGATE SIZE SHALL BE 1¢

3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEI NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A STEEL. WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE C AND ALL HOOKS SHALL BE STANDARD, UNLESS NOTED OTHERWISE.

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

   CONCRETE CAST AGAINST EARTH.....3"
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER.....3"
   #5 AND SMALLER & WWF.....3"
   CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
   SLAB AND WALL.....1½"
   BEAMS AND COLUMNS.....1½"

5. A CHAMFER OF 3/4° SHALL BE PROVIDED AT ALL EXPOSED EDGES O UNLESS NOTED OTHERWISE. IN ACCORDANCE WITH ACI 3010 SECTION

6. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE F MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EA OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE DAMAGED WI CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE.

7. WELDING IS PROHIBITED ON REINFORCING STEEL AND EMBEDMENTS.

8. ALL CONCRETE SHALL BE READY-MIXED IN ACCORDANCE WITH ASTM TEMPERATURE OF CAST IN PLACE CONCRETE AT BETWEEN 50 DEGREE DEGREES.

9. DO NOT USE RETEMPERED CONCRETE, OR ADD WATER TO READY-MIX THE JOBSITE.

10. FOUNDATION INSTALLER SHALL INSURE THAT ALL PROTRUDING THREAI CLEAN AND FREE OF CONCRETE.

11. FOUNDATION DESIGN IS BASED ON SOIL WITH 2000 PSF BEARING CAP EXISTING SOIL DOES NOT HAVE A MINIMUM 2000 PSF BEARING CAPA SHALL EXTEND PERIMETER BEAM TO REACH SOIL WITH MINIMUM 2000 CAPACITY.

8"

12"

FCC REGISTRATION SIGN

WHITE/ GREEN BACKGROUND, WHITE/ BLACK LETTERING.
MOUNTING LOCATION: GATE & BASE OF TOWER
QUANTITY: 2
WHERE ACCESS GATE INSTALLED (QTY. 3)

10"

14"

DANGER NO TRESPASSING SIGN

WHITE/ BLACK BACKGROUND, WHITE/BLACK LETTERING.
MOUNTING LOCATION: GATE & BASE OF TOWER
QUANTITY: 2
WHERE ACCESS GATE INSTALLED (QTY. 3)

10"

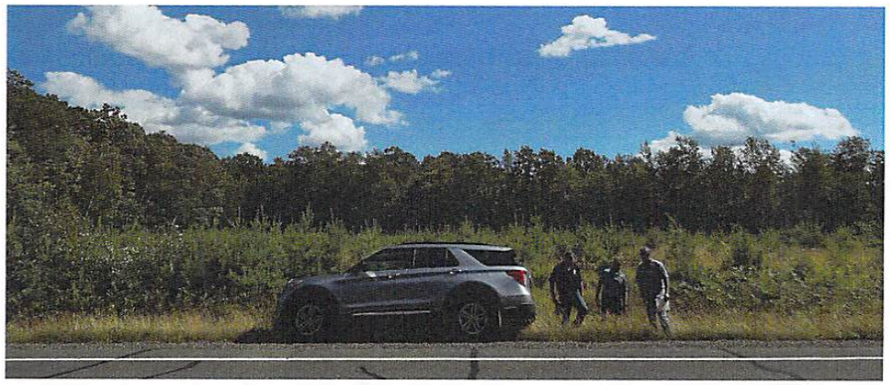
14"

AUTHORIZED PERSONNEL SIGN

WHITE/ BLACK BACKGROUND, WHITE/BLACK LETTERING.
MOUNTING LOCATION: GATE & BASE OF TOWER
QUANTITY: 2
WHERE ACCESS GATE INSTALLED (QTY. 3)

TOWERNORTH SIGN

WHITE/ BLACK BACKGROUND, BLUE LETTERING.
MOUNTING LOCATION: GATE
QUANTITY: 1
WHERE ACCESS GATE INSTALLED AND COMPOUND IS NOT VISIBLE FROM MAIN ROAD (QTY. 2)
(PROVIDED BY TOWER OWNER)

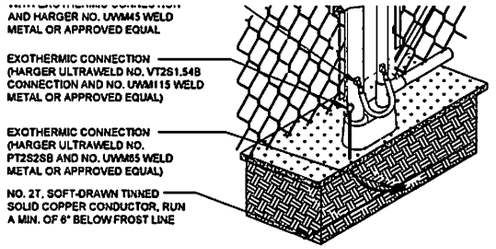


1 VIEW FACING SOUTH
SCALE: N.T.S.

2 S.T.H. 77
SCALE: N.T.S.

3 PROPOSED SITE LOCATION
SCALE: N.T.S.

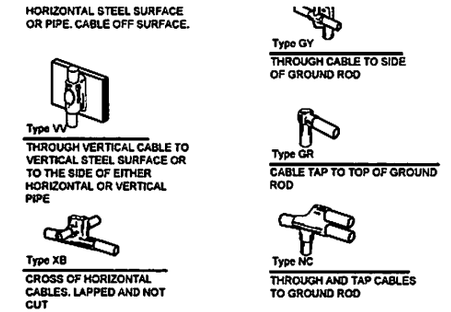
6 UTILTY POLE NEAR SITE
SCALE: N.T.S.



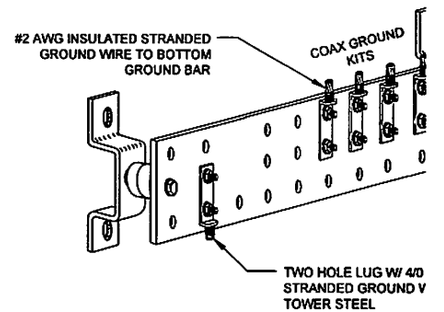
1 FENCE GROUNDING DETAIL
N.T.S.

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

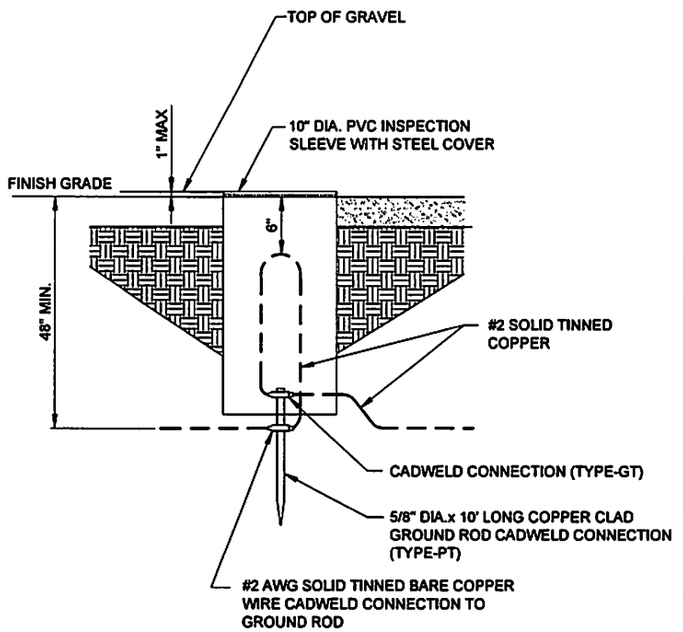
2 GROUND ROD DETAIL
SCALE: N.T.S.



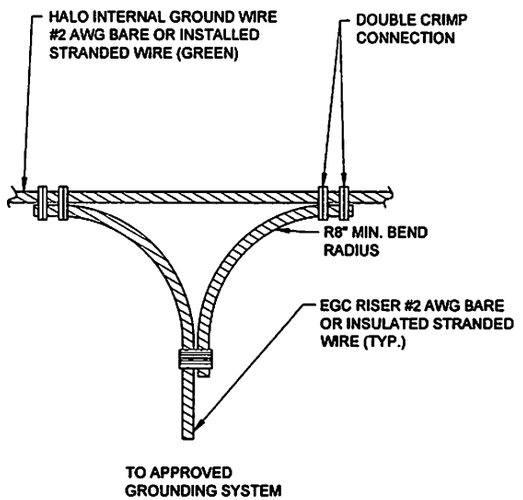
3 EXOTHERMIC WELD DETAILS
EXOTHERMIC AND HARGER ULTRAWELD OR APPROVED EQUAL



4 GROUND COLLECTOR
SCALE: N.T.S.

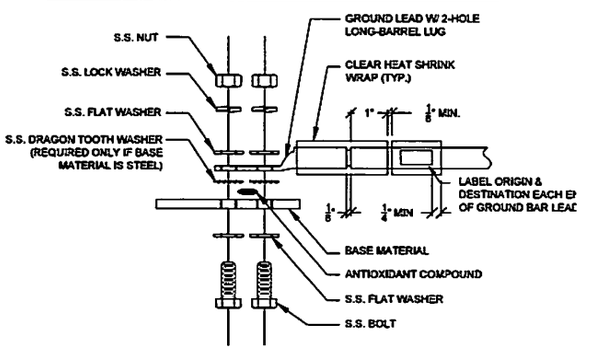


5 INSPECTION SLEEVE DETAIL
N.T.S.



6 HALO NON-DIRECTIONAL GROUND RING SPLICE DETAIL
N.T.S.

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



7 GROUND LUG INSTALLATION DETAIL
N.T.S.

(9) PROVIDE AN EXTERNAL #2 TNNCOATED GROUND LEAD FROM GROUND RING TO ALL METAL CABINETS ON UTILITY BACKBOARD (TELCO,ELEKTRIC,BREAKER PANELS, METER RACKS, JUNCTION BOXES, ETC.) SLEEVED IN CONDUIT FROM JUST BELOW GRADE TO SAND CABINETS USING BURNDY TYPE 2 LONG BARREL LUGS WITH NO-OK OR COPPER SHIELD

(10) ELECTRIC METER AND ELECTRIC SERVICE GROUNDING COORDINATE ALTERNATE WITH PM

(11) 24" x 30" x 24" FIBER OPTIC HAND HOLE

(12) MAINTAIN TWO FOOT DISTANCE OFF OF STRUCTURES.

(13) GROUND CHAIN LINK FENCE (TYPICAL) EXOTHERMIC CONNECTION (TYPE VS) GROUND FENCE POSTS WITHIN 6 FEET OF PLATFORM AND 25 FEET OF TOWER.

(14) PROPOSED TOWER GROUND RING

(15) PROPOSED COMPOUND GROUND RING

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

NOTES:

1. CONTRACTOR TO INSTALL GROUND RODS AS NEEDED TO PROVIDE RECOMMENDED RESISTIVITY. REFER TO ELECTRICAL AND GROUNDING NOTES ON SHEET E-1.
2. CONTRACTOR TO INSTALL HANDHOLES AS NECESSARY PER LOCAL UTILITY REQUIREMENTS.
3. **ALL GROUNDING CONDUCTORS ARE #2 AWG SOLID TINNED COPPER WIRE BARE, UNLESS NOTED OTHERWISE.**

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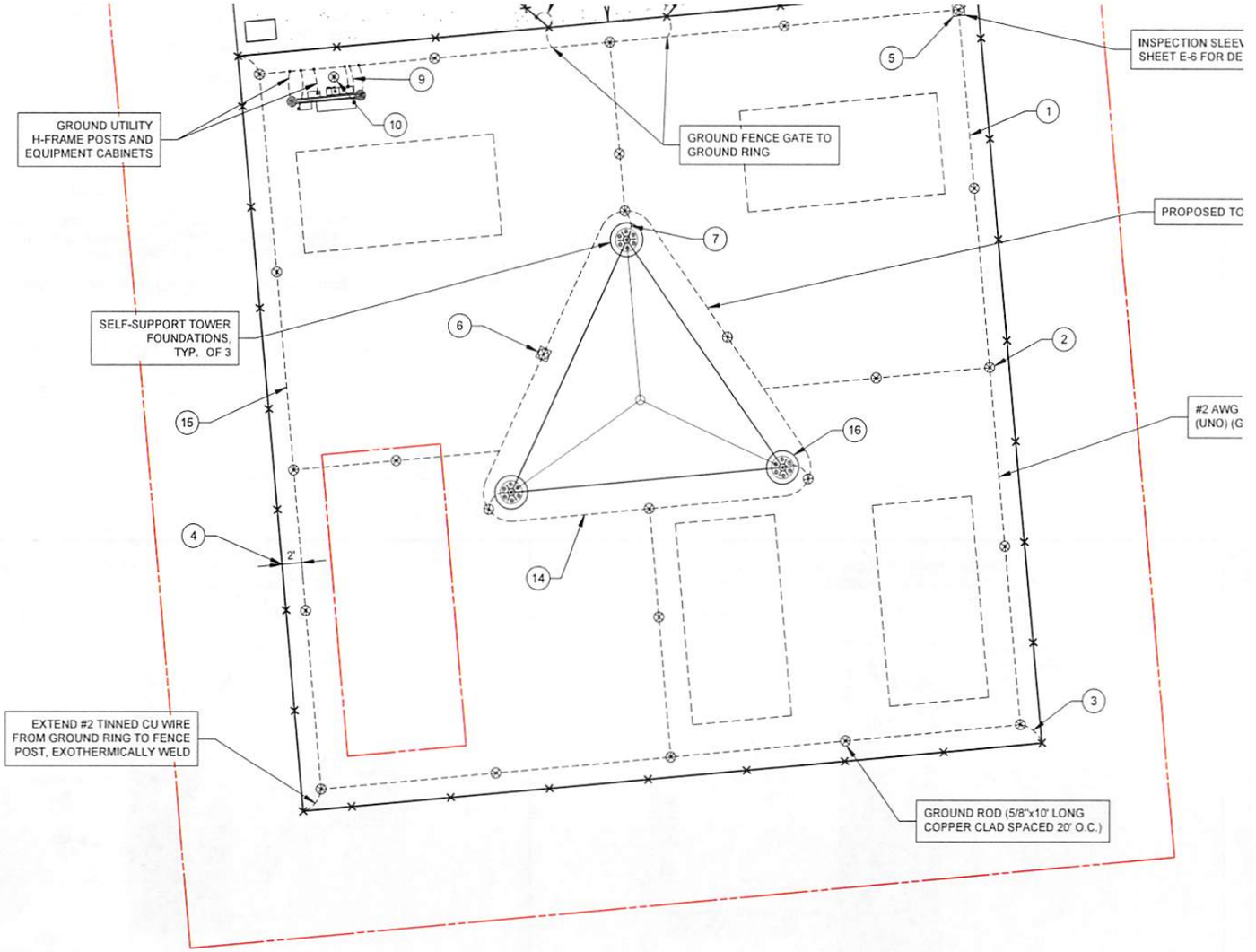
OTHER UTILITIES NOT INCLUDED IN DIGGERS HOTLINE AND LOCAL UTILITY DISTRICTS AND COMPANIES SHALL ALSO BE NOTIFIED

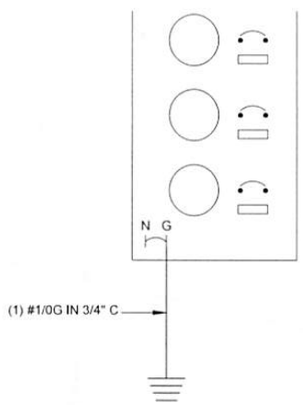
LEGEND:

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



1 SITE GROUNDING PLAN
SCALE: 1" = 5'

NO
SE
ON



NOTE:

CONTRACTOR TO CONFIRM BREAKER SIZE WITH TOWER LIGHTING MANUFACTURER

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.

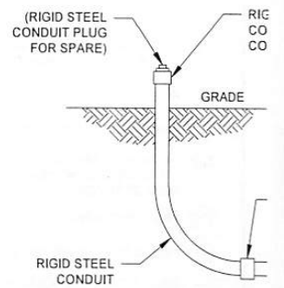
8. CONTRACTOR SHALL ENSURE ALL NEUTRAL CONDUCTORS HAVE WHITE INSULATION AND EQUIPMENT GROUND CONDUCTORS HAVE GREEN INSULATION. COLOR TAPE IDENTIFICATION OF THESE CONDUCTORS IS NOT ALLOWED.

9. PER NEC ARTICLE 702 PROVIDE SIGNAGE AS FOLLOWS:

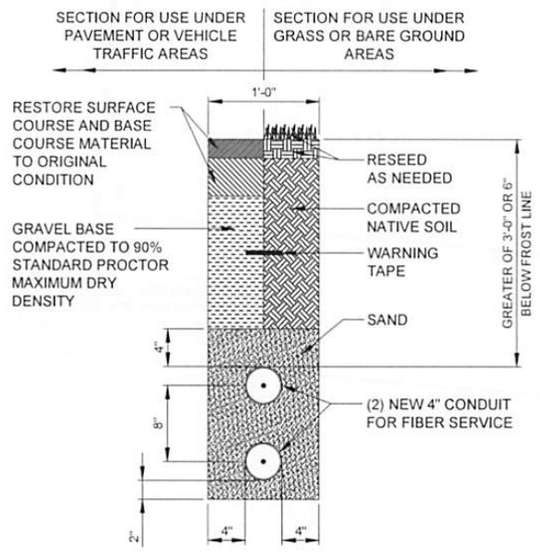
AT SERVICE DISCONNECT:

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

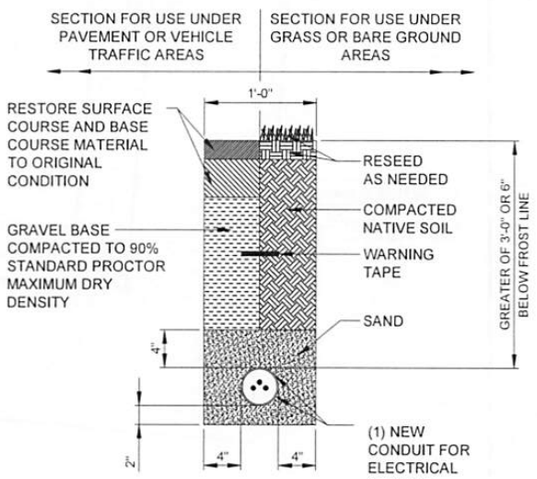
1 SINGLE LINE DIAGRAM (POWER)
SCALE: N.T.S.



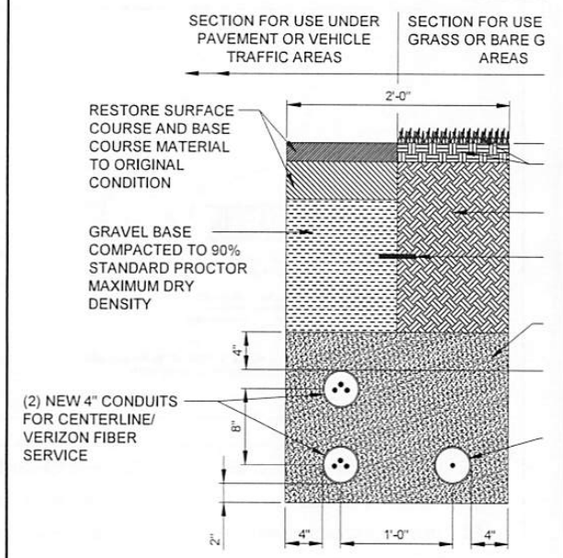
2 UNDERGROUND CONDUIT
SCALE: N.T.S.



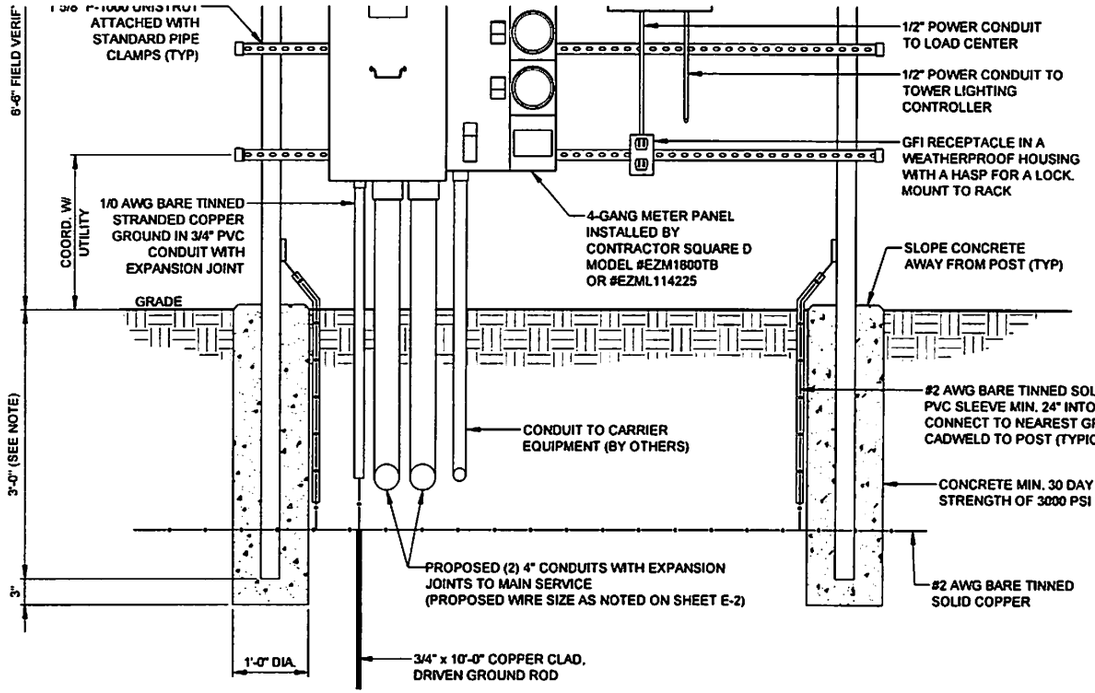
3 FIBER TRENCH DETAIL (IF REQUIRED)
N.T.S.



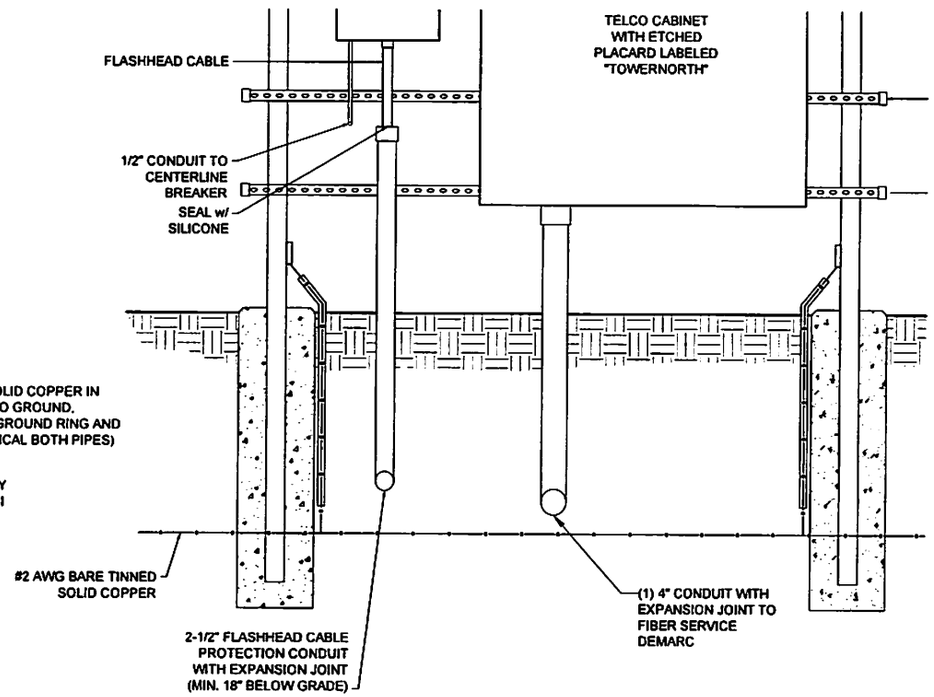
4 ELECTRICAL TRENCH DETAIL
N.T.S.



5 JOINT UTILITY TRENCH DETAIL
N.T.S.



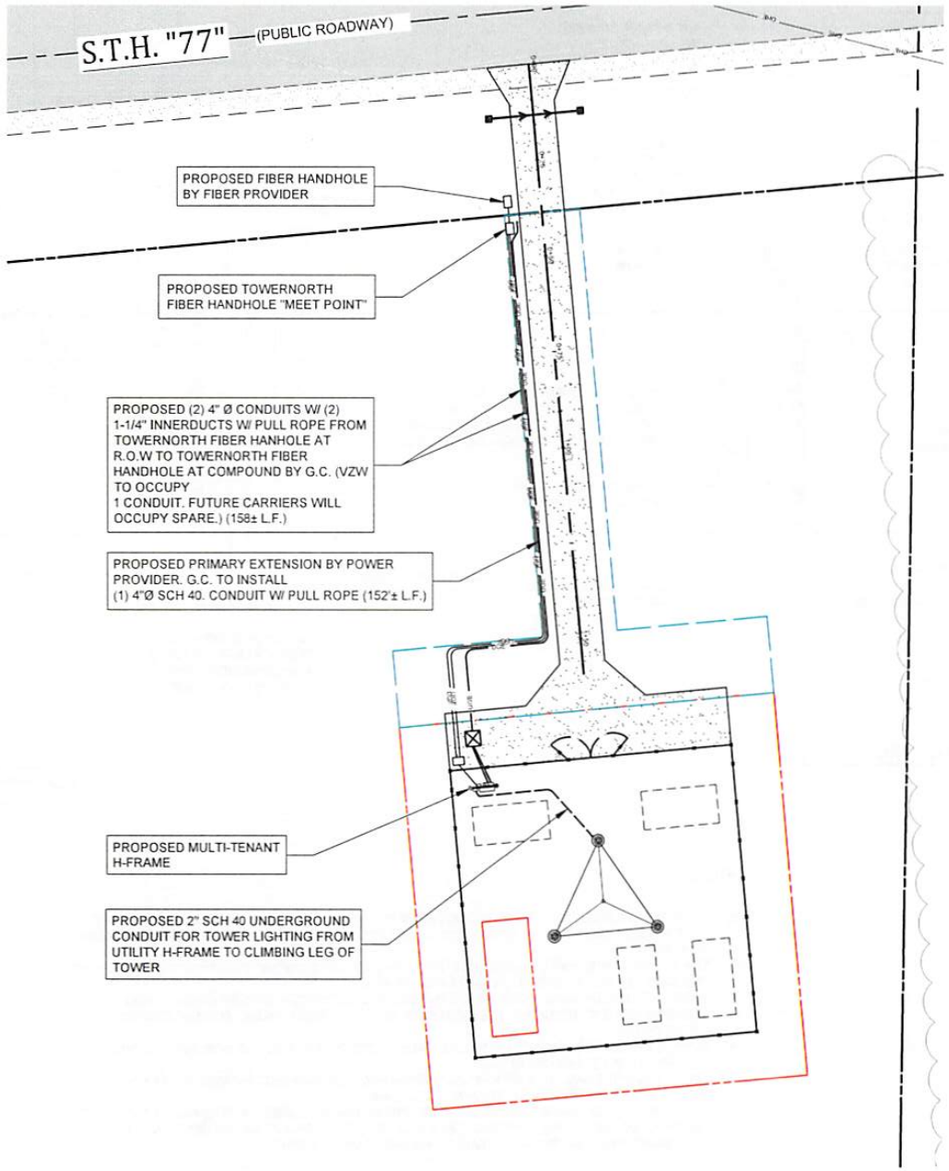
1 UTILITY H-FRAME DETAIL (GANG METER)
SCALE: 1" = 10'



2 UTILITY H-FRAME DETAIL (TELCO)
SCALE: 1" = 10'

NOTES:

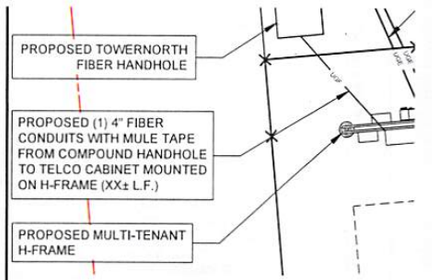
1. CONTRACTOR TO FIELD LOCATE THE METER PEDESTAL AS SHOWN ON THE PLAN. INSTALL THE METER PEDESTAL NEAR THE PERIMETER OF THE FENCED COMPOUND WITH THE METERS FACING AS SHOWN.
2. THE CONTRACTOR SHALL COORDINATE THE LOCAL UTILITY COMPANY FOR THE CONDUIT RUN TO THE MAIN SERVICE CONNECTION OR TRANSFORMER.
3. THE CONTRACTOR SHALL COORDINATE THE LOCAL UTILITY COMPANY FOR GROUND ROD REQUIREMENTS. IF REQUIRED, THE CONTRACTOR SHALL ORDER AN PAY FOR NECESSARY GROUND TEST.
4. SUPPORT POST AND UNISTRUT SHALL BE GALVANIZED. PIPE CLAMS AND HARDWARE SHALL BE GALVANIZED OR STAINLESS STEEL.
5. TELCO CABINET SHALL BE A 48" x 48" x12" HOFFMAN OR EQUIVALENT. PROVIDE 3/4" PLYWOOD BACKBOARD INSIDE THE MULTI-TENANT TELCO CABINET.
6. ADJUSTMENTS TO THE METER PEDESTAL DESIGN MAY BE REQUIRED DEPENDING ON THE EXACT METER PANEL INSTALLED. CONTRACTOR SHALL FIELD COORDINATE ADJUSTMENTS AND INFORM THE ENGINEER IF ANY UNUSUAL CONDITIONS ARE FOUND TO EXIST.



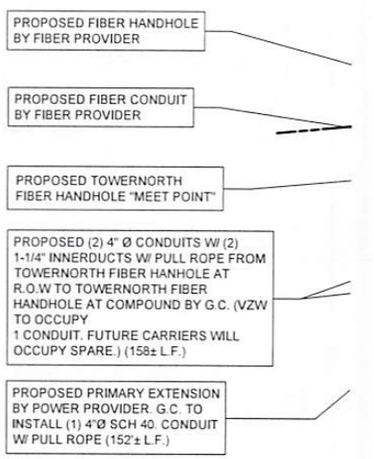
1 UTILITY ROUTING PLAN
SCALE: 1" = 20'

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

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



2 UTILITY ROUTING PLAN A
SCALE: 1" = 5'



3 UTILITY ROUTING PLAN
SCALE: 1" = 5'

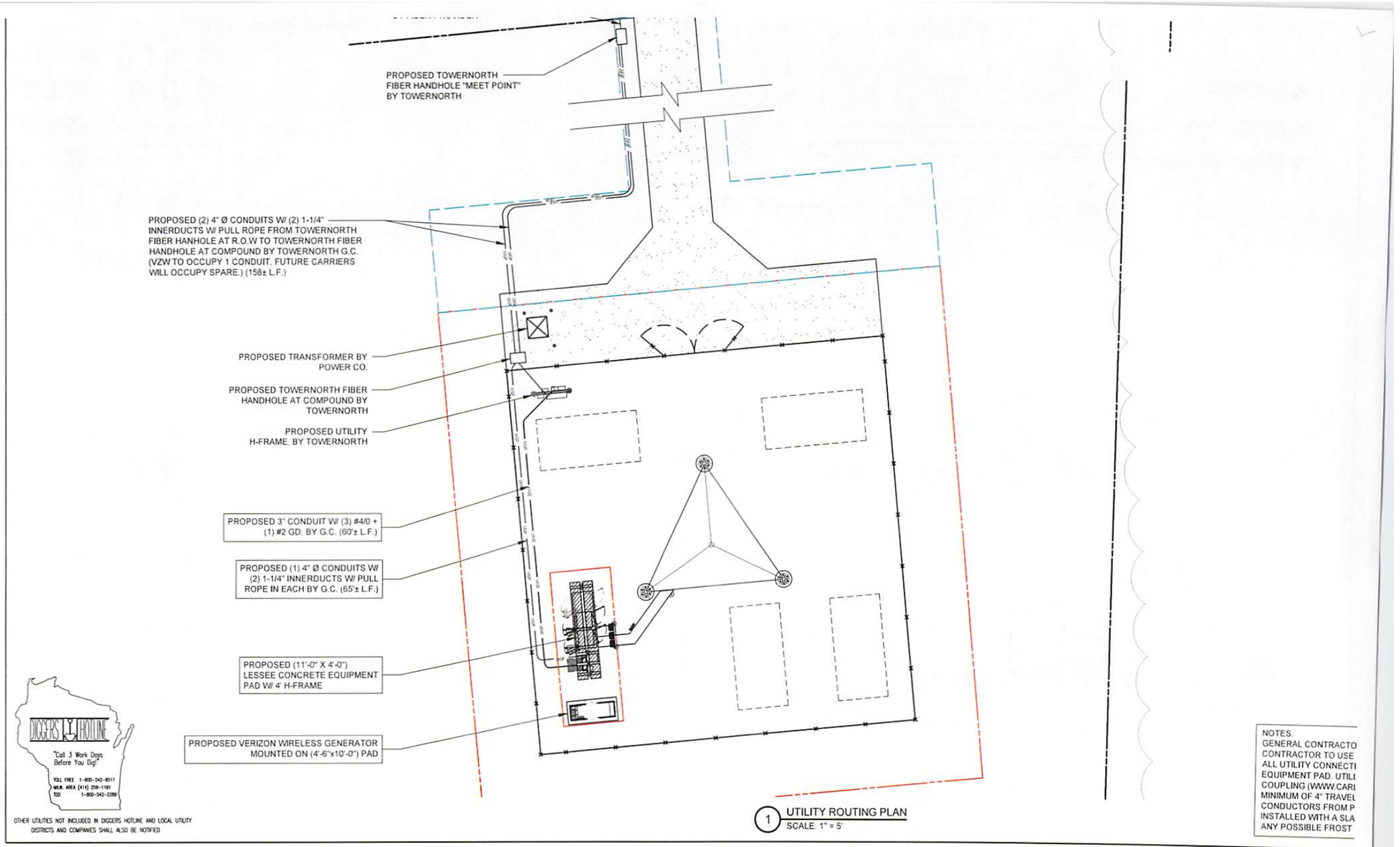
LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, ½ INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NE & OSHA.

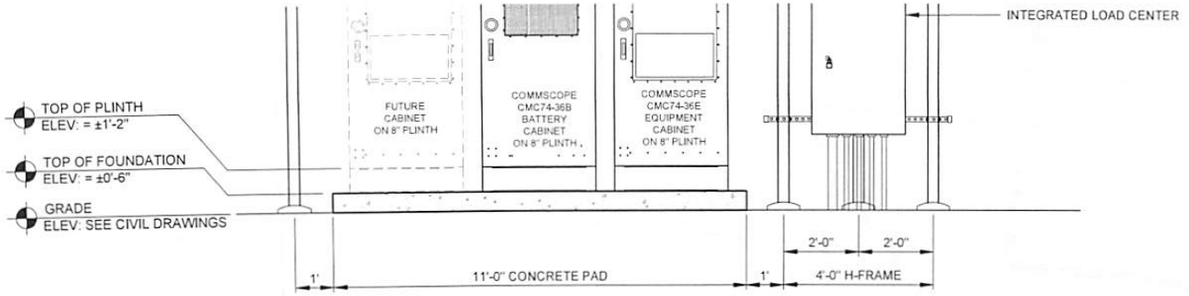
8. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (IE., PANELBOARD AND CIRCUIT ID'S).
9. PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.
10. 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 OR XHHW-2, STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
11. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE USE-2 CABLE (314 AWG OR LARGER), 600 V, OIL RESISTANT RHW-2 OR XHHW-2, STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.
12. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 90°C.
13. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.
14. ELECTRICAL METALLIC TUBING (EMT) OR RIGID METALLIC CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
15. ELECTRICAL METALLIC TUBING (EMT) OR RIGID METALLIC CONDUIT (RMC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
16. RIGID NON-METALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR IN ARES OF HEAVY VEHICLE TRAFFIC, GALVANIZED RIGID CONDUIT SHALL BE USED.
17. ALL OUTDOOR EXPOSED CONDUIT SHALL BE RMC AND SHALL BE SUPPORTED ADEQUATELY.
18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT LTMC) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED. LFMC SHALL CONFORM TO NEC ARTICLE 350.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES, AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.
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) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
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 WEATHER PROTECTED (WP 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 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
24. NON-METALLIC 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. CONTRACTOR SHALL APPLY FOR ELECTRICAL SERVICE AS SOON AS POSSIBLE AND COORDINATE REQUIREMENTS, SERVICE ROUTING, AND METER SOCKET TYPE WITH LOCAL POWER COMPANY.
30. CONTRACTOR SHALL LABEL ELECTRICAL EQUIPMENT IN ACCORDANCE WITH NEC 110.16 AND 110.24.
31. CONTRACTOR SHALL VERIFY THAT THE MAIN BONDING JUMPER AND GROUNDING ELECTRODE CONDUCTOR IS INSTAL PROPERLY AT SERVICE ENTRANCE.
32. CONTRACTOR SHALL SEAL AROUND ALL CONDUIT PENETRATIONS TO PREVENT MOISTURE PENETRATION OR VERMIN INFESTATIONS.
33. DURING TRENCH BACK-FILLING FOR EACH UNDERGROUND ELECTRICAL, TELEPHONE, SIGNAL AND COMMUNICATIONS PROVIDE A CONTINUOUS UNDERGROUND WARNING TAPE TWELVE INCHES BELOW FINISHED GRADE.

GROUNDING NOTES

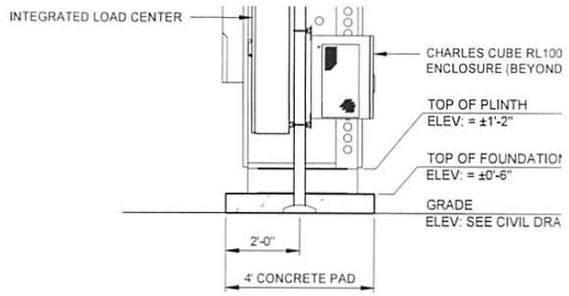
1. ALL GROUNDING CONNECTIONS SHALL BE MADE USING EXOTHERMIC WELDING PROCESS (CAD WELD OR EQUAL) EXC THAT MAY BE MECHANICALLY FASTENED. ALL LUGS SHALL BE TWO HOLE, LONG BARREL TYPE, FOR COPPER, UNL NOTED.
2. ALL GROUND PLATES SHALL BE INSTALLED AT 30" BELOW GRADE PER MANUFACTURER'S SPECIFICATIONS. UNDERG CONDUCTORS SHALL BE 30" BELOW GRADE.
3. ALL GROUND CONDUCTORS SHALL BE MIN. #2 AWG SOLID TINNED COPPER WIRE BARE. EQUIPMENT GROUND CONDU MIN. #6 GREEN INSULATED, UNLESS OTHERWISE NOTED.
4. GROUND PLATES FOR GROUND RING SHALL BE LOCATED 5'-0" APART.
5. ANY METAL OBJECT WITHIN 6 FEET OF THE TOWER OR EQUIPMENT GROUND RING SHALL BE BONDED DIRECTLY TO
6. THE MINIMUM BENDING RADIUS FOR ALL GROUNDING CONDUCTORS #6 AWG OR LARGER SHALL BE 24".
7. ALL ABOVE GRADE GROUND CONDUCTORS SHALL BE ROUTED DOWNWARD TOWARD EARTH AND HORIZONTAL ONLY
8. ALL CONDUCTORS SHALL BE ROUTED SUCH THAT THERE ARE NO INCLUSIVE ANGLES OF LESS THAN 90 DEGREES.
9. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AN ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES A ACHIEVE A RECOMMENDED TEST RESULT OF 5 OHMS OR LESS.
10. ALL GROUNDING SHALL COMPLY WITH THE N.E.C. AND NFPA 780, "LIGHTING PROTECTION CODE".
11. ALL GROUNDING COMPONENTS SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR.
12. ANY METAL CONDUIT MOUNTED ON THE TOWER SHALL BE BONDED TO THE TOWER AT EACH END.
13. ALL EXPOSED GROUNDING SHALL BE IN NON-METALLIC FLEX CONDUIT AND SECURED AS NECESSARY.
14. WHEN BONDING TO EQUIPMENT, REMOVE PAINT TO BARE STEEL AND PROTECT WITH A COATING OF NO-OX.
15. APPROVED ANTIOXIDANT COATINGS SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
16. BOND ICE BRIDGE SECTIONS TOGETHER EXOTHERMICALLY OR WITH 2 HOLE LUGS. BOND ICE BRIDGE TO SUPPORT

1 NORTH ELEVATION
SCALE: 1/16" = 1'-0"

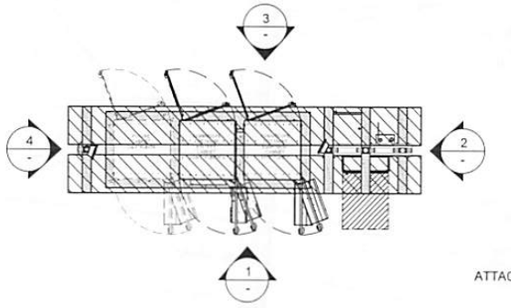

PROPOSED TOWERNORTH FIBER HANDHOLE "MEET POINT" BY TOWERNORTH
PROPOSED (2) 4" Ø CONDUITS W/ (2) 1-1/4" INNERDUCTS W/ PULL ROPE FROM TOWERNORTH FIBER HANHOLE AT R.O.W TO TOWERNORTH FIBER HANDHOLE AT COMPOUND BY TOWERNORTH G.C. (VZW TO OCCUPY 1 CONDUIT. FUTURE CARRIERS WILL OCCUPY SPARE.) (158± L.F.)
PROPOSED TRANSFORMER BY POWER CO.
PROPOSED TOWERNORTH FIBER HANDHOLE AT COMPOUND BY TOWERNORTH
PROPOSED UTILITY H-FRAME, BY TOWERNORTH
PROPOSED 3" CONDUIT W/ (3) #4/0 + (1) #2 GD; BY G.C. (60'± L.F.)
PROPOSED (1) 4" Ø CONDUITS W/ (2) 1-1/4" INNERDUCTS W/ PULL ROPE IN EACH BY G.C. (65'± L.F.)
PROPOSED (11'-0" X 4'-0") LESSEE CONCRETE EQUIPMENT PAD W/ 4' H-FRAME
PROPOSED VERIZON WIRELESS GENERATOR MOUNTED ON (4'-6"x10'-0") PAD
DIGGERS HOTLINE
"Call 3 Work Days Before You Dig"
TOLL FREE 1-800-242-8511
MILW. AREA (414) 259-1181
TDD 1-800-542-2289
OTHER UTILITIES NOT INCLUDED IN DIGGERS HOTLINE AND LOCAL UTILITY DISTRICTS AND COMPANIES SHALL ALSO BE NOTIFIED
1 UTILITY ROUTING PLAN
SCALE: 1" = 5'
NOTES:
GENERAL CONTRACTO
CONTRACTOR TO USE
ALL UTILITY CONNECTI
EQUIPMENT PAD. UTILI
COUPLING (WWW.CARI
MINIMUM OF 4" TRAVEL
CONDUCTORS FROM P
INSTALLED WITH A SLA
ANY POSSIBLE FROST

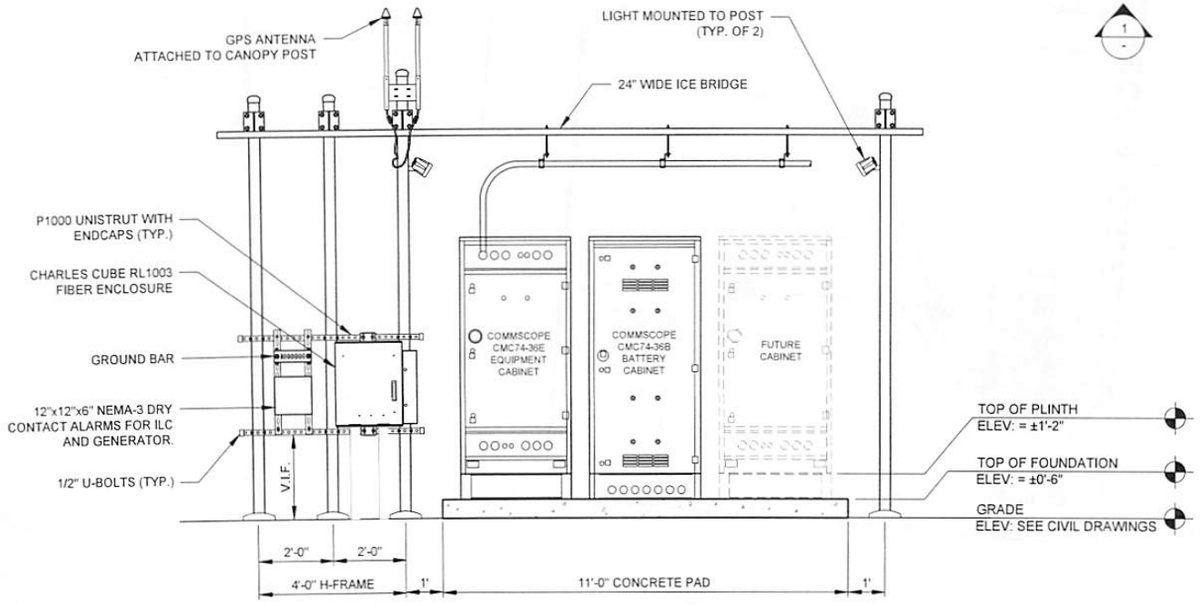


1 EQUIPMENT PAD ELEVATION
SCALE: N.T.S.

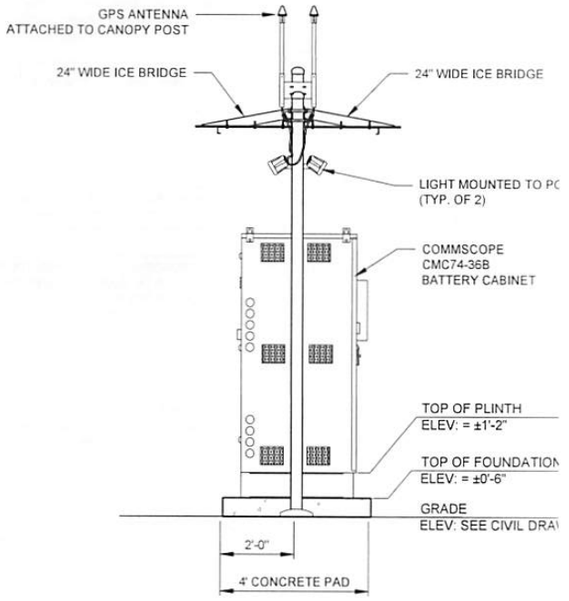


2 EQUIPMENT PAD ELEVATION
SCALE: N.T.S.

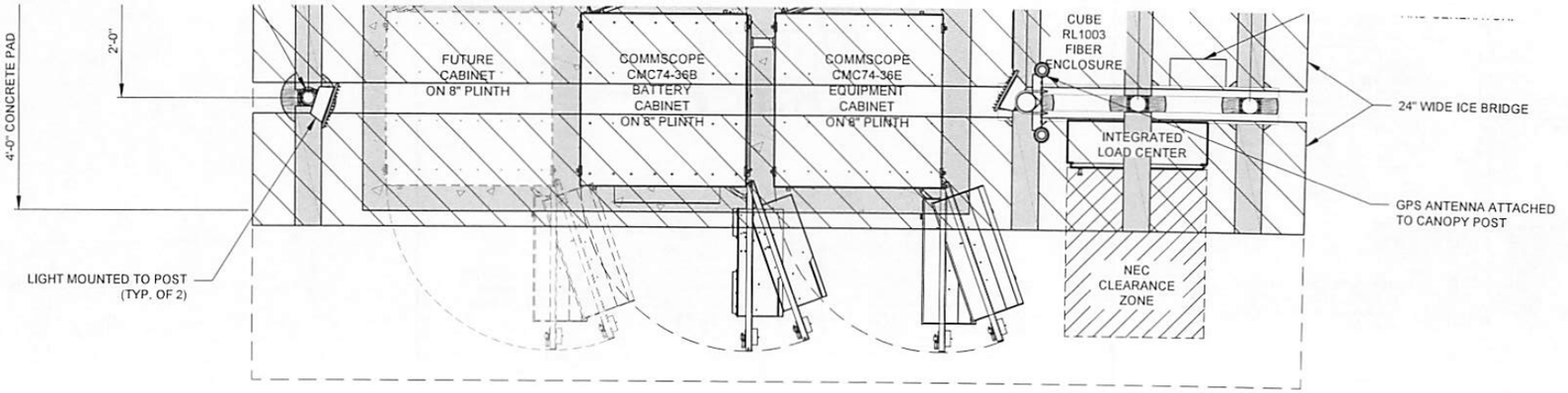




3 EQUIPMENT PAD ELEVATION
SCALE: N.T.S.



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



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

LEGEND

= CANOPY/CONCRETE PAD

= ICE BRIDGE

NOTES:

1. THIS IS AN UNMANNED STORAGE AND EQUIPMENT PAD (
2. PAD SHALL BE PLACED ACCORDING TO STATE AND LOCA PROPERTY LINE, INTERIOR LOT LINE OR ANY OTHER BUI
3. ALL ITEMS NOTED AS "FIELDWORK" SHALL BE INSTALLED FACTORY THEN REMOVED FOR TRANSPORT AND REINST
4. PAD NOT DESIGNED FOR INSTALLATION IN A FLOOD PRO
5. THIS PAD DOES NOT CONTAIN PLUMBING FACILITIES.
6. THIS ENCLOSURE IS CLASSIFIED AS USE S-2 (IBC, FBC), U
   2006-2015 INTERNATIONAL BUILDING CODE
   2009-2012 UNIFORM MECHANICAL CODE
   2006-2015 INTERNATIONAL MECHANICAL CODE
   2004 CHICAGO BUILDING CODE

   DESIGN PARAMETERS
   USE GROUP: S-2 (IBC, FBC)
   U (OBC)
7. 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)

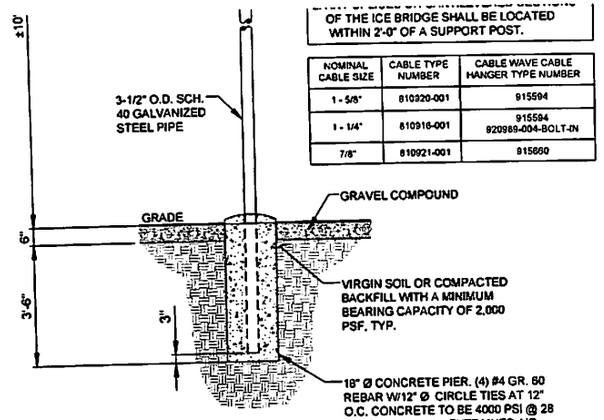
   USE
   SITE

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

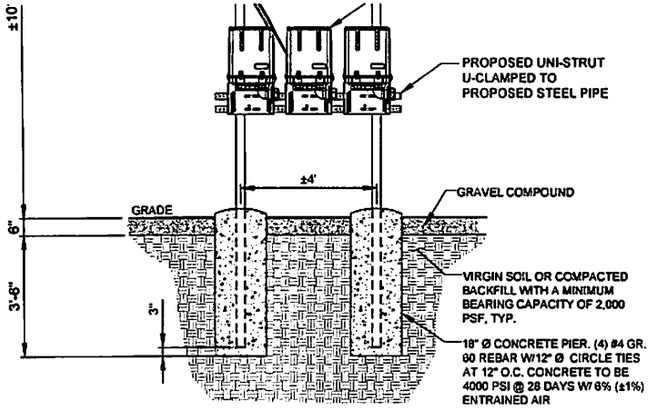
8. CONCRETE PAD AND ASSOCIATED EQUIPMENT IS PROVIC SEPARATE CONTRACT. EQUIPMENT ENCLOSURE INFORM HEREIN IS PROVIDED FOR REFERENCE ONLY AND IS TAK MANUFACTURER'S AVAILABLE DATA. REFER TO CIVIL, ST ELECTRICAL DRAWINGS FOR WORK TO BE PERFORMED

OF THE ICE BRIDGE SHALL BE LOCATED WITHIN 2'-0" OF A SUPPORT POST.

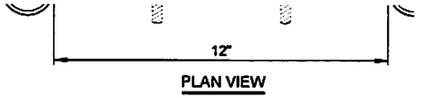
NOMINAL CABLE SIZE	CABLE TYPE NUMBER	CABLE WAVE CABLE HANGER TYPE NUMBER
1 - 5/8"	810320-001	915594
1 - 1/4"	810916-001	915594 920989-004-BOLT-IN
7/8"	810921-001	915660



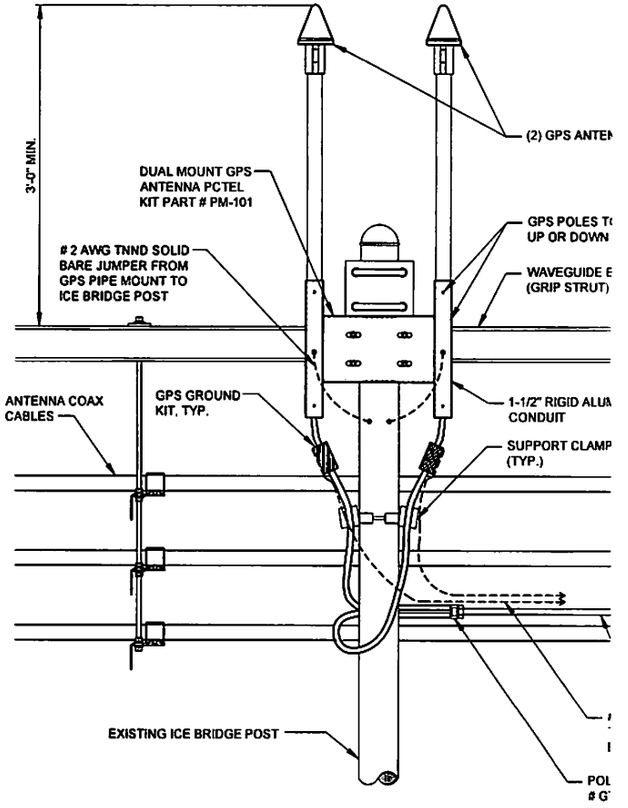
1 ICE BRIDGE DETAIL
N.T.S.



2 RAYCAP MOUNT DETAIL - IF APPLICABLE
N.T.S.

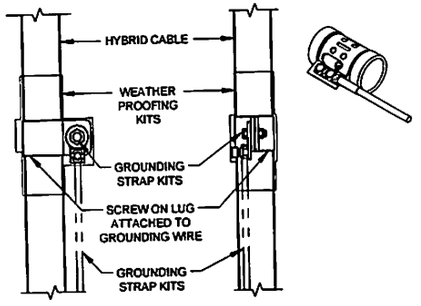


PLAN VIEW



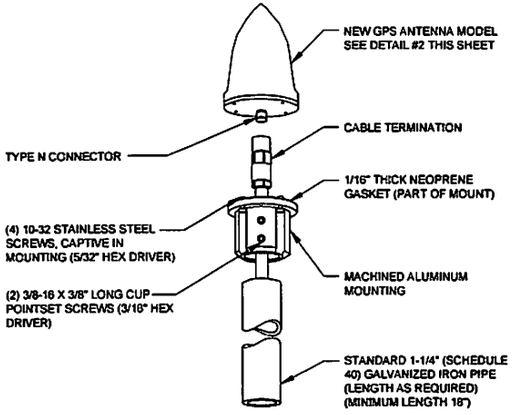
3 GPS MOUNTING DETAIL
N.T.S.

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

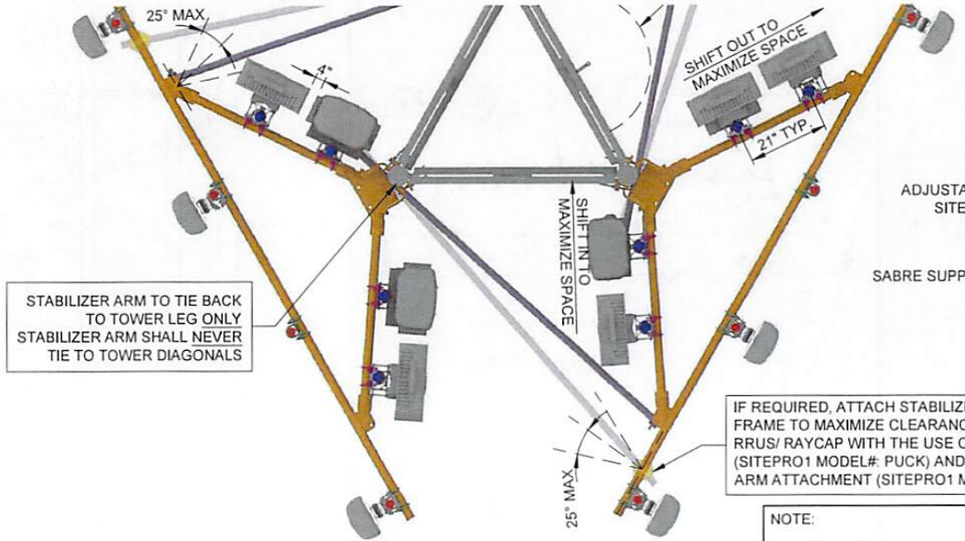


5 COAX/ HYBRID GROUND KIT DETAIL
N.T.S.

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



4 TYPICAL GPS DETAIL
N.T.S.



STABILIZER ARM TO TIE BACK TO TOWER LEG ONLY
STABILIZER ARM SHALL NEVER TIE TO TOWER DIAGONALS

IF REQUIRED, ATTACH STABILIZER ARM AT END OF FRAME TO MAXIMIZE CLEARANCE FROM RRUS/ RAYCAP WITH THE USE OF ADJUSTABLE PUCK (SITEPRO1 MODEL#: PUCK) AND UNIVERSAL STIFF ARM ATTACHMENT (SITEPRO1 MODEL #: SAM-U)

NOTE:

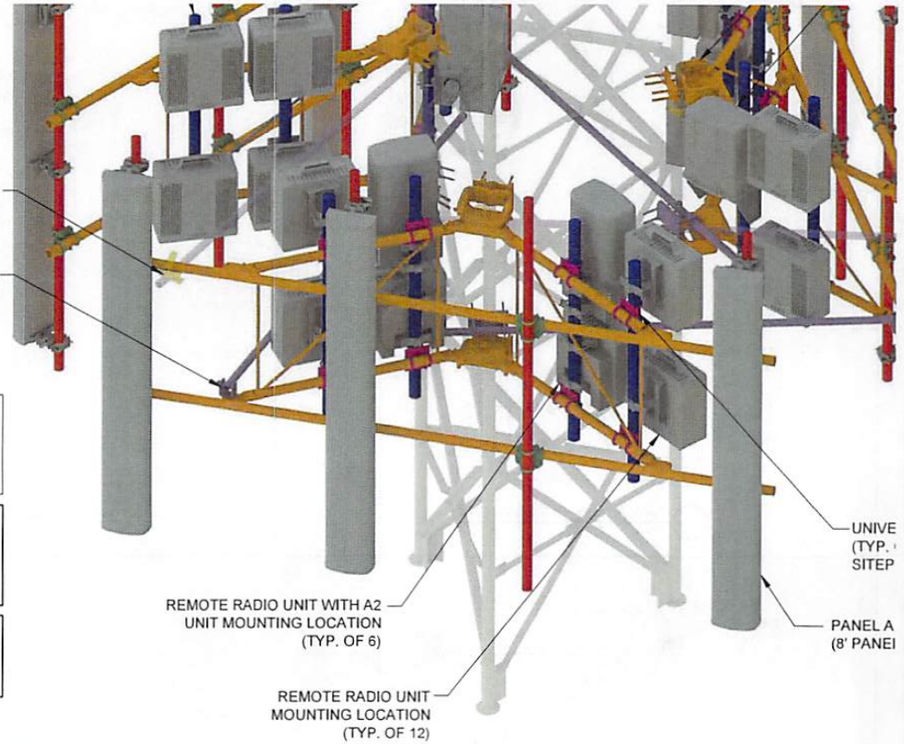
UNLESS SPECIFIED DIFFERENTLY IN RFDS, G.C. TO MOUNT ANTENNAS WITH 700 TECHNOLOGY ON OPPOSITE ENDS OF FRAME.

CONFIGURATION SHOWN IS CONCEPTUAL, AND IS MEANT TO DEMONSTRATE REQUIRED MOUNTING LOCATIONS. REFER TO SHEET ANT-2 FOR ACTUAL EQUIPMENT QUANTITIES

NOTE:

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.

1 PLAN VIEW
SCALE: N.T.S.



ADJUSTABLE PUCK (TYP. OF 3)
SITEPRO1 MODEL #: PUCK
(IF REQUIRED)

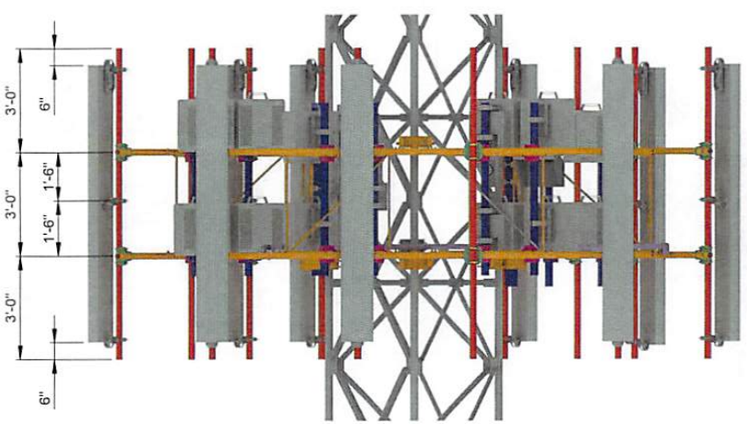
SABRE SUPPLIED STABILIZER ARM
(TYP. OF 3)

REMOTE RADIO UNIT WITH A2 UNIT MOUNTING LOCATION
(TYP. OF 6)

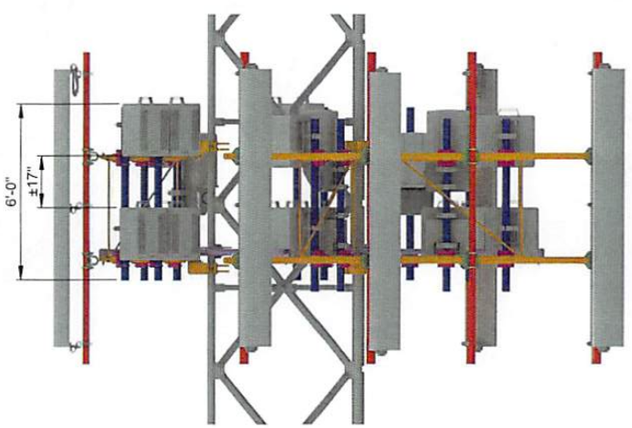
REMOTE RADIO UNIT MOUNTING LOCATION
(TYP. OF 12)

UNIVE
(TYP.
SITEP

PANEL A
(8' PANEI

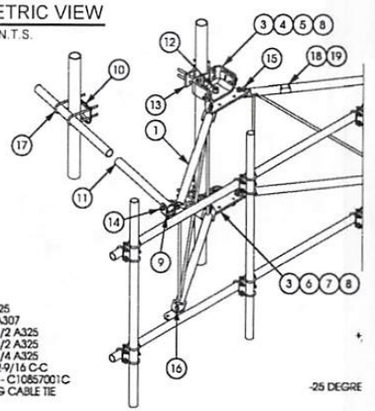


3 FRONT VIEW
SCALE: N.T.S.



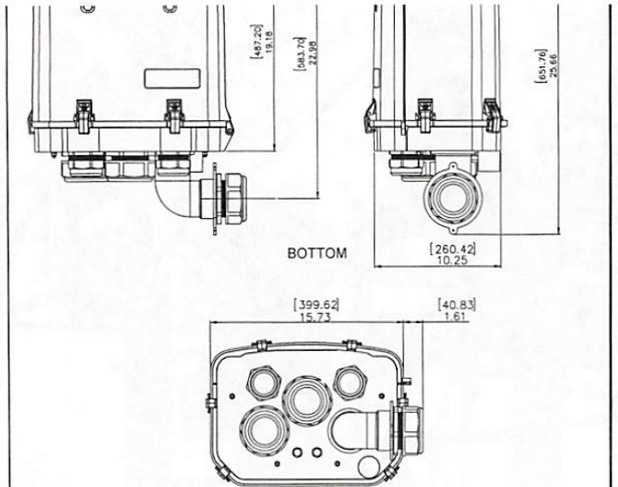
4 SIDE VIEW
SCALE: N.T.S.

2 ISOMETRIC VIEW
SCALE: N.T.S.

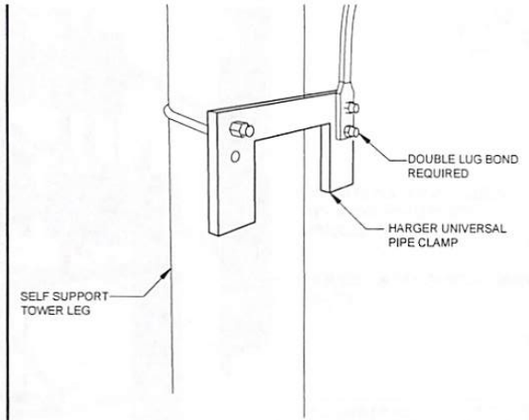


ITEM	DESCRIPTION
1	WELDMENT, STAND OFF
2	WELDMENT, FACE PIPE
3	PLATE, ROTATING
4	PLATE, PIVOTING (UPPER)
5	PLATE, LEG CLAMP (UPPER)
6	PLATE, PIVOTING (LOWER)
7	PLATE, LEG CLAMP (LOWER)
8	PLATE, LEG CLAMP (BACK)
9	PLATE, TIE BACK SWIVEL
10	PLATE, TIE BACK CLAMP
11	PIPE, TIE BACK
12	BOLT ASSEMBLY, 1 DIA. x 3 A325
13	BOLT ASSEMBLY, 5/8 DIA. x 8 A307
14	BOLT ASSEMBLY, 5/8 DIA. x 4-1/2 A325
15	BOLT ASSEMBLY, 5/8 DIA. x 2-1/2 A325
16	BOLT ASSEMBLY, 5/8 DIA. x 2-1/4 A325
17	U-BOLT ASSEMBLY, 1/2 DIA. x 2-9/16 C-C
18	MOUNT CLASSIFICATION TAG - C10857001C
19	STAINLESS STEEL SELF-LOCKING CABLE TIE

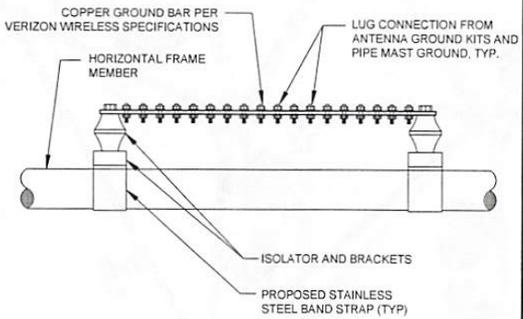
5 SECTOR FRAME DETAIL
SCALE: N.T.S.



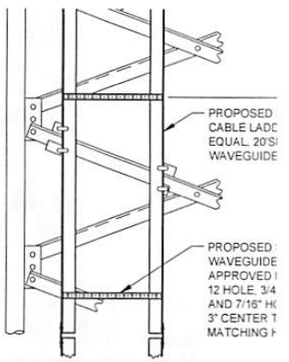
1 RAYCAP JUNCTION BOX DETAIL
SCALE: N.T.S.



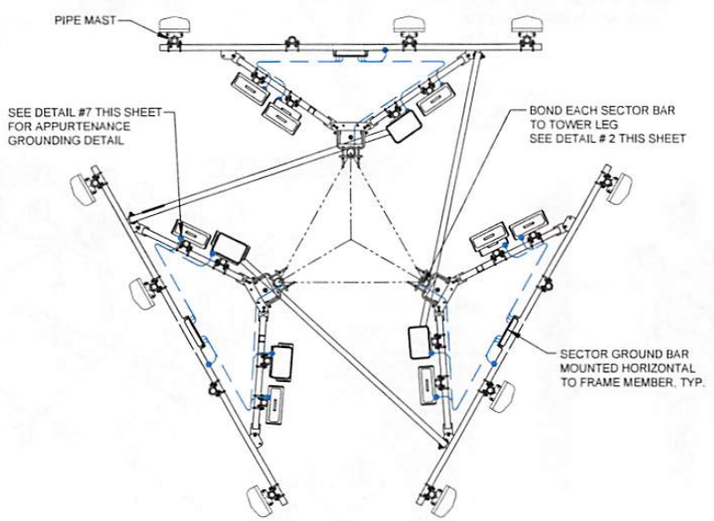
2 SELF SUPPORT TOWER (ROUND MEMBER)
SCALE: N.T.S.



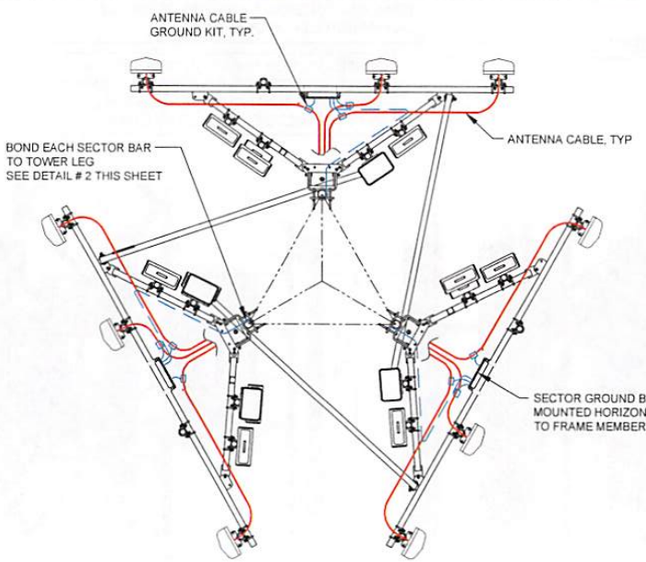
3 GROUND BAR AT SECTOR
N.T.S.



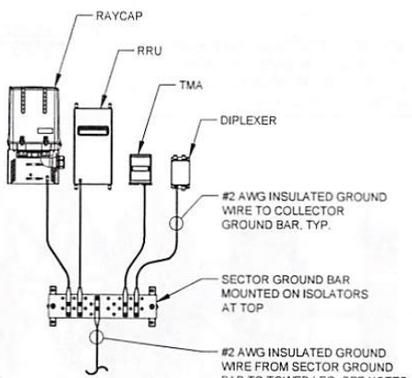
4 TRANSMISSION LINE HANG
N.T.S.



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



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



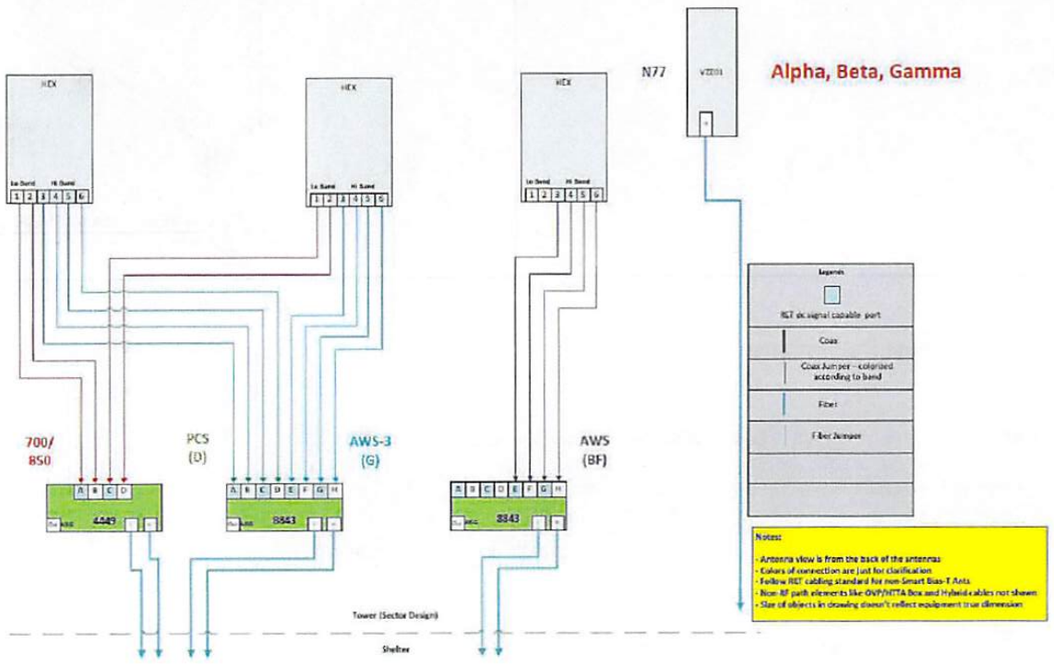
THIS DETAIL IS CONCEPTUAL TO DEMONSTRATE GROUNDING AT THE ANTENNA LEVEL. VERIFY EQUIPMENT, MOUNTING FRAME, AND AZIMUTH WITH ANT-1 SHEET & ECR.

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

APPROVED UL LIS	
APPLICATION	UL
METAL FLANGE	
PIPE MEMBER	
LARGER PIPE MEMBER	UI CLA
TO TOWER LEG	HAI

NOTES:

1. THE BOND BETWE THE TOWER IS TO TO TOWER LEG. T BE A UL APPROVE CLAMP.
2. GROUND CONNEC HOLE CONNECTIO TO EQUIPMENT TH DOUBLE HOLE CO



1 CABLE DIAGRAM
N.T.S.

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

Raycap Layout - Raycap Per Sector

POWER

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

FIBER

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

2 RAYCAP TABLE
N.T.S.

Removed

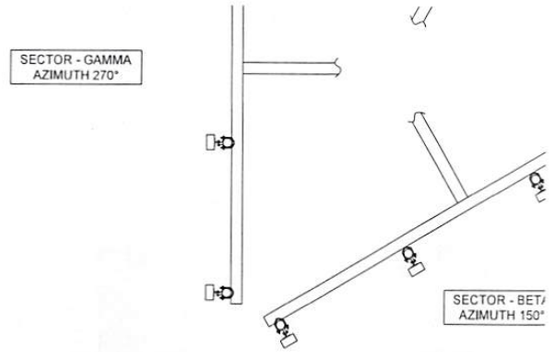
700	850	1900	AWS	AWS3	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity	Item ID
No data available															

Retained

700	850	1900	AWS	AWS3	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity	Item ID
No data available															

Added: 12 | Removed: 0 | Retained: 0

1 ANTENNA SUMMARY
N.T.S.



3 ANTENNA PLAN SCHEMATIC
N.T.S.

Equipment Summary

Added

Equipment Type	Location	700	850	1900	AWS	AWS3	L-Sub6	Make	Model	Cable Length	Cable Size	Install Type	Quantity	Item ID
Hybrid Cable	Tower							COMMSCOPET-001	HFT1206-24SV4-xxxG			PHYSICAL	3	
RRU	Tower	LTE	LTE 5G					Ericsson	4449			PHYSICAL	3	KRC161749/1
RRU	Tower			LTE	LTE	LTE		Ericsson	8843			PHYSICAL	6	KRC161707/2
RRU	Tower						5G	Ericsson	AIR6449			PHYSICAL	3	
OVP Box	Tower							RAYCAPINC-001	RVZDC-3315-PF-48			PHYSICAL	3	RVZDC-3315-PF-48

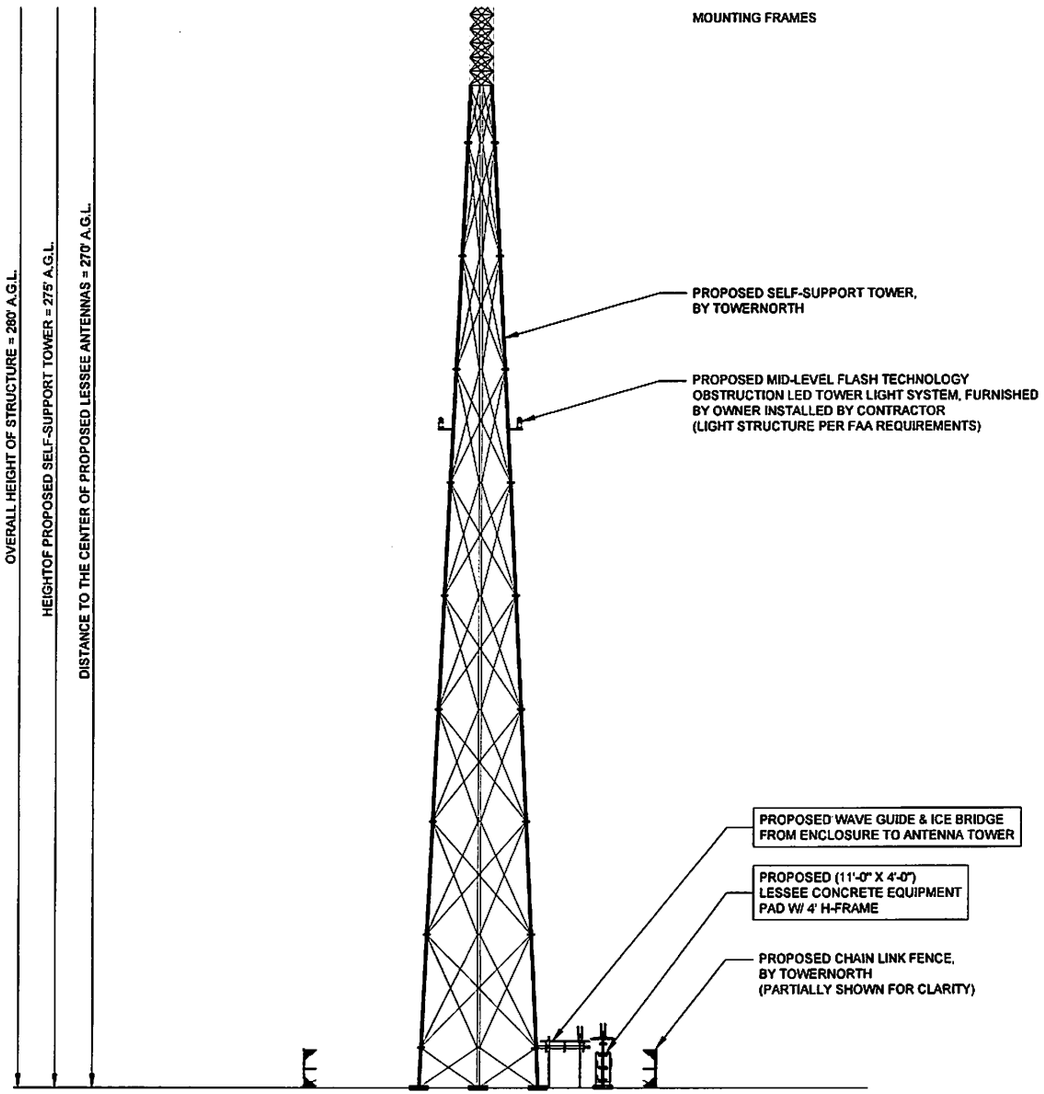
Removed

Equipment Type	Location	700	850	1900	AWS	AWS3	L-Sub6	Make	Model	Cable Length	Cable Size	Install Type	Quantity	Item ID
No data available.														

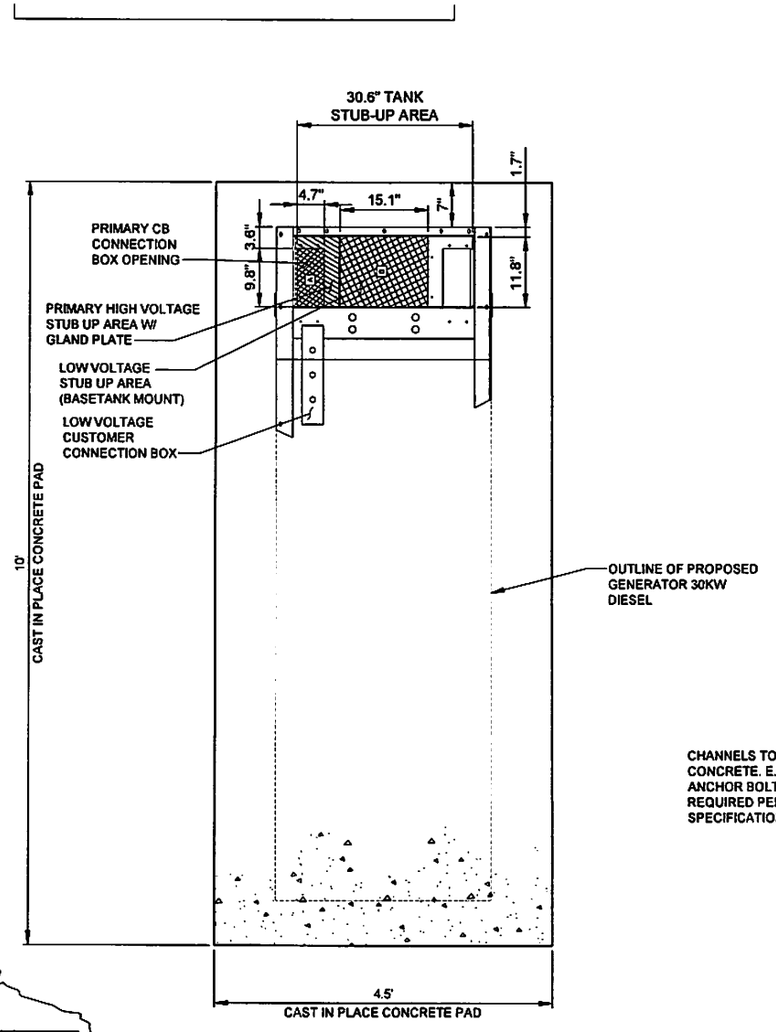
Retained

Equipment Type	Location	700	850	1900	AWS	AWS3	L-Sub6	Make	Model	Cable Length	Cable Size	Install Type	Quantity	Item ID
No data available.														

2 EQUIPMENT SUMMARY
N.T.S.



1 NORTH ELEVATION
SCALE: 1/16" = 1'-0"



PLAN VIEW

1 TYPICAL GENERAC FOUNDATION DETAIL
SCALE: 1" = 1'

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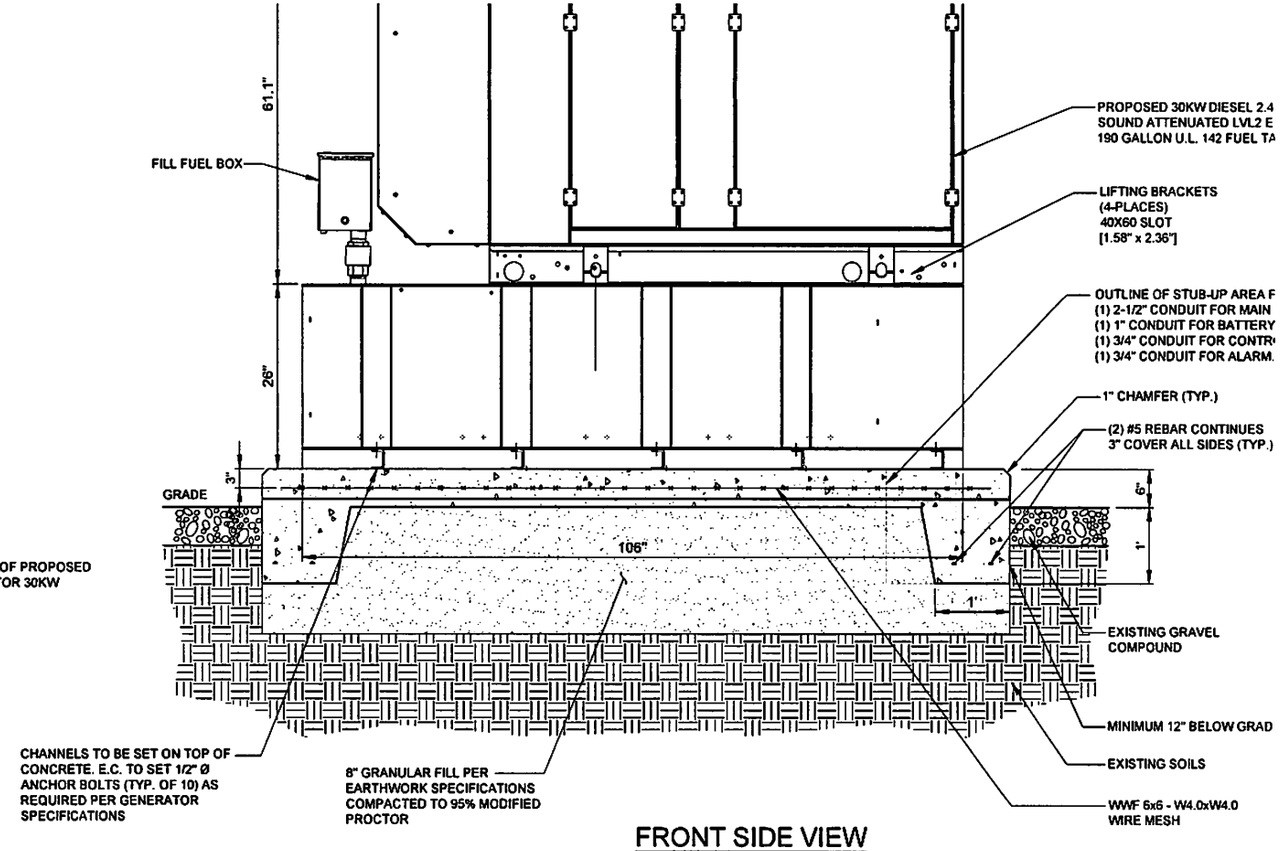
TDD 1-800-542-2289

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

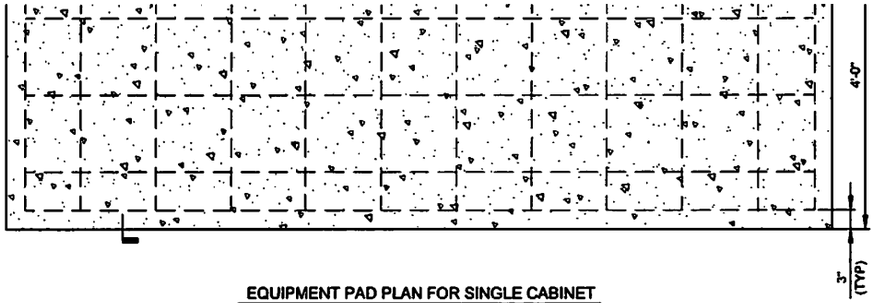


FRONT SIDE VIEW

2 TYPICAL GENERAC FOUNDATION DETAIL
SCALE: 1" = 1'

NOTES:

1. SEE GENERATOR MANUFACTURE'S DRAWINGS FOR PHYSICAL LOCATION OF FUEL LINES, CONTROL AND POWER INTERCONNECTIONS AND OTHER INTEF CAST INTO THE CONCRETE. THE PREFERRED METHOD IS TO BRING THE CONDI THE UNDERSIDE OF THE GENERATOR (MINIMIZES RODENT DAMAGE). FINISH C(FLEXIBLE CONDUIT PER GENERATOR MANUFACTURES SPECS. RIGID CONDUITS THE EXISTING SLAB, THEN BURIED BETWEEN SLAB AND SHELTER.
2. -THE GENERATOR SHALL BE LOCATED A MIN 5' AWAY FROM A COMBUSTIBLE W -THE GENERATOR SHALL BE LOCATED A MIN OF 3' AWAY FROM A NON-COMBUS

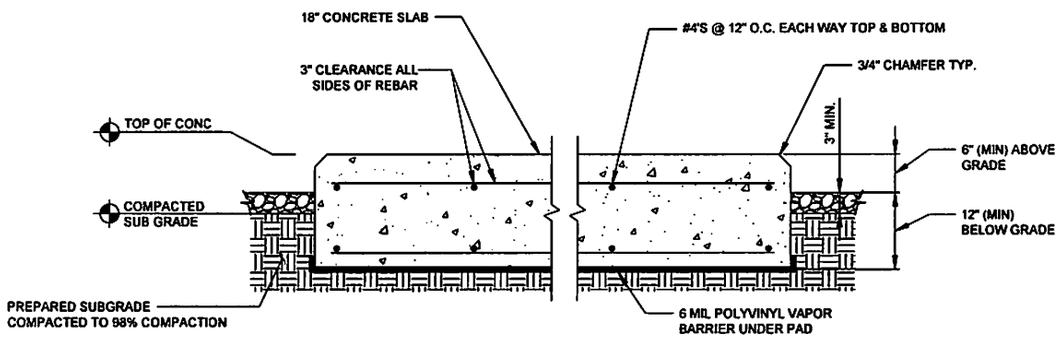


EQUIPMENT PAD PLAN FOR SINGLE CABINET

SCALE: N.T.S.

1 EQUIPMENT SLAB DETAIL

SCALE: N.T.S.



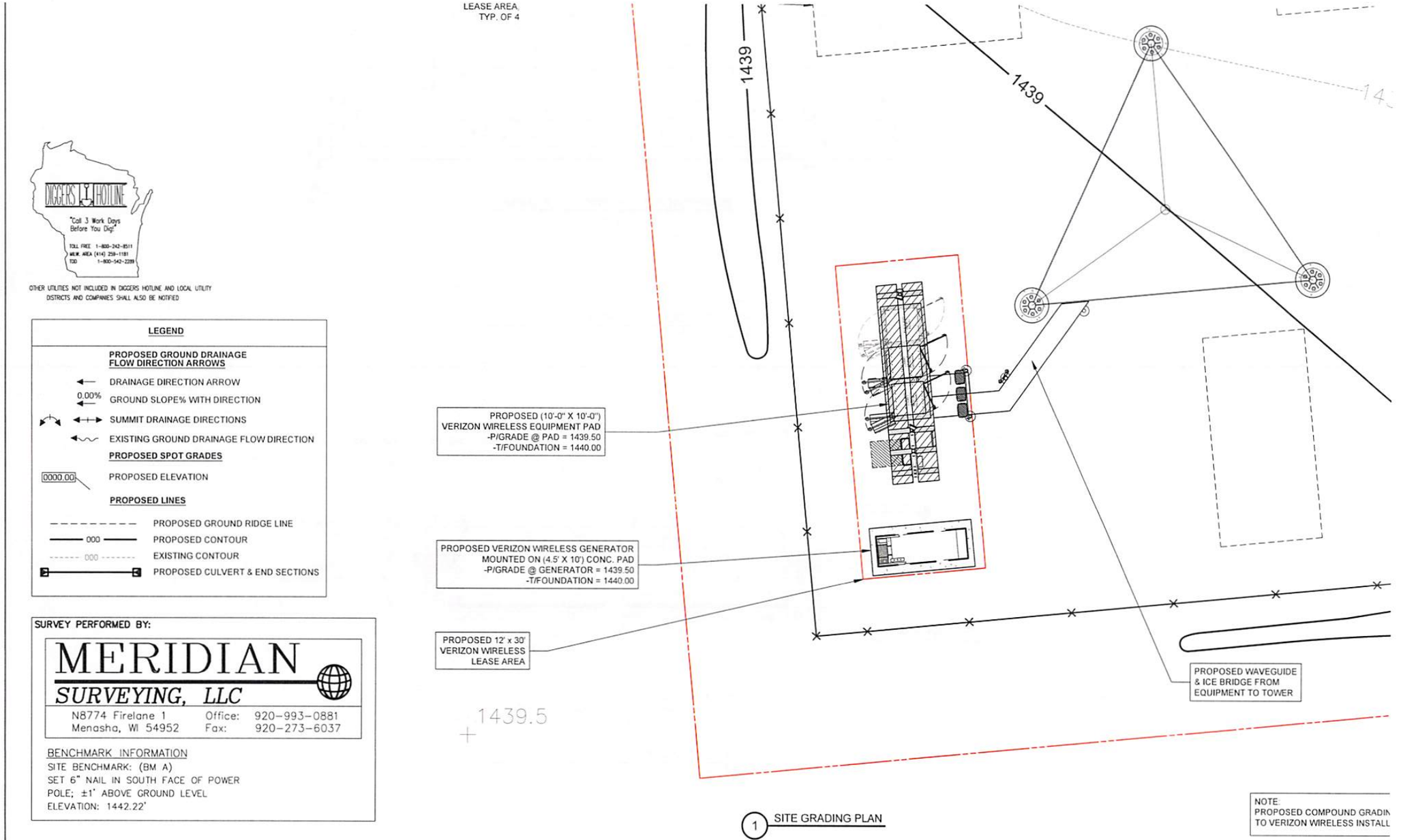
NOTES:

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.

2 EQUIPMENT PAD DETAIL

SCALE: N.T.S.

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


LEASE AREA
TYP. OF 4
1439
1439
PROPOSED (10'-0" X 10'-0")
VERIZON WIRELESS EQUIPMENT PAD
-P/GRADE @ PAD = 1439.50
-T/FOUNDATION = 1440.00
PROPOSED VERIZON WIRELESS GENERATOR
MOUNTED ON (4.5' X 10') CONC. PAD
-P/GRADE @ GENERATOR = 1439.50
-T/FOUNDATION = 1440.00
PROPOSED 12' x 30'
VERIZON WIRELESS
LEASE AREA
PROPOSED WAVEGUIDE
& ICE BRIDGE FROM
EQUIPMENT TO TOWER
1439.5
DIGGERS HOTLINE
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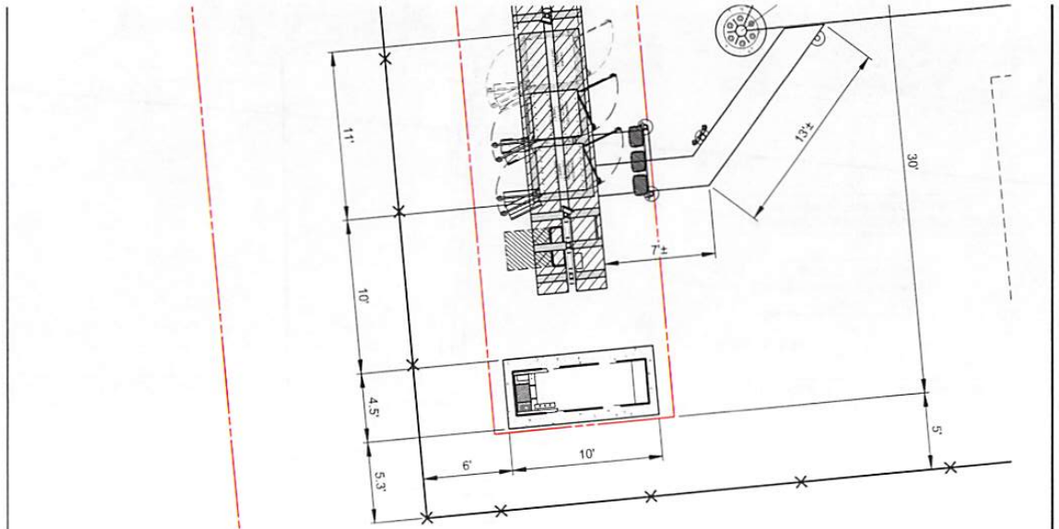
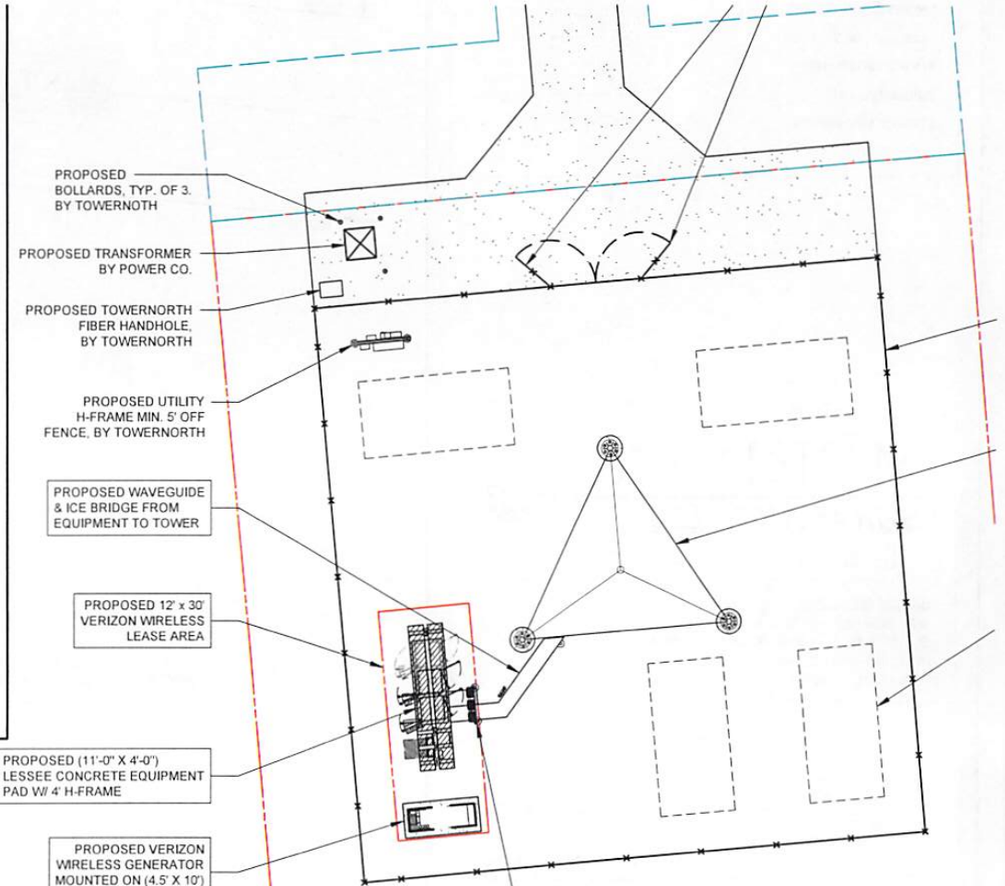
OTHER UTILITIES NOT INCLUDED IN DIGGERS HOTLINE AND LOCAL UTILITY
DISTRICTS AND COMPANIES SHALL ALSO BE NOTIFIED
LEGEND
PROPOSED GROUND DRAINAGE
FLOW DIRECTION ARROWS
DRAINAGE DIRECTION ARROW
0.00%
GROUND SLOPE% WITH DIRECTION
SUMMIT DRAINAGE DIRECTIONS
EXISTING GROUND DRAINAGE FLOW DIRECTION
PROPOSED SPOT GRADES
0000.00
PROPOSED ELEVATION
PROPOSED LINES
PROPOSED GROUND RIDGE LINE
000
PROPOSED CONTOUR
000
EXISTING CONTOUR
PROPOSED CULVERT & END SECTIONS
SURVEY PERFORMED BY:
MERIDIAN
SURVEYING, LLC
N8774 Firelane 1
Menasha, WI 54952
Office: 920-993-0881
Fax: 920-273-6037
BENCHMARK INFORMATION
SITE BENCHMARK: (BM A)
SET 6" NAIL IN SOUTH FACE OF POWER
POLE; ±1' ABOVE GROUND LEVEL
ELEVATION: 1442.22'
1 SITE GRADING PLAN
NOTE:
PROPOSED COMPOUND GRADIN
TO VERIZON WIRELESS INSTALL



2 SITE DIMENSION PLAN
SCALE: 1" = 5'



1 SITE PLAN

SURVEY PERFORMED BY:

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

BENCHMARK INFORMATION
SITE BENCHMARK: (BM A)
SET 6" NAIL IN SOUTH FACE OF POWER POLE; ±1' ABOVE GROUND LEVEL
ELEVATION: 1442.22'

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

UNDERGROUND TELCO — UGT — UGT —

UNDERGROUND POWER — UGE — UGE —

BURIED WATER LINE — W — W —

BURIED GAS LINE — G — G — G —

EDGE OF BUSH/TREES

SURVEY PERFORMED BY:

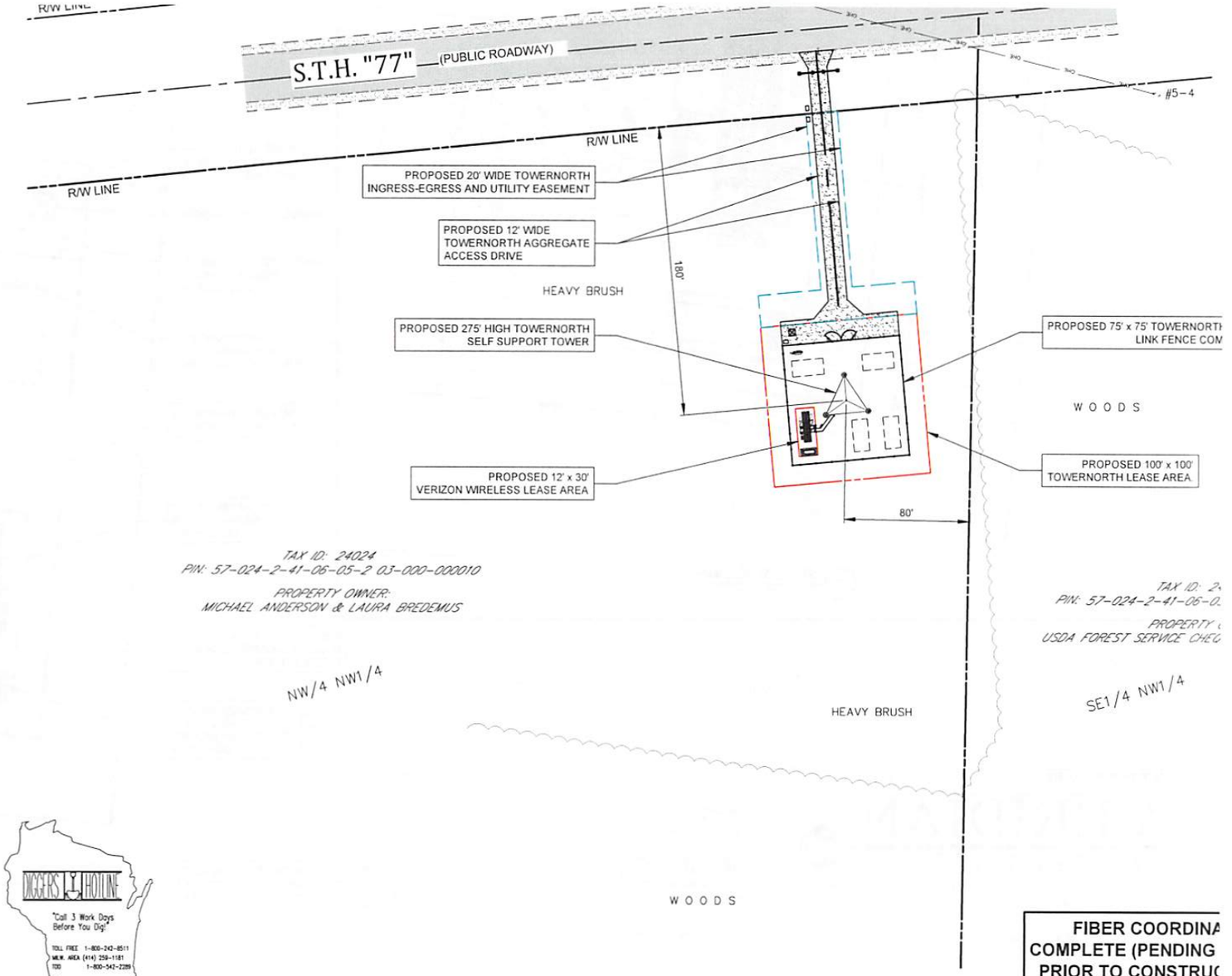
MERIDIAN SURVEYING, LLC

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

BENCHMARK INFORMATION
SITE BENCHMARK: (BM A)
SET 6" NAIL IN SOUTH FACE OF POWER POLE; ±1' ABOVE GROUND LEVEL
ELEVATION: 1442.22'

GENERAL SITE NOTES

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



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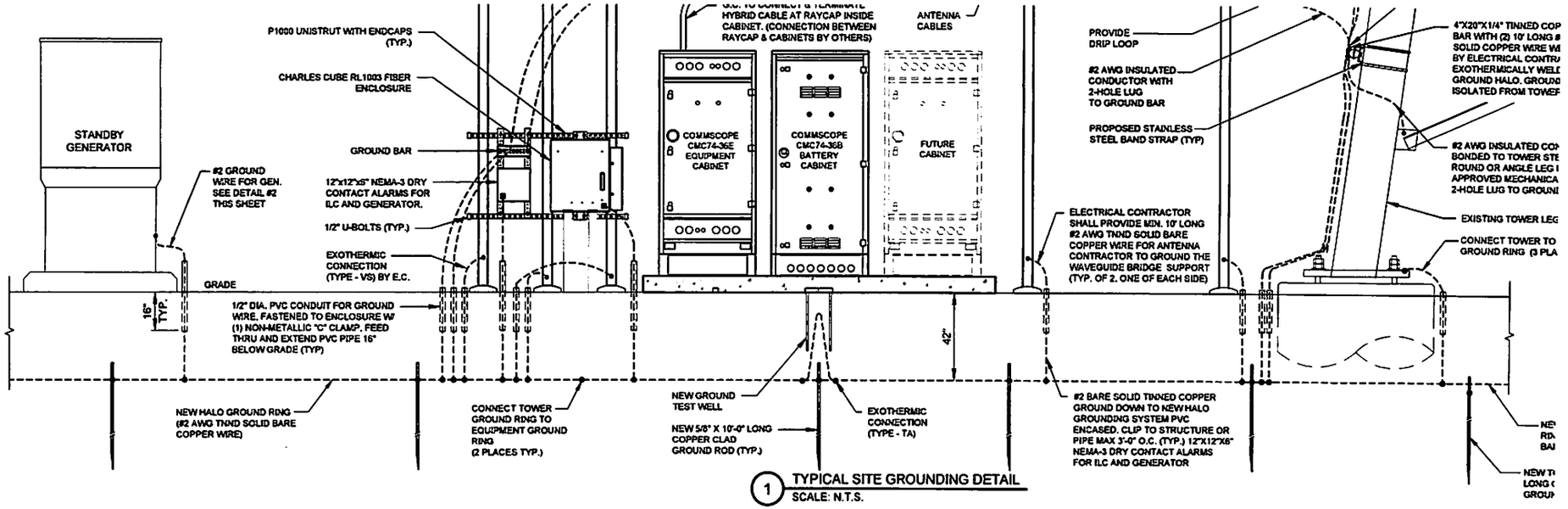
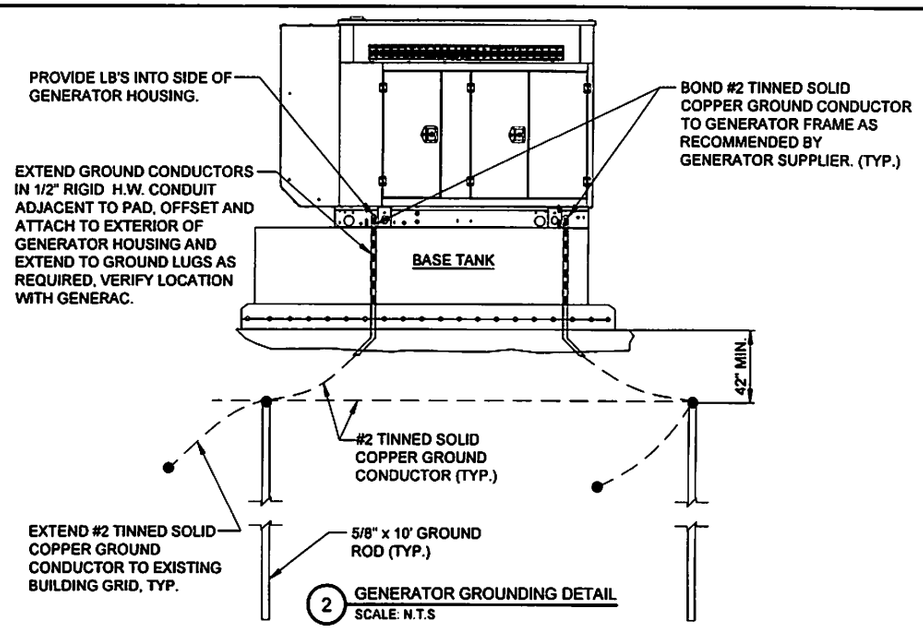
OTHER UTILITIES NOT INCLUDED IN DIGGERS HOTLINE AND LOCAL UTILITY DISTRICTS AND COMPANIES SHALL ALSO BE NOTIFIED

1 LOCATION PLAN

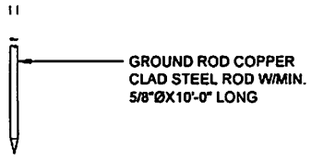
FIBER COORDINA
COMPLETE (PENDING
PRIOR TO CONSTRUC
DESIGNER FOR



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

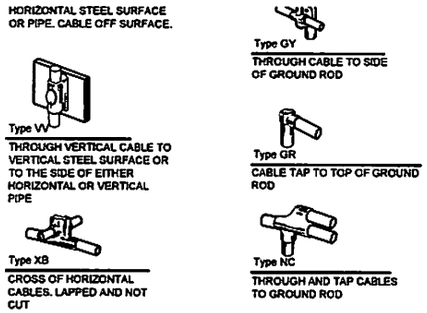


2 GENERATOR GROUNDING DETAIL
SCALE: N.T.S

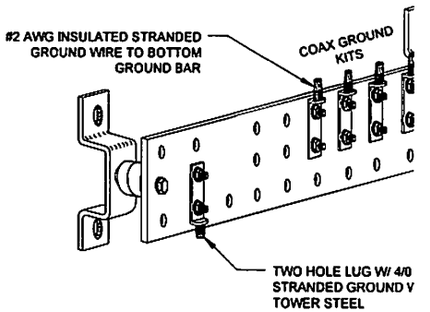


NOTE:
GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL.

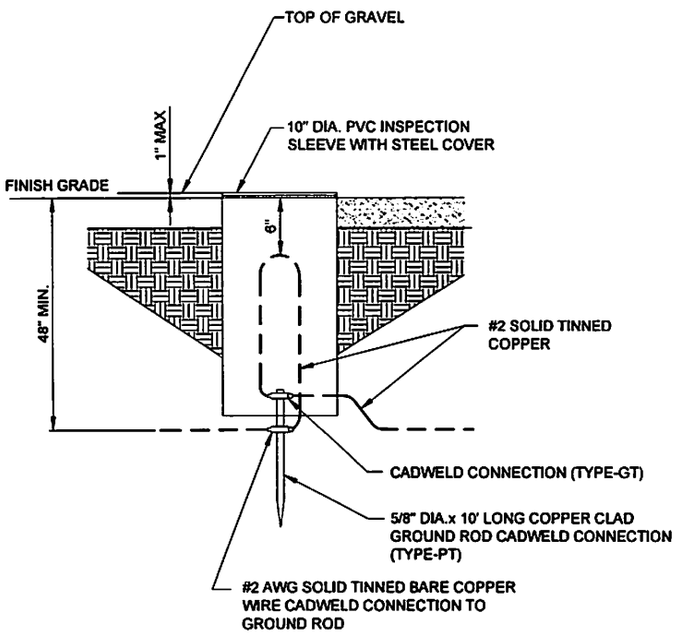
1 GROUND ROD DETAIL
SCALE: N.T.S.



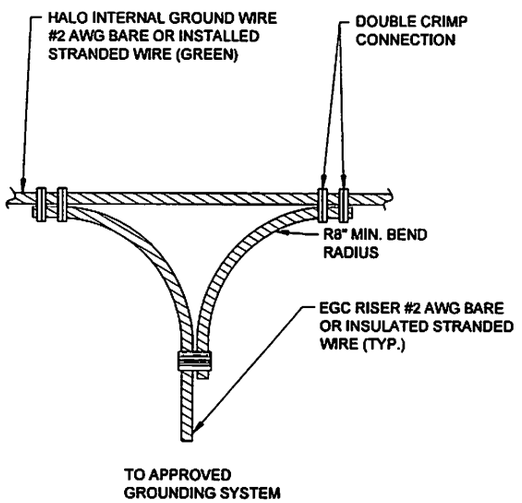
2 EXOTHERMIC WELD DETAILS
EXOTHERMIC AND HARGER ULTRAWELD OR APPROVED EQUAL



3 GROUND COLLECTOR
SCALE: N.T.S.

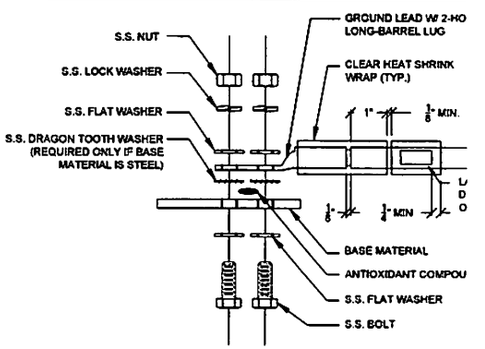


4 INSPECTION SLEEVE DETAIL
N.T.S.



5 HALO NON-DIRECTIONAL GROUND RING SPLICE DETAIL
N.T.S.

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



6 GROUND LUG INSTALLATION DET/
N.T.S.

(8) 4"X20"X1/4" TNND INSULATED COPPER GROUND BAR, NON ISOLATED WITH 10.0' LONG #2 AWG TNND SOLID COPPER WIRE WELDED TAILS (HARGER GBIT 14420VW)

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

(10) VZW DISCONNECT AND ELECTRIC SERVICE GROUND TO GROUND ROD

(11) 24" x 30" x 24" FIBER OPTIC HAND HOLE

(12) PROPOSED TOWER OR COMPOUND GROUND RING BY CENTERLINE (V.I.F.)

(13) MAINTAIN TWO FOOT DISTANCE OFF OF STRUCTURES.

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

(15) TWO #2 LEADS FROM THE EGR TO THE GROUND BAR AT UTILITY FRAME LOCATED ON PLATFORM/PAD. CADWELD AT EGR AND DOUBLE HOLE LUGS ON PLATFORM/PAD.

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

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

(18) MGB MOUNTED ON H-FRAME.

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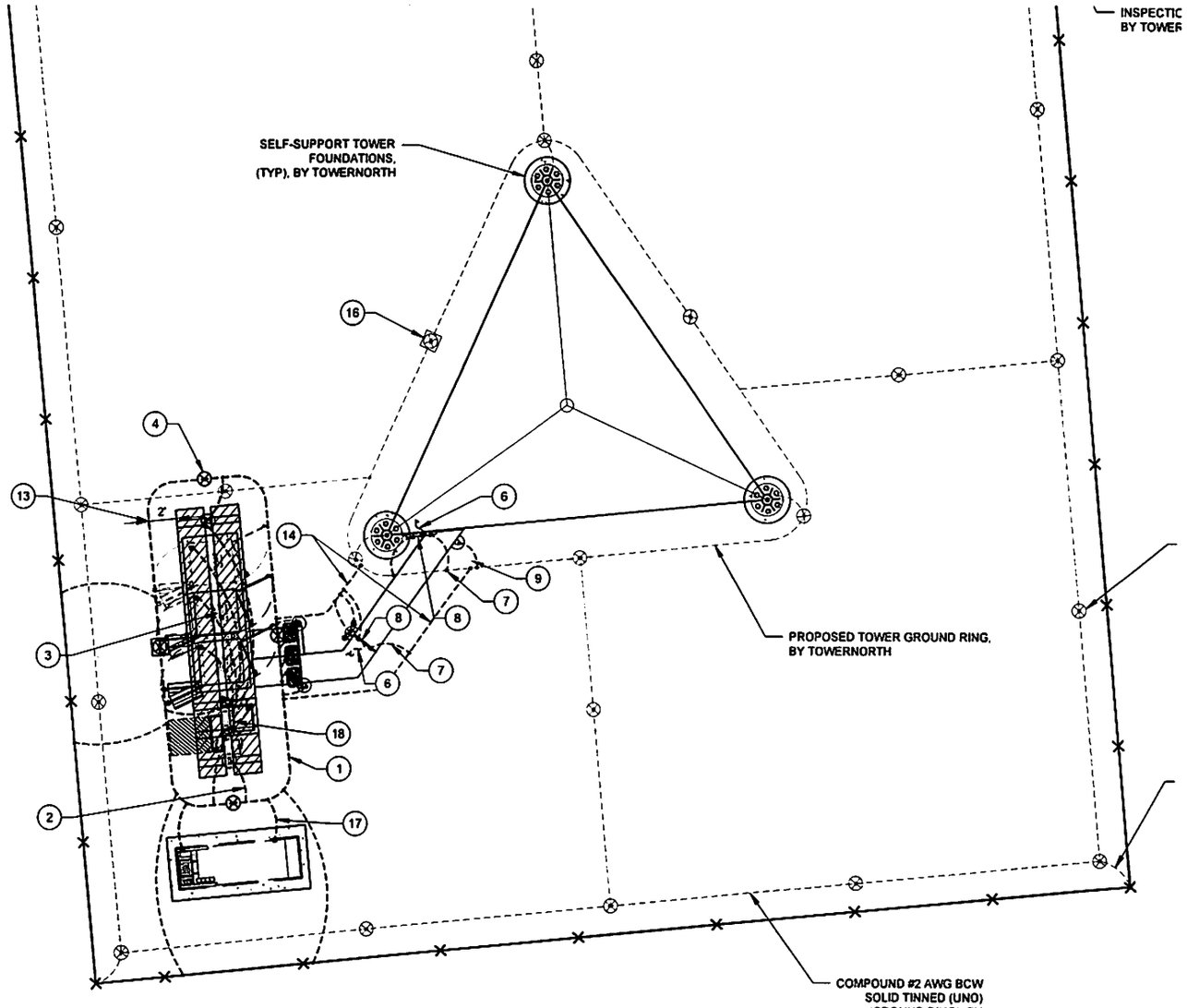
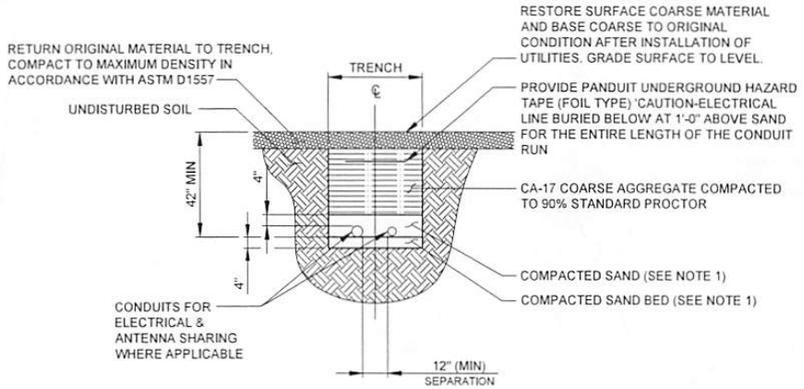
LEGEND:

⊂⊃	GROUND BAR OR ARRESTOR BAR	⊃	SPARE GROUND LEAD
⊗	5/8"Ø x 10'-0" GROUND ROD	■	MECHANICAL CONNECTION
O	GROUND SYSTEM TEST WELL	– – –	EXISTING GROUNDING
•	CADWELD OR APPROVED CONNECTION	———	NEW GROUNDING



1 SITE GROUNDING PLAN
SCALE: 1" = 5'

NO
SEE
ON



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

		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 RECEPTA
SMOKE DETECTORS	20/1		39	40	1200	20/1	EQUIPMENT
EMERG LIGHTS/ EQUIP	20/1		41	42	1000	20/1	GEN. GFCI REC
			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.)

2 PANEL BOARD SCHEDULE
N.T.S.

NOTE:
1. VERIZON WIRELESS EQUIPMENT ENGIN
BREAKER FOR RADIO AND POWER CA
2. GENERAL CONTRACTOR TO SUPPLY BI

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

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 #8 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.

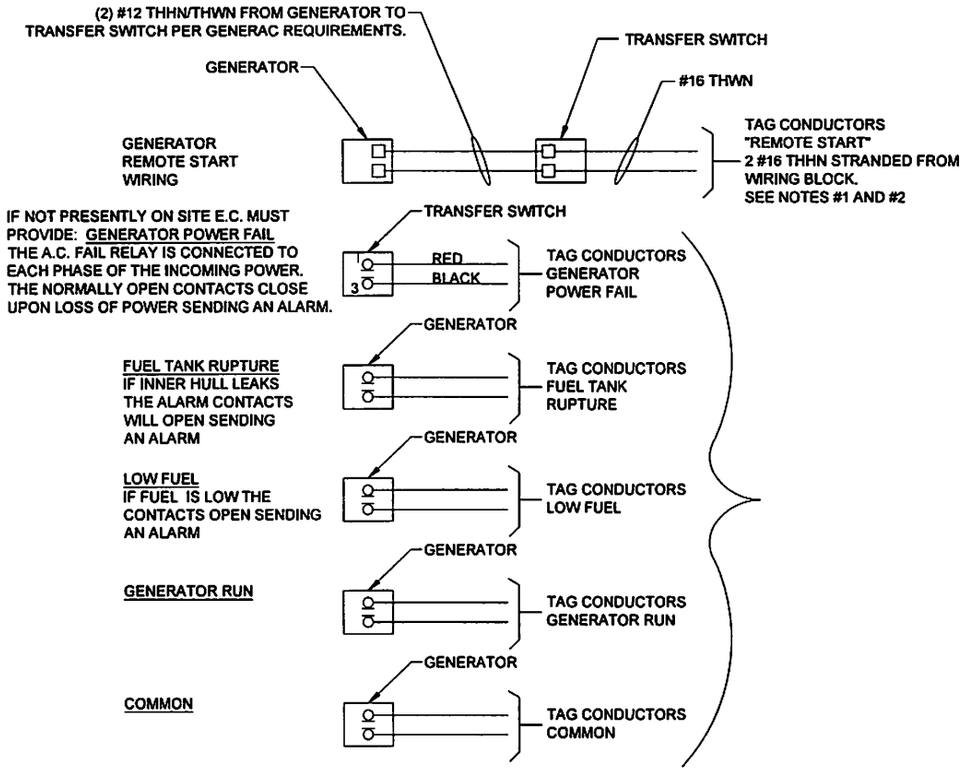
14. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS, IF REQUIRED BY EQUIPMENT INSTALLATION INSTRUCTIONS (NEC 110-3 (B)).

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.

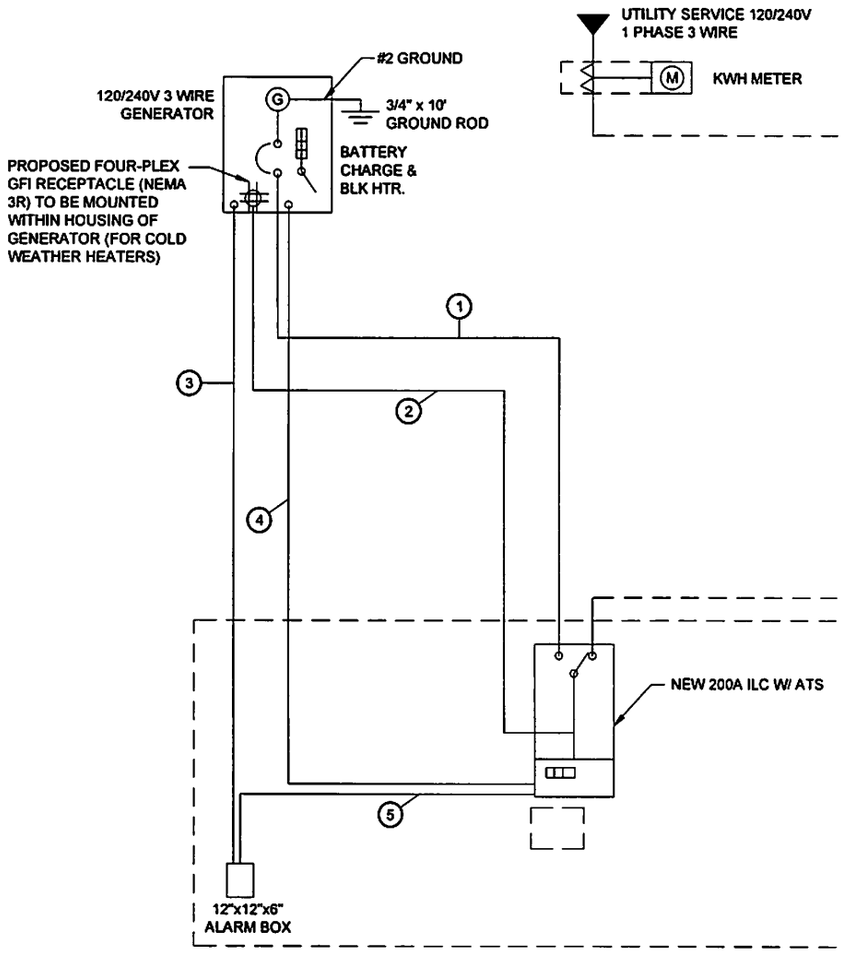


1 ALARM WIRING
N.T.S.

NOTES:

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

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



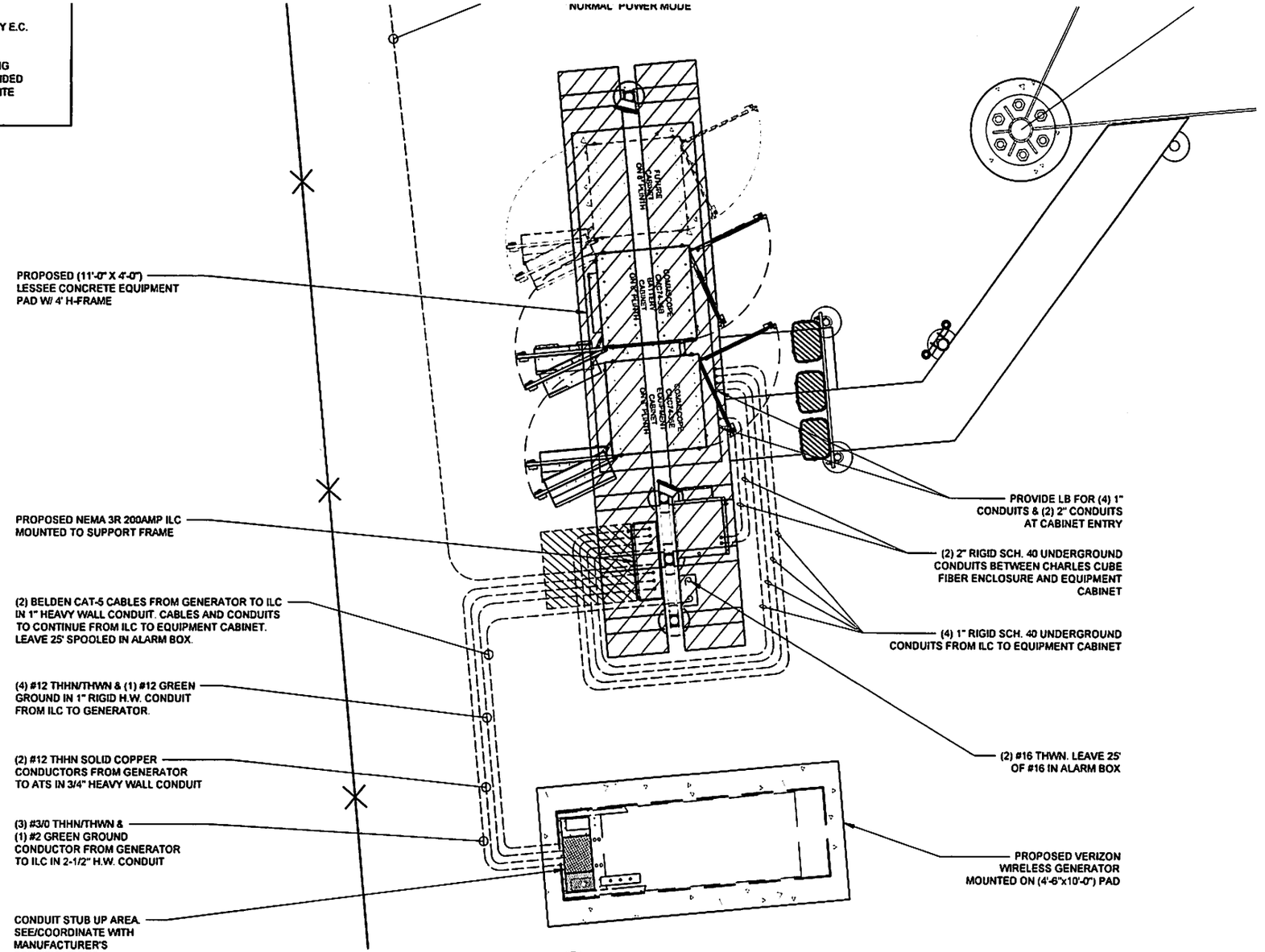
2 NEW SINGLE LINE DIAGRAM
N.T.S.

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

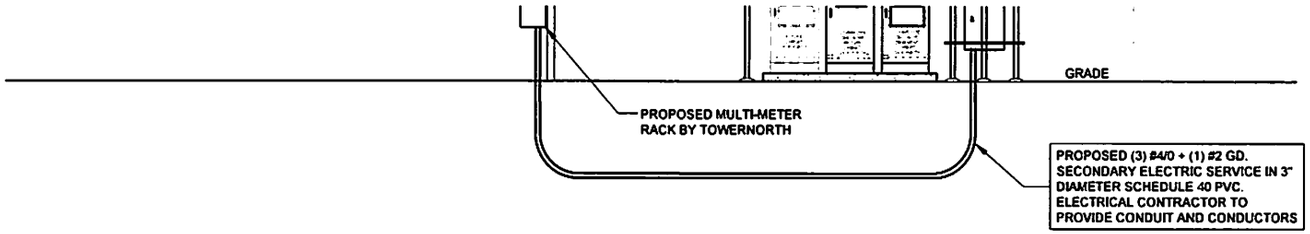
6) E.C. MUST MONITOR DC POWER WHEN ON BATTERY BACK-UP DURING PORTIONS OF CONSTRUCTION. IF LEVEL FALLS BELOW RECOMMENDED LEVEL 2256 DC, E.C. MUST TURN ON THE MAIN POWER. THE CELL SITE CANNOT GO OFF LINE AT ANYTIME.

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.



1 **GENERATOR UTILITY ROUTING PLAN**
SCALE: 1" = 2'

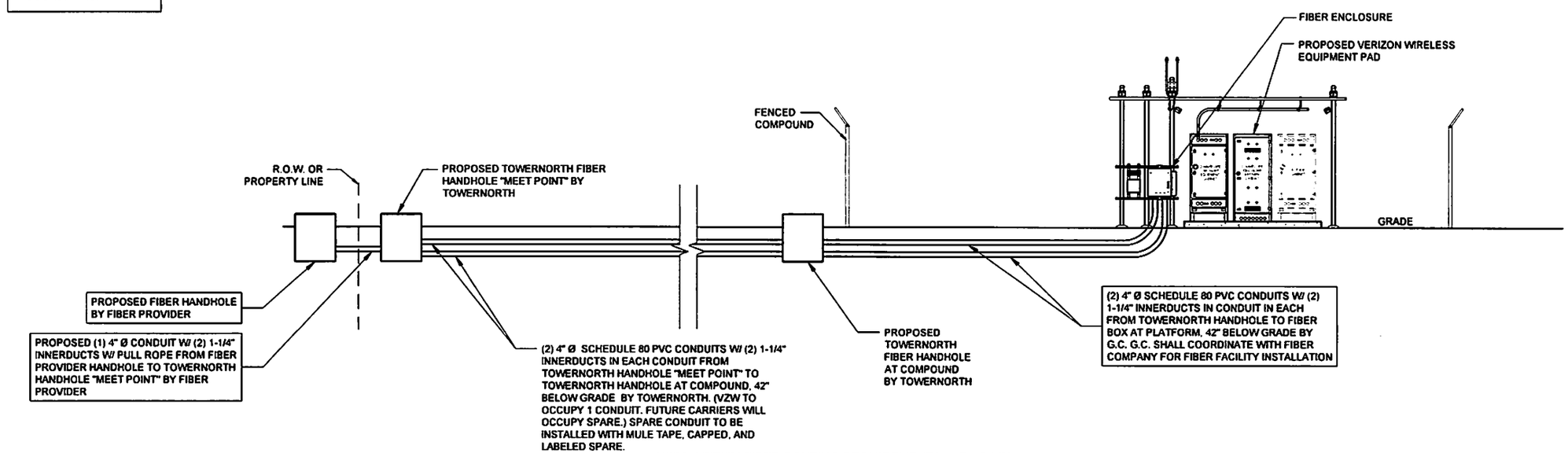


ELECTRICAL SERVICE: 200 AMP 120/240V SINGLE PHASE 3 WIRE

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

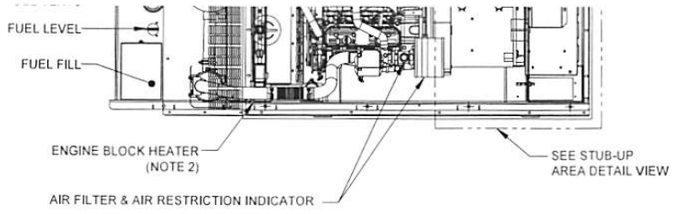
CONTRACTOR SHALL BUILD INTO THE F
THE COST OF TWO (2) MOBILIZATIONS:
1) POWER/FIBER PERMIT PULLED PRIOF
AND PRELIMINARY WORK (SMART JA
COMPLETED PRIOR TO GENERAL CO
2) RETURN TO COMPLETE GENERAL EL

- DESIGN PENDING FIBER COORDINATION

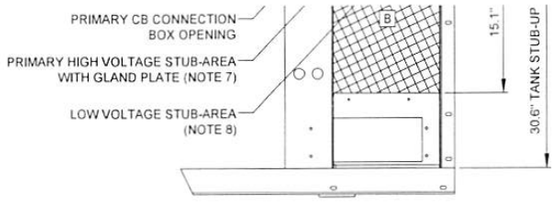


NOTE: VERIFY FIBER ROUTING REQUIREMENTS WITH FIBER COMPANY

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

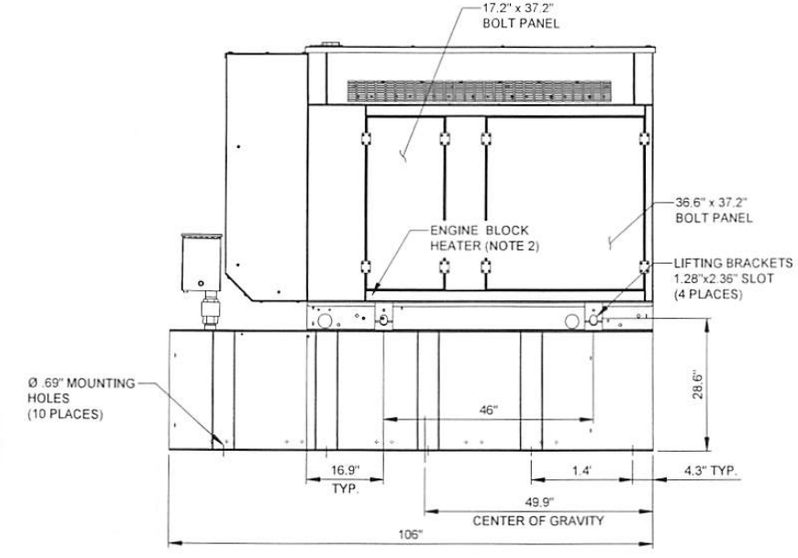


TOP OR PLAN VIEW

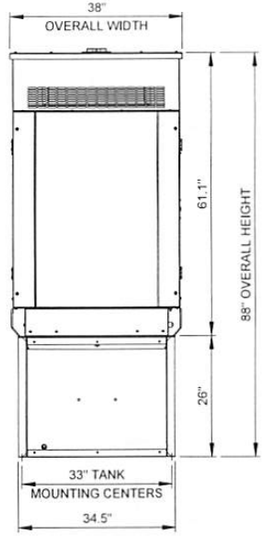


STUB-UP AREA DETAILED VIEW

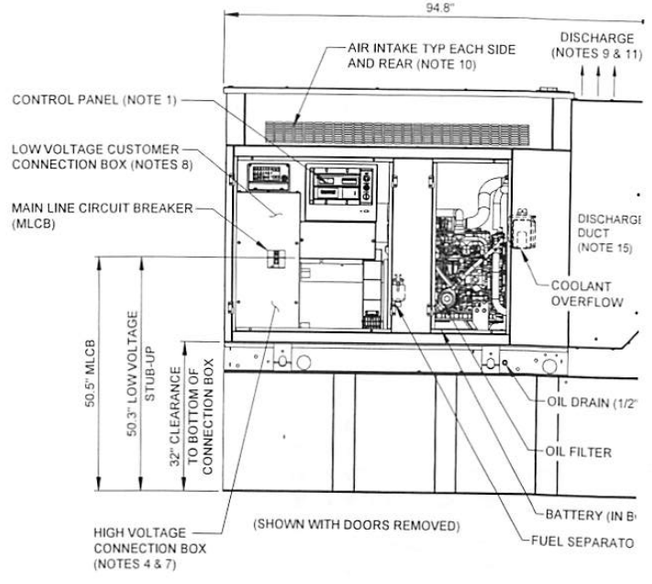
10. MUST ALLOW FREE FLOW OF INTAKE AIR. SEE SP
AIR FLOW AND MAXIMUM RESTRICTION REQUIRE
11. GENERATOR MUST BE INSTALLED SUCH THAT FR
AVAILABLE AND THAT DISCHARGE AIR FROM THE
RECIRCULATED.
12. IT IS THE RESPONSIBILITY OF THE INSTALLATION
THAT THE GENERATOR INSTALLATION COMPLIES
CODES, STANDARDS, AND REGULATIONS.
13. 132 GALLON USEABLE CAPACITY BASETANK IS IN
14. UNIT IS SHIPPED WITH FUEL SUPPLY AND RETUR
AND PLUGGED BETWEEN ENGINE AND FUEL TAN
FACILITATE PRESSURE TESTING OF THE TANK IN
INFORMATION REGARDING CONNECTING THE FIE
PROCEDURE (0E5082) SUPPLIED IN THE TANK LO
SHIPPED WITH THIS GENERATOR.
15. SEE DRAWING 0C3850 FOR DISCHARGE DUCT RE
WILL PROVIDE ACCESS TO MUFFLER FOR SERVIC



LEFT SIDE VIEW



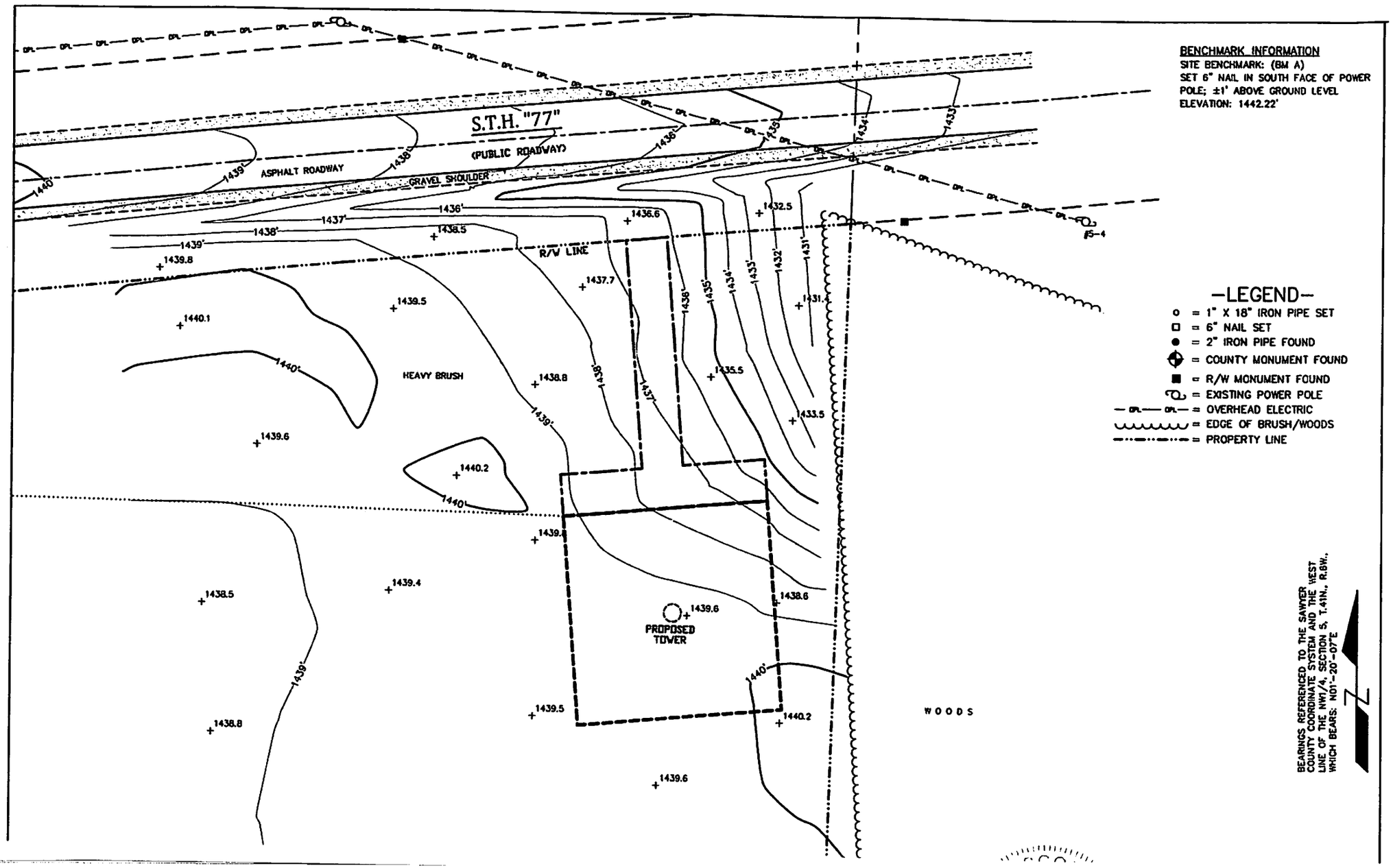
REAR VIEW

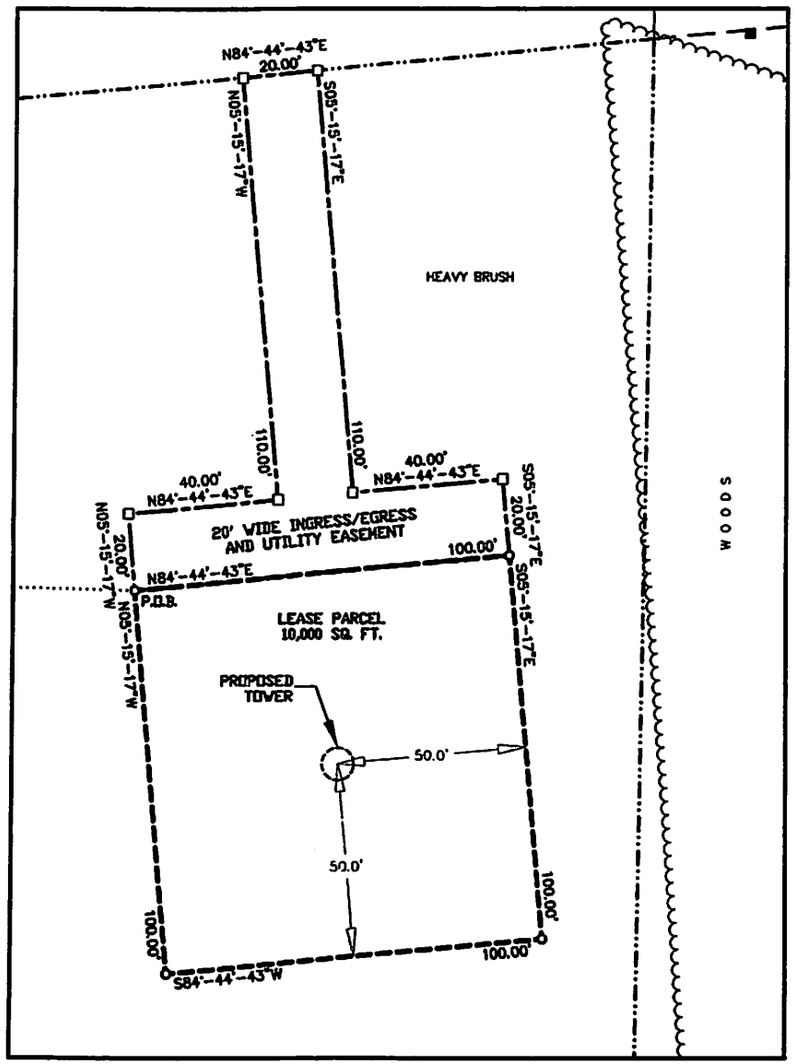


RIGHT SIDE VIEW

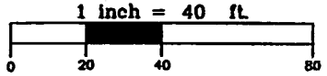
1 GENERAC 30kW DIESEL GENERATOR
SCALE: N.T.S. GENERAC MODEL: SD030-1P-190JT

WEIGHT DATA: (INC
GENERATOR : 3106


S.T.H. "77"
(PUBLIC ROADWAY)
ASPHALT ROADWAY
GRAVEL SHOULDER
R/W LINE
HEAVY BRUSH
PROPOSED TOWER
WOODS
BENCHMARK INFORMATION
SITE BENCHMARK: (BM A)
SET 6" NAIL IN SOUTH FACE OF POWER POLE; ±1' ABOVE GROUND LEVEL
ELEVATION: 1442.22'
—LEGEND—
o = 1" X 18" IRON PIPE SET
□ = 6" NAIL SET
● = 2" IRON PIPE FOUND
= COUNTY MONUMENT FOUND
■ = R/W MONUMENT FOUND
= EXISTING POWER POLE
OPL OPL = OVERHEAD ELECTRIC
= EDGE OF BRUSH/WOODS
= PROPERTY LINE
BEARINGS REFERENCED TO THE SAWYER COUNTY COORDINATE SYSTEM AND THE WEST LINE OF THE NW1/4, SECTION 5, T.41N., R.6W., WHICH BEARS: N01°-20'-07"E



GRAPHIC SCALE
1 inch = 40 ft.



LEASE PARCEL

A part of the Southwest Quarter (SW1/4) of the Northwest Quarter (NW1/4) of Section Five (5), Township Forty-One (41) North, Range Six (6) West, Town of Round Lake, Sawyer County, Wisconsin containing 10,000 square feet (0.230 acres) of land and being described by

Commencing at the West Quarter Corner of said Section 5; thence N01°-20'-07"E 865.79 feet along the west line of the NW1/4 of said Section 5; thence S88°-39'-53"E 1173.15 feet to the point of beginning, thence N84°-44'-43"E 100.00 feet; thence S05°-15'-17"E 100.00 feet; thence S84°-44'-43"W 100.00 feet; thence N05°-15'-17"W 100.00 feet to the point of beginning. Being subject to any and all easements and restrictions of record.

20' WIDE INGRESS/EGRESS & UTILITY EASEMENT

A part of the Southwest Quarter (SW1/4) of the Northwest Quarter (NW1/4) of Section Five (5), Township Forty-One (41) North, Range Six (6) West, Town of Round Lake, Sawyer County, Wisconsin containing 4,200 square feet (0.096 acres) of land and being described by:

Commencing at the West Quarter Corner of said Section 5; thence N01°-20'-07"E 865.79 feet along the west line of the NW1/4 of said Section 5; thence S88°-39'-53"E 1173.15 feet to the point of beginning; thence N05°-15'-17"W 20.00 feet; thence N84°-44'-43"E 40.00 feet; thence N05°-15'-17"W 110.00 feet to a point on the south line of State Highway "77"; thence N84°-44'-43"E 20.00 feet along said south line of State Highway "77"; thence S05°-15'-17"E 110.00 feet; thence N84°-44'-43"E 40.00 feet; thence S05°-15'-17"E 20.00 feet; thence S84°-44'-43"W 100.00 feet to the point of beginning. Being subject to any and all easements and restrictions of record.

PARENT PARCEL

THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER, SECTION 5, TOWNSHIP 41 NORTH, RANGE 6 WEST, TOWN OF ROUND LAKE, SAWYER COUNTY, WISCONSIN EXCEPT THAT PART LYING NORTH OF HIGHWAY 77 AND EAST OF TOWN ROAD, ALSO EXCEPT PART FOR HIGHWAY RECORDED IN VOLUME 95, PAGE 148 AS DOCUMENT NO. 104564A AND IN VOLUME 283, PAGE 339 AS DOCUMENT NO. 160282.

TITLE REPORT REVIEW

TITLE REPORT: TITLE MATTERS, LLC

COMMITMENT NO.: 9409M

EFFECTIVE DATE: AUGUST 5, 2022

FEE SIMPLE TITLE VESTED IN: MICHAEL J. ANDERSON AND LAURA M. BREDEMUS

NOTE: THE STATEMENT OF APPLICABILITY REFERS TO THE LEASE SITE AND ANY EASEMENTS PERTINENT THEREUNTO WHERE SPECIFIC ENCUMBRANCES AFFECT THE LEASED PREMISES AND/OR A PERTINENT EASEMENT, THEY ARE IDENTIFIED AS SUCH.

SCHEDULE B-II

1. CONVEYANCE TO THE STATE HIGHWAY COMMISSION DATED 6/12/1929 AND RECORDED AT VOLUME 95, PAGE 148. **THE PRESENT DAY ROAD RIGHT OF WAY IS PLOTTED AND SHOWN.**
2. CONVEYANCE TO THE STATE OF WISCONSIN DATED 6/29/1977 AND RECORDED AT VOLUME 283, PAGE 339. **THE PRESENT DAY ROAD RIGHT OF WAY IS PLOTTED AND SHOWN.**

verizon fuze | RFDS

WEST > Upper Midwest > Illinois/Wisconsin > Wisconsin > WI2_HWY77_RSW

Edit by: Rychter, Bartlomiej - bart.rychter@verizonwireless.com - 8/3/2022, 8:34:59 AM

Submit by: Dixit, Vivek - vivek.dixit@verizonwireless.com - 9/7/2022, 11:47:57 AM

Location Information

Sub6-Prep

Site ID: 617212450
E-NodeB ID: 2107765,2109765,210765,910769
PSLC: 713833
Switch Name: Appleton
Tower Owner:
Tower Type: Self Support (Lattice Tower)
Site Type: MACRO
Site Sub Type: TRADITIONAL
Street Address: Wisconsin State Route 77
City: Hayward
State: WI
Zip Code: 54843
County: Sawyer
Latitude: 46.063705 46° 3' 49.338" N
Longitude: -91.149539 91° 8' 58.3404" W

Antenna Summary

Added

700	850	1900	AWS	AWS3	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity	Item ID
LTE	LTE 5G	LTE	LTE	LTE		COMMSCOPE	NHH-65B-R2B	270	273	30(0001) 30(01) 150(0002) 150(02) 270(0003) 270(03)	false	false	PHYSICAL	9	NHH-65B-R2B
					5G	Ericsson	AIR6449	270	271.3	30(0001) 150(0002) 270(0003)	false	false	PHYSICAL	3	

Removed

700	850	1900	AWS	AWS3	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity	Item ID

No data available.

Retained

700	850	1900	AWS	AWS3	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity	Item ID

No data available.

Added: 12 Removed: 0 Retained: 0

Proprietary and Confidential. Not for disclosure outside of Verizon.

Equipment Summary

6 Make	Model	Cable Length	Cable Size	Install Type	Quantity	Item ID
COMMSCOPET-001	HFT1206-24SW4-xxxG			PHYSICAL	3	
Ericsson	4449			PHYSICAL	3	KRC161749/1
Ericsson	8843			PHYSICAL	6	KRC161707/2
Ericsson	AIR6449			PHYSICAL	3	
RAYCAPINC-001	RVZDC-3315-PF-48			PHYSICAL	3	RVZDC-3315-PF-48

6 Make	Model	Cable Length	Cable Size	Install Type	Quantity	Item ID

No data available.

6 Make	Model	Cable Length	Cable Size	Install Type	Quantity	Item ID

No data available.

Service Info

AWS3 LTE

	0002		
Sector	01	02	03
Azimuth	30	150	270
Cell / ENode B ID	210766	210766	210766
Antenna Model	NHH-65B-R2B	NHH-65B-R2B	NHH-65B-R2B
Antenna Make	COMMSCOPE	COMMSCOPE	COMMSCOPE
Antenna Centerline(Ft)	270	270	270
Mechanical Down-Tilt(Deg.)	0	0	0
Electrical Down-Tilt	0	0	0
Tip Height	273	273	273
Regulatory Power	812.43	812.43	812.43
DLEARFCN	66911	66911	66911
Channel Bandwidth(MHz)	5	5	5
Total ERP (W)	2228.44	2228.44	2228.44
TMA Make			
TMA Model			
RRU Make	Ericsson	Ericsson	Ericsson
RRU Model	8843	8843	8843
Number of Tx, Rx Lines	4,4	4,4	4,4
Position			
Transmitter Id	14270807	14270812	14270817
Source	ATOLL_API	ATOLL_API	ATOLL_API

700 MHz LTE

	0002		
Sector	01	02	03
Azimuth	30	150	270
Cell / ENode B ID	210765	210765	210765
Antenna Model	NHH-65B-R2B	NHH-65B-R2B	NHH-65B-R2B
Antenna Make	COMMSCOPE	COMMSCOPE	COMMSCOPE
Antenna Centerline(Ft)	270	270	270
Mechanical Down-Tilt(Deg.)	0	0	0
Electrical Down-Tilt	0	0	0
Tip Height	273	273	273
Regulatory Power	73.92	73.92	73.92
DLEARFCN	5230	5230	5230

	0002		
	01	02	03
	30	150	270
	210765	210765	210765
	NHH-65B-R2B	NHH-65B-R2B	NHH-65B-R2B
	COMMSCOPE	COMMSCOPE	COMMSCOPE
	270	270	270
	0	0	0
	0	0	0
	273	273	273
	282.89	282.89	282.89
	2560	2560	2560
	10	10	10
	636.5	636.5	636.5
	Ericsson	Ericsson	Ericsson
	4449	4449	4449
	4,4	4,4	4,4
	14270800	14270801	14270802
	ATOLL_API	ATOLL_API	ATOLL_API

	0002		
	0001	0002	0003
	30	150	270
	2109765	2109765	2109765
	NHH-65B-R2B	NHH-65B-R2B	NHH-65B-R2B
	COMMSCOPE	COMMSCOPE	COMMSCOPE
	270	270	270
	0	0	0
	0	0	0
	273	273	273
	282.89	282.89	282.89
	2560	2560	2560
	10	10	10
	636.5	636.5	636.5
	Ericsson	Ericsson	Ericsson
	4449	4449	4449
	4,4	4,4	4,4
	14270800	14270801	14270802
	ATOLL_API	ATOLL_API	ATOLL_API

1900 MHz LTE

Sector	0002		
Azimuth	01	02	03
Cell / ENode B ID	30	150	270
Antenna Model	210766	210766	210766
	NHH-65B-R2B	NHH-65B-R2B	NHH-65B-R2B
Antenna Make	COMMSCOPE	COMMSCOPE	COMMSCOPE
Antenna CenterLine(Ft)	270	270	270
Mechanical Down-Tilt(Deg.)	0	0	0
Electrical Down-Tilt	0	0	0
Tip Height	273	273	273
Regulatory Power	695.8	695.8	695.8
DLEARFCN	775	775	775
Channel Bandwidth(MHz)	5	5	5
Total ERP (W)	1908.53	1908.53	1908.53
TMA Make			
TMA Model			
RRU Make	Ericsson	Ericsson	Ericsson
RRU Model	8843	8843	8843
Number of Tx, Rx Lines	4,4	4,4	4,4
Position			
Transmitter Id	14270804	14270809	14270814
Source	ATOLL_API	ATOLL_API	ATOLL_API

Proprietary and Confidential, Not for disclosure outside of Verizon.

	0002		
	01	01	02
	30	30	150
	210766	210766	210765
	NHH-65B-R2B	NHH-65B-R2B	NHH-65B-R2B
	COMMSCOPE	COMMSCOPE	COMMSCOPE
	270	270	270
	0	0	0
	0	0	0
	273	273	273
	406.22	406.22	406.22
	2100	2350	2100
	10	10	10
	2228.44	2228.44	2228.44
	Ericsson	Ericsson	Ericsson
	8843	8843	8843
	4,4	4,4	4,4
	14270805	14270806	14270810
	ATOLL_API	ATOLL_API	ATOLL_API

	0002		
	02	03	03
	150	270	270
	210766	210766	210766
	NHH-65B-R2B	NHH-65B-R2B	NHH-65B-R2B
	COMMSCOPE	COMMSCOPE	COMMSCOPE
	270	270	270
	0	0	0
	0	0	0
	273	273	273
	406.22	406.22	406.22
	2350	2100	2350
	10	10	10
	2228.44	2228.44	2228.44

AWS

Sector	0002		
Azimuth	0001	0002	0003
Cell / ENode B ID	30	150	270
Antenna Model	2127765	2127765	2127765
	ABK6449	ABK6449	ABK6449
Antenna Make	Ericsson	Ericsson	Ericsson
Antenna CenterLine(Ft)	270	270	270
Mechanical Down-Tilt(Deg.)	0	0	0
Electrical Down-Tilt	6	6	6
Tip Height	271.3	271.3	271.3
Regulatory Power	1440.51	1365.07	1365.07
DLEARFCN	648672	648672	648672
Channel Bandwidth(MHz)	60	60	60
Total ERP (W)	23713.74	23713.74	23713.74
TMA Make			
TMA Model			
RRU Make	Ericsson	Ericsson	Ericsson
RRU Model	ABK6449	ABK6449	ABK6449
Number of Tx, Rx Lines	2,2	2,2	2,2
Position			
Transmitter Id	14270818	14270819	14270820
Source	ATOLL_API	ATOLL_API	ATOLL_API

Service Comments

Callsigns Per Antenna

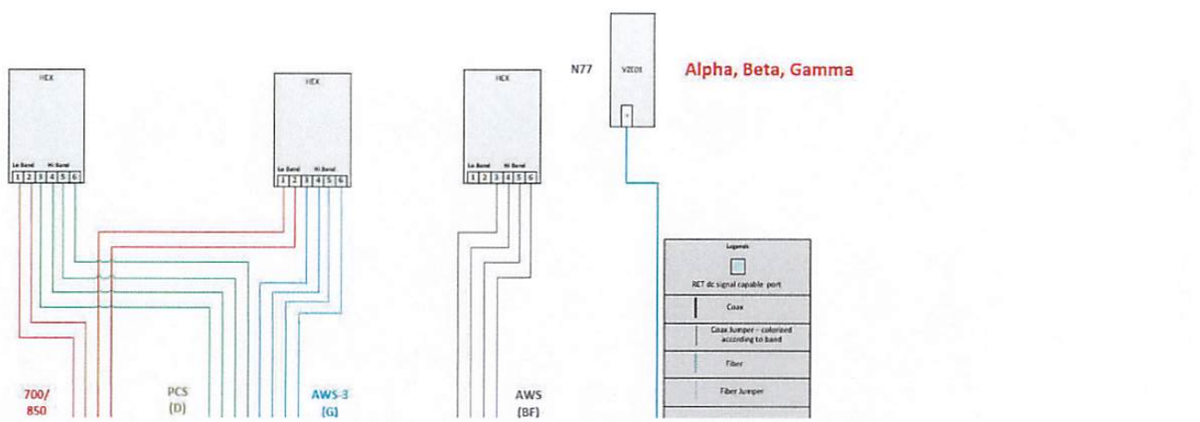
¢ CL ight AGL	Tip Height	Azimuth (TN)	Elec Tilt	Mech Tilt	Gain	Beam Width	Regulatory Power	Callsigns						
								700	850	1900	2100	28 GHz	31 GHz	39 GHz
'0	273	150	0	0	16.07	65.75	406.22				WQGA717 WQGA990			
'0	273	150	0	0	16.07	65.75	406.22				WQGA717 WQGA990			
'0	273	150	0	0	12.376	59.25	282.89		KNKN485					
'0	271.3	270	6	0	22.95	95	1365.07							
'0	273	150	0	0	15.659	67	695.8			KNLG415				
'0	273	30	0	0	16.07	65.75	406.22				WQGA717 WQGA990			
'0	273	30	0	0	12.25	65	73.92	WQJQ691						
'0	273	150	0	0	12.25	65	73.92	WQJQ691						
'0	271.3	150	6	0	22.95	95	1365.07							
'0	273	150	0	0	16.07	65.75	812.43				WQWH554			
'0	273	270	0	0	12.376	59.25	282.89		KNKN485					
'0	273	270	0	0	12.25	65	73.92	WQJQ691						
'0	273	30	0	0	15.659	67	695.8			KNLG415				
'0	273	270	0	0	16.07	65.75	406.22				WQGA717 WQGA990			
'0	271.3	30	6	0	22.95	95	1440.91							
'0	273	30	0	0	16.07	65.75	406.22				WQGA717 WQGA990			
'0	273	30	0	0	16.07	65.75	812.43				WQWH554			
'0	273	270	0	0	16.07	65.75	406.22				WQGA717 WQGA990			
'0	273	150	0	0	12.376	59.25	282.89		KNKN485					
'0	273	270	0	0	15.659	67	695.8			KNLG415				
'0	273	270	0	0	16.07	65.75	812.43				WQWH554			
'0	273	30	0	0	12.376	59.25	282.89		KNKN485					
'0	273	30	0	0	12.376	59.25	282.89		KNKN485					
'0	273	270	0	0	12.376	59.25	282.89		KNKN485					

Callsigns

Callsign	Market	Radio Code	Market Number	Block	State	County	Licensee Name	Wholly Owned	Total MHZ	Freq Range 1	Freq Range 2	Freq Range 3	Freq Range 4	Regulatory Power	Threshold (W)	POPs /Sq Mi	Status	Action	Approved for Insvc
WQJQ691	Great Lakes	WU	REA003	C	WI	Sawyer	Cellco Partnership	Yes	22.000	746.000-757.000	776.000-787.000	.000-.000	.000-.000	73.92	2000	14.38	Active	added	Yes
KNKN485	Wisconsin 2 - Bayfield	CL	CMA709	B	WI	Sawyer	Alltel Corporation	Yes	25.000	835.000-845.000	880.000-890.000	846.500-849.000	891.500-894.000	282.89	800	14.38	Active	added	Yes
KNLG415	Duluth, MN	CW	BTA119	D	WI	Sawyer	RURAL CELLULAR CORPORATION	Yes	10.000	1865.000-1870.000	1945.000-1950.000	.000-.000	.000-.000	695.8	3280	14.38	Active	added	Yes
WQWH554	Wisconsin 2 - Bayfield	AT	CMA709	G	WI	Sawyer	Cellco Partnership	Yes	10.000	1755.000-1760.000	2155.000-2160.000	.000-.000	.000-.000	812.43	3280	14.38	Active	added	Yes
WRNF887	Eau Claire, WI	PM	PEA137	A1	WI	Sawyer	Cellco Partnership	Yes	20.000	3700.000-3720.000	.000-.000	.000-.000	.000-.000	1440.91	1640	14.38	Active	added	No
WRNF888	Eau Claire, WI	PM	PEA137	A2	WI	Sawyer	Cellco Partnership	Yes	20.000	3720.000-3740.000	.000-.000	.000-.000	.000-.000	1440.91	1640	14.38	Active	added	No
WRNF889	Eau Claire, WI	PM	PEA137	A3	WI	Sawyer	Cellco Partnership	Yes	20.000	3740.000-3760.000	.000-.000	.000-.000	.000-.000	1440.91	1640	14.38	Active	added	No
WQGA990	Minneapolis-St. Paul, MN-WI-IA	AW	BEA107	B	WI	Sawyer	Cellco Partnership	Yes	20.000	1720.000-1730.000	2120.000-2130.000	.000-.000	.000-.000	406.22	3280	14.38	Active	added	Yes
WQGA717	Great Lakes	AW	REA003	F	WI	Sawyer	Cellco Partnership	Yes	20.000	1745.000-1755.000	2145.000-2155.000	.000-.000	.000-.000	406.22	3280	14.38	Active	added	Yes
WRHF509	Eau Claire, WI	UU	PEA137	M1	WI	Sawyer	Straight Path Spectrum, LLC	Yes	100.000	37600.000-37700.000	.000-.000	.000-.000	.000-.000			14.38	Active		Yes
WRHF510	Eau Claire, WI	UU	PEA137	M10	WI	Sawyer	Straight Path Spectrum, LLC	Yes	100.000	38500.000-38600.000	.000-.000	.000-.000	.000-.000			14.38	Active		Yes
WRHF511	Eau Claire, WI	UU	PEA137	M2	WI	Sawyer	Straight Path Spectrum, LLC	Yes	100.000	37700.000-37800.000	.000-.000	.000-.000	.000-.000			14.38	Active		Yes
WRHF512	Eau Claire, WI	UU	PEA137	M3	WI	Sawyer	Straight Path Spectrum, LLC	Yes	100.000	37800.000-37900.000	.000-.000	.000-.000	.000-.000			14.38	Active		Yes
WRHF513	Eau Claire, WI	UU	PEA137	M4	WI	Sawyer	Straight Path Spectrum, LLC	Yes	100.000	37900.000-38000.000	.000-.000	.000-.000	.000-.000			14.38	Active		Yes
WRHF514	Eau Claire, WI	UU	PEA137	M5	WI	Sawyer	Straight Path Spectrum, LLC	Yes	100.000	38000.000-38100.000	.000-.000	.000-.000	.000-.000			14.38	Active		Yes
WRHF515	Eau Claire, WI	UU	PEA137	M6	WI	Sawyer	Straight Path Spectrum, LLC	Yes	100.000	38100.000-38200.000	.000-.000	.000-.000	.000-.000			14.38	Active		Yes
WRHF516	Eau Claire, WI	UU	PEA137	M7	WI	Sawyer	Straight Path Spectrum, LLC	Yes	100.000	38200.000-38300.000	.000-.000	.000-.000	.000-.000			14.38	Active		Yes
WRHF517	Eau Claire, WI	UU	PEA137	M8	WI	Sawyer	Straight Path Spectrum, LLC	Yes	100.000	38300.000-38400.000	.000-.000	.000-.000	.000-.000			14.38	Active		Yes
WRHF518	Eau Claire, WI	UU	PEA137	M9	WI	Sawyer	Straight Path Spectrum, LLC	Yes	100.000	38400.000-38500.000	.000-.000	.000-.000	.000-.000			14.38	Active		Yes
WRNF890	Eau Claire, WI	PM	PEA137	A4	WI	Sawyer	Cellco Partnership	Yes	20.000	3760.000-3780.000	.000-.000	.000-.000	.000-.000		1640	14.38	Active		No
WRNF891	Eau Claire, WI	PM	PEA137	A5	WI	Sawyer	Cellco Partnership	Yes	20.000	3780.000-3800.000	.000-.000	.000-.000	.000-.000		1640	14.38	Active		No
WRNF892	Eau Claire, WI	PM	PEA137	B1	WI	Sawyer	Cellco Partnership	Yes	20.000	3800.000-3820.000	.000-.000	.000-.000	.000-.000		1640	14.38	Active		No

Proprietary and Confidential. Not for disclosure outside of Verizon.

ellco Partnership	Yes	20.000	3820.000-3840.000	.000-.000	.000-.000	.000-.000		1640	14.38	Active		No
ellco Partnership	Yes	20.000	3840.000-3860.000	.000-.000	.000-.000	.000-.000		1640	14.38	Active		No
ellco Partnership	Yes	20.000	3860.000-3880.000	.000-.000	.000-.000	.000-.000		1640	14.38	Active		No
ellco Partnership	Yes	20.000	3880.000-3900.000	.000-.000	.000-.000	.000-.000		1640	14.38	Active		No



Conditional Use Permit Request
STAFF REPORT

Prepared By: Jay Kozlowski, Sawyer County Zoning & Conservation Administrator

File: # CUP 23-006

Applicant:

Lynn Pohl
N12509 Cth F
Phillips, WI 54555

Agent:

TowerNorth Development, LLC & Verizon Wireless
C/O Mountain, LTD. – Trish Gray

Property Location & Legal Description:

Town of Draper. Part of the SE ¼ of the NW ¼; S24, T39N, R03W; Parcel #006-339-24-2401; Tax ID #6012; 39.93 total acres; Zoned Forestry One (F-1).

Purpose of Request:

Construction of a 275' wireless communication tower with 5' lightning rod per Section 17.8 (B) (10) of the Sawyer County Zoning Ordinance and Sawyer County Telecommunication Ordinance in conjunction with WI State Stats.

Project History/Summary of Request/Summary of State mobile tower siting regulations:

With the new changes to WI Chapter 66.0404 mobile tower siting regulations including the changes in 2017 and in 2019 Counties are somewhat limited in local regulations as long as the applicant or mobile service provider comply with the provisions and regulations specified in 66.0404. The Sawyer County Telecommunication Ordinance would not be compliant at this point to State Statutes and the State Statutes would need to be followed. The only element that the Sawyer County Zoning Telecommunication Ordinance is utilizing is that a Conditional Use Permit is required for a telecommunication facility.

Per the regulations established in 66.0404(2)(b) the application process which a person must complete to engage in the siting, construction, or modification activities shall be in writing and shall contain all of the following information:

1. The name and business address of, and the contact individual for, the applicant. **(included in attached plans)**

2. The location of the proposed or affected support structure. **(included in attached plans)**

3. The location of the proposed mobile service facility. **(included in attached plans)**

~~4. If the application is to substantially modify an existing support structure, a construction plan which describes the proposed modifications to the support structure and the equipment and network components, including antennas, transmitters, receivers, base stations, power supplies, cabling, and related equipment associated with the proposed modifications.~~ (new structure-not applicable)

5. If the application is to construct a new mobile service support structure, a construction plan which describes the proposed mobile service support structure and the equipment and network components, including antennas, transmitters, receivers, base stations, power supplies, cabling, and related equipment to be placed on or around the new mobile service support structure. **(included in attached plans)**

6. If an application is to construct a new mobile service support structure, an explanation as to why the applicant chose the proposed location and why the applicant did not choose collocation, including a sworn statement from an individual who has responsibility over the placement of the mobile service support structure attesting that collocation within the applicant's search ring would not result in the same mobile service functionality, coverage, and capacity; is technically infeasible; or is economically burdensome to the mobile service provider. **(included as separate letter in packet)**

The Sawyer County Zoning Administrator has deemed that the application is complete.

Within 90 days of its receipt of a complete application (January 26, 2023), a political subdivision (Sawyer County) shall complete all of the following or the applicant may consider the application approved, except that the applicant and the political subdivision may agree in writing to an extension of the 90 day period. The Town Board was unable to hear this CUP due to Town Board members resigning. In any case, the Sawyer County Zoning Committee should still make a decision for this CUP. If the decision is to approve the Committee can make a condition that it would also require Town Approval.

1. Review the application to determine whether it complies with all applicable aspects of the political subdivision's building code and, subject to the limitations in this section, zoning ordinances. **(All other determinations have been tentatively approved by the Zoning & Conservation Department including setbacks, floodplains, and other County Zoning Ordinances not subject to the limitations described later in this staff report)**

2. Make a final decision whether to approve or disapprove the application.

3. Notify the applicant, in writing, of its final decision.

4. If the decision is to disapprove the application, include with the written notification substantial evidence which supports the decision.

- A political subdivision may disapprove an application if an applicant refuses to evaluate the feasibility of collocation within the applicant's search ring and provide the sworn statement.
- A party who is aggrieved by the final decision of a political subdivision may bring an action in the circuit court of the county in which the proposed activity, which is the subject of the application, is to be located.
- If an applicant provides a political subdivision with an engineering certification showing that a mobile service support structure, or an existing structure, is designed to collapse within a smaller area than the setback or fall zone area required in a zoning ordinance, that zoning ordinance does not apply to such a structure unless the political subdivision provides the applicant with substantial evidence that the engineering certification is flawed. **(The proposed tower height would be 250' and would be located 130' to the closest setback line. The applicant has provided a letter from a professional engineer indicating that even though the tower would be within the fallzone of a setback line that the tower is designed to collapse with a radius less than or equal to 125'. If the committee accepts this engineering certificate a greater setback distance than 130' from a setback line may not be imposed.)**

66.0404(4) Limitations: With regard to an activity described for new construction a political subdivision may not do any of the following:

- Impose environmental testing, sampling, or monitoring requirements, or other compliance measures for radio frequency emissions, on mobile service facilities or mobile radio service providers.
- Enact an ordinance imposing a moratorium on the permitting, construction, or approval of any such activities.
- Enact an ordinance prohibiting the placement of a mobile service support structure in particular locations within the political subdivision.
- Charge a mobile radio service provider a fee in excess of $3,000 for new construction.
- Charge a mobile radio service provider any recurring fee for new construction or a class 2 collocation.
- Permit 3rd party consultants to charge the applicant for any travel expenses incurred in the consultant's review of mobile service permits or applications.
- Disapprove an application to conduct an activity based solely on aesthetic concerns.
- Disapprove an application to conduct a class 2 collocation on aesthetic concerns.
- Enact or enforce an ordinance related to radio frequency signal strength or the adequacy of mobile service quality.
- Impose a surety requirement, unless the requirement is competitively neutral, nondiscriminatory, and commensurate with the historical record for surety requirements for other facilities and structures in the political subdivision which fall into disuse. There is a rebuttable presumption that a surety requirement of $20,000 or less complies with this paragraph.

- Prohibit the placement of emergency power systems.
- Require that a mobile service support structure be placed on property owned by the political subdivision.
- Disapprove an application based solely on the height of the mobile service support structure or on whether the structure requires lighting.
- Condition approval of such activities on the agreement of the structure or mobile service facility owner to provide space on or near the structure for the use of or by the political subdivision at less than the market rate, or to provide the political subdivision other services via the structure or facilities at less than the market rate.
- Limit the duration of any permit that is granted.
- Require an applicant to construct a distributed antenna system instead of either constructing a new mobile service support structure or engaging in collocation.
- Disapprove an application based on an assessment by the political subdivision of the suitability of other locations for conducting the activity.
- Require that a mobile service support structure, existing structure, or mobile service facilities have or be connected to backup battery power.
- Impose a setback or fall zone requirement for a mobile service support structure that is different from a requirement that is imposed on other types of commercial structures.
- Consider an activity a substantial modification if a greater height is necessary to avoid interference with an existing antenna.
- Consider an activity a substantial modification if a greater protrusion is necessary to shelter the antenna from inclement weather or to connect the antenna to the existing structure by cable
- Limit the height of a mobile service support structure to under 200 feet
- Condition the approval of an application on, or otherwise require, the applicant's agreement to indemnify or insure the political subdivision in connection with the political subdivision's exercise of its authority to approve the application.
- Condition the approval of an application on, or otherwise require, the applicant's agreement to permit the political subdivision to place at or collocate with the applicant's support structure any mobile service facilities provided or operated by, whether in whole or in part, a political subdivision or an entity in which a political subdivision has a governance, competitive, economic, financial or other interest.

Additional information for Conditional Use Permits:

Substantial evidence means facts and information, other than merely personal preferences or speculation, directly pertaining to the requirements and conditions an applicant must meet to obtain a conditional use permit and that reasonable persons would accept in support of a conclusion.

If an applicant agrees to meets all of the requirements and conditions specified in the county ordinance or those imposed by the county zoning board, the county shall grant the conditional use permit. Any condition imposed must be related to the purpose of the ordinance and be based on substantial evidence. The conditions must be reasonable and, to the extent

practicable, measurable. The applicant must demonstrate that the application and all requirements and conditions established by the county relating to the conditional use are or shall be satisfied, both of which must be supported by substantial evidence. The county's decision to approve or deny the permit must be supported by substantial evidence.

Possible Conditions for Approval: (choose from list below) (add or delete from list below)

1 Land Use Permit for telecommunication facility is required. **(LUP submitted pending CUP approval)**

2 Prior to issuing the Land Use Permit the applicant or owner of the telecommunication facility shall provide a bond, irrevocable letter of credit, of their suitable financial guarantee as to ensure the removal of facility if it falls into disuse and restoration back to pre-construction state in the amount of $20,000.

3 All other town, County, State, Federal Laws are followed. Including Town approval of the CUP case.

Findings of Fact for Approval: (choose from list below)

1 It would not be significantly damaging to the rights of others or property values
2 It would not be detrimental to ecology, wild life, wetlands or shorelands.
3 It would not create an air quality, water supply, or pollution problem.
4 It would not create topographical problems such as run off, drainage, erosion, flooding, or vegetative cover removal.
5 It would not create traffic or highway access problems.
6 It would not destroy prime agricultural lands.
7 It would be compatible with the surrounding uses and the area.
8 It would be compatible with the Town and County Comprehensive Plan
9 It would not create an objectionable view.

Findings of Fact for Denial: (choose from list below)

10 It would be significantly damaging to the rights of others and property values.
11 It would be detrimental to ecology, wild life, wetlands or shorelands.
12 It would create an air quality, water supply, or pollution problem.
13 It would create topographical problems such as run off, drainage, erosion, flooding, or vegetative cover removal.
14 It would create traffic or highway access problems.
15 It would destroy prime agricultural lands.
16 It would not be compatible with the surrounding uses and the area.
17 It would not be compatible with the Town and County Comprehensive Plan.
18 It would create an objectionable view.

SAWYER COUNTY

Conditional Use Public Hearing Application

RECEIVED
JAN 26 2023
SAWYER COUNTY
ZONING ADMINISTRATION

TO: Sawyer County Zoning and Conservation Administration
10610 Main Street Suite 49
Hayward, Wisconsin 54843
Attn: Kathy Marks E-mail: kathy.marks@sawyercountygov.org

Property Owner Name & Address:
Lynn Pohl and Diane M Wasieleski
422W State Highway 70
Loretta, WI 54896

Phone: (715)339-2870 **Email:** pohllynn426@gmail.com

Property description including Parcel Number:
The southeast quarter of the northwest quarter, section 24, township 39 north, range 3 west, town of Draper, Sawyer County, Wisconsin, EXCEPT Highway in Warranty Deed in Volume 456, page 100 as Document No. 220614. Property tax ID number of 57-006-2-39-03-24-2 04-000-000010.

Permit desired for: *Edit: TowerNorth Development, LLC and Verizon Central, LLC seek Conditional Use Permit
Verizon Central LLC ("Verizon") seeks Conditional Use Permit approval to construct a 275-foot wireless communications tower with a five (5) foot lightning rod on the property located on State Highway 70. The purpose of the facility is to allow Verizon to improve its customer experience in the vicinity of the proposed facility. The property is located in Sawyer County and the property is zoned Forestry One (F-1).

Owner Print & Sign

Owner Print & Sign

Signature of property owner(s) required. The undersigned person(s) hereby give permission for access to the property for inspection by Municipal Officials, Sawyer County Zoning Staff and Sawyer County Zoning Committee members if needed.

Name, Address, Phone & Email of Agent or Buyer:
TowerNorth Development, LLC and Verizon Wireless
c/o Mountain Ltd. Trish Gray
26 E. Scranton Avenue #188
Lake Bluff, IL 60044
(630)746-5433
pgray@mountainltd.com

Fee: $350.00 Date of Public Hearing:

Rev January 2021

Real Estate Sawyer County Property Listing

Today's Date: 1/26/2023

Property Status: Current

Created On: 2/6/2007 7:55:11 AM

Description

Updated: 12/10/2008

Tax ID:	6012
PIN:	57-006-2-39-03-24-2 04-000-000010
Legacy PIN:	006339242401
Map ID:	.8.1
Municipality:	(006) TOWN OF DRAPER
STR:	S24 T39N R03W
Description:	PRT SENW
Recorded Acres:	39.930
Calculated Acres:	36.354
Lottery Claims:	0
First Dollar:	Yes
Zoning:	(F-1) Forestry One
ESN:	429

Tax Districts

Updated: 2/6/2007

1	State of Wisconsin
57	Sawyer County
006	Town of Draper
576615	Winter School District
001700	Technical College

Recorded Documents

Updated: 1/18/2023

QUIT CLAIM DEED	
Date Recorded: 2/4/1997	259044 596/213
MAP OF SURVEY	
Date Recorded: 12/19/2022	24393-6

Ownership

Updated: 12/10/2008

LYNN POHL	PHILLIPS WI
DIANE M WASIELESKI	PHILLIPS WI

Billing Address:	**Mailing Address:**
LYNN POHL	**LYNN POHL**
N12509 CTH F	N12509 CTH F
PHILLIPS WI 54555	PHILLIPS WI 54555

Site Address

* indicates Private Road

422W STATE HWY 70	PARK FALLS 54552

Property Assessment

Updated: 8/22/2016

2023 Assessment Detail

Code	Acres	Land	Imp.
G1-RESIDENTIAL	1.000	4,500	11,700
G6-PRODUCTIVE FOREST	38.930	49,100	0

2-Year Comparison	2022	2023	Change
Land:	53,600	53,600	0.0%
Improved:	11,700	11,700	0.0%
Total:	65,300	65,300	0.0%

Property History

N/A

006339133101
006339134201
006339135201
006339231101
W. DNR
006339242101
006339242201
006339241101
422W
L. Pohl
&
D. Wasileski
006339231401
70
006339242401 Town of Draper
ROW
STATE HWY 70
N
006339233401
006339243101
006339244201
006339244101
SNUSS BLVD
SNUSS BLVD
5884N
0 200 400 600ft
DISCLAIMER: This map is not guaranteed to be accurate, correct, current, or complete and conclusions drawn are the responsibility of the user.

006339133101
006339134201
006339135201
006339231101
006339242101
006339242201
006339241101
422W
006339231401
70
006339242401
Town of Draper
ROW
STATE HWY 70
SNUSS BLVD
SNUSS BLVD
006339233401
006339243101
006339244201
006339244101
588 4N

00633924201
00633924101
422W
00633924401
Town of Draper
00633941101
70
ROW
STATE HWY 70
00633943101
00633944201

Sabre Industries™
Towers and Poles

January 9, 2023

Liz Rutkowski
Site Development Manager
TowerNorth
750 W Center St, Floor 3
West Bridgewater, MA 02379

RE: Proposed 275' Sabre Self-Supporting Tower for WI1022-A NFork, WI

Dear Ms. Rutkowski,

Upon receipt of order, we propose to design a tower for the above referenced project for a Basic Wind Speed of 106 mph and 50 mph with 1.5" radial ice, Risk Category II, Exposure Category C, and Topographic Category 1 in accordance with the Telecommunications Industry Association Standard ANSI/TIA-222-H, "Structural Standard for Antenna Supporting Structures and Antennas".

When designed according to this standard, the wind pressures and steel strength capacities include several safety factors. Therefore, it is highly unlikely that the tower will fail structurally in a wind event where the design wind speed is exceeded within the range of the built-in safety factors.

Should the wind speed increase beyond the capacity of the built-in safety factors, to the point of failure of one or more structural elements, the most likely location of the failure would be within one or more of the tower members in the upper portion. This would result in a buckling failure mode, where the loaded member would bend beyond its elastic limit (beyond the point where the member would return to its original shape upon removal of the wind load).

Therefore, it is likely that the overall effect of such an extreme wind event would be localized buckling of a tower section. Assuming that the wind pressure profile is similar to that used to design the tower, the tower is most likely to buckle at the location of the highest combined stress ratio in the upper portion of the tower. This would result in the portion of the tower above the failure location "folding over" onto the portion of the tower below the failure location. *Please note that this letter only applies to the above referenced tower designed and manufactured by Sabre Towers & Poles.* In the unlikely event of total separation, this would result in a fall radius less than or equal to 74 feet.

Sincerely,

WISCONSIN
AMY R. HERBST
E-38026
SIOUX CITY
IA
PROFESSIONAL ENGINEER
1/9/23

Amy R. Herbst, P.E.
Senior Design Engineer

Sabre Towers and Poles • 7101 Southbridge Drive • P.O. Box 658 • Sioux City, IA 51102-0658
P: 712-258-6690 **F**: 712-279-0814 **W**: www.SabreTowersandPoles.com

MOUNTAIN, LTD.
26 E. Scranton Avenue, #188
Lake Bluff, IL 60044

January 23, 2023

Sawyer County Zoning
Attn: Jay Kozlowski
10610 Main Street, Suite 49
Hayward, WI 54843

RE: Wisconsin Statutes Chapter 66.0404 Mobile Tower Siting Regulations 2.B.(6) / No Existing Structures that Achieve Verizon's Network Objective / Telecommunications Tower Facility on Parcel #57-006-2-39-03-24-2 04-000-000010/ State Highway 70 Park Falls, WI [NFORK WI1022-A]

Dear Mr. Kozlowski,

After evaluating Verizon Wireless's search area in which it is seeking to install new telecommunication antennas, no existing structures were located that would allow Verizon to achieve its network objective. As a result, the proposed telecommunications tower facility is required to allow Verizon to improve its customer experience and address its network objective.

If you have any questions regarding this request, please contact me directly at (630)746-5433 or pgray@mountainltd.com.

Sincerely,

_____

Trish Gray
Agent on Behalf of Verizon Wireless
MOUNTAIN LTD.

MOUNTAIN, LTD.

January 24, 2023

Sawyer County Zoning & Conservation
Attn: Jay Kozlowski
10610 Main Street, Suite 49
Hayward, WI 54843

Mr. Kozlowski,

The scope of work for the new TowerNorth and Verizon site located off State Highway 70 Park Falls, WI includes the construction of a new 275' tower with antennas, ground equipment, and ancillary equipment within a fenced compound. The purpose of this facility is to allow Verizon to improve its customer experience in the vicinity of the proposed facility.

The following documents have been included for your review:

- Check #115656 for the Conditional Use Permit Application Fee
- 1 Conditional Use Narrative
- 1 set of Construction Drawings
- 1 Fall Zone Letter
- 1 Justification Statement – No Existing Towers
- 1 Completed Conditional Use Application
- 1 Photo of the Signed Conditional Use Application

If there is any additional information required or questions regarding this submittal, please contact me directly at (630)746-5433 or pgray@mountainltd.com.

Sincerely,

_____

Trish Gray
Agent on Behalf of Verizon Wireless
MOUNTAIN LTD.

Conditional Use Application for TowerNorth Development, LLC and Verizon Wireless for a 275' Communications Tower located on 422W State Highway 70 Park Falls, WI 54552

Chris Barton, Director

515 N. State Street 14th Floor, Chicago , IL 60654

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EXHIBIT B: FALL ZONE LETTER

EXHIBIT C: JUSTIFICATION STATEMENT – NO EXISTING TOWERS

EXHIBIT D: CONDITIONAL USE APPLICATION

SUMMARY OF PROPOSED CONDTIONAL USE APPROVAL FOR A 280' COMMUNICATIONS TOWER

TowerNorth Development, LLC ("TowerNorth") and Verizon Central LLC ("Verizon") seek Conditional Use Permit approval to construct a 275-foot wireless communications tower with a five (5) foot lightning rod on the property located on State Highway 70 with a property tax ID number of 57-006-2-39-03-24-2 04-000-000010. The purpose of the facility is to allow Verizon to improve its customer experience in the vicinity of the proposed facility. The property is located in Sawyer County and the property is zoned Forestry One (F-1). The property is owned by Lynn Pohl and Diane M. Wasieleski.

Verizon's antenna and ancillary equipment will be mounted at the 270' elevation. The tower will be capable of holding four additional co-locators at lower elevations. The tower will be enclosed within a 75' x 75' fenced area within the 100' x 100' lease area. Within the compound, Verizon will install its ground equipment along with a generator and hand hole/pull box for its fiber equipment. The compound will be enclosed by a fence and accessed only through a locked gate. The site is an unmanned facility; therefore, no water or sewage service is necessary. The tower and compound will be accessed from State Highway 70 (see Exhibit A).

If Sawyer County approves the Conditional Use Permit for TowerNorth and Verizon, the enhancement of Sawyer County's public safety system and the improved E-911 services from Verizon will improve public safety in the County. A few reasons for the need and benefit of the installation to the community are below:

- More than 75% of prospective home buyers prefer strong cellular connections when buying a home (Rootmetrics, June 2015).
- 35% of Americans reach for their smartphone first in the morning (CTIA, July 2015), underscoring the importance of in-building coverage.
- In the United States, mobile data traffic will grow 7-fold from 2014 to 2019, a compound annual growth rate of 47%. (Cisco VNI Mobile Forecast Highlights, 2014-2019, October 2015)
- In the US, there are 355 million wireless devices for 319 million residents. (CTIA, "Facts and Infographics, June 2015).

Robust public safety services enhance the general welfare of the community by reducing emergency responder's response times to life/safety emergencies.

COMPLIANCE WITH SAWYER COUNTY CONDITIONAL USE PERMIT STANDARDS:
CHAPTER 66 REGULATION SECTION 66.0404 MOBILE TOWER SITING REGULATIONS

TowerNorth and Verizon have met all the standards pursuant to Wisconsin State Statute Chapter 66 General Municipality Law Subsection IV Regulation Section 66.0404 Mobile Tower Siting Regulations. Per conversation with Jay Kozlowski, Sawyer County Zoning & Conservation Administrator, the Sawyer County Ordinance is out of date and the Wisconsin Statute should be used in conjunction with the Sawyer County Conditional Use Public Hearing Application. Therefore, granting TowerNorth and Verizon's requested conditional use permit approval is the only appropriate determination.

Subdivision 2: New Construction or Substantial Modification of Facilities and Support Structures

A. Subject to the provisions and limitations of this section, a political subdivision may enact a zoning ordinance under s. 59.69, 60.61, or 62.23 to regulate any of the following activities:
    1. The siting and construction of a new mobile service support structure and facilities.
    2. With regard to a class 1 collocation, the substantial modification of an existing support structure and mobile service facilities.

*** TowerNorth and Verizon's proposed installation falls under Subdivision 2.A.1 as a new mobile service support structure and facilities.**

B. If a political subdivision regulates an activity described under par. (a), the regulation shall prescribe the application process which a person must complete to engage in the siting, construction, or modification activities described in par. (a). The application shall be in writing and shall contain all of the following information:
    1. The name and business address of, and the contact individual for, the applicant.

        *** TowerNorth and Verizon have included this information (Page T-1, Exhibit A)**

    2. The location of the proposed or affected support structure.

        *** TowerNorth and Verizon have included this information (Page LP, Exhibit A)**

    3. The location of the proposed mobile service facility.

        *** TowerNorth and Verizon have included this information (Page LP, Exhibit A)**

    4. If the application is to substantially modify an existing support structure, a construction plan which describes the proposed modifications to the support structure and the equipment and network components, including antennas, transmitters, receivers, base stations, power supplies, cabling, and related equipment associated with the proposed modifications.

        *** Not applicable to this application**

5. If the application is to construct a new mobile service support structure, a construction plan which describes the proposed mobile service support structure and the equipment and network components, including antennas, transmitters, receivers, base stations, power supplies, cabling, and related equipment to be placed on or around the new mobile service support structure.

   *** TowerNorth and Verizon have included this information (Pages C-5 thru VW EX-1, Exhibit A)**

6. If an application is to construct a new mobile service support structure, an explanation as to why the applicant chose the proposed location and why the applicant did not choose collocation, including a sworn statement from an individual who has responsibility over the placement of the mobile service support structure attesting that collocation within the applicant's search ring would not result in the same mobile service functionality, coverage, and capacity; is technically infeasible; or is economically burdensome to the mobile service provider.

   *** TowerNorth and Verizon have included this information (Exhibit C)**

C. If an applicant submits to a political subdivision an application for a permit to engage in an activity described under par. (a), which contains all of the information required under par. (b), the political subdivision shall consider the application complete. If the political subdivision does not believe that the application is complete, the political subdivision shall notify the applicant in writing, within 10 days of receiving the application, that the application is not complete. The written notification shall specify in detail the required information that was incomplete. An applicant may resubmit an application as often as necessary until it is complete.

   *** All conditional use permit conditions have been met and granting the conditional use is the only proper decision pursuant to the County's ordinance.**

D. Within 90 days of its receipt of a complete application, a political subdivision shall complete all of the following or the applicant may consider the application approved, except that the applicant and the political subdivision may agree in writing to an extension of the 90 day period:
   1. Review the application to determine whether it complies with all applicable aspects of the political subdivision's building code and, subject to the limitations in this section, zoning ordinances.
   2. Make a final decision whether to approve or disapprove the application.
   3. Notify the applicant, in writing, of its final decision.
   4. If the decision is to disapprove the application, include with the written notification substantial evidence which supports the decision.

   *** All conditional use permit conditions have been met and granting the conditional use is the only proper decision pursuant to the County's ordinance.**

E. A political subdivision may disapprove an application if an applicant refuses to evaluate the feasibility of collocation within the applicant's search ring and provide the sworn statement described under par. (b) 6.

*** Verizon has evaluated the feasibility of collocation within the search ring and provided a sworn statement with this application. (Exhibit C)**

F. A party who is aggrieved by the final decision of a political subdivision under par. (d) 2. may bring an action in the circuit court of the county in which the proposed activity, which is the subject of the application, is to be located.

*** All conditional use permit conditions have been met and granting the conditional use is the only proper decision pursuant to the County's ordinance.**

G. If an applicant provides a political subdivision with an engineering certification showing that a mobile service support structure, or an existing structure, is designed to collapse within a smaller area than the setback or fall zone area required in a zoning ordinance, that zoning ordinance does not apply to such a structure unless the political subdivision provides the applicant with substantial evidence that the engineering certification is flawed.

*** A Fall Zone Letter is included with this submission demonstrating that the tower is designed to collapse within a smaller area than the setback or fall zone area required. (Exhibit B)**

H. A political subdivision may regulate the activities described under par. (a) only as provided in this section.

*** No response needed.**

I. If a political subdivision has in effect on July 2, 2013, an ordinance that applies to the activities described under par. (a) and the ordinance is inconsistent with this section, the ordinance does not apply to, and may not be enforced against, the activity.

*** No response needed.**

Subdivision 3: Collocation on existing support structures

*** No response needed – does not apply to this application.**

Subdivision 4: Limitations

*** No response needed by applicant – Subdivision 4 pertains to the Limitations a political subdivision must abide by and is included for reference only.**

With regard to an activity described in sub. (2) (a) or a class 2 collocation, a political subdivision may not do any of the following:

A. Impose environmental testing, sampling, or monitoring requirements, or other compliance measures for radio frequency emissions, on mobile service facilities or mobile radio service providers.

B. Enact an ordinance imposing a moratorium on the permitting, construction, or approval of any such activities.

C. Enact an ordinance prohibiting the placement of a mobile service support structure in particular locations within the political subdivision.

D. Charge a mobile radio service provider a fee in excess of one of the following amounts:

1. For a permit for a class 2 collocation, the lesser of $500 or the amount charged by a political subdivision for a building permit for any other type of commercial development or land use development.
2. For a permit for an activity described in sub. (2) (a), $3,000.

E. Charge a mobile radio service provider any recurring fee for an activity described in sub. (2) (a) or a class 2 collocation.

F. Permit 3rd party consultants to charge the applicant for any travel expenses incurred in the consultant's review of mobile service permits or applications.

G. Disapprove an application to conduct an activity described under sub. (2) (a) based solely on aesthetic concerns.

GM. Disapprove an application to conduct a class 2 collocation on aesthetic concerns.

H. Enact or enforce an ordinance related to radio frequency signal strength or the adequacy of mobile service quality.

I. Impose a surety requirement, unless the requirement is competitively neutral, nondiscriminatory, and commensurate with the historical record for surety requirements for other facilities and structures in the political subdivision which fall into disuse. There is a rebuttable presumption that a surety requirement of $20,000 or less complies with this paragraph.

J. Prohibit the placement of emergency power systems.

K. Require that a mobile service support structure be placed on property owned by the political subdivision.

L. Disapprove an application based solely on the height of the mobile service support structure or on whether the structure requires lighting.

M. Condition approval of such activities on the agreement of the structure or mobile service facility owner to provide space on or near the structure for the use of or by the political subdivision at less than the market rate, or to provide the political subdivision other services via the structure or facilities at less than the market rate.

N. Limit the duration of any permit that is granted.

O. Require an applicant to construct a distributed antenna system instead of either constructing a new mobile service support structure or engaging in collocation.

P. Disapprove an application based on an assessment by the political subdivision of the suitability of other locations for conducting the activity.

Q. Require that a mobile service support structure, existing structure, or mobile service facilities have or be connected to backup battery power.

R. Impose a setback or fall zone requirement for a mobile service support structure that is different from a requirement that is imposed on other types of commercial structures.

S. Consider an activity a substantial modification under sub. (1) (s) 1. or 2. if a greater height is necessary to avoid interference with an existing antenna.

T. Consider an activity a substantial modification under sub. (1) (s) 3. if a greater protrusion is necessary to shelter the antenna from inclement weather or to connect the antenna to the existing structure by cable.
U. Limit the height of a mobile service support structure to under 200 feet.
V. Condition the approval of an application on, or otherwise require, the applicant's agreement to indemnify or insure the political subdivision in connection with the political subdivision's exercise of its authority to approve the application.
W. Condition the approval of an application on, or otherwise require, the applicant's agreement to permit the political subdivision to place at or collocate with the applicant's support structure any mobile service facilities provided or operated by, whether in whole or in part, a political subdivision or an entity in which a political subdivision has a governance, competitive, economic, financial or other interest.

Subdivision 4: Setback Requirements

*** A Fall Zone Letter is included with this submission demonstrating that the tower is designed to collapse within a smaller area than the setback or fall zone area required. (Exhibit B)**

A. Notwithstanding sub. (4) (r), and subject to the provisions of this subsection, a political subdivision may enact an ordinance imposing setback requirements related to the placement of a mobile service support structure that applies to new construction or the substantial modification of facilities and support structures, as described in sub. (2).
B. A setback requirement may apply only to a mobile service support structure that is constructed on or adjacent to a parcel of land that is subject to a zoning ordinance that permits single-family residential use on that parcel. A setback requirement does not apply to an existing or new utility pole, or wireless support structure in a right-of-way that supports a small wireless facility, if the pole or facility meets the height limitations in s. 66.0414 (2) (e) 2. and 3.
C. The setback requirement under par. (b) for a mobile service support structure on a parcel shall be measured from the lot lines of other adjacent and nonadjacent parcels for which single-family residential use is a permitted use under a zoning ordinance.
D. A setback requirement must be based on the height of the proposed mobile service support structure, and the setback requirement may not be a distance that is greater than the height of the proposed structure.

Subdivision 5: Applicability.

If a county enacts an ordinance as described under sub. (2) the ordinance applies only in the unincorporated parts of the county, except that if a town enacts an ordinance as described under sub. (2) after a county has so acted, the county ordinance does not apply, and may not be enforced, in the town, except that if the town later repeals its ordinance, the county ordinance applies in that town.

*** No response needed.**

CONSULTANT TEAM

PROJECT CONSULTANT: TERRA CONSULTING GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
(847) 698-6400

SURVEYOR: MERIDIAN SURVEYING, LLC
N8774 FIRELANE 1
MENASHA, WI 54952
(920) 993-0881

APPROVALS

CARRIER: _____

LANDLORD: _____

LEASING: _____

CONSTRUCTION: _____

PROJECT TYPE

PROPOSED VERIZON WIRELESS ANTENNAS TO BE MOUNTED ON PROPOSED SELF-SUPPORT TOWER WITH PROPOSED 10'-0" x 10'-0" EQUIPMENT ON CONCRETE PAD AT BASE.

SITE COORDINATES:

LATITUDE: 45° 50' 52.83" N (FROM 1A)

LONGITUDE: 90° 41' 32.23" W (FROM 1A)

ELEVATION: ±1432.0' (FROM 1A)

DRIVING DIRECTIONS:

FROM VERIZON OFFICE: 1701 GOLF RD, ROLLING MEADOWS, IL

Head southeast, Slight left toward Meijer Dr, Turn left toward Meijer Dr, Turn left onto Meijer Dr, pass by Arby's (on the right), Turn right onto Golf Rd, Turn right onto IL-62 E/W Algonquin Rd, Turn right onto S Arlington Heights Rd, Use the right lane to merge onto I-90 W via the ramp to Rockford, Merge onto I-90 W, Keep left at the fork to stay on I-90 W entering Wisconsin, Keep left to continue on I-39 N/I-90 W, Take exit 108 A-B for I-39 N toward US-51/Portage/Wausau, Continue onto I-39 N,Continue onto US-51 N, Keep right at the fork to stay on US-51 N,Take exit 231 toward Co Rd A, Turn left onto Co Rd A, Turn right to stay on Co Rd A, Turn left onto County Hwy U, Turn left onto US-8 W, Turn right onto Co Hwy A/Co Rd A, Turn right onto State Hwy 13 N/WI-13 Trunk N, Turn left onto WI-70 W/WI-70 Trunk W.

VICINITY MAP

N.T.S.

PROJECT INFORMATION

ZONING:	F-1 FORESTRY ONE
OCCUPANCY:	UNINHABITED
PERMITTING JURISDICTION:	TOWN OF DRAPER / SAWYER COUNTY
E911 ADDRESS:	TBD
TOWER OWNER:	TOWERNORTH DEVELOPMENT, LLC 750 W CENTER STREET, SUITE 301 W BRIDGEWATER, MA 02379
CONTACT:	LIZ RUTKOWSKI EMAIL: LRUTKOWSKI@TOWERNORTH.COM PHONE: 401-533-1679
PROPERTY OWNER:	LYNN POHL & DIANE WASIELESKI N12509 C.T.H. "F" PHILLIPS, WI 54555
POWER PROVIDER:	NORTH CENTRAL POWER CO, INC. NAME: AMY BULLERWELL PHONE: 715-945-2630 EMAIL: NCPOFFICE@BEVCOMM.NET WORK ORDER#: 2210084
TELCO PROVIDER:	-

GENERATOR TYPE:	DIESEL
MAKE:	GENERAC
MODEL #	SD030-1PE-190JT GEN-GENSET-WP-30KW-DSL-1PH-190G-AHJ-TANK

TowerNorth

750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: (844) 748-8878 FAX: (508) 819-3017

verizon

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

LOCATION NUMBER: 712592
SITE NAME: IL/WI/WI2_NFORK_RSW

SITE NAME: NFORK
SITE NUMBER: WI-1022

422W S.T.H. "70"
PARK FALLS, WI 54552

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

FIBER COORDINATION IS NOT COMPLETE (PENDING FIBER CONTACT). PRIOR TO CONSTRUCTION, CONTACT DESIGNER FOR UPDATE.

DRAWING INDEX

SHEET	DRAWING INDEX	REVISION
T-1	TITLE SHEET	1.4
LP	LOCATION PLAN	4
C-1	ENGINEERING SITE PLAN	2
C-2	SITE GRADING PLAN	-
C-2A	GRADING DETAILS	3
C-3	FENCE DETAILS	2
C-4	SITE DETAILS	-
C-5	CONSTRUCTION NOTES	-
C-6	SITE SIGNAGE	-
ANT-1	SITE ELEVATION	-
E-1	ELECTRICAL NOTES	4
E-2	UTILITY ROUTING PLAN	2.4
E-3	H-FRAME DETAILS	-
E-4	SINGLE LINE DIAGRAM & TRENCH DETAILS	-
E-5	SITE GROUNDING PLAN	2
E-6	GROUNDING DETAILS	-
EX-1	PHOTO EXHIBIT	-
VW LP	LOCATION PLAN	4
VW C-1	ENGINEERING SITE PLAN	2
VW C-2	SITE GRADING PLAN	1
VW C-3	FOUNDATION DETAILS	1
VW C-4	GENERATOR FOUNDATION DETAILS	-
VW A-1	SITE ELEVATION	1
VW A-2	ANTENNA INFORMATION	-
VW A-2A	ANTENNA INFORMATION	-
VW A-3	SITE DETAILS	-
VW A-3A	ANTENNA MOUNTING DETAILS	-
VW A-4	SITE DETAILS	-
VW B-1	EQUIPMENT PAD PLAN & NOTES	-
VW B-2	EQUIPMENT PAD ELEVATIONS	4
VW E-1	UTILITY ROUTING PLAN	-
VW E-1A	UTILITY RISER DIAGRAMS	2
VW E-1B	GENERATOR UTILITY ROUTING PLAN	-
VW E-1C	GENERATOR SINGLE LINE DIAGRAM & ALARM WIRING	-
VW E-2	ELECTRICAL AND GROUNDING NOTES	-
VW E-3	ELECTRICAL DETAILS	-
VW E-4	SITE GROUNDING PLAN	2
VW E-5	GROUNDING DETAILS	-
VW E-6	GROUNDING DETAILS	1
VW EX-1	GENERATOR CUT-SHEET	3

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

ATTACHMENTS

1 OF 3	SITE SURVEY	-
2 OF 3	SITE SURVEY	-
3 OF 3	SITE SURVEY RFDS (BY OTHERS)	-

PREPARED FOR:
TowerNorth
750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: (844) 748-8878 FAX: (508) 819-3017

PLANS PREPARED BY:
TERRA
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

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

REVISIONS

NO	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	10/05/22	TJS
1	REVISED EQUIPMENT LAYOUT	10/13/22	TJS
2	REVISED PER POWER DESIGN	10/25/22	KBJ
3	ADDITION OF GRADING PLAN	12/14/22	TJS
4	REVISED PER POWER COORDINATION	01/03/23	KBJ

SITE # WI-1022
LOC # 712592

NFORK

422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DBS
DATE:	06/16/22
PROJECT #:	170-640

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

LEGEND

= 1" X 18" IRON PIPE SET
= 6" NAIL SET
= COUNTY MONUMENT FOUND
= TELEPHONE PEDESTAL
= EXISTING POWER POLE
OPL = OVERHEAD ELECTRIC
= EDGE OF BRUSH/WOODS
= PROPERTY LINE

PROPERTY LINE
FENCE
OVERHEAD POWER LINE
UNDERGROUND TELCO
UNDERGROUND POWER
BURIED WATER LINE
BURIED GAS LINE
EDGE OF BUSH/TREES

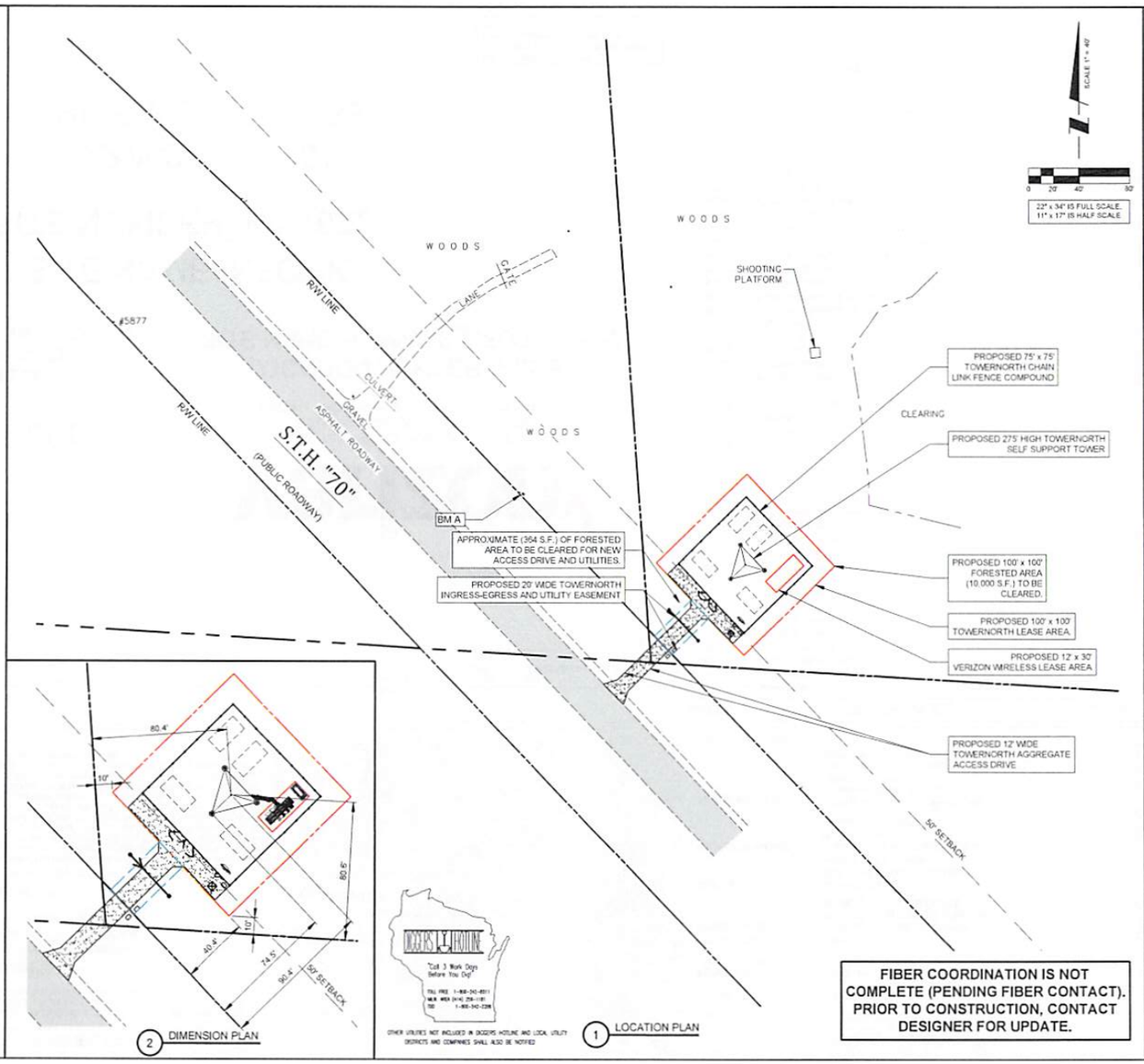
SURVEY PERFORMED BY:

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

BENCHMARK INFORMATION
SITE BENCHMARK: (BM A)
SET 6" NAIL IN NORTH FACE OF POWER POLE, ±1' ABOVE GROUND LEVEL
ELEVATION: 1434.28'

GENERAL SITE NOTES

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



2 DIMENSION PLAN

DIGGERS HOTLINE
"Call 3 Work Days Before You Dig"
TOLL FREE: 1-800-242-8511
OTHER UTILITIES NOT INCLUDED IN DIGGERS HOTLINE AND LOCAL UTILITY DISTRICTS AND COMPANIES SHALL ALSO BE NOTIFIED

1 LOCATION PLAN

FIBER COORDINATION IS NOT COMPLETE (PENDING FIBER CONTACT). PRIOR TO CONSTRUCTION, CONTACT DESIGNER FOR UPDATE.

PREPARED FOR:
TowerNorth
750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: (844) 745-4455 FAX: (508) 816-3017

PLANS PREPARED BY:
TERRA
608 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

CARRIER:
verizon
1701 GOLF ROAD
TOWER 2, SUITE 400
ROLLING MEADOWS, IL 60008
PHONE: (847) 519-5397
FAX: (847) 706-7415

REVISIONS

NO	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	10/05/22	TJS
1	REVISED EQUIPMENT LAYOUT	10/14/22	TJS
2	REVISED PER POWER DESIGN	11/28/22	KEJ
3	ADDITION OF GRADING PLAN	12/14/22	TJS
4	REVISED PER POWER COORDINATION	6/05/23	KEJ

SITE # WI-1022
LOC # 712592

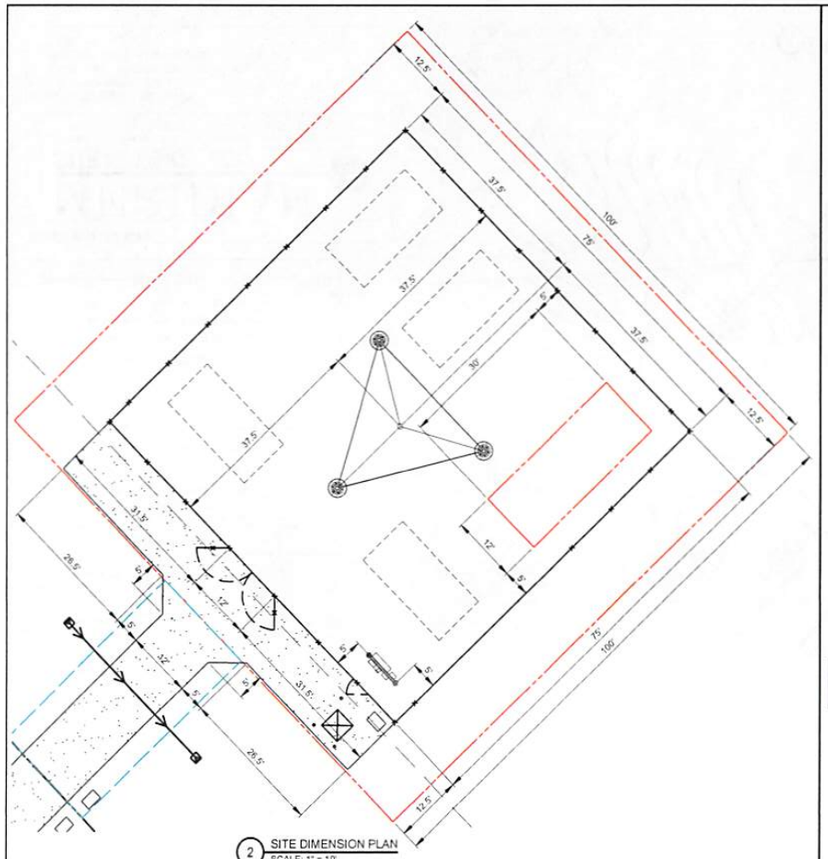
NFORK

422W S.T.H. "70"
PARK FALLS, WI 54552

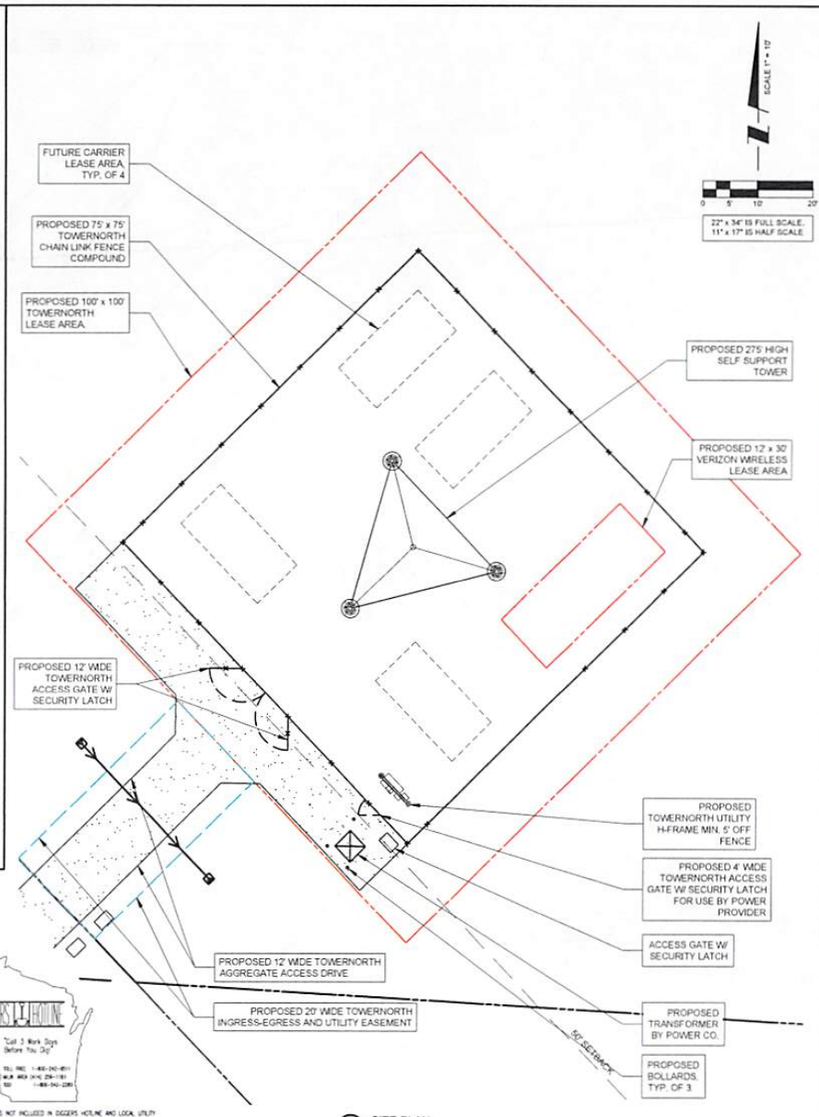
DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	06/16/22
PROJECT #	170-040

SHEET TITLE
LOCATION PLAN

SHEET NUMBER
LP



2 SITE DIMENSION PLAN
SCALE: 1" = 10'



1 SITE PLAN

PAVEMENT MATERIAL

ACCESS ROAD (HATCHED)
99 S.Y.
8" COMPACTED AGGREGATE BASE COURSE, CA-6
MIRAFI 500X SUBGRADE GEOTEXTILE FABRIC OR APPROVED EQUAL

LEASE SITE
1,111 S.Y.
8" COMPACTED AGGREGATE BASE COURSE, WITH 3/4" CRUSHED AGGREGATE, NO FINES, OR APPROVED EQUAL, MIRAFI 500X SUBGRADE GEOTEXTILE FABRIC OR APPROVED EQUAL
300 L.F. OF FENCING

THE CONTRACTOR SHALL INCLUDE AS PART OF THE BID, THE COST OF REMOVAL OF ANY SURFACE VEGETATION AND ORGANIC SOILS OR OTHER DELETERIOUS MATERIALS AND THE REPLACEMENT WITH ENGINEERED BACKFILL FOR THE AGGREGATE ACCESS DRIVE AND LEASE SITE, IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT.

SURVEY PERFORMED BY:

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

BENCHMARK INFORMATION
SITE BENCHMARK: (BM A)
SET 6" NAIL IN NORTH FACE OF POWER POLE; ±1' ABOVE GROUND LEVEL
ELEVATION: 1434.28'

DIGGERS HOTLINE
"Call 3 Work Days Before You Dig"
OTHER UTILITIES NOT INCLUDED IN DIGGERS HOTLINE AND LOCAL UTILITY DISTRICTS AND COMPANIES SHALL ALSO BE NOTIFIED

PREPARED FOR:
TowerNorth
750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: (844) 745-8378 FAX: (508) 816-3017

PLANS PREPARED BY:
TERRA
608 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6490
FAX: 847-698-6491

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

REVISIONS

NO.	DESCRIPTION	DATE	BY
-	ENLARGED FOR REVIEW	10/5/22	TJS
1	REVISED EQUIPMENT LAYOUT	10/19/22	TJS
2	REVISED PER POWER DESIGN	10/26/22	TJS
3	ADDITION OF GRADING PLAN	12/14/22	TJS
4	REVISED PER POWER COORDINATION	01/05/23	RMJ

SITE # WI-1022
LOC # 712592

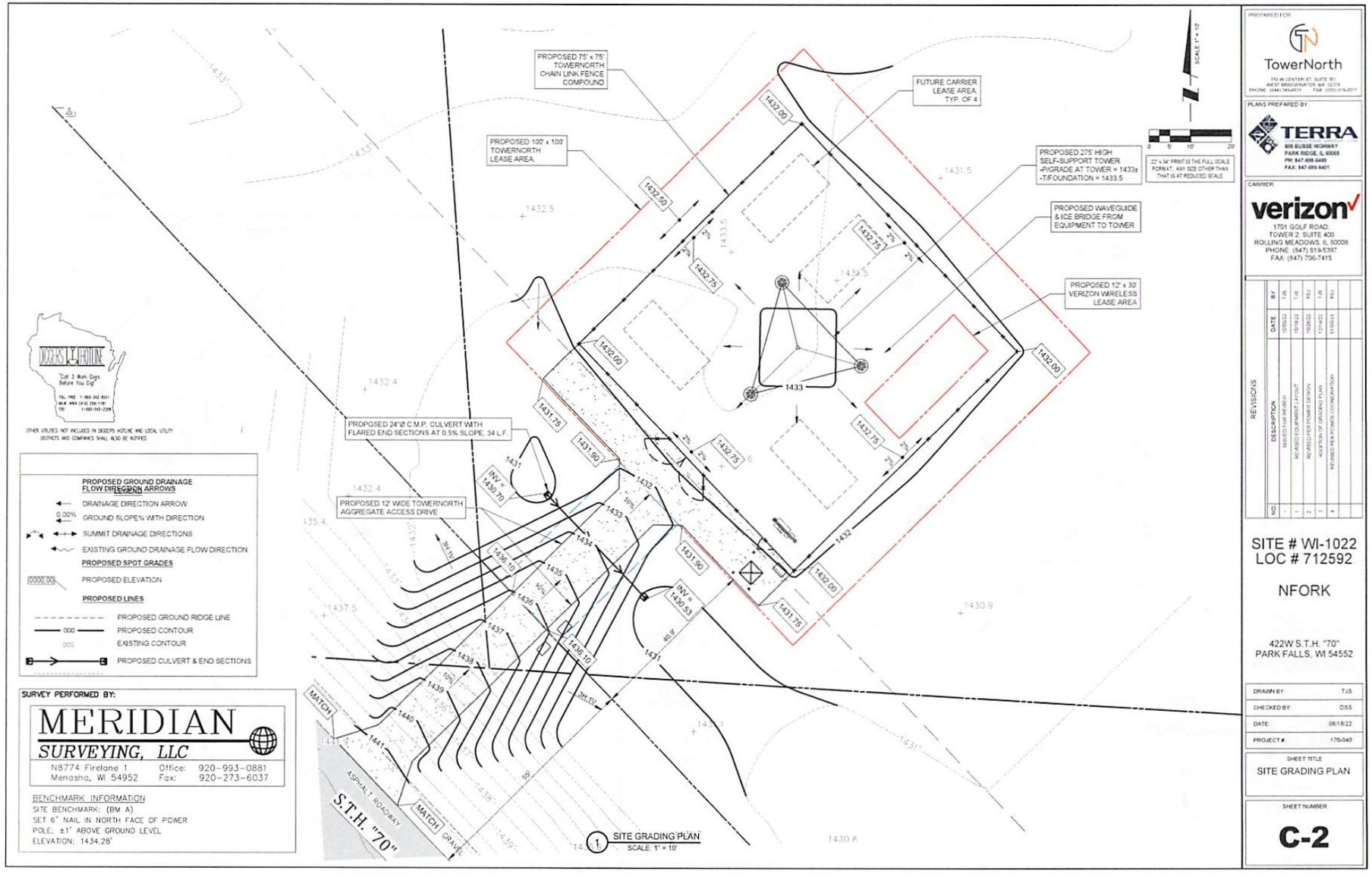
NFORK

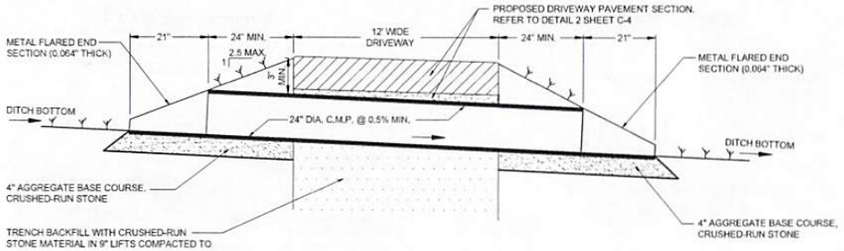
422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	06/16/22
PROJECT #:	176-040

SHEET TITLE
ENLARGED SITE PLAN

SHEET NUMBER
C-1


PROPOSED 75' x 75' TOWERNORTH CHAIN LINK FENCE COMPOUND
PROPOSED 100' x 100' TOWERNORTH LEASE AREA
FUTURE CARRIER LEASE AREA, TYP. OF 4
PROPOSED 275' HIGH SELF-SUPPORT TOWER -P/GRADE AT TOWER = 1433± -T/FOUNDATION = 1433.5
PROPOSED WAVEGUIDE & ICE BRIDGE FROM EQUIPMENT TO TOWER
PROPOSED 12' x 30' VERIZON WIRELESS LEASE AREA
PROPOSED 24"Ø C.M.P. CULVERT WITH FLARED END SECTIONS AT 0.5% SLOPE, 34 L.F.
PROPOSED 12' WIDE TOWERNORTH AGGREGATE ACCESS DRIVE
INV = 1430.70
INV = 1430.53
MATCH
ASPHALT ROADWAY
S.T.H. "70"
MATCH
GRAVEL
22" x 34" PRINT IS THE FULL SCALE FORMAT. ANY SIZE OTHER THAN THAT IS AT REDUCED SCALE.
SCALE 1" = 10'
0 5 10' 20'
Diggers Hotline
"Call 3 Work Days Before You Dig"
OTHER UTILITIES NOT INCLUDED IN DIGGERS HOTLINE AND LOCAL UTILITY DISTRICTS AND COMPANIES SHALL ALSO BE NOTIFIED
PROPOSED GROUND DRAINAGE FLOW DIRECTION ARROWS
DRAINAGE DIRECTION ARROW
0.00% GROUND SLOPE% WITH DIRECTION
SUMMIT DRAINAGE DIRECTIONS
EXISTING GROUND DRAINAGE FLOW DIRECTION
PROPOSED SPOT GRADES
0000.00 PROPOSED ELEVATION
PROPOSED LINES
PROPOSED GROUND RIDGE LINE
000 PROPOSED CONTOUR
000 EXISTING CONTOUR
PROPOSED CULVERT & END SECTIONS
SURVEY PERFORMED BY:
MERIDIAN SURVEYING, LLC
N8774 Firelane 1 Office: 920-993-0881
Menasha, WI 54952 Fax: 920-273-6037
BENCHMARK INFORMATION
SITE BENCHMARK: (BM A)
SET 6" NAIL IN NORTH FACE OF POWER POLE, ±1' ABOVE GROUND LEVEL
ELEVATION: 1434.28'
1 SITE GRADING PLAN
SCALE: 1" = 10'
PREPARED FOR:
TowerNorth
PLANS PREPARED BY:
TERRA
800 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401
CARRIER:
verizon
1701 GOLF ROAD,
TOWER 2, SUITE 400
ROLLING MEADOWS, IL 60008
PHONE: (847) 519-5397
FAX: (847) 706-7415
REVISIONS
NO DESCRIPTION DATE BY
1 WIRELESS COMPANY REVIEW 07/05/22 TJS
2 REVISED EQUIPMENT LAYOUT 10/19/22 TJS
3 REVISED PER POWER DESIGN 11/28/22 KBJ
4 ADDITION OF GRADING PLAN 12/14/22 TJS
5 REVISED PER POWERS COORDINATION 01/05/23 KBJ
SITE # WI-1022
LOC # 712592
NFORK
422W S.T.H. "70"
PARK FALLS, WI 54552
DRAWN BY: TJS
CHECKED BY: DSS
DATE: 06/18/22
PROJECT #: 176-040
SHEET TITLE
SITE GRADING PLAN
SHEET NUMBER
C-2

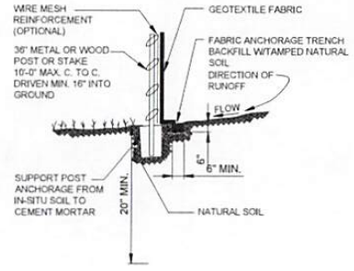


NOTES: 1.) INSTALL CULVERT AT THE LOCATION NOTED ON THE GRADING PLAN. FINAL GRADING SHALL CREATE POSITIVE DRAINAGE.

2.) THE CULVERT SHALL NOT BE ANY CLOSER THAN 6' FROM THE EXISTING EDGE OF ROADWAY PAVEMENT. REFER TO PLANS AND DITCH DETAIL.

3.) CULVERT LENGTHS PROVIDED ON THE DITCH PROFILES ARE MEASURE FROM THE END OF THE F.E.S. TO THE END OF THE F.E.S.

1 ACCESS DRIVE CULVERT DETAIL
N.T.S.



POST: STEEL EITHER "T" OR "U" TYPE OR 2" HARDWOOD.

FENCE: WOVEN WIRE, 14 1/2" GAUGE, 6" MAX. MESH OPENING

FILTER CLOTH: FILTER X, MIRAFI 100X, STABLINKS T140N OR APPROVED EQUAL

PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APROVED EQUAL

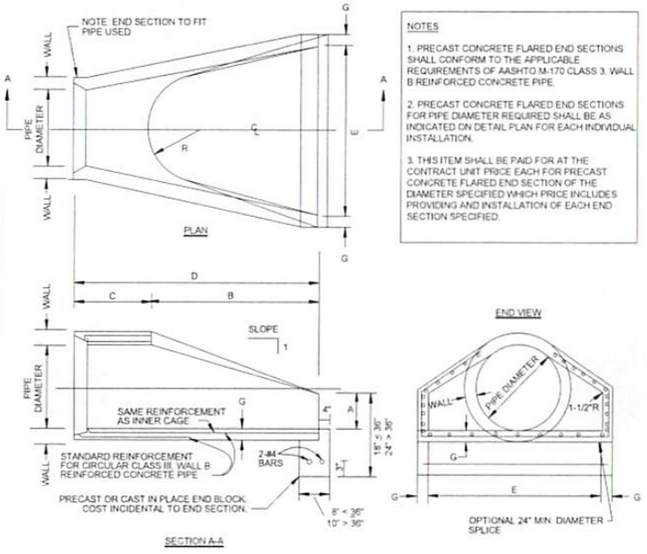
NOTE:
DEPENDING UPON CONFIGURATION, ATTACH FABRIC TO WIRE MESH W/HOG RINGS, STEEL POSTS W/ TIE WIRES, WOOD POSTS W/ NAILS.

GEOTEXTILE PARAMETERS		
PROPERTY	MINIMUM VALUE (a)	TEST METHOD
GRAB STRENGTH	180 LBS.	ASTM D-4632-91
PUNCTURE STRENGTH	75 LBS.	ASTM D-4833-88
BURST STRENGTH	290 LBS.	ASTM D-3786
TRAPEZOIDAL TEAR	50 LBS.	ASTM D-4571-87
(a) ALL VALUES REPRESENT MINIMUM ROLL VALUES		

NOTES:
THE FABRIC SHOULD BE PLACED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. INTERSECTIONS OF SHEETS MUST BE SOWN OR SUFFICIENTLY OVERLAPPED (AT LEAST 24 INCHES) OR AS SPECIFIED BY THE MANUFACTURER). THE GEOTEXTILE SHEETS SHOULD ALSO BE PLACED TAUT TO REDUCE WRINKLES OR FOLDS. CARE MUST BE EXERCISED TO PREVENT PHYSICAL DAMAGE OF THE GEOTEXTILE PRIOR TO, DURING AND AFTER INSTALLATION. UTILITIES SHOULD BE INSTALLED BEFORE PLACING THE FABRIC.

3 EROSION CONTROL SILT FENCE DETAIL
N.T.S.

* RADIUS AS FURNISHED BY MANUFACTURER



NOTES

1. PRECAST CONCRETE FLARED END SECTIONS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M-170 CLASS 3, WALL B REINFORCED CONCRETE PIPE.

2. PRECAST CONCRETE FLARED END SECTIONS FOR PIPE DIAMETER REQUIRED SHALL BE AS INDICATED ON DETAIL PLAN FOR EACH INDIVIDUAL INSTALLATION.

3. THIS ITEM SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR PRECAST CONCRETE FLARED END SECTION OF THE DIAMETER SPECIFIED WHICH PRICE INCLUDES PROVIDING AND INSTALLATION OF EACH END SECTION SPECIFIED.

PIPE DIA.	APPRX. QTY. (lbs)	WALL (in)	A (in)	B (in)	C (in)	D (in)	E (in)	G (in)	R (in)	APPROX. SLOPE
12"	530	2	4	24	4'-0 7/8"	6'-0 7/8"	24	2	9	1:2.4
15"	740	2 1/4	6	27	3'-10"	6'-1"	30	2 1/4"	11	1:2.4
18"	990	2 1/2	9	27	3'-10"	6'-1"	36	2 1/2	12	1:2.4
21"	1280	2 3/4	9	35	38	6'-1"	3'-6"	2 3/4	13	1:2.4
24"	1520	3	9 1/2	3'-7 1/2"	30	6'-1 1/2"	4'-0"	3	14	1:2.5

2 PRECAST REINFORCED CONCRETE FLARED END SECTION
N.T.S.

OPERATES 24 HOURS A DAY 365 DAYS A YEAR

Call Before You Dig
JULIE
ILLINOIS ONE CALL SYSTEM
CALL JULIE TOLL FREE (800) 892-0123 48 HOURS BEFORE YOU DIG

PREPARED FOR
TowerNorth
750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: (844) 745-3472 FAX: (508) 519-3017

PLANS PREPARED BY:
TERRA
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-696-6400
FAX: 847-696-6401

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

REVISIONS

NO.	DESCRIPTION	DATE	BY
-	PROJECT FOR HEARING	10/05/22	TJS
1	REVISED EQUIPMENT LAYOUT	10/14/22	TJS
2	REVISED PER POWER DESIGN	10/24/22	RJJ
3	ADDITION OF GRADING PLAN	12/14/22	TJS
4	REVISED PER POWER CORRECTION	01/05/23	RJJ

SITE # WI-1022
LOC # 712592

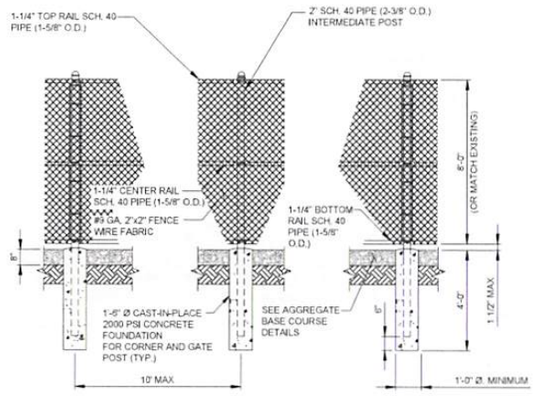
NFORK

422W S.T.H. "70"
PARK FALLS, WI 54552

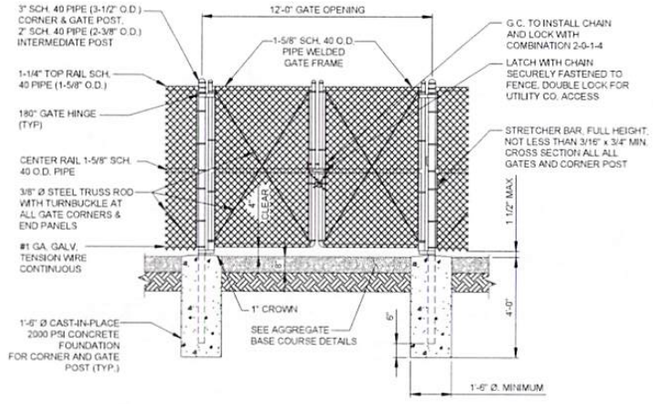
DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	08/18/22
PROJECT #:	170-040

SHEET TITLE
GRADING DETAILS

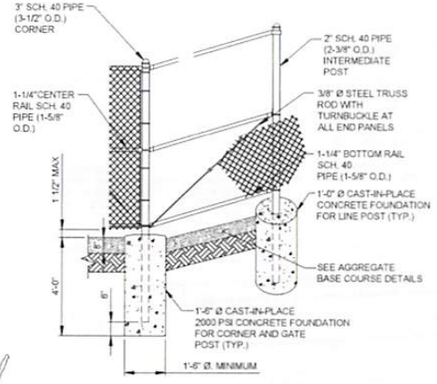
SHEET NUMBER
C-2A



1 FENCE POST DETAILS
N.T.S.

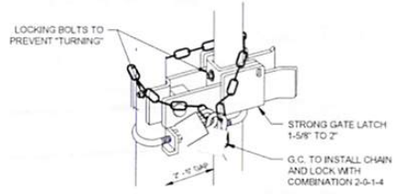


2 12'-0" DOUBLE SWING GATE
N.T.S.

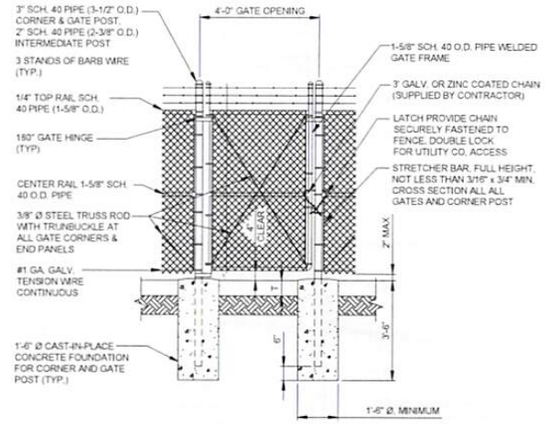


3 CORNER POST DETAIL
N.T.S.

NOTE:
GATE HINGE BOLTS SHALL HAVE THEIR THREADS PEENED OR WELDED TO PREVENT UNAUTHORIZED REMOVAL.



4 STRONG ARM GATE LATCH DETAIL
N.T.S.



2 4'-0" SWING GATE
N.T.S.

DIGGERS HOTLINE
"Call 3 Work Days Before You Dig"
TOLL FREE: 1-800-242-8511
MILWAUKEE AREA: 259-1181
TDD: 1-800-542-2289

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

PREPARED FOR:
TowerNorth
250 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: (774) 745-8171 FAX: (920) 918-3017

PLANS PREPARED BY:
TERRA
608 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-696-6400
FAX: 847-696-6401

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

REVISIONS

NO	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	10/05/22	TJS
1	REVISED EQUIPMENT LAYOUT	10/19/22	TJS
2	REVISED PER POWER DESIGN	10/28/22	KSJ
3	ADDITION OF GRADING PLAN	12/14/22	TJS
4	REVISED PER POWER COORDINATION	01/03/23	KSJ

SITE # WI-1022
LOC # 712592

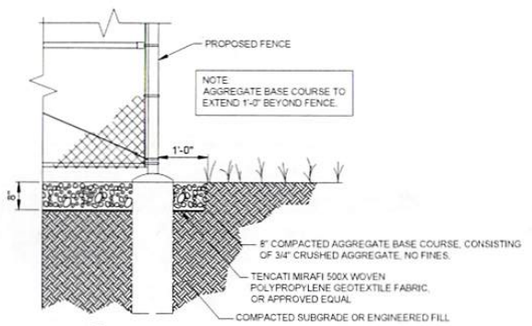
NFORK

422W S.T.H. "70"
PARK FALLS, WI 54552

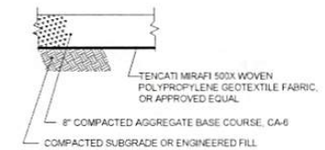
DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	06/16/22
PROJECT #:	170-040

SHEET TITLE:
FENCE DETAILS

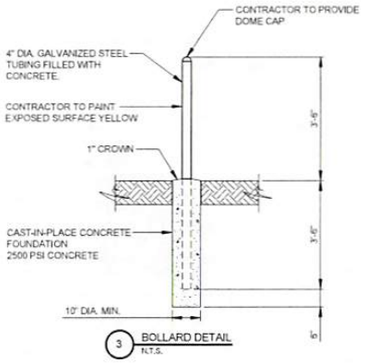
SHEET NUMBER:
C-3



1 AGGREGATE CROSS-SECTION
N.T.S. LEASE SITE



2 AGGREGATE CROSS-SECTION
ACCESS ROAD N.T.S.



3 BOLLARD DETAIL
N.T.S.

DIGGERS HOTLINE
Tell 3 Work Days
Before You Dig

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

PREPARED FOR:
TowerNorth
759 N. CENTER ST., SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: (844) 744-8675 FAX: (508) 816-3017

PLANS PREPARED BY:
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PARK RIDGE, IL 60068
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FAX: 847.698.6491

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

REVISIONS

NO.	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	10/05/22	TJS
1	REVISED EQUIPMENT LAYOUT	10/18/22	TJS
2	REVISED PER POWER DESIGN	10/28/22	KSJ
3	ADDITION OF GROUND PLAN	12/14/22	TJS
4	REVISED PER POWER COORDINATION	01/10/23	KSJ

SITE # WI-1022
LOC # 712592

NFORK

422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	06/16/22
PROJECT #:	179-040

SHEET TITLE
SITE DETAILS

SHEET NUMBER
C-4

GENERAL NOTES:

1. FOR THE PURPOSE OF THE CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   TOWER OWNER – TOWERNORTH DEVELOPMENT, LLC
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.
4. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
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 CONTRACTOR 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 CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE ENGINEER.
8. CONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER, FIBER, AND GROUNDING CABLES AS SHOWN ON THE POWER & GROUNDING DRAWINGS.
9. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
10. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY.
11. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
12. CONTRACTOR SHALL HAVE A PRECONSTRUCTION MEETING WITH OWNER TO DISCUSS ALL ASPECTS OF THE CONSTRUCTION SCOPE OF THIS DRAWING TO ENSURE HE IS FAMILIAR AND UNDERSTANDS ALL REQUIREMENTS AND INTENT OF EACH ACTIVITY.
13. THE GENERAL CONTRACTOR MUST VERIFY ALL DIMENSIONS, CONDITIONS AND ELEVATIONS BEFORE STARTING WORK. ALL DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF THE ENGINEER AND SHALL BE RESOLVED BEFORE PROCEEDING WITH THE WORK. ALL WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER IN ACCORDANCE WITH ACCEPTED CONSTRUCTION PRACTICES.
14. IT IS THE INTENTION OF THESE DRAWINGS TO SHOW THE COMPLETE INSTALLATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY BRACING, SHORING, TIES, FORMWORK, ETC. IN ACCORDANCE WITH ALL NATIONAL, STATE AND LOCAL ORDINANCES, TO SAFELY EXECUTE ALL WORK AND SHALL BE RESPONSIBLE FOR SAME. ALL WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES.
15. THE CONTRACTOR SHALL USE ADEQUATE NUMBERS OF SKILLED WORKMEN WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS, AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND METHODS NEEDED FOR PROPER PERFORMANCE OF THE WORK.
16. CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO INDEMNIFY AND HOLD DESIGN ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH PERFORMANCE OF WORK ON THIS PROJECT. ALL WORK SHALL COMPLY WITH OSHA AND STATE SAFETY REQUIREMENTS. PROCEDURES FOR THE PROTECTION OF EXCAVATIONS, EXISTING CONSTRUCTION AND UTILITIES SHALL BE ESTABLISHED PRIOR TO FOUNDATION INSTALLATION.

SITE WORK GENERAL NOTES:

1. THE CONTRACTOR 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 ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATION OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING & 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 OWNER AND/OR LOCAL UTILITIES.
6. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE.
7. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER EQUIPMENT AND TOWER AREAS.
8. NOFILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
9. THE SUB GRADE UNDER THE PROPOSED EQUIPMENT PAD SHALL BE COMPACTED TO 95% PROCTOR AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
10. 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.
11. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

STRUCTURAL STEEL NOTES:

1. 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.
2. BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE CONNECTIONS AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.

CONCRETE AND REINFORCING STEEL NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184 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. SLUMP: 2"MIN./4"MAX. AIR ENTRAINMENT: 45 TO 6% BY VOLUME. MAXIMUM COARSE AGGREGATE SIZE SHALL BE 1".
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, UNLESS NOTED OTHERWISE.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
   CONCRETE CAST AGAINST EARTH.....3"
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER.....3"
   #5 AND SMALLER & WWF.....3"
   CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
   SLAB AND WALL.....1½"
   BEAMS AND COLUMNS.....1½"
5. A CHAMFER OF 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE. IN ACCORDANCE WITH ACI 3010 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 DAMAGED WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE.
7. WELDING IS PROHIBITED ON REINFORCING STEEL AND EMBEDMENTS.
8. ALL CONCRETE SHALL BE READY-MIXED IN ACCORDANCE WITH ASTM C94. MAINTAIN TEMPERATURE OF CAST IN PLACE CONCRETE AT BETWEEN 50 DEGREES AND 90 DEGREES.
9. DO NOT USE RETEMPERED CONCRETE, OR ADD WATER TO READY-MIX CONCRETE AT THE JOBSITE.
10. FOUNDATION INSTALLER SHALL INSURE THAT ALL PROTRUDING THREADS ARE LEFT CLEAN AND FREE OF CONCRETE.
11. FOUNDATION DESIGN IS BASED ON SOIL WITH 2000 PSF BEARING CAPACITY. IF EXISTING SOIL DOES NOT HAVE A MINIMUM 2000 PSF BEARING CAPACITY CONTRACTOR SHALL EXTEND PERIMETER BEAM TO REACH SOIL WITH MINIMUM 2000 PSF BEARING CAPACITY.

PREPARED FOR:
TowerNorth
750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: (844) 745-6873 FAX: (201) 313-3311

PLANS PREPARED BY:
TERRA
800 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847.698.6400
FAX: 847.698.6401

CARRIER:
verizon
1701 GOLF ROAD
TOWER 2, SUITE 400
ROLLING MEADOWS, IL 60008
PHONE: (847) 619-5397
FAX: (847) 709-7415

REVISIONS

NO	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	12/09/22	TJS
1	REVISED EQUIPMENT LAYOUT	12/19/22	TJS
2	REVISED PER POWER DESIGN	1/9/2023	KEJ
3	ADDITION OF GROUND PLAN	1/24/2023	TJS
4	REVISED PER POWER COORDINATION	2/1/2023	KEJ

SITE # WI-1022
LOC # 712592

NFORK

422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	06/19/22
PROJECT #:	170-040

SHEET TITLE
CONSTRUCTION NOTES

SHEET NUMBER
C-5

NOTE:

ALL SIGNS TO BE PROVIDED AND INSTALLED BY GC UNLESS OTHERWISE NOTED.

8"

12"

FCC REGISTRATION SIGN

WHITE/ GREEN BACKGROUND, WHITE/ BLACK LETTERING.
MOUNTING LOCATION: GATE & BASE OF TOWER
QUANTITY: 2
WHERE ACCESS GATE INSTALLED (QTY. 3)

10"

14"

DANGER NO TRESPASSING SIGN

WHITE/ BLACK BACKGROUND, WHITE/BLACK LETTERING.
MOUNTING LOCATION: GATE & BASE OF TOWER
QUANTITY: 2
WHERE ACCESS GATE INSTALLED (QTY. 3)

10"

14"

AUTHORIZED PERSONNEL SIGN

WHITE/ BLACK BACKGROUND, WHITE/BLACK LETTERING.
MOUNTING LOCATION: GATE & BASE OF TOWER
QUANTITY: 2
WHERE ACCESS GATE INSTALLED (QTY. 3)

TOWERNORTH SIGN

WHITE/ BLACK BACKGROUND, BLUE LETTERING.
MOUNTING LOCATION: GATE
QUANTITY: 1
WHERE ACCESS GATE INSTALLED AND COMPOUND IS NOT VISIBLE FROM MAIN ROAD (QTY. 2)
(PROVIDED BY TOWER OWNER)

PREPARED FOR:

TowerNorth

PLANS PREPARED BY:

TERRA

600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847.698.6400
FAX: 847.698.6401

CARRIER:

verizon

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

REVISIONS

NO.	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	10/05/22	TJS
1	REVISED EQUIPMENT LAYOUT	10/18/22	TJS
2	REVISED PER POWER DESIGN	12/28/22	XU
3	ADDITION OF GRADING PLAN	12/14/23	TJS
4	REVISED PER POWER COORDINATION	01/05/23	XU

SITE # WI-1022
LOC # 712592

NFORK

422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	08/18/22
PROJECT #:	175-048

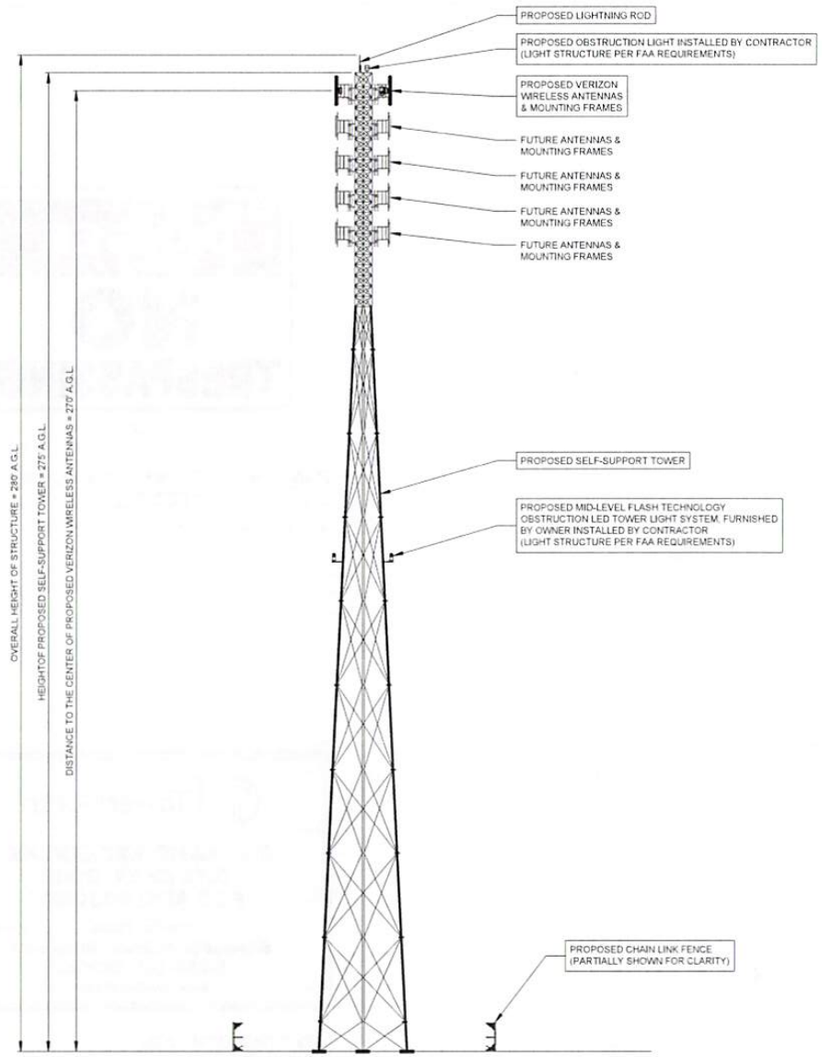
SHEET TITLE

SITE SIGNAGE

SHEET NUMBER

C-6

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.



1 SOUTHWEST ELEVATION
SCALE: 1/16" = 1'-0"

0 1/2" 1" 2"
SCALE: 1/16"=1'-0"

22" x 34" PRINT IS THE FULL SCALE FORMAT. ANY SIZE OTHER THAN THAT IS AT REDUCED SCALE.

PREPARED FOR
TowerNorth
750 W CENTER ST. SUITE 301
WEST BRIDGEWATER, MA. 02379
PHONE: (646) 746-4578 FAX: (508) 816-3017

PLANS PREPARED BY:
TERRA
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-696-6400
FAX: 847-696-6401

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

REVISIONS

NO.	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	10/5/22	TJS
1	REVISED EQUIPMENT LAYOUT	10/18/22	TJS
2	REVISED PER POWER DESIGN	12/5/22	KSJ
3	ADDITIONAL GRADING PLAN	12/14/22	TJS
4	REVISED PER POWER COORDINATION	01/04/23	KSJ

SITE # WI-1022
LOC # 712592

NFORK

422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	06/18/22
PROJECT #:	170-040

SHEET TITLE
SITE ELEVATION

SHEET NUMBER
ANT-1

Antenna Summary

Added

700	850	1900	AWS	AWS3	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity	Item ID
LTE	LTE 5G	LTE	LTE	LTE		COMMSCOPE	NHH-65C-R2B	275	279	325(0001) 325(01) 90(0002) 90(02) 210(0003) 210(03)	false	false	PHYSICAL	9	NHH-65C-R2B
					5G	Ericsson	AIR6449	275	276.3	325(0001) 90(0002) 210(0003)	false	false	PHYSICAL	3	

Removed

700	850	1900	AWS	AWS3	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity	Item ID

No data available.

Retained

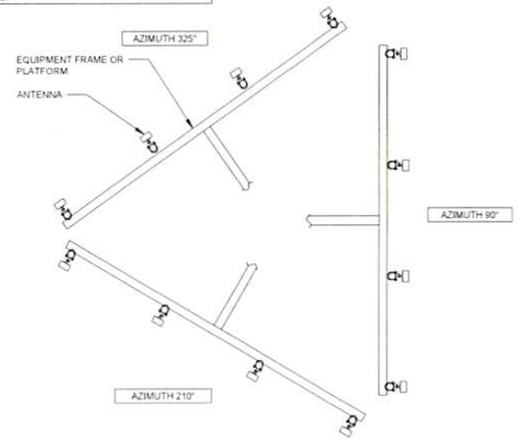
700	850	1900	AWS	AWS3	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity	Item ID

No data available.

Added: 12 | Removed: 0 | Retained: 0

1 ANTENNA SUMMARY
N.T.S.

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



3 ANTENNA PLAN SCHEMATIC
N.T.S.

Equipment Summary

Added

Equipment Type	Location	700	850	1900	AWS	AWS3	L-Sub6	Make	Model	Cable Length	Cable Size	Install Type	Quantity	Item ID
Hybrid Cable	Tower							COMMSCOPET-001	HFT1206-24SV4-xxxG			PHYSICAL	3	
RRU	Tower	LTE	LTE 5G					Ericsson	4449			PHYSICAL	3	KRC161749/1
RRU	Tower			LTE	LTE	LTE		Ericsson	8843			PHYSICAL	6	KRC161707/2
RRU	Tower						5G	Ericsson	AIR6449			PHYSICAL	3	
OVP Box	Tower							RAYCAPINC-001	RVZDC-3315-PF-48			PHYSICAL	3	RVZDC-3315-PF-48

Removed

Equipment Type	Location	700	850	1900	AWS	AWS3	L-Sub6	Make	Model	Cable Length	Cable Size	Install Type	Quantity	Item ID

No data available.

Retained

Equipment Type	Location	700	850	1900	AWS	AWS3	L-Sub6	Make	Model	Cable Length	Cable Size	Install Type	Quantity	Item ID

No data available.

2 EQUIPMENT SUMMARY
N.T.S.

PREPARED FOR
TowerNorth
750 W CENTER ST, SUITE 201
WEST BRIDGEWATER, MA 02379
PHONE: (844) 749-8678 FAX: (508) 816-3317

PLANS PREPARED BY:
TERRA
650 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-696-4460
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CARRIER:
verizon
1701 GOLF ROAD,
TOWER 2, SUITE 400
ROLLING MEADOWS, IL 60008
PHONE: (847) 619-5397
FAX: (847) 706-7415

REVISIONS

NO	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	10/07/22	TJS
1	REVISED EQUIPMENT LAYOUT	12/19/22	TJS
2	REVISED PER POWER DESIGN	12/19/23	KSJ
3	ADDITION OF GROUND PLAN	12/14/22	TJS
4	REVISED PER POWER DESIGN & TMA	01/09/23	KSJ

SITE # WI-1022
LOC # 712592

NFORK

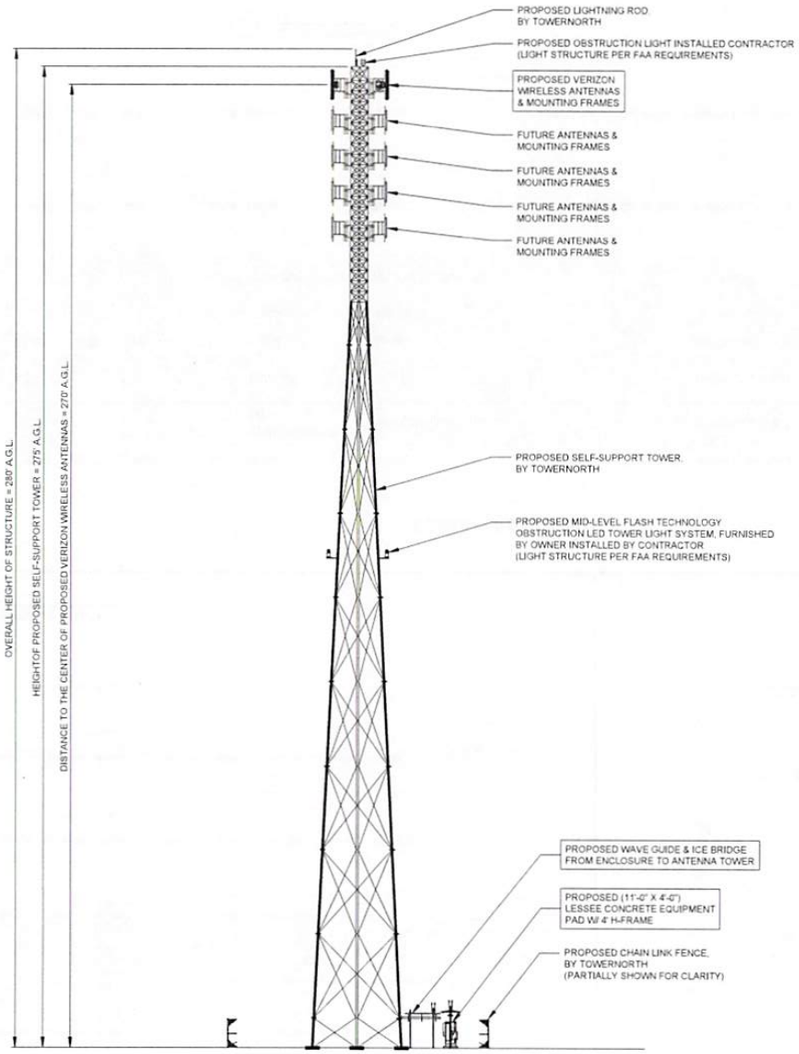
422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	06/16/22
PROJECT #:	170-040

SHEET TITLE
ANTENNA INFORMATION

SHEET NUMBER
VW A-2

G.C. TO ADJUST HEIGHT OF MOUNT BY ±5' AS NEEDED TO AVOID CLIMBING FACILITIES. G.C. IS NOT TO REMOVE OR DAMAGE CLIMBING FACILITIES DURING INSTALLATION.



1 SOUTHWEST ELEVATION
SCALE: 1/16" = 1'-0"

0 1/2" 1" 2"
SCALE: 1/16"=1'-0"

22" x 34" PRINT IS THE FULL SCALE FORMAT. ANY SIZE OTHER THAN THAT IS AT REDUCED SCALE.

PREPARED FOR
TowerNorth
750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: (646) 746-8579 FAX: (508) 814-3017

PLANS PREPARED BY:
TERRA
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CARRIER:
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FAX: (847) 706-7415

REVISIONS

NO	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	09/06/22	TJS
1	REVISED EQUIPMENT LAYOUT	09/19/22	TJS
2	REVISED PER POWER DESIGN	10/26/22	KSJ
3	ADDITION OF GRADING PLAN	12/14/22	TJS
4	REVISED PER POWER COORDINATION	01/05/23	KSJ

SITE # WI-1022
LOC # 712592

NFORK

422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	08/18/22
PROJECT #:	170-040

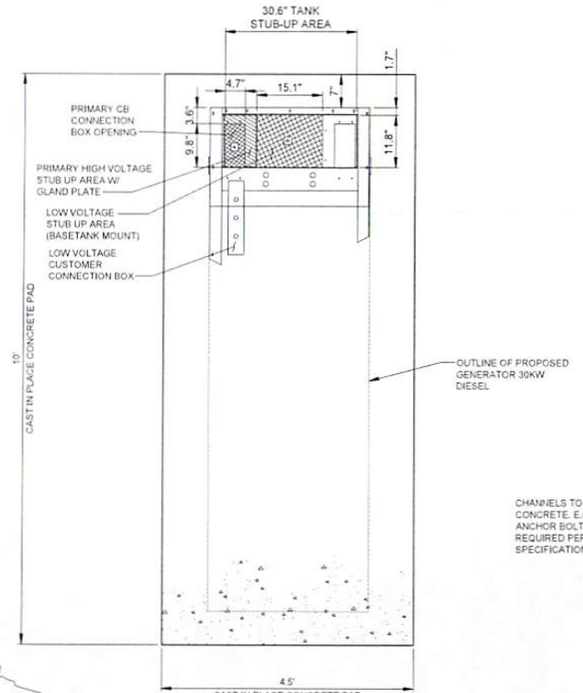
SHEET TITLE
SITE ELEVATION

SHEET NUMBER
VW A-1

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

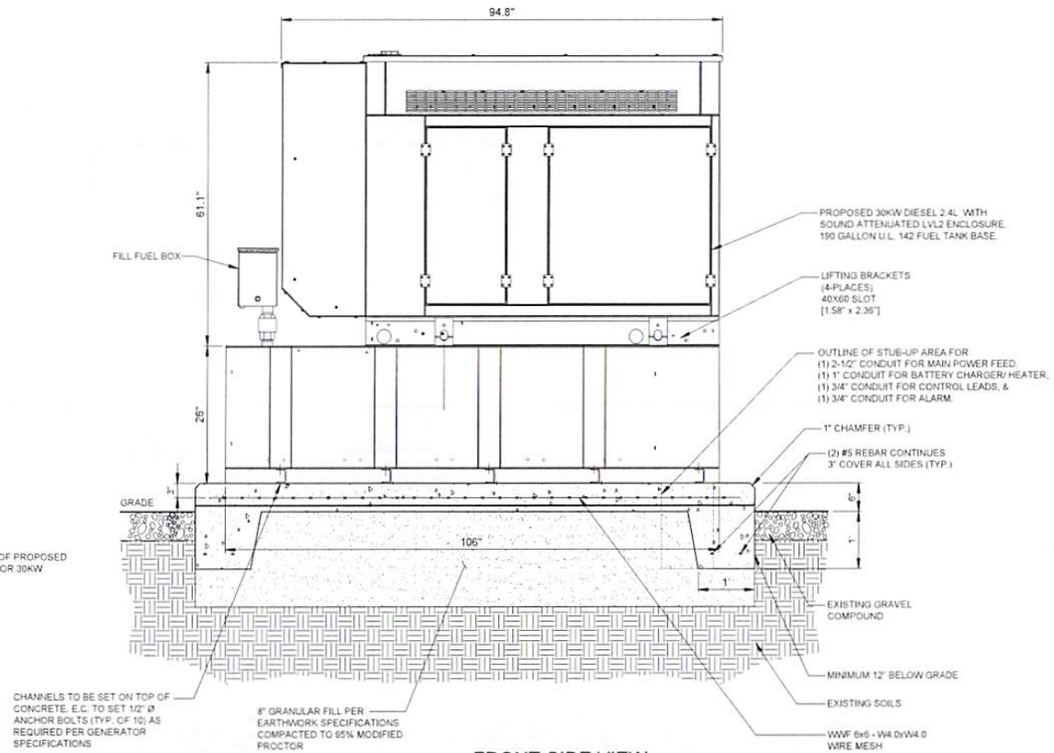
(LOW VOLTAGE STUB UP)
1. TRANSFER SWITCH/COMMUNICATIONS CONDUITS. COMMUNICATIONS AND 2-WIRE START MUST NOT BE RUN IN CONDUIT W/ AC WIRING.

(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

1 TYPICAL GENERAC FOUNDATION DETAIL
SCALE: 1" = 1'



FRONT SIDE VIEW

2 TYPICAL GENERAC FOUNDATION DETAIL
SCALE: 1" = 1'

DIGGERS HOTLINE
"Call 3 Work Days Before You Dig"
TOLL FREE: 1-800-242-8511
WI & UPA (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

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.

PREPARED FOR
TowerNorth
750 W CENTER ST., SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: (844) 749-8678 FAX: (508) 974-3017

PLANS PREPARED BY:
TERRA
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-696-8480
FAX: 847-698-6401

CARRIER:
verizon
1701 GOLF ROAD
TOWER 2, SUITE 400
ROLLING MEADOWS, IL 60008
PHONE: (847) 619-6397
FAX: (847) 706-7415

REVISIONS			
NO	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	10/07/22	TJS
1	REVISED EQUIPMENT LAYOUT	10/18/22	TJS
2	REVISED PER POWER DESIGN	10/24/22	DSS
3	ADDED PLOT GRADING PLAN	10/18/22	TJS
4	REVISED PER POWER COORDINATION	01/09/23	JCU

SITE # WI-1022
LOC # 712592

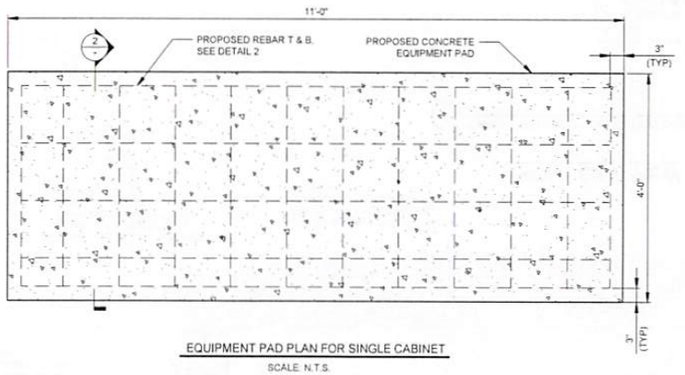
NFORK

422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	08/18/22
PROJECT #:	170-040

SHEET TITLE
GENERATOR
FOUNDATION DETAILS

SHEET NUMBER
VW C-4

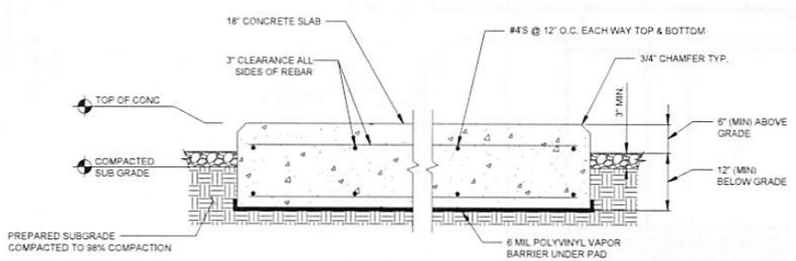


EQUIPMENT PAD PLAN FOR SINGLE CABINET

SCALE: N.T.S.

1 EQUIPMENT SLAB DETAIL

SCALE: N.T.S.



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.

2 EQUIPMENT PAD DETAIL

SCALE: N.T.S.

DIGGERS HOTLINE
Call 3 Work Days
Before You Dig
TOLL FREE 1-800-242-8511
WEB WEB (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

PREPARED FOR

TowerNorth

750 W CENTER ST. SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: (844) 749-8576 FAX: (508) 816-3017

PLANS PREPARED BY:

TERRA

600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847.698.6480
FAX: 847.698.6401

CARRIER:

verizon

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

REVISIONS

NO	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	10/5/22	TJS
1	REVISED EQUIPMENT LAYOUT	10/19/22	TJS
2	REVISED PER POWER DESIGN	12/29/22	KSJ
3	ADDITION OF GRADING PLAN	12/14/22	TJS
4	REVISED PER POWER COORDINATION	01/04/23	KSJ

SITE # WI-1022
LOC # 712592

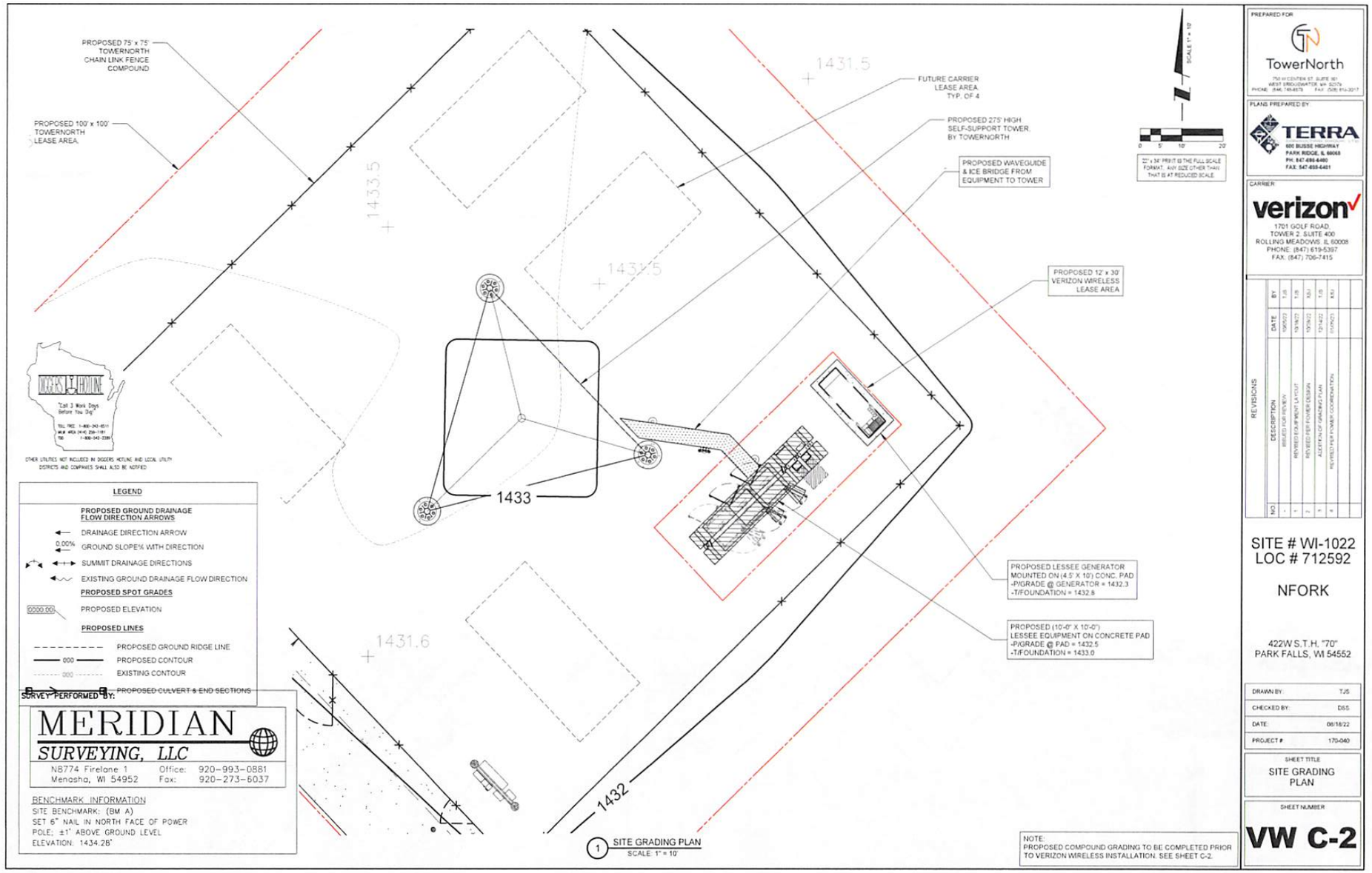
NFORK

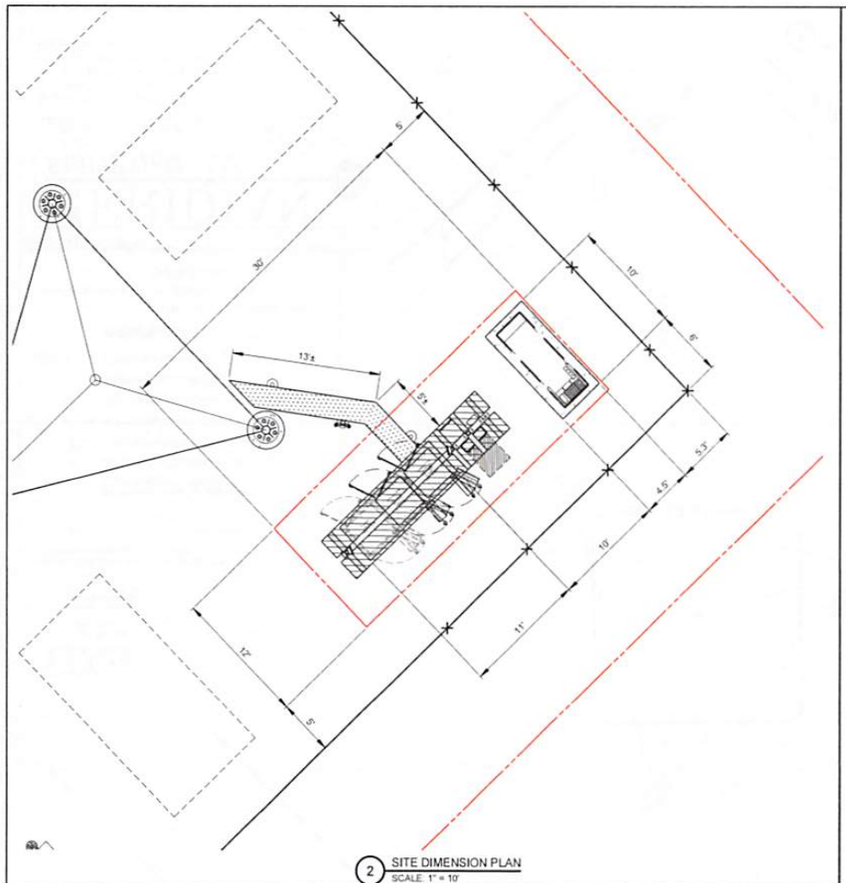
422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	08/18/22
PROJECT #:	170-040

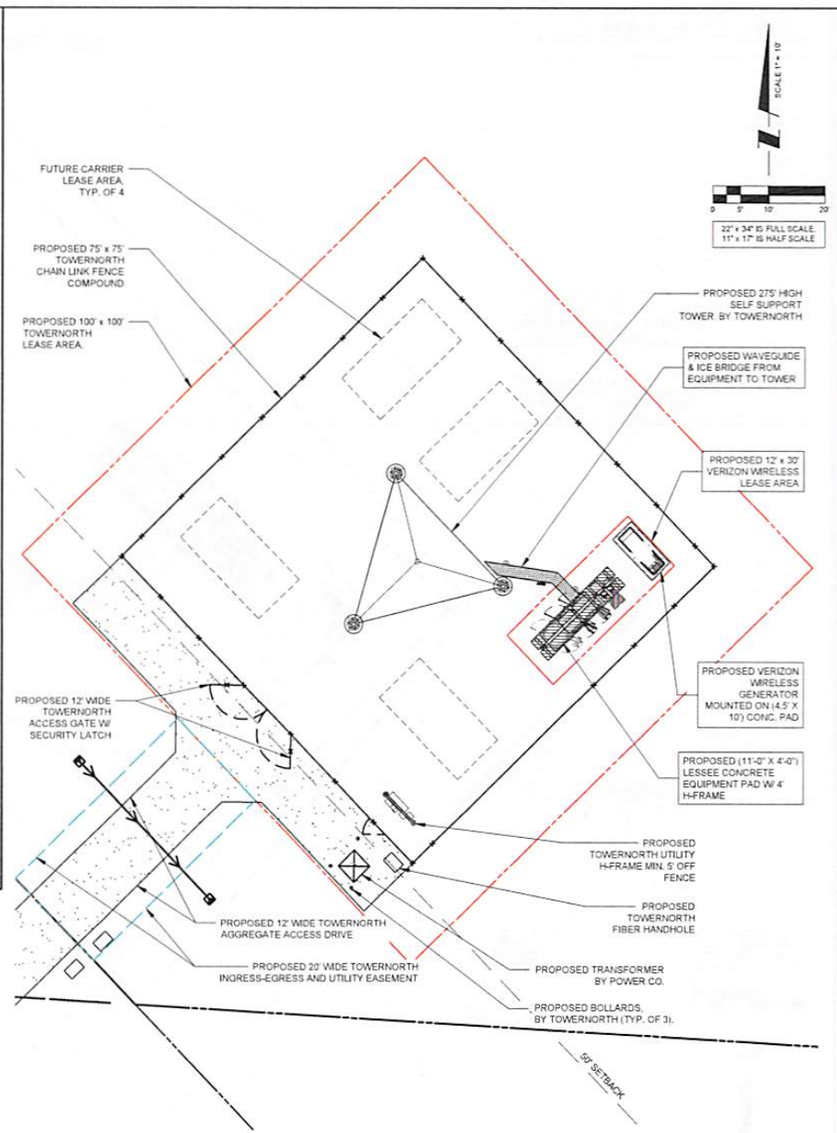
SHEET TITLE
FOUNDATION DETAILS

SHEET NUMBER
VW C-3


PROPOSED 75' x 75' TOWERNORTH CHAIN LINK FENCE COMPOUND
PROPOSED 100' x 100' TOWERNORTH LEASE AREA
FUTURE CARRIER LEASE AREA, TYP. OF 4
PROPOSED 275' HIGH SELF-SUPPORT TOWER, BY TOWERNORTH
PROPOSED WAVEGUIDE & ICE BRIDGE FROM EQUIPMENT TO TOWER
PROPOSED 12' x 30' VERIZON WIRELESS LEASE AREA
PROPOSED LESSEE GENERATOR MOUNTED ON (4.5' X 10') CONC. PAD
-P/GRADE @ GENERATOR = 1432.3
-T/FOUNDATION = 1432.8
PROPOSED (10'-0" X 10'-0") LESSEE EQUIPMENT ON CONCRETE PAD
-P/GRADE @ PAD = 1432.5
-T/FOUNDATION = 1433.0
1431.5
1433.5
1434.5
1431.6
1433
1432
LEGEND
PROPOSED GROUND DRAINAGE FLOW DIRECTION ARROWS
DRAINAGE DIRECTION ARROW
0.00% GROUND SLOPE% WITH DIRECTION
SUMMIT DRAINAGE DIRECTIONS
EXISTING GROUND DRAINAGE FLOW DIRECTION
PROPOSED SPOT GRADES
0000.00 PROPOSED ELEVATION
PROPOSED LINES
PROPOSED GROUND RIDGE LINE
000 PROPOSED CONTOUR
000 EXISTING CONTOUR
PROPOSED CULVERT & END SECTIONS
DIGGERS HOTLINE
"Call 3 Work Days Before You Dig"
OTHER UTILITIES NOT INCLUDED IN DIGGERS HOTLINE AND LOCAL UTILITY DISTRICTS AND COMPANIES SHALL ALSO BE NOTIFIED
SURVEY PERFORMED BY:
MERIDIAN
SURVEYING, LLC
N8774 Firelane 1
Menasha, WI 54952
Office: 920-993-0881
Fax: 920-273-6037
BENCHMARK INFORMATION
SITE BENCHMARK: (BM A)
SET 6" NAIL IN NORTH FACE OF POWER POLE; ±1' ABOVE GROUND LEVEL
ELEVATION: 1434.28'
1 SITE GRADING PLAN
SCALE: 1" = 10'
SCALE 1" = 10'
0 5' 10' 20'
22" x 34" PRINT IS THE FULL SCALE FORMAT. ANY SIZE OTHER THAN THAT IS AT REDUCED SCALE.
NOTE:
PROPOSED COMPOUND GRADING TO BE COMPLETED PRIOR TO VERIZON WIRELESS INSTALLATION. SEE SHEET C-2.
PREPARED FOR
TowerNorth
PLANS PREPARED BY
TERRA
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-696-6480
FAX: 847-698-6481
CARRIER:
verizon
1701 GOLF ROAD
TOWER 2, SUITE 400
ROLLING MEADOWS, IL 60008
PHONE: (847) 619-5397
FAX: (847) 706-7415
REVISIONS
NO. DESCRIPTION DATE BY
- ISSUED FOR REVIEW 09/09/22 TJS
1 REVISED EQUIPMENT LAYOUT 10/18/22 TJS
2 REVISED PER POWER DESIGN 10/28/22 MJ
3 ADDITION OF GRADING PLAN 12/14/22 TJS
4 REVISED PER POWER COORDINATION 01/04/23 MJ
SITE # WI-1022
LOC # 712592
NFORK
422W S.T.H. "70"
PARK FALLS, WI 54552
DRAWN BY: TJS
CHECKED BY: DSS
DATE: 06/16/22
PROJECT # 170-040
SHEET TITLE
SITE GRADING PLAN
SHEET NUMBER
VW C-2



2 SITE DIMENSION PLAN
SCALE: 1" = 10'



1 SITE PLAN

SURVEY PERFORMED BY:

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

BENCHMARK INFORMATION
SITE BENCHMARK: (BM A)
SET 6" NAIL IN NORTH FACE OF POWER POLE, ±1' ABOVE GROUND LEVEL
ELEVATION: 1434.28'

DIGGERS HOTLINE
"Call 3 Work Days Before You Dig"
TOLL FREE 1-800-242-8511
TDD 1-800-542-2289

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

PREPARED FOR:
TowerNorth
750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: (844) 749-8678 FAX: (508) 816-3017

PLANS PREPARED BY:
TERRA
660 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-696-6400
FAX: 847-696-6401

CARRIER:
verizon
1701 GOLF ROAD,
TOWER 2, SUITE 400
ROLLING MEADOWS, IL 60008
PHONE: (847) 619-5397
FAX: (847) 709-7415

REVISIONS

NO	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	10/05/22	TJS
1	REVISED EQUIPMENT LAYOUT	10/18/22	TJS
2	REVISED PER POWER DESIGN	10/26/22	ASJ
3	ADDITION OF GRADING PLAN	12/14/22	TJS
4	REVISED PER POWER COORDINATION	01/05/23	ASJ

SITE # WI-1022
LOC # 712592

NFORK

422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	08/18/22
PROJECT #:	170-040

SHEET TITLE
ENLARGED SITE PLAN

SHEET NUMBER
VW C-1

LEGEND

= 1" X 18" IRON PIPE SET
= 6" NAIL SET
= COUNTY MONUMENT FOUND
= TELEPHONE PEDESTAL
= EXISTING POWER POLE
OPL = OVERHEAD ELECTRIC
= EDGE OF BRUSH/WOODS
= PROPERTY LINE

PROPERTY LINE	
FENCE	X X
OVERHEAD POWER LINE	
UNDERGROUND TELCO	UGT UGT
UNDERGROUND POWER	UGE UGE
BURIED WATER LINE	W W
BURIED GAS LINE	G G G
EDGE OF BUSH/TREES	

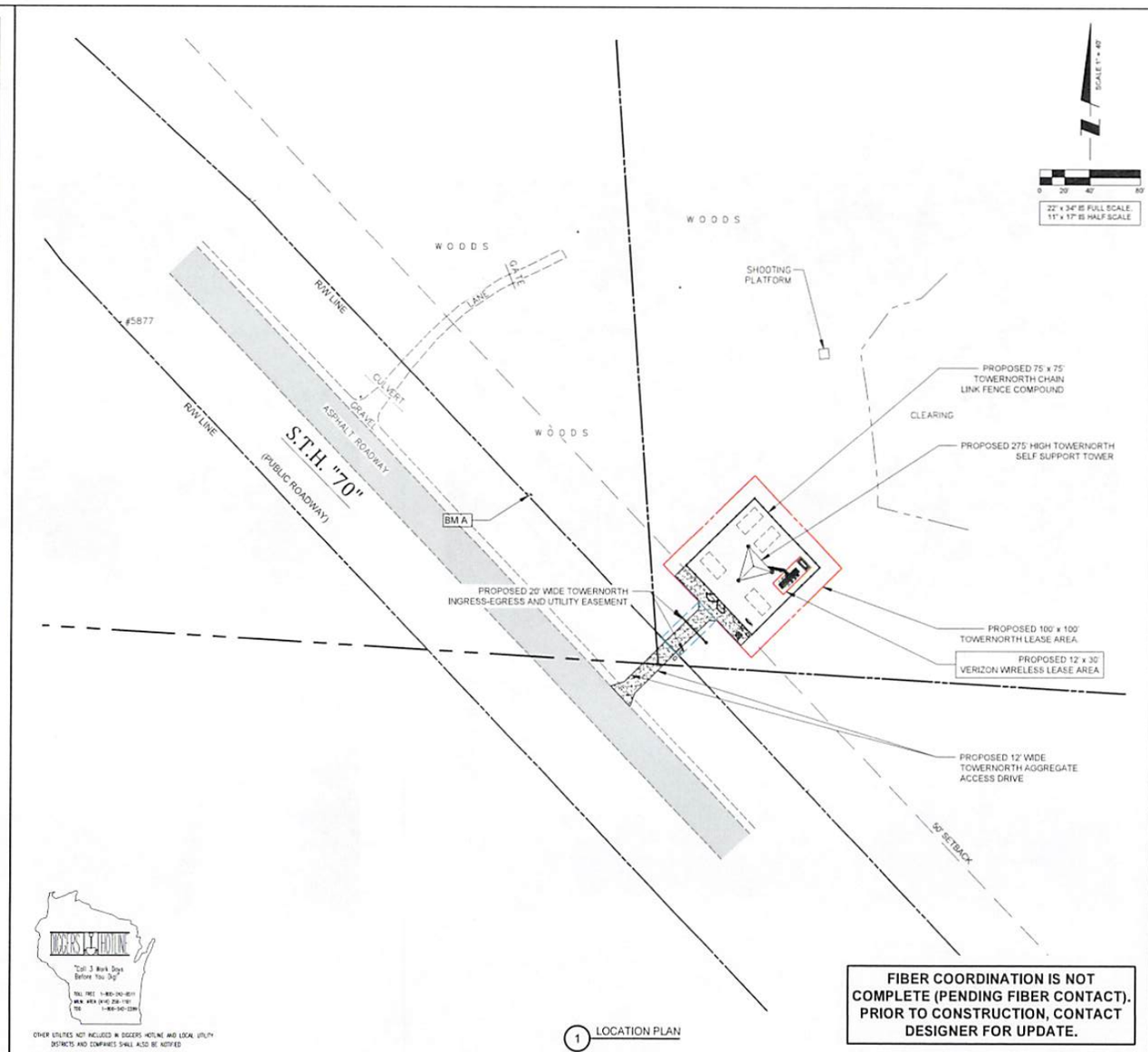
SURVEY PERFORMED BY:

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

BENCHMARK INFORMATION
SITE BENCHMARK: (BM A)
SET 6" NAIL IN NORTH FACE OF POWER POLE, ±1" ABOVE GROUND LEVEL
ELEVATION: 1434.28'

GENERAL SITE NOTES

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



DIGGERS HOTLINE
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WEB: WWW.DIGGERSHOTLINE.COM
TDD 1-800-542-2289
OTHER UTILITIES NOT INCLUDED IN DIGGERS HOTLINE AND LOCAL UTILITY DISTRICTS AND COMPANIES SHALL ALSO BE NOTIFIED

1 LOCATION PLAN

FIBER COORDINATION IS NOT COMPLETE (PENDING FIBER CONTACT). PRIOR TO CONSTRUCTION, CONTACT DESIGNER FOR UPDATE.

PREPARED FOR
TowerNorth
750 W CENTER ST, SUITE 101
WEST BRIDGEWATER, MA 02379
PHONE: (844) 746-8675 FAX: (508) 816-3017

PLANS PREPARED BY:
TERRA
680 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-696-6400
FAX: 847-693-6401

CARRIER:
verizon
1701 GOLF ROAD
TOWER 2, SUITE 400
ROLLING MEADOWS, IL 60008
PHONE: (847) 619-5367
FAX: (847) 706-7415

REVISIONS

NO	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	10/07/22	TJS
1	REVISED EQUIPMENT LAYOUT	10/19/22	TJS
2	REVISED PER POWER DESIGN	10/28/22	DGS
3	ADDED PAVING PLAN	11/14/22	TJS
4	REVISED PER POWER COORDINATION	01/06/23	ASJ

SITE # WI-1022
LOC # 712592

NFORK

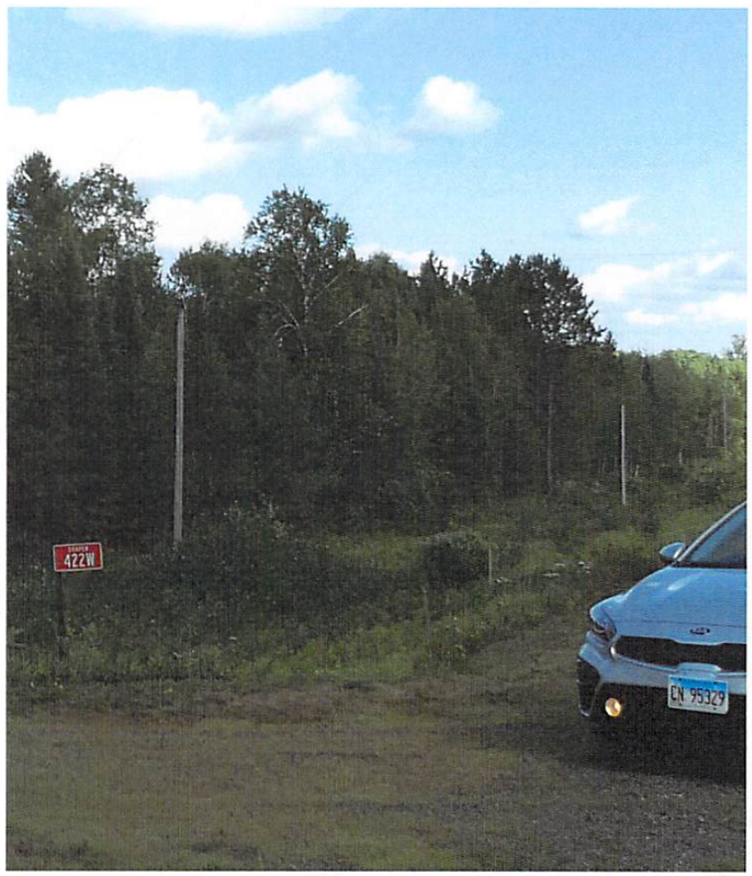
422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DGS
DATE:	08/18/22
PROJECT #:	170-040

SHEET TITLE
LOCATION PLAN

SHEET NUMBER
VW LP

3 S.T.H. "70"
SCALE: N.T.S.



5 UTILTY POLE NEAR SITE
SCALE: N.T.S.

PREPARED FOR:

TowerNorth

750 W CENTER ST. SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: (844) 749-8678 FAX: (508) 510-3017

PLANS PREPARED BY:

TERRA

600 BUSSE HIGHWAY
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PH: 847-698-6400
FAX: 847-698-6401

CARRIER:

verizon

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

REVISIONS

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SITE # WI-1022
LOC # 712592

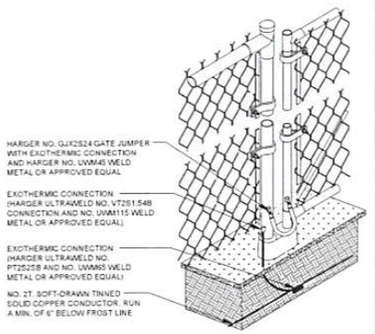
NFORK

422W S.T.H. "70"
PARK FALLS, WI 54552

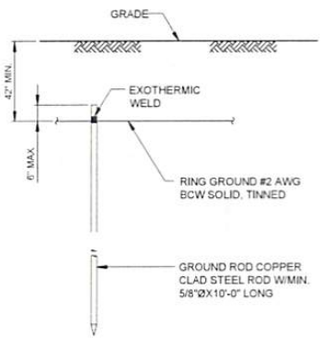
DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	08/18/22
PROJECT #:	170-040

SHEET TITLE:
PHOTO EXHIBIT

SHEET NUMBER:
EX-1

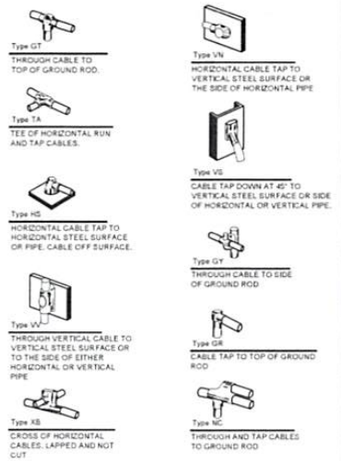


1 FENCE GROUNDING DETAIL
N.T.S.



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

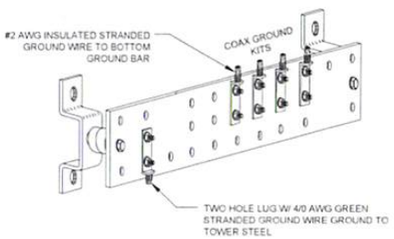
2 GROUND ROD DETAIL
SCALE: N.T.S.



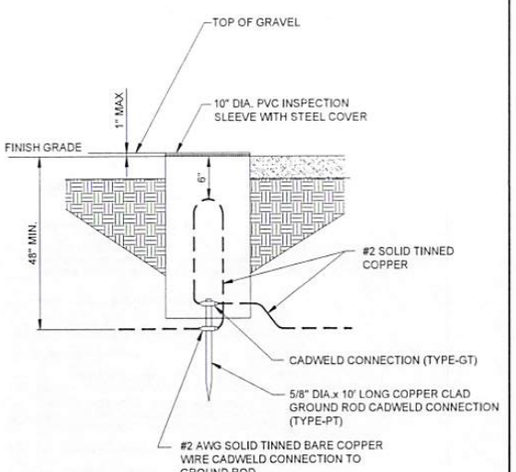
3 EXOTHERMIC WELD DETAILS
EXOTHERMIC AND HARGER ULTRAWELD OR APPROVED EQUAL

NOTES:

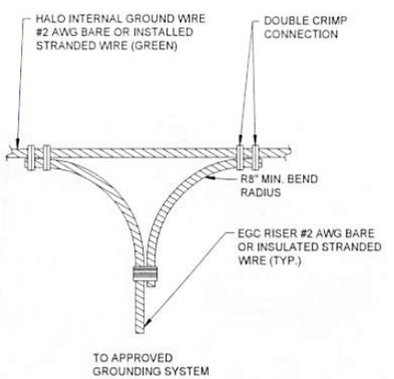
1. PROPOSED HARGER 2x14.5" GROUND BAR (PN/ TGBR14214.5VER) MOUNT DIRECTLY TO TOWER STEEL.
2. INSULATORS TO BE NEWTON CAT. NO. 3015-8 OR APPROVED EQUAL
3. 5/8" LOCK WASHERS; NEWTON CAT. NO. A-6056 OR APPROVED EQUAL
4. 5/8" - 11 X 1" M.M.C.S. BOLTS; NEWTON CAT. NO. 3012-1 OR APPROVED EQUAL
5. COAT ALL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



4 GROUND COLLECTOR BAR
SCALE: N.T.S.

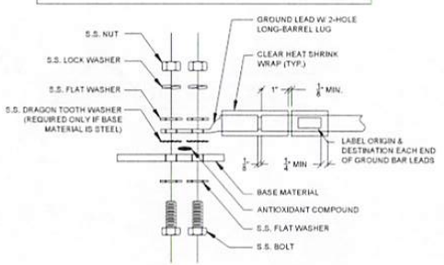


5 INSPECTION SLEEVE DETAIL
N.T.S.



6 HALO NON-DIRECTIONAL GROUND RING SPLICE DETAIL
N.T.S.

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



7 GROUND LUG INSTALLATION DETAIL
N.T.S.

PREPARED FOR
TowerNorth
750 W CENTER ST, SUITE 201
WEST BRIDGEWATER, MA 02379
PHONE: (508) 340-8570 FAX: (508) 974-3017

PLANS PREPARED BY:
TERRA
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-696-6460
FAX: 847-698-6461

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

NO	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	10/6/22	TJS
1	REVISED EQUIPMENT LAYOUT	10/19/22	TJS
2	REVISED PER POWER DESIGN	10/28/22	KMJ
3	ADDITION OF GROUND PLAN	12/14/22	TJS
4	REVISED PER POWER COORDINATION	01/06/23	KMJ

SITE # WI-1022
LOC # 712592

NFORK

422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	06/16/22
PROJECT #:	170-040

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
E-6

TYPICAL KEYED GROUNDING NOTES

1. #2 AWG TNND SOLID BARE COPPER CONDUCTOR 42" BELOW GRADE (TYPICAL) MINIMUM 24" BENDING RADIUS
2. 5/8" x 10' COPPER CLAD GROUND ROD
3. GROUND ALL CORNER POSTS WITH MECHANICAL PIPE CONNECTORS
4. PERIPHERAL GROUND RING SHOULD BE INSTALLED 1-2' INSIDE THE FENCE LINE. THE TOWER GROUND RING SHOULD BE INSTALLED A MINIMUM TWO FEET OFF OF ANY STRUCTURE
5. 5/8"Ø 10' LONG COPPERCLAD GROUND ROD WITH INSPECTION WELL. TOP OF GROUND ROD MAX 24" BURY. SEE DETAIL SHEET E-5.
6. INSPECTION WELL (TYP.)
7. BOND TOWER TO GROUND SYSTEM WITH CADWELD TYPE VS. 4 LOCATIONS
8. GATE JUMPERS SEE DETAIL ON SHEET E-6
9. PROVIDE AN EXTERNAL #2 TNNGOATED GROUND LEAD FROM GROUND RING TO ALL METAL CABINETS ON UTILITY BACKBOARD (TELCO,ELEXTRIC,BREAKER PANELS, METER RACKS, JUNCTION BOXES, ETC.) SLEEVED IN CONDUIT FROM JUST BELOW GRADE TO SAND CABINETS USING BURNDY TYPE 2 LONG BARREL LUGS WITH NO-OK OR COPPER SHIELD
10. ELECTRIC METER AND ELECTRIC SERVICE GROUNDING COORDINATE ALTERNATE WITH PM
11. 24" x 30" x 24" FIBER OPTIC HAND HOLE
12. MAINTAIN TWO FOOT DISTANCE OFF OF STRUCTURES.
13. GROUND CHAIN LINK FENCE (TYPICAL) EXOTHERMIC CONNECTION (TYPE VS) GROUND FENCE POSTS WITHIN 6 FEET OF PLATFORM AND 25 FEET OF TOWER.
14. PROPOSED TOWER GROUND RING
15. PROPOSED COMPOUND GROUND RING
16. EACH TOWER FOUNDATION TO HAVE AT LEAST ONE ANCHOR BOLT BONDED TO TOWER GROUND RING WITH #2 TINNED SOLID COPPER CONDUCTOR

NOTES:

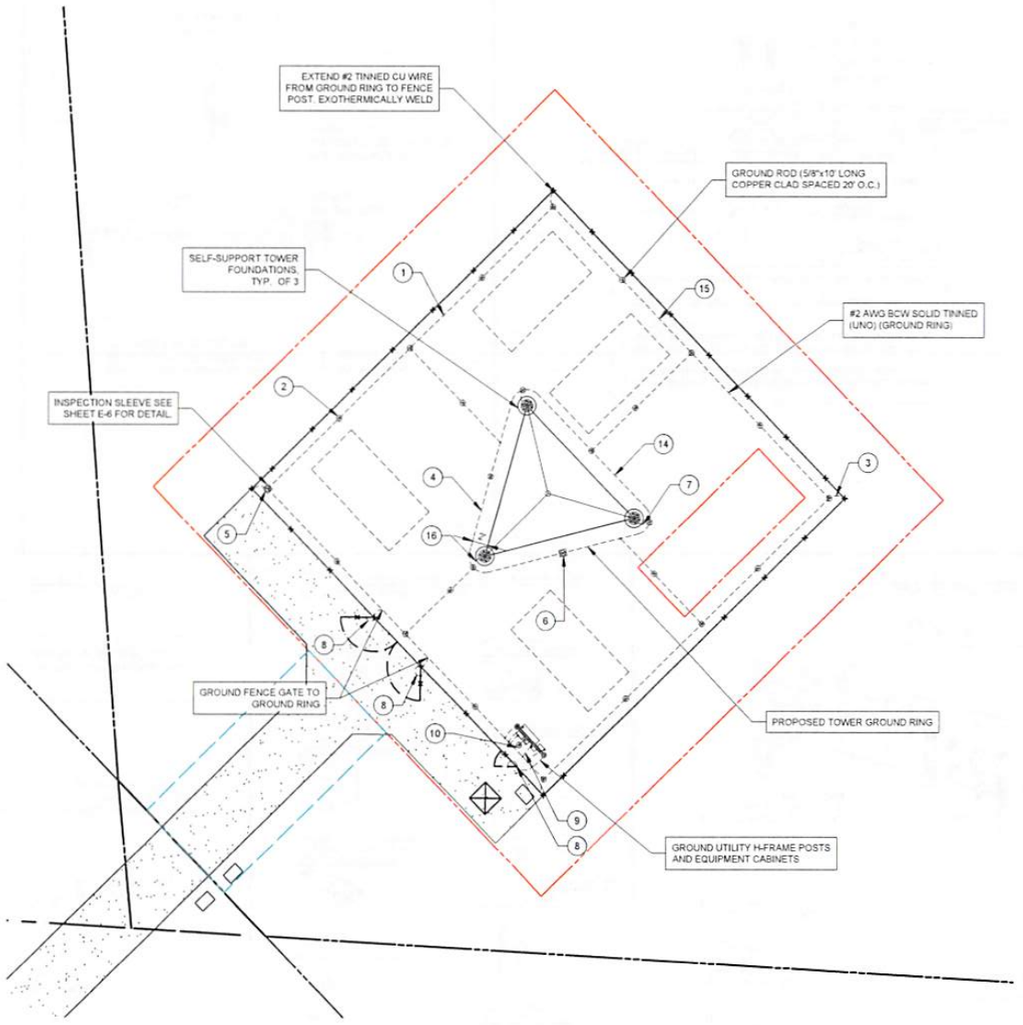
1. CONTRACTOR TO INSTALL GROUND RODS AS NEEDED TO PROVIDE RECOMMENDED RESISTIVITY. REFER TO ELECTRICAL AND GROUNDING NOTES ON SHEET E-1.
2. CONTRACTOR TO INSTALL HANDHOLES AS NECESSARY PER LOCAL UTILITY REQUIREMENTS.
3. **ALL GROUNDING CONDUCTORS ARE #2 AWG SOLID TINNED COPPER WIRE BARE, UNLESS NOTED OTHERWISE.**

DIGGERS HOTLINE
"Call 3 Work Days Before You Dig"

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

LEGEND:

⊏⊐	GROUND BAR OR ARRESTOR BAR	⊃	SPARE GROUND LEAD
⊗	5/8"Ø x 10'-0" GROUND ROD	■	MECHANICAL CONNECTION
⊠	GROUND SYSTEM TEST WELL	– – –	EXISTING GROUNDING
•	CADWELD OR APPROVED CONNECTION	———	NEW GROUNDING



1 SITE GROUNDING PLAN
SCALE: 1" = 5'

SCALE 1" = 5'
0 2.5' 5' 10'
22" x 34" PRINT IS THE FULL SCALE FORMAT. ANY SIZE OTHER THAN THAT IS AT REDUCED SCALE.

NOTE:
SEE GROUNDING DETAILS ON SHEET E-6

PREPARED FOR:
TowerNorth
750 W CENTER ST, SUITE 301
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PHONE: (646) 748-8578 FAX: (508) 816-3017

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

NO	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	10/5/22	TJS
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2	REVISED PER POWER DESIGN	10/26/22	KSJ
3	ADDITION OF GRADING PLAN	12/14/22	TJS
4	REVISED PER POWER COORDINATION	01/05/23	KSJ

REVISIONS

SITE # WI-1022
LOC # 712592

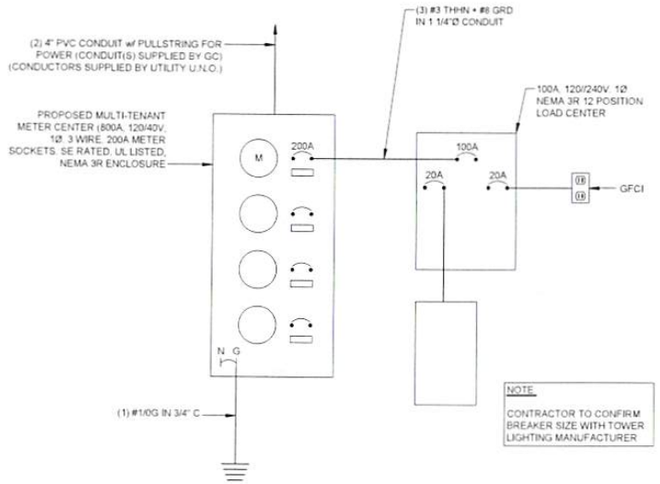
NFORK

422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	08/18/22
PROJECT #:	170-040

SHEET TITLE
SITE GROUNDING PLAN

SHEET NUMBER
E-5



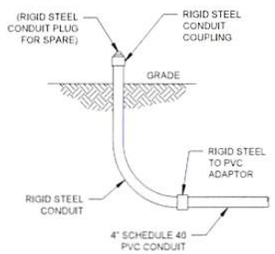
1 SINGLE LINE DIAGRAM (POWER)
SCALE: N.T.S.

NOTES AND SPECIFICATIONS

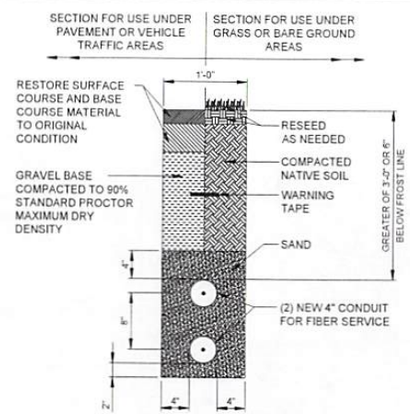
1. ELECTRIC UTILITY WILL PROVIDE METER AND INCOMING SERVICE LATERAL CONDUCTORS.
2. ALL ELECTRICAL WORK SHALL COMPLY WITH NEC, STATE AND LOCAL CODES.
3. CONTRACTOR SHALL OBTAIN OWNER/TENANT EQUIPMENT DRAWINGS AND REVIEW FOR ADDITIONAL DETAILS AND REQUIREMENTS THAT MAY NOT BE SHOWN IN THESE DRAWINGS. CONTRACTOR 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 ...NTRACTOR 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:

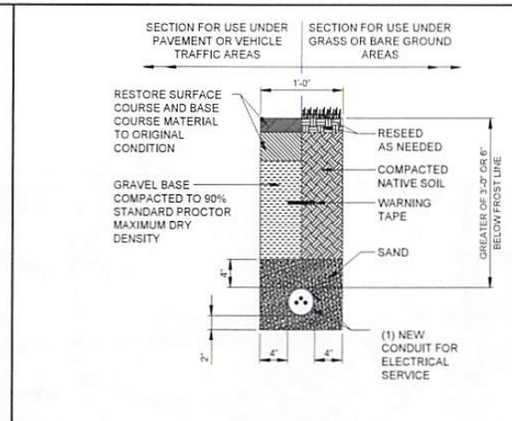
WARNING - SHOCK HAZARD EXISTS IF GROUNDING ELECTRODE CONDUCTOR OR BONDING JUMPER CONNECTION IN THIS EQUIPMENT IS REMOVED WHILE ALTERNATE SOURCE(S) IS ENERGIZED



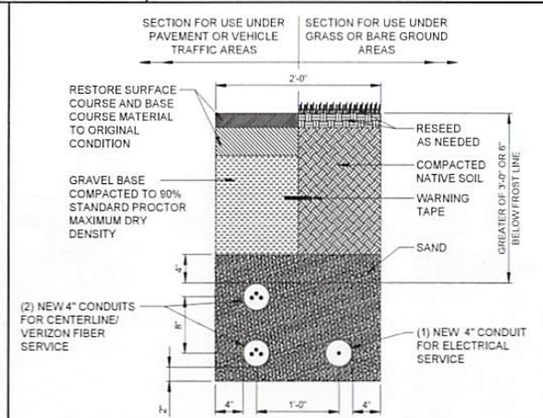
2 UNDERGROUND CONDUIT STUB-UP
SCALE: N.T.S.



3 FIBER TRENCH DETAIL (IF REQUIRED)
N.T.S.



4 ELECTRICAL TRENCH DETAIL
N.T.S.



5 JOINT UTILITY TRENCH DETAIL
N.T.S.

PREPARED FOR:
TowerNorth
750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: (646) 749-8578 FAX: (520) 814-3017

PLANS PREPARED BY:
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620 BUSSE HIGHWAY
PARK RIDGE, IL 60068
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FAX: 847.685.6481

CARRIER:
verizon
1701 GOLF ROAD
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REVISIONS

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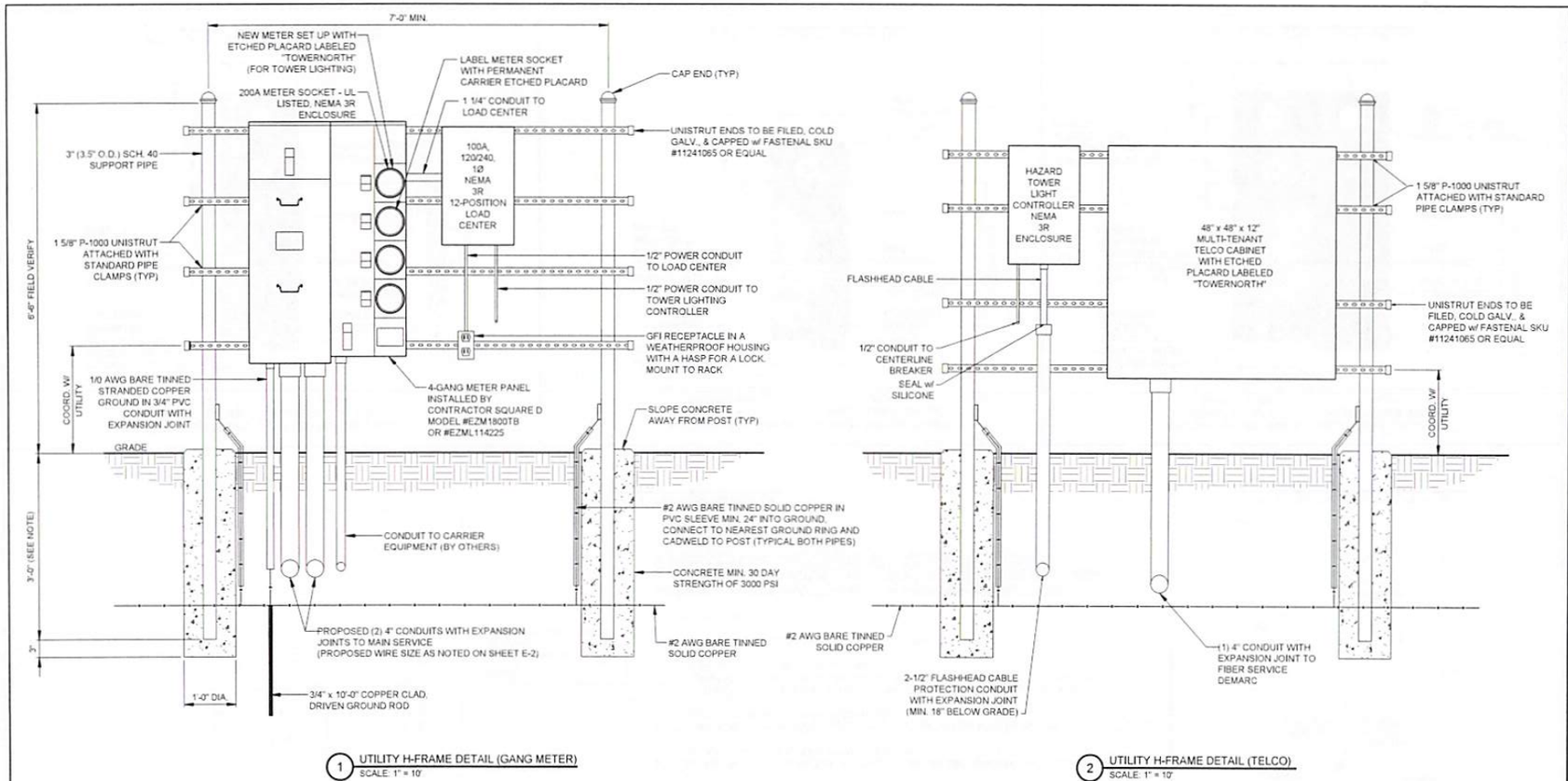
PROJECT #:	170-040

SHEET TITLE
SINGLE LINE DIAGRAM & UTILITY TRENCH DETAILS

SHEET NUMBER
E-4



1 UTILITY H-FRAME DETAIL (GANG METER)
SCALE: 1" = 10'

2 UTILITY H-FRAME DETAIL (TELCO)
SCALE: 1" = 10'

NOTES:

1. CONTRACTOR TO FIELD LOCATE THE METER PEDESTAL AS SHOWN ON THE PLAN. INSTALL THE METER PEDESTAL NEAR THE PERIMETER OF THE FENCED COMPOUND WITH THE METERS FACING AS SHOWN.
2. THE CONTRACTOR SHALL COORDINATE THE LOCAL UTILITY COMPANY FOR THE CONDUIT RUN TO THE MAIN SERVICE CONNECTION OR TRANSFORMER.
3. THE CONTRACTOR SHALL COORDINATE THE LOCAL UTILITY COMPANY FOR GROUND ROD REQUIREMENTS. IF REQUIRED, THE CONTRACTOR SHALL ORDER AN PAY FOR NECESSARY GROUND TEST.
4. SUPPORT POST AND UNISTRUT SHALL BE GALVANIZED. PIPE CLAMS AND HARDWARE SHALL BE GALVANIZED OR STAINLESS STEEL.
5. TELCO CABINET SHALL BE A 48" x 48" x12" HOFFMAN OR EQUIVALENT. PROVIDE 3/4" PLYWOOD BACKBOARD INSIDE THE MULTI-TENANT TELCO CABINET.
6. ADJUSTMENTS TO THE METER PEDESTAL DESIGN MAY BE REQUIRED DEPENDING ON THE EXACT METER PANEL INSTALLED. CONTRACTOR SHALL FIELD COORDINATE ADJUSTMENTS AND INFORM THE ENGINEER IF ANY UNUSUAL CONDITIONS ARE FOUND TO EXIST.

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REVISIONS

NO	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	10/05/22	TJS
1	REVISED EQUIPMENT LAYOUT	10/19/22	TJS
2	REVISED PER POWER DESIGN	10/26/22	KSJ
3	ADDITION OF GRADING PLAN	12/14/22	TJS
4	REVISED PER POWER COORDINATION	01/05/23	KSJ

SITE # WI-1022
LOC # 712592

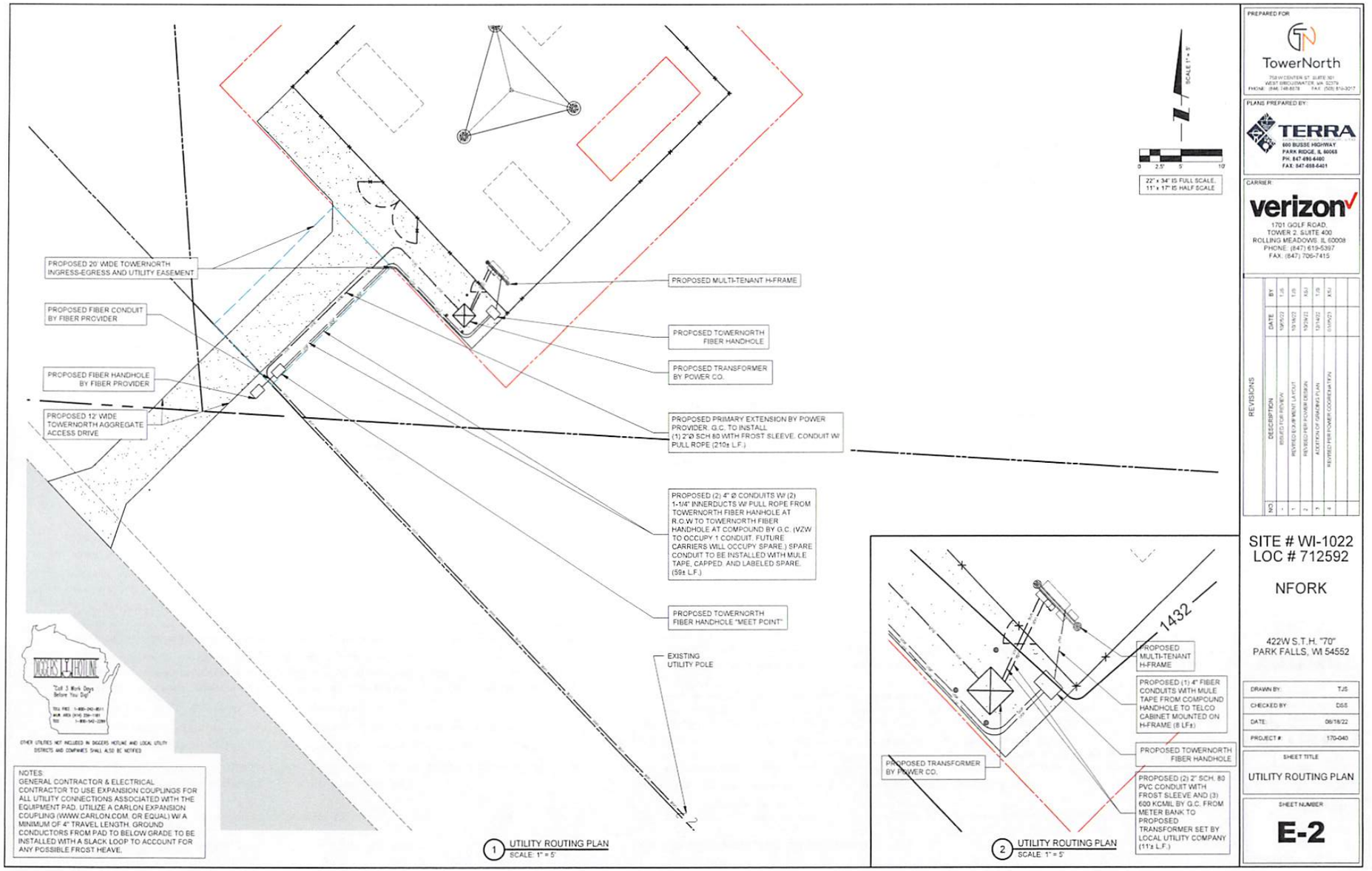
NFORK

422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	08/18/22
PROJECT #:	170-040

SHEET TITLE
H-FRAME DETAILS

SHEET NUMBER
E-3



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REVISIONS

NO.	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	10/5/22	TJS
1	REVISED EQUIPMENT LAYOUT	10/18/22	TJS
2	REVISED PER POWER DESIGN	10/28/22	KMJ
3	ADDITION OF GRADING PLAN	12/14/22	TJS
4	REVISED PER POWER COORDINATION	01/04/23	KMJ

SITE # WI-1022
LOC # 712592

NFORK

422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	08/18/22
PROJECT #:	170-040

SHEET TITLE
UTILITY ROUTING PLAN

SHEET NUMBER
E-2

ELECTRICAL INSTALLATION NOTES

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.
2. ALL ELECTRICAL EQUIPMENT AND ACCESSORIES SHALL BE U.L. APPROVED OR LISTED.
3. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
4. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
5. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
6. CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
7. EACH END OF EVERY POWER, POWER PHASE CONDUCTOR (I.E., HOTS), GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, ½ INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NE & OSHA.
8. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (IE., PANELBOARD AND CIRCUIT ID'S).
9. PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.
10. 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 OR XHHW-2, STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
11. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE USE-2 CABLE (#14 AWG OR LARGER), 600 V, OIL RESISTANT RHW-2 OR XHHW-2, STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.
12. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 90°C.
13. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.
14. ELECTRICAL METALLIC TUBING (EMT) OR RIGID METALLIC CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
15. ELECTRICAL METALLIC TUBING (EMT) OR RIGID METALLIC CONDUIT (RMC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
16. RIGID NON-METALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR IN ARES OF HEAVY VEHICLE TRAFFIC, GALVANIZED RIGID CONDUIT SHALL BE USED.
17. ALL OUTDOOR EXPOSED CONDUIT SHALL BE RMC AND SHALL BE SUPPORTED ADEQUATELY.
18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT LTMC) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED. LFMC SHALL CONFORM TO NEC ARTICLE 350.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES, AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.
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) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
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 WEATHER PROTECTED (WP 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 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
24. NON-METALLIC 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. CONTRACTOR SHALL APPLY FOR ELECTRICAL SERVICE AS SOON AS POSSIBLE AND COORDINATE REQUIREMENTS, SERVICE ROUTING, AND METER SOCKET TYPE WITH LOCAL POWER COMPANY.

ELECTRICAL INSTALLATION NOTES (CONT.)

26. CONTRACTOR SHALL APPLY FOR TELEPHONE SERVICE AS SOON AS POSSIBLE AND COORDINATE REQUIREMENTS AND SERVICE ROUTING WITH TELEPHONE COMPANY.
27. CONTRACTOR SHALL OBTAIN ALL PERMITS, PAY PERMIT FEES, AND SCHEDULE INSPECTIONS.
28. ALL SAFETY SWITCHES SHALL BE NEMA 1 FOR INDOOR, NEMA 3R FOR OUTDOOR, UL LISTED 200K SCCR RATED, REJECTION TYPE, WITH RK1 FUSES. FUSES SHALL HAVE AN AIR OF 200K AND SHALL HAVE A LIMITING RATING AS SHOWN IN THESE DRAWINGS. EQUIPMENT AND ACCESSORIES SHALL BE RATED FOR 75 DEGREES CELSIUS OR HIGHER.
29. ALL LOAD CENTERS SHALL BE 42 SPACE UNLESS NOTED OTHERWISE, NEMA 1 FOR INDOOR, NEMA 3R FOR OUTDOOR, MCB WITH CONVERTIBLE MAINS, UL LISTED 22K IA OR HIGHER SCCR, WITH 22K AIR BREAKERS, BREAKERS AND LOAD CENTER SHALL BE RATED FOR 75 DEGREES CELSIUS OR HIGHER. BREAKERS SHALL HAVE A LIMITING RATING AS SPECIFIED ON THESE DRAWINGS.
30. CONTRACTOR SHALL LABEL ELECTRICAL EQUIPMENT IN ACCORDANCE WITH NEC 110.16 AND 110.24.
31. CONTRACTOR SHALL VERIFY THAT THE MAIN BONDING JUMPER AND GROUNDING ELECTRODE CONDUCTOR IS INSTALLED PROPERLY AT SERVICE ENTRANCE.
32. CONTRACTOR SHALL SEAL AROUND ALL CONDUIT PENETRATIONS TO PREVENT MOISTURE PENETRATION OR VERMIN INFESTATIONS.
33. DURING TRENCH BACK-FILLING FOR EACH UNDERGROUND ELECTRICAL, TELEPHONE, SIGNAL AND COMMUNICATIONS LINE, PROVIDE A CONTINUOUS UNDERGROUND WARNING TAPE TWELVE INCHES BELOW FINISHED GRADE.

GROUNDING NOTES

1. ALL GROUNDING CONNECTIONS SHALL BE MADE USING EXOTHERMIC WELDING PROCESS (CAD WELD OR EQUAL) EXCEPT FOR EQUIPMENT THAT MAY BE MECHANICALLY FASTENED. ALL LUGS SHALL BE TWO HOLE, LONG BARREL TYPE, FOR COPPER, UNLESS OTHERWISE NOTED.
2. ALL GROUND PLATES SHALL BE INSTALLED AT 30" BELOW GRADE PER MANUFACTURER'S SPECIFICATIONS. UNDERGROUND GROUNDING CONDUCTORS SHALL BE 30" BELOW GRADE.
3. ALL GROUND CONDUCTORS SHALL BE MIN. #2 AWG SOLID TINNED COPPER WIRE BARE. EQUIPMENT GROUND CONDUCTORS SHALL BE MIN. #6 GREEN INSULATED, UNLESS OTHERWISE NOTED.
4. GROUND PLATES FOR GROUND RING SHALL BE LOCATED 5'-0" APART.
5. ANY METAL OBJECT WITHIN 6 FEET OF THE TOWER OR EQUIPMENT GROUND RING SHALL BE BONDED DIRECTLY TO THE RING.
6. THE MINIMUM BENDING RADIUS FOR ALL GROUNDING CONDUCTORS #6 AWG OR LARGER SHALL BE 24".
7. ALL ABOVE GRADE GROUND CONDUCTORS SHALL BE ROUTED DOWNWARD TOWARD EARTH AND HORIZONTAL ONLY WHERE NECESSARY.
8. ALL CONDUCTORS SHALL BE ROUTED SUCH THAT THERE ARE NO INCLUSIVE ANGLES OF LESS THAN 90 DEGREES.
9. THE CONTRACTOR 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 RECOMMENDED TEST RESULT OF 5 OHMS OR LESS.
10. ALL GROUNDING SHALL COMPLY WITH THE N.E.C. AND NFPA 780, "LIGHTING PROTECTION CODE".
11. ALL GROUNDING COMPONENTS SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR.
12. ANY METAL CONDUIT MOUNTED ON THE TOWER SHALL BE BONDED TO THE TOWER AT EACH END.
13. ALL EXPOSED GROUNDING SHALL BE IN NON-METALLIC FLEX CONDUIT AND SECURED AS NECESSARY.
14. WHEN BONDING TO EQUIPMENT, REMOVE PAINT TO BARE STEEL AND PROTECT WITH A COATING OF NO-OX.
15. APPROVED ANTIOXIDANT COATINGS SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
16. BOND ICE BRIDGE SECTIONS TOGETHER EXOTHERMICALLY OR WITH 2 HOLE LUGS. BOND ICE BRIDGE TO SUPPORT POSTS.

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REVISIONS

NO	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	10/05/22	TJS
1	REVISED EQUIPMENT LAYOUT	10/19/22	TJS
2	REVISED PER POWER DESIGN	10/26/22	XSJ
3	ADDITION OF GRADING PLAN	11/14/22	TJS
4	REVISED PER POWER COORDINATION	01/05/23	XSJ

SITE # WI-1022
LOC # 712592

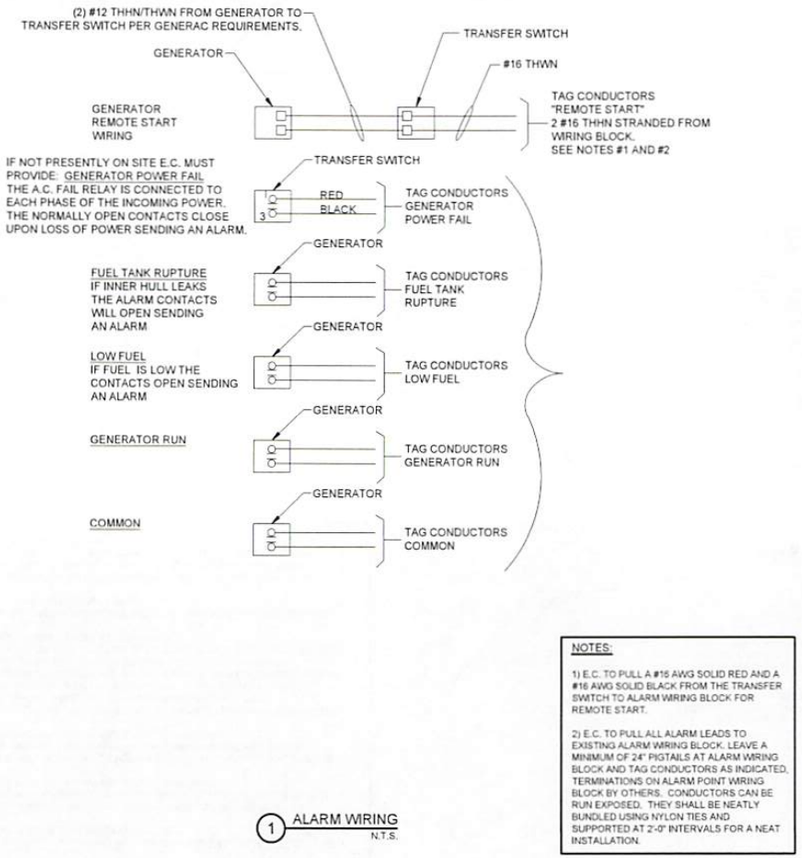
NFORK

422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	06/18/22
PROJECT #:	170-040

SHEET TITLE
ELECTRICAL NOTES

SHEET NUMBER
E-1



1 ALARM WIRING
N.T.S.

NOTES:

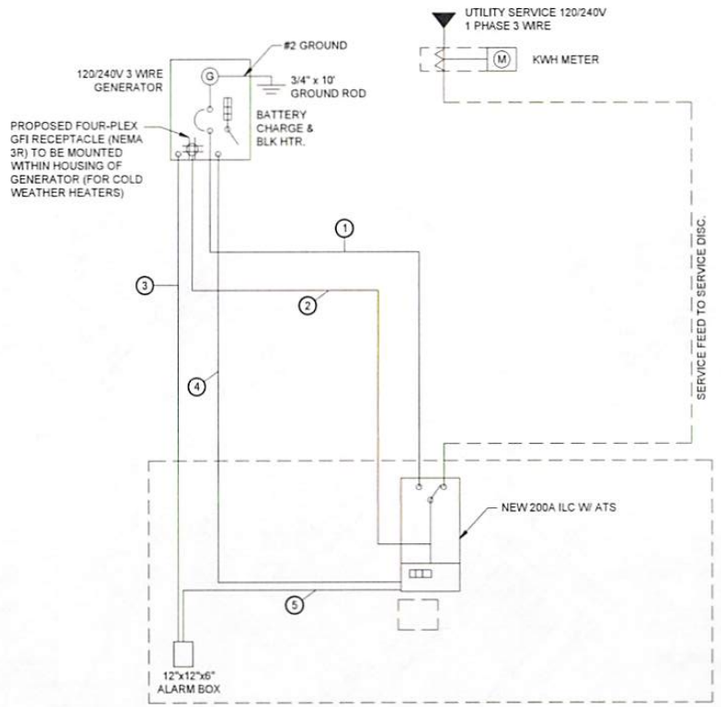
1) E.C. TO PULL A #16 AWG SOLID RED AND A #16 AWG SOLID BLACK FROM THE TRANSFER SWITCH TO ALARM WIRING BLOCK FOR REMOTE START.

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

KEY

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

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



2 NEW SINGLE LINE DIAGRAM
N.T.S.

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REVISIONS

NO.	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	10/05/22	TJS
1	REVISED EQUIPMENT LAYOUT	10/14/22	TJS
2	REVISED PER POWER DESIGN	10/28/22	KBT
3	ADDITION OF GRADING PLAN	12/14/22	TJS
4	REVISED PER POWER COORDINATION	01/05/23	KBJ

SITE # WI-1022
LOC # 712592

NFORK

422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	08/18/22
PROJECT #:	170-040

SHEET TITLE
GENERATOR SINGLE LINE DIAGRAM & ALARM WIRING

SHEET NUMBER
VW E-1C

NOTES:

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

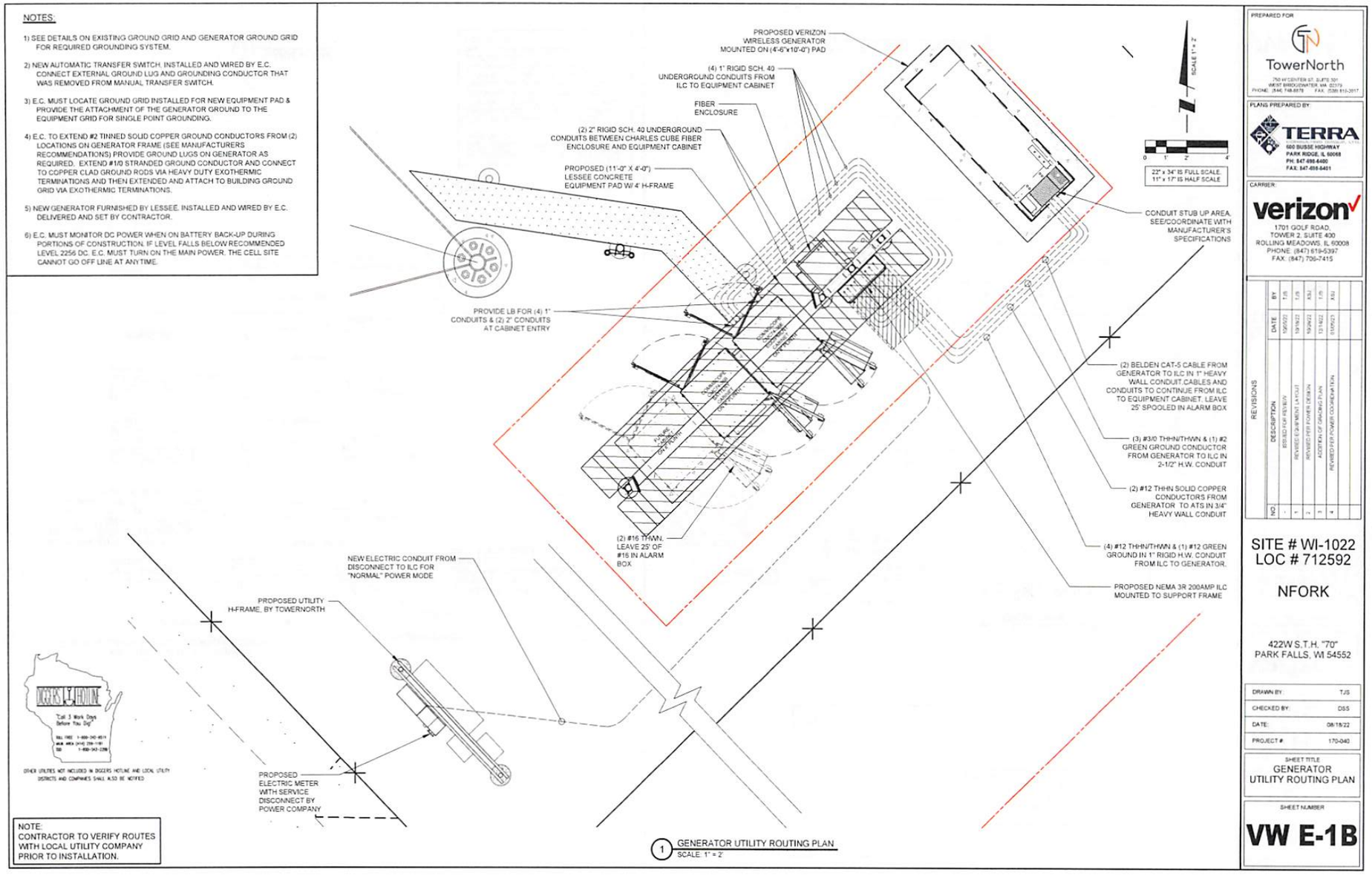
2) NEW AUTOMATIC TRANSFER SWITCH, INSTALLED AND WIRED BY E.C. CONNECT EXTERNAL GROUND LUG AND GROUNDING CONDUCTOR THAT WAS REMOVED FROM MANUAL TRANSFER SWITCH.

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.



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

1 GENERATOR UTILITY ROUTING PLAN
SCALE: 1" = 2'

PREPARED FOR
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NO.	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	10/6/22	TJS
1	REVISED EQUIPMENT LAYOUT	10/19/22	TJS
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3	ADDITION OF GROUND PLAN	12/14/22	TJS
4	REVISED PER POWER COORDINATION	03/24/23	KSJ

SITE # WI-1022
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NFORK

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PARK FALLS, WI 54552

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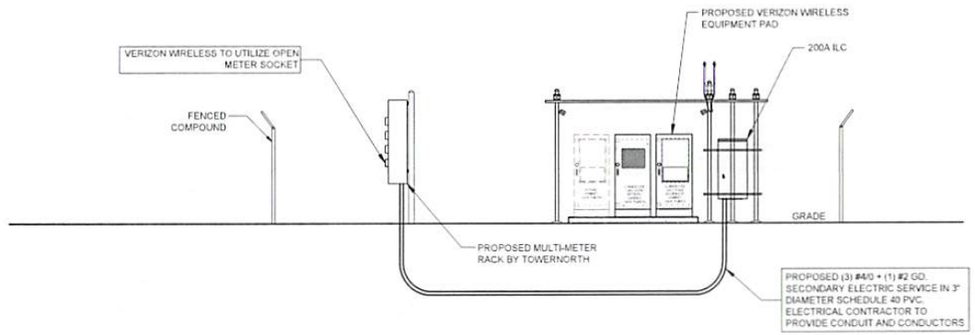
SHEET TITLE
GENERATOR
UTILITY ROUTING PLAN

SHEET NUMBER
VW E-1B



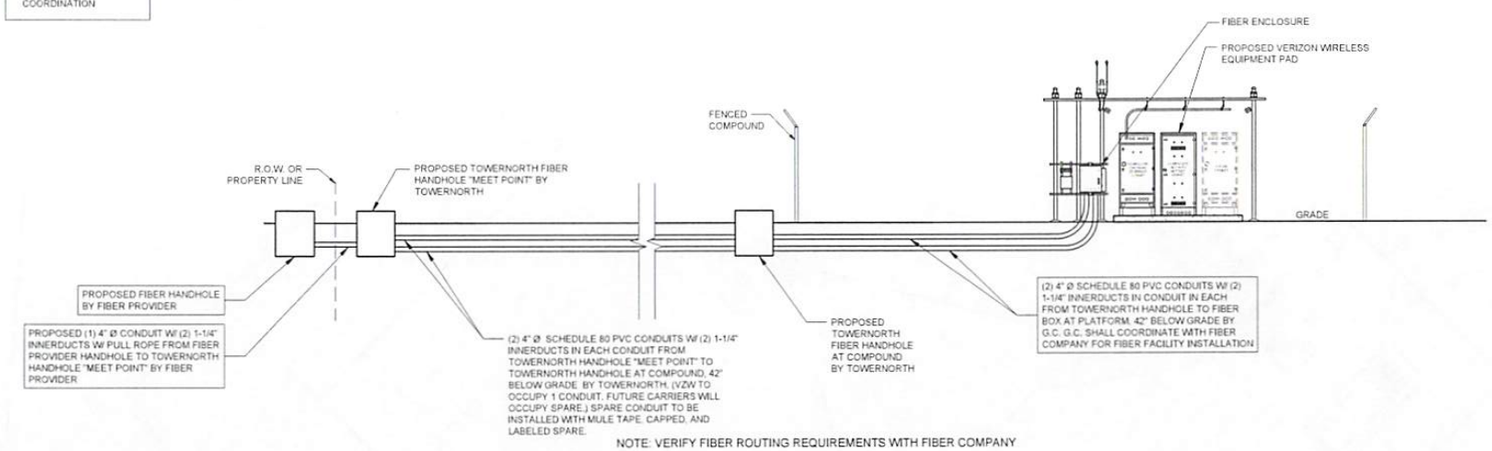
ELECTRICAL SERVICE: 200 AMP 120/240V SINGLE PHASE 3 WIRE

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

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

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

- DESIGN PENDING FIBER COORDINATION



NOTE: VERIFY FIBER ROUTING REQUIREMENTS WITH FIBER COMPANY

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

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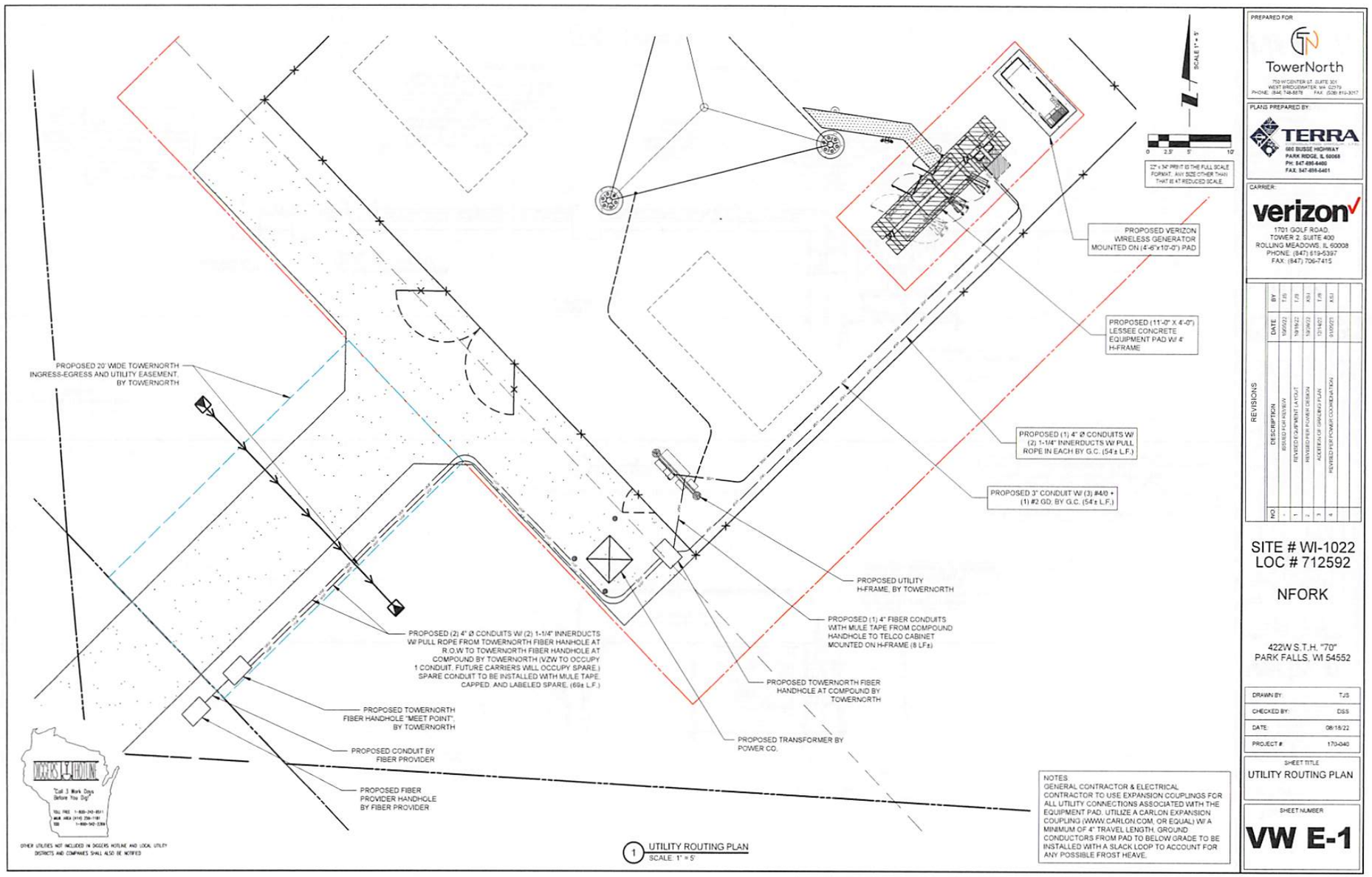
SHEET TITLE
UTILITY RISER DIAGRAMS

SHEET NUMBER
VW E-1A



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2	REVISED PER POWER DESIGN	12/2/22	KSJ
3	ADDITION OF GROUND PLAN	12/14/22	TJS
4	REVISED PER POWER COORDINATION	3/15/23	KSJ

REVISIONS

SITE # WI-1022
LOC # 712592

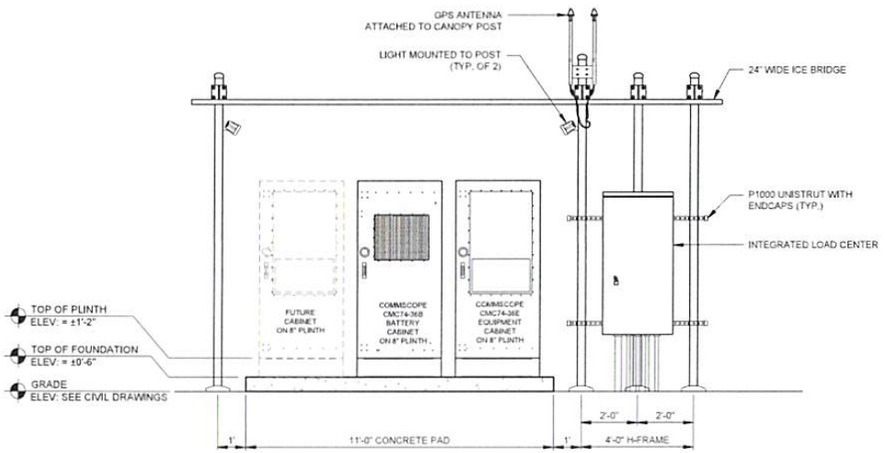
NFORK

422W S.T.H. "70"
PARK FALLS, WI 54552

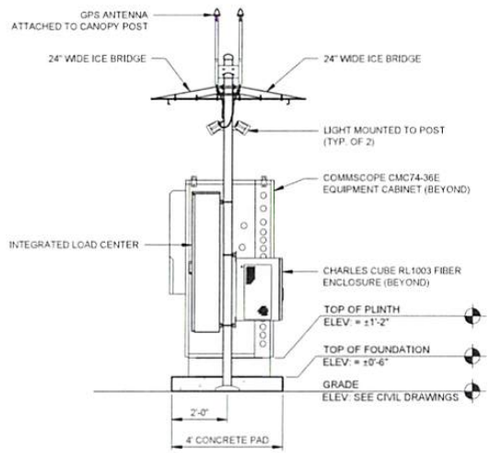
DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	08/18/22
PROJECT #	170-040

SHEET TITLE
UTILITY ROUTING PLAN

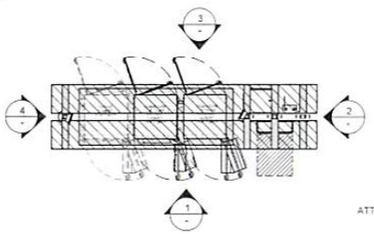
SHEET NUMBER
VW E-1

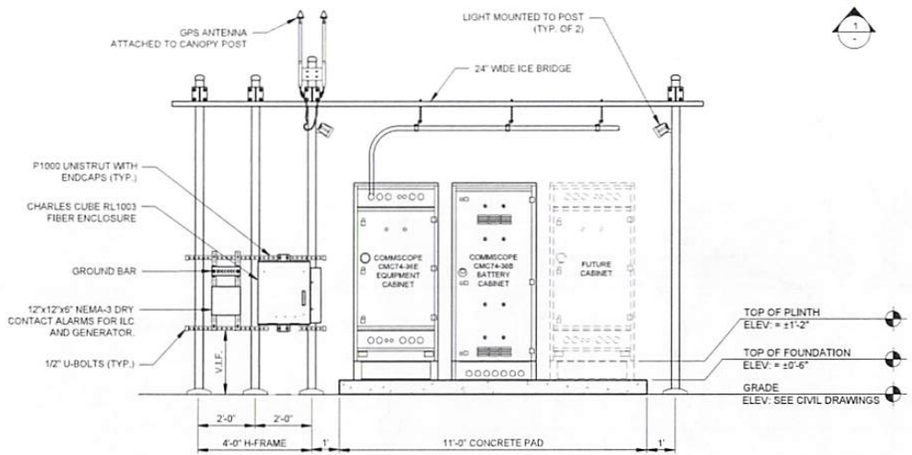


1 EQUIPMENT PAD ELEVATION
SCALE: N.T.S.

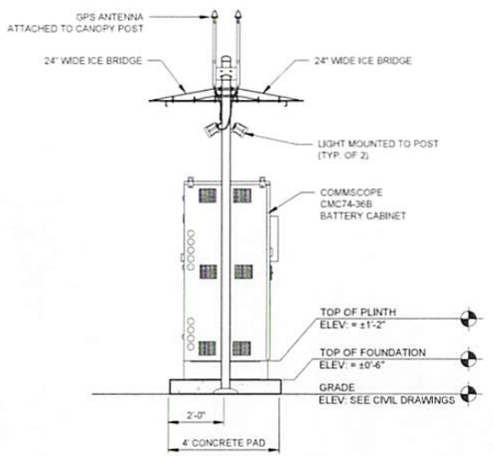


2 EQUIPMENT PAD ELEVATION
SCALE: N.T.S.





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



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

NOTE: FOR REFERENCE ONLY

PREPARED FOR
TowerNorth
759 W CENTER ST, SUITE 101
WEST BRIDGEWATER, MA 02379
PHONE: (844) 749-8678 FAX: (508) 814-3017

PLANS PREPARED BY:
TERRA
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-696-6400
FAX: 847-655-6401

CARRIER:
verizon
1701 GOLF ROAD,
TOWER 2, SUITE 400
ROLLING MEADOWS, IL 60008
PHONE: (847) 619-6397
FAX: (847) 706-7415

REVISIONS

NO.	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	10/07/22	TJS
1	REVISED EQUIPMENT LAYOUT	10/18/22	TJS
2	REVISED PER POWER DESIGN	10/26/22	DSS
3	ADDITION OF GRADING PLAN	10/14/23	TJS
4	REVISED PER POWER CONFIGURATION	01/04/23	KSJ

SITE # WI-1022
LOC # 712592

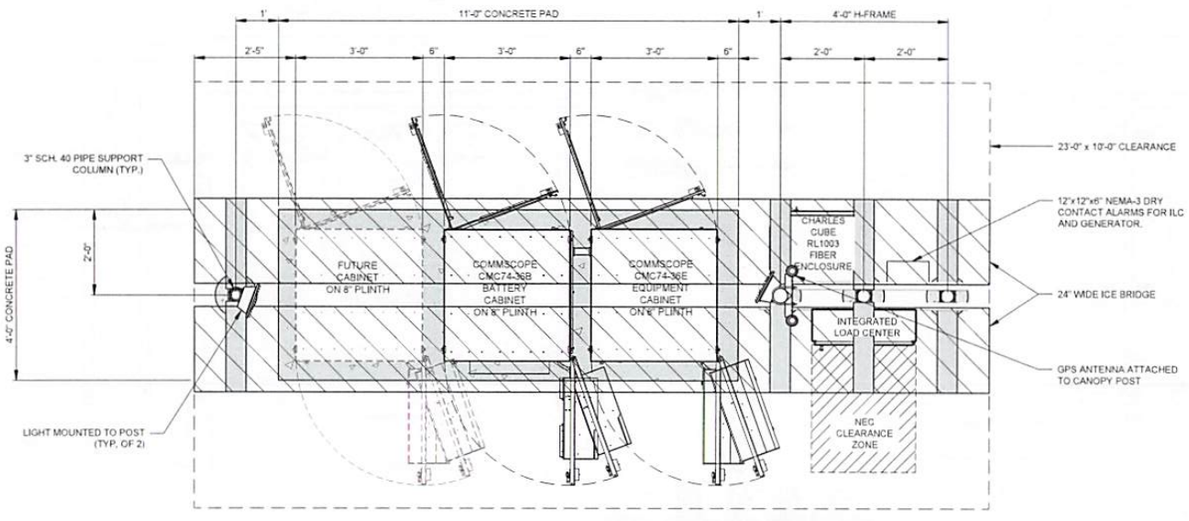
NFORK

422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	08/18/22
PROJECT #:	170-040

SHEET TITLE
EQUIPMENT PAD ELEVATIONS

SHEET NUMBER
VW B-2



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

LEGEND

= CANOPY/CONCRETE PAD

= ICE BRIDGE

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

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.

PREPARED FOR
TowerNorth
750 W CENTER ST. SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: (844) 748-8675 FAX: (508) 816-3017

PLANS PREPARED BY:
TERRA
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-696-8400
FAX: 847-698-8401

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

REVISIONS

NO	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	10/6/2022	TJS
1	REVISED EQUIPMENT LAYOUT	10/19/22	TJS
2	REVISED PER RFDS/RFDS DESIGN	10/24/22	ASJ
3	ADDITION OF GROUND PLAN	11/14/22	TJS
4	REVISED PER POWER COORDINATION	01/05/23	ASJ

SITE # WI-1022
LOC # 712592

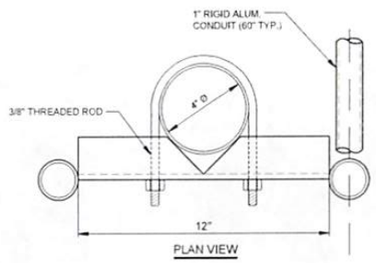
NFORK

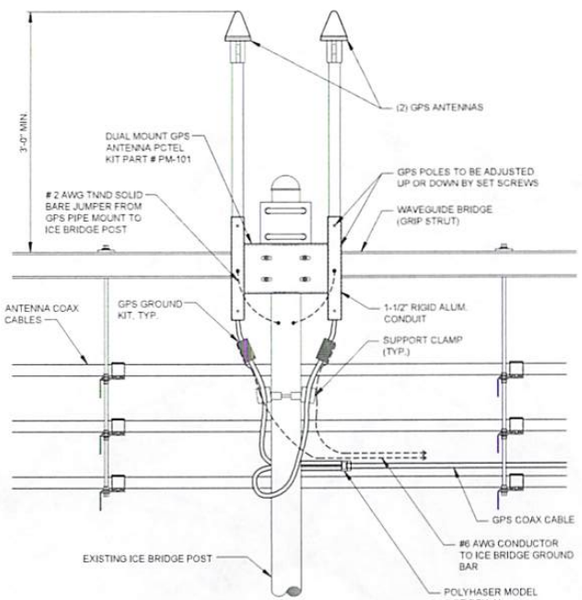
422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	08/16/22
PROJECT #	170-040

SHEET TITLE
EQUIPMENT PAD PLAN & NOTES

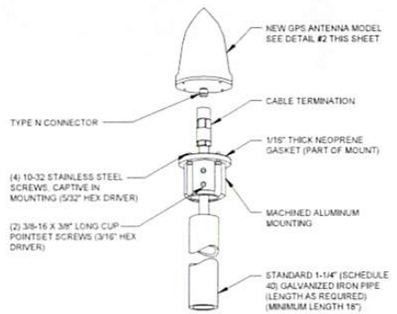
SHEET NUMBER
VW B-1



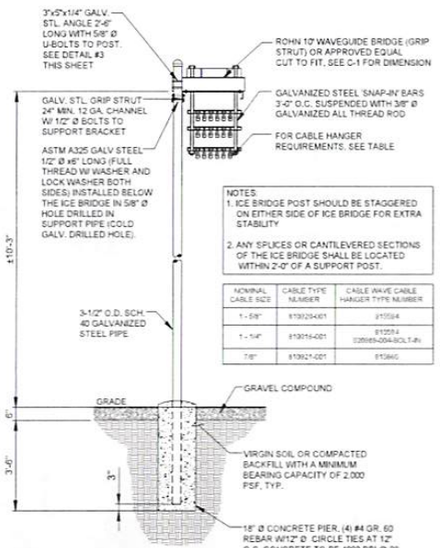


1 GPS MOUNTING DETAIL
N.T.S.

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



2 TYPICAL GPS DETAIL
N.T.S.

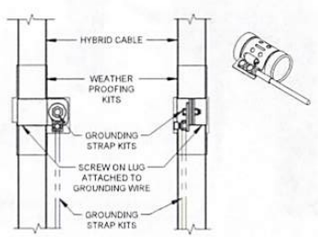


NOTES:
1. ICE BRIDGE POST SHOULD BE STAGGERED ON EITHER SIDE OF ICE BRIDGE FOR EXTRA STABILITY
2. ANY SPLICES OR CANTILEVERED SECTIONS OF THE ICE BRIDGE SHALL BE LOCATED WITHIN 2'-0" OF A SUPPORT POST.

NOMINAL CABLE SIZE	CABLE TYPE NUMBER	CABLE WAVE CABLE HANGER TYPE NUMBER
1 - 5/8"	613023-001	913594
1 - 1/4"	613016-001	913594 (026669-004-BOLT-IN)
7/8"	613021-001	913640

3 ICE BRIDGE DETAIL
N.T.S.

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



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

PREPARED FOR
TowerNorth
753 W CENTER ST, SUITE 301
WEST BRIDGEWATER, VA 22578
PHONE: (844) 746-8678 FAX: (508) 914-3017

PLANS PREPARED BY:
TERRA
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-696-6400
FAX: 847-698-6401

CARRIER:
verizon
1701 GOLF ROAD
TOWER 2, SUITE 400
ROLLING MEADOWS, IL 60008
PHONE: (847) 619-6397
FAX: (847) 706-7415

NO.	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	10/07/22	TJS
1	REVISED EQUIPMENT LAYOUT	10/19/22	TJS
2	REVISED PER POWER DESIGN	10/19/22	DSJ
3	ADDITIONAL GROUNDING PLAN	10/19/22	TJS
4	REVISED PER POWER COMPANY	01/09/23	KSI

SITE # WI-1022
LOC # 712592

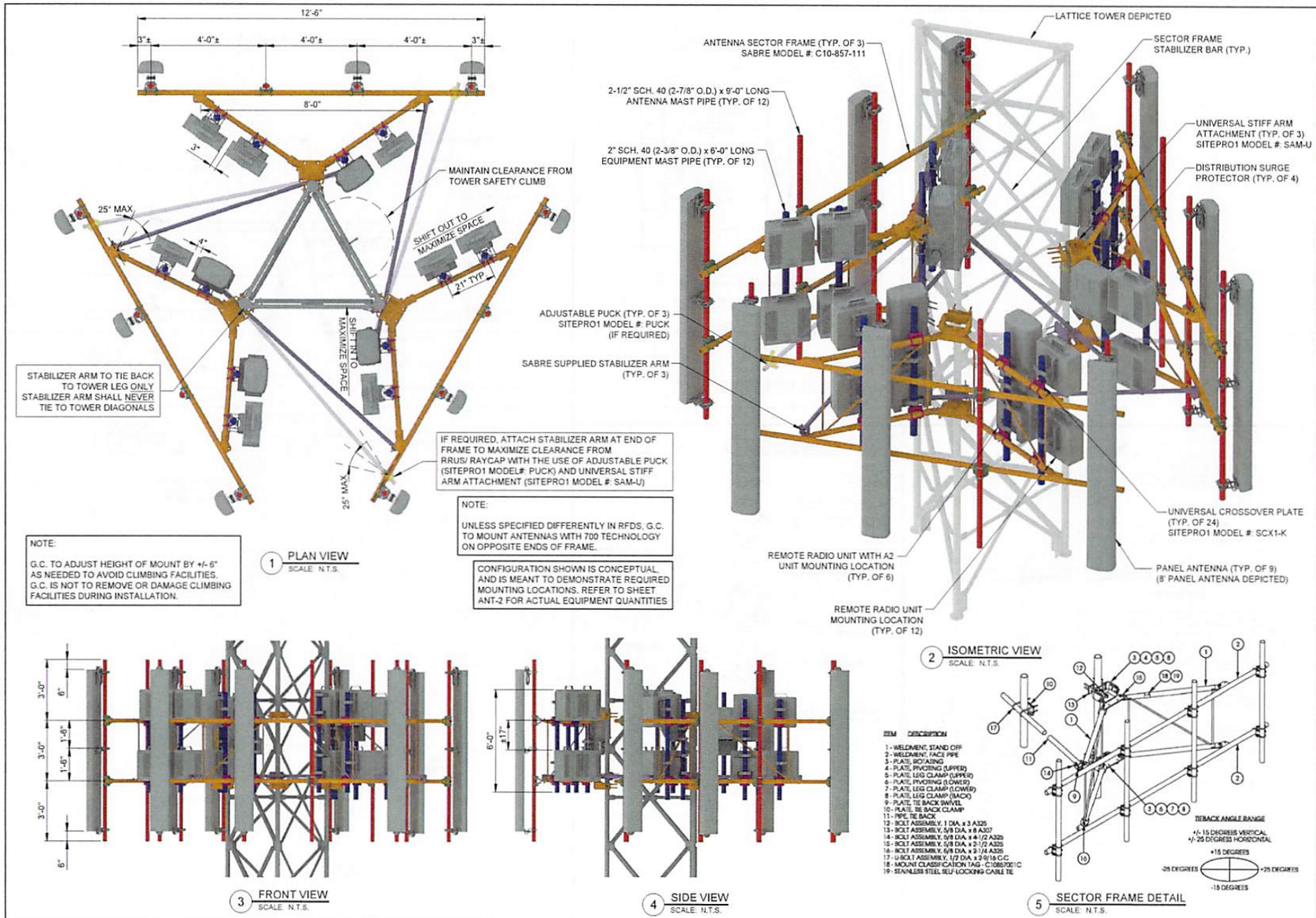
NFORK

422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	08/18/22
PROJECT #:	170-040

SHEET TITLE
SITE DETAILS

SHEET NUMBER
VW A-4



PREPARED FOR:
TowerNorth
750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: (844) 748-8676 FAX: (508) 510-3017

PLANS PREPARED BY:
TERRA
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847.698.6400
FAX: 847.698.6401

CARRIER:
verizon
1701 GOLF ROAD,
TOWER 2, SUITE 400
ROLLING MEADOWS, IL 60008
PHONE: (847) 619-5397
FAX: (847) 709-7415

NO	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	08/05/22	TJS
1	REVISED EQUIPMENT LAYOUT	09/16/22	TJS
2	REVISED PER POWER DESIGN	10/26/22	ASJ
3	ADDITION OF GRADING PLAN	12/14/22	TJS
4	REVISED PER POWER COORDINATION	01/09/23	ASJ

REVISIONS

SITE # WI-1022
LOC # 712592

NFORK

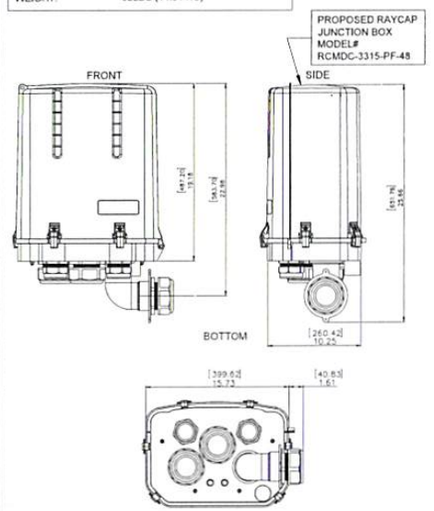
422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	08/18/22
PROJECT #:	170-040

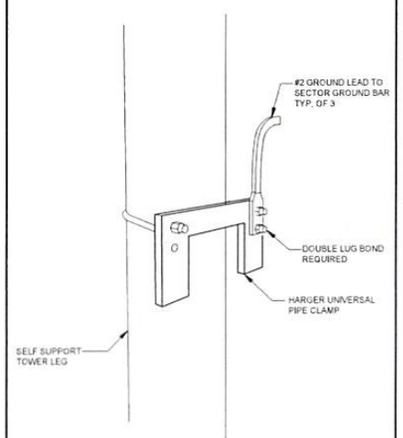
SHEET TITLE
ANTENNA MOUNTING DETAILS

SHEET NUMBER
VW A-3A

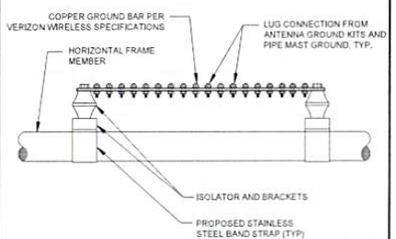
SPECIFICATIONS	DC SURGE PROTECTION FOR RRU/INTEGRATED ANTENNA RADIO HEAD	[mm] INCHES
APPLICATION:	TOWER / BASE / ROOFTOP / ROOFTOP DISTRIBUTION MODELS	
WEIGHT:	32LBS (14.51 KG)	



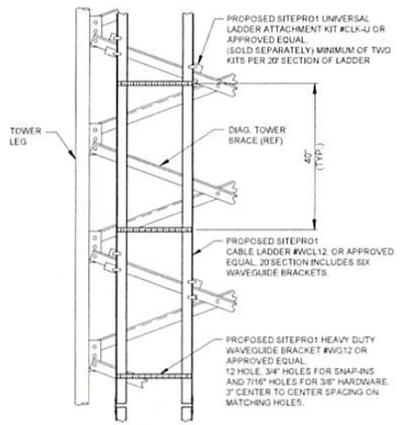
1 RAYCAP JUNCTION BOX DETAIL
SCALE: N.T.S.



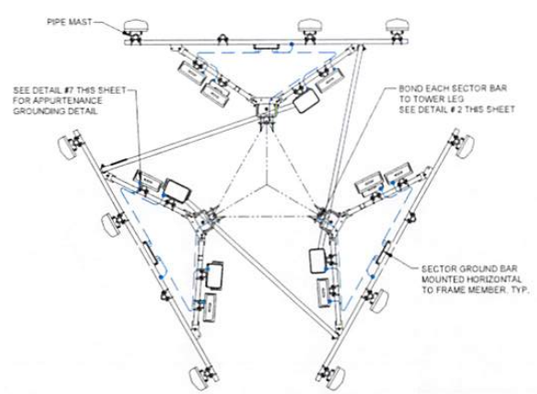
2 SELF SUPPORT TOWER (ROUND MEMBER)
SCALE: N.T.S.



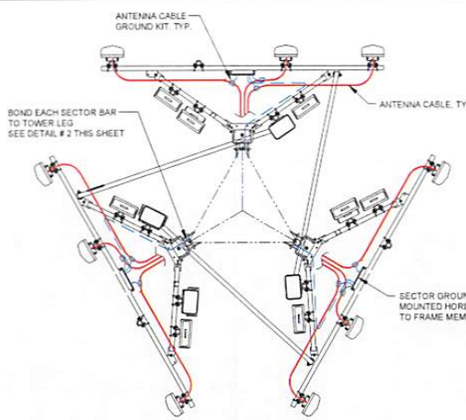
3 GROUND BAR AT SECTOR
N.T.S.



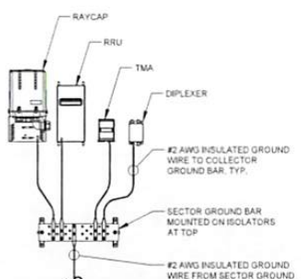
4 TRANSMISSION LINE HANGER
N.T.S.



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



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



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

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

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.

PREPARED FOR
TowerNorth
750 W CENTER ST, SUITE 301
WEST DEBURAKER, MA 02379
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PLANS PREPARED BY:
TERRA
600 BUSSE HIGHWAY
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CARRIER:
verizon
1701 GOLF ROAD,
TOWER 2, SUITE 400
ROLLING MEADOWS, IL 60008
PHONE: (847) 619-5397
FAX: (847) 706-7415

REVISIONS			
NO.	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	12/7/22	TJS
1	REVISED EQUIPMENT LAYOUT	12/19/22	TJS
2	REVISED PER POWER DESIGN	12/29/22	DSS
3	ADDITION OF GRADING PLAN	1/31/2023	TJS
4	REVISED PER POWER COORDINATION	01/06/23	KRS

SITE # WI-1022
LOC # 712592

NFORK

422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	08/18/22
PROJECT #:	170-040

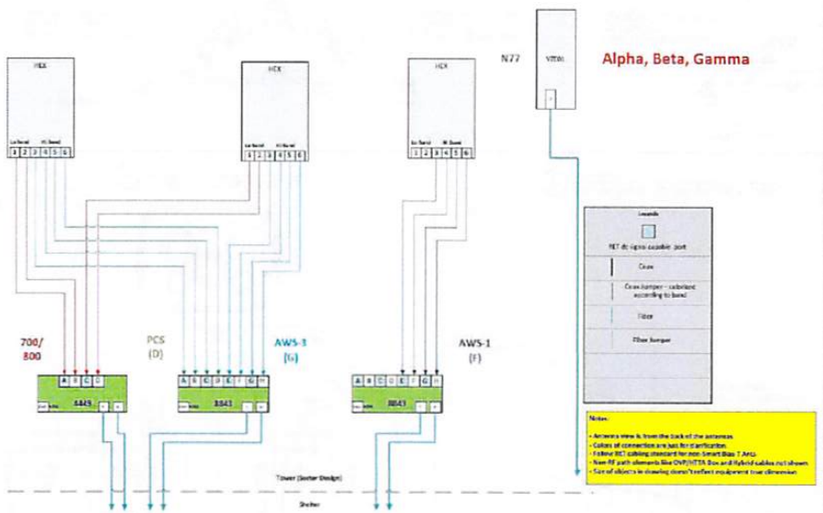
SHEET TITLE
SITE DETAILS

SHEET NUMBER
VW A-3

RF EMISSIONS REPORT REQUIRED

☐ YES ☒ NO

DATE OF REPORT: _____



1 CABLE DIAGRAM
N.T.S.

	HYBRID LENGTH				
	AT GROUND		AT STRUCTURE		
SECTOR	HOR (±)	VER (±)	HOR (±)	RAYCAP CL (±)	TOTAL (±)
MAIN	25'	5'	8'	275'	288'

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

Raycap Layout - Raycap Per Sector

POWER

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

FIBER

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

2 RAYCAP TABLE
N.T.S.

PREPARED FOR
TowerNorth
750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: (844) 748-8678 FAX: (508) 816-3017

PLANS PREPARED BY:
TERRA
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

CARRIER:
verizon
1701 GOLF ROAD,
TOWER 2, SUITE 400
ROLLING MEADOWS, IL 60008
PHONE: (847) 619-5397
FAX: (847) 709-7415

REVISIONS

NO	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	10/5/22	TJS
1	REVISED EQUIPMENT LAYOUT	10/19/22	TJS
2	REVISED PER POWER DESIGN	10/24/22	KSJ
3	ADDITION OF GROUND PLAN	12/14/22	TJS
4	REVISED PER POWER COORDINATION	3/15/23	KSJ

SITE # WI-1022
LOC # 712592

NFORK

422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	08/18/22
PROJECT #:	170-040

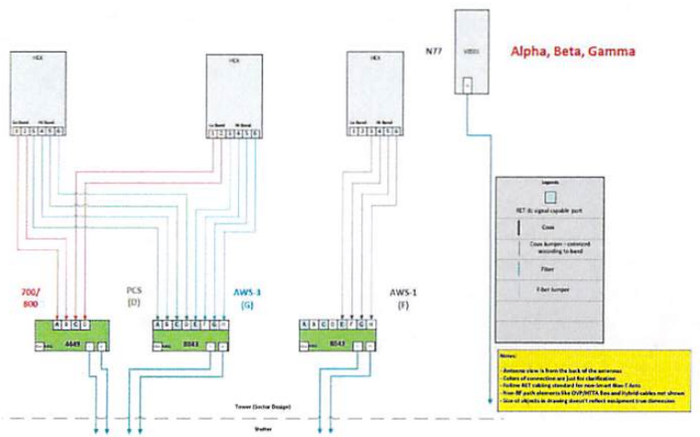
SHEET TITLE
ANTENNA INFORMATION

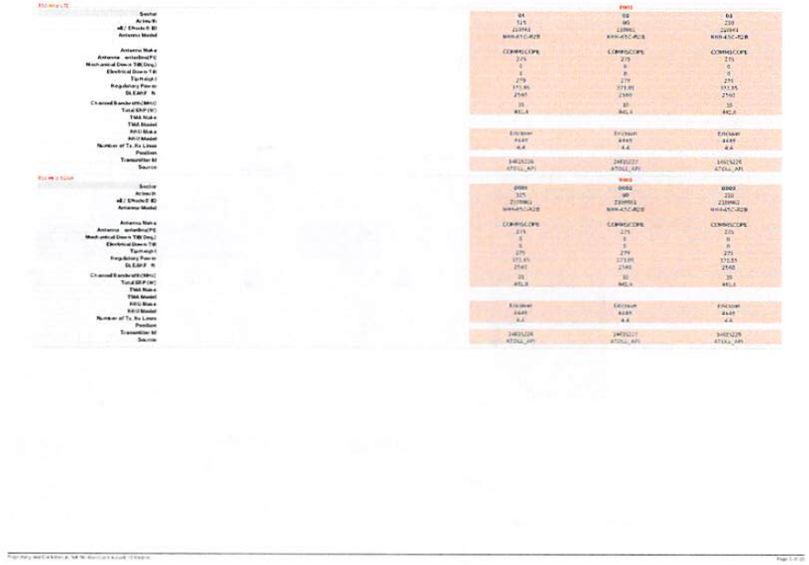
SHEET NUMBER
VW A-2A

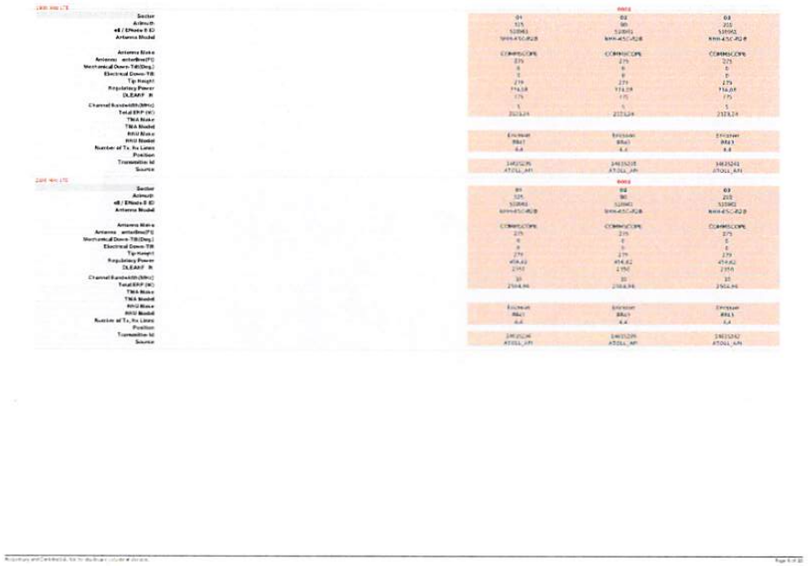
Callsigns

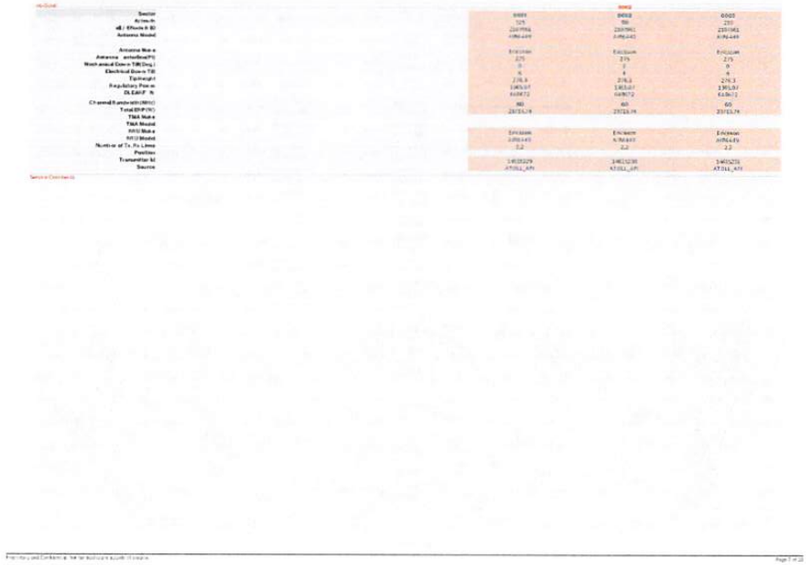
eBuign	Market	Radio cde	Market Number	Block	State	ounty	Licensee Name	wnolly Owned	Total MHZ	Freq Range 1	Freq Range 2	Freq Range 3	Freq Range 4	Regulatory Power	Threshold (W)	POPs (%)/66	Status	Action	Approved for Interc
WQJQ692	Great Lakes	WU	REA003	C	WI	Sawyer	Cellco Partnership	Yes	22.000	706.000-757.000	776.000-787.000	.000-.000	.000-.000	96.55	2000	14.38	Active	added	Yes
KNEN485	Wisconsin 2 - Bayfield	CL	CMA709	B	WI	Sawyer	Attel Corporation	Yes	25.000	825.000-845.000	880.000-890.000	846.500-849.000	891.500-894.000	373.93	500	14.38	Active	added	Yes
KNLG423	Duluth, MN	CW	BTA105	D	WI	Sawyer	RURAL CELLULAR CORPORATION	Yes	10.000	1865.000-1870.000	1945.000-1950.000	.000-.000	.000-.000	774.89	3280	14.38	Active	added	Yes
WQNH554	Wisconsin 2 - Bayfield	AT	CMA709	G	WI	Sawyer	Cellco Partnership	Yes	10.000	1715.000-1720.000	2110.000-2120.000	.000-.000	.000-.000	913.25	3280	14.38	Active	added	Yes
WRRF887	Eau Claire, WI	PM	PEA127	A1	WI	Sawyer	Cellco Partnership	Yes	20.000	3700.000-3720.000	.000-.000	.000-.000	.000-.000	1363.07	1640	14.38	Active	added	No
WRRF888	Eau Claire, WI	PM	PEA127	A2	WI	Sawyer	Cellco Partnership	Yes	20.000	3720.000-3740.000	.000-.000	.000-.000	.000-.000	1363.07	1640	14.38	Active	added	No
WRRF889	Eau Claire, WI	PM	PEA127	A3	WI	Sawyer	Cellco Partnership	Yes	20.000	3740.000-3760.000	.000-.000	.000-.000	.000-.000	1363.07	1640	14.38	Active	added	No
WQGA717	Great Lakes	AW	REA003	F	WI	Sawyer	Cellco Partnership	Yes	10.000	1745.000-1755.000	2145.000-2155.000	.000-.000	.000-.000	456.62	3280	14.38	Active	added	Yes
WHHF909	Eau Claire, WI	UU	PEA127	N1	WI	Sawyer	Straight Path Spectrum, LLC	Yes	100.000	37600.000-37700.000	.000-.000	.000-.000	.000-.000			14.38	Active		Yes
WHHF910	Eau Claire, WI	UU	PEA127	N10	WI	Sawyer	Straight Path Spectrum, LLC	Yes	100.000	38600.000-38800.000	.000-.000	.000-.000	.000-.000			14.38	Active		Yes
WHHF911	Eau Claire, WI	UU	PEA127	N11	WI	Sawyer	Straight Path Spectrum, LLC	Yes	100.000	37700.000-37900.000	.000-.000	.000-.000	.000-.000			14.38	Active		Yes
WHHF912	Eau Claire, WI	UU	PEA127	N12	WI	Sawyer	Straight Path Spectrum, LLC	Yes	100.000	37900.000-37900.000	.000-.000	.000-.000	.000-.000			14.38	Active		Yes
WHHF913	Eau Claire, WI	UU	PEA127	N13	WI	Sawyer	Straight Path Spectrum, LLC	Yes	100.000	37900.000-38000.000	.000-.000	.000-.000	.000-.000			14.38	Active		Yes
WHHF914	Eau Claire, WI	UU	PEA127	N14	WI	Sawyer	Straight Path Spectrum, LLC	Yes	100.000	38000.000-38100.000	.000-.000	.000-.000	.000-.000			14.38	Active		Yes
WHHF915	Eau Claire, WI	UU	PEA127	N15	WI	Sawyer	Straight Path Spectrum, LLC	Yes	100.000	38100.000-38200.000	.000-.000	.000-.000	.000-.000			14.38	Active		Yes
WHHF916	Eau Claire, WI	UU	PEA127	N16	WI	Sawyer	Straight Path Spectrum, LLC	Yes	100.000	38200.000-38300.000	.000-.000	.000-.000	.000-.000			14.38	Active		Yes
WHHF917	Eau Claire, WI	UU	PEA127	N17	WI	Sawyer	Straight Path Spectrum, LLC	Yes	100.000	38300.000-38400.000	.000-.000	.000-.000	.000-.000			14.38	Active		Yes
WHHF918	Eau Claire, WI	UU	PEA127	N18	WI	Sawyer	Straight Path Spectrum, LLC	Yes	100.000	38400.000-38500.000	.000-.000	.000-.000	.000-.000			14.38	Active		Yes
WHNF905	Eau Claire, WI	PM	PEA127	A4	WI	Sawyer	eBox Partnership	Yes	20.000	3740.000-3760.000	.000-.000	.000-.000	.000-.000		1640	14.38	Active		No
WHNF906	Eau Claire, WI	PM	PEA127	A5	WI	Sawyer	eBox Partnership	Yes	20.000	3760.000-3780.000	.000-.000	.000-.000	.000-.000		1640	14.38	Active		No
WQLB440	Minneapolis-St. Paul, MN-WI-IA	AW	MEA007	G	WI	Sawyer	eBox Partnership	Yes	20.000	1720.000-1730.000	2120.000-2130.000	.000-.000	.000-.000		3280	14.38	Active		Yes
WHNF902	Eau Claire, WI	PM	PEA127	B1	WI	Sawyer	eBox Partnership	Yes	20.000	3800.000-3820.000	.000-.000	.000-.000	.000-.000		1640	14.38	Active		No

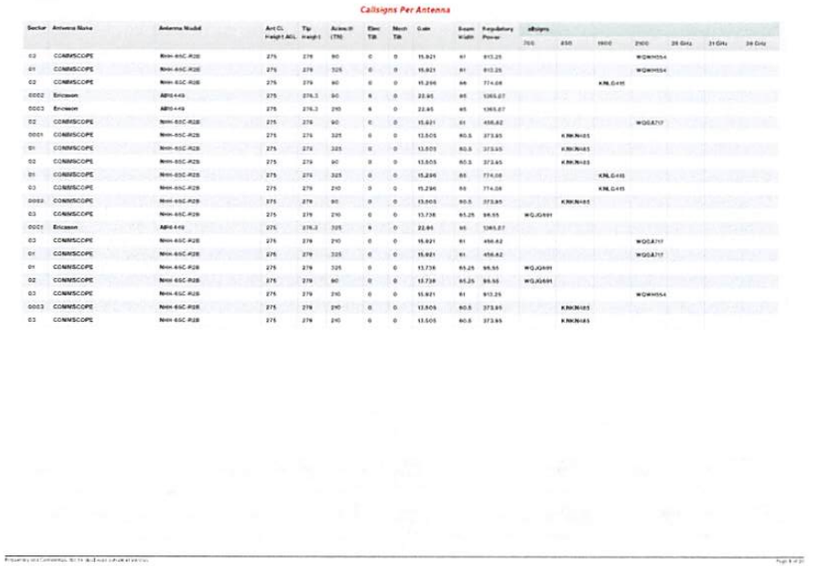
WHNF903	Eau Claire, WI	PM	PEA127	B2	WI	Sawyer	eBox Partnership	Yes	20.000	3820.000-3840.000	.000-.000	.000-.000	.000-.000		1640	14.38	Active		No
WHNF904	Eau Claire, WI	PM	PEA127	B3	WI	Sawyer	eBox Partnership	Yes	20.000	3840.000-3860.000	.000-.000	.000-.000	.000-.000		1640	14.38	Active		No
WHNF905	Eau Claire, WI	PM	PEA127	B4	WI	Sawyer	eBox Partnership	Yes	20.000	3860.000-3880.000	.000-.000	.000-.000	.000-.000		1640	14.38	Active		No
WHNF906	Eau Claire, WI	PM	PEA127	B5	WI	Sawyer	eBox Partnership	Yes	20.000	3880.000-3900.000	.000-.000	.000-.000	.000-.000		1640	14.38	Active		No











Callsigns Per Antenna

Sector	Antenna Name	Antenna Model	Ant Ct. Height AGL	Tip Height	Azimuth (TN)	Elec Tilt	Mech Tilt	Gain	Beam Width	Regulatory Power	dBsigns 700	850	1900	2100	28 GHz	31 GHz	39 GHz
03	COMMSCOPE	NHH-65C-R2B	275	279	90	0	0	15.921	61	815.26				WQHH554			
01	COMMSCOPE	NHH-65C-R2B	275	279	325	0	0	15.921	61	815.26				WQHH554			
02	COMMSCOPE	NHH-65C-R2B	275	279	90	0	0	15.296	66	774.08			KNLG455				
0002	Ericsson	AIR6449	275	276.3	90	6	0	22.95	65	1365.07							
0003	Ericsson	AIR6449	275	276.3	210	6	0	22.95	65	1365.07							
02	COMMSCOPE	NHH-65C-R2B	275	279	90	0	0	15.921	61	456.62				WQDA717			
0001	COMMSCOPE	NHH-65C-R2B	275	279	325	0	0	13.505	60.5	373.65		KNKN465					
01	COMMSCOPE	NHH-65C-R2B	275	279	325	0	0	13.505	60.5	373.65		KNKN465					
02	COMMSCOPE	NHH-65C-R2B	275	279	90	0	0	13.505	60.5	373.65		KNKN465					
01	COMMSCOPE	NHH-65C-R2B	275	276	325	0	0	15.296	66	774.08			KNLG455				
03	COMMSCOPE	NHH-65C-R2B	275	279	210	0	0	15.296	66	774.08			KNLG455				
0002	COMMSCOPE	NHH-65C-R2B	275	279	90	0	0	13.505	60.5	373.65		KNKN465					
03	COMMSCOPE	NHH-65C-R2B	275	279	210	0	0	13.738	65.25	99.55	WQJG691						
0001	Ericsson	AIR6449	275	276.3	325	6	0	22.95	65	1365.07							
03	COMMSCOPE	NHH-65C-R2B	275	279	210	0	0	15.921	61	456.62				WQDA717			
01	COMMSCOPE	NHH-65C-R2B	275	279	325	0	0	15.921	61	456.62				WQDA717			
01	COMMSCOPE	NHH-65C-R2B	275	279	325	0	0	13.738	65.25	99.55	WQJG691						
02	COMMSCOPE	NHH-65C-R2B	275	279	90	0	0	13.738	65.25	99.55	WQJG691						
03	COMMSCOPE	NHH-65C-R2B	275	279	210	0	0	15.921	61	815.26				WQHH554			
0003	COMMSCOPE	NHH-65C-R2B	275	279	210	0	0	13.505	60.5	373.65		KNKN465					
03	COMMSCOPE	NHH-65C-R2B	275	279	210	0	0	13.505	60.5	373.65		KNKN465					

verizon
fuze | RFDS

WEST > Upper Midwest > Illinois/Wisconsin > Wisconsin > WI2_NFORK_RSW

RF Submit by: Rychter, Bartlomiej - bartlomiej.rychter@verizonwireless.com - 8/31/2022, 9:18:34 AM

EE Submit by: Dixit, Vivek - vivek.dixit@verizonwireless.com - 9/7/2022, 11:50:10 AM

Project Details

FUZE Project ID: 16873166
Project Name: WI2_NFORK_RSW
Project Alt Name: WI2_NFORK_RSW
Project Type: Initial Build
Modification Type:
Designed Sector arrier 4G: 17
Designed Sector arrier 5G: 3
Additional Sector arrier 4G: N/A
Additional Sector arrier 5G: N/A
FP Solution Type & Tech Type: MCR,4G_700,4G_850,5G_L-Sub6-Prep
arrier Aggregation: false
MPT Id:
e IP-O: false
Suffix:

Location Information

Site ID: 617212479
E-NodeB ID: 210961,2109961,510961,2107961
PSLC: 712592
Switch Name: Appleton
Tower Owner:
Tower Type: Self Support (Lattice Tower)
Site Type: MACRO
Site Sub Type: TRADITIONAL
Street Address: 422W State Hwy 70
ity: Park Falls
State: WI
Zip ode: 54552
ounty: Sawyer
Latitude: 45.848082 45° 50' 53.0952" N
Longitude: -90.692186 90° 41' 31.8696" W

RFDS Project Scope:

Antenna Summary

Added

700	850	1900	AWS	AWS3	L-Subt	Make	Model	antaeline	Tip Height	Azimuth	RET	4x4s	Ant. Type	Quantity	Item ID
LTE	LTE 5G	LTE	LTE	LTE		COMMSCOPE	NHH-65C-R2B	275	279	325(000) 325(0) 90(000) 90(0) 210(000) 210(0)	false	false	PHYSI AL	9	NHH-65C-R2B
					5G	Ericsson	AIR6448	279	276.3	325(000) 90(000) 210(000)	false	false	PHYSI AL	3	

Removed

700	850	1900	AWS	AWS3	L-Subt	Make	Model	antaeline	Tip Height	Azimuth	RET	4x4s	Ant. Type	Quantity	Item ID

No data available.

Retained

700	850	1900	AWS	AWS3	L-Subt	Make	Model	antaeline	Tip Height	Azimuth	RET	4x4s	Ant. Type	Quantity	Item ID

No data available.

Added: 12 Removed: 1 Retained: 0

Equipment Summary

Added

Equipment Type	Location	700	850	1900	AWS	AWS3	L-Subt	Make	Model	side Length	side Size	Install Type	Quantity	Item ID
Hybrid cable	Tower							COMMSCOPE-001	HFT1050-2-(BV1-xxx)-0			PHYSI AL	3	
RRU	Tower	LTE	LTE 5G					Ericsson	4449			PHYSI AL	3	KRC161749/1
RRU	Tower			LTE	LTE	LTE		Ericsson	8843			PHYSI AL	6	KRC161707/2
RRU	Tower						5G	Ericsson	AIR6449			PHYSI AL	3	
OVP Box	Tower							RAYCAPRC-001	RVZDC-3315-PF-48			PHYSI AL	3	RVZDC-3315-PF-48

Removed

Equipment Type	Location	700	850	1900	AWS	AWS3	L-Subt	Make	Model	side Length	side Size	Install Type	Quantity	Item ID

No data available.

Retained

Equipment Type	Location	700	850	1900	AWS	AWS3	L-Subt	Make	Model	side Length	side Size	Install Type	Quantity	Item ID

No data available.

Service Info

LEASE PARCEL

PART OF THE SOUTHEAST QUARTER (SE1/4) OF THE NORTHWEST QUARTER (NW1/4) OF SECTION TWENTY-FOUR (24), TOWNSHIP THIRTY-NINE (39) NORTH; RANGE THREE (3) WEST, TOWN OF DRAPER, SAWYER COUNTY, WISCONSIN, CONTAINING 10,000 SQUARE FEET (0.230 ACRES) OF LAND AND BEING DESCRIBED BY:

COMMENCING AT THE WEST QUARTER CORNER OF SAID SECTION 24; THENCE S86°-35'-42"E 1309.15 FEET ALONG THE EAST/WEST QUARTER LINE OF SAID SECTION 24; THENCE N03°-24'-18"E 10.00 FEET TO THE POINT OF BEGINNING; THENCE N44°-05'-31"W 100.00 FEET; THENCE N45°-54'-29"E 100.00 FEET; THENCE S44°-05'-31"E 100.00 FEET; THENCE S45°-54'-29"W 100.00 FEET TO THE POINT OF BEGINNING; BEING SUBJECT TO ANY AND ALL EASEMENTS AND RESTRICTIONS OF RECORD.

20 FOOT WIDE UTILITY AND INGRESS/EGRESS EASEMENT

PART OF THE SOUTHEAST QUARTER (SE1/4) OF THE NORTHWEST QUARTER (NW1/4) OF SECTION TWENTY-FOUR (24), TOWNSHIP THIRTY-NINE (39) NORTH; RANGE THREE (3) WEST, TOWN OF DRAPER, SAWYER COUNTY, WISCONSIN, CONTAINING 807 SQUARE FEET (0.019 ACRES) OF LAND AND BEING DESCRIBED BY:

COMMENCING AT THE WEST QUARTER CORNER OF SAID SECTION 24; THENCE S86°-35'-42"E 1309.15 FEET ALONG THE EAST/WEST QUARTER LINE OF SAID SECTION 24; THENCE N03°-24'-18"E 10.00 FEET; THENCE N44°-05'-31"W 40.00 FEET TO THE POINT OF BEGINNING; THENCE S45°-54'-29"W 40.37 FEET TO A POINT ON THE NORTHEASTERLY RIGHT OF WAY LINE OF S.T.H. 70; THENCE N44°-05'-31"W 20.00 FEET ALONG SAID NORTHEASTERLY RIGHT OF WAY LINE; THENCE N45°-54'-29"E 40.37 FEET; THENCE S44°-05'-31"E 20.00 FEET TO THE POINT OF BEGINNING; BEING SUBJECT TO ANY AND ALL EASEMENTS AND RESTRICTIONS OF RECORD.

PARENT PARCEL

TITLE REPORT REVIEW

TITLE REPORT: TITLE MATTERS, LLC

COMMITMENT NO.: 9407M

EFFECTIVE DATE: AUGUST 5, 2022

FEE SIMPLE TITLE VESTED IN: LYNN C. POHL AND DIANE M. WASIELESKI

NOTE: THE STATEMENT OF APPLICABILITY REFERS TO THE LEASE SITE AND ANY EASEMENTS PERTINENT THEREUNTO WHERE SPECIFIC ENCUMBRANCES AFFECT THE LEASED PREMISES AND/OR A PERTINENT EASEMENT, THEY ARE IDENTIFIED AS SUCH.

SCHEDULE B-II

1. MINERAL RESERVATION CONTAINED IN DEED RECORDED AT VOLUME 77, PAGE 632. NOTE THAT THIS INSTRUMENT APPEARS TO BE A DEED IN THE CHAIN OF TITLE WITH NO MENTION OF ANY MINERAL RESERVATION. **NOT A SURVEY RELATED MATTER.**

2. MINERAL RESERVATION BY THE STATE OF WISCONSIN IN AN INSTRUMENT RECORDED AT VOLUME 401, PAGE 300. THIS RESERVATION MAY STILL EXIST AND MAY PROHIBIT ANY EXCAVATION ON THE LAND AS WOULD BE REQUIREDTO CONSTRUCT THE TELECOMMUNICATIONS FACILITY. **DOES APPLY BUT IS NOT A SURVEY RELATED MATTER.**

3. CONVEYANCE TO THE STATE OF WISCONSIN FOR HIGHWAY RECORDED AT VOLUME 456, PAGE 100. **THE PRESENT DAY RIGHT OF WAY IS PLOTTED AND SHOWN.**

4. LINE EASEMENT TO GENERAL TELEPHONE COMPANY OF WISCONSIN DATED 9/20/1990 AND RECORDED AT VOLUME 456, PAGE 214. THIS EASEMENT WAS GRANTED BY THE STATE OF WISCONSIN. **DOES NOT APPLY.**

SURVEYED FOR:

TERRA CONSULTING GROUP, LTD.

600 Busse Highway
Park Ridge, IL 60068
OFFICE: (847) 698-6400
FAX: (678) 444-4472

SURVEYED FOR:

TowerNorth

750 W. Center St. Floor 3
West Bridgewater, MA 02379
MOBILE: (401) 533-1679

MERIDIAN SURVEYING, LLC

N9637 Friendship Drive Office: 920-993-0881
Kaukauna, WI 54130 Fax: 920-273-6037

SITE NAME:
WI2 NFORK RSW

SITE NUMBER:
WI-1022

SITE ADDRESS:
422W S.T.H. "70"
PARK FALLS, WI 54552

PROPERTY OWNER:
LYNN POHL & DIANE WASIELESKI
N12509 C.T.H. "F"
PHILLIPS, WI 54555

TAX ID: 6012
PIN: 57-006-2-39-03-24-2 04-000-000010

ZONED: F-1, FORESTRY ONE

DEED REFERENCE:
VOLUME 596, PAGE 213
DOC. NO. 259044

LEASE EXHIBIT

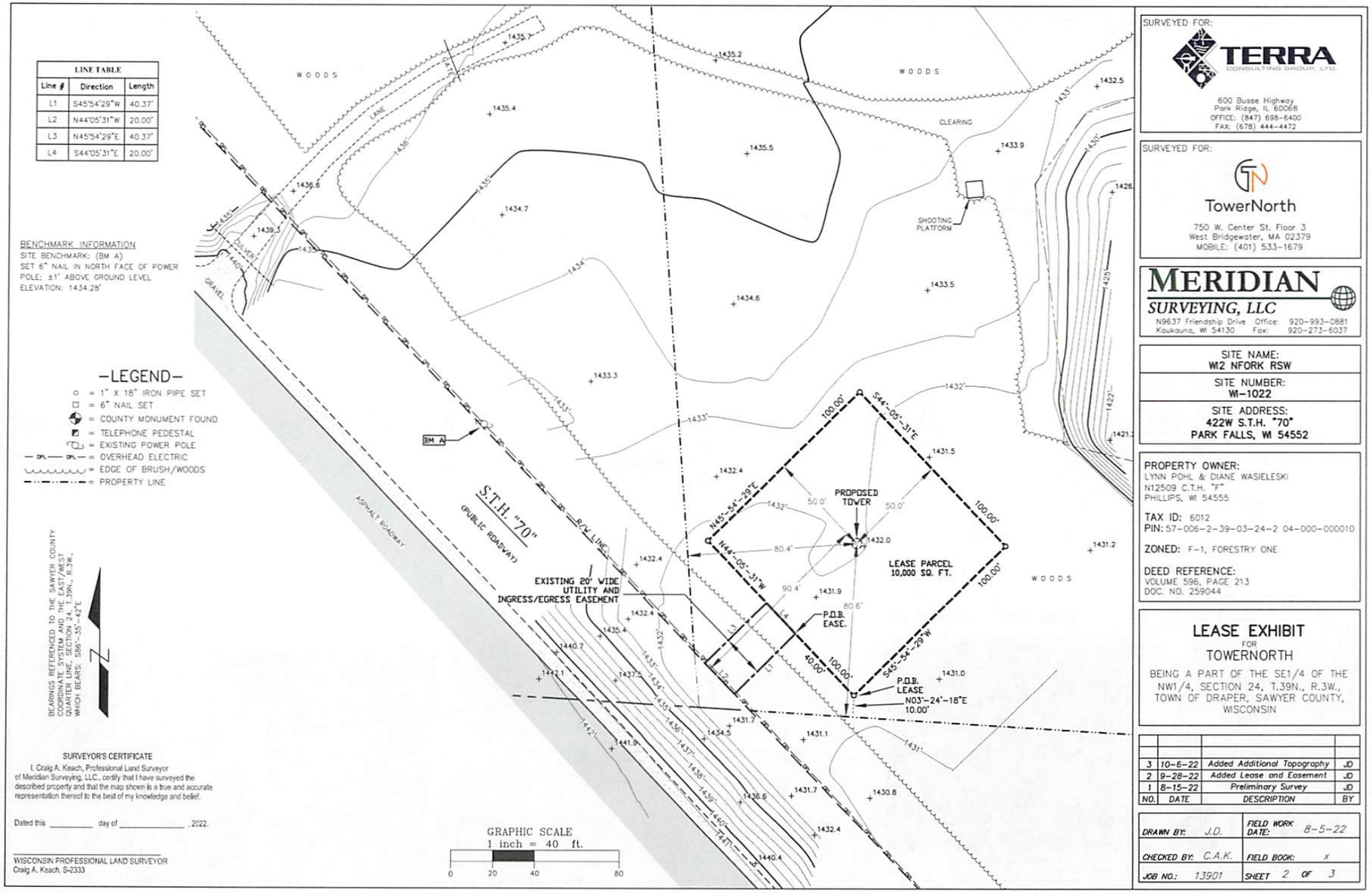
FOR

TOWERNORTH

BEING A PART OF THE SE1/4 OF THE NW1/4, SECTION 24, T.39N., R.3W., TOWN OF DRAPER, SAWYER COUNTY, WISCONSIN

NO.	DATE	DESCRIPTION	BY
3	10-6-22	Added Additional Topography	JD
2	9-28-22	Added Lease and Easement	JD
1	8-15-22	Preliminary Survey	JD

DRAWN BY: J.D.	FIELD WORK DATE: 8-5-22
CHECKED BY: C.A.K.	FIELD BOOK: x
JOB NO.: 13901	SHEET 3 OF 3



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FAX: (678) 444-4472

SURVEYED FOR:

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750 W. Center St. Floor 3
West Bridgewater, MA 02379
MOBILE: (401) 533-1679

MERIDIAN SURVEYING, LLC
N9637 Friendship Drive
Kaukauna, WI 54130
Office: 920-993-0881
Fax: 920-273-6037

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WI2 NFORK RSW

SITE NUMBER:
WI-1022

SITE ADDRESS:
422W S.T.H. "70"
PARK FALLS, WI 54552

PROPERTY OWNER:
LYNN POHL & DIANE WASIELESKI
N12509 C.T.H. "F"
PHILLIPS, WI 54555

TAX ID: 6012
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ZONED: F-1, FORESTRY ONE

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VOLUME 596, PAGE 213
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FOR
TOWERNORTH

BEING A PART OF THE SE1/4 OF THE NW1/4, SECTION 24, T.39N., R.3W., TOWN OF DRAPER, SAWYER COUNTY, WISCONSIN

NO.	DATE	DESCRIPTION	BY
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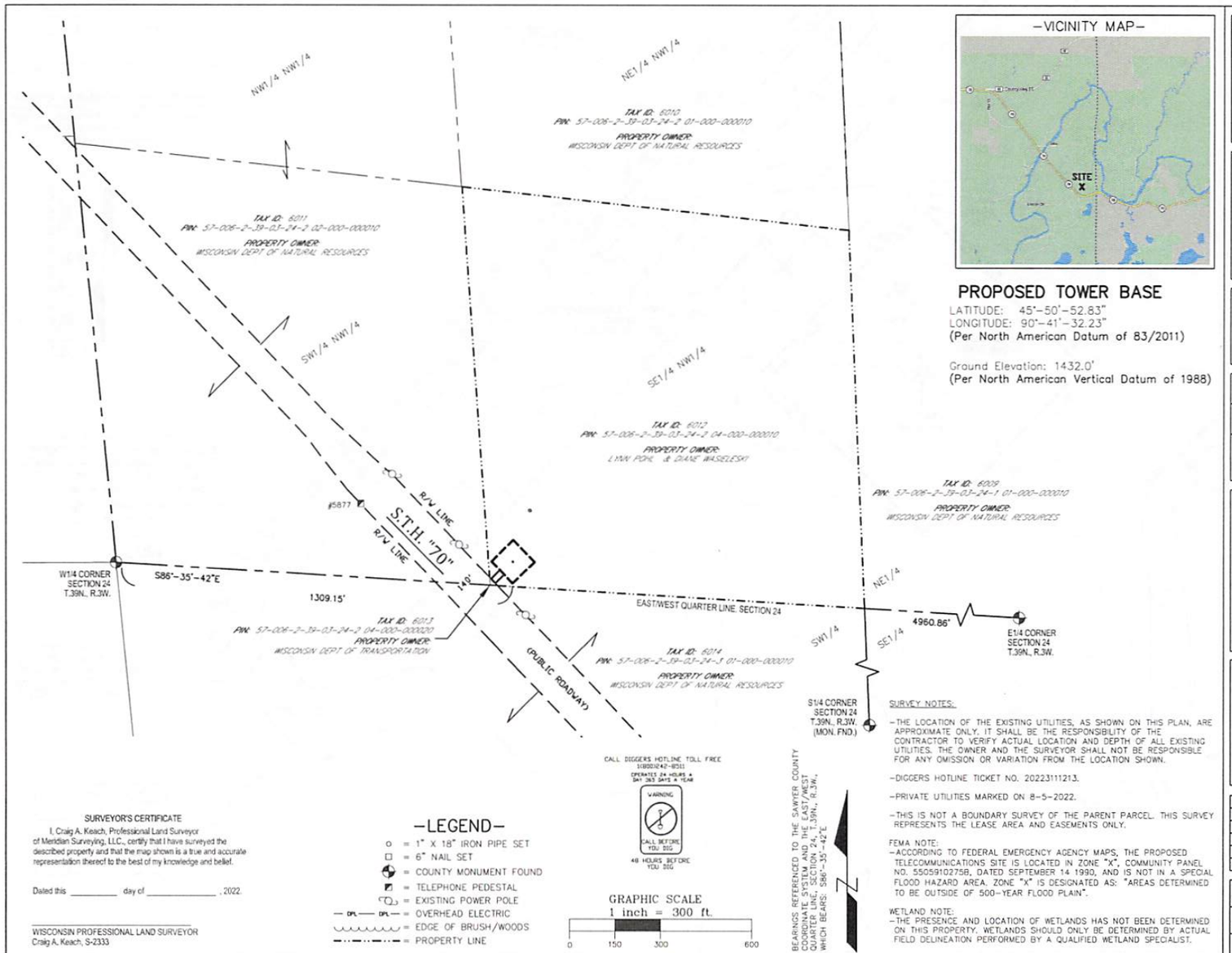
DRAWN BY: J.D.	FIELD WORK DATE: 8-5-22
CHECKED BY: C.A.K.	FIELD BOOK: x
JOB NO.: 13901	SHEET 2 OF 3



-VICINITY MAP-

PROPOSED TOWER BASE

LATITUDE: 45°-50'-52.83"
LONGITUDE: 90°-41'-32.23"
(Per North American Datum of 83/2011)

Ground Elevation: 1432.0'
(Per North American Vertical Datum of 1988)

SURVEYOR'S CERTIFICATE

I, Craig A. Keach, Professional Land Surveyor of Meridian Surveying, LLC., certify that I have surveyed the described property and that the map shown is a true and accurate representation thereof to the best of my knowledge and belief.

Dated this _____ day of _____, 2022.

_____
WISCONSIN PROFESSIONAL LAND SURVEYOR
Craig A. Keach, S-2333

-LEGEND-

- o = 1" X 18" IRON PIPE SET
- □ = 6" NAIL SET
- = COUNTY MONUMENT FOUND
- = TELEPHONE PEDESTAL
- = EXISTING POWER POLE
- — DPL — DPL — = OVERHEAD ELECTRIC
- = EDGE OF BRUSH/WOODS
- = PROPERTY LINE

SURVEY NOTES:

-THE LOCATION OF THE EXISTING UTILITIES, AS SHOWN ON THIS PLAN, ARE APPROXIMATE ONLY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ACTUAL LOCATION AND DEPTH OF ALL EXISTING UTILITIES. THE OWNER AND THE SURVEYOR SHALL NOT BE RESPONSIBLE FOR ANY OMISSION OR VARIATION FROM THE LOCATION SHOWN.

-DIGGERS HOTLINE TICKET NO. 20223111213.

-PRIVATE UTILITIES MARKED ON 8-5-2022.

-THIS IS NOT A BOUNDARY SURVEY OF THE PARENT PARCEL. THIS SURVEY REPRESENTS THE LEASE AREA AND EASEMENTS ONLY.

FEMA NOTE:
-ACCORDING TO FEDERAL EMERGENCY AGENCY MAPS, THE PROPOSED TELECOMMUNICATIONS SITE IS LOCATED IN ZONE "X", COMMUNITY PANEL NO. 55059102758, DATED SEPTEMBER 14 1990, AND IS NOT IN A SPECIAL FLOOD HAZARD AREA. ZONE "X" IS DESIGNATED AS: "AREAS DETERMINED TO BE OUTSIDE OF 500-YEAR FLOOD PLAIN".

WETLAND NOTE:
-THE PRESENCE AND LOCATION OF WETLANDS HAS NOT BEEN DETERMINED ON THIS PROPERTY. WETLANDS SHOULD ONLY BE DETERMINED BY ACTUAL FIELD DELINEATION PERFORMED BY A QUALIFIED WETLAND SPECIALIST.

SURVEYED FOR:

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600 Busse Highway
Park Ridge, IL 60068
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FAX: (678) 444-4472

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SITE NUMBER:
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FOR
TOWERNORTH

BEING A PART OF THE SE1/4 OF THE NW1/4, SECTION 24, T.39N., R.3W., TOWN OF DRAPER, SAWYER COUNTY, WISCONSIN

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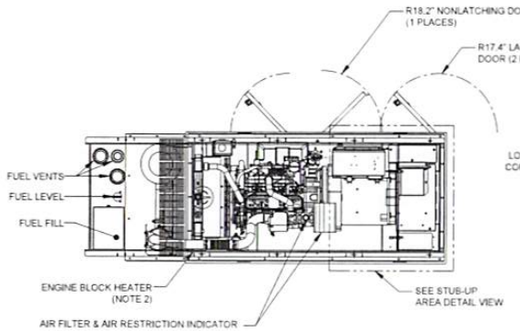
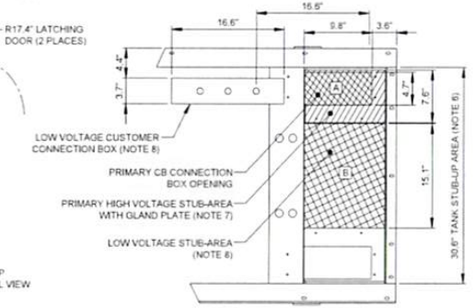
CHECKED BY: C.A.K.		FIELD BOOK: x	
JOB NO.: 13901		SHEET 1 OF 3	



TOP OR PLAN VIEW



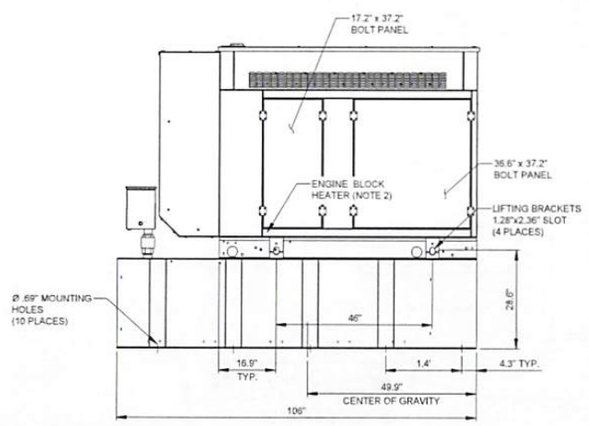
STUB-UP AREA DETAILED VIEW

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

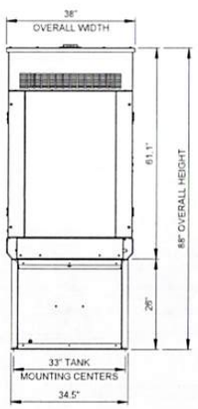
DESCRIPTION	INSIDE BASE
(HIGH VOLTAGE STUB UP) 1. AC LOAD LEAD CONDUIT AREA. 2. 120/240 VAC FROM UTILITY FOR OPTIONAL LOADS. (GLAND PLATE INCLUDED)	A
LOW VOLTAGE STUB UP 1. TRANSFER SWITCH/ COMMUNICATIONS CONDUITS. COMMUNICATIONS AND 2-WIRE START MUST NOT BE RUN IN CONDUIT W/ AC WIRING. (SEE NOTE 6)	B

NOTES

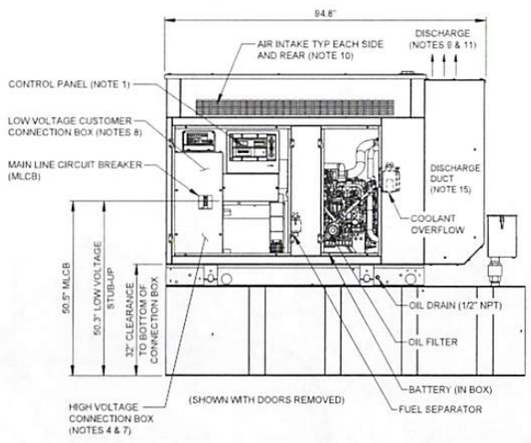
1. CONTROL PANEL INCLUDES BATTERY CHARGER WITH THREE PRONG CORD.
2. 1500W 120VAC ENGINE BLOCK HEATER WITH THREE PRONG CORD.
3. 12 VOLT NEGATIVE GROUND SYSTEM.
4. GENERATOR MUST BE GROUNDED.
5. CENTER OF GRAVITY & WEIGHT MAY BE SHIFTED SLIGHTLY DUE TO UNIT OPTION.
6. STUB-UPS: BASE TANK REQUIRES ALL STUB-UPS TO BE IN THE REAR TANK STUB UP AREA.
7. HIGH VOLTAGE STUB-UP AREA INCLUDES THE AC LOAD LEAD CONNECTION TO THE MAIN LINE CIRCUIT BREAKER, THE NEUTRAL CONNECTION, AND AUXILIARY 120/240V CONNECTION.
8. CONNECTION POINTS FOR CONTROL WIRES. BOTTOM OF LOW VOLTAGE CUSTOMER CONNECTION BOX HAS KNOCKOUTS FOR 1/2" AND 3/4" CONDUIT FITTINGS.
9. MUST ALLOW FREE FLOW OF DISCHARGE AIR AND EXHAUST. SEE SPEC SHEET FOR MINIMUM AIR FLOW AND MAXIMUM RESTRICTION REQUIREMENTS.
10. MUST ALLOW FREE FLOW OF INTAKE AIR. SEE SPEC SHEET FOR MINIMUM AIR FLOW AND MAXIMUM RESTRICTION REQUIREMENTS.
11. GENERATOR MUST BE INSTALLED SUCH THAT FRESH COOLING AIR IS AVAILABLE AND THAT DISCHARGE AIR FROM THE RADIATOR IS NOT RECIRCULATED.
12. IT IS THE RESPONSIBILITY OF THE INSTALLATION TECHNICIAN TO ENSURE THAT THE GENERATOR INSTALLATION COMPLIES WITH ALL APPLICABLE CODES, STANDARDS, AND REGULATIONS.
13. 132 GALLON USEABLE CAPACITY BASETANK IS INCLUDED WITH GENERATOR.
14. 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 FIELD TANK FIELD TESTING PROCEDURE (0E5082) SUPPLIED IN THE TANK LOOSE VENTS KIT, WHICH IS SHIPPED WITH THIS GENERATOR.
15. SEE DRAWING 0C3850 FOR DISCHARGE DUCT REMOVAL. REMOVAL OF DUCT WILL PROVIDE ACCESS TO MUFFLER FOR SERVICING.



LEFT SIDE VIEW



REAR VIEW



RIGHT SIDE VIEW

1 GENERAC 30kW DIESEL GENERATOR
SCALE: N.T.S. GENERAC MODEL: SD030-1P-190JT

WEIGHT DATA: (INCLUDING EMPTY FUEL TANK)
GENERATOR : 3106 LBS

PREPARED FOR
TowerNorth
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REVISIONS

NO	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	10/07/22	TJS
1	REVISED EQUIPMENT LAYOUT	10/18/22	TJS
2	REVISED PER FINAL DESIGN	10/26/22	KAH
3	ADDITION OF GROUND PLAN	10/14/22	TJS
4	REVISED PER POWER COMPANY	01/09/23	KAH

SITE # WI-1022
LOC # 712592

NFORK

422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	08/18/22
PROJECT #:	170-040

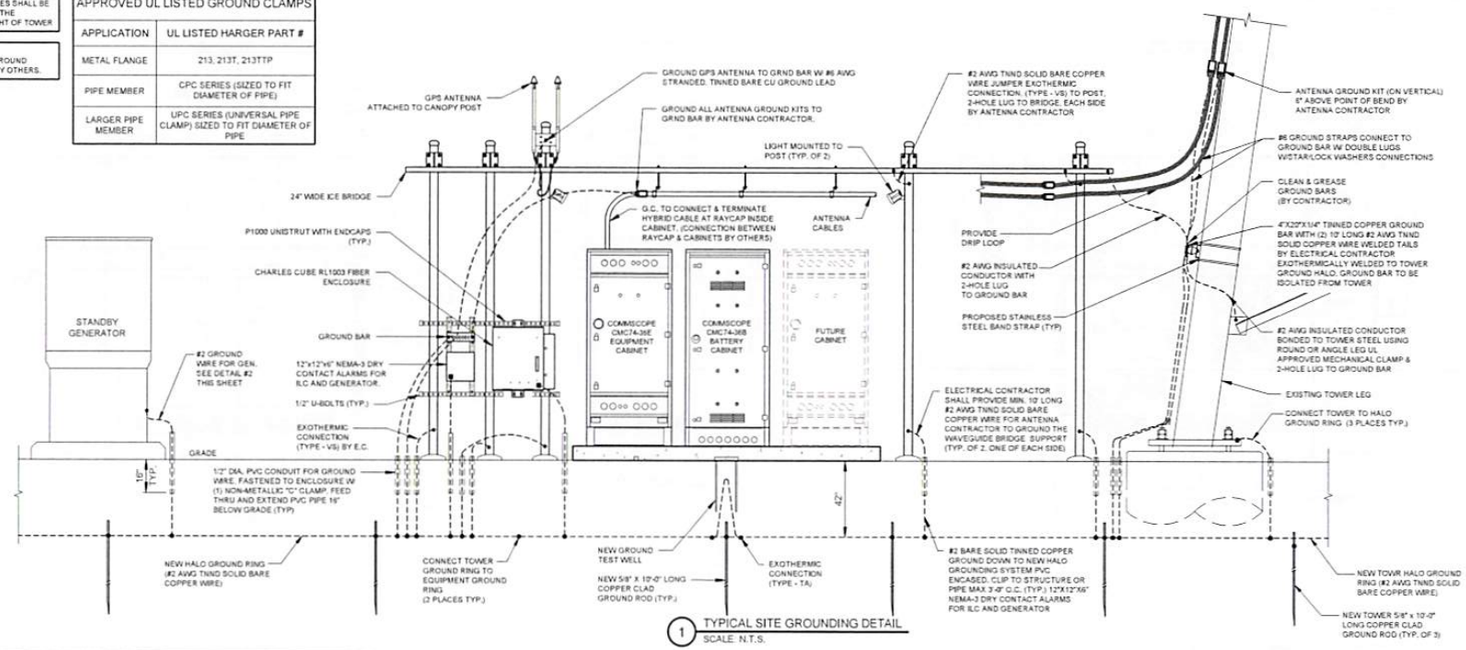
SHEET TITLE
GENERATOR CUT-SHEET

SHEET NUMBER
VW EX-1

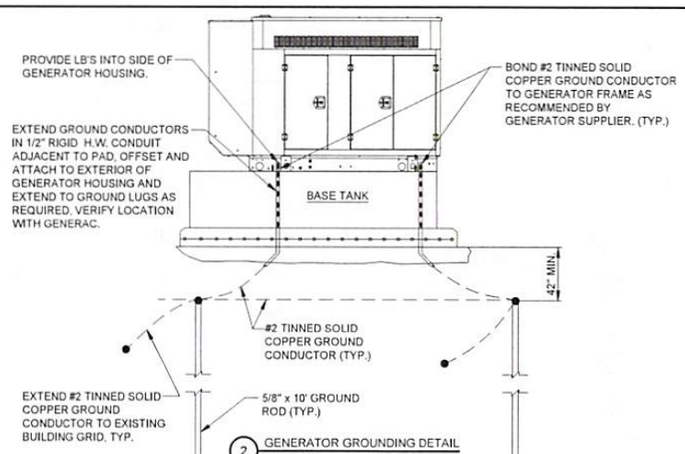
NOTE:
ANTENNA CABLES SHALL BE GROUNDED AT THE ANTENNA HEIGHT OF TOWER

NOTE:
ALL CABINET GROUND CONNECTION BY OTHERS.

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



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



2 GENERATOR GROUNDING DETAIL
SCALE: N.T.S

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REVISIONS

NO	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	10/5/22	TJS
1	REVISED EQUIPMENT LAYOUT	10/19/22	TJS
2	REVISED PER POWER DESIGN	10/26/22	KSJ
3	ADDITION OF GRADING PLAN	12/14/22	TJS
4	REVISED PER POWER COORDINATION	01/05/23	KSJ

SITE # WI-1022
LOC # 712592

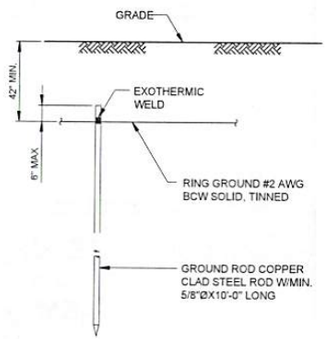
NFORK

422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	08/15/22
PROJECT #:	170-040

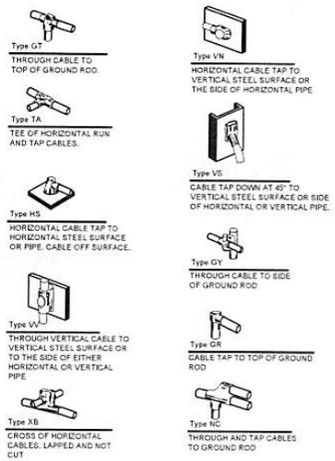
SHEET TITLE
GROUNDING & ELECTRICAL DETAILS

SHEET NUMBER
VW E-6



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

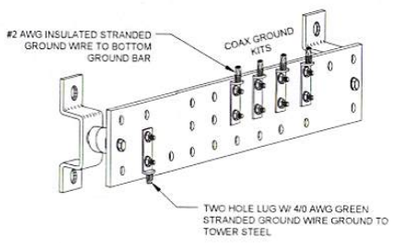
1 GROUND ROD DETAIL
SCALE: N.T.S.



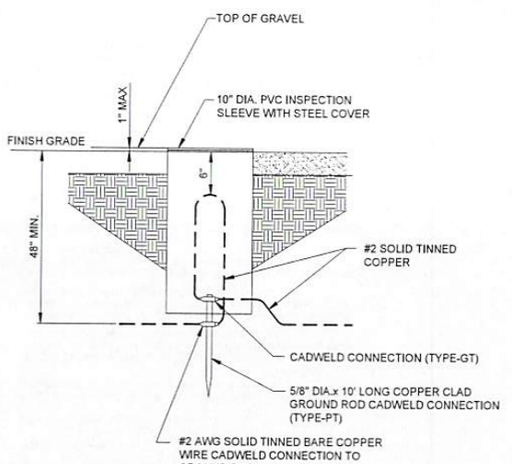
2 EXOTHERMIC WELD DETAILS
EXOTHERMIC AND HARGER ULTRAWELD OR APPROVED EQUAL

NOTES:

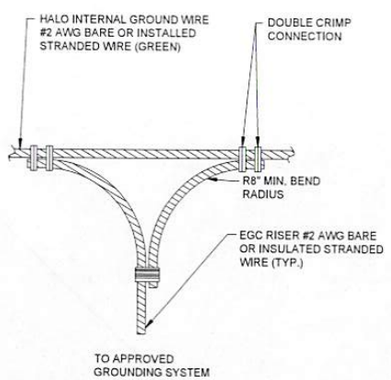
1. PROPOSED HARGER 2x14.5" GROUND BAR (PN/ TGBR14214.5VER) MOUNT DIRECTLY TO TOWER STEEL.
2. INSULATORS TO BE NEWTON CAT. NO. 3015-8 OR APPROVED EQUAL
3. 5/8" LOCK WASHERS; NEWTON CAT. NO. A-6056 OR APPROVED EQUAL
4. 5/8" - 11 X 1" M.M.C.S. BOLTS; NEWTON CAT. NO. 3012-1 OR APPROVED EQUAL
5. COAT ALL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



3 GROUND COLLECTOR BAR
SCALE: N.T.S.

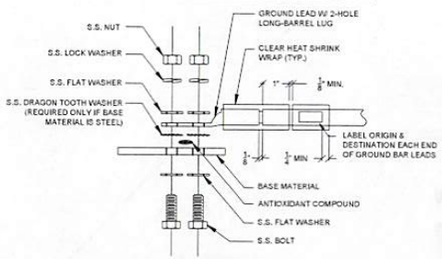


4 INSPECTION SLEEVE DETAIL
N.T.S.



5 HALO NON-DIRECTIONAL GROUND RING SPLICE DETAIL
N.T.S.

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



6 GROUND LUG INSTALLATION DETAIL
N.T.S.

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REVISIONS

NO.	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	10/05/22	TJS
1	REVISED EQUIPMENT LAYOUT	10/19/22	TJS
2	REVISED PER POWER DESIGN	12/29/22	KBJ
3	ADDED PLOT GRADING PLAN	12/14/22	TJS
4	REVISED PER POWER COORDINATION	01/05/23	KBJ

SITE # WI-1022
LOC # 712592

NFORK

422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	08/18/22
PROJECT #:	170-040

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
VW E-5

TYPICAL KEYED GROUNDING NOTES

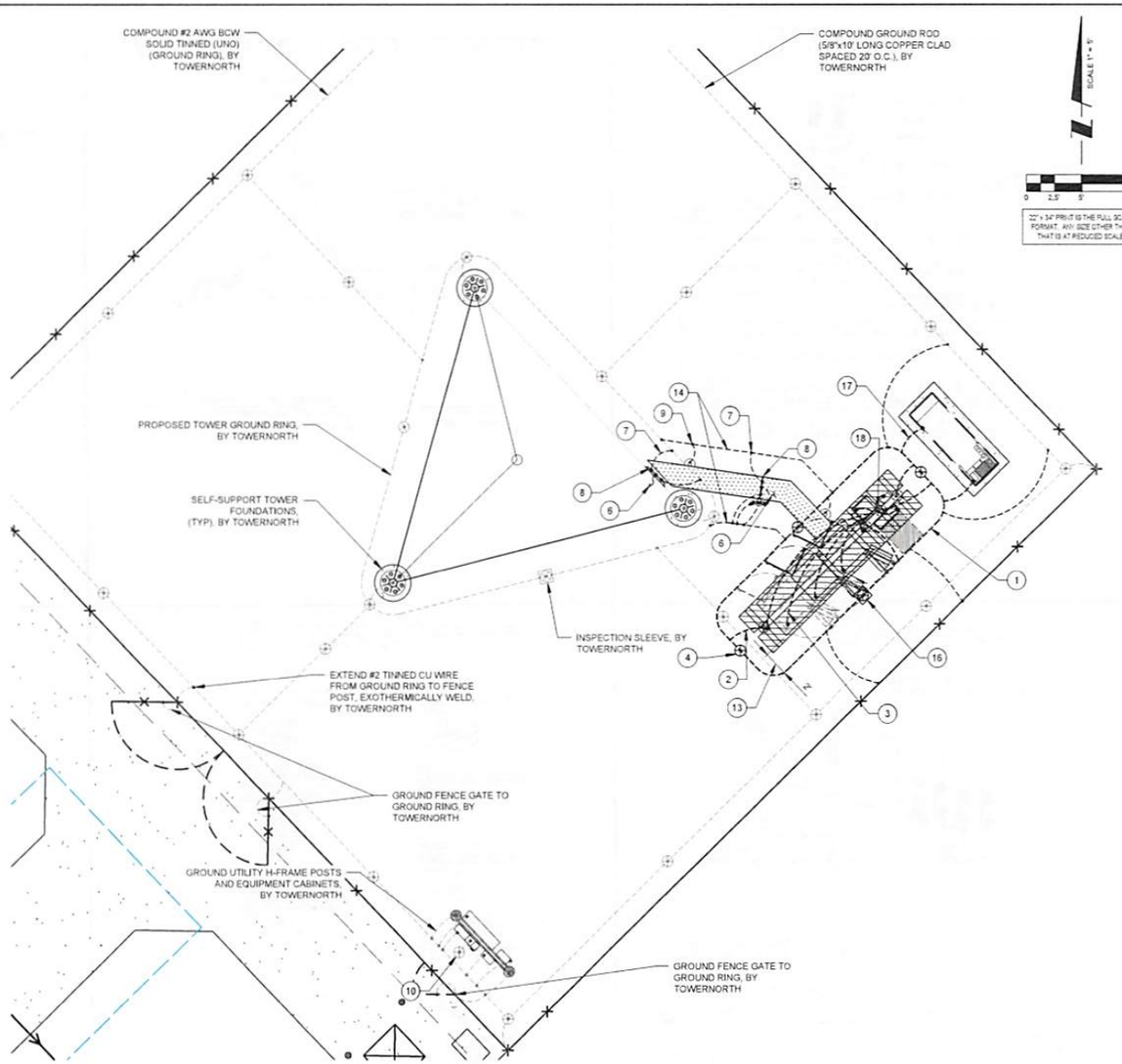
1. #2 AWG TINND SOLID BARE COPPER CONDUCTOR 42" BELOW GRADE (TYPICAL) MINIMUM 24" BENDING RADIUS
2. PLATFORM/PAD CORNER POST, STEEL COLUMN, STEEL BEAM & CANOPY GROUND
3. CABINET GROUND
4. 5/8" x 10' COPPER CLAD GROUND ROD
5. GROUND CHAIN LINK FENCE (TYPICAL) EXOTHERMIC CONNECTION GROUND FENCE POSTS WITHIN 6 FEET OF EQUIPMENT.
6. GROUND COAXIAL ANTENNA CABLES TO GROUND BAR BY ANTENNA CONTRACTOR TERMINATE CABLES 1'-0" FROM PLATFORM AND INSTALL LIGHTNING SURGE ARRESTORS ON EACH CABLE GROUND.
7. EXOTHERMICALLY WELD COPPER GROUND BAR TAIL TO HALO GROUND RING (EXOTHERMIC CONNECTION TYPE TA) BY ANTENNA CONTRACTOR. FINAL CONNECTION BY ELECTRICAL CONTRACTOR.
8. 4"X20"X1/4" TINND INSULATED COPPER GROUND BAR, NON ISOLATED WITH 10.0' LONG #2 AWG TINND SOLID COPPER WIRE WELDED TAILS (HARGER GBIT 14420VW)
9. GROUND CABLE WAVEGUIDE BRIDGE (TYP.) BY ELECTRICAL CONTRACTOR.
10. VZW DISCONNECT AND ELECTRIC SERVICE GROUND TO GROUND ROD
11. 24" x 30" x 24" FIBER OPTIC HAND HOLE
12. PROPOSED TOWER OR COMPOUND GROUND RING BY CENTERLINE (V.I.F.)
13. MAINTAIN TWO FOOT DISTANCE OFF OF STRUCTURES.
14. BOND EXISTING/ PROPOSED TOWER GROUND RING TO PROPOSED PLATFORM/PAD GROUND RING WITH #2 AWG TINND SOLID COPPER CONDUCTOR IN 2 LOCATIONS.
15. TWO #2 LEADS FROM THE EGR TO THE GROUND BAR AT UTILITY FRAME LOCATED ON PLATFORM/PAD. CADWELD AT EGR AND DOUBLE HOLE LUGS ON PLATFORM/PAD.
16. COPPER CLAD GROUND ROD WITH INSPECTION WELL TOP OF GROUND ROD MAX 24" BURY.
17. EXTEND GROUND CONDUCTORS IN 1/2" RIGID H.W. CONDUIT ADJACENT TO PAD, OFFSET AND ATTACH TO EXTERIOR OF GENERATOR HOUSING AND EXTEND TO GROUND LUGS AS REQUIRED. VERIFY LOCATION WITH GENERAC.
18. MGB MOUNTED ON H-FRAME.

DIGGERS HOTLINE
"Call 3 Work Days Before You Dig"
TOLL FREE: 1-800-242-8511
TDD: 1-800-542-2289

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

LEGEND:

⊏⊐	GROUND BAR OR ARRESTOR BAR	⊃	SPARE GROUND LEAD
⊗	5/8"Ø x 10'-0" GROUND ROD	■	MECHANICAL CONNECTION
○	GROUND SYSTEM TEST WELL	----	EXISTING GROUNDING
•	CADWELD OR APPROVED CONNECTION	————	NEW GROUNDING



1 SITE GROUNDING PLAN
SCALE: 1" = 5'

NOTE:
SEE GROUNDING DETAILS ON SHEET E-6

PREPARED FOR
TowerNorth
750 W CENTER ST, SUITE 301
WEST BROUGHTER, WA 22575
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CARRIER:
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REVISIONS

NO	DESCRIPTION	DATE	BY
-	PROJECT FOR REVIEW	08/05/22	TJS
1	REVISED EQUIPMENT LAYOUT	09/19/22	TJS
2	REVISED PEP POWER DESIGN	10/26/22	XJU
3	ADDITION OF GROUND PLAN	12/14/22	TJS
4	REVISED PEP POWER CONFIGURATION	01/05/23	XJU

SITE # WI-1022
LOC # 712592

NFORK

422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	08/18/22
PROJECT #:	170-040

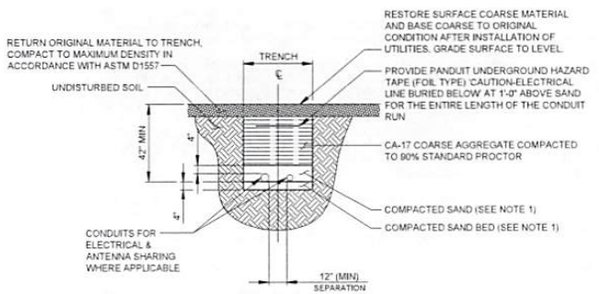
SHEET TITLE
SITE GROUNDING PLAN

SHEET NUMBER
VW E-4

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

NOTES:

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



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

VERIZON WIRELESS PANEL "A" SCHEDULE

MAIN: 400 VOLTAGE: 120/240 PHASE: 1 WIRE: 3

TO AUTOMATIC TRANSFER SWITCH — 200A/2

DESCRIPTION	BRKR.	WATTS			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		4000 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.)

2 PANEL BOARD SCHEDULE
N.T.S.

NOTE:
1. VERIZON WIRELESS EQUIPMENT ENGINEERING TO SUPPLY BREAKER FOR RADIO AND POWER CABINETS
2. GENERAL CONTRACTOR TO SUPPLY BREAKERS NOTED WITH " * "

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NO	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	10/07/22	TJS
1	REVISED EQUIPMENT LAYOUT	12/19/22	TJS
2	REVISED PER POWER DESIGN	12/28/22	SAJ
3	ADDED PLOT GROUND PLAN	12/14/22	TJS
4	REVISED PER POWER COORDINATION	01/06/23	KSJ

REVISIONS

SITE # WI-1022
LOC # 712592

NFORK

422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DES
DATE:	06/16/22
PROJECT #:	170-040

SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
VW E-3

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.

PREPARED FOR
TowerNorth
750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: (844) 748-8678 FAX: (508) 510-3517

PLANS PREPARED BY:
TERRA
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-696-6400
FAX: 847-696-6401

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

REVISIONS			
NO	DESCRIPTION	DATE	BY
-	ISSUED FOR REVIEW	10/5/21	TJS
1	REVISED EQUIPMENT LAYOUT	1/19/22	TJS
2	REVISED PER POWER DESIGN	10/26/22	KSJ
3	ADDITION OF GROUND PLAN	12/14/22	TJS
4	REVISED PER POWER COORDINATION	01/05/23	KSJ

SITE # WI-1022
LOC # 712592

NFORK

422W S.T.H. "70"
PARK FALLS, WI 54552

DRAWN BY:	TJS
CHECKED BY:	DSS
DATE:	08/18/22
PROJECT #:	170-040

SHEET TITLE
ELECTRICAL AND GROUNDING NOTES

SHEET NUMBER
VW E-2

Conditional Use Permit Request
STAFF REPORT

Prepared By: Jay Kozlowski, Sawyer County Zoning & Conservation Administrator

File: # CUP 23-007

Applicant:

Jeffery & Cynthia Schmid
13141W Old OO Road
Hayward, WI 54843

Property Location & Legal Description:

Town of Lenroot. Part of the SW ¼ of the SE ¼, Lot 1 CSM 30/92 #7534; S15, T42N, R08W; Tax ID #39913; 5.67 total acres; Zoned Residential/Recreational One (RR-1).

Request: Permit requested as per Section 17.2(B) (7) for a professional office/studio for the assembly of dairy wash controls. No manufacturing is to be done onsite.

Project History & Summary of Request: In conversation with the owner they are seeking a conditional use permit to assemble dairy wash controls on the requested property. This property is a vacant parcel immediately adjacent to the parcel that contains their primary dwelling. Currently this use is being performed elsewhere in the City of Hayward but are wanting to relocate this "Professional Office/Studio" to their home residence parcel(s). As part of this request there would be no manufacturing done onsite. Outside vendors would manufacture specific parts of the product and ship them to this location. The property owners would then take several different pieces and assemble them into the final product and reship to other destinations. This would be done by light tools such as general power tools and hand tools. UPS would then ship out the final product.

As part of this request the property owners would be constructing a new building as part of this use on the property. With any type of new "non-habitable building" it will require that a deed restriction or restrictive covenants is also submitted between the lot containing the new "professional office/studio" and the existing dwelling. This would then require that both properties are sold together. The reason this is needed is because this CUP would be limited to the property owner. If the property owner sells, then the CUP is voided and whatever structures may be placed out there would not be allowed as an accessory structure on vacant land. Thus, combining the lots with the deed restriction would just be viewed as an accessory structure that is still combined back with a lot containing a dwelling. The proposed accessory structure size has not been identified yet but would need to meet all requirements. The "use" of the building is what requires the CUP.

Additional information for Conditional Use Permits:

Substantial evidence means facts and information, other than merely personal preferences or speculation, directly pertaining to the requirements and conditions an applicant must meet to obtain a conditional use permit and that reasonable persons would accept in support of a conclusion. If an applicant agrees to meets all of the requirements and conditions specified in the county ordinance or those imposed by the county zoning board, the county shall grant the conditional use permit. Any condition imposed must be related to the purpose of the ordinance and be based on substantial evidence. The conditions must be reasonable and, to the extent practicable, measurable. The applicant must demonstrate that the application and all requirements and conditions established by the county relating to the conditional use are or shall be satisfied, both of which must be supported by substantial evidence. The county's decision to approve or deny the permit must be supported by substantial evidence.

Possible Conditions for Approval: (choose from list below) (add or delete from list below)

1 CUP #23-007 is limited to the property owner and use as described with the request.
2 No fabrication or manufacturing of product is allowed. **Assembly Only.**
3 If/when a new building is constructed it will require its own fire number/address sign.
4 Only 1 additional building is allowed for requested use. If additional buildings are needed it will require an additional CUP
5 A Land Use Permit is required for the construction of the new building and is to meet all setback requirements.
6 A deed restriction or restrictive covenants document is needed to combined the adjacent lot containing the primary/habitable dwelling with lot proposed for the new accessory structure and CUP request.
7 All signage must meet Sawyer County Zoning Ordinance Requirements.
8 All other Town, County, State, Federal Laws are followed

Findings of Fact for Approval: (choose from list below)

1 It would not be damaging to the rights of others or property values
2 It would not be detrimental to ecology, wild life, wetlands or shorelands.
3 It would not create an air quality, water supply, or pollution problem.
4 It would not create topographical problems such as run off, drainage, erosion, flooding, or vegetative cover removal.
5 It would not create traffic or highway access problems.
6 It would not destroy prime agricultural lands.
7 It would be compatible with the surrounding uses and the area.
8 It would be consistent with the Town and/or County Comprehensive Plan
9 It would be a like or similar use to another stated Conditional Use Permit in the opinion of the Sawyer County Zoning Committee.
10 It would not create an objectionable view.

Findings of Fact for Denial: (choose from list below)

11 It would be damaging to the rights of others and property values.
12 It would be detrimental to ecology, wild life, wetlands or shorelands.
13 It would create an air quality, water supply, or pollution problem.
14 It would create topographical problems such as run off, drainage, erosion, flooding, or vegetative cover removal.
15 It would create traffic or highway access problems.
16 It would destroy prime agricultural lands.
17 It would not be compatible with the surrounding uses and the area.
18 It would create an objectionable view.

SAWYER COUNTY

RECEIVED
JAN 31 2023
SAWYER COUNTY
ZONING ADMINISTRATION

Conditional Use Application # 23-007

Town of Lenroot

Return Original

To: Sawyer County Zoning & Conservation
10610 Main Street, Suite #49
Hayward, WI 54843

Phone: 715-634-8288
Email: Kathy.marks@sawyercountygov.org

Owner: Jeffery + Cynthia Schmid

Address: 13141W Old 00 Rd Hayward WI 54843

Phone: 715-558-5158 Email: tendermachineworks@centurylink.net

Legacy PIN#: 014842154305 Zoned: RR1 Acreage: 5.67

Property Description: PRT SWSE, Lot 1 CSM 30/92

Permit desired for: Section 17.2 (B) 7 for professional office for the assembly of dairy wash controls. No manufacturing done on site.

Cynthia Schmid Cynthia Schmid 1/31/23

*Please Print & Sign (Property Owner)

The above hereby make application for a conditional use. The above certify that the listed information and intentions are true and correct. The above person(s) hereby give permission for access to the property for onsite inspections by Sawyer County Zoning staff.

Name, Address, Phone & Email of agent:

Fee$ 350.00 Date of Public Hearing 4-21-23

Rev. 1/2021

Bender Machine Works, Inc.
9946 N County Rd E
Hayward WI 54843
Phone: 715-634-2626
Email: bendermachineworks@centurylink.net

My husband Jeff and I are seeking a conditional use permit to move our business from the above address to our property on Old OO Road in Seeley. I have outlined our business structure below.

Bender Machine Works, Inc., is owned and operated by Jeff & Cindy Schmid. We do not have any employees and do not sell our products via a storefront.

We are a small manufacturer of dairy pipeline and wash controls. Our controls are assembled by Jeff and shipped via UPS by myself. Additionally, we sell parts for our products, also shipped by UPS. I do all of the administrative work and help with other tasks in the areas of shipping and parts/ inventory.

The components used for our controls are fabricated and procured from outside vendors. We do not manufacture any plastic or electrical components. Assembly of our product is done solely by Jeff with hand tools. We do not sell or store chemical solutions used in the wash units.

Our products are viewable on our website: https://benderdairy.com/products/.

Thank you for taking the time to review and consider our request,

Cindy Schmid
Bender Machine Works, Inc.

Real Estate Listing Sawyer County Property

Today's Date: 1/31/2023

Property Status: Current

Created On: 5/28/2008 2:55:48 PM

Description Updated: 6/23/2008

Tax ID:	39913
PIN:	57-014-2-42-08-15-4 03-000-000050
Legacy PIN:	014842154305
Map ID:	.15.5
Municipality:	(014) TOWN OF LENROOT
STR:	S15 T42N R08W
Description:	PRT SWSE, LOT 1 CSM 30/92 #7534
Recorded Acres:	5.670
Lottery Claims:	0
First Dollar:	No
Zoning:	(RR1) Residential/Recreational One
ESN:	400

Tax Districts Updated: 5/28/2008

1	State of Wisconsin
57	Sawyer County
014	Town of Lenroot
572478	Hayward Community School District
001700	Technical College

Recorded Documents Updated: 6/23/2008

WARRANTY DEED

Date Recorded: 5/30/2008 353921

Ownership Updated: 6/23/2008

JEFFERY W & CYNTHIA G SCHMID HAYWARD WI

Billing Address:	**Mailing Address:**
JEFFERY W & CYNTHIA G SCHMID	**JEFFERY W & CYNTHIA G SCHMID**
13141W OLD OO RD	13141W OLD OO RD
HAYWARD WI 54843	HAYWARD WI 54843

Site Address * indicates Private Road

N/A

Property Assessment Updated: 9/26/2014

2023 Assessment Detail

Code	Acres	Land	Imp.
G1-RESIDENTIAL	5.670	38,700	0

2-Year Comparison	2022	2023	Change
Land:	38,700	38,700	0.0%
Improved:	0	0	0.0%
Total:	38,700	38,700	0.0%

Property History

Parent Properties	Tax ID
57-014-2-42-08-15-4 03-000-000040	39601

HISTORY Expand All History White=Current Parcels Pink=Retired Parcels

Tax ID: 16877 **Pin:** 57-014-2-42-08-15-4 03-000-000010 **Leg. Pin:** 014842154301 **Map ID:** .15.1

Tax ID: 39601 **Pin:** 57-014-2-42-08-15-4 03-000-000040 **Leg. Pin:** 014842154304 **Map ID:** .15.4

39913 This Parcel Parents Children

DETERGENT
MILK DRY WASH
ACID
CAUTION
FILL
ON

MONITOR CLEAN CONTROL
Bender
MILK OFF WASH
FAILSAFE
WASH

IGNITOR
ACID
IGNITOR

13152W
01484154203
R-1
01484154205
01484153101
13082W
13141W
01484154302
01484154303
OUDOO RD
OUDOO RD
F-1
Town of Lennox
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RR-1
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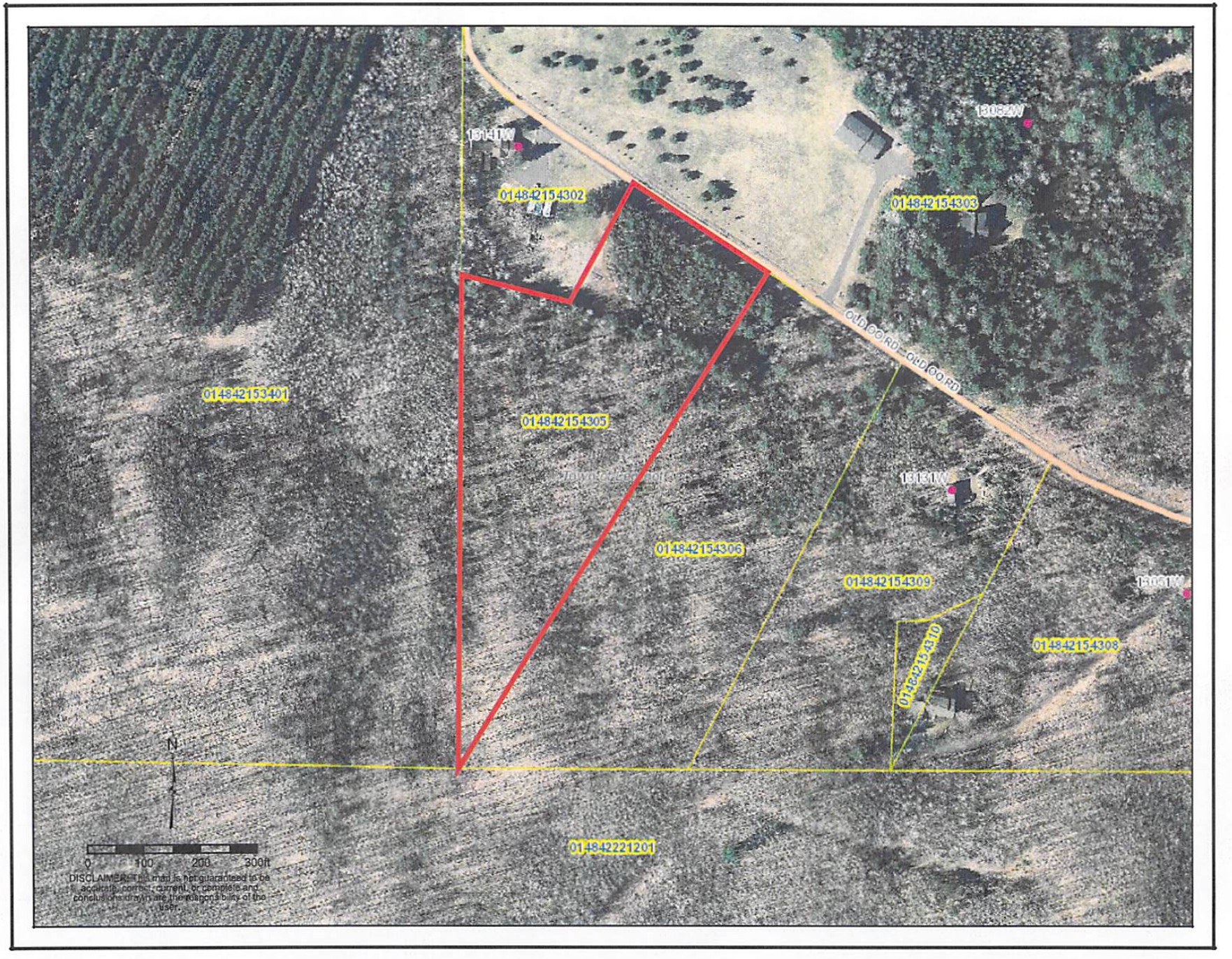
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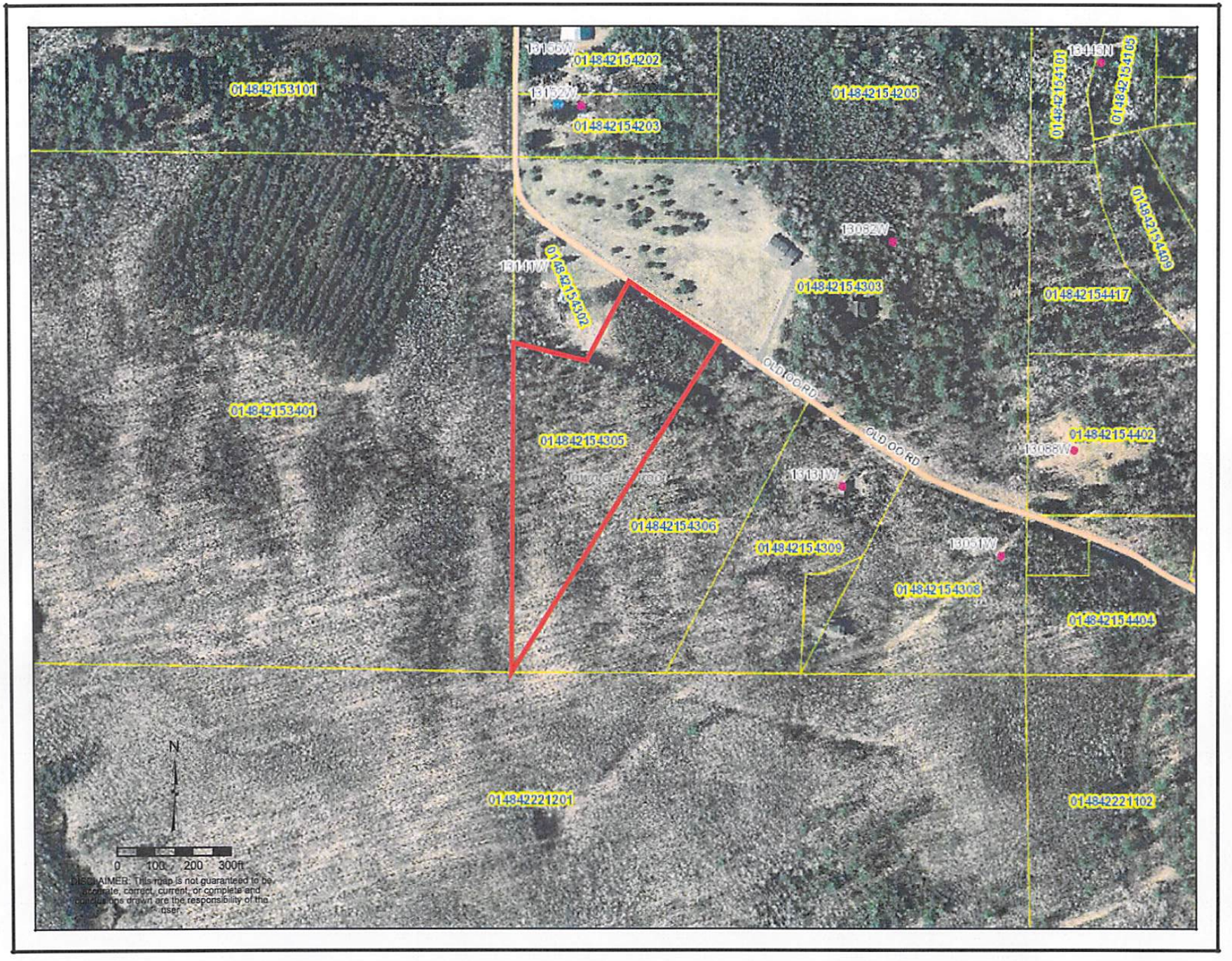
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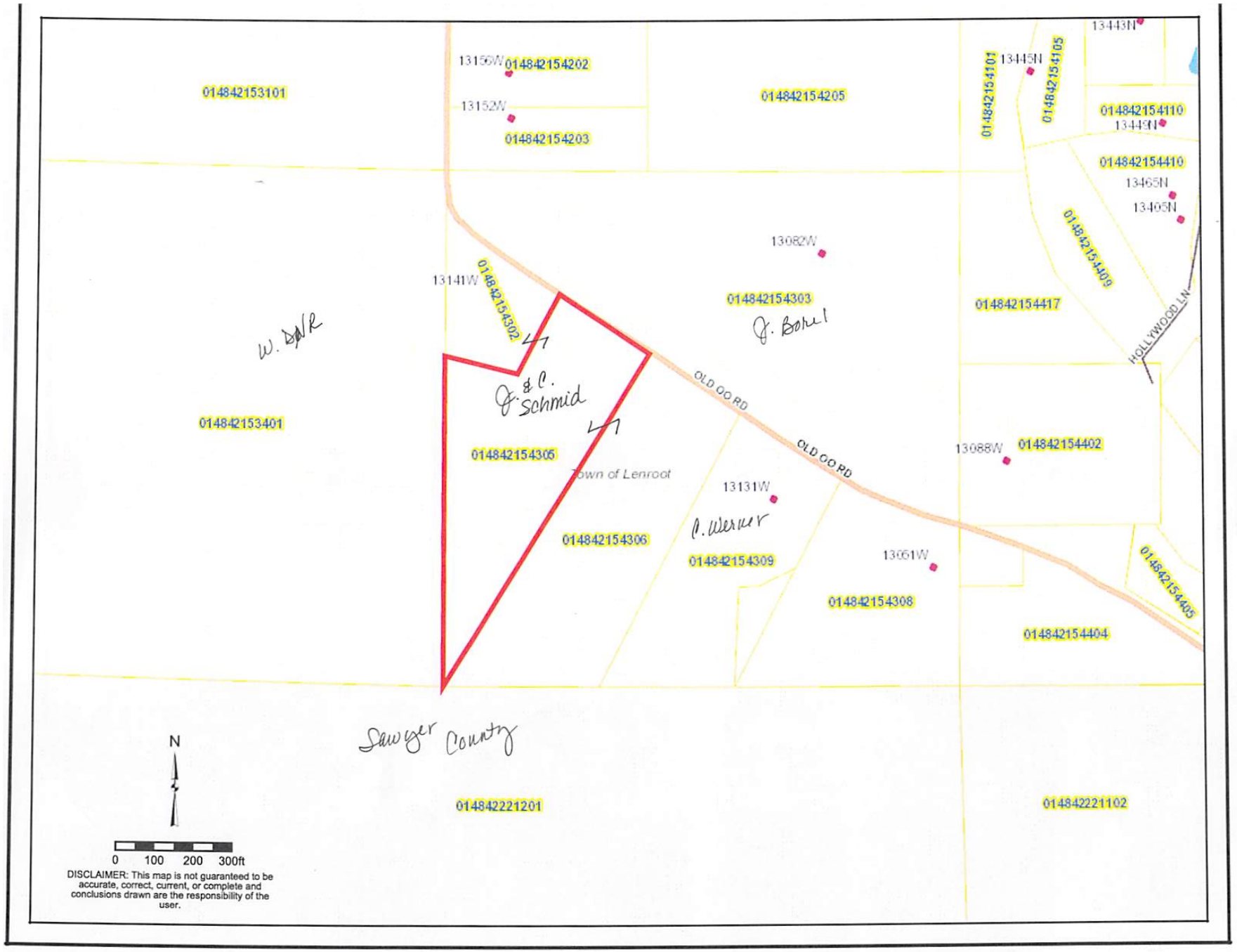
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13449N
014842154410
13465N
13405N
014842154409
13082W
13141W
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W. Spk R
J. Borel
J. & C. Schmid
HOLLYWOOD LN
OLD OO RD
OLD OO RD
014842153401
014842154305
Town of Lenroot
13088W
014842154402
13131W
P. Werner
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DISCLAIMER: This map is not guaranteed to be accurate, correct, current, or complete and conclusions drawn are the responsibility of the user.
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Conditional Use Permit Request
STAFF REPORT

Prepared By: Jay Kozlowski, Sawyer County Zoning & Conservation Administrator

File: # CUP 23-008

Applicant:

Reginald & Kimberly Pontillo
1305 13th St.
Winthrop Harbor, IL 60096

Property Location & Legal Description:

Town of Hayward. Part of the NW ¼ of the SE ¼, Lot 1 CSM 36-243 #8461; S15, T41N, R08W; Parcel #010-841-15-4204; Tax ID #43868. 7.39 total acres; Zoned Forestry One (F-1).

Request: Permit desired for a 32' x 40' accessory structure on vacant property per section 4.26 (1) of the Sawyer County Zoning Ordinance. This accessory structure is to meet all setbacks. As per section 4.26 (1) of the Sawyer County Zoning Ordinance.

4.26(1)….The construction of accessory buildings on vacant property may only be allowed by Conditional Use with Town and Zoning Committee Approval. Granting of a Conditional Use will require within 3 years for a principal dwelling Land Use Permit to be applied for and the principal dwelling to be built within the permit time frame on the same parcel. Failure to build principal dwelling will result in citation and order for removal of accessory structure.

Project History & Summary of Request

As per conversations with the applicants the Conditional Use Permit is being requested to first build an outbuilding prior to constructing a cabin. Proposed accessory structure is to meet all other County Zoning setback and use requirements. The size of the garage is to be 32' x 40' and approximately 20' in height.

Additional information for Conditional Use Permits:

Substantial evidence means facts and information, other than merely personal preferences or speculation, directly pertaining to the requirements and conditions an applicant must meet to obtain a conditional use permit and that reasonable persons would accept in support of a conclusion.

If an applicant agrees to meets all of the requirements and conditions specified in the county ordinance or those imposed by the county zoning board, the county shall grant the

conditional use permit. Any condition imposed must be related to the purpose of the ordinance and be based on substantial evidence. The conditions must be reasonable and, to the extent practicable, measurable. The applicant must demonstrate that the application and all requirements and conditions established by the county relating to the conditional use are or shall be satisfied, both of which must be supported by substantial evidence. The county's decision to approve or deny the permit must be supported by substantial evidence.

Possible Conditions for Approval: (choose from list below) (add or delete from list below)

1 Land Use Permit is required and applied for the **accessory structure(s)** within **1 year** from the date of Zoning Committee decision and built within permit timeframes.

2 Land Use Permit is required and applied for **principal structure** within **3 years** from date of Zoning Committee decision and built within permit timeframe. Failure to apply and build will result in citation with potential order for removal of accessory building.

3 Proposed accessory structure must me all other Sawyer County Zoning & Conservation requirements and compliant with all other State & Federal Laws

4 Size of proposed structure not to exceed 32' x 40'.

Findings of Fact for Approval: (choose from list below)

1 It would not be significantly damaging to the rights of others or property values
2 It would not be detrimental to ecology, wild life, wetlands or shorelands.
3 It would not create an air quality, water supply, or pollution problem.
4 It would not create topographical problems such as run off, drainage, erosion, flooding, or vegetative cover removal.
5 It would not create traffic or highway access problems.
6 It would not destroy prime agricultural lands.
7 It would be compatible with the surrounding uses and the area.
8 It would be consistent with the Town and/or County Comprehensive Plan
9 It would not create an objectionable view.

Findings of Fact for Denial: (choose from list below)

10 It would be significantly damaging to the rights of others and property values.
11 It would be detrimental to ecology, wild life, wetlands or shorelands.
12 It would create an air quality, water supply, or pollution problem.
13 It would create topographical problems such as run off, drainage, erosion, flooding, or vegetative cover removal.
14 It would create traffic or highway access problems.
15 It would destroy prime agricultural lands.
16 It would not be compatible with the surrounding uses and the area.
17 It would be consistent with the Town and/or County Comprehensive Plan
18 It would create an objectionable view.

feb 15 Deadline

RECEIVED
FEB 09 2023
SAWYER COUNTY
ZONING ADMINISTRATION

SAWYER COUNTY

Conditional Use Application # 23-008

Town of Hayward

Return Original

To: Sawyer County Zoning & Conservation
10610 Main Street, Suite #49
Hayward, WI 54843

Phone: 715-634-8288
Email: Kathy.marks@sawyercountygov.org

Owner: Reginald R & Kimberly A Pontillo

Address: 13190 W Kreyer Drive

Phone: 6847-791-0038 Email: reggie.pontillo@gmail.com

Legacy PIN#: 010841154204 Zoned: F-1 Acreage: 7.390

Property Description: PRT NWSE Lot 1 CSM 36/243 #8461

Permit desired for: 32'x40' garage, 20' height. +10' to east lot; 4.26(1) ACCESSORY STRUCTURE ON VACANT PROPERTY W/CONDITIONS BUILD DWELLING WITHIN 3 YRS., PERMIT TIMEFRAME, APPROVAL BY TOWN & ZC. FAILURE TO BUILD WILL RESULT IN CITATION & ORDER OF REMOVAL.

Reginald R Pontillo
Reginald R Pontillo

Kimberly A Pontillo
Kimberly Pontillo

*Please Print & Sign (Property Owner)

The above hereby make application for a conditional use. The above certify that the listed information and intentions are true and correct. The above person(s) hereby give permission for access to the property for onsite inspections by Sawyer County Zoning staff.

Name, Address, Phone & Email of agent:

Fee$ 350.00

Date of Public Hearing 4-21-23

Rev. 1/2021

Real Estate Sawyer County Property Listing

Today's Date: 2/9/2023

Property Status: Current

Created On: 8/4/2020 12:50:22 PM

Description

Updated: 8/4/2020

Tax ID:	43868
PIN:	57-010-2-41-08-15-4 02-000-000040
Legacy PIN:	010841154204
Map ID:	
Municipality:	(010) TOWN OF HAYWARD
STR:	S15 T41N R08W
Description:	PRT NWSE LOT 1 CSM 36/243 #8461
Recorded Acres:	7.390
Calculated Acres:	0.000
Lottery Claims:	0
First Dollar:	No
Zoning:	(F-1) Forestry One
ESN:	444

Tax Districts

Updated: 8/4/2020

1	State of Wisconsin
57	Sawyer County
010	Town of Hayward
572478	Hayward Community School District
001700	Technical College

Recorded Documents

Updated: 2/3/2021

WARRANTY DEED	
Date Recorded: 2/2/2021	**429742**
AFFIDAVIT OF CORR CSM	
Date Recorded: 8/19/2020	425808
EASEMENT	
Date Recorded: 6/19/2020	424507
CERTIFIED SURVEY MAP	
Date Recorded: 6/18/2020	424481
MFL ORDER	
Date Recorded: 11/16/2015	398625
QUIT CLAIM DEED	
Date Recorded: 1/14/2015	393980
PERSONAL REPRESENTATIVES DEED	
Date Recorded: 12/30/2014	393774
QUIT CLAIM DEED	
Date Recorded: 3/26/2002	298970 800/168
WARRANTY DEED	
Date Recorded: 9/23/1969	132421 221/350

Child History Record Count: 3 -

HISTORY Expand All History White=Current Parcels Pink=Retired Parcels

- **Tax ID:** 10994 **Pin:** 57-010-2-41-08-15-4 02-000-000010 **Leg. Pin:** 010841154201 **Map ID:** .14.1
- **Tax ID:** 10957 **Pin:** 57-010-2-41-08-15-1 03-000-000010 **Leg. Pin:** 010841151301 **Map ID:** .3.1
  - **Tax ID:** 43867 **Pin:** 57-010-2-41-08-15-1 03-000-000030 **Leg. Pin:** 010841151303

43868 This Parcel ↑ Parents ↓ Children

Ownership

Updated: 2/3/2021

REGINALD R & KIMBERLY A PONTILLO WINTHROP HARBOR IL

Billing Address:	**Mailing Address:**
REGINALD R & KIMBERLY A PONTILLO	**REGINALD R & KIMBERLY A PONTILLO**
1305 13TH ST	1305 13TH ST
WINTHROP HARBOR IL 60096	WINTHROP HARBOR IL 60096

Site Address

* indicates Private Road

13190W KREYER DR HAYWARD 54843

Property Assessment

Updated: 4/16/2021

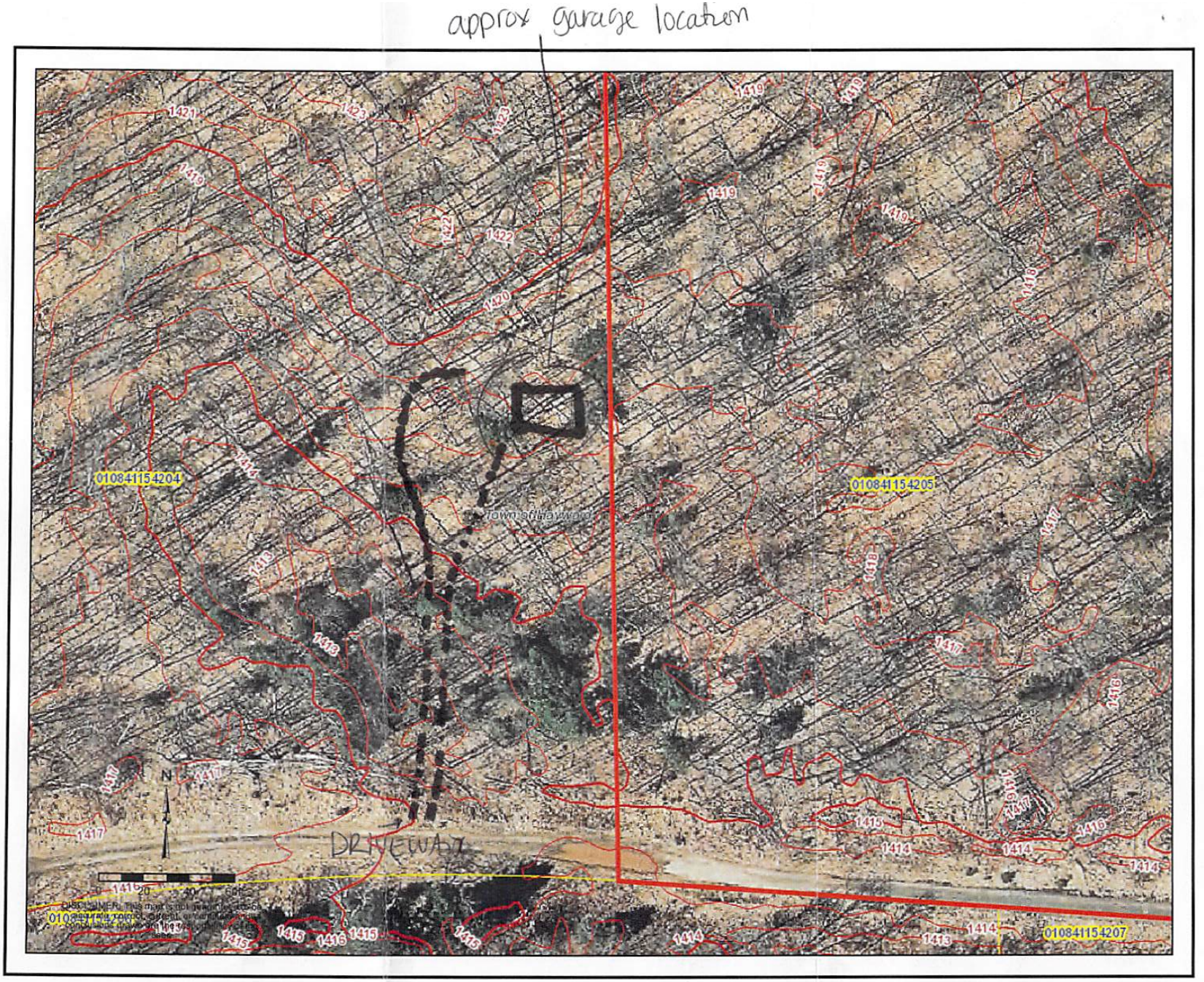
2023 Assessment Detail

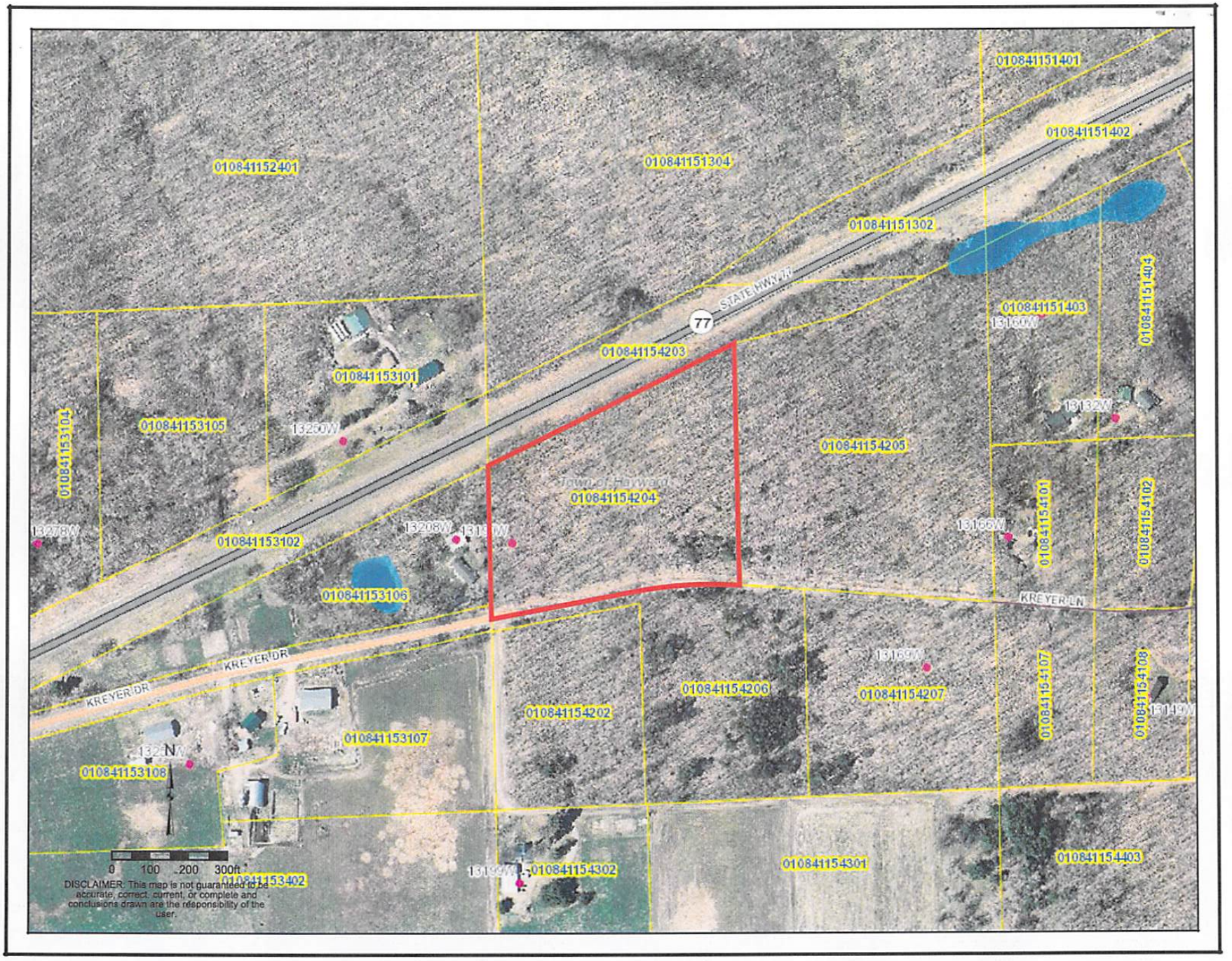
Code	Acres	Land	Imp.
G6-PRODUCTIVE FOREST	7.390	12,600	0

2-Year Comparison	2022	2023	Change
Land:	12,600	12,600	0.0%
Improved:	0	0	0.0%
Total:	12,600	12,600	0.0%

Property History

Parent Properties	Tax ID
57-010-2-41-08-15-1 03-000-000030	43867


approx garage location
1421
1423
1422
1419
1420
1418
1417
1416
1415
1414
1413
010841154204
010841154205
010841154207
Town of Ithaca
N
DRIVEWAY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010841152401
010841151304
010841151302
STATE HWY 77
77
010841151403
010841151404
13160W
010841154203
010841153101
13250W
13132W
010841153104
010841153105
010841154205
Town of Hayward
010841154204
13278W
13208W
13166W
010841154101
010841154102
010841153102
010841153106
KREYER LN
KREYER DR
KREYER DR
13169W
010841154206
010841154207
010841154107
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010841154202
010841153107
132 NW
010841153108
0 100 200 300ft
DISCLAIMER: This map is not guaranteed to be accurate, correct, current, or complete and conclusions drawn are the responsibility of the user.
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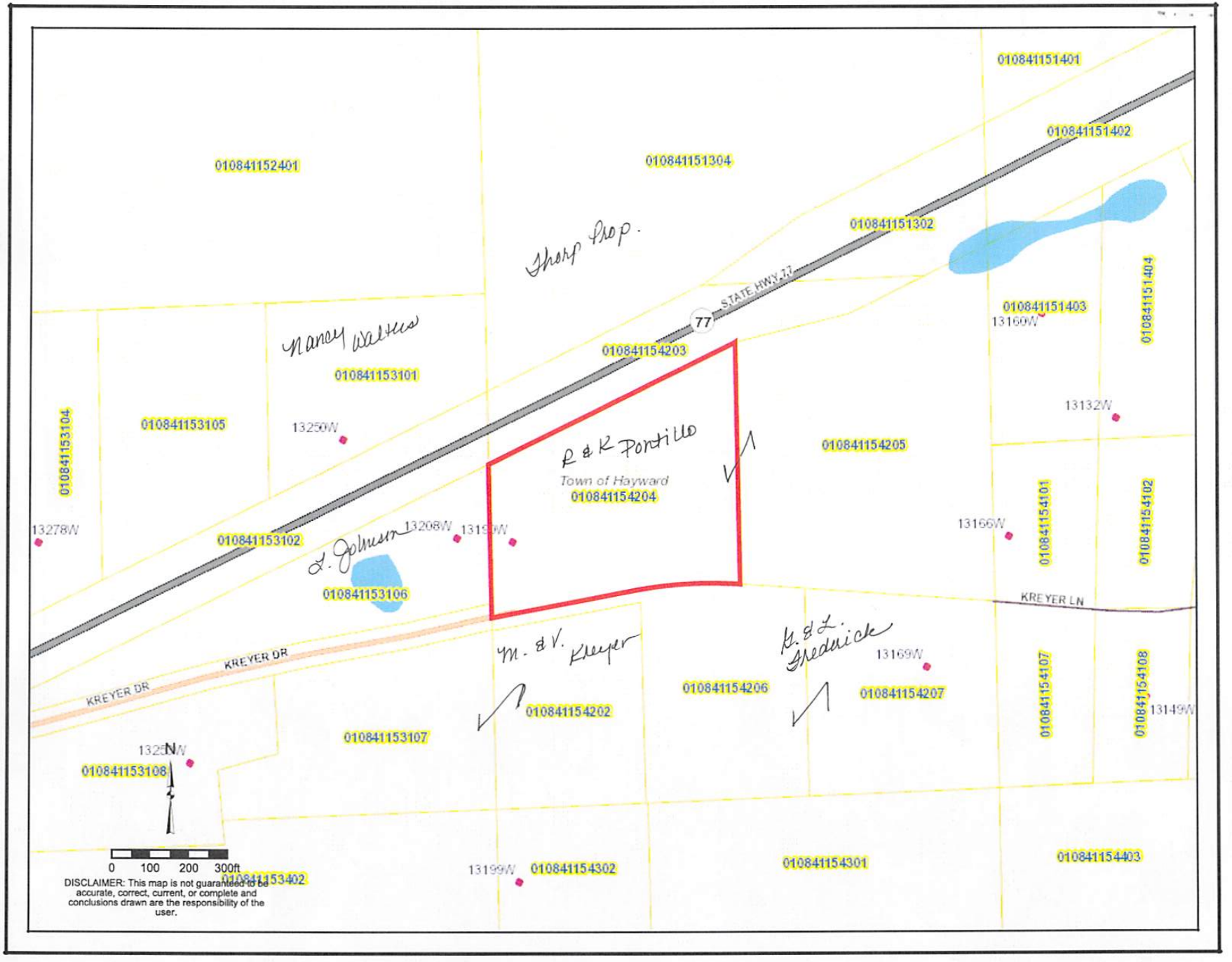
13199W
010841154302
010841154301
010841154403


010841151401
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010841151302
Thorp Prop.
STATE HWY 77
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010841151403
13160W
Nancy Walters
010841154203
010841153101
010841153104
010841153105
13250W
13132W
R & K Portillo
Town of Hayward
010841154204
010841154205
13278W
010841153102
13208W
13199W
L. Johnson
010841154101
010841154102
13166W
010841153106
KREYER LN
KREYER DR
KREYER DR
M. & V. Kreyer
G. & L. Grednick
13169W
010841154206
010841154207
010841154202
010841154107
010841154108
13149W
010841153107
13251W
010841153108
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0 100 200 300ft
DISCLAIMER: This map is not guaranteed to be accurate, correct, current, or complete and conclusions drawn are the responsibility of the user.
010841153402
13199W
010841154302
010841154301
010841154403

Conditional Use Permit Request - STAFF REPORT

Prepared By: Jay Kozlowski, Sawyer County Zoning & Conservation Administrator

File: # CUP 23-009 Location and Operation Plan

Applicant:
Brandon & Natalie Heath
PO Box 74
Radisson, WI 54867

Agent/Operator:
Nick Petit and Jeremy Petit
DBA: Hungry Run Trucking LLC

Property Location & Legal Description:
The NE ¼ of the SW ¼; S12, T38N, R07W; Parcel #022-738-12-3101; Tax ID 22306; 40 total acres; Zoned Forestry One (F-1).

Request: Permit desired for location/operation of non-metallic mining site to include rock crusher and asphalt plant. Actual mine site to be limited to 5 acres within the NW corner of the 40-acre parcel. This would be for a potential 5-year approval.

Project History & Summary of Request

This request of CUP 23-009 is for the new location of a non-metallic mineral extraction operation including a rock crusher and asphalt plant. The property is 40.0 total acres with an actual mine site identified as 5.02 acres in the Northwest corner of the property.

The surrounding area is additional forestry zoned land and agricultural land with the nearest resident approximately 1500' away.

As per conditions of an approved reclamation plan financial assurance would be required in the amount of $7,500 or $1,500 per acre. The applicant must provide payment of assurance prior to any excavation.

The specified hours of operation are to be from 6 AM to 7 PM, Monday – Friday and intermittent operation during the weekend as projects demand between 7AM-4PM (No Holidays) Crushing hours and asphalt plant operations are to occur during specified hours of operation and not to exceed 21 days per calendar year.

Additional information for Conditional Use Permits:

Substantial evidence means facts and information, other than merely personal preferences or speculation, directly pertaining to the requirements and conditions an applicant must meet to obtain a conditional use permit and that reasonable persons would accept in support of a conclusion.

If an applicant agrees to meets all of the requirements and conditions specified in the county ordinance or those imposed by the county zoning board, the county shall grant the conditional use permit. Any condition imposed must be related to the purpose of the ordinance and be based on substantial evidence. The conditions must be reasonable and, to the extent practicable, measurable. The applicant must demonstrate that the application and all requirements and conditions established by the county relating to the conditional use are or shall be satisfied, both of which must be supported by substantial evidence. The county's decision to approve or deny the permit must be supported by substantial evidence.

Possible Conditions for Approval: (choose from list below) (add or delete from list below)

1 Obtain approval or conditional approval of reclamation plan
2 Hours of normal operations: 6AM-7PM, Monday-Friday; 7AM-4PM, Saturday and Sunday (excluding holidays).
3 Crushing hours & ashplant plant operation: 6AM-7PM, Monday-Friday; 7AM-4PM, Saturday-Sunday excluding holidays, not to exceed 21 days per calendar year.
4 A Fire # or Site Address is required for the property.
5 Maintain compliance with Department of Natural Resources Chapter 30
6 Comply with all other federal, state, and local regulations including approval of the "Reclamation Plan".

Findings of Fact for Approval: (choose from list below)

1 It would not be significantly damaging to the rights of others or property values
2 It would not be detrimental to ecology, wild life, wetlands or shorelands.
3 It would not create an air quality, water supply, or pollution problem.
4 It would not create topographical problems such as run off, drainage, erosion, flooding, or vegetative cover removal.
5 It would not create traffic or highway access problems.
6 It would not destroy prime agricultural lands.
7 It would be compatible with the surrounding uses and the area.
8 It would be consistent with the Town and/or County Comprehensive Plan
9 It would not create an objectionable view.

Findings of Fact for Denial: (choose from list below)

10 It would be significantly damaging to the rights of others and property values.
11 It would be detrimental to ecology, wild life, wetlands or shorelands.
12 It would create an air quality, water supply, or pollution problem.

13 It would create topographical problems such as run off, drainage, erosion, flooding, or vegetative cover removal.
14 It would create traffic or highway access problems.
15 It would destroy prime agricultural lands.
16 It would not be compatible with the surrounding uses and the area.
17 It would not be consistent with the Town and/or County Comprehensive Plan
18 It would create an objectionable view.

SAWYER COUNTY

Conditional Use Public Hearing Application

TO: Sawyer County Zoning and Conservation Administration
10610 Main Street Suite 49
Hayward, Wisconsin 54843
Attn: Kathy Marks E-mail: kathy.marks@sawyercountygov.org

CUP # 23-009

Property Owner Name & Address:
Brandon Heath PO BOX 74 Radisson, WI 54867

Phone: 715-456-0731 **Email:** b_heath22@hotmail.com

Property description including Parcel Number:
57-022-2-38-07-12-301-000-000010
S12 T38N R07W NE 1/4 SW 1/4
Zoning - F-1
Tax ID - 22306

Permit desired for:
CUP for Gravel Pit
Location / operation of Non-metallic mining site to include rock crusher per Sawyer County Zoning Ordinance 17.8 (B) (8)
Please see attached documents, maps and drawings

Brandon Heath
BRANDON HEATH
Owner Print & Sign

Agent - Nick Petit
Nick Petit
Owner Print & Sign

Signature of property owner(s) required. The undersigned person(s) hereby give permission for access to the property for inspection by Municipal Officials, Sawyer County Zoning Staff and Sawyer County Zoning Committee members if needed.

Name, Address, Phone & Email of Agent or Buyer:
Agent - Nick Petit 2435 Sundown Pl Kronenwetter WI 54455
715-581-9167 nick@tpaving.com

Fee: $350.00 Date of Public Hearing: April 21, 2023

Rev January 2021

Real Estate Sawyer County Property Listing

Today's Date: 2/22/2023

Property Status: Current

Created On: 2/6/2007 7:55:37 AM

Description

Updated: 10/11/2016

Tax ID:	22306
PIN:	57-022-2-38-07-12-3 01-000-000010
Legacy PIN:	022738123101
Map ID:	.9.1
Municipality:	(022) TOWN OF RADISSON
STR:	S12 T38N R07W
Description:	NESW
Recorded Acres:	40.000
Calculated Acres:	40.471
Lottery Claims:	0
First Dollar:	No
Zoning:	(F-1) Forestry One
ESN:	

Tax Districts

Updated: 2/6/2007

1	State of Wisconsin
57	Sawyer County
022	Town of Radisson
576615	Winter School District
001700	Technical College

Recorded Documents

Updated: 9/3/2015

WARRANTY DEED
Date Recorded: 7/27/2015 — 396880

WARRANTY DEED
Date Recorded: 7/5/1988 — 209849 420/239

Ownership

Updated: 10/11/2016

BRANDON R & NATALIE R HEATH RADISSON WI

Billing Address:	**Mailing Address:**
BRANDON R & NATALIE R HEATH	**BRANDON R & NATALIE R HEATH**
PO BOX 74	PO BOX 74
RADISSON WI 54867-0074	RADISSON WI 54867-0074

Site Address

* indicates Private Road

N/A

Property Assessment

Updated: 10/24/2011

2023 Assessment Detail

Code	Acres	Land	Imp.
G6-PRODUCTIVE FOREST	40.000	52,000	0

2-Year Comparison	2022	2023	Change
Land:	52,000	52,000	0.0%
Improved:	0	0	0.0%
Total:	52,000	52,000	0.0%

Property History

N/A

Written Brief

The granting of the special exception for the placement of gravel pit is well within the spirit of the ordinance. The placement of the gravel pit will not be a nuisance to neighboring property owners, through noise, dust, or any aspect of public safety. The site will not affect property values of neighboring properties, property will go back to F1 use once gravel pit is completed. The property is not in a flood plain and no wetlands or forest resources will be affected by the proposed site. Lastly, the siting of the gravel pit at this particular location will provide the most effective and efficient use of taxpayer's funds by allowing the close proximity of the gravel pit to reduce travel and trucking costs which in turn reduces the time necessary to complete the work. The reduced cost in terms of both money and user delay due to construction is a win-win for the traveling public.

The granting of the special exception will be in the best interest of both the local population as well as the travelling public. The gravel pit will be placed in a rural area. Additionally, the drivers at Hungry Run Trucking take pride in their driving with common sense and safety when on the road. The general welfare, public health, or safety of the local population will not be significantly impacted due to the placement away from a populated area along with the efforts made by Hungry Run Trucking to limit dust and noise.

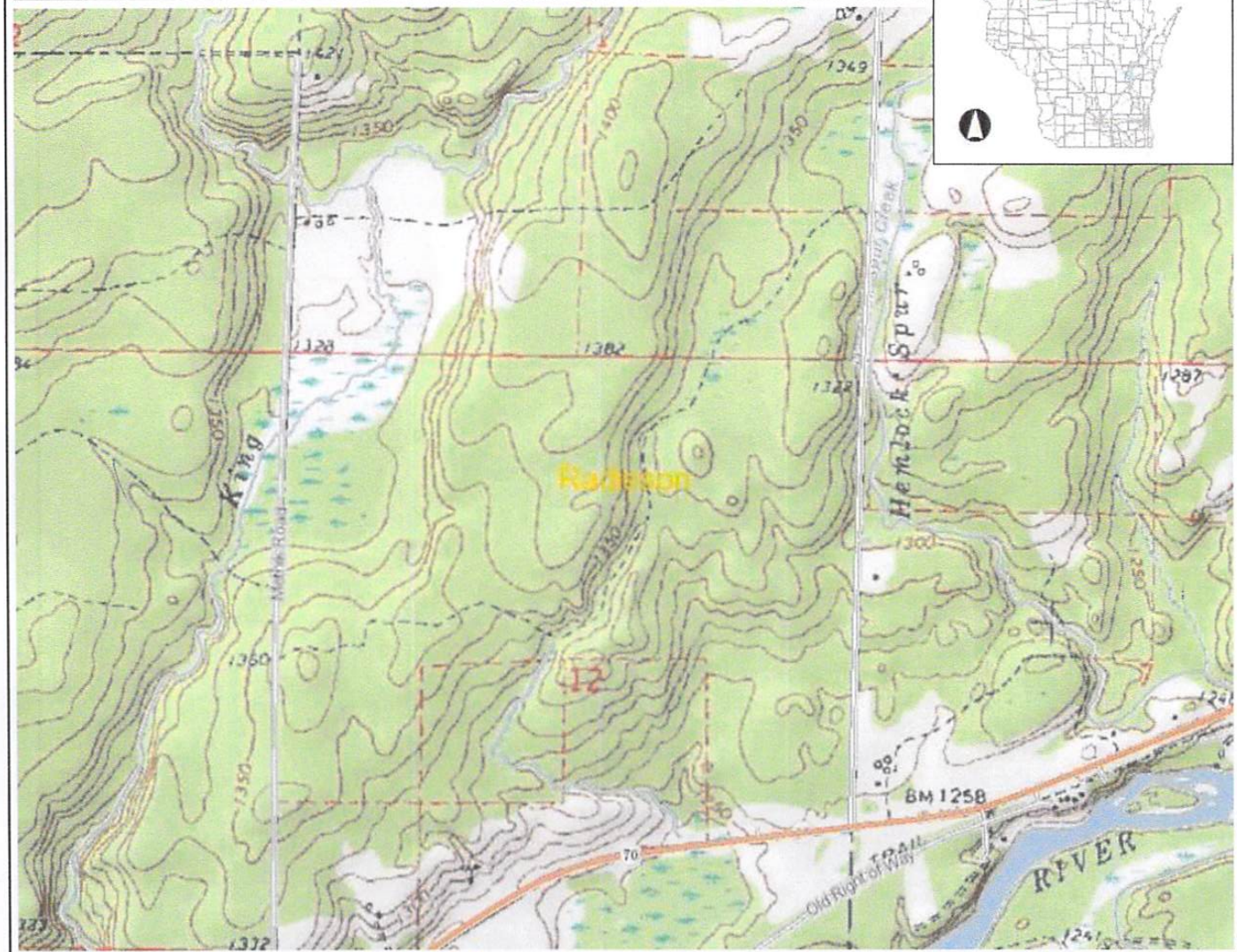
Hungry Run Trucking makes every effort to be good neighbors, and part of being good neighbors is making are best effort to eliminate as much as possible any issues with noise, dust, smoke, and odors. The noise made by the crushing operation is comparable to the current level of noise created by normal traffic on the highway. The noise created by the other equipment and dump trucks is similar in nature to the other traffic on the highway.

Hungry Run will follow all county ordinance along with any town ordinances that apply to this Conditional Use Permit.

Our request will not impact public health, safety, or general welfare.

Granting this special exception to Hungry Run Trucking provides an important service to the community because it is the most prudent choice to preserve taxpayer dollars. The ability to locate the gravel pit as close as possible to the projects allows the contractors the ability to provide the most competitive pricing to the Department of Transportation as well as local municipalities and in turn the best value to the Wisconsin tax payers. The close location to the projects also limits the amount of on road traffic by construction vehicles which minimizes any potential issues with local traffic.

Contour Map



Legend

- Municipality
- State Boundaries
- County Boundaries
- Major Roads
  - Interstate Highway
  - State Highway
  - US Highway
- County and Local Roads
  - County HWY
  - Local Road
- Railroads
- Tribal Lands
- Rivers and Streams
- Intermittent Streams
- Lakes and Open water
- 24K USGS Quad Index - Level 7 - 16

Notes

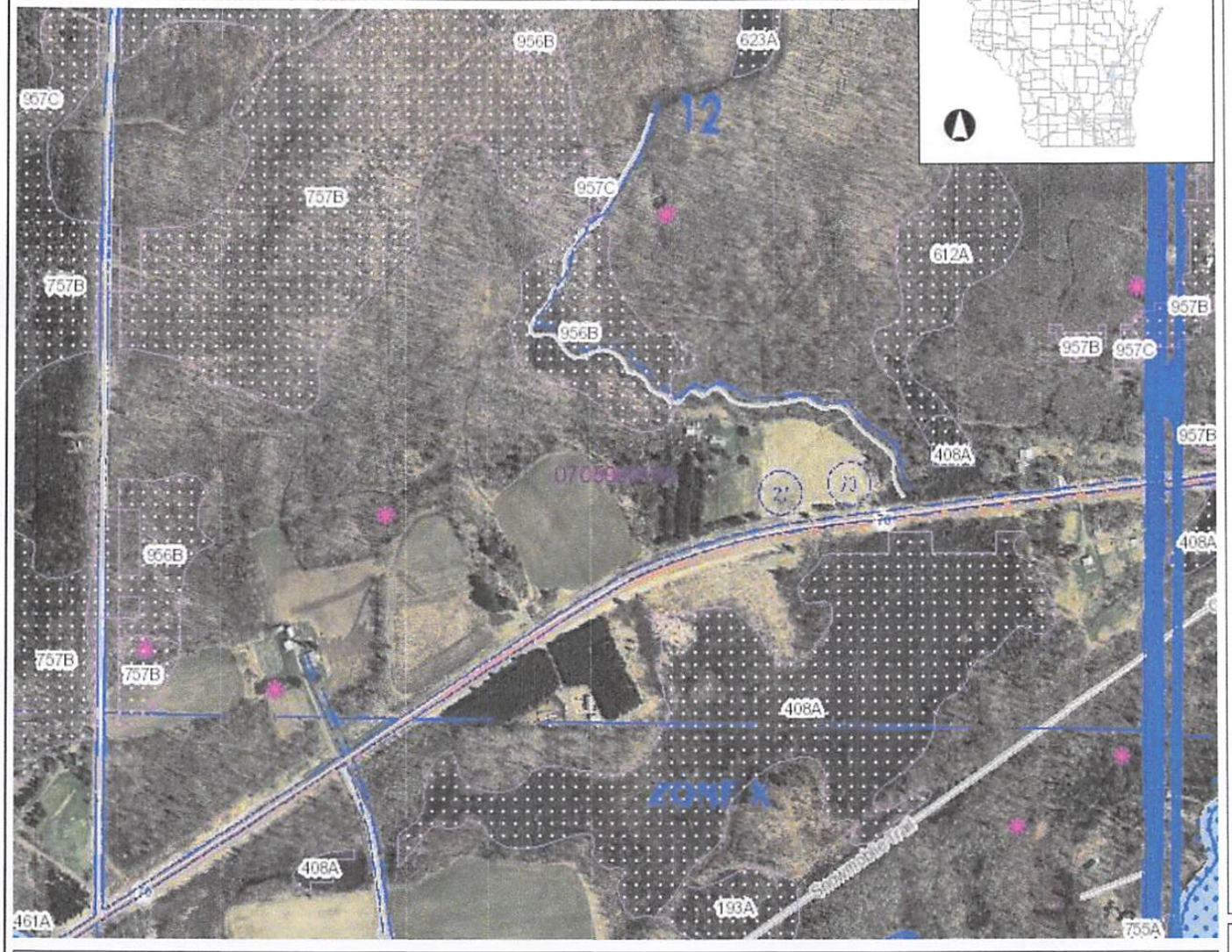
0.5 0 0.25 0.5 Miles

NAD_1983_HARN_Wisconsin_TM

1: 15,840

DISCLAIMER: The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: http://dnr.wi.gov/legal/

Surface Water Data Viewer Map



Legend

- Wetland Indicators
- 2D Water Surface Elevation Grid
  - High : 937.629
  - Low : 853.184
- Dams
  - Dams with FERC License
  - Dams
- Record Flood Levels
- Analysis Lines
  - Other
  - Flood Insurance Study
  - Letter of Map Revision
  - Case By Case Analysis
  - Bridge
- Analysis Points
  - Other
  - Flood Insurance Study
  - Letter of Map Revision
  - Case By Case Analysis
  - Bridge
- Analysis Catchments
- Floodplain Storage
- Cross Sections
- Floodplains
  - Flood Fringe
  - Floodway
- FERC Project Area Boundaries
- DOT Bridges
- Statewide Paper FIRM Index
- FIRM Panels
- Cross-Sections
- Flood Hazard Boundaries

Notes

0.3 0 0.13 0.3 Miles

NAD_1983_HARN_Wisconsin_TM

1: 7,920

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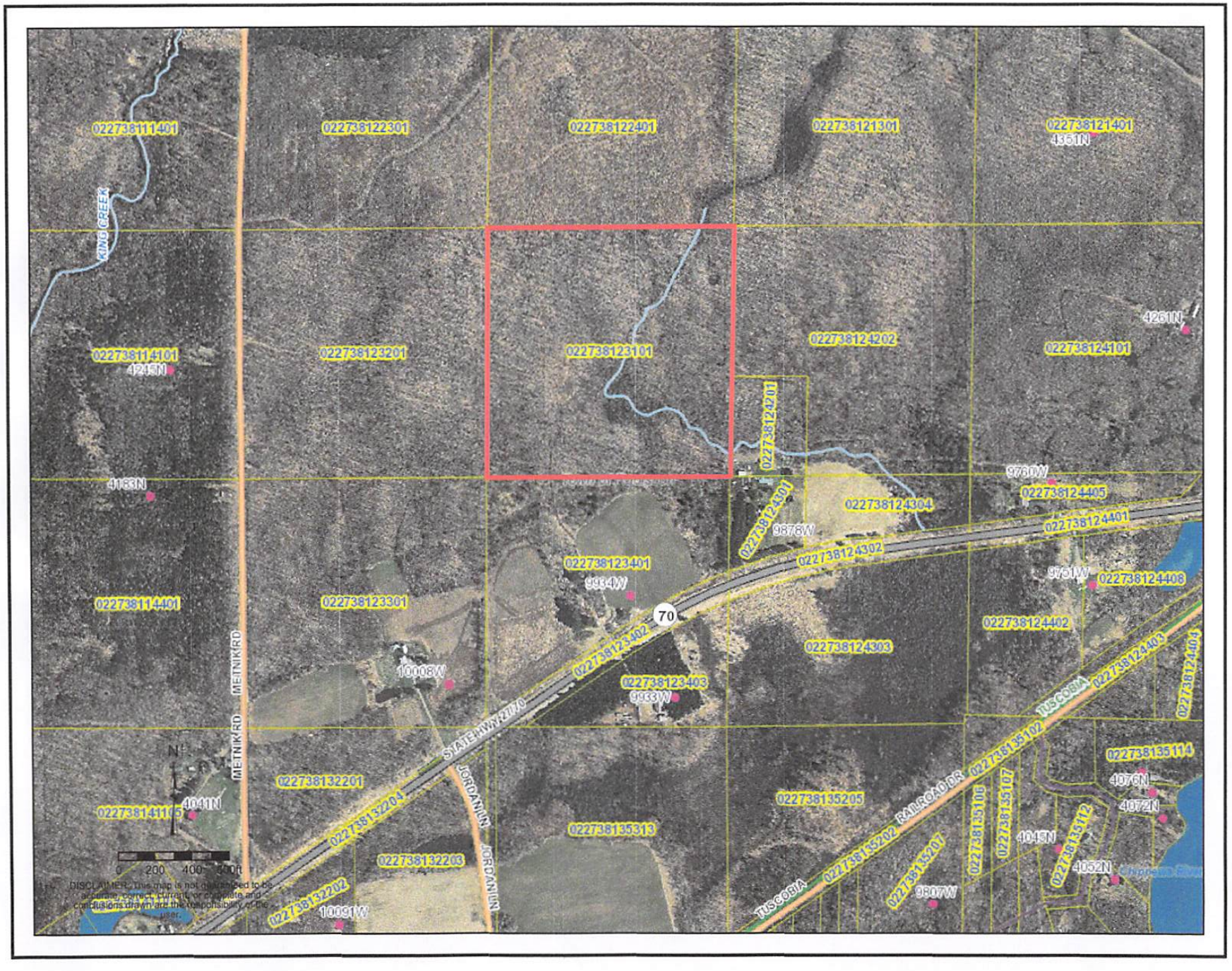
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KING CREEK
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022738123101
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022738124101
022738124201
9760W
4183N
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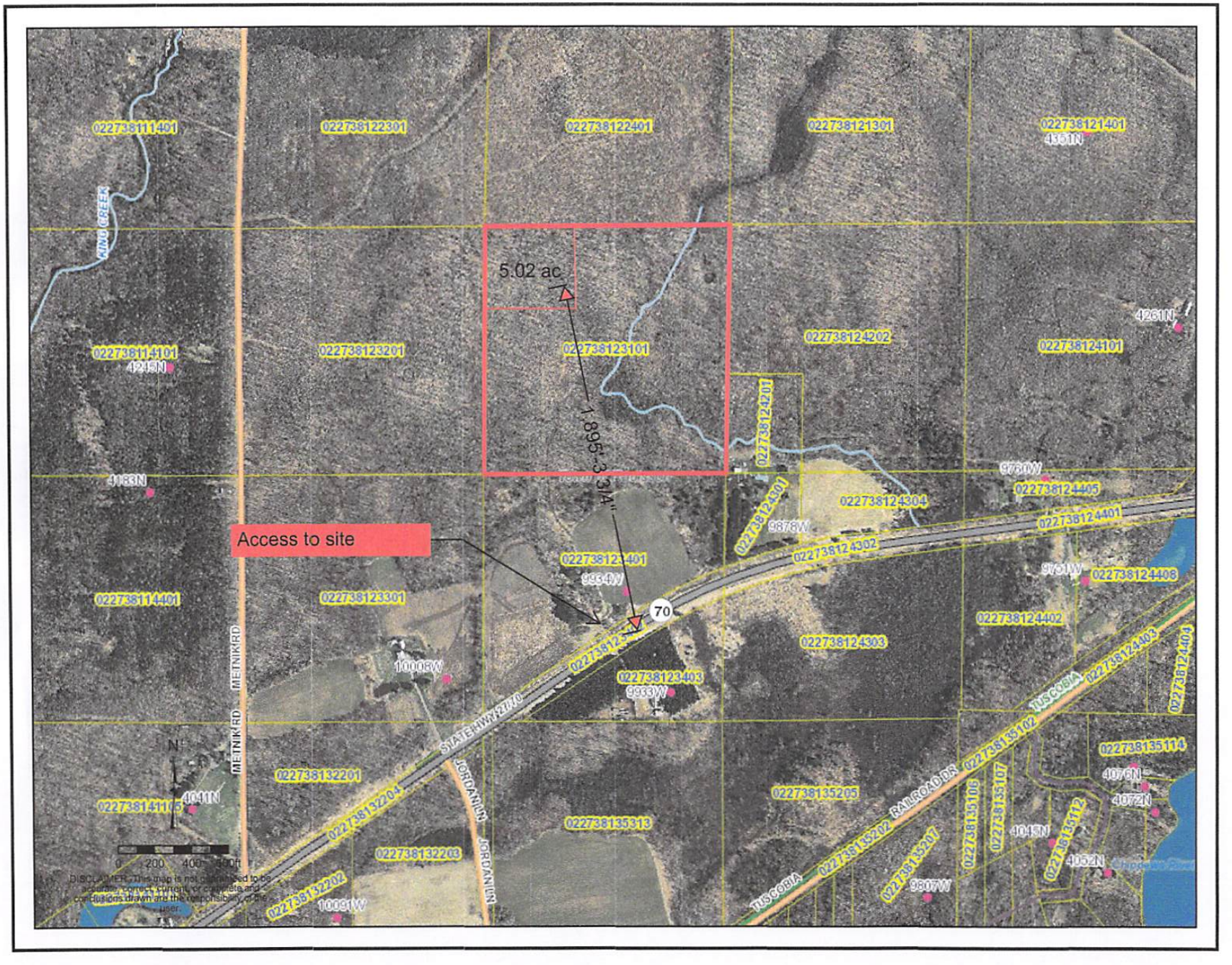
DISCLAIMER: This map is not guaranteed to be accurate, correct, current, or complete and conclusions drawn are the responsibility of the user.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1,895' 3 3/4"
Access to site
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KING CREEK
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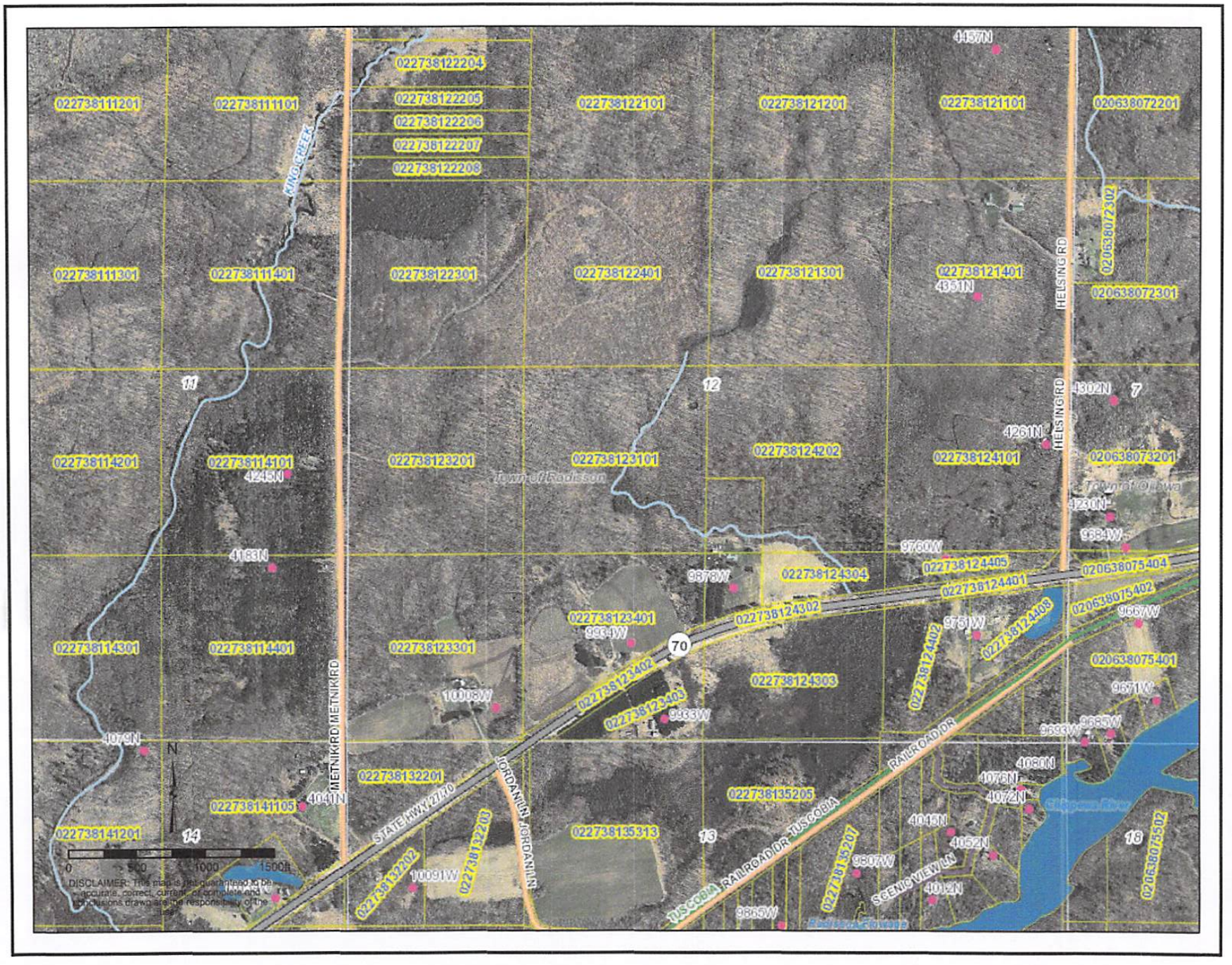
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Town of Radisson
Town of Olha
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9760W
4183N
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9671W
10006W
022738123403
9983W
9683W
9685W
4079N
N
METNIK RD
METNIK RD
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4076N
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RAILROAD DR
022738135205
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STATE HWY 27/70
JORDAN LN
JORDAN LN
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14
022738135313
13
4052N
16
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9807W
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SCENIC VIEW LN
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4012N
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TUSCOBIA
RAILROAD DR
TUSCOBIA
9865W
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DISCLAIMER: This map is not guaranteed to be accurate, correct, current, or complete and conclusions drawn are the responsibility of the user.

KING CREEK
022738111401
022738122301
Wi. Northern Highlands
022738122401
D. & S. Suzan
022738121301
022738121401
D. & E. Mahy
022738114101
4245N
022738123201
B. & N. Heath
022738123101
Town of Radisson
L. Martin
022738124202
022738124101
J. J. Jones
022738124201
4183N
9760W
022738124405
022738124304
9878W
022738124301
STATE HWY 27/70
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022738124302
METNIK RD
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022738123401
9934W
70
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022738123403
9933W
10008W
0 200 400 600ft
DISCLAIMER: This map is not guaranteed to be accurate, correct, current, or complete and conclusions drawn are the responsibility of the user.

HUNGRY RUN TRUCKING LLC
Setting Elevation High

Heavy & Highway Contracting

6534 W Railroad Ave
Winter, WI 54896
Phone 612-759-1695

Febuary 13th, 2023

Sawyer County / Town of Radisson
Plan Commission

Subject: **Special Exception; Parcel Pin 57-022-2-38-07-12-3 01-000-000010**

Nick Petit, as agent on behalf of Brandon Heath (property owner) and Jeremy Petit with Hungry Run Trucking is submitting the enclosed applications, drawings, and supporting documentation for your review reguarding the proposed gravel pit on a portion of the property listed above.

Contact Information

Site:
Parcel Pin: **57-022-2-38-07-12-3 01-000-000010**
Legal Description: See Attached
Town of Radisson, WI 54867

Property Owner:
Brandon Heath
PO Box 74
Radisson,WI 54867

Sincerely,

Nick Petit

Nick Petit
715-240-0315
nick@tpaving.com

WTBA Wisconsin Transportation Builders Association

An Equal Opportunity Employer

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- Introductions & Intentions
- Closing Statement
- Land Use Permit Application
- Operations Plan
- Written Brief
- General Overview Location Map
- Scaled Site Layout
- Property Owners Overview
- DNR Surface Water Map
- Contour Map
- Legal Description

Operations Plan

Equipment

Equipment that will be used on site is the following.

-Backhoe

-Loader

-Dump Trucks

-Track Crusher (not to exceed 21 days per calendar year, during hours of operation

-Asphalt Plant

Hours of operation: 6AM-7PM, Monday - Friday; intermittent operation during weekends as projects demand between 7AM-4pm. (NO Holidays)

Materials

-3/4 inch base

-1 ¼ inch base

-Sand

-Topsoil

-Clay

Proposed Activities

-Sand and Gravel Extraction. This will take place throughout the year.

-Crushing. This will take place in the spring of each year.

-Asphalt Production.

-Screening (Sand, Topsoil)

Other items required for an Operational Plan are included in the CUP. Please see other supporting documents and maps included. If any additional information is needed, please contact me directly.

Nick Petit

Gravel Pit

Gravel is an essential building material for use in a variety of civil construction projects such as buildings, roads, bridges, and a variety of other structures. As the Wisconsin Department of Transportation (WisDOT) and a variety of other municipalities continue efforts to update roads in Sawyer County, the demand for a locally available and economical option for the production and distribution of material is critically important to on-time and on-budget projects to reduce the costs to taxpayers and impacts on commuters for these projects.

Based upon the availability of some ingredient aggregate materials nearby as well as the proximity to the awarded construction work, the Heath Site on HWY 70 offers an ideal location for a gravel pit. The site is currently zoned F1 (Forestry One) and is being used for recreational use. Hungry Run Trucking is requesting this special exception permit beginning on June 1st, 2023 to December 31st, 2028.

Siting

The site, consisting of Parcel Pin 57-022-2-38-07-12-3-01-000-000010 is currently being used for recreational use. The special exception permit area is approximately 5 acres in size, for the exact location and layout please see the attached map. No building or structure will be put on this parcel. Only equipment and crushing spread is proposed as part of the application.

Site Preparation

Site preparation with consist of clearing and grubbing, and removal of topsoil. Site clearing for trees and brush will take place starting May 1st, 2023. Once we have the appropriate documents approved, we will then begin stripping topsoil.

Operation Description

The proposed gravel pit would be utilized to supply Sawyer County residents with material as well as supply state and commercial projects in the area. The exact number of employees varies between 2 and 5 on the gravel operations team. Access to the site will be via the existing driveway currently in use. Parking for the operators will be adjacent to the site. Operational periods will include generally daytime operating hours (6:00 AM – 7:00 PM) during week days and intermittent operation during weekends only as project demands necessitate. weekend hours 7AM-4PM, no Holidays.
Crushing to occur during hours of operation.
Outdoor storage would consist of piles of aggregates and sand stored within the existing site. Activities conducted outdoors at the site would include the staging, handling, and mixing of materials, loading of delivery trucks. Domestic waste generation would be handled by an onsite dumpster that is regularly emptied by a local waste management service.

Zoning and Setbacks

The Gravel Pit will be sited on the property to adhere to all setback's as set forth in the current Sawyer County and Town of Radisson zoning regulations that govern the property. See attached mapping for the proposed location within the property.

Closing Statement

Nick Petit (agent) on behalf of Brandon Heath (property owner) and Hungry Run Trucking is submitting the enclosed Special Exception Permit for the proposed Gravel Pit along with the required fees and attachments. We are requesting approval for the operation from ~~June 1st, 2023, to December 31st, 2028~~ in support of construction projects in Sawyer County and surrounding projects. If you have any questions or concerns, or require additional information, or clarification, please feel free to contact me via the contact information listed on the front page.

Sincerely,

Nick Petit

Permit will start at Zoning Committee approved 4/28/2023 and expire 5 years @ 15. Will need to renew CUP at that time

Erosion Control/ Storm Water Management

As part of participating in WisDOT construction work strict environmental and erosion control standards must be adhered to and are regularly monitored by Hungry Runs' project staff.

Noise

The noise emitted by the Pit operations will be less than or equal to the current noise generated by the traffic on the HWY 70.

Dust Control

Dust will be controlled by a water truck as needed. Water is used extensively around the plant site during crushing operations as needed to control the dust of the moving trucks. Water as well as sweeping is used on any adjacent roads that to control both dust and any debris that may track on to public roadways.

Lighting

No lighting will be needed at this site. All operations will take place during daylight hours.

Conditional Use Permit Request-Reclamation Plan
STAFF REPORT

Prepared By: Jay Kozlowski, Sawyer County Zoning & Conservation Administrator

File: # CUP 23-009 Reclamation Plan

Applicant:
Brandon & Natalie Heath
PO Box 74
Radisson, WI 54867

Agent/Operator:
Nick Petit and Jeremy Petit
DBA: Hungry Run Trucking LLC

Property Location & Legal Description:
The NE ¼ of the SW ¼; S12, T38N, R07W; Parcel #022-738-12-3101; Tax ID 22306; 40 total acres; Zoned Forestry One (F-1).

Request: Permit issuance of the Reclamation Plan

Project History & Summary of Request

The applicant is requesting to open a new non-metallic mineral extraction on the property described above. Previously the public hearing for CUP 23-009 was for potential approval of the "Location & Operation" Per the reclamation plan provided the area is showing 5.0 acres of disturbance for mining. If expansion was to occur a new updated reclamation plan would be need which required additional approval. Per the plan, the pit depth is not to exceed 30 feet and approximately 5,000-10,000 cubic yards of gravel are to be excavated from the site annually. Per the NR 135 requirements before approval can be granted for the conditional use operation process the regulatory authority being the County needs to approve the applicant's reclamation plan (attached).

The Sawyer County Zoning & Conservation Department has reviewed the "reclamation summary" and concludes that the plan is consistent with the standards specified in NR 135. With a post mining activity described as a wildlife foodplot with mixed forest regeneration.

The Sawyer County Zoning Committee, being the regulatory authority may approve, conditionally approve, or deny the reclamation plan.

If the regulatory authority approves the reclamation plan subject to general compliance requirements of NR 135, the approval may not include conditions that are not related to the reclamation plan. Other conditions may be added during the public hearing process for the "location and plan of operation". One required condition of an approved reclamation plan shall be that the new mine obtain financial assurance pursuant to NR 135.40.

If the regulatory authority denies the reclamation plan it needs to have the findings of one the following:

1) The applicant has, after being given an opportunity to make corrections, failed to provide an adequate permit application, reclamation plan, financial assurance or any other submittal required by NR 135 or the applicable reclamation ordinance.
2) The proposed nonmetallic mining site cannot be reclaimed in compliance with the reclamation standards contained in the applicable reclamation ordinance, NR 135 or subch. I of ch. 295, Stats.
3) The applicant, or its agent, principal or predecessor has, during the course of nonmetallic mining in Wisconsin within 10 years of the permit application or modification request being considered shown a pattern of serious violations of this chapter or of federal, state or local environmental laws related to nonmetallic mining reclamation.

A denial shall be in writing and shall contain documentation of reasons for denial. The regulatory authority's decision to deny an application to issue a reclamation permit may be reviewed NR 135.30.

HUNGRY RUN TRUCKING LLC
Setting Elevation High

Sawyer County

NR 135

Reclamation Plan

Summary

-Site Information

-Maps

-General Location

-Property Boundaries

-Areal Extent

-Geologic Composition and Depth of the Mineral Deposit

-Distribution, Thickness and Type of Topsoil

-Approximate Elevation of Ground Water

-Location of Surface Water

-Existing Drainage Patterns

-Existing Topography

-Location of Manmade Features

-Biological Information

-Post Mining Land Use

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- Proposed Map
- Establishing Grass
- Erosion Control Installation
- Critical Area Planting
- Seeding Date Ranges
- Property Owners Overview
- Property Owners Contact Information

Applicant Name: Brandon Heath

Address: PO Box 74

Radisson. WI 54867

Pit Name: Hungry Run

Sites Legal Description: S12 T38N R07W

Phone:(715) 456-0731 **Total Area of Mine: 5 acres**

Purpose and planned excavation of mine: The purpose of the mine is to produce gravel and fill sand. The total extent of the mine is shown on the Site Plan Map. Active excavation at the site will not exceed five acres at any given time. The total depth of excavation will be between 25' to 30' and will not exceed 30' in any location.

General Location: Hungry Runs Pit, non-metallic mine is in, Section 12 Town 38 North, Range 7 West,

Town of Radisson, Sawyer County, Wisconsin. The mine is approximately 1/2 of a mile north of state highway 70.

Soil Type: The soil type at the site is a Pence sandy loam, 6 to 30 percent slopes.

Distribution, thickness, and type of topsoil: Thickness of topsoil is less than 6 inches with 2-3' of clay under the topsoil.

Approximate elevation of groundwater: The approximate ground level elevation of the water table in this site is 20' below the land surface. The groundwater level will be 15-20' below the floor of the final pit level.

Location of surface waters and existing drainage patterns: The existing drainage pattern of the site is internally draining. There are no perennial water bodies close to the mine site. The closest water is a small creek just east of the property. The existing drainage patterns and the distance to identified wetlands can be seen on the attached maps.

Current biological resources, plant communities, and wildlife use at and adjacent to mine site: Biological and wildlife data was mainly determined by visual observations. The proposed mine site is a northern hardwood forest consisting of mostly maple with a mix of oak birch, and aspen trees.

Wildlife usage is moderate in the forest for foraging and cover of the property Main species present include rabbits, whitetail deer, and various songbirds and smaller mammals common to the area.

No threatened or endangered species were observed or known to inhabit the site.

Proposed post-mining land use: The proposed post-mining land use for the non-metallic mine site is a forest with some trees. The proposed land use would be appropriate to the current local zoning of Forestry 1. Upon complete reclamation, Hungry Run will convert the 5 acres into a food plot for wildlife.

OPERATION PLAN

Owner: Brandon Heath

Parcel ID: 57-022-2-38-07-12-301-000-000010

Property Description: S12 T38N R07W

Location: Sawyer County, East of Radisson, 1300' East of Metnik Road, State Hwy 70

Property Size: 40 Acres

Proposed Non-Metallic Mine Area: 5 Acres

Proposed Activities

Extracting, crushing, conveying, and stockpiling gravel. Extracting and stockpiling fill sand.

Hours of Operation

Normal Hours: Monday -Friday 6:00 AM -7:00 PM ; 7AM-4:PM, Saturday & Sunday (no holidays)

Crushing Hours: April -December, Monday -Friday 6:00 AM -7:00 PM, ~~X~~ 21 days total per year.

Total Crushing Operations: No more than ~~X~~ 21 days per year.

Access Route

Access to the site is an existing driveway off State Hwy 70.

Equipment Used

Equipment used during pit operation will be an excavator, front end loader, dump truck, conveyor, and a crusher.

Principal Structure/Residences

The closet principal structure is approximately 1300 feet from the closest boundary of the proposed pit. See attached map measuring distance to adjacent structures. All crushing activities will occur at least 1,000 feet from the closest residence. Further, the proposed pit sits 1200' off the highway and all pit activities will be blocked from direct sight/sound by trees and forest.

Excavation

The depth of the pit will be no more than 30 feet. Approximately 5,000-10,000 yards of gravel are anticipated to be excavated each year. Excavation will continue until the decided setbacks are reached. Active excavation will be limited to no more than five acres at any given time. (See Reclamation Plan for more detail).

Lot Lines

Lot lines will be marked with paint or ribbon. Identification and safety signs will be placed at the pit entrance. The proposed pit will maintain at least the required 10' setback from the neighboring northern and western property line.

Navigable Waters/Wetlands

The property has some wetlands outside of the northeast and northwest property line. The boundary of proposed pit is 200' feet from the closest identified wetland. See attached map for distance to identified wetlands. Pursuant to Sawyer County Ordinance§ 4.29, all of these setbacks exceed the required 40' setback from wetland areas.

Erosion Control

Runoff from the site will be controlled by being contained within the pit itself. For added management of water runoff we will install silt fence along the eastern border of the property line.

Environmental Considerations

All operations will be done in a way that will minimize the production of noise, vibration, or dust. Best management practices will be used to minimize erosion and pollution of the surface and ground water. (See Reclamation Plan for more detail)

Activities/Projects the Mining Operations Supports

The mined materials will support projects being done by the applicant. Materials will predominantly be used for residential projects with some commercial/municipality and DOT projects upon request. Applicant would consider selling to state, county or townships if requested. The materials will be used for construction projects in and around Sawyer County. The availability of this local pit will eliminate excess transportation and shipment of sand and gravel from outside areas. The mineral extraction operations from this pit be conducted solely by the applicant and his personally owned business operations.

The users of the mined materials will include the applicant personally as well as Hungry Run Trucking.

Reclamation Plan

A reclamation plan has been submitted to Sawyer Count Zoning.

Maintenance Plan

Runoff from the pit will be internally drained. (See Reclamation Plan for more detail)

Mining Process

Work is scheduled for Spring of 2023, or when site conditions allow. Machinery used will consist of a dozer, backhoe, and dump trucks. Mining will be completed in 1 Phase and within 10 years. Operational hours are 6 am to 7 pm Monday through Friday with occasional Saturdays. Total proposed area to be impacted; excavation and stockpiling, is approximately 5 acres. The surface 6 inches of topsoil will be stripped, stockpiled, and seeded to form vegetated earth berms until used for reclamation. Sand and gravel will be excavated with a backhoe. Dry excavated sand and gravel will be immediately loaded onto a dump truck and hauled offsite or stockpiled until sold. As excavation deepens, any saturated material will be stockpiled in the "Sand and Gravel Stockpiling Area". Excess water will drain off the stockpiles into the underlying, permeable sand and gravel until dry, then hauled offsite with a dump truck.

Topsoil Management for Reclamation

The surface 6 inches of topsoil will be stripped, stockpiled, and seeded to form earth berms. Earth Berm sideslopes will be approximately 20 feet wide with 3:1 or flatter sideslopes. After excavation is completed, vegetated earth berms will be used for topsoiling disturbed areas during reclamation. Extra topsoil can be sold.

Conservation Practices

Silt fence will be installed upslope of the wetland boundary. All mining activities will be confined to the permitted area, no alteration to the surrounding landscape is proposed.

Fueling will be completed offsite, or with a portable fuel tank and conducted on level ground, away from open water. No vehicle maintenance will occur onsite. If machinery is leaking fluids or needs repair, it will be immediately hauled offsite and not returned until the problem has been resolved.

Machinery will be pressure washed or thoroughly cleaned prior to entering and exiting the site to minimize the spread of invasive species.

Manmade Features

The only manmade feature associated with mining are the berms being built on site. No structures or other features for mining are planned at this time.

Final Reclamation

Reclamation will include topsoiling and seeding disturbed area of 5 acres, to a depth of 6 inches, then seeded with the attached seed mix. The site will be considered reclaimed when a minimum 70% vegetation cover is established along sideslopes.

Seed Mix

Two seed mixes are provided in Attachment 2. The first is WisDOT Seed Mix #20. This seed mix is used to stabilize slopes and consists of grasses, resulting in a lawn type setting appearance.

The second seed mix is from Prairie Nursery, Westfield Wisconsin. This seed mix consists of native prairie flowers and grasses utilized by butterflies and pollinators. For more information regarding native seed mixes and ordering, Prairie Nursery can be contacted at 1-800-476-9453

Conclusion

This Nonmetallic Mine Permit on Brandon Heaths property. Sand and Gravel Pit indicates this site is located greater than 500 feet from all navigable waterways. Final Reclamation will consist of spreading topsoil and planting grass seed. This report should be beneficial for reclaiming this site after mining is complete.

Site Location
BLUEBERRY FIRE LN
ASHEGON FIRE LN
Ashegon Lake
Eddy Creek Spring
Town of Couderay
Eddy Creek
CC
COUNTY HWY CC
RYAN RD
SHEBTICK RD
Village of Couderay
TUSCOBIA
BEAVER BROOK RD
DELAP LN
Couderay River
HARBORS LN
BECHTEL RD
OLD COUDERAY RD
Village of Radisson
Grimm Flowage
Radisson Flowage
COUNTY HWY H
GALEY AVE
METNIK RD
HELSING RD
STATE HWY 27
RAILROAD DR
SCOUT TRL
RIVER RD
RIDGEWAY
Chippewa River
KOEBLER RD
POLISH RD
ABORNE RD
Town of Ojibwa
Village of Winter
MARION ST
STATE HWY 70
70
THORSEN RD
CEMETERY RD
G
W
OLMSTEAD RD
COUNTY HWY G
KNAPP RD
DAM RD
DORSCHEID RD
Mud Lake
COUNTY HWY W
WILEY RD
OLD 70
HANSON RD
SQUIRES RD
OLD HWY 70
BEAGLE LN
HIGHLAND RD
27
OLD J RD
IRVINE DR
Brunet River
STATE HWY 27
TOWNLINE RD
LANDON RD
SMITH RD
OLD D RD
Town of Meadowbrook
Hess Lake
Wilard Lake
HOFFMAN RD
LEWERENZ RD
MINERVA
40
Town of Weirgor
Little Weirgor Creek
Beaver Creek
Weirgor Creek
Weirgor Lake
Weirgor Springs
BRISKO LN
POLISH RD
LOST LAKE RD
Lost Lake
WEIRGOR RD
STATE HWY 40
RIVER DR
SWEDE RD
EASTLUND RD
LITKE DR
BIRCHRUN
Chippewa River
Mill Lake
Town of Weirgor
N
0
3mi
DISCLAIMER: This map is not guaranteed to be accurate, correct, current, or complete and the conclusions drawn are the responsibility of the user.

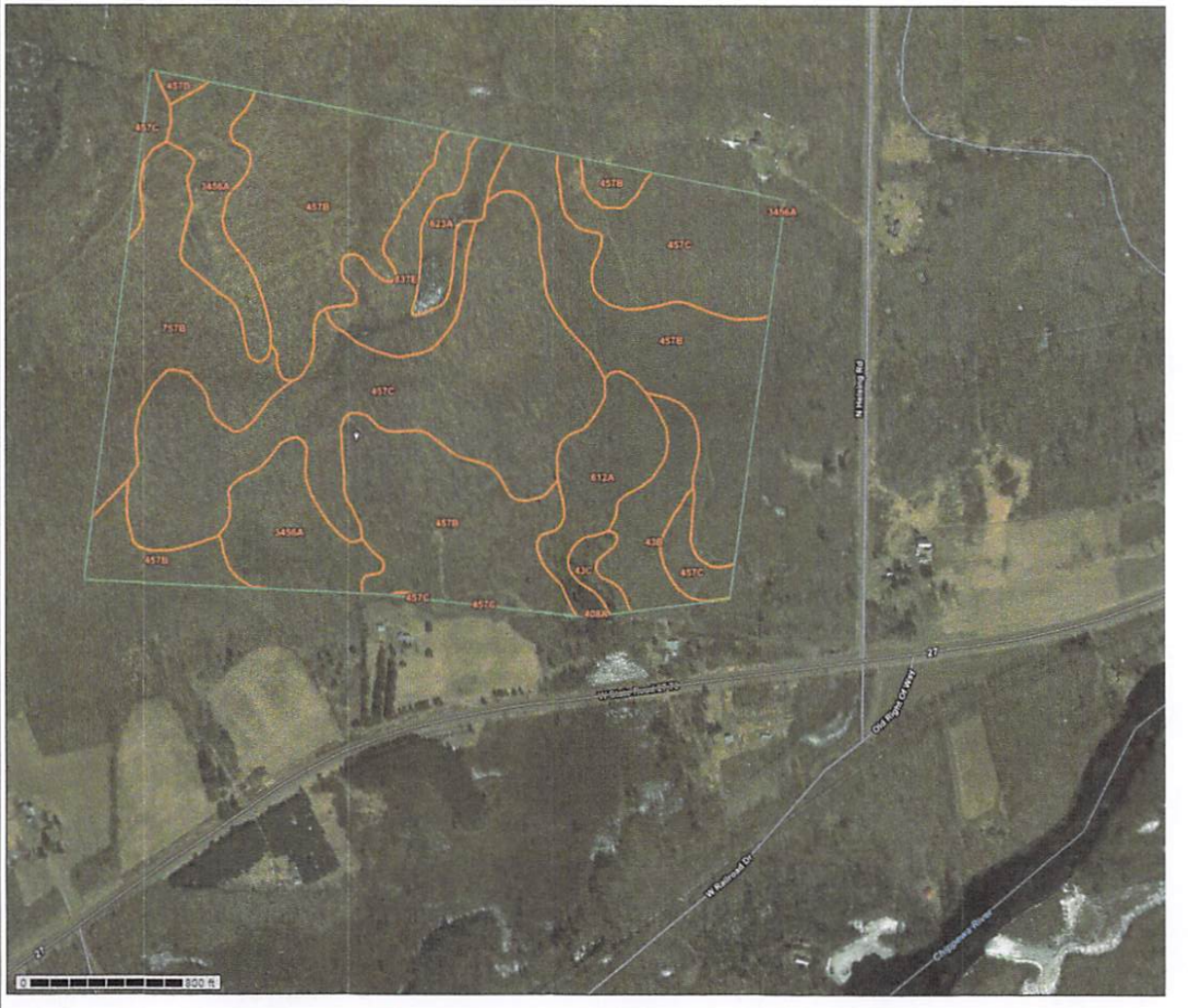
Search

Map Unit Legend

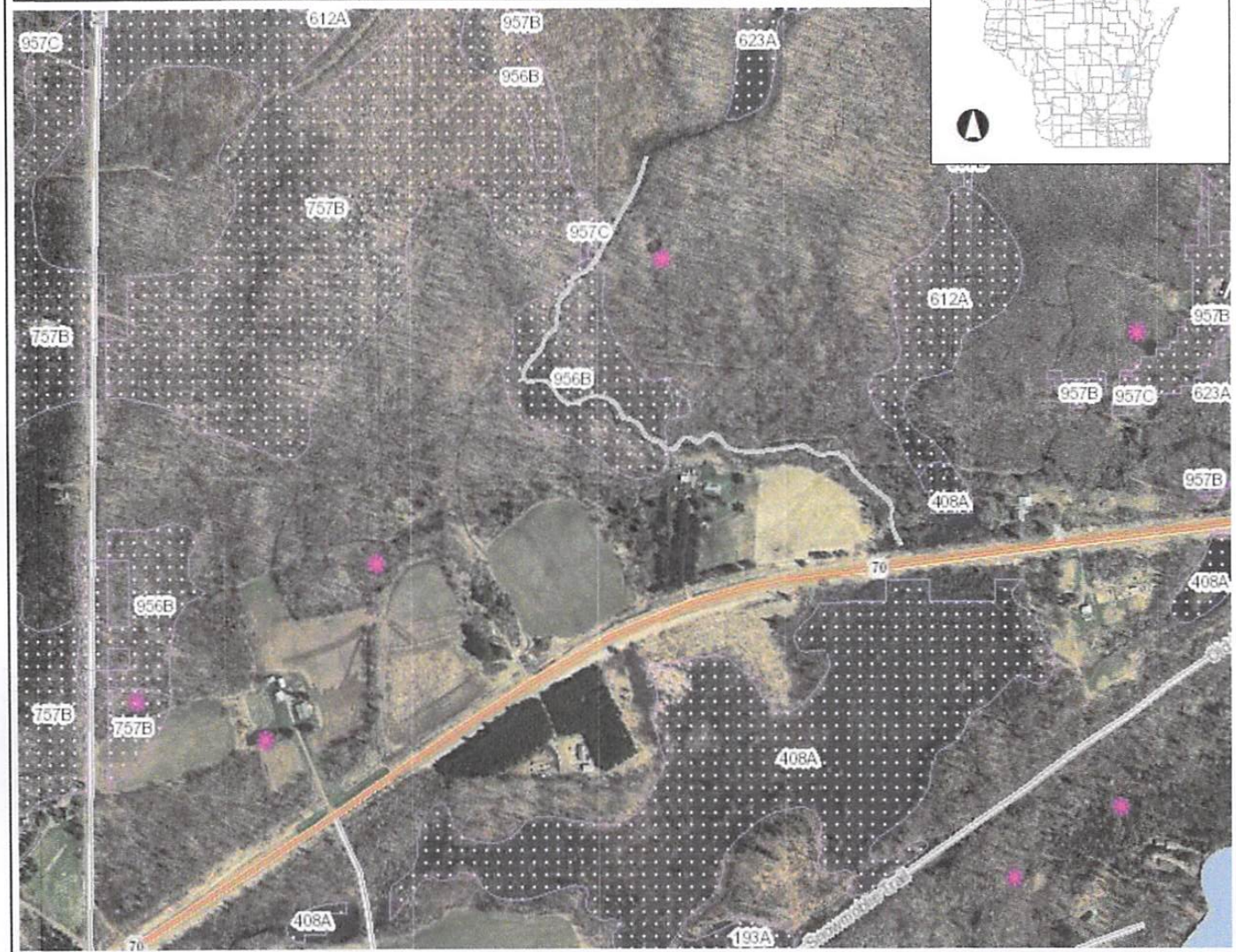
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
43B	Antigo silt loam, 2 to 6 percent slopes	6.4	3.4%
43C	Antigo silt loam, 6 to 15 percent slopes	1.5	0.8%
408A	Lupton and Cathro soils, 0 to 1 percent slopes	0.1	0.0%
457B	Freeon, very stony and Freeon silt loams, 2 to 6 percent slopes	65.6	35.3%
457C	Freeon, very stony and Freeon silt loams, 6 to 15 percent slopes	58.7	31.5%
612A	Magnor, very stony-Ossmer complex, 0 to 4 percent slopes	8.5	4.6%

Soil Map

Scale (not to scale)



Surface Water Data Viewer Map



Legend

- Wetland Indicators
- NRCS Wetspots
- Municipality
- State Boundaries
- County Boundaries
- Major Roads
  - Interstate Highway
  - State Highway
  - US Highway
- County and Local Roads
  - County HWY
  - Local Road
- Railroads
- Tribal Lands
- Rivers and Streams
- Intermittent Streams
- Lakes and Open water

Notes

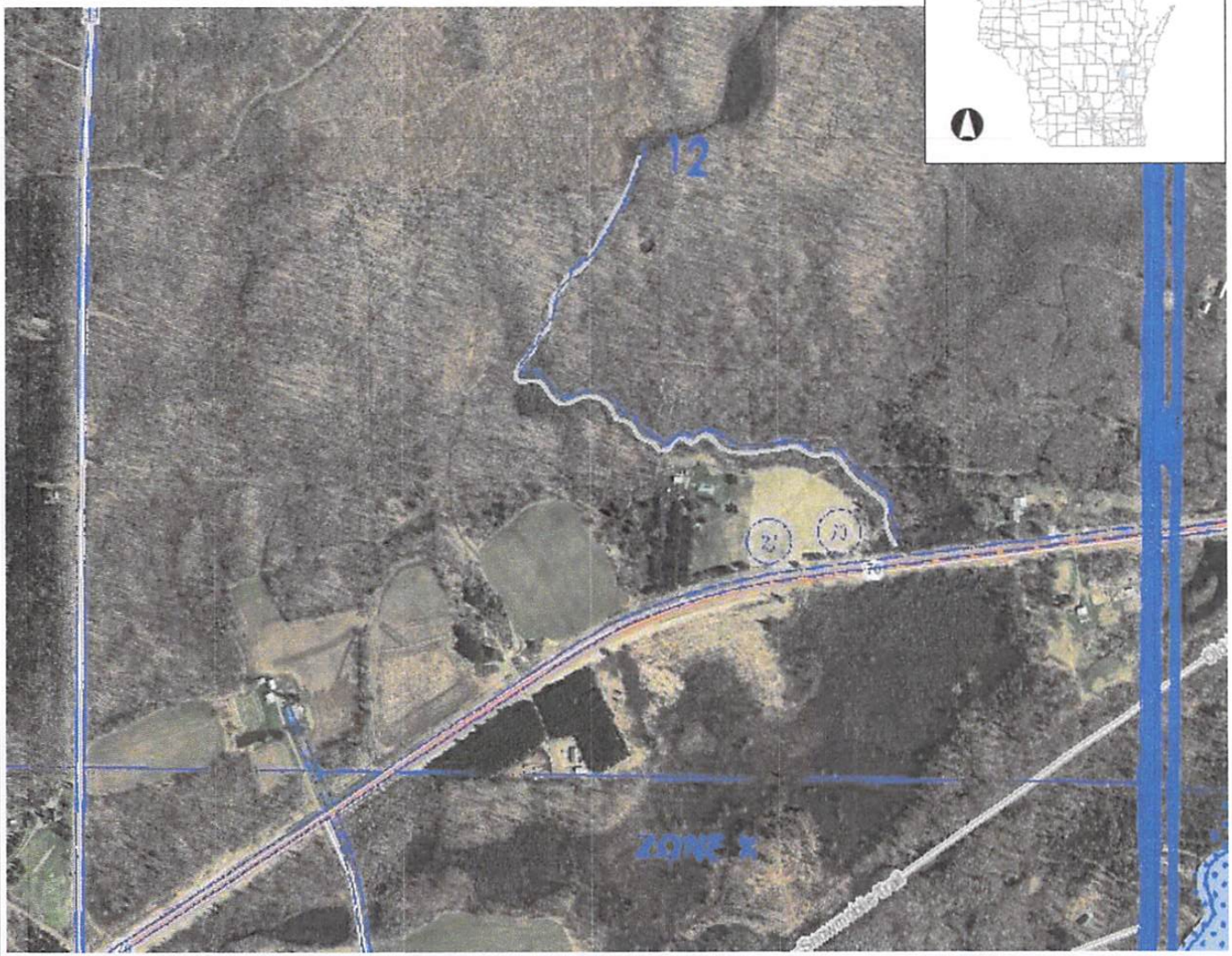
0.3 0 0.13 0.3 Miles

NAD_1983_HARN_Wisconsin_TM

1: 7,920

DISCLAIMER: The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: http://dnr.wi.gov/legal/

Floodplain Map



Legend

2D Water Surface Elevation Grid
- High : 937.629
- Low : 853.184

Dams
- Dams with FERC License
- Dams

Record Flood Levels

Analysis Lines
- Other
- Flood Insurance Study
- Letter of Map Revision
- Case By Case Analysis
- Bridge

Analysis Points
- Other
- Flood Insurance Study
- Letter of Map Revision
- Case By Case Analysis
- Bridge

Analysis Catchments

Floodplain Storage

Cross Sections

Floodplains
- Flood Fringe
- Floodway

FERC Project Area Boundaries

DOT Bridges

Statewide Paper FIRM Index

FIRM Panels

Cross-Sections

Flood Hazard Boundaries
- Limit Lines

Notes

0.3 0 0.13 0.3 Miles

NAD_1983_HARN_Wisconsin_TM

1: 7,920

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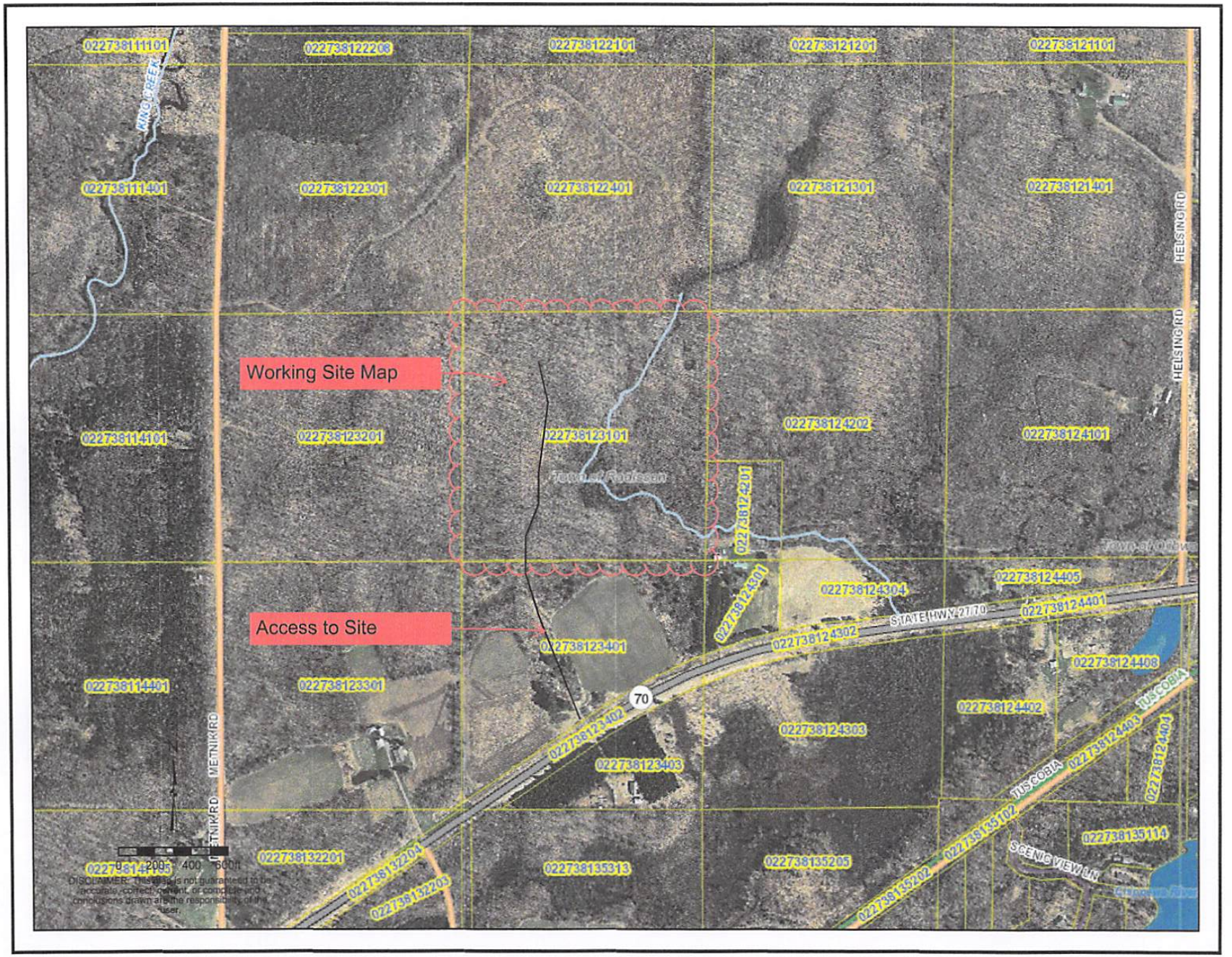
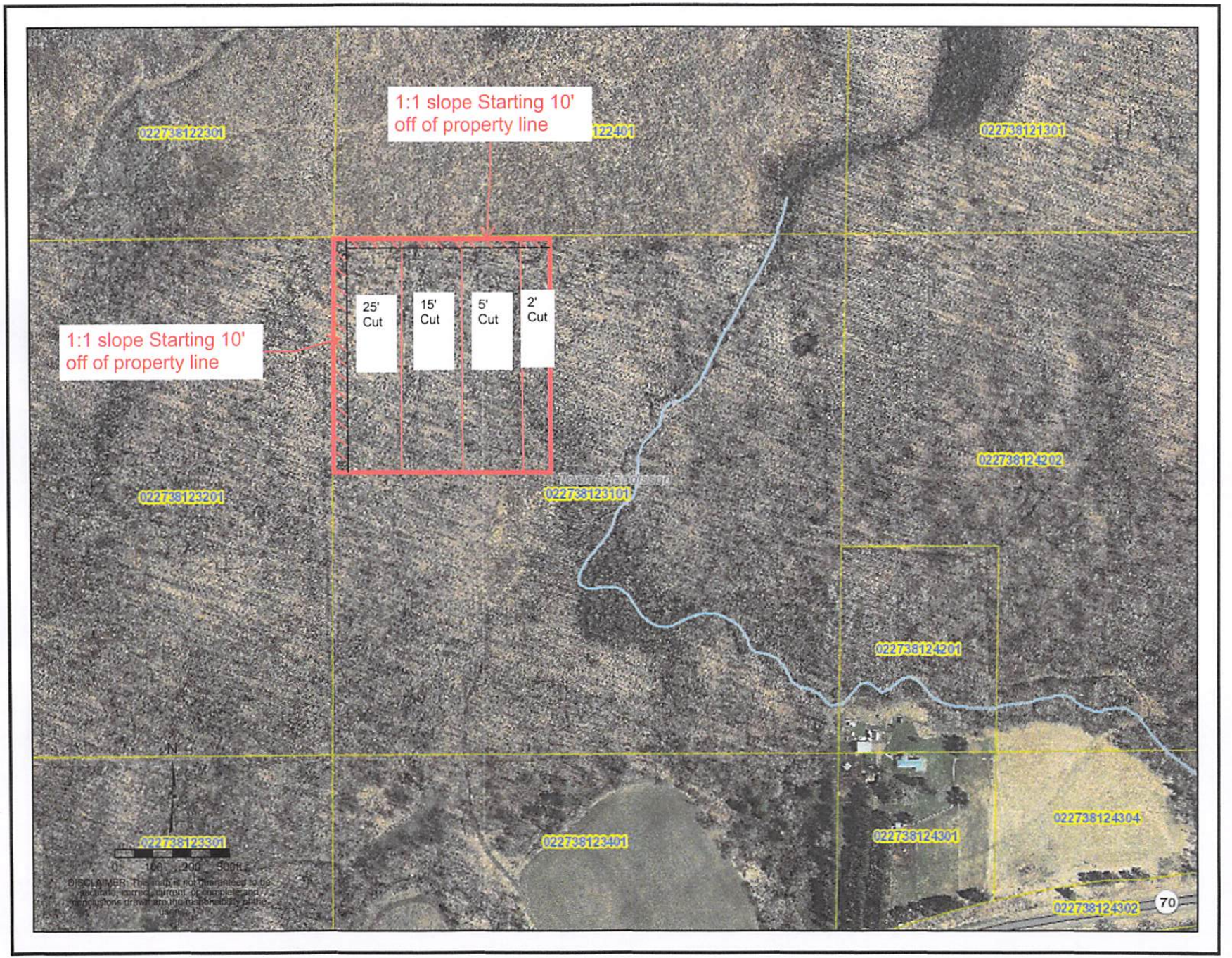

Working Site Map
Access to Site
022738111101
022738122206
022738122101
022738121201
022738121101
022738111401
022738122301
022738122401
022738121301
022738121401
022738114101
022738123201
022738123101
022738124202
022738124101
022738124201
022738124301
022738124304
022738124405
022738124401
022738123401
022738124302
022738124408
022738114401
022738123301
022738124402
022738124303
022738123402
022738123403
022738124403
022738124404
022738132201
022738132204
022738132203
022738135313
022738135205
022738135102
022738135202
022738135114
STATE HWY 2770
70
TUSCOBIA
HELSING RD
METNIK RD
SCENIC VIEW LN
KING CREEK
DISCLAIMER: This data is not guaranteed to be accurate, correct, current, or complete and conclusions drawn are the responsibility of the user.


1:1 slope Starting 10' off of property line
1:1 slope Starting 10' off of property line
25' Cut
15' Cut
5' Cut
2' Cut
022738122301
122401
022738121301
022738123201
022738123101
022738124202
022738124201
022738123301
022738123401
022738124301
022738124304
022738124302
70
0 100 200 300ft

USDA United States Department of Agriculture

Natural Resources Conservation Service

How to Establish and Maintain Native Grasses, Forbs and Legumes Wisconsin Job Sheet 135

Landowner: _____ **Tract:** _____

If you are receiving financial assistance for completing this planting, refer to your agreement for any additional requirements or restrictions.

Purpose

This job sheet describes methods to establish and maintain native grasses, forbs, and legumes and applies to the following practice (Select all that apply).

- ☐ Conservation Cover (327)
- ☐ Critical Area Planting (342)
- ☐ Forage and Biomass Planting (512)

Native species can be used to accomplish one or more of the following:

- Reduce soil erosion.
- Enhance pollinator and wildlife habitat.
- Increase forage supply during periods of low production.
- Produce feedstock for biofuel or energy production.
- Improve soil, water, and air quality.

For additional recommendations, refer to Wisconsin NRCS Agronomy Technical Note 5, Establishing and Maintaining Native Grasses, Forbs, and Legumes, at http://www.nrcs.usda.gov/wps/portal/nrcs/detail/wi/technical/?cid=nrcs142p2_020841

Species Selection and Seed Quality

Species and cultivars must be selected based upon the adaptation to site conditions, including appropriate moisture regime or forage suitability group, climatic conditions, soil conditions, and landscape position.

1. Select species based on growth characteristics, fertility requirements, disease resistance, compatibility with other species, and the intended use of the seeding.
2. Mixtures must meet all requirements of the Wisconsin weed laws. Species identified as restricted or prohibited by law shall not be planted.
3. Seed must be of high quality and meet the requirements of the Wisconsin seed laws for certification. If you plan to use untested seed, prior approval must be granted from NRCS before planting. If certified seed is not available, non-certified seed may be used as long as the seed is tested for purity and germination by a testing laboratory following Association of Official Seed Analysts (AOSA) procedures.
4. Native species are not recommended in concentrated flow areas due to their slow establishment and growth characteristics.
5. If more than 20 percent of the legume seed is hard seed, increase the seeding rate for legumes by the percent of hard seed in the seeding mixture.
6. Legume seeds must be inoculated prior to planting.

Seeding Periods and Rates

Seeding rates and species are provided on the attached seeding plan. Rates are based upon Pure Live Seed (PLS). In order to determine PLS, the seed must be tested for purity and germination. If you are receiving financial assistance for this practice, any changes to the species or rates listed in the seeding plan must be approved before seed is purchased.

- Permanent, perennial vegetative cover will be established within the recommended seeding dates as shown on the attached seeding plan. When it is not possible to seed during the recommended seeding dates, a temporary cover will be required to reduce erosion until the seeding can be completed.
- Frost Seeding. The frost seeding period in Wisconsin typically ranges from February to mid-March but may vary from year to year depending on the weather. Frost seeding is allowed only during the active freezing and thawing cycle and can be completed on fields where good seed-to-soil contact can be obtained. Do not frost seed on fields with solid ice or snow cover greater than 2 inches. Seeding rates must be increased by 15 percent. Refer to your seeding plan to determine if frost seeding is allowed for your situation.
- Dormant Seeding. Dormant seeding occurs late in the fall when the soil temperature is cool enough to prevent germination until the following spring. This type of seeding provides greater risk of failure due to variability in weather and often has reduced yields. Seeding rates must be increased by 15 percent when seeding during this time period. Refer to your seeding plan to determine if dormant seeding is allowed for your situation.

Fertilizer and Lime Requirements

For establishment of native species, soil testing and application of soil amendments is not a requirement.

Seeding Methods

Conventional Seeding

Conventional seeding includes preparing a firm seedbed by using tillage and packing equipment. The seed is broadcasted on the soil surface and incorporated by secondary tillage or packing equipment.

When using a drill, seed should be sorted according to size and shape and placed in the appropriate seed boxes to ensure uniform distribution across the field. Seed can also be broadcast by using air seeders, fertilizer spreaders, or other types of rotary or drop seeder implements. When a small amount of seed is being applied over a large area, a carrier should be mixed with the seed. Carriers such as pelletized lime, fertilizer, cracked corn, saw dust, vermiculite, etc., may be used.

The seedbed should contain enough fine soil particles to provide uniform shallow coverage of the seed as well as contact with moisture and nutrients. It is important to have a firm seedbed. As a minimum, culti-pack or roll before and after seeding. When walking on a properly prepared seedbed, the depth of your footprints should not exceed ¼ inch. Do not use heavy, no-till type drills to seed on conventionally prepared seedbeds. Heavy drills tend to sink into the soil and seeding depth will be difficult to control. Do not plant seed deeper than ¼ inch.

No-Till Seeding

No-till planting is the planting of grasses and/or legumes in the absence of tillage. No-till can be used to establish new seedings on land previously in row crops or existing sod. As with conventional seeding, seed placement should be no deeper than ¼ inch. A drill equipped for no-till planting must be used to obtain proper seeding depth unless the ground is soft enough to allow consistent penetration of disk openers of a conventional drill.

Herbicides are often necessary when using no-till methods of establishment. When using herbicides, be sure to read and follow all label directions.

No-Till Planting Into Crop Residue

Residue should be uniformly distributed over the field from the previous year's harvest. It is often preferred to plant new seedings into soybean stubble when using a no-till drill. No-tilling into large amounts of non-fragile residue such as corn stalks and small grain residue may reduce germination and seedling vigor. For spring weed control, use a nonselective herbicide to kill weeds prior to planting. Be careful not to select a herbicide that will have carryover or residual effects on your new seeding.

No-Till Planting Into Existing Sod

No-till planting can be used to completely renovate existing sod. In order to prepare a good seedbed for no-tilling into existing sod, plant litter and existing growth must be removed or altered prior to applying nonselective herbicides. Options to remove or reduce existing cover include mowing, burning, haying, or grazing.

- Mowing: Mow the site using a rotary mower or flail chopper to a height of 3 inches. Mowing equipment should uniformly distribute the mowed plant material over the field surface.
- Burning: Conduct a prescribed burn according to the requirements outlined in the burn plan. The burn plan must address safety concerns and document the appropriate timing for the burn.
- Haying: Mechanically harvest vegetation from the site the year before the planned seeding. The timing of the hay harvest should be planned to minimize the amount of re-growth that will occur prior to herbicide application.
- Grazing: Timing and duration of grazing must be intensive enough to significantly reduce the existing vegetative cover. If possible, begin the grazing at a time of the year when the standing vegetation is green and growing to increase the palatability and feed value of the forage which will result in a more uniform removal of the vegetation.

After the existing plant litter is altered or removed, allow plants to actively re-grow before applying a nonselective herbicide. Be aware of herbicides that may have carryover or residual effects. Timing of herbicide applications usually occurs in the spring before plants flower or early fall to actively-growing plants. Herbicide applications in the fall often have greater efficacy, but air temperature should be above 50° F to improve plant uptake.

Inter-Seeding

Inter-seeding includes any stand modification that maintains some vegetative component of the original stand. Inter-seeding is a good way to improve existing stands that lack plant diversity or have low-yielding forage species. Existing plant growth and litter will need to be reduced, and the same options used for no-tilling into existing sod can be used. In addition, limited tillage can be used to suppress the existing cover.

- Limited Tillage: Limited tillage may also be used to suppress the existing stand. Fields can be tilled to a depth of 3 to 5 inches and should expose at least 50 percent of the soil surface. Careful consideration should be used when using limited tillage due to potential erosion concerns or the potential to encourage additional weed growth due to soil disturbance.

After reducing plant growth, herbicides can be used to suppress, not eliminate, vegetation prior to interseeding. One must consider the current types of plants in the field (grasses vs. broadleaves) and which species you want to suppress. In addition, current field conditions and timing of application must be considered before selecting a herbicide.

A drill equipped for no-till planting must be used to obtain proper seeding depth unless limited tillage is used to prepare the seedbed. In this case, seed may be broadcast or drilled. Use a culti-packer or roll the seedbed before and after seeding when tillage is used

Temporary Cover and Companion Crops

Temporary Cover

Temporary cover is required when seed or planting stock is not available, the normal planting period has passed, or where herbicide carryover is likely. A temporary cover will typically not be necessary on those areas where at least 50 percent of the ground is covered with either crop residue or vegetative cover. Temporary cover crops must be clipped or terminated prior to seedhead emergence or before planting permanent cover.

Temporary Cover			
Species	Rate (lbs. or bu./acre)		Seeding Dates
	No Herbicide Carryover	Triazine Herbicide Carryover Likely	
Forage Sorghum	½ bu.		5/15 to 7/15
Sorghum-Sudangrass Hybrid	1 bu.		
Sudangrass	1 bu.		
Winter Wheat	120 (2 bu.)	Not recommended	8/1 to 10/15
Winter Cereal Rye	112 (2 bu.)	Not recommended	
Oats	64 (2 bu.)	Not recommended	4/1 to- 9/1
Annual Ryegrass	20 lbs.	Not recommended	4/1 to 9/1

Companion Crops

Companion crops can be used to reduce the amount of erosion on critical sites, suppress weeds, and provide added protection for permanent perennial vegetation seeded during the first year of planting. If the seeding is not used for hayland purposes, the companion crop must be mowed before seedhead emergence. Second and subsequent mowings may be necessary when re-growth provides competition to new plantings. Mowing should only remove the growth above the developing seedlings. Companion crops seeded late summer in most cases will not require clippings prior to the first killing frost unless the growing season is prolonged. Refer to your seeding plan to determine if companion crops are recommended for your situation.

Mulching

Mulch materials shall consist of natural and/or artificial materials such as plant residue, wood bark or chips, plastic, or fabric. Mulching is generally performed after grading, soil surface preparation, and seeding and plantings are complete. Mulch material shall be evenly applied and anchored to the soil. Review your engineering or seeding plan or consult your conservation planner to determine if mulching is required.

Operation and Maintenance

Weed control during establishment is critical to ensure survival of the new stand. Mowing, herbicide application, or grazing may be used alone or in combination to control weeds before they go to seed. Graze or mow the existing stand at a height of 4 to 6 inches before weeds go to seed. If grazing the stand, be cautious of selective grazing where animals do not uniformly graze the stand. Be careful not to mow or graze when the soil is wet to avoid damage to seedlings. If residue will be left on the field, do not allow the vegetation to grow too high prior to mowing; otherwise, excessive residue may accumulate and smother seedlings. Additional treatment may be needed every 3 to 4 weeks throughout the growing season until the stand becomes established. If using herbicides, be sure to follow all label directions.

Once the permanent vegetation is established, control noxious weeds or invading woody vegetation by spot mowing, spraying with herbicides, grazing, burning, or other methods appropriate for the site. To maximize wildlife benefits, mow before May 15 or after August 1 to protect nesting birds and provide cover.

Please note: If you are receiving financial assistance for this seeding, certain methods and timing of maintenance may not be allowed. Refer to your contract agreement for specific guidance.

Conservation Reserve Program Requirements

CRP rules allow the cover to be managed throughout the year to control weeds or woody vegetation UNTIL the cover is determined to be established (typically within the first 3 years of the contract).

Once the cover is established, no disturbance is allowed during the primary nesting season recorded in the CRP contract (May 15 through August 1). Spot clipping or spot spraying may be done during the primary nesting season with prior approval from the local Farm Service Agency (FSA) County Committee.

Any haying or grazing of CRP must be approved by the Farm Service Agency in advance

Example Pure Live Seed (PLS) Rate Calculations:

- Step 1 – Determine the seeding rate of each of specie. For example: 80 PLS pounds per acre of Spring Barley is planned.
- Step 2 – Multiply the percent purity by the percent germination of each specie based on seed tag information. For example: 98% purity x 60% germination equates to 0.588% PLS.
- Step 3 – Divide the planned seeding rate by the percent PLS to find the bulk seed needed per acre. For example: 80 lbs. of Spring Barley per acre / 0.588% PLS = 136 lbs/acre.

The adjusted pure live seeding rate of 136 pounds of Spring Barley per acre is required to meet the seeding criteria for his example.

NRCS
U.S. Department of Agriculture
Natural Resources Conservation Service

How to Establish and Maintain Introduced Grasses and Legumes

Wisconsin Job Sheet 134

Natural Resources Conservation Service (NRCS) Wisconsin

Landowner: _____ **Tract:** _____

If you are receiving financial assistance for completing this planting, refer to your agreement for any additional requirements or restrictions.

PURPOSE

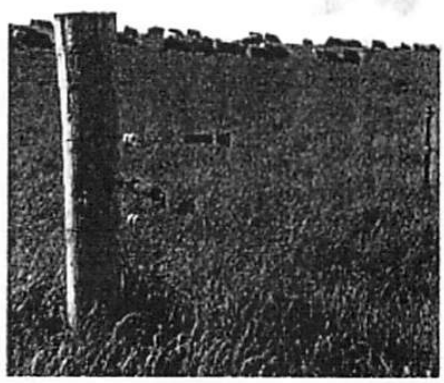
This job sheet describes methods to establish and maintain introduced grasses and legumes and applies to the following practice:

- ☐ Conservation Cover (327)
- ☐ Critical Area Planting (342)
- ☐ Forage and Biomass Planting (512)

Introduced grasses and legumes can be used to accomplish one or more of the following:

- Stabilize areas with existing or expected high rates of soil erosion.
- Enhance pollinator and wildlife habitat.
- Improve forage production and livestock health.
- Improve soil, water, and air quality.

For additional recommendations, refer to Wisconsin NRCS Agronomy Technical Note 6, Establishing and Maintaining Introduced Grasses and Legumes, located at http://www.wi.nrcs.usda.gov/technical/technotes.html.



SPECIES SELECTION AND SEED QUALITY

1. Species and cultivars must be selected based upon the adaptation to site conditions, including appropriate moisture regime or forage suitability group, climatic conditions, soil conditions, and landscape position.
2. Select species based on growth characteristics, fertility requirements, disease resistance, compatibility with other species, and the intended use of the seeding.
3. Mixtures must meet all requirements of the Wisconsin weed laws. Species identified as restricted or prohibited by law shall not be planted.
4. Seed must be of high quality and meet the requirements of the Wisconsin seed laws for certification. If you plan to use untested seed, prior approval must be granted from NRCS before planting. If certified seed is not available, non-certified seed may be used as long as the seed is tested for purity and germination by a testing laboratory following Association of Official Seed Analysts (AOSA) procedures.
5. If one or more of the species in the mix consists of more than 20 percent hard seed, the seeding rate for the species must be increased by the percent of hard seed.
6. Legume seeds must be inoculated prior to planting.

SEEDING PERIODS AND RATES

1. Seeding rates and species are provided on the attached seeding plan. Rates are based upon Pure Live Seed (PLS). In order to determine PLS, the seed must be tested for purity and germination. If you are receiving financial

assistance for this practice, any changes to the species or rates listed in the seeding plan must be approved before seed is purchased.

2. Permanent, perennial vegetative cover will be established within the recommended seeding dates as shown on the attached seeding plan. When it is not possible to seed during the recommended seeding dates, a temporary cover will be required to reduce erosion until the seeding can be completed.

3. Frost Seeding. The frost seeding period in Wisconsin typically ranges from February to mid-March but may vary from year to year depending on the weather. Frost seeding is allowed only during the active freezing and thawing cycle and can be completed on fields where good seed-to-soil contact can be obtained. Do not frost seed on fields with solid ice or snow cover greater than 2 inches. Seeding rates must be increased by 15 percent. Refer to your seeding plan to determine if frost seeding is allowed for your situation.

4. Dormant Seeding. Dormant seeding occurs late in the fall when the soil temperature is cool enough to prevent germination until the following spring. This type of seeding provides greater risk of failure due to variability in weather and often has reduced yields. Seeding rates must be increased by 15 percent when seeding during this time period. Refer to your seeding plan to determine if dormant seeding is allowed for your situation.

FERTILIZER AND LIME REQUIREMENTS

Forage and Biomass Planting (512)

If you are planting hayland or pasture, soil tests no older than 4 years must be taken according to UW Extension Publication A2100, Sampling Soils for Testing. You will need at least one sample for every 5 acres or less, and the samples must be analyzed at a Wisconsin certified soil testing laboratory. Any recommendations for fertilizer or lime will be applied based on UW Extension Publication A2809, Nutrient Application Guidelines for Field, Vegetable and Fruit Crops.

Conservation Cover (327) or Critical Area Planting (342)

When following either of these standards, you can choose to take a soil test using the procedure listed above or follow a general recommendation. If you choose not to obtain a soil test, a general recommendation of 150 pounds per acre of a 20-10-10 fertilizer and a minimum of 2 tons per acre of 80-89 lime may be used. Under certain conditions, fertilizer and/or lime requirements may be waived.

SEEDING METHODS

Conventional Seeding

Conventional seeding includes preparing a firm seedbed by using tillage and packing equipment. The seed is broadcasted on the soil surface and incorporated by secondary tillage or packing equipment.

When using a drill, seed should be sorted according to size and shape and placed in the appropriate seed boxes to ensure uniform distribution across the field.

Seed can also be broadcast by using air seeders, fertilizer spreaders, or other types of rotary or drop seeder implements. When a small amount of seed is being applied over a large area, a carrier should be mixed with the seed. Carriers such as pelletized lime, fertilizer, cracked corn, saw dust, vermiculite, etc., maybe used.

The seedbed should contain enough fine soil particles to provide uniform shallow coverage of the seed as well as contact with moisture and nutrients. It is important to have a firm seedbed. As a minimum, cultipack or roll before and after seeding. When walking on a properly prepared seedbed, the depth of your footprints should not exceed ¼ inch. Do not use heavy, no-till type drills to seed on conventionally prepared seedbeds. Heavy drills tend to sink into the soil and seeding depth will be difficult to control. Do not plant seed deeper than ½ inch.

No-Till Seeding

No-till planting is the planting of grasses and/or legumes in the absence of tillage. No-till can be used to establish new seedings on land previously in row crops or existing sod. As with conventional seeding, seed placement should be no deeper than ½ inch. A drill equipped for no-till planting must be used to obtain proper seeding depth unless the ground is soft enough to allow consistent penetration of disk openers of a conventional drill.

Herbicides are often necessary when using no-till methods of establishment. When using herbicides, be sure to read and follow all label directions.

No-Till Planting Into Crop Residue

Residue should be uniformly distributed over the field from the previous year's harvest. It is often preferred to plant new seedings into soybean stubble when using a no-till drill. No-tilling into large amounts of non-fragile residue such as corn stalks and small grain residue may reduce germination and seedling vigor. For spring weed control, use a nonselective herbicide to kill weeds prior to planting. Be careful not to select a herbicide that will have carryover or residual effects on your new seeding.

No-Till Planting Into Existing Sod

No-till planting can be used to completely renovate existing sod. In order to prepare a good seedbed for no-tilling into existing sod, plant litter and existing growth must be removed or altered prior to applying nonselective herbicides. Options to remove or reduce existing cover include mowing, burning, haying, or grazing.

- Mowing: Mow the site using a rotary mower or flail chopper to a height of 3 inches. Mowing equipment should uniformly distribute the mowed plant material over the field surface.
- Burning: Conduct a prescribed burn according to the requirements outlined in the burn plan. The burn plan must address safety concerns and document the appropriate timing for the burn.
- Haying: Mechanically harvest vegetation from the site the year before the planned seeding. The timing of the hay harvest should be planned to minimize the amount of re-growth that will occur prior to herbicide application.
- Grazing: Timing and duration of grazing must be intensive enough to significantly reduce the existing vegetative cover. If possible, begin the grazing at a time of the year when the standing vegetation is green and growing to increase the palatability and feed value of the forage which will result in a more uniform removal of the vegetation.

After the existing plant litter is altered or removed, allow plants to actively re-grow before applying a nonselective herbicide. Be aware of herbicides that may have carryover or residual effects. Timing of herbicide applications usually occurs in the spring before plants flower or early fall to actively-growing plants. Herbicide applications in the fall often have greater efficacy, but air temperature should be above 50° F to improve plant uptake.

Interseeding

Interseeding includes any stand modification that maintains some vegetative component of the original stand. Interseeding is a good way to improve existing stands that lack plant diversity or have low yielding forage species. Existing plant growth and litter will need to be reduced, and the same options used for no-tilling into existing sod can be used. In addition, limited tillage can be used to suppress the existing cover.

- Limited Tillage: Limited tillage may also be used to suppress the existing stand. Fields can be tilled to a depth of 3 to 5 inches and should expose at least 50 percent of the soil surface. Careful consideration should be used when using limited tillage due to potential erosion concerns or the potential to encourage additional weed growth due to soil disturbance.

After reducing plant growth, herbicides can be used to suppress, not eliminate, vegetation prior to interseeding. One must consider the current types of plants in the field (grasses vs. broadleaves) and which species you want to suppress. In addition, current field conditions and timing of application must be considered before selecting a herbicide.

A drill equipped for no-till planting must be used to obtain proper seeding depth unless limited tillage is used to prepare the seedbed. In this case, seed may be broadcast or drilled. Use a cultipacker or roll the seedbed before and after seeding when tillage is used.

TEMPORARY COVER AND COMPANION CROPS

Temporary Cover

Temporary cover is required when seed or planting stock is not available, the normal planting period has passed, or where herbicide carryover is likely. A temporary cover will typically not be necessary on those areas where at least 50 percent of the ground is covered with either crop residue or vegetative cover.

Temporary cover crops must be clipped or terminated prior to seedhead emergence or before planting permanent cover.

Temporary Cover			
Species	Rate (lbs. or bu. / acre)		Seeding Dates
	No Herbicide Carryover	Triazine Herbicide Carryover Likely	
Forage Sorghum	½ bu.		5/15 - 7/15
Sorghum-Sudangrass Hybrid	1 bu.		
Sudangrass	1 bu.		
Winter Wheat	120 (2 bu.)	Not recommended	8/1 - 10/15
Winter Cereal Rye	112 (2 bu.)	Not recommended	
Oats	64 (2 bu.)	Not recommended	4/1 - 9/1
Annual Ryegrass	20 lbs.	Not recommended	4/1 - 9/1

Companion Crops

Companion crops can be used to reduce the amount of erosion on critical sites, suppress weeds, and provide added protection for permanent perennial vegetation seeded during the first year of planting. If the seeding is not used for hayland purposes, the companion crop must be mowed before seedhead emergence. Second and subsequent mowings may be necessary when re-growth provides competition to new plantings. Mowing should only remove the growth above the developing seedlings. Companion crops seeded late summer in most cases will not require clippings prior to the first killing frost unless the growing season is prolonged. Refer to your seeding plan to determine if companion crops are recommended for your situation.

OPERATION AND MAINTENANCE

Weed control during establishment is critical to ensure survival of the new stand. Mowing, herbicide application, or grazing may be used alone or in combination to control weeds before they go to seed. Graze or mow the existing stand at a height of 4 to 6 inches before weeds go to seed. If grazing the stand, be cautious of selective grazing where animals do not uniformly graze the stand. Be careful not to mow or graze when the soil is wet to avoid damage to seedlings. If residue will be left on the field, do not allow the vegetation to grow too high prior to mowing; otherwise, excessive residue may accumulate and smother seedlings. Additional treatment may be needed every 3 to 4 weeks throughout the growing season until the stand becomes established. If using herbicides, be sure to follow all label directions

Once the permanent vegetation is established, control noxious weeds or invading woody vegetation by spot mowing, spraying with herbicides, grazing, burning, or other methods appropriate for the site. To maximize wildlife benefits, mow before May 15 or after August 1 to protect nesting birds and provide cover.

Please note: If you are receiving financial assistance for this seeding, certain methods and timing of maintenance may not be allowed. Refer to your contract agreement for specific guidance.

CONSERVATION RESERVE PROGRAM (CRP) REQUIREMENTS

CRP rules allow the cover to be managed throughout the year to control weeds or woody vegetation UNTIL the cover is determined to be established (typically within the first 3 years of the contract).

Once the cover is established, no disturbance is allowed during the primary nesting season recorded in the CRP contract (May 15 through August 1). Spot clipping or spot spraying may be done during the primary nesting season with prior approval from the local Farm Service Agency (FSA) County Committee.

Any haying or grazing of CRP must be approved by the Farm Service Agency in advance.

The USDA is an equal opportunity provider and employer.

MULCHING
(Acre)
Code 484

Natural Resources Conservation Service
Conservation Practice Standard

I. Definition

Applying plant residues, or other suitable materials produced off site to the land surface.

II. Purpose

This practice may be applied as part of a conservation management system to support one or more of the following purposes:

- conserve soil moisture,
- moderate soil temperature,
- provide erosion control,
- suppress weed growth,
- facilitate the establishment of vegetative cover,
- improve soil condition, and
- reduce airborne particulates
- Reduce energy use associated with irrigation.

III. Conditions Where Practice Applies

This practice applies to all lands where mulches are needed. This practice may be used alone or in combination with other practices.

IV. Federal, Tribal, State, and Local Laws

Users of this standard shall comply with applicable federal, tribal, state and local laws, rules, regulations or permit requirements governing mulching. This standard does not contain the text of federal, tribal, state, or local laws.

V. Criteria

A. General Criteria Applicable to All Purposes

The type of mulching material selected should be based on cost, time of year, soils, percent slope, anticipated runoff velocities, and landscape position.

If the area to be mulched is to be seeded, see Wisconsin NRCS Field Office Technical Guide (FOTG) Section IV, Standard 342, Critical Area Planting, for seedbed preparation, lime, fertilizer, and seeding requirements.

Mulch shall consist of either natural and/or artificial materials such as plant residue (including cereal grain straw, grass hay, wood chips, bark and wood fiber), byproducts, gravel, plastic, fabric, or other equivalent materials of sufficient dimension (depth or thickness) and durability to achieve the intended effect for the required time period.

1. Criteria for Site Preparation

   Soil surface shall be prepared prior to the application of the mulch material in order to achieve desired purpose and to ensure optimum contact between soil and mulch. All areas to be mulched shall be reasonably smooth and free of rills, gullies, and debris.

   Concentrated flow sources above the site where mulch is applied shall be diverted, or mulch designed to withstand anticipated runoff velocities shall be used.

2. Criteria for Materials

   Mulch material shall be relatively free of disease, pesticides, chemicals, noxious weed seeds, and other pests and pathogens.

3. Criteria for Application

   Criteria for mulch application applies to both seeded and unseeded areas.

   Mulch shall be applied immediately after seeding or after final grading for unseeded areas.

   The mulch material shall be evenly applied.

   Manufactured mulches should be applied according to the manufacturer's specifications.

Crimping (disking), wood cellulose fiber, tackifiers, netting, pinning, or other acceptable methods of anchoring will be used if needed to hold the mulch in place. Criteria are described in V.B. Mulch Anchoring Methods

4. Mulch Application Rate

Straw and hay mulch shall be applied at the rate of 1½ to 2 tons per acre. This application results in a layer of 6 to 7 stems, 1 to 2 inches thick and shall provide a minimum 70% ground cover. Some soil surface can be seen after the application.

Wood chips or wood bark shall be applied at the rate of 6 to 9 tons per acre to achieve a minimum of 80 percent ground cover.

Wood cellulose fiber mulch, applied with a hydroseeder, shall be applied at the rate of 1,500 to 2,000 pounds per acre. Apply a tackifier when the slope exceeds 3 to 1.

Long-fibered wood cellulose shall be applied at the rate of ¾ to 1¼ tons per acre.

Corncobs shall be applied at the rate of 5 tons per acre.

Gravel shall be applied approximately 2 inches deep and shall consist of pieces ¼ to 2 inches in diameter and shall achieve a minimum of 90 percent ground cover.

5. Fiber Blankets and Mats

Erosion control products manufactured from wood fiber, straw, or paper are intended for use in high water velocity conditions. Design and install according to the manufacturer's instructions.

B. Criteria for Mulch Anchoring Methods

1. Mulch Anchoring Tool or Disk (Serrated Blades)

Apply mulch and pull a mulch anchoring tool over soil surface immediately following the mulch application. Use equipment with serrated straight disks spaced 6 to 10 inches or other suitable equipment approved by the Natural Resources Conservation Service (NRCS). Operate as close to the contour as possible. Mulch material should be imbedded into the soil surface 2 to 3 inches. Use on areas where concentrated flow velocity is less than 4 feet per second.

2. Wood Cellulose Fiber

Apply wood cellulose fiber with a hydromulcher immediately after spreading mulch. Reduce straw or hay mulch applications to 3,000 pounds per acre and apply 750 pounds of wood fiber per acre over the surface of the straw or hay in combination with a nontoxic, biodegradable tackifier. Use on areas without concentrated flow.

3. Tackifier or Binder Material

Apply tackifier or binder material with suitable equipment by spraying product directly into the mulch as it is applied. Rate of application shall be according to manufacturer's recommendations. Material shall be nontoxic to plant life. Use only on areas without concentrated flow.

Follow the manufacturer's recommendations on mixing and temperature control. The mulch materials and tackifier shall be blown from a machine and uniformly deposited over the area in one operation.

The machine used for placement of mulch shall blow or eject by constant air stream a controlled amount of straw or hay. It shall also introduce into the air stream a spray of asphalt or similar product.

Mulch materials shall not contain moisture in excess of that which will permit uniform feeding through the machine.

4. Polypropylene Plastic or Jute Netting

Use netting on areas without concentrated flow or where concentrated flow velocity is less than 4 feet per second. Prior to recommending the use of netting, evaluate the potential for reptiles or other wildlife to become entrapped by the net. If a risk is identified, select a 100% degradable net (WI DOT Class I Type A, Class II Type C), or an alternative mulch anchoring method.

Apply netting over the mulch application and staple according to manufacturer's recommendations.

On slopes, mats and nets may be run either up and down or cross slope. In areas of concentrated flow, mats and nets shall be laid parallel to the direction of flow and spread evenly without stretching to allow maximum contact with the soil. Adjacent edges should be overlapped a minimum of 3 inches with the adjoining mats or nets. Staples of 11 gauge or heavier will be used to hold the mats and nets in place. Staples shall be U-shaped with a 1-inch crown. Staple length shall be determined based on soil condition

Soil Condition	Staple Length
Highly compacted soils	6 inches
Friable soils	8 inches
Loose or sandy soils	10 inches

Lay downstream blankets first, working upstream. The netting side of the blanket shall be on the top side after installation. Mat and net edges and middles will be stapled according to manufacturer's recommendations.

5. Peg and Twine

   After mulching, divide the area into blocks approximately one square yard in size. Drive 4 to 6 pegs per block to within 2 to 3 inches of the soil surface. Anchor mulch by stretching twine between pegs in a crisscross pattern on each block. Secure twine around each peg with two or more turns. Drive pegs flush with soil surface to allow mowing. Use on areas without concentrated flow.

6. Pinning

   Cut mulch into soil surface with square edge spade or a dull disk. Make cuts in contour rows. Use on small areas without concentrated flow.

7. Soil

   Small areas of mulch can be lightly covered with soil. The soil shall be free of stones and debris, and distributed over the mulch in a thin uniform layer. Use on small areas without concentrated flow.

8. Trenching or Weights

   Bury edge of plastic in a trench 6 inches deep. Compact the soil over plastic in the trench. Use stones to hold plastic down in other places as needed. Use on small areas without concentrated flow.

C. Additional Criteria to Conserve Soil Moisture and/or Reduce Energy Use Associated with Irrigation

Mulch material applied to the soil surface shall cover at least 60 percent of the soil surface to reduce potential evaporation.

D. Additional Criteria Applicable to Moderate/Modify Soil Temperature

Nonporous, clear, infrared transmissible, and dark-colored material shall be used to raise soil and ambient air temperature below the mulch. Light-colored material will be used to cool soil and ambient soil temperature below the mulch. The mulch shall be applied to the desired soil and air temperature below the mulch can be achieved.

The material should be sufficient thickness to persist for the period of time required for the temperature modification.

The percent coverage shall be 100 percent over the area treated.

E. Additional Criteria Applicable to Control Weed Growth

Mulches applied around growing plants or prior to seedling development shall provide 100 percent ground cover. Thickness of the mulch shall be adequate to prevent emergence of targeted weeds. Use colored or infrared transmissible (IRT) plastic when plastic mulch is used.

F. Additional Criteria to Suppress Weed Growth

The thickness of mulch will be determined by the size and growth characteristics of the plant being mulched. Mulches shall be kept clear of the stems of plants where disease is likely to occur. Mulches applied around growing plants or prior to weed seedling development shall have 100 percent ground cover. Thickness of the mulch shall be adequate to prevent emergence of targeted weeds. Plastic mulches may be used.

G. Additional Criteria to Establish Vegetative Cover

Mulch shall be applied at a rate that achieves a minimum of 70 percent ground cover to provide protection from erosion and runoff and yet allow adequate light and air penetration to the seedbed to ensure proper germination and emergence.

H. Additional Criteria to Improve Soil Condition

Apply mulch materials with a carbon to nitrogen ratio (C:N) less than 30:1 so that soil nitrogen is not immobilized by soil biota. Do not apply mulch with C:N less than 20:1 to an area of designed flow in watercourses.

Use the Soil Conditioning Index to assess soil quality impacts and to determine the type and rate of the mulching material.

VI. Considerations

Additional recommendations relating to design that may enhance the use of, or avoid problems with, this practice but are not required to ensure its basic conservation functions are as follows.

A. Consider mulching disturbed areas that will not have additional construction activity for 60 days, or completed sites that will not be permanently seeded for periods of 60 days or longer.

B. Consider application of mulch immediately after a precipitation event or watering to conserve soil moisture. Ensure soil under shallow rooted crops is moist, as these crops require a constant supply of moisture.

C. Consider anchoring straw or hay mulch or keep mulch moist to prevent blowing in wind-prone areas.

D. Consider the impact of mulch materials with a high water holding capacity and/or high impermeability to water droplets which may reduce the water availability to plants.

E. Consider the potential impact of fine-textured mulches (e.g., rice hulls) which allow less oxygen penetration than coarser materials. Fine-textured mulches should be applied in a layer no thicker than 2 inches.

F. Consider the potential of organic materials with C:N ratios of less than 20:1 to release excess nitrate to adjoining surface waters.

G. Consider the potential for mulch to provide habitat for beneficial insects and provide pest suppression.

H. Consider the mulch color impact on plant growth. Clear mulches allow profuse weed growth and may negate the benefits of soil warming. Black mulches provide effective weed control. Wavelength selective (IRT) plastic provides the soil warming characteristics of clear mulch with the weed control ability of black mulch.

I. Consider the potential for runoff from low permeability mulches (e.g., plastic) which may increase concentrated flow and erosion on un-mulched areas.

J. Consider potential toxic allelopathic effects that mulch material may have on other organisms. Animal and plant pest species contained in the mulch may be incompatible with the intended use.

K. Consider the potential for increased pathogenic activity within the applied mulch material.

L. Consider the potential for mulch to cause disease and pest problems. Keep mulch 3 to 6 inches away from plant stems and crowns where an identified risk is present. Additional weed control may be needed around the plant base area.

M. Consider the potential for deep mulch to provide nesting habitat for ground-burrowing rodents that can chew extensively on tree trunks and/or tree roots. Use of a light mulch applied after the first cold weather may prevent rodents from nesting.

N. Consider the potential impacts of mulch material on aquatic environments due to changes in water chemistry or as waterborne debris.

O. Consider the use of biodegradable staples in locations where wire staples are determined to be a risk.

VII. Plans and Specifications

Specifications shall be prepared for each site and purpose and recorded using approved specification sheets, job sheets, technical notes, narrative statements in the conservation plan, or other acceptable documentation.

Documentation shall include the following.

- purpose of the mulch;
- type of mulch material used;
- percent cover and/or thickness of mulch material;
- rate of mulch application (tons/acre, lbs/square foot),
- timing of application;
- site preparation;
- listing of netting, tackifiers, or method of anchoring; and
- operation and maintenance.

VIII. Operation and Maintenance

Mulched areas will be periodically inspected, and mulch shall be reinstalled or repaired as needed to accomplish the intended purpose.

Evaluate the effectiveness of the mulch (application, amount of cover provided, durability, etc.) and adjust the management or type of mulch to better meet the intended purpose(s).

Removal or incorporation of mulch materials as necessary after use shall be consistent with the intended purpose and site conditions

Operation of equipment near and on the site shall not compromise the intended purpose of the mulch.

Prevent or repair any fire damage to the mulch material.

Properly collect and dispose of artificial mulch material after intended use.

Monitor and control undesirable weeds in mulched areas.

IX. References

USDA, NRCS Wisconsin Field Office Technical Guide (FOTG), Section I, Erosion Prediction, Revised Universal Soil Loss Equation (RUSLE2).

Toy, T.J., and G.R. Foster. (Ed.) 1998. Guidelines for the use of the Revised Universal Soil Loss Equation (RUSLE) Version 1.06 on mined lands, construction sites, and reclaimed lands. USDI, OSMR.

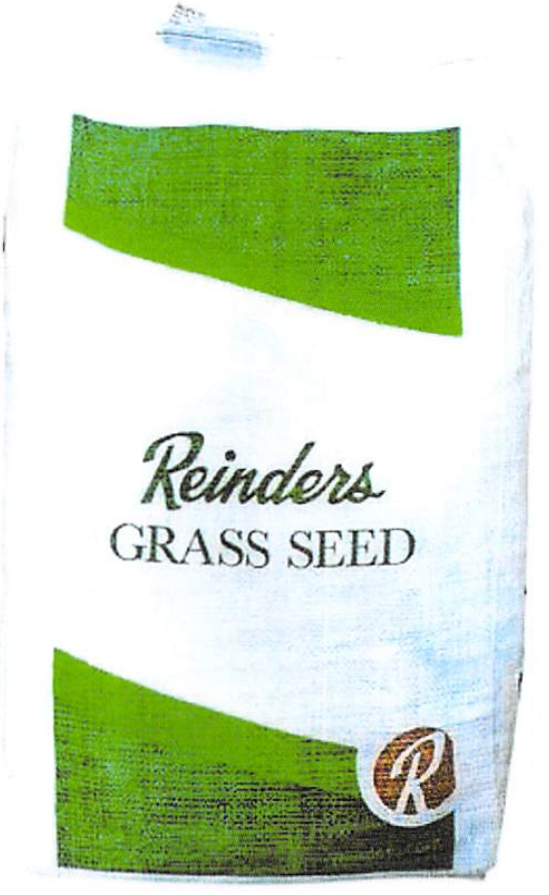
USDA, NRCS. 2002. National Agronomy Manual. 190-V. Washington, D.C.

ASTM Designation: D 977, Standard Specification for Emulsified Asphalt.

Wisconsin Department of Transportation, Erosion Control Product Acceptability Lists (PAL): Erosion Mats, Class I Type A, Class II Type C, Tackifiers. http://www.dot.wisconsin.gov/business/engrserv/docs/pal.pdf

Home > Turf/Landscaping > Reinders Grass Seed > Highway Mixes

Reinders - Wisconsin DOT No. 20 Seed Mix - 50 LB Bag

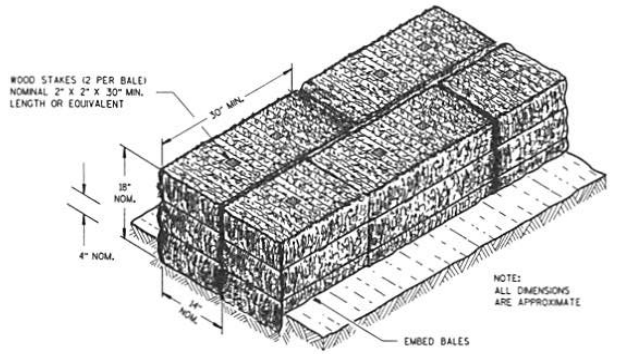


SKU: 3207-1400

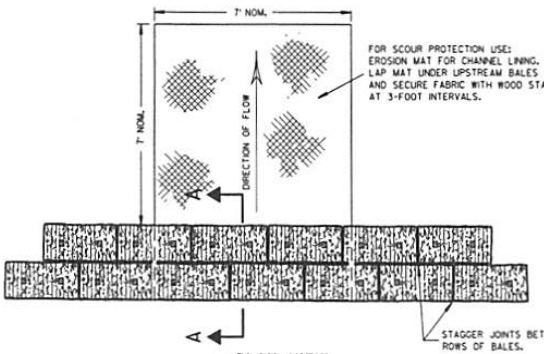
Availability: In Stock

Your Price:

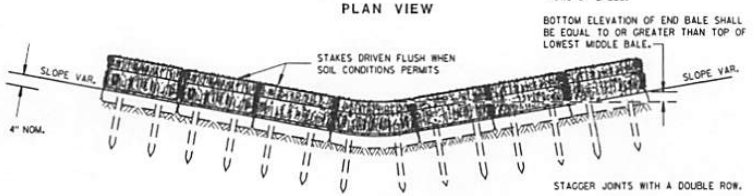
$263.00 /bag − 1 +



SECTION A-A



PLAN VIEW



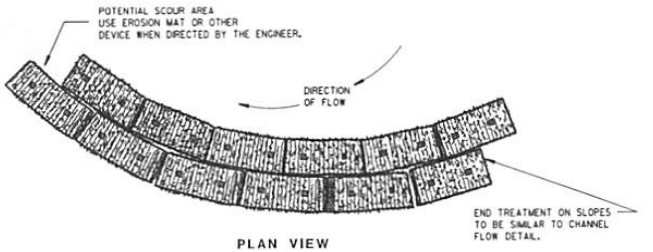
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

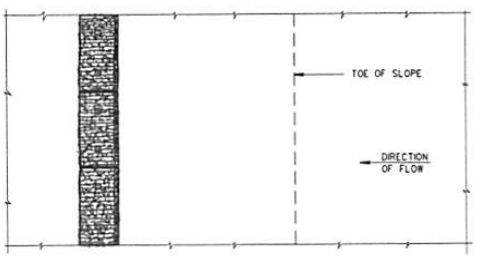
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

① TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

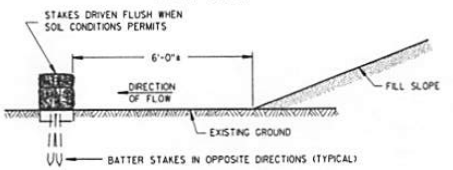


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

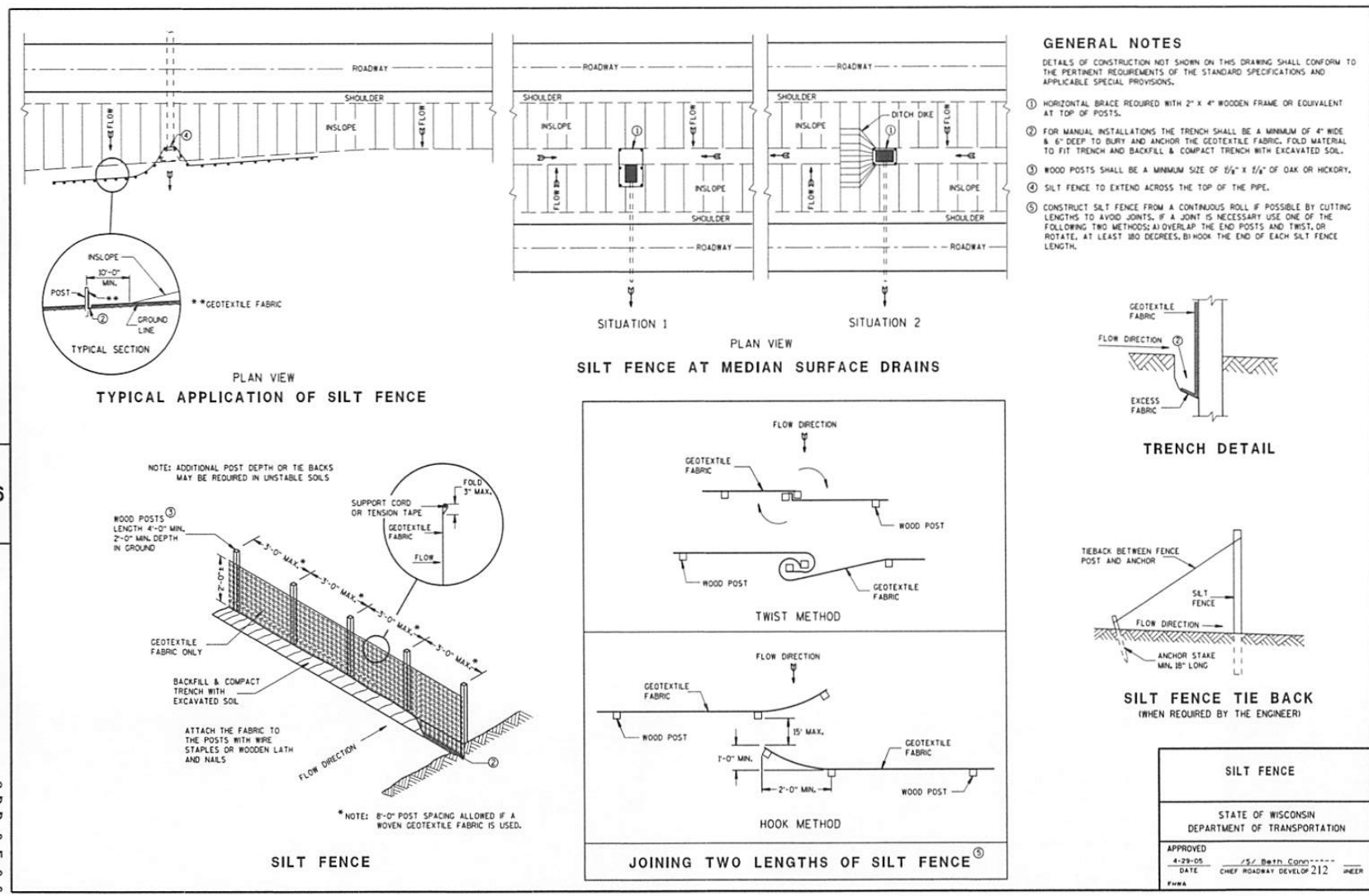
APPROVED
6/04/02 DATE
/S/ Beth Conaway CHIEF ROADWAY DEVELOP 211 ENGR
FHWA

6

S.D.D. 8 E 8-3

6

S.D.D. 8 E 8-3


ROADWAY
SHOULDER
INSLOPE
FLOW
INSLOPE
30'-0" MIN.
POST
GROUND LINE
TYPICAL SECTION
* GEOTEXTILE FABRIC
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE
DITCH DIKE
SITUATION 1
SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS
GENERAL NOTES
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/4" X 1 1/4" OF OAK OR HICKORY.
④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS: A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES. B) HOOK THE END OF EACH SILT FENCE LENGTH.
GEOTEXTILE FABRIC
FLOW DIRECTION
EXCESS FABRIC
TRENCH DETAIL
NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS
WOOD POSTS ③ LENGTH 4'-0" MIN. 2'-0" MIN. DEPTH IN GROUND
SUPPORT CORD OR TENSION TAPE
FOLD 3" MAX.
GEOTEXTILE FABRIC
FLOW
3'-0" MAX.*
2'-0"
GEOTEXTILE FABRIC ONLY
BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL
ATTACH THE FABRIC TO THE POSTS WITH WIRE STAPLES OR WOODEN LATH AND NAILS
FLOW DIRECTION
*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.
SILT FENCE
FLOW DIRECTION
GEOTEXTILE FABRIC
WOOD POST
TWIST METHOD
HOOK METHOD
15" MAX.
1'-0" MIN.
2'-0" MIN.
JOINING TWO LENGTHS OF SILT FENCE ⑤
TIEBACK BETWEEN FENCE POST AND ANCHOR
SILT FENCE
ANCHOR STAKE MIN. 18" LONG
SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)
SILT FENCE
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
APPROVED
4-29-05
DATE
/S/ Beth Cannon
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA
6
S.D.D. 8 E 9-6

Erosion control blanket installation instructions

SLOPES

Product	Staple Diagram		Staples		Seam Overlap		Installation	
Soils	Cohesive	Non-Cohesive	Cohesive	Non-Cohesive	Cohesive	Non-Cohesive	Cohesive	Non-Cohesive
Curlex I	A	A	D	E	--	F	H	I
Curlex II	A	A	D	E	--	F	H	I
QuickGrass	A	A	D	E	--	F	H	I

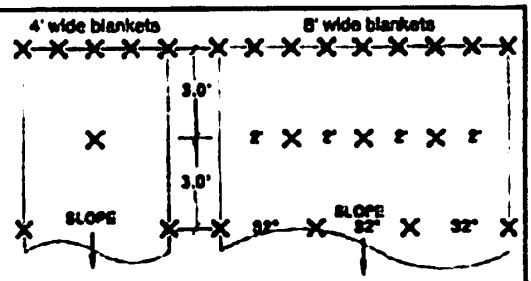
CHANNELS

Product	Staple Diagram		Staples		Seam Overlap (Multi-flow directions)	
Soils	Cohesive	Non-Cohesive	Cohesive	Non-Cohesive	Cohesive	Non-Cohesive
Curlex I	B	B	D	E	G	G
Curlex II	B	B	D	E	G	G
QuickGrass	B	B	D	E	G	G
Curlex III	C	C	D	E	G	G

COHESIVE SOILS:
- No overlap required on side seams
- Use 6" staple length

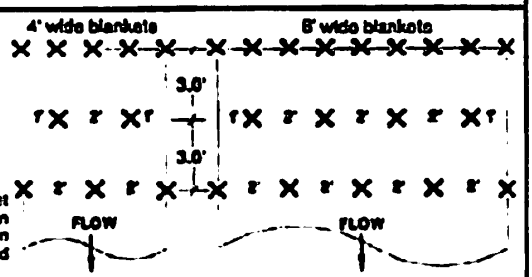
NON-COHESIVE SOILS
- Use 2" side seam overlap
- Use 8" staple length
- Use 6" anchor trench at top of slope

A
SLOPES
Up to 1.5H:1V
- Install the blanket vertically or horizontally
- Use 12" staple spacing on starter row.



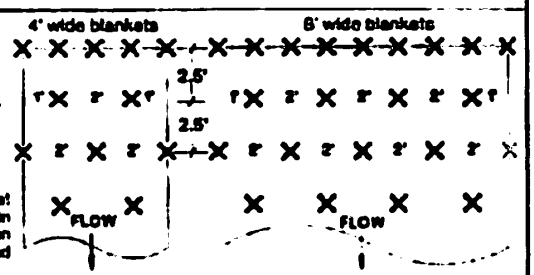
COHESIVE SOILS:
- Use 2" side seam overlap
- Use 6" staple length
- Option: Some installations may not require overlapping on side seams

B
CHANNELS
- Use 12" staple spacing on starter row
- Upstream blanket should overlap downstream blanket a distance of 12" in a "shingle" fashion and bury the finished toe at least 6"



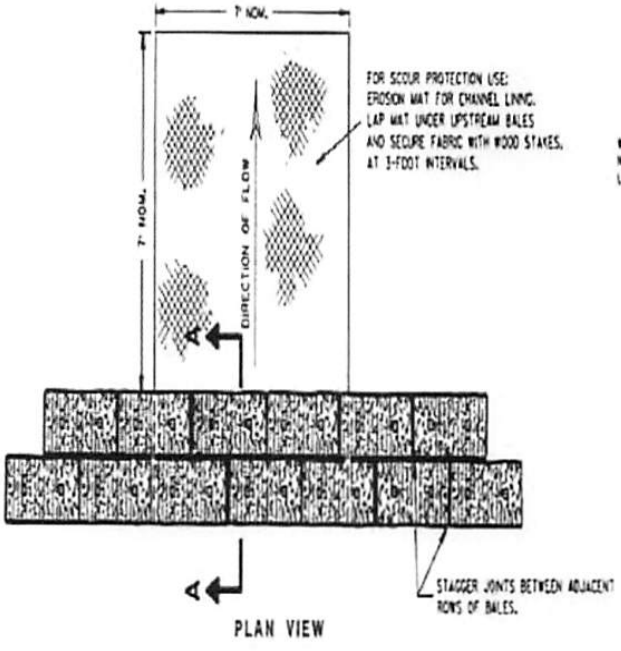
NON-COHESIVE SOILS
- Use 2" side seam overlap
- Use 8" staple length
- Use 6" transverse anchor trench at 50-ft intervals

C
CHANNELS
- Use 12" staple spacing on starter row
- Upstream blanket should overlap downstream blanket a distance of 12" in a "shingle" fashion and bury the finished toe at least 6"

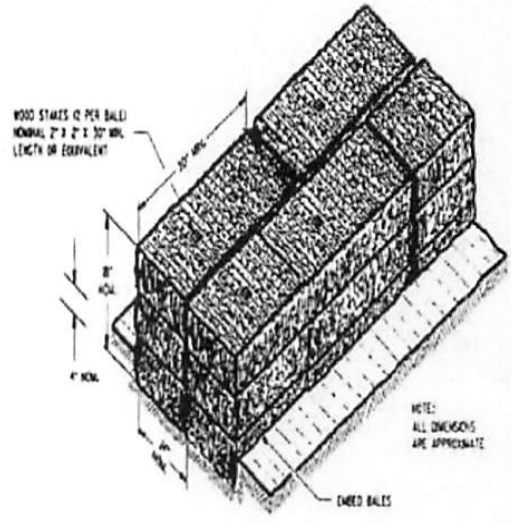


D = 5x1x5 11 ga wire E = 8x2x8 11 ga wire F = 2" G = 6" H = Start 3 over grade break I = Start 3 over grade break & trench

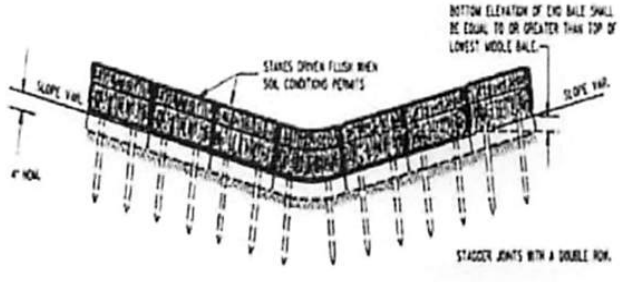
Figure 1



PLAN VIEW



SECTION A-A

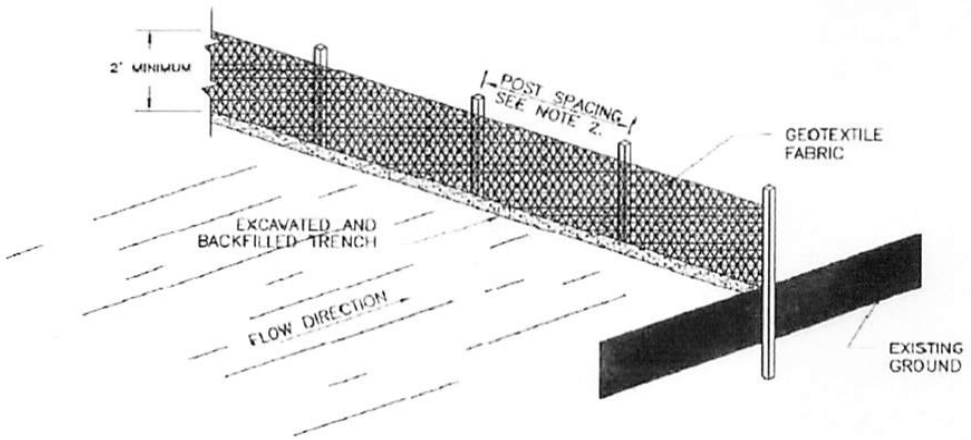


FRONT ELEVATION

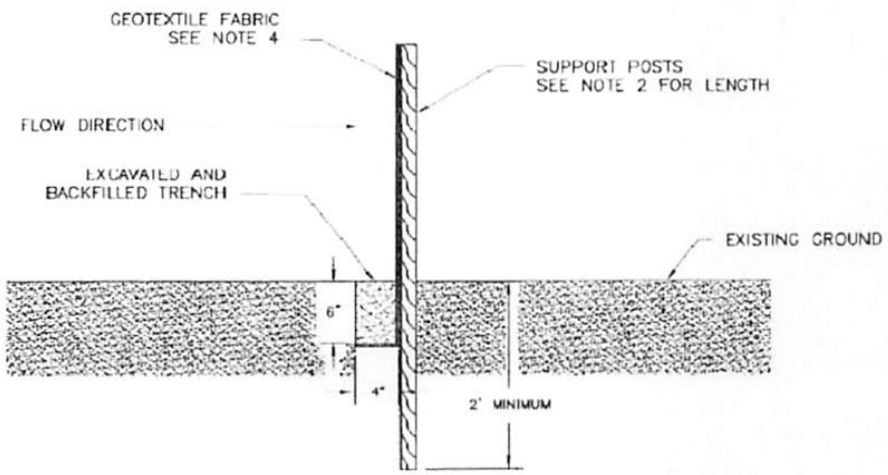
TEMPORARY DITCH CHECK USING EROSION BALES ①

This drawing based on Wisconsin Department of Transportation Standard Detail Drawing # E 8-1.

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS



ISOMETRIC VIEW



TYPICAL SECTION

ESTIMATED LENGTH
OF SILT FENCE ____

SEE SHEET___ OF ___
FOR LOCATION

SAWYER COUNTY ZONING AND CONSERVATION	SILT FENCE CLIENT: _____ COUNTY: _____	Date Designed _____ Drawn _____ Checked _____ Approved _____	Drawing Name Date 12/11 Sheet of

NOTES:

1. THE GEOTEXTILE FABRIC SHALL BE PLACED IN THE EXCAVATED TRENCH, BACKFILLED, AND COMPACTED TO THE EXISTING GROUND SURFACE.
2. WOODEN SUPPORT POSTS SHALL BE A MINIMUM DIMENSION OF 1-1/8" x 1-1/8" AIR OR KILN DRIED OF HICKORY OR OAK AND 4 FEET LONG. STEEL POSTS SHALL BE STUDDED "TEE" OR "U" TYPE WITH A MINIMUM WEIGHT OF 1.3 POUNDS PER LINEAL FOOT AND 5 FEET LONG. POST SPACING SHALL BE A MAXIMUM OF 8 FEET FOR WOVEN FABRIC AND 3 FEET FOR NON-WOVEN FABRIC.
3. THE GEOTEXTILE FABRIC SHALL BE ATTACHED DIRECTLY TO THE UPSLOPE SIDE OF WOODEN POSTS WITH 0.5 INCH STAPLES IN AT LEAST 3 PLACES, OR WITH WOODEN LATH AND NAILS. ATTACHMENT TO STEEL POSTS WILL BE BY WIRE FASTENERS OR 50 POUND PLASTIC TIE STRAPS ON THE UPSLOPE SIDE.
4. THE GEOTEXTILE FABRIC SHALL CONSIST OF EITHER WOVEN OR NON-WOVEN POLYESTER, POLYPROPYLENE, STABILIZED NYLON, POLYETHYLENE, OR POLYVINYLIDENE CHLORIDE. NON-WOVEN FABRIC MAY BE NEEDLE PUNCHED, HEAT BONDED, RESIN BONDED, OR COMBINATIONS THEREOF. ALL FABRIC SHALL MEET THE FOLLOWING REQUIREMENTS:

TEST REQUIREMENT	METHOD	VALUE *
MINIMUM GRAB TENSILE STRENGTH IN THE MACHINE DIRECTION	ASTM D 4632	120 LBS.
MINIMUM GRAB TENSILE STRENGTH IN THE CROSS MACHINE DIRECTION	ASTM D 4632	100 LBS.
MAXIMUM APPARENT OPENING SIZE EQUIVALENT STANDARD SIEVE	ASTM D 4751	NO. 30
MINIMUM PERMITTIVITY	ASTM D 4491	0.05 SEC^{-1}
MAXIMUM PERMITTIVITY	ASTM D 4491	0.135 SEC^{-1} OR 10 gpm/sq ft at 50 mm constant head
MINIMUM ULTRAVIOLET STABILITY PERCENTAGE OF STRENGTH RETAINED AFTER 500 HOURS OF EXPOSURE	ASTM D 4355	70%

* ALL NUVERICAL VALUES REPRESENT MINIMUM/MAXIMUM AVERAGE ROLL VALUES. (FOR EXAMPLE, THE AVERAGE OF MINIMUM TEST RESULTS ON ANY ROLL IN A LOT SHOULD MEET OR EXCEED THE MINIMUM SPECIFIED VALUES.)

BILL OF MATERIALS

ITEM	QUANTITY
SUPPORT POSTS	_____
GEOTEXTILE	FT.
FASTENERS	AS REQUIRED

CRITICAL AREA PLANTING
(Acre)
Code 342

Natural Resources Conservation Service
Conservation Practice Standard

I. Definition

Establishing permanent vegetation on sites that have or are expected to have high erosion rates, and on sites that have physical, chemical, or biological conditions that prevent the establishment of vegetation with normal practices.

II. Purposes

This practice may be applied as part of a conservation management system to support one or more of the following purposes:

- Stabilize and restore riparian areas.
- Stabilize stream and channel banks and shorelines.
- Stabilize areas with existing or expected high rates of soil erosion by water or wind.
- Rehabilitate and revegetate degraded sites that cannot be stabilized using normal establishment techniques.

III. Conditions Where Practice Applies

This practice applies to highly disturbed areas such as:

- active or abandoned surface mine sites,
- urban conservation sites,
- road construction areas,
- conservation practice construction sites,
- areas needing stabilization before or after natural disasters such as floods, tornados, and wildfires,
- eroded banks of natural channels, banks of newly constructed channels, and lake shorelines, and
- areas degraded by human activities.

IV. Federal, Tribal, State and Local Laws

Critical area planting practices shall comply with all federal, tribal, state and local laws, rules or regulations. The landowner and/or operator is responsible for securing required permits. This standard does not contain the text of the federal, tribal, state or local laws.

V. Criteria

A. General Criteria Applicable To All Purposes.

1. Site Assessment

   A site investigation shall be conducted to identify any physical, chemical, or biological conditions that could affect the successful establishment of vegetation. The site investigation shall include evaluation of soil characteristics, soil fertility, slope, *aspect*[1], moisture regime, climatic patterns, proximity to natural plant community, and site history.

   Areas to be planted will be cleared of unwanted materials and smoothed or shaped, if needed, to meet planting and landscaping purposes.

   Compacted layers will be ripped and the soil re-firmed prior to seedbed preparation.

   On tilled or disturbed sites, prepare a firm seedbed. The seedbed shall contain enough fine particles for uniform shallow coverage of seed and contact with moisture and nutrients. For details on seedbed preparation, refer to Wisconsin Agronomy Technical Notes 5, Establishing and Maintaining Native Grasses, Legumes, and Forbs; and 6, Establishing and Maintaining Introduced Grasses and Legumes.

2. Specie Selection and Seed Quality

   Species selected for planting shall be suited to current site conditions, intended use, and be resistant to diseases and insects common to the site location.

Selected species will have the capacity to achieve adequate density and vigor to stabilize the site within an appropriate period.

Native herbaceous or woody vegetation selected for planting shall be suitable for the site.

Species identified as restricted or prohibited by law shall not be planted.

Certified Seed shall be used, and seeding rates will be based on *Pure Live Seed* (PLS). Seed tag information such as purity and germination and any computations to adjust seeding rates must be submitted to document actual seeding rates. *Actual adjusted seeding rates* will be based on the equivalent of 100 percent PLS, determined by multiplying the percent purity by total percent germination.

Untested introduced and native grass and forb seed are not approved for planting.

When certified seed is unavailable or difficult to locate, *non-certified* seed can be used, after testing for varietal purity, germination, and other mechanical qualities, such as inert matter and other crop or weed seeds.

If more than 20 percent of legume seed is hard seed, increase the seeding rate for legumes by the percentage of hard seed.

Introduced and native legume seed shall be inoculated immediately prior to planting. Rhizobia inoculant shall be specific to the legume seeded. When more than one legume specie is used, each specie will be inoculated separately.

3. Seeding Periods

The specific date that provides the best chance for success will vary from south to north and from year to year with prevailing moisture and temperature conditions. Late summer seeding is generally riskier than spring seeding. Planting at either end of the allowable range is riskier than the middle of the range. Refer to Figure 1 for planting zones and Tables 1 and 2 for seeding dates.

Seeding outside of the recommended dates must be approved by the Area Resource Conservationist or State Agronomist.

Frost seeding is not an authorized seeding method when using this standard.

Dormant seeding can be used when planting introduced species. When using dormant seedings in concentrated flow areas, the site must be mulched according to the engineering design (if applicable) and Wisconsin NRCS Field Office Technical Guide, Section IV, (WI FOTG) Conservation Practice Standard 484, Mulching.

4. Nutrient and Soil Amendment Requirements

When seeding *introduced species*, soil fertility and pH level will be amended to satisfy the needs of the plant species to be established. Fertilizer and lime recommendations will be determined by a soil test, and all nutrients will be applied following WI FOTG Standard 590, Nutrient Management. If no soil test is available, apply a minimum of 150 pounds of 20-10-10 fertilizer and 2 tons of 80-89 lime or equivalent per acre. Soil amendments may be waived at the discretion of a certified conservation planner. The basis for waiving the use of soil amendments shall be documented in the client's case file.

For establishment of *native species*, use of soil amendments are not required.

5. Seedbed Preparation

Prior to planting into cropland fields, verify that herbicides previously applied to the site will not "carry over" and damage the new seeding.

Site preparation shall be adequate to assure weed suppression and to promote germination and growth of the species planted.

Planting equipment type, use, and timing shall be appropriate for the site conditions, soil characteristics, and type of seeds (size, etc.) selected to assure uniform placement and germination.

Refer to Wisconsin Agronomy Technical Notes 5 and 6 for detailed guidance for specific situations.

6. Mulching, Temporary Cover, and Companion Crop

Mulching, temporary cover, and companion crops are vital practices utilized to support the establishment of a critical area planting. Temporary cover and companion crops suppress weed growth and limit soil erosion during the establishment period. Use depends on the site conditions, method of planting, and seed mixture.

For further details on mulching, temporary cover and companion crop recommendations, refer to Wisconsin Agronomy Technical Notes 5 and 6.

B. Criteria for Seed Mixture Development

Seeding rates are based on seeds per square foot of Pure Live Seeds. Refer to Tables 3 and 4 for common species and seeding rates.

Additional approved species for critical area planting can be found in Wisconsin Agronomy Technical Notes 5 and 6. Species not listed in the technical notes must be approved in advance by the State Agronomist.

a. Introduced Grass and Legume Plantings on Critical Sites

Custom and standard mixtures will comprise of at least 50 percent grass seed, consisting of at least 25 percent sod forming grass seed per square foot.

A minimum of 160 seeds per square foot is required for either a solid stand of grasses or a combination of grasses and legumes. Increase seeding rate by 15 percent when dormant seeding occurs.

Standard mixes listed in Table 5 will meet the minimum seed mixture criteria.

b. Native Herbaceous Plantings on Critical Sites

Native species are generally not recommended for critical area plantings due to their slow establishment and because they are clump grasses, not the preferred sod-forming grasses. Native plantings are not permitted in concentrated flow channels.

1) A minimum of 60 seeds per square foot for solid native grass plantings is required.

2) For native grass and forb/legume mixtures, a minimum of 40 seeds per square foot of grass and a minimum of 20 seeds per square foot for the forb/legume component is required. The minimum of 20 forb/legume seeds per square foot is not required when the solid stand native grass mixture comprise of 60 grass seeds per square foot is utilized.

Canada/Virginia wildrye and sideoats grama shall not exceed a maximum of 20 percent of the required grass seeds per square foot in custom seed mixtures.

C. Additional Criteria to Stabilize Stream Channel Banks and Shorelines

Wisconsin FOTG Standard 580, Streambank and Shoreline Protection, shall be used to stabilize the toe and/or bank hydrologic zones before vegetation establishment.

1. Bank and Channel Slopes

Identify, mark, and protect desirable existing vegetation during practice installation.

On sites with a disturbed soil profile, topsoil will be stockpiled and spread over areas to be planted as needed to meet planting and land shaping needs.

Channel side slopes shall be shaped to a stable slope to facilitate establishment and maintenance of desired vegetation.

Slopes steeper than 2H:1V shall not be stabilized using vegetation alone. A combination of vegetative and structural measures will be used on these slopes to ensure adequate stability.

Grazing shall be permanently excluded on high hazard sites, such as cut banks, areas of seepage or other potentially unstable areas.

2. Species Selection

Plant material used for this purpose shall:

- be adapted to the hydrologic zone into which they will be planted.
- be adapted and proven in the regions in which they will be used.
- when mature, produce plant communities that are compatible with those already existing in the area.
- protect the channel banks but not restrict channel capacity.

D. Additional Criteria to Stabilize Areas of Erosion By Wind and Water

1. The amount of plant biomass and cover needed to reduce wind and water erosion to the planned soil loss objective shall be determined using the current approved wind and/or water erosion prediction technology.

2. Do not use tillage where desirable vegetation is already present or where soil disturbance will increase the potential for erosion or cause sedimentation to environmentally sensitive areas.

3. Use a companion crop as added protection.

E. Additional Criteria to Rehabilitate and Revegetate Degraded Sites That Cannot Be Stabilized Using Normal Establishment Techniques

Slope Stabilization

1. On sites that are too steep for regular seeding equipment to operate, the use of hydroseeding and mechanically blown mulch is recommended. For more information regarding hyrdoseeding, refer to Wisconsin Agronomy Technical Note 6.

2. Grade to a stable slope when shaping and eliminate all overfalls. For slopes steeper than 2H:1V, enhanced stabilization activities such as soil bioengineering may be required. These practice concepts shall follow approved design procedures located in the NRCS Engineering Field Handbook, Chapter 18.

3. The toe of the slope, or the outlet of the concentrated flow channel, shall be stable before attempting seeding on the slope.

4. Concentrated flow may need to be diverted from the critical area during the establishment period.

5. All gullies and deep rills will be filled and leveled during seedbed preparation.

6. A minimum of 4 inches of friable soil material or topsoil shall be added and mixed to exposed rocky, sandy, gravelly, shaley material, or extremely fine textured subsoil.

7. Sod placement shall be limited to areas that can naturally supply needed moisture or sites that can be irrigated during the establishment period.

8. Sod will be placed and anchored using techniques to ensure that it remains in place until established

VI. Considerations

Additional recommendations relating to design that may enhance the use of, or avoid problems with, this practice but are not required to ensure its basic conservation functions are as follows.

A. Minimize activities which disturb wildlife during the primary nesting season May 15 through August 1.

B. Consider seeding at a lower rate and making 2 passes to ensure uniform coverage. Check seed boxes regularly to ensure even distribution

C. Heavy traffic and/or compacted soil areas may need special site preparation prior to seeding.

D. Sprigs, root stocks, crowns, cones, culms, and sod may be considered where appropriate to accelerate the establishment of cover.

E. Woody shrubs or trees may be used only after initial stabilization. Plant in accordance with the purpose of the planting. See WI FOTG Standards 612, Tree/Shrub Planting; and 580, Streambank and Shoreland Protection. Also see NRCS Engineering Field Handbook, Chapter 16, Streambank and Shoreline Protection and Chapter 18, Soil Bioengineering for Upland Slope Protection.

F. Consider using carriers such as vermiculite, sawdust, and soybean meal to increase volume and weight for uniform seed distribution.

G. Consider limited or no use of herbicides one year prior to seeding. If herbicides must be used, ensure there is no potential for carryover and follow label recommendations. Follow WI FOTG Standard 595, Integrated Pest Management, for pesticide use and safety.

H. Consider sodding to establish vegetation on steep slopes. For further details on this special erosion control measure, refer to Wisconsin Agronomy Technical Note 6.

I. Consider establishing a buffer of trees and/or grasses next to intermittent or perennial streams

J. Consider planting native vegetation and/or local *genotypes* when restoring riparian corridors to its pre-settlement conditions.

K. High seed counts per square foot much above the recommended minimums may lead to excessive competition and poor establishment of some species. Seeds per square foot should not exceed 25 percent of the minimum requirement, with the exception of mixtures designed for wet mesic and wet sites.

L. Consider the use of *soil bioengineering* techniques to arrest and prevent slope failures and erosion. For approved design procedures, refer to Chapter 18 of the NRCS Engineering Field Handbook (EFH).

M. Consider alternatives to reduce or eliminate the delivery of sediment and associated pollutants into the riparian zone by implementing upland treatment practices.

VII. Plans and Specifications

Prepare plans and specifications for each field or management unit according to the Criteria and Operation and Maintenance sections of this standard. Specifications shall describe the requirements for applying this practice to meet the intended purpose using the appropriate specification and/or job sheets. The following elements shall be addressed in the plan, as applicable, to meet the intended purpose.

- Site preparation.
- Fertilizer application.
- Methods of seeding/planting.
- Selection of species.
- Analysis of seed quality.
- Seeding rate (adjusted based on pure live seed calculations).
- Target number of plants per square foot after emergence.
- Mulching (if applicable).
- Temporary cover (if applicable).
- Companion crop (if applicable).
- Weed control activities during the establishment period

Specifications shall be recorded using Wisconsin Job Sheets 134, How to Establish and Maintain Introduced Grasses and Legumes; and 135, How to Establish and Maintain Native Grasses, Forbs, and Legumes.

VIII. Operation and Maintenance

A. Noxious weeds and other undesirable species must be controlled at all sites. During the first year, mow plantings at 14 to 21-day intervals or when weeds are 12-14 inches high and before the development of mature seed. Mowing height

should be 4 inches for introduced and 7 inches for native plants. Small grain companion crops should be mowed at boot stage and prior to heading. Spot spraying or hand pulling may be needed for some invasive species such as thistles and purple loosestrife

B. Sites may require on-going periodic maintenance consisting of mowing, burning, or herbicide treatment.

C. Sites should be inspected periodically to ensure site stabilization objectives are being met.

IX. References

Curtis, J. T. 1959. The Vegetation of Wisconsin: an ordination of plant communities. University of Wisconsin Press, Madison, Wisconsin.

Henderson, R. A. 1995. Plant Species Composition of Wisconsin Prairies: An Aid to Selecting Species for Plantings and Restorations Based Upon University of Wisconsin-Madison Plant Ecology Laboratory Data. Wisconsin Department of Natural Resources Technical Bulletin No. 188.

Ladd, D. and Oberle, F. 1995. Tallgrass Prairie Wildflowers, A Field Guide. The Nature Conservancy.

Nichols, S. and Entine, L. 1976. Prairie Primer. University of Wisconsin - Extension, publication G2736.

Packard, S. and Mutel, C. 1997. The Tallgrass Restoration Handbook for Prairies, Savannas and Woodlands. Society for Ecological Restoration

Rock, H. W. 1971. Prairie Propagation Handbook. Boerner Botanical Gardens.

USDA, NRCS. National Engineering Handbook, Part 650, Engineering Field Handbook.

USDA, NRCS, Wisconsin Field Office Technical Guide (FOTG), Section IV, Practice Standards and Specifications.

USDA, NRCS, Wisconsin Agronomy Technical Note 5, Establishing and Maintaining Native Grasses, Forbs, and Legumes.

USDA, NRCS, Wisconsin Agronomy Technical Note 6, Establishing and Maintaining Introduced Grasses and Legumes.

USDA, NRCS, Wisconsin Job Sheet 134, How to Establish and Maintain Introduced Grasses and Legumes.

USDA, NRCS, Wisconsin Job Sheet 135, How to Establish and Maintain Native Grasses, Forbs, and Legumes.

X. Definitions

Actual Adjusted Seeding Rates (V.A.2.) - an increase in seeds per square foot or pounds per acre, when the PLS is less than 100 percent.

Aspect (V.A.1.) - The exposure of the site to direct sunlight, prevailing winds, and other factors that influence plant growing conditions. For example, a north slope tends to be cooler and moister while a south-facing slope tends to be drier and warmer.

Soil Bioengineering (V.L.) - Practice of combining mechanical, biological, and ecological concepts to arrest and prevent shallow slope failures and erosion.

Certified Seed (V.A.2.) - Seed that meets the standards established by the designated official seed certifying agency for the purpose of ensuring species/variety, species/varietal purity and mechanical quality. The Wisconsin Crop Improvement Association is the official seed certifying agency for Wisconsin.

Genotype (V.I.) - A group of individual plants which share a specified genetic makeup. For example, all big bluestem plants that are genetically adapted to grow and mature in the climatic conditions found in the driftless region could be considered a genotype.

Introduced Species (V.A.4.) - Plant species that historically were not native to North America and were brought here from other parts of the world, for example, smooth bromegrass and alfalfa.

Native Species (V.A.4.) - Plants species that historically would have been found growing in North America such as big bluestem or green needle-grass.

Non-Certified Seed (V.A.2.) - Seed that is grown, processed, tested and labeled for species/variety and mechanical quality factors, but is not certified by an official seed certifying agency.

Pure Live Seed (PLS) (V.A.2.) - PLS is a means of expressing seed quality, based on the percentage of seed in a seed lot that is both pure and viable. PLS is calculated by multiplying the percentage of total viable seed (germination + hard seed + dormant seed) by the percentage of pure seed divided by 100.

Untested Seed (V.A.2.) - Seed that has no assurances of testing for species/variety and mechanical quality, i.e., species/variety purity, inert matter, other crop or weed seeds and germination potential. Untested seed legally cannot be labeled.

Table 3
Common Species and Seeding Rates for Critical Area Plantings

Common Name	Scientific Name	Moisture Regime	Single Species Seeding Rate (PLS) Lbs./Ac.	Seeds/Lb.	Seeds/Square Ft./Lb./Ac.
Native Grasses					
Big Bluestem[1]	Andropogon gerardii[1]	D, DM, M, WM	11	165,000	3.8
Canada Wild Rye	Elymus canadensis	DM, M, WM	12	83,200	1.9
Indian Grass[1]	Sorghastrum nutans[1]	D, DM, M, WM, W	10	192,000	4.4
Little Bluestem	Schizachyrium scoparium	D, DM, M	8	240,000	5.5
Prairie June Grass	Koeleria macrantha[1, 2]	D, DM, M	0.5	2,308,672	53
Sideoats Grama	Bouteloua curtipendula	D, DM, M	8	127,000	2.9
Switch Grass[1]	Panicum virgatum[1]	D, DM, M, WM, W	7	389,000	8.9
Virginia Wild Rye	Elymus virginicus	M, WM, W	17	67,200	1.5
Introduced Grasses					
Chewings Red Fescue[2]	Festuca rubra L. ssp fallax[2]	D, DM, M	5	350,000	8
Creeping Red Fescue[1, 2]	Festuca rubra[1, 2]	DM, M, WM	5	350,000	8
Festulolium	Festuca x Lolium	DM, M, WM	10	227,000	5.2
Italian or Annual Ryegrass	Lolium perenne L. ssp. multiflorum	DM, M, WM	20	227,000	5.2
Kentucky Bluegrass[1, 2]	Poa pratensis[1, 2]	D, DM, M, WM, W	8	2,177,000	50
Orchard Grass	Dactylis glomerata L.	D, DM, M, WM	10	653,000	15
Perennial Ryegrass	Lolium perenne	DM, M, WM	20	227,000	5.2
Redtop[1, 2]	Agrostis gigantea[2]	M, WM, W	4	4,990,000	114.5
Smooth Bromegrass[1, 2]	Bromus inermis[1, 2]	D, DM, M, WM	20	136,000	3.1
Tall Fescue	Schedonorus arundinaceus	D, DM, M, WM	12	227,000	5.2
Timothy	Phleum pratense	DM, M, WM, W	8	1,230,000	28.2
Legumes					
Alfalfa	Medicago sativa	D, DM, M	12	219,000	5.0
Alsike Clover	Trifolium hybridum	M, WM, W	3	680,000	15.6
Birdsfoot trefoil	Lotus corniculatus	DM, M, WM, W	7	375,000	8.6
Red Clover	Trifolium pratense	DM, M, WM	10	275,000	6.3
White Ladino Clover	Trifolium repens	DM, M, WM	3	871,650	20

[1] Species approved for seeding individually at the recommended Pure Stand Rates based on Pure Live Seeds (PLS) depending on the erosiveness of the site.

It is required that at least 50% of the seeds per square foot of mixtures planted to introduced and native species on critical areas are composed of grasses, and 25% of the seeds per square foot are sod-forming grasses for introduced species.

If more than 20% of the legume seed is hard seed, increase the seeding rate for legumes by the percent of hard seed

Seeds per square foot for a particular specie can be calculated by multiplying the number of seeds per pound of the specie by the rate of the specie in pound(s) per acre divided by 43,560 square feet.

[2] Sod-forming grass plants.

Table 4
Seeding Chart for Native Grass Species

Common Name	Scientific Name	Percent of Mixture	Pure Stand Seeding Rate	Seeds per Square Foot
Big Bluestem	Andropogon gerardii	0-100	11 lbs/ac	42
Canada Wildrye	Elymus canadensis	0-20	12 lbs/ac	23
Indian grass	Sorghastrum nutans	0-100	10 lbs/ac	44
Little Bluestem	Schizachyrium scoparium	0-20	8 lbs /ac	44
Sideoats Grama	Bouteloua curtipendula	0-20	8 lbs/ac	23
Switchgrass	Panicum virgatum	0-100	7 lbs/ac	63
Virginia Wild Rye	Elymus virginicus	0-20	17 lbs/ac	26
Prairie June Grass	Koeleria macrantha	0-20	0.5 lbs/ac	26
Hairy Grama	Bouteloua hirsuta	0-25	1 lb/ac	26

Canada Wild Rye, Virginia Wild Rye and Sideoats Grama when combined will not comprise of more than 20% of the total grass seeds per square foot. Pure stand seeding rates for Big Bluestem and Indiangrass must be increased by 5 lbs/acre to meet the minimum seeds per square foot as required by this standard. Refer to Table 3 for suggested moisture regimes per specie.

Table 5
Seeding Mixtures Suitable for Critical Area Plantings

Seed Calculator Code*	Moisture Regimes	Common Name	Scientific Name	Seeding Rate in lb/ac PLS	Seeding Rate in Seeds/Ft² PLS	Capacity Retardance	Type of Site**
342-1	*Dry-Mesic* and *Mesic* Sites	Smooth Bromegrass	Bromus inermis	10	31	B	EB, WW,CSB
		Creeping Red Fescue	Festuca rubra	3	24		
		Alfalfa	Medicago sativa	3	15		
		Red Clover	Trifolium pratense	3	19		
		Kentucky bluegrass	Poa pratensis	1.5	75		
342-2	Dry-Mesic and Mesic Sites***	Smooth Bromegrass	Bromus inermis	15	47	B	EB,WW
		Alfalfa	Medicago sativa	7	35		
		Timothy	Phleum pratense	3	85		
342-3	Dry-Mesic and Mesic Sites	Kentucky bluegrass	Poa pratensis	1	50	B	CSB, EB, WW
		Smooth Bromegrass	Bromus inermis	10	31		
		Timothy	Phleum pratense	2	56		
		Tall Fescue	Schedonorus arundinacea	2	10		
		Perennial Ryegrass	Lolium perenne	5	26		
342-4	Dry-Mesic and Mesic Sites	Smooth Bromegrass	Bromus inermis	20	62	B	EB, WW, CSB
		Creeping Red Fescue	Festuca rubra	5	40		
		Alfalfa	Medicago sativa	8	40		
		Red Clover	Trifolium pratense	4	25		
342-5	Dry-Mesic and Mesic Sites	Smooth Bromegrass	Bromus inermis	30	93	B	EB, WW, CSB
		Alfalfa	Medicago sativa	14	70		
342-6	Dry-Mesic, Mesic, and Wet Mesic Sites	Smooth Bromegrass	Bromus inermis	7	22	B	CSB, EB, WW
		Timothy	Phleum pratense	2	56		
		Creeping Red Fescue	Festuca rubra	1	8		
		Kentucky Bluegrass	Poa pratensis	1	50		
		Perennial Ryegrass	Lolium perenne	3	16		
		Red Clover	Trifolium pratense	3	19		
342-7	Mesic Sites***	Smooth Bromegrass	Bromus inermis	7	22	B	EB, WW
		Creeping Red Fescue	Festuca rubra	2	16		
		Kentucky bluegrass	Poa pratensis	3	150		
		Birdsfoot trefoil	Lotus corniculatus	2	17		
342-8	Mesic Sites***	Smooth Bromegrass	Bromus inermis	15	47	B	WW,EB
		Creeping Red Fescue	Festuca rubra	2	16		
		Kentucky Bluegrass	Poa pratensis	2	100		
342-9	Mesic Sites***	Kentucky Bluegrass	Poa pratensis	3	150	C	WW,EB
		Creeping Red Fescue	Festuca rubra	4	32		
		Perennial Ryegrass	Lolium perenne	10	52		
342-10	Mesic Sites	Smooth Bromegrass	Bromus inermis	14	43	B	EB, WW, CSB
		Timothy	Phleum pratense	3	85		
		Red Clover	Trifolium pratense	3	19		
		Perennial Ryegrass	Lolium perenne	4	21		
342-11	Mesic Sites	Smooth Bromegrass	Bromus inermis	32	99	B	EB, WW
		Creeping Red Fescue	Festuca rubra	8	64		
342-12	Mesic Sites	Kentucky bluegrass	Poa pratensis	4	200	C	EB, WW
		Creeping Red Fescue	Festuca rubra	3	24		

Seed Calculator Code*	Moisture Regimes	Common Name	Scientific Name	Seeding Rate in lb/ac PLS	Seeding Rate in Seeds/Ft² PLS	Capacity Retardance	Type of Site**
342-13	Mesic Sites	Smooth Bromegrass	Bromus inermis	14	43	B	EB, WW, CSB
		Timothy	Phleum pratense	4	113		
		Red Clover	Trifolium pratense	3	19		
342-14	Mesic Sites	Smooth Bromegrass	Bromus inermis	15	47	B	EB, WW, CSB
		Timothy	Phleum pratense	3.5	99		
		Alsike Clover	Trifolium hybridum	2	32		
342-15	Mesic Sites	Smooth Bromegrass	Bromus inermis	15	47	B	EB, WW
		Timothy	Phleum pratense	3.5	99		
		Birdsfoot trefoil	Lotus corniculatus	3	26		
342-16	Wet Mesic Sites	Tall Fescue	Schedonorus arundinaceus	5	26	B	CSB, EB, WW
		Timothy	Phleum pratense	3	85		
		Perennial Ryegrass	Lolium perenne	3	16		
		Red Clover	Trifolium pratense	3	19		
		Smooth Bromegrass	Bromus inermis	6	19		
		Kentucky Bluegrass	Poa pratensis	2	100		
342-17	Wet Mesic Sites	Redtop	Agrostis gigantea	1	115	C	WW, CSB, EB
		Timothy	Phleum pratense	3	85		
		Red Clover	Trifolium pratense	5	32		
342-18	Wet Mesic Sites	Timothy	Phleum pratense	3	85	B	WW, CSB, EB
		Perennial Ryegrass	Lolium perenne	3	16		
		Red Clover	Trifolium pratense	3	19		
		Smooth Bromegrass	Bromus inermis	6	19		
		Kentucky Bluegrass	Poa pratensis	2	100		
342-19	Wet Mesic Sites	Redtop	Agrostis gigantea	1	115	C	WW, CSB, EB
		Timothy	Phleum pratense	1	28		
		Red Clover	Trifolium pratense	4	25		
		Kentucky Bluegrass	Poa pratensis	2	100		
342-20	Wet Sites***	Redtop	Agrostis gigantea	2	229	C	WW
		Alsike Clover	Trifolium hybridum	2	31		
		Kentucky Bluegrass	Poa pratensis	2	100		
342-21	Wet Mesic Sites	Redtop	Agrostis gigantea	3	344	C	WW
		Alsike Clover	Trifolium hybridum	3	47		

*These codes represent the mixtures used in the Wisconsin Seed Calculator
**EB = Embankments, WW = Waterways, CSB = Channel and Streambanks
***Mixtures can be used on other site descriptions when not listed

Figure 1
Planting Zones

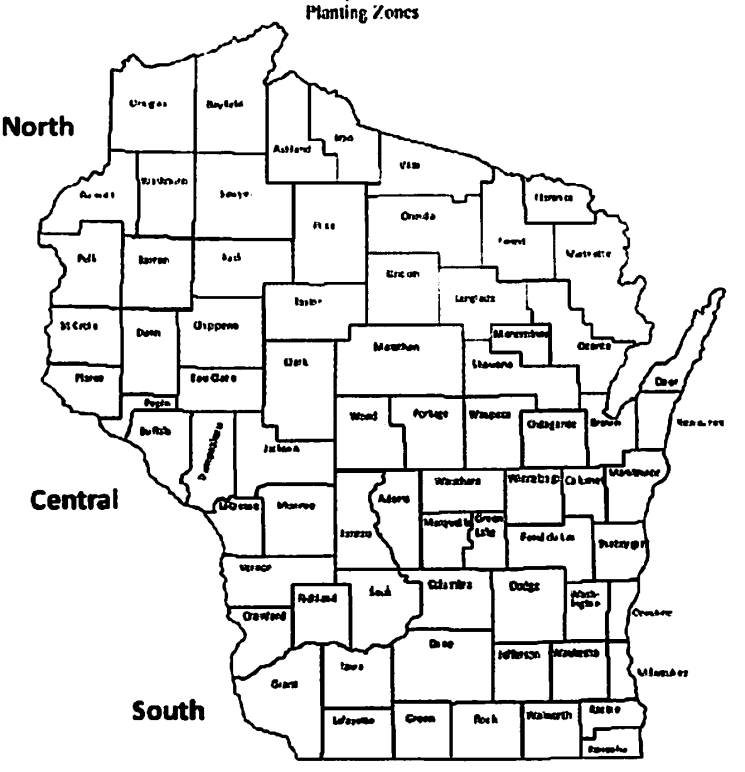


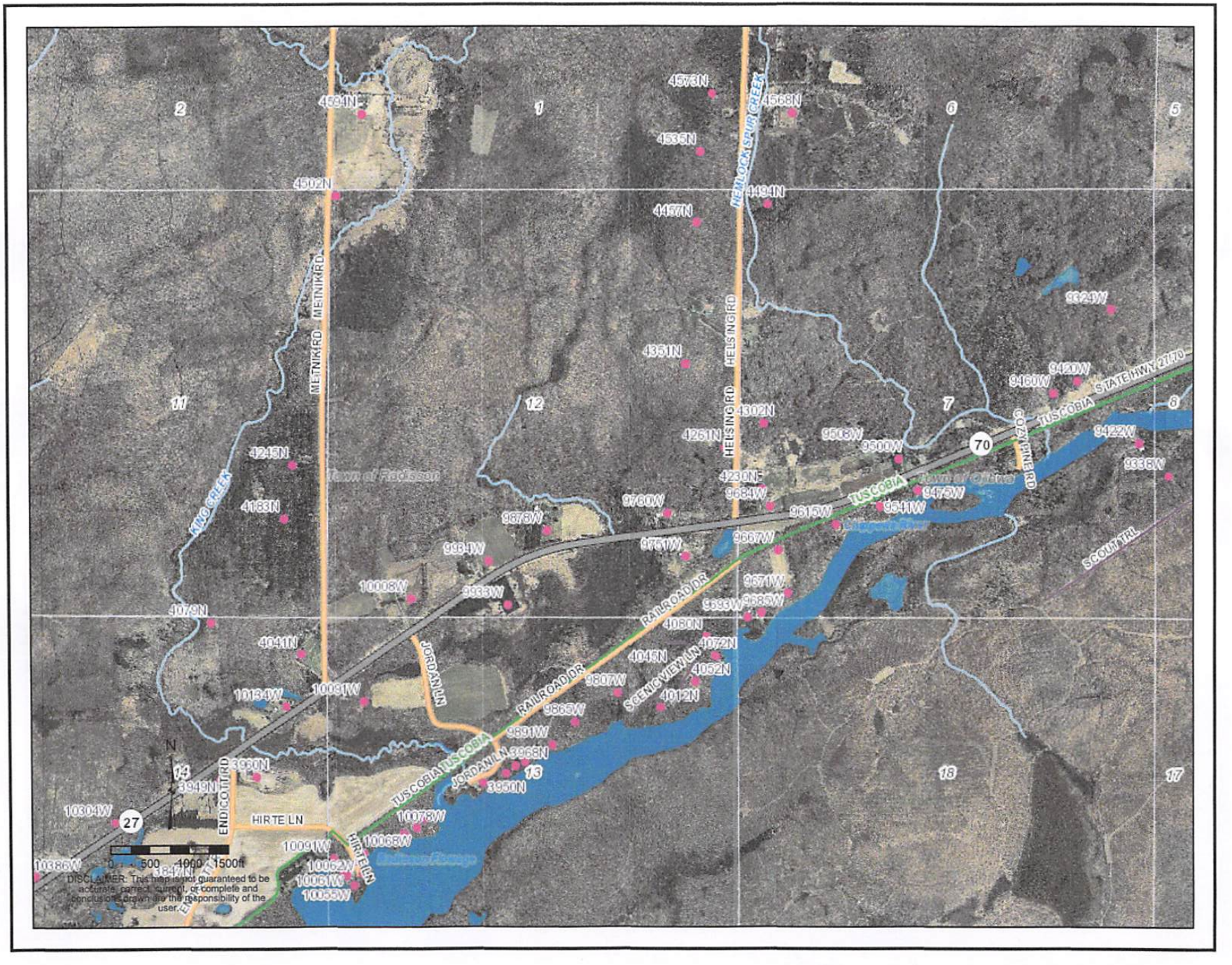
Table 1
Seeding Date/Ranges for Native Mixtures and Companion Crops

Zone	Spring Seeding
Northern	Thaw - 7/15
Central	Thaw - 6/30
Southern	Thaw - 6/30

Table 2
Seeding Date/Ranges for Introduced Grasses, Legumes, and Companion Crops

Planting Zone	Spring	Late Summer	Dormant
North	5/1 - 6/15	7/15 - 8/10	11/1 - Freeze up
Central	4/15 - 6/1	8/1 - 8/21	11/1 - Freeze up
South	4/1 - 5/15	8/7 - 8/29	11/1 - Freeze up

NRCS, WI
1/13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1
0
5
11
12
7
6
4584N
4573N
4568N
4535N
4502N
4434N
4457N
4351N
4302N
4261N
4249N
4230N
4183N
4079N
4041N
4045N
4072N
4052N
4012N
3968N
3950N
3949N
3847N
9324W
9420W
9460W
9422W
9336W
9508W
9500W
9684W
9475W
9615W
9541W
9760W
9678W
9761W
9667W
9994W
10008W
9983W
9671W
9695W
9685W
10134W
10091W
9807W
9865W
9891W
10304W
10078W
10068W
10091W
10062W
10061W
10055W
10386W
HIRTE LN
ENDICOTT RD
JORDAN LN
RAILROAD DR
SCENIC VIEW LN
TUSCOBIA
KING CREEK
METNIK RD
HEISING RD
HEMLOCK SPUR CREEK
STATE HWY 27/70
SCOUT TRL
Town of Radisson
Town of Ojibwa
N
0 500 1000 1500ft
DISCLAIMER: This map is not guaranteed to be accurate, correct, current, or complete and conclusions drawn are the responsibility of the user.

Proposed Ordinance Amendment for Multi-Dwelling Development Option 3 (Version 4.2)

Sawyer County Zoning Ordinance

SECTION 2.0 DEFINITIONS

(30) DWELLING, MULTI-FAMILY: Two or more DWELLINGS on one Lot but which may have joint services and/or facilities.

(31) DWELLING UNIT: A building or portion thereof with rooms arranged, designed, used or intended to be used for one family. Guesthouses with kitchen and bathroom facilities; and any accessory structures with a HABITABLE LIVING AREA are considered to be DWELLING UNITS. Houseboats and watercraft on land shall not be used as DWELLINGS or DWELLING UNITS.

(57) LOT: A parcel of land occupied or capable of being occupied by one Building or one or more DWELLING UNITS and the ACCESSORY STRUCTURES OR USES customarily incidental to them, including such open spaces as are required by this ordinance.

(71) MULTI-DWELLING DEVELOPMENT: DEVELOPMENT, regardless of form of ownership consisting of two or more DWELLING UNITS, CONDOMINIUM, RESORT, hotel or motel units or other units/structures intended for residential or long or short-term rental uses, all of which are to be located on the same LOT.

(85) RESORT: A resort is a for-profit business, which provides rental to the public of more than 2 (two) DWELLING UNITS contained in one or more permanent buildings used primarily for recreational use.

(107) TWO-FAMILY: One building/dwelling that contains two DWELLING UNITS with independent cooking and bathroom facilities. For example, a duplex is a two-family dwelling.

SECTION 17.0 ZONE DISTRICTS

17.1 R-1: Residential One District

This district provides for one-family and two-family residential development protected from traffic hazards and the intrusion of incompatible land uses. It is intended to encourage such development around existing residential areas where soil conditions are suitable for such development and in those areas, which can be economically and readily served by utilities and municipal facilities. Add 5,000 sq./ft for each additional unit over one plus any additional area required as required by Sec. 18.2

A) Permitted Uses

1) One family and two-family DWELLINGS provided that if a DWELLING is a TWO-FAMILY, the LOT must be at least double the minimum lot size required by Sec. 18.2.

B) Uses Authorized by Conditional Use

17.1(B)(1) DWELLING, MULTI-FAMILY provided the LOT must be at least double the minimum lot size required by Sec. 18.2 for each additional DWELLING UNIT

17.2 RR-1: Residential/Recreational One District

A) Permitted Uses

1) One-family and two-family DWELLINGs provided that if a DWELLING is a TWO FAMILY, the LOT must be at least double the minimum lot size required by Sec. 18.2.

B) Uses Authorized by Conditional Use

17.2(B)(15) MULTI-DWELLING DEVELOPMENT or other similar development, which in the opinion of the County Zoning Committee, is of the same general scale and character. Each DWELLING UNIT must meet the minimum Dimensional Requirements contained in Sec. 18. Does not include conversions of existing properties to a different form of ownership (i.e., to condominium ownership) unless DWELLING UNITS are being proposed by plat or other means that would be in addition to the existing DWELLING UNITS. Does not include existing MULTI-DWELLING DEVELOPMENTS unless creating additional DWELLING UNITS.

17.3 RR-2: Residential/Recreational Two District

A) Permitted Uses

1) One-family and two-family DWELLINGs provided that if a DWELLING is a TWO-FAMILY, the LOT must be at least double the minimum lot size required by Sec. 18.2.

B) Uses Authorized by Conditional Use

17.3(B)(16) MULTI-DWELLING DEVELOPMENT or other similar development, which in the opinion of the County Zoning Committee, are of the same general scale and character. Each DWELLING UNIT must meet the minimum Dimensional Requirements contained in Sec.18. Does not include conversions of existing properties to a different form of ownership (i.e., to condominium ownership) unless DWELLING UNITS are being proposed by plat or other means that would be in addition to the existing DWELLING UNITS. Does not include existing MULTI-DWELLING DEVELOPMENTS unless creating additional DWELLING UNITS.

Sawyer County Shoreland-Wetland Protection Ordinance

Section 5.1 (1)

The construction of new dwellings or replacement dwellings; additions to existing principal structures and the construction of accessory buildings may be permitted provided all other requirements, regulations and setbacks can be met. Only one (1) principal dwelling/habitable structure is allowed per legal lot unless authorized by Conditional Use Permit.

Proposed Ordinance Amendment for Multi-Dwelling Development Option 3 (Version 4.2)

Sawyer County Zoning Ordinance

SECTION 2.0 DEFINITIONS

(30) DWELLING, MULTI-FAMILY: ~~A dwelling or group of dwellings on one plot containing separate living quarters for three~~Two or more ~~families~~DWELLINGS on one Lot but which may have joint services and/or facilities.

(31) DWELLING UNIT: A building or portion thereof with rooms arranged, designed, used or intended to be used for one family. Guesthouses with kitchen and bathroom facilities; and any accessory structures with a HABITABLE LIVING AREA are considered to be ~~dwelling units~~DWELLING UNITS. Houseboats and watercraft on land shall not be used as DWELLINGS or DWELLING UNITS. ~~Only one dwelling unit is allowed per Lot.~~

(57) LOT: A parcel of land occupied or capable of being occupied by one Building or one ~~Dwelling Unit~~or more DWELLING UNITS and the ~~Accessory Buildings or uses~~ACCESSORY STRUCTURES OR USES customarily incidental to ~~it~~them, including such open spaces as are required by this ordinance.

(71) MULTI-DWELLING DEVELOPMENT: ~~Development~~DEVELOPMENT, regardless of form of ownership consisting of ~~three~~two or more DWELLING UNITS, ~~condominium, resort~~CONDOMINIUM, RESORT, hotel or motel units or other units/structures intended for residential or long or short-term rental uses, all of which are to be located on the same LOT.

(85) RESORT: A resort is a for-profit business ~~holding a Seller's Permit and licensed by the Wisconsin Department of Health and Family Services~~, which provides rental to the public of more than 2 (two) DWELLING UNITS contained in one or more permanent buildings used primarily for recreational use.

(107) TWO-FAMILY: One building/dwelling that contains two DWELLING UNITS with independent cooking and bathroom facilities. For example, a duplex is a two-family dwelling.

SECTION 17.0 ZONE DISTRICTS

17.1 R-1: Residential One District

This district provides for one-family and two-family ~~year-round~~ residential development

protected from traffic hazards and the intrusion of incompatible land uses. It is intended to encourage such development around existing residential areas where soil conditions are suitable for such development and in those areas, which can be economically and readily served by utilities and municipal facilities. Add 5,000 sq./ft for each additional unit over one plus any additional area required as required by Sec. 18.2

A) Permitted Uses

1) One family and two-family ~~year-round dwellings.~~DWELLINGS provided that if a DWELLING is a TWO-FAMILY, the LOT must be at least double the minimum lot size required by Sec. 18.2.

B) Uses Authorized by Conditional Use

~~**17.1(B)(1)** Multi-family (3 or more) dwelling units.~~

17.1(B)(1) DWELLING, MULTI-FAMILY provided the LOT must be at least double the minimum lot size required by Sec. 18.2 for each additional DWELLING UNIT

17.2 RR-1: Residential/Recreational One District
A) Permitted Uses

1) One-family and two-family ~~dwellings~~DWELLINGs provided that if a DWELLING is a TWO FAMILY, the LOT must be at least double the minimum lot size required by Sec. 18.2.

B) Uses Authorized by Conditional Use

17.2(B)(15) MULTI-DWELLING DEVELOPMENT ~~(i.e. **new** condominium, hotel, motel or resort,~~ or other similar development, which ~~is~~in the opinion of the County Zoning Committee, is of the same general scale and character~~). (~~. Each DWELLING UNIT must meet the minimum Dimensional Requirements contained in Sec. 18. Does not include ~~the conversion~~conversions of existing properties to a ~~condominium~~different form of ownership~~, existing resorts, motels, hotels or any other existing multi dwelling development~~ (i.e., to condominium ownership) unless ~~more rental/dwelling units~~DWELLING UNITS are being proposed by plat or other means that would be in addition to the existing ~~rental/dwelling units.)~~ DWELLING UNITS. Does not include existing MULTI-DWELLING DEVELOPMENTS unless creating additional DWELLING UNITS.

17.3 RR-2: Residential/Recreational Two District

A) Permitted Uses

1) One-family and two-family ~~dwellings.~~DWELLINGs provided that if a DWELLING is a TWO-FAMILY, the LOT must be at least double the minimum lot size required by Sec. 18.2.

B) Uses Authorized by Conditional Use

17.3(B)(16) MULTI-DWELLING DEVELOPMENT or other similar development ~~including a condominium, hotel, motel or resort, or other development~~, which in the opinion of the County Zoning Committee, are of the same general scale and character. Each DWELLING UNIT must meet the minimum Dimensional Requirements contained in Sec.18. Does not include conversions of existing properties to a different form of ownership (i.e., to condominium ownership) unless DWELLING UNITS are being proposed by plat or other means that would be in addition to the existing ~~rental~~/DWELLING UNITS. Does not include existing MULTI-DWELLING DEVELOPMENTS unless creating additional DWELLING UNITS.

Sawyer County Shoreland-Wetland Protection Ordinance

Section 5.1 (1)

The construction of new dwellings or replacement dwellings; additions to existing principal structures and the construction of accessory buildings may be permitted provided all other requirements, regulations and setbacks can be met. Only one (1) principal dwelling/habitable structure is allowed per legal lot. unless authorized by Conditional Use Permit.

SAWYER COUNTY

SAWYER COUNTY ZONING & CONSERVATION DEPARTMENT

10610 MAIN STREET SUITE 49 • HAYWARD, WISCONSIN 54843 • Phone (715) 634-8288

Email: Jay.kozlowski@sawyercountygov.org

Summary of Ordinance Amendments for Multi-Dwelling Development:

-Please distribute to Town Board members and read entirety of the summary letter.

Sawyer County is looking to make amendments to the Zoning Ordinance in the form of what the current ordinance reads for "multi-dwelling development", "dwelling, multi-family", and the definition of "resort". This current portion of the ordinance is out of date and there are several instances in which the current language either contradicts itself in other places of the ordinance or the language is unclear and leads to ambiguity and a difference in interpretation. Changes to this portion of the ordinance need to occur one way or another. Over the last 12 months Sawyer County Zoning Committee members, Legal Counsel, and myself (Sawyer County Zoning Administrator) have been working on several different versions in which the majority of us believe solve these issues.

As part of the attachment to this summary is Option 3 – Version 4.2 for the proposed ordinance amendment. In order to hold an official public hearing process at the County level it will require over 50% of Towns to approve to proposed amendments. The approval/denial list is also attached with this summary letter.

There are 2 major changes proposed with the ordinance amendment. All other additions or deletions in the proposed text are to solidify these changes or contribute additional clarification to how the current ordinance already reads.

The first main change is the definition of "resort". This definition has been brought into question and a change is needed in this definition one way or another. Going back to September 2020 the current definition interpretation was brought to the Zoning Committee Members. At that time discussion had occurred that a "resort" would have other amenities offered for the guests. Also, that the rental of 2 dwelling units on the property would not be viewed as a resort but that more than 2 would. The reason that this was brought up is that there are many instances within the County across all Towns in which certain properties have 2 existing dwellings on one lot. These dwellings would have been needed to be lawfully placed prior to June 20, 1985 when a separate ordinance amendment was enacted that would have only allowed 1 dwelling unit on a lot. Those added after this time are considered illegal. There are allowances for expansion and replacement to these existing lawfully placed dwelling units but the larger question that is now brought up is the rental of 2 dwelling units through a Short-Term Rental (STR) process. The proposed ordinance amendment would have a true resort definition (which requires other Town and County Zoning approval) for more than 2 dwelling units. Those that had 2 lawfully placed

dwelling units would be able to rent both dwelling units under a STR process and not be defined as a resort. Those that were not lawfully placed would not be able to rent both and this is monitored via Zoning Department and County Health Department. I would estimate that there are near 300 properties within Sawyer County that have more than 1 lawfully placed dwelling unit on 1 lot and currently 6 within the County that have been approved for (STR) on one lot. If this definition of resort was to be solidified to only allow rental of 1 dwelling unit these 6 identified existing rentals would not be allowed. With all the information provided and guidance from the Zoning Committee and Legal Counsel the proposed ordinance amendment would clarify a "resort" as the rental of more than 2 dwelling units.

The second major change has to deal with "Dwelling, Multi-Family" and "Multi-Dwelling Development". Both of these definitions are very similar but are found in different portions of the ordinance as they relate to zone districts under uses authorized for a Conditional Use Permit (CUP) which require a public hearing process and a Town Board recommendation. "Dwelling, Multi-Family" is found within the Residential-One (R-1) zone district. The current ordinance allows for "Dwelling, Multi-Family" with a CUP but still needs to meet the minimum lot dimensional requirements of 100' in width and 200' in depth. From there, each additional dwelling unit requires an additional 5,000 sq. ft of land area. However, in the current ordinance this is only allowed for more than 3 dwelling units. This means there is no current ordinance language that would allow any type of application process for the allowance of just 2 dwelling units still meeting the minimum dimensional requirements. With 1 it is an approved use, with 3 you can apply for a CUP, but if you just wanted 2 it would not be allowed. This is the generally the same for "Multi-Dwelling Development" which is found under the CUP requirements within the Residential/Recreational One & Two (RR-1 & RR-2) zone districts. The only difference here is that for each additional dwelling unit you would need a minimum of 100' of width, 200' of depth and a minimum of 20,000 sq. ft of land area. Again though 1 would be an approved use. If you wanted 3 you would need a minimum of 300' of lot width (or shoreland frontage), 200' of depth, a minimum of 60,000 sq. ft., and be approved a CUP. If you just wanted 2 though and still meet the minimum dimensional requirements for 2 there is no current ordinance language that allows for this and you would need to legally split the lot. There was a claim that by going through a CUP route that somehow there would be some type of tax loop hole created. However, in conversations with Legal Counsel they found this not to be true and any Land Use Permit or Building Permit for another dwelling on the same lot would trigger the tax assessor to re-evaluate the property and could assess properly without creating otherwise unintended tax loop hole consequences. The proposed ordinance language would change both of these definitions from 3 or more dwelling units to 2 or more dwelling units and still require a CUP process. For me it has always been the situation that 1 is an approved use, 3 or more can apply for a CUP (with correct lot dimensional requirements), but if you want 2 then you can't do it and need to legally split the lot with a certified surveyor.

The rest of the proposed changed are to solidify the summary that I have laid out or to add additional definitions that were not previously defined. If Towns are not agreeable to these changes please indicate why because in the end the current ordinance needs additional clarification for myself to properly administer. I urge any Town Officials that have any questions with what is being proposed to please contact me at the information provided at the top of this letter.

Thank you,

Jay Kozlowski

Sawyer County Zoning & Conservation Administrator