

# Dane County Conditional Use Permit Application

<b>Application Date</b>	<b>C.U.P Number</b>
08/27/2019	DCPCUP-2019-02481
<b>Public Hearing Date</b>	
11/26/2019	

<b>OWNER INFORMATION</b>	<b>AGENT INFORMATION</b>
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OWNER NAME RANDY RAY KNICKMEIER	Phone with Area Code (608) 575-5072	AGENT NAME LCC TELECOM SERVICES	Phone with Area Code (815) 621 9110
BILLING ADDRESS (Number, Street) 1481 COUNTY HIGHWAY W		ADDRESS (Number, Street) 10700 W. HIGGINS ROADSUITE 240	
(City, State, Zip) STOUGHTON, WI 53589		(City, State, Zip) Rosemont, IL 60018	
E-MAIL ADDRESS		E-MAIL ADDRESS rseagren@lcc telecom.com	

<b>ADDRESS/LOCATION 1</b>	<b>ADDRESS/LOCATION 2</b>	<b>ADDRESS/LOCATION 3</b>
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ADDRESS OR LOCATION OF CUP		ADDRESS OR LOCATION OF CUP		ADDRESS OR LOCATION OF CUP	
Approximately 400' north of 869 County Highway A					
TOWNSHIP ALBION	SECTION 4	TOWNSHIP	SECTION	TOWNSHIP	SECTION
PARCEL NUMBERS INVOLVED		PARCEL NUMBERS INVOLVED		PARCEL NUMBERS INVOLVED	
0512-042-9020-3		---		---	

**CUP DESCRIPTION**

260' self support communication tower

<b>DANE COUNTY CODE OF ORDINANCE SECTION</b>	<b>ACRES</b>
----------------------------------------------	--------------

10.103(9)	0.13
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<b>DEED RESTRICTION REQUIRED?</b>	<b>Inspectors Initials</b>	<b>SIGNATURE:(Owner or Agent)</b>
<input type="checkbox"/> Yes <input type="checkbox"/> No Applicant Initials _____	AMA1	<i>Reid Seagren</i>
		<b>PRINT NAME:</b>
		Reid Seagren
		<b>DATE:</b>
		9/4/19

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OWNER NAME RANDY RAY KNICKMEIER	Phone with Area Code (608) 575-5072	AGENT NAME LCC TELECOM SERVICES	Phone with Area Code (630) 352-3277
BILLING ADDRESS (Number, Street) 1481 COUNTY HIGHWAY W		ADDRESS (Number, Street) 10700 W. HIGGINS ROADSUITE 240	
(City, State, Zip) STOUGHTON, WI 53589		(City, State, Zip) Rosemont, IL 60018	
E-MAIL ADDRESS		E-MAIL ADDRESS schase@lcctelecom.com	

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		SECTION
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75' X 75' LEASE AREA DESCRIPTION

A PORTION OF LAND LOCATED IN PART OF THE WEST HALF OF THE NORTHWEST QUARTER OF SECTION 4, TOWNSHIP 5 NORTH, RANGE 12 EAST, TOWN OF ALBION, DANE COUNTY, WISCONSIN, AND BEING FURTHER DESCRIBED AS FOLLOWS:

COMMENCING AT A CALCULATED MONUMENT LOCATING THE NORTHWEST CORNER OF SAID SECTION 4; THENCE S2° 54' 15"E, 176.01 FEET ALONG THE WEST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 4; THENCE N90° 00' 00"E, 604.65 FEET TO THE POINT OF BEGINNING; THENCE CONTINUING N90° 00' 00"E, 75.00 FEET; THENCE N0° 00' 00"E, 75.00 FEET; THENCE N90° 00' 00"W, 75.00 FEET; THENCE S0° 00' 00"E, 75.00 TO THE POINT OF BEGINNING. SAID PROPOSED LEASE AREA CONTAINS 5,625 SQUARE FEET (0.13 ACRES) AND IS SUBJECT TO ANY AND ALL EASEMENTS OR AGREEMENTS, RECORDED OR UNRECORDED.



**TILLMAN INFRASTRUCTURE**



**APPLICATION FOR CONDITIONAL USE PERMIT AND HEIGHT VARIANCE  
APPROVAL FOR THE PROPOSED NEW TOWER  
AT**

**PID: 002/0512-042-9020-3  
ALBION, WI 53534**

**TILLMAN SITE # – 11895**



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# Letter of Application

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April 16, 2019

Majid Allan  
Dane County Senior Planner  
210 Martin Luther King, Jr. Blvd. Room 116, City-County Building  
Madison, WI 53703-3342

RE: Tillman Infrastructure Site Number: 11895  
PID: 002/0512-042-9020-3  
Albion, WI 53534

Dear Mr. Allan:

Tillman Infrastructure has finalized a lease agreement with the landowners of the site referenced above to construct a mobile service support structure to be used by AT&T Mobility and potentially other wireless carriers in the future. The proposed shared use facility is designed to house the equipment necessary to provide clear and uninterrupted wireless telecommunications services to the residents of the Town of Albion.

This mobile service support structure is being constructed pursuant to Wisconsin Statutes § 66.0404. The proposed mobile service support structure will consist of a 260'-0" tall self-support lattice tower with a 9'-0" lightning rod for a total height of 269'-0" to be located within a 75'-0" x 75'-0" lease parcel. The proposed tower will be erected, owned and managed by Tillman Infrastructure, a company that constructs mobile service facilities for shared use by multiple telecommunication carriers. The initial carrier on this proposed location is AT&T Mobility.

On behalf of Tillman Infrastructure, LCC Telecom Services has submitted all required documentation for the proposed tower in accordance with Wisconsin Statutes § 66.0404(2)(a)(1-6). The application is for Conditional Use and Height Variance approval and any other approvals necessary to construct the proposed site. By complying with state statute requirements this application should be deemed complete. A statement of compliance with the application submittal requirements of the state statute is included in this packet. When appropriate, Tillman has also voluntarily submitted information requested by Dane County that is not required under § 66.0404. However, failure to provide information not required under the state statute does not impact the completeness of this application.

Should you have any questions please feel free to contact me. I look forward to working with you during the approval process to provide the residents of the Town of Albion the best possible PCS coverage.

Sincerely,

Sheronica Chase  
Zoning Administrator



LCC Telecom Services  
10700 W. Higgins Road Suite 240  
Rosemont, IL 60018  
Office | (630) 352-3277  
Cell | (601) 212-6226

# Letter of Application

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Sheronica Chase  
Zoning Administrator

LCC Telecom Services  
10700 W. Higgins Road Suite 240  
Rosemont, IL 60018  
Office | (630) 352-3277  
Cell | (601) 212-6226

# Variance Application Form

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# Dane County Planning & Development

## Division of Zoning

Appeal No. \_\_\_\_\_  
 Date Received \_\_\_\_\_  
 Date of Public Hearing \_\_\_\_\_

### VARIANCE APPLICATION:

**Owner:** Tillman Infrastructure  
**Mailing Address:** 152 West 57th St 8th Floor  
New York, New York 10019  
**Phone Number(s):** (646) 354-7603  
**Email Address:** CMularadelis@tillmaninfrastructure.com

**Assigned Agent:** Sheronica Chase  
**Mailing Address:** 10700 Higgins Road Suite 240  
Rosemont, IL 60018  
**Phone Number(s):** schase@lcctelecom.com  
**Email Address:** (630) 352-3277

*To the Dane County Board of Adjustment:*  
 Please take notice that the undersigned was refused a permit by the Dane County Zoning Division, Department of Planning and Development, for lands described below for the reason that the application failed to comply with provisions of the Dane County Code of Ordinances: Chapters 10 – Zoning, 11 – Shoreland, Shoreland-Wetland & Inland-Wetland, 17 – Floodplain Zoning, and/or 76 – Airport Height Regulations. The owner or assigned agent herewith appeals said refusal and seeks a variance.

Parcel Number: 0 5 1 2 -0 4 2 -9 0 2 0 -3 Zoning District: FP-1 Acreage: 25  
 Town: Albion Section: 4 1/4 W 1/2 1 / 4 N W  
 Property Address: PID: 002/ 0512-042-9020-3  
 CSM: \_\_\_\_\_ Lot: N/A / Subdivision: N/A Block/Lot(s): N/A  
 Shoreland: Y / (N) / Floodplain: Y / (N) / Wetland: Y / (N) / Water Body None  
 Sanitary Service: Public / Private (Septic System) None

Current Use: Agricultural/Farmland

Proposal: Construct a 260'-0" tall self-support lattice tower with a 9'-0" lightning rod and associated wireless facilities within a 75'-0" x 75'-0" lease parcel

**NOTE: You are encouraged to provide a complete and detailed description of the existing use and your proposed project on an attached sheet.**

#### REQUIRED BY ORDINANCE

Section	Description	Required	Proposed or Actual	Variance Needed
10.103(9)(d)	No tower may be more than 195' in height unless a variance from this requirement is granted.	Variance	260' tall tower with 9' lightning rod	Yes.

## PRESENTING YOUR CASE TO THE BOARD OF ADJUSTMENT:

An Area Variance may be authorized by the Dane County Board of Adjustment to vary one or more of the dimensional or physical requirements of the applicable ordinance in connection with some proposed construction.

The burden will be on you, as property owner or authorized agent, to provide information upon which the board may base its decision. At the hearing, any party may appear in person or may be represented by an agent or attorney. You or your agent must convince the zoning board to make a ruling in your favor. The board must make its decision based only on the evidence submitted to it at the time of the hearing, including the staff report. Unless you or your agent is present, the board may not have sufficient evidence to rule in your favor and may then deny your application.

**Please answer the four questions below. You are encouraged to attach a separate sheet, labeling the answers (1) through (4), to provide enough detail to support your appeal:**

(1) Describe alternatives to your proposal such as other locations, designs and construction techniques. **Attach a site map showing alternatives you considered in each category below:**

(A) Alternatives you considered that comply with existing standards: If you find such an alternative, you can move forward with this option with a regular permit. If you reject compliant alternatives, provide the reasons you rejected them.

To obtain the elevation AT&T requires for its antennas with the shortest possible tower, Tillman sought to locate on the property with the highest elevation within the 2,500' search radius provided by AT&T. However, as is shown the Elevation Map included with this application, the proposed site, with a 943' AMSL stands at or very near the highest elevation in the search radius. In addition, Tillman considered reducing the height of the proposed tower to 190' to satisfy the zoning ordinance. However, as is shown in the Propagation Maps included with this application, this reduction in height could not be accomplished without a major loss of coverage. The proposed tower has been located near the center of the search ring, on the highest property available to attempt to satisfy the zoning ordinance.

(B) Alternatives you considered that require a lesser variance: If you reject such alternatives, provide the reasons you rejected them.

As stated in (A) above, efforts to reduce the tower height through locating other properties with higher elevation were fruitless. Also, a compliant tower would be incapable of providing the residents of Dane County with the best possible coverage as illustrated in the attached propagation maps. Please note that Section 66.0404(4)(p) of the Wisconsin State Statutes prohibits the denial of an application, "based on an assessment by the political subdivision of the suitability of other locations for conducting the activity."

(2) Will there be an unnecessary hardship to the property owner to strictly comply with the ordinance?

*Unnecessary hardship exists when compliance would unreasonably prevent the owner from using the property for a permitted purpose (leaving the property owner without any use that is permitted for the property) or would render conformity with such restrictions unnecessarily burdensome.*

*An applicant may not claim unnecessary hardship because of conditions which are self-imposed or created by a prior owner (for example, excavating a pond on a vacant lot and then arguing that there is no suitable location for a home or claiming that they need more outbuilding space than that permitted to store personal belongings). Courts have also determined that economic or financial hardship does not justify a variance. When determining whether unnecessary hardship exists, the property as a whole is considered rather than a portion of the parcel. The property owner bears the burden of proving unnecessary hardship.*

Per Section 10.103(9)(a) of the Dane County Zoning Ordinance, an applicant for a height variance must show the existence of "unique transmission condition problems that cannot be overcome by another location."

As stated in 1 (A) and (B) above, unique transmission problems exist due to the low elevation of the area to be covered as shown in the attached Propagation Maps. This is not due to any action of the Applicant or Owner.

Communications towers are permitted with a conditional use permit on in Dane County's Farmland Preservation (FP-1), Zone, pursuant to Section 10.221(3)(b) of the Dane County Zoning Ordinance and Section 66.0404(4)(c) of the Wisconsin State Statutes.



- (3) Do unique physical characteristics of your property prevent compliance with the ordinance? If yes, please explain. The required Site Plan and/or Survey submitted with your application must show these features.

*Unique physical limitations of the property such as steep slopes or wetlands that are not generally shared by other properties must prevent compliance with the ordinance requirements. The circumstances of an applicant (growing family, need for a larger garage, etc.) are not a factor in deciding variances. Nearby ordinance violations, prior variances, or lack of objections from neighbors do not provide a basis for granting a variance.*

The lack of elevation on the proposed site requires a height variance to provide the best possible coverage. As is illustrated on the attached

Topographical Map, the lack of elevation on the proposed property cannot be resolved by moving to an adjacent parcel. Further, as illustrated on the attached Propagation Maps a compliant tower, would be unable to provide sufficient coverage.

- (4) What would be the effect on this property, the community or neighborhood, and the general public interest if the variance were granted? Describe how negative impacts would be mitigated. The required Site Plan and/or Survey submitted with your application must show any proposed mitigation features.

*These interests may be listed as objectives in the purpose statement of an ordinance and may include: Promoting and maintaining public health, safety and welfare; protecting fish and wildlife habitat; maintaining scenic beauty; minimizing property damages; ensuring provision of efficient public facilities and utilities; requiring eventual compliance for nonconforming uses, structures and lots; drainage; visual impact; fire safety and building code requirements; and any other public interest issues.*

The surrounding property, community, and Dane County would all benefit if a variance were granted. A variance would allow the proposed tower to provide the best possible PCS coverage to the surrounding area, which would benefit business and personal uses as well as promoting public safety.

A variance would also best allow the proposed tower to be incorporated into AT&T Mobility's Service Network, avoiding the need for additional towers to fill coverage gaps.

## **REQUIRED PLANS AND SPECIFICATIONS:**

In addition to providing the information required above, you must submit:

1. **Site Plan:** Complete and detailed plans of your lot or lots, drawn to a standard and easily readable scale. In most cases, a survey by a Registered Land Surveyor is needed. The Site Plan/Survey should include the following, as applicable, as well as any unique existing features of the lot and any proposed mitigation features, as described above:
  - Scale and North arrow
  - Road names and right-of-way widths
  - All lot dimensions
  - Existing buildings, wells, septic systems and physical features such as driveways, utility easements, sewer mains and the like, including neighboring properties and structures.
  - Proposed new construction, additions or structural alterations.
  - For property near lakes, rivers or streams:
    - Location of Ordinary High Water Mark (OHWM) Elevation
    - Location of Floodplain Elevation
  - For property near Wetlands, a Wetland Boundary determination by a qualified professional consultant may be required.
  - Topographic survey information may be desirable or necessary.
  - Setbacks from any existing or proposed structures (building) to lot lines, right-of-way lines, Ordinary High Water Mark, and/or Wetland Boundary, as applicable.
  - For setback from Ordinary High Water Mark Variance Appeals, the setbacks of the two neighboring structures from the OHWM may be required.

**2. Floor Plans and Elevations:** Professionally-prepared plans and elevations are not required, but the plans submitted must be drawn to a standard and easily readable scale, must show each story of the building or structure, and must include all parts of existing and proposed structures, including any balconies, porches, decks, stoops, fireplaces and chimneys. Exterior dimensions must be included. Show all exit door locations, including sliding doors, and any windows or other features that are pertinent to your appeal. The plans may be a preliminary version, but are expected to represent your actual proposal for the use of your lot.

Please consult with the Assistant Zoning Administrator regarding required plans for non-conventional structures such as signs, construction cranes, etc.

**3. Town Acknowledgment:** Obtain a signed, dated memo or letter from the Town Clerk or Administrator of the Town where the variance is needed, acknowledging that you have informed them of your intention to apply for the variance(s). You probably will need to appear before the Town Board and/or Plan Commission, which will provide advisory input requested by the Board of Adjustment.

**APPLICANT SIGNATURE:**

*The undersigned hereby attests that all information provided is true and accurate, and further gives permission to Planning & Development staff and Board of Adjustment members to view the premises, in relation to the Appeal request made herein, during reasonable daylight hours.*

Signature Required: *Sheronica Chase* Date: 6/12/2019

Print Name: Sheronica Chase as agent for Tillman Infrastructure

Specify Owner or Agent: Agent on behalf of Tillman Infrastructure

**Agent must provide written permission from the property owner**

Please see section 1-B of the attached lease agreement.

**STAFF INFORMATION:**

Date Zoning Division Refused Permit (if different from filing date)

Filing Date

Filing Materials Required:

Site Plan

Floor Plans

Elevations

Fee \_\_\_\_\_ Receipt No. \_\_\_\_\_

Town Acknowledgement Date

Notices Mailed Date

Class II Notices Published Dates

Site Visit Date

Town Action Received Date:

Public Hearing Date

Action by B.O.A. \_\_\_\_\_

**Approved by:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Director, Division of Planning Operations, Department of Planning and Development**



# Conditional Use Application Form

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DANE COUNTY  
**PLANNING & DEVELOPMENT**

**Conditional Use Application**

**Zoning Division**  
Room 116, City-County Building  
210 Martin Luther King Jr. Blvd.  
Madison, Wisconsin 53703-3342  
Phone: (608) 266-4266  
Fax: (608) 267-1540

Application Fee: \$495 Mineral Extraction: \$1145 Cell Tower: \$1145

Items required to be submitted with application:

- o **Written Legal Description of Conditional Use Permit boundaries**
- o **Scaled drawing of the property showing existing/proposed buildings, setback requirements, driveway, parking area, outside storage areas, location/type of exterior lighting, any natural features, and proposed signs.**
- o **Scaled map showing neighboring area land uses and zoning districts**
- o **Written operations plan describing the items listed below (additional items needed for mineral extraction sites)**
- o **Written statement on how the proposal meets the 8 standards of a Conditional Use**

Owner	Tillman Infrastructure, LLC	Agent	Sheronica Chase- as agent on behalf of Tillman Infrastructure
Address	152 West 57th Street 8th Floor New York, New York 10019	Address	10700 Higgins Road Suite 240 Rosemont, IL 60018
Phone	(601) 212-6226	Phone	(601) 212-6226
	(601) 212-6226	Phone	(601) 212-6226
Email	schase@lcctelecom.com	Email	schase@lcctelecom.com

Parcel numbers affected: 002/0512-042-9020-3 Town: Albion Section: Part of the West 1/2  
of the NW 1/4 of Section 4, T5N, R12E Property Address: PID: 002/0512-042-9020-3 Albion, WI 53534

Existing/ Proposed Zoning District : No Rezoning requested. Existing District is Farmland Preservation FP-1

**Separate checklist for mineral extraction or cell tower uses must be completed.**

- o **Type of Activity proposed:** 260'-0" tall self-support lattice tower with a 9'-0" lightning rod for a total height of 269'-0"
- o **Hours of Operation** Unmanned Facility operating continuously.
- o **Number of employees** 0
- o **Anticipated customers** None
- o **Outside storage** None
- o **Outdoor activities** As
- o **Outdoor lighting** As required by the FAA and shown on sheets A-3, A-7, and A-8 of the attached Site Plan
- o **Outside loudspeakers** N/A
- o **Proposed signs** N/A
- o **Trash removal** N/A
- o **Eight Standards of CUP (see page 2)** Please see the attached Standards for Conditional Use Approval

The statements provided are true and provide an accurate depiction of the proposed land use. I authorize that I am the owner or have permission to act on behalf of the owner of the property.

Submitted By: Sheronica Chase

Date: 6/7/19

# **Eight Standards of a Conditional Use Permit**

Provide an explanation on how the proposed land use will meet all eight standards.

1. The establishment, maintenance or operation of the conditional use will not be detrimental to or endanger the public health, safety, comfort or general welfare.
2. The uses, values and enjoyment of other property in the neighborhood for purposes already permitted shall be in no foreseeable manner substantially impaired or diminished by establishment, maintenance or operation of the conditional use.
3. The establishment of the conditional use will not impede the normal and orderly development and improvement of the surrounding property for uses permitted in the district.
4. Adequate utilities, access roads, drainage and other necessary site improvements have been or are being made to accommodate the conditional use.
5. Adequate measures have been or will be taken to provide ingress and egress so designed as to minimize traffic congestion in the public streets.
6. That the conditional use shall conform to all applicable regulations of the district in which it is located.
7. The proposed conditional use is consistent with adopted Town and County Comprehensive Plans.
8. If located in the Farmland Preservation (FP) area, the conditional use meets the necessary findings to be located in the district as per Dane County Code of Ordinances Section 10.220(1)

# Tower Permit Application Form

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# Dane County Planning & Development

## Division of Zoning

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### *CONDITIONAL USE PERMIT (CUP) APPLICATION REQUIREMENTS*

#### *FOR*

#### *“COMMUNICATION TOWERS”*

In order to make a Conditional Use Permit (CUP) application in Dane County for a new communication tower, eight items are required. These eight items satisfy the normal CUP application requirements, i.e. those required of all CUP applications, but they also include a few requirements that are peculiar only to CUPs for communication towers. The required application items are:

- A. Legal description;
- B. Tax parcel number(s);
- C. Completed *Zoning Application Form*;
- D. Completed *Communication Tower Information Form (CTIF)*;
- E. Written Statement;
- F. Site Plan, Design Elevations, Site Photos, and Photo Simulations;
- G. CUP filing fee; and
- H. Radiofrequency Engineering Analysis.<sup>1</sup>

***Town Pre-Application Meeting.*** In addition to the eight required items listed above, some of Dane County’s 34 towns may request a pre-application meeting between the applicant and the town prior to the submittal of a communication tower CUP application with Dane County. The County strongly recommends that applicants first contact the relevant town to determine if the town prior to making application with the County desires such a meeting. If the town during this preliminary meeting generates questions, applicants may submit such questions with their application for consideration by the third-party radiofrequency engineering consultant.

***County Pre-Application Meeting.*** For new applicants, an informal meeting prior to application is recommended to allow staff to explain the County’s zoning process. As with all zoning petitions, Department staff are available to assist applicants throughout the entire process.

The following sections outline the details of each of the required application items above.

#### **A. LEGAL DESCRIPTION**

A legal description of the land for which the permit is requested. This may be a lot or lots in a Certified Survey Map (CSM) or a Subdivision Plat or an exact metes and bounds description. Include the size of the proposed CUP area in both net (i.e. independent of right-of-way) acres and square feet.

#### **B. TAX PARCEL NUMBER(S)**

The tax parcel number(s) of the lot(s) or parcel(s) on which the conditional use is to be located. If the area proposed for the conditional use is part of a larger parcel, please provide the tax parcel number of the larger parcel. If the larger parcel is part of a farm or other parcel of more than 35 acres zoned A-1 Agriculture (Exclusive), please provide the total size of the farm in acres.

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<sup>1</sup> It is not expected that the applicant submit this last item at the time of application. The County will initiate this RF engineering analysis with a third-party consultant following the submittal of the other application material.

**C. COMPLETED ZONING APPLICATION FORM**

This is the standard application form required of all zoning applications, both rezones and CUPs alike. This form must be filled out with Zoning staff at the Zoning Counter in Room 116 of the City-County Building.

**D. COMPLETED COMMUNICATION TOWER INFORMATION FORM (CTIF)**

The information provided in this form will be used for two purposes: 1) to provide basic information to the County and the respective town for preliminary review; and 2) if ultimately part of a completed and approved CUP application packet, the form will be used to supplement the County's geographic information system (GIS) database on existing communication tower locations. A copy of this form is included as an attachment to this material.

**E. WRITTEN STATEMENT**

The Written Statement should address the following: 1) project description; 2) collocation; and 3) existing and proposed network buildout.

1. **Project Description.** Thoroughly articulate the proposed project and clearly describe such things as the existing and proposed uses and zoning of the subject property; existing uses and zoning of adjacent properties; time schedule for development; and reasons why the property is suitable for the proposed use. Two RF propagation plots must accompany this project description: one that shows the carrier's current service (highlighting the existing service area void), and one that shows the service to be gained by the proposed facility. These plots shall be prepared in accordance with accepted industry standards and shall be accompanied by a clear and simply written description by an RF engineer explaining the plots and how to read them.

Both of these plots should also include and identify the location of any existing communication towers as well as any other possible structures that could be used to support the requester's antenna equipment within a 1.5-mile radius. Both maps should also show all of the requester's sites that surround the subject location. The identity of the entity owning or managing the tower must also be given (see below). The written statement should provide persuasive reasons why alternative existing sites cannot be used. Requester should note that the inability of a tower structure to support another antenna, or an insufficient height, are not by themselves "persuasive reasons" why they cannot be used. Requester must also explain why the structure cannot be replaced with a stronger or taller structure at a reasonable cost as outlined in s. 10.194(3) of the Dane County Code of Ordinances.

2. **Collocation.** Section 10.194(2) of the DCCO requires that no conditional use permit for the placement or construction of a new tower shall be issued unless the applicant presents to the committee (i.e. the Dane County Zoning and Natural Resources Committee) credible evidence establishing to a reasonable degree of certainty that at least one of six factors are present. The applicant must clearly identify under which of the six factors listed under s. 10.194(2) it will make the case that a new communication tower is needed. All of the evidence submitted will be reviewed by Planning and Development Department staff, an RF engineering consultant to be hired by the County,<sup>2</sup> and by other consultants as deemed necessary by the committee.

Applicants should make their explanations of the evidence submitted as complete and thorough as possible to avoid any potential delays later in the zoning process that may result from a need to clarify or expand upon the information provided. The six factors under s. 10.194(2) are:

- (a) **Absence of Tower(s).** No existing communication tower is located within the area in which the applicant's equipment must be located.
- (b) **Insufficient Height.** No existing communication tower within the area in which the applicant's equipment must be located is of sufficient height to meet applicant's requirements and the deficiency in height cannot be remedied at a reasonable cost.<sup>3</sup>

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<sup>2</sup> This analysis is to be financed out of the CUP application fee.

<sup>3</sup> Section 10.194(3) establishes the basis for *reasonable cost* as the following: "The cost of eliminating impediments to collocation shall be deemed reasonable if it does not exceed by 25 percent the cost of constructing a tower

- (c) ***Insufficient Structural Strength.*** No existing communication tower within the area in which the applicant's equipment must be located has sufficient structural strength to support applicant's equipment and the deficiency in structural strength cannot be remedied at a reasonable cost.
- (d) ***Interference.*** The applicant's equipment would cause electromagnetic interference [i.e. in violation of the FCC's Rules and Regulations] with equipment on the existing communication tower(s) within the area in which the applicant's equipment must be located, or the equipment on the existing communication tower(s) would cause interference with the applicant's equipment and the interference, from whatever source, cannot be eliminated at a reasonable cost.
- (e) ***Fees or Terms Deviate from Industry Norms.*** The fees, costs or contractual provisions required by the owner in order to collocate on an existing communication tower are unreasonable relative to industry norms.
- (f) ***Other Factors.*** The applicant demonstrates that there are other factors that render existing communication towers unsuitable or unavailable and establishes that the public interest is best served by the placement or construction of a new communication tower.

If there are towers within the search ring or within a 1.5-mile radius (whichever is greater), then the applicant must submit:

1. a map documenting and assigning an identification number to all existing towers within the designated radius; and
2. a table providing the following data for each existing tower: simple description of the tower, including height and registration number; owner's name and contact information; present percentage of use of the tower, available aperture at the requester's preferred height, and type of communication technology being used; and date the tower was permitted.

Planning and Development Department staff are available to assist in the above task. Department staff have developed a geographic information system (GIS) inventory of existing wireless communication facilities and other relevant land use features (e.g. private airports) in Dane County. This inventory is available from the Department upon request to aid applicants in completing this task. Since the inventory is a snapshot at one point in time, it will occasionally lapse out of date: The inventory information should always be field verified.

For each existing tower identified within the designated radius, the applicant must then identify and address the factor [s. 10.194(2)(b) through (f)] relied on to make the case that a new tower is needed and that the existing tower should be removed from consideration as a viable collocation option. If the applicant is making the case under items (b) *insufficient height*, (c) *insufficient structural strength*, or (d) *interference*, the applicant must: clearly demonstrate and explain the issue in lay terms; identify the anticipated cost of constructing the proposed tower; and demonstrate that it will cost more than 125 percent of the cost of constructing the new tower to remedy the identified shortcomings of the existing tower(s). The cost for both constructing the new tower and the cost of remediating the identified shortcomings (e.g. modifying the existing tower or dismantling and reconstructing the tower) must not merely be lump sum amounts: they must be broken out into reasonable and discernable cost components that add up to the lump sum total. The explanations of the issues must be provided by qualified professionals (e.g. an RF engineer would be a credible source to describe RF issues and a structural engineer would be a credible source to describe structural issues, etc.). A letter from a site acquisition person or an attorney describing RF or structural issues would not be considered credible evidence. There must be a reasonable, technical nexus between the qualifications of the person describing the issue and the issue itself. Specifically in regard to the interference case, i.e. s. 10.194(2)(d), exhibits claiming interference must be prepared by a professional RF engineer.

If the applicant is making the case under item (e) *fees deviate from industry norms*, the applicant must identify *industry norms*. Dane County does not have data on industry norms, and the burden of proof rests entirely on the applicant. The applicant should attempt to establish a normal range of the fees, costs, or contractual provisions and clearly demonstrate that the other tower owner(s) are requiring something in excess of that

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new tower on which to mount applicant's equipment." The cost of eliminating impediments to collocation shall be deemed unreasonable if it exceeds 125 percent of the cost of constructing a new tower.

range. Success for the applicant is dependent upon submittal of a persuasive, well prepared, and sufficiently documented case. The applicant should include copies of letters, emails, or other written material to document the existing tower owner's position on the fees, costs, or contractual provisions. If the applicant is making the case under item (f) *other factors*, all evidence must be derived from qualified, credible sources.

3. ***Existing and Proposed Network Buildout.*** Under s. 10.194(11), the committee may require that an applicant for a CUP under this section provide information regarding the applicant's then current plans for future placement or construction of communication towers in Dane County. Describe in writing and via a map the applicant's existing network in Dane County and one mile surrounding the County's border. Identify each individual wireless communication facility on the network and whether the proposed tower is intended to address capacity, coverage, or other performance issues on the network. Discuss and show on a map generally where gaps in service currently exist. Discuss and show on a map the applicant's current plans for future placement or construction of communication towers in Dane County in addition to the proposed tower that is the subject of the application.

#### **F. SITE PLAN, DESIGN ELEVATIONS, SITE PHOTOS, AND PHOTO SIMULATIONS**

***Site Plan.*** A complete site plan, including design elevations, is required for every communication tower CUP application. The site plan, drawn to a scale large enough to show sufficient detail on 11 x 17 sheets, shall include the following:

1. Four-digit Conditional Use Permit (CUP) number assigned to the petition.
2. A small vicinity map that clearly identifies the site's location within Dane County.
3. Location of subject property, parcel number(s), and any relevant certified survey map (CSM) or plat information related to the identification of the property.
4. Scale and north arrow.
5. A contact name and phone number of the person(s) or entity responsible for preparing the plan.
6. Date the site plan was last revised.
7. Existing subject property lot lines and dimensions.
8. Proposed or existing lease area.
9. Proposed CUP area.
10. All buildings and outdoor use areas, both existing and proposed, including utilities, water, and sewer, either public or private. Existing and proposed uses should be labeled and clearly distinguishable. All building footprint dimensions and lot line setbacks should be shown; include approximate building heights.
11. Location, width, and surface of all interior roads or driveways and existing and proposed driveway entrances and exits onto public and private roadways. Clearly indicate traffic flow patterns.
12. Existing and proposed zoning district boundaries of the subject property and adjacent properties. Clearly label all districts.
13. Location and distance from the proposed tower of residences on both the subject property and adjacent properties.
14. Existing and proposed landscaping, fences, and other screening (e.g. berms).
15. All existing natural features of the subject property, including two-foot contours, cropped areas, woodlands, lakes, ponds, streams (including intermittent streams), significant drainage courses, general areas of slopes in excess of 20 percent, flood zones, and wetlands. For woodland areas, identify the dominant species and the approximate average height of trees in the area.
16. Other significant features, such as existing or proposed lighting, signs, and refuse dumpsters.
17. Possible future expansion areas (if anticipated).



**Design Elevations.** The design elevation drawings should be stamped by a registered professional engineer (P.E.) licensed by the State of Wisconsin and show, at a minimum:

1. A scaled elevation drawing of the proposed tower and the location and elevation (ft., AGL) of each proposed antenna array, future anticipated arrays, and any anticipated lighting.
2. The location and height of all ancillary ground equipment and structures and any anticipated landscaping or berming.
3. A schematic showing the primary antenna orientation (azimuth)/downtilts.

**Site Photos and Photo Simulations.** The application should include two sets of 4 x 6 inch photographs and one set of photo simulations. The first set should be comprised of four photographs from the proposed base of the tower looking out toward the horizon into the four cardinal directions -- north, south, east and west. Each photograph should be clearly identified in terms of what direction is being viewed. The second set of photographs should be comprised of four photographs of the subject site from adjacent properties, taken from each of the four cardinal directions -- north, south, east, and west. Again, each photograph should be clearly identified in terms of what perspective is being provided. Applicants may either indicate on the site plan or attach a separate map to show where each of the photos was taken. Lastly, one set of photo simulations providing a depiction of how the proposed tower will look should be included in the application material. These simulations should include a scaled representation of the tower superimposed on each of the four photos in the second set described above, i.e. those taken from adjoining properties looking toward the subject site. The tower should be shown as painted according to FAA requirements unless requester meets FAR waiver requirements, in which case an appropriate blending color may be used.

#### G. CUP APPLICATION FILING FEE

A filing fee of \$100 required for all CUP applications for new communication towers at the time the application is made (cash or check only). Many tower applications will also require a zoning change, which involves a separate fee that varies depending upon the current and proposed zoning category. Applications are accepted between 8:00 a.m. and 4:00 p.m. Monday through Friday.

#### H. RADIOFREQUENCY ENGINEERING ANALYSIS

Section 10.194(4) affords Dane County the option of consulting with objective, third-party technical resources at the expense of the applicant: "In the event the committee determines that it is necessary to consult with a third party in considering the factors listed in subsection (2) above, all reasonable costs and expenses associated with such consultation shall be borne by the applicant. Failure to pay such costs and expenses or provide information requested by the committee shall be grounds for denial or revocation of a conditional use permit. The applicant may provide to the committee the names of consultants which the applicant believes are qualified to assist in resolving the issues before the committee." As a matter of course, a Radiofrequency Engineering Analysis will be completed for every CUP application for a new communication tower. Dane County has contracted with Evans Associates Consulting, LLC out of Thiensville, Wisconsin to provide this service. Following the close of the Application Deadline, Planning and Development staff will forward each completed CUP application for a communication tower to the County's consultant for review. The fee for this review is included in the \$100 CUP application fee for new communication towers.

**COMMUNICATION TOWER INFORMATION FORM (CTIF)**

<b>CONTACTS</b>				
Property Owner's Name		Randy R. Knickmeier		
Property Owner's Mailing Address	1481 County Highway W Street	Stoughton City	WI State	53589 ZIP
Property Owner's Phone Number		( 608 ) 575-5072		
Agent's Name & Affiliation		Sheronica Chase- as agent on behalf of Tillman Infrastructure		
Agent's Relationship to Property Owner		Serving as agent on behalf of leasee		
Agent's Relationship to the Proposed Tower (e.g. wireless service provider, site acquisition firm, tower builder, etc.)		Site Acquisition Firm		
Agent's Mailing Address	10700 West Higgins Road, Suite #240 Street	Rosemont City	IL State	60018 ZIP
Agent's Phone Number		( 630) 352-3277 (O) or 601-212-6226 (C)		
<b>PROPOSED ACTION</b>				
Current Zoning	FP-1: Farmland Preservation	CUP Acres	75' x 75' lease area	
Proposed Zoning (only if rezoning)	N/A	Rezone Acres (if applicable)	N/A	
Have the property owner and the agent/tower sponsor formally completed a binding letter of intent, option to lease, or lease? Please attach a letter from the property owner(s) consenting to the application.			<input checked="" type="checkbox"/> Yes	No
			<i>Circle One</i>	
If applicable, does the lease area coincide with the proposed CUP area?			<input checked="" type="checkbox"/> Yes	No
			<i>Circle One</i>	
<b>LOCATION</b>				
Town	Albion			
PLSS location (Township, Range, ¼ ¼ Section)	T5N, R12E, West 1/2 of the NW 1/4 of Section 4			
Parcel Number(s)	002/0512-042-9020-3			
Street Address (or Proximity to Nearest Address)	approximately 600' to the east from 832 County Highway A Edgerton, WI 53534			
Coordinates in Decimal Degrees (00.000000 Lat., - 00.000000 Long.)	42.9338114, -89.0900081			
Is the subject property located in the Height Limitation Zoning Overlay District (HLZO), roughly within three miles of the Dane County Regional Airport (check with Zoning staff)?			Yes	<input checked="" type="checkbox"/> No
			<i>Circle One</i>	

<b>TOWER DETAILS</b>						
Applicant's Intended Purpose of Tower (e.g. coverage, capacity, other). Explain.		Relocation due to economically burdensome lease terms at existing tower. Please see the attached site selection affidavit and sworn statement.				
Type of Tower (e.g. monopole, self-support lattice, guyed lattice, etc.)			Self-support lattice			
Above Ground Level (AGL) Height (ft.) (i.e. maximum design potential).			943' AMSL; 260' self-support lattice tower with a 9' lightning rod			
Base/Ground Elevation (ft.)			943' AMSL			
What is the "fall-down radius" (ft.) of the proposed tower?			30'			
Technology to be Initially Sited on the Proposed Tower (e.g. Cellular, PCS, Radio, Television, Microwave, etc.) <sup>4</sup>			Personal Communications Services			
Number & elevation (Feet AGL) of Antenna Arrays to be Accommodated		1	2	3	4	5
Is the primary sponsor of this tower a wireless service provider or a tower builder?		Tower Builder		If a wireless service provider, please include FCC license number.		N/A
To the best of the applicant's knowledge, will this tower be lighted?		<input checked="" type="checkbox"/> Yes	No	If applicable, please explain in the box below to the greatest extent known in what manner the tower will be lighted.		
		Circle One				
<i>Lighting Configuration:</i> All lighting will conform to FAA regulations which typically requires a white strobe during the day and red at night.						
Are there any mitigation measures being taken to minimize the visual impact of this tower? If so, explain. Attach an additional page if necessary. Landscaping will be utilized to surround site as shown on sheet A-1 of the attached site plan.						
<b>PRELIMINARY INFORMATION ON OPTIONS FOR COLLOCATION<sup>5</sup></b>						
What search area radius was used to determine the location of the proposed tower?					2,500'	
Are there any existing towers or other potentially suitable structures in excess of 80 feet in height within a 1.5 mile radius? If yes, how many structures <u>total</u> are there? <sup>1</sup> _____ structures. If yes, please attach map showing the location of these structures in proximity to the proposed tower.					<input checked="" type="checkbox"/> Yes	No
					Circle One	
Has the applicant examined each of the structures noted above to determine if an antenna array can or may be located on the structure?					<input checked="" type="checkbox"/> Yes	No
					Circle One	

<sup>4</sup> Note that this statement in itself does not necessarily preclude in the future the placement of alternative technologies on this structure.

<sup>5</sup> Note that more detailed information regarding options for collocation and addressing s. 10.194(2) of the Dane County Code of Ordinances is required in the *Written Statement*.

Assign a number to each of the existing structures noted above and briefly explain in the spaces below why each one will not accommodate the proposed antenna array (e.g. structurally incapable, owner unwilling to enter into a lease, etc.). Attach additional pages if necessary.

1- The existing tower is no longer viable due to economically burdensome lease terms as discussed in the attached site selection affidavit and sworn statement.

2.

3.

4.

**SUBJECT PROPERTY AND SURROUNDING AREA**

What is the current, primary use of the subject property (e.g. residential, agricultural, commercial, etc.)?	The current primary use of the subject property is agricultural.
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What are the current, primary uses of all properties adjacent to the subject property?	Agricultural and Residential
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What is the current zoning of all properties adjacent to the subject property?	The properties surrounding the proposed parcel are zoned: Farmland Preservation (FP-1), Rural Residential (RR-2), and Rural Mixed Use (RM-8) to the north; Rural Mixed Use (RM-8) Farmland Preservation (FP-35) to the south; Rural Residential (RR-4) and Rural Mixed Use (RM-8) to the east; and Farmland Preservation (FP-35) and Residential (R) to the west.
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How far (in feet) is the proposed tower from the nearest structure on an adjacent property (not on subject property)? What is the current use of the structure?	398' from residential
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Are there any small, private airports within a 3-mile radius of the proposed tower? If yes, give the name(s) and distance(s) in the box below.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
	<i>Circle One</i>	

*Name(s) and Distances of Private Airports:*  
 Wisersky Airport 2.0 miles from proposed site  
 Jana Airport 4.1 miles from proposed site

If applicable, have the listed private airports within a 3-mile radius of the proposed tower been notified of the petition?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
	<i>Circle One</i>	

# Cell Tower Application Formatting Requirements

Below are formatting guidelines for communication tower Conditional Use Permit applications. Because of the numerous pieces of information that applicants must submit, the Department requests that the guidelines be closely followed. Having a consistent format to these applications helps to expedite the staff and Radio Frequency engineering review.

## Application format

Please use a binder clip to assemble the materials below, or some other easy mechanism that will make it easy to copy applications.

Please submit three (3) original copies of your applications: One to put in the application file and to be used by staff, one for the radio frequency engineer, and one for the relevant town. If you want to bring colored copies of propagation plots, site photos/simulations, etc. for the county Zoning and Land Regulation Committee (ZLR) to view, please bring these copies to the ZLR meetings for distribution.

In packaging and presenting your applications, please try to follow the outline and sequence provided by the application handout and checklist. Please include section tabs that correspond directly to the letters for each application section outlined in the handout, as follows:

### Tab/Exhibit A: Legal Description

Referring to the legal description in the reduced site plan is not good: The print on a reduced 11 x 17 site plan is typically too small and makes it difficult for the inspectors and others to read. In this tab, please just include the legal description for the CUP area using 12- font type.

### Tab/Exhibit B: Tax Parcel Numbers

For this one, it is OK to refer to both the Zoning Application Form and the Communication Tower Information Form for the relevant parcel numbers.

### Tab/Exhibit C: Zoning Application Form

This form is filled out by county zoning staff at the time you make the CUP application in person. Please provide a copy of this form in your final submittal. The zoning application form includes your application's CUP number, which will be referenced throughout the review and approval process. The simpler application binding mentioned above allows us to simply insert a copy of the original Zoning Application Form into this exhibit.

## **Tab/Exhibit D: Completed Communication Tower Information Form (CTIF)**

Inspectors will check to see if the contact and location information in the CTIF correspond to the information in the Zoning Application Form. Please note under the LOCATION section that "Town" refers to the rural, unincorporated township jurisdiction in which a CUP subject property is located.

## **Tab/Exhibit E: Written Statement**

Please use the following tabs for this section: E.1, E.2, and E.3

*E.1 Project Description*

*E.2 Collocation*

*E.3 Existing and Proposed Network Buildout*

## **Tab/Exhibit F: Site Plan, Design Elevations, Site Photos, & Photo Simulations**

As above, please use the following tabs for this section: F.1, F.2, and F.3

*F.1 Site Plan*

*F.2 Design Elevations*

*F.3 Site Photos and Photo Simulations*

# Project Narrative

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Tillman Infrastructure, LLC. (“Tillman Infrastructure”), seeks a Conditional Use Permit, a Height Variance and any other permits or approvals necessary to install a mobile service support structure on property located at PID:002/0512-042-9020-3 Albion, WI 53534. Tillman Infrastructure has an agreement with AT&T Mobility to develop this site on its behalf. In addition to AT&T Mobility, the site will be offered as a shared facility to any other communication carriers that have a need for a facility in this area. AT&T Mobility has acquired the necessary licenses from the Federal Communications Commission (“FCC”) to provide Personal Communications Services (“PCS”) coverage throughout the United States to provide communication services. These licenses include the Town of Albion.

The proposed site was selected as a relocation from a nearby tower, owned by SBA Structures LLC. This relocation was necessary due to SBA Structures LLC setting rent at a level that has imposed a substantial economic burden on AT&T Mobility. To alleviate this unreasonable economic burden, LCC Telecom Services was charged with finding an alternative location for a tower within a 2,500’ search radius. This radius was provided to ensure that any new tower constructed would satisfy AT&T Mobility’s radio frequency and provide Dane County residents with equal or better coverage than did the existing site. Because the existing site is the only wireless support structure within the search radius, collocating on a separate support structure was not possible as is further explained in the attached Site Selection Affidavit. The proposed property was selected, in part, because it is near the center of the search radius and satisfies AT&T Mobility’s radio frequency criteria as shown on the Propagation Maps included with this application. For further information on why the rent being charged at the existing tower is economically burdensome and why the proposed site was selected, please see the Site Selection Affidavit and Sworn Statement of Need included as Exhibits with this application.

In addition to satisfying AT&T Mobility’s radio frequency needs, the proposed site was selected due to the character and location of the property. The proposed site is in a Farmland

Preservation (FP-1) District. The properties surrounding the proposed parcel are zoned Farmland Preservation (FP-1), Rural Residential (RR-2), and Rural Mixed-Use (RM-8) to the North; Rural Mixed-Use (RM-8) and Farmland Preservation (FP-35) to the South; Rural Residential (RR-4) and Rural Mixed-Use (RM-16) to the East; and Farmland Preservation (FP-35) and Residential (R) to the West. Although a portion of the area surrounding the site has residential zoning, the location, the nearest development is over 515' from the proposed site, as shown in Sheet A-1 of the attached Site Plan. The site promotes public safety as there are no structures within the 30' fall zone radius of the tower as outlined in the attached Fall Zone Letter. Further, the proposed location would ensure that the sparsely spread out residences and business in the surrounding area, as well as travelers on the adjacent County Highway A and US Interstate 39, continue to receive the best possible, uninterrupted coverage.

The proposed tower will provide uninterrupted PCS services to the residents of the Dane County, including wireless telephone service, voice paging, messaging and wireless internet and broadband data transmission. All registered wireless provider's technology operates at various radio frequency bands allocated by the FCC as part of their license.

PCS systems operate on a grid system where overlapping cells mesh together, forming a seamless network. No single site can function as a stand-alone entity as each site is interconnected, forming the network. The technical criteria for establishing cell sites are very exacting as to the location and height. The proposed site at PID:002/0512-042-9020-3 Albion, WI 53534 is within the geographic area deemed necessary for AT&T Mobility to provide uninterrupted services.

In accordance with the Dane County Zoning Ordinance and Wisconsin state statutes, Tillman Infrastructure has made application to install a mobile service support structure. The proposed mobile service support structure will consist of a 260'-0" tall self-support lattice tower with a 9'-0" lightning rod for a total height of 269'-0" to be located within a 75'-0" x 75'-0" lease parcel.

The facility is unstaffed and will require service technicians, in a pick-up/van sized vehicle, to visit the site approximately once per month. Access will be provided via an easement and the proposed property entry at PID:002/0512-042-9020-3 Albion, WI 53534. The site is entirely self-

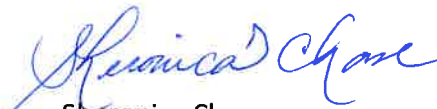


monitored through a sophisticated alarm system which is connected to a main switch station. The system alerts personnel to any equipment malfunction or breach of security. Additionally, there is no impact on any town's services such as water, sanitation, police and fire. The only services used in connect with the wireless telecommunications facility are power and land-line telephone.

In accordance with FCC regulations, the mobile service support structure will not interfere with any form of communications, including but not limited to, land-line phones, cable and satellite television and radio broadcasts. PCS technology has become a vital part of emergency services, aiding local residents and motorists in a variety of situations, thus helping to protect the general public's health, safety and welfare. The proposed mobile service support structure at this site will further enhance goals of providing the most reliable network possible in this area.

The proposed mobile service support structure will be designed and constructed to meet all applicable governmental and industry safety standards. Specifically, Tillman Infrastructure will comply with all FCC and FAA rules and regulations regarding construction requirements and technical standards. Any and all RF emissions are subject to the exclusive jurisdiction of the FCC. Any height, lighting or marking issues are subject to the exclusive jurisdiction of the FAA. LCC Telecom Services, on behalf of Tillman Infrastructure, looks forward to working with the Town of Albion and Dane County to bring the benefits of the proposed service to the entire area. The addition of the mobile service support structure will ensure the best uninterrupted wireless services for the citizens of the Town of Albion.

Sincerely,



Sheronica Chase

LCC Telecom Services

10700 W. Higgins Road Suite 240

Rosemont, IL 60018

Office | (630) 352-3277

# Legal Description & Tax Parcel No.

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As interest in land, said interest being over a portion of the following described parent parcel:

Part of the West  $\frac{1}{2}$  of the NW  $\frac{1}{4}$  of Section 4, T5N, R12E, Town of Albion, Dane County, Wisconsin more fully described as follows:

Commencing at the NW corner of Section 4, T5N, R12E; thence S  $03^{\circ}-18'-25''$  E, 310.70 feet to the point of beginning of this description; thence N  $86^{\circ}-41'-35''$  E, 33.00 feet; thence along a curve to the right which has a radius of 268.60 feet and a long chord that bears N $42^{\circ}-32'-39''$ E, 385.46 feet; thence N  $88^{\circ}-23'-44''$  E, 67.08 feet; thence S  $01^{\circ}-32'-54''$  E, 25.18 feet; thence South  $86^{\circ}-58'-27''$  E, 250.80 feet; thence N $88^{\circ}-27'-06''$  E, 412.33 feet; thence along a curve to the right which has a radius of 11,349.19 feet and a long chord that bears S  $18^{\circ}-58'-48''$  E, 1039.95 feet; thence S  $03^{\circ}-24'-17''$  E, 432.69 feet; thence S  $88^{\circ}-23'-44''$  W, 1319.53 feet; thence N $03^{\circ}-18'-25''$  W, 1193.77 feet to the point of beginning. This parcel contains 40.000 acres of which 0.905 acres is within road right of way. EXCEPTING THEREFROM, Lot One (1) Certified Survey Map 6327, recorded as document number 2247285, Town of Albion, Dane County, Wisconsin.

Tax Parcel Nos. 002/ 0512-042-9020-3

# Site Data Sheet

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<b>Applicant:</b>	Tillman Infrastructure, LLC 152 West 57 <sup>th</sup> Street 8 <sup>th</sup> Floor New York, New York 10019  AT&T Mobility 475 Morosgo Drive NE Atlanta, Georgia 30324
<b>Agent:</b>	Sheronica Chase LCC Telecom Services 10700 Higgins Road Suite 240 Rosemont, IL 60018
<b>Tower Owner:</b>	Tillman Infrastructure, LLC 152 West 57 <sup>th</sup> Street 8 <sup>th</sup> Floor New York, New York 10019
<b>Applicant's Interest in the Property:</b>	Leasehold
<b>Property Owner:</b>	Randy Ray Knickmeier 1481 County Highway W. Stoughton, WI 53589
<b>Address of Property:</b>	PID: 002/0512-042-9020-3 Albion, WI 53534
<b>Request:</b>	Application for a Conditional Use Permit, Height Variance and any other permits or approvals necessary to erect a 260'-0" tall self-support lattice tower with a 9'-0" lightning rod for a total height of 269'-0" to be located within a 75'-0" x 75'-0" lease parcel.

# Standards for Variance Approval

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Section 10.103 (9)(c) of the Dane County Zoning Ordinance (the “Zoning Ordinance”), requires the proposed tower to receive a variance based on its height of 260’ with a 9’ lightning rod. Section 10.101(10) of the Zoning Ordinance requires the Board of Adjustment to find six standards are satisfied before granting a variance. These standards (1 through 6) are addressed in turn below with the requirement stated above the bolded compliant document or information.

1. There are conditions unique to the property of the applicant that do not apply generally to other properties in the district. Dane County Zoning Ordinance Section 10.101(10)(g)(1).

**The 260’ height of the proposed tower’s structure is necessary to allow AT&T to install their equipment at the elevation required to provide the best coverage possible to the surrounding area. If the tower was constructed at a height not requiring a variance, AT&T would be required to drop the height of their equipment which, as shown on the attached Propagation Maps, would result in diminished coverage. Also, as shown on the Topographic Map included with this application, there is no location on the proposed parcel with appreciably higher elevation than the proposed location. Please see also Section 66.0404(4)(p) of the Wisconsin State Statutes.**

2. The variance is not contrary to the spirit, purpose, and intent of the regulations in the zoning district and is not contrary to the public interest. Dane County Zoning Ordinance Section 10.101(10)(g)(2).

**The proposed tower advances the public interest and the spirit, purpose, and intent of the Farmland Preservation District (FP-1). The proposed tower fulfills the Farmland Preservation District’s goal of preserving farmland as the 75’ x 75’ total lease area which the tower and facilities will occupy will not substantially decrease the area of the parcel available for agricultural purposes and will not diminish the ability of nearby properties to be used for this purpose. Instead, a variance for additional height will help to preserve nearby agricultural properties as it would obviate the need for the construction of additional supporting facilities to cover gaps in coverage created by a less than ideal, compliant height. Further, the tower will advance the Farmland Perseveration District’s stated objective of providing additional economic opportunities for property owners, by providing long term income to the property owner as shown in the attached Lease Agreement.**

3. For a variance from area, setback or dimensional standards in the ordinance, compliance with the strict letter of the ordinance would unreasonably prevent use of the property for a permitted purpose or would render compliance with the ordinance unnecessarily burdensome. Dane County Zoning Ordinance Section 10.101(10)(g)(3).

**A height variance should be granted, because strict application of the height standard would render compliance with the Zoning Ordinance unnecessarily burdensome. The burden of complying with the Zoning Ordinance's height limitation is unnecessary here, as applying the height limitation strictly would not advance the interests of public safety or the purposes of the Farmland Preservation District. Limiting the height of the proposed tower would not advance public safety because, as is shown in Sheet A-1 of the attached Site Plan and the included Fall Zone Letter, the tower at the height requiring a variance would not represent a danger to any adjacent property or structure in the unlikely event of a collapse. Further, the burden of strict compliance is unnecessary, because, as stated in 2 above, a tower of the ideal height will advance the Farmland Preservation Districts goal of preserving farmland by making additional supporting towers unnecessary. Please see also sections 66.0404(4)(u) and 66.0404(4)(L) of the Wisconsin State Statutes.**

4. The alleged difficulty or hardship is created by the terms of the ordinance rather than by a person who has a present interest in the property. Dane County Zoning Ordinance Section 10.101(10)(g)(4).

**The height limitation imposes a hardship resulting from the elevation of the property which is not attributable to any person who has or has had an interest in the property.**

5. The proposed variance shall not create substantial detriment to adjacent property. Dane County Zoning Ordinance Section 10.101(10)(g)(5).

**The proposed variance will not be detrimental to adjacent property. The proposed variance for height will not endanger the property or structures of any adjacent property as shown in the attached Fall Zone Letter and Sheet A-1 of the Site Plan. Further, the variance will benefit adjacent property owners by ensuring the continued provision of needed PCS services at and around their properties as illustrated in the attached Propagation Maps.**

6. The proposed variance shall be compatible with the character of the immediate neighborhood. Dane County Zoning Ordinance Section 10.101(10)(g)(6).

**The height variance will not make the proposed tower incompatible with the immediate neighborhood. The properties surrounding the proposed parcel are zoned Farmland Preservation (FP-1), Rural Residential (RR-2), and Rural Mixed-Use (RM-8) to the North; Rural Mixed-Use (RM-8) and Farmland Preservation (FP-35) to the South; Rural Residential (RR-4) and Rural Mixed-Use (RM-16) to the East; and Farmland Preservation (FP-35) and Residential (R) to the West. Although a portion of the area surrounding the site has residential zoning, the location is ideal for promoting public safety as there are no structures**

**within the 30' fall zone radius of the tower, see the attached Fall Zone Letter, with the nearest development being further than 515' of the proposed site as shown in Sheet A-1 of the attached Site Plan.**

# Standards for Conditional Use Approval

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Communication towers are allowed with a conditional use permit in Dane County's Farmland Preservation (FP-1), Zone, pursuant to Section 10.221(3)(b) of the Dane County Zoning Ordinance (the "Zoning Ordinance") and Section 66.0404(4)(c) of the Wisconsin State Statutes. Section 10.101(7)(d) of the Zoning Ordinance provides that no application for a conditional use shall be granted by the town board or zoning committee unless such body shall find that all of the following conditions (1-8) are present. These requirements are addressed in turn below with the requirement stated above the bolded compliant document or information.

1. That the establishment, maintenance or operation of the conditional use will not be detrimental to or endanger the public health, safety, comfort or general welfare. Dane County Zoning Ordinance § 10.101(7)(d)(1)(a)

**The proposed wireless telecommunications facility will be designed, constructed, operated and maintained so as not to be detrimental to or have any harmful effects on the public. The mobile service facility will be situated on a portion of this lot which will minimize the visual impact from ground level. See Sheet A-1 of the attached Site plan. The site will also be surrounded by landscaping to blend with the existing environment to reduce the view of the proposed tower at the ground level. *Ibid.* The site does not generate noise, traffic, sounds, odors, or any nuisance which would be detrimental to the public. The site is designed so that in the event of any collapse, the tower will fall within a 30' radius of the center of the tower and will not endanger any structure or any land other than that of the property owner. The enhanced wireless signal will increase the access to telecommunication connectivity, wi-fi, and emergency services. This increase in connectivity will result in a positive impact on public health, safety, comfort and general welfare of the community.**

2. That the uses, values and enjoyment of other property in the neighborhood for purposes already permitted shall be in no foreseeable manner substantially impaired or diminished by establishment, maintenance or operation of the conditional use. Dane County Zoning Ordinance § 10.101(7)(d)(1)(b)

**As stated above, the proposed wireless telecommunications facility will be designed, constructed, operated and maintained so as not to have any detrimental impact on surrounding properties or have any harmful effects on the public. The site is in a heavily agricultural area. The facility will not affect access to or use of any adjoining property and the minimal access needs, once a month, will not create any traffic demands in the area. The mobile service facility location has been selected and designed to minimize the visual impact from ground level. See Sheet A-1 of the attached Site Drawing. The site will be surrounded by landscaping to blend with the existing environment and does**

**not produce noise, traffic, sounds, or odors which would be detrimental to surrounding properties. *Id.* Much of the surrounding property is zoned agriculture and appears to be used for that purpose. *Id.* The proposed tower will not affect the current use of any surrounding property. The enhanced wireless signal will enhance the potential development of the surrounding properties.**

3. That the establishment of the conditional use will not impede the normal and orderly development and improvement of the surrounding property for uses permitted in the District. Dane County Zoning Ordinance § 10.101(7)(d)(1)(c)

**The proposed tower will not impede on future development or improvement of the surrounding property. As is shown on Sheet A-1 of the attached Site plan, the tower be sited within a 60'x60' fenced compound within a 75' x 75' lease area. The location of this small lease area will not substantially reduce the area of available farmland on the parent parcel. Further, the proposed tower will help to promote development by providing better connectivity to the surrounding properties.**

4. That adequate utilities, access roads, drainage and other necessary site improvements have been or are being made. Dane County Zoning Ordinance § 10.101(7)(d)(1)(d)

**As shown on Sheet A-1 of the attached Site plan, the proposed facility includes a graveled access easement for access utilizing an existing driveway as well as easements for utilities. The 75' x 75' lease area depicted on Sheet A-1 of attached Site plan will feature a 60' x 60' fenced in compound that will be covered with porous gravel to ensure adequate drainage. The proposed site has been designed to ensure adequate utilities, access roads, drainage and other necessary site improvements will be made per the provided site plans. The facility is unstaffed and only the only utility requirements are for power and telco services.**

5. That adequate measures have been or will be taken to provide ingress and egress so designed as to minimize traffic congestion in the public streets. Dane County Zoning Ordinance 10.101(7)(d)(1)(e).

**The proposed site consists of a 20' wide access and utility easement with a 12' wide gravel access road, depicted on Sheet A-1 of the attached Site plan. This access road allows access to the tower for regular monthly maintenance or in case of an emergency from County Highway A. This site will not cause traffic congestion along County Highway A due to the visits to the tower commonly once monthly.**

6. That the conditional use shall conform to all applicable regulations of the district in which it is located. Dane County Zoning Ordinance § 10.101(7)(d)(1)(f)

**The proposed mobile service facility satisfies all requirements of Dane County's Farmland Preservation (FP-1) Zone as stated in Section 10.221(3) of the Zoning**



**Ordinance. See Sheet A-1 of the attached Site plan. The proposed facility also satisfies all requirements of Section 66.0404 of the Wisconsin State Statutes and all Federal Communications Commission regulations and the Federal Aviation Administration regulations.**

7. That the conditional use is consistent with the adopted town and county comprehensive plans. Dane County Zoning Ordinance § 10.101(7)(d)(1)(g).

**The proposed conditional use is consistent with Dane County's Comprehensive Plan, as it will advance Dane County's goal of "promot(ing) and support(ing) a robust, sustainable county economy" as stated in Chapter 6 of the Dane County's Comprehensive Plan. The proposed use will help to ensure business and residents of Dane County have access to the high-quality PCS services required by many modern businesses. In particular, the proposed location would provide continued coverage to the sparsely spread out surrounding residences and business, as well as travelers on the adjacent County Highway A and US Interstate 39.**

8. That the Conditional use complies with the requirements of Section 10.220 of the Zoning Ordinance. Dane County Zoning Ordinance § 10.101(7)(d)(1)(h).

**The application satisfies the requirements of Section 10.220 of the Zoning Ordinance. Section 10.220 requires the zoning committee to find that the following standards are met before approving a conditional use permit in a Farmland Preservation district: 1) the use is consistent with the purpose of the district; 2) the use and its location are reasonable and appropriate, considering alternative locations, or are specifically approved under state or federal law; 3) the use is reasonable designed to minimize the conversion of land; 4) the use does not substantially impair or limit the current or future agricultural use of surrounding parcels of land that are zoned for agricultural use; 5) construction damage to land remaining in agricultural use is minimized and repaired to the extent feasible.**

**The proposed use is consistent with the purpose of the Farmland Preservation District, because it preserves the area around the small, 75' x 75' compound, for continued agricultural use. See Sheet A-1 of the attached Site Plan. The proposed use is also reasonable and appropriate because, as shown on Sheet A-1, it would involve a minor occupation of an already subdivided parcel, and the proposed use is specifically permitted by Wisconsin State Law 66.0404(4)(c) and (p). In addition, the use occupies only a small 75' x 75' area of the parcel, which is required for the tower and related facilities, and would not impair the use of surrounding or adjacent property for agricultural purposes. Further, any and all construction damage to the property will be repaired to the extent feasible as required by Section 13 of the Lease Agreement included as an exhibit with this application.**

**Compliance with Section 10.103(9)(b), (c), and (d) of the Zoning Ordinance**

In addition to meeting the conditional use standards addressed above, Dane County requests information from a communications tower applicant under Section 10.103(9)(b), (c), and (d) of Dane County's Zoning Ordinance . Sections (b), (c), and (d) of the Zoning Ordinance are addressed in turn below with the requirement stated above the bolded compliant document or information. When appropriate, Tillman has voluntarily submitted information requested by Dane County that is not required under § 66.0404 of the Wisconsin State Statutes. However, failure to provide information not required under the state statute does not impact the completeness of this application.

Section 10.103(9)(b) of the Zoning Ordinance requires the applicant to provide the following twelve categories of information described in a. through l. below.

- a. A completed tower application form. Section 10.103(9)(b)(a).

**Please see the attached Tower Application Permit.**

- b. An explanation as to why the site was selected and, as applies to the present application, an explanation as to why the applicant did not choose collocation including a sworn statement that the cost of collocation is, "economically burdensome." Section 10.103(9)(b)(1)(b) defines economically burdensome as meaning that, "the cost of collocation exceeds the cost of construction of a new tower by 25 percent or more." Section 10.103(9)(b)(b).

**The proposed site was selected due to its central location within the 2,500' search ring issued by AT&T, as shown in the Tower Map Exhibit, and the character of the proposed and surrounding properties. The central location of the proposed site is desirable as it will best satisfy AT&T's radio frequency criteria and provide the best coverage to the area. Also, the proposed site is in a Farmland Preservation (FP-1) District. The properties surrounding the proposed parcel are zoned Farmland Preservation (FP-1), Rural Residential (RR-2), and Rural Mixed-Use (RM-8) to the North; Rural Mixed-Use (RM-8) and Farmland Preservation (FP-35) to the South; Rural Residential (RR-4) and Rural Mixed-Use (RM-16) to the East; and Farmland Preservation (FP-35) and Residential (R) to the West. Although a portion of the area surrounding the site has residential zoning, the location is ideal for promoting public safety as there are no structures within the 30' fall zone radius of the tower, see the attached Fall Zone Letter, with the nearest development being further than 515' of the proposed site as shown in Sheet A-1 of the attached Site Plan. For a further explanation of why this site was selected please see the Site Selection Affidavit and Sworn Statement of Need included as Exhibits with this application.**

**Section 10.103(9)(b)(1)(b) of the Zoning Ordinance mirrors the goals and objectives set forth in the Section 66.0404(2)(b)6 of the Wisconsin State Statutes. The Wisconsin State Statute, like the Zoning Ordinance, requires an explanation as to why construction of a**

**new support structure is necessary at the proposed location and why 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. Here AT&T has provided information on the Sworn Statement of Need included with this application proving that the cost of collocation on the existing tower exceeds the cost of construction of a new tower by an amount greater than 25%. For a further discussion of how the unreasonableness of the financial terms imposed on AT&T necessitate the construction of a new tower, please see also the Site Selection Affidavit included with this application.**

- c. A search ring map showing all existing telecommunications facilities and tall structures within 1 mile of the search ring, including a brief statement why any existing tower is not available for collocation. Section 10.103(9)(b)(c).

**Please see attached Federal Communications Commission Tower Inventory and Tower Map exhibits for a list of all towers within the requested area. Please see attached Tower Table Exhibit, Site Selection Affidavit, and Statement of Need for an explanation of why the existing tower is unavailable for collocation.**

- d. A Radio frequency propagation map. Section 10.103(9)(b)(d).

**Please see Propagation Maps included as an exhibit with this application.**

- e. A Site plan showing the permit area and lease area, proposed tower compound, and resides within 1,500' per 100' of tower height. Section 10.103(9)(b)(e).

**Please see Sheet A-1 of the included Site Plan.**

- f. A Preliminary Design and Construction Plan showing a preliminary scaled elevation drawing of the proposed tower, a statement indicating the anticipated design capacity of the tower, the dimensions and design of all facilities, and information regarding any proposed lighting. Section 10.103(9)(b)(f).

**A preliminary scaled elevation drawing of the tower and its design capacity can be found on Sheet A-3 of the proposed site plan. The dimensions and design of all facilities, including lighting, can be found on Sheets A-1, A-2, A-4, A-5, and E-2 of the attached Site Plan.**

**The proposed tower will be equipped with lighting as required by FAA regulations. The lighting will be designed to provide intermittent illumination twenty-four hours a day, seven days a week. The lighting will be designed to emit white light during daytime hours and red light after sunset to minimize it's visual impact. See Sheet A-3 of Site Plans.**

- g. Notification of other Carriers. Section 10.103(9)(b)(g).

**Pending standard form from Dane County.**

- h. Notification of Nearby Airports. Section 10.103(9)(b)(h).

**Notification of Jana Airport in Edgerton Wisconsin has been achieved by certified mail.**

- i. A copy of a determination of no hazard from the federal aviation administration. Section 10.103(9)(b)(i).

**Please see attached FAA No Hazard Exhibit.**

- j. A description of the applicant's existing network in Dane County and proposed buildout. Section 10.103(9)(b)(j).

**The tower is proposed as a relocation due to economic burden, and therefore is not part of a proposed buildout. The proposed tower is the only tower applied for by the applicant in Dane County as of the date of this application.**

- k. Additional information requested by the Committee. Section 10.103(9)(b)(k).

**No additional information has been requested.**

- l. Fees as required in Chapter 12 of the Zoning Ordinance. Section 10.103(9)(b)(l).

**A check for \$1,100 has been included with this application as required by Section 12.05 (1)(d) is included with this application.**

Section 10.103(9)(c) requires applicants to satisfy height and setback requirements. Section 10.103(9)(c)(a) requires applicants to meet any applicable airport height limitation ordinance and limits proposed towers to below 195' unless a variance is granted based on unique transmission conditions problems which cannot be overcome by another location. Section 10.103(9)(c)(b) requires applicants to meet all front, side and rear setbacks provided by the Zoning Ordinance and Chapter 11, of the Dane County Code.

**The application satisfies the requirements of Section 10.103(9)(c)(a). Per the Dane County Regional Airport Building Height Limitation Map, no airport height limitations apply to the proposed tower. See also the attached FAA No Hazard Letter. The proposed tower, at 260' with a 9' lightning rod, exceeds the 195' limitation imposed by Section 10.103(9)(c)(a). As a result, a height variance has been requested as a part of this application. As discussed in the attached Variance Application, this height is necessary to provide the best possible coverage to the surrounding area. As illustrated on the attached Propagation Maps, a reduction in height to**

**comply with the Zoning Ordinance, would result in a loss in coverage and insufficient service to customers. This loss in coverage cannot be diminished by moving to a nearby parcel with a higher elevation, because, as illustrated on the attached Topographic Map, the selected property is at or near the highest elevation within AT&T Mobility's search area. See also Section 66.0404(4)(p) of the Wisconsin State Statutes.**

**The application also satisfies the setback requirements of Section 10.103(9)(c)(b). The proposed tower satisfies all setback requirements imposed in Section 10.221(5) of the Zoning Code, as permitted by Section 66.0404(2)(g) of the Zoning Ordinance. See the attached Fall Zone Letter.**

# Statement of Compliance with State Statute

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*The 2013 Biennial Budget Act (Act 20) modified the regulatory powers of local governments regarding applications for mobile service facilities and support structures. The law was enacted to impose consistent statewide standards regarding the regulation of placement of mobile service facilities and support structures. In order to achieve this consistency, the state statute preempts local ordinances to the extent that they are inconsistent with the statute.*

*The proposed facility is governed by Section 66.0404 of the Wisconsin Statutes (the "State Statute"), entitled, "Mobile tower siting regulations". The proposed facility meets the requirements of the state statute.*

## Application Requirements- Wis. Stat. § 66.0404(2)(2)(b)(1-6)

Section 66.0404(2)(2)(b) of the State Statute sets out specific requirements and timelines for an application to construct a new mobile service support structure. Section 66.0404(2)(2)(b)(1-6) of the State Statute outlines six categories of information that must be submitted to constitute a complete application for a substantial modification or new site. In this case, five of the six categories are required based on the site type as a new mobile service facility and support structure.

The following information is required under the statute for an application to be complete. The statute requirement is listed below in bold, with the compliant document or information identified or outlined below the requirement.

1. **The name and business address of, and the contact individual for, the applicant.** Wis. Stat. § 66.0404(2)(2)(b)(1).

**The applicant is Tillman Infrastructure, LLC. Sheronica Chase of LCC Telecom Services is the agent of and contact individual for Tillman Infrastructure, LLC, 152 West 57th Street 8th Floor New York, New York 10019. Her business address is 10700 Higgins Road, Suite 240 Rosemont, IL 60018.**

2. **The location of the proposed or affected support structure.** Wis. Stat. § 66.0404(2)(2)(b)(2).

**A support structure is defined in Section 66.0404(1)(I) of the State Statute as "a freestanding structure that is designed to support a mobile service facility". In this case, the proposed support structure is a 260'-0" tall self-support lattice tower with a 9' lightning rod for a total height of 269'.**

The support structure is to be located at PID:002/0512-042-9020-3 Albion, WI 53534. The support structure will be located within an equipment compound as defined in Section §66.0404(1)(h) of the State Statute. This fenced lease parcel is part of a larger parent parcel at the above address. The support structure location is depicted on Sheet A-1 of the Site plan which are submitted as a part of this application.

3. The location of the proposed mobile service facility. *Wis. Stat. § 66.0404(2)(2)(b)(3)*.

A mobile service facility is defined in *Wis. Stat. §66.0404(1)(l)* as “a set of equipment and network components, including antennas, transmitters, receivers, base stations, power supplies, cabling, and associated equipment, that is necessary to provide mobile service to a discreet geographic area.” In this case, the equipment consists of base station equipment cabinets on a platform, along with antennas, transmitters, receivers, power supplies, cabling and associated equipment. All of the equipment is necessary to operate the facility.

The proposed mobile service facility is also to be located to be located at PID:002/0512-042-9020-3 Albion, WI 53534 as shown on Sheet A-1 of the attached Site plan. The mobile service facility will be located within an equipment compound as defined in *Wis. Stat. §66.0404(1)(h)*. This fenced lease parcel is part of a larger parent parcel at the above address as shown on Sheet A-1 of the Site plan. The location of the mobile service facility is depicted on Sheet A-1 of the attached Site plan.

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. *Wis. Stat. § 66.0404(2)(2)(b)(4)*.

***Wis. Stat. §66.0404(2)(2)(b)(4)* applies only to substantial modification applications as defined in *Wis. Stat. §66.0404(1)(s)*. Tillman is not proposing any modification of an existing site. Accordingly, this provision is inapplicable to this application and no information is required for the Tillman Infrastructure application.**

5. 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. *Wis. Stat. § 66.0404(2)(2)(b)(5)*.

The construction plan required for a new mobile service support structure and facility under *Wis. Stat. §66.0404(2)(2)(b)(4)* has been submitted as part of this application. See Sheet A-1 of the attached Site plan. The proposed mobile service support structure and the equipment and network components, including antennas, transmitters, receivers, base stations, power supplies, cabling, and related equipment are illustrated on Sheets A-1 through A-8 of the attached Site plan.

6. 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. Wis. Stat. § 66.0404(2)(2)(b)(6).

**Please see the Sworn Statement of Need that is included as an exhibit with this application for an explanation as to why collocation on the existing support structure in the applicants search ring is economically burdensome to AT&T Mobility.**

**In addition to rent on the existing structure being economically burdensome, collocating on another support structure in the applicants search radius is not possible. As is discussed in the Site Selection Affidavit that is included with this application, AT&T Mobility provided Tillman Infrastructure with a 2,500' search radius within which the new tower could be located. This 2,500' search radius was provided to ensure that any new tower constructed would provide Dane County with equal or greater coverage than did the existing site. As is shown in the Federal Communications Commission Tower Inventory that is included as an exhibit with this application, there are no other wireless support structure within 1.5 miles of the existing tower on which the applicant could collocate. Further, the selected site is located near the center of the search area, to ensure the best possible coverage, and away from nearby residential properties.**



# Sworn Statement of Need

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existing communications support structure in AT&T's search ring, is economically burdensome for AT&T and would not result in the same cost-effective operation as compared to what AT&T could achieve if it relocated its Wireless Facilities to the Tillman Tower.

**Co-Location on the SBA Tower is Economically Burdensome**

6. AT&T maintains a co-location agreement with SBA for the SBA Tower. Under this agreement, SBA increases the rent, assesses other costs and poses other logistical issues when AT&T installs additional Wireless Facilities on the SBA Tower. AT&T anticipates future rent increases and costs from SBA if it remains co-located at the SBA Tower. Those rent increases and costs would result from, among other things, AT&T's equipment rights on the SBA Tower.

7. The current rent charged by SBA to co-locate on the SBA Tower is over three (3) what Tillman will charge AT&T to co-locate on the Tillman Tower. Pursuant to the agreement between AT&T and Tillman, annual rent increases are less than the annual rent increases charged by SBA. At the current rate of rent increases, over the next twenty (20) years, the difference in rent paid by AT&T to remain on the SBA Tower versus relocating on the Tillman Tower is well over four million dollars (\$4,000,000).

8. Since AT&T located on the SBA Tower in 2001, rent and escalators have become more competitive in the tower marketplace. New tower companies have entered the marketplace since 2001, which has also led to more competitive economic terms in tower lease agreements. Considering these competitive economic terms from other tower companies, AT&T has requested tower rent reductions from SBA. Unlike other tower companies, SBA has resisted an economically sustainable cost structure with its existing AT&T co-location leases, such that many of these leases have become economically burdensome for AT&T.

9. Decommissioning an existing Wireless Facility in favor of moving to an alternate tower location is something AT&T will only do in limited circumstances. AT&T will bear a significant capital cost in decommissioning its Wireless Facilities installation on the SBA Tower and relocating to the Tillman Tower. Despite these relocation costs, the Tillman Tower remains a better co-location option for AT&T.

10. AT&T has made this determination because the current rents and other charges to co-locate on the SBA Tower have been categorized as high-cost as compared to other existing sites in AT&T's portfolio

and the rents charged by other tower companies, such as Tillman.

11. AT&T has entered into nationwide development and master lease agreements with Tillman, which I am familiar with. Under these agreements, Tillman will construct at its own expense and own communications towers upon which AT&T will lease space to install its Wireless Facilities. AT&T does not bear any costs for the construction of a tower owned by Tillman.

12. Per these agreements and as is the case with the Tillman Tower, AT&T pays Tillman rent in return for 40,000 square inches of wind load surface area of loading and defined space on each tower and does not pay increased rent for additions to its Wireless Facilities provided said facilities remain within the predetermined space and loading limits. The agreed upon tower space and loading limits have taken into consideration the future additions and upgrades projected for AT&T's Wireless Facilities.

13. There are no other structures (other than the SBA Tower) located in AT&T's search ring capable of accommodating its Wireless Facilities.

14. The economic terms imposed upon AT&T by SBA to remain co-located on the SBA Tower are not cost-effective and are economically burdensome for AT&T especially when the nearby Tillman Tower presents a more competitive and flexible co-location option.

15. Specific terms from AT&T's lease on the SBA Tower and the Tillman Tower have not been disclosed because its lease agreement with SBA for the SBA Tower contains confidentiality provisions. AT&T will disclose the specific terms of its lease for the SBA Tower if SBA will waive AT&T's confidentiality obligation. Tillman has already agreed to do so.

**The Tillman Tower provides superior mobile service functionality.**

16. Technological changes and market trends in the wireless communications industry require AT&T to continuously upgrade its Wireless Facilities. AT&T is also obligated to build out FirstNet, which is our country's first nationwide integrated data network for providers of emergency services.

17. AT&T's lease agreement for the SBA Tower does not include "set aside" capacity reserved for the future needs of AT&T's Wireless Facilities. Every time AT&T desires to improve the Wireless Facilities installed on the SBA Tower, it must apply to SBA which then triggers an application fee and a lengthy


administrative review process, which typically includes a structural analysis of the tower and an amendment to the existing lease agreement. This administrative process may take several months and results in unnecessary time delay and additional costs in the deployment of the upgraded Wireless Facilities.

18. Conversely, AT&T's master tower lease agreement with Tillman allows AT&T to rent 40,000 square inches of tower space and loading on a Tillman Tower. This space and loading capacity is reserved exclusively for AT&T and will accommodate the needs for AT&T's Wireless Facilities well into the future. This arrangement benefits AT&T because it increases the speed of deploying Wireless Facilities and gives AT&T greater flexibility to upgrade technologies and respond to the ever-changing coverage and capacity demands of its wireless network. Provided it does not exceed the reserved space and capacity limits in the co-location agreement, AT&T is free to upgrade its Wireless Facilities on the Tillman Tower with little to no delay.



Tim Brenner

Subscribed and sworn to before me  
this 15 day of May, 2019.

  
Notary Public State of Texas  
My Commission Expires: 01/16/2020





# Site Selection Affidavit

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I, John Wallace, of the City of Chicago and Cook County, having been duly sworn, state and depose as follows:

LCC Telecom Services is petitioning for approval of a Conditional Use Permit and Height Variance for a new wireless communications facility in the Town of Albion, County of Dane (the "County") on behalf of its client, Tillman Infrastructure. Tillman Infrastructure has been contracted by AT&T Mobility to construct a new wireless facility to replace an existing site. A replacement site is required due to economically burdensome lease terms at the current location.

Based on radio frequency criteria supplied by AT&T Mobility, LCC Telecom Services was charged with finding an alternative location within a 2,500' search radius. This radius was provided to ensure that any new tower constructed would provide the County with equal or better coverage than did the existing site. Because the existing site is the only wireless support structure within the search radius, collocating on a separate support structure was not possible. The selected site is located in an agricultural parcel, near the center of the search radius, to ensure that the County continues to receive the best possible coverage. Every effort was made to secure a location with a land use appropriate to the proposed facility

This statement is submitted pursuant to Wisconsin Statute 66.0404 Mobile Tower Siting Regulations, Section (2)(b)6. That section requires an explanation as to why construction of a new facility is necessary at the proposed location and why 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. As is discussed more fully in the Sworn Statement of Need included with this application, relocation to the parcel is necessary due to unreasonable and economically burdensome rent being charged at the existing site. In addition, the new facility was selected to ensure the uninterrupted provision of quality wireless communication services to the County.

**X** \_\_\_\_\_

John Wallace

SUBSCRIBED AND SWORN To Before Me on the

\_\_\_\_ day of \_\_\_\_\_, 20\_\_

Signature \_\_\_\_\_ (Seal)

NOTARY PUBLIC

My Commission expires: \_\_\_\_\_

# Site Plan

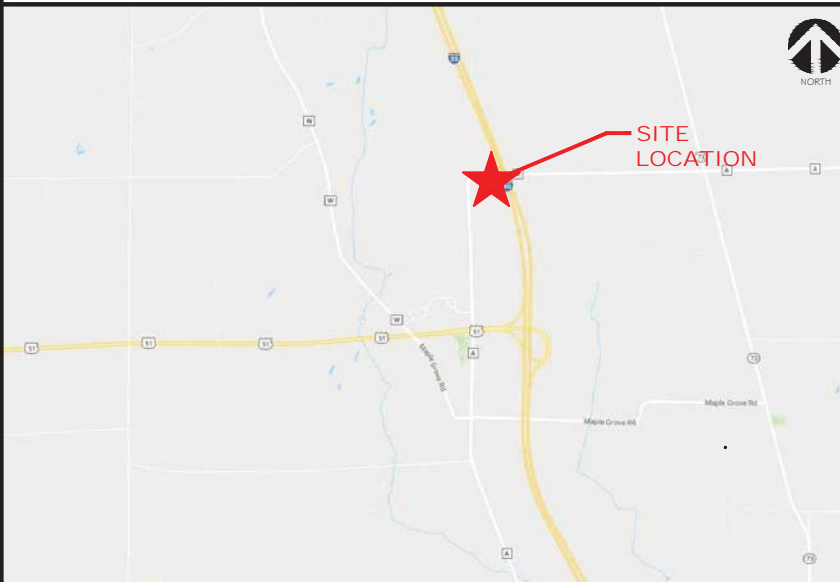
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**PROJECT:** NEW SITE BUILD  
**SITE NAME:** KNICKMEIER FARMS  
**SITE CASCADE:** TI-OPP-11895-C  
**SITE ADDRESS:** PID: 051204290203  
 ALBION, WI 53534  
**SITE TYPE:** 260' SELF SUPPORT



**VICINITY MAP:**



**AERIAL MAP:**



**PROJECT INFORMATION:**

**SITE ADDRESS:**  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

**SITE COORDINATES:**  
 LATITUDE: 42.9338114  
 LONGITUDE: -89.0900081

**MUNICIPAL ID:**  
 BLOCK: N/A  
 PARCEL #: 051204290203  
 ZONE: TBD

**PROPERTY OWNER:**  
 RANDY RAY KNICKMEIER

**APPLICANT**  
 TILLMAN INFRASTRUCTURE  
 PHONE: (646) 578-8394

**SITE ACQUISITION**  
 LCC TELECOM SERVICES  
 10700 HIGGINS ROAD, SUITE 240  
 ROSEMONT, IL 60018  
 CONTACT: JOHN WALLACE  
 PHONE: (847) 608-6300

**A&E FIRM**  
 RAMAKER & ASSOCIATES, INC.  
 855 COMMUNITY DRIVE  
 SAUK CITY, WI 53583  
 CONTACT: JASON FRAZIER  
 EMAIL: JFRAZIER@RAMAKER.COM  
 PHONE: (608) 643-4100

**APPROVALS:**

CONSTRUCTION MANAGER:  
 SITE ACQUISITION:  
 LANDLORD:

**SHEET INDEX**

SHEET NUMBER	SHEET DESCRIPTION
T-1	TITLE SHEET
N-1 THRU N-3	NOTES
1 OF 1	SURVEY
Z-1	OVERALL ZONING MAP
Z-2	ZONING MAP DETAILS
A-1	OVERALL SITE PLAN
A-2	ENLARGED SITE PLAN
A-3	TOWER ELEVATION
A-4	EQUIPMENT PLATFORM PLAN & DETAILS
A-5	EQUIPMENT DETAILS
A-6	ANTENNA PLAN & SCHEDULE
A-7	EQUIPMENT DETAILS
A-8	FENCE & GATE DETAILS
A-9	SITE DETAILS
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E-3	PANEL SCHEDULE
E-4	DC/FIBER SYSTEM DIAGRAM
E-5	DC WIRING DIAGRAM
E-6	UTILITY DETAILS
E-7	TYPICAL GROUNDING PLAN
E-8	GROUNDING DETAILS
E-9	GROUNDING DETAILS
E-10	GROUNDING DETAILS

**CODE COMPLIANCE:**

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

- 2015 INTERNATIONAL BUILDING CODE
- INTERNATIONAL MECHANICAL CODE
- ANSI/TIA-222 STRUCTURAL STANDARD
- NFPA 780 - LIGHTNING PROTECTION CODE
- NATIONAL ELECTRICAL CODE



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



*James R. Skowronski* 6/20/2019  
 James R. Skowronski Date:

MARK	DATE	DESCRIPTION
ISSUE PHASE	FINAL	DATE ISSUED 06/20/2019

PROJECT TITLE:  
**TI-OPP-11895-C**

PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:  
**TITLE SHEET**

SCALE: NONE

PROJECT NUMBER	42278
SHEET NUMBER	T-1



**GENERAL**

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

**DIVISION 1: GENERAL REQUIREMENTS**  
**SECTION 01700 - PROJECT CLOSEOUT**

**PART 1 - GENERAL**

- OBTAIN AND SUBMIT RELEASES ENABLING THE OWNER UNRESTRICTED USE OF THE WORK AND ACCESS TO SERVICES AND UTILITIES; INCLUDE OCCUPANCY PERMITS, OPERATING CERTIFICATES AND SIMILAR RELEASES
- SUBMIT RECORD DRAWINGS, DAMAGE OR SETTLEMENT SURVEY, PROPERTY SURVEY, AND ACCESS TO SERVICES AND UTILITIES; INCLUDE OCCUPANCY PERMITS, OPERATING
- COMPLETE FINAL CLEAN UP REQUIREMENTS, INCLUDING TOUCH-UP PAINTING. TOUCH UP AND OTHERWISE REPAIR AND RESTORE MARRED EXPOSED FINISHES.

**PART 2 - FINAL CLEANING**

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

**DIVISION 2: SITE WORK**  
**SECTION 02200 - EARTHWORK AND DRAINAGE**

**PART 1 - GENERAL**

- WORK INCLUDED: SEE SITE PLAN.
- DESCRIPTIONS
 

LEASE AREA, AND IF APPLICABLE ACCESS DRIVE / TURNAROUND AREA, AND UNDERGROUND UTILITY EASEMENTS ARE TO BE CONSTRUCTED TO PROVIDE A WELL DRAINED, EASILY MAINTAINED, EVEN SURFACE FOR MATERIAL AND EQUIPMENT DELIVERIES AND MAINTENANCE PERSONNEL ACCESS.
- QUALITY ASSURANCE
  - APPLY SOIL STERILIZER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS (AS NEEDED).
  - APPLY AND MAINTAIN GRASS SEED AS RECOMMENDED BY THE SEED PRODUCER (IF REQUIRED).
  - PLACE AND MAINTAIN VEGETATION LANDSCAPING, IF INCLUDED WITHIN THE CONTRACT, RECOMMENDED BY NURSERY INDUSTRY STANDARDS.
- SEQUENCING
  - CONFIRM SURVEY STAKES AND SET ELEVATION STAKES PRIOR TO ANY CONSTRUCTION.
  - COMPLETELY GRUB THE ACCESS DRIVE W/ TURNAROUND, UNDERGROUND UTILITY EASEMENTS, (IF APPLICABLE) AND LEASE AREA PRIOR TO FOUNDATION CONSTRUCTION, PLACEMENT OF BACKFILL AND SUB-BASE MATERIAL.
  - CONSTRUCT TEMPORARY CONSTRUCTION AREA ALONG ACCESS DRIVE.
  - BRING THE LEASE AREA AND ACCESS DRIVE W/ TURNAROUND TO BASE COURSE ELEVATION PRIOR TO INSTALLING FOUNDATION.
  - APPLY SOIL STERILIZER PRIOR TO PLACING BASE MATERIALS.
  - GRADE, SEED, FERTILIZE, AND MULCH ALL AREAS DISTURBED BY CONSTRUCTION (INCLUDING UNDERGROUND UTILITY EASEMENTS)

- IMMEDIATELY AFTER BRINGING LEASE AREA AND ACCESS DRIVE W/ TURNAROUND TO BASE COURSE ELEVATION, WATER TO ENSURE GROWTH.
- REMOVE GRAVEL FROM TEMPORARY CONSTRUCTION ZONE TO AN AUTHORIZED AREA OR AS DIRECTED BY PROJECT MANAGER.
  - AFTER APPLICATIONS OF FINAL SURFACES, APPLY SOIL STERILIZER TO STONE SURFACES.

**PART 2 - PRODUCTS**

- MATERIALS
  - SOIL STERILIZER SHALL BE EPA-REGISTERED, PRE-EMERGENCE LIQUID:
    - TOTAL KILL (PRODUCT 910) - EPA 10292-7 PHASAR CORPORATION P.O. BOX 5123 DEARBORN, MI 48128 (313) 563-8000
    - AMBUSH HERBICIDE - EPA REGISTERED FRAMAR INDUSTRIAL PRODUCTS 1435 MORRIS AVE. UNION, NJ 07083 (800) 526-4924
  - ROAD AND SITE MATERIALS SHALL CONFORM TO DOT SPECIFICATIONS FILL MATERIAL (UNLESS OTHERWISE NOTED) - ACCEPTABLE SELECT FILL SHALL STANDARD SPECIFICATIONS... BE IN ACCORDANCE WITH STATE DEPARTMENT OF HIGHWAY AND TRANSPORTATION.
  - SOIL STABILIZER FABRIC SHALL BE MIRAFI - 500X.

**PART 3 - EXECUTION**

- INSPECTIONS
 

LOCAL BUILDING INSPECTORS SHALL BE NOTIFIED NO LESS THAN 48 HOURS IN ADVANCE OF CONCRETE POURS, UNLESS OTHERWISE SPECIFIED BY JURISDICTION.
- PREPARATION
  - CLEAR TREES, BRUSH AND DEBRIS FROM LEASE AREA, ACCESS DRIVE W/ TURN-AROUND AND UNDER GROUND UTILITY EASEMENTS AS REQUIRED FOR CONSTRUCTION.
  - PRIOR TO OTHER EXCAVATION AND CONSTRUCTION, GRUB ORGANIC MATERIAL TO A MINIMUM OF SIX (6) INCHES BELOW GRADE.
  - UNLESS OTHERWISE INSTRUCTED BY CARRIER, TRANSPORT ALL REMOVED TREES, BRUSH AND DEBRIS FROM THE PROPERTY TO AN AUTHORIZED LANDFILL.
  - PRIOR TO PLACEMENT OF FILL OR BASE MATERIALS, ROLL THE SOIL.
  - WHERE UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED, LINE THE AREAS WITH STABILIZER MAT PRIOR TO PLACEMENT OF FILL OR BASE MATERIAL.
- INSTALLATION
  - GRADE OR FILL THE LEASE AREA AND ACCESS DRIVE W/TURNAROUND AS REQUIRED IN ORDER THAT UPON DISTRIBUTION OF SPOILS, RESULTING FROM EXCAVATIONS, THE RESULTING GRADE WILL CORRESPOND WITH SAID SUB-BASE COURSE. ELEVATIONS ARE TO BE CALCULATED FROM BENCHMARK, FINISHED GRADES, OR INDICATED SLOPES.
  - CLEAR EXCESS SPOILS, IF ANY, FROM JOB SITE AND DO NOT SPREAD BEYOND THE LIMITS OF PROJECT AREA UNLESS AUTHORIZED BY PROJECT MANAGER AND AGREED TO BY LANDOWNER.
  - BRING THE ACCESS DRIVE W/ TURNAROUND TO BASE COURSE ELEVATION TO FACILITATE CONSTRUCTION AND OBSERVATION DURING CONSTRUCTION OF THE SITE.
  - AVOID CREATING DEPRESSIONS WHERE WATER MAY POND.
  - THE CONTRACT SHALL INCLUDE GRADING, BANKING, AND DITCHING, UNLESS OTHERWISE INDICATED.
  - WHEN IMPROVING AN EXISTING ACCESS DRIVE, GRADE THE EXISTING DRIVE TO REMOVE ANY ORGANIC MATTER AND SMOOTH THE SURFACE BEFORE PLACING FILL OR STONE.
  - PLACE FILL OR STONE IN SIX (6) INCH MAXIMUM LIFTS, AND COMPACT BEFORE PLACING NEXT LIFT.
  - THE TOP SURFACE COURSE SHALL EXTEND A MINIMUM OF ONE (1) FOOT BEYOND THE SITE FENCE (UNLESS OTHERWISE NOTED) AND SHALL COVER THE AREA AS INDICATED.
  - APPLY RIPRAP TO THE SIDE SLOPES OF ALL FENCED SITE AREAS, PARKING AREAS, AND ALL OTHER SLOPES GREATER THAN 2:1.
  - APPLY RIPRAP TO THE SIDES OF DITCHES OR DRAINAGE SWALES.
  - RIPRAP ENTIRE DITCH FOR SIX (6) FEET IN ALL DIRECTIONS AT CULVERT OPENINGS.
  - APPLY SEED, FERTILIZER, AND STRAW COVER TO ALL OTHER DISTURBED AREAS, DITCHES, AND DRAINAGE SWALES, NOT OTHERWISE RIP RAPPED.
  - UNDER NO CIRCUMSTANCES WILL DITCHES, SWALES, OR CULVERTS BE PLACED SO THAT THEY DIRECT WATER TOWARDS, OR PERMIT STANDING WATER IMMEDIATELY ADJACENT TO COMPOUND. IF DESIGNS OR ELEVATIONS ARE IN CONFLICT WITH THIS, ADVISE CONSTRUCTION MANAGER IMMEDIATELY.
  - IN DITCHES WITH SLOPES GREATER THAN 10%, MOUND DIVERSIONARY HEADWALLS IN THE DITCH AT CULVERT ENTRANCES. POSITION THE HEADWALL AT AN ANGLE NO GREATER THAN 60° OFF THE DITCH LINE. RIPRAP THE UPSTREAM SIDE OF THE HEADWALL AS WELL AS THE DITCH FOR SIX (6) FEET ABOVE THE CULVERT ENTRANCE.
  - APPLY SEED AND FERTILIZER TO SURFACE CONDITIONS WHICH WILL

- ENCOURAGE ROOTING. RAKE AREAS TO BE SEEDED TO EVEN THE SURFACE AND LOOSEN THE SOIL.
- SOW SEED IN TWO DIRECTIONS IN TWICE THE QUANTITY RECOMMENDED BY THE SEED PRODUCER.
  - ENSURE GROWTH OF SEEDED AND LANDSCAPED AREAS, BY WATERING, UP TO THE POINT OF RELEASE FROM THE CONTRACT. CONTINUE TO REWORK THE BARE AREAS UNTIL COMPLETE COVERAGE IS OBTAINED.

- FIELD QUALITY CONTROL
 

COMPACT SOILS TO MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D-1557. AREAS OF SETTLEMENT WILL BE EXCAVATED AND REFILLED AT CONTRACTOR'S EXPENSE. INDICATE PERCENTAGE OF COMPACTION ACHIEVED ON AS-BUILT DRAWINGS.
- PROTECTION
  - PROTECT SEEDED AREAS FROM EROSION BY SPREADING STRAW TO A UNIFORM LOOSE DEPTH OF 1-2 INCHES, STAKE AND TIE DOWN AS REQUIRED. USE OF EROSION CONTROL MESH OR MULCH NET WILL BE AN ACCEPTED ALTERNATE.
  - ALL TREES PLACED IN CONJUNCTION WITH A LANDSCAPE CONTRACT WILL BE WRAPPED, TIED WITH HOSE PROTECTED WIRE, AND SECURED TO 2" X 2" X 4'-0" WOODEN STAKES EXTENDING TWO-FEET INTO THE GROUND ON FOUR SIDES OF THE TREE.
  - PROTECT ALL EXPOSED AREAS AGAINST WASHOUTS AND SOIL EROSION. PLACE STRAW BALES AT THE INLET APPROACH TO ALL NEW OR EXISTING CULVERTS. WHERE THE SITE OR ROAD AREAS HAVE BEEN ELEVATED IMMEDIATELY ADJACENT TO THE RAIL LINE, STAKE EROSION CONTROL FABRIC FULL LENGTH IN THE SWALE TO PREVENT CONTAMINATION OF THE RAIL BALLAST. ALL EROSION CONTROL METHODS SHALL CONFORM TO APPLICABLE BUILDING CODE REQUIREMENTS.

**SECTION 02830 - FENCING AND GATE(S)**

**PART 1 - GENERAL**

- WORK INCLUDED
 

SEE PLAN FOR SITE AND LOCATION OF FENCE AND GATE(S).
- QUALITY ASSURANCE
 

ALL STEEL MATERIALS UTILIZED IN CONJUNCTION WITH THIS SPECIFICATION WILL BE GALVANIZED OR STAINLESS STEEL. WEIGHT OF ZINC COATING ON THE FABRIC SHALL NOT BE LESS THAN 12 OUNCES PER SQUARE FOOT OF MATERIAL COVERED. POSTS SHALL BE HOT-DIPPED IN GRADE 'E' ZINC, 18 OUNCES PER SQUARE FOOT.
- SEQUENCING
 

IF THE SITE AREA HAS BEEN BROUGHT UP TO SURFACE COURSE ELEVATION (PRIOR TO THE FENCE CONSTRUCTION), FENCE POST EXCAVATION SPOILS MUST BE CONTROLLED TO PRECLUDE CONTAMINATION OF SAID SURFACE COURSE.
- SUBMITTALS
  - MANUFACTURER'S DESCRIPTIVE LITERATURE.
  - CERTIFICATE OR STATEMENT OF COMPLIANCE WITH THE SPECIFICATIONS.

**PART 2 - PRODUCTS**

- FENCE MATERIAL
  - ALL FABRIC WIRE, RAILS, HARDWARE, AND OTHER STEEL MATERIALS SHALL BE HOT-DIPPED GALVANIZED.
  - FABRIC SHALL BE SEVEN-FOOT HIGH OR TO MATCH EXISTING FENCE TWO-INCH CHAIN LINK MESH OF NO. 9 GAUGE (0.148") WIRE. THE FABRIC SHALL HAVE A KNUCKLED FINISH FOR THE TOP SELVAGES. FABRIC SHALL CONFORM TO THE SPECIFICATIONS OF ASTM A-392 CLASS 1.
  - BARBED WIRE SHALL BE DOUBLE-STRAND, 12-1/2 GAUGE TWISTED WIRE, WITH 14-GAUGE, 4-POINT ROUND BARBS SPACED ON FIVE-INCH CENTERS.
  - ALL POSTS SHALL BE SCHEDULE - 40 MECHANICAL SERVICE PIPE AND SHALL BE TYPE 1 ASTM A-128 AND OF THE FOLLOWING DIAMETER LINE 2" SCHEDULE 40 (23#8" O.D.) GATE 3" SCHEDULE 40 (31#2" O.D.) CORNER 3" SCHEDULE 40 (31#2" O.D.)
  - GATE POSTS SHALL BE EXTENDED 12 INCHES, INCLUDING DOME CAP, TO PROVIDE FOR ATTACHMENT OF BARBED WIRE.
- ALL TOP AND BRACE RAILS SHALL BE 1" DIAMETER SCHEDULE 40 MECHANICAL-SERVICE PIPE.
- GATE FRAMES AND BRACES SHALL BE 1.90 INCH DIAMETER SCHEDULE 40 MECHANICAL-SERVICE PIPE. FRAMES SHALL HAVE WELDED CORNERS.
- GATE FRAMES SHALL HAVE A FULL-HEIGHT VERTICAL BRACE, AND A FULL-WIDTH HORIZONTAL BRACE, SECURED IN PLACE BY USE OF GATE BRACE CLAMPS.
- GATE HINGES SHALL BE MERCHANTS METAL MODEL 64386 HINGE ADAPTER WITH MODEL 6409, 188-DEGREE ATTACHMENT.
- THE GUIDE (LATCH ASSEMBLY) SHALL BE HEAVY INDUSTRIAL DOUBLE GATE LATCH. SEE DETAIL.
- LATCHES AND STOPS SHALL BE PROVIDED FOR ALL GATES.
- PLUNGER ROD COMPLETE WITH RECEPTOR TO BE PROVIDED AT THE INACTIVE LEAF OF ALL DOUBLE GATE INSTALLATIONS.
- ALL STOPS SHALL HAVE KEEPERS CAPABLE OF HOLDING THE GATE

- LEAF IN THE OPEN POSITION.
- A NO. 7 GAUGE ZINC COATED TENSION WIRE SHALL BE USED AT THE BOTTOM OF THE FABRIC, TERMINATED WITH BAND CLIPS AT CORNER AND GATE POSTS.
- A SIX-INCH BY 1/2-INCH DIAMETER EYEBOLT TO HOLD TENSION WIRE SHALL BE PLACED AT LINE POSTS.
- STRETCHER BARS SHALL BE 3/16-INCH BY 3/4-INCH OR HAVE EQUIVALENT CROSS-SECTIONAL AREA.
- ALL CORNER GATE AND PANELS SHALL HAVE A 3/8-INCH TRUSS ROD WITH TURNBUCKLES.
- ALL POSTS EXCEPT GATE POSTS SHALL HAVE A COMBINATION CAP AND BARBED WIRE SUPPORTING ARM. GATE POSTS SHALL HAVE A DOME CAP.
- OTHER HARDWARE INCLUDES BUT MAY NOT BE LIMITED TO TIE CLIPS, BAND CLIPS AND TENSION BAND CLIPS.
- BARBED WIRE GATE GUARDS SHALL BE FITTED WITH DOME CAPS.
- BARBED WIRE SUPPORT ARMS SHALL BE PRESSED STEEL COMPLETE WITH SET BOLT AND LOCK WIRE IN THE ARM.
- ALL CAPS SHALL BE MALLEABLE IRON, DOME OR ACORN SHAPED AS REQUIRED BY PIPE SIZE.
- WHERE THE USE OF CONCERTINA HAS BEEN SPECIFIED, 24-INCH DIAMETERS COIL, BARBED TAPE, STAINLESS STEEL, CYCLONE FENCE MODEL G8P TO TYPE III SHALL BE FURNISHED. IT SHALL BE SUPPORTED ABOVE THE TOP RAIL BY USE OF SIX (6) WIRE BARBED WIRE ARMS POSITIONED ATOP EACH LINE/CORNER POST.

- INSPECTION
 

TO CONFIRM PROPER DEPTH AND DIAMETER OF POST HOLE EXCAVATIONS. ALL POST HOLES WILL BE EXCAVATED AS PER CONSTRUCTION DOCUMENTS.
- INSTALLATION
  - FOUNDATIONS SHALL HAVE A MINIMUM SIX (6) INCH CONCRETE COVER UNDER POST.
  - ALL FENCE POSTS SHALL BE VERTICALLY PLUMB; ONE QUARTER (1/4) INCH
  - AT CORNER POSTS, GATE POSTS, AND SIDES OF GATE FRAME, FABRIC SHALL BE ATTACHED WITH STRETCHER AND TENSION BAND-CLIPS AT FIFTEEN(15) INCH INTERVALS.
  - AT LINE POSTS, FABRIC SHALL BE ATTACHED WITH BAND-CLIPS AT FIFTEEN (15) INCH INTERVALS.
  - FABRIC SHALL BE ATTACHED TO BRACE RAILS, TENSION WIRE AND TRUSS RODS WITH TIE-CLIPS AT TWO (2) FOOT INTERVALS.
  - A MAXIMUM GAP OF ONE INCH WILL BE PERMITTED BETWEEN TIE CHAIN LINE FABRIC AND THE FINAL GRADE.
  - GATE SHALL BE INSTALLED SO LOCKS ARE ACCESSIBLE FROM BOTH SIDES.
  - GATE HINGE BOLTS SHALL HAVE THEIR THREADS PEENED OR WELDED TO PREVENT UNAUTHORIZED REMOVAL.
  - CONCRETE TO BE A MINIMUM OF 4,000 PSI AT 7 DAYS. CEMENT SHALL EXCEED ASTM C150, TYPE IIIA.
- PROTECTION
 

UPON COMPLETION OF ERECTION, INSPECT FENCE MATERIAL AND PAINT FIELD CUTS OR GALVANIZING BREAKS WITH ZINC-BASED PAINT, COLOR TO MATCH THE GALVANIZED METAL.

**APPLICABLE STANDARDS**

- ASTM-A120 SPECIFICATION FOR PIPE, STEEL BLACK AND HOT-DIPPED ZINC COATED (GALVANIZED) WELDED AND SEAMLESS, FOR ORDINARY USES.
- ASTM-A123 ZINC (HOT-DIP GALVANIZED) COATING ON IRON AND STEEL PRODUCTS.
- ASTM-A153 STANDARD SPECIFICATION FOR ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE.
- ASTM-A392 SPECIFICATION FOR ZINC-COATED STEEL CHAIN LINK FENCE FABRIC.
- ASTM-A491 SPECIFICATION FOR ALUMINUM-COATED STEEL CHAIN LINK FENCE FABRIC
- ASTM-A525 STANDARD SPECIFICATION FOR STEEL SHEET ZINC COATED (GALVANIZED) BY THE HOT-DIPPED PROCESS. ASTM-A570 SPECIFICATION FOR HOT-ROLLED CARBON STEEL SHEET AND STRIP. STRUCTURAL QUALITY.
- ASTM-A535 SPECIFICATION FOR ALUMINUM COATED STEEL BARBED WIRE.
- FEDERAL SPECIFICATION RR-F-191- FENCING, WIRE AND POST METAL (AND GATES, CHAIN LINK FENCE FABRIC, AND ACCESSORIES)



10700 HIGGINS ROAD, SUITE 240  
 ROSEMONT, IL 60018  
 OFFICE: (847) 393-4528



100% EMPLOYEE-OWNED  
 855 Community Dr, Sauk City, WI 53583  
 608-643-4100 www.Ramaker.com  
 Sauk City, WI • Willmar, MN  
 Woodcliff Lake, NJ • Bayamon, PR

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



*James R. Skowronski* 6/20/2019  
 James R. Skowronski : Date:


MARK	DATE	DESCRIPTION
ISSUE PHASE	FINAL	DATE ISSUED 06/20/2019

PROJECT TITLE:  
**TI-OPP-11895-C**

PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:  
**NOTES**

SCALE: NONE

PROJECT NUMBER	42278
SHEET NUMBER	N-1



DIVISION 3: CONCRETE  
SECTION 03000 - BASIC CONCRETE MATERIALS AND METHODS

PART 1 - GENERAL

1. WORK INCLUDED FORM WORK, REINFORCEMENT, ACCESSORIES, CAST-IN-PLACE CONCRETE, FINISHING, AND CURING.
2. INSPECTIONS
  - A. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING BUILDING DEPARTMENT INSPECTIONS REQUIRED FOR HIS SCOPE OF WORK.
  - B. ALL REINFORCING STEEL SHALL BE INSPECTED AND APPROVED BY THE CARRIER CONSTRUCTION MANAGER, OR THEIR DESIGNEE, PRIOR TO PLACEMENT OF CONCRETE.
  - C. THE CARRIER CONSTRUCTION MANAGER SHALL BE NOTIFIED NO LESS THAN 48 HOURS IN ADVANCE OF CONCRETE POURS.
3. QUALITY ASSURANCE
  - A. CONSTRUCT AND ERECT CONCRETE FORM WORK IN ACCORDANCE WITH ACI 301 AND ACI 318.
  - B. PERFORM CONCRETE REINFORCING WORK IN ACCORDANCE WITH ACI 301, ACI 318, AND ASTM A184.
  - C. PERFORM CAST-IN-PLACE CONCRETE WORK IN ACCORDANCE WITH ACI 301, ACI 318, AND ACI 117-90.
  - D. OPEN FOUNDATION TRENCHES SHALL BE INSPECTED BY MES PRIOR TO CONCRETE INSTALLATION.
4. SUBMITTALS SUBMIT CONCRETE MIX AND REINFORCING STEEL SHOP DRAWINGS FOR APPROVAL BY CARRIER CONSTRUCTION MANAGER/ENGINEER. THE SHOP DRAWINGS SHALL BE SUBMITTED IN THE FORM OF TWO (2) CONCRETE MIX DESIGN INFORMATION SHEETS AND TWO (2) BLUE LINE DRAWINGS FOR REINFORCING STEEL.

PART 2 - PRODUCTS

1. REINFORCEMENT MATERIALS
  - A. REINFORCEMENT STEEL, ASTM A615, 60 ksi YIELD GRADE, DEFORMED BILLET STEEL BARS, PLAIN FINISH.
  - B. WELDED STEEL WIRE FABRIC ASTM A185 PLAIN TYPE, IN FLAT SHEETS, PLAIN FINISH.
  - C. CHAIRS, BOLSTERS, BAR SUPPORTS, SPACERS. SIZED AND SHAPED FOR SUPPORTS OF REINFORCING.
  - D. FABRICATE CONCRETE REINFORCING IN ACCORDANCE WITH ACI 315, ACI 318, ASTM A184
2. CONCRETE MATERIALS
  - A. CEMENT: ASTM C150, PORTLAND TYPE
  - B. FINE AND COURSE AGGREGATES: ASTM C33 - MAXIMUM SIZE OF CONCRETE AGGREGATE SHALL NOT EXCEED; ONE (1) INCH SIZE SUITABLE FOR INSTALLATION METHOD UTILIZED OR ONE-THIRD CLEAR DISTANCE BEHIND OR BETWEEN REINFORCING.
  - C. WATER: CLEAN AND NOT DETRIMENTAL TO CONCRETE
  - D. AIR ENTRAINING ADMIXTURE: ASTM C260
  - E. BONDING AGENT: LATEX EMULSION FOR BONDING NEW TO OLD CONCRETE AS MANUFACTURED BY DAYTON SUPERIOR.
  - F. NON-SHRINK GROUT: PREMIXED COMPOUND CONSISTING OF NONMETALLIC AGGREGATE, CEMENT, WATER REDUCING AND PLASTICIZING AGENTS.
3. CONCRETE MIX
  - A. CONCRETE MATERIALS SHALL CONFORM TO THE APPROPRIATE A.C.I. REQUIREMENTS FOR EXPOSED STRUCTURAL CONCRETE.
  - B. MIX AND DELIVER CONCRETE IN ACCORDANCE WITH ASTM C94, ALT. 3.
  - C. PROPORTIONS OF CONCRETE MATERIALS SHALL BE SUITABLE FOR THE INSTALLATION METHOD UTILIZED AND SHALL RESULT IN DURABLE CONCRETE FOR LOCAL ANTICIPATED AGGRESSIVE ACTIONS. THE DURABILITY REQUIREMENTS OF ACI 318 CHAPTER 4 SHALL BE SATISFIED BASED ON THE CONDITIONS EXPECTED AT THE SITE. PROVIDE CONCRETE AS FOLLOWS:
    1. COMPRESSIVE STRENGTH: 4000 psi AT 28 DAYS.
    2. SLUMP: 3 INCHES

PART 3 - EXECUTION

1. INSERTS, EMBEDDED COMPONENTS AND OPENINGS
  - A. THE CONTRACTOR SHALL COORDINATE AND CROSS-CHECK ARCHITECTURAL, BUILDING & ELECTRICAL DRAWINGS FOR OPENINGS, SLEEVES, ANCHORS, HANGERS, AND OTHER ITEMS RELATED TO CONCRETE WORK AND SHALL ASSUME FULL RESPONSIBILITY FOR THE PROPER LOCATION BEFORE PLACING CONCRETE
  - B. PROVIDE FORMED OPENINGS WHERE REQUIRED FOR WORK TO BE EMBEDDED IN AND PASSING THROUGH CONCRETE MEMBERS.
  - C. COORDINATE WORK OF OTHER SECTIONS IN FORMING AND SETTING OPENING, SLOTS, RECESSES, CHASES, SLEEVES, BOLTS, ANCHORS, AND OTHER INSERTS.
  - D. INSTALL CONCRETE ACCESSORIES STRAIGHT, LEVEL AND PLUMB.
2. REINFORCEMENT PLACEMENT
  - A. PLACE REINFORCEMENT, SUPPORTED AND SECURED AGAINST DISPLACEMENT.
  - B. ENSURE REINFORCING IS CLEAN, FREE OF LOOSE SCALE, DIRT, OR OTHER FOREIGN COATINGS.
  - C. WELDING IS PROHIBITED ON REINFORCING STEEL AND EMBEDMENTS.

D. MINIMUM CONCRETE COVER FOR REINFORCING SHALL BE 3 INCHES UNLESS OTHERWISE NOTED E. CONCRETE COVER FROM TOP OF FOUNDATION TO ENDS OF VERTICAL REINFORCEMENT SHALL NOT EXCEED 3 INCHES NOR BE LESS THAN 2 INCHES.

3. PLACING CONCRETE
  - A. VIBRATE ALL CONCRETE.
  - B. ALL CONCRETE WORK SHALL ADHERE TO THE LATEST A.C.I STANDARDS FOR WINTER POURING AND CURING PROCEDURES IF SEASONAL CONDITIONS APPLY
4. CURING
  - A. AFTER PLACEMENT, PROTECT CONCRETE FROM PREMATURE DRYING.
  - B. MAINTAIN CONCRETE WITH MINIMAL MOISTURE LOSS AT RELATIVELY CONSTANT TEMPERATURE FOR A PERIOD NECESSARY FOR HYDRATION OF CEMENT AND HARDENING OF CONCRETE.
5. PROVIDE HAND RUBBED SMOOTH FINISH TO ALL EXPOSED VERTICAL FORMED CONCRETE SURFACES.
6. FIELD QUALITY CONTROL
  - A. SUBMIT THREE (3) CONCRETE TEST CYLINDERS - TAKEN FOR EVERY 15 CUBIC YARD OR LESS. SUBMIT CONCRETE TESTS TO THE PROJECT MANAGER IN ACCORDANCE WITH ASTM , C-31 AND C-39.
  - B. SUBMIT ONE (1) ADDITIONAL TEST CYLINDER - TAKEN DURING COLD WEATHER POURS, AND CURED ON JOB SITE UNDER SAME CONDITIONS AS CONCRETE IT REPRESENTS.
  - C. SUBMIT ONE (1) SLUMP TEST - TAKEN FOR EACH SET OF TEST CYLINDERS TAKEN.
7. DEFECTIVE CONCRETE MODIFY OR REPLACE CONCRETE NOT CONFORMING TO REQUIRED LINES, DETAILS OR ELEVATIONS AT COST OF GC, AS DIRECTED BY ARCHITECT/ENGINEER.

PART 1 - GENERAL

1. SECTION INCLUDES: STRUCTURAL STEEL FRAMING MEMBERS, BASE PLATES, PLATES, BARS AND GROUTING UNDER BASE PLATES.
2. SUBMITTALS: SHOP DRAWINGS: INDICATE SIZES, SPACING, AND LOCATIONS OF STRUCTURAL MEMBERS, OPENINGS, CONNECTIONS, CAMBERS, LOADS, AND WELDED SECTIONS.
3. QUALITY ASSURANCE:
  - A. FABRICATE STRUCTURAL STEEL MEMBERS IN ACCORDANCE WITH AISC SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS.
  - B. PERFORM DESIGN UNDER DIRECT SUPERVISION OF A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE.

PART 2 - PRODUCTS

1. MATERIALS:
  - A. STRUCTURAL STEEL MEMBERS: ASTM A572, GRADE 50
  - B. STRUCTURAL TUBING: ASTM A500, GRADE B
  - C. PIPE: ASTM A53, TYPE E OR S, GRADE B
  - D. BOLTS, NUTS, AND WASHERS: ASTM A325
  - E. ANCHOR BOLTS: ASTM A307
  - F. WELDING MATERIALS: AWS D1.1, TYPE REQUIRED FOR MATERIALS BEING WELDED
  - G. GROUT: NON-SHRINK TYPE, PREMIXED COMPOUND CONSISTING OF NONMETALLIC AGGREGATE, CEMENT, WATER REDUCING AND PLASTICIZING ADDITIVES, CAPABLE OF DEVELOPING MINIMUM COMPRESSIVE STRENGTH OF 7000 psi AT 28 DAYS.
  - H. SHOP AND TOUCH-UP PRIMER: SSPC 15, TYPE 1, RED OXIDE
  - I. TOUCH-UP PRIMER FOR GALV. SURFACES: ZINC RICH TYPE
2. FABRICATION: CONTINUOUSLY SEAL JOINTED MEMBERS BY CONTINUOUS WELDS. GRIND EXPOSED WELDS SMOOTH.
3. FINISH:
  - A. PREPARE STRUCTURAL COMPONENT SURFACES IN ACCORDANCE WITH SSPC SP-1 TO SP-10 PROCEDURES.
  - B. STRUCTURAL STEEL MEMBERS SHALL BE HOT DIPPED GALVANIZED.

PART 3 - EXECUTION

1. EXAMINATION AND PREPARATION: VERIFY THAT THE FIELD CONDITIONS ARE ACCEPTABLE.
2. ERECTION:
  - A. ALLOW FOR ERECTION LOADS. PROVIDE TEMPORARY BRACING TO MAINTAIN FRAMING IN ALIGNMENT UNTIL COMPLETION OF ERECTION AND INSTALLATION OF PERMANENT BRIDGING AND BRACING.
  - B. FIELD WELD COMPONENTS INDICATED ON SHOP DRAWINGS.
  - C. DO NOT FIELD CUT OR ALTER STRUCTURAL MEMBERS WITHOUT APPROVAL OF THE ARCHITECT/ENGINEER.
  - D. AFTER ERECTION, TOUCH-UP WELDS, ABRASIONS, AND SURFACES NOT SHOP PRIMED OR GALVANIZED WITH TOUCH-UP PRIMERS AS SPECIFIED UNDER SECTION 05000 -METALS, PART 2 - PRODUCTS, H & I. SURFACES TO BE IN CONTACT WITH CONCRETE NOT INCLUDED.
3. FIELD QUALITY CONTROL: FIELD INSPECTION OF MEMBERS, CONNECTIONS, WELDS AND TORQUING.

DIVISION 16: ELECTRICAL  
SECTION 16050 - BASIC ELECTRICAL MATERIALS AND METHODS

1. CONTRACTOR SHALL REVIEW THE CONTRACT DOCUMENTS PRIOR TO ORDERING THE ELECTRICAL EQUIPMENT AND STARTING THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE ARCHITECT LISTING ANY DISCREPANCIES OR CONFLICTING INFORMATION.
2. ELECTRICAL PLANS, DETAILS AND DIAGRAMS ARE DIAGRAMMATIC ONLY. VERIFY EXACT LOCATIONS AND MOUNTING HEIGHTS OF ELECTRICAL EQUIPMENT WITH OWNER PRIOR TO INSTALLATION.
3. EACH CONDUCTOR OF EVERY SYSTEM SHALL BE PERMANENTLY TAGGED IN EACH PANELBOARD, PULLBOX, JUNCTION BOX, SWITCH BOX, ETC. THE TYPE OF TAGGING METHODS SHALL BE IN COMPLIANCE WITH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (O.S.H.A.).
4. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN GOOD WORKING CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. MATERIALS SHALL BE LISTED "J" WHERE APPLICABLE. MATERIALS SHALL MEET WITH APPROVAL OF ALL GOVERNING BODIES HAVING JURISDICTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA, NBFU AND "UL" LISTED.
5. ALL CONDUIT SHALL HAVE A PULL CORD.
6. PROVIDE PROJECT MANAGER WITH ONE SET OF COMPLETE ELECTRICAL "AS INSTALLED" DRAWINGS AT THE COMPLETION OF THE JOB, SHOWING ACTUAL DIMENSIONS, ROUTINGS, AND CIRCUITS.
7. ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED, AND A MINIMUM OF 10,000 A.I.C.
8. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY UBC, NEC AND ALL APPLICABLE CODES.
9. PATCH, REPAIR AND PAINT ANY AREA THAT HAS BEEN DAMAGED IN THE COURSE OF THE ELECTRICAL WORK.
10. PLASTIC PLATES FOR ALL SWITCHES, RECEPTACLES, TELEPHONE AND BLANKED OUTLETS SHALL HAVE ENGRAVED LETTERING WHERE INDICATED ON THE DRAWINGS. WEATHERPROOF RECEPTACLES SHALL HAVE SIERRA #WPD-8 LIFT COVER PLATES.

SECTION 16400 - SERVICE AND DISTRIBUTION

1. WIRE AND CABLE CONDUCTORS SHALL BE COPPER, 600V, TYPE THHN OR THWN, WITH A MIN. SIZE OF #12 AWG, COLOR CODED. ALL RECTIFIER DROPS SHALL BE STRANDED TO ACCEPT CRIMP CONNECTORS.
2. ALL CHEMICAL GROUND RODS SHALL BE "UL" APPROVED.
3. METER SOCKET AMPERES, VOLTAGE, NUMBER OF PHASES SHALL BE A NOTED ON THE DRAWINGS. MANUFACTURED BY MILBANK OR APPROVED EQUAL, AND SHALL BE UTILITY COMPANY APPROVED.
4. CONDUIT:
  - A. RIGID CONDUIT SHALL BE U.L. LABEL GALVANIZED ZINC COATED WITH GALVANIZED ZINC INTERIOR AND SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS, IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR RIGID CONDUIT IN CONTACT WITH EARTH SHALL BE 2/2 LAPPED WRAPPED WITH HUNTS WRAP PROCESS NO. 3.
  - B. ELECTRICAL METALLIC TUBING SHALL HAVE U.L. LABEL, FITTING SHALL BE GLAND RING COMPRESSION TYPE.
  - C. FLEXIBLE METALLIC CONDUIT SHALL HAVE U.L. LISTED LABEL AND MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE "JAKE" OR "SQUEEZE" TYPE. ALL FLEXIBLE CONDUITS SHALL HAVE FULL LENGTH GROUND WIRE.
  - D. ALL UNDERGROUND CONDUIT SHALL BE AS NOTED ON THE DRAWINGS AT A MINIMUM DEPTH OF 30" BELOW GRADE. IT IS REQUIRED AND WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO NOTIFY THE UTILITY CLEARANCE HOTLINE (DIGGER'S HOTLINE OR OTHER SUCH NOTIFYING AGENCY) SEVENTY-TWO (72) BUSINESS HOURS PRIOR TO DIGGING.
5. CONTRACTOR TO COORDINATE WITH UTILITY COMPANY FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE SITE. THE TEMPORARY POWER AND ALL HOOKUP COSTS ARE TO BE PAID BY THE CONTRACTOR.
6. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS WITH WHITE ON BLUE BACKGROUND LETTERING (MINIMUM LETTER HEIGHT SHALL BE 1/4-INCH). NAMEPLATES SHALL BE FASTENED WITH STAINLESS STEEL SCREWS, NOT ADHESIVE.
7. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL POTENTIAL GROUNDING TESTS BY AN INDEPENDENT TESTING SERVICE ENGAGED BY THE CONTRACTOR SHALL BE SUBMITTED FOR APPROVAL. SUBMIT TEST REPORTS TO PROJECT MANAGER. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION.
8. GROUNDING ELECTRODE SYSTEM
  - A. PREPARATION
    1. SURFACE PREPARATION: ALL CONNECTIONS SHALL BE MADE TO BARE METAL. ALL PAINTED SURFACES SHALL BE FIELD INSPECTED AND MODIFIED TO ENSURE PROPER CONTACT. NO WASHERS ARE ALLOWED BETWEEN THE ITEMS BEING GROUNDED. ALL CONNECTIONS ARE TO HAVE A NON-OXIDIZING AGENT APPLIED PRIOR TO INSTALLATION.
    2. GROUND BAR PREPARATION: ALL COPPER GROUND BARS SHALL BE CLEANED, POLISHED AND A NON-OXIDIZING AGENT APPLIED. NO FINGERPRINTS OR DISCOLORED COPPER WILL BE PERMITTED.

3. SLEEVES: ALL GROUNDING CONDUCTORS SHALL RUN THROUGH PVC SLEEVES WHEREVER CONDUCTORS RUN THROUGH WALLS, FLOORS OR CEILINGS. IF CONDUCTORS MUST RUN THROUGH EMT, BOTH ENDS OF CONDUIT SHALL BE GROUNDED. SEAL BOTH ENDS OF CONDUIT WITH SILICONE CAULK.
- B. GROUND BARS
  1. ALL GROUND BARS SHALL BE 1/4-INCH THICK TINNED COPPER PLATE AND OF SIZE INDICATED ON DRAWINGS.
  2. ALL CONNECTIONS TO THE GROUND BARS SHALL OBSERVE THE FOLLOWING SEQUENCE:
    - A. BOLT-HEAD
    - B. 2-HOLE LUG
    - C. NON-OX (ANTI-OXIDATION COMPOUND)
    - D. TINNED COPPER BUSS BAR
    - E. NON-OX (ANTI-OXIDATION COMPOUND)
    - F. STAR WASHER
    - G. NUT
  - C. EXTERNAL CONNECTIONS
    1. ALL BURIED GROUNDING CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC WELD PROCESS. CONNECTIONS SHALL INCLUDE ALL CABLE TO CABLE, SPLICES, TEE'S, CROSSES, ETC. ALL CABLE TO GROUND RODS, GROUND ROD SPLICES AND LIGHTNING PROTECTION SYSTEMS ARE TO BE AS INDICATED. ALL MATERIALS USED (MOLDS, WELDING METAL, TOOLS, ETC.) SHALL BE BY "CADWELD" AND INSTALLED PER MANUFACTURER'S RECOMMENDED PROCEDURES.
    2. ALL ABOVE GRADE GROUNDING AND BONDING CONDUCTORS SHALL BE CONNECTED BY TWO HOLE CRIMP TYPE (COMPRESSION) CONNECTIONS (EXCEPT FOR THE ACEG AND GROUND ROD) MECHANICAL CONNECTIONS, FITTINGS OR CONNECTIONS THAT DEPEND SOLELY ON SOLDER SHALL NOT BE USED. ALL CABLE TO CABLE CONNECTIONS SHALL BE HIGH PRESSURE DOUBLE CRIMP TYPE CONNECTIONS. CONNECTIONS TO STRUCTURAL STEEL SHALL BE EXOTHERMIC WELDS.
  - D. GROUND RODS ALL GROUND RODS SHALL BE 5/8-INCH DIAMETER X 10'-0" LONG "COPPERED" OR APPROVED EQUAL, OF THE NUMBER AND LOCATIONS INDICATED. GROUND RODS SHALL BE DRIVEN FULL LENGTH VERTICAL IN UNDISTURBED EARTH.
  - E. GROUND CONDUCTORS ALL GROUND CONDUCTORS SHALL BE STANDARD TINNED SOLID BARE COPPER ANNEALED, AND OF SIZE INDICATED ON DRAWINGS UNLESS NOTED OTHERWISE.
  - F. LUGS
    1. LUGS SHALL BE 2-HOLE, LONG BARREL, STRAND COPPER UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS. LUGS SHALL BE THOMAS AND BETTS SERIES #548 BE OR EQUIVALENT MINIMUM BENDING
      - A. 535 MCM DLO 54880BE
      - B. 262 MCM DLO 54872BE
      - C. #1/0 DLO 54862BE
      - D. #4/0 THWN AND BARE 54866BE
      - E. #2/0 THWN 54862BE
      - F. #2 THHN 54207BE
      - G. #6 DLO 54205BE
    2. WHEN THE DIRECTION OF THE CONDUCTOR MUST CHANGE, IT SHALL BE DONE GRADUALLY. THE CURVATURE OF THE TURN SHALL BE DONE IN ACCORDANCE WITH THE FOLLOWING CHART:

GROUNDING CONDUCTOR SIZE	RADIUS TO INSIDE EDGE
NO. 6 AWG TO NO. 4 AWG	6 INCHES
NO. 2 AWG TO NO. 1/0 AWG	8 INCHES
NO. 2/0 AWG TO 4/0 MCM	12 INCHES
250 MCM TO 750 MCM	24 INCHES
  - G. GROUND RING
    1. THE EXTERNAL GROUND RING ENCIRCLING THE TOWER (IF APPLICABLE) AND BETWEEN THE EQUIPMENT SHELTER PLATFORM ANCHORS SHALL BE MINIMUM NO. 2 A.W.G. SOLID TINNED BARE COPPER CONDUCTORS IN DIRECT CONTACT WITH THE EARTH AT THE DEPTH INDICATED ON THE DRAWINGS. CONDUCTOR BENDS SHALL HAVE A MINIMUM BENDING RADIUS OF EIGHT (8) INCHES.
    2. ALL EXTERNAL GROUND RINGS ARE TO BE JOINED TOGETHER AND ALL CONNECTIONS MUST BE CADWELDED. NO LUGS OR CLAMPS WILL BE ACCEPTED.
  - H. FENCE/GATE GROUND EACH GATE POST, CORNER POST AND GATE AS INDICATED ON DRAWING GROUND CONNECTIONS TO FENCE POSTS AND ALL OTHER CONNECTIONS FOR THE GROUND GRID SYSTEM SHALL BE MADE BY EXOTHERMIC WELD PROCESS, AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND PROCEDURES, AND SPRAYED WITH COLD GALVANIZED PAINT.
9. I.E.E.E. FALL POTENTIAL TESTS
  - A. FOR RAW LAND SITE
    1. GROUND TESTS SHALL BE PERFORMED AS INDICATED ON DRAWINGS. A BIDDLE GROUND OHMER OR THE METHOD OF USING TWO AUXILIARY GROUND RODS (AS DESCRIBED IN I.E.E.E. STANDARDS NO. 81-1983, PART 1) MAY BE USED. THE I.E.E.E. METHOD REQUIRES THE USE OF AN A.C. TEST CURRENT. THE AUXILIARY TEST RODS MUST BE SUFFICIENTLY FAR AWAY FROM THE ROD UNDER TEST SO THAT THE REGIONS IN WHICH THEIR RESISTANCE IS LOCALIZED DO NOT OVERLAP. THE TEST POINT WILL BE THE GROUND ROD AND WILL CONSIST OF THE THREE POINT FALL OF POTENTIAL MEGGER TEST METHOD, USING THE BIDDLE NULL-BALANCE EARTH TESTER (MEGGER #250220-2 OR EQUIVALENT)
    2. CONTRACTOR TO CONDUCT GROUND RESISTANCE TEST IN THE FORMAT AS FOLLOWS:



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Woodcliff Lake, NJ • Bayamon, PR

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



James R. Skowronski  
Date: 6/20/2019

MARK	DATE	DESCRIPTION	DATE ISSUED
ISSUE PHASE	FINAL		06/20/2019

PROJECT TITLE:

TI-OPP-11895-C

PROJECT INFORMATION:  
PID: 051204290203  
ALBION, WI 53534  
DANE COUNTY

SHEET TITLE:

NOTES

SCALE: NONE

PROJECT NUMBER 42278

SHEET NUMBER N-2

- A. TOWER
- FIRST TEST - SHALL BE WITH THREE GROUND RODS INSTALLED (MINIMUM), EQUALLY SPACED AROUND THE TOWER FOUNDATION, BUT NOT CONNECTED TO THE SHELTER PAD EXTERNAL GROUND RING. FURNISH WIRE TO CONNECT (TEMPORARY CLAMP) ALL THREE GROUND RODS TOGETHER TO MAKE A SYSTEM TEST AFTER EACH ROD IS INDIVIDUALLY TESTED. IF ANY INDIVIDUAL ROD TESTS 25 OHMS OR MORE, NOTIFY THE CONTRACTOR AND OWNER'S REPRESENTATIVE SO THAT THE ROD CAN BE DRIVEN DEEPER UNTIL ALL THREE (3) RODS HAVE A RESISTANCE OF 10 OHMS OR LESS ON A DRY DAY.
  - SECOND TEST - SHALL BE WITH THE GROUND RODS CONNECTED, WITH DRY SOIL AND WHEN NO STANDING WATER HAS BEEN PRESENT FOR THE PAST TEN (10) DAYS, THE MAXIMUM ALLOWABLE READING IS 5 OHMS TO GROUND. IF THE RESISTANCE OF THE ENTIRE SYSTEM EXCEEDS 5 OHMS THE ELECTRICAL CONTRACTOR AND OWNER'S REPRESENTATIVE SHOULD BE NOTIFIED SO THAT EITHER ADDITIONAL AND/OR DEEPER RODS CAN BE INSTALLED.
- C. EQUIPMENT PAD AND TOWER
- AFTER THE EQUIPMENT PAD AND TOWER GROUND RESISTANCE TEST IS COMPLETED, CONTRACTOR SHALL TIE EQUIPMENT PAD EXTERNAL GROUND RING AND TOWER EXTERNAL GROUND RING TOGETHER. AFTER FIRST AND SECOND TEST ALL CONNECTIONS MUST BE MADE USING EXOTHERMIC WELD. NO LUGS OR CLAMPS WILL BE ACCEPTED.
  - AFTER ALL THE EXTERNAL GROUND RINGS ARE TIED TOGETHER, COMPLETE A MEGGER CHECK OF THE GROUND SYSTEM SHOULD BE DONE. THE MAXIMUM ALLOWABLE LEADING IS 5 OHMS TO GROUND. 10. GROUNDING RESISTANCE TEST REPORT UPON COMPLETION OF THE TESTING FOR EACH SITE, A TEST REPORT SHOWING RESISTANCE IN OHMS WITH AUXILIARY POTENTIAL ELECTRODES AT 5 FEET AND 10 FEET INTERVALS UNTIL THE AVERAGE RESISTANCE STARTS INCREASING AND ALSO NOTE THAT 10-15 PHOTOS MUST BE TAKEN TO PROOF ENTIRE EXTERNAL GROUND RING SYSTEM BEFORE BACKFILL. TWO (2) SETS OF TEST DOCUMENTS ARE OF THE INDEPENDENT TESTING SERVICE TO BE BOUND AND SUBMITTED WITHIN ONE (1) WEEK OF WORK COMPLETION.
10. GROUNDING RESISTANCE TEST REPORT UPON COMPLETION OF THE TESTING FOR EACH SITE, A TEST REPORT SHOWING RESISTANCE IN OHMS WITH AUXILIARY POTENTIAL ELECTRODES AT 5 FEET AND 10 FEET INTERVALS UNTIL THE AVERAGE RESISTANCE STARTS INCREASING AND ALSO NOTE THAT 10-15 PHOTOS MUST BE TAKEN TO PROOF ENTIRE EXTERNAL GROUND RING SYSTEM BEFORE BACKFILL. TWO (2) SETS OF TEST DOCUMENTS ARE OF THE INDEPENDENT TESTING SERVICE TO BE BOUND AND SUBMITTED WITHIN ONE (1) WEEK OR WORK COMPLETION.

**SECTION 16503 - POLES, POSTS, AND STANDARDS  
 (SINGLE MAST AND SELF SUPPORTING TOWERS)**

1. GENERAL
- LIGHTNING ROD AND EXTENSION PIPE INCLUDING ALL APPURTENANCES, TO BE FURNISHED BY OWNER, IF REQUIRED.
  - PROVIDE TEMPORARY LIGHTING FOR TOWER AS PER FAA REGULATIONS DURING CONSTRUCTION, IF REQUIRED.
  - GROUNDING: GROUND TOWER WITH A MINIMUM OF #2 AWG TINNED SOLID BARE COPPER CONDUCTOR CADWELDED TO TOWER BASE PLATE. TWO (2) GROUNDING LEADS PER TOWER BASE PLATE. NON-EXOTHERMIC WELDS SHALL BE ATTACHED DIRECTLY TO THE MONOPOLE TOWER SHAFT.



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



*James R. Skowronski*  
 James R. Skowronski : 6/20/2019  
 Date:

MARK	DATE	DESCRIPTION
ISSUE PHASE	FINAL	DATE ISSUED 06/20/2019

PROJECT TITLE:  
**TI-OPP-11895-C**

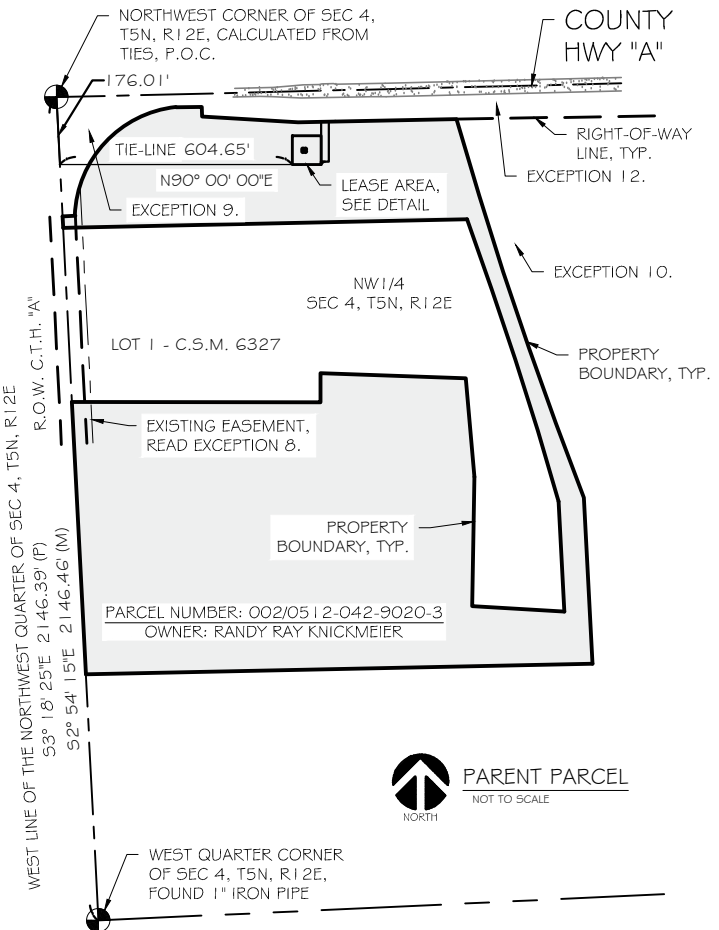
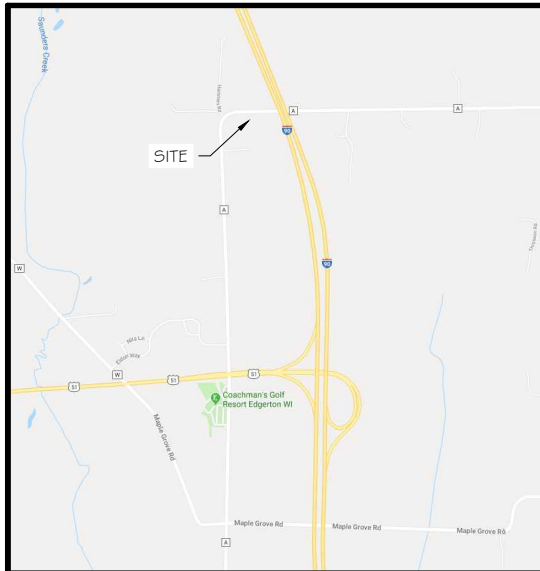
PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:  
**NOTES**

SCALE: NONE

PROJECT NUMBER	42278
SHEET NUMBER	N-3





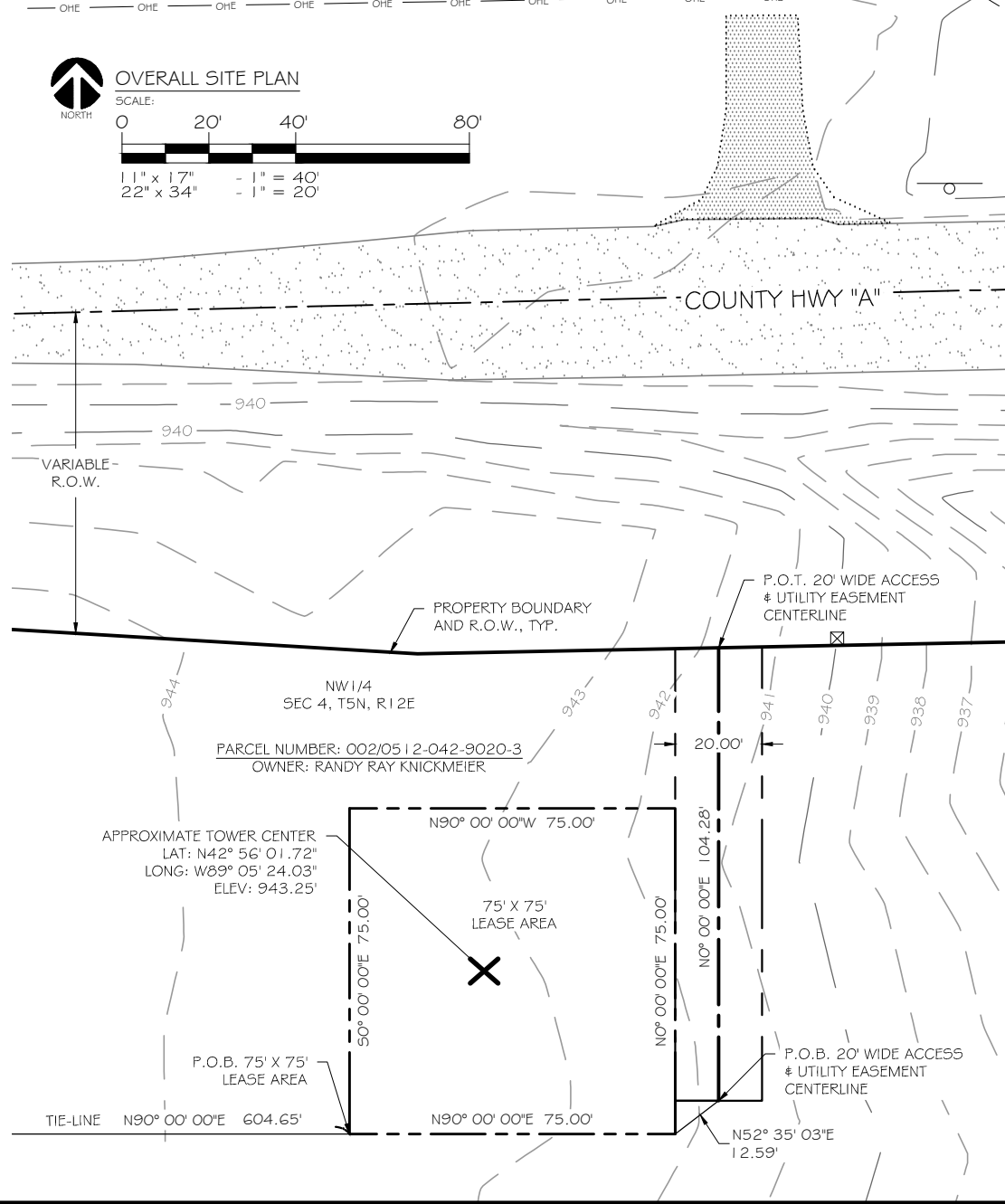
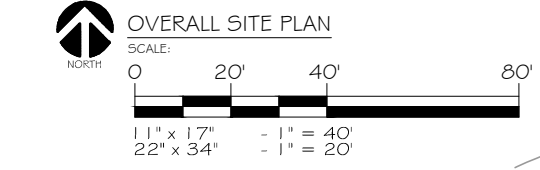
PARENT PARCEL DESCRIPTION BY FIDELITY NATIONAL INSURANCE COMPANY  
 COMMITMENT NO. 28180694, PARCEL NUMBER: 051204290203

PART OF THE WEST HALF OF THE NORTHWEST QUARTER OF SECTION 4, TOWNSHIP 5 NORTH, RANGE 12 EAST, TOWN OF ALBION, DANE COUNTY, WISCONSIN, MORE FULLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 4, T5N, R12E; THENCE S03° 18' 25"E, 310.70 FEET TO THE POINT OF BEGINNING OF THIS DESCRIPTION; THENCE N86° 41' 35"E, 33.00 FEET; THENCE ALONG A CURVE TO THE RIGHT WHICH HAS A RADIUS OF 268.60 FEET AND A LONG CHORD THAT BEARS N42° 32' 39"E, 385.46 FEET; THENCE N88° 23' 44"E, 67.08 FEET; THENCE S01° 32' 54"E, 25.18 FEET; THENCE S86° 58' 27"E, 250.80 FEET; THENCE N88° 27' 06"E, 412.33 FEET; THENCE ALONG A CURVE TO THE RIGHT WHICH HAS A RADIUS OF 11,349.19 FEET AND A LONG CHORD THAT BEARS S18° 58' 48"E, 1039.95 FEET; THENCE S03° 24' 17"E, 432.69 FEET; THENCE S88° 23' 44"W, 1319.53 FEET; THENCE N03° 18' 25"W, 1193.77 FEET TO THE POINT OF BEGINNING. THIS PARCEL CONTAINS 40.000 ACRES OF WHICH 0.905 ACRES IS WITHIN ROAD RIGHT-OF-WAY.

AND BEING THE SAME PROPERTY CONVEYED TO RANDY RAY KNICKMEIER FROM GURENA MEYER, F/K/A GURENA MEYER MCARDLE AND UNITED BANK, N/K/A VALLEY TRUST COMPANY, AS TRUSTEE U/W/O GURENA IVERSON, DECEASED BY WARRANTY DEED DATED FEBRUARY 14, 1991 AND RECORDED MARCH 19, 1991 IN DEED BOOK 15558, PAGE 6.

- SURVEYOR'S NOTES**
- 1) ALL EASEMENTS AND/OR LEASE AREAS SHOWN AND NOT LABELED AS EXISTING SHALL BE PENDING UNTIL RECORDED.
  - 2) AN ATTEMPT WAS MADE TO LOCATE ALL PROPERTY CORNERS AND MONUMENTS. WHERE NO MONUMENTS WERE FOUND, THE PROPERTY LINE WAS DRAWN BASED ON RECORDED AND/OR FILED DOCUMENTS.
  - 3) NOT TO BE USED AS CONSTRUCTION DRAWINGS.
  - 4) THE LOCATIONS OF UNDERGROUND UTILITIES WAS DETERMINED BY FIELD OBSERVATIONS AND VISIBLE MARKINGS ONLY AT TIME OF SURVEY.
  - 5) THE PURPOSE OF THIS SURVEY IS TO ESTABLISH AND DESCRIBE A LEASE AREA AND ASSOCIATED EASEMENTS. THIS IS NOT A BOUNDARY SURVEY OF THE PARENT PARCEL.
  - 6) PARENT PARCEL DESCRIPTION FROM RECORDED AND/OR FILED DOCUMENTS.
  - 7) THIS MAP WAS PREPARED WITH THE AID OF A TITLE COMMITMENT BY FIDELITY NATIONAL TITLE INSURANCE COMPANY, COMMITMENT NUMBER: 28180694, DATE OF COMMITMENT: OCTOBER 18, 2018.
  - 8) FIELD WORK WAS PERFORMED BY RAMAKER & ASSOCIATES AND REVIEWED BY TRENT D. NELSON, WI SURVEYOR NUMBER 3132-8.
  - 9) BEARINGS ARE REFERENCED TO THE WEST LINE OF THE NORTHWEST QUARTER OF SECTION 4, T5N, R12E, MEASURED TO BEAR S2° 54' 15"E BY GPS GRID USING THE WISCONSIN COUNTY COORDINATE SYSTEM, DANE COUNTY, U.S. FOOT DATUM.
  - 10) F.E.M.A. FLOOD PANEL MAP NUMBER 55025C0662H, EFFECTIVE SEPTEMBER 17, 2014, AREA OF MINIMAL FLOOD HAZARD, ZONE 'X', AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE OF FLOOD PLAIN.
  - 11) PARCEL NUMBER: 002/0512-042-9020-3.



**TITLE REVIEW**

TITLE BY: FIDELITY NATIONAL TITLE INSURANCE COMPANY  
 COMMITMENT NUMBER: 28180694

SCHEDULE B - SECTION II, SURVEY RELATED EXCEPTIONS:

8. RIGHT-OF-WAY AUTHORIZATION IN FAVOR OF GENERAL TELEPHONE COMPANY OF WISCONSIN, SET FORTH IN INSTRUMENT RECORDED ON 02/02/1970 IN DEED BOOK 157, PAGE 393. **EXISTING EASEMENT IS SHOWN ON THE SURVEY. EXISTING EASEMENT WILL NOT AFFECT THE LEASE AREA OR ASSOCIATED EASEMENT.**
9. TERMS, PROVISIONS, COVENANTS, CONDITIONS, RESTRICTIONS, RESERVATIONS, EASEMENTS, CHARGES, ASSESSMENTS AND LIENS PROVIDED IN A DEED OR COVENANTS, CONDITIONS AND RESTRICTIONS RECORDED IN DEED BOOK 241, PAGE 15, BUT OMITTING ANY COVENANTS OR RESTRICTIONS, IF ANY, BASED UPON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, FAMILIAL STATUS, MARITAL STATUS, DISABILITY, HANDICAP, NATIONAL ORIGIN, ANCESTRY, OR SOURCE OF INCOME, AS SET FORTH IN APPLICABLE STATE OR FEDERAL LAWS, EXCEPT TO THE EXTENT THAT SAID COVENANT OR RESTRICTION IS PERMITTED BY APPLICABLE LAW. **EXISTING HIGHWAY IS LOCATED ON THE NORTHERN MOST AND WESTERN MOST PART OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 4 AND IS SHOWN ON THE SURVEY. EXISTING HIGHWAY AND ASSOCIATED RIGHT-OF-WAY WILL NOT AFFECT THE LEASE AREA OR ASSOCIATED EASEMENT.**
10. TERMS, PROVISIONS, COVENANTS, CONDITIONS, RESTRICTIONS, RESERVATIONS, EASEMENTS, CHARGES, ASSESSMENTS AND LIENS PROVIDED IN A DEED OR COVENANTS, CONDITIONS AND RESTRICTIONS RECORDED IN DEED BOOK 719, PAGE 389, BUT OMITTING ANY COVENANTS OR RESTRICTIONS, IF ANY, BASED UPON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, FAMILIAL STATUS, MARITAL STATUS, DISABILITY, HANDICAP, NATIONAL ORIGIN, ANCESTRY, OR SOURCE OF INCOME, AS SET FORTH IN APPLICABLE STATE OR FEDERAL LAWS, EXCEPT TO THE EXTENT THAT SAID COVENANT OR RESTRICTION IS PERMITTED BY APPLICABLE LAW. **EXISTING HIGHWAY IS LOCATED ON THE NORTHERN MOST AND WESTERN MOST PART OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 4 AND IS SHOWN ON THE SURVEY. EXISTING HIGHWAY AND ASSOCIATED RIGHT-OF-WAY WILL NOT AFFECT THE LEASE AREA OR ASSOCIATED EASEMENT.**
12. MATTERS AS SHOWN AND NOTED ON PLAT RECORDED IN INSTRUMENT NO. 5068382. **EXISTING HIGHWAY IS LOCATED ON THE NORTHERN MOST AND WESTERN MOST PART OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 4 AND IS SHOWN ON THE SURVEY. EXISTING HIGHWAY AND ASSOCIATED RIGHT-OF-WAY WILL NOT AFFECT THE LEASE AREA OR ASSOCIATED EASEMENT.**

**75' X 75' LEASE AREA DESCRIPTION**

A PORTION OF LAND LOCATED IN PART OF THE WEST HALF OF THE NORTHWEST QUARTER OF SECTION 4, TOWNSHIP 5 NORTH, RANGE 12 EAST, TOWN OF ALBION, DANE COUNTY, WISCONSIN, AND BEING FURTHER DESCRIBED AS FOLLOWS:

COMMENCING AT A CALCULATED MONUMENT LOCATING THE NORTHWEST CORNER OF SAID SECTION 4; THENCE S2° 54' 15"E, 176.01 FEET ALONG THE WEST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 4; THENCE N90° 00' 00"E, 604.65 FEET TO THE POINT OF BEGINNING; THENCE CONTINUING N90° 00' 00"E, 75.00 FEET; THENCE N0° 00' 00"E, 75.00 FEET; THENCE N90° 00' 00"W, 75.00 FEET; THENCE S0° 00' 00"E, 75.00 TO THE POINT OF BEGINNING. SAID PROPOSED LEASE AREA CONTAINS 5,625 SQUARE FEET (0.13 ACRES) AND IS SUBJECT TO ANY AND ALL EASEMENTS OR AGREEMENTS, RECORDED OR UNRECORDED.

**20' WIDE ACCESS & UTILITY EASEMENT CENTERLINE DESCRIPTION**

A PORTION OF LAND LOCATED IN PART OF THE WEST HALF OF THE NORTHWEST QUARTER OF SECTION 4, TOWNSHIP 5 NORTH, RANGE 12 EAST, TOWN OF ALBION, DANE COUNTY, WISCONSIN, AND BEING FURTHER DESCRIBED AS FOLLOWS:

COMMENCING AT A CALCULATED MONUMENT LOCATING THE NORTHWEST CORNER OF SAID SECTION 4; THENCE S2° 54' 15"E, 176.01 FEET ALONG THE WEST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 4; THENCE N90° 00' 00"E, 604.65 FEET TO THE SOUTHWEST CORNER OF THE AFOREMENTIONED LEASE AREA; THENCE CONTINUING N90° 00' 00"E, 75.00 FEET TO THE SOUTHWEST CORNER OF THE AFOREMENTIONED LEASE AREA; THENCE N52° 35' 03"E, 12.59 TO THE POINT OF BEGINNING; THENCE N0° 00' 00"E, 104.28 FEET, MORE OR LESS, RUNNING PARALLEL WITH THE EAST LINE OF THE AFOREMENTIONED LEASE AREA, TO THE SOUTHERLY RIGHT-OF-WAY LINE OF COUNTY HWY "A" AND ALSO THE POINT OF TERMINATION. SAID ACCESS & UTILITY EASEMENT CENTERLINE CONTAINS 104.28 LINEAR FEET, MORE OR LESS, AND IS SUBJECT TO ANY AND ALL EASEMENTS OR AGREEMENTS, RECORDED OR UNRECORDED. SIDELINES OF SAID EASEMENT SHALL BE LENGTHENED OR SHORTENED TO END AT THE SOUTHERLY RIGHT-OF-WAY LINE OF COUNTY HWY "A".

**LEGEND**

	FOUND SECTION CORNER
	POINT OF COMMENCEMENT
	POINT OF BEGINNING
	POINT OF TERMINATION
	CERTIFIED SURVEY MAP
	PLATTED DISTANCE
	MEASURED AS PARENT PARCEL BOUNDARY
	EXISTING OVERHEAD ELECTRIC
	EXISTING UTILITY POLE
	EXISTING SIGN
	EXISTING TELEPHONE PEDESTAL
	EXISTING ASPHALT
	EXISTING GRAVEL
	LEASE AREA
	EASEMENT SIDELINE
	EASEMENT CENTERLINE
	SECTION LINE
	QUARTER SECTION LINE

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PROJECT NUMBER:	42278
MARK DATE DESCRIPTION	
Certification & Seal:	I hereby certify that this Survey Document was prepared and the related Survey Work was performed by me or under my direct personal supervision and that I am a duly Licensed Land Surveyor under the Laws of the State of Wisconsin.
	Trent D. Nelson, PLS License Number: 3132-8 Date: 02/07/19
ISSUE PHASE:	FINAL DATE ISSUED: 02/07/2019
SITE NAME:	TI-OPP-11895
ADDRESS:	PID: 002/0512-042-9020-3 ALBION, WI DANE COUNTY
SHEET TITLE:	SITE SURVEY
SCALE:	AS NOTED
R # A NUMBER:	2018202
SHEET NUMBER:	1 OF 1





**TILLMAN**  
INFRASTRUCTURE

**LCC**  
TELECOM SERVICES

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Certification & Seal:  
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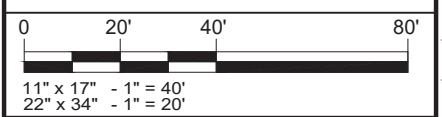
*James R. Skowronski*  
James R. Skowronski Date: 6/20/2019

MARK	DATE	DESCRIPTION
ISSUE	FINAL	DATE ISSUED 06/20/2019

PROJECT TITLE:  
**TI-OPP-11895-C**

PROJECT INFORMATION:  
PID: 051204290203  
ALBION, WI 53534  
DANE COUNTY

SHEET TITLE:  
**OVERALL ZONING SITE PLAN**



PROJECT NUMBER: 42278  
SHEET NUMBER: Z-1

**OVERALL ZONING SITE PLAN** ①  
SCALE: NOT TO SCALE



PARCEL REF. #	PARCEL #	PARCEL OWNER	PARCEL REF. #	PARCEL #	PARCEL OWNER
1	051204290203	RANDY RAY KNICKMEIER	51	061233386607	PAMELA A. & NICHOLE L. UCHYTIL
2	051204286709	GEORGE A. & REBECCA S. ZEIMET	52	061232193808	LINNERUD TRUST - WAYNE & FAITH
3	051204291908	CURRENT OWNER	53	061232197500	LINNERUD TRUST - WAYNE & FAITH
4	051204296403	WISCONSIN D.O.T.	54	061233391100	WILBERT S. & SHIRLEY A. KNICKMEIER
5	051204385003	CURRENT OWNER	55	061233390914	WILBERT S. KNICKMEIER
6	051204381110	CURRENT OWNER	56	061232495200	KELLY A. & DALE K. SPLINTER
7	051204396110	CURRENT OWNER	57	061233392109	RODNEY ROST
8	051204390010	CURRENT OWNER	58	061232495030	AIDE LIVING TRUST
9	051204395010	CURRENT OWNER	59	061232491000	AIDE LIVING TRUST
10	051204490005	DONOVAN J. & SHARON E. SVEUM	60	061232395000	OLSON LIVING TRUST - JOHN W. & BEVERLY A.
11	051204485002	CURRENT OWNER	61	061232395500	LARRY E. JOHNSON
12	051204380010	CURRENT OWNER	62	061232396901	LARRY E. JOHNSON
13	051204280220	STEVEN D. & GINGER L. HAGEMANN	63	051205281006	LARRY E. JOHNSON
14	051204190704	CURRENT OWNER	64	051205280007	RANDY R. KNICKMEIER
15	051204195003	RONALD L. & KENLYN THRONSON	65	051205185010	RANDY R. KNICKMEIER
16	051204180108	PORTER JT REV. LIVING TRUST	66	051205185500	DAVID M. & CANDACE A. SARBACKER
17	051204182100	ANDREW L. & MEREDITH L. STENSVEN	67	051205180510	DAVID M. & CANDACE A. SARBACKER
18	051204181700	PORTER JT REV. LIVING TRUST	68	051205180017	RONNIE J. & KIMBERLY J. OBERMUELLER
19	051204181107	RICHARD A. BARFKNECHT	69	051205197000	RANDY R. KNICKMEIER
20	051204185210	SCOTT G. TAYLOR	70	051205190010	RANDY R. KNICKMEIER
21	051204185701	CURRENT OWNER	71	051205295000	RANDY R. KNICKMEIER
22	051204280018	JEFFREY K. & ANNE KOHLER	72	051205480005	ROBERT A. & COLLEEN N. YOUNG
23	051204281606	ALEX J. ARNOLD	73	051205480416	GILBERTSEN JT REV. LIVING TRUST
24	051204280303	JENNIFER A. CLARK	74	051205485000	RICHARD & IRENE GUNDERSON
25	061233390003	ROY KAUPER	75	051205485600	SIMS LIVING TRUST - JW & JULIE
26	061233395017	ROY KAUPER	76	051205485610	SIMS LIVING TRUST - JW & JULIE
27	061233398201	LEIF T. LERVIK	77	051205381014	ERIK K. & ANGELA J. OTTERSON
28	061233492304	LEIF T. & LARS J. LERVIK	78	051205485750	MATTHEW C. & JENNIFER C. MCCLURE
29	061233490002	LEIN ACRES LLC	79	051205484207	KENNETH O. RUDE
30	061233495007	LARS H. LEIN LLC	80	051205482807	RICHARD A. & IRENE E. GUNDERSON
31	061233480004	LEIN ACRES LLC	81	051205497600	COACHMAN'S INN ENTERPRISES INC.
32	061233485009	LEIN ACRES LLC	82	051205496200	COACHMAN'S INN ENTERPRISES INC.
33	061233380005	LEIN ACRES LLC	83	051205471450	DAVID A. & ALEXIS R. JOHNSON
34	061233385000	MARLETTA HILL	84	051205471340	RYAN P. & HEATHER L. KLUCK
35	061233290102	NOTSTAD LIVING TRUST	85	051205471230	JOAN L. GARD
36	061233296900	LEIN ACRES LLC	86	051205470020	SUE ELLEN KNUTSON
37	061233191920	LEIN ACRES LLC	87	051205470130	STEVEN T. & LORI MOE KITTELSON
38	061233193351	NICHOLAS J. & STACI R. BROWN	88	051205470240	CURRENT OWNER
39	061233194000	BRUCE R. LEE	89	051205470350	EUGENE GULLIVER & MELISSA DELEON-GULLIVER
40	061233190309	JACOB LANGER	90	051205470460	JAMES A. & CONNIE N. WINTER
41	061233295009	JACOB LANGER	91	051205495008	KEVIN T. & LISA M. BEERUP
42	061233281907	JACOB LANGER	92	051205470570	JASON L. & SHELIA L. GUERIN
43	061233286500	DOUGLAS H. & BONNIE J. CAPARON	93	051205470680	ANDREW & LYDIA POESCHEL
44	061232180009	NOTSTAD LIVING TRUST	94	051205470790	CURRENT OWNER
45	061233290004	NOTSTAD LIVING TRUST	95	051205470900	CURRENT OWNER
46	061232195708	LINNERUD TRUST - WAYNE & FAITH	96	051205471560	TOWN OF ALBION
47	06123219000	LINNERUD TRUST - WAYNE & FAITH	97	051205495500	CURRENT OWNER
48	061232380007	NOEL R. & KRISTEEN A. JOHNSON	98	051205471010	ROBERT H. & LAURA S. DVORAK
49	061232485001	JAMES W. & JOANN H. MORRIS LE	99	051205471120	ROBERT H. & LAURA S. DVORAK
50	061232480006	JAMES W. & JOANN H. MORRIS LE	100	051205456000	CURRENT OWNER



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*James R. Skowronski*  
 James R. Skowronski Date: 6/20/2019

MARK	DATE	DESCRIPTION
ISSUE	FINAL	DATE ISSUED 06/20/2019

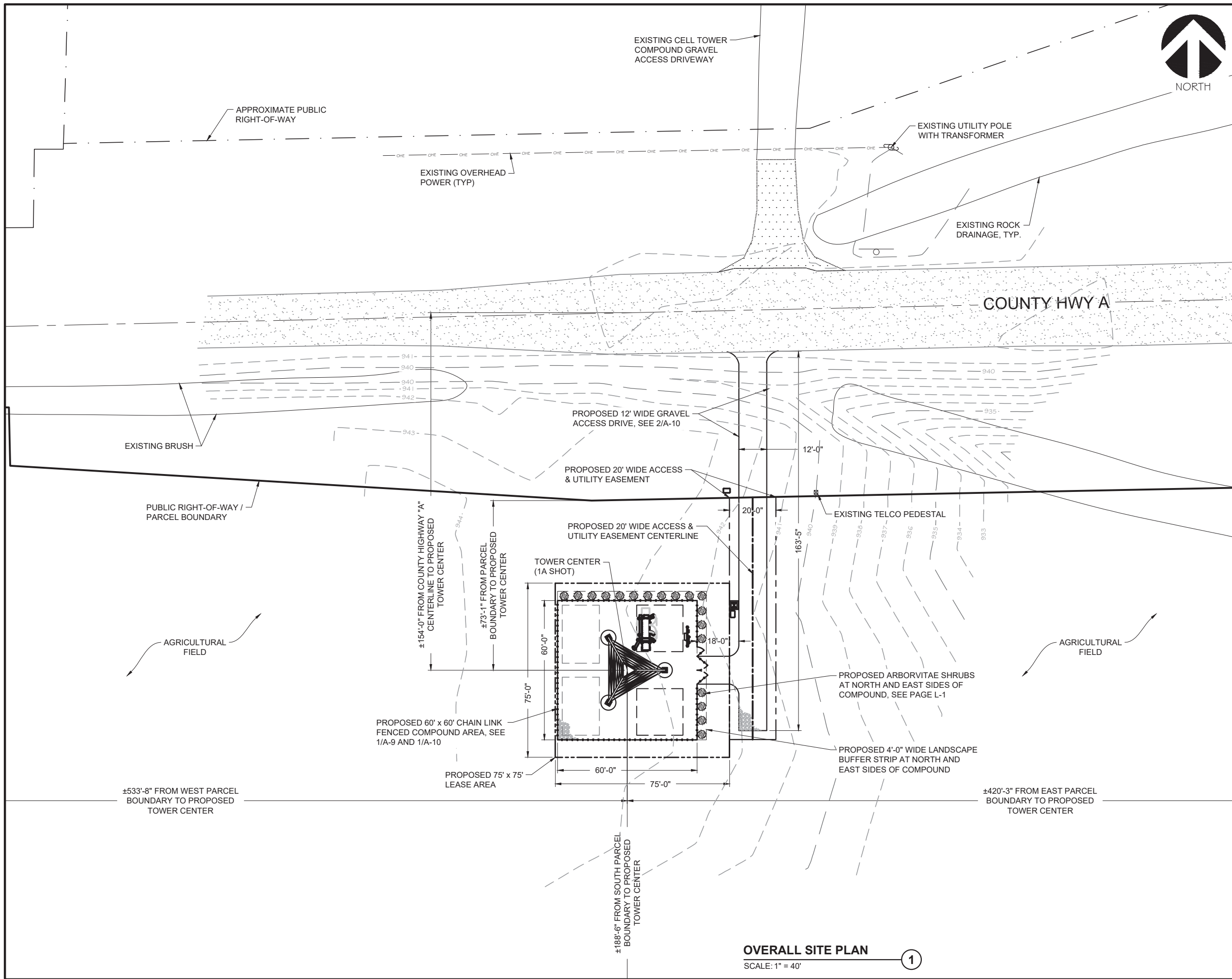
PROJECT TITLE:  
**TI-OPP-11895-C**

PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:  
**ZONING MAP DETAILS**

SCALE: NONE

PROJECT NUMBER 42278  
 SHEET NUMBER Z-2



**TILLMAN**  
**INFRASTRUCTURE**

**LCC**  
**TELECOM SERVICES**

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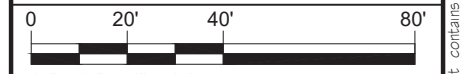
*James R. Skowronski*  
 James R. Skowronski Date: 6/20/2019

MARK	DATE	DESCRIPTION
ISSUE	FINAL	DATE ISSUED 06/20/2019

PROJECT TITLE:  
**TI-OPP-11895-C**

PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:  
**OVERALL SITE PLAN**



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

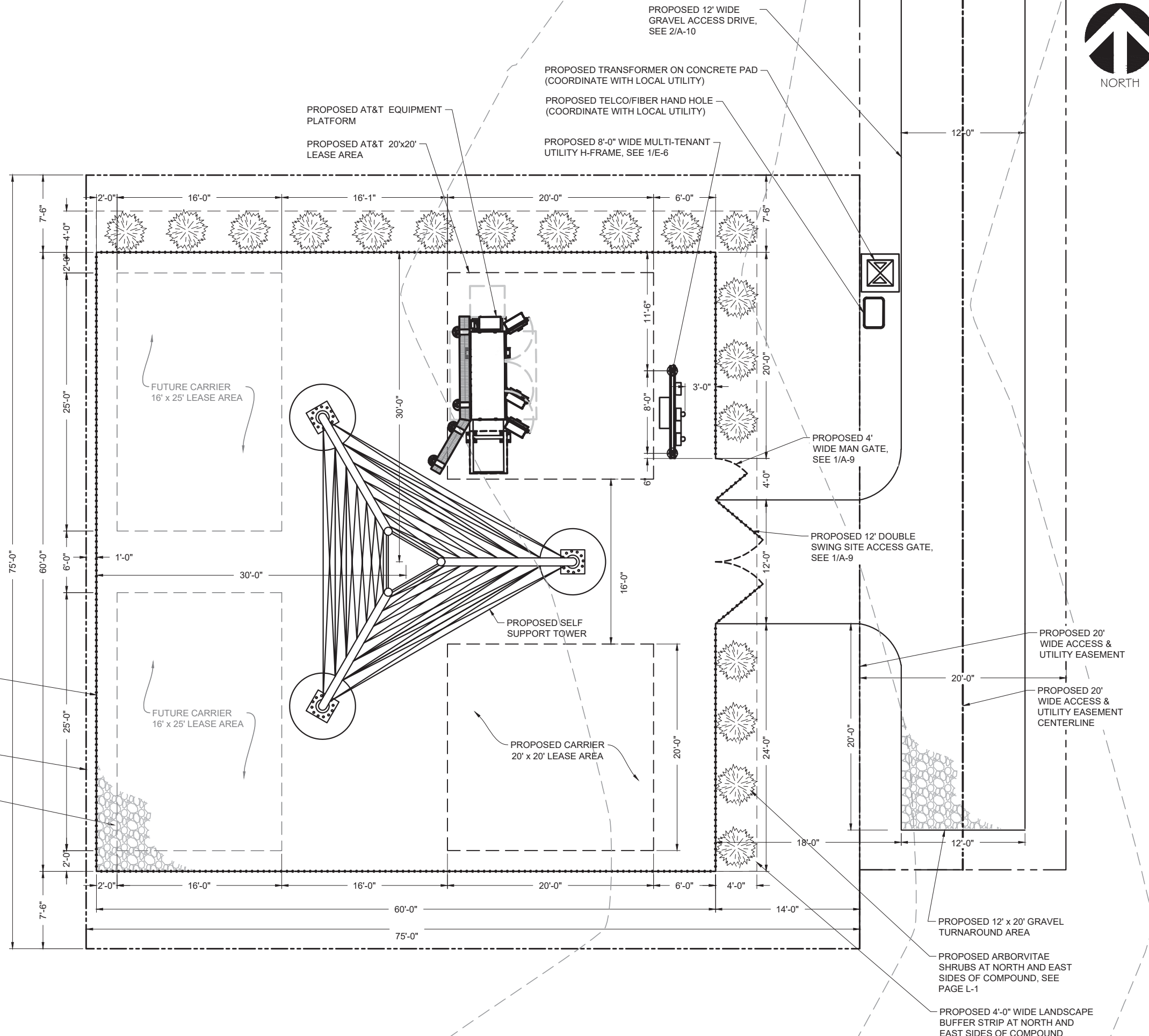
PROJECT NUMBER: 42278  
 SHEET NUMBER: A-1

**OVERALL SITE PLAN**

SCALE: 1" = 40'

1





**ENLARGED SITE PLAN**  
 SCALE: 1" = 10'

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**INFRASTRUCTURE**

**LCC**  
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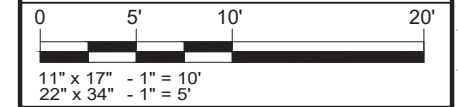
*James R. Skowronski* 6/20/2019  
 James R. Skowronski Date:

MARK	DATE	DESCRIPTION
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PROJECT TITLE:  
**TI-OPP-11895-C**

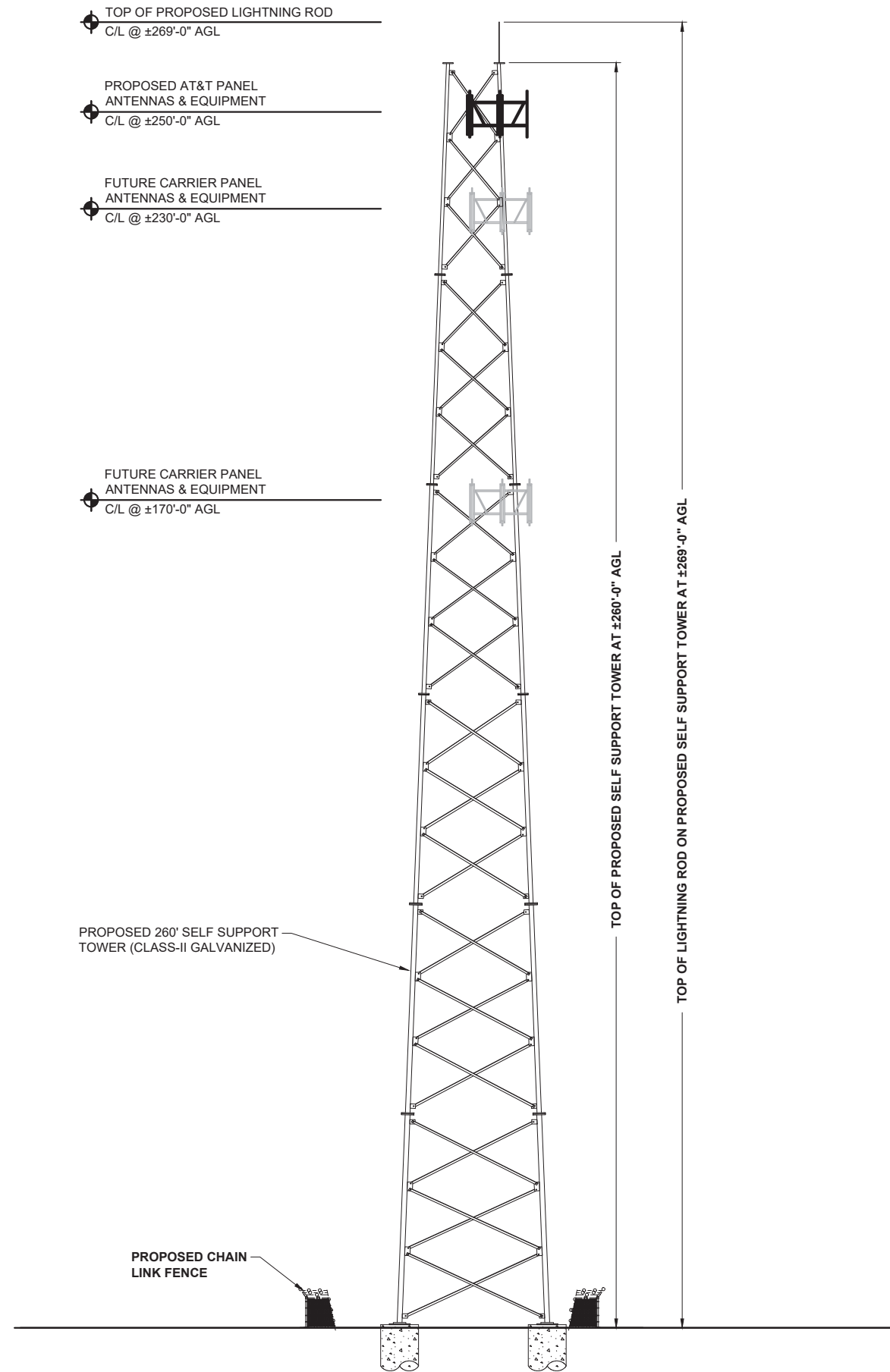
PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:  
**ENLARGED SITE PLAN**



PROJECT NUMBER: 42278  
 SHEET NUMBER: A-2





**TOWER ELEVATION**  
 SCALE: 1" = 30'

1

**TILLMAN**  
 INFRASTRUCTURE

**LCC**  
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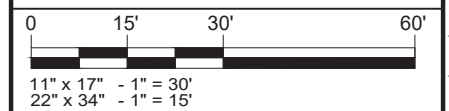
*James R. Skowronski*  
 James R. Skowronski Date: 6/20/2019

MARK	DATE	DESCRIPTION
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PROJECT TITLE:  
**TI-OPP-11895-C**

PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:  
**TOWER ELEVATION**



PROJECT NUMBER: 42278  
 SHEET NUMBER: A-3

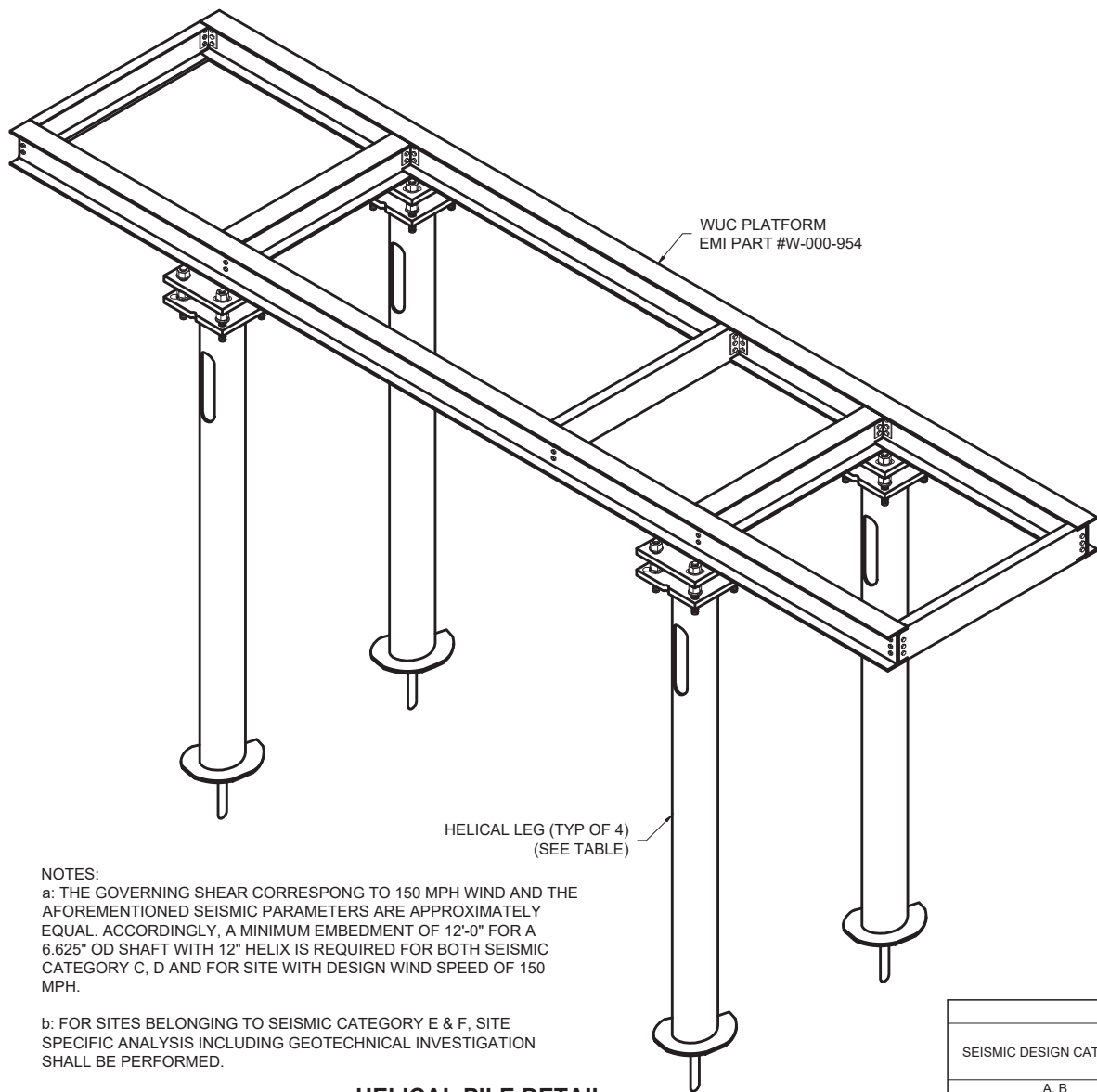
# EQUIPMENT FOUNDATION STRUCTURAL NOTES

- 1) PLATFORM DESIGN LOADS
  - a. ASCE 7-10/IBC 2015 EXPOSURE B, (REF. PILE DESIGN TABLE FOR DESIGN WIND SPEED)
  - b. MAX. AXIAL COMPRESSION PER LEG = 6000 LBS
  - c. MAX. UPLIFT PER LEG = 1200 LBS
  - d. MAX. HORIZONTAL SHEAR = 3000 PSF
- 2) PRESUMPTIVE SOIL PARAMETERS
  - a. SOIL UNIT WEIGHT,  $\gamma = 90$  PCF
  - b. ANGLE OF INTERNAL FRICTION =  $30^\circ$
- 3) SEISMIC DESIGN PARAMETERS
  - a. OCCUPANCY CATEGORY II
  - b. SITE CLASS = D
  - c. SEISMIC USE GROUP = SUG II
  - d. SEISMIC DESIGN CATEGORY - REF. TO PILE DESIGN TABLE.
- 4) ALL FABRICATION AND INSTALLATION SHOULD BE DONE BY A CONTRACTOR EXPERIENCED IN SIMILAR WORK.
- 5) CONTRACTOR SHOULD OBSERVE ALL OSHA AND OTHER APPLICABLE SAFETY GUIDELINES DURING INSTALLATION.
- 6) ALL FABRICATION AND INSTALLATION PROCEDURES AND SITE SAFETY ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- 7) CONTRACTOR SHOULD FIELD VERIFY ALL DIMENSIONS AND FIT BEFORE FABRICATION.
- 8) THE DRAWINGS DO NOT INCLUDE ALL THE EXISTING FIELD CONDITIONS, SOME OF WHICH MAY INTERFERE WITH THE INSTALLATION. CONTRACTOR SHOULD CONDUCT A FIELD SURVEY TO IDENTIFY ANY POTENTIAL DIFFICULTIES IN THE INSTALLATION BEFORE WORK COMMENCES. CONTACT THE ENGINEER IF THE FIELD CONDITIONS REQUIRED ANY CHANGES IN THE DESIGN.

- 9) CONTRACTOR MAY HAVE TO TEMPORARILY REMOVE EXISTING TRANSMISSION LINES AND OTHER OBSTRUCTIONS TO INSTALL NEW STRUCTURE. COORDINATE ALL SUCH PROCEDURES WITH THE BUILDING OWNER.
- 10) CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL LICENSES, PERMITS AND ANY OTHER APPROVALS REQUIRED FOR CONSTRUCTION.
- 11) PAINT THE NEW MEMBERS TO MATCH THE EXISTING STRUCTURE.
- 12) THE STRUCTURAL STEEL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ANCHOR BOLT LOCATIONS, ELEVATION OF TOP OF CONCRETE AND BEARING PLATES, ALIGNMENT ETC. PRIOR TO START OF STEEL ERECTION.
- 13) THE LATEST EDITION OF THE FOLLOWING SPECIFICATIONS SHALL GOVERN:
  - a) AISC - "ALLOWABLE STRESS DESIGN SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS"
  - b) AISC - "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES"
  - c) AWS - "D1.1 STRUCTURAL WELDING CODE - STEEL"
- 14) MATERIAL, UNLESS OTHERWISE NOTED, SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATIONS:
 

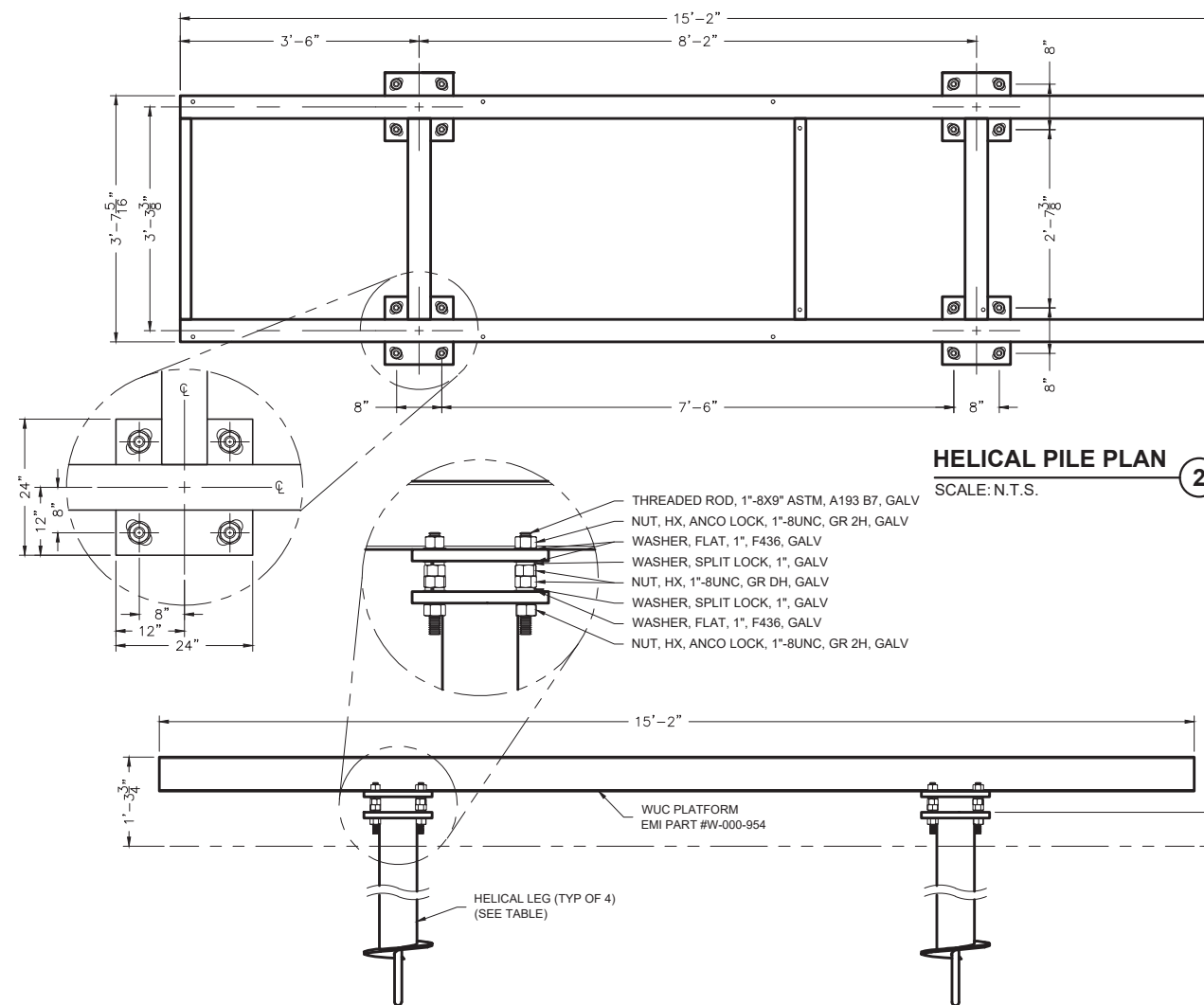
a) STRUCTURAL WIDE FLANGE & M SHAPES	A992 OR A572 Fy = 50 KSI
b) OTHER STRUCTURAL SHAPES AND PLATES	A36 Fy = 36 KSI
c) STRUCTURAL TUBING	A500 Gr. B Fy = 46 KSI
d) HIGH STRENGTH BOLTS	A325
e) THREADED RODS	A36
f) ANCHOR BOLTS	A307 OF A36
g) PIPE (HANDRAIL)	SCH40 PIPE
- 15) ALL STEEL SHALL BE HOT DIPPED GALVANIZED AS PER ASTM A123 SPECIFICATIONS
- 16) ALL STEEL HARDWARE SHALL BE HOT DIPPED GALVANIZED AS PER ASTM A153

- 17) ALL BOLTS SHALL BE DOMESTIC, NEW 1/2 INCH DIAMETER HIGH STRENGTH GALVANIZED BOLTS, BEARING TYPE "X", UNLESS OTHERWISE NOTED IN THE DRAWINGS AND SHALL CONFORM TO ASTM A325 SPECIFICATIONS. USE ANCO LOCKNUTS & FLAT WASHERS ON ALL BOLTS.
- 18) ALL FINISHED BOLT HOLES SHALL NOT BE MORE THAN 1/16 INCH LARGER THAN THE BOLT DIAMETER UNLESS OTHERWISE NOTED.
- 19) ALL BOLTS SHALL BE TIGHTENED USING TURN-OF-THE-NUT METHOD.
- 20) ALL BOLT HOLES EDGE DISTANCES SHALL BE 1-1/2 INCH UNLESS OTHERWISE NOTED.
- 21) ALL WELDING SHALL BE DONE USING E-70 ELECTRODES AND IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY STANDARDS AND SPECIFICATIONS.
- 22) ANY FIELD CUTS MUST BE THOROUGHLY CLEANED AND DOUBLE COATED.
- 23) DO NOT HEAT STRUCTURAL MATERIAL FOR STRAIGHTENING BENT OR WARPED MEMBERS.
- 24) CLEAN THE SITE OF ALL DEBRIS UPON COMPLETION OF THE WORK. STORE ALL SURPLUS MATERIALS NEATLY IN AN AREA APPROVED BY THE OWNER.
- 25) BEFORE FIELD WELDING CLEAN ALL PAINT AND GALVANIZING TO BARE METAL. PREHEATING AND POST HEATING OF THE BASE METAL SHOULD BE AS PER AWS D1.1 SPECIFICATION AND APPLICABLE CODES REGARDING PREHEATING AND POSTHEATING.
- 26) CONTRACTOR TO PROVIDE FIRE PROTECTION BEFORE FIELD WELDING.
- 27) HOLES IN STEEL SHALL BE DRILLED OR PUNCHED. ALL SLOTTED HOLES SHALL BE PROVIDED WITH SMOOTH EDGES. BURNING OF HOLES AND TORCH CUTTING AT THE SITE IS NOT PERMITTED. ALL HOLES IN BEARING PLATES SHALL BE DRILLED.
- 28) EPOXY ANCHORS TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.



NOTES:  
 a: THE GOVERNING SHEAR CORRESPONDING TO 150 MPH WIND AND THE AFOREMENTIONED SEISMIC PARAMETERS ARE APPROXIMATELY EQUAL. ACCORDINGLY, A MINIMUM EMBEDMENT OF 12'-0" FOR A 6.625" OD SHAFT WITH 12" HELIX IS REQUIRED FOR BOTH SEISMIC CATEGORY C, D AND FOR SITE WITH DESIGN WIND SPEED OF 150 MPH.  
 b: FOR SITES BELONGING TO SEISMIC CATEGORY E & F, SITE SPECIFIC ANALYSIS INCLUDING GEOTECHNICAL INVESTIGATION SHALL BE PERFORMED.

**HELICAL PILE DETAIL 1**  
 SCALE: N.T.S.



**HELICAL PILE PLAN 2**  
 SCALE: N.T.S.

PILE DESIGN TABLE						
SEISMIC DESIGN CATEGORY	Ss	S1	LIGHTPOLE FOUNDATION			
			DESIGN WIND SPEED (MPH)	DEPTH (FT)	SHAFT SIZE (IN)	HELIX SIZE (IN)
A, B	0.150	0.050	100	7	4.5	12
A, B	0.300	0.125	100	7	6	12
C, D	1.250	0.500	100	12	6.625	12

**ELEVATED PLATFORM CONNECTIONS 3**  
 SCALE: N.T.S.



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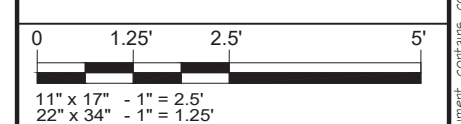
James R. Skowronski  
 Date: 6/20/2019

MARK	DATE	DESCRIPTION
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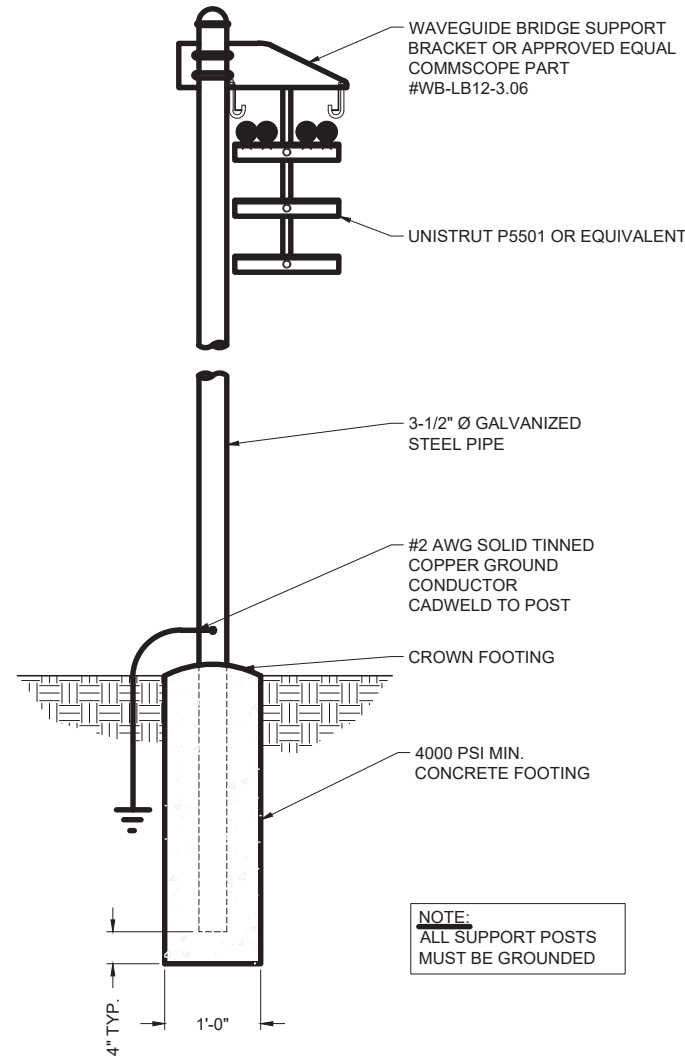
PROJECT TITLE:  
**TI-OPP-11895-C**

PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:  
**EQUIPMENT PLATFORM & DETAILS**

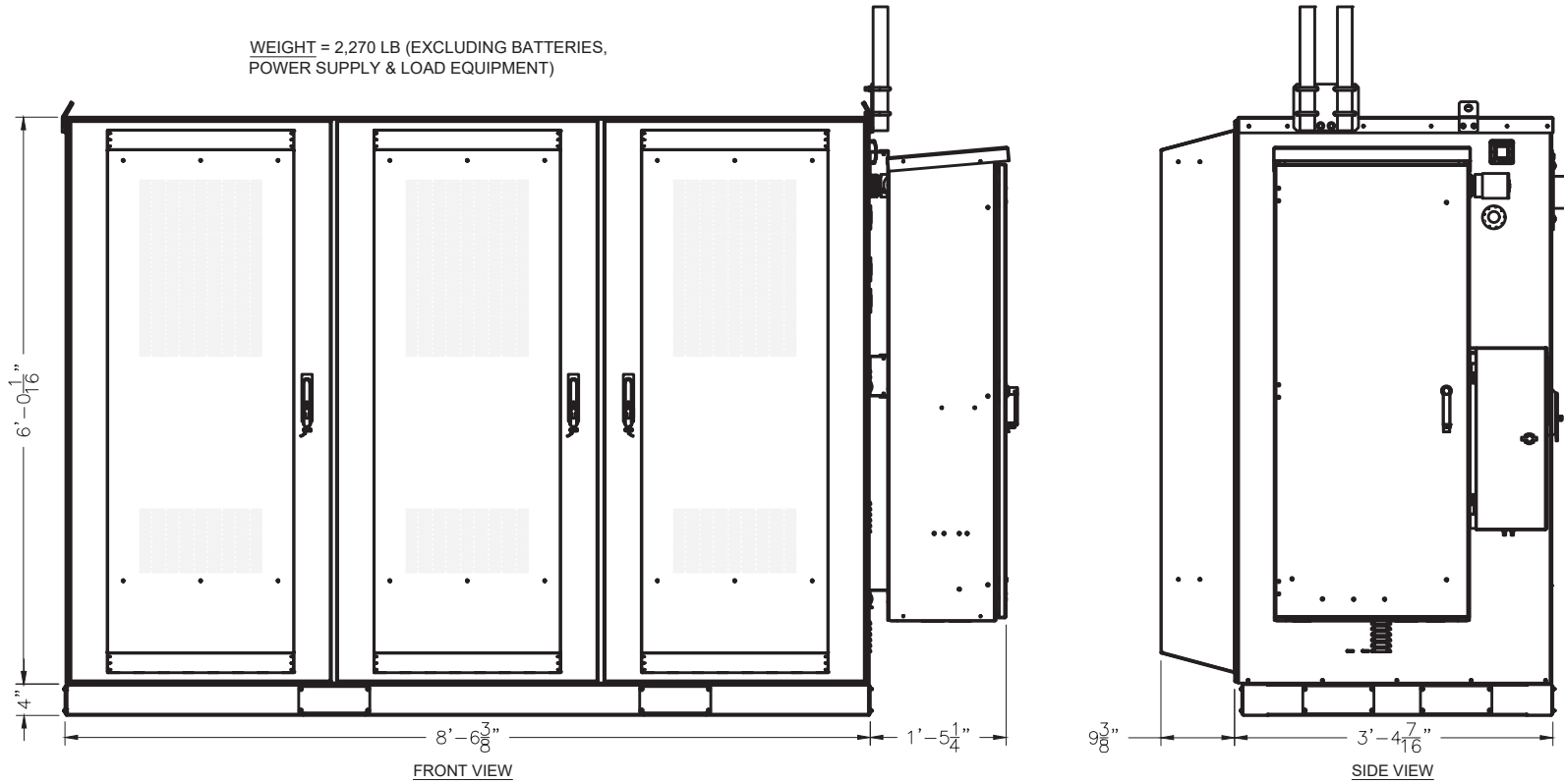


PROJECT NUMBER: 42278  
 SHEET NUMBER: A-4

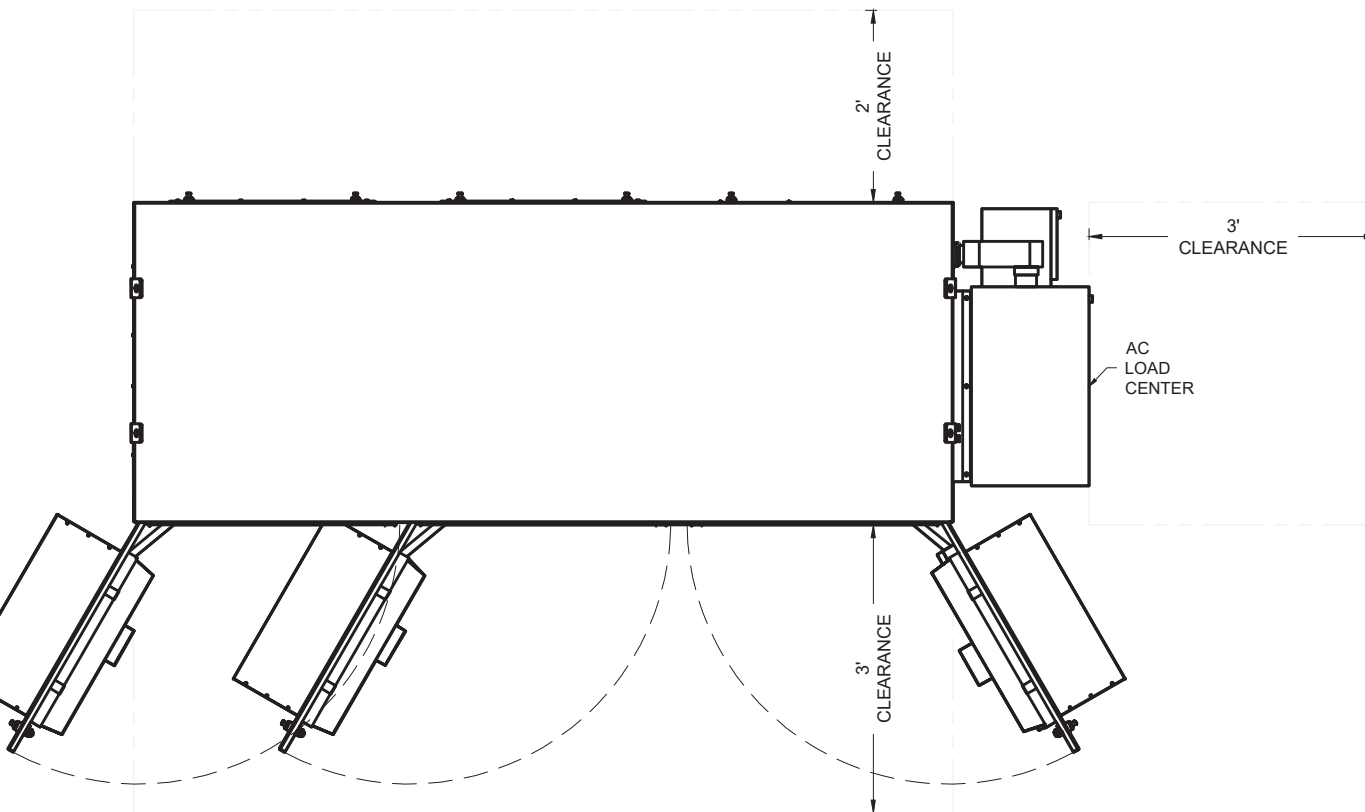


**ICE BRIDGE DETAIL**  
 SCALE: NTS

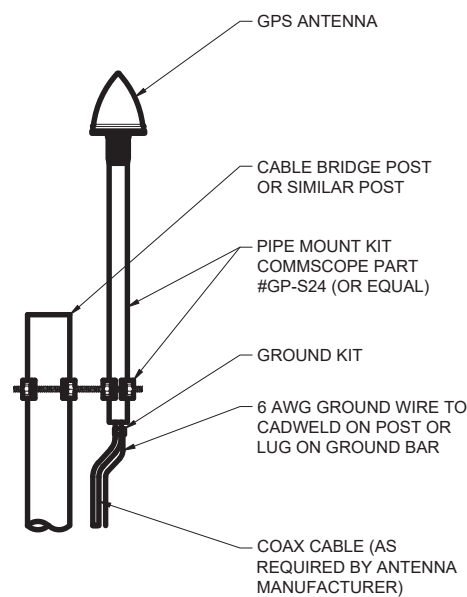
**NOTE:**  
 ALL SUPPORT POSTS  
 MUST BE GROUNDED



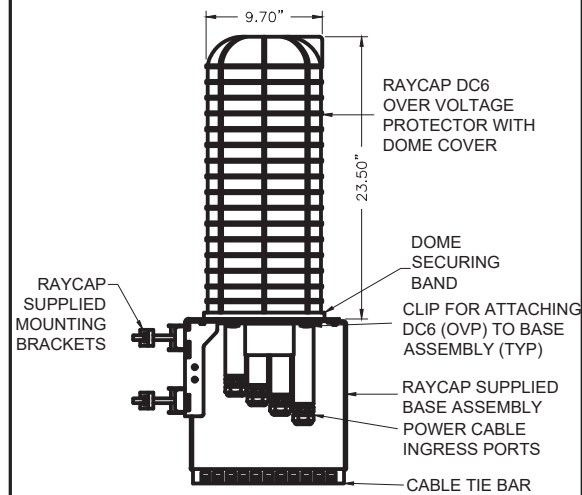
**WALK UP CABINET ELEVATIONS (DELTA ESOF030-HCU01)**  
 SCALE: NTS



**WALK UP CABINET PLAN VIEW (DELTA ESOF030-HCU01)**  
 SCALE: NTS



**GPS MOUNTING DETAIL**  
 SCALE: NTS



**RAYCAP DC6-48-60-18-8F (SQUID) DETAIL**  
 SCALE: NTS

**TILLMAN**  
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 James R. Skowronski Date: 6/20/2019

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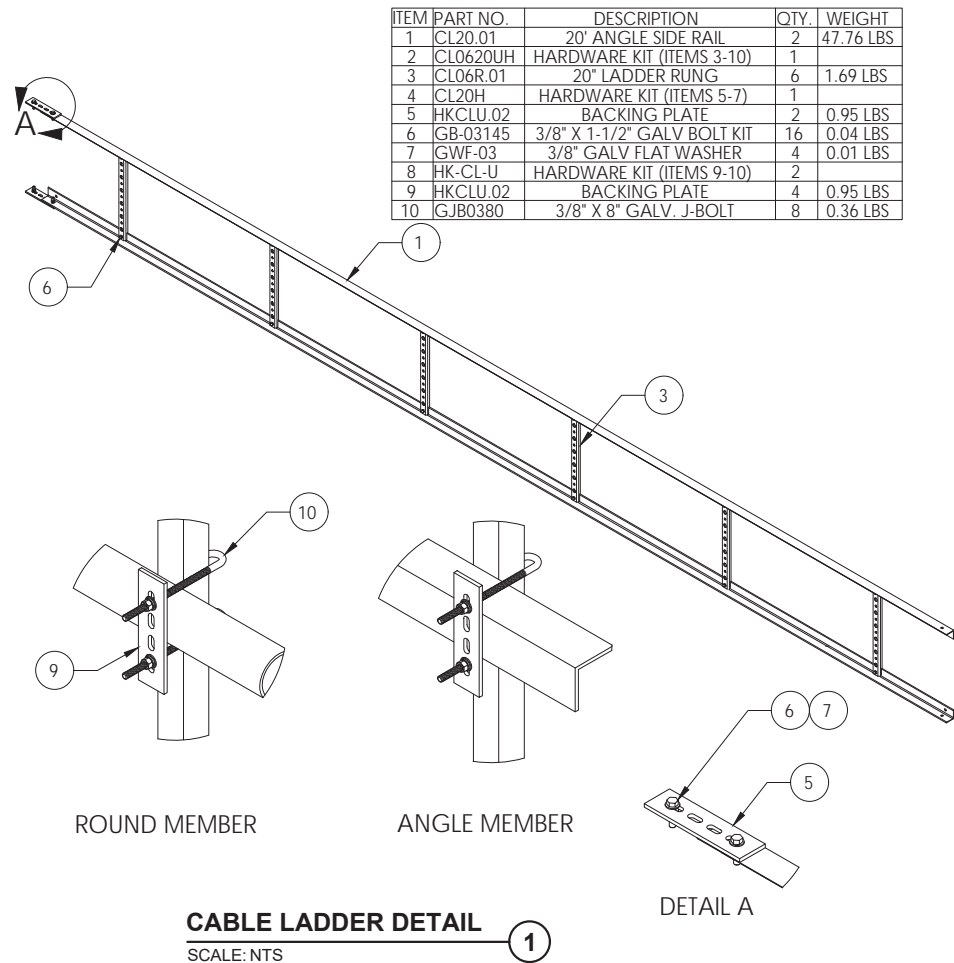
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**EQUIPMENT DETAILS**

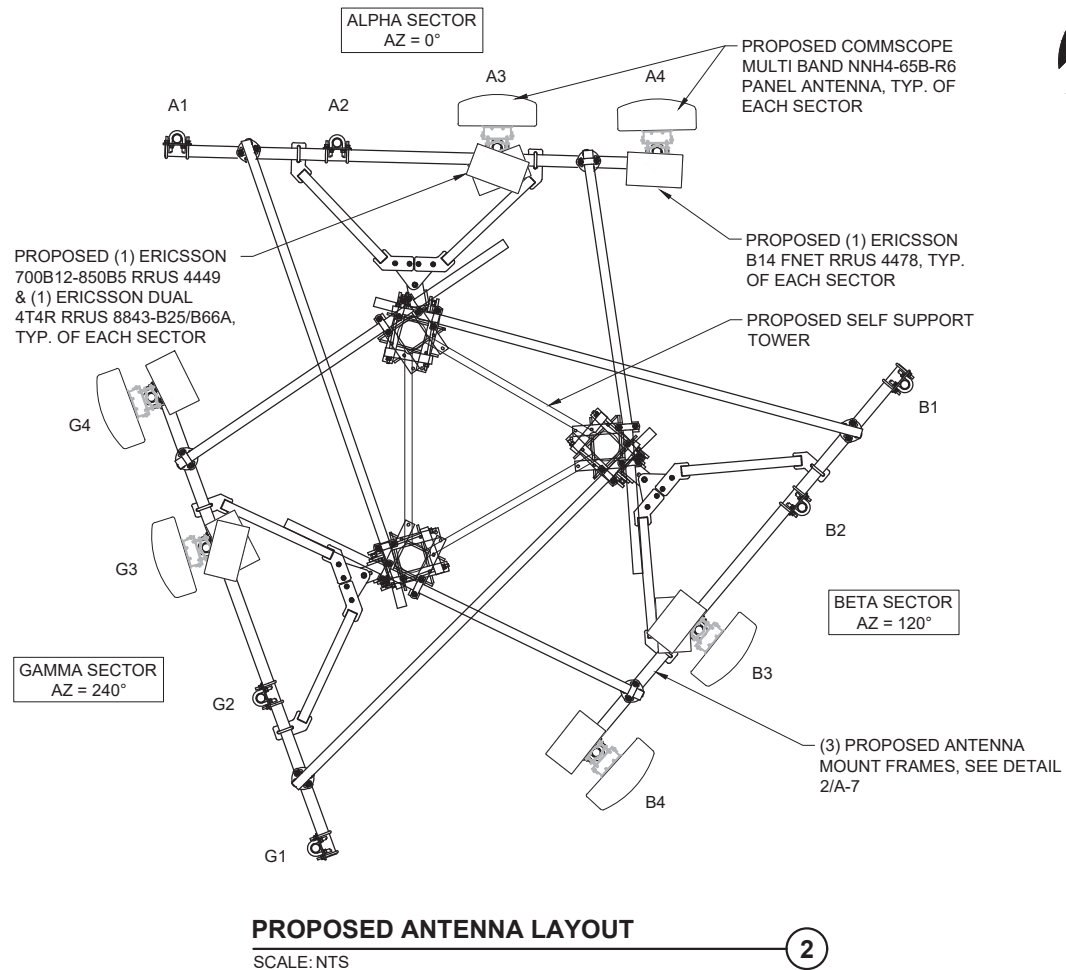
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PROJECT NUMBER 42278  
 SHEET NUMBER A-5



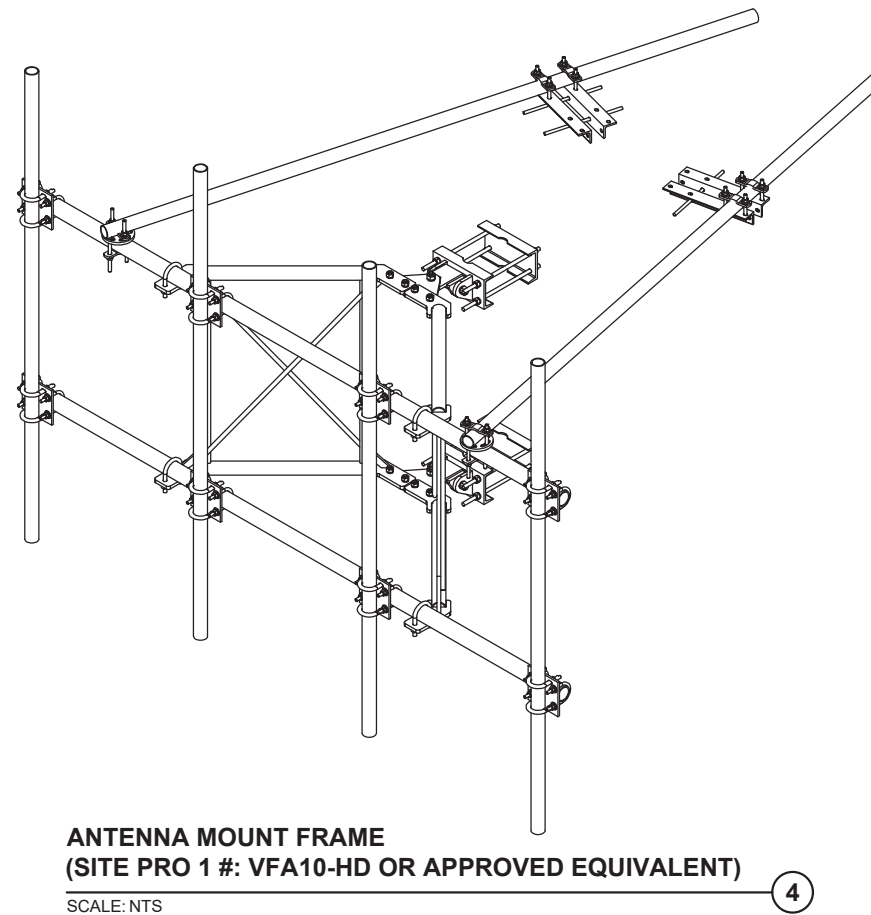


ITEM	PART NO.	DESCRIPTION	QTY.	WEIGHT
1	CL20.01	20' ANGLE SIDE RAIL	2	47.76 LBS
2	CL0620UH	HARDWARE KIT (ITEMS 3-10)	1	
3	CL06R.01	20" LADDER RUNG	6	1.69 LBS
4	CL20H	HARDWARE KIT (ITEMS 5-7)	1	
5	HKCLU.02	BACKING PLATE	2	0.95 LBS
6	GB-03145	3/8" X 1-1/2" GALV BOLT KIT	16	0.04 LBS
7	GW-F-03	3/8" GALV FLAT WASHER	4	0.01 LBS
8	HK-CL-U	HARDWARE KIT (ITEMS 9-10)	2	
9	HKCLU.02	BACKING PLATE	4	0.95 LBS
10	GJB0380	3/8" X 8" GALV. J-BOLT	8	0.36 LBS



SECTOR	ANTENNA NUMBER	ANTENNA TYPE	ANTENNA VENDOR	ANTENNA MODEL NUMBER	ANTENNA SIZE (HxWxD)	RRU MODEL NUMBER	RRU VENDOR	AZIMUTH	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	ANTENNA CENTERLINE (AGL)
ALPHA	A-1	MULTI BAND	COMMSCOPE	JAHH-65B-R3B-V3	72"x13.8"x8.2"	(1) 850 RRUS-12 (1) WCS 4T4R RRUS-32	ERICSSON	0°	0°	-	163'
	A-2	-	-	-	-	-	-	-	-	-	-
	A-3	MULTI BAND	COMMSCOPE	NNH4-65B-R6	72"x19.6"x7.8"	(1) 700 B12-850 B5 RRUS 4449 (1) DUAL 4T4R RRUS 8843-B25/B66A	ERICSSON	0°	0°	-	250'
	A-4	MULTI BAND	COMMSCOPE	NNH4-65B-R6	72"x19.6"x7.8"	(1) B14 FNET RRUS 4478	ERICSSON	0°	0°	-	250'
BETA	B-1	MULTI BAND	COMMSCOPE	JAHH-65B-R3B-V3	72"x13.8"x8.2"	(1) 850 RRUS-12 (1) WCS 4T4R RRUS-32	ERICSSON	260°	0°	-	163'
	B-2	-	-	-	-	-	-	-	-	-	-
	B-3	MULTI BAND	COMMSCOPE	NNH4-65B-R6	72"x19.6"x7.8"	(1) 700 B12-850 B5 RRUS 4449 (1) DUAL 4T4R RRUS 8843-B25/B66A	ERICSSON	120°	0°	-	250'
	B-4	MULTI BAND	COMMSCOPE	NNH4-65B-R6	72"x19.6"x7.8"	(1) B14 FNET RRUS 4478	ERICSSON	120°	0°	-	250'
GAMMA	G-1	MULTI BAND	COMMSCOPE	JAHH-65B-R3B-V3	72"x13.8"x8.2"	(1) 850 RRUS-12 (1) WCS 4T4R RRUS-32	ERICSSON	310°	0°	-	163'
	G-2	-	-	-	-	-	-	-	-	-	-
	G-3	MULTI BAND	COMMSCOPE	NNH4-65C-R6	72"x19.6"x7.8"	(1) 700 B12-850 B5 RRUS 4449 (1) DUAL 4T4R RRUS 8843-B25/B66A	ERICSSON	240°	0°	-	250'
	G-4	MULTI BAND	COMMSCOPE	NNH4-65C-R6	72"x19.6"x7.8"	(1) B14 FNET RRUS 4478	ERICSSON	240°	0°	-	250'

**ANTENNA & RRH SCHEDULE**  
 SCALE: NTS



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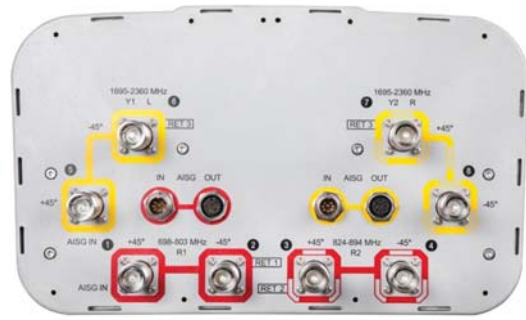
PROJECT TITLE:  
**TI-OPP-11895-C**

PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:  
**ANTENNA PLAN & SCHEDULE**

SCALE: NONE

PROJECT NUMBER: 42278  
 SHEET NUMBER: A-6



MECHANICAL	
DIMENSION (HxWxD)	72" x 13.8" x 8.2"
WEIGHT	72.3 lbs

**COMMSCOPE JAHH-65B-R3B-V3 PANEL ANTENNA DETAIL** ①  
SCALE: NTS



MECHANICAL	
DIMENSION (HxWxD)	72" x 19.6" x 7.8"
WEIGHT	89.7 lbs

**COMMSCOPE NNH4-65B-R6 PANEL ANTENNA DETAIL** ②  
SCALE: NTS



MECHANICAL	
DIMENSION (HxWxD)	20.4" x 18.5" x 7.5"
WEIGHT	50 lbs

**ERICSSON 850 RRUS-12 RRH DETAIL** ③  
SCALE: NTS



MECHANICAL	
DIMENSION (HxWxD)	26.7" x 12.1" x 6.8"
WEIGHT	50.8 lbs

**ERICSSON WCS RRUS-32 RRH DETAIL** ④  
SCALE: NTS



MECHANICAL	
DIMENSION (HxWxD)	15" x 13.2" x 9.3"
WEIGHT	70 lbs

**ERICSSON 700/850 RRUS 4449 RRH DETAIL** ⑤  
SCALE: NTS



MECHANICAL	
DIMENSION (HxWxD)	18.1" x 13.4" x 8.26"
WEIGHT	59.4 lbs

**ERICSSON 700 RRUS 4478 RRH DETAIL** ⑦  
SCALE: NTS



MECHANICAL	
DIMENSION (HxWxD)	15" x 13.2" x 11"
WEIGHT	75 lbs

**ERICSSON RRUS 8843 B25/B66A RRH DETAIL** ⑥  
SCALE: NTS

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Date: 6/20/2019

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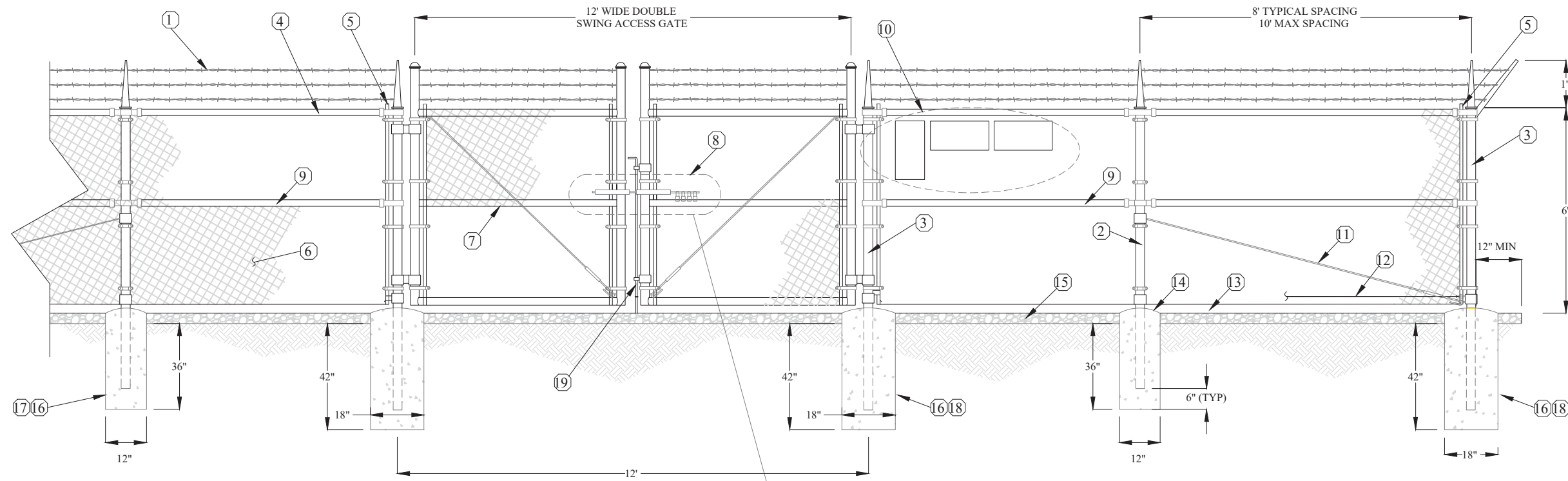
PROJECT INFORMATION:  
PID: 051204290203  
ALBION, WI 53534  
DANE COUNTY

SHEET TITLE:  
**EQUIPMENT DETAILS**

SCALE: NONE

PROJECT NUMBER 42278  
SHEET NUMBER A-7





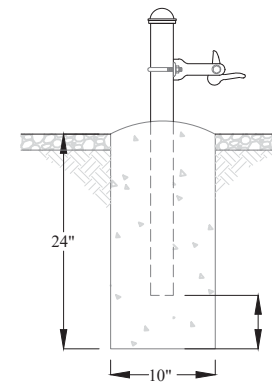
**KEYNOTES:**

- ① 3 STRANDS OF DOUBLE 12 # GAUGE TWISTED STRAND WIRE, WITH 4 POINT 14 GAUGE BARBS SPACED 5" O.C.
- ② 2-1/2" NOMINAL GALVANIZED STEEL, SCHEDULE 40 INTERMEDIARY LINE POSTS (PER ASTM-F1083). LINE POSTS SHALL BE EQUALLY SPACED AT MAXIMUM 10' O.C.
- ③ 3" O.D. GALVANIZED STEEL SCHEDULE 40 CORNER AND GATE POSTS (PER ASTM-F1083). IF GATE LEAF WIDTH GREATER THAN OR EQUAL TO 10-FT OR IF FENCE FABRIC EXTENDED OVER 6-FT AND GATE LEAF WIDTH OVER 6-FT, GATE POST SHALL BE 4" O.D. GALVANIZED STEEL SCHEDULE 40 (PER ASTM-F1083).
- ④ 1-5/8" O.D. SCHEDULE 40 ROUND TOP/BRAVE RAIL (PER ASTM-F1083)
- ⑤ STRETCHER BAR TO EXTEND FULL HEIGHT OF FENCE FABRIC; NOT LESS THAN 1/2" x 3/4" CROSS SECTION; PLACE ON ALL GATES AND POSTS
- ⑥ 9 GAUGE 2" x 2" FENCE FABRIC (TO CONFORM TO ASTM-A392)
- ⑦ GATE FRAME BRACE
- ⑧ STYMIE LOCK OR OTHER APPROVED MULTI-TENANT LOCKING DEVICE
- ⑨ 1-5/8" DIAMETER POST BRACE (AS REQUIRED)
- ⑩ GATE SIGNS (SEE DETAIL, SHEET C-12)
- ⑪ 3/8" DIAGONAL BRACE ROD WITH GALVANIZED STEEL TURNBUCKLE OR DIAGONAL THREADED ROD
- ⑫ 9 GAUGE ALUMINUM TIE WIRE. PROVIDE HOG RING FABRIC TIES SPACED 12" O.C. FOR POSTS AND GATES AND 24" O.C. FOR RAILS AND WIRE.
- ⑬ MAINTAIN A 1" MAXIMUM CLEARANCE FROM FINISHED GRADE
- ⑭ PROVIDE CROWNED/PITCHED FINISH FOR FENCE POST PIER FOUNDATIONS
- ⑮ COMPOUND SECTION AND MATERIALS (SEE DETAIL, SHEET C-5)  
 CONCRETE PIER FOUNDATION; TO ACHIEVE A MINIMUM STRENGTH OF 3000 PSI AT 28 DAYS. CONCRETE DEPTH TO BE AS SPECIFIED HEREIN, AS SPECIFIED BY MANUFACTURER, OR A MINIMUM OF 6" BELOW FROST LINE; WHICHEVER IS GREATER
- ⑯ LINE POST CONCRETE PIER FOUNDATION
- ⑰ CORNER/GATE POST CONCRETE PIER FOUNDATION
- ⑱ COMMERCIAL GRADE DROP ROD AND CENTERSTOP (HOOVER FENCE OR EQUIV)

**NOTES:**

- 1. FENCE DESIGN AND INSTALLATION NOTES ARE INDUSTRY STANDARDS AND/OR MINIMUM REQUIREMENTS AND ARE FOR GENERAL GUIDANCE ONLY. REFER TO MANUFACTURER'S RECOMMENDATIONS OF THE SPECIFIED PRODUCT AND APPLICABLE GOVERNING CODES FOR FULL INSTALLATION DETAILS. IN THE EVENT OF DISCREPANCIES, MANUFACTURER'S RECOMMENDATIONS OR APPLICABLE CODE SHALL GOVERN, WHICHEVER IS MORE STRINGENT.
- 2. ALL FENCING TO BE INSTALLED PER ASTM F-567. ALL SWING GATES TO BE INSTALLED PER ASTM F-900.
- 3. BARBED WIRE PERMIT REQUIRED SHALL BE COMPLETED IF LOCAL ORDINANCE REQUIRES.
- 4. POST & GATE PIPE SIZES ARE INDUSTRY STANDARDS. ALL PIPE TO BE GALVANIZED (HOT DIP, ASTM A120 GRADE "A" STEEL). ALL GATE FRAMES SHALL BE WELDED. ALL WELDINGS SHALL BE COATED WITH (3) COATS OF GOLD GALV. (OR EQUAL). ALL OPEN POSTS SHALL HAVE END-CAPS.
- 5. ALL SIGNS MUST BE MOUNTED ON INSIDE OF FENCE FABRIC USING GALVANIZED HOG-RING WIRE.
- 6. ALL SIGNS AND SIGN PLACEMENT SHALL ADHERE TO THE REQUIREMENTS OF OSHA 1910.145 AND 1910.200 AND ALL APPLICABLE FCC CODES
- 7. DROP ROD AND CENTERSTOP REQUIRED FOR GATE. GENERAL CONTRACTOR RESPONSIBLE FOR GATE LOCK.

**GATE KEEPER**



**FENCE AND GATE DETAIL**

SCALE: NTS

①

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*James R. Skowronski* 6/20/2019  
 James R. Skowronski Date:

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PROJECT TITLE:

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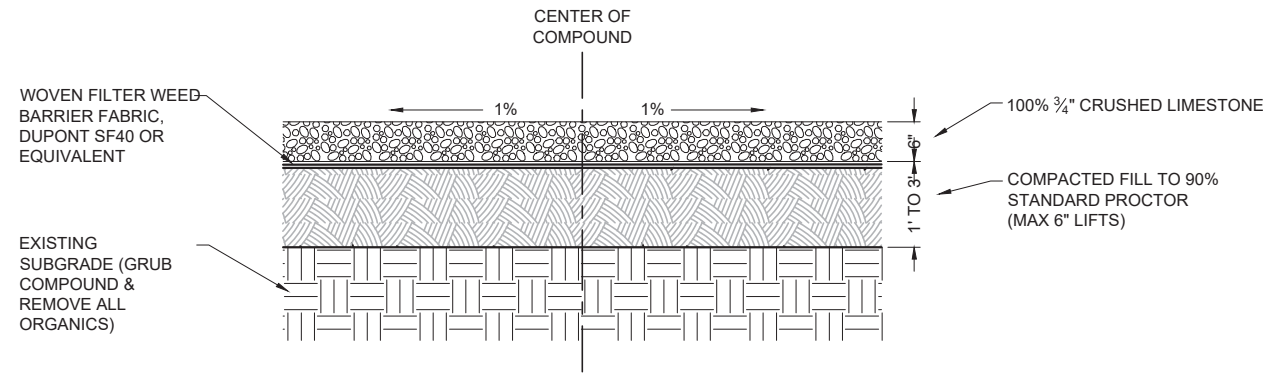
SHEET TITLE:

**FENCE & GATE DETAILS**

SCALE: NONE

PROJECT NUMBER 42278

SHEET NUMBER A-8



**COMPOUND SECTION**

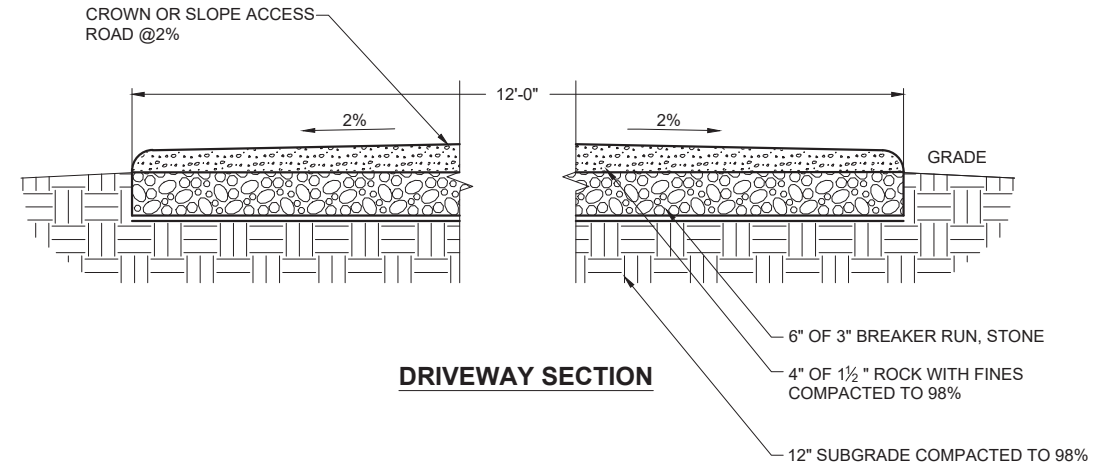
NOTES:

THE FABRIC SHOULD BE PLACED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. INTERSECTIONS OF SHEETS MUST BE SEWN 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.

**TYPICAL COMPOUND GRAVEL**

SCALE: NTS

1

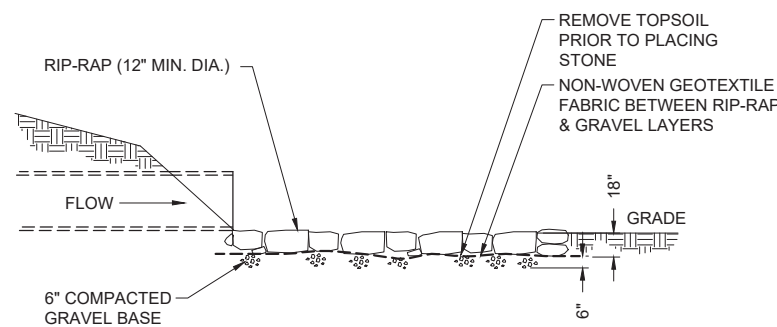


**DRIVEWAY SECTION**

**TYPICAL GRAVEL DRIVEWAY**

SCALE: NTS

2

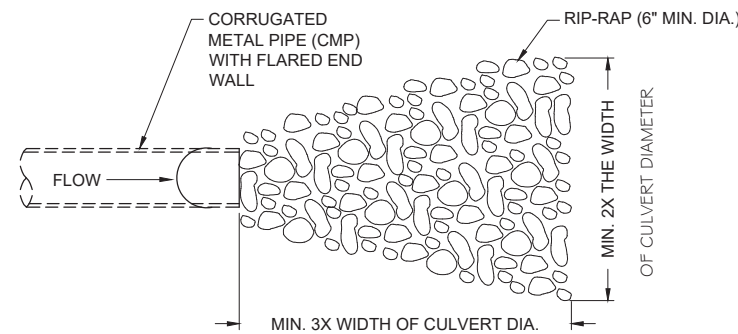


**RIP-RAP SECTION**

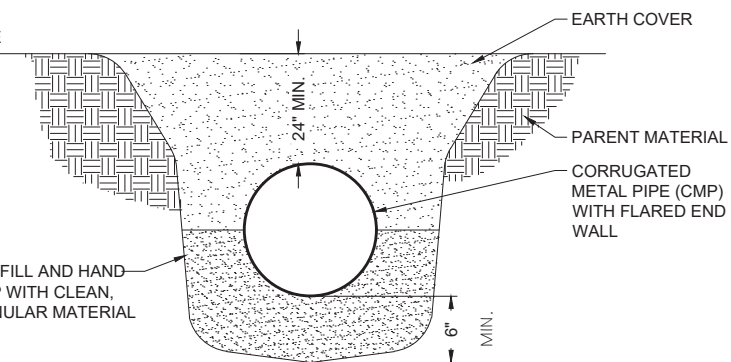
**TYPICAL RIP-RAP DETAIL**

SCALE: NTS

3



**RIP-RAP PLAN**



**CULVERT SECTION**

**TYPICAL PIPE CULVERT RIP-RAP DETAIL**

SCALE: NTS

4

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 James R. Skowronski Date: 6/20/2019

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 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:

**SITE DETAILS**

SCALE: NONE

PROJECT NUMBER 42278  
 SHEET NUMBER A-9



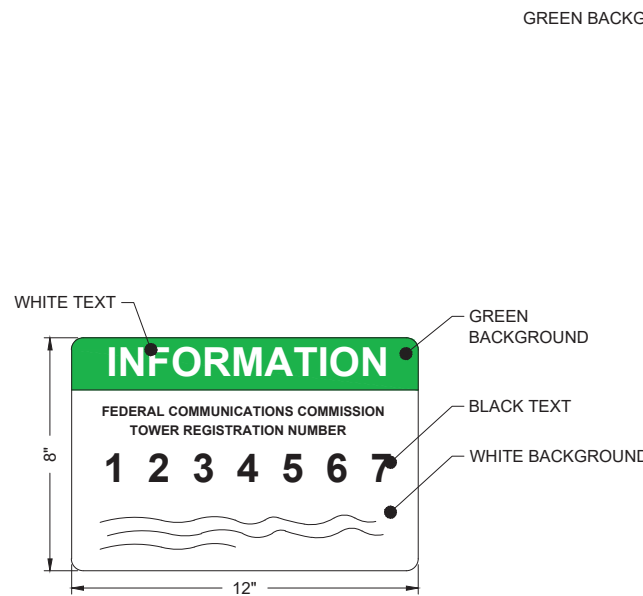


WHITE BACKGROUND, RED/BLACK LETTERING  
 MOUNTING LOCATION: SHELTER OR TENNANT IMPROVEMENT ROOM  
 DOOR, IF OUTDOOR CABINET SITE PLACE ON END CABINET  
 CLOSEST TO SITE ACCESS POINT. PLACE ON GENERATOR.  
 QUANTITY: 1 OR 2

**PROPERTY OF TILLMAN INFRASTRUCTURE** ①  
 SCALE: NTS

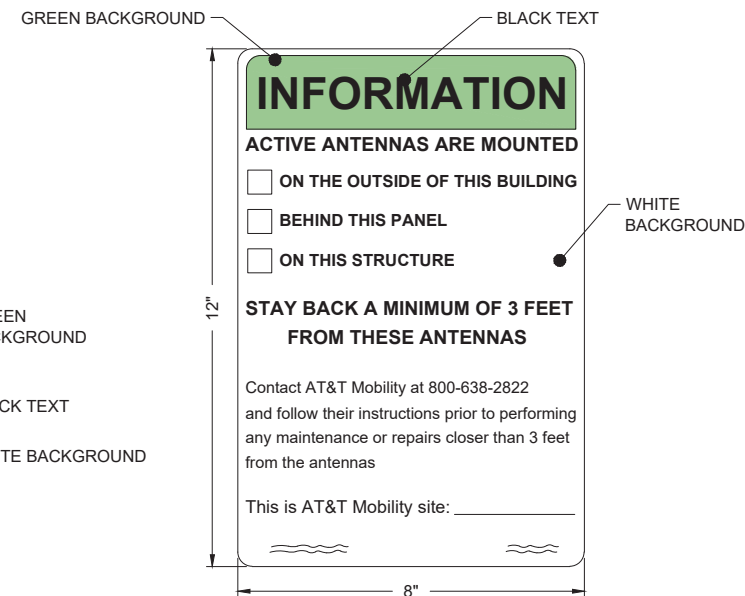
SIGNAGE NOTES:

- SIGNS SHALL BE FABRICATED FROM CORROSION RESISTANT PRESSED METAL & PAINTED WITH LONG LASTING UV RESISTANT COATINGS
- SIGNS (EXCEPT WHERE NOTED OTHERWISE) SHALL BE MOUNTED TO THE TOWER, GATE & FENCE USING A MINIMUM OF 9 GAUGE ALUMINUM WIRE HOG RINGS (FENCE) OR BRACKETS, WHERE NECESSARY, BRACKETS SHALL BE OF SIMILAR METALS AS THE STRUCTURE TO AVOID GALVANIC CORROSION
- ADDITIONAL E911 ADDRESS AND FCC REGISTRATION SIGNS SHALL BE MOUNTED AT EACH ACCESS ROAD GATE LEADING TO THE COMPOUND AS WELL AS ON THE COMPOUND GATE ITSELF
- CARRIER SITE # AND EMERGENCY CONTACT SIGNS SHALL BE MOUNTED ON THE EQUIPMENT CABINET WITH PERMANENT SET ADHESIVE. TWO SIDED TAPE SHALL BE APPLIED AT EACH CORNER OF THE BACKSIDE TO AVOID PLACEMENT UNTIL THE ADHESIVE SETS



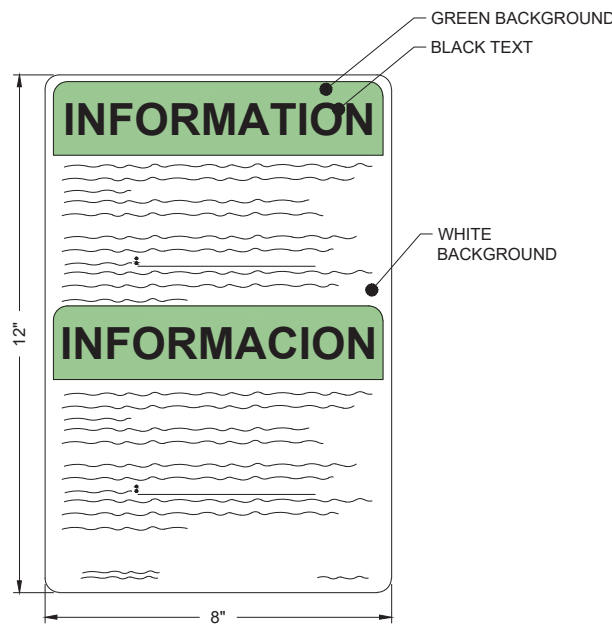
WHITE/GREEN BACKGROUND, WHITE/BLACK LETTERING  
 MOUNTING LOCATION: GATE & BASE OF TOWER  
 QUANTITY: 2

**FCC REGISTRATION SIGN** ②  
 SCALE: NTS



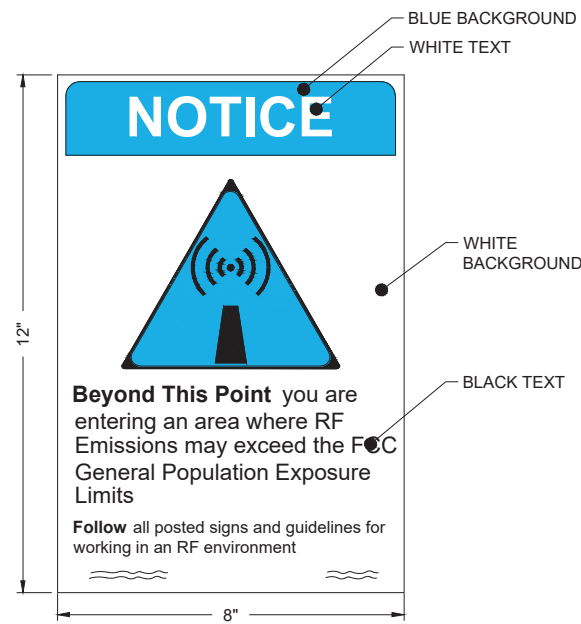
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 QUANTITY: 2

**RF EXPOSURE INFORMATION SIGN** ③  
 SCALE: NTS



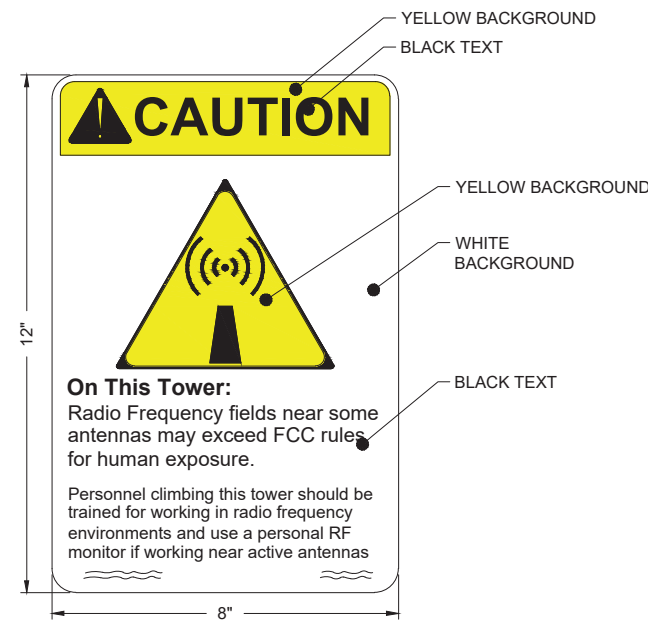
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 MOUNTING LOCATION: GATE & BASE OF TOWER  
 QUANTITY: 2

**RF EXPOSURE INFORMATION SIGN** ④  
 SCALE: NTS



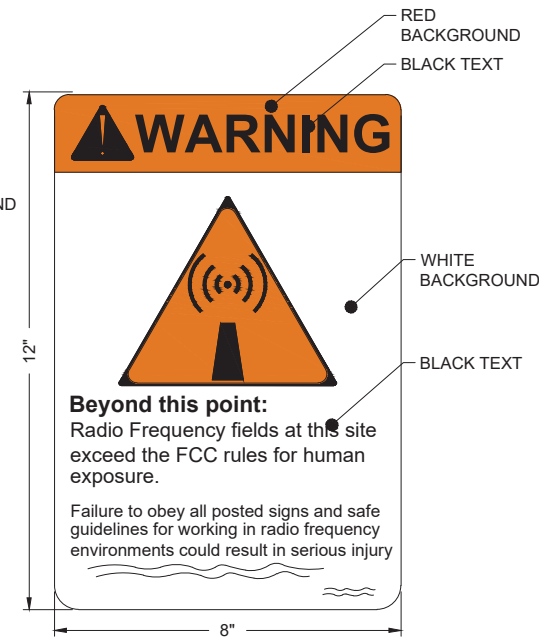
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 MOUNTING LOCATION: GATE & BASE OF TOWER  
 QUANTITY: 2

**RF EXPOSURE NOTICE SIGN** ⑤  
 SCALE: NTS



WHITE/YELLOW BACKGROUND, BLACK LETTERING  
 MOUNTING LOCATION: BASE OF TOWER  
 QUANTITY: 1

**RF EXPOSURE CAUTION SIGN** ⑥  
 SCALE: NTS



WHITE/RED BACKGROUND, BLACK LETTERING  
 MOUNTING LOCATION: GATE & BASE OF TOWER  
 QUANTITY: 2

**RF EXPOSURE WARNING SIGN** ⑦  
 SCALE: NTS

TILLMAN  
 INFRASTRUCTURE

LCC  
 TELECOM SERVICES

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 by me or under my direct supervision and that I am a duly Licensed  
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James R. Skowronski  
 James R. Skowronski : 6/20/2019 Date:

MARK	DATE	DESCRIPTION
ISSUE	FINAL	DATE ISSUED 06/20/2019

PROJECT TITLE:  
 TI-OPP-11895-C

PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:

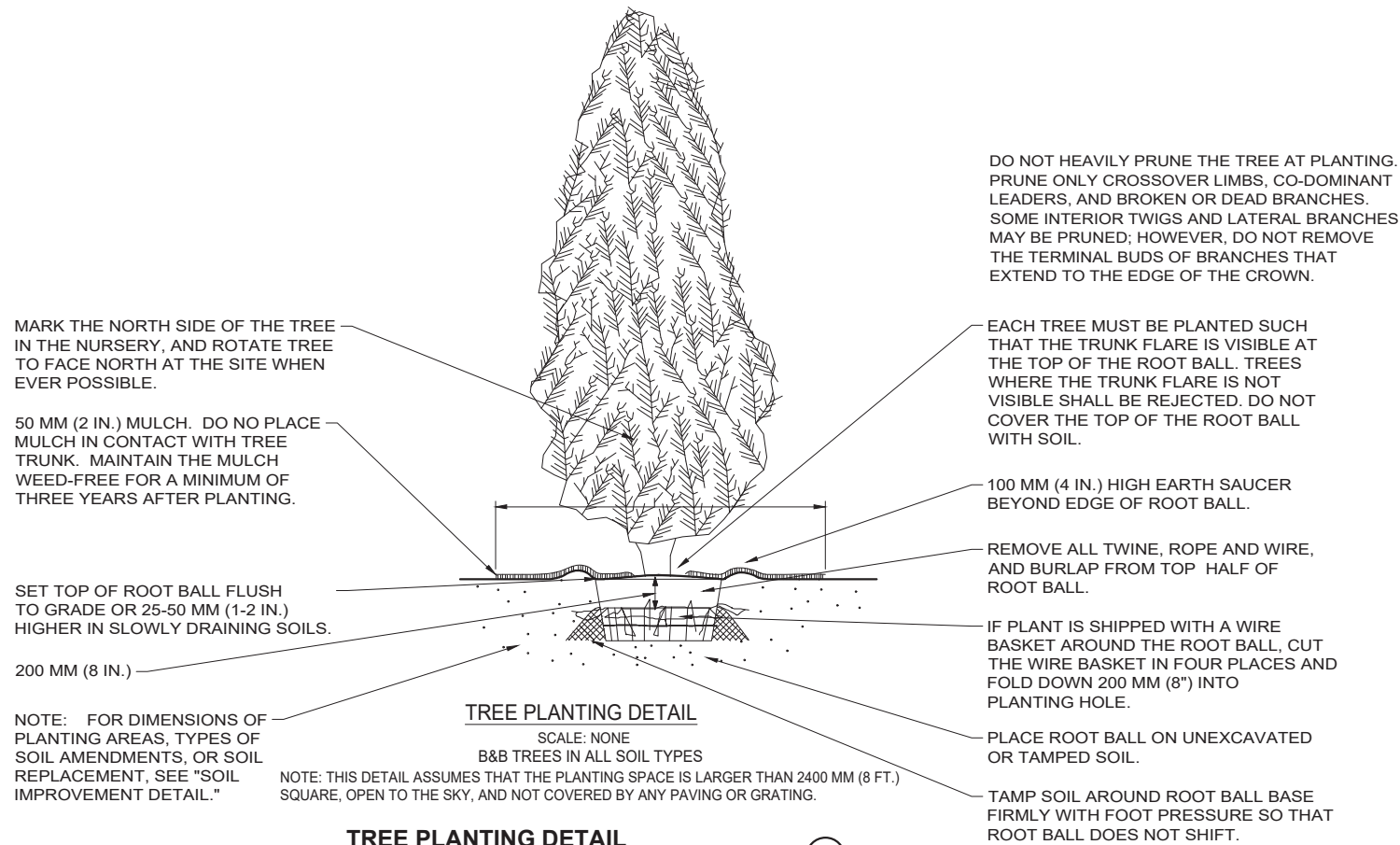
COMPOUND SIGN DETAILS

SCALE: NONE

PROJECT NUMBER 42278

SHEET NUMBER A-10

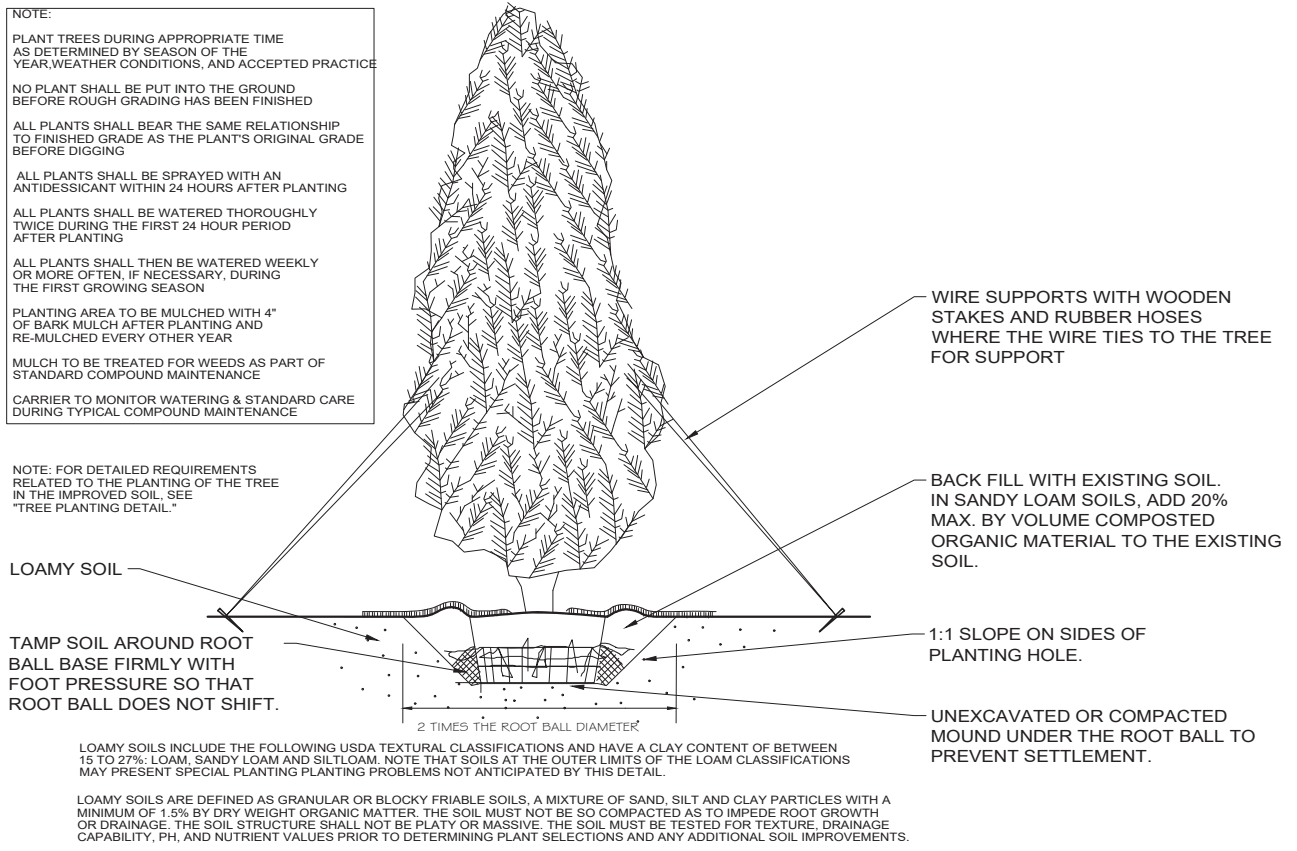




**TREE PLANTING DETAIL**  
 SCALE: NTS

NOTE:  
 PLANT TREES DURING APPROPRIATE TIME AS DETERMINED BY SEASON OF THE YEAR, WEATHER CONDITIONS, AND ACCEPTED PRACTICE  
 NO PLANT SHALL BE PUT INTO THE GROUND BEFORE ROUGH GRADING HAS BEEN FINISHED  
 ALL PLANTS SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS THE PLANT'S ORIGINAL GRADE BEFORE DIGGING  
 ALL PLANTS SHALL BE SPRAYED WITH AN ANTIDESSICANT WITHIN 24 HOURS AFTER PLANTING  
 ALL PLANTS SHALL BE WATERED THOROUGHLY TWICE DURING THE FIRST 24 HOUR PERIOD AFTER PLANTING  
 ALL PLANTS SHALL THEN BE WATERED WEEKLY OR MORE OFTEN, IF NECESSARY, DURING THE FIRST GROWING SEASON  
 PLANTING AREA TO BE MULCHED WITH 4" OF BARK MULCH AFTER PLANTING AND RE-MULCHED EVERY OTHER YEAR  
 MULCH TO BE TREATED FOR WEEDS AS PART OF STANDARD COMPOUND MAINTENANCE  
 CARRIER TO MONITOR WATERING & STANDARD CARE DURING TYPICAL COMPOUND MAINTENANCE

NOTE: FOR DETAILED REQUIREMENTS RELATED TO THE PLANTING OF THE TREE IN THE IMPROVED SOIL, SEE "TREE PLANTING DETAIL."



**SOIL IMPROVEMENT DETAIL**  
 SCALE: NTS



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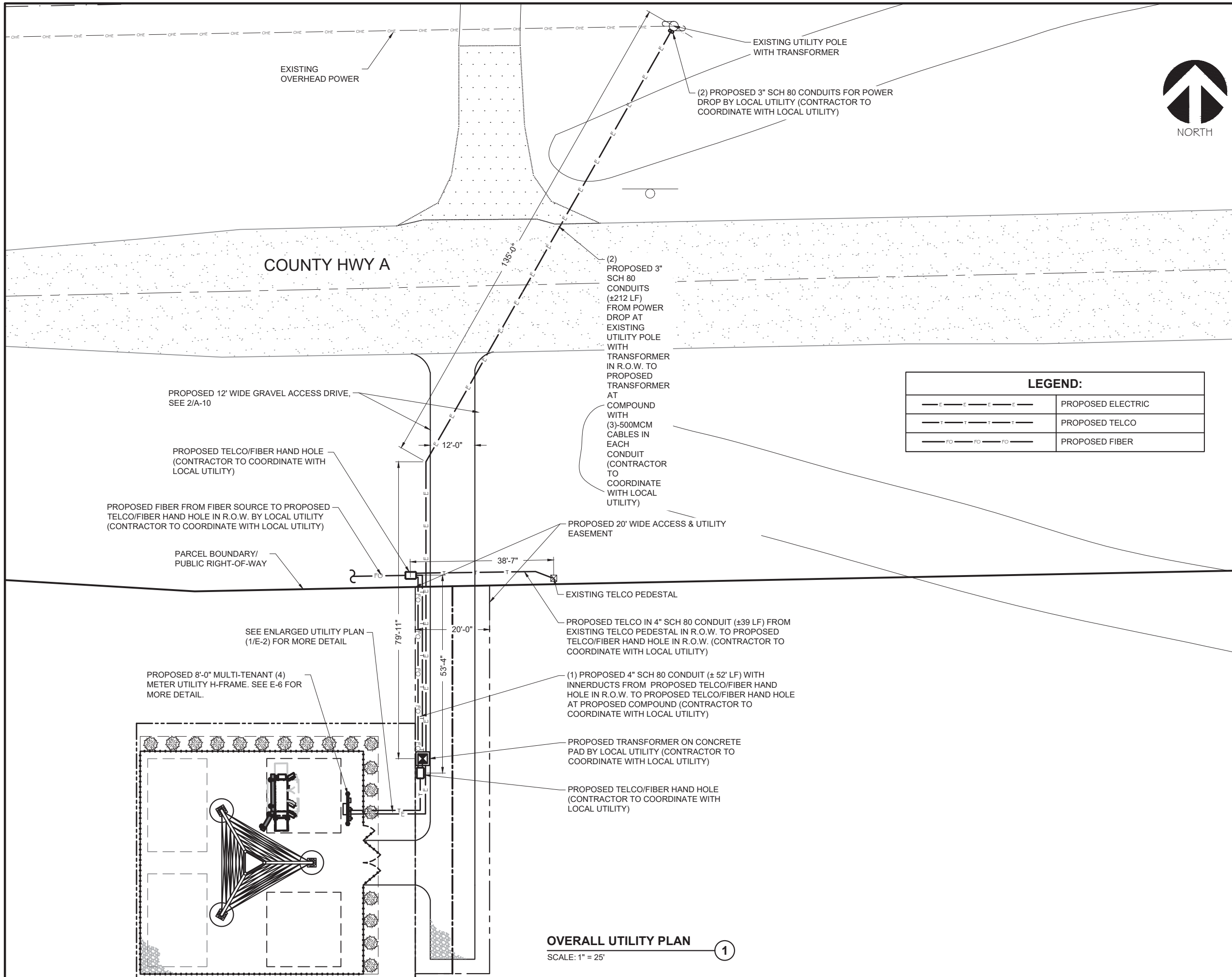
PROJECT TITLE:  
**TI-OPP-11895-C**

PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:  
**LANDSCAPE DETAILS**

SCALE: NONE

PROJECT NUMBER	42278
SHEET NUMBER	L-1



LEGEND:	
— E — E — E — E — E —	PROPOSED ELECTRIC
— T — T — T — T — T —	PROPOSED TELCO
— FO — FO — FO — FO — FO —	PROPOSED FIBER

**OVERALL UTILITY PLAN**  
 SCALE: 1" = 25'

**TILLMAN**  
**INFRASTRUCTURE**

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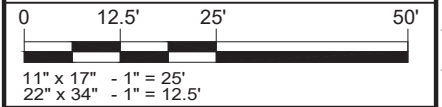
*James R. Skowronski*  
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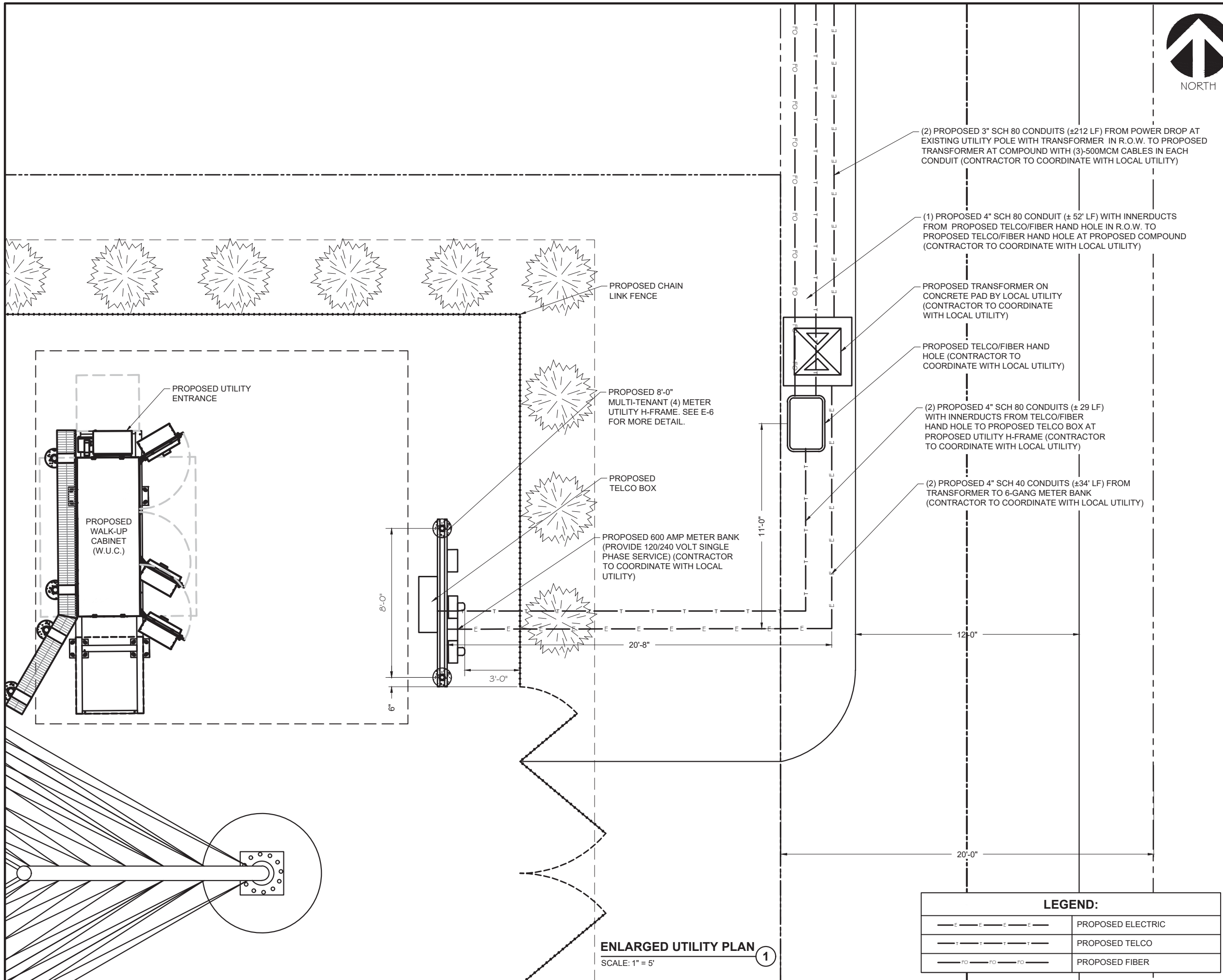
PROJECT INFORMATION:  
 PID: 051204290203  
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 DANE COUNTY

SHEET TITLE:  
**OVERALL UTILITY PLAN**



PROJECT NUMBER: 42278  
 SHEET NUMBER: E-1





**ENLARGED UTILITY PLAN** ①  
 SCALE: 1" = 5'

- (2) PROPOSED 3" SCH 80 CONDUITS (±212 LF) FROM POWER DROP AT EXISTING UTILITY POLE WITH TRANSFORMER IN R.O.W. TO PROPOSED TRANSFORMER AT COMPOUND WITH (3)-500MCM CABLES IN EACH CONDUIT (CONTRACTOR TO COORDINATE WITH LOCAL UTILITY)
- (1) PROPOSED 4" SCH 80 CONDUIT (± 52' LF) WITH INNERDUCTS FROM PROPOSED TELCO/FIBER HAND HOLE IN R.O.W. TO PROPOSED TELCO/FIBER HAND HOLE AT PROPOSED COMPOUND (CONTRACTOR TO COORDINATE WITH LOCAL UTILITY)
- PROPOSED TRANSFORMER ON CONCRETE PAD BY LOCAL UTILITY (CONTRACTOR TO COORDINATE WITH LOCAL UTILITY)
- PROPOSED TELCO/FIBER HAND HOLE (CONTRACTOR TO COORDINATE WITH LOCAL UTILITY)
- (2) PROPOSED 4" SCH 80 CONDUITS (± 29 LF) WITH INNERDUCTS FROM TELCO/FIBER HAND HOLE TO PROPOSED TELCO BOX AT PROPOSED UTILITY H-FRAME (CONTRACTOR TO COORDINATE WITH LOCAL UTILITY)
- (2) PROPOSED 4" SCH 40 CONDUITS (±34' LF) FROM TRANSFORMER TO 6-GANG METER BANK (CONTRACTOR TO COORDINATE WITH LOCAL UTILITY)



**TILLMAN**  
**INFRASTRUCTURE**

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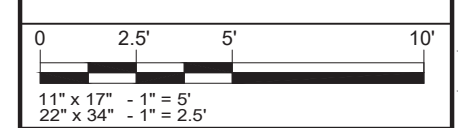
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**TI-OPP-11895-C**

PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:  
**ENLARGED UTILITY PLAN**



PROJECT NUMBER: 42278  
 SHEET NUMBER: E-2

**ELECTRICAL NOTES**

- SUBMITTAL OF BID INDICATES THAT THE CONTRACTOR IS COGNIZANT OF ALL JOB SITE CONDITIONS AND WORK TO BE PERFORMED UNDER THIS CONTRACT.
- CONTRACTOR SHALL PERFORM ALL VERIFICATIONS, OBSERVATION TESTS, AND EXAMINATION WORK PRIOR TO ORDERING OF ANY EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE PROJECT MANAGER LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.
- VERIFY HEIGHTS WITH PROJECT MANAGER PRIOR TO INSTALLATION.
- THESE PLANS ARE DIAGRAMMATIC ONLY, FOLLOW AS CLOSELY AS POSSIBLE.
- CONTRACTOR SHALL COORDINATE ALL WORK BETWEEN TRADES AND ALL OTHER SCHEDULING AND PROVISIONARY CIRCUMSTANCES SURROUNDING THE PROJECT.
- CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION CONSTRUCTION TOOLS, TRANSPORTATION, ETC., FOR COMPLETE AND FUNCTIONALLY OPERATING SYSTEMS ENERGIZED AND READY FOR USE THROUGHOUT AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.
- ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN PERFECT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. ELECTRICAL MATERIALS SHALL BE LISTED AND APPROVED BY UNDERWRITER'S LABORATORIES AND SHALL BEAR THE INSPECTION LABEL "J" WHERE SUBJECT TO SUCH APPROVAL. MATERIALS SHALL MEET WITH APPROVAL OF ALL GOVERNING BODIES HAVING JURISDICTION OVER THE CONSTRUCTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH ALL CURRENT APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA AND NBFU. ALL MATERIALS AND EQUIPMENT SHALL BE APPROVED FOR THEIR INTENDED USE AND LOCATION.
- ALL WORK SHALL COMPLY WITH ALL APPLICABLE GOVERNING STATE, COUNTY AND CITY CODES AND OSHA, NFPA, NEC & ASHRAE REQUIREMENTS.
- ENTIRE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF JOB ACCEPTANCE. ALL WORK, MATERIAL AND EQUIPMENT FOUND TO BE FAULTY DURING THAT PERIOD SHALL BE CORRECTED AT ONCE, UPON WRITTEN NOTIFICATION, AT THE EXPENSE OF THE CONTRACTOR.
- PROPERLY SEAL ALL PENETRATIONS. PROVIDE UL LISTED FIRE-STOPS WHERE PENETRATIONS ARE MADE THROUGH FIRE-RATED ASSEMBLIES. WATER-TIGHT USING SILICONE SEALANT.
- DELIVER ALL BROCHURES, OPERATING MANUALS, CATALOGS AND SHOP DRAWINGS TO THE PROJECT MANAGER AT JOB COMPLETION. PROVIDE MAINTENANCE MANUALS FOR MECHANICAL EQUIPMENT. AFFIX MAINTENANCE LABELS TO MECHANICAL EQUIPMENT.
- ALL CONDUCTORS SHALL BE COPPER. MINIMUM CONDUCTOR SIZE SHALL BE #12 AWG., UNLESS OTHERWISE NOTED. CONDUCTORS SHALL BE TYPE THHW, RATED IN ACCORDANCE WITH NEC 110-14(C).
- ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THAN THE MAXIMUM INTERRUPTING CURRENT TO WHICH THEY MAY BE SUBJECTED.
- THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE; ARTICLES 250 & 810 AND THE UTILITY COMPANY STANDARDS.
- CONDUIT:
  - RIGID CONDUIT SHALL BE U.L. LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR AND SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS, IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR. RIGID CONDUIT IN CONTACT WITH EARTH SHALL BE 1/2 LAPPED WRAPPED WITH HUNTS WRAP PROCESS NO. 3.
  - ELECTRICAL METALLIC TUBING SHALL HAVE U.L. LABEL, FITTINGS SHALL BE GLAND RING COMPRESSION TYPE. EMT SHALL BE USED ONLY FOR INTERIOR RUNS.
  - LIQUID-TIGHT FLEXIBLE METAL CONDUIT SHALL BE U.L. LISTED AND SHALL BE USED AT FINAL CONNECTIONS TO MECHANICAL EQUIPMENT & RECTIFIERS AND WHERE PERMITTED BY CODE. ALL CONDUIT IN EXCESS OF SIX FEET IN LENGTH SHALL CONTAIN A FULL-SIZE GROUND CONDUCTOR.
  - CONDUIT RUNS SHALL BE SURFACE MOUNTED ON CEILINGS OR WALLS UNLESS NOTED OTHERWISE. ALL CONDUIT SHALL RUN PARALLEL OR PERPENDICULAR TO WALLS, FLOOR, CEILING, OR BEAMS. VERIFY EXACT ROUTING OF ALL EXPOSED CONDUIT WITH THE PROJECT MANAGER PRIOR TO INSTALLING.
  - PVC CONDUIT MAY BE PROVIDED ONLY WHERE SHOWN, OR IN UNDERGROUND INSTALLATIONS. PROVIDE UV-RESISTANT CONDUIT WHERE EXPOSED TO THE ATMOSPHERE. PROVIDE GROUND CONDUCTOR IN ALL PVC RUNS; EXCEPT WHERE PERMITTED BY CODE TO OMIT.
- ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS. BACKGROUND SHALL BE BLACK WITH WHITE LETTERS; EXCEPT AS REQUIRED BY CODE TO FOLLOW A DIFFERENT SCHEME.
- UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL OF POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO PROJECT MANAGER. GROUNDING SYSTEM RESISTANCE SHALL NOT EXCEED 5 OHMS. IF THE RESISTANCE VALUE IS EXCEEDED, NOTIFY THE PROJECT MANAGER FOR FURTHER INSTRUCTION ON METHODS FOR REDUCING THE RESISTANCE VALUE.
- CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION. LEGALLY DISPOSE OF ALL REMOVED, UNUSED AND EXCESS MATERIAL GENERATED BY THE WORK OF THIS CONTRACT. DELIVER ITEMS INDICATED ON THE DRAWINGS TO THE OWNER IN GOOD CONDITION. OBTAIN SIGNED RECEIPT UPON DELIVERY.
- COORDINATE WITH UTILITY COMPANY FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE SITE. THE TEMPORARY POWER AND ALL HOOKUP COSTS SHALL BE PAID BY THE CONTRACTOR.
- VERIFY ALL EXISTING CIRCUITRY PRIOR TO REMOVAL AND NEW WORK. MAINTAIN POWER TO ALL OTHER AREAS & CIRCUITS NOT SCHEDULED FOR REMOVAL.
- RED LINED AS-BUILT PLANS SHALL BE PROVIDED TO THE CONSTRUCTION MANAGER.

INTEGRATED LOAD CENTER																																					
LOAD				LOAD PER PHASE (VA)				WIRE COLOR	LOADS CONTINUOUS	LOADS NON-CONT.	LOADS SUB-PANEL	WIRE SIZE	GROUNDING WIRE SIZE	TRIP	TRIP	GROUNDING WIRE SIZE	WIRE SIZE	LOADS SUB-PANEL	LOADS NON-CONT.	LOADS CONTINUOUS	WIRE COLOR	LOAD PER PHASE (VA)				LOAD											
DESCRIPTION	QTY.	UNIT V.A.	PHASE		A	B	PHASE															UNIT V.A.	QTY.	DESCRIPTION	UNIT V.A.	QTY.	DESCRIPTION	UNIT V.A.	QTY.	DESCRIPTION	UNIT V.A.	QTY.	DESCRIPTION	UNIT V.A.	QTY.	DESCRIPTION	
			A	B			A																														B
1	RECTIFIER #1	1	1400	1400			BLK	X			8	(10)	40	40	(10)	8				X	BLK	1400		1400	1	RECTIFIER #5	2										
3		1	1400		1400		RED														RED		1400	1		4											
5	RECTIFIER #2	1	1400	1400			BLK	X			8	(10)	40	40	(10)	8				X	BLK	1400		1400	1	RECTIFIER #6	6										
7		1	1400		1400		RED														RED		1400	1		8											
9	RECTIFIER #3	1	1400	1400			BLK	X			8	(10)	40	40	(10)	8				X	BLK	1400		1400	1	RECTIFIER #7	10										
12		1	1400		1400		RED														RED		1400	1		12											
13	RECTIFIER #4	1	1400	1400			BLK	X			8	(10)	40	40	(10)	8				X	BLK	1400		1400	1	RECTIFIER #8	14										
15		1	1400		1400		RED														RED		1400	1		16											
17							BLK														BLK					18											
19							RED	X			12	12	20								RED					20											
21	GFCI RECEPTACLES	2	180	360			BLK	X			12	(12)	20								BLK					22											
23	OPTIONAL FIBER BOX RECEPTACLE	1	180		180		RED	X			12	12	20								RED					24											
25	BATTERY CHARGER	1	240	240			BLK	X			12	12	20								BLK					26											
27	BLOCK HEATER	1	1500		1500		RED	X			12	12	20								RED					28											
29	OIL HEATER	1	180	180			BLK	X			12	12	20								BLK					30											
			SUBTOTAL CONTINUOUS		6,380	7,280															5,600	5,600	SUBTOTAL CONTINUOUS		TOTAL KVA CONTINUOUS x 1.25		31.075										
			SUBTOTAL NON-CONT.		-	-															-	-	SUBTOTAL NON-CONT.		TOTAL KVA NON-CONTINUOUS		-										
			SUBTOTAL SUB-PANEL		-	-															-	-	SUBTOTAL SUB-PANEL		TOTAL KVA SUB-PANEL		-										
PANEL DESIGNATION: ELECTRICAL PANEL (ITEM 2)																							TOTAL KVA		31.075												
MAIN LUGS: N/A			MAIN BREAKER: 200 AMP																	BRANCH BREAKER TYPE: SIEMENS - BL			TOTAL KVA		31.075												
VOLTAGE: 120/240			CYCLE: 60			PHASE: 1			WIRES: 3			MAIN COPPER BUS: 200 AMPS			NEUTRAL: 200 AMPS			TOTAL AMPS		129.48																	

**PANEL SCHEDULE**

SCALE: NTS



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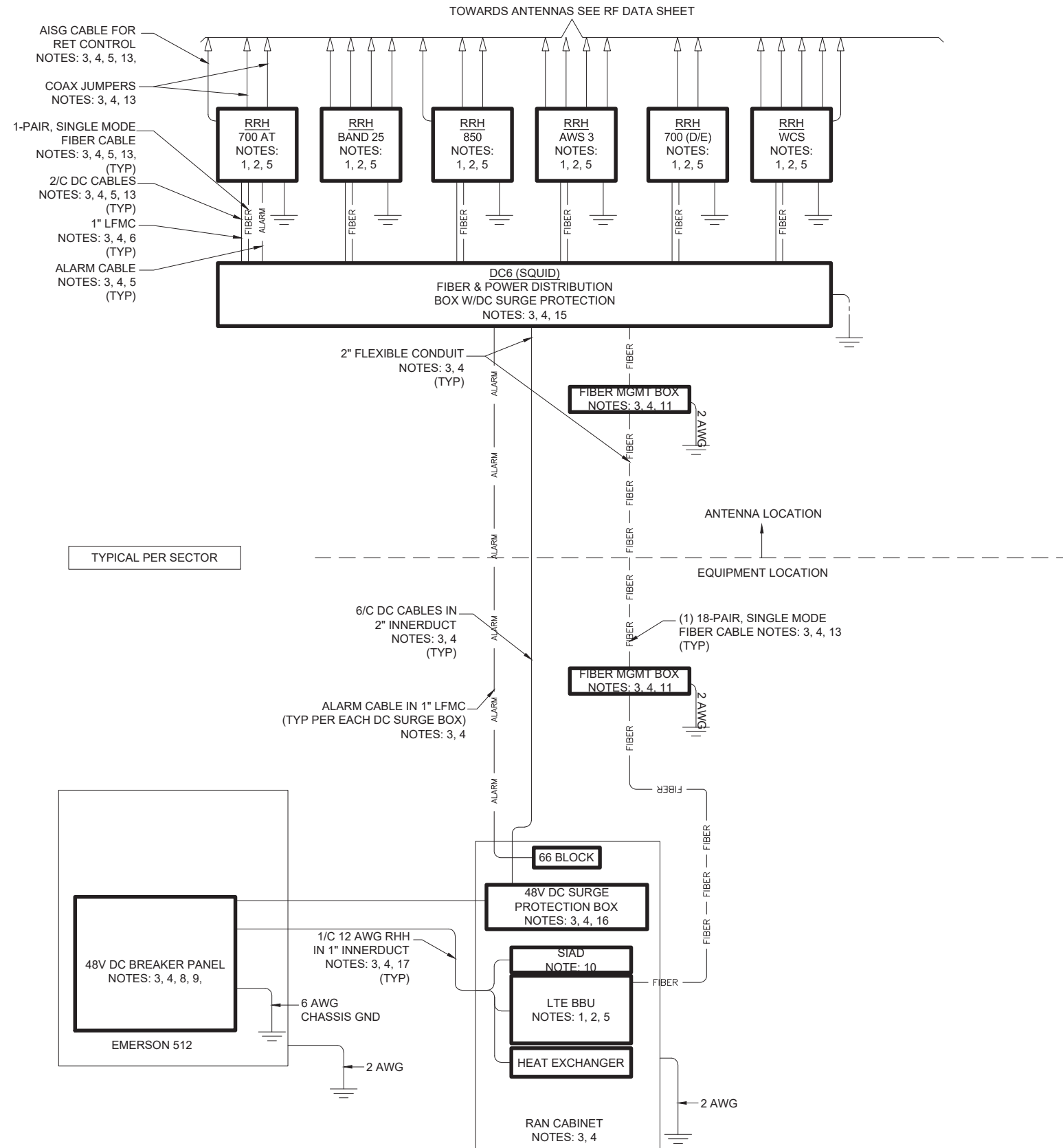
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PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:  
**PANEL SCHEDULE**

SCALE: NONE

PROJECT NUMBER: 42278  
 SHEET NUMBER: E-3



**DC/FIBER SYSTEM DIAGRAM**

SCALE: NTS

1

**NOTES:**

1. FURNISHED BY OEM/AT&T.
2. INSTALLED BY OEM OR AS SCOPED BY MARKET.
3. FURNISHED BY OTHERS
4. INSTALLED BY OTHERS
5. FINAL CONNECTION BY OEM OR AS SCOPED BY MARKET.
6. OPEN END OF LFMC TO BE LEFT WEATHERPROOFED UNTIL TERMINATED.
7. DELETED.
8. BREAKERS SPECIFIED SOLD SEPERATELY.
9. BREAKERS TO BE TAGGED AND LOCKED OUT.
10. SIAD IS FURNISHED AND INSTALLED BY OTHERS AND INCLUDES POWER CONNECTIONS AND FIBER TO THE UNIT OR AS SCOPED BY MARKET. INSTALL 10 AWG CHASSIS GROUND, PROVIDE (2) 10A BREAKERS FROM A 24V DC POWER SOURCE OR (2) 5A BREAKERS FROM A 48V DC POWER SOURCE AND CONNECT USING MFR POWER CABLE WITH SPECIAL CONNECTOR.
11. FIBER MANAGEMENT BOX IS J-SOURCE MODEL 12126FM4SEC.
12. LEC TO FURNISH AND INSTALL NETWORK INTERFACE DEVICE.
13. LEAVE COILED AND PROTECTED UNTIL TERMINATED.
14. SEE DETAIL 1408 FOR DC POWER CABLE SIZES.
15. FIBER AND POWER DISTRIBUTION BOX 4/48V SURGE SHALL BE RAYCAP MODEL DC6-48-60-18-8F.
16. POWER DISTRIBUTION W/DC SURGE PROTECTION BOX SHALL BE RAYCAP MODEL DC6-48-60-0-18.
17. SINGLE-CONDUCTOR DC POWER CABLES SHALL BE TELCOFLEX OR KS24194. COPPER, UL LISTED RHH NON-HALOGEN, LOW SMOKE WITH BRAIDED COVER, TYPE TC (1/0 AND LARGER). UNLESS OTHERWISE NOTED, STRANDING SHALL BE CLASS B (TYPE III) FOR CABLES SIZES 14, 12 & 10 AWG AND CLASS 1 (TYPE IV) FOR SIZES 8 AWG AND LARGER. CABLES SHALL BE COLOR CODED RED FOR +24V, BLUE FOR -48V AND GRAY FOR 24V AND 48V RETURN CONDUCTORS. MULTI-CONDUCTOR DC POWER CABLES SHALL COPPER, CLASS B STRANDED WITH FLAME RETARDANT PVC JACKET, TYPE TC, UL LISTED FOR 90°C DRY/ 75°C WET INSTALLATION.
18. 10A FUSE FOR HEAT EXCHANGER FURNISHED AND INSTALLED BY OTHERS.
19. DELETED
20. GROUNDING WIRES SHALL BE COPPER, GREEN THHN/THWN UL LISTED FOR 90°C DRY/75°C WET INSTALLATION. MINIMUM SIZE IS 6 AWG UNLESS NOTED OTHERWISE.
21. RET CONTROL FROM THE RRH IS AN OPTIONAL METHOD OF CONNECTION. REFER TO RF DATA SHEET FOR APPLICABILITY.
22. DELETED.
23. FIBER AND POWER DISTRIBUTION BOX 4/48V SURGE SHALL BE RAYCAP MODEL DC6-48-60-0-1E.
24. FIBER MANAGEMENT BOX IS COMMSCOPE MODEL FB 18188.
25. FIBER AND POWER DISTRIBUTION BOX 4/48V SURGE SHALL BE RAYCAP MODEL DC12-48-60-0-25E.



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*James R. Skowronski*  
 James R. Skowronski Date: 6/20/2019

MARK	DATE	DESCRIPTION
ISSUE	FINAL	DATE ISSUED 06/20/2019

PROJECT TITLE:  
**TI-OPP-11895-C**

PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

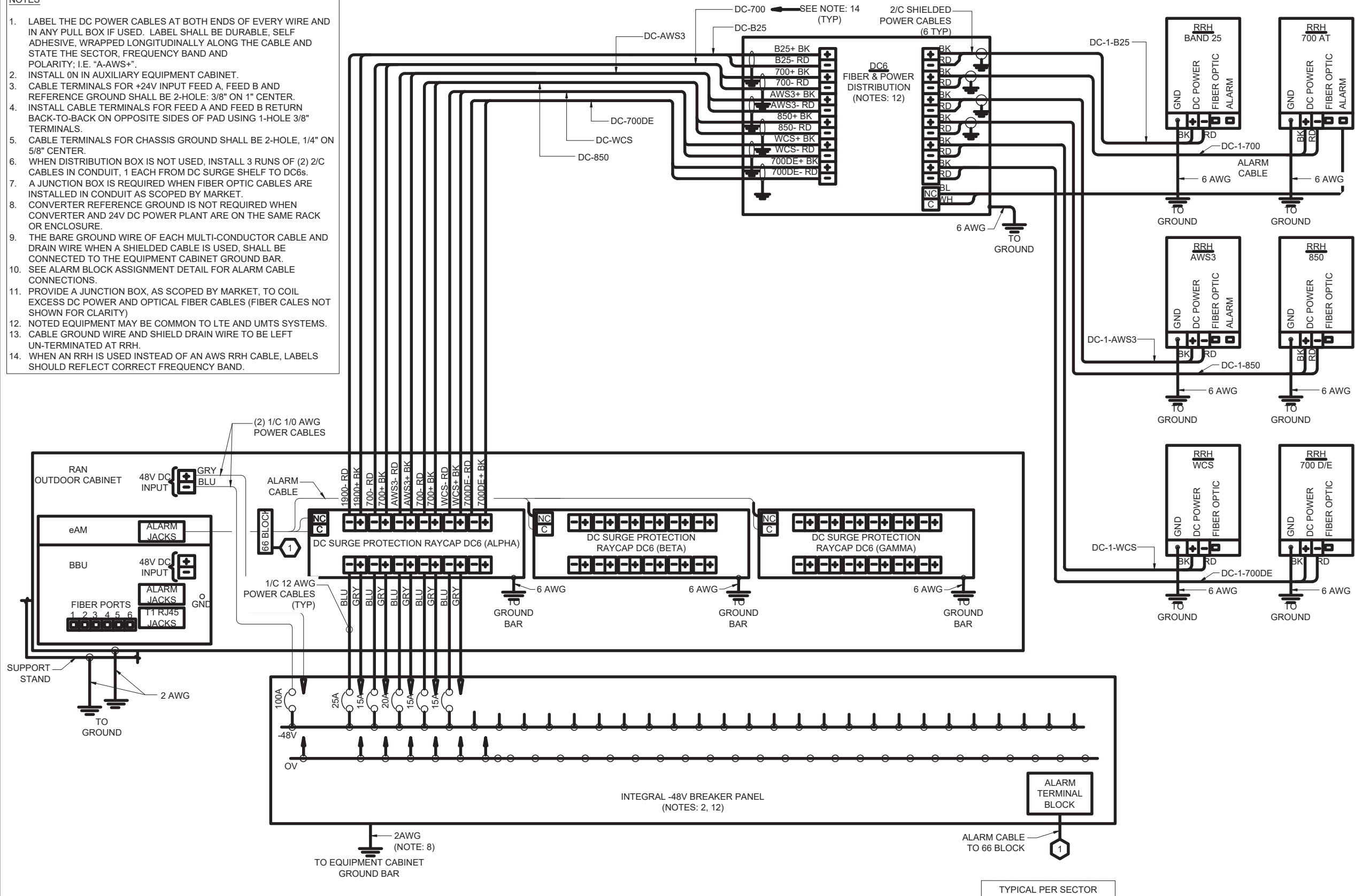
SHEET TITLE:  
**DC/FIBER SYSTEM DIAGRAM**

SCALE: NONE

PROJECT NUMBER	42278
SHEET NUMBER	E-4



- NOTES**
1. LABEL THE DC POWER CABLES AT BOTH ENDS OF EVERY WIRE AND IN ANY PULL BOX IF USED. LABEL SHALL BE DURABLE, SELF ADHESIVE, WRAPPED LONGITUDINALLY ALONG THE CABLE AND STATE THE SECTOR, FREQUENCY BAND AND POLARITY; I.E. "A-AWS+".
  2. INSTALL 0N IN AUXILIARY EQUIPMENT CABINET.
  3. CABLE TERMINALS FOR +24V INPUT FEED A, FEED B AND REFERENCE GROUND SHALL BE 2-HOLE: 3/8" ON 1" CENTER.
  4. INSTALL CABLE TERMINALS FOR FEED A AND FEED B RETURN BACK-TO-BACK ON OPPOSITE SIDES OF PAD USING 1-HOLE 3/8" TERMINALS.
  5. CABLE TERMINALS FOR CHASSIS GROUND SHALL BE 2-HOLE, 1/4" ON 5/8" CENTER.
  6. WHEN DISTRIBUTION BOX IS NOT USED, INSTALL 3 RUNS OF (2) 2/C CABLES IN CONDUIT, 1 EACH FROM DC SURGE SHELF TO DC6s.
  7. A JUNCTION BOX IS REQUIRED WHEN FIBER OPTIC CABLES ARE INSTALLED IN CONDUIT AS SCOPED BY MARKET.
  8. CONVERTER REFERENCE GROUND IS NOT REQUIRED WHEN CONVERTER AND 24V DC POWER PLANT ARE ON THE SAME RACK OR ENCLOSURE.
  9. THE BARE GROUND WIRE OF EACH MULTI-CONDUCTOR CABLE AND DRAIN WIRE WHEN A SHIELDED CABLE IS USED, SHALL BE CONNECTED TO THE EQUIPMENT CABINET GROUND BAR.
  10. SEE ALARM BLOCK ASSIGNMENT DETAIL FOR ALARM CABLE CONNECTIONS.
  11. PROVIDE A JUNCTION BOX, AS SCOPED BY MARKET, TO COIL EXCESS DC POWER AND OPTICAL FIBER CABLES (FIBER CALES NOT SHOWN FOR CLARITY)
  12. NOTED EQUIPMENT MAY BE COMMON TO LTE AND UMTS SYSTEMS.
  13. CABLE GROUND WIRE AND SHIELD DRAIN WIRE TO BE LEFT UN-TERMINATED AT RRH.
  14. WHEN AN RRH IS USED INSTEAD OF AN AWS RRH CABLE, LABELS SHOULD REFLECT CORRECT FREQUENCY BAND.



**DC WIRING DIAGRAM**  
 SCALE: NTS

1



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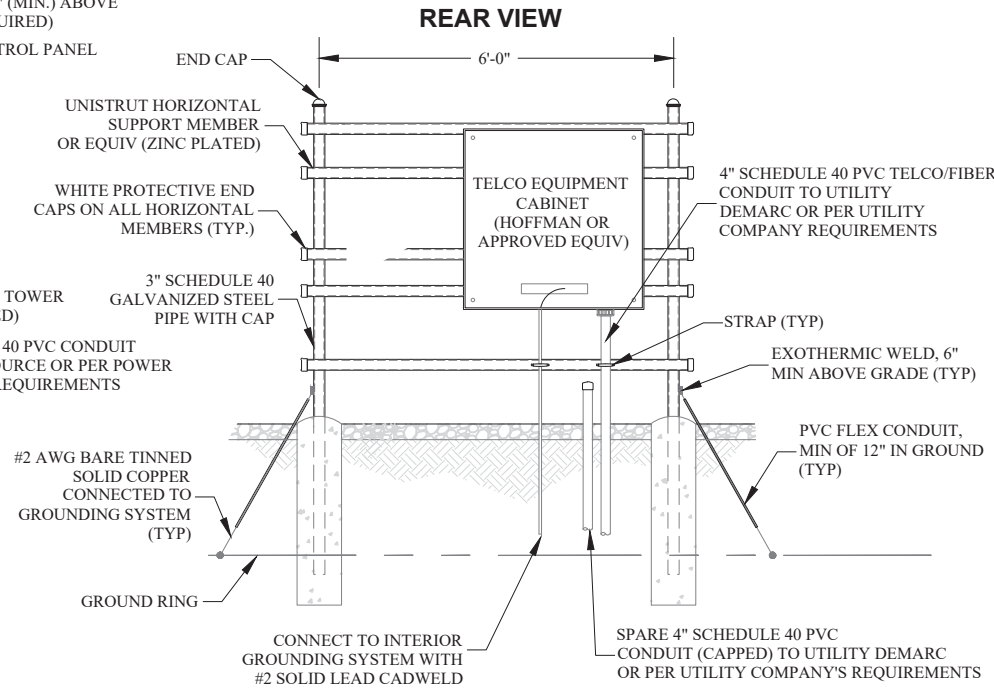
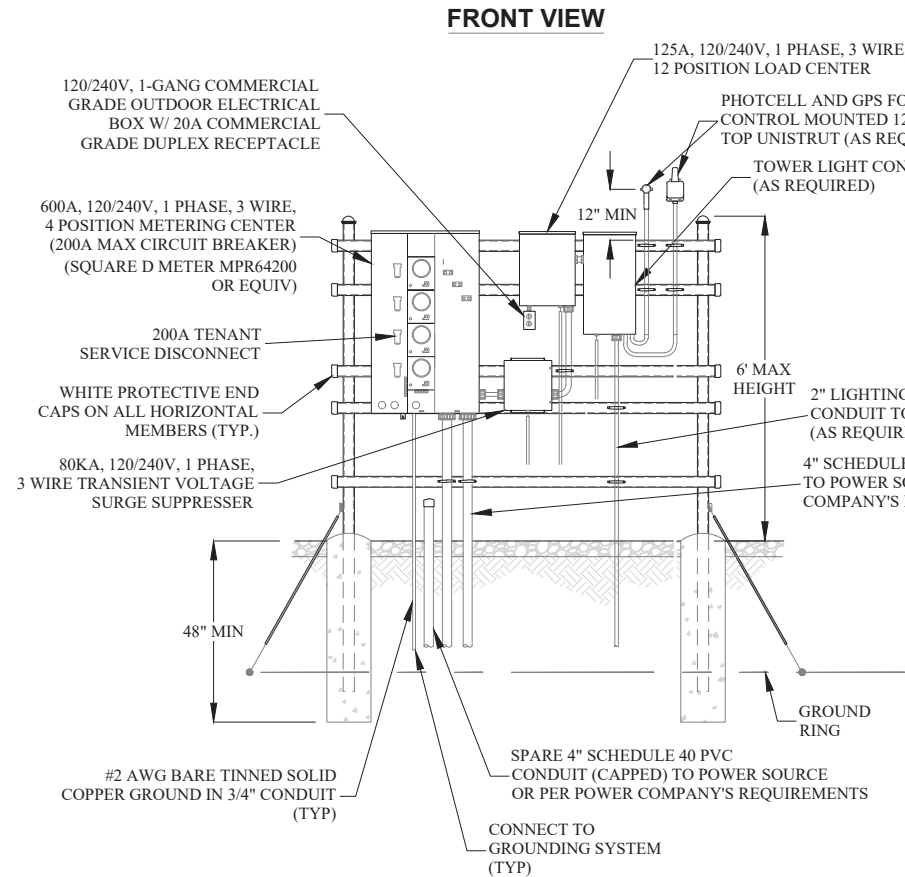
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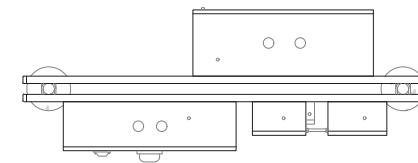
SHEET TITLE:  
**DC WIRING DIAGRAM**

SCALE: NONE

PROJECT NUMBER	42278
SHEET NUMBER	E-5

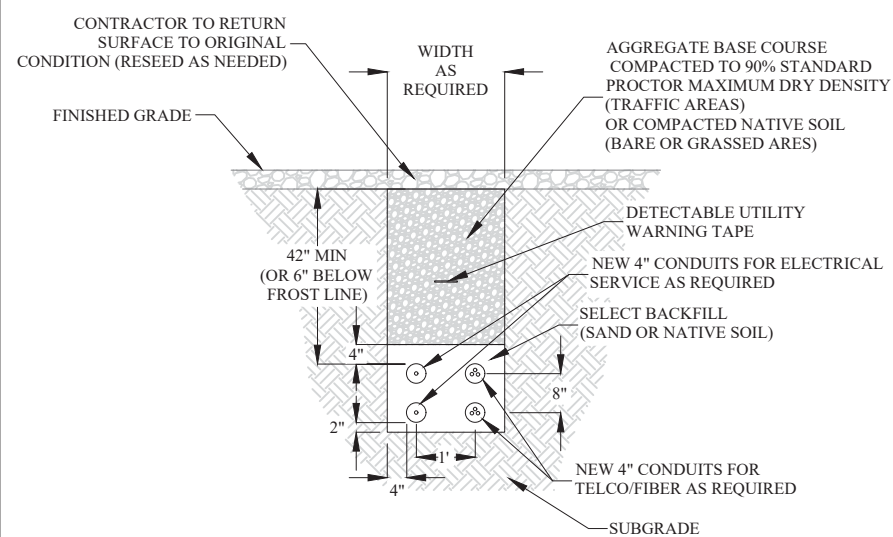


**PLAN VIEW**



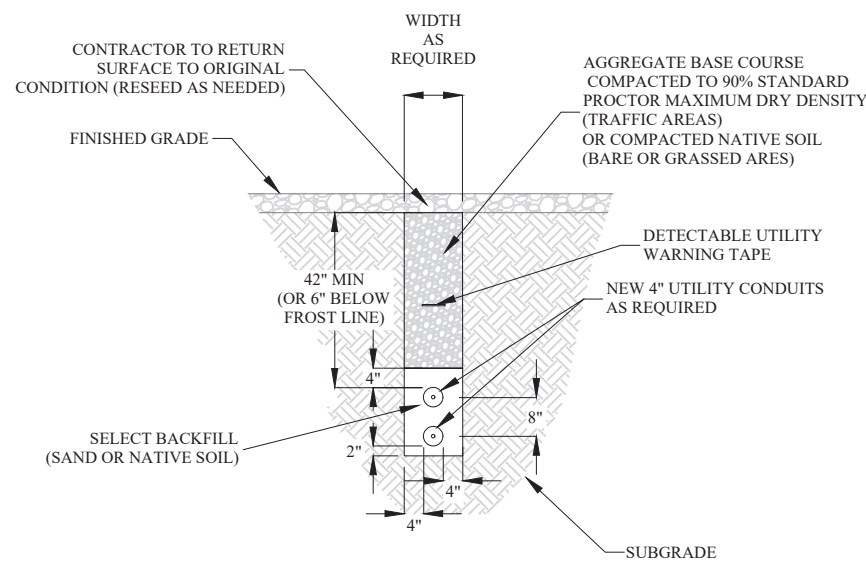
- NOTES:**
1. EXACT LAYOUT AND COMPONENTS OF UTILITY RACK MAY CHANGE BASED ON OWNER/TENANT REQUIREMENTS. CONTRACTOR TO COORDINATE WITH OWNER PRIOR TO BID REGARDING POTENTIAL MODIFICATIONS.
  2. CONTRACTOR TO MAINTAIN 3'-0" MINIMUM CLEARANCE FROM METERING CENTER TO NEAREST OBSTRUCTION
  3. CONCRETE PIER FOUNDATION TO ACHIEVE A MINIMUM STRENGTH OF 3000 PSI AT 28 DAYS. CONCRETE DEPTH TO BE A MINIMUM OF 6" BELOW FROST LINE (48" MINIMUM, TYP.)
  4. ELECTRIC SERVICE: 240/120V, 1Ø, 3W, 600A UNDERGROUND SERVICE TO POLE RISER
  5. USE COPPER STRANDED, 600V, TYPE THW/THWN, WITH CROSS-LINKED POLYETHYLENE INSULATION FOR #8 AWG AND LARGER WIRE
  6. UNDERGROUND CONDUITS SHALL BE SCHEDULE 40 PVC (MEET UL STANDARDS G51 AND NEMA TC2-1990) EXPOSED GALVANIZED STEEL. ALL CONDUIT BENDS SHALL BE A MIN. OF 24" RADIUS OR AS SPECIFIED BY THE LATEST EDITION OF THE NEC, WHICHEVER IS GREATER
  7. GROUNDING CONDUCTOR SHALL BE #2 AWG SOLID BARE TINNED COPPER UNLESS OTHERWISE NOTED
  8. 4" PVC CONDUIT INSTALLED 30" (MIN) BELOW GRADE FOR INCOMING SERVICE BY TELEPHONE COMPANY. PROVIDE PULL STRING - 200 LB TEST POLYETHYLENE CORD
  9. ALL ELECTRICAL & TELCO EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED UV RESISTANT PLASTIC LABELS. BACKGROUND SHALL BE BLACK WITH WHITE LETTERS

**JOINT UTILITY TRENCH**



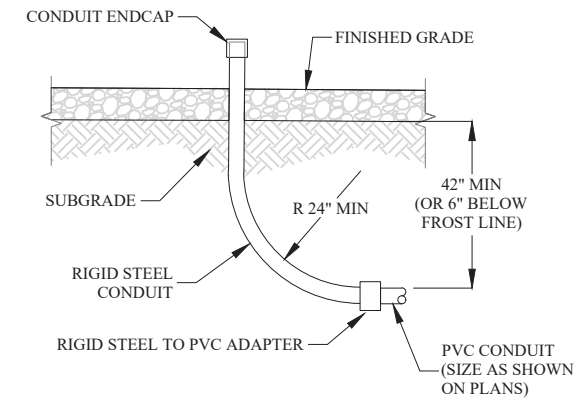
- NOTES:**
1. CONDUIT TYPE, SIZE, QUANTITY, AND SEPARATION TO BE VERIFIED WITH LOCAL UTILITY PROVIDER REQUIREMENTS.

**SINGLE UTILITY TRENCH**



- NOTES:**
1. CONDUIT TYPE, SIZE, QUANTITY, AND SEPARATION TO BE VERIFIED WITH LOCAL UTILITY PROVIDER REQUIREMENTS.

**CONDUIT STUB-UP**



**UTILITY H-FRAME DETAIL**

SCALE: NTS

1



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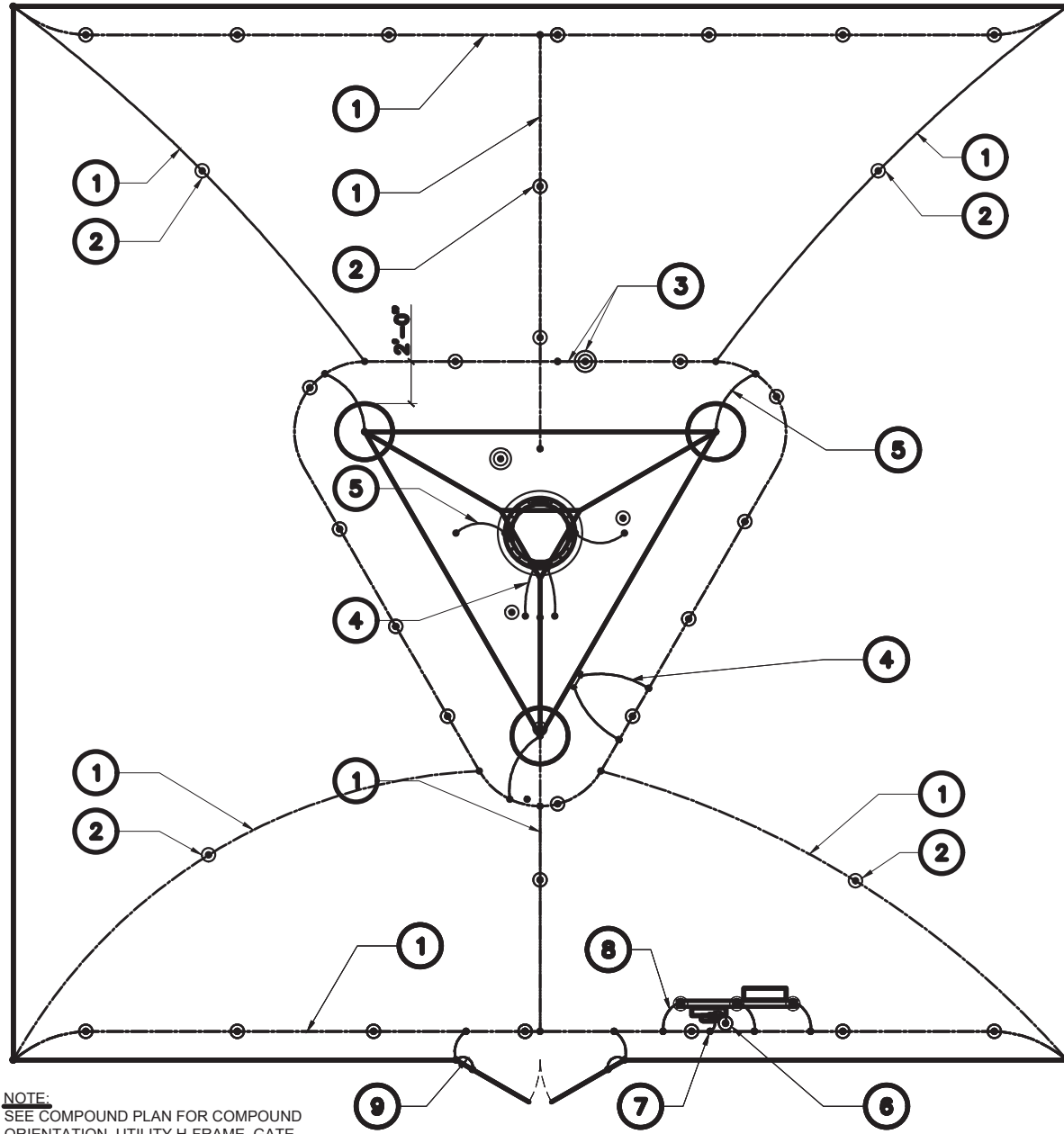
SHEET TITLE:  
**UTILITY DETAILS**

SCALE: NONE

PROJECT NUMBER	42278
SHEET NUMBER	E-6

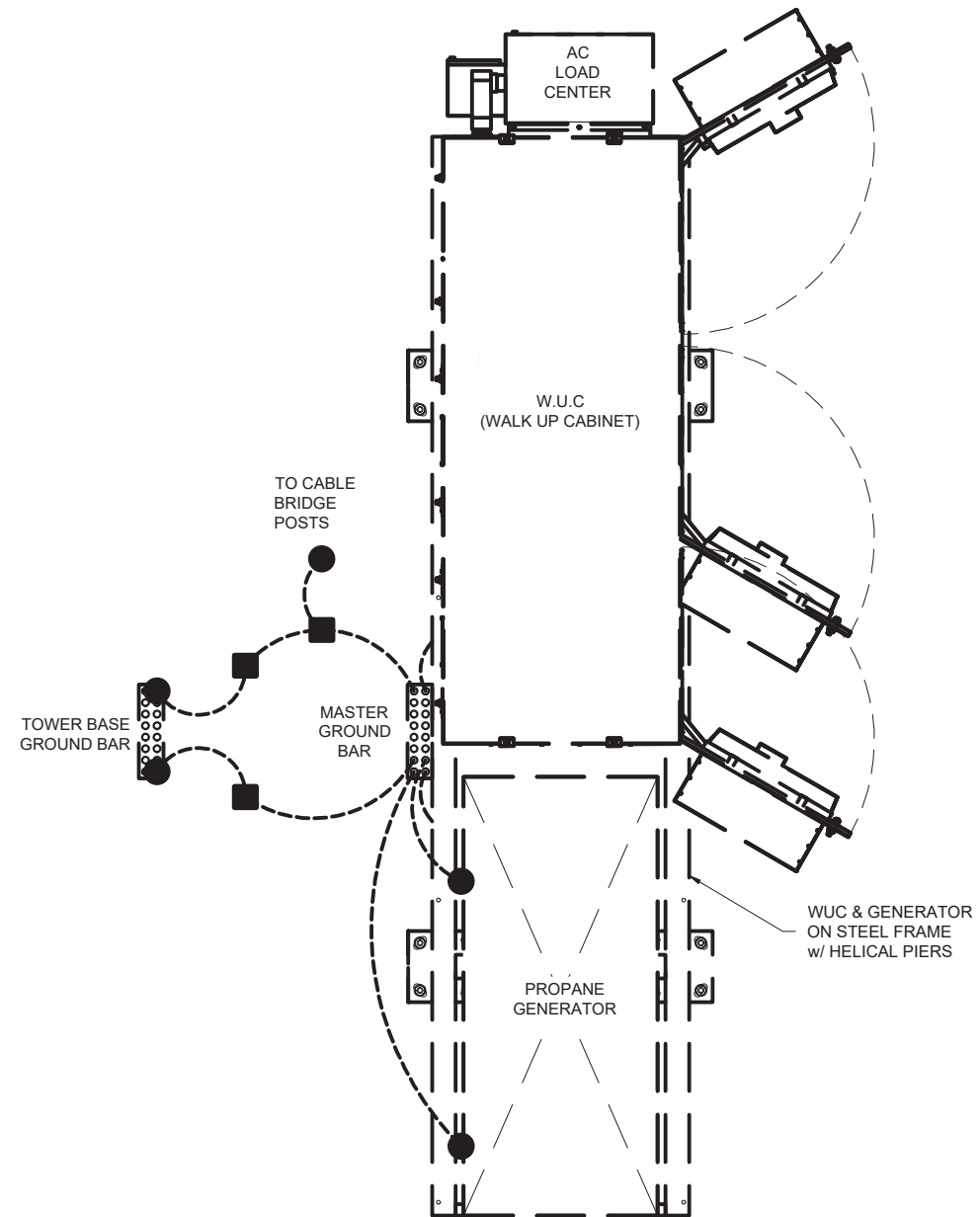


1. GROUND RING, #2 SOLID TINNED, BARE COPPER WIRE
2. 5/8"Ø x 10'-0" COPPER CLAD STEEL GROUND ROD SPACED MIN. 10'-0", MAX 15'-0" APART
3. GROUND SYSTEM TEST WELL
4. #2 SOLID TINNED, BARE COPPER GROUND WIRE FROM LOWER TOWER GROUND BAR TO NEW GROUND RING (2 REQ'D)
5. #2 SOLID TINNED, BARE COPPER GROUND WIRE FROM TOWER BASE PLATE TO NEW GROUND RING
6. 5/8"Ø x 10'-0" COPPER CLAD GROUND ROD FOR ELECTRICAL SERVICE GROUND
7. #2 SOLID TINNED, BARE COPPER GROUND WIRE FROM ELECTRICAL SERVICE GROUND TO LIGHTNING PROTECTION GROUND RING
8. #2 SOLID TINNED, BARE COPPER GROUND WIRE, BOND UTILITY POST W/ VS TYPE CADWELD. (1 PER POST REQ'D)
9. A.L.T. OR EQUAL 2/0 GROUNDING CONDUCTOR W/BLACK NEOPRENE INSULATION & PRE-CAPPED ENDS ATTACHED TO GATE POST AND GATE FRAME W/ VS TYPE EXOTHERMIC. INSTALL W/ WELDS 18" ABOVE FINISH GRADE
10. IN THE EVENT A PAD/PIER FOUNDATION IS INSTALLED, THE BURIED GROUND RING SHALL BE INSTALLED A MINIMUM 2 FT. FROM THE EDGE OF CONCRETE



**COMPOUND GROUNDING PLAN**  
 SCALE: NTS

GROUNDING LEGEND	
●	EXOTHERMIC WELD CONNECTION
■	COMPRESSION FITTING CONNECTION
⊙	5/8"x10' COPPER-CLAD STEEL GROUND ROD
⊙	5/8"x10' COPPER-CLAD STEEL GROUND ROD WITH INSPECTION WELL
---	PROPOSED GROUND WIRING
▬	TINNED COPPER GROUND BAR 1/4"x4"x12" OR 1/4"x4"x20"
⊖	COLLECTOR GROUND BAR
⊖	MAIN GROUND BAR



**PLATFORM GROUNDING PLAN**  
 SCALE: NTS

TILLMAN  
 INFRASTRUCTURE

LCC  
 TELECOM SERVICES

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 DANE COUNTY

SHEET TITLE:  
**TYPICAL GROUNDING PLAN**

SCALE: NONE

PROJECT NUMBER 42278  
 SHEET NUMBER E-7



**GROUNDING NOTES:**

- GROUNDING SHALL COMPLY WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE.
- ALL GROUNDING DEVICES SHALL BE U.L. APPROVED OR LISTED FOR THEIR INTENDED USE.
- ALL WIRES SHALL BE AWG THHN/THWN COPPER UNLESS NOTED OTHERWISE.
- GROUNDING CONNECTIONS TO GROUND RODS, GROUND RING WIRE, TOWER BASE AND FENCE POSTS SHALL BE EXOTHERMIC ("CADWELDS") UNLESS NOTED OTHERWISE. CLEAN SURFACES TO SHINY METAL. WHERE GROUND WIRES ARE CADWELDED TO GALVANIZED SURFACES, SPRAY CADWELD WITH GALVANIZING PAINT.
- GROUNDING CONNECTIONS TO GROUND BARS ARE TO BE TWO-HOLE BRASS MECHANICAL CONNECTORS WITH STAINLESS STEEL HARDWARE (INCLUDING SCREW SET) CLEAN GROUND BAR TO SHINY METAL. AFTER MECHANICAL CONNECTION, TREAT WITH PROTECTIVE ANTIOXIDANT COATING.
- GROUND COAXIAL CABLE SHIELDS AT BOTH ENDS WITH MANUFACTURER'S GROUNDING KITS.
- ROUTE GROUNDING CONDUCTORS THE SHORTEST AND STRAIGHTEST PATH POSSIBLE. BEND GROUNDING LEADS WITH A MINIMUM 12" RADIUS.
- INSTALL #2 AWG GREEN-INSULATED STRANDED WIRE FOR ABOVE GRADE GROUNDING AND #2 BARE TINNED COPPER WIRE FOR BELOW GRADE GROUNDING UNLESS OTHERWISE NOTED.
- REFER TO GROUNDING PLAN FOR GROUND BAR LOCATIONS. GROUNDING CONNECTIONS SHALL BE EXOTHERMIC TYPE ("CADWELDS") TO ANTENNA MOUNTS AND GROUND RING. REMAINING GROUNDING CONNECTIONS SHALL BE COMPRESSION FITTINGS. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO-HOLE LUGS.
- THE GROUND ELECTRODE SYSTEM SHALL CONSIST OF DRIVEN GROUND RODS POSITION ACCORDING TO GROUNDING PLAN. THE GROUND RODS SHALL BE 5/8"x10'-0" COPPER CLAD STEEL INTERCONNECTED WITH #2 BARE TINNED COPPER WIRE BURIED 36" BELOW GRADE. BURY GROUND RODS A MAXIMUM OF 15' APART, AND A MINIMUM OF 8' APART.
- IF ROCK IS ENCOUNTERED GROUND RODS SHALL BE PLACED AT AN OBLIQUE ANGLE NOT TO EXCEED 45°.
- EXOTHERMIC WELDS SHALL BE MADE IN ACCORDANCE WITH ERICO PRODUCTS BULLETIN A-AT.
- CONSTRUCTION OF GROUND RING AND CONNECTIONS TO EXISTING GROUND RING SYSTEM SHALL BE DOCUMENTED WITH PHOTOGRAPHS PRIOR TO BACKFILLING SITE. PROVIDE PHOTOS TO THE AT&T CONSTRUCTION MANAGER.
- ALL GROUND LEADS EXCEPT THOSE TO THE EQUIPMENT ARE TO BE #2 BARE TINNED COPPER WIRE. ALL EXTERIOR GROUND BARS TINNED COPPER.
- PRIOR TO INSTALLING LUGS ON GROUND WIRES, APPLY THOMAS & BETTS KOPR-SHIELD (TM OF JET LUBE INC.). PRIOR TO BOLTING GROUND WIRE LUGS TO GROUND BARS, APPLY KOPR-SHIELD OR EQUAL.
- ENGAGE AN INDEPENDENT ELECTRICAL TESTING FIRM TO TEST AND VERIFY THAT IMPEDANCE DOES NOT EXCEED FIVE OHMS TO GROUND BY MEANS OF "FALL OF POTENTIAL TEST". TEST SHALL BE WITNESSED BY A METROPCS REPRESENTATIVE, AND RECORDED ON THE "GROUND RESISTANCE TEST" FORM.
- WHERE BARE COPPER GROUND WIRES ARE ROUTED FROM ANY CONNECTION ABOVE GRADE TO GROUND RING, INSTALL WIRE IN 3/4" PVC SLEEVE, FROM 1' BELOW GRADE AND SEAL TOP WITH SILICONE MATERIAL.
- PREPARE ALL BONDING SURFACES FOR GROUNDING CONNECTIONS BY REMOVING ALL PAINT AND CORROSION DOWN TO SHINY METAL. FOLLOWING CONNECTION, APPLY APPROPRIATE ANTI-OXIDIZATION PAINT.
- ANY SITE WHERE THE EQUIPMENT (BTS, CABLE BRIDGE, PPC, GENERATOR, ETC.) IS LOCATED WITHIN 6 FEET OF METAL FENCING, THE GROUND RING SHALL BE BONDED TO THE NEAREST FENCE POST USING (3) RUNS OF #2 BARE TINNED COPPER WIRE.

**CABLE COLOR CODING NOTES:**

- SECTOR ORIENTATION/AZIMUTH WILL VARY FROM REGION AND IS SITE SPECIFIC. REFER TO RF REPORT FOR EACH SITE TO DETERMINE THE ANTENNA LOCATION AND FUNCTION OF EACH TOWER SECTOR FACE.
- THE ANTENNA SYSTEM CABLES SHALL BE LABELED WITH VINYL TAPE EXCEPT IN LOCATIONS WHERE ENVIRONMENTAL CONDITIONS CAUSE PHYSICAL DAMAGE, THEN PHYSICAL TAGS ARE PREFERRED.
- THE STANDARD IS BASED ON EIGHT COLORED TAPES - RED, BLUE, GREEN, YELLOW, ORANGE, BROWN, WHITE & VIOLET. THESE TAPES MUST BE 3/4" WIDE & UV RESISTANT SUCH AS SCOTCH 35 VINYL ELECTRICAL COLOR CODING TAPE AND SHOULD BE READILY AVAILABLE TO THE ELECTRICIAN OR SUBCONTRACTOR ON SITE.
- USING COLOR BANDS ON THE CABLES, MARK ALL RF CABLES BY SECTOR AND NUMBER AS SHOWN ON "CABLE MARKING COLOR CONVENTION TABLE".
- WHEN AN EXISTING COAXIAL LINE THAT IS INTENDED TO BE A SHARED LINE BETWEEN GSM/3G AND IS-136 TDMA IS ENCOUNTERED, THE SUBCONTRACTOR SHALL REMOVE THE EXISTING COLOR CODING SCHEME AND REPLACE IT WITH THE COLOR CODING AND TAGGING STANDARD THAT IS OUTLINED IN THE CURRENT VERSION OF ND-00027. IN THE ABSENCE OF AN EXISTING COLOR CODING TAGGING SCHEME, OR WHEN INSTALLING PROPOSED COAXIAL CABLES, THIS GUIDELINE SHALL BE IMPLEMENTED AT THAT SITE REGARDLESS OF TECHNOLOGY.
- ALL COLOR CODE TAPE SHALL BE 3M-35 AND SHALL BE A MINIMUM OR (3) WRAPS OF TAPE AND SHALL BE NEATLY TRIMMED AND SMOOTHED OUT SO AS TO AVOID UNRAVELING.
- ALL COLOR BANDS INSTALLED AT THE TOP OF TOWER SHALL BE A MINIMUM OF 3" WIDE AND SHALL HAVE A MINIMUM OF 3/4" OF SPACE IN BETWEEN EACH COLOR.
- ALL COLOR CODES SHALL BE INSTALLED AS TO ALIGN NEATLY WITH ONE ANOTHER FROM SIDE TO SIDE.
- IF EXISTING CABLES AT THE SITE ALREADY HAVE A COLOR CODING SCHEME AND THEY ARE NOT INTENDED TO BE REUSED OR SHARED WITH THE GSM TECHNOLOGY, THE EXISTING COLOR CODING SCHEME SHALL REMAIN UNTOUCHED.

**CABLE MARKING TAGS:**

WHEN USING THE ALTERNATIVE LABELING METHOD, EACH RF CABLE SHALL BE IDENTIFIED WITH A METAL ID TAG MADE OF STAINLESS STEEL OR BRASS. THE TAG SHALL BE 1-1/2" IN DIAMETER WITH 1/4" STAMPED LETTERS AND NUMBERS INDICATING THE SECTOR, ANTENNA POSITION AND CABLE NUMBER. ID MARKING LOCATIONS SHOULD BE AS PER "CABLE MARKING LOCATIONS TABLE". THE TAG SHOULD BE ATTACHED WITH CORROSION PROOF WIRE AROUND THE CABLE AT THE SAME LOCATION AS DEFINED ABOVE. THE TAG SHOULD BE LABELED AS SHOWN ON THE "GSM AND UMTS LINE TAG" DETAIL.

CABLE MARKING LOCATIONS TABLE	
NO.	LOCATIONS
1	EACH JUMPER SHALL BE COLOR CODED WITH (1) SET OF 3" WIDE BANDS.
2	EACH MAIN COAX SHALL BE COLOR CODED WITH (1) SET OF 3" WIDE BANDS AT THE TOP JUMPER CONNECTION AND WITH (1) SET OF 3/4" WIDE COLOR BANDS PRIOR TO ENTERING THE BTS OR SHELTER.
3	CABLE ENTRY PORT ON THE INTERIOR OF SHELTER.
4	ALL BOTTOM JUMPERS SHALL BE COLOR CODED WITH (1) SET OF 3/4" WIDE BANDS ON EACH END OF THE BOTTOM JUMPER.
5	ALL BOTTOM JUMPERS SHALL BE COLOR CODED WITH (1) SET OF 3/4" WIDE BANDS ON EACH END OF THE BOTTOM JUMPER.



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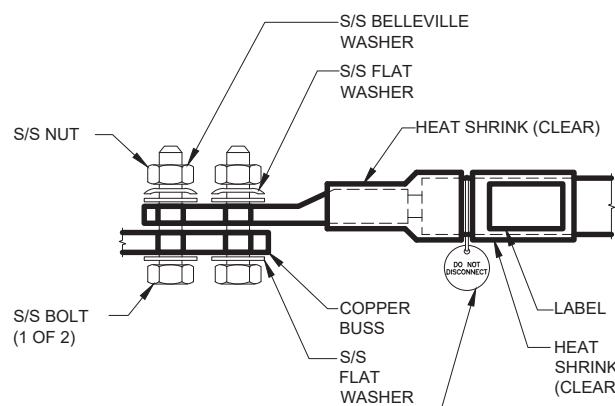
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SHEET TITLE:  
**GROUNDING DETAILS**

SCALE: NONE

PROJECT NUMBER	42278
SHEET NUMBER	E-8



"DO NOT DISCONNECT" TAG ON ALL GROUND BAR INTERCONNECTS

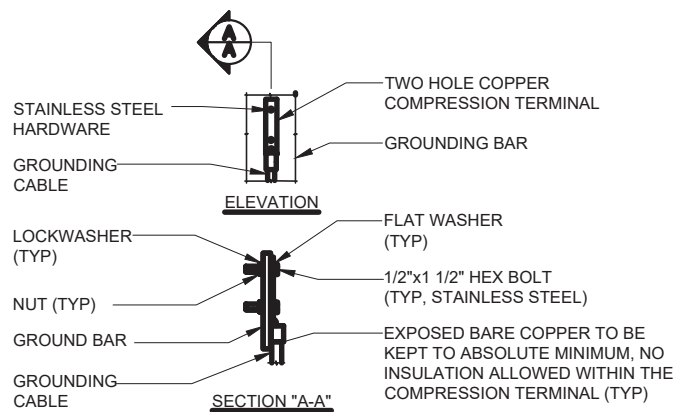
**NOTES:**

- ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING BELLEVILLES. COAT ALL SURFACES WITH ANTI-OXIDATION COMPOUND BEFORE MATING.
- FOR GROUND BOND TO STEEL ONLY; INSERT A DRAGON TOOTH WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH ANTI-OXIDATION COMPOUND.
- COAT ALL BARRELS WITH ANTI-OXIDATION COMPOUND BEFORE CRIMPING.

**GROUND LUG DETAIL**

SCALE: NTS

1



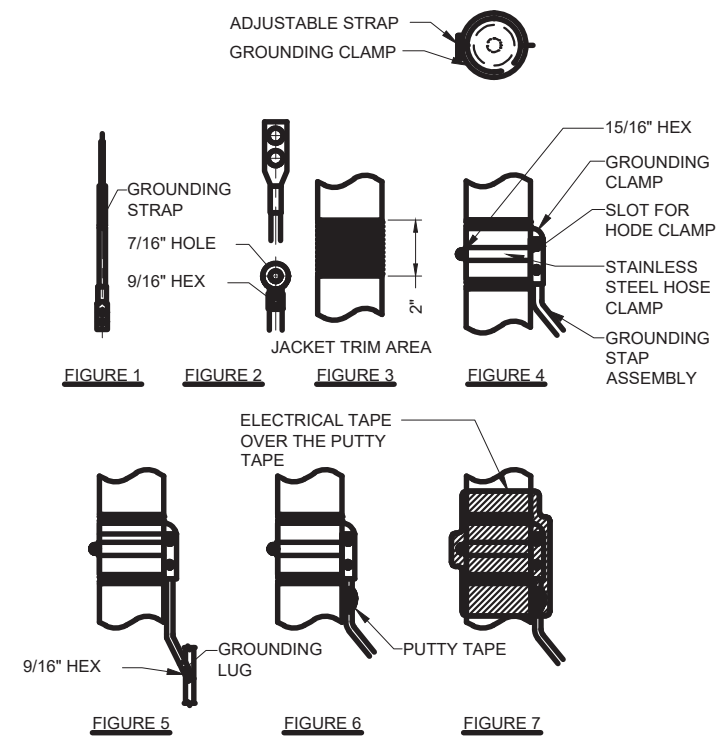
**NOTE:**

- "DOUBLING UP" OR "STACKING" OF CONNECTIONS IS NOT PERMITTED.
- OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

**TYPICAL GROUND BAR CONNECTION DETAIL**

SCALE: NTS

2



**GROUNDING STRAP WEATHERPROOFING DETAIL**

SCALE: NTS

3

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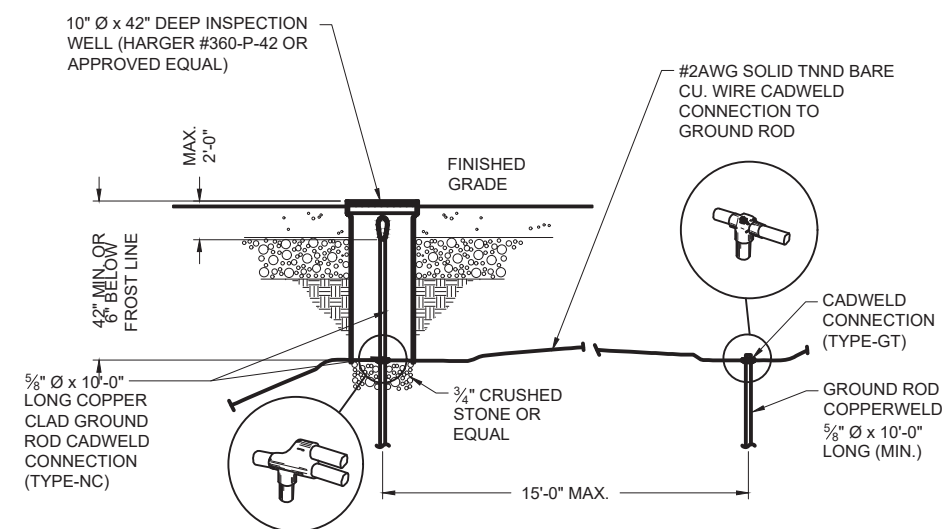
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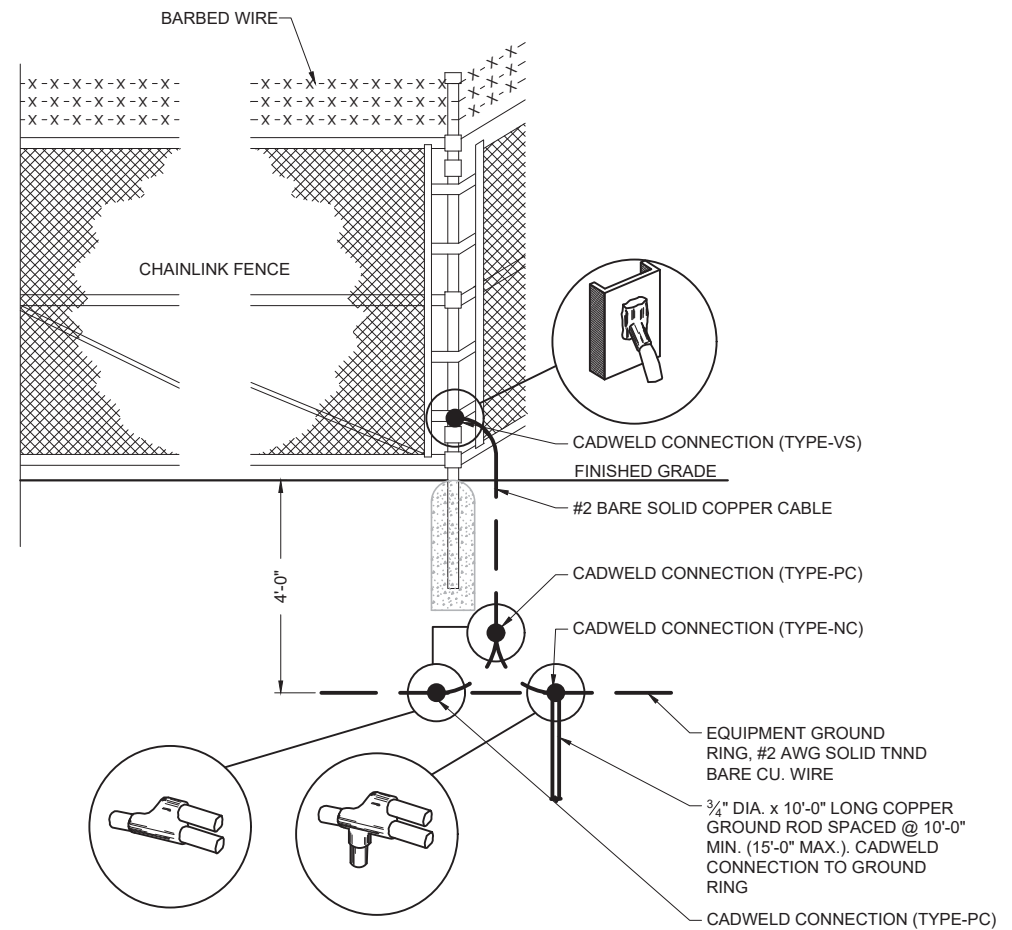
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**INSPECTION WELL & GROUND ROD DETAIL**

SCALE: NTS

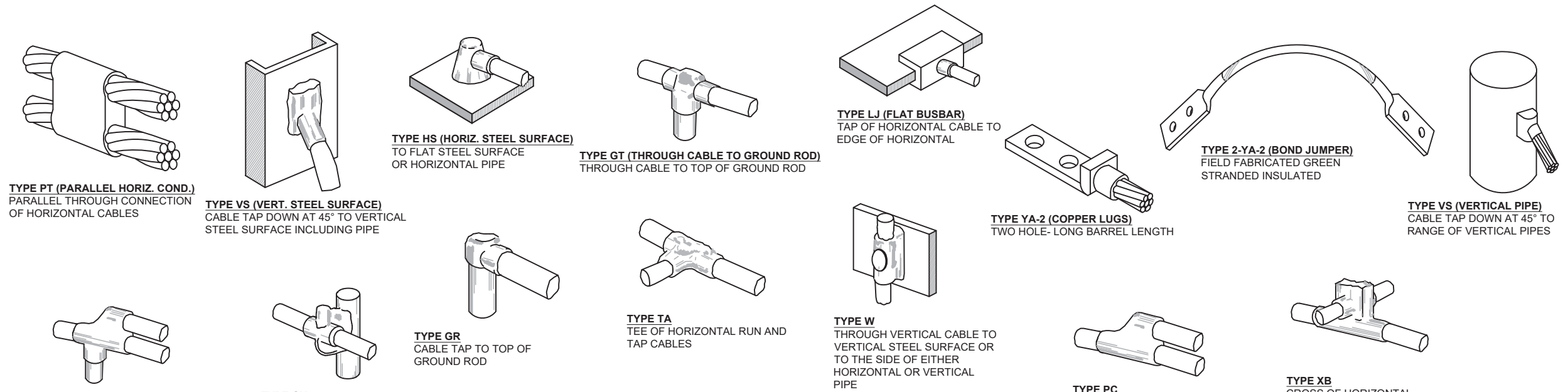
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**FENCE CORNER POST GROUNDING DETAIL**

SCALE: NTS

2

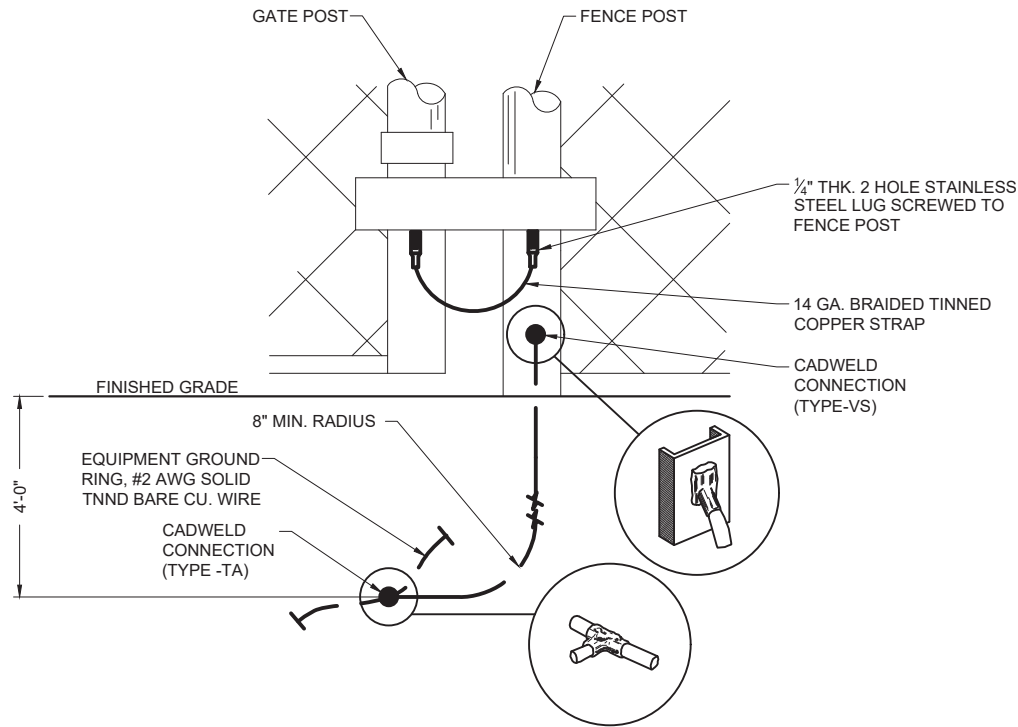


**TYPICAL CADWELD TYPES DETAIL**

SCALE: NTS

3





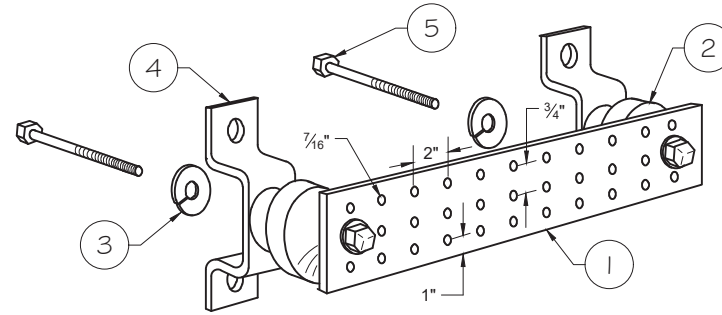
**GATE POST GROUNDING DETAIL**

SCALE: NTS

1

**NOTES:**

1. ALL MOUNTING HARDWARE CAN BE USED ON 6", 12", 18", ETC. GROUND BARS.
2. ENTIRE ASSEMBLY AVAILABLE FROM NEWTON INSTRUMENT CO. CAT. NO. 2106060010 OR AS HARGER TGB14420M.



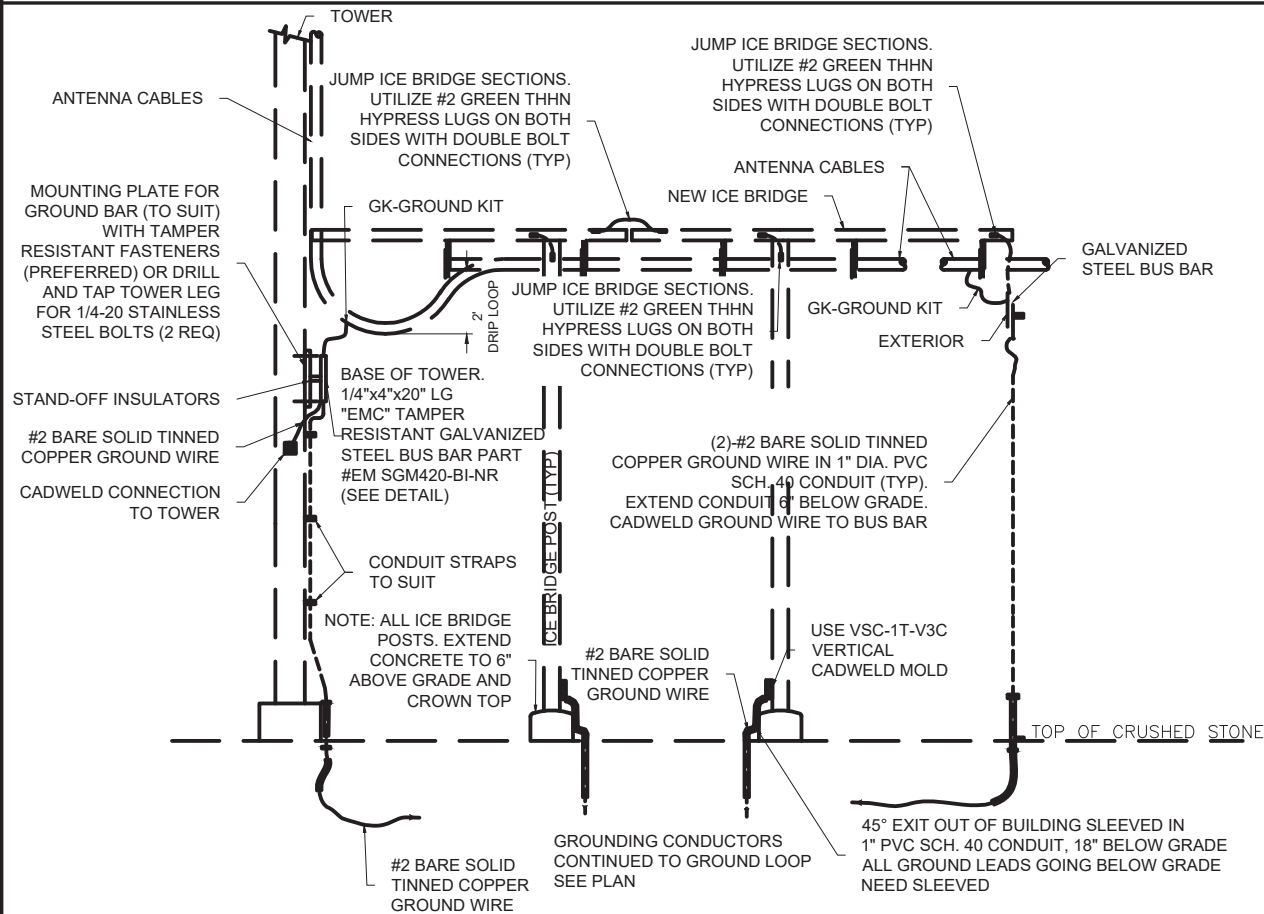
**LEGEND**

1. TINNED COPPER GROUND BAR, 1/4" x 4" x 20", NEWTON CO., HARGER TGB14420M, OR EQUIVALENT. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.
2. INSULATORS. INSTRUMENT CO. CAT. NO. 3061-4 OR HARGER EQUIVALENT.
3. 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8 OR EQUIVALENT.
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT. NO. A-6056 OR HARGER EQUIVALENT.
5. 5/8" x 1" H.H.C.S. BOLTS, NEWTON INSTRUMENT CO. CAT. NO. 3012-1 OR HARGER EQUIVALENT.

**TYPICAL GROUND BAR DETAIL**

SCALE: NTS

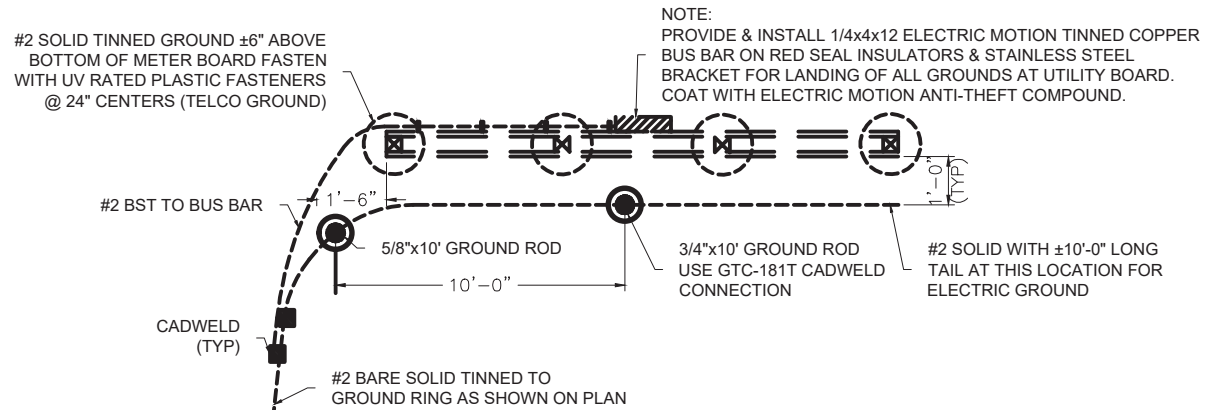
2



**COAXIAL GROUNDING AT ICE BRIDGE**

SCALE: NTS

3



**METER BOARD UTILITY GROUNDING DETAIL**

SCALE: NTS

4



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 Sauk City, WI • Willmar, MN  
 Woodcliff Lake, NJ • Bayamon, PR

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



*James R. Skowronski*  
 James R. Skowronski Date: 6/20/2019

MARK	DATE	DESCRIPTION

ISSUE PHASE	FINAL	DATE ISSUED	06/20/2019
PROJECT TITLE:			

TI-OPP-11895-C

PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:  
**GROUNDING DETAILS**

SCALE: NONE

PROJECT NUMBER: 42278  
 SHEET NUMBER: E-10

# Federal Communications Commission Tower Inventory

Antenna Structure Registration

Registration Search Results

Matched Records: 1 (1 of 1)

Specified Search: Latitude=42-56-40.15 N, Longitude=89-45-22.23 W, Radius=2.4 Kilometers

Registration Number	Status	File Number	Owner Name	Latitude/Longitude	Structure City/State	Overall Height Above Ground (AAG)
122553	Constructed	4382839	New Structures, LLC	42-56-40.15 N, 89-45-22.23 W	Edgemoor, WI	31.5

Matched 1 (1 of 1)

# Federal Communications Commission Tower Inventory

**FCC** Federal Communications Commission

FCC Home | Search | Updates | E-Filing | Initiatives | For Consumers | Find People

## Antenna Structure Registration

FCC > WTR > ASR > Online Systems > ASR Search FCC Site Map

ASR Registration Search

### Registration Search Results

[New Search](#) [Refine Search](#) [Printable Page](#) [Query Download](#) [Map Result\(s\)](#) [ADVANCED SEARCH](#) [HELP](#)

**Displayed Results**

Matches 1-1 (of 1) [P] = Pending Application(s)

1

**Specified Search**

Latitude='42-56-1.5 N', Longitude='89-5-20.2 E', Radius=2.4 Kilometers

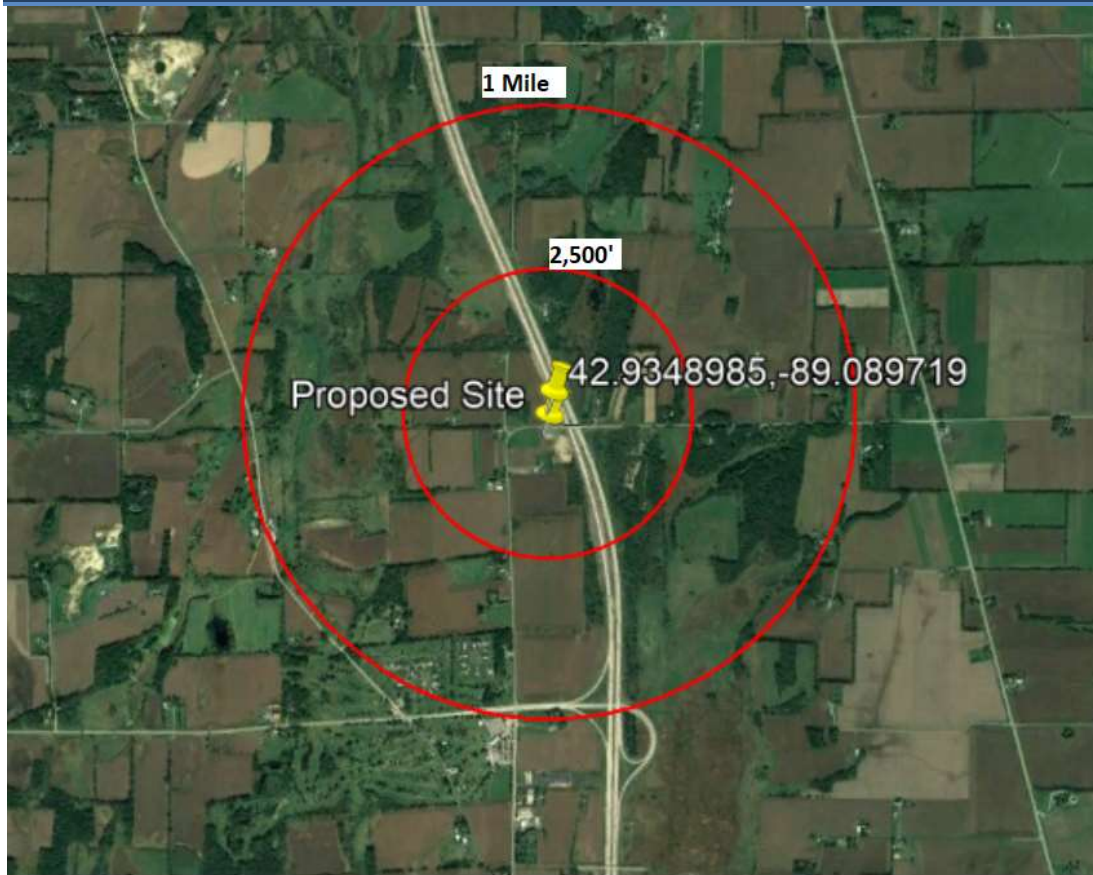
Display:

	Registration Number	Status	File Number	Owner Name	Latitude/Longitude	Structure City/State	Overall Height Above Ground (AGL)
1	1054853	Constructed	A0838309	SBA Structures, LLC	42-56-05.7N 089-05-23.2W	Edgerton, WI	51.5

Matches 1-1 (of 1)

1

# Tower Map



# Tower Table

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Name:	Existing Tower
Height	51.5 Meters AGL
Registration No.	1054853
Owners Name and Contact Information	Owner: SBA Structures, LLC Attention To: Edward G. Roach 8051 Congress Avenue Boca Raton , FL 34487  Contact: Edward G. Roach 8051 Congress Avenue Boca Raton , FL 33487
Present Percentage of Use	Unknown
Available Aperture at Applicants Preferred Height	Unavailable. The existing tower is approximately 170' tall, and AT&T's preferred height is 250'.
Type of Communication Technology Utilized	Unknown

# FAA No Hazard

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

Aeronautical Study No.  
 2019-AGL-1294-OE

Issued Date: 03/05/2019

Donna-Marie Stipo  
 Tillman Infrastructure, LLC  
 152 West 57th Street  
 8th Floor  
 New York, NY 10019

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

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

Structure: Antenna Tower Edgerton WI-TI-11895  
 Location: Edgerton, WI  
 Latitude: 42-56-01.72N NAD 83  
 Longitude: 89-05-24.03W  
 Heights: 943 feet site elevation (SE)  
 280 feet above ground level (AGL)  
 1223 feet above mean sea level (AMSL)

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

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, a med-dual system - Chapters 4,8(M-Dual),&12.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

This determination expires on 09/05/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- (b) extended, revised, or terminated by the issuing office.

- (c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

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

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

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

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

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

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

If we can be of further assistance, please contact our office at (718) 553-4199, or [Dianne.Marin@FAA.GOV](mailto:Dianne.Marin@FAA.GOV). On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-AGL-1294-OE.

**Signature Control No: 396027459-398766482**

( DNE )

Dianne Marin  
Technician

Attachment(s)  
Case Description  
Frequency Data  
Map(s)

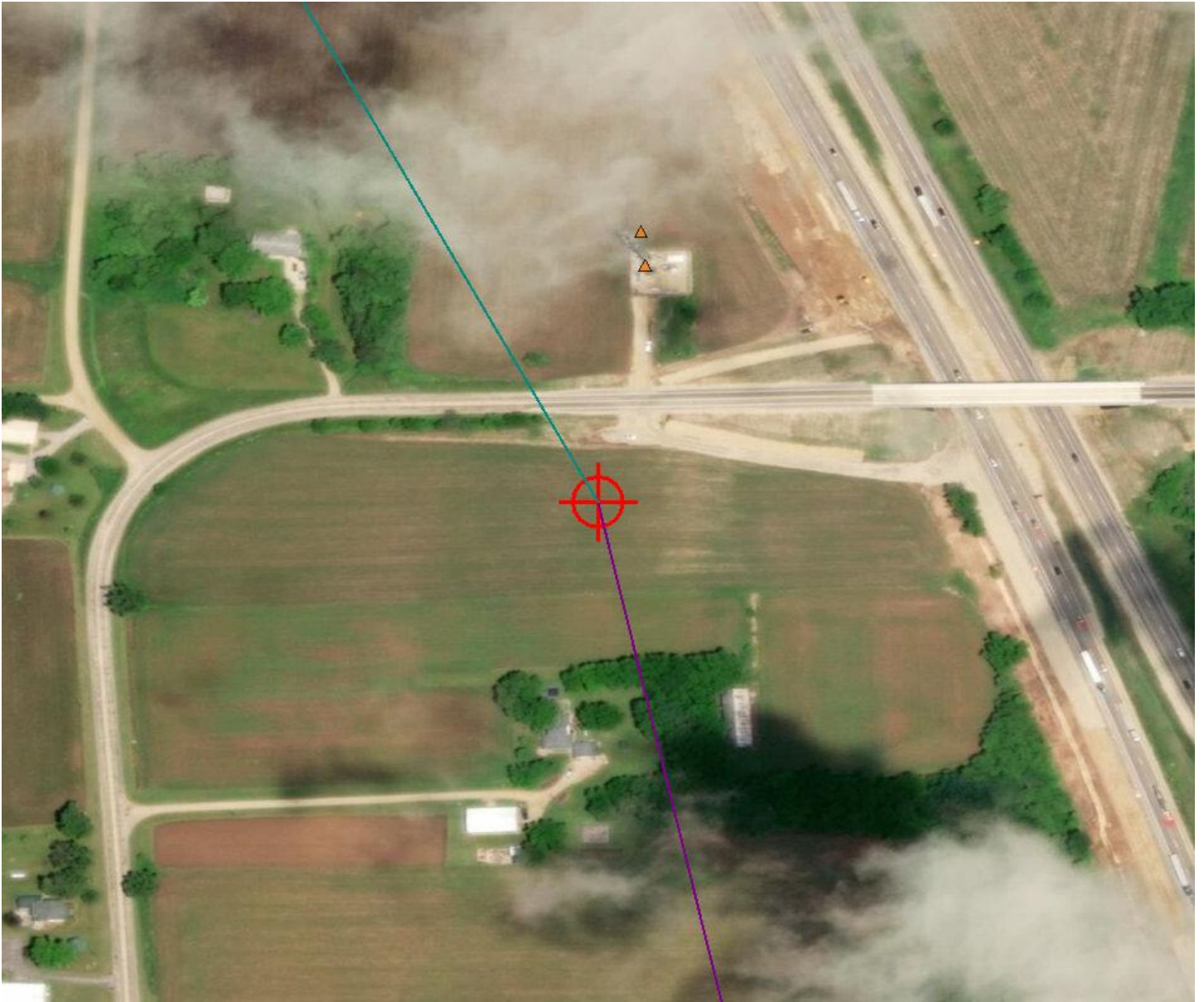
cc: FCC

## Case Description for ASN 2019-AGL-1294-OE

Study request for a self support communications tower.

**Frequency Data for ASN 2019-AGL-1294-OE**

<b>LOW FREQUENCY</b>	<b>HIGH FREQUENCY</b>	<b>FREQUENCY UNIT</b>	<b>ERP</b>	<b>ERP UNIT</b>
6	7	GHz	55	dBW
6	7	GHz	42	dBW
614	698	MHz	2000	W
614	698	MHz	1000	W
698	806	MHz	1000	W
806	824	MHz	500	W
806	901	MHz	500	W
824	849	MHz	500	W
851	866	MHz	500	W
869	894	MHz	500	W
896	901	MHz	500	W
901	902	MHz	7	W
929	932	MHz	3500	W
930	931	MHz	3500	W
931	932	MHz	3500	W
932	932.5	MHz	17	dBW
935	940	MHz	1000	W
940	941	MHz	3500	W
1670	1675	MHz	500	W
1710	1755	MHz	500	W
1850	1910	MHz	1640	W
1850	1990	MHz	1640	W
1930	1990	MHz	1640	W
1990	2025	MHz	500	W
2110	2200	MHz	500	W
2305	2310	MHz	2000	W
2305	2360	MHz	2000	W
2345	2360	MHz	2000	W



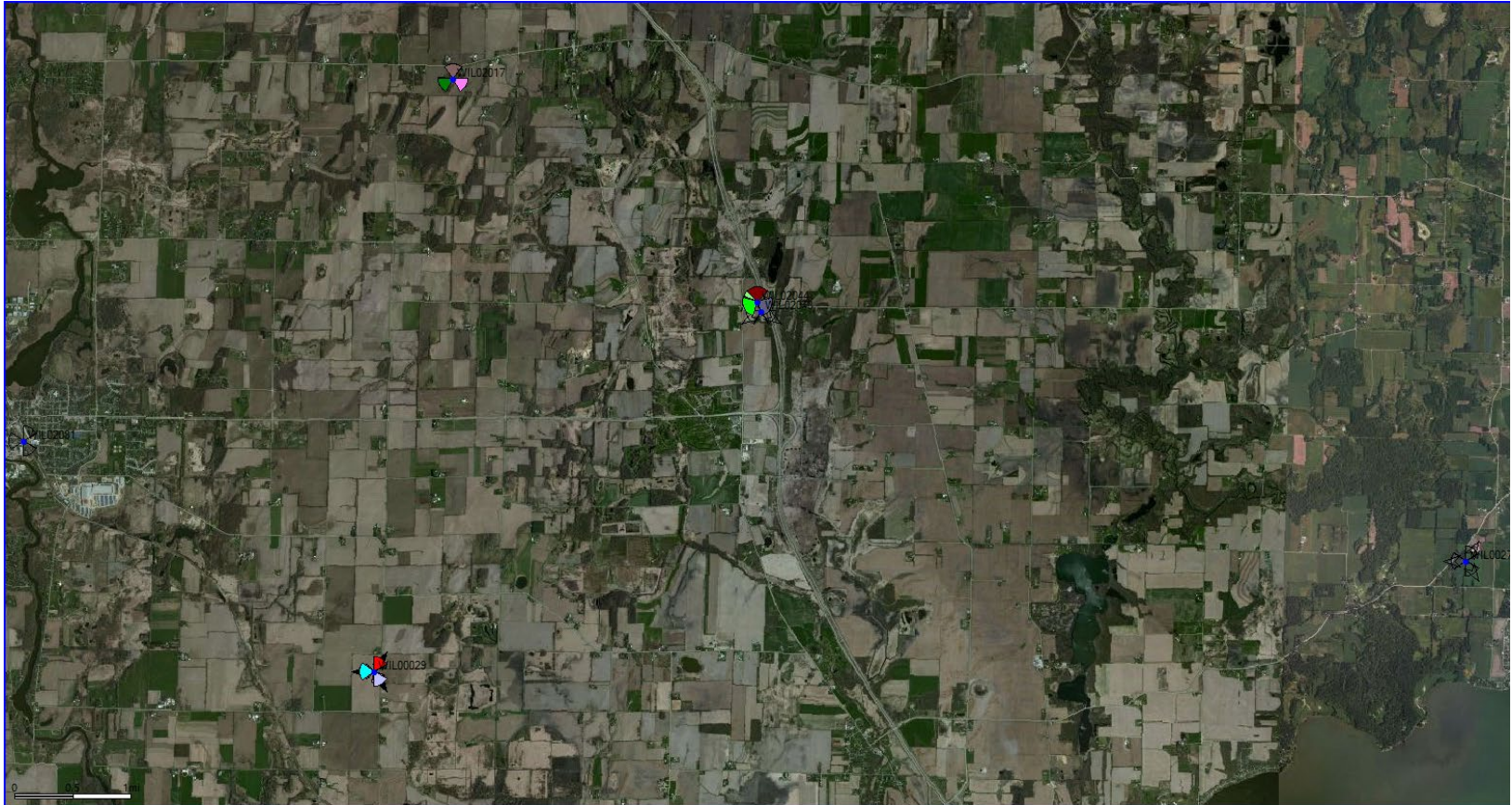


# Propagation Maps

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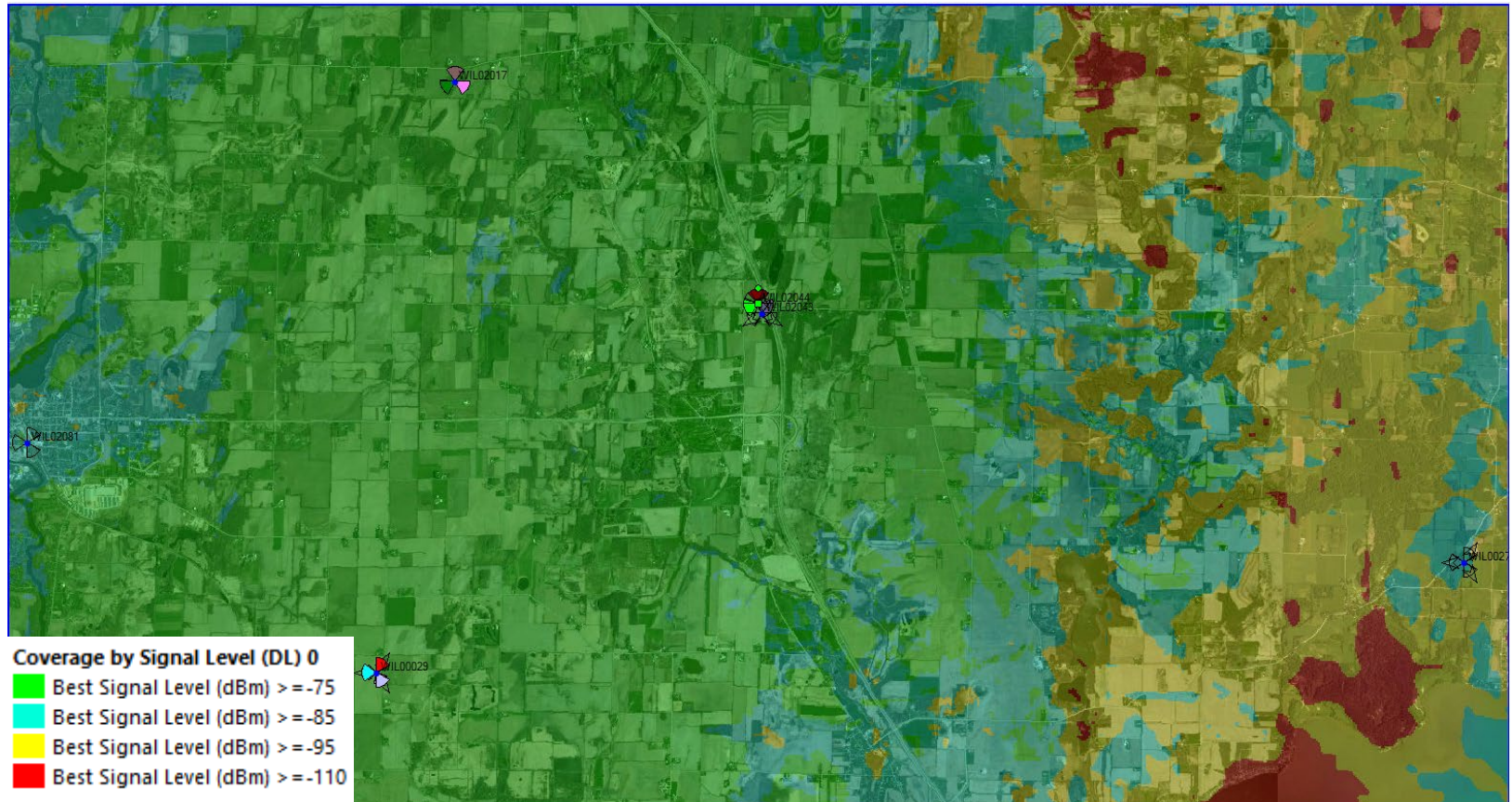
# Propagation Plots for WIL02043

# Aerial View of Surrounding Area

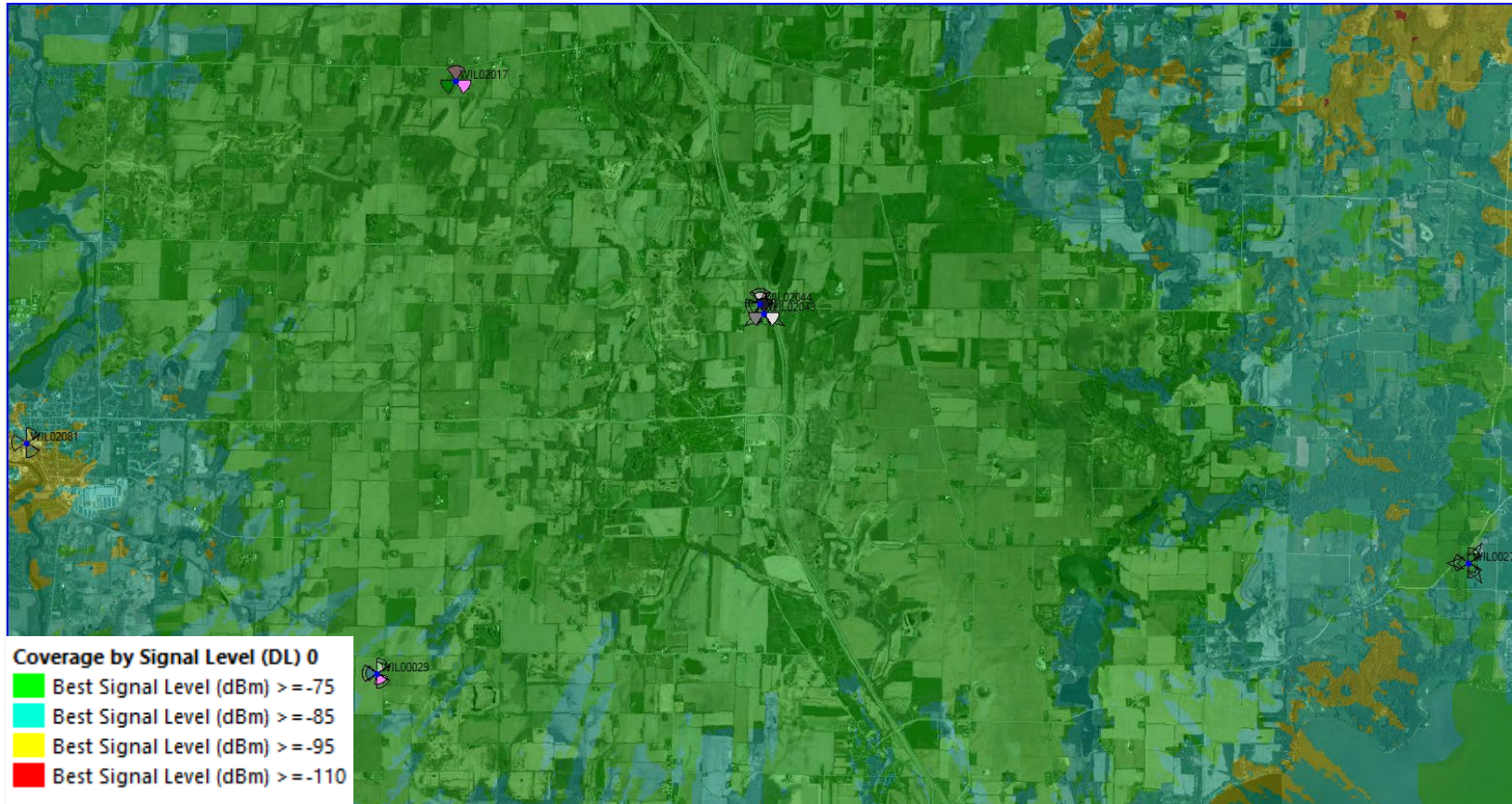




# Existing Coverage with WIL02044/WIL02043 replacement site



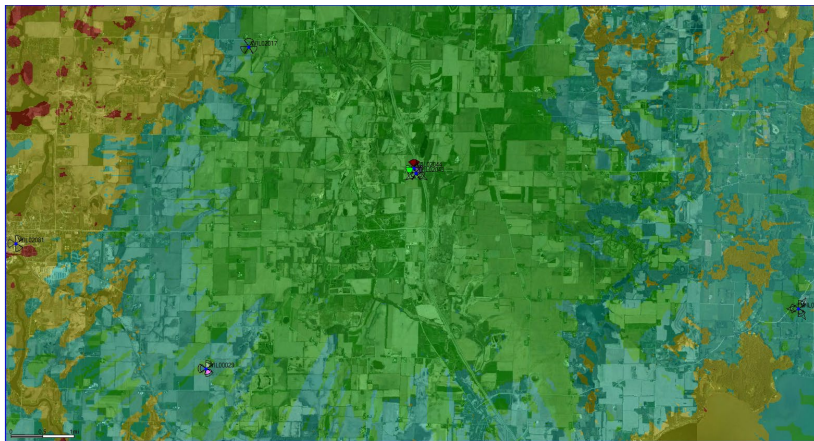
# Coverage with WIL02043 replacement site



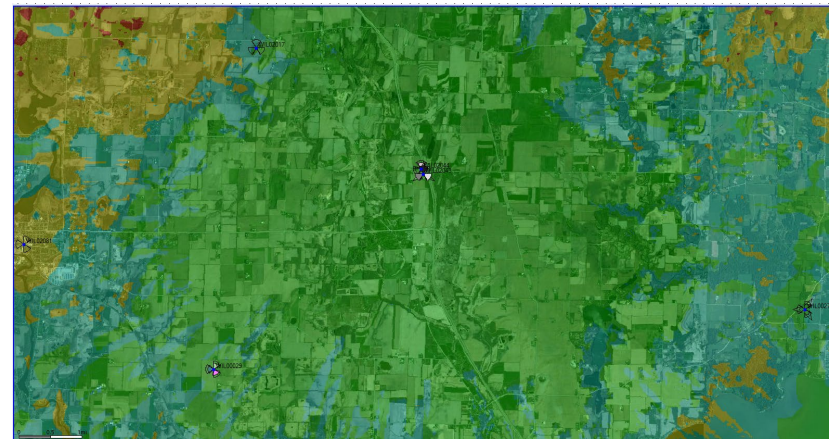


# Coverage Plot with WIL02043

Current site



WIL02043



## Coverage by Signal Level (DL) 0

- Best Signal Level (dBm)  $\geq -75$
- Best Signal Level (dBm)  $\geq -85$
- Best Signal Level (dBm)  $\geq -95$
- Best Signal Level (dBm)  $\geq -110$



## In Conclusion:

- These coverage plots are done using 700 MHz spectrum.
- When the new site is on air this area will have to have its coverage adjusted to maximize the new site's footprint to give the customer the best experience.

# Radio Frequency Certification Letter

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June 1, 2019

RE: Radio Frequency Certification

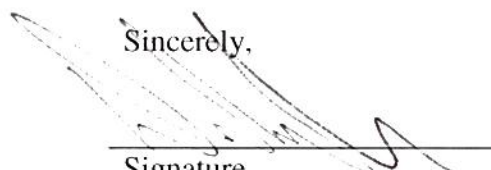
To Whom It May Concern:

Please be advised I am a Radio Frequency Engineer responsible for designing and maintaining AT&T's network in the greater Dane County, Wisconsin area. AT&T currently has wireless telecommunications equipment located on an existing tower owned by SBA Structures LLC located off County Highway A. Due to an increase in users and upgrades in technology, AT&T is no able to provide a robust network in the area utilizing the existing 170'-0" tall tower. Tillman Infrastructure is proposing to erect a 260'-0" tall self-support lattice tower with a 9'-0" lightning rod (269'-0" highest point of the tower) on property located at PID: 051204290203 Albion, WI 53534.

I have provided propagation maps depicting the current and proposed coverage levels for AT&T in this area. I have analyzed the coverage based on various heights including the height of AT&T's equipment on the existing tower and the proposed height of 250'. Based on the propagation study maps I have provided, the proposed 250' centerline for AT&T's equipment is the only height adequate to meet AT&T's level of service. A modification or replacement of the existing SBA site would not allow for the coverage objectives of AT&T as shown in the attached propagation maps. Due to the rural nature of this area, there are no other alternative forms of technology that are feasible to meet our coverage needs.

It is my intention, through the construction of the tower proposed by Tillman Infrastructure, to provide better coverage in the area and create a seamless network. As such, a 250'-0" centerline for AT&T's equipment is the optimal height which allows me to provide the best coverage to the surrounding area. In addition to the greater capacity served by the new tower, the proposed tower will provide coverage for areas east and west that are currently underserved. We have also evaluated the possibility of co-locating throughout the area however; there are no existing wireless telecommunications that meet AT&T's coverage objectives in the area.

Sincerely,



Signature

Dan Sobczyk  
Printed Name

Professional-Eng Engineer  
Title



# Fall Zone Letter

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May 29, 2019

Tom Crisci  
Tillman Infrastructure  
25 NW Point Blvd, Ste 525  
Elk Grove Village, IL 60007

RE: Proposed 260' Sabre Self-Supporting Tower for TI-OPP-11895 Albion, WI

Dear Mr. Crisci,

Upon receipt of order, we propose to design a tower for the above referenced project for an ASCE 7-16 Ultimate Wind Speed of 107 mph and 40 mph with 1.5" radial ice, Structure Class II, Exposure C, Topographic Category 1 in accordance with the Telecommunications Industry Association Standard ANSI/TIA-222-G, "Structural Standard for Antenna Supporting Structures and Antennas".

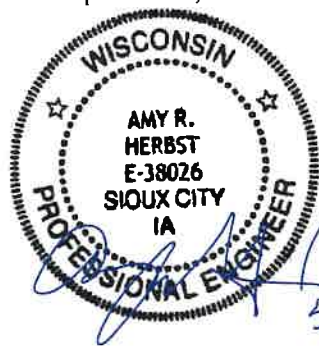
When designed according to this standard, the wind pressures and steel strength capacities include several safety factors, resulting in an overall minimum safety factor of 25%. Therefore, it is highly unlikely that the tower will fail structurally in a wind event where the design wind speed is exceeded 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 collapse within a radius of less than or equal to 30 feet.

Sincerely,

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



# Lease Agreement

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Market: North  
Cell Site Number: 11895  
Cell Site Name: \_\_\_\_\_  
Search Ring Name: \_\_\_\_\_  
Fixed Asset Number: 14578377

## OPTION AND LEASE AGREEMENT

THIS OPTION AND LEASE AGREEMENT ("**Agreement**"), dated as of the latter of the signature dates below (the "**Effective Date**"), is entered into by Randy Ray Knickmeier, an unmarried person, having a mailing address of 1481 County Highway W. Stoughton, WI 53589 ("**Landlord**") and Tillman Infrastructure LLC, a Delaware limited liability company, having an address at 152 West 57<sup>th</sup> Street, New York, New York 10019 ("**Tenant**").

### BACKGROUND

Landlord owns or controls that certain plot, parcel or tract of land, as described on **Exhibit 1**, together with all rights and privileges arising in connection therewith, located at Tax Parcel No. 002/0512-042-9020-3, in the Town of Albion, in the County of Dane, State of Wisconsin (collectively, the "**Property**"). Landlord desires to grant to Tenant the right to use a portion of the Property in accordance with this Agreement.

The parties agree as follows:

#### 1. OPTION TO LEASE.

(a) Landlord grants to Tenant an exclusive option (the "**Option**") to lease a certain portion of the Property consisting of a 75' x 75' parcel of property including the air space above such ground space, as described on attached **Exhibit 1**, (the "**Premises**"), for the placement of a Communication Facility in accordance with the terms of this Agreement.

(b) During the Option Term, and during the Term, Tenant and its agents, engineers, surveyors and other representatives will have the right to enter upon the Property to inspect, examine, conduct soil borings, drainage testing, material sampling, radio frequency testing and other geological or engineering tests or studies of the Property (collectively, the "**Tests**"), to apply for and obtain licenses, permits, approvals, or other relief required of or deemed necessary or appropriate at Tenant's sole discretion for its use of the Premises and include, without limitation, applications for zoning variances, zoning ordinances, amendments, special use permits, registrations with the Federal Communications Commissions and construction permits (collectively, the "**Government Approvals**"), initiate the ordering and/or scheduling of necessary utilities, and otherwise to do those things on or off the Property that, in the opinion of Tenant, are necessary in Tenant's sole discretion to determine the physical condition of the Property, the environmental history of the Property, Landlord's title to the Property and the feasibility or suitability of the Property for Tenant's Permitted Use, all at Tenant's expense. Tenant will not be liable to Landlord or any third party on account of any pre-existing defect or condition on or with respect to the Property, whether or not such defect or condition is disclosed by Tenant's inspection. Tenant will restore the Property to its condition as it existed at the commencement of the Option Term, reasonable wear and tear and loss by casualty or other causes beyond Tenant's control excepted.

(c) In consideration of Landlord granting Tenant the Option, Tenant agrees to pay Landlord the sum of [REDACTED] business days after the Effective Date. The Option may be exercised during an initial term of one (1) year commencing on the Effective Date (the "**Initial Option Term**") which term may be renewed by Tenant for an additional one (1) year (the "**Renewal Option Term**") upon written notification to Landlord and the payment of an additional [REDACTED] no later than five (5) days prior to the expiration date of the Initial Option Term. The Initial Option Term and any Renewal Option Term are collectively referred to as the "**Option Term**."

(d) The Option may be sold, assigned or transferred at any time by Tenant without the written consent of Landlord. Upon notification to Landlord of such sale, assignment or transfer, Tenant shall immediately be released from any and all liability under this Agreement, including the payment of any rental or other sums due, without any further action.

(e) During the Option Term, Tenant may exercise the Option by notifying Landlord in writing. If Tenant exercises the Option, then Landlord leases the Premises to Tenant subject to the terms and conditions of this Agreement. If Tenant does not exercise the Option during the Initial Option Term or any extension thereof, then this Agreement will terminate and the parties will have no further liability to each other.

(f) If during the Option Term, or during the Term if the Option is exercised, Landlord decides to subdivide, sell, or change the status of the zoning of the Premises, the Property or any of Landlord's contiguous, adjoining or surrounding property (the "**Surrounding Property**"), or in the event of a threatened foreclosure on any of the foregoing, Landlord shall immediately notify Tenant in writing. Landlord agrees that during the Option Term, or during the Term if the Option is exercised, Landlord shall not initiate or consent to any change in the zoning of the Premises, the Property or the Surrounding Property or impose or consent to any other use or restriction that would prevent or limit Tenant from using the Premises for the Permitted Use. Any and all terms and conditions of this Agreement that by their sense and context are intended to be applicable during the Option Term shall be so applicable.

2. **PERMITTED USE.** Tenant may use the Premises for the transmission and reception of communications signals and related activities, and the installation, construction, maintenance, operation, repair, replacement and upgrade of communications fixtures and related equipment, cables, accessories and improvements, which may include a suitable tower and support structure ("**Structure**"), associated antennas, equipment shelters or cabinets and fencing and any other items necessary to the successful and secure use of the Premises (collectively the "**Communication Facility**"), as well as the right to test, survey and review title on the Property; Tenant further has the right but not the obligation to add, modify and/or replace equipment in order to be in compliance with any current or future federal, state or local mandated application, including, but not limited to, emergency 911 communication services, at no additional cost to Tenant or Landlord (collectively, the "**Permitted Use**"). Landlord and Tenant agree that any portion of the Communication Facility that may be conceptually described on **Exhibit 1** will not be deemed to limit Tenant's Permitted Use. If **Exhibit 1** includes drawings of the initial installation of the Communication Facility, Landlord's execution of this Agreement will signify Landlord's approval of **Exhibit 1**. For a period of one hundred twenty (120) days following the start of construction, Landlord grants Tenant, its subtenants, licensees and sublicensees, the right to use such portions of the Surrounding Property as may reasonably be required during construction and installation of the Communication Facility. Tenant has the right to install and operate transmission cables from the equipment shelters or cabinets to the antennas, electric lines from the main feed to the equipment shelters or cabinets and communication lines from the Property's main entry point to the equipment shelters or cabinets, install a generator(s) and to make other improvements, additions, alterations, upgrades or additions appropriate for Tenant's Permitted Use, including the right to construct a fence around the Premises or equipment, install warning signs to make individuals aware of risks, install protective barriers, install any other control measures reasonably required by Tenant's safety procedures or applicable law, and undertake any other appropriate means to secure the Premises or equipment at Tenant's expense. Tenant has the right to modify, supplement, replace, upgrade, expand the Communication Facility (including, for example, increasing the number of antennas or adding microwave dishes to the Structure or relocate the Communication Facility or add additional cabinets within the Premises at any time during the Term. Tenant will be allowed to make such alterations to the Property in order to ensure that the Communication Facility complies with all applicable federal, state or local laws, rules or regulations. In the event Tenant desires to modify or upgrade the Communication Facility, in a manner that requires an additional portion of the Property (the "**Additional Premises**") for such modification or upgrade, Landlord agrees to lease to Tenant the Additional Premises, upon the same terms and conditions set forth herein, except that the Rent shall increase, in conjunction with the lease of the Additional Premises by the amount equivalent to the then-current per square foot rental rate charged by Landlord to Tenant times the square footage of the Additional Premises. Landlord agrees to take such actions and enter into and deliver to Tenant such documents as Tenant reasonably requests in order to effect and memorialize the lease of the Additional Premises to Tenant.



3. **TERM.**

(a) The initial lease term will be ten (10) years (the "**Initial Term**"), commencing on the effective date of written notification by Tenant to Landlord of Tenant's exercise of the Option (the "**Term Commencement Date**"). The Initial Term will terminate on the tenth (10th) anniversary of the Term Commencement Date.

(b) This Agreement will automatically renew for sixteen (16) additional five (5) year term(s) (each additional five (5) year term shall be defined as an "**Extension Term**"), upon the same terms and conditions set forth herein unless Tenant notifies Landlord in writing of Tenant's intention not to renew this Agreement at least sixty (60) days prior to the expiration of the Initial Term or the then-existing Extension Term.

(c) Unless (i) Landlord or Tenant notifies the other in writing of its intention to terminate this Agreement at least six (6) months prior to the expiration of the final Extension Term, or (ii) the Agreement is terminated as otherwise permitted by this Agreement prior to the end of the final Extension Term, this Agreement shall continue in force upon the same covenants, terms and conditions for a further term of one (1) year, and for annual terms thereafter ("**Annual Term**") until terminated by either party hereto by giving to the other party hereto written notice of its intention to so terminate at least six (6) months prior to the end of any such Annual Term. Monthly rent during such Annual Terms shall be equal to the Rent paid for the last month of the final Extension Term. If Tenant remains in possession of the Premises after the termination of this Agreement, then Tenant will be deemed to be occupying the Premises on a month-to-month basis (the "**Holdover Term**"), subject to the terms and conditions of this Agreement.

(d) The Initial Term, any Extension Terms, any Annual Terms and any Holdover Term are collectively referred to as the "**Term**."

4. **RENT.**

(a) Commencing on the first day of the calendar month following the date that Tenant commences construction (the "**Rent Commencement Date**"). Tenant will pay Landlord on or before the tenth (10<sup>th</sup>) day of each calendar month in advance, [REDACTED] (the "**Rent**"), at the address set forth above. In any partial month occurring after the Rent Commencement Date, the Rent will be prorated. The initial Rent payment will be forwarded by Tenant to Landlord within forty-five (45) days after the Rent Commencement Date.

(b) [REDACTED]

(c) All charges payable under this Agreement such as utilities and taxes shall be billed by Landlord within one (1) year from the end of the calendar year in which the charges were incurred; any charges beyond such period shall not be billed by Landlord, and shall not be payable by Tenant. The foregoing shall not apply to monthly Rent which is due and payable without a requirement that it be billed by Landlord. The provisions of this subsection shall survive the termination or expiration of this Agreement.

5. **APPROVALS.**

(a) Landlord agrees that Tenant's ability to use the Premises is contingent upon the suitability of the Premises and Property for the Permitted Use and Tenant's ability to obtain and maintain all Government Approvals. Landlord authorizes Tenant to prepare, execute and file all required applications to obtain Government Approvals for the Permitted Use and agrees to reasonably assist Tenant with such applications and with obtaining and maintaining the Government Approvals.

(b) Tenant has the right to obtain a title report or commitment for a leasehold title policy from a title insurance company of its choice and to have the Property surveyed by a surveyor of its choice.

(c) Tenant may also perform and obtain, at Tenant's sole cost and expense, soil borings, percolation tests, engineering procedures, environmental investigation or other tests or reports on, over, and under the Property, necessary to determine if Tenant's use of the Premises will be compatible with Tenant's engineering specifications, system, design, operations or Government Approvals.

6. **TERMINATION.** This Agreement may be terminated, without penalty or further liability, as follows:
- (a) by either party on thirty (30) days prior written notice, if the other party remains in default under Section 15 of this Agreement after the applicable cure periods;
  - (b) by Tenant upon written notice to Landlord, if Tenant is unable to obtain, or maintain, any required approval(s) or the issuance of a license or permit by any agency, board, court or other governmental authority necessary for the construction or operation of the Communication Facility as now or hereafter intended by Tenant; or if Tenant determines, in its sole discretion that the cost of or delay in obtaining or retaining the same is commercially unreasonable;
  - (c) by Tenant, upon written notice to Landlord, if Tenant determines, in its sole discretion, due to the title report results or survey results, that the condition of the Premises is unsatisfactory for its intended uses;
  - (d) by Tenant upon written notice to Landlord for any reason or no reason, at any time prior to commencement of construction by Tenant; or
  - (e) by Tenant upon sixty (60) days' prior written notice to Landlord for any reason or no reason, so long as Tenant pays Landlord a termination fee equal to three (3) months' Rent, at the then-current rate, provided, however, that no such termination fee will be payable on account of the termination of this Agreement by Tenant under any termination provision contained in any other Section of this Agreement, including the following: Section 5 Approvals, Section 6(a) Termination, Section 6(b) Termination, Section 6(c) Termination, Section 6(d) Termination, Section 11(d) Environmental, Section 18 Condemnation or Section 19 Casualty.

7. **INSURANCE.** During the Option Term and throughout the Term, Tenant will purchase and maintain in full force and effect such general liability policy as Tenant may deem necessary. Said policy of general liability insurance will at a minimum provide a combined single limit of One Million and No/100 Dollars (\$1,000,000.00). Notwithstanding the foregoing, Tenant shall have the right to self-insure such general liability coverage or by adding this site as an endorsement on a pre-existing master policy which contains the above limit.

8. **INTERFERENCE.**

- (a) Prior to or concurrent with the execution of this Agreement, Landlord has provided or will provide Tenant with a list of radio frequency user(s) and frequencies used on the Property as of the Effective Date. Tenant warrants that its use of the Premises will not interfere with those existing radio frequency uses on the Property, as long as the existing radio frequency user(s) operate and continue to operate within their respective frequencies and in accordance with all applicable laws and regulations.
- (b) Landlord will not grant, after the Effective Date, a lease, license or any other right to any third party, if the exercise of such grant may in any way adversely affect or interfere with the Communication Facility, the operations of Tenant or the rights of Tenant under this Agreement. Landlord will notify Tenant in writing prior to granting any third party the right to install and operate communications equipment on the Property.
- (c) Landlord will not, nor will Landlord permit its employees, tenants, licensees, invitees, agents or independent contractors to interfere in any way with the Communication Facility, the operations of Tenant or the rights of Tenant under this Agreement. Landlord will cause such interference to cease within twenty-four (24) hours after receipt of notice of interference from Tenant. In the event any such interference does not cease within the aforementioned cure period, Landlord shall cease all operations which are suspected of causing interference (except for intermittent testing to determine the cause of such interference) until the interference has been corrected.
- (d) For the purposes of this Agreement, "interference" may include, but is not limited to, any use on the Property or Surrounding Property that causes electronic or physical obstruction with, or degradation of, the communications signals from the Communication Facility.

9. **INDEMNIFICATION.**

- (a) Tenant agrees to indemnify, defend and hold Landlord harmless from and against any and all injury, loss, damage or liability, costs or expenses in connection with a third party claim (including reasonable attorneys' fees and court costs) arising directly from the installation, use, maintenance, repair or removal of the Communication Facility or Tenant's breach of any provision of this Agreement, except to the extent attributable

to the negligent or intentional act or omission of Landlord, its employees, invitees, agents or independent contractors.

(b) Landlord agrees to indemnify, defend and hold Tenant harmless from and against any and all injury, loss, damage or liability, costs or expenses in connection with a third party claim (including reasonable attorneys' fees and court costs) arising directly from the actions or failure to act of Landlord, its employees, invitees, agents or independent contractors, or Landlord's breach of any provision of this Agreement, except to the extent attributable to the negligent or intentional act or omission of Tenant, its employees, agents or independent contractors.

(c) The indemnified party: (i) shall promptly provide the indemnifying party with written notice of any claim, demand, lawsuit, or the like for which it seeks indemnification pursuant to this Section 9 and provide the indemnifying party with copies of any demands, notices, summonses, or legal papers received in connection with such claim, demand, lawsuit, or the like; (ii) shall not settle any such claim, demand, lawsuit, or the like without the prior written consent of the indemnifying party; and (iii) shall fully cooperate with the indemnifying party in the defense of the claim, demand, lawsuit, or the like. A delay in notice shall not relieve the indemnifying party of its indemnity obligation, except (1) to the extent the indemnifying party can show it was prejudiced by the delay; and (2) the indemnifying party shall not be liable for any settlement or litigation expenses incurred before the time when notice is given.

#### 10. WARRANTIES.

(a) Each of Tenant and Landlord (to the extent not a natural person) each acknowledge and represent that it is duly organized, validly existing and in good standing and has the right, power, and authority or capacity, as applicable, to enter into this Agreement and bind itself hereto through the party or individual set forth as signatory for the party below.

(b) Landlord represents, warrants and agrees that: (i) Landlord solely owns the Property as a legal lot in fee simple, or controls the Property by lease or license; (ii) the Property is not and will not be encumbered by any liens, restrictions, mortgages, covenants, conditions, easements, leases, or any other agreements of record or not of record, which would adversely affect Tenant's Permitted Use and enjoyment of the Premises under this Agreement; (iii) Landlord grants to Tenant sole, actual, quiet and peaceful use, enjoyment and possession of the Premises in accordance with the terms of this Agreement without hindrance or ejection by any persons lawfully claiming under Landlord; (iv) Landlord's execution and performance of this Agreement will not violate any laws, ordinances, covenants or the provisions of any mortgage, lease or other agreement binding on Landlord; and (v) if the Property is or becomes encumbered by a deed to secure a debt, mortgage or other security interest, then Landlord will provide promptly to Tenant a mutually agreeable subordination, non-disturbance and attornment agreement executed by Landlord and the holder of such security interest in the form attached hereto as Exhibit 2.

#### 11. ENVIRONMENTAL.

(a) Landlord represents and warrants, except as may be identified in **Exhibit 3** attached to this Agreement, (i) the Property, as of the Effective Date, is free of hazardous substances, including asbestos-containing materials and lead paint, and (ii) the Property has never been subject to any contamination or hazardous conditions resulting in any environmental investigation, inquiry or remediation. Landlord and Tenant agree that each will be responsible for compliance with any and all applicable governmental laws, rules, statutes, regulations, codes, ordinances, or principles of common law regulating or imposing standards of liability or standards of conduct with regard to protection of the environment or worker health and safety, as may now or at any time hereafter be in effect, to the extent such apply to that party's activity conducted in or on the Property.

(b) Landlord and Tenant agree to hold harmless and indemnify the other from, and to assume all duties, responsibilities and liabilities at the sole cost and expense of the indemnifying party for, payment of penalties, sanctions, forfeitures, losses, costs or damages, and for responding to any action, notice, claim, order, summons, citation, directive, litigation, investigation or proceeding ("**Claims**"), to the extent arising from that party's breach of its obligations or representations under Section 11(a). Landlord agrees to hold harmless and indemnify Tenant from, and to assume all duties, responsibilities and liabilities at the sole cost and expense of Landlord for, payment of penalties, sanctions, forfeitures, losses, costs or damages, and for responding to any Claims, to the extent arising from subsurface or other contamination of the Property with hazardous substances

prior to the Effective Date or from such contamination caused by the acts or omissions of Landlord during the Term. Tenant agrees to hold harmless and indemnify Landlord from, and to assume all duties, responsibilities and liabilities at the sole cost and expense of Tenant for, payment of penalties, sanctions, forfeitures, losses, costs or damages, and for responding to any Claims, to the extent arising from hazardous substances brought onto the Property by Tenant.

(c) The indemnification provisions contained in this Section 11 specifically include reasonable costs, expenses and fees incurred in connection with any investigation of Property conditions or any clean-up, remediation, removal or restoration work required by any governmental authority. The provisions of this Section 11 will survive the expiration or termination of this Agreement.

(d) In the event Tenant becomes aware of any hazardous materials on the Property, or any environmental, health or safety condition or matter relating to the Property, that, in Tenant's sole determination, renders the condition of the Premises or Property unsuitable for Tenant's use, or if Tenant believes that the leasing or continued leasing of the Premises would expose Tenant to undue risks of liability to a government agency or other third party, then Tenant will have the right, in addition to any other rights it may have at law or in equity, to terminate this Agreement upon written notice to Landlord.

12. **ACCESS.** At all times throughout the Term of this Agreement, and at no additional charge to Tenant, Tenant and its employees, agents, and subcontractors, will have twenty-four (24) hour per day, seven (7) day per week pedestrian and vehicular access ("**Access**") to and over the Property, from an open and improved public road to the Premises, for the installation, maintenance and operation of the Communication Facility and any utilities serving the Premises. As may be described more fully in **Exhibit 1**, Landlord grants to Tenant, its subtenants, lessees assigns and licensees an easement for such Access and Landlord agrees to provide to Tenant such codes, keys and other instruments necessary for such Access at no additional cost to Tenant (the "**Access Easement**"). Upon Tenant's request, Landlord will execute a separate recordable easement evidencing this right. Landlord shall execute a letter granting Tenant Access to the Property substantially in the form attached as Exhibit 4, and upon Tenant's request, Landlord shall execute additional letters during the Term. Landlord acknowledges that in the event Tenant cannot obtain Access to the Premises, Tenant shall incur significant damage. If Landlord fails to provide the Access granted by this Section 12, such failure shall be a default under this Agreement. If Tenant elects to utilize an Unmanned Aircraft System ("**UAS**") in connection with its installation, construction, monitoring, suite audits, inspections, maintenance, repair, modification, or alteration activities at the Property, Landlord hereby grants Tenant, as any UAS operator acting on Tenant's behalf, express permission to fly over the applicable Property and Premises, and consents to the use of audio and video navigation and recording in connection with the use of the UAS. In connection with such default, in addition to any other rights or remedies available to Tenant under this Agreement or at law or equity, Landlord shall pay Tenant, as liquidated damages and not as a penalty, \$500.00 per day in consideration of Tenant's damages until Landlord cures such default. Landlord and Tenant agree that Tenant's damages in the event of a denial of Access are difficult, if not impossible, to ascertain, and the liquidated damages set forth above are a reasonable approximation of such damages.

13. **REMOVAL/RESTORATION.** All portions of the Communication Facility brought onto the Property by Tenant will be and remain Tenant's personal property and, at Tenant's option, may be removed by Tenant at any time during or after the Term. Landlord covenants and agrees that no part of the Communication Facility constructed, erected or placed on the Premises by Tenant will become, or be considered as being affixed to or a part of, the Property, it being the specific intention of Landlord that all improvements of every kind and nature constructed, erected or placed by Tenant on the Premises will be and remain the property of Tenant and may be removed by Tenant at any time during or after the Term. Tenant will repair any damage to the Property resulting from Tenant's removal activities. Any portions of the Communication Facility that Tenant does not remove within one hundred twenty (120) days after the later of the end of the Term and cessation of Tenant's operations at the Premises shall be deemed abandoned and owned by Landlord. Notwithstanding the foregoing, Tenant will not be responsible for the replacement of any trees, shrubs or other vegetation.



**14. MAINTENANCE/UTILITIES.**

(a) Tenant will keep and maintain the Premises in good condition, reasonable wear and tear and damage from the elements excepted. Landlord will maintain and repair the Property and access thereto and all areas of the Premises where Tenant does not have exclusive control, in good and tenantable condition, subject to reasonable wear and tear and damage from the elements. Landlord will be responsible for maintenance of landscaping on the Property, including any landscaping installed by Tenant as a condition of this Agreement or any required permit.

(b) Landlord acknowledges that Tenant provides a communication service which requires electrical power to operate and must operate twenty-four (24) hours per day, seven (7) days per week. If an interruption in electrical power is for an extended period of time, in Tenant's reasonable determination, Landlord agrees to allow Tenant the right to bring in a temporary source of power for the duration of the interruption. Landlord will not be responsible for interference with, interruption of or failure, beyond the reasonable control of Landlord, of such services to be furnished or supplied by Landlord.

(c) Tenant will have the right to install utilities, at Tenant's expense, and to improve present utilities on the Property and the Premises. Landlord hereby grants to Tenant and any service company providing utility or similar services, including electric power and telecommunications, to Tenant an easement, in, on under and over the Property, from an open and improved public road to the Premises, and upon the Premises, for the purpose of maintaining and operating the Communication Facility and constructing, operating, upgrading and maintaining such lines, wires, circuits, and conduits, associated equipment cabinets and such appurtenances thereto, as Tenant and such service companies may from time to time require in order to provide such services to the Premises (the "Utility Easement"). Upon Tenant's or service company's request, Landlord will execute a separate recordable Utility Easement evidencing this grant, at no cost to Tenant or the service company.

**15. DEFAULT AND RIGHT TO CURE.**

(a) The following will be deemed a default by Tenant and a breach of this Agreement: (i) non-payment of Rent if such Rent remains unpaid for more than thirty (30) days after written notice from Landlord of such failure to pay; or (ii) Tenant's failure to perform any other term or condition under this Agreement within forty-five (45) days after written notice from Landlord specifying the failure. No such failure, however, will be deemed to exist if Tenant has commenced to cure such default within such period and provided that such efforts are prosecuted to completion with reasonable diligence. Delay in curing a default will be excused if due to causes beyond the reasonable control of Tenant. If Tenant remains in default beyond any applicable cure period, then Landlord will have the right to exercise any and all rights and remedies available to it under law and equity.

(b) The following will be deemed a default by Landlord and a breach of this Agreement: (i) Landlord's failure to provide Access to the Premises as required by Section 12 within twenty-four (24) hours after written notice of such failure; (ii) Landlord's failure to cure an interference problem as required by Section 8 within twenty-four (24) hours after written notice of such failure; or (iii) Landlord's failure to perform any term, condition or breach of any warranty or covenant under this Agreement within forty-five (45) days after written notice from Tenant specifying the failure. No such failure, however, will be deemed to exist if Landlord has commenced to cure the default within such period and provided such efforts are prosecuted to completion with reasonable diligence. Delay in curing a default will be excused if due to causes beyond the reasonable control of Landlord. If Landlord remains in default beyond any applicable cure period, Tenant will have: (i) the right to cure Landlord's default and to deduct the costs of such cure from any monies due to Landlord from Tenant, and (ii) any and all other rights available to it under law and equity.

**16. ASSIGNMENT/SUBLEASE.**

(a) Tenant will have the right to assign this Agreement or sublease the Premises and its rights herein, in whole or in part, without Landlord's consent. Upon notification to Landlord of such assignment, Tenant will be relieved of all future performance, liabilities and obligations under this Agreement to the extent of such assignment.



17. **NOTICES.** All notices, requests and demands hereunder will be given by first class certified or registered mail, return receipt requested, or by a nationally recognized overnight courier, postage prepaid, to be effective when properly sent and received, refused or returned undelivered. Notices will be addressed to the parties hereto as follows:

If to Tenant: Tillman Infrastructure LLC  
152 West 57<sup>th</sup> Street 27<sup>th</sup> Floor  
New York, New York 10019  
Attn: Lease Administration

With a copy to: Tillman Infrastructure LLC  
152 West 57<sup>th</sup> Street 27<sup>th</sup> Floor  
New York, New York 10019  
Attn: Suruchi Ahuja

If to Landlord: Randy Knickmeier  
1481 County Highway W.  
Stoughton, WI 53589

Either party hereto may change the place for the giving of notice to it by thirty (30) days' prior written notice to the other party hereto as provided herein.

18. **CONDEMNATION.** In the event Landlord receives notification of any condemnation proceedings affecting the Property, Landlord will provide notice of the proceeding to Tenant within twenty-four (24) hours. If a condemning authority takes all of the Property, or a portion sufficient, in Tenant's sole determination, to render the Premises unsuitable for Tenant, this Agreement will terminate as of the date the title vests in the condemning authority. The parties will each be entitled to pursue their own separate awards in the condemnation proceeds, which for Tenant will include, where applicable, the value of its Structure and Communication Facility, moving expenses, prepaid Rent, and business dislocation expenses. Tenant will be entitled to reimbursement for any prepaid Rent on a *pro rata* basis.

19. **CASUALTY.** Landlord will provide notice to Tenant of any casualty or other harm affecting the Property within twenty-four (24) hours of the casualty or other harm. If any part of the Communication Facility or the Property is damaged by casualty or other harm as to render the Premises unsuitable, in Tenant's sole determination, then Tenant may terminate this Agreement by providing written notice to Landlord, which termination will be effective as of the date of such casualty or other harm. Upon such termination, Tenant will be entitled to collect all insurance proceeds payable to Tenant on account thereof and to be reimbursed for any prepaid Rent on a *pro rata* basis. Landlord agrees to permit Tenant to place temporary transmission and reception facilities on the Property, but only until such time as Tenant is able to activate a replacement transmission facility at another location; notwithstanding the termination of this Agreement, such temporary facilities will be governed by all of the terms and conditions of this Agreement, including Rent. If Landlord or Tenant undertakes to rebuild or restore the Premises and/or the Communication Facility, as applicable, Landlord agrees to permit Tenant to place temporary transmission and reception facilities on the Property at no additional Rent until the reconstruction of the Premises and/or the Communication Facility is completed. If Landlord determines not to rebuild or restore the Property, Landlord will notify Tenant of such determination within thirty (30) days after the casualty or other harm. If Landlord does not so notify Tenant and Tenant decides not to terminate under this Section 19, then Landlord will promptly rebuild or restore any portion of the Property interfering with or required for Tenant's Permitted Use of the Premises to substantially the same condition as existed before the casualty or other harm. Landlord agrees that the Rent shall be abated until the Property and/or the Premises are rebuilt or restored, unless Tenant places temporary transmission and reception facilities on the Property.

20. **WAIVER OF LANDLORD'S LIENS.** Landlord waives any and all lien rights it may have, statutory or otherwise, concerning the Communication Facility including the Structure or any portion thereof. The Communication Facility shall be deemed personal property for purposes of this Agreement, regardless of whether any portion is deemed real or personal property under applicable law; Landlord consents to Tenant's right to remove all or any portion of the Communication Facility from time to time in Tenant's sole discretion and without Landlord's consent.

21. **TAXES.**

(a) Landlord shall be responsible for (i) all taxes and assessments levied upon the lands, improvements and other property of Landlord including any such taxes that may be calculated by a taxing authority using any method, including the income method (ii) all sales, use, license, value added, documentary, stamp, gross receipts, registration, real estate transfer, conveyance, excise, recording, and other similar taxes and fees imposed in connection with this Agreement and (iii) all sales, use, license, value added, documentary, stamp, gross receipts, registration, real estate transfer, conveyance, excise, recording, and other similar taxes and fees imposed in connection with a sale of the Property or assignment of Rent payments by Landlord. Tenant shall be responsible for (i) any taxes and assessments attributable to and levied upon Tenant's leasehold improvements on the Premises if and as set forth in this Section 21 and (ii) all sales, use, license, value added, documentary, stamp, gross receipts, registration, real estate transfer, conveyance, excise, recording, and other similar taxes and fees imposed in connection with an assignment of this Agreement or sublease by Tenant. Nothing herein shall require Tenant to pay any inheritance, franchise, income, payroll, excise, privilege, rent, capital stock, stamp, documentary, estate or profit tax, or any tax of similar nature, that is or may be imposed upon Landlord.

(b) In the event Landlord receives a notice of assessment with respect to which taxes or assessments are imposed on Tenant's leasehold improvements on the Premises, Landlord shall provide Tenant with copies of each such notice immediately upon receipt, but in no event later than thirty (30) days after the date of such notice of assessment. If Landlord does not provide such notice or notices to Tenant in a timely manner and Tenant's rights with respect to such taxes are prejudiced by the delay, Landlord shall reimburse Tenant for any increased costs directly resulting from the delay and Landlord shall be responsible for payment of the tax or assessment set forth in the notice, and Landlord shall not have the right to reimbursement of such amount from Tenant. If Landlord provides a notice of assessment to Tenant within such time period and requests reimbursement from Tenant as set forth below, then Tenant shall reimburse Landlord for the tax or assessments identified on the notice of assessment on Tenant's leasehold improvements, which has been paid by Landlord. If Landlord seeks reimbursement from Tenant, Landlord shall, no later than thirty (30) days after Landlord's payment of the taxes or assessments for the assessed tax year, provide Tenant with written notice including evidence that Landlord has timely paid same, and Landlord shall provide to Tenant any other documentation reasonably requested by Tenant to allow Tenant to evaluate the payment and to reimburse Landlord.

(c) For any tax amount for which Tenant is responsible under this Agreement, Tenant shall have the right to contest, in good faith, the validity or the amount thereof using such administrative, appellate or other proceedings as may be appropriate in the jurisdiction, and may defer payment of such obligations, pay same under protest, or take such other steps as permitted by law. This right shall include the ability to institute any legal, regulatory or informal action in the name of Landlord, Tenant, or both, with respect to the valuation of the Premises. Landlord shall cooperate with respect to the commencement and prosecution of any such proceedings and will execute any documents required therefor. The expense of any such proceedings shall be borne by Tenant and any refunds or rebates secured as a result of Tenant's action shall belong to Tenant, to the extent the amounts were originally paid by Tenant. In the event Tenant notifies Landlord by the due date for assessment of Tenant's intent to contest the assessment, Landlord shall not pay the assessment pending conclusion of the contest, unless required by applicable law.

(d) Landlord shall not split or cause the tax parcel on which the Premises are located to be split, bifurcated, separated or divided without the prior written consent of Tenant.

(e) Tenant shall have the right but not the obligation to pay any taxes due by Landlord hereunder if Landlord fails to timely do so, in addition to any other rights or remedies of Tenant. In the event that Tenant exercises its rights under this Section 21(e) due to such Landlord default, Tenant shall have the right to deduct such tax amounts paid from any monies due to Landlord from Tenant as provided in Section 15(b), provided that

Tenant may exercise such right without having provided to Landlord notice and the opportunity to cure per Section 15(b).

(f) Any tax-related notices shall be sent to Tenant in the manner set forth in Section 17 and, in addition, a copy of any such notices shall be sent to the below address. Promptly after the Effective Date of this Agreement, Landlord shall provide the following address to the taxing authority for the authority's use in the event the authority needs to communicate with Tenant. In the event that Tenant's tax address changes by notice to Landlord, Landlord shall be required to provide Tenant's new tax address to the taxing authority or authorities.

Tillman Infrastructure LLC  
152 W 57<sup>th</sup> Street  
New York, New York 10017  
Attn: Network Real Estate Administration--Taxes

(g) Notwithstanding anything to the contrary contained in this Section 21, Tenant shall have no obligation to reimburse any tax or assessment for which the Landlord is reimbursed or rebated by a third party.

## **22. SALE OF PROPERTY.**

(a) Landlord may sell the Property or a portion thereof to a third party, provided: (i) the sale is made subject to the terms of this Agreement; and (ii) if the sale does not include the assignment of Landlord's full interest in this Agreement, the purchaser must agree to perform, without requiring compensation from Tenant or any subtenant, any obligation of Landlord under this Agreement, including Landlord's obligation to cooperate with Tenant as provided hereunder.

(b) If Landlord, at any time during the Term of this Agreement, decides to rezone or sell, subdivide or otherwise transfer all or any part of the Premises, or all or any part of the Property or the Surrounding Property, to a purchaser other than Tenant, Landlord shall promptly notify Tenant in writing, and such rezoning, sale, subdivision or transfer shall be subject to this Agreement and Tenant's rights hereunder. In the event of a change in ownership, transfer or sale of the Property, within ten (10) days of such transfer, Landlord or its successor shall send the documents listed below in this Section 22(b) to Tenant. Until Tenant receives all such documents, Tenant's failure to make payments under this Agreement shall not be an event of default and Tenant reserves the right to hold payments due under this Agreement.

- i. Old deed to Property
- ii. New deed to Property
- iii. Bill of Sale or Transfer
- iv. Copy of current Tax Bill
- v. New IRS Form W-9
- vi. Completed and Signed Tenant Payment Direction Form
- vii. Full contact information for new Landlord including phone number(s)

(c) Landlord agrees not to sell, lease or use any areas of the Property or the Surrounding Property for the installation, operation or maintenance of other wireless communication facilities if such installation, operation or maintenance would interfere with Tenant's Permitted Use or communications equipment as determined by radio propagation tests performed by Tenant in its sole discretion. Landlord or Landlord's prospective purchaser shall reimburse Tenant for any costs and expenses of such testing. If the radio frequency propagation tests demonstrate levels of interference unacceptable to Tenant, Landlord shall be prohibited from selling, leasing or using any areas of the Property or the Surrounding Property for purposes of any installation, operation or maintenance of any other wireless communication facility or equipment.

(d) The provisions of this Section 22 shall in no way limit or impair the obligations of Landlord under this Agreement, including interference and access obligations.

23. **RIGHT OF FIRST REFUSAL.** Notwithstanding the provisions contained in Section 22, if at any time after the Effective Date, Landlord receives a bona fide written offer from a third party seeking any sale, conveyance, assignment or transfer, whether in whole or in part, of any property interest in or related to the Premises, including without limitation any offer seeking an assignment or transfer of the Rent payments associated with this Agreement or an offer to purchase an easement with respect to the Premises ("Offer"), Landlord shall immediately furnish Tenant with a copy of the Offer. Tenant shall have the right within ninety (90) days after it receives such copy to match the financial terms of the Offer and agree in writing to match such terms of the Offer. Such writing shall be in the form of a contract substantially similar to the Offer but Tenant may assign its rights to a third party. If Tenant chooses not to exercise this right or fails to provide written notice to Landlord within the ninety (90) day period, Landlord may sell, convey, assign or transfer such property interest in or related to the Premises pursuant to the Offer, subject to the terms of this Agreement. If Landlord attempts to sell, convey, assign or transfer such property interest in or related to the Premises without complying with this Section 23, the sale, conveyance, assignment or transfer shall be void. Tenant shall not be responsible for any failure to make payments under this Agreement and reserves the right to hold payments due under this Agreement until Landlord complies with this Section 23. Tenant's failure to exercise the right of first refusal shall not be deemed a waiver of the rights contained in this Section 23 with respect to any future proposed conveyances as described herein.

24. **MISCELLANEOUS.**

(a) **Amendment/Waiver.** This Agreement cannot be amended, modified or revised unless done in writing and signed by Landlord and Tenant. No provision may be waived except in a writing signed by both parties. The failure by a party to enforce any provision of this Agreement or to require performance by the other party will not be construed to be a waiver, or in any way affect the right of either party to enforce such provision thereafter.

(b) **Memorandum/Short Form Lease.** Contemporaneously with the execution of this Agreement, the parties will execute a recordable Memorandum of Lease substantially in the form attached as **Exhibit 5**. Either party may record this Memorandum of Lease at any time during the Term, in its absolute discretion. Thereafter during the Term, either party will, at any time upon fifteen (15) business days' prior written notice from the other, execute, acknowledge and deliver to the other a recordable Memorandum of Lease.

(c) **Limitation of Liability.** Except for the indemnity obligations set forth in this Agreement, and otherwise notwithstanding anything to the contrary in this Agreement, Tenant and Landlord each waives any claims that each may have against the other with respect to consequential, incidental or special damages, however caused, based on any theory of liability.

(d) **Compliance with Law.** Tenant agrees to comply with all federal, state and local laws, orders, rules and regulations ("Laws") applicable to Tenant's use of the Communication Facility on the Property. Landlord agrees to comply with all Laws relating to Landlord's ownership and use of the Property and any improvements on the Property.

(e) **Bind and Benefit.** The terms and conditions contained in this Agreement will run with the Property and bind and inure to the benefit of the parties, their respective heirs, executors, administrators, successors and assigns.

(f) **Entire Agreement.** This Agreement and the exhibits attached hereto, all being a part hereof, constitute the entire agreement of the parties hereto and will supersede all prior offers, negotiations and agreements with respect to the subject matter of this Agreement. Exhibits are numbered to correspond to the Section wherein they are first referenced. Except as otherwise stated in this Agreement, each party shall bear its own fees and expenses (including the fees and expenses of its agents, brokers, representatives, attorneys, and accountants) incurred in connection with the negotiation, drafting, execution and performance of this Agreement and the transactions it contemplates.

(g) **Governing Law.** This Agreement will be governed by the laws of the state in which the Premises are located, without regard to conflicts of law.

(h) **Interpretation.** Unless otherwise specified, the following rules of construction and interpretation apply: (i) captions are for convenience and reference only and in no way define or limit the construction of the terms and conditions hereof; (ii) use of the term "including" will be interpreted to mean "including but not limited to"; (iii) whenever a party's consent is required under this Agreement, except as otherwise stated in the Agreement



or as same may be duplicative, such consent will not be unreasonably withheld, conditioned or delayed; (iv) exhibits are an integral part of this Agreement and are incorporated by reference into this Agreement; (v) use of the terms "termination" or "expiration" are interchangeable; (vi) reference to a default will take into consideration any applicable notice, grace and cure periods; (vii) to the extent there is any issue with respect to any alleged, perceived or actual ambiguity in this Agreement, the ambiguity shall not be resolved on the basis of who drafted the Agreement; (viii) the singular use of words includes the plural where appropriate; and (ix) if any provision of this Agreement is held invalid, illegal or unenforceable, the remaining provisions of this Agreement shall remain in full force if the overall purpose of the Agreement is not rendered impossible and the original purpose, intent or consideration is not materially impaired.

(i) **Affiliates.** All references to "Tenant" shall be deemed to include any Affiliate of Tillman Infrastructure LLC using the Premises for any Permitted Use or otherwise exercising the rights of Tenant pursuant to this Agreement. "Affiliate" means with respect to a party to this Agreement, any person or entity that (directly or indirectly) controls, is controlled by, or under common control with, that party. "Control" of a person or entity means the power (directly or indirectly) to direct the management or policies of that person or entity, whether through the ownership of voting securities, by contract, by agency or otherwise.

(j) **Survival.** Any provisions of this Agreement relating to indemnification shall survive the termination or expiration hereof. In addition, any terms and conditions contained in this Agreement that by their sense and context are intended to survive the termination or expiration of this Agreement shall so survive.

(k) **W-9.** As a condition precedent to payment, Landlord agrees to provide Tenant with a completed IRS Form W-9, or its equivalent, upon execution of this Agreement and at such other times as may be reasonably requested by Tenant, including any change in Landlord's name or address.

(l) **Execution/No Option.** The submission of this Agreement to any party for examination or consideration does not constitute an offer, reservation of or option for the Premises based on the terms set forth herein. This Agreement will become effective as a binding Agreement only upon the handwritten legal execution, acknowledgment and delivery hereof by Landlord and Tenant. This Agreement may be executed in two (2) or more counterparts, all of which shall be considered one and the same agreement and shall become effective when one or more counterparts have been signed by each of the parties. All parties need not sign the same counterpart.

(m) **Attorneys' Fees.** In the event that any dispute between the parties related to this Agreement should result in litigation, the prevailing party in such litigation shall be entitled to recover from the other party all reasonable fees and expenses of enforcing any right of the prevailing party, including reasonable attorneys' fees and expenses. Prevailing party means the party determined by the court to have most nearly prevailed even if such party did not prevail in all matters. This provision will not be construed to entitle any party other than Landlord, Tenant and their respective Affiliates to recover their fees and expenses.

(n) **WAIVER OF JURY TRIAL. EACH PARTY, TO THE EXTENT PERMITTED BY LAW, KNOWINGLY, VOLUNTARILY AND INTENTIONALLY WAIVES ITS RIGHT TO A TRIAL BY JURY IN ANY ACTION OR PROCEEDING UNDER ANY THEORY OF LIABILITY ARISING OUT OF OR IN ANY WAY CONNECTED WITH THIS AGREEMENT OR THE TRANSACTIONS IT CONTEMPLATES.**

(o) **Incidental Fees.** Unless specified in this Agreement, no unilateral fees or additional costs or expenses are to be applied by either party to the other party, including review of plans, structural analyses, consents, provision of documents or other communications between the parties.

(p) **Further Acts.** Upon request, Landlord will cause to be promptly and duly taken, executed, acknowledged and delivered all such further acts, documents, and assurances as Tenant may request from time to time in order to effectuate, carry out and perform all of the terms, provisions and conditions of this Agreement and all transactions and permitted use contemplated by this Agreement, including any Subordination, Non-Disturbance and Attornment Agreement.

(q) **Confidentiality.** The terms and conditions of this Agreement are confidential between the parties and Landlord shall not disclose the same to anyone else, except to Landlord's accountant, attorney and as agreed to by the Parties (except as to sublessees), or as is necessary to effectuate the terms of this Agreement. Any Disclosure in violation of this Section shall be deemed a material breach of this Agreement.

(r) **Estoppel.** Either party will, at any time upon twenty (20) business days prior written notice from the other, execute, acknowledge and deliver to the other a statement in writing (i) certifying that this



Agreement is unmodified and in full force and effect (or, if modified, stating the nature of such modification and certifying this Agreement, as so modified, is in full force and effect) and the date to which the Rent and other charges are paid in advance, if any, and (ii) acknowledging that there are not, to such party's knowledge, any uncured defaults on the part of the other party hereunder, or specifying such defaults if any are claimed.

(s) **Rules Against Perpetuities.** If this Agreement or any covenants or provisions herein would otherwise be unlawful, void or voidable for violation of the Rule against Perpetuities, then the same shall continue until 20 years and 6 months after the date of death of the last survivor of the members of Congress of the United States of America (including the House of Representatives and the Senate) representing the State in which the Premises is located who are serving on the date of this Agreement

(t) **Security Interest.** Tenant has the right to assign, mortgage or grant a security interest in all or a portion of Tenant's interest in and to this Agreement, Premises, the Structure, Communication Facility, equipment and Easements, and may assign such Tenant's interests to any such assignee, mortgagees, or holders of security interests, all without Landlord's consent ("Secured Party" or, collectively, "Secured Parties"). If requested, Lessor shall execute such consent to Tenant's financing as may reasonably be required by Secured Parties.

[SIGNATURE PAGES TO FOLLOW]

IN WITNESS WHEREOF, the parties have caused this Agreement to be effective as of the Effective Date.

“WITNESSES”

[Signature]  
Name: MICHAEL D. RUMPF  
[Signature]  
Name: Susan M. Gaertner

“LANDLORD”

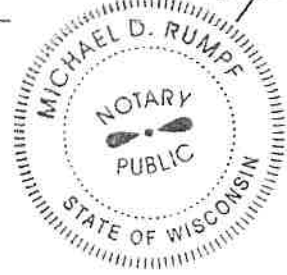
By: [Signature]  
Print Name: Randy Ray Knickmeier  
Its:  
Date: Jan 14, 2019

INDIVIDUAL ACKNOWLEDGMENT

STATE OF WISCONSIN )  
COUNTY OF DANE ) ss:

BE IT REMEMBERED, that on this 14 day of Jan, 2019 before me, the subscriber, a person authorized to take oaths in the State of Wisconsin, personally appeared Randy Ray Knickmeier who, being duly sworn on his/her/their oath, deposed and made proof to my satisfaction that he/she/they is/are the person(s) named in the within instrument; and I, having first made known to him/her/them the contents thereof, he/she/they did acknowledge that he/she/they signed, sealed and delivered the same as his/her/their voluntary act and deed for the purposes therein contained.

[Signature]  
Notary Public: State of Wisconsin  
My Commission Expires: 15 permanent



IN WITNESS WHEREOF, the parties have caused this Agreement to be effective as of the Effective Date.

**“WITNESSES”**

\_\_\_\_\_  
Name: \_\_\_\_\_

\_\_\_\_\_  
Name: \_\_\_\_\_

**“TENANT”**

**TILLMAN INFRASTRUCTURE LLC,**  
a Delaware limited liability company

By: \_\_\_\_\_

Name: \_\_\_\_\_

Its: \_\_\_\_\_

Date: \_\_\_\_\_

STATE OF NEW YORK

)

COUNTY OF NEW YORK

) ss.

)

On the \_\_\_\_ day of \_\_\_\_\_ in the year of 2018, before me, the undersigned, a Notary Public in and for said state, personally appeared \_\_\_\_\_, Authorized Signatory of Tillman Infrastructure LLC, a Delaware limited liability company, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the individual or the entity upon behalf of which the individual acted, executed the instrument.

WITNESS my hand and official seal.

Signature: \_\_\_\_\_

My Commission Expires: \_\_\_\_\_

Commission Number: \_\_\_\_\_

**Exhibit 1**

**Description of the Premises & Access and Utility Easements:**

Page 1 of 2

to the Option and Lease Agreement dated Jan, 2019, by and between Randy Ray Knickmeier, an unmarried person, as Landlord, and Tillman Infrastructure LLC, a Delaware limited liability company, having an address at 152 West 57th Street, New York, New York 10019 as Tenant.

The Property is legally described as follows:

An interest in land, said interest being over a portion of the following described parent parcel:

Part of the West ½ of the NW ¼ of Section 4, T5N, R12E, Town of Albion, Dane County, Wisconsin more fully described as follows:

Commencing at the NW corner of Section 4, T5N, R12E; thence S 03°-18'-25" E, 310.70 feet to the point of beginning of this description; thence N 86°-41'-35" E, 33.00 feet; thence along a curve to the right which has a radius of 268.60 feet and a long chord that bears N42°-32'-39" E, 385.46 feet; thence N 88°-23'-44" E, 67.08 feet; thence S 01°-32'-54" E, 25.18 feet; thence South 86°-58'-27" E, 250.80 feet; thence N88°-27'-06" E, 412.33 feet; thence along a curve to the right which has a radius of 11,349.19 feet and a long chord that bears S 18°-58'-48" E, 1039.95 feet; thence S 03°-24'-17" E, 432.69 feet; thence S 88°-23'-44" W, 1319.53 feet; thence N03°-18'-25" W, 1193.77 feet to the point of beginning. This parcel contains 40.000 acres of which 0.905 acres is within road right of way. EXCEPTING THEREFROM, Lot One (1) Certified Survey Map 6327, recorded as document number 2247285, Town of Albion, Dane County, Wisconsin.

Tax Parcel No. 002/0512-042-9020-3





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**EXHIBIT 2**

**SUBORDINATION, NON-DISTURBANCE AND ATTORNMENT AGREEMENT**

**(FOLLOWS ON THE NEXT PAGE)**

Prepared by and Return to:

Chris Mularadelis  
Tillman Infrastructure LLC  
152 W 57<sup>th</sup> Street  
New York, New York 10019  
Site No. \_\_\_\_\_

Fixed Asset No. 14578377

Market: North

Cell Site Number: \_\_\_\_\_

Cell Site Name: \_\_\_\_\_

### SUBORDINATION, NON-DISTURBANCE AND ATTORNMENT AGREEMENT

**THIS SUBORDINATION, NON-DISTURBANCE AND ATTORNMENT AGREEMENT** ("Agreement"), dated as of the date below, between Badgerland Financial, FLCA having its principal office at 315 Broadway, Baraboo, WI 53913-0069, (hereinafter called "Mortgagee") and Randy Ray Knickmeier, an unmarried person, having its principal office/residing at 1481 County Highway W. Stoughton, WI 53589 (hereinafter called "Landlord"), and Tillman Infrastructure LLC, a Delaware limited liability company, having an address at 152 West 57<sup>th</sup> Street, New York, New York 10019 (hereinafter called "Tenant").

#### WITNESSETH:

*Jan 14* **WHEREAS**, Tenant has entered into a certain Option and Lease Agreement dated *2019*, (the "Lease") with Landlord, covering property more fully described in **Exhibit 1** attached hereto and made a part hereof (the leasehold premises along with the access and utility easement are collectively referred to as the "Premises"); and

**WHEREAS**, Landlord has given to Mortgagee a mortgage and other related collateral documents (collectively the "Mortgage") upon property having a Tax Parcel No. of 002/0512-042-9020-3 being identified as Part of the West 1/2 of the NW 1/4 of Section 4, T5N, R12E, Town of Albion, County of Dane, State of Wisconsin, ("Property"), a part of which Property contains the Premises; and

**WHEREAS**, the Mortgage on the Property is in the original principal sum of Six Hundred and Thirteen Thousand (\$613,000.00) Dollars, which Mortgage has been recorded in Instrument No. 4729897 for Dane County, Wisconsin; and

**WHEREAS**, Tenant desires to be assured of continued occupancy of the Premises under the terms of the Lease and subject to the terms of this Agreement.

**NOW, THEREFORE**, in consideration of the mutual promises, covenants and agreements herein contained, the receipt and sufficiency of which are hereby acknowledged, the parties hereto, intending to be legally bound hereby, agree as follows:

1. So long as this Agreement will remain in full force and effect, the Lease is and will be subject and subordinate to the lien and effect of the Mortgage insofar as it affects the real property and fixtures of which the Premises forms a part (but not Tenant's trade fixtures and other personal property), and to all renewals, modifications, consolidations, replacements and extensions thereof, to the full extent of the principal sum secured

thereby and interest thereon, with the same force and effect as if the Mortgage had been executed, delivered, and duly recorded among the above-mentioned public records, prior to the execution and delivery of the Lease.

2. In the event Mortgagee takes possession of the Premises as mortgagee-in-possession, including but not limited to, by deed in lieu of foreclosure or foreclosure of the Mortgage, Mortgagee agrees not to affect or disturb Tenant's right to possession of the Premises and any of Tenant's other rights under the Lease in the exercise of Mortgagee's rights so long as Tenant is not then in default, after applicable notice and/or grace periods, under any of the terms, covenants, or conditions of the Lease.

3. In the event that Mortgagee succeeds to the interest of Landlord or other landlord under the Lease and/or to title to the Premises, Mortgagee and Tenant hereby agree to be bound to one another under all of the terms, covenants and conditions of the Lease; accordingly, from and after such event, Mortgagee and Tenant will have the same remedies against one another for the breach of an agreement contained in the Lease as Tenant and Landlord had before Mortgagee succeeded to the interest of Landlord; provided, however, that Mortgagee will not be:

- (a) personally liable for any act or omission of any prior landlord (including Landlord); or
- (b) bound by any rent or additional rent which Tenant might have paid for more than the payment period as set forth under the Lease (one month, year etc.) in advance to any prior landlord (including Landlord).

4. In the event that Mortgagee or anyone else acquires title to or the right to possession of the Premises upon the foreclosure of the Mortgage, or upon the sale of the Premises by Mortgagee or its successors or assigns after foreclosure or acquisition of title in lieu thereof or otherwise, Tenant agrees not to seek to terminate the Lease by reason thereof, but will remain bound unto the new owner so long as the new owner is bound to Tenant (subject to paragraph 3 above) under all of the terms, covenants and conditions of the Lease.

5. Mortgagee understands, acknowledges and agrees that notwithstanding anything to the contrary contained in the Mortgage and/or any related financing documents, including, without limitation, any UCC-1 financing statements, Mortgagee will acquire no interest in any furniture, equipment, trade fixtures and/or other property installed by Tenant on the Property. Mortgagee hereby expressly waives any interest which Mortgagee may have or acquire with respect to such furniture, equipment, trade fixtures and/or other property of Tenant now, or hereafter, located on or affixed to the Property or any portion thereof and Mortgagee hereby agrees that same do not constitute realty regardless of the manner in which same are attached or affixed to the Property.

6. This Agreement will be binding upon and will extend to and benefit the successors and assigns of the parties hereto and to any assignees or subtenants of Tenant which are permitted under the Lease. The term "Mortgagee", when used in this Agreement will be deemed to include any person or entity which acquires title to or the right to possession of the Premises by, through or under Mortgagee and/or the Mortgage, whether directly or indirectly.

7. This Agreement will be governed by the laws of the state in which the Premises are located, without regard to conflicts of law.

8. This Agreement may be executed in any number of counterparts, each of which shall, when executed, be deemed to be an original and all of which shall be deemed to be one and the same instrument.

[Signature Pages Follows]

IN WITNESS WHEREOF, the undersigned has caused this Agreement to be executed as of the last signature date below.

**WITNESSES:**

[Signature]  
Name: MICHAEL D. RUMPF

[Signature]  
Name: Susan M. Gaertner

**LANDLORD:**

\_\_\_\_\_  
An unmarried person

By: [Signature]  
Name: Randy Ray Knickmeier

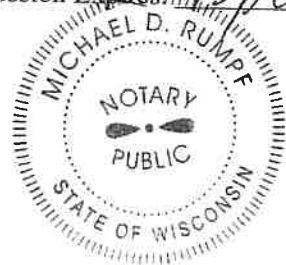
Title: \_\_\_\_\_  
Date: 1/14/19

**LANDLORD (INDIVIDUAL)**

STATE OF Wisconsin )  
COUNTY OF DANE ) ss

The foregoing instrument was acknowledged before me this 14 day of Jan., 2019, by Randy Ray Knickmeier, (  ) who is personally known to me OR (  ) who has produced \_\_\_\_\_ as identification.

[Signature]  
Notary Public  
My Commission Expires: 15 permanent





IN WITNESS WHEREOF, the undersigned has caused this Agreement to be executed as of the last signature date below.

**WITNESSES:**

Name: \_\_\_\_\_

Name: \_\_\_\_\_

**TENANT:**

Tillman Infrastructure LLC, a Delaware limited liability company

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**TENANT ACKNOWLEDGMENT**

STATE OF NEW YORK )  
 ) ss.  
COUNTY OF NEW YORK )

On the \_\_\_\_ day of \_\_\_\_\_ in the year of 2018, before me, the undersigned, a Notary Public in and for said state, personally appeared \_\_\_\_\_, Authorized Signatory of Tillman Infrastructure LLC, a Delaware limited liability company, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the individual or the entity upon behalf of which the individual acted, executed the instrument.

WITNESS my hand and official seal.

Signature: \_\_\_\_\_

My Commission Expires: \_\_\_\_\_

Commission Number: \_\_\_\_\_

IN WITNESS WHEREOF, the undersigned has caused this Agreement to be executed as of the last signature date below.

**WITNESSES:**

**MORTGAGEE:**

Name: \_\_\_\_\_

\_\_\_\_\_

a \_\_\_\_\_

Name: \_\_\_\_\_

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**MORTGAGEE (CORPORATION)**

STATE OF \_\_\_\_\_ )

COUNTY OF \_\_\_\_\_ ) ss

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_  
by \_\_\_\_\_ [name of representative] the  
\_\_\_\_\_ [title] of \_\_\_\_\_ [name of banking  
institution], a \_\_\_\_\_ corporation on behalf of the corporation ( ) who is personally known  
OR ( ) who produced \_\_\_\_\_ as identification.

\_\_\_\_\_  
Notary Public

My Commission Expires: \_\_\_\_\_

**EXHIBIT 1**

**DESCRIPTION OF PREMISES**

The Property is legally described as follows:

An interest in land, said interest being over a portion of the following described parent parcel:

Part of the West  $\frac{1}{2}$  of the NW  $\frac{1}{4}$  of Section 4, T5N, R12E, Town of Albion, Dane County, Wisconsin more fully described as follows:

Commencing at the NW corner of Section 4, T5N, R12E; thence S 03°-18'-25" E, 310.70 feet to the point of beginning of this description; thence N 86°-41'-35" E, 33.00 feet; thence along a curve to the right which has a radius of 268.60 feet and a long chord that bears N42°-32'-39"E, 385.46 feet; thence N 88°-23'-44" E, 67.08 feet; thence S 01°-32'-54" E, 25.18 feet; thence South 86°-58'-27" E, 250.80 feet; thence N88°-27'-06" E, 412.33 feet; thence along a curve to the right which has a radius of 11,349.19 feet and a long chord that bears S 18°-58'-48" E, 1039.95 feet; thence S 03°-24'-17" E, 432.69 feet; thence S 88°-23'-44" W, 1319.53 feet; thence N03°-18'-25" W, 1193.77 feet to the point of beginning. This parcel contains 40.000 acres of which 0.905 acres is within road right of way. EXCEPTING THEREFROM, Lot One (1) Certified Survey Map 6327, recorded as document number 2247285, Town of Albion, Dane County, Wisconsin.

Tax Parcel No. 002/0512-042-9020-3



**EXHIBIT 3**

**ENVIRONMENTAL DISCLOSURE**

Landlord represents and warrants that the Property, as of the Effective Date, is free of hazardous substances except as follows:

[INSERT AS APPLICABLE]



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**EXHIBIT 4**

**STANDARD ACCESS LETTER**

**[FOLLOWS ON NEXT PAGE]**

DATE

Building Staff / Security Staff  
Landlord, Lessee, Licensee  
Parcel ID-51204290203  
Albion, WI 53523

Re: Authorized Access granted to Tillman Infrastructure LLC

Dear Building and Security Staff,

Please be advised that we have signed a lease with Tillman Infrastructure LLC permitting Tillman Infrastructure LLC to install, operate and maintain telecommunications equipment at the property. The terms of the lease grant Tillman Infrastructure LLC and its representatives, employees, agents and subcontractors ("representatives") 24 hour per day, 7 day per week access to the leased area.

To avoid impact on telephone service during the day, Tillman Infrastructure LLC representatives may be seeking access to the property outside of normal business hours. Tillman Infrastructure LLC representatives have been instructed to keep noise levels at a minimum during their visit.

Please grant the bearer of a copy of this letter access to the property and to leased area. Thank you for your assistance.

  
Landlord Signature

Prepared by and return to:

Chris Mularadelis  
Tillman Infrastructure LLC  
152 W 57<sup>th</sup> Street  
New York, New York 10019  
Site No. 11895

Fixed Asset No. \_\_\_\_\_  
Market: North  
Cell Site Number: \_\_\_\_\_  
Cell Site Name: \_\_\_\_\_

**MEMORANDUM  
OF  
LEASE**

This Memorandum of Lease is entered into on this 14 day of Jan, 2019, by and between Randy Ray Knickmeier, an unmarried person, having a mailing address of 1481 County Highway W., Stoughton, WI 53589 (hereinafter referred to as "**Landlord**") and Tillman Infrastructure LLC, a Delaware limited liability company, having an address at 152 W. 57<sup>th</sup> Street, New York, New York 10019 (hereinafter referred to as "**Tenant**").


1. Landlord and Tenant entered into a certain Option and Lease Agreement ("**Agreement**") on the \_\_\_\_\_ day of Jan, 2019, for the purpose of installing, operating and maintaining a communication facility and other improvements. All of the foregoing is set forth in the Agreement, concerning real property located at Tax Parcel No. 002/0512-042-9020-3 Town of Albion, County of Dane, State of Wisconsin (the "**Real Property**"), and as is more particularly described on **Exhibit 1** hereto
2. Tenant exercised the option pursuant to the Option and Lease Agreement and the initial lease term will be Ten (10) years commencing on the effective date of written notification by Tenant to Landlord of Tenant's exercise of its option, with Sixteen (16) successive automatic Five (5) year options to renew.
3. The portion of the Property being leased to Tenant and associated access and utility easements are described in **Exhibit 2** annexed hereto.
4. The Agreement gives Tenant a right of first refusal in the event Landlord receives a bona fide written offer from a third party seeking any sale, conveyance, assignment or transfer, whether in whole or in part, of any property interest in or related to the Premises, including without limitation any offer seeking an assignment or transfer of the Rent payments associated with the Agreement or an offer to purchase an easement with respect to the Premises.
5. This Memorandum of Lease is not intended to amend or modify, and shall not be deemed or construed as amending or modifying, any of the terms, conditions or provisions of the

- 
5. This Memorandum of Lease is not intended to amend or modify, and shall not be deemed or construed as amending or modifying, any of the terms, conditions or provisions of the Agreement, all of which are hereby ratified and affirmed. In the event of a conflict between the provisions of this Memorandum of Lease and the provisions of the Agreement, the provisions of the Agreement shall control. The Agreement shall be binding upon and inure to the benefit of the parties and their respective heirs, successors, and assigns, subject to the provisions of the Agreement.
  6. This Agreement may be signed executed in any number of Counterparts, each of which shall, when executed, be deemed to be an original and all of which shall be deemed to be one and the same instrument.

-SIGNATURE PAGE TO FOLLOW-

IN WITNESS WHEREOF, the parties have executed this Memorandum of Lease as of the day and year first above written.

**"WITNESSES"**

  
Name: MICHAEL D. RUMP

Susan M. Gaertner  
Name: Susan M. Gaertner

\_\_\_\_\_  
Name: \_\_\_\_\_

\_\_\_\_\_  
Name: \_\_\_\_\_

**"LANDLORD"**

\_\_\_\_\_  
By: Randy R. Knickmeier  
Print Name: Randy Ray Knickmeier  
Its: \_\_\_\_\_  
Date: 1/14/19

**"TENANT"**

**TILLMAN INFRASTRUCTURE LLC,**  
a Delaware limited liability company

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Its: \_\_\_\_\_  
Date: \_\_\_\_\_

[ACKNOWLEDGMENTS APPEAR ON NEXT PAGE]



**TENANT ACKNOWLEDGMENT**

STATE OF NEW YORK )  
 ) ss.  
COUNTY OF NEW YORK )

On the \_\_\_ day of \_\_\_\_\_ in the year of 2018, before me, the undersigned, a Notary Public in and for said state, personally appeared \_\_\_\_\_, Authorized Signatory of Tillman Infrastructure LLC, a Delaware limited liability company, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the individual or the entity upon behalf of which the individual acted, executed the instrument.

WITNESS my hand and official seal.

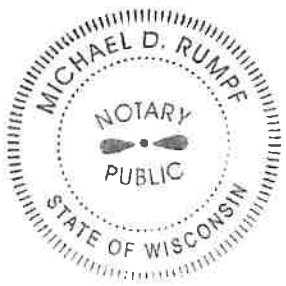
Signature: \_\_\_\_\_  
My Commission Expires: \_\_\_\_\_  
Commission Number: \_\_\_\_\_

**LANDLORD ACKNOWLEDGMENT**

STATE OF Wisconsin )  
 ) ss.  
COUNTY OF DANE )

The foregoing instrument was acknowledged before me this 14 day of Jan, 2019, by Randy Ray Knickmeier, (  ) who is personally known to me OR (  ) who has produced \_\_\_\_\_ as identification.

*[Signature]*  
Notary Public  
My Commission Expires: 15 February  
WITNESS my hand and official seal.



**EXHIBIT 1**

**Description of Real Property**

An interest in land, said interest being over a portion of the following described parent parcel:

Part of the West  $\frac{1}{2}$  of the NW  $\frac{1}{4}$  of Section 4, T5N, R12E, Town of Albion, Dane County, Wisconsin more fully described as follows:

Commencing at the NW corner of Section 4, T5N, R12E; thence S 03°-18'-25" E, 310.70 feet to the point of beginning of this description; thence N 86°-41'-35" E, 33.00 feet; thence along a curve to the right which has a radius of 268.60 feet and a long chord that bears N42°-32'-39"E, 385.46 feet; thence N 88°-23'-44" E, 67.08 feet; thence S 01°-32'-54" E, 25.18 feet; thence South 86°-58'-27" E, 250.80 feet; thence N88°-27'-06" E, 412.33 feet; thence along a curve to the right which has a radius of 11,349.19 feet and a long chord that bears S 18°-58'-48" E, 1039.95 feet; thence S 03°-24'-17" E, 432.69 feet; thence S 88°-23'-44" W, 1319.53 feet; thence N03°-18'-25" W, 1193.77 feet to the point of beginning. This parcel contains 40.000 acres of which 0.905 acres is within road right of way. EXCEPTING THEREFROM, Lot One (1) Certified Survey Map 6327, recorded as document number 2247285, Town of Albion, Dane County, Wisconsin.

Tax Parcel No. 002/0512-042-9020-3

Exhibit 2

DESCRIPTION OF PREMISES AND ACCESS AND UTILITY EASEMENT

Page 1 of 1

to the Memorandum of Lease dated Jan, 2019, by and between Randy Ray Knickmeier, an unmarried person, as Landlord, and Tillman Infrastructure LLC, a Delaware limited liability company, as Tenant.

The Property is legally described as follows:

An interest in land, said interest being over a portion of the following described parent parcel:

Part of the West  $\frac{1}{2}$  of the NW  $\frac{1}{4}$  of Section 4, T5N, R12E, Town of Albion, Dane County, Wisconsin more fully described as follows:

Commencing at the NW corner of Section 4, T5N, R12E; thence S 03°-18'-25" E, 310.70 feet to the point of beginning of this description; thence N 86°-41'-35" E, 33.00 feet; thence along a curve to the right which has a radius of 268.60 feet and a long chord that bears N42°-32'-39"E, 385.46 feet; thence N 88°-23'-44" E, 67.08 feet; thence S 01°-32'-54" E, 25.18 feet; thence South 86°-58'-27" E, 250.80 feet; thence N88°-27'-06" E, 412.33 feet; thence along a curve to the right which has a radius of 11,349.19 feet and a long chord that bears S 18°-58'-48" E, 1039.95 feet; thence S 03°-24'-17" E, 432.69 feet; thence S 88°-23'-44" W, 1319.53 feet; thence N03°-18'-25" W, 1193.77 feet to the point of beginning. This parcel contains 40.000 acres of which 0.905 acres is within road right of way. EXCEPTING THEREFROM, Lot One (1) Certified Survey Map 6327, recorded as document number 2247285, Town of Albion, Dane County, Wisconsin.

Tax Parcel No. 002/0512-042-9020-3

FNF file No: \_\_\_\_\_  
Customer Reference: \_\_\_\_\_

**AFFIDAVIT OF NOTARY**

I, Michael D. Rumpf (please print name as commissioned), the undersigned Notary Public, do hereby affirm and attest to Fidelity National Title Insurance Company one of the following (please check one) is an accurate statement:

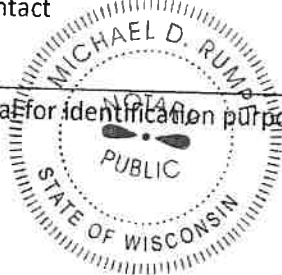
- I am a Bancserv notary (and by checking this box I certify I was assigned by Bancserv for this notary service); or
- I am an FNF-approved notary on the FNTG Field Compliance Approved Third Party list; or
- I am a licensed attorney or a notary working under the supervision of a licensed attorney. Insert lawyer or law firm:  
Michael D. Rumpf, Rumpf Law Office, S.C.; or
- I am a notary working in a bank or credit union (this option is only applicable for notaries at banks {FDIC insured} and credit unions {NCUA insured} and is not applicable for notaries at mortgage companies or mortgage brokers).

Bank or credit union name: \_\_\_\_\_  
Bank/credit union employee title: \_\_\_\_\_  
Branch name or street address: \_\_\_\_\_  
Telephone number of bank or credit union: \_\_\_\_\_

1/14/19  
Date

[Signature]  
Notary Public signature  
(608) 423-3254  
Telephone contact

Notary # or Seal for identification purposes



# Topographical Map

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# Photographic Simulations

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SHEET TITLE: PHOTO RENDERING/SIMULATION LOCATION MAP
PROJECT TITLE: KNICKMEIER FARMS (TI-OPP-1   895-C)
PROJECT NUMBER: 42278
PROJECT LOCATION: PID: 05   204290203, ALBION, WI 53534 (DANE COUNTY)

**TILLMAN**  
INFRASTRUCTURE  
LCC  
TELECOM SERVICES

**RAMAKER & ASSOCIATES, INC.**  
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608-643-4100 [www.Ramaker.com](http://www.Ramaker.com)  
Sauk City, WI • Willmar, MN  
Woodcliff Lake, NJ • Bayamon, PR



SHEET TITLE:  
PHOTO FROM TOWER - LOOKING NORTH



PROJECT TITLE:  
KNICKMEIER FARMS (TI-OPP-1 | 895-C)

PROJECT NUMBER:  
42278

PROJECT LOCATION:  
PID: 05 | 204290203, ALBION, WI 53534 (DANE COUNTY)

**TILLMAN**  
**INFRASTRUCTURE**

**L C C**  
TELECOM SERVICES

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SHEET TITLE:  
PHOTO FROM TOWER - LOOKING EAST



PROJECT TITLE:  
KNICKMEIER FARMS (TI-OPP-1 | 895-C)

PROJECT NUMBER:  
42278

PROJECT LOCATION:  
PID: 05 | 204290203, ALBION, WI 53534 (DANE COUNTY)

**TILLMAN**  
**INFRASTRUCTURE**

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SHEET TITLE:  
PHOTO FROM TOWER - LOOKING SOUTH

PROJECT TITLE:  
KNICKMEIER FARMS (TI-OPP-1 | 895-C)

PROJECT NUMBER:  
42278

PROJECT LOCATION:  
PID: 05 | 204290203, ALBION, WI 53534 (DANE COUNTY)



**TILLMAN**  
**INFRASTRUCTURE**

**L C C**  
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SHEET TITLE: PHOTO FROM TOWER - LOOKING WEST	
PROJECT TITLE: KNICKMEIER FARMS (TI-OPP-1   895-C)	
PROJECT NUMBER: 42278	
PROJECT LOCATION: PID: 05   204290203, ALBION, WI 53534 (DANE COUNTY)	

**TILLMAN**  
**INFRASTRUCTURE**  
**L C C**  
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SHEET TITLE:  
BEFORE PHOTO RENDERING/SIMULATION - LOOKING NORTH



PROJECT TITLE:  
KNICKMEIER FARMS (TI-OPP-1 | 895-C)

PROJECT NUMBER:  
42278

PROJECT LOCATION:  
PID: 05 | 204290203, ALBION, WI 53534 (DANE COUNTY)

**TILLMAN**  
**INFRASTRUCTURE**

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Woodcliff Lake, NJ • Bayamon, PR





SHEET TITLE:  
AFTER PHOTO RENDERING/SIMULATION - LOOKING NORTH



PROJECT TITLE:  
KNICKMEIER FARMS (TI-OPP-1 | 895-C)

PROJECT NUMBER:  
42278

PROJECT LOCATION:  
PID: 05 | 204290203, ALBION, WI 53534 (DANE COUNTY)

**TILLMAN**  
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Woodcliff Lake, NJ • Bayamon, PR



SHEET TITLE:  
BEFORE PHOTO RENDERING/SIMULATION - LOOKING EAST



PROJECT TITLE:  
KNICKMEIER FARMS (TI-OPP-1 | 895-C)

PROJECT NUMBER:  
42278

PROJECT LOCATION:  
PID: 05 | 204290203, ALBION, WI 53534 (DANE COUNTY)

**TILLMAN**  
**INFRASTRUCTURE**

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SHEET TITLE:  
AFTER PHOTO RENDERING/SIMULATION - LOOKING EAST



PROJECT TITLE:  
KNICKMEIER FARMS (TI-OPP-1 | 895-C)

PROJECT NUMBER:  
42278

PROJECT LOCATION:  
PID: 05 | 204290203, ALBION, WI 53534 (DANE COUNTY)

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SHEET TITLE:  
BEFORE PHOTO RENDERING/SIMULATION - LOOKING SOUTH



PROJECT TITLE:  
KNICKMEIER FARMS (TI-OPP-1 | 895-C)

PROJECT NUMBER:  
42278

PROJECT LOCATION:  
PID: 05 | 204290203, ALBION, WI 53534 (DANE COUNTY)

**TILLMAN**  
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SHEET TITLE:  
AFTER PHOTO RENDERING/SIMULATION - LOOKING SOUTH



PROJECT TITLE:  
KNICKMEIER FARMS (TI-OPP-1 | 895-C)

PROJECT NUMBER:  
42278

PROJECT LOCATION:  
PID: 05 | 204290203, ALBION, WI 53534 (DANE COUNTY)

**TILLMAN**  
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SHEET TITLE:  
BEFORE PHOTO RENDERING/SIMULATION - LOOKING WEST



PROJECT TITLE:  
KNICKMEIER FARMS (TI-OPP-1 1895-C)

PROJECT NUMBER:  
42278

PROJECT LOCATION:  
PID: 051204290203, ALBION, WI 53534 (DANE COUNTY)

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**INFRASTRUCTURE**

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SHEET TITLE:  
AFTER PHOTO RENDERING/SIMULATION - LOOKING WEST

PROJECT TITLE:  
KNICKMEIER FARMS (TI-OPP-1 | 895-C)

PROJECT NUMBER:  
42278

PROJECT LOCATION:  
PID: 05 | 204290203, ALBION, WI 53534 (DANE COUNTY)



**TILLMAN**  
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# Airport Notification

---





10700 W. Higgins Rd., Ste. 240,  
 Rosemont, IL 60018  
 847 608-6300 Office  
 847 608-1299 Fax  
 www.lcctelecom.com

5/30/19

Wisersky Airport  
 1458 Kaase Rd  
 Stoughton, WI 53589  
 (608) 873-0242

Dear Airport Manager,

In accordance with the Dane County Zoning Code we are notifying you of Tillman Infrastructure Inc. proposed tower to be applied for zoning review for a 250' self-support tower to be located at:  
 PID: 051204290203  
 ALBION, WI 53534 DANE COUNTY

With coordinates of:  
 LATITUDE: 42.9338114  
 LONGITUDE: -89.0900081

Please find attached the FAA determination for this site along with a survey and aerial map showing the location and compound layout.

Please do not hesitate to contact me with any questions about this proposal.

*John Wallace*  
 Thank you,  
 John Wallace  
 Project Manager  
 Cell: 312-961-0559

SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. ■ Print your name and address on the reverse so that we can return the card to you. ■ Attach this card to the back of the mailpiece, or on the front if space permits.		A. Signature <i>DAVID WISERSKY</i> <input type="checkbox"/> Agent <input checked="" type="checkbox"/> Addressee B. Received by (Printed Name) _____ C. Date of Delivery _____	
1. Article Addressed to: <i>WISERSKY AIRPORT-MGR.            1458 Kaase Rd.            Stoughton, WI 53589</i>		D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If YES, enter delivery address below: _____	
2. Article Number (Transfer from service label)		3. Service Type <input type="checkbox"/> Certified Mail® <input type="checkbox"/> Priority Mail Express™ <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> Collect on Delivery	
4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		7014 3490 0000 7137 3104	



10700 W. Higgins Rd., Ste. 240,  
Rosemont, IL 60018  
847 608-6300 Office  
847 608-1299 Fax  
www.lcc telecom.com

5/30/19

Jana Airport-58C  
406 Highway St.  
Edgerton, WI 53534

Dear Airport Manager,

In accordance with the Dane County Zoning Code we are notifying you of Tillman Infrastructure Inc. proposed tower to be applied for zoning review for a 250' self-support tower to be located at:

PID: 051204290203  
ALBION, WI 53534 DANE COUNTY

With coordinates of:  
LATITUDE: 42.9338114  
LONGITUDE: -89.0900081

Please find attached the FAA determination for this site along with a survey and aerial map showing the location and compound layout.

Please do not hesitate to contact me with any questions about this proposal.

*John Wallace*

Thank you,  
John Wallace  
Project Manager  
Cell: 312-961-0559

SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none"> <li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>		A. Signature <b>X</b> <i>Donald Becker</i>	<input type="checkbox"/> Agent <input type="checkbox"/> Addressee
1. Article Addressed to:  <i>JANA AIRPORT - MER. 406 Highway St. Edgerton, WI 53534</i>		B. Received by (Printed Name) <i>Donald Becker</i>	C. Date of Delivery <i>6-1-19</i>
		D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No	
		3. Service Type <input type="checkbox"/> Certified Mail® <input type="checkbox"/> Priority Mail Express™ <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> Collect on Delivery	
		4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes	
2. Article Number (Transfer from service label)		7014 3490 0000 7137 3111	

# Carrier Notification

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June 4, 2019

**VIA CERTIFIED U.S. MAIL**

COACHMANS INN ENTERPRISES INC  
984 CTY HWY A  
Edgerton, WI 53534

Re: Proposed Colocation Site – New 260' self-support lattice tower at Tax Parcel No. 002/0512-042-9020-3 Albion, WI 53534

To Whom It May Concern,

The purpose of this letter is to provide COACHMANS INN ENTERPRISES INC, with a new colocation opportunity for a tower at Tax Parcel No. 002/0512-042-9020-3 Albion, WI 53534; Coordinates 42.9338114, -89.0900081; Elevation 943' AMSL. Currently, the tower is in development and a zoning application will be filed shortly. Due to zoning requirements, we have sent this letter certified.

Please feel free to reach out to Brian Robinson in our Business Development Office, copied below.

Best regards,

Tom Crisci  
IL/WI Project Manager

Cc: Brian Robinson  
Business Development  
Tillman Infrastructure LLC  
25 NW Point Blvd, Ste 525  
Suite 375  
Elk Grove Village, IL 60007  
Mobile: 773.343.1442

7014 3490 0000 7137 2190

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<b>Total</b>		

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Street or PO \_\_\_\_\_  
City, \_\_\_\_\_

Coachmans Inn Enterprises Inc.  
984 CTY Hwy. A  
Edgerton, WI 53534

Postmark Here  
JUN 11 2019

PS Form 3800, July 2014 See Reverse for Instructions

152 West 57<sup>th</sup> Street, 27<sup>th</sup> Floor  
New York, NY 10019



June 4, 2019

**VIA CERTIFIED U.S. MAIL**

MADISON SMSA LIMITED PARTNERSHIP  
208 S Akard St RM 1015  
Dallas, Texas 75202

Re: Proposed Colocation Site – New 260' self-support lattice tower at Tax Parcel No. 002/0512-042-9020-3 Albion, WI 53534

To Whom It May Concern,

The purpose of this letter is to provide MADISON SMSA LIMITED PARTNERSHIP. with a new colocation opportunity for a tower at Tax Parcel No. 002/0512-042-9020-3 Albion, WI 53534; Coordinates 42.9338114, -89.0900081; Elevation 943' AMSL. Currently, the tower is in development and a zoning application will be filed shortly. Due to zoning requirements, we have sent this letter certified.

Please feel free to reach out to Brian Robinson in our Business Development Office, copied below.

Best regards,

Tom Crisci  
IL/WI Project Manager

Cc: Brian Robinson  
Business Development  
Tillman Infrastructure LLC  
25 NW Point Blvd, Ste 525  
Suite 375  
Elk Grove Village, IL 60007  
Mobile: 773.343.1442

7014 3490 0000 7137 2182

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To: Madison SMSA Limited Partnership  
208 S. Akard ST. Rm 1015  
Dallas, TX 75202

Postmark Here  
ROSEMONT STATION  
JUN 11 2019  
ROSEMONT IL 60018

PS Form 3800, July 2014 See Reverse for Instructions





June 4, 2019

**VIA CERTIFIED U.S. MAIL**

NEXTEL LICENSE HOLDINGS 4 INC  
12502 Sunrise Valley Drive  
Reston, VA, 20196

Re: Proposed Colocation Site – New 260’ self-support lattice tower at Tax Parcel No. 002/0512-042-9020-3 Albion, WI 53534

To Whom It May Concern,

The purpose of this letter is to provide NEXTEL LICENSE HOLDINGS 4 INC. with a new colocation opportunity for a tower at Tax Parcel No. 002/0512-042-9020-3 Albion, WI 53534; Coordinates 42.9338114, -89.0900081; Elevation 943’ AMSL. Currently, the tower is in development and a zoning application will be filed shortly. Due to zoning requirements, we have sent this letter certified.

Please feel free to reach out to Brian Robinson in our Business Development Office, copied below.

Best regards,

Tom Crisci  
IL/WI Project Manager

Cc: Brian Robinson  
Business Development  
Tillman Infrastructure LLC  
25 NW Point Blvd, Ste 525  
Suite 375  
Elk Grove Village, IL 60007  
Mobile: 773.343.1442

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Restricted Delivery Fee (Endorsement Required)	
Total	\$

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Street or PO: \_\_\_\_\_  
City: \_\_\_\_\_

Postmark Here  
ROSBERT STATION  
JUN 11 2019  
ROSBERT IL 60007

Nextel License Holdings 4 Inc.  
12502 Sunrise Valley Drive  
Reston, VA 20196

PS Form 3800, October 2018  
Instructions

152 West 57<sup>th</sup> Street, 27<sup>th</sup> Floor  
New York, NY 10019

June 4, 2019

**VIA CERTIFIED U.S. MAIL**

Verizon Wireless  
Network Real Estate  
180 Washington Valley Rd.  
Bedminster, NJ 07921

Re: Proposed Colocation Site – New 260' self-support lattice tower at Tax Parcel No. 002/0512-042-9020-3 Albion, WI 53534

To Whom It May Concern,

The purpose of this letter is to provide Verizon Wireless Inc. with a new colocation opportunity for a tower at Tax Parcel No. 002/0512-042-9020-3 Albion, WI 53534; Coordinates 42.9338114, -89.0900081; Elevation 943' AMSL. Currently, the tower is in development and a zoning application will be filed shortly. Due to zoning requirements, we have sent this letter certified.

Please feel free to reach out to Brian Robinson in our Business Development Office, copied below.

Best regards,



Tom Crisci  
IL/WI Project Manager

Cc: Brian Robinson  
Business Development  
Tillman Infrastructure LLC  
25 NW Point Blvd, Ste 525  
Suite 375  
Elk Grove Village, IL 60007  
Mobile: 773.343.1442

7014 3490 0000 7137 2169

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Total	

Sent To  
Street or PO  
City, S

Verizon Wireless  
Network real Estate  
180 Washington Valley Rd.  
Bedminster, NJ 07921

PS Form 3800, July 2014 See Reverse for Instructions

ROSEMONT STATION  
Postmark Here  
JUN 11 2019  
ROSEMONT IL 60018

152 West 57<sup>th</sup> Street, 27<sup>th</sup> Floor  
New York, NY 10019



June 4, 2019

VIA CERTIFIED U.S. MAIL

MADISON CELLULAR TELEPHONE COMPANY  
8410 W BRYN MAWR AVE SUITE #700  
Chicago, IL 606313486

Re: Proposed Colocation Site – New 260' self-support lattice tower at Tax Parcel No. 002/0512-042-9020-3 Albion, WI 53534

To Whom It May Concern,

The purpose of this letter is to provide MADISON CELLULAR TELEPHONE COMPANY, with a new colocation opportunity for a tower at Tax Parcel No. 002/0512-042-9020-3 Albion, WI 53534; Coordinates 42.9338114, -89.0900081; Elevation 943' AMSL. Currently, the tower is in development and a zoning application will be filed shortly. Due to zoning requirements, we have sent this letter certified.

Please feel free to reach out to Brian Robinson in our Business Development Office, copied below.

Best regards,

Tom Crisci  
IL/WI Project Manager

Cc: Brian Robinson  
Business Development  
Tillman Infrastructure LLC  
25 NW Point Blvd, Ste 525  
Suite 375  
Elk Grove Village, IL 60007  
Mobile: 773.343.1442

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Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total	
Sent to Street or PO City, State, ZIP+4	Madison Cellular Telephone Company 8410 W. Bryn Mawr Ave. Ste. 700 Chicago, IL 60631

152 W  
7014 3490 0000 7137 2213

June 4, 2019

**VIA CERTIFIED U.S. MAIL**

BURNS BUS CO INC  
101 Mechanic St.  
Edgerton, WI 53534

Re: Proposed Colocation Site – New 260' self-support lattice tower at Tax Parcel No. 002/0512-042-9020-3 Albion, WI 53534

To Whom It May Concern,

The purpose of this letter is to provide BURNS BUS CO INC, with a new colocation opportunity for a tower at Tax Parcel No. 002/0512-042-9020-3 Albion, WI 53534; Coordinates 42.9338114, -89.0900081; Elevation 943' AMSL. Currently, the tower is in development and a zoning application will be filed shortly. Due to zoning requirements, we have sent this letter certified.

Please feel free to reach out to Brian Robinson in our Business Development Office, copied below.

Best regards,



Tom Crisci  
IL/WI Project Manager

Cc: Brian Robinson  
Business Development  
Tillman Infrastructure LLC  
25 NW Point Blvd, Ste 525  
Suite 375  
Elk Grove Village, IL 60007  
Mobile: 773.343.1442

7014 3490 0000 7137 2206

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Postmark Here	
Burns Bus Company Inc. 101 Mechanic St. Edgerton, WI 53534	
PS Form 3800, July 2014	See Reverse for Instructions





June 4, 2019

VIA CERTIFIED U.S. MAIL

MADISON CELLULAR TELEPHONE COMPANY  
8410 W BRYN MAWR AVE SUITE #700  
Chicago, IL 606313486

Re: Proposed Colocation Site – New 260’ self-support lattice tower at Tax Parcel No. 002/0512-042-9020-3 Albion, WI 53534

To Whom It May Concern,

The purpose of this letter is to provide MADISON CELLULAR TELEPHONE COMPANY, with a new colocation opportunity for a tower at Tax Parcel No. 002/0512-042-9020-3 Albion, WI 53534; Coordinates 42.9338114, -89.0900081; Elevation 943’ AMSL. Currently, the tower is in development and a zoning application will be filed shortly. Due to zoning requirements, we have sent this letter certified.

Please feel free to reach out to Brian Robinson in our Business Development Office, copied below.

Best regards,

Tom Crisci  
IL/WI Project Manager

Cc: Brian Robinson  
Business Development  
Tillman Infrastructure LLC  
25 NW Point Blvd, Ste 525  
Suite 375  
Elk Grove Village, IL 60007  
Mobile: 773.343.1442

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Restricted Delivery Fee (Endorsement Required)	
Total	
Postmark Here JUN 11 2019	
Sent To	Madison Cellular Telephone Company
Street or PO Box	8410 W. Bryn Mawr Ave. Ste. 700
City, State, ZIP+4	Chicago, IL 60631

152 W  
7014 3490 0000 7137 2213



June 4, 2019

VIA CERTIFIED U.S. MAIL

LiteWire Internet Services Inc  
565 E Main St  
Evansville, WI 53536

Re: Proposed Colocation Site – New 260' self-support lattice tower at Tax Parcel No. 002/0512-042-9020-3 Albion, WI 53534

To Whom It May Concern,

The purpose of this letter is to provide LiteWire Internet Services Inc, with a new colocation opportunity for a tower at Tax Parcel No. 002/0512-042-9020-3 Albion, WI 53534; Coordinates 42.9338114, - 89.0900081; Elevation 943' AMSL. Currently, the tower is in development and a zoning application will be filed shortly. Due to zoning requirements, we have sent this letter certified.

Please feel free to reach out to Brian Robinson in our Business Development Office, copied below.

Best regards,



Tom Crisci  
IL/WI Project Manager

Cc: Brian Robinson  
Business Development  
Tillman Infrastructure LLC  
25 NW Point Blvd, Ste 525  
Suite 375  
Elk Grove Village, IL 60007  
Mobile: 773.343.1442

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ELK GROVE VILLAGE, IL 60007

LiteWire Internet Services Inc.  
565 E. Main St.  
Evansville, WI 53536

PS Form 3800, July 2014  
See Reverse for Instructions

152 West 57<sup>th</sup> Street,  
New York, NY 10019

June 4, 2019

**VIA CERTIFIED U.S. MAIL**

To Whom It May Concern  
T-Mobile Inc.  
12920 SE 38th St.  
Bellvue, WA 98006

Re: Proposed Colocation Site – New 260' self-support lattice tower at Tax Parcel No. 002/0512-042-9020-3 Albion, WI 53534

To Whom It May Concern,

The purpose of this letter is to provide Sprint Inc. with a new colocation opportunity for a tower at Tax Parcel No. 002/0512-042-9020-3 Albion, WI 53534; Coordinates 42.9338114, -89.0900081; Elevation 943' AMSL. Currently, the tower is in development and a zoning application will be filed shortly. Due to zoning requirements, we have sent this letter certified.

Please feel free to reach out to Brian Robinson in our Business Development Office, copied below.

Best regards,



Tom Crisci  
IL/WI Project Manager

Cc: Brian Robinson  
Business Development  
Tillman Infrastructure LLC  
25 NW Point Blvd, Ste 525  
Elk Grove Village, IL 60007  
Mobile: 773.343.1442

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Street or PO: 12920 SE 38th Street  
City, St: Bellvue, WA 98006

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ROSEMONT STATION  
JUN 11 2019  
60018 IL

PS Form 3800, July 2014

4921 1264  
7014 2870 0000 2981 1264



June 4, 2019

**VIA CERTIFIED U.S. MAIL**

Sprint Inc.  
6391 Sprint Parkway,  
Overland Park, KS 66251

Re: Proposed Colocation Site – New 260’ self-support lattice tower at Tax Parcel No. 002/0512-042-9020-3 Albion, WI 53534

To Whom It May Concern,

The purpose of this letter is to provide Sprint Inc. with a new colocation opportunity for a tower at Tax Parcel No. 002/0512-042-9020-3 Albion, WI 53534; Coordinates 42.9338114, -89.0900081; Elevation 943’ AMSL. Currently, the tower is in development and a zoning application will be filed shortly. Due to zoning requirements, we have sent this letter certified.

Please feel free to reach out to Brian Robinson in our Business Development Office, copied below.

Best regards,

Tom Crisci  
IL/WI Project Manager

Cc: Brian Robinson  
Business Development  
Tillman Infrastructure LLC  
25 NW Point Blvd, Ste 525  
Elk Grove Village, IL 60007  
Mobile: 773.343.1442

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Street & A, or PO Box	ROSEMONT STATION JUN 11 2019 ROSEMONT IL 60043
City, State	
Sprint Inc. 6391 Sprint Parkway Overland Park, KS 63251	
PS Form 3800, July 2014 See Reverse for Instructions	

7014 2870 0000 2981 1257

152 West 57<sup>th</sup> Street, 27<sup>th</sup> Floor  
New York, NY 10019

# Certificate of Insurance

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June 1, 2019

RE: Radio Frequency Certification

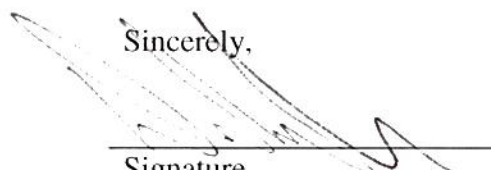
To Whom It May Concern:

Please be advised I am a Radio Frequency Engineer responsible for designing and maintaining AT&T's network in the greater Dane County, Wisconsin area. AT&T currently has wireless telecommunications equipment located on an existing tower owned by SBA Structures LLC located off County Highway A. Due to an increase in users and upgrades in technology, AT&T is no able to provide a robust network in the area utilizing the existing 170'-0" tall tower. Tillman Infrastructure is proposing to erect a 260'-0" tall self-support lattice tower with a 9'-0" lightning rod (269'-0" highest point of the tower) on property located at PID: 051204290203 Albion, WI 53534.

I have provided propagation maps depicting the current and proposed coverage levels for AT&T in this area. I have analyzed the coverage based on various heights including the height of AT&T's equipment on the existing tower and the proposed height of 250'. Based on the propagation study maps I have provided, the proposed 250' centerline for AT&T's equipment is the only height adequate to meet AT&T's level of service. A modification or replacement of the existing SBA site would not allow for the coverage objectives of AT&T as shown in the attached propagation maps. Due to the rural nature of this area, there are no other alternative forms of technology that are feasible to meet our coverage needs.

It is my intention, through the construction of the tower proposed by Tillman Infrastructure, to provide better coverage in the area and create a seamless network. As such, a 250'-0" centerline for AT&T's equipment is the optimal height which allows me to provide the best coverage to the surrounding area. In addition to the greater capacity served by the new tower, the proposed tower will provide coverage for areas east and west that are currently underserved. We have also evaluated the possibility of co-locating throughout the area however; there are no existing wireless telecommunications that meet AT&T's coverage objectives in the area.

Sincerely,



Signature

Dan Sobczyk  
Printed Name

Professional-Eng Engineer  
Title



August 12, 2019

To Whom It May Concern,

The proposed AT&T wireless equipment (see attached specification sheets) with a centerline radiation point of 250' to be located at on the parcel 051204290203 in Albion, WI (more specifically at latitude: 42.9338114 and longitude: -89.090008) will operate below the maximum permissible exposures for both Occupational/Controlled and General Population/Uncontrolled thresholds mandated by the FCC.

If any additional information is required, please contact myself or our primary site acquisition vendor, LCC Telecom Services listed below.

Sincerely,

A handwritten signature in black ink, appearing to read "Andrew T. Flowers".

Andrew T. Flowers  
Sr. Real Estate & Construction Manager  
AT&T Mobility Corporation

CC: John Wallace,  
LCC Telecom Services  
10700 W. Higgins Rd.  
Rosemont, IL 60018



10700 W. Higgins Rd., Ste. 240,  
Rosemont, IL 60018  
847 608-6300 Office  
847 608-1299 Fax  
[www.lcctelecom.com](http://www.lcctelecom.com)

July 5, 2019

**RE: Design Capacity of Mobile Support Structure– TI-OPP-11895**

Mr. Majid Allan  
Senior Planner, Dane County Planning & Development,

This statement is submitted in response to your request for additional information regarding the anticipated design capacity of the proposed new mobile service support structure to be located at PID: 002/0512-042-9020-3 in Dane County Albion, Wisconsin 53534 for which an application for a conditional use permit and height variance was sent to your office on June 21, 2019. The proposed support structure will be designed to have the capacity to support the mobile service antennas and equipment of three (3) mobile service provider. AT&T will be the first provider to install their equipment, described in detail on Sheets A-6 and A-7 of the Site Plan included with our application, on the proposed support structure. In addition to AT&T, the proposed support structure will be designed to have the capacity to support the equipment of two (2) additional carriers to be added at a later date, as is shown on Sheet A-3 of the Site Plan. Please feel free to contact me if you need additional information or have any questions.

Best Regards,

*Reid Seagren*

Reid Seagren  
LCC Telecom Services



[rseagren@lcctelecom.com](mailto:rseagren@lcctelecom.com)  
(224) 567-6414

# Tower Table

---

Name:	WIL02044
Height	46.6 Meters AGL
Registration No.	1054853
Owners Name and Contact Information	Owner: SBA Structures, LLC Attention To: Edward G. Roach 8051 Congress Avenue Boca Raton , FL 34487  Contact: Edward G. Roach 8051 Congress Avenue Boca Raton , FL 33487

Name:	WIL00029
Height of Tower:	76.8 Meters AGL
Registration No.	1034442

Owners Name and Contact Information:	<p>Owner:  MADISON SMSA TOWER HOLDINGS LLC  Attention To: FCC Group  208 S. Akard St., RM 1015  Dallas , TX 75202</p> <p>Contact:  Mathew , Cecil J  Attention To: FCC Group  208 S. Akard St., RM 1015  Dallas , TX 75202</p>
--------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Name:	WIL02017
Height of Tower:	72.8 Meters AGL
Registration No.	1036139
Owners Name and Contact Information:	<p>Owner:  AT&amp;T Corp.  Attention To: FCC Group  208 S. Akard St., RM 1015  Dallas , TX 75202</p> <p>Contact:  Mathew , Cecil J  Attention To: FCC Group  208 S. Akard St., RM 1015  Dallas , TX 75202</p>

Name:	WIL00221
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Height of Tower:	60.7 Meters AGL
Registration No.	1063821
Owners Name and Contact Information:	<p>Owner: SpectraSite Communications, LLC. through American Towers, LLC. Attention To: Regulatory Compliance FAA FCC 10 Presidential Way Woburn , MA 01801</p> <p>Contact: Attention To: FAA FCC 10 Presidential Way Woburn , MA 01801</p>

Name:	WIL00219
Height of Tower:	59.4 Meters AGL
Registration No.	1034499
Owners Name and Contact Information:	<p>Owner: SpectraSite Communications, LLC. through American Towers, LLC. Attention To: Regulatory Compliance FAA FCC 10 Presidential Way Woburn , MA 01801</p> <p>Contact: Attention To: FAA FCC</p>

	10 Presidential Way Woburn , MA 01801
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Name:	WIL02035
Height of Tower:	45.7 Meters AGL
Registration No.	1062217
Owners Name and Contact Information:	Owner: United States Cellular Corporation 8410 W. BRYN MAWR AVENUE, SUITE 700 CHICAGO , IL 60631  Contact: Connolly , Peter M Esq 2099 Pennsylvania Avenue, N.W., Sui Washington , DC 20006

Name:	WIL00243
Height of Tower:	57.9 Meters AGL
Registration No.	1249220

Owners Name and Contact Information:	<p>Owner:  United States Cellular Corporation  Attention To: Renee Mazur  8410 W Bryn Mawr Avenue, Suite 700  Chicago , IL 60631</p> <p>Contact:  Connolly , Peter M ESQ  2099 Pennsylvania Avenue, Suite 100  Washington , DC 20006</p>
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Name:	WIL00021
Height of Tower:	85.6 Meters AGL
Registration No.	1034436
Owners Name and Contact Information:	<p>Owner:  American Towers LLC  Attention To: Regulatory Compliance FAA  FCC  10 Presidential Way  Woburn , MA 01801</p> <p>Contact  Attention To: Regulatory Compliance FAA  FCC  10 Presidential Way  Woburn , MA 01801</p>

Name:	WIL00126
Height of Tower:	55.8 Meters AGL

Registration No.	1217603
Owners Name and Contact Information:	<p>MADISON SMSA TOWER HOLDINGS LLC  Attention To: FCC Group  208 S. Akard St., RM 1015  Dallas , TX 75202</p> <p>Contact:  Mathew , Cecil J  Attention To: FCC Group  208 S. Akard St., RM 1015  Dallas , TX 75202</p>

Name:	WIL01193
Height of Tower:	60.7 Meters AGL
Registration No.	1050098
Owners Name and Contact Information:	<p>WISCONSIN ELECTRIC POWER COMPANY  333 WEST EVERETT ST  A026  P.O. Box 2046  MILWAUKEE , WI 53201-2345</p> <p>Contact:  BUCKMASTER , CHRIS  333 WEST EVERETT ST  A026  P.O. Box 2046  MILWAUKEE , WI 53201-2345</p>

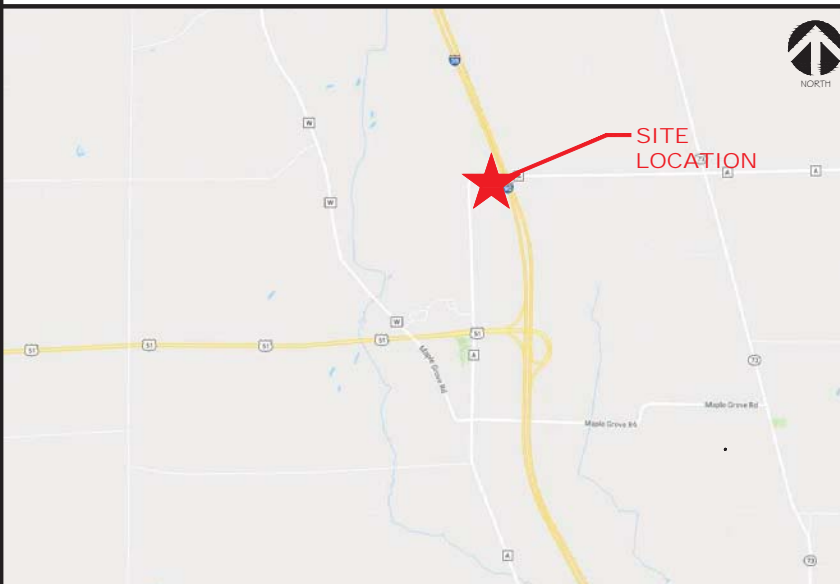


**PROJECT:** NEW SITE BUILD  
**SITE NAME:** KNICKMEIER FARMS  
**SITE CASCADE:** TI-OPP-11895-C  
**SITE ADDRESS:** PID: 051204290203  
 ALBION, WI 53534  
**SITE TYPE:** 260' SELF SUPPORT



Sauk City, WI • Willmar, MN  
 Woodcliff Lake, NJ • Bayamon, PR

**VICINITY MAP:**



**AERIAL MAP:**



**PROJECT INFORMATION:**

**SITE ADDRESS:**  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

**SITE COORDINATES:**  
 LATITUDE: 42.9338114  
 LONGITUDE: -89.0900081

**MUNICIPAL ID:**  
 BLOCK: N/A  
 PARCEL #: 051204290203  
 ZONE: TBD

**PROPERTY OWNER:**  
 RANDY RAY KNICKMEIER

**APPLICANT**  
 TILLMAN INFRASTRUCTURE  
 PHONE: (646) 578-8394

**SITE ACQUISITION**  
 LCC TELECOM SERVICES  
 10700 HIGGINS ROAD, SUITE 240  
 ROSEMONT, IL 60018  
 CONTACT: JOHN WALLACE  
 PHONE: (847) 608-6300

**A&E FIRM**  
 RAMAKER & ASSOCIATES, INC.  
 855 COMMUNITY DRIVE  
 SAUK CITY, WI 53583  
 CONTACT: JASON FRAZIER  
 EMAIL: JFRAZIER@RAMAKER.COM  
 PHONE: (608) 643-4100

**APPROVALS:**

**CONSTRUCTION MANAGER:**  
**SITE ACQUISITION:**  
**LANDLORD:**

**SHEET INDEX**

SHEET NUMBER	SHEET DESCRIPTION
T-1	TITLE SHEET
N-1 THRU N-3	NOTES
1 OF 1	SURVEY
Z-1	OVERALL ZONING MAP
Z-2	ZONING MAP DETAILS
A-1	OVERALL SITE PLAN
A-2	ENLARGED SITE PLAN
A-3	TOWER ELEVATION
A-4	EQUIPMENT PLATFORM PLAN & DETAILS
A-5	EQUIPMENT DETAILS
A-6	ANTENNA PLAN & SCHEDULE
A-7	EQUIPMENT DETAILS
A-8	FENCE & GATE DETAILS
A-9	SITE DETAILS
A-10	COMPOUND SIGN DETAILS
L-1	LANDSCAPE PLAN
E-1	OVERALL UTILITY PLAN
E-2	ENLARGED UTILITY PLAN
E-3	PANEL SCHEDULE
E-4	DC/FIBER SYSTEM DIAGRAM
E-5	DC WIRING DIAGRAM
E-6	UTILITY DETAILS
E-7	TYPICAL GROUNDING PLAN
E-8	GROUNDING DETAILS
E-9	GROUNDING DETAILS
E-10	GROUNDING DETAILS

**CODE COMPLIANCE:**

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

- 2015 INTERNATIONAL BUILDING CODE
- INTERNATIONAL MECHANICAL CODE
- ANSI/TIA-222 STRUCTURAL STANDARD
- NFPA 780 - LIGHTNING PROTECTION CODE
- NATIONAL ELECTRICAL CODE



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



*James R. Skowronski* 7/08/2019  
 James R. Skowronski Date:

MARK	DATE	DESCRIPTION
1	07/08/19	ADDED LIGHTING PACKAGE
ISSUE PHASE	FINAL	DATE ISSUED 06/20/2019

PROJECT TITLE:  
**TI-OPP-11895-C**

PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:  
**TITLE SHEET**

SCALE: NONE

PROJECT NUMBER	42278
SHEET NUMBER	T-1



**GENERAL**

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

**DIVISION 1: GENERAL REQUIREMENTS**  
**SECTION 01700 - PROJECT CLOSEOUT**

**PART 1 - GENERAL**

- OBTAIN AND SUBMIT RELEASES ENABLING THE OWNER UNRESTRICTED USE OF THE WORK AND ACCESS TO SERVICES AND UTILITIES; INCLUDE OCCUPANCY PERMITS, OPERATING CERTIFICATES AND SIMILAR RELEASES
- SUBMIT RECORD DRAWINGS, DAMAGE OR SETTLEMENT SURVEY, PROPERTY SURVEY, AND ACCESS TO SERVICES AND UTILITIES; INCLUDE OCCUPANCY PERMITS, OPERATING
- COMPLETE FINAL CLEAN UP REQUIREMENTS, INCLUDING TOUCH-UP PAINTING. TOUCH UP AND OTHERWISE REPAIR AND RESTORE MARRED EXPOSED FINISHES.

**PART 2 - FINAL CLEANING**

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

**DIVISION 2: SITE WORK**  
**SECTION 02200 - EARTHWORK AND DRAINAGE**

**PART 1 - GENERAL**

- WORK INCLUDED: SEE SITE PLAN.
- DESCRIPTIONS  
 LEASE AREA, AND IF APPLICABLE ACCESS DRIVE / TURNAROUND AREA, AND UNDERGROUND UTILITY EASEMENTS ARE TO BE CONSTRUCTED TO PROVIDE A WELL DRAINED, EASILY MAINTAINED, EVEN SURFACE FOR MATERIAL AND EQUIPMENT DELIVERIES AND MAINTENANCE PERSONNEL ACCESS.
- QUALITY ASSURANCE
  - APPLY SOIL STERILIZER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS (AS NEEDED).
  - APPLY AND MAINTAIN GRASS SEED AS RECOMMENDED BY THE SEED PRODUCER (IF REQUIRED).
  - PLACE AND MAINTAIN VEGETATION LANDSCAPING, IF INCLUDED WITHIN THE CONTRACT, RECOMMENDED BY NURSERY INDUSTRY STANDARDS.
- SEQUENCING
  - CONFIRM SURVEY STAKES AND SET ELEVATION STAKES PRIOR TO ANY CONSTRUCTION.
  - COMPLETELY GRUB THE ACCESS DRIVE W/ TURNAROUND, UNDERGROUND UTILITY EASEMENTS, (IF APPLICABLE) AND LEASE AREA PRIOR TO FOUNDATION CONSTRUCTION, PLACEMENT OF BACKFILL AND SUB-BASE MATERIAL.
  - CONSTRUCT TEMPORARY CONSTRUCTION AREA ALONG ACCESS DRIVE.
  - BRING THE LEASE AREA AND ACCESS DRIVE W/ TURNAROUND TO BASE COURSE ELEVATION PRIOR TO INSTALLING FOUNDATION.
  - APPLY SOIL STERILIZER PRIOR TO PLACING BASE MATERIALS.
  - GRADE, SEED, FERTILIZE, AND MULCH ALL AREAS DISTURBED BY CONSTRUCTION (INCLUDING UNDERGROUND UTILITY EASEMENTS)

- IMMEDIATELY AFTER BRINGING LEASE AREA AND ACCESS DRIVE W/ TURNAROUND TO BASE COURSE ELEVATION, WATER TO ENSURE GROWTH.
- REMOVE GRAVEL FROM TEMPORARY CONSTRUCTION ZONE TO AN AUTHORIZED AREA OR AS DIRECTED BY PROJECT MANAGER.
  - AFTER APPLICATIONS OF FINAL SURFACES, APPLY SOIL STERILIZER TO STONE SURFACES.

**PART 2 - PRODUCTS**

- MATERIALS
  - SOIL STERILIZER SHALL BE EPA-REGISTERED, PRE-EMERGENCE LIQUID:
    - TOTAL KILL (PRODUCT 910) - EPA 10292-7 PHASAR CORPORATION P.O. BOX 5123 DEARBORN, MI 48128 (313) 563-8000
    - AMBUSH HERBICIDE - EPA REGISTERED FRAMAR INDUSTRIAL PRODUCTS 1435 MORRIS AVE. UNION, NJ 07083 (800) 526-4924
  - ROAD AND SITE MATERIALS SHALL CONFORM TO DOT SPECIFICATIONS FILL MATERIAL (UNLESS OTHERWISE NOTED) - ACCEPTABLE SELECT FILL SHALL STANDARD SPECIFICATIONS... BE IN ACCORDANCE WITH STATE DEPARTMENT OF HIGHWAY AND TRANSPORTATION.
  - SOIL STABILIZER FABRIC SHALL BE MIRAFI - 500X.

**PART 3 - EXECUTION**

- INSPECTIONS  
 LOCAL BUILDING INSPECTORS SHALL BE NOTIFIED NO LESS THAN 48 HOURS IN ADVANCE OF CONCRETE POURS, UNLESS OTHERWISE SPECIFIED BY JURISDICTION.
- PREPARATION
  - CLEAR TREES, BRUSH AND DEBRIS FROM LEASE AREA, ACCESS DRIVE W/ TURN-AROUND AND UNDER GROUND UTILITY EASEMENTS AS REQUIRED FOR CONSTRUCTION.
  - PRIOR TO OTHER EXCAVATION AND CONSTRUCTION, GRUB ORGANIC MATERIAL TO A MINIMUM OF SIX (6) INCHES BELOW GRADE.
  - UNLESS OTHERWISE INSTRUCTED BY CARRIER, TRANSPORT ALL REMOVED TREES, BRUSH AND DEBRIS FROM THE PROPERTY TO AN AUTHORIZED LANDFILL.
  - PRIOR TO PLACEMENT OF FILL OR BASE MATERIALS, ROLL THE SOIL.
  - WHERE UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED, LINE THE AREAS WITH STABILIZER MAT PRIOR TO PLACEMENT OF FILL OR BASE MATERIAL.
- INSTALLATION
  - GRADE OR FILL THE LEASE AREA AND ACCESS DRIVE W/TURNAROUND AS REQUIRED IN ORDER THAT UPON DISTRIBUTION OF SPOILS, RESULTING FROM EXCAVATIONS, THE RESULTING GRADE WILL CORRESPOND WITH SAID SUB-BASE COURSE. ELEVATIONS ARE TO BE CALCULATED FROM BENCHMARK, FINISHED GRADES, OR INDICATED SLOPES.
  - CLEAR EXCESS SPOILS, IF ANY, FROM JOB SITE AND DO NOT SPREAD BEYOND THE LIMITS OF PROJECT AREA UNLESS AUTHORIZED BY PROJECT MANAGER AND AGREED TO BY LANDOWNER.
  - BRING THE ACCESS DRIVE W/ TURNAROUND TO BASE COURSE ELEVATION TO FACILITATE CONSTRUCTION AND OBSERVATION DURING CONSTRUCTION OF THE SITE.
  - AVOID CREATING DEPRESSIONS WHERE WATER MAY POND.
  - THE CONTRACT SHALL INCLUDE GRADING, BANKING, AND DITCHING, UNLESS OTHERWISE INDICATED.
  - WHEN IMPROVING AN EXISTING ACCESS DRIVE, GRADE THE EXISTING DRIVE TO REMOVE ANY ORGANIC MATTER AND SMOOTH THE SURFACE BEFORE PLACING FILL OR STONE.
  - PLACE FILL OR STONE IN SIX (6) INCH MAXIMUM LIFTS, AND COMPACT BEFORE PLACING NEXT LIFT.
  - THE TOP SURFACE COURSE SHALL EXTEND A MINIMUM OF ONE (1) FOOT BEYOND THE SITE FENCE (UNLESS OTHERWISE NOTED) AND SHALL COVER THE AREA AS INDICATED.
  - APPLY RIPRAP TO THE SIDE SLOPES OF ALL FENCED SITE AREAS, PARKING AREAS, AND ALL OTHER SLOPES GREATER THAN 2:1.
  - APPLY RIPRAP TO THE SIDES OF DITCHES OR DRAINAGE SWALES.
  - RIPRAP ENTIRE DITCH FOR SIX (6) FEET IN ALL DIRECTIONS AT CULVERT OPENINGS.
  - APPLY SEED, FERTILIZER, AND STRAW COVER TO ALL OTHER DISTURBED AREAS, DITCHES, AND DRAINAGE SWALES, NOT OTHERWISE RIP RAPPED.
  - UNDER NO CIRCUMSTANCES WILL DITCHES, SWALES, OR CULVERTS BE PLACED SO THAT THEY DIRECT WATER TOWARDS, OR PERMIT STANDING WATER IMMEDIATELY ADJACENT TO COMPOUND. IF DESIGNS OR ELEVATIONS ARE IN CONFLICT WITH THIS, ADVISE CONSTRUCTION MANAGER IMMEDIATELY.
  - IN DITCHES WITH SLOPES GREATER THAN 10%, MOUND DIVERSIONARY HEADWALLS IN THE DITCH AT CULVERT ENTRANCES. POSITION THE HEADWALL AT AN ANGLE NO GREATER THAN 60° OFF THE DITCH LINE. RIPRAP THE UPSTREAM SIDE OF THE HEADWALL AS WELL AS THE DITCH FOR SIX (6) FEET ABOVE THE CULVERT ENTRANCE.
  - APPLY SEED AND FERTILIZER TO SURFACE CONDITIONS WHICH WILL

- ENCOURAGE ROOTING. RAKE AREAS TO BE SEEDED TO EVEN THE SURFACE AND LOOSEN THE SOIL.
- SOW SEED IN TWO DIRECTIONS IN TWICE THE QUANTITY RECOMMENDED BY THE SEED PRODUCER.
  - ENSURE GROWTH OF SEEDED AND LANDSCAPED AREAS, BY WATERING, UP TO THE POINT OF RELEASE FROM THE CONTRACT. CONTINUE TO REWORK THE BARE AREAS UNTIL COMPLETE COVERAGE IS OBTAINED.

- FIELD QUALITY CONTROL  
 COMPACT SOILS TO MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D-1557. AREAS OF SETTLEMENT WILL BE EXCAVATED AND REFILLED AT CONTRACTOR'S EXPENSE. INDICATE PERCENTAGE OF COMPACTION ACHIEVED ON AS-BUILT DRAWINGS.
- PROTECTION
  - PROTECT SEEDED AREAS FROM EROSION BY SPREADING STRAW TO A UNIFORM LOOSE DEPTH OF 1-2 INCHES, STAKE AND TIE DOWN AS REQUIRED. USE OF EROSION CONTROL MESH OR MULCH NET WILL BE AN ACCEPTABLE ALTERNATE.
  - ALL TREES PLACED IN CONJUNCTION WITH A LANDSCAPE CONTRACT WILL BE WRAPPED, TIED WITH HOSE PROTECTED WIRE, AND SECURED TO 2" X 2" X 4'-0" WOODEN STAKES EXTENDING TWO-FEET INTO THE GROUND ON FOUR SIDES OF THE TREE.
  - PROTECT ALL EXPOSED AREAS AGAINST WASHOUTS AND SOIL EROSION. PLACE STRAW BALES AT THE INLET APPROACH TO ALL NEW OR EXISTING CULVERTS. WHERE THE SITE OR ROAD AREAS HAVE BEEN ELEVATED IMMEDIATELY ADJACENT TO THE RAIL LINE, STAKE EROSION CONTROL FABRIC FULL LENGTH IN THE SWALE TO PREVENT CONTAMINATION OF THE RAIL BALLAST. ALL EROSION CONTROL METHODS SHALL CONFORM TO APPLICABLE BUILDING CODE REQUIREMENTS.

**SECTION 02830 - FENCING AND GATE(S)**

**PART 1 - GENERAL**

- WORK INCLUDED  
 SEE PLAN FOR SITE AND LOCATION OF FENCE AND GATE(S).
- QUALITY ASSURANCE  
 ALL STEEL MATERIALS UTILIZED IN CONJUNCTION WITH THIS SPECIFICATION WILL BE GALVANIZED OR STAINLESS STEEL. WEIGHT OF ZINC COATING ON THE FABRIC SHALL NOT BE LESS THAN 12 OUNCES PER SQUARE FOOT OF MATERIAL COVERED. POSTS SHALL BE HOT-DIPPED IN GRADE 'E' ZINC, 18 OUNCES PER SQUARE FOOT.
- SEQUENCING  
 IF THE SITE AREA HAS BEEN BROUGHT UP TO SURFACE COURSE ELEVATION (PRIOR TO THE FENCE CONSTRUCTION), FENCE POST EXCAVATION SPOILS MUST BE CONTROLLED TO PRECLUDE CONTAMINATION OF SAID SURFACE COURSE.
- SUBMITTALS
  - MANUFACTURER'S DESCRIPTIVE LITERATURE.
  - CERTIFICATE OR STATEMENT OF COMPLIANCE WITH THE SPECIFICATIONS.

**PART 2 - PRODUCTS**

- FENCE MATERIAL
  - ALL FABRIC WIRE, RAILS, HARDWARE, AND OTHER STEEL MATERIALS SHALL BE HOT-DIPPED GALVANIZED.
  - FABRIC SHALL BE SEVEN-FOOT HIGH OR TO MATCH EXISTING FENCE TWO-INCH CHAIN LINK MESH OF NO. 9 GAUGE (0.148") WIRE. THE FABRIC SHALL HAVE A KNUCKLED FINISH FOR THE TOP SELVAGES. FABRIC SHALL CONFORM TO THE SPECIFICATIONS OF ASTM A-392 CLASS 1.
  - BARBED WIRE SHALL BE DOUBLE-STRAND, 12-1/2 GAUGE TWISTED WIRE, WITH 14-GAUGE, 4-POINT ROUND BARBS SPACED ON FIVE-INCH CENTERS.
  - ALL POSTS SHALL BE SCHEDULE - 40 MECHANICAL SERVICE PIPE AND SHALL BE TYPE 1 ASTM A-128 AND OF THE FOLLOWING DIAMETER LINE 2" SCHEDULE 40 (23#8" O.D.) GATE 3" SCHEDULE 40 (31#2" O.D.) CORNER 3" SCHEDULE 40 (31#2" O.D.)
  - GATE POSTS SHALL BE EXTENDED 12 INCHES, INCLUDING DOME CAP, TO PROVIDE FOR ATTACHMENT OF BARBED WIRE.
- ALL TOP AND BRACE RAILS SHALL BE 1" DIAMETER SCHEDULE 40 MECHANICAL-SERVICE PIPE.
- GATE FRAMES AND BRACES SHALL BE 1.90 INCH DIAMETER SCHEDULE 40 MECHANICAL-SERVICE PIPE. FRAMES SHALL HAVE WELDED CORNERS.
- GATE FRAMES SHALL HAVE A FULL-HEIGHT VERTICAL BRACE, AND A FULL-WIDTH HORIZONTAL BRACE, SECURED IN PLACE BY USE OF GATE BRACE CLAMPS.
- GATE HINGES SHALL BE MERCHANTS METAL MODEL 64386 HINGE ADAPTER WITH MODEL 6409, 188-DEGREE ATTACHMENT.
- THE GUIDE (LATCH ASSEMBLY) SHALL BE HEAVY INDUSTRIAL DOUBLE GATE LATCH. SEE DETAIL.
- LATCHES AND STOPS SHALL BE PROVIDED FOR ALL GATES.
- PLUNGER ROD COMPLETE WITH RECEPTOR TO BE PROVIDED AT THE INACTIVE LEAF OF ALL DOUBLE GATE INSTALLATIONS.
- ALL STOPS SHALL HAVE KEEPERS CAPABLE OF HOLDING THE GATE

- LEAF IN THE OPEN POSITION.
- A NO. 7 GAUGE ZINC COATED TENSION WIRE SHALL BE USED AT THE BOTTOM OF THE FABRIC, TERMINATED WITH BAND CLIPS AT CORNER AND GATE POSTS.
- A SIX-INCH BY 1/2-INCH DIAMETER EYEBOLT TO HOLD TENSION WIRE SHALL BE PLACED AT LINE POSTS.
- STRETCHER BARS SHALL BE 3/16-INCH BY 3/4-INCH OR HAVE EQUIVALENT CROSS-SECTIONAL AREA.
- ALL CORNER GATE AND PANELS SHALL HAVE A 3/8-INCH TRUSS ROD WITH TURNBUCKLES.
- ALL POSTS EXCEPT GATE POSTS SHALL HAVE A COMBINATION CAP AND BARBED WIRE SUPPORTING ARM. GATE POSTS SHALL HAVE A DOME CAP.
- OTHER HARDWARE INCLUDES BUT MAY NOT BE LIMITED TO TIE CLIPS, BAND CLIPS AND TENSION BAND CLIPS.
- BARBED WIRE GATE GUARDS SHALL BE FITTED WITH DOME CAPS.
- BARBED WIRE SUPPORT ARMS SHALL BE PRESSED STEEL COMPLETE WITH SET BOLT AND LOCK WIRE IN THE ARM.
- ALL CAPS SHALL BE MALLEABLE IRON, DOME OR ACORN SHAPED AS REQUIRED BY PIPE SIZE.
- WHERE THE USE OF CONCERTINA HAS BEEN SPECIFIED, 24-INCH DIAMETERS COIL, BARBED TAPE, STAINLESS STEEL, CYCLONE FENCE MODEL G8P TO TYPE III SHALL BE FURNISHED. IT SHALL BE SUPPORTED ABOVE THE TOP RAIL BY USE OF SIX (6) WIRE BARBED WIRE ARMS POSITIONED ATOP EACH LINE/CORNER POST.

- INSPECTION  
 TO CONFIRM PROPER DEPTH AND DIAMETER OF POST HOLE EXCAVATIONS. ALL POST HOLES WILL BE EXCAVATED AS PER CONSTRUCTION DOCUMENTS.
- INSTALLATION
  - FOUNDATIONS SHALL HAVE A MINIMUM SIX (6) INCH CONCRETE COVER UNDER POST.
  - ALL FENCE POSTS SHALL BE VERTICALLY PLUMB; ONE QUARTER (1/4) INCH
  - AT CORNER POSTS, GATE POSTS, AND SIDES OF GATE FRAME, FABRIC SHALL BE ATTACHED WITH STRETCHER AND TENSION BAND-CLIPS AT FIFTEEN(15) INCH INTERVALS.
  - AT LINE POSTS, FABRIC SHALL BE ATTACHED WITH BAND-CLIPS AT FIFTEEN (15) INCH INTERVALS.
  - FABRIC SHALL BE ATTACHED TO BRACE RAILS, TENSION WIRE AND TRUSS RODS WITH TIE-CLIPS AT TWO (2) FOOT INTERVALS.
  - A MAXIMUM GAP OF ONE INCH WILL BE PERMITTED BETWEEN TIE CHAIN LINE FABRIC AND THE FINAL GRADE.
  - GATE SHALL BE INSTALLED SO LOCKS ARE ACCESSIBLE FROM BOTH SIDES.
  - GATE HINGE BOLTS SHALL HAVE THEIR THREADS PEENED OR WELDED TO PREVENT UNAUTHORIZED REMOVAL.
  - CONCRETE TO BE A MINIMUM OF 4,000 PSI AT 7 DAYS. CEMENT SHALL EXCEED ASTM C150, TYPE IIIA.
- PROTECTION  
 UPON COMPLETION OF ERECTION, INSPECT FENCE MATERIAL AND PAINT FIELD CUTS OR GALVANIZING BREAKS WITH ZINC-BASED PAINT, COLOR TO MATCH THE GALVANIZED METAL.

**APPLICABLE STANDARDS**

- ASTM-A120 SPECIFICATION FOR PIPE, STEEL BLACK AND HOT-DIPPED ZINC COATED (GALVANIZED) WELDED AND SEAMLESS, FOR ORDINARY USES.
- ASTM-A123 ZINC (HOT-DIP GALVANIZED) COATING ON IRON AND STEEL PRODUCTS.
- ASTM-A153 STANDARD SPECIFICATION FOR ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE.
- ASTM-A392 SPECIFICATION FOR ZINC-COATED STEEL CHAIN LINK FENCE FABRIC.
- ASTM-A491 SPECIFICATION FOR ALUMINUM-COATED STEEL CHAIN LINK FENCE FABRIC
- ASTM-A525 STANDARD SPECIFICATION FOR STEEL SHEET ZINC COATED (GALVANIZED) BY THE HOT-DIPPED PROCESS. ASTM-A570 SPECIFICATION FOR HOT-ROLLED CARBON STEEL SHEET AND STRIP. STRUCTURAL QUALITY.
- ASTM-A535 SPECIFICATION FOR ALUMINUM COATED STEEL BARBED WIRE.
- FEDERAL SPECIFICATION RR-F-191- FENCING, WIRE AND POST METAL (AND GATES, CHAIN LINK FENCE FABRIC, AND ACCESSORIES)



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



*James R. Skowronski* 7/08/2019  
 James R. Skowronski : Date:

MARK	DATE	DESCRIPTION
1	07/08/19	ADDED LIGHTING PACKAGE
ISSUE PHASE	FINAL	DATE ISSUED 06/20/2019

PROJECT TITLE:  
**TI-OPP-11895-C**

PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:  
**NOTES**

SCALE: NONE

PROJECT NUMBER	42278
SHEET NUMBER	N-1



DIVISION 3: CONCRETE  
SECTION 03000 - BASIC CONCRETE MATERIALS AND METHODS

PART 1 - GENERAL

- WORK INCLUDED FORM WORK, REINFORCEMENT, ACCESSORIES, CAST-IN-PLACE CONCRETE, FINISHING, AND CURING.
- INSPECTIONS
  - CONTRACTOR IS RESPONSIBLE FOR SCHEDULING BUILDING DEPARTMENT INSPECTIONS REQUIRED FOR HIS SCOPE OF WORK.
  - ALL REINFORCING STEEL SHALL BE INSPECTED AND APPROVED BY THE CARRIER CONSTRUCTION MANAGER, OR THEIR DESIGNEE, PRIOR TO PLACEMENT OF CONCRETE.
  - THE CARRIER CONSTRUCTION MANAGER SHALL BE NOTIFIED NO LESS THAN 48 HOURS IN ADVANCE OF CONCRETE POURS.
- QUALITY ASSURANCE
  - CONSTRUCT AND ERECT CONCRETE FORM WORK IN ACCORDANCE WITH ACI 301 AND ACI 318.
  - PERFORM CONCRETE REINFORCING WORK IN ACCORDANCE WITH ACI 301, ACI 318, AND ASTM A184.
  - PERFORM CAST-IN-PLACE CONCRETE WORK IN ACCORDANCE WITH ACI 301, ACI 318, AND ACI 117-90.
  - OPEN FOUNDATION TRENCHES SHALL BE INSPECTED BY MES PRIOR TO CONCRETE INSTALLATION.
- SUBMITTALS SUBMIT CONCRETE MIX AND REINFORCING STEEL SHOP DRAWINGS FOR APPROVAL BY CARRIER CONSTRUCTION MANAGER/ENGINEER. THE SHOP DRAWINGS SHALL BE SUBMITTED IN THE FORM OF TWO (2) CONCRETE MIX DESIGN INFORMATION SHEETS AND TWO (2) BLUE LINE DRAWINGS FOR REINFORCING STEEL.

PART 2 - PRODUCTS

- REINFORCEMENT MATERIALS
  - REINFORCEMENT STEEL, ASTM A615, 60 ksi YIELD GRADE, DEFORMED BILLET STEEL BARS, PLAIN FINISH.
  - WELDED STEEL WIRE FABRIC ASTM A185 PLAIN TYPE, IN FLAT SHEETS, PLAIN FINISH.
  - CHAIRS, BOLSTERS, BAR SUPPORTS, SPACERS. SIZED AND SHAPED FOR SUPPORTS OF REINFORCING.
  - FABRICATE CONCRETE REINFORCING IN ACCORDANCE WITH ACI 315, ACI 318, ASTM A184
- CONCRETE MATERIALS
  - CEMENT: ASTM C150, PORTLAND TYPE
  - FINE AND COURSE AGGREGATES: ASTM C33 - MAXIMUM SIZE OF CONCRETE AGGREGATE SHALL NOT EXCEED; ONE (1) INCH SIZE SUITABLE FOR INSTALLATION METHOD UTILIZED OR ONE-THIRD CLEAR DISTANCE BEHIND OR BETWEEN REINFORCING.
  - WATER: CLEAN AND NOT DETRIMENTAL TO CONCRETE
  - AIR ENTRAINING ADMIXTURE: ASTM C260
  - BONDING AGENT: LATEX EMULSION FOR BONDING NEW TO OLD CONCRETE AS MANUFACTURED BY DAYTON SUPERIOR.
  - NON-SHRINK GROUT: PREMIXED COMPOUND CONSISTING OF NONMETALLIC AGGREGATE, CEMENT, WATER REDUCING AND PLASTICIZING AGENTS.
- CONCRETE MIX
  - CONCRETE MATERIALS SHALL CONFORM TO THE APPROPRIATE A.C.I. REQUIREMENTS FOR EXPOSED STRUCTURAL CONCRETE.
  - MIX AND DELIVER CONCRETE IN ACCORDANCE WITH ASTM C94, ALT. 3.
  - PROPORTIONS OF CONCRETE MATERIALS SHALL BE SUITABLE FOR THE INSTALLATION METHOD UTILIZED AND SHALL RESULT IN DURABLE CONCRETE FOR LOCAL ANTICIPATED AGGRESSIVE ACTIONS. THE DURABILITY REQUIREMENTS OF ACI 318 CHAPTER 4 SHALL BE SATISFIED BASED ON THE CONDITIONS EXPECTED AT THE SITE. PROVIDE CONCRETE AS FOLLOWS:
    - COMPRESSIVE STRENGTH: 4000 psi AT 28 DAYS.
    - SLUMP: 3 INCHES

PART 3 - EXECUTION

- INSERTS, EMBEDDED COMPONENTS AND OPENINGS
  - THE CONTRACTOR SHALL COORDINATE AND CROSS-CHECK ARCHITECTURAL, BUILDING & ELECTRICAL DRAWINGS FOR OPENINGS, SLEEVES, ANCHORS, HANGERS, AND OTHER ITEMS RELATED TO CONCRETE WORK AND SHALL ASSUME FULL RESPONSIBILITY FOR THE PROPER LOCATION BEFORE PLACING CONCRETE
  - PROVIDE FORMED OPENINGS WHERE REQUIRED FOR WORK TO BE EMBEDDED IN AND PASSING THROUGH CONCRETE MEMBERS.
  - COORDINATE WORK OF OTHER SECTIONS IN FORMING AND SETTING OPENING, SLOTS, RECESSES, CHASES, SLEEVES, BOLTS, ANCHORS, AND OTHER INSERTS.
  - INSTALL CONCRETE ACCESSORIES STRAIGHT, LEVEL AND PLUMB.
- REINFORCEMENT PLACEMENT
  - PLACE REINFORCEMENT, SUPPORTED AND SECURED AGAINST DISPLACEMENT.
  - ENSURE REINFORCING IS CLEAN, FREE OF LOOSE SCALE, DIRT, OR OTHER FOREIGN COATINGS.
  - WELDING IS PROHIBITED ON REINFORCING STEEL AND EMBEDMENTS.

D. MINIMUM CONCRETE COVER FOR REINFORCING SHALL BE 3 INCHES UNLESS OTHERWISE NOTED. E. CONCRETE COVER FROM TOP OF FOUNDATION TO ENDS OF VERTICAL REINFORCEMENT SHALL NOT EXCEED 3 INCHES NOR BE LESS THAN 2 INCHES.

- PLACING CONCRETE
  - VIBRATE ALL CONCRETE.
  - ALL CONCRETE WORK SHALL ADHERE TO THE LATEST A.C.I STANDARDS FOR WINTER POURING AND CURING PROCEDURES IF SEASONAL CONDITIONS APPLY
- CURING
  - AFTER PLACEMENT, PROTECT CONCRETE FROM PREMATURE DRYING.
  - MAINTAIN CONCRETE WITH MINIMAL MOISTURE LOSS AT RELATIVELY CONSTANT TEMPERATURE FOR A PERIOD NECESSARY FOR HYDRATION OF CEMENT AND HARDENING OF CONCRETE.
- PROVIDE HAND RUBBED SMOOTH FINISH TO ALL EXPOSED VERTICAL FORMED CONCRETE SURFACES.
- FIELD QUALITY CONTROL
  - SUBMIT THREE (3) CONCRETE TEST CYLINDERS - TAKEN FOR EVERY 15 CUBIC YARD OR LESS. SUBMIT CONCRETE TESTS TO THE PROJECT MANAGER IN ACCORDANCE WITH ASTM , C-31 AND C-39.
  - SUBMIT ONE (1) ADDITIONAL TEST CYLINDER - TAKEN DURING COLD WEATHER POURS, AND CURED ON JOB SITE UNDER SAME CONDITIONS AS CONCRETE IT REPRESENTS.
  - SUBMIT ONE (1) SLUMP TEST - TAKEN FOR EACH SET OF TEST CYLINDERS TAKEN.
- DEFECTIVE CONCRETE MODIFY OR REPLACE CONCRETE NOT CONFORMING TO REQUIRED LINES, DETAILS OR ELEVATIONS AT COST OF GC, AS DIRECTED BY ARCHITECT/ENGINEER.

PART 1 - GENERAL

- SECTION INCLUDES: STRUCTURAL STEEL FRAMING MEMBERS, BASE PLATES, PLATES, BARS AND GROUTING UNDER BASE PLATES.
- SUBMITTALS: SHOP DRAWINGS: INDICATE SIZES, SPACING, AND LOCATIONS OF STRUCTURAL MEMBERS, OPENINGS, CONNECTIONS, CAMBERS, LOADS, AND WELDED SECTIONS.
- QUALITY ASSURANCE:
  - FABRICATE STRUCTURAL STEEL MEMBERS IN ACCORDANCE WITH AISC SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS.
  - PERFORM DESIGN UNDER DIRECT SUPERVISION OF A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE.

PART 2 - PRODUCTS

- MATERIALS:
  - STRUCTURAL STEEL MEMBERS: ASTM A572, GRADE 50
  - STRUCTURAL TUBING: ASTM A500, GRADE B
  - PIPE: ASTM A53, TYPE E OR S, GRADE B
  - BOLTS, NUTS, AND WASHERS: ASTM A325
  - ANCHOR BOLTS: ASTM A307
  - WELDING MATERIALS: AWS D1.1, TYPE REQUIRED FOR MATERIALS BEING WELDED
  - GROUT: NON-SHRINK TYPE, PREMIXED COMPOUND CONSISTING OF NONMETALLIC AGGREGATE, CEMENT, WATER REDUCING AND PLASTICIZING ADDITIVES, CAPABLE OF DEVELOPING MINIMUM COMPRESSIVE STRENGTH OF 7000 psi AT 28 DAYS.
  - SHOP AND TOUCH-UP PRIMER: SSPC 15, TYPE 1, RED OXIDE
  - TOUCH-UP PRIMER FOR GALV. SURFACES: ZINC RICH TYPE
- FABRICATION: CONTINUOUSLY SEAL JOINTED MEMBERS BY CONTINUOUS WELDS. GRIND EXPOSED WELDS SMOOTH.
- FINISH:
  - PREPARE STRUCTURAL COMPONENT SURFACES IN ACCORDANCE WITH SSPC SP-1 TO SP-10 PROCEDURES.
  - STRUCTURAL STEEL MEMBERS SHALL BE HOT DIPPED GALVANIZED.

PART 3 - EXECUTION

- EXAMINATION AND PREPARATION: VERIFY THAT THE FIELD CONDITIONS ARE ACCEPTABLE.
- ERECTION:
  - ALLOW FOR ERECTION LOADS. PROVIDE TEMPORARY BRACING TO MAINTAIN FRAMING IN ALIGNMENT UNTIL COMPLETION OF ERECTION AND INSTALLATION OF PERMANENT BRIDGING AND BRACING.
  - FIELD WELD COMPONENTS INDICATED ON SHOP DRAWINGS.
  - DO NOT FIELD CUT OR ALTER STRUCTURAL MEMBERS WITHOUT APPROVAL OF THE ARCHITECT/ENGINEER.
  - AFTER ERECTION, TOUCH-UP WELDS, ABRASIONS, AND SURFACES NOT SHOP PRIMED OR GALVANIZED WITH TOUCH-UP PRIMERS AS SPECIFIED UNDER SECTION 05000 - METALS, PART 2 - PRODUCTS, H & I. SURFACES TO BE IN CONTACT WITH CONCRETE NOT INCLUDED.
- FIELD QUALITY CONTROL: FIELD INSPECTION OF MEMBERS, CONNECTIONS, WELDS AND TORQUING.

DIVISION 16: ELECTRICAL  
SECTION 16050 - BASIC ELECTRICAL MATERIALS AND METHODS

- CONTRACTOR SHALL REVIEW THE CONTRACT DOCUMENTS PRIOR TO ORDERING THE ELECTRICAL EQUIPMENT AND STARTING THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE ARCHITECT LISTING ANY DISCREPANCIES OR CONFLICTING INFORMATION.
- ELECTRICAL PLANS, DETAILS AND DIAGRAMS ARE DIAGRAMMATIC ONLY. VERIFY EXACT LOCATIONS AND MOUNTING HEIGHTS OF ELECTRICAL EQUIPMENT WITH OWNER PRIOR TO INSTALLATION.
- EACH CONDUCTOR OF EVERY SYSTEM SHALL BE PERMANENTLY TAGGED IN EACH PANELBOARD, PULLBOX, JUNCTION BOX, SWITCH BOX, ETC. THE TYPE OF TAGGING METHODS SHALL BE IN COMPLIANCE WITH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (O.S.H.A.).
- ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN GOOD WORKING CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. MATERIALS SHALL BE LISTED "J" WHERE APPLICABLE. MATERIALS SHALL MEET WITH APPROVAL OF ALL GOVERNING BODIES HAVING JURISDICTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA, NBFU AND "UL" LISTED.
- ALL CONDUIT SHALL HAVE A PULL CORD.
- PROVIDE PROJECT MANAGER WITH ONE SET OF COMPLETE ELECTRICAL "AS INSTALLED" DRAWINGS AT THE COMPLETION OF THE JOB, SHOWING ACTUAL DIMENSIONS, ROUTINGS, AND CIRCUITS.
- ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED, AND A MINIMUM OF 10,000 A.I.C.
- THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY UBC, NEC AND ALL APPLICABLE CODES.
- PATCH, REPAIR AND PAINT ANY AREA THAT HAS BEEN DAMAGED IN THE COURSE OF THE ELECTRICAL WORK.
- PLASTIC PLATES FOR ALL SWITCHES, RECEPTACLES, TELEPHONE AND BLANKED OUTLETS SHALL HAVE ENGRAVED LETTERING WHERE INDICATED ON THE DRAWINGS. WEATHERPROOF RECEPTACLES SHALL HAVE SIERRA #WPD-8 LIFT COVER PLATES.

SECTION 16400 - SERVICE AND DISTRIBUTION

- WIRE AND CABLE CONDUCTORS SHALL BE COPPER, 600V, TYPE THHN OR THWN, WITH A MIN. SIZE OF #12 AWG, COLOR CODED. ALL RECTIFIER DROPS SHALL BE STRANDED TO ACCEPT CRIMP CONNECTORS.
- ALL CHEMICAL GROUND RODS SHALL BE "UL" APPROVED.
- METER SOCKET AMPERES, VOLTAGE, NUMBER OF PHASES SHALL BE A NOTED ON THE DRAWINGS. MANUFACTURED BY MILBANK OR APPROVED EQUAL, AND SHALL BE UTILITY COMPANY APPROVED.
- CONDUIT:
  - RIGID CONDUIT SHALL BE U.L. LABEL GALVANIZED ZINC COATED WITH GALVANIZED ZINC INTERIOR AND SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS, IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR RIGID CONDUIT IN CONTACT WITH EARTH SHALL BE 2/2 LAPPED WRAPPED WITH HUNTS WRAP PROCESS NO. 3.
  - ELECTRICAL METALLIC TUBING SHALL HAVE U.L. LABEL, FITTING SHALL BE GLAND RING COMPRESSION TYPE.
  - FLEXIBLE METALLIC CONDUIT SHALL HAVE U.L. LISTED LABEL AND MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE "JAKE" OR "SQUEEZE" TYPE. ALL FLEXIBLE CONDUITS SHALL HAVE FULL LENGTH GROUND WIRE.
  - ALL UNDERGROUND CONDUIT SHALL BE AS NOTED ON THE DRAWINGS AT A MINIMUM DEPTH OF 30" BELOW GRADE. IT IS REQUIRED AND WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO NOTIFY THE UTILITY CLEARANCE HOTLINE (DIGGER'S HOTLINE OR OTHER SUCH NOTIFYING AGENCY) SEVENTY-TWO (72) BUSINESS HOURS PRIOR TO DIGGING.
- CONTRACTOR TO COORDINATE WITH UTILITY COMPANY FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE SITE. THE TEMPORARY POWER AND ALL HOOKUP COSTS ARE TO BE PAID BY THE CONTRACTOR.
- ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS WITH WHITE ON BLUE BACKGROUND LETTERING (MINIMUM LETTER HEIGHT SHALL BE 1/4-INCH). NAMEPLATES SHALL BE FASTENED WITH STAINLESS STEEL SCREWS, NOT ADHESIVE.
- UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL POTENTIAL GROUNDING TESTS BY AN INDEPENDENT TESTING SERVICE ENGAGED BY THE CONTRACTOR SHALL BE SUBMITTED FOR APPROVAL. SUBMIT TEST REPORTS TO PROJECT MANAGER. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION.
- GROUNDING ELECTRODE SYSTEM
  - PREPARATION
    - SURFACE PREPARATION: ALL CONNECTIONS SHALL BE MADE TO BARE METAL. ALL PAINTED SURFACES SHALL BE FIELD INSPECTED AND MODIFIED TO ENSURE PROPER CONTACT. NO WASHERS ARE ALLOWED BETWEEN THE ITEMS BEING GROUNDED. ALL CONNECTIONS ARE TO HAVE A NON-OXIDIZING AGENT APPLIED PRIOR TO INSTALLATION.
    - GROUND BAR PREPARATION: ALL COPPER GROUND BARS SHALL BE CLEANED, POLISHED AND A NON-OXIDIZING AGENT APPLIED. NO FINGERPRINTS OR DISCOLORED COPPER WILL BE PERMITTED.

- SLEEVES: ALL GROUNDING CONDUCTORS SHALL RUN THROUGH PVC SLEEVES WHEREVER CONDUCTORS RUN THROUGH WALLS, FLOORS OR CEILINGS. IF CONDUCTORS MUST RUN THROUGH EMT, BOTH ENDS OF CONDUIT SHALL BE GROUNDED. SEAL BOTH ENDS OF CONDUIT WITH SILICONE CAULK.
  - GROUND BARS
    - ALL GROUND BARS SHALL BE 1/4-INCH THICK TINNED COPPER PLATE AND OF SIZE INDICATED ON DRAWINGS.
    - ALL CONNECTIONS TO THE GROUND BARS SHALL OBSERVE THE FOLLOWING SEQUENCE:
      - BOLT-HEAD
      - 2-HOLE LUG
      - NON-OX (ANTI-OXIDATION COMPOUND)
      - TINNED COPPER BUSS BAR
      - NON-OX (ANTI-OXIDATION COMPOUND)
      - STAR WASHER
      - NUT
  - EXTERNAL CONNECTIONS
    - ALL BURIED GROUNDING CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC WELD PROCESS. CONNECTIONS SHALL INCLUDE ALL CABLE TO CABLE, SPLICES, TEE'S, CROSSES, ETC. ALL CABLE TO GROUND RODS, GROUND ROD SPLICES AND LIGHTNING PROTECTION SYSTEMS ARE TO BE AS INDICATED. ALL MATERIALS USED (MOLDS, WELDING METAL, TOOLS, ETC.) SHALL BE BY "CADWELD" AND INSTALLED PER MANUFACTURER'S RECOMMENDED PROCEDURES.
    - ALL ABOVE GRADE GROUNDING AND BONDING CONDUCTORS SHALL BE CONNECTED BY TWO HOLE CRIMP TYPE (COMPRESSION) CONNECTIONS (EXCEPT FOR THE ACEG AND GROUND ROD) MECHANICAL CONNECTIONS, FITTINGS OR CONNECTIONS THAT DEPEND SOLELY ON SOLDER SHALL NOT BE USED. ALL CABLE TO CABLE CONNECTIONS SHALL BE HIGH PRESSURE DOUBLE CRIMP TYPE CONNECTIONS. CONNECTIONS TO STRUCTURAL STEEL SHALL BE EXOTHERMIC WELDS.
  - GROUND RODS ALL GROUND RODS SHALL BE 5/8-INCH DIAMETER X 10'-0" LONG "COPPERED" OR APPROVED EQUAL, OF THE NUMBER AND LOCATIONS INDICATED. GROUND RODS SHALL BE DRIVEN FULL LENGTH VERTICAL IN UNDISTURBED EARTH.
  - GROUND CONDUCTORS ALL GROUND CONDUCTORS SHALL BE STANDARD TINNED SOLID BARE COPPER ANNEALED, AND OF SIZE INDICATED ON DRAWINGS UNLESS NOTED OTHERWISE.
  - LUGS
    - LUGS SHALL BE 2-HOLE, LONG BARREL, STRAND COPPER UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS. LUGS SHALL BE THOMAS AND BETTS SERIES #548 BE OR EQUIVALENT MINIMUM BENDING
      - 535 MCM DLO 54880BE
      - 262 MCM DLO 54872BE
      - #1/0 DLO 54862BE
      - #4/0 THWN AND BARE 54866BE
      - #2/0 THWN 54862BE
      - #2 THHN 54207BE
      - #6 DLO 54205BE
    - WHEN THE DIRECTION OF THE CONDUCTOR MUST CHANGE, IT SHALL BE DONE GRADUALLY. THE CURVATURE OF THE TURN SHALL BE DONE IN ACCORDANCE WITH THE FOLLOWING CHART:

GROUNDING CONDUCTOR SIZE	RADIUS TO INSIDE EDGE
NO. 6 AWG TO NO. 4 AWG	6 INCHES
NO. 2 AWG TO NO. 1/0 AWG	8 INCHES
NO. 2/0 AWG TO 4/0 MCM	12 INCHES
250 MCM TO 750 MCM	24 INCHES
- GROUND RING
  - THE EXTERNAL GROUND RING ENCIRCLING THE TOWER (IF APPLICABLE) AND BETWEEN THE EQUIPMENT SHELTER PLATFORM ANCHORS SHALL BE MINIMUM NO. 2 A.W.G. SOLID TINNED BARE COPPER CONDUCTORS IN DIRECT CONTACT WITH THE EARTH AT THE DEPTH INDICATED ON THE DRAWINGS. CONDUCTOR BENDS SHALL HAVE A MINIMUM BENDING RADIUS OF EIGHT (8) INCHES.
  - ALL EXTERNAL GROUND RINGS ARE TO BE JOINED TOGETHER AND ALL CONNECTIONS MUST BE CADWELDED. NO LUGS OR CLAMPS WILL BE ACCEPTED.
- FENCE/GATE GROUND EACH GATE POST, CORNER POST AND GATE AS INDICATED ON DRAWING GROUND CONNECTIONS TO FENCE POSTS AND ALL OTHER CONNECTIONS FOR THE GROUND GRID SYSTEM SHALL BE MADE BY EXOTHERMIC WELD PROCESS, AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND PROCEDURES, AND SPRAYED WITH COLD GALVANIZED PAINT.
- I.E.E.E. FALL POTENTIAL TESTS
  - FOR RAW LAND SITE
    - GROUND TESTS SHALL BE PERFORMED AS INDICATED ON DRAWINGS. A BIDDLE GROUND OHMER OR THE METHOD OF USING TWO AUXILIARY GROUND RODS (AS DESCRIBED IN I.E.E.E. STANDARDS NO. 81-1983, PART 1) MAY BE USED. THE I.E.E.E. METHOD REQUIRES THE USE OF AN A.C. TEST CURRENT. THE AUXILIARY TEST RODS MUST BE SUFFICIENTLY FAR AWAY FROM THE ROD UNDER TEST SO THAT THE REGIONS IN WHICH THEIR RESISTANCE IS LOCALIZED DO NOT OVERLAP. THE TEST POINT WILL BE THE GROUND ROD AND WILL CONSIST OF THE THREE POINT FALL OF POTENTIAL MEGGER TEST METHOD, USING THE BIDDLE NULL-BALANCE EARTH TESTER (MEGGER #250220-2 OR EQUIVALENT)
    - CONTRACTOR TO CONDUCT GROUND RESISTANCE TEST IN THE FORMAT AS FOLLOWS:



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Woodcliff Lake, NJ • Bayamon, PR

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



James R. Skowronski  
Date: 7/08/2019

MARK	DATE	DESCRIPTION
1	07/08/19	ADDED LIGHTING PACKAGE

ISSUE PHASE	FINAL	DATE ISSUED	06/20/2019
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PROJECT TITLE:  
**TI-OPP-11895-C**

PROJECT INFORMATION:  
PID: 051204290203  
ALBION, WI 53534  
DANE COUNTY

SHEET TITLE:  
**NOTES**

SCALE: NONE

PROJECT NUMBER: 42278  
SHEET NUMBER: N-2

- A. TOWER
- FIRST TEST - SHALL BE WITH THREE GROUND RODS INSTALLED (MINIMUM), EQUALLY SPACED AROUND THE TOWER FOUNDATION, BUT NOT CONNECTED TO THE SHELTER PAD EXTERNAL GROUND RING. FURNISH WIRE TO CONNECT (TEMPORARY CLAMP) ALL THREE GROUND RODS TOGETHER TO MAKE A SYSTEM TEST AFTER EACH ROD IS INDIVIDUALLY TESTED. IF ANY INDIVIDUAL ROD TESTS 25 OHMS OR MORE, NOTIFY THE CONTRACTOR AND OWNER'S REPRESENTATIVE SO THAT THE ROD CAN BE DRIVEN DEEPER UNTIL ALL THREE (3) RODS HAVE A RESISTANCE OF 10 OHMS OR LESS ON A DRY DAY.
  - SECOND TEST - SHALL BE WITH THE GROUND RODS CONNECTED, WITH DRY SOIL AND WHEN NO STANDING WATER HAS BEEN PRESENT FOR THE PAST TEN (10) DAYS, THE MAXIMUM ALLOWABLE READING IS 5 OHMS TO GROUND. IF THE RESISTANCE OF THE ENTIRE SYSTEM EXCEEDS 5 OHMS THE ELECTRICAL CONTRACTOR AND OWNER'S REPRESENTATIVE SHOULD BE NOTIFIED SO THAT EITHER ADDITIONAL AND/OR DEEPER RODS CAN BE INSTALLED.
- C. EQUIPMENT PAD AND TOWER
- AFTER THE EQUIPMENT PAD AND TOWER GROUND RESISTANCE TEST IS COMPLETED, CONTRACTOR SHALL TIE EQUIPMENT PAD EXTERNAL GROUND RING AND TOWER EXTERNAL GROUND RING TOGETHER. AFTER FIRST AND SECOND TEST ALL CONNECTIONS MUST BE MADE USING EXOTHERMIC WELD. NO LUGS OR CLAMPS WILL BE ACCEPTED.
  - AFTER ALL THE EXTERNAL GROUND RINGS ARE TIED TOGETHER, COMPLETE A MEGGER CHECK OF THE GROUND SYSTEM SHOULD BE DONE. THE MAXIMUM ALLOWABLE LEADING IS 5 OHMS TO GROUND. 10. GROUNDING RESISTANCE TEST REPORT UPON COMPLETION OF THE TESTING FOR EACH SITE, A TEST REPORT SHOWING RESISTANCE IN OHMS WITH AUXILIARY POTENTIAL ELECTRODES AT 5 FEET AND 10 FEET INTERVALS UNTIL THE AVERAGE RESISTANCE STARTS INCREASING AND ALSO NOTE THAT 10-15 PHOTOS MUST BE TAKEN TO PROOF ENTIRE EXTERNAL GROUND RING SYSTEM BEFORE BACKFILL. TWO (2) SETS OF TEST DOCUMENTS ARE OF THE INDEPENDENT TESTING SERVICE TO BE BOUND AND SUBMITTED WITHIN ONE (1) WEEK OF WORK COMPLETION.
10. GROUNDING RESISTANCE TEST REPORT UPON COMPLETION OF THE TESTING FOR EACH SITE, A TEST REPORT SHOWING RESISTANCE IN OHMS WITH AUXILIARY POTENTIAL ELECTRODES AT 5 FEET AND 10 FEET INTERVALS UNTIL THE AVERAGE RESISTANCE STARTS INCREASING AND ALSO NOTE THAT 10-15 PHOTOS MUST BE TAKEN TO PROOF ENTIRE EXTERNAL GROUND RING SYSTEM BEFORE BACKFILL. TWO (2) SETS OF TEST DOCUMENTS ARE OF THE INDEPENDENT TESTING SERVICE TO BE BOUND AND SUBMITTED WITHIN ONE (1) WEEK OR WORK COMPLETION.

**SECTION 16503 - POLES, POSTS, AND STANDARDS  
 (SINGLE MAST AND SELF SUPPORTING TOWERS)**

1. GENERAL
- LIGHTNING ROD AND EXTENSION PIPE INCLUDING ALL APPURTENANCES, TO BE FURNISHED BY OWNER, IF REQUIRED.
  - PROVIDE TEMPORARY LIGHTING FOR TOWER AS PER FAA REGULATIONS DURING CONSTRUCTION, IF REQUIRED.
  - GROUNDING: GROUND TOWER WITH A MINIMUM OF #2 AWG TINNED SOLID BARE COPPER CONDUCTOR CADWELDED TO TOWER BASE PLATE. TWO (2) GROUNDING LEADS PER TOWER BASE PLATE. NON-EXOTHERMIC WELDS SHALL BE ATTACHED DIRECTLY TO THE MONOPOLE TOWER SHAFT.



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



*James R. Skowronski* 7/08/2019  
 James R. Skowronski Date:


1	07/08/19	ADDED LIGHTING PACKAGE
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ISSUE PHASE	FINAL	DATE ISSUED	06/20/2019
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PROJECT TITLE:  
**TI-OPP-11895-C**

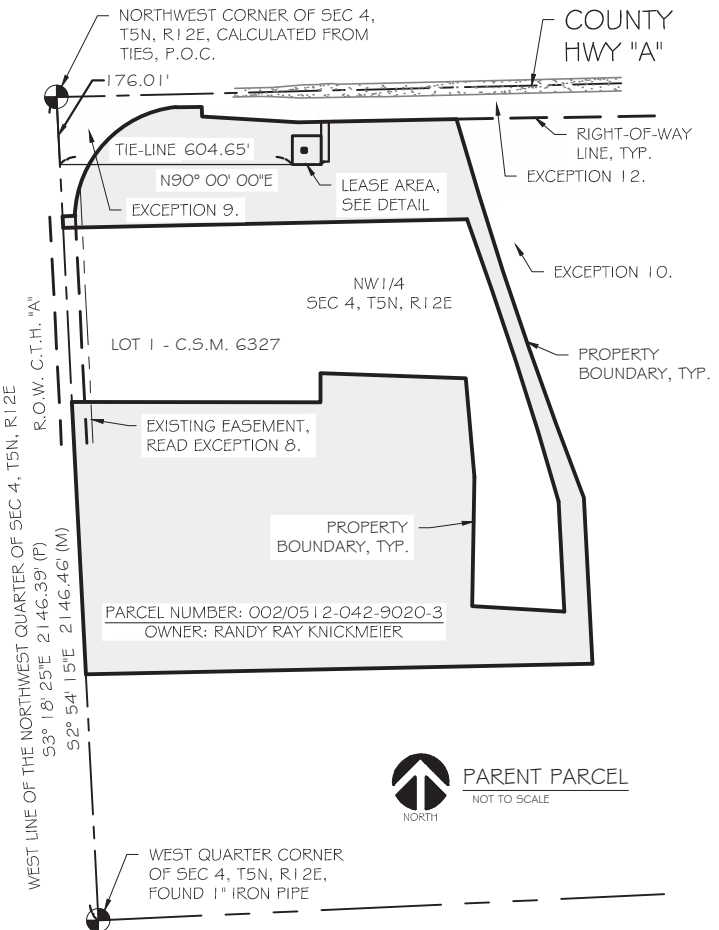
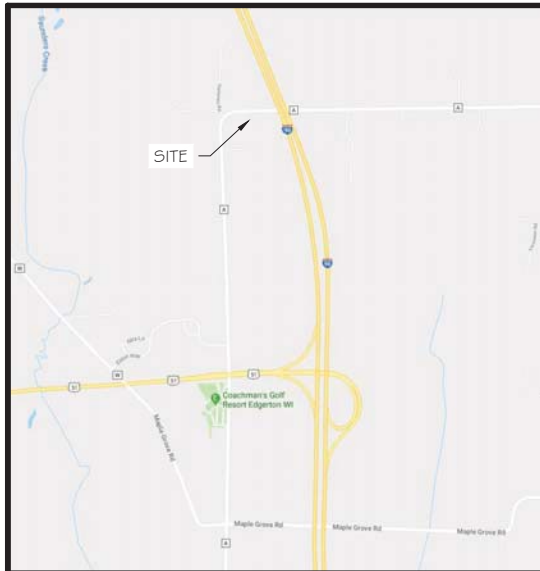
PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:  
**NOTES**

SCALE: NONE

PROJECT NUMBER	42278
SHEET NUMBER	N-3





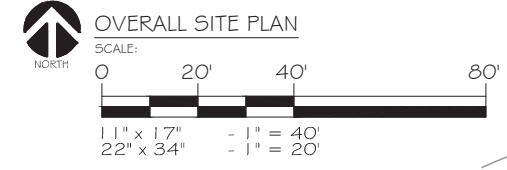
PARENT PARCEL DESCRIPTION BY FIDELITY NATIONAL INSURANCE COMPANY  
 COMMITMENT NO. 28180694, PARCEL NUMBER: 051204290203

PART OF THE WEST HALF OF THE NORTHWEST QUARTER OF SECTION 4, TOWNSHIP 5 NORTH, RANGE 12 EAST, TOWN OF ALBION, DANE COUNTY, WISCONSIN, MORE FULLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 4, T5N, R12E; THENCE S03° 18' 25"E, 310.70 FEET TO THE POINT OF BEGINNING OF THIS DESCRIPTION; THENCE N86° 41' 35"E, 33.00 FEET; THENCE ALONG A CURVE TO THE RIGHT WHICH HAS A RADIUS OF 268.60 FEET AND A LONG CHORD THAT BEARS N42° 32' 39"E, 385.46 FEET; THENCE N88° 23' 44"E, 67.08 FEET; THENCE S01° 32' 54"E, 25.18 FEET; THENCE S86° 58' 27"E, 250.80 FEET; THENCE N88° 27' 06"E, 412.33 FEET; THENCE ALONG A CURVE TO THE RIGHT WHICH HAS A RADIUS OF 11,349.19 FEET AND A LONG CHORD THAT BEARS S18° 58' 48"E, 1039.95 FEET; THENCE S03° 24' 17"E, 432.69 FEET; THENCE S88° 23' 44"W, 1319.53 FEET; THENCE N03° 18' 25"W, 1193.77 FEET TO THE POINT OF BEGINNING. THIS PARCEL CONTAINS 40.000 ACRES OF WHICH 0.905 ACRES IS WITHIN ROAD RIGHT-OF-WAY.

AND BEING THE SAME PROPERTY CONVEYED TO RANDY RAY KNICKMEIER FROM GURENA MEYER, F/K/A GURENA MEYER MCARDLE AND UNITED BANK, N/K/A VALLEY TRUST COMPANY, AS TRUSTEE U/W/O GURENA IVERSON, DECEASED BY WARRANTY DEED DATED FEBRUARY 14, 1991 AND RECORDED MARCH 19, 1991 IN DEED BOOK 15558, PAGE 6.

- SURVEYOR'S NOTES**
- 1) ALL EASEMENTS AND/OR LEASE AREAS SHOWN AND NOT LABELED AS EXISTING SHALL BE PENDING UNTIL RECORDED.
  - 2) AN ATTEMPT WAS MADE TO LOCATE ALL PROPERTY CORNERS AND MONUMENTS. WHERE NO MONUMENTS WERE FOUND, THE PROPERTY LINE WAS DRAWN BASED ON RECORDED AND/OR FILED DOCUMENTS.
  - 3) NOT TO BE USED AS CONSTRUCTION DRAWINGS.
  - 4) THE LOCATIONS OF UNDERGROUND UTILITIES WAS DETERMINED BY FIELD OBSERVATIONS AND VISIBLE MARKINGS ONLY AT TIME OF SURVEY.
  - 5) THE PURPOSE OF THIS SURVEY IS TO ESTABLISH AND DESCRIBE A LEASE AREA AND ASSOCIATED EASEMENTS. THIS IS NOT A BOUNDARY SURVEY OF THE PARENT PARCEL.
  - 6) PARENT PARCEL DESCRIPTION FROM RECORDED AND/OR FILED DOCUMENTS.
  - 7) THIS MAP WAS PREPARED WITH THE AID OF A TITLE COMMITMENT BY FIDELITY NATIONAL TITLE INSURANCE COMPANY, COMMITMENT NUMBER: 28180694, DATE OF COMMITMENT: OCTOBER 18, 2018.
  - 8) FIELD WORK WAS PERFORMED BY RAMAKER & ASSOCIATES AND REVIEWED BY TRENT D. NELSON, WI SURVEYOR NUMBER 3132-8.
  - 9) BEARINGS ARE REFERENCED TO THE WEST LINE OF THE NORTHWEST QUARTER OF SECTION 4, T5N, R12E, MEASURED TO BEAR S2° 54' 15"E BY GPS GRID USING THE WISCONSIN COUNTY COORDINATE SYSTEM, DANE COUNTY, U.S. FOOT DATUM.
  - 10) F.E.M.A. FLOOD PANEL MAP NUMBER 55025C0662H, EFFECTIVE SEPTEMBER 17, 2014, AREA OF MINIMAL FLOOD HAZARD, ZONE 'X', AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE OF FLOOD PLAIN.
  - 11) PARCEL NUMBER: 002/0512-042-9020-3.



**TITLE REVIEW**

TITLE BY: FIDELITY NATIONAL TITLE INSURANCE COMPANY  
 COMMITMENT NUMBER: 28180694

SCHEDULE B - SECTION II, SURVEY RELATED EXCEPTIONS:

8. RIGHT-OF-WAY AUTHORIZATION IN FAVOR OF GENERAL TELEPHONE COMPANY OF WISCONSIN, SET FORTH IN INSTRUMENT RECORDED ON 02/02/1970 IN DEED BOOK 157, PAGE 393. **EXISTING EASEMENT IS SHOWN ON THE SURVEY. EXISTING EASEMENT WILL NOT AFFECT THE LEASE AREA OR ASSOCIATED EASEMENT.**
9. TERMS, PROVISIONS, COVENANTS, CONDITIONS, RESTRICTIONS, RESERVATIONS, EASEMENTS, CHARGES, ASSESSMENTS AND LIENS PROVIDED IN A DEED OR COVENANTS, CONDITIONS AND RESTRICTIONS RECORDED IN DEED BOOK 241, PAGE 15, BUT OMITTING ANY COVENANTS OR RESTRICTIONS, IF ANY, BASED UPON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, FAMILIAL STATUS, MARITAL STATUS, DISABILITY, HANDICAP, NATIONAL ORIGIN, ANCESTRY, OR SOURCE OF INCOME, AS SET FORTH IN APPLICABLE STATE OR FEDERAL LAWS, EXCEPT TO THE EXTENT THAT SAID COVENANT OR RESTRICTION IS PERMITTED BY APPLICABLE LAW. **EXISTING HIGHWAY IS LOCATED ON THE NORTHERN MOST AND WESTERN MOST PART OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 4 AND IS SHOWN ON THE SURVEY. EXISTING HIGHWAY AND ASSOCIATED RIGHT-OF-WAY WILL NOT AFFECT THE LEASE AREA OR ASSOCIATED EASEMENT.**
10. TERMS, PROVISIONS, COVENANTS, CONDITIONS, RESTRICTIONS, RESERVATIONS, EASEMENTS, CHARGES, ASSESSMENTS AND LIENS PROVIDED IN A DEED OR COVENANTS, CONDITIONS AND RESTRICTIONS RECORDED IN DEED BOOK 719, PAGE 389, BUT OMITTING ANY COVENANTS OR RESTRICTIONS, IF ANY, BASED UPON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, FAMILIAL STATUS, MARITAL STATUS, DISABILITY, HANDICAP, NATIONAL ORIGIN, ANCESTRY, OR SOURCE OF INCOME, AS SET FORTH IN APPLICABLE STATE OR FEDERAL LAWS, EXCEPT TO THE EXTENT THAT SAID COVENANT OR RESTRICTION IS PERMITTED BY APPLICABLE LAW. **EXISTING HIGHWAY IS LOCATED ON THE NORTHERN MOST AND WESTERN MOST PART OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 4 AND IS SHOWN ON THE SURVEY. EXISTING HIGHWAY AND ASSOCIATED RIGHT-OF-WAY WILL NOT AFFECT THE LEASE AREA OR ASSOCIATED EASEMENT.**
12. MATTERS AS SHOWN AND NOTED ON PLAT RECORDED IN INSTRUMENT NO. 5068382. **EXISTING HIGHWAY IS LOCATED ON THE NORTHERN MOST AND WESTERN MOST PART OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 4 AND IS SHOWN ON THE SURVEY. EXISTING HIGHWAY AND ASSOCIATED RIGHT-OF-WAY WILL NOT AFFECT THE LEASE AREA OR ASSOCIATED EASEMENT.**

**75' X 75' LEASE AREA DESCRIPTION**

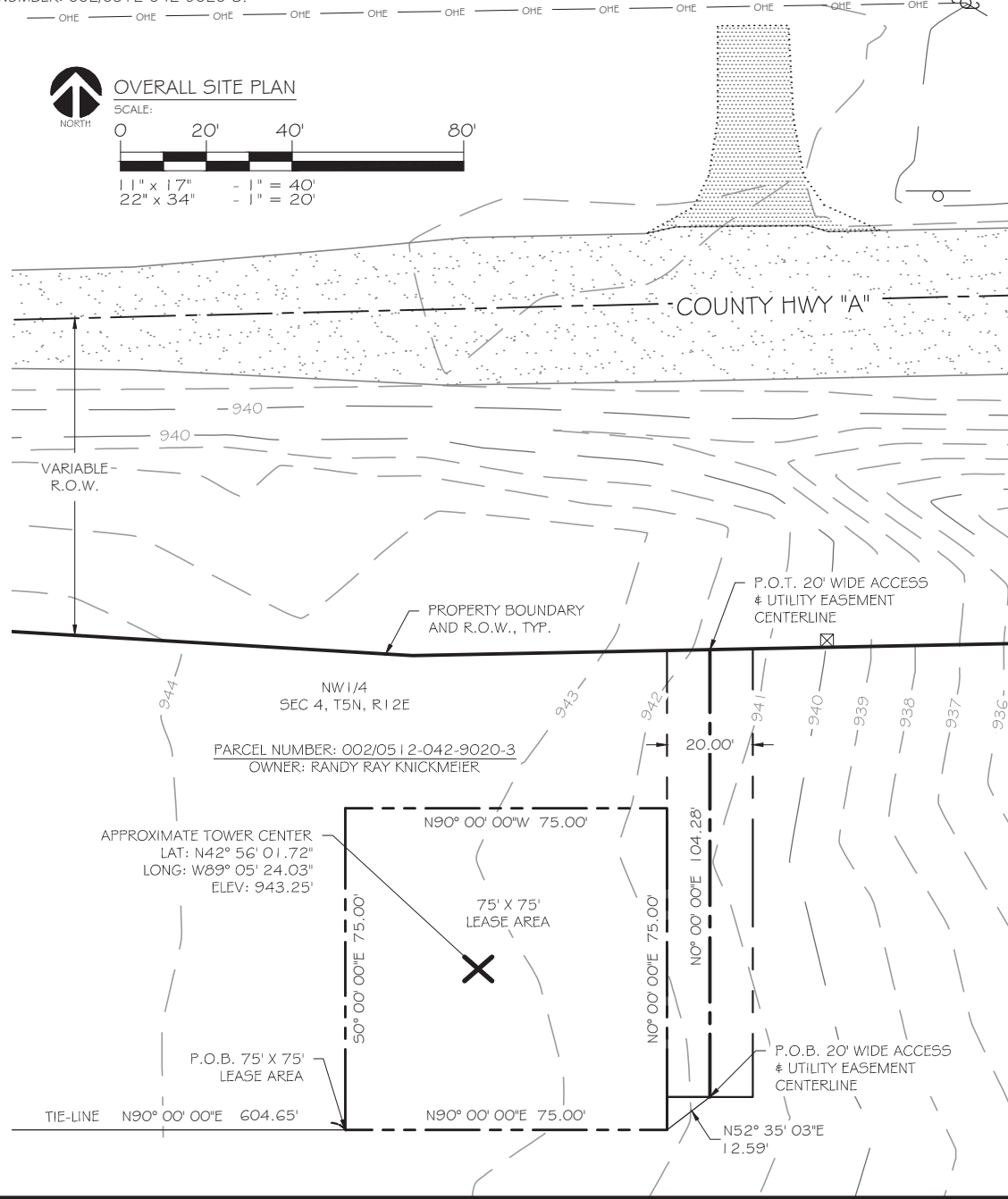
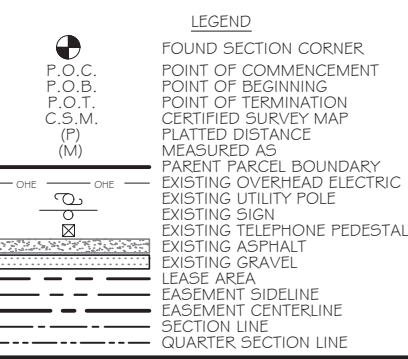
A PORTION OF LAND LOCATED IN PART OF THE WEST HALF OF THE NORTHWEST QUARTER OF SECTION 4, TOWNSHIP 5 NORTH, RANGE 12 EAST, TOWN OF ALBION, DANE COUNTY, WISCONSIN, AND BEING FURTHER DESCRIBED AS FOLLOWS:

COMMENCING AT A CALCULATED MONUMENT LOCATING THE NORTHWEST CORNER OF SAID SECTION 4; THENCE S2° 54' 15"E, 176.01 FEET ALONG THE WEST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 4; THENCE N90° 00' 00"E, 604.65 FEET TO THE POINT OF BEGINNING; THENCE CONTINUING N90° 00' 00"E, 75.00 FEET; THENCE N0° 00' 00"E, 75.00 FEET; THENCE N90° 00' 00"W, 75.00 FEET; THENCE S0° 00' 00"E, 75.00 TO THE POINT OF BEGINNING. SAID PROPOSED LEASE AREA CONTAINS 5,625 SQUARE FEET (0.13 ACRES) AND IS SUBJECT TO ANY AND ALL EASEMENTS OR AGREEMENTS, RECORDED OR UNRECORDED.

**20' WIDE ACCESS & UTILITY EASEMENT CENTERLINE DESCRIPTION**

A PORTION OF LAND LOCATED IN PART OF THE WEST HALF OF THE NORTHWEST QUARTER OF SECTION 4, TOWNSHIP 5 NORTH, RANGE 12 EAST, TOWN OF ALBION, DANE COUNTY, WISCONSIN, AND BEING FURTHER DESCRIBED AS FOLLOWS:

COMMENCING AT A CALCULATED MONUMENT LOCATING THE NORTHWEST CORNER OF SAID SECTION 4; THENCE S2° 54' 15"E, 176.01 FEET ALONG THE WEST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 4; THENCE N90° 00' 00"E, 604.65 FEET TO THE SOUTHWEST CORNER OF THE AFOREMENTIONED LEASE AREA; THENCE CONTINUING N90° 00' 00"E, 75.00 FEET TO THE SOUTHEAST CORNER OF THE AFOREMENTIONED LEASE AREA; THENCE N52° 35' 03"E, 12.59 TO THE POINT OF BEGINNING; THENCE N0° 00' 00"E, 104.28 FEET, MORE OR LESS, RUNNING PARALLEL WITH THE EAST LINE OF THE AFOREMENTIONED LEASE AREA, TO THE SOUTHERLY RIGHT-OF-WAY LINE OF COUNTY HWY "A" AND ALSO THE POINT OF TERMINATION. SAID ACCESS & UTILITY EASEMENT CENTERLINE CONTAINS 104.28 LINEAR FEET, MORE OR LESS, AND IS SUBJECT TO ANY AND ALL EASEMENTS OR AGREEMENTS, RECORDED OR UNRECORDED. SIDELINES OF SAID EASEMENT SHALL BE LENGTHENED OR SHORTENED TO END AT THE SOUTHERLY RIGHT-OF-WAY LINE OF COUNTY HWY "A".



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PROJECT NUMBER:	42278	
MARK	DATE	DESCRIPTION
Certification & Seal:		
I hereby certify that this Survey Document was prepared and the related Survey Work was performed by me or under my direct personal supervision and that I am a duly Licensed Land Surveyor under the Laws of the State of Wisconsin.		
Trent D. Nelson, FL3 License Number: 3132-8 Date: 02/07/19		
ISSUE PHASE:	FINAL	DATE ISSUED: 02/07/2019
SITE NAME: TI-OPP-11895		
ADDRESS: PID: 002/0512-042-9020-3 ALBION, WI DANE COUNTY		
SHEET TITLE: SITE SURVEY		
SCALE: AS NOTED		
R # A NUMBER:	2018202	
SHEET NUMBER:	1 OF 1	





**OVERALL ZONING SITE PLAN** ①  
SCALE: NOT TO SCALE



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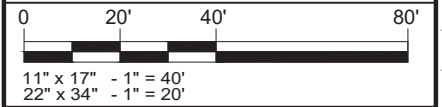
*James R. Skowronski* 7/08/2019  
James R. Skowronski Date:


MARK	DATE	DESCRIPTION
1	07/08/19	ADDED LIGHTING PACKAGE

ISSUE PHASE: FINAL DATE ISSUED: 06/20/2019  
PROJECT TITLE:  
**TI-OPP-11895-C**

PROJECT INFORMATION:  
PID: 051204290203  
ALBION, WI 53534  
DANE COUNTY

SHEET TITLE:  
**OVERALL ZONING SITE PLAN**



PROJECT NUMBER	42278
SHEET NUMBER	Z-1



PARCEL REF. #	PARCEL #	PARCEL OWNER	PARCEL REF. #	PARCEL #	PARCEL OWNER
1	051204290203	RANDY RAY KNICKMEIER	51	061233386607	PAMELA A. & NICHOLE L. UCHYTIL
2	051204286709	GEORGE A. & REBECCA S. ZEIMET	52	061232193808	LINNERUD TRUST - WAYNE & FAITH
3	051204291908	CURRENT OWNER	53	061232197500	LINNERUD TRUST - WAYNE & FAITH
4	051204296403	WISCONSIN D.O.T.	54	061233391100	WILBERT S. & SHIRLEY A. KNICKMEIER
5	051204385003	CURRENT OWNER	55	061233390914	WILBERT S. KNICKMEIER
6	051204381110	CURRENT OWNER	56	061232495200	KELLY A. & DALE K. SPLINTER
7	051204396110	CURRENT OWNER	57	061233392109	RODNEY ROST
8	051204390010	CURRENT OWNER	58	061232495030	AIDE LIVING TRUST
9	051204395010	CURRENT OWNER	59	061232491000	AIDE LIVING TRUST
10	051204490005	DONOVAN J. & SHARON E. SVEUM	60	061232395000	OLSON LIVING TRUST - JOHN W. & BEVERLY A.
11	051204485002	CURRENT OWNER	61	061232395500	LARRY E. JOHNSON
12	051204380010	CURRENT OWNER	62	061232396901	LARRY E. JOHNSON
13	051204280220	STEVEN D. & GINGER L. HAGEMANN	63	051205281006	LARRY E. JOHNSON
14	051204190704	CURRENT OWNER	64	051205280007	RANDY R. KNICKMEIER
15	051204195003	RONALD L. & KENLYN THRONSON	65	051205185010	RANDY R. KNICKMEIER
16	051204180108	PORTER JT REV. LIVING TRUST	66	051205185500	DAVID M. & CANDACE A. SARBACKER
17	051204182100	ANDREW L. & MEREDITH L. STENSVEN	67	051205180510	DAVID M. & CANDACE A. SARBACKER
18	051204181700	PORTER JT REV. LIVING TRUST	68	051205180017	RONNIE J. & KIMBERLY J. OBERMUELLER
19	051204181107	RICHARD A. BARFKNECHT	69	051205197000	RANDY R. KNICKMEIER
20	051204185210	SCOTT G. TAYLOR	70	051205190010	RANDY R. KNICKMEIER
21	051204185701	CURRENT OWNER	71	051205295000	RANDY R. KNICKMEIER
22	051204280018	JEFFREY K. & ANNE KOHLER	72	051205480005	ROBERT A. & COLLEEN N. YOUNG
23	051204281606	ALEX J. ARNOLD	73	051205480416	GILBERTSEN JT REV. LIVING TRUST
24	051204280303	JENNIFER A. CLARK	74	051205485000	RICHARD & IRENE GUNDERSON
25	061233390003	ROY KAUPER	75	051205485600	SIMS LIVING TRUST - JW & JULIE
26	061233395017	ROY KAUPER	76	051205485610	SIMS LIVING TRUST - JW & JULIE
27	061233398201	LEIF T. LERVIK	77	051205381014	ERIK K. & ANGELA J. OTTERSON
28	061233492304	LEIF T. & LARS J. LERVIK	78	051205485750	MATTHEW C. & JENNIFER C. MCCLURE
29	061233490002	LEIN ACRES LLC	79	051205484207	KENNETH O. RUDE
30	061233495007	LARS H. LEIN LLC	80	051205482807	RICHARD A. & IRENE E. GUNDERSON
31	061233480004	LEIN ACRES LLC	81	051205497600	COACHMAN'S INN ENTERPRISES INC.
32	061233485009	LEIN ACRES LLC	82	051205496200	COACHMAN'S INN ENTERPRISES INC.
33	061233380005	LEIN ACRES LLC	83	051205471450	DAVID A. & ALEXIS R. JOHNSON
34	061233385000	MARLETTA HILL	84	051205471340	RYAN P. & HEATHER L. KLUCK
35	061233290102	NOTSTAD LIVING TRUST	85	051205471230	JOAN L. GARD
36	061233296900	LEIN ACRES LLC	86	051205470020	SUE ELLEN KNUTSON
37	061233191920	LEIN ACRES LLC	87	051205470130	STEVEN T. & LORI MOE KITTELSON
38	061233193351	NICHOLAS J. & STACI R. BROWN	88	051205470240	CURRENT OWNER
39	061233194000	BRUCE R. LEE	89	051205470350	EUGENE GULLIVER & MELISSA DELEON-GULLIVER
40	061233190309	JACOB LANGER	90	051205470460	JAMES A. & CONNIE N. WINTER
41	061233295009	JACOB LANGER	91	051205495008	KEVIN T. & LISA M. BEERUP
42	061233281907	JACOB LANGER	92	051205470570	JASON L. & SHELIA L. GUERIN
43	061233286500	DOUGLAS H. & BONNIE J. CAPARON	93	051205470680	ANDREW & LYDIA POESCHEL
44	061232180009	NOTSTAD LIVING TRUST	94	051205470790	CURRENT OWNER
45	061233290004	NOTSTAD LIVING TRUST	95	051205470900	CURRENT OWNER
46	061232195708	LINNERUD TRUST - WAYNE & FAITH	96	051205471560	TOWN OF ALBION
47	06123219000	LINNERUD TRUST - WAYNE & FAITH	97	051205495500	CURRENT OWNER
48	061232380007	NOEL R. & KRISTEEN A. JOHNSON	98	051205471010	ROBERT H. & LAURA S. DVORAK
49	061232485001	JAMES W. & JOANN H. MORRIS LE	99	051205471120	ROBERT H. & LAURA S. DVORAK
50	061232480006	JAMES W. & JOANN H. MORRIS LE	100	051205456000	CURRENT OWNER



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*James R. Skowronski*  
James R. Skowronski Date: 7/08/2019


1	07/08/19	ADDED LIGHTING PACKAGE
MARK	DATE	DESCRIPTION
ISSUE	FINAL	DATE ISSUED 06/20/2019

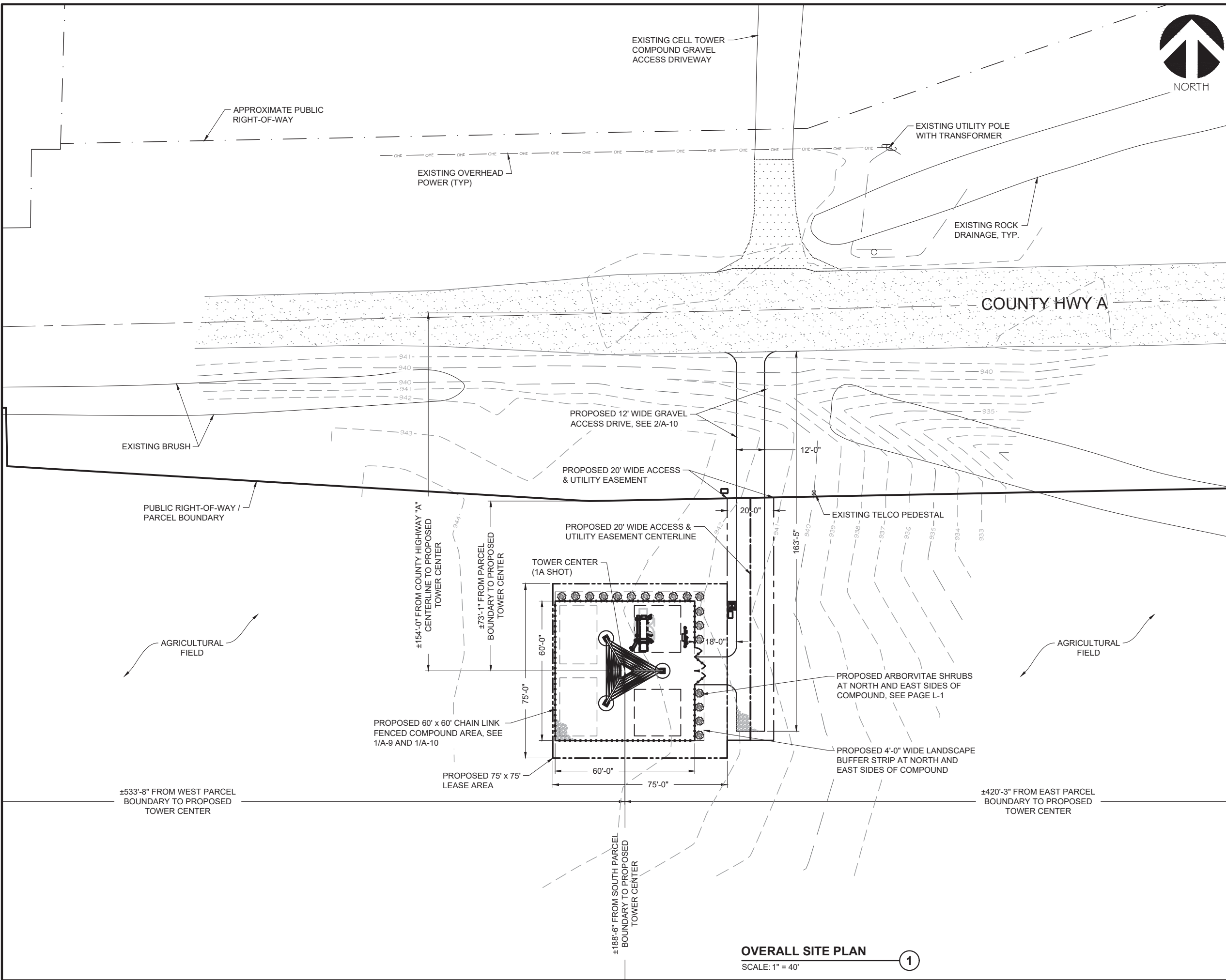
PROJECT TITLE:  
**TI-OPP-11895-C**

PROJECT INFORMATION:  
PID: 051204290203  
ALBION, WI 53534  
DANE COUNTY

SHEET TITLE:  
**ZONING MAP DETAILS**

SCALE: NONE

PROJECT NUMBER 42278  
SHEET NUMBER Z-2



**TILLMAN**  
**INFRASTRUCTURE**

**LCC**  
**TELECOM SERVICES**

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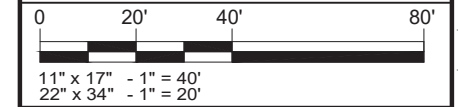
*James R. Skowronski*  
 James R. Skowronski Date: 7/08/2019

MARK	DATE	DESCRIPTION
1	07/08/19	ADDED LIGHTING PACKAGE
ISSUE PHASE	FINAL	DATE ISSUED 06/20/2019

PROJECT TITLE:  
**TI-OPP-11895-C**

PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

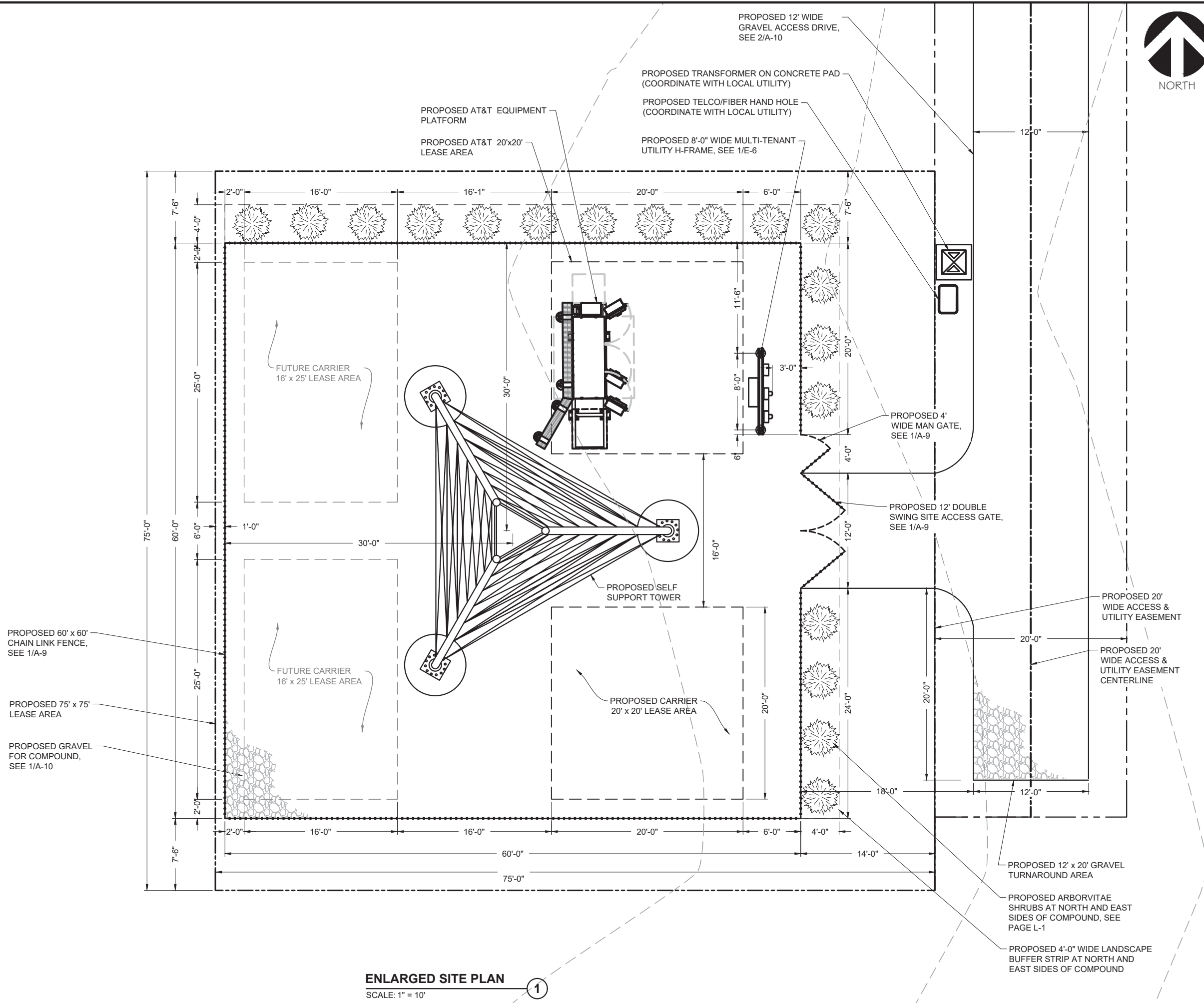
SHEET TITLE:  
**OVERALL SITE PLAN**



PROJECT NUMBER: 42278  
 SHEET NUMBER: A-1

**OVERALL SITE PLAN**  
 SCALE: 1" = 40' **1**





**ENLARGED SITE PLAN**  
 SCALE: 1" = 10'

**TILLMAN**  
**INFRASTRUCTURE**

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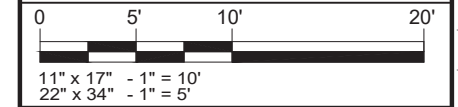
*James R. Skowronski* 7/08/2019  
 James R. Skowronski Date:

MARK	DATE	DESCRIPTION
1	07/08/19	ADDED LIGHTING PACKAGE
ISSUE PHASE	FINAL	DATE ISSUED 06/20/2019

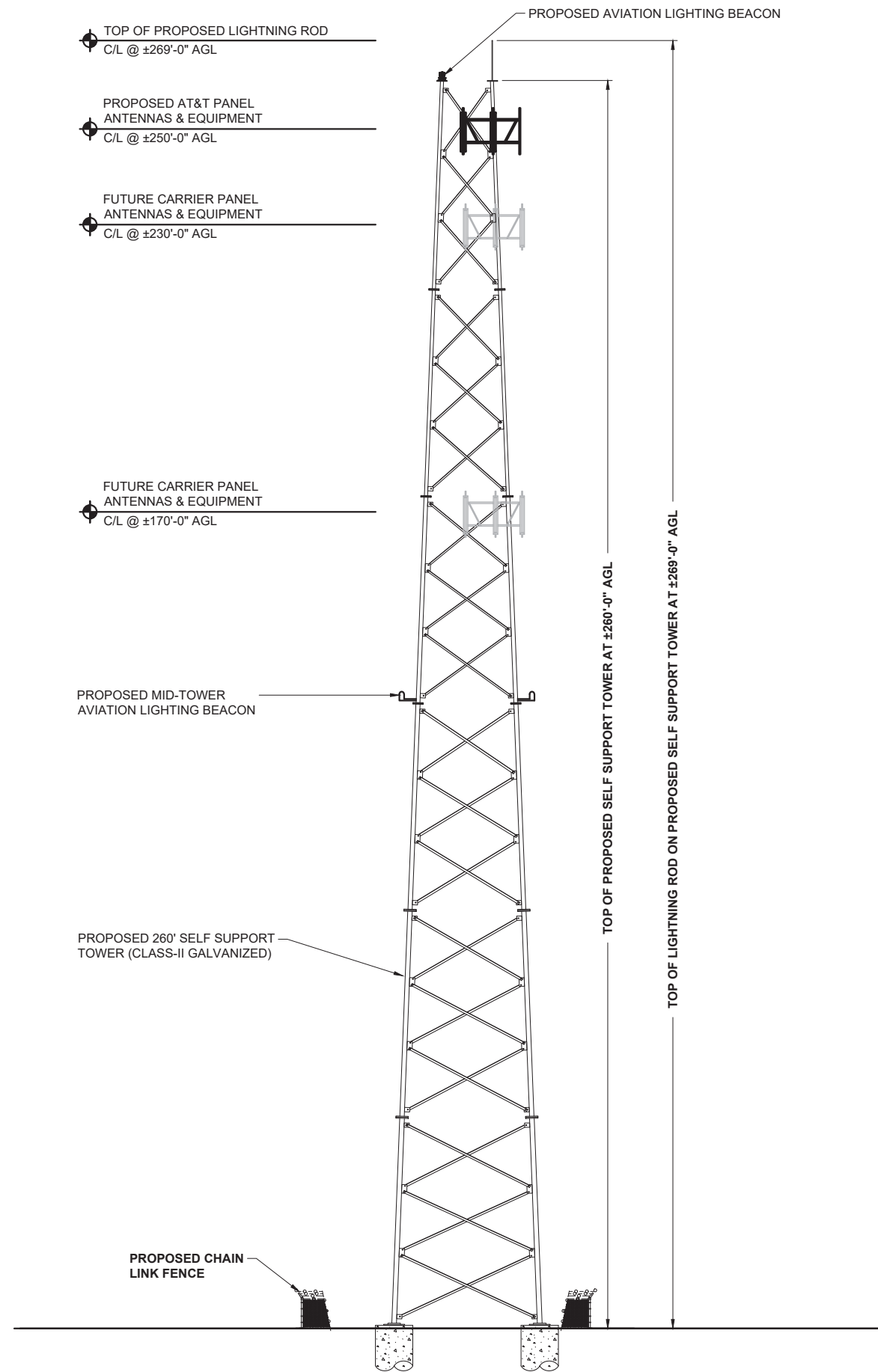
PROJECT TITLE:  
**TI-OPP-11895-C**

PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:  
**ENLARGED SITE PLAN**



PROJECT NUMBER: 42278  
 SHEET NUMBER: A-2



**TOWER ELEVATION**  
 SCALE: 1" = 30'

1

**TILLMAN**  
 INFRASTRUCTURE

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*James R. Skowronski*  
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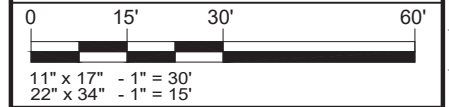

MARK	DATE	DESCRIPTION
1	07/08/19	ADDED LIGHTING PACKAGE

ISSUE PHASE	FINAL	DATE ISSUED	06/20/2019
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PROJECT TITLE:  
**TI-OPP-11895-C**

PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:  
**TOWER ELEVATION**



PROJECT NUMBER	42278
SHEET NUMBER	A-3

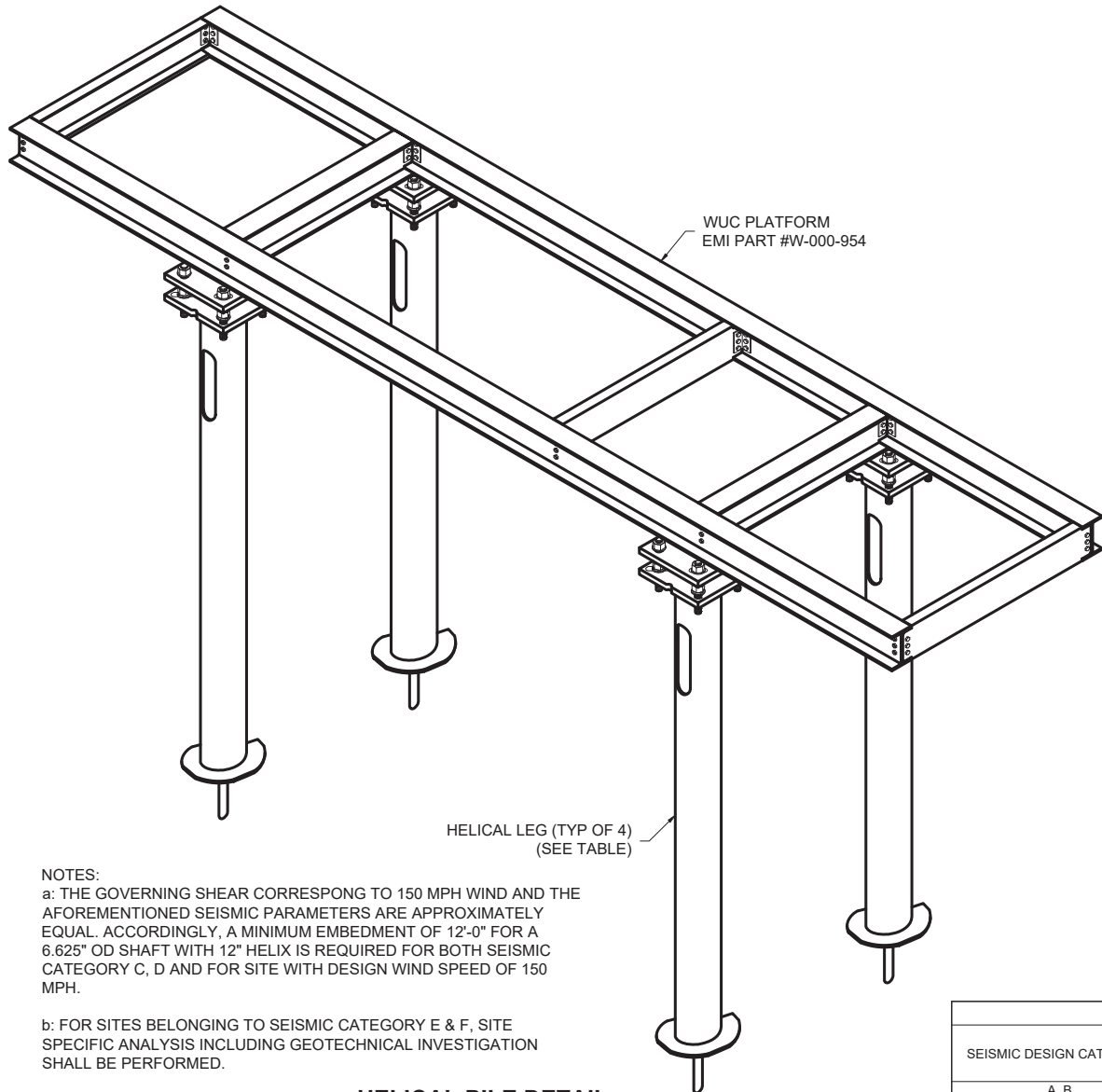
# EQUIPMENT FOUNDATION STRUCTURAL NOTES

- 1) PLATFORM DESIGN LOADS
  - a. ASCE 7-10/IBC 2015 EXPOSURE B, (REF. PILE DESIGN TABLE FOR DESIGN WIND SPEED)
  - b. MAX. AXIAL COMPRESSION PER LEG = 6000 LBS
  - c. MAX. UPLIFT PER LEG = 1200 LBS
  - d. MAX. HORIZONTAL SHEAR = 3000 PSF
- 2) PRESUMPTIVE SOIL PARAMETERS
  - a. SOIL UNIT WEIGHT,  $\gamma = 90$  PCF
  - b. ANGLE OF INTERNAL FRICTION =  $30^\circ$
- 3) SEISMIC DESIGN PARAMETERS
  - a. OCCUPANCY CATEGORY II
  - b. SITE CLASS = D
  - c. SEISMIC USE GROUP = SUG II
  - d. SEISMIC DESIGN CATEGORY - REF. TO PILE DESIGN TABLE.
- 4) ALL FABRICATION AND INSTALLATION SHOULD BE DONE BY A CONTRACTOR EXPERIENCED IN SIMILAR WORK.
- 5) CONTRACTOR SHOULD OBSERVE ALL OSHA AND OTHER APPLICABLE SAFETY GUIDELINES DURING INSTALLATION.
- 6) ALL FABRICATION AND INSTALLATION PROCEDURES AND SITE SAFETY ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- 7) CONTRACTOR SHOULD FIELD VERIFY ALL DIMENSIONS AND FIT BEFORE FABRICATION.
- 8) THE DRAWINGS DO NOT INCLUDE ALL THE EXISTING FIELD CONDITIONS, SOME OF WHICH MAY INTERFERE WITH THE INSTALLATION. CONTRACTOR SHOULD CONDUCT A FIELD SURVEY TO IDENTIFY ANY POTENTIAL DIFFICULTIES IN THE INSTALLATION BEFORE WORK COMMENCES. CONTACT THE ENGINEER IF THE FIELD CONDITIONS REQUIRED ANY CHANGES IN THE DESIGN.

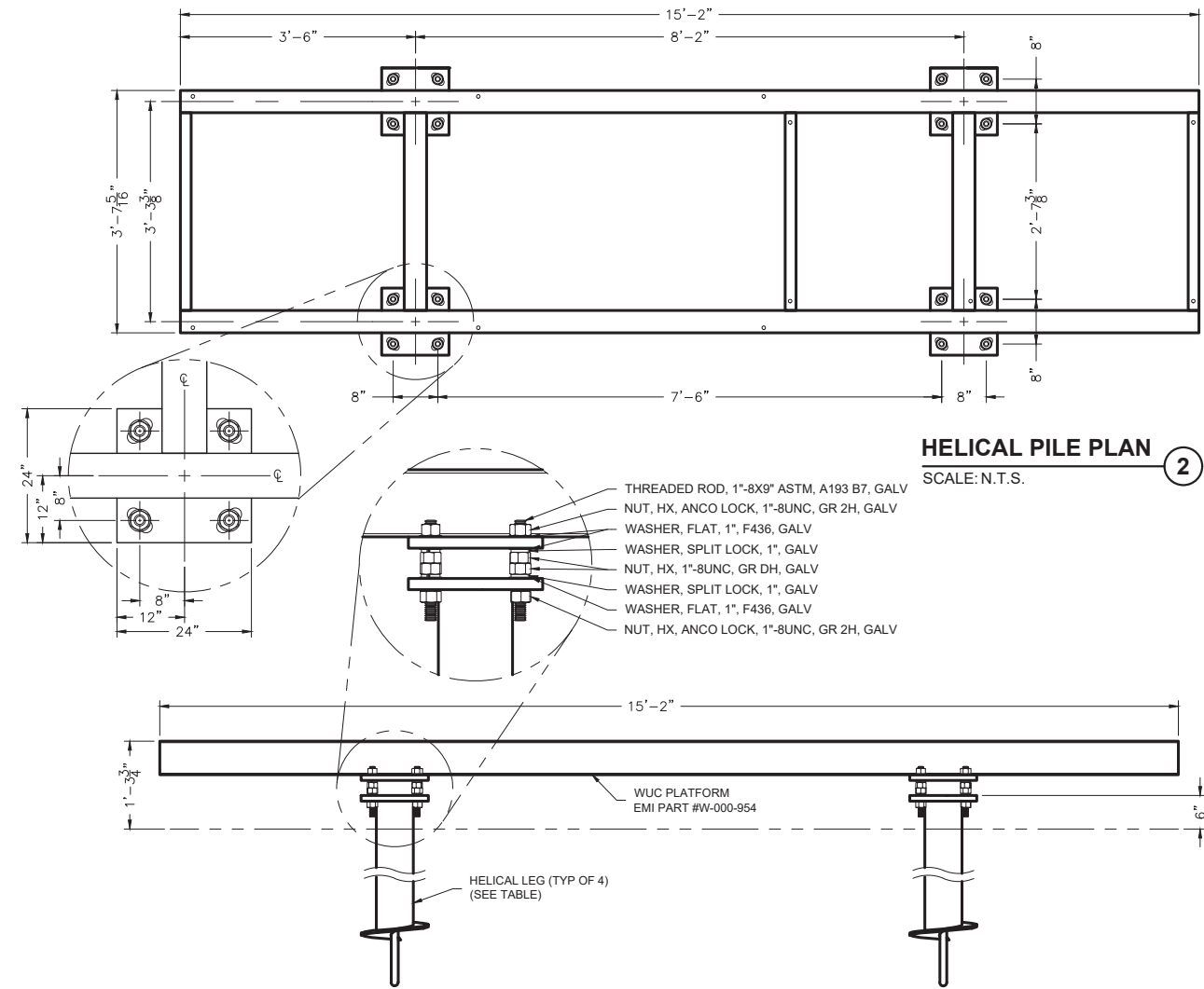
- 9) CONTRACTOR MAY HAVE TO TEMPORARILY REMOVE EXISTING TRANSMISSION LINES AND OTHER OBSTRUCTIONS TO INSTALL NEW STRUCTURE. COORDINATE ALL SUCH PROCEDURES WITH THE BUILDING OWNER.
- 10) CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL LICENSES, PERMITS AND ANY OTHER APPROVALS REQUIRED FOR CONSTRUCTION.
- 11) PAINT THE NEW MEMBERS TO MATCH THE EXISTING STRUCTURE.
- 12) THE STRUCTURAL STEEL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ANCHOR BOLT LOCATIONS, ELEVATION OF TOP OF CONCRETE AND BEARING PLATES, ALIGNMENT ETC. PRIOR TO START OF STEEL ERECTION.
- 13) THE LATEST EDITION OF THE FOLLOWING SPECIFICATIONS SHALL GOVERN:
  - a) AISC - "ALLOWABLE STRESS DESIGN SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS"
  - b) AISC - "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES"
  - c) AWS - "D1.1 STRUCTURAL WELDING CODE - STEEL"
- 14) MATERIAL, UNLESS OTHERWISE NOTED, SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATIONS:
 

a) STRUCTURAL WIDE FLANGE & M SHAPES	A992 OR A572
	Fy = 50 KSI
b) OTHER STRUCTURAL SHAPES AND PLATES	A36
	Fy = 36 KSI
c) STRUCTURAL TUBING	A500 Gr. B
	Fy = 46 KSI
d) HIGH STRENGTH BOLTS	A325
e) THREADED RODS	A36
f) ANCHOR BOLTS	A307 OF A36
g) PIPE (HANDRAIL)	SCH40 PIPE
- 15) ALL STEEL SHALL BE HOT DIPPED GALVANIZED AS PER ASTM A123 SPECIFICATIONS
- 16) ALL STEEL HARDWARE SHALL BE HOT DIPPED GALVANIZED AS PER ASTM A153

- 17) ALL BOLTS SHALL BE DOMESTIC, NEW 1/2 INCH DIAMETER HIGH STRENGTH GALVANIZED BOLTS, BEARING TYPE "X", UNLESS OTHERWISE NOTED IN THE DRAWINGS AND SHALL CONFORM TO ASTM A325 SPECIFICATIONS. USE ANCO LOCKNUTS & FLAT WASHERS ON ALL BOLTS.
- 18) ALL FINISHED BOLT HOLES SHALL NOT BE MORE THAN 1/16 INCH LARGER THAN THE BOLT DIAMETER UNLESS OTHERWISE NOTED.
- 19) ALL BOLTS SHALL BE TIGHTENED USING TURN-OF-THE-NUT METHOD.
- 20) ALL BOLT HOLES EDGE DISTANCES SHALL BE 1-1/2 INCH UNLESS OTHERWISE NOTED.
- 21) ALL WELDING SHALL BE DONE USING E-70 ELECTRODES AND IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY STANDARDS AND SPECIFICATIONS.
- 22) ANY FIELD CUTS MUST BE THOROUGHLY CLEANED AND DOUBLE COATED.
- 23) DO NOT HEAT STRUCTURAL MATERIAL FOR STRAIGHTENING BENT OR WARPED MEMBERS.
- 24) CLEAN THE SITE OF ALL DEBRIS UPON COMPLETION OF THE WORK. STORE ALL SURPLUS MATERIALS NEATLY IN AN AREA APPROVED BY THE OWNER.
- 25) BEFORE FIELD WELDING CLEAN ALL PAINT AND GALVANIZING TO BARE METAL. PREHEATING AND POST HEATING OF THE BASE METAL SHOULD BE AS PER AWS D1.1 SPECIFICATION AND APPLICABLE CODES REGARDING PREHEATING AND POSTHEATING.
- 26) CONTRACTOR TO PROVIDE FIRE PROTECTION BEFORE FIELD WELDING.
- 27) HOLES IN STEEL SHALL BE DRILLED OR PUNCHED. ALL SLOTTED HOLES SHALL BE PROVIDED WITH SMOOTH EDGES. BURNING OF HOLES AND TORCH CUTTING AT THE SITE IS NOT PERMITTED. ALL HOLES IN BEARING PLATES SHALL BE DRILLED.
- 28) EPOXY ANCHORS TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.



**HELICAL PILE DETAIL**  
 SCALE: N.T.S.



**HELICAL PILE PLAN**  
 SCALE: N.T.S.

PILE DESIGN TABLE						
SEISMIC DESIGN CATEGORY	Ss	S1	LIGHTPOLE FOUNDATION			
			DESIGN WIND SPEED (MPH)	DEPTH (FT)	SHAFT SIZE (IN)	HELIX SIZE (IN)
A, B	0.150	0.050	100	7	4.5	12
A, B	0.300	0.125	100	7	6	12
C, D	1.250	0.500	100	12	6.625	12

**ELEVATED PLATFORM CONNECTIONS**  
 SCALE: N.T.S.



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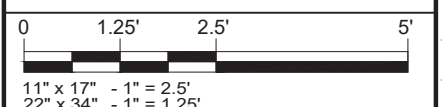
James R. Skowronski  
 Date: 7/08/2019

MARK	DATE	DESCRIPTION
1	07/08/19	ADDED LIGHTING PACKAGE
ISSUE PHASE	FINAL	DATE ISSUED 06/20/2019

PROJECT TITLE:  
**TI-OPP-11895-C**

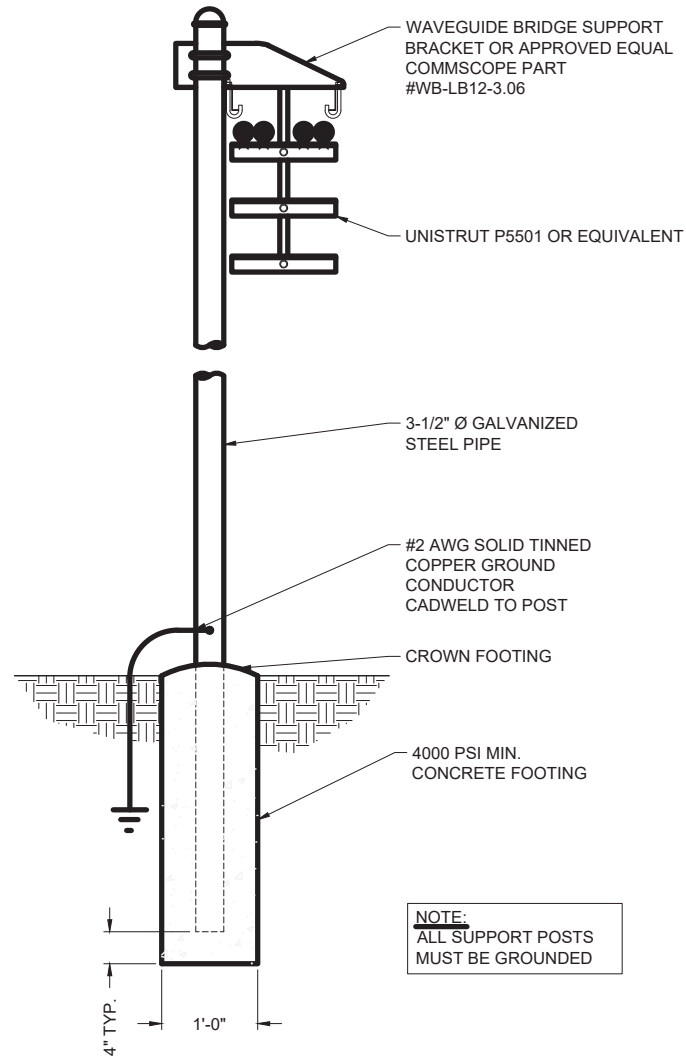
PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:  
**EQUIPMENT PLATFORM & DETAILS**



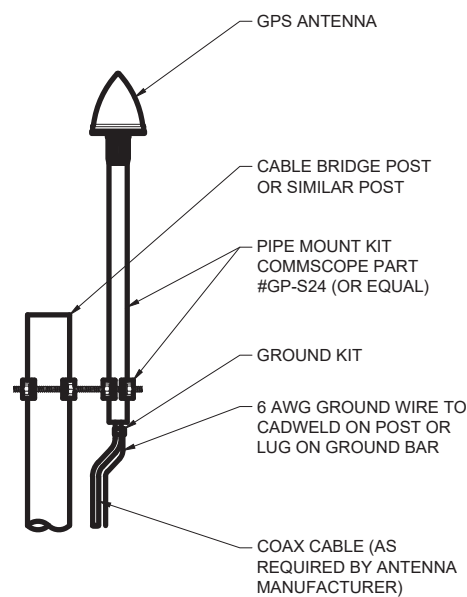
PROJECT NUMBER: 42278  
 SHEET NUMBER: A-4





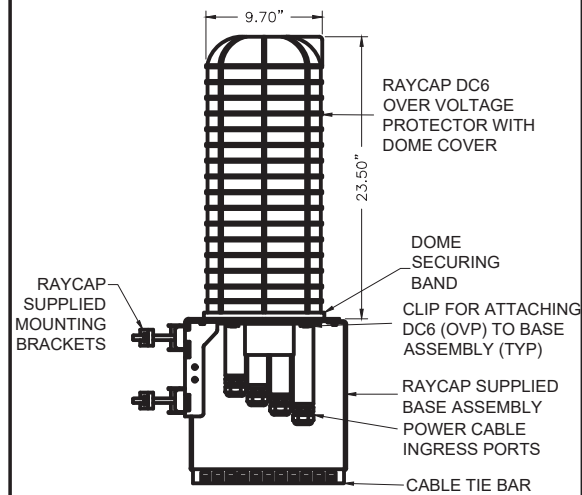
**ICE BRIDGE DETAIL**  
 SCALE: NTS

1



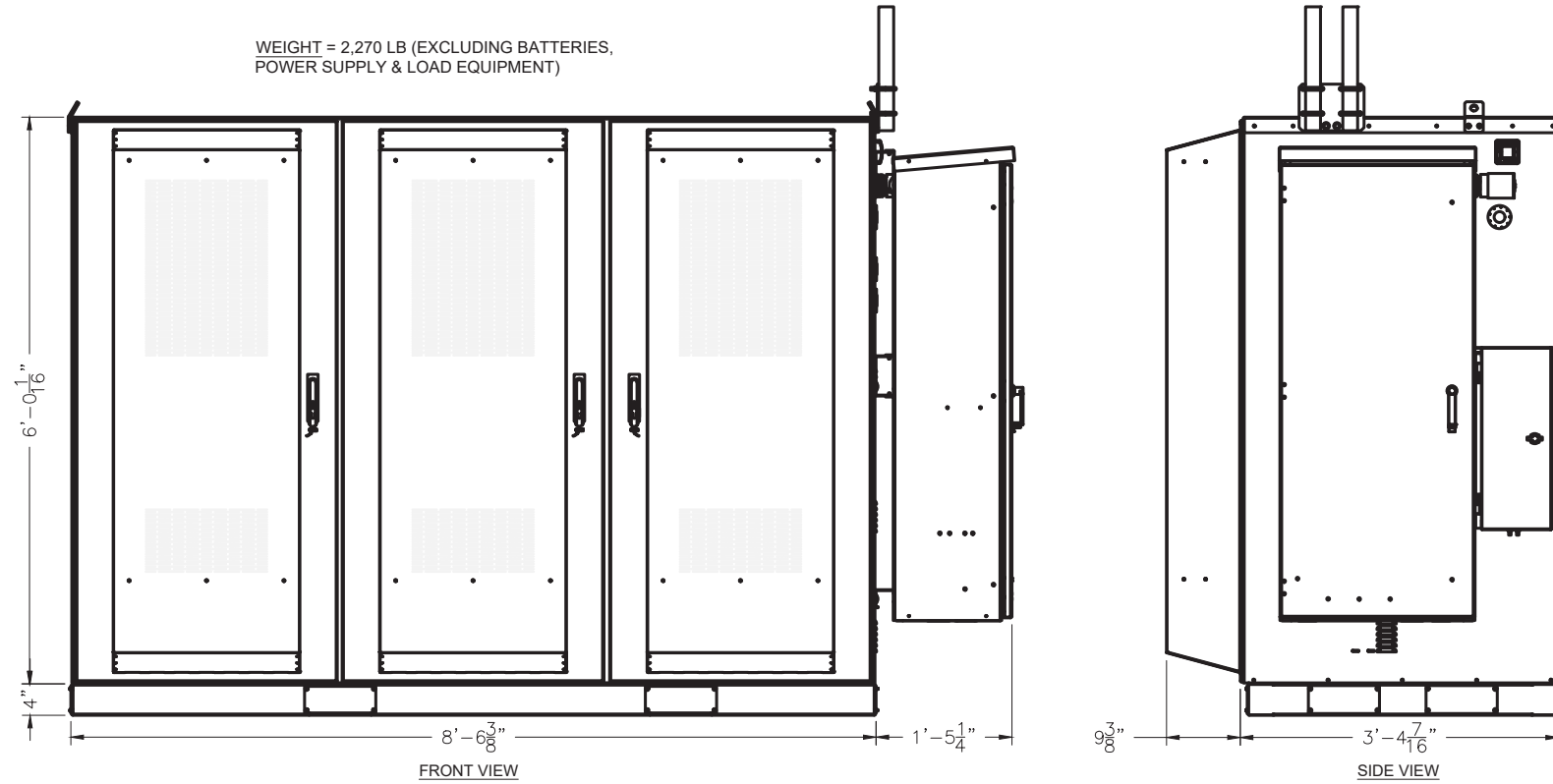
**GPS MOUNTING DETAIL**  
 SCALE: NTS

3



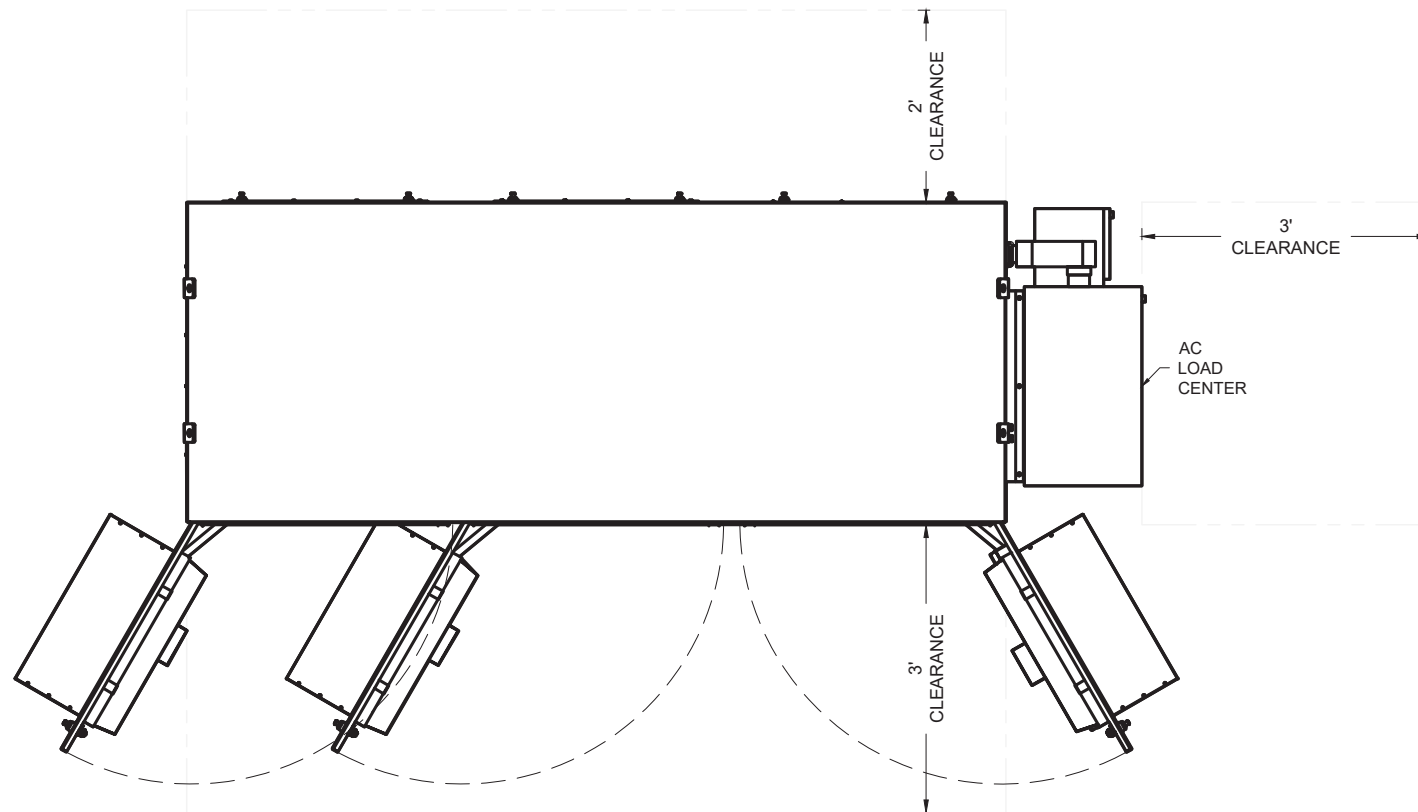
**RAYCAP DC6-48-60-18-8F (SQUID) DETAIL**  
 SCALE: NTS

4



**WALK UP CABINET ELEVATIONS (DELTA ESOF030-HCU01)**  
 SCALE: NTS

2



**WALK UP CABINET PLAN VIEW (DELTA ESOF030-HCU01)**  
 SCALE: NTS

5

**TILLMAN**  
**INFRASTRUCTURE**

**LCC**  
**TELECOM SERVICES**

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*James R. Skowronski* 7/08/2019  
 James R. Skowronski Date:

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ISSUE PHASE	FINAL	DATE ISSUED 06/20/2019

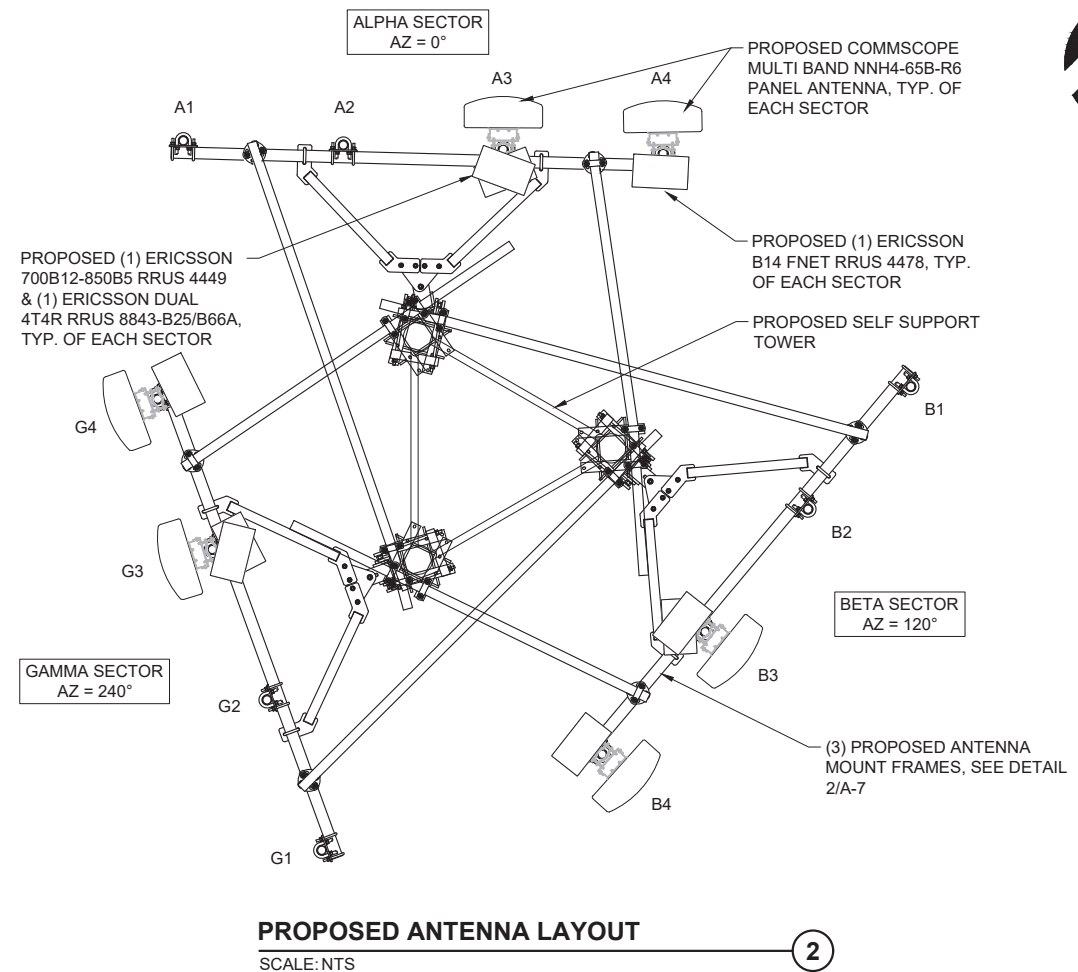
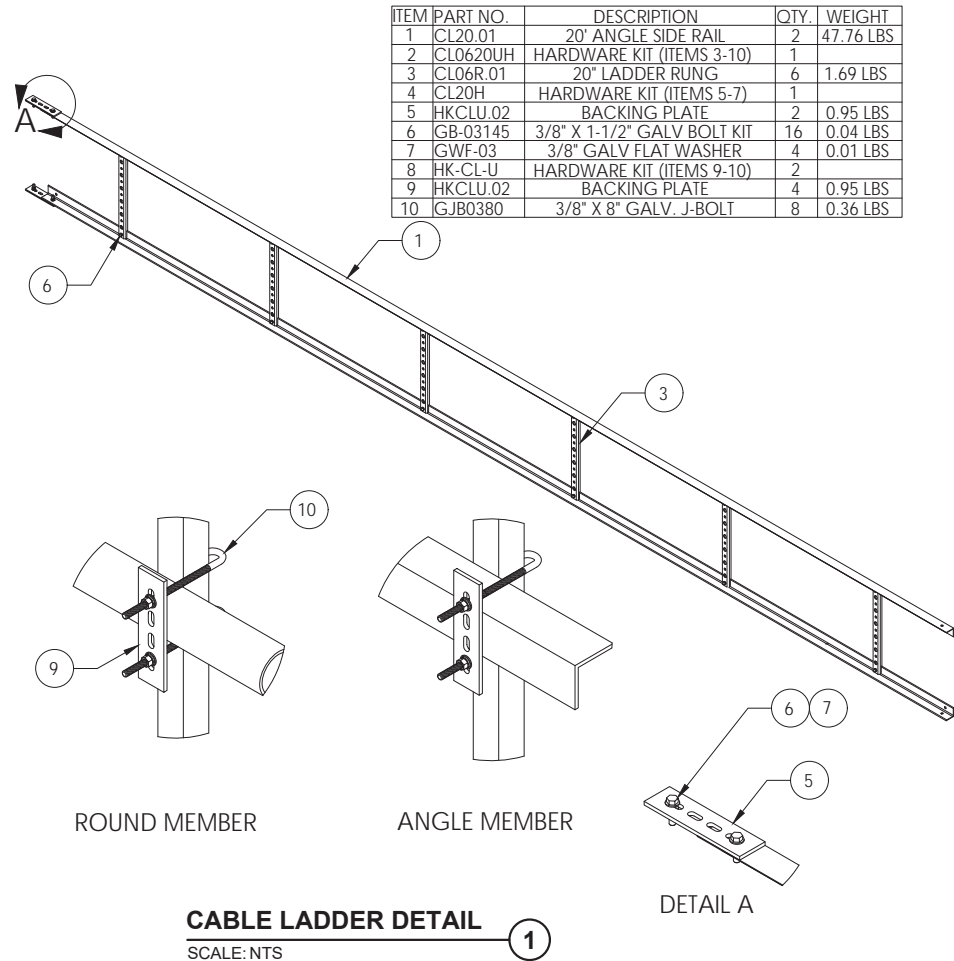
PROJECT TITLE:  
**TI-OPP-11895-C**

PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:  
**EQUIPMENT DETAILS**

SCALE: NONE

PROJECT NUMBER 42278  
 SHEET NUMBER A-5



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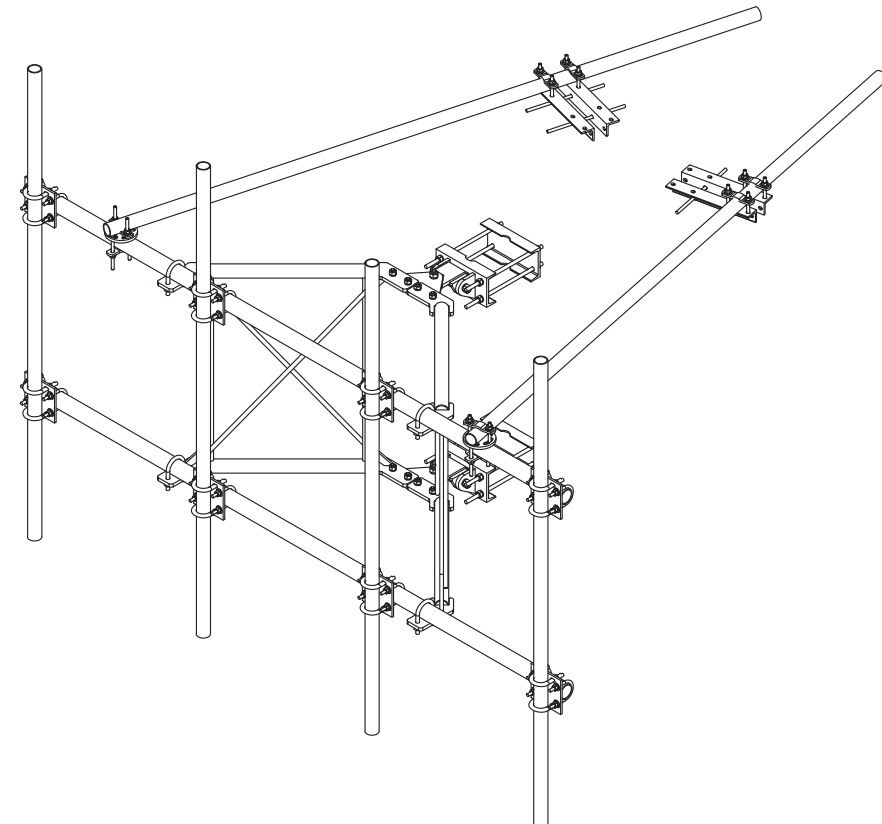
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 James R. Skowronski  
 7/08/2019  
 Date:

SECTOR	ANTENNA NUMBER	ANTENNA TYPE	ANTENNA VENDOR	ANTENNA MODEL NUMBER	ANTENNA SIZE (HxWxD)	RRU MODEL NUMBER	RRU VENDOR	AZIMUTH	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	ANTENNA CENTERLINE (AGL)
ALPHA	A-1	MULTI BAND	COMMSCOPE	JAHH-65B-R3B-V3	72"x13.8"x8.2"	(1) 850 RRUS-12 (1) WCS 4T4R RRUS-32	ERICSSON	0°	0°	-	163'
	A-2	-	-	-	-	-	-	-	-	-	-
	A-3	MULTI BAND	COMMSCOPE	NNH4-65B-R6	72"x19.6"x7.8"	(1) 700 B12-850 B5 RRUS 4449 (1) DUAL 4T4R RRUS 8843-B25/B66A	ERICSSON	0°	0°	-	250'
	A-4	MULTI BAND	COMMSCOPE	NNH4-65B-R6	72"x19.6"x7.8"	(1) B14 FNET RRUS 4478	ERICSSON	0°	0°	-	250'
BETA	B-1	MULTI BAND	COMMSCOPE	JAHH-65B-R3B-V3	72"x13.8"x8.2"	(1) 850 RRUS-12 (1) WCS 4T4R RRUS-32	ERICSSON	260°	0°	-	163'
	B-2	-	-	-	-	-	-	-	-	-	-
	B-3	MULTI BAND	COMMSCOPE	NNH4-65B-R6	72"x19.6"x7.8"	(1) 700 B12-850 B5 RRUS 4449 (1) DUAL 4T4R RRUS 8843-B25/B66A	ERICSSON	120°	0°	-	250'
	B-4	MULTI BAND	COMMSCOPE	NNH4-65B-R6	72"x19.6"x7.8"	(1) B14 FNET RRUS 4478	ERICSSON	120°	0°	-	250'
GAMMA	G-1	MULTI BAND	COMMSCOPE	JAHH-65B-R3B-V3	72"x13.8"x8.2"	(1) 850 RRUS-12 (1) WCS 4T4R RRUS-32	ERICSSON	310°	0°	-	163'
	G-2	-	-	-	-	-	-	-	-	-	-
	G-3	MULTI BAND	COMMSCOPE	NNH4-65C-R6	72"x19.6"x7.8"	(1) 700 B12-850 B5 RRUS 4449 (1) DUAL 4T4R RRUS 8843-B25/B66A	ERICSSON	240°	0°	-	250'
	G-4	MULTI BAND	COMMSCOPE	NNH4-65C-R6	72"x19.6"x7.8"	(1) B14 FNET RRUS 4478	ERICSSON	240°	0°	-	250'

**ANTENNA & RRH SCHEDULE**  
 SCALE: NTS



**ANTENNA MOUNT FRAME**  
 (SITE PRO 1 #: VFA10-HD OR APPROVED EQUIVALENT)  
 SCALE: NTS

MARK	DATE	DESCRIPTION
1	07/08/19	ADDED LIGHTING PACKAGE
ISSUE PHASE	FINAL	DATE ISSUED 06/20/2019

PROJECT TITLE:  
**TI-OPP-11895-C**

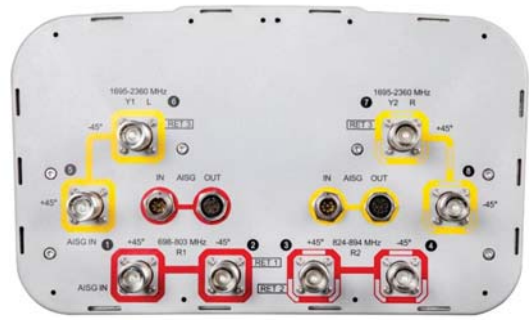
PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:  
**ANTENNA PLAN & SCHEDULE**

SCALE: NONE

PROJECT NUMBER	42278
SHEET NUMBER	A-6





MECHANICAL	
DIMENSION (HxWxD)	72" x 13.8" x 8.2"
WEIGHT	72.3 lbs

**COMMSCOPE JAHH-65B-R3B-V3 PANEL ANTENNA DETAIL** ①  
SCALE: NTS



MECHANICAL	
DIMENSION (HxWxD)	72" x 19.6" x 7.8"
WEIGHT	89.7 lbs

**COMMSCOPE NNH4-65B-R6 PANEL ANTENNA DETAIL** ②  
SCALE: NTS



MECHANICAL	
DIMENSION (HxWxD)	20.4" x 18.5" x 7.5"
WEIGHT	50 lbs

**ERICSSON 850 RRUS-12 RRH DETAIL** ③  
SCALE: NTS



MECHANICAL	
DIMENSION (HxWxD)	26.7" x 12.1" x 6.8"
WEIGHT	50.8 lbs

**ERICSSON WCS RRUS-32 RRH DETAIL** ④  
SCALE: NTS



MECHANICAL	
DIMENSION (HxWxD)	15" x 13.2" x 9.3"
WEIGHT	70 lbs

**ERICSSON 700/850 RRUS 4449 RRH DETAIL** ⑤  
SCALE: NTS



MECHANICAL	
DIMENSION (HxWxD)	18.1" x 13.4" x 8.26"
WEIGHT	59.4 lbs

**ERICSSON 700 RRUS 4478 RRH DETAIL** ⑦  
SCALE: NTS



MECHANICAL	
DIMENSION (HxWxD)	15" x 13.2" x 11"
WEIGHT	75 lbs

**ERICSSON RRUS 8843 B25/B66A RRH DETAIL** ⑥  
SCALE: NTS

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*James R. Skowronski* 7/08/2019  
James R. Skowronski Date:


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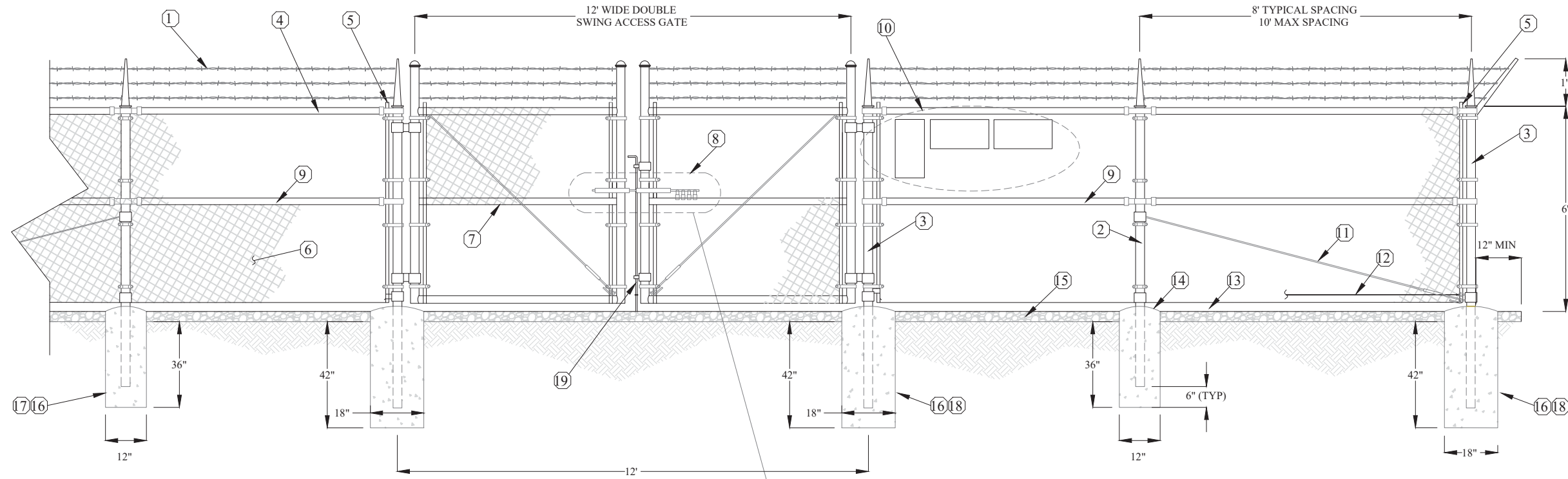
ISSUE PHASE FINAL DATE ISSUED 06/20/2019  
PROJECT TITLE:  
**TI-OPP-11895-C**

PROJECT INFORMATION:  
PID: 051204290203  
ALBION, WI 53534  
DANE COUNTY

SHEET TITLE:  
**EQUIPMENT DETAILS**

SCALE: NONE

PROJECT NUMBER 42278  
SHEET NUMBER A-7

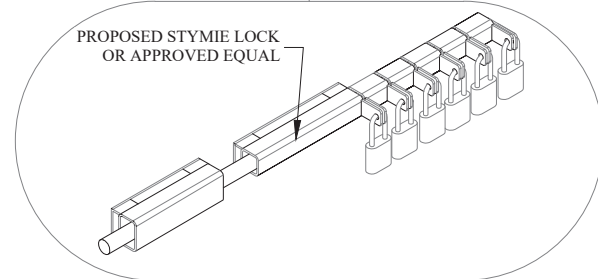


**KEYNOTES:**

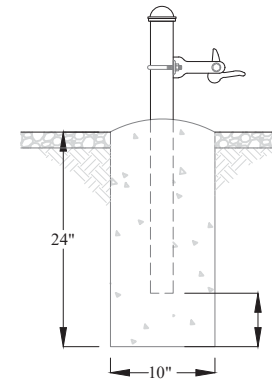
- ① 3 STRANDS OF DOUBLE 12 GAUGE TWISTED STRAND WIRE, WITH 4 POINT 14 GAUGE BARBS SPACED 5" O.C.
- ② 2-1/2" NOMINAL GALVANIZED STEEL, SCHEDULE 40 INTERMEDIARY LINE POSTS (PER ASTM-F1083). LINE POSTS SHALL BE EQUALLY SPACED AT MAXIMUM 10' O.C.
- ③ 3" O.D. GALVANIZED STEEL SCHEDULE 40 CORNER AND GATE POSTS (PER ASTM-F1083). IF GATE LEAF WIDTH GREATER THAN OR EQUAL TO 10-FT OR IF FENCE FABRIC EXTENDED OVER 6-FT AND GATE LEAF WIDTH OVER 6-FT, GATE POST SHALL BE 4" O.D. GALVANIZED STEEL SCHEDULE 40 (PER ASTM-F1083).
- ④ 1-5/8" O.D. SCHEDULE 40 ROUND TOP/BRACE RAIL (PER ASTM-F1083)
- ⑤ STRETCHER BAR TO EXTEND FULL HEIGHT OF FENCE FABRIC; NOT LESS THAN 1/2" x 3/4" CROSS SECTION; PLACE ON ALL GATES AND POSTS
- ⑥ 9 GAUGE 2" x 2" FENCE FABRIC (TO CONFORM TO ASTM-A392)
- ⑦ GATE FRAME BRACE
- ⑧ STYMIE LOCK OR OTHER APPROVED MULTI-TENANT LOCKING DEVICE
- ⑨ 1-5/8" DIAMETER POST BRACE (AS REQUIRED)
- ⑩ GATE SIGNS (SEE DETAIL, SHEET C-12)
- ⑪ 3/8" DIAGONAL BRACE ROD WITH GALVANIZED STEEL TURNBUCKLE OR DIAGONAL THREADED ROD
- ⑫ 9 GAUGE ALUMINUM TIE WIRE. PROVIDE HOG RING FABRIC TIES SPACED 12" O.C. FOR POSTS AND GATES AND 24" O.C. FOR RAILS AND WIRE.
- ⑬ MAINTAIN A 1" MAXIMUM CLEARANCE FROM FINISHED GRADE
- ⑭ PROVIDE CROWNED/PITCHED FINISH FOR FENCE POST PIER FOUNDATIONS
- ⑮ COMPOUND SECTION AND MATERIALS (SEE DETAIL, SHEET C-5)  
CONCRETE PIER FOUNDATION; TO ACHIEVE A MINIMUM STRENGTH OF 3000 PSI AT 28 DAYS. CONCRETE DEPTH TO BE AS SPECIFIED HEREIN, AS SPECIFIED BY MANUFACTURER, OR A MINIMUM OF 6" BELOW FROST LINE; WHICHEVER IS GREATER
- ⑯ LINE POST CONCRETE PIER FOUNDATION
- ⑰ CORNER/GATE POST CONCRETE PIER FOUNDATION
- ⑱ COMMERCIAL GRADE DROP ROD AND CENTERSTOP (HOOVER FENCE OR EQUIV)

**NOTES:**

- 1. FENCE DESIGN AND INSTALLATION NOTES ARE INDUSTRY STANDARDS AND/OR MINIMUM REQUIREMENTS AND ARE FOR GENERAL GUIDANCE ONLY. REFER TO MANUFACTURER'S RECOMMENDATIONS OF THE SPECIFIED PRODUCT AND APPLICABLE GOVERNING CODES FOR FULL INSTALLATION DETAILS. IN THE EVENT OF DISCREPANCIES, MANUFACTURER'S RECOMMENDATIONS OR APPLICABLE CODE SHALL GOVERN, WHICHEVER IS MORE STRINGENT.
- 2. ALL FENCING TO BE INSTALLED PER ASTM F-567. ALL SWING GATES TO BE INSTALLED PER ASTM F-900.
- 3. BARBED WIRE PERMIT REQUIRED SHALL BE COMPLETED IF LOCAL ORDINANCE REQUIRES.
- 4. POST & GATE PIPE SIZES ARE INDUSTRY STANDARDS. ALL PIPE TO BE GALVANIZED (HOT DIP, ASTM A120 GRADE "A" STEEL). ALL GATE FRAMES SHALL BE WELDED. ALL WELDINGS SHALL BE COATED WITH (3) COATS OF GOLD GALV. (OR EQUAL). ALL OPEN POSTS SHALL HAVE END-CAPS.
- 5. ALL SIGNS MUST BE MOUNTED ON INSIDE OF FENCE FABRIC USING GALVANIZED HOG-RING WIRE.
- 6. ALL SIGNS AND SIGN PLACEMENT SHALL ADHERE TO THE REQUIREMENTS OF OSHA 1910.145 AND 1910.200 AND ALL APPLICABLE FCC CODES
- 7. DROP ROD AND CENTERSTOP REQUIRED FOR GATE. GENERAL CONTRACTOR RESPONSIBLE FOR GATE LOCK.



**GATE KEEPER**



**FENCE AND GATE DETAIL**

SCALE: NTS

①

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*James R. Skowronski* 7/08/2019  
James R. Skowronski Date:

MARK	DATE	DESCRIPTION
1	07/08/19	ADDED LIGHTING PACKAGE
ISSUE PHASE	FINAL	DATE ISSUED 06/20/2019

PROJECT TITLE:  
**TI-OPP-11895-C**

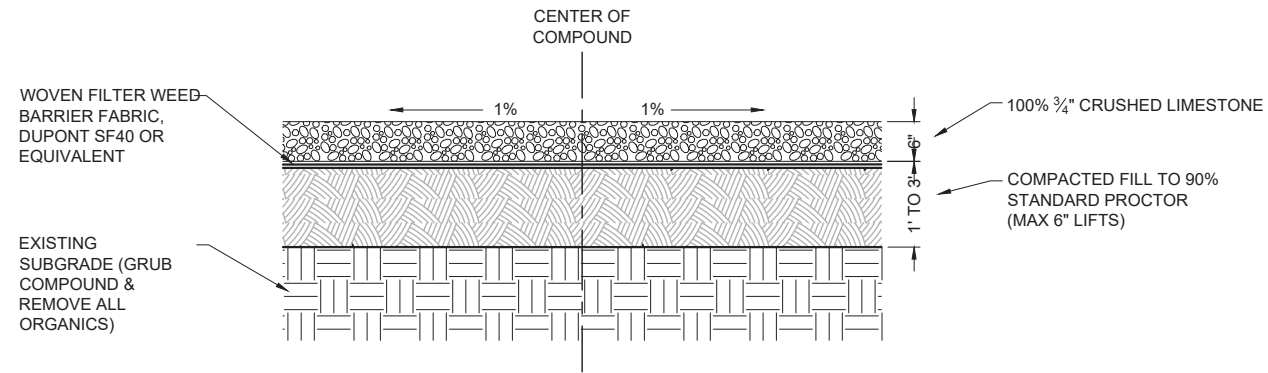
PROJECT INFORMATION:  
PID: 051204290203  
ALBION, WI 53534  
DANE COUNTY

SHEET TITLE:  
**FENCE & GATE DETAILS**

SCALE: NONE

PROJECT NUMBER 42278  
SHEET NUMBER A-8





**COMPOUND SECTION**

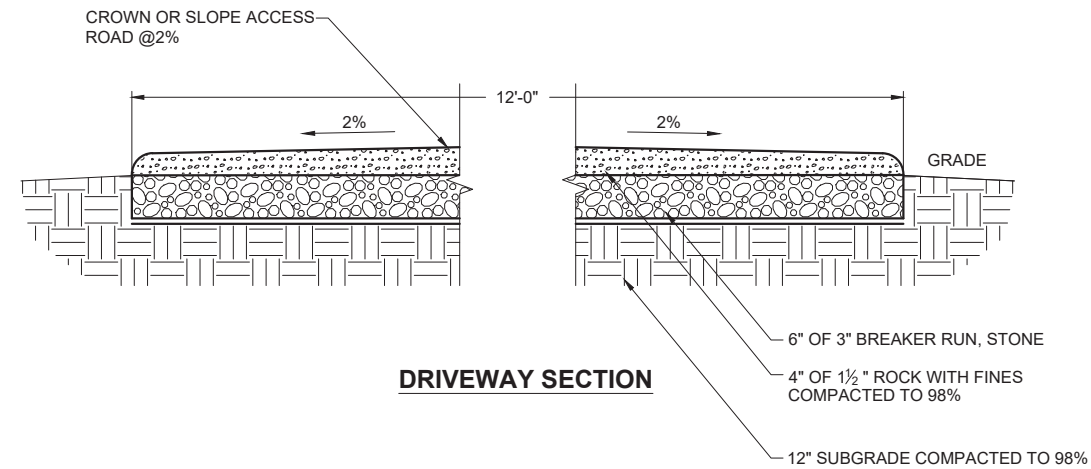
NOTES:

THE FABRIC SHOULD BE PLACED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. INTERSECTIONS OF SHEETS MUST BE SEWN 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.

**TYPICAL COMPOUND GRAVEL**

SCALE: NTS

1

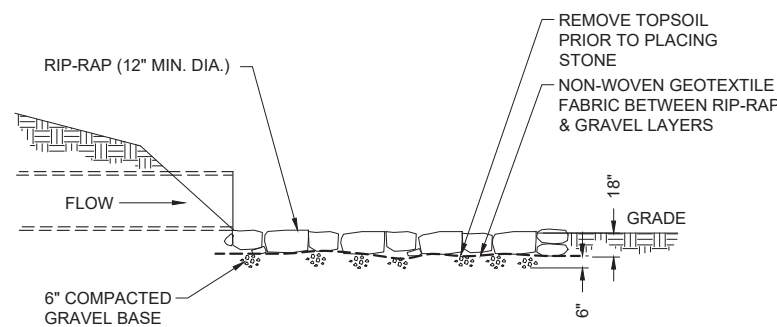


**DRIVEWAY SECTION**

**TYPICAL GRAVEL DRIVEWAY**

SCALE: NTS

2

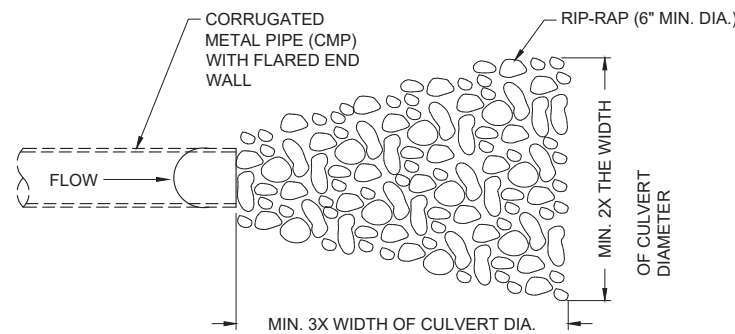


**RIP-RAP SECTION**

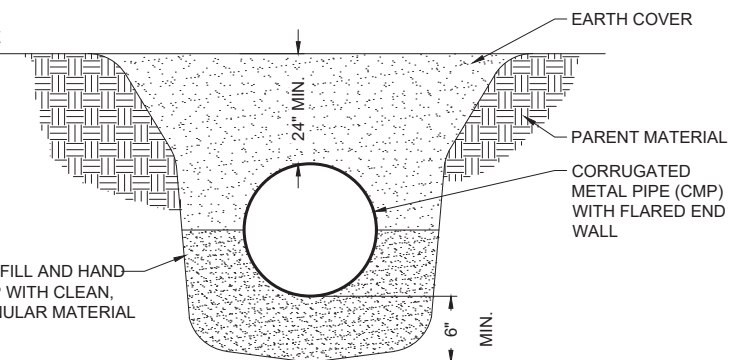
**TYPICAL RIP-RAP DETAIL**

SCALE: NTS

3



**RIP-RAP PLAN**



**CULVERT SECTION**

**TYPICAL PIPE CULVERT RIP-RAP DETAIL**

SCALE: NTS

4

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*James R. Skowronski* 7/08/2019  
 James R. Skowronski Date:


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ISSUE PHASE	FINAL	DATE ISSUED 06/20/2019

PROJECT TITLE:  
**TI-OPP-11895-C**

PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:  
**SITE DETAILS**

SCALE: NONE

PROJECT NUMBER 42278  
 SHEET NUMBER A-9

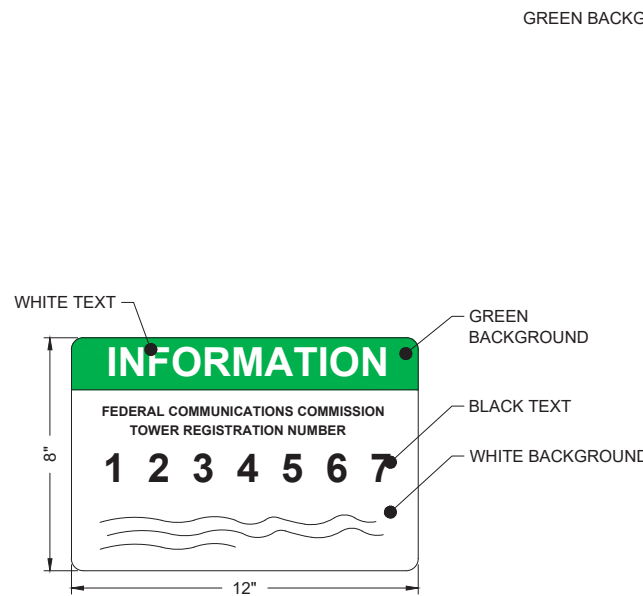


WHITE BACKGROUND, RED/BLACK LETTERING  
 MOUNTING LOCATION: SHELTER OR TENANT IMPROVEMENT ROOM  
 DOOR, IF OUTDOOR CABINET SITE PLACE ON END CABINET  
 CLOSEST TO SITE ACCESS POINT. PLACE ON GENERATOR.  
 QUANTITY: 1 OR 2

**PROPERTY OF TILLMAN INFRASTRUCTURE** ①  
 SCALE: NTS

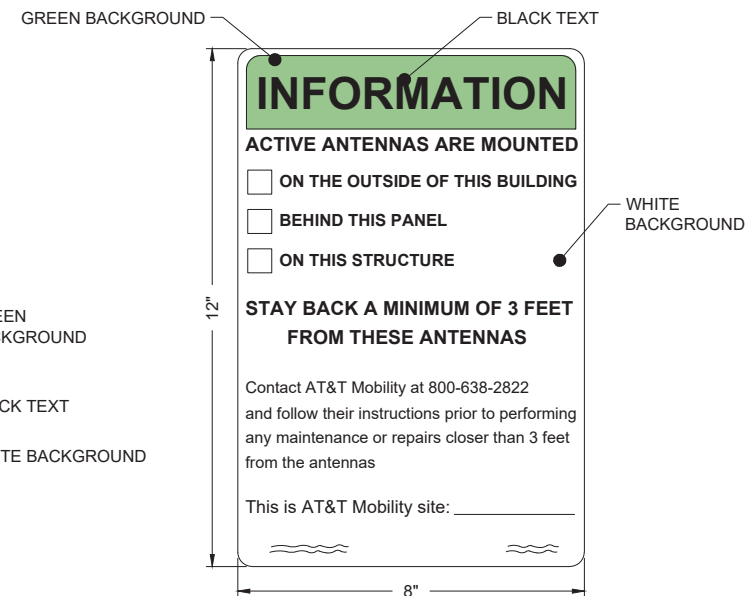
SIGNAGE NOTES:

- SIGNS SHALL BE FABRICATED FROM CORROSION RESISTANT PRESSED METAL & PAINTED WITH LONG LASTING UV RESISTANT COATINGS
- SIGNS (EXCEPT WHERE NOTED OTHERWISE) SHALL BE MOUNTED TO THE TOWER, GATE & FENCE USING A MINIMUM OF 9 GAUGE ALUMINUM WIRE HOG RINGS (FENCE) OR BRACKETS, WHERE NECESSARY, BRACKETS SHALL BE OF SIMILAR METALS AS THE STRUCTURE TO AVOID GALVANIC CORROSION
- ADDITIONAL E911 ADDRESS AND FCC REGISTRATION SIGNS SHALL BE MOUNTED AT EACH ACCESS ROAD GATE LEADING TO THE COMPOUND AS WELL AS ON THE COMPOUND GATE ITSELF
- CARRIER SITE # AND EMERGENCY CONTACT SIGNS SHALL BE MOUNTED ON THE EQUIPMENT CABINET WITH PERMANENT SET ADHESIVE. TWO SIDED TAPE SHALL BE APPLIED AT EACH CORNER OF THE BACKSIDE TO AVOID PLACEMENT UNTIL THE ADHESIVE SETS



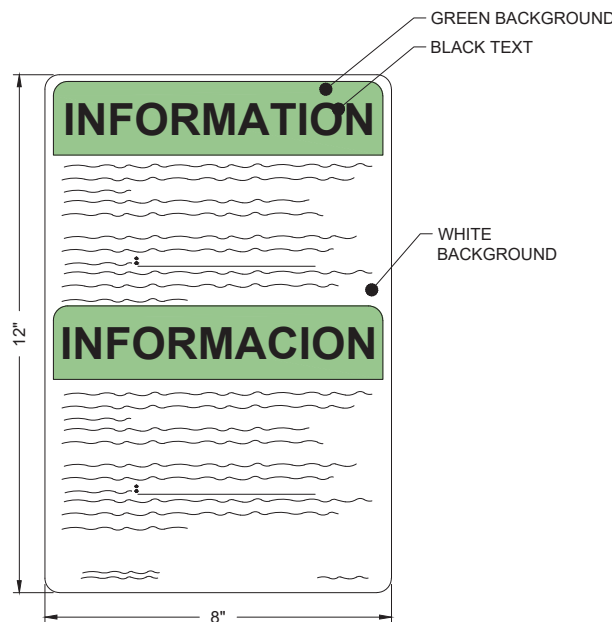
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 MOUNTING LOCATION: GATE & BASE OF TOWER  
 QUANTITY: 2

**FCC REGISTRATION SIGN** ②  
 SCALE: NTS



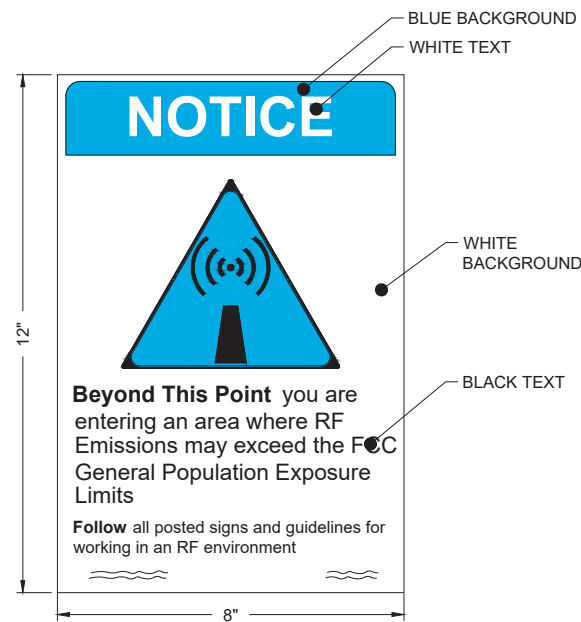
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 MOUNTING LOCATION: GATE & BASE OF TOWER  
 QUANTITY: 2

**RF EXPOSURE INFORMATION SIGN** ③  
 SCALE: NTS



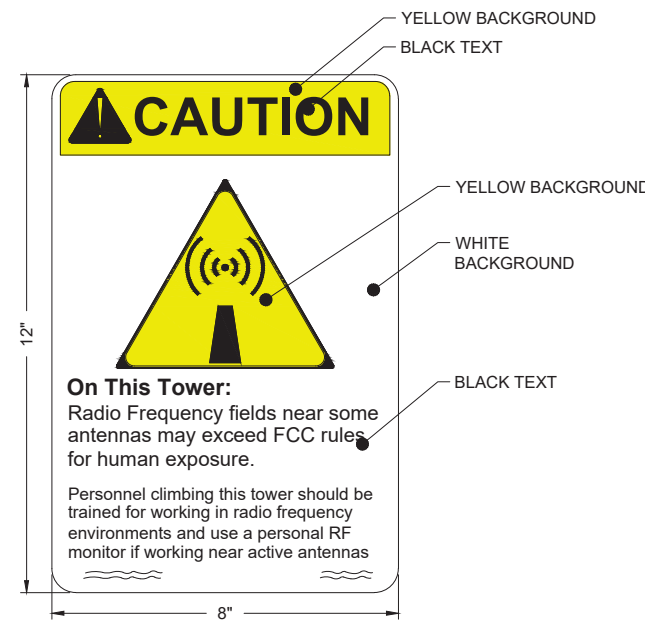
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 MOUNTING LOCATION: GATE & BASE OF TOWER  
 QUANTITY: 2

**RF EXPOSURE INFORMATION SIGN** ④  
 SCALE: NTS



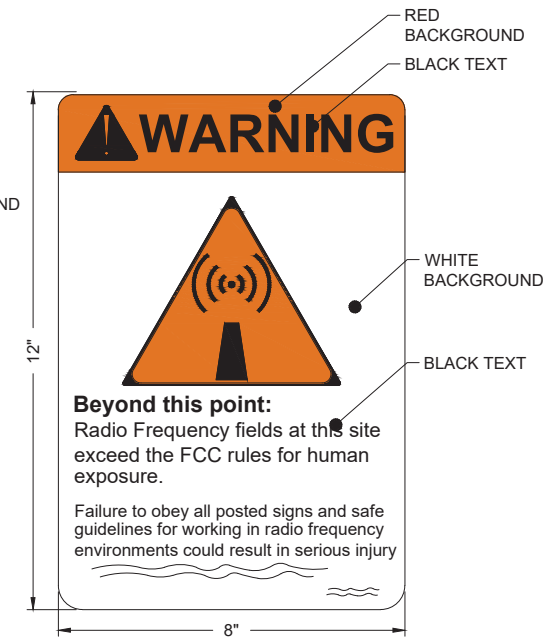
WHITE/BLUE BACKGROUND, BLACK/WHITE LETTERING  
 MOUNTING LOCATION: GATE & BASE OF TOWER  
 QUANTITY: 2

**RF EXPOSURE NOTICE SIGN** ⑤  
 SCALE: NTS



WHITE/YELLOW BACKGROUND, BLACK LETTERING  
 MOUNTING LOCATION: BASE OF TOWER  
 QUANTITY: 1

**RF EXPOSURE CAUTION SIGN** ⑥  
 SCALE: NTS



WHITE/RED BACKGROUND, BLACK LETTERING  
 MOUNTING LOCATION: GATE & BASE OF TOWER  
 QUANTITY: 2

**RF EXPOSURE WARNING SIGN** ⑦  
 SCALE: NTS



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James R. Skowronski  
 James R. Skowronski : 7/08/2019  
 Date:

MARK	DATE	DESCRIPTION
1	07/08/19	ADDED LIGHTING PACKAGE

ISSUE PHASE	FINAL	DATE ISSUED	06/20/2019
PROJECT TITLE:			

TI-OPP-11895-C

PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:

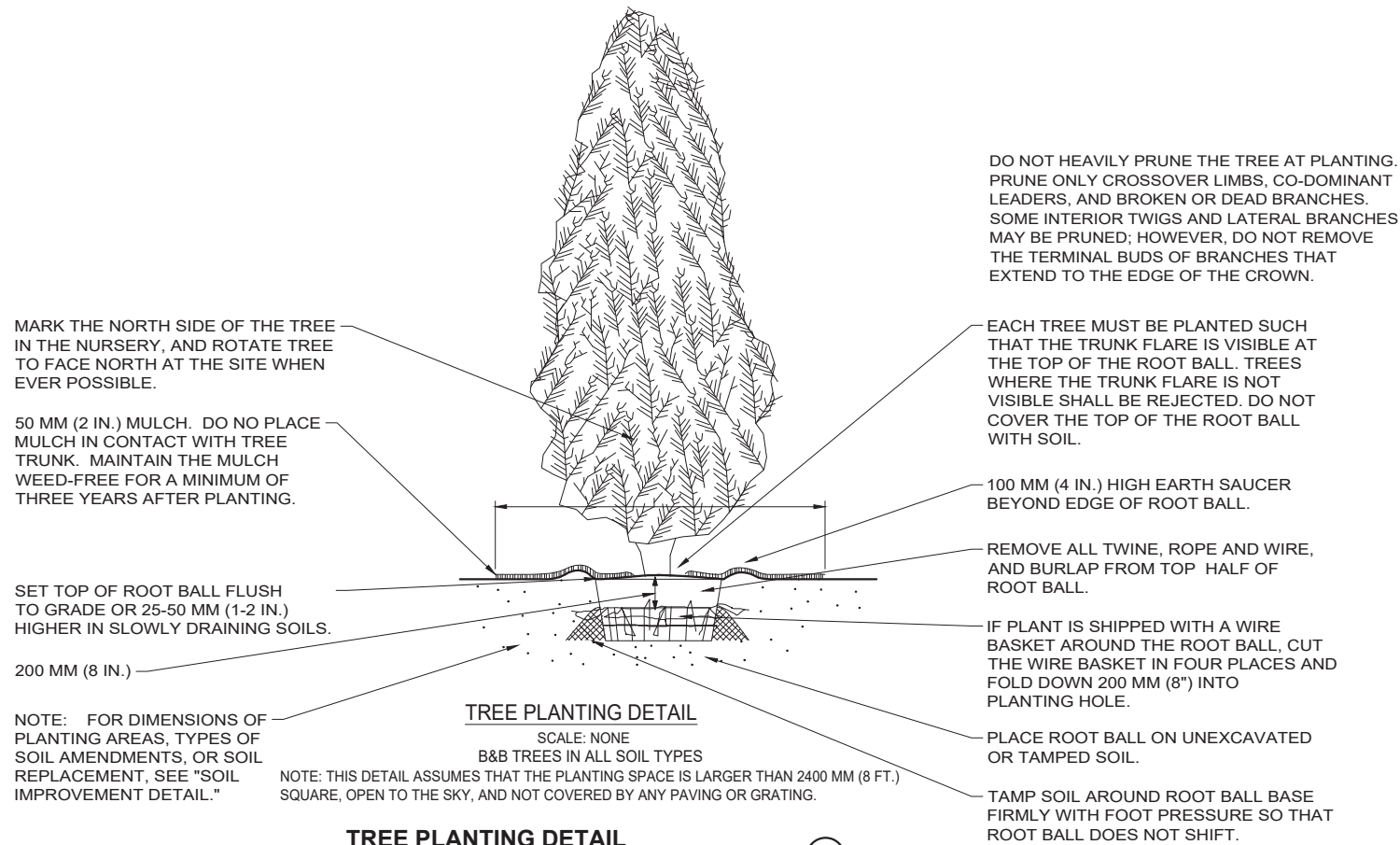
COMPOUND SIGN DETAILS

SCALE: NONE

PROJECT NUMBER 42278

SHEET NUMBER A-10

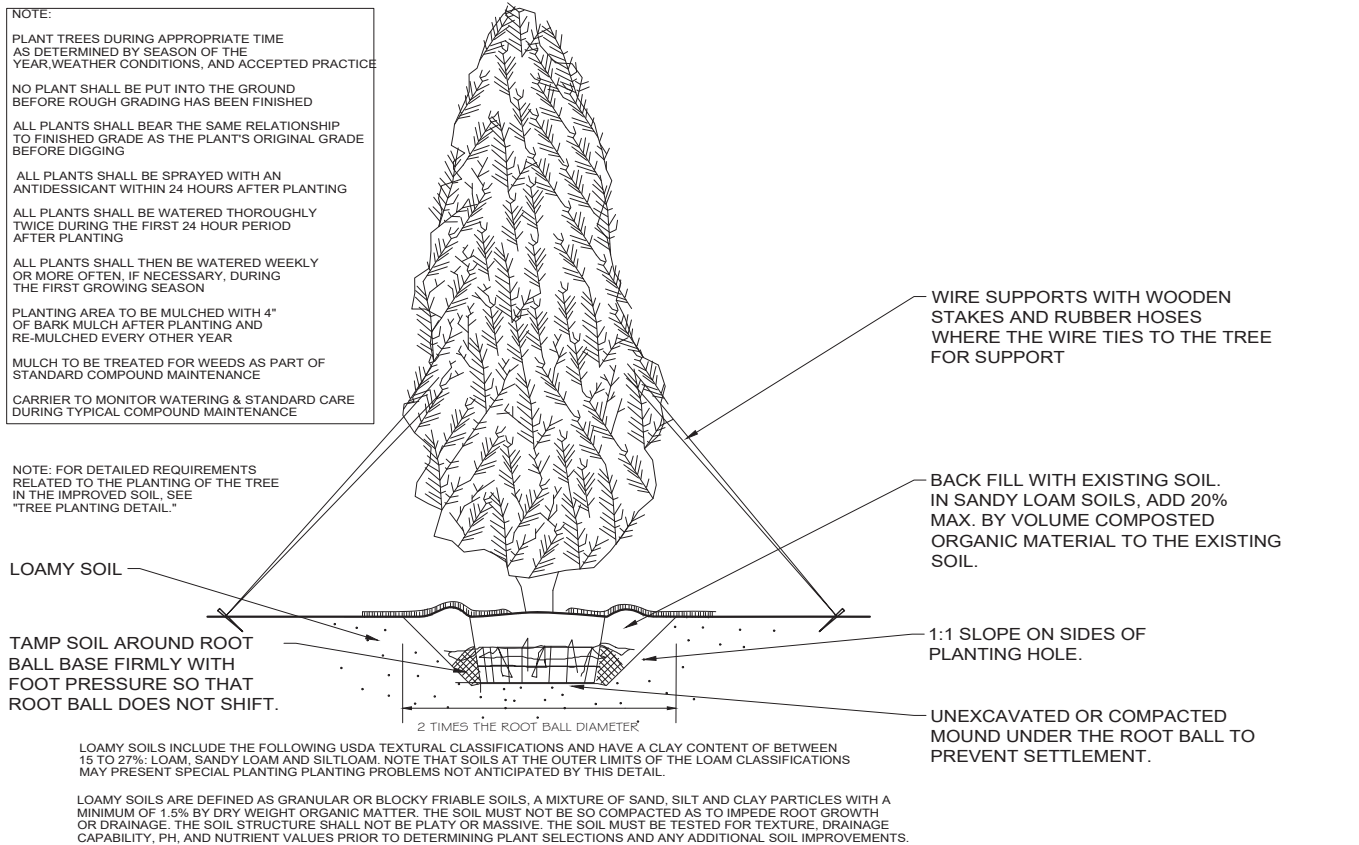




**TREE PLANTING DETAIL**  
 SCALE: NTS ①

NOTE:  
 PLANT TREES DURING APPROPRIATE TIME AS DETERMINED BY SEASON OF THE YEAR, WEATHER CONDITIONS, AND ACCEPTED PRACTICE  
 NO PLANT SHALL BE PUT INTO THE GROUND BEFORE ROUGH GRADING HAS BEEN FINISHED  
 ALL PLANTS SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS THE PLANT'S ORIGINAL GRADE BEFORE DIGGING  
 ALL PLANTS SHALL BE SPRAYED WITH AN ANTIDESSICANT WITHIN 24 HOURS AFTER PLANTING  
 ALL PLANTS SHALL BE WATERED THOROUGHLY TWICE DURING THE FIRST 24 HOUR PERIOD AFTER PLANTING  
 ALL PLANTS SHALL THEN BE WATERED WEEKLY OR MORE OFTEN, IF NECESSARY, DURING THE FIRST GROWING SEASON  
 PLANTING AREA TO BE MULCHED WITH 4" OF BARK MULCH AFTER PLANTING AND RE-MULCHED EVERY OTHER YEAR  
 MULCH TO BE TREATED FOR WEEDS AS PART OF STANDARD COMPOUND MAINTENANCE  
 CARRIER TO MONITOR WATERING & STANDARD CARE DURING TYPICAL COMPOUND MAINTENANCE

NOTE: FOR DETAILED REQUIREMENTS RELATED TO THE PLANTING OF THE TREE IN THE IMPROVED SOIL, SEE "TREE PLANTING DETAIL."



**SOIL IMPROVEMENT DETAIL**  
 SCALE: NTS ②



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*James R. Skowronski*  
 James R. Skowronski Date: 7/08/2019


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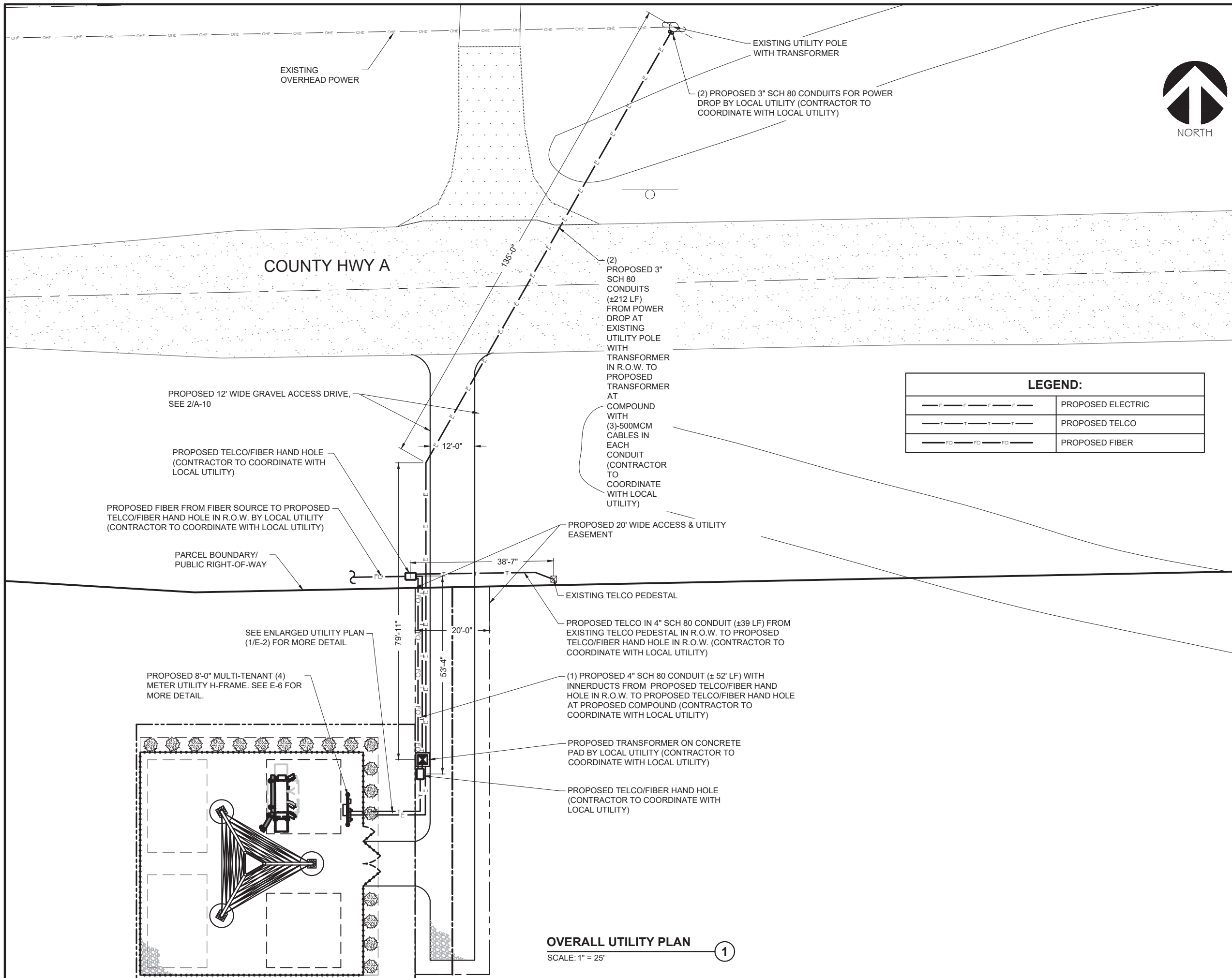
PROJECT TITLE:  
**TI-OPP-11895-C**

PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:  
**LANDSCAPE DETAILS**

SCALE: NONE

PROJECT NUMBER	42278
SHEET NUMBER	L-1



LEGEND:	
— E — E — E — E — E —	PROPOSED ELECTRIC
— T — T — T — T — T —	PROPOSED TELCO
— FO — FO — FO — FO —	PROPOSED FIBER

**OVERALL UTILITY PLAN**  
 SCALE: 1" = 25'

**TILLMAN**  
**INFRASTRUCTURE**

**LCC**  
**TELECOM SERVICES**

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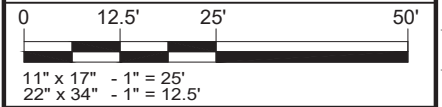
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ISSUE PHASE: FINAL DATE ISSUED: 06/20/2019

PROJECT TITLE:  
**TI-OPP-11895-C**

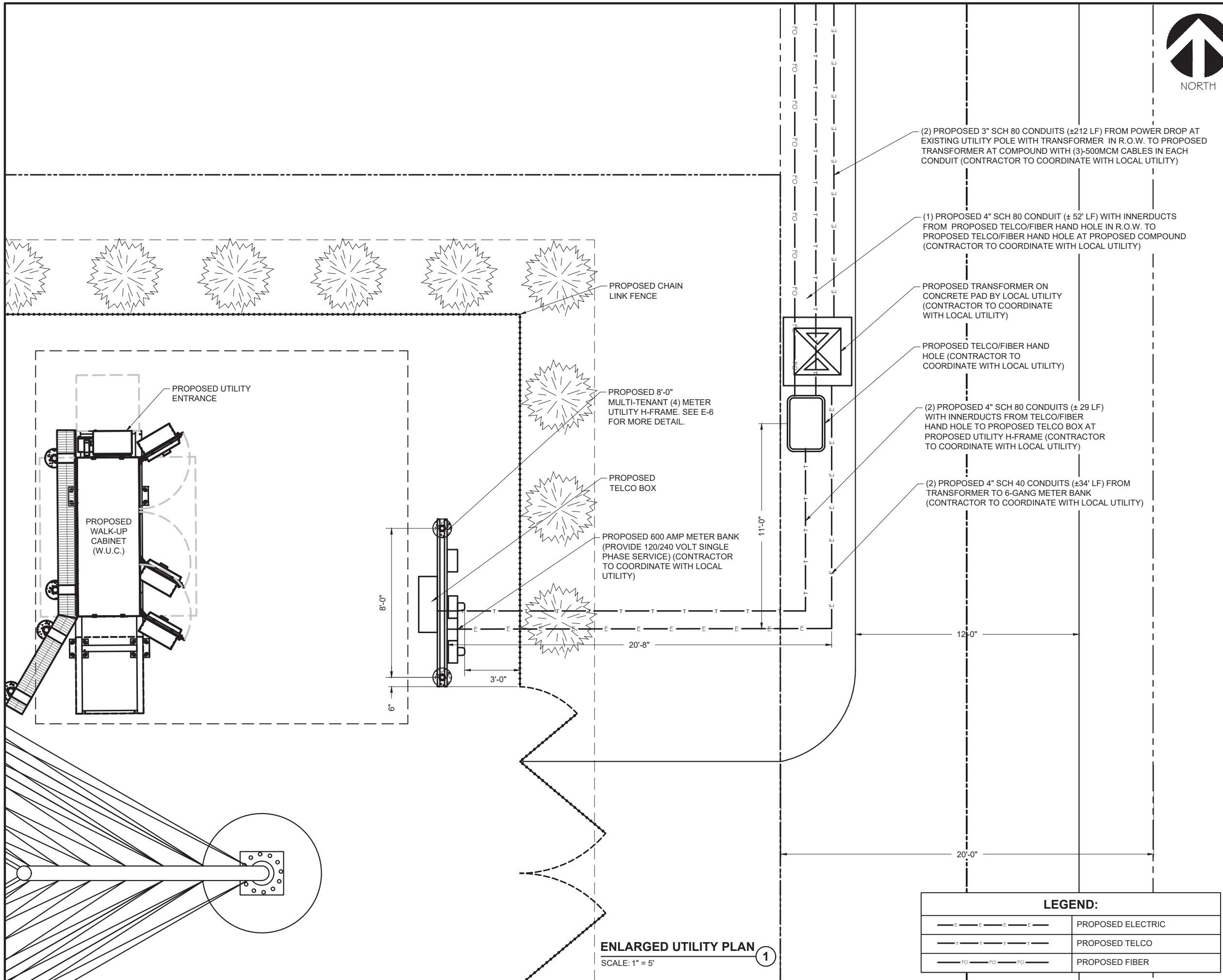
PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:  
**OVERALL UTILITY PLAN**



PROJECT NUMBER: 42278  
 SHEET NUMBER: E-1





**ENLARGED UTILITY PLAN** ①  
 SCALE: 1" = 5'

- (2) PROPOSED 3" SCH 80 CONDUITS (±212 LF) FROM POWER DROP AT EXISTING UTILITY POLE WITH TRANSFORMER IN R.O.W. TO PROPOSED TRANSFORMER AT COMPOUND WITH (3)-500MCM CABLES IN EACH CONDUIT (CONTRACTOR TO COORDINATE WITH LOCAL UTILITY)
- (1) PROPOSED 4" SCH 80 CONDUIT (± 52' LF) WITH INNERDUCTS FROM PROPOSED TELCO/FIBER HAND HOLE IN R.O.W. TO PROPOSED TELCO/FIBER HAND HOLE AT PROPOSED COMPOUND (CONTRACTOR TO COORDINATE WITH LOCAL UTILITY)
- PROPOSED TRANSFORMER ON CONCRETE PAD BY LOCAL UTILITY (CONTRACTOR TO COORDINATE WITH LOCAL UTILITY)
- PROPOSED TELCO/FIBER HAND HOLE (CONTRACTOR TO COORDINATE WITH LOCAL UTILITY)
- (2) PROPOSED 4" SCH 80 CONDUITS (± 29 LF) WITH INNERDUCTS FROM TELCO/FIBER HAND HOLE TO PROPOSED TELCO BOX AT PROPOSED UTILITY H-FRAME (CONTRACTOR TO COORDINATE WITH LOCAL UTILITY)
- (2) PROPOSED 4" SCH 40 CONDUITS (±34' LF) FROM TRANSFORMER TO 6-GANG METER BANK (CONTRACTOR TO COORDINATE WITH LOCAL UTILITY)

LEGEND:	
	PROPOSED ELECTRIC
	PROPOSED TELCO
	PROPOSED FIBER

**TILLMAN**  
**INFRASTRUCTURE**

**LCC**  
**TELECOM SERVICES**

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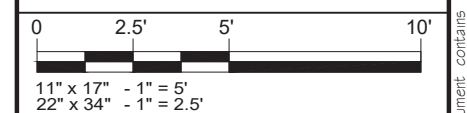
MARK	DATE	DESCRIPTION
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ISSUE PHASE FINAL DATE ISSUED 06/20/2019  
 PROJECT TITLE:

**TI-OPP-11895-C**

PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:  
**ENLARGED UTILITY PLAN**



PROJECT NUMBER 42278  
 SHEET NUMBER E-2

**ELECTRICAL NOTES**

- SUBMITTAL OF BID INDICATES THAT THE CONTRACTOR IS COGNIZANT OF ALL JOB SITE CONDITIONS AND WORK TO BE PERFORMED UNDER THIS CONTRACT.
- CONTRACTOR SHALL PERFORM ALL VERIFICATIONS, OBSERVATION TESTS, AND EXAMINATION WORK PRIOR TO ORDERING OF ANY EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE PROJECT MANAGER LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.
- VERIFY HEIGHTS WITH PROJECT MANAGER PRIOR TO INSTALLATION.
- THESE PLANS ARE DIAGRAMMATIC ONLY, FOLLOW AS CLOSELY AS POSSIBLE.
- CONTRACTOR SHALL COORDINATE ALL WORK BETWEEN TRADES AND ALL OTHER SCHEDULING AND PROVISIONARY CIRCUMSTANCES SURROUNDING THE PROJECT.
- CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION CONSTRUCTION TOOLS, TRANSPORTATION, ETC., FOR COMPLETE AND FUNCTIONALLY OPERATING SYSTEMS ENERGIZED AND READY FOR USE THROUGHOUT AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.
- ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN PERFECT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. ELECTRICAL MATERIALS SHALL BE LISTED AND APPROVED BY UNDERWRITER'S LABORATORIES AND SHALL BEAR THE INSPECTION LABEL "J" WHERE SUBJECT TO SUCH APPROVAL. MATERIALS SHALL MEET WITH APPROVAL OF ALL GOVERNING BODIES HAVING JURISDICTION OVER THE CONSTRUCTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH ALL CURRENT APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA AND NBFU. ALL MATERIALS AND EQUIPMENT SHALL BE APPROVED FOR THEIR INTENDED USE AND LOCATION.
- ALL WORK SHALL COMPLY WITH ALL APPLICABLE GOVERNING STATE, COUNTY AND CITY CODES AND OSHA, NFPA, NEC & ASHRAE REQUIREMENTS.
- ENTIRE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF JOB ACCEPTANCE. ALL WORK, MATERIAL AND EQUIPMENT FOUND TO BE FAULTY DURING THAT PERIOD SHALL BE CORRECTED AT ONCE, UPON WRITTEN NOTIFICATION, AT THE EXPENSE OF THE CONTRACTOR.
- PROPERLY SEAL ALL PENETRATIONS. PROVIDE UL LISTED FIRE-STOPS WHERE PENETRATIONS ARE MADE THROUGH FIRE-RATED ASSEMBLIES. WATER-TIGHT USING SILICONE SEALANT.
- DELIVER ALL BROCHURES, OPERATING MANUALS, CATALOGS AND SHOP DRAWINGS TO THE PROJECT MANAGER AT JOB COMPLETION. PROVIDE MAINTENANCE MANUALS FOR MECHANICAL EQUIPMENT. AFFIX MAINTENANCE LABELS TO MECHANICAL EQUIPMENT.
- ALL CONDUCTORS SHALL BE COPPER. MINIMUM CONDUCTOR SIZE SHALL BE #12 AWG., UNLESS OTHERWISE NOTED. CONDUCTORS SHALL BE TYPE THHW, RATED IN ACCORDANCE WITH NEC 110-14(C).
- ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THAN THE MAXIMUM INTERRUPTING CURRENT TO WHICH THEY MAY BE SUBJECTED.
- THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE; ARTICLES 250 & 810 AND THE UTILITY COMPANY STANDARDS.
- CONDUIT:
  - RIGID CONDUIT SHALL BE U.L. LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR AND SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS, IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR. RIGID CONDUIT IN CONTACT WITH EARTH SHALL BE 1/2 LAPPED WRAPPED WITH HUNTS WRAP PROCESS NO. 3.
  - ELECTRICAL METALLIC TUBING SHALL HAVE U.L. LABEL, FITTINGS SHALL BE GLAND RING COMPRESSION TYPE. EMT SHALL BE USED ONLY FOR INTERIOR RUNS.
  - LIQUID-TIGHT FLEXIBLE METAL CONDUIT SHALL BE U.L. LISTED AND SHALL BE USED AT FINAL CONNECTIONS TO MECHANICAL EQUIPMENT & RECTIFIERS AND WHERE PERMITTED BY CODE. ALL CONDUIT IN EXCESS OF SIX FEET IN LENGTH SHALL CONTAIN A FULL-SIZE GROUND CONDUCTOR.
  - CONDUIT RUNS SHALL BE SURFACE MOUNTED ON CEILINGS OR WALLS UNLESS NOTED OTHERWISE. ALL CONDUIT SHALL RUN PARALLEL OR PERPENDICULAR TO WALLS, FLOOR, CEILING, OR BEAMS. VERIFY EXACT ROUTING OF ALL EXPOSED CONDUIT WITH THE PROJECT MANAGER PRIOR TO INSTALLING.
  - PVC CONDUIT MAY BE PROVIDED ONLY WHERE SHOWN, OR IN UNDERGROUND INSTALLATIONS. PROVIDE UV-RESISTANT CONDUIT WHERE EXPOSED TO THE ATMOSPHERE. PROVIDE GROUND CONDUCTOR IN ALL PVC RUNS; EXCEPT WHERE PERMITTED BY CODE TO OMIT.
- ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS. BACKGROUND SHALL BE BLACK WITH WHITE LETTERS; EXCEPT AS REQUIRED BY CODE TO FOLLOW A DIFFERENT SCHEME.
- UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL OF POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO PROJECT MANAGER. GROUNDING SYSTEM RESISTANCE SHALL NOT EXCEED 5 OHMS. IF THE RESISTANCE VALUE IS EXCEEDED, NOTIFY THE PROJECT MANAGER FOR FURTHER INSTRUCTION ON METHODS FOR REDUCING THE RESISTANCE VALUE.
- CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION. LEGALLY DISPOSE OF ALL REMOVED, UNUSED AND EXCESS MATERIAL GENERATED BY THE WORK OF THIS CONTRACT. DELIVER ITEMS INDICATED ON THE DRAWINGS TO THE OWNER IN GOOD CONDITION. OBTAIN SIGNED RECEIPT UPON DELIVERY.
- COORDINATE WITH UTILITY COMPANY FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE SITE. THE TEMPORARY POWER AND ALL HOOKUP COSTS SHALL BE PAID BY THE CONTRACTOR.
- VERIFY ALL EXISTING CIRCUITRY PRIOR TO REMOVAL AND NEW WORK. MAINTAIN POWER TO ALL OTHER AREAS & CIRCUITS NOT SCHEDULED FOR REMOVAL.
- RED LINED AS-BUILT PLANS SHALL BE PROVIDED TO THE CONSTRUCTION MANAGER.

INTEGRATED LOAD CENTER																											
LOAD				LOAD PER PHASE (VA)				WIRE COLOR	LOADS CONTINUOUS	LOADS NON-CONT.	LOADS SUB-PANEL	WIRE SIZE	GROUNDING WIRE SIZE	TRIP	TRIP	GROUNDING WIRE SIZE	WIRE SIZE	LOADS SUB-PANEL	LOADS NON-CONT.	LOADS CONTINUOUS	WIRE COLOR	LOAD PER PHASE (VA)				LOAD	
DESCRIPTION	QTY.	UNIT V.A.	PHASE		A	B	A															B	UNIT V.A.	QTY.	DESCRIPTION		
1	RECTIFIER #1	1	1400	1400		BLK	X				8	(10)	40	40	(10)	8				X	BLK	1400		1400	1	RECTIFIER #5	2
3		1	1400		1400	RED															RED		1400	1400	1		4
5	RECTIFIER #2	1	1400	1400		BLK	X				8	(10)	40	40	(10)	8				X	BLK	1400		1400	1	RECTIFIER #6	6
7		1	1400		1400	RED															RED		1400	1400	1		8
9	RECTIFIER #3	1	1400	1400		BLK	X				8	(10)	40	40	(10)	8				X	BLK	1400		1400	1	RECTIFIER #7	10
12		1	1400		1400	RED															RED		1400	1400	1		12
13	RECTIFIER #4	1	1400	1400		BLK	X				8	(10)	40	40	(10)	8				X	BLK	1400		1400	1	RECTIFIER #8	14
15		1	1400		1400	RED															RED		1400	1400	1		16
17						BLK															BLK						18
19						RED	X				12	12	20								RED						20
21	GFCI RECEPTACLES	2	180	360		BLK	X				12	(12)	20								BLK						22
23	OPTIONAL FIBER BOX RECEPTACLE	1	180		180	RED	X				12	12	20								RED						24
25	BATTERY CHARGER	1	240	240		BLK	X				12	12	20								BLK						26
27	BLOCK HEATER	1	1500		1500	RED	X				12	12	20								RED						28
29	OIL HEATER	1	180	180		BLK	X				12	12	20								BLK						30
SUBTOTAL CONTINUOUS				6,380	7,280																	5,600	5,600	SUBTOTAL CONTINUOUS	TOTAL KVA CONTINUOUS x 1.25	31.075	
SUBTOTAL NON-CONT.				-	-																	-	-	SUBTOTAL NON-CONT.	TOTAL KVA NON-CONTINUOUS	-	
SUBTOTAL SUB-PANEL				-	-																	-	-	SUBTOTAL SUB-PANEL	TOTAL KVA SUB-PANEL	-	
PANEL DESIGNATION: ELECTRICAL PANEL (ITEM 2)																				TOTAL KVA		31.075					
MAIN LUGS: N/A		MAIN BREAKER: 200 AMP		BRANCH BREAKER TYPE: SIEMENS - BL																TOTAL KVA		31.075					
VOLTAGE: 120/240		CYCLE: 60		PHASE: 1		WIRES: 3		MAIN COPPER BUS: 200 AMPS		NEUTRAL: 200 AMPS		TOTAL AMPS		129.48													

**PANEL SCHEDULE**  
 SCALE: NTS 1



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*James R. Skowronski* 7/08/2019  
 James R. Skowronski Date:

1	07/08/19	ADDED LIGHTING PACKAGE
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MARK	DATE	DESCRIPTION
ISSUE	FINAL	DATE ISSUED 06/20/2019

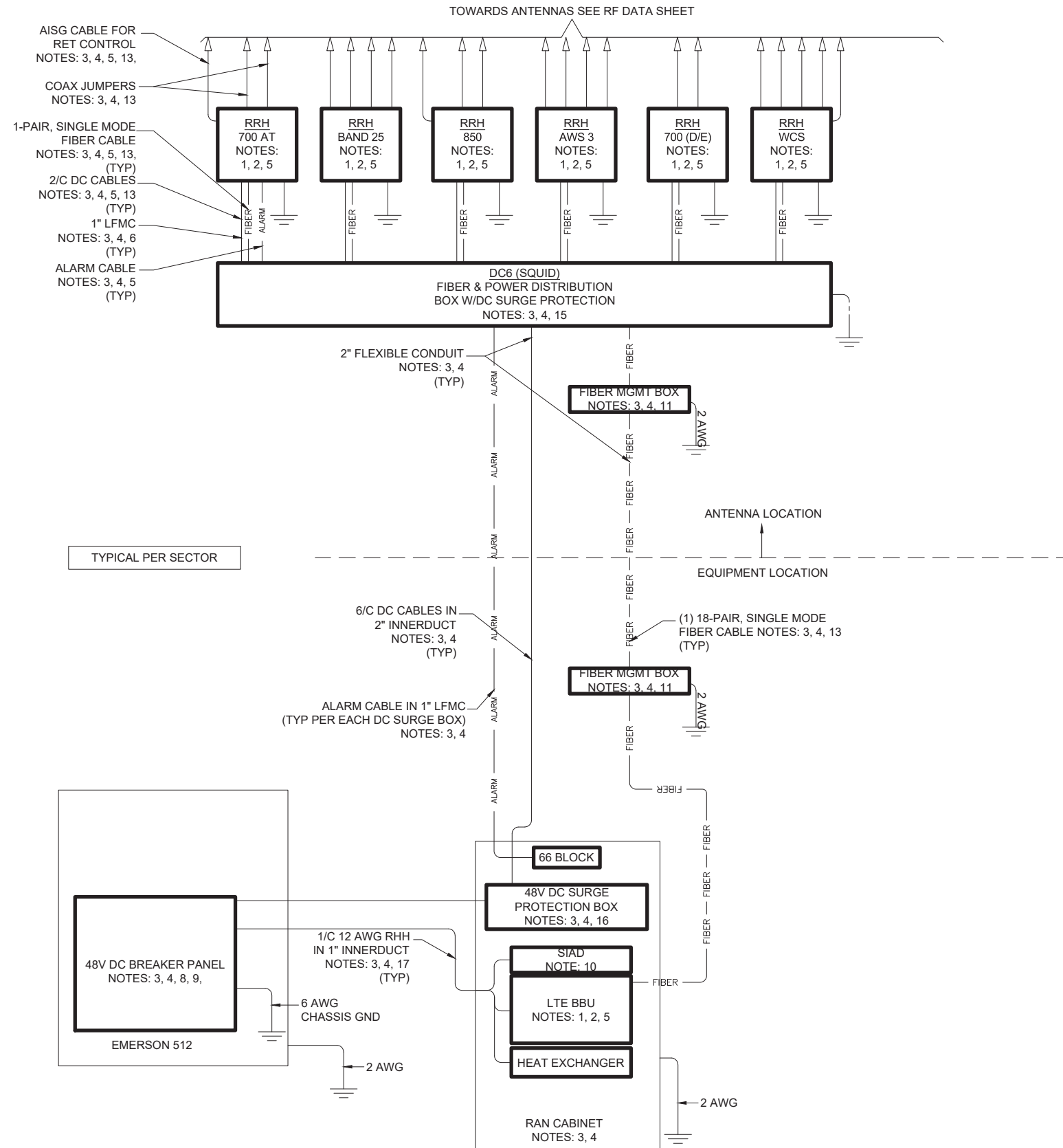
PROJECT TITLE:  
**TI-OPP-11895-C**

PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:  
**PANEL SCHEDULE**

SCALE: NONE

PROJECT NUMBER	42278
SHEET NUMBER	E-3



**NOTES:**

1. FURNISHED BY OEM/AT&T.
2. INSTALLED BY OEM OR AS SCOPED BY MARKET.
3. FURNISHED BY OTHERS
4. INSTALLED BY OTHERS
5. FINAL CONNECTION BY OEM OR AS SCOPED BY MARKET.
6. OPEN END OF LFMC TO BE LEFT WEATHERPROOFED UNTIL TERMINATED.
7. DELETED.
8. BREAKERS SPECIFIED SOLD SEPERATELY.
9. BREAKERS TO BE TAGGED AND LOCKED OUT.
10. SIAD IS FURNISHED AND INSTALLED BY OTHERS AND INCLUDES POWER CONNECTIONS AND FIBER TO THE UNIT OR AS SCOPED BY MARKET. INSTALL 10 AWG CHASSIS GROUND, PROVIDE (2) 10A BREAKERS FROM A 24V DC POWER SOURCE OR (2) 5A BREAKERS FROM A 48V DC POWER SOURCE AND CONNECT USING MFR POWER CABLE WITH SPECIAL CONNECTOR.
11. FIBER MANAGEMENT BOX IS J-SOURCE MODEL 12126FM4SEC.
12. LEC TO FURNISH AND INSTALL NETWORK INTERFACE DEVICE.
13. LEAVE COILED AND PROTECTED UNTIL TERMINATED.
14. SEE DETAIL 1408 FOR DC POWER CABLE SIZES.
15. FIBER AND POWER DISTRIBUTION BOX 4/48V SURGE SHALL BE RAYCAP MODEL DC6-48-60-18-8F.
16. POWER DISTRIBUTION W/DC SURGE PROTECTION BOX SHALL BE RAYCAP MODEL DC6-48-60-0-18.
17. SINGLE-CONDUCTOR DC POWER CABLES SHALL BE TELCOFLEX OR KS24194, COPPER, UL LISTED RHH NON-HALOGEN, LOW SMOKE WITH BRAIDED COVER, TYPE TC (1/0 AND LARGER). UNLESS OTHERWISE NOTED, STRANDING SHALL BE CLASS B (TYPE III) FOR CABLES SIZES 14, 12 & 10 AWG AND CLASS 1 (TYPE IV) FOR SIZES 8 AWG AND LARGER. CABLES SHALL BE COLOR CODED RED FOR +24V, BLUE FOR -48V AND GRAY FOR 24V AND 48V RETURN CONDUCTORS. MULTI-CONDUCTOR DC POWER CABLES SHALL COPPER, CLASS B STRANDED WITH FLAME RETARDANT PVC JACKET, TYPE TC, UL LISTED FOR 90°C DRY/ 75°C WET INSTALLATION.
18. 10A FUSE FOR HEAT EXCHANGER FURNISHED AND INSTALLED BY OTHERS.
19. DELETED
20. GROUNDING WIRES SHALL BE COPPER, GREEN THHN/THWN UL LISTED FOR 90°C DRY/75°C WET INSTALLATION. MINIMUM SIZE IS 6 AWG UNLESS NOTED OTHERWISE.
21. RET CONTROL FROM THE RRH IS AN OPTIONAL METHOD OF CONNECTION. REFER TO RF DATA SHEET FOR APPLICABILITY.
22. DELETED.
23. FIBER AND POWER DISTRIBUTION BOX 4/48V SURGE SHALL BE RAYCAP MODEL DC6-48-60-0-1E.
24. FIBER MANAGEMENT BOX IS COMMSCOPE MODEL FB 18188.
25. FIBER AND POWER DISTRIBUTION BOX 4/48V SURGE SHALL BE RAYCAP MODEL DC12-48-60-0-25E.



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*James R. Skowronski*  
 James R. Skowronski Date: 7/08/2019

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MARK	DATE	DESCRIPTION
ISSUE PHASE	FINAL	DATE ISSUED 06/20/2019

PROJECT TITLE:  
**TI-OPP-11895-C**

PROJECT INFORMATION:  
 PID: 051204290203  
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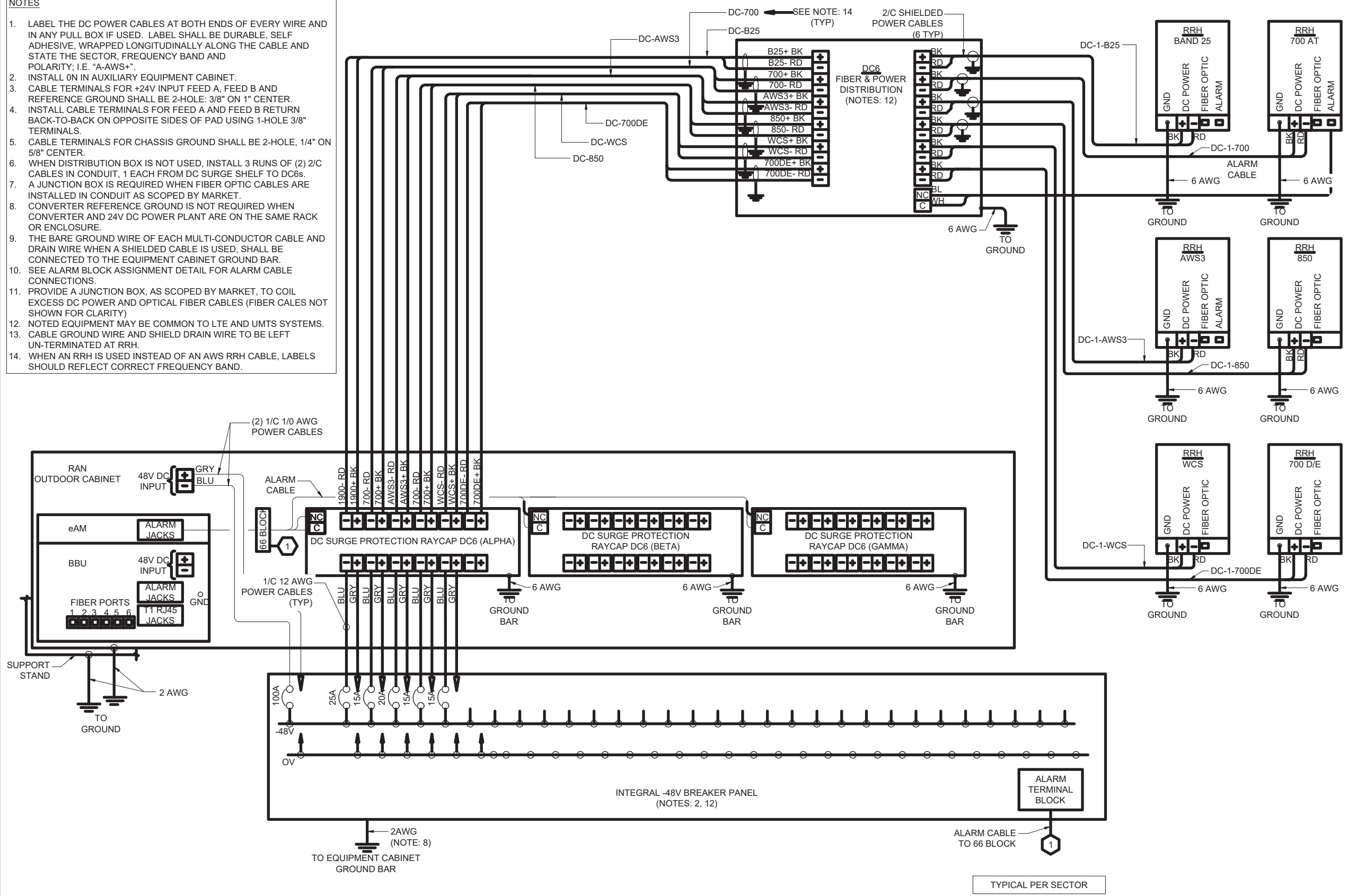
SHEET TITLE:  
**DC/FIBER SYSTEM DIAGRAM**

SCALE: NONE

PROJECT NUMBER	42278
SHEET NUMBER	E-4



- NOTES**
1. LABEL THE DC POWER CABLES AT BOTH ENDS OF EVERY WIRE AND IN ANY PULL BOX IF USED. LABEL SHALL BE DURABLE, SELF ADHESIVE, WRAPPED LONGITUDINALLY ALONG THE CABLE AND STATE THE SECTOR, FREQUENCY BAND AND POLARITY; I.E. "A-AWS+".
  2. INSTALL 0N IN AUXILIARY EQUIPMENT CABINET.
  3. CABLE TERMINALS FOR +24V INPUT FEED A, FEED B AND REFERENCE GROUND SHALL BE 2-HOLE: 3/8" ON 1" CENTER.
  4. INSTALL CABLE TERMINALS FOR FEED A AND FEED B RETURN BACK-TO-BACK ON OPPOSITE SIDES OF PAD USING 1-HOLE 3/8" TERMINALS.
  5. CABLE TERMINALS FOR CHASSIS GROUND SHALL BE 2-HOLE, 1/4" ON 5/8" CENTER.
  6. WHEN DISTRIBUTION BOX IS NOT USED, INSTALL 3 RUNS OF (2) 2/C CABLES IN CONDUIT, 1 EACH FROM DC SURGE SHELF TO DC6s.
  7. A JUNCTION BOX IS REQUIRED WHEN FIBER OPTIC CABLES ARE INSTALLED IN CONDUIT AS SCOPED BY MARKET.
  8. CONVERTER REFERENCE GROUND IS NOT REQUIRED WHEN CONVERTER AND 24V DC POWER PLANT ARE ON THE SAME RACK OR ENCLOSURE.
  9. THE BARE GROUND WIRE OF EACH MULTI-CONDUCTOR CABLE AND DRAIN WIRE WHEN A SHIELDED CABLE IS USED, SHALL BE CONNECTED TO THE EQUIPMENT CABINET GROUND BAR.
  10. SEE ALARM BLOCK ASSIGNMENT DETAIL FOR ALARM CABLE CONNECTIONS.
  11. PROVIDE A JUNCTION BOX, AS SCOPED BY MARKET, TO COIL EXCESS DC POWER AND OPTICAL FIBER CABLES (FIBER CALES NOT SHOWN FOR CLARITY)
  12. NOTED EQUIPMENT MAY BE COMMON TO LTE AND UMTS SYSTEMS.
  13. CABLE GROUND WIRE AND SHIELD DRAIN WIRE TO BE LEFT UN-TERMINATED AT RRH.
  14. WHEN AN RRH IS USED INSTEAD OF AN AWS RRH CABLE, LABELS SHOULD REFLECT CORRECT FREQUENCY BAND.



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**WISCONSIN PROFESSIONAL ENGINEER**

**JAMES R. SKOWRONSKI**  
 E-35556  
 SAUK CITY, WI

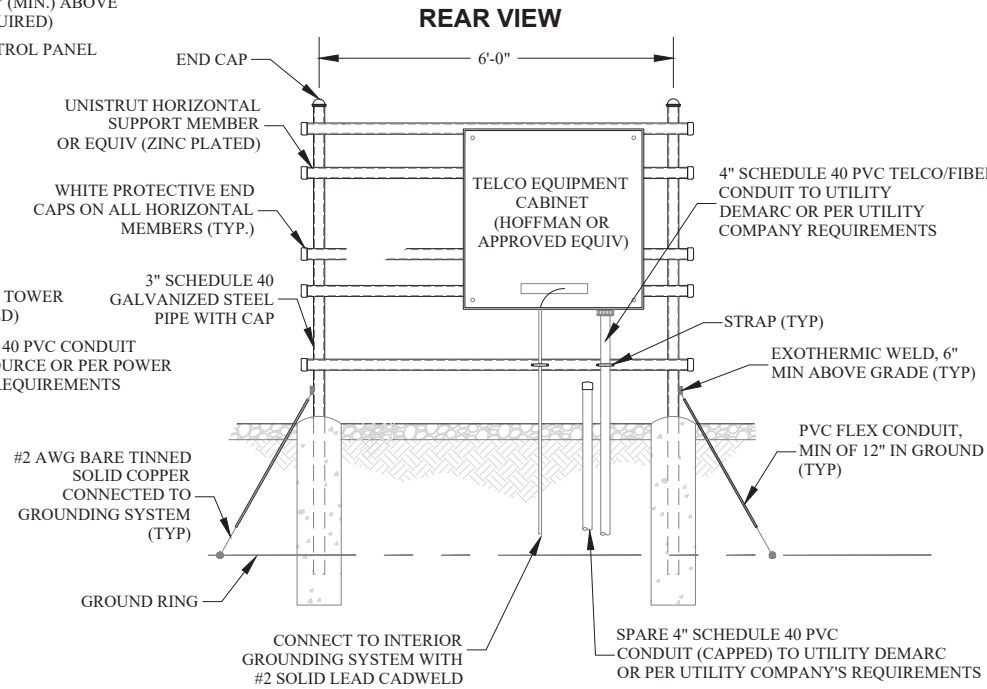
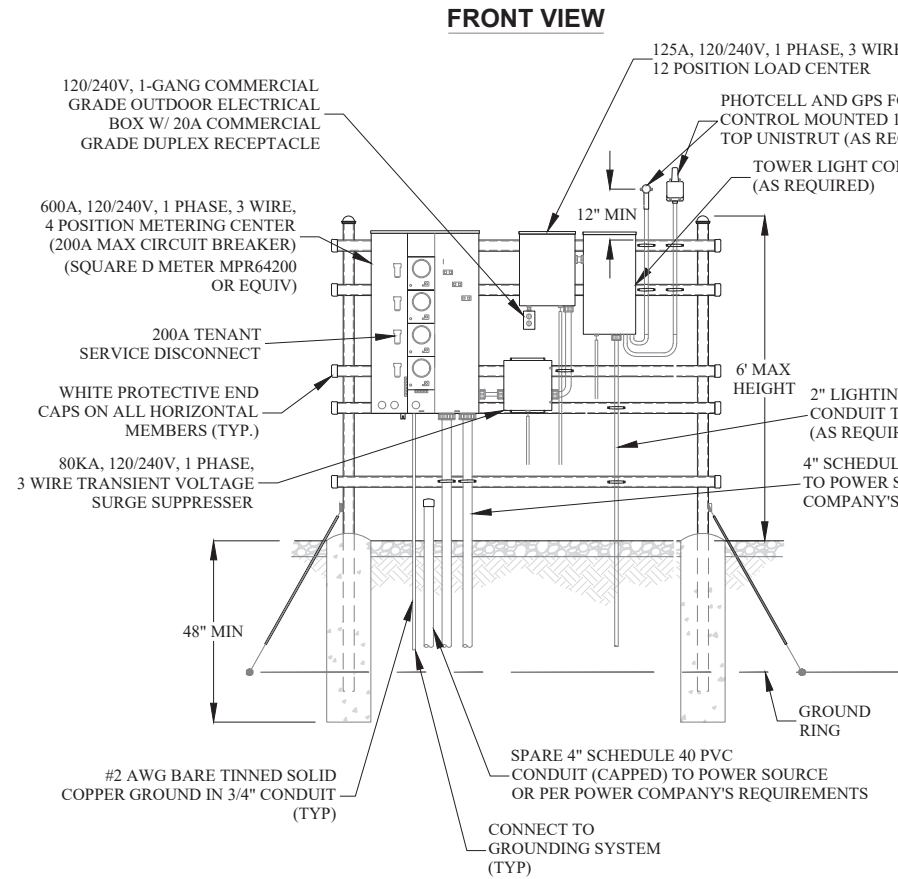
*James R. Skowronski* 7/08/2019  
 Date:

MARK	DATE	DESCRIPTION	DATE ISSUED
1	07/08/19	ADDED LIGHTING PACKAGE	
ISSUE PHASE	FINAL		DATE ISSUED 06/20/2019
PROJECT TITLE: <b>TI-OPP-11895-C</b>			
PROJECT INFORMATION: PID: 051204290203 ALBION, WI 53534 DANE COUNTY			
SHEET TITLE: <b>DC WIRING DIAGRAM</b>			
SCALE: NONE			
PROJECT NUMBER	42278		
SHEET NUMBER	E-5		

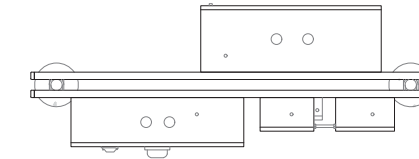
**DC WIRING DIAGRAM**  
 SCALE: NTS **1**

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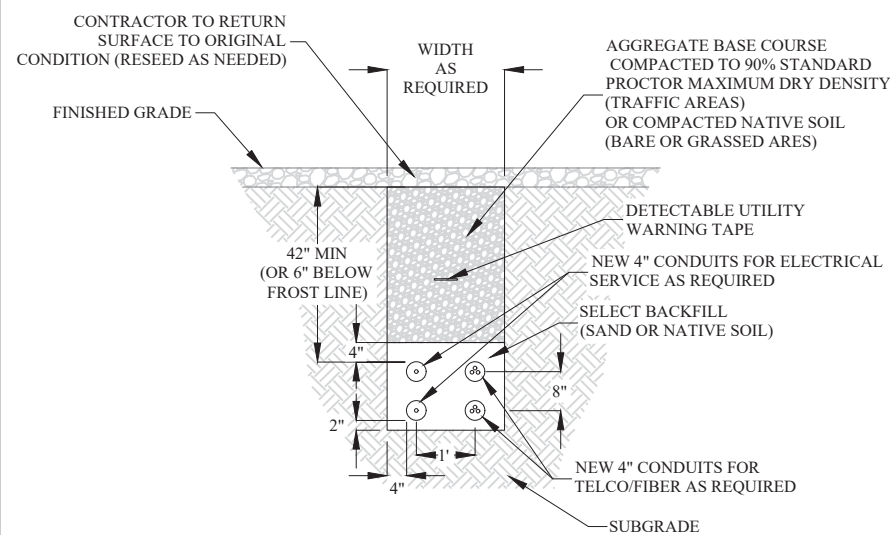
**PLAN VIEW**



**NOTES:**

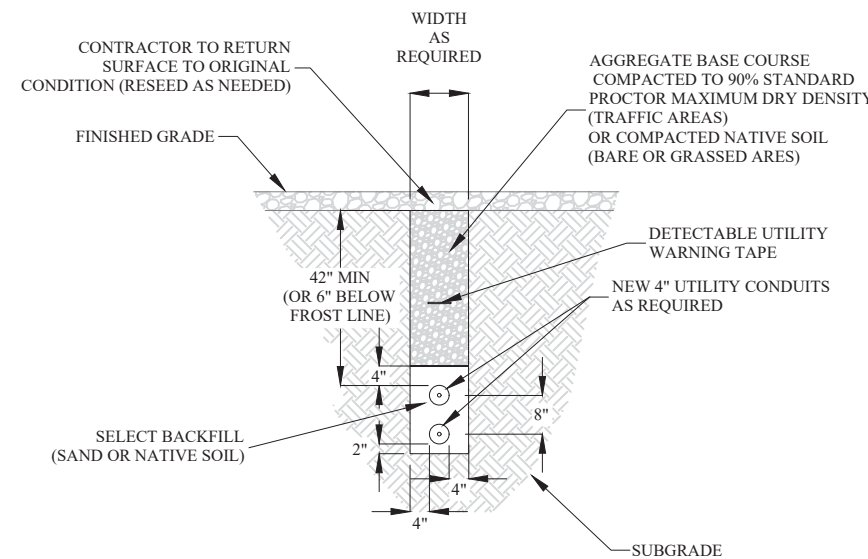
1. EXACT LAYOUT AND COMPONENTS OF UTILITY RACK MAY CHANGE BASED ON OWNER/TENANT REQUIREMENTS. CONTRACTOR TO COORDINATE WITH OWNER PRIOR TO BID REGARDING POTENTIAL MODIFICATIONS.
2. CONTRACTOR TO MAINTAIN 3'-0" MINIMUM CLEARANCE FROM METERING CENTER TO NEAREST OBSTRUCTION
3. CONCRETE PIER FOUNDATION TO ACHIEVE A MINIMUM STRENGTH OF 3000 PSI AT 28 DAYS. CONCRETE DEPTH TO BE A MINIMUM OF 6" BELOW FROST LINE (48" MINIMUM, TYP.)
4. ELECTRIC SERVICE: 240/120V, 1Ø, 3W, 600A UNDERGROUND SERVICE TO POLE RISER
5. USE COPPER STRANDED, 600V, TYPE THW/THWN, WITH CROSS-LINKED POLYETHYLENE INSULATION FOR #8 AWG AND LARGER WIRE
6. UNDERGROUND CONDUITS SHALL BE SCHEDULE 40 PVC (MEET UL STANDARDS G51 AND NEMA TC2-1990) EXPOSED GALVANIZED STEEL. ALL CONDUIT BENDS SHALL BE A MIN. OF 24" RADIUS OR AS SPECIFIED BY THE LATEST EDITION OF THE NEC, WHICHEVER IS GREATER
7. GROUNDING CONDUCTOR SHALL BE #2 AWG SOLID BARE TINNED COPPER UNLESS OTHERWISE NOTED
8. 4" PVC CONDUIT INSTALLED 30" (MIN) BELOW GRADE FOR INCOMING SERVICE BY TELEPHONE COMPANY. PROVIDE PULL STRING - 200 LB TEST POLYETHYLENE CORD
9. ALL ELECTRICAL & TELCO EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED UV RESISTANT PLASTIC LABELS. BACKGROUND SHALL BE BLACK WITH WHITE LETTERS

**JOINT UTILITY TRENCH**



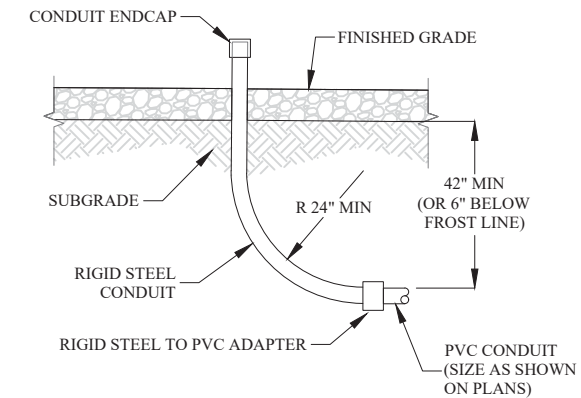
- NOTES:**
1. CONDUIT TYPE, SIZE, QUANTITY, AND SEPARATION TO BE VERIFIED WITH LOCAL UTILITY PROVIDER REQUIREMENTS.

**SINGLE UTILITY TRENCH**



- NOTES:**
1. CONDUIT TYPE, SIZE, QUANTITY, AND SEPARATION TO BE VERIFIED WITH LOCAL UTILITY PROVIDER REQUIREMENTS.

**CONDUIT STUB-UP**



**UTILITY H-FRAME DETAIL**

SCALE: NTS

1



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 James R. Skowronski  
 7/08/2019  
 Date:

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1	07/08/19	ADDED LIGHTING PACKAGE	06/20/2019

PROJECT TITLE:  
**TI-OPP-11895-C**

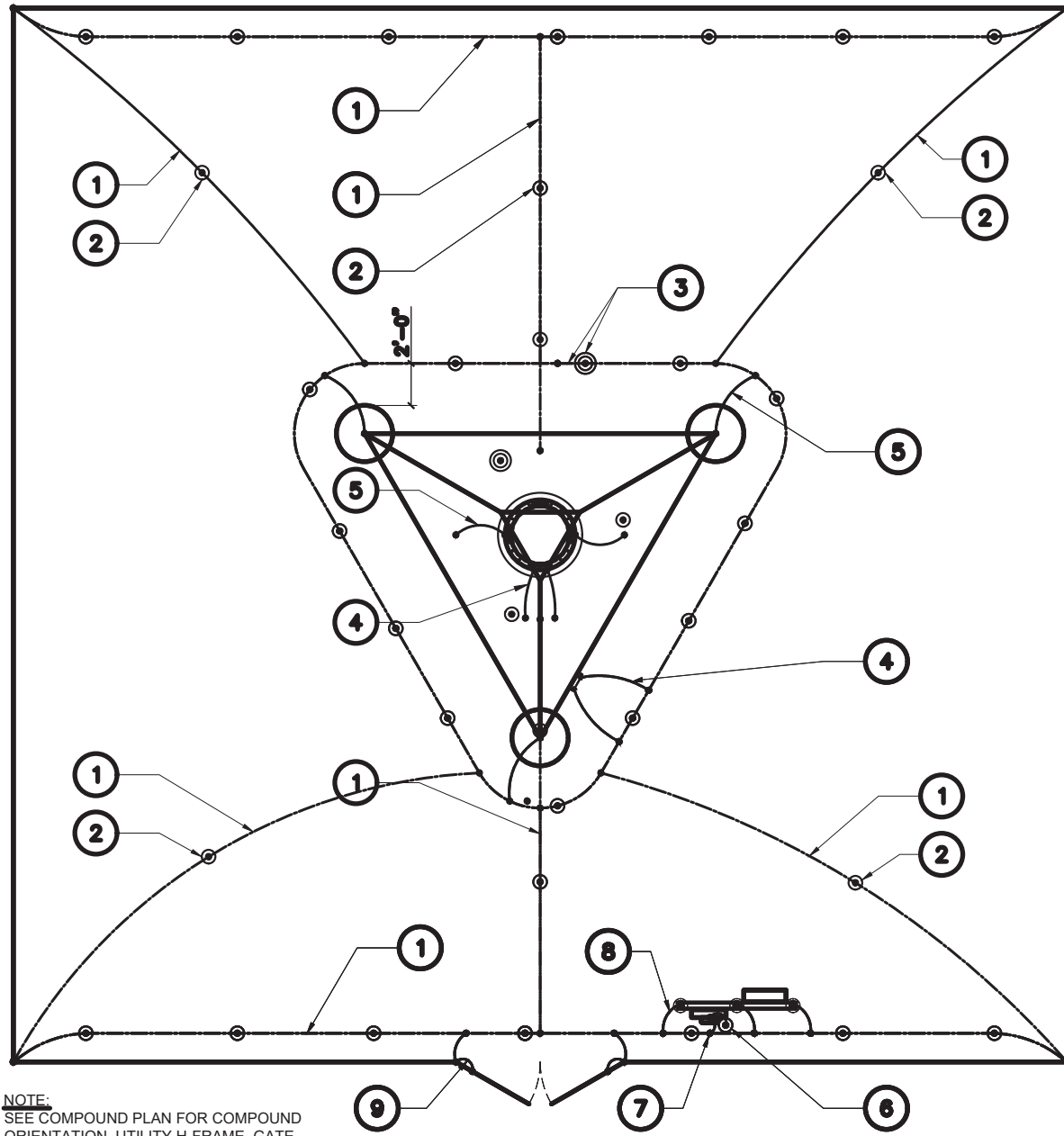
PROJECT INFORMATION:  
 PID: 051204290203  
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 DANE COUNTY

SHEET TITLE:  
**UTILITY DETAILS**

SCALE: NONE

PROJECT NUMBER	42278
SHEET NUMBER	E-6

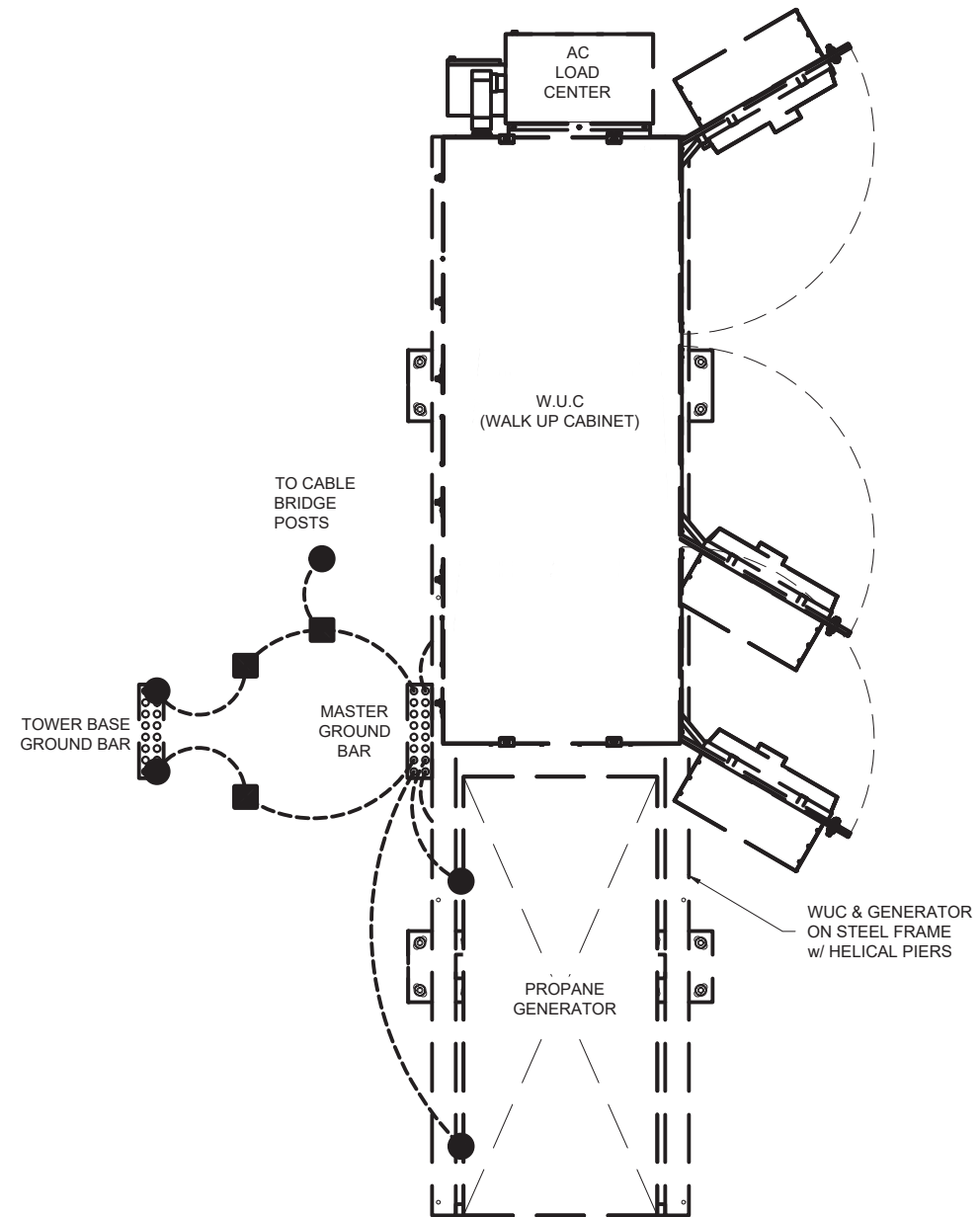
1. GROUND RING, #2 SOLID TINNED, BARE COPPER WIRE
2. 5/8"Ø x 10'-0" COPPER CLAD STEEL GROUND ROD SPACED MIN. 10'-0", MAX 15'-0" APART
3. GROUND SYSTEM TEST WELL
4. #2 SOLID TINNED, BARE COPPER GROUND WIRE FROM LOWER TOWER GROUND BAR TO NEW GROUND RING (2 REQ'D)
5. #2 SOLID TINNED, BARE COPPER GROUND WIRE FROM TOWER BASE PLATE TO NEW GROUND RING
6. 5/8"Ø x 10'-0" COPPER CLAD GROUND ROD FOR ELECTRICAL SERVICE GROUND
7. #2 SOLID TINNED, BARE COPPER GROUND WIRE FROM ELECTRICAL SERVICE GROUND TO LIGHTNING PROTECTION GROUND RING
8. #2 SOLID TINNED, BARE COPPER GROUND WIRE, BOND UTILITY POST W/ VS TYPE CADWELD. (1 PER POST REQ'D)
9. A.L.T. OR EQUAL 2/0 GROUNDING CONDUCTOR W/BLACK NEOPRENE INSULATION & PRE-CAPPED ENDS ATTACHED TO GATE POST AND GATE FRAME W/ VS TYPE EXOTHERMIC. INSTALL W/ WELDS 18" ABOVE FINISH GRADE
10. IN THE EVENT A PAD/PIER FOUNDATION IS INSTALLED, THE BURIED GROUND RING SHALL BE INSTALLED A MINIMUM 2 FT. FROM THE EDGE OF CONCRETE



NOTE:  
 SEE COMPOUND PLAN FOR COMPOUND  
 ORIENTATION, UTILITY H-FRAME, GATE  
 AND TOWER LOCATION

**COMPOUND GROUNDING PLAN**  
 SCALE: NTS

GROUNDING LEGEND	
●	EXOTHERMIC WELD CONNECTION
■	COMPRESSION FITTING CONNECTION
⊙	5/8"X10' COPPER-CLAD STEEL GROUND ROD
⊙	5/8"X10' COPPER-CLAD STEEL GROUND ROD WITH INSPECTION WELL
---	PROPOSED GROUND WIRING
+++++	TINNED COPPER GROUND BAR 1/4"X4"X12" OR 1/4"X4"X20"
⊖	COLLECTOR GROUND BAR
⊖	MAIN GROUND BAR



**PLATFORM GROUNDING PLAN**  
 SCALE: NTS

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 James R. Skowronski Date: 7/08/2019

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 PROJECT TITLE:

TI-OPP-11895-C

PROJECT INFORMATION:  
 PID: 051204290203  
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 DANE COUNTY

SHEET TITLE:  
**TYPICAL GROUNDING PLAN**

SCALE: NONE

PROJECT NUMBER: 42278  
 SHEET NUMBER: E-7



**GROUNDING NOTES:**

- GROUNDING SHALL COMPLY WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE.
- ALL GROUNDING DEVICES SHALL BE U.L. APPROVED OR LISTED FOR THEIR INTENDED USE.
- ALL WIRES SHALL BE AWG THHN/THWN COPPER UNLESS NOTED OTHERWISE.
- GROUNDING CONNECTIONS TO GROUND RODS, GROUND RING WIRE, TOWER BASE AND FENCE POSTS SHALL BE EXOTHERMIC ("CADWELDS") UNLESS NOTED OTHERWISE. CLEAN SURFACES TO SHINY METAL. WHERE GROUND WIRES ARE CADWELDED TO GALVANIZED SURFACES, SPRAY CADWELD WITH GALVANIZING PAINT.
- GROUNDING CONNECTIONS TO GROUND BARS ARE TO BE TWO-HOLE BRASS MECHANICAL CONNECTORS WITH STAINLESS STEEL HARDWARE (INCLUDING SCREW SET) CLEAN GROUND BAR TO SHINY METAL. AFTER MECHANICAL CONNECTION, TREAT WITH PROTECTIVE ANTIOXIDANT COATING.
- GROUND COAXIAL CABLE SHIELDS AT BOTH ENDS WITH MANUFACTURER'S GROUNDING KITS.
- ROUTE GROUNDING CONDUCTORS THE SHORTEST AND STRAIGHTEST PATH POSSIBLE. BEND GROUNDING LEADS WITH A MINIMUM 12" RADIUS.
- INSTALL #2 AWG GREEN-INSULATED STRANDED WIRE FOR ABOVE GRADE GROUNDING AND #2 BARE TINNED COPPER WIRE FOR BELOW GRADE GROUNDING UNLESS OTHERWISE NOTED.
- REFER TO GROUNDING PLAN FOR GROUND BAR LOCATIONS. GROUNDING CONNECTIONS SHALL BE EXOTHERMIC TYPE ("CADWELDS") TO ANTENNA MOUNTS AND GROUND RING. REMAINING GROUNDING CONNECTIONS SHALL BE COMPRESSION FITTINGS. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO-HOLE LUGS.
- THE GROUND ELECTRODE SYSTEM SHALL CONSIST OF DRIVEN GROUND RODS POSITION ACCORDING TO GROUNDING PLAN. THE GROUND RODS SHALL BE 5/8"x10'-0" COPPER CLAD STEEL INTERCONNECTED WITH #2 BARE TINNED COPPER WIRE BURIED 36" BELOW GRADE. BURY GROUND RODS A MAXIMUM OF 15' APART, AND A MINIMUM OF 8' APART.
- IF ROCK IS ENCOUNTERED GROUND RODS SHALL BE PLACED AT AN OBLIQUE ANGLE NOT TO EXCEED 45°.
- EXOTHERMIC WELDS SHALL BE MADE IN ACCORDANCE WITH ERICO PRODUCTS BULLETIN A-AT.
- CONSTRUCTION OF GROUND RING AND CONNECTIONS TO EXISTING GROUND RING SYSTEM SHALL BE DOCUMENTED WITH PHOTOGRAPHS PRIOR TO BACKFILLING SITE. PROVIDE PHOTOS TO THE AT&T CONSTRUCTION MANAGER.
- ALL GROUND LEADS EXCEPT THOSE TO THE EQUIPMENT ARE TO BE #2 BARE TINNED COPPER WIRE. ALL EXTERIOR GROUND BARS TINNED COPPER.
- PRIOR TO INSTALLING LUGS ON GROUND WIRES, APPLY THOMAS & BETTS KOPR-SHIELD (TM OF JET LUBE INC.). PRIOR TO BOLTING GROUND WIRE LUGS TO GROUND BARS, APPLY KOPR-SHIELD OR EQUAL.
- ENGAGE AN INDEPENDENT ELECTRICAL TESTING FIRM TO TEST AND VERIFY THAT IMPEDANCE DOES NOT EXCEED FIVE OHMS TO GROUND BY MEANS OF "FALL OF POTENTIAL TEST". TEST SHALL BE WITNESSED BY A METROPCS REPRESENTATIVE, AND RECORDED ON THE "GROUND RESISTANCE TEST" FORM.
- WHERE BARE COPPER GROUND WIRES ARE ROUTED FROM ANY CONNECTION ABOVE GRADE TO GROUND RING, INSTALL WIRE IN 3/4" PVC SLEEVE, FROM 1' BELOW GRADE AND SEAL TOP WITH SILICONE MATERIAL.
- PREPARE ALL BONDING SURFACES FOR GROUNDING CONNECTIONS BY REMOVING ALL PAINT AND CORROSION DOWN TO SHINY METAL. FOLLOWING CONNECTION, APPLY APPROPRIATE ANTI-OXIDIZATION PAINT.
- ANY SITE WHERE THE EQUIPMENT (BTS, CABLE BRIDGE, PPC, GENERATOR, ETC.) IS LOCATED WITHIN 6 FEET OF METAL FENCING, THE GROUND RING SHALL BE BONDED TO THE NEAREST FENCE POST USING (3) RUNS OF #2 BARE TINNED COPPER WIRE.

**CABLE COLOR CODING NOTES:**

- SECTOR ORIENTATION/AZIMUTH WILL VARY FROM REGION AND IS SITE SPECIFIC. REFER TO RF REPORT FOR EACH SITE TO DETERMINE THE ANTENNA LOCATION AND FUNCTION OF EACH TOWER SECTOR FACE.
- THE ANTENNA SYSTEM CABLES SHALL BE LABELED WITH VINYL TAPE EXCEPT IN LOCATIONS WHERE ENVIRONMENTAL CONDITIONS CAUSE PHYSICAL DAMAGE, THEN PHYSICAL TAGS ARE PREFERRED.
- THE STANDARD IS BASED ON EIGHT COLORED TAPES - RED, BLUE, GREEN, YELLOW, ORANGE, BROWN, WHITE & VIOLET. THESE TAPES MUST BE 3/4" WIDE & UV RESISTANT SUCH AS SCOTCH 35 VINYL ELECTRICAL COLOR CODING TAPE AND SHOULD BE READILY AVAILABLE TO THE ELECTRICIAN OR SUBCONTRACTOR ON SITE.
- USING COLOR BANDS ON THE CABLES, MARK ALL RF CABLES BY SECTOR AND NUMBER AS SHOWN ON "CABLE MARKING COLOR CONVENTION TABLE".
- WHEN AN EXISTING COAXIAL LINE THAT IS INTENDED TO BE A SHARED LINE BETWEEN GSM/3G AND IS-136 TDMA IS ENCOUNTERED, THE SUBCONTRACTOR SHALL REMOVE THE EXISTING COLOR CODING SCHEME AND REPLACE IT WITH THE COLOR CODING AND TAGGING STANDARD THAT IS OUTLINED IN THE CURRENT VERSION OF ND-00027. IN THE ABSENCE OF AN EXISTING COLOR CODING TAGGING SCHEME, OR WHEN INSTALLING PROPOSED COAXIAL CABLES, THIS GUIDELINE SHALL BE IMPLEMENTED AT THAT SITE REGARDLESS OF TECHNOLOGY.
- ALL COLOR CODE TAPE SHALL BE 3M-35 AND SHALL BE A MINIMUM OF (3) WRAPS OF TAPE AND SHALL BE NEATLY TRIMMED AND SMOOTHED OUT SO AS TO AVOID UNRAVELING.
- ALL COLOR BANDS INSTALLED AT THE TOP OF TOWER SHALL BE A MINIMUM OF 3" WIDE AND SHALL HAVE A MINIMUM OF 3/4" OF SPACE IN BETWEEN EACH COLOR.
- ALL COLOR CODES SHALL BE INSTALLED AS TO ALIGN NEATLY WITH ONE ANOTHER FROM SIDE TO SIDE.
- IF EXISTING CABLES AT THE SITE ALREADY HAVE A COLOR CODING SCHEME AND THEY ARE NOT INTENDED TO BE REUSED OR SHARED WITH THE GSM TECHNOLOGY, THE EXISTING COLOR CODING SCHEME SHALL REMAIN UNTOUCHED.

**CABLE MARKING TAGS:**

WHEN USING THE ALTERNATIVE LABELING METHOD, EACH RF CABLE SHALL BE IDENTIFIED WITH A METAL ID TAG MADE OF STAINLESS STEEL OR BRASS. THE TAG SHALL BE 1-1/2" IN DIAMETER WITH 1/4" STAMPED LETTERS AND NUMBERS INDICATING THE SECTOR, ANTENNA POSITION AND CABLE NUMBER. ID MARKING LOCATIONS SHOULD BE AS PER "CABLE MARKING LOCATIONS TABLE". THE TAG SHOULD BE ATTACHED WITH CORROSION PROOF WIRE AROUND THE CABLE AT THE SAME LOCATION AS DEFINED ABOVE. THE TAG SHOULD BE LABELED AS SHOWN ON THE "GSM AND UMTS LINE TAG" DETAIL.

CABLE MARKING LOCATIONS TABLE	
NO.	LOCATIONS
1	EACH JUMPER SHALL BE COLOR CODED WITH (1) SET OF 3" WIDE BANDS.
2	EACH MAIN COAX SHALL BE COLOR CODED WITH (1) SET OF 3" WIDE BANDS AT THE TOP JUMPER CONNECTION AND WITH (1) SET OF 3/4" WIDE COLOR BANDS PRIOR TO ENTERING THE BTS OR SHELTER.
3	CABLE ENTRY PORT ON THE INTERIOR OF SHELTER.
4	ALL BOTTOM JUMPERS SHALL BE COLOR CODED WITH (1) SET OF 3/4" WIDE BANDS ON EACH END OF THE BOTTOM JUMPER.
5	ALL BOTTOM JUMPERS SHALL BE COLOR CODED WITH (1) SET OF 3/4" WIDE BANDS ON EACH END OF THE BOTTOM JUMPER.



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



James R. Skowronski  
 Date: 7/08/2019

1	07/08/19	ADDED LIGHTING PACKAGE
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MARK	DATE	DESCRIPTION
ISSUE	FINAL	DATE ISSUED 06/20/2019

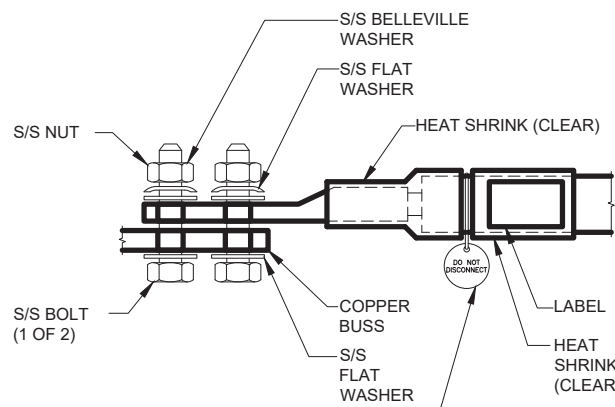
PROJECT TITLE:  
**TI-OPP-11895-C**

PROJECT INFORMATION:  
 PID: 051204290203  
 ALBION, WI 53534  
 DANE COUNTY

SHEET TITLE:  
**GROUNDING DETAILS**

SCALE: NONE

PROJECT NUMBER: 42278  
 SHEET NUMBER: E-8

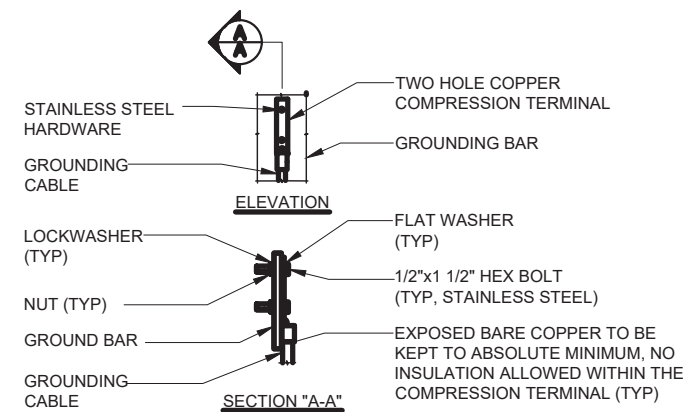


- NOTES:**
- ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING BELLEVILLES. COAT ALL SURFACES WITH ANTI-OXIDATION COMPOUND BEFORE MATING.
  - FOR GROUND BOND TO STEEL ONLY; INSERT A DRAGON TOOTH WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH ANTI-OXIDATION COMPOUND.
  - COAT ALL BARRELS WITH ANTI-OXIDATION COMPOUND BEFORE CRIMPING.

**GROUND LUG DETAIL**

SCALE: NTS

1

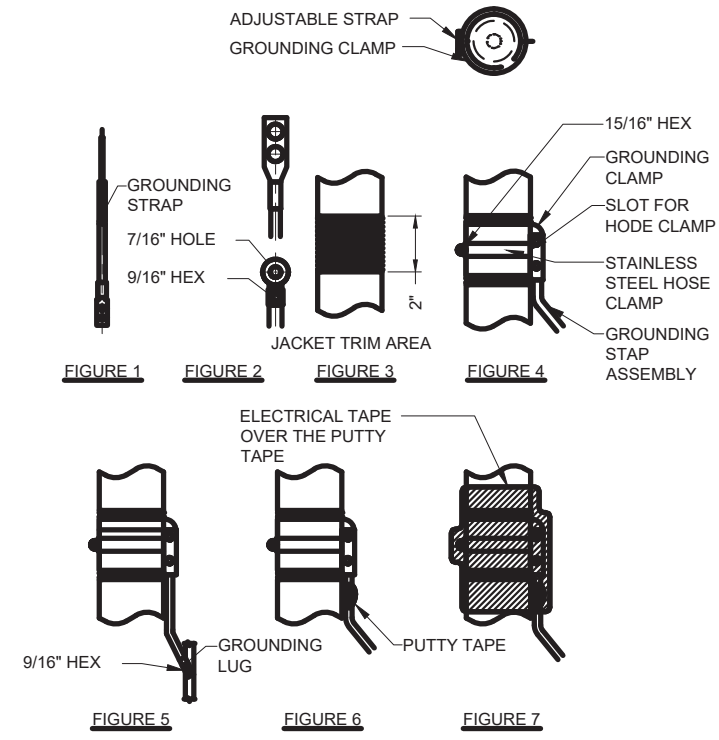


- NOTE:**
- "DOUBLING UP" OR "STACKING" OF CONNECTIONS IS NOT PERMITTED.
  - OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

**TYPICAL GROUND BAR CONNECTION DETAIL**

SCALE: NTS

2



**GROUNDING STRAP WEATHERPROOFING DETAIL**

SCALE: NTS

3

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*James R. Skowronski*  
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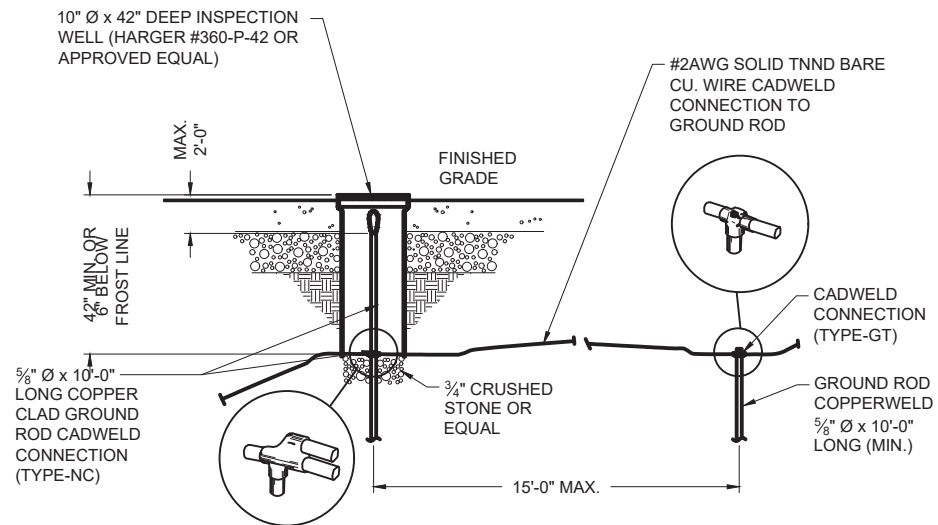
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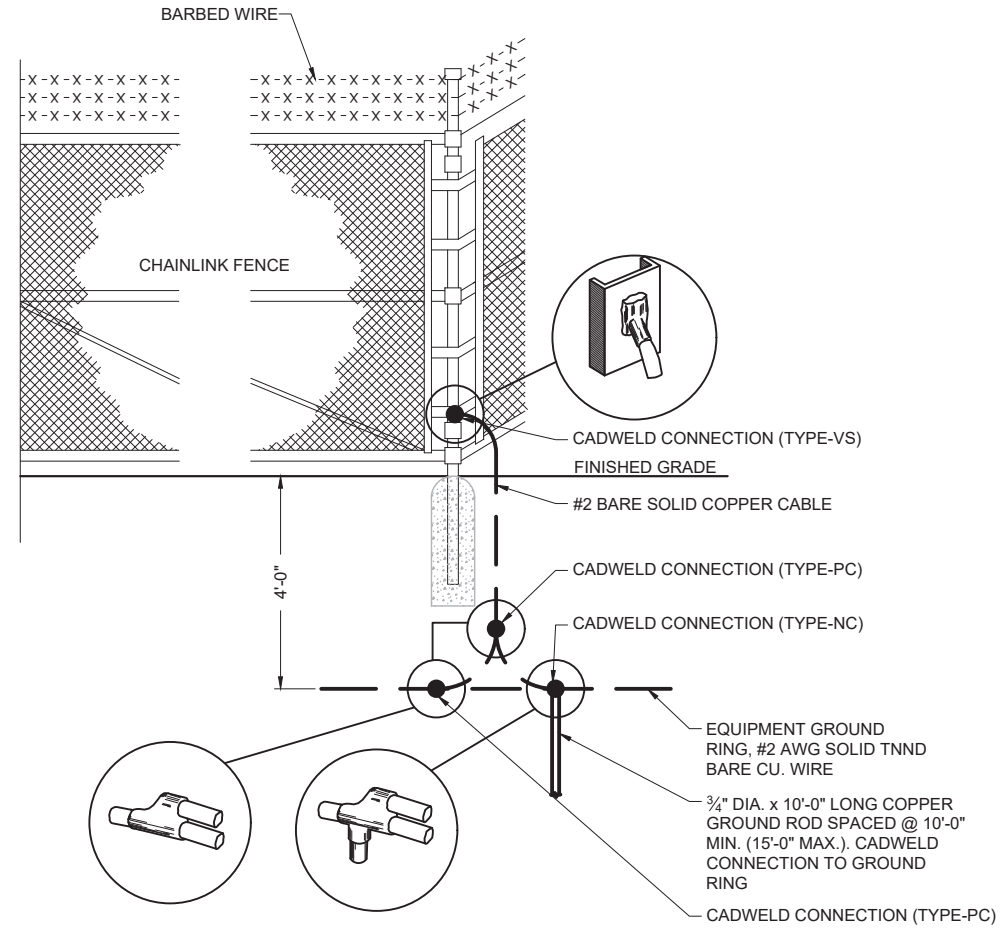
PROJECT NUMBER	42278
SHEET NUMBER	E-9



**INSPECTION WELL & GROUND ROD DETAIL**

SCALE: NTS

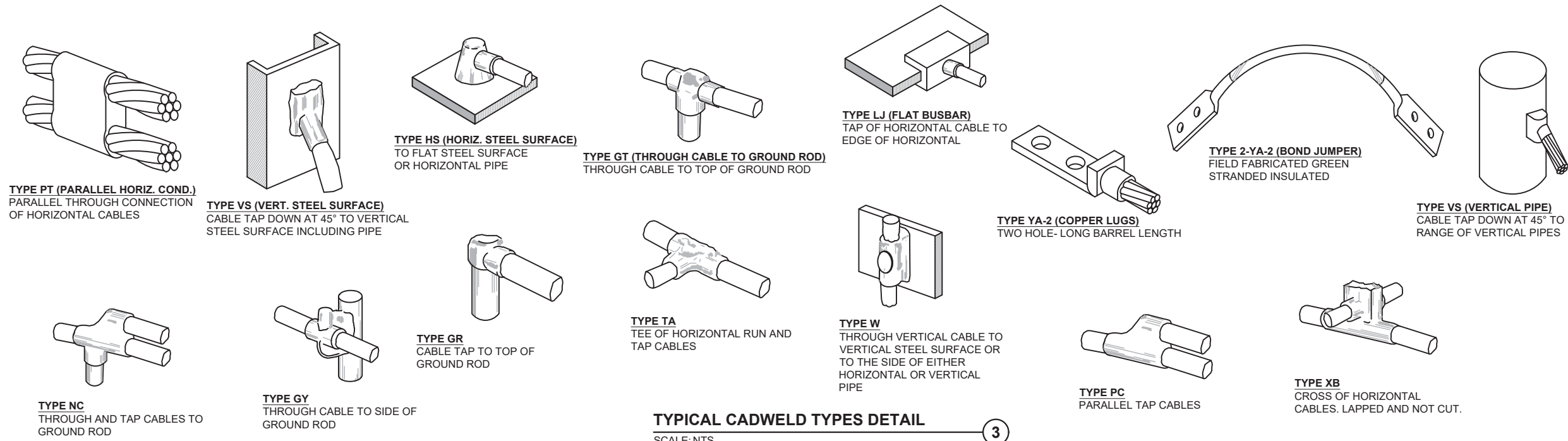
1



**FENCE CORNER POST GROUNDING DETAIL**

SCALE: NTS

2

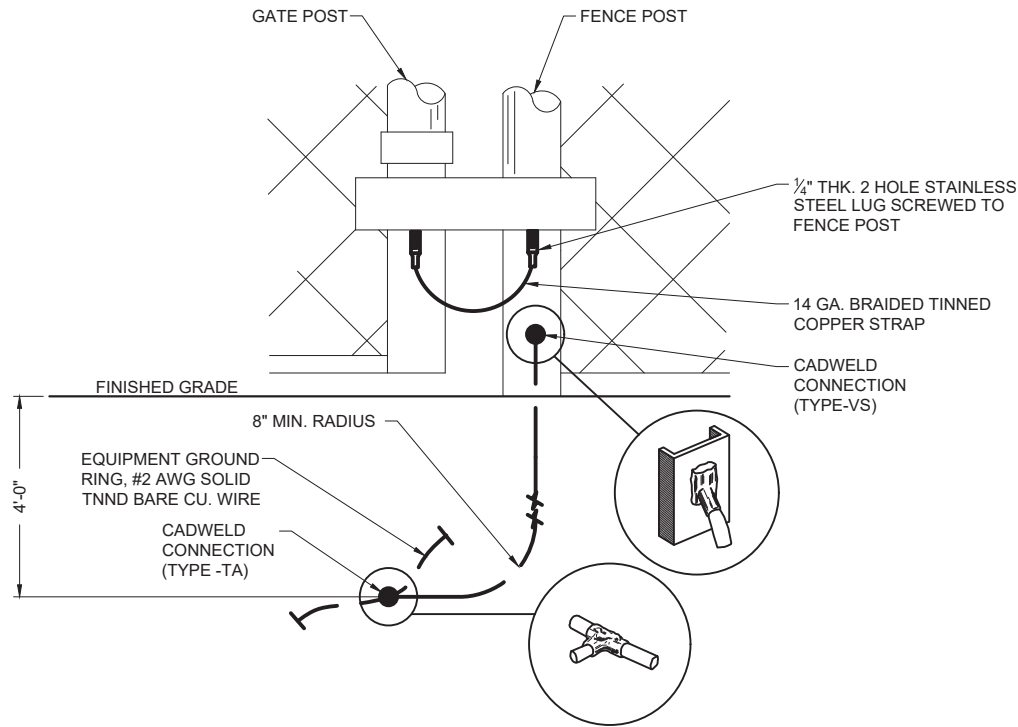


**TYPICAL CADWELD TYPES DETAIL**

SCALE: NTS

3





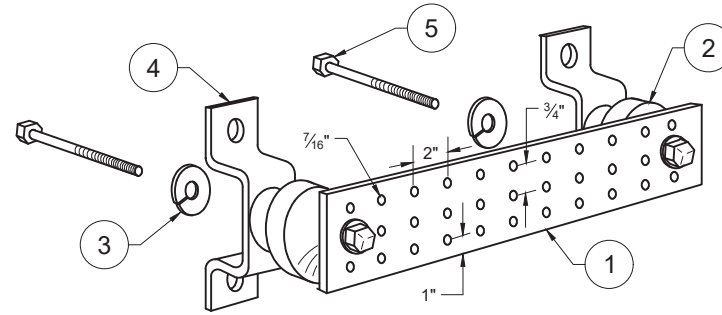
**GATE POST GROUNDING DETAIL**

SCALE: NTS

1

**NOTES:**

1. ALL MOUNTING HARDWARE CAN BE USED ON 6", 12", 18", ETC. GROUND BARS.
2. ENTIRE ASSEMBLY AVAILABLE FROM NEWTON INSTRUMENT CO. CAT. NO. 2106060010 OR AS HARGER TGB14420M.



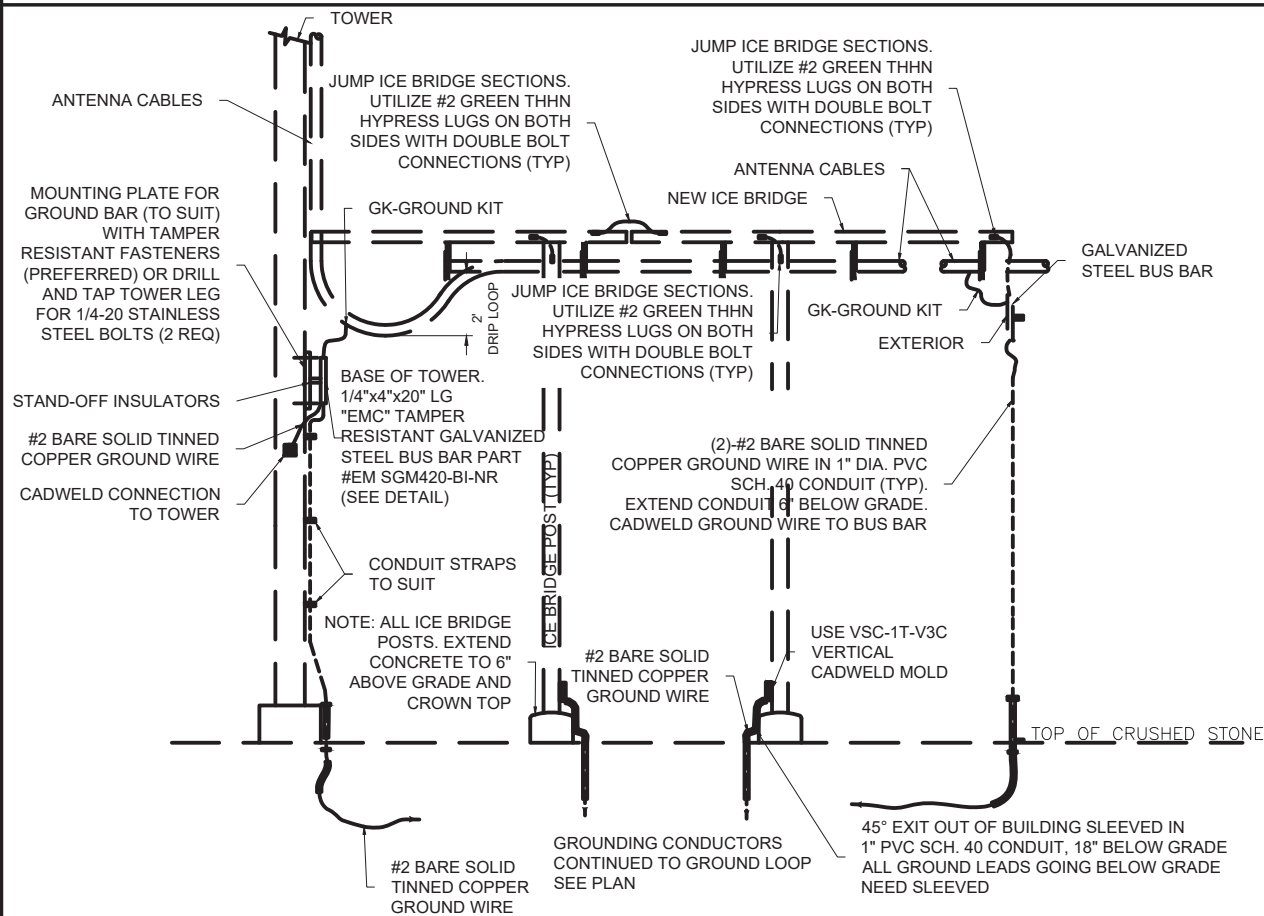
**LEGEND**

1. TINNED COPPER GROUND BAR, 1/4" x 4" x 20", NEWTON CO., HARGER TGB14420M, OR EQUIVALENT. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.
2. INSULATORS. INSTRUMENT CO. CAT. NO. 3061-4 OR HARGER EQUIVALENT.
3. 5/16" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8 OR EQUIVALENT.
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT. NO. A-6056 OR HARGER EQUIVALENT.
5. 5/16" x 1" H.H.C.S. BOLTS, NEWTON INSTRUMENT CO. CAT. NO. 3012-1 OR HARGER EQUIVALENT.

**TYPICAL GROUND BAR DETAIL**

SCALE: NTS

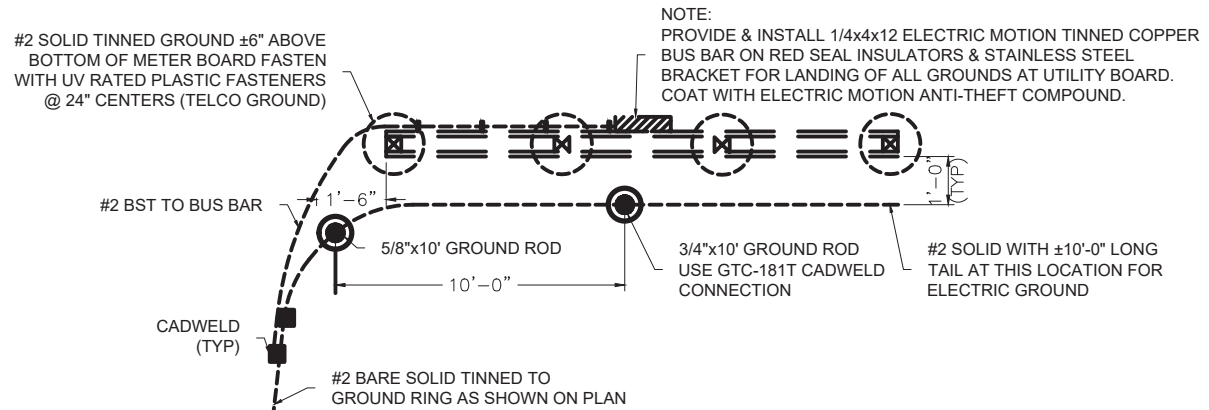
2



**COAXIAL GROUNDING AT ICE BRIDGE**

SCALE: NTS

3



**METER BOARD UTILITY GROUNDING DETAIL**

SCALE: NTS

4

**TILLMAN**  
INFRASTRUCTURE

**LCC**  
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PROJECT NUMBER 42278  
SHEET NUMBER E-10