



Fee must accompany application

\$1460 Paid H/M Date 2.22-19

CONDITIONAL USE PERMIT APPLICATION

Pursuant to Section 17.42 of the Municipal Code

Please read and complete this application carefully. **All applications must be signed and dated.**

1 APPLICANT OR AGENT

Lendlease Americas, Inc.
 fka PI Tower Development, LLC
 909 Lake Carolyne Pkwy, Suite 260
 Irving, TX 95039
 Attn: Kristie Lokken-Davis
 Phone (847)826-0958
 Fax ()
 E-Mail kristie.loken-davis@lendlease.com

PROPERTY OWNER

Rockfield Investments, LLC
 13416 Watertown Plank Rd., Suite 255
 Elm Grove, WI 53122
 Phone (414)313-3777
 MSR@NetworkREG.com

2 TO WHOM SHOULD THE PERMIT BE ISSUED?

Lendlease Americas, Inc.

3 PROPERTY ADDRESS

TAX KEY NUMBER

| | |
|---|--------|
| N132W17390 Rockfield Road, Germantown, WI | 091991 |
|---|--------|

4 DESCRIPTION OF EXISTING OPERATION

Briefly describe the use as it exists today, including use, size, number of employees, hours of operation, etc. If this permit involves new construction, describe the current status of the property, e.g. "vacant." Use additional pages as necessary.
 Multi-tenant warehousing/storage of various products. Generally no employees on site unless picking up or dropping off materials. Much of it is cold storage. Typical business hours of 8AM-5PM. Tenant spaces range in size from 3,000 square feet to 25,000 square feet. Total building is approximately 80,000 SF.

5 DESCRIPTION OF PROPOSED OPERATION

Write the name of the proposed conditional use exactly as it appears in the Municipal Code.
 Wireless Communications Facility
 Describe the proposed use, including size, number of employees, hours of operation and extent of any new construction/alterations.
 185.5' monopole (190.0' tip of lightning rod) within a 50' x 78' fenced compound including radio transmitter equipment, antennas on monopole, back-up generator, propane tank as well as underground electrical and fiber optic utilities.

METES AND BOUNDS LEGAL DESCRIPTION OF PROPERTY — REQUIRED

6

Attach pages as necessary.

See attached legal description of Property, Leased Premises and 30' Access and Utility Easement.

SUPPORTING DOCUMENTATION:

7

- Site plan and elevations for new construction (can be conceptual)
- Photos of existing use and/or proposed use operating elsewhere
- RF Sworn Statement and Search Ring
- Application transmittal letter

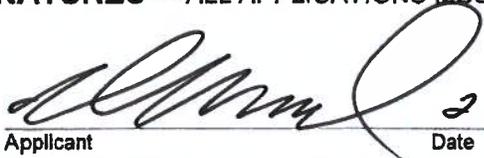
READ AND INITIAL THE FOLLOWING:

8

- I understand that the Village is under no obligation to issue a Conditional Use Permit and will do so only if the applicant successfully demonstrates that the proposed use is harmonious with the neighborhood and the long range goals of the Village.
- I will notify the Village if any aspect of the conditional use changes. I understand that failure to do so may result in the revocation of the CUP.
- I understand that a Conditional Use Permit is valid only if the conditions and restrictions of the permit are met. I understand that failure to comply with any aspect of the permit may result in revocation.

SIGNATURES — ALL APPLICATIONS MUST BE SIGNED BY OWNER!

9

 2/22/19
 Applicant Date

 Feb. 13, 2019
 Owner Agent for Owner Date

Nathan Ward, Buell Consulting
 on behalf of Lendlease
 414-788-1327
 nward@buellconsulting.com



February 22nd, 2019

Mr. Jeff Retzlaff
Ms. Lori Johnson
Village of Germantown
N112 W17001 Mequon Road
Germantown, WI 53022

Re: Application for Conditional Use Permit for Wireless Communications Facility
Applicants: Lendlease Americas, Inc &
Cellco Partnership d/b/a Verizon Wireless (tenants)
Parcel Owner: Rockfield Investments LLC, 13416 Watertown Plank Rd., Suite 255
Elm Grove, WI 53122

Dear Jeff and Lori:

I serve as agent for Lendlease Americas, Inc. and Verizon Wireless Personal Communications LP d/b/a Verizon Wireless (“Verizon Wireless”). Lendlease and Verizon Wireless (the “Applicants”) respectfully request the review and issuance of a conditional use permit to construct a wireless communications facility at the parcel noted above.

The proposed facility meets the guidelines in Wis. Stat. § 66.0404 (the “Wireless Siting Law”).¹ It includes a 185.5-foot monopole, with a 4.5-foot lightning rod, for an overall structure height of 190 feet (the “Monopole”).

The Wireless Siting Law sets forth six (6) requirements which must be included in an application to construct a new tower.² Those requirements, as well as the Applicants’ responses to those requirements, follow. It is my belief that the information and related enclosures set forth in this letter fulfill the requirements of the Wireless Siting Law.

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

¹ The Wireless Siting Law provides that a political subdivision regulate the siting and construction of a new mobile service support structure and facilities only as provided in § 66.0404 and further provides that any ordinances in effect that are inconsistent with § 66.0404 may not be applied to, or enforced against, the activity. Wis. Stat. § 66.0404(h) & (i).

² The six requirements are found at Wis. Stat. § 66.0404(2)(b).

Mr. Jeff Retzlaff
Ms. Lori Johnson
February 22nd, 2019
Page 2

| Applicants: | Contact Individual: |
|--|--|
| Lendlease Americas, LLC 909 Lake Carolyne Pkwy. Suite 260 Irving, TX 95039 | Nathan Ward Buell Consulting 1200 Riva Ridge Racine, WI 53402 414-788-1327 |
| Cellco Partnership d/b/a Verizon Wireless 1515 Woodfield Road Schaumburg, IL 60173 | Nathan Ward Buell Consulting 1200 Riva Ridge Racine, WI 53402 414-788-1327 |

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

Applicants propose to construct a mobile service facility and related mobile support service structure, as defined by the Wireless Siting Law, (the “Installation”) at N132W17390 Rockfield Road, Germantown, WI which bears Parcel ID # 091991 (the “Property”).

The Monopole will be constructed by Lendlease and located within a 60’ x 80’-foot compound (the “Leased Premises”) of which 50’ x 78’ will be fenced and located in the north central portion of the Property and as depicted in the enclosed survey and construction drawings (the “Construction Drawings”).

3. The location of the proposed mobile service facility.

The Wireless Siting Law defines “mobile service facility” as:

the 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 discrete geographic area, but does not include the underlying support structure.³

The Construction Drawings depict where the mobile service facility will be located on the Property. As noted on the Construction Drawings, sheet VZW A-1, Verizon Wireless will attach its equipment on the Monopole at the 180-foot centerline, route its coax/cabling through the interior of the Monopole, and install equipment cabinets on a raised platform, an exterior backup power generator on a concrete pad and propane storage tank near the base of the Monopole within the Leased Premises. The Monopole and mobile service facility is designed to accommodate at least three (3) additional wireless providers.

³ Wis. Stat. § 66.0404(1)(L).

Mr. Jeff Retzlaff
Ms. Lori Johnson
February 22nd, 2019
Page 3

- 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.**

The application proposes installation of a new monopole; therefore, the requirements of this section are not applicable.

- 5. If the application is to construct a new mobile service support structure, a construction plan which describes the proposed mobile services 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.**

The Construction Drawings set forth this information.

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

Enclosed is a sworn statement prepared by a Verizon Wireless radio frequency engineer (the "Verizon RF Statement"). The Verizon RF Statement includes the search ring which defines the precise geographic area where an additional cell site is needed to expand network coverage or capacity. Contributing factors for search ring placement and shape include the surrounding topography, the demographics and even whether the surrounding areas are urban, suburbs or open land.

As noted in the Verizon RF Statement, there are no existing structures of sufficient height available for collocation within the search ring making collocation technically infeasible.

The proposed location for the Installation is the best available candidate due to Verizon Wireless' network design needs, as well as the nature of the surrounding area and current use of the Property.

Mr. Jeff Retzlaff
Ms. Lori Johnson
February 22nd, 2019
Page 4

SETBACK

The Wireless Siting Law provides that if an applicant furnishes an engineering certification showing that a mobile service support structure is designed to collapse within an area smaller than the setback or fall zone area required in a zoning ordinance, that zoning ordinance does not apply unless the political subdivision provides the applicant with substantial evidence that the engineering certification is flawed.⁴ Enclosed is such an engineering certification. Sabre Industries, Inc. is the Monopole manufacturer and has issued the certification that the Monopole has a fall radius of 144 feet. The Monopole is set 148.4 feet from the nearest (east) property line and all improvements meet the M-1 district setbacks (in the unlikely event of failure) entirely on the Property.

ADDITIONAL DISCUSSION

The proposed Installation is the result of Verizon Wireless' determination that it has a deficit in its service within the vicinity of the proposed Monopole. Lendlease is a national owner and operator of wireless communications infrastructure. Lendlease proposes to operate the Installation within the Leased Premises and will own the Monopole. Verizon Wireless will install its equipment on the Monopole and place ground equipment within the Leased Premises. It is not uncommon for wireless telecommunications service providers to partner with companies like Lendlease in site development projects.

The Installation will include a 30-foot wide access and utility easement from the Wisconsin Avenue public right-of-way. The access and utility easement will require only minimal improvement.

The Installation will provide a great benefit in providing high quality, technologically advanced wireless communication services to the area. The Installation will conform to all applicable laws and regulations, including the national standard's seventh revision for Steel Antenna Towers and Antenna Supporting Structures published by the Telecommunications Industry Association (ANSI/TIA 222-G), Federal Communications Commission, and Federal Aviation Administration ("FAA"). Enclosed is the FAA Determination of No Hazard, which further negates any risk posed by the Monopole.

The Installation will fill the void for wireless coverage within the immediate geographic area of the site. Once constructed, the Installation's ability to accommodate additional carriers on the Monopole will negate requests for additional towers in the area. Lendlease actively markets its tower sites for collocation to all communications users.

⁴ See Wis. Stat. § 66.0404(2)(g).

Mr. Jeff Retzlaff
Ms. Lori Johnson
February 22nd, 2019
Page 5

The Property is in the M-1 Limited Industrial District, which is described in § 17.33 of the Germantown Code of Ordinances as “intended to provide for warehousing, manufacturing or fabrication operations which, on the basis of physical and operational characteristics, would not be detrimental to the immediate surrounding area or to the Village as a whole by reason of smoke, odor, noise, dust, flash, traffic, physical appearance, or other similar factors; and to establish such regulatory controls as will reasonably insure compatibility with the surrounding area in this respect. All uses in this District must meet the State of Wisconsin industrial standards.” The Leased Premises has been positioned upon the underlying parcel in a location to best fit with the current uses of the Property. The Installation will require no public financial contribution or result in any additional expenses public facilities and services. The communication services offered by Verizon Wireless are expected to be used by the general public, providing an economic asset to the community. The Installation will enhance E-911 services, further protecting public health, safety, and welfare within Germantown.

The Installation will be unmanned. No parking or employee facilities are required. Verizon Wireless’ technicians will visit the site periodically, typically a couple hours once per month, for the security monitoring, testing, monitoring, and maintenance of its equipment. Lendlease will also visit the site periodically to monitor the maintenance and security of the facility. The facility will not generate recognizable traffic. Noise level is limited to periodic generator operation.

Should you require further information or have questions regarding the application, please contact me directly at 414-788-1327 or by e-mail at nward@buellconsulting.com.

Very truly yours,

Nathan Ward
Buell Consulting
on behalf of Lendlease Americas, Inc. and
Cellco Partnership d/b/a Verizon Wireless

CC: Attorney Rodney Carter, Husch Blackwell LLP (legal counsel for Cellco Partnership d/b/a Verizon Wireless and & Lendlease Americas, Inc.)

Enclosures

Mr. Jeff Retzlaff
Ms. Lori Johnson
February 22nd, 2019
Page 6

66.0404 Mobile tower siting regulations.

(1) Definitions. In this section:

- (a) "Antenna" means communications equipment that transmits and receives electromagnetic radio signals and is used in the provision of mobile services.
- (b) "Application" means an application for a permit under this section to engage in an activity specified in sub. (2) (a) or a class 2 collocation.
- (c) "Building permit" means a permit issued by a political subdivision that authorizes an applicant to conduct construction activity that is consistent with the political subdivision's building code.
- (d) "Class 1 collocation" means the placement of a new mobile service facility on an existing support structure such that the owner of the facility does not need to construct a free standing support structure for the facility but does need to engage in substantial modification.
- (e) "Class 2 collocation" means the placement of a new mobile service facility on an existing support structure such that the owner of the facility does not need to construct a free standing support structure for the facility or engage in substantial modification.
- (f) "Collocation" means class 1 or class 2 collocation or both.
- (g) "Distributed antenna system" means a network of spatially separated antenna nodes that is connected to a common source via a transport medium and that provides mobile service within a geographic area or structure.
- (h) "Equipment compound" means an area surrounding or adjacent to the base of an existing support structure within which is located mobile service facilities.
- (i) "Existing structure" means a support structure that exists at the time a request for permission to place mobile service facilities on a support structure is filed with a political subdivision.
- (j) "Fall zone" means the area over which a mobile support structure is designed to collapse.
- (k) "Mobile service" has the meaning given in 47 USC 153 (33).
- (L) "Mobile service facility" means the 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 discrete geographic area, but does not include the underlying support structure.
- (m) "Mobile service provider" means a person who provides mobile service.
- (n) "Mobile service support structure" means a freestanding structure that is designed to support a mobile service facility.
- (o) "Permit" means a permit, other than a building permit, or approval issued by a political subdivision which authorizes any of the following activities by an applicant:
 - 1. A class 1 collocation.
 - 2. A class 2 collocation.
 - 3. The construction of a mobile service support structure.
- (p) "Political subdivision" means a city, village, town, or county.
- (q) "Public utility" has the meaning given in s. 196.01 (5).

(r) "Search ring" means a shape drawn on a map to indicate the general area within which a mobile service support structure should be located to meet radio frequency engineering requirements, taking into account other factors including topography and the demographics of the service area.

(s) "Substantial modification" means the modification of a mobile service support structure, including the mounting of an antenna on such a structure that does any of the following:

1. For structures with an overall height of 200 feet or less, increases the overall height of the structure by more than 20 feet.
2. For structures with an overall height of more than 200 feet, increases the overall height of the structure by 10 percent or more.
3. Measured at the level of the appurtenance added to the structure as a result of the modification, increases the width of the support structure by 20 feet or more, unless a larger area is necessary for collocation.
4. Increases the square footage of an existing equipment compound to a total area of more than 2,500 square feet.

(t) "Support structure" means an existing or new structure that supports or can support a mobile service facility, including a mobile service support structure, utility pole, water tower, building, or other structure.

(u) "Utility pole" means a structure owned or operated by an alternative telecommunications utility, as defined in s. 196.01 (1d); public utility, as defined in s. 196.01 (5); telecommunications utility, as defined in s. 196.01 (10); political subdivision; or cooperative association organized under ch. 185; and that is designed specifically for and used to carry lines, cables, or wires for telecommunications service, as defined in s. 182.017 (1g) (cq); video service, as defined in s. 66.0420 (2) (y); for electricity; or to provide light.

(2) New construction or substantial modification of facilities and support structures.

(a) Subject to the provisions and limitations of this section, a political subdivision may enact a zoning ordinance under s. 59.69, 60.61, or 62.23 to regulate any of the following activities:

1. The siting and construction of a new mobile service support structure and facilities.
2. With regard to a class 1 collocation, the substantial modification of an existing support structure and mobile service facilities.

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

1. The name and business address of, and the contact individual for, the applicant.
2. The location of the proposed or affected support structure.
3. The location of the proposed mobile service facility.
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.
5. If the application is to construct a new mobile service support structure, a construction plan which describes the proposed mobile service support structure and the equipment and network components,

Mr. Jeff Retzlaff
Ms. Lori Johnson
February 22nd, 2019
Page 8

including antennas, transmitters, receivers, base stations, power supplies, cabling, and related equipment to be placed on or around the new mobile service support structure.

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

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

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

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

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

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

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

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

Mr. Jeff Retzlaff
Ms. Lori Johnson
February 22nd, 2019
Page 9

(i) If a political subdivision has in effect on the effective date of this subdivision [LRB inserts date], an ordinance that applies to the activities described under par. (a) and the ordinance is inconsistent with this section, the ordinance does not apply to, and may not be enforced against, the activity.

(3) Collocation on existing support structures.

(a) 1. A class 2 collocation is a permitted use under ss. 59.69, 60.61, and 62.23.

2. If a political subdivision has in effect on the effective date of this subdivision [LRB inserts date], an ordinance that applies to a class 2 collocation and the ordinance is inconsistent with this section, the ordinance does not apply to, and may not be enforced against, the class 2 collocation.

3. A political subdivision may regulate a class 2 collocation only as provided in this section.

4. A class 2 collocation is subject to the same requirements for the issuance of a building permit to which any other type of commercial development or land use development is subject.

(b) If an applicant submits to a political subdivision an application for a permit to engage in a class 2 collocation, the application shall contain all of the information required under sub. (2) (b) 1. to 3., in which case the political subdivision shall consider the application complete. If any of the required information is not in the application, the political subdivision shall notify the applicant in writing, within 5 days of receiving the application, that the application is not complete. The written notification shall specify in detail the required information that was incomplete. An applicant may resubmit an application as often as necessary until it is complete.

(c) Within 45 days of its receipt of a complete application, a political subdivision shall complete all of the following or the applicant may consider the application approved, except that the applicant and the political subdivision may agree in writing to an extension of the 45 day period:

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

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

3. If the application is approved, issue the applicant the relevant permit.

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

(d) A party who is aggrieved by the final decision of a political subdivision under par. (c) 1. may bring an action in the circuit court of the county in which the proposed activity, which is the subject of the application, is to be located.

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

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

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

Mr. Jeff Retzlaff
Ms. Lori Johnson
February 22nd, 2019
Page 10

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

(d) Charge a mobile radio service provider a fee in excess of one of the following amounts:

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

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

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

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

(gm) Disapprove an application to conduct a class 2 collocation on aesthetic concerns.

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

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

(j) Prohibit the placement of emergency power systems.

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

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

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

(n) Limit the duration of any permit that is granted.

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

Mr. Jeff Retzlaff
Ms. Lori Johnson
February 22nd, 2019
Page 11

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

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

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

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

(t) Consider an activity a substantial modification under sub. (1) (s) 3. if a greater protrusion is necessary to shelter the antenna from inclement weather or to connect the antenna to the existing structure by cable.

(u) Limit the height of a mobile service support structure to under 200 feet.

(v) Condition the approval of an application on, or otherwise require, the applicant's agreement to indemnify or insure the political subdivision in connection with the political subdivision's exercise of its authority to approve the application.

(w) Condition the approval of an application on, or otherwise require, the applicant's agreement to permit the political subdivision to place at or collocate with the applicant's support structure any mobile service facilities provided or operated by, whether in whole or in part, a political subdivision or an entity in which a political subdivision has a governance, competitive, economic, financial or other interest.

(5) Applicability. If a county enacts an ordinance as described under sub. (2) the ordinance applies only in the unincorporated parts of the county, except that if a town enacts an ordinance as described under sub.

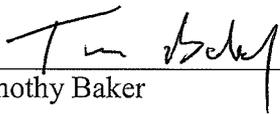
(2) after a county has so acted, the county ordinance does not apply, and may not be enforced, in the town, except that if the town later repeals its ordinance, the county ordinance applies in that town.

fashion. The Verizon Wireless Proposal is designed to provide seamless wireless coverage within the target area.

10. The location of the Verizon Wireless Proposal on the Site was selected because the location met the necessary RF engineering requirements.

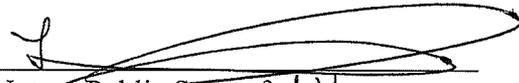
11. The Verizon Wireless Proposal is being submitted because collocation within Verizon Wireless' search ring for the area covered by the Verizon Wireless proposal is technically infeasible as no existing structures of sufficient height currently exist which could be utilized for such collocation.

12. This sworn statement is made pursuant to Wis. Stat. § 66.0404(2)(b)6.

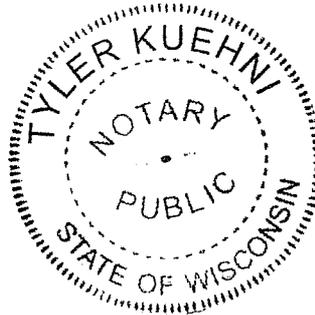


Timothy Baker

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



Notary Public State of WI
My Commission Expires: 7-25-2022



February 7, 2019

Pat Quevillon
Challenger Consulting, Inc.
1313 Spring Lake Corners
Quincy, IL 62305

RE: 185' Monopole for Germantown-Rockfield, WI (Sabre #18-2595-JDS)

Dear Pat,

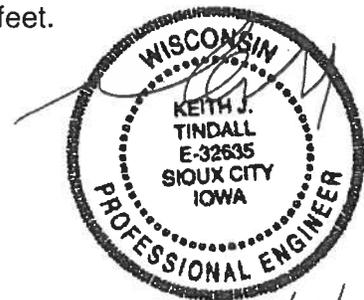
As shown in our Structural Design Report #18-2595-JDS dated September 29, 2017, the above referenced monopole has been designed for a Basic Wind Speed of 90 mph with no ice and 40 mph with 3/4" radial ice, Structure Class II, Exposure Category C and Topographic Category 1 in accordance with the Telecommunications 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 monopole 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 the monopole shaft, above the base plate. Assuming that the wind pressure profile is similar to that used to design the monopole, the monopole will buckle at the location of the highest combined stress ratio within the monopole shaft. This is likely to result in the portion of the monopole above leaning over and remaining in a permanently deformed condition. **Please note that this letter only applies to the above referenced monopole designed and manufactured by Sabre Towers & Poles.** The fall radius for the monopole design described above is less than 144 feet.

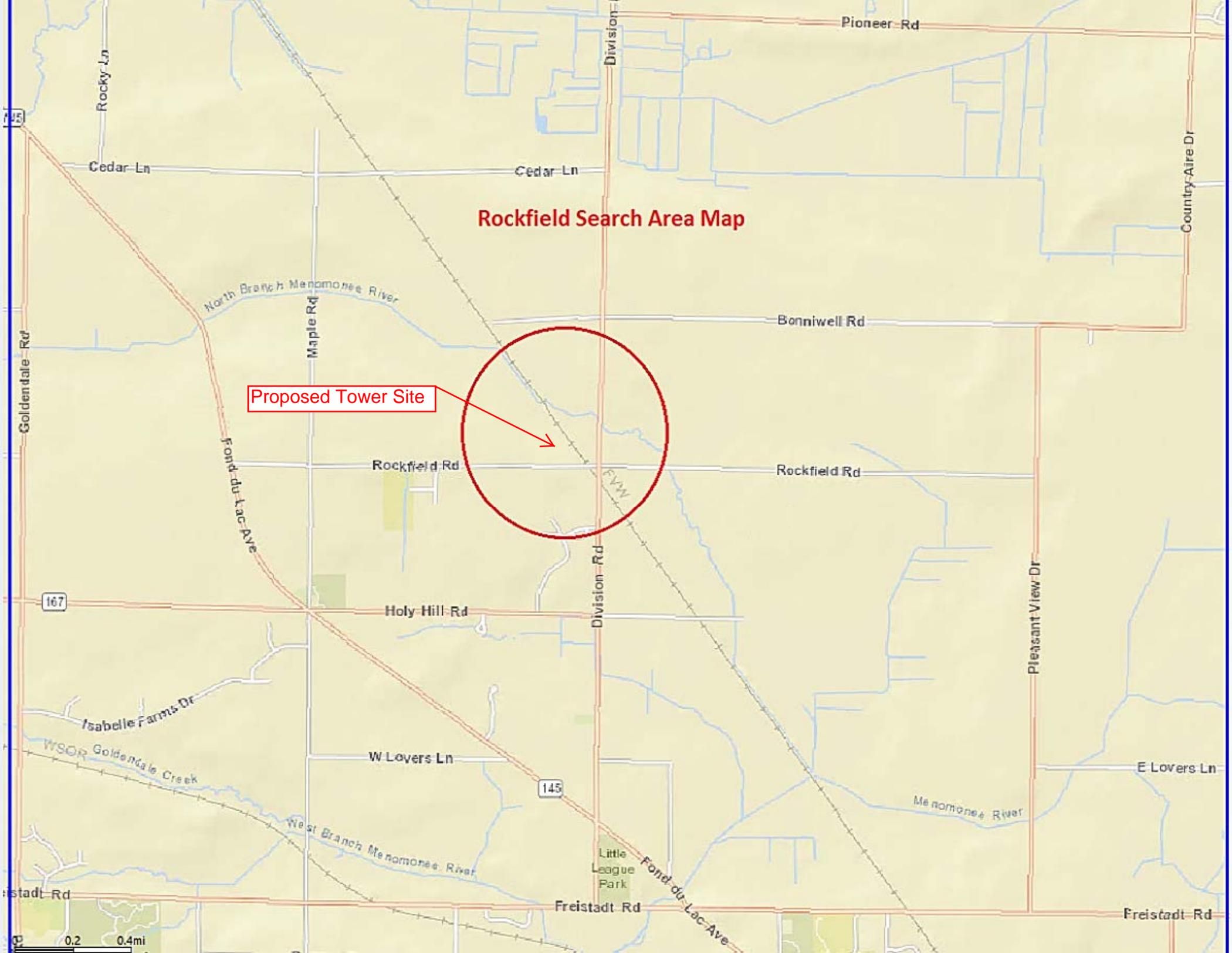
Sincerely,

Keith J. Tindall, P.E.
Vice President, Telecom Engineering



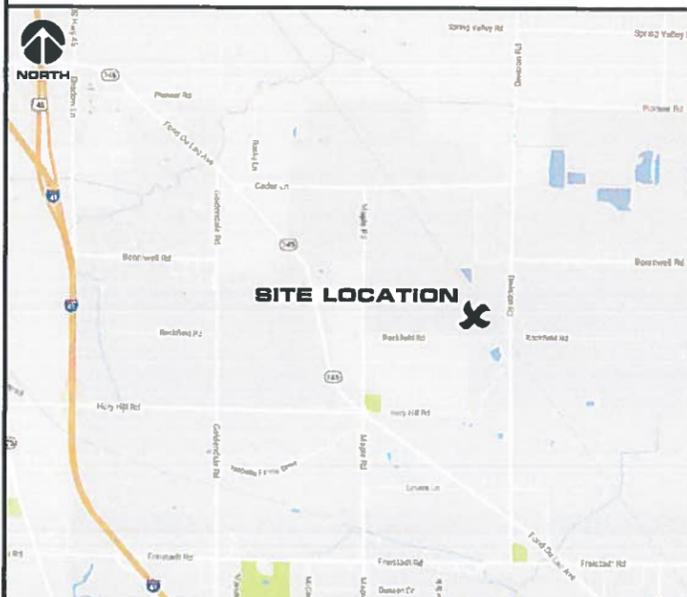
Rockfield Search Area Map

Proposed Tower Site





SITE LOCATION MAPS



ROCKFIELD (418732) RICHFIELD, WISCONSIN 185' MONOPOLE TOWER

SHEET INDEX

| NO: | SHEET TITLE |
|-----|-------------|
|-----|-------------|

| LENLEASE CONSTRUCTION SECTION | |
|-------------------------------|----------------------|
| T-1 | TITLE SHEET |
| C-1 | SITE PLAN |
| C-2 | COMPOUND PLAN |
| C-3 | FENCE DETAILS |
| C-4 | CONSTRUCTION DETAILS |
| C-5 | GRADING PLAN |
| A-1 | TOWER ELEVATION |
| E-1 | UTILITY PLAN |
| E-2 | UTILITY RACK DETAILS |
| G-1 | GROUNDING PLAN |
| G-2 | GROUNDING DETAILS |
| SP-1 | SPECIFICATIONS |
| SP-2 | SPECIFICATIONS |

| VERIZON WIRELESS CONSTRUCTION SECTION | |
|---------------------------------------|-------------------------|
| 1-3 | SURVEY * |
| VZW C-1 | SITE PLAN |
| VZW C-2 | COMPOUND PLAN |
| VZW C-3 | ENLARGED COMPOUND PLAN |
| VZW S-1 | EQUIPMENT DETAILS |
| VZW S-2 | EQUIPMENT DETAILS |
| VZW S-3 | FOUNDATION DETAILS |
| VZW S-4 | EQUIPMENT ELEVATIONS |
| VZW A-1 | TOWER ELEVATION |
| VZW A-2 | ANTENNA CONFIGURATION |
| VZW A-3 | ANTENNA CONFIGURATION |
| VZW A-4 | ICE BRIDGE DETAILS |
| VZW A-5 | ANTENNA/EQUIP. MOUNTING |
| VZW E-1 | UTILITY PLAN |
| VZW E-2 | UTILITY DETAILS |
| VZW E-3 | GENERATOR DETAILS |
| VZW E-4 | GENERATOR DETAILS |
| VZW E-5 | GENERATOR RISER DETAILS |
| VZW E-6 | LP TANK DETAILS |
| VZW E-7 | GAS PIPING DETAILS |
| VZW G-1 | GROUNDING PLAN |
| VZW G-2 | GROUNDING DETAILS |
| VZW G-3 | GROUNDING DETAILS |
| VZW N-1 | NOTICE TO CONTRACTOR * |
| VZW N-2 | NOTICE TO CONTRACTOR * |
| VZW N-3 | NOTICE TO CONTRACTOR * |
| VZW P-1 | SITE PHOTOS |

* COMPLETED BY OTHERS

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS/CONDITIONS ON SITE. IMMEDIATELY NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO PERFORMING ANY WORK OR BE RESPONSIBLE FOR THE SAME.

DIRECTORY

CLIENT:
CHICAGO SMSA LIMITED PARTNERSHIP
d/b/a VERIZON WIRELESS
1515 E. WOODFIELD ROAD
10TH FLOOR
SCHAUMBURG, IL 60173
REAL ESTATE MANAGER: DANNY PEREZ
OFFICE: 847.706.1765
MOBILE: 847.302.4122

ENGINEERING COMPANY:
EDGE CONSULTING ENGINEERS, INC.
624 WATER STREET
PRAIRIE DU SAC, WI 53578
CONTACT: PAUL MOLITOR
PHONE: 608.644.1449

SITE ACQUISITION:
BUELL CONSULTING, INC.
1360 ENERGY PARK DRIVE
SUITE 210
ST. PAUL, MN 55108
CONTACT: NATHAN WARD
PHONE: 414.788.1327

SURVEYOR:
MERIDIAN SURVEYING, LLC.
N9637 FRIENDSHIP DRIVE
KAUKAUNA, WI 54130
CONTACT: CRAIG KEACH
PHONE: 920.993.0881

PROJECT INFO

SITE LOCATION:
E911 ADDRESS TO BE DETERMINED
N132 W17390 ROCKFIELD ROAD
GERMANTOWN, WI 53022

PROPERTY OWNER:
ROCKFIELD INVESTMENTS, LLC.
13416 WATERTOWN PLANK ROAD
SUITE 255
ELM GROVE, WI 53122
CONTACT: MARK REINDERS
PHONE: 414.313.3777

TOWER OWNER:
LENLEASE AMERICAS INC.
909 LAKE CAROLYN PARKWAY, SUITE 260
IRVING, TX 75039
CONTACT: KRISTIE LOKKEN-DAVIS
PHONE: 847.826.0958
EMAIL: kristie.lokken-davis@lendlease.com
SITE NAME: ROCKFIELD
SITE #: PIW1040

1A INFORMATION (NAD 1983/2011)
-TOWER BASE-
LAT: 43°-15'-33.47"
LONG: 88°-07'-37.28"
GROUND ELEVATION (NAVD 88): 890.9'

PLSS INFORMATION:
BEING A PART OF THE SE1/4 OF THE NE1/4,
SECTION 9, T.9N, R.20E,
TOWN OF GERMANTOWN,
WASHINGTON COUNTY
WISCONSIN

TAX PARCEL NUMBER:
091991

ZONED: MANUFACTURING

UTILITY INFO

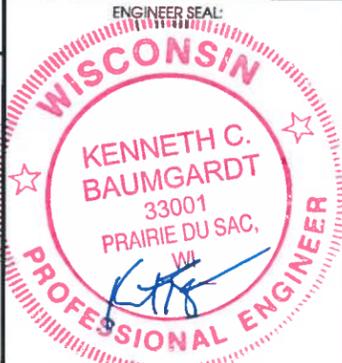
ELECTRIC PROVIDER: NAME: WE ENERGIES
CONTACT: LAURIE FREDRICKS
PHONE: 262.253.4542

FIBER OPTIC PROVIDER: NAME: TIME WARNER (MI-TECH - VENDOR)
CONTACT: JOHN SCHUSTER
PHONE: 920.204.1223

TO OBTAIN LOCATION OF PARTICIPANTS' UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN, CALL DIGGER'S HOTLINE

TOLL FREE
1-800-242-8511
FAX A LOCATE 1-800-338-3860

WI STATUTE 182.0175 (1974) REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE



SCOPE OF WORK

PROJECT DESCRIPTION:
PROJECT TYPE: 185' MONOPOLE TOWER
EQUIPMENT: 8'-0" x 9'-4" CONCRETE PAD
GENERATOR: EXTERIOR LP GENERATOR

RF DESCRIPTION (VERIFY WITH ECR):
PRO: ANTENNA C/L: 180' ABOVE T.O.C.
ANTENNAS: (3) 700/850/AWS ANTENNAS
(3) 700/850/PCS/LTE ANTENNAS
(3) AWS-3 ANTENNAS
CABLES: (3) PRO. HYBRID LINES

EQUIPMENT: (3) PRO. SURGE PROTECTORS
(9) PRO. REMOTE RADIO UNITS

TITLE SHEET ROCKFIELD (418732) RICHFIELD, WISCONSIN

| PRELIMINARY DWGS: | INT: |
|--------------------------------|------|
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD's REV.1 - 02/13/2019 | JAH |
| STAMPED FINAL DWGS: | |

I HEREBY CERTIFY THAT THIS PLAN SET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION OTHER THAN THE EXCEPTIONS NOTED IN THE SHEET INDEX, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.

Signature:

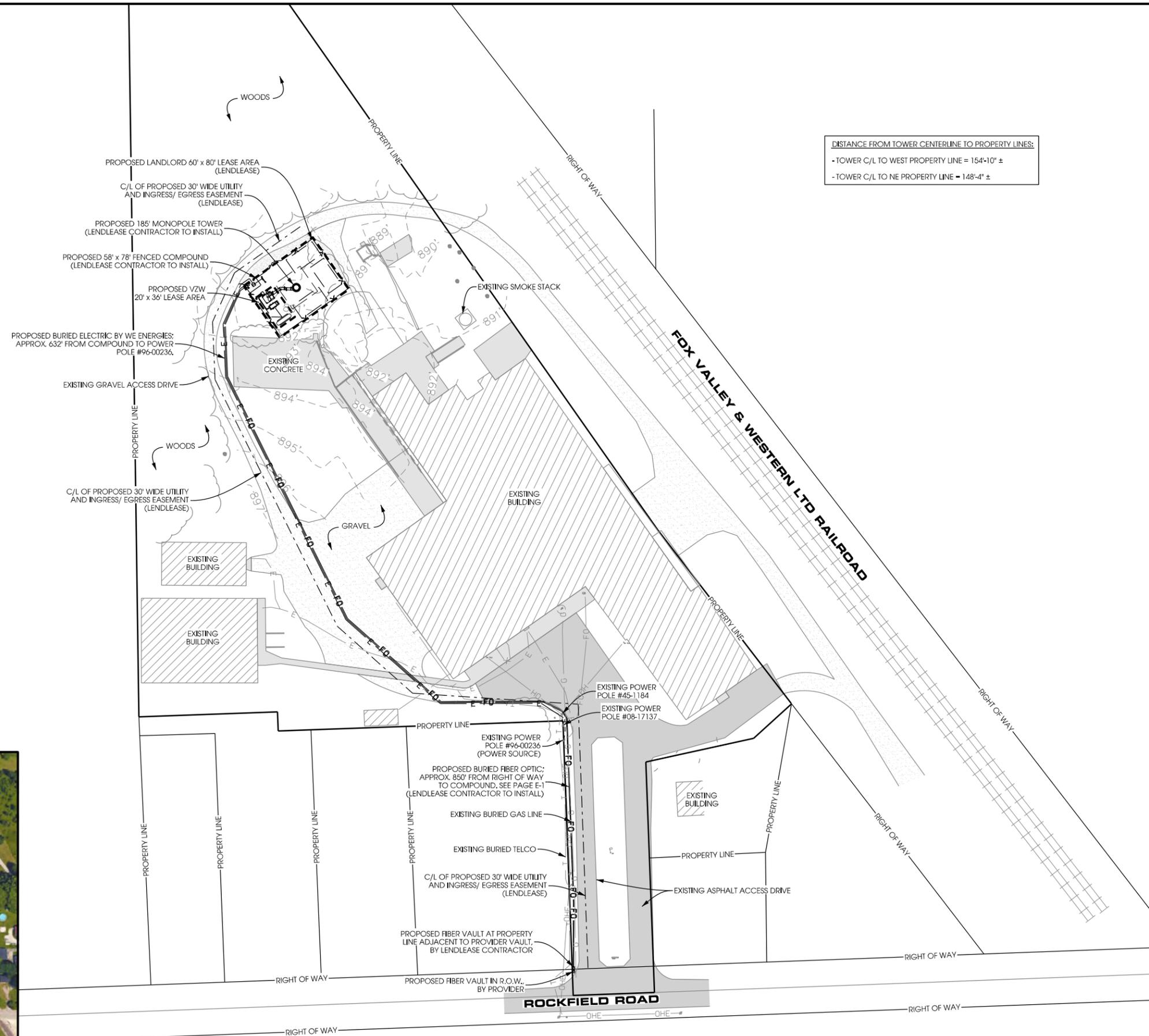
Date: 2/14/19

CHECKED BY:
PCM
PLOT DATE:
2/13/2019
PROJECT #:
15143
FILE NAME:
T-1.dgn

SHEET NUMBER:
T-1



SECTION LINE



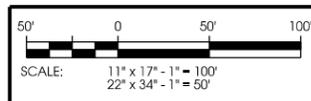
DISTANCE FROM TOWER CENTERLINE TO PROPERTY LINES:

- TOWER C/L TO WEST PROPERTY LINE = 154'-10" ±
- TOWER C/L TO NE PROPERTY LINE = 148'-4" ±



AERIAL OVERVIEW OF SITE

K:\15100\151483\CAD\Plot\CD\A_C-1.dgn



SITE PLAN
ROCKFIELD [418732]
RICHFIELD, WISCONSIN

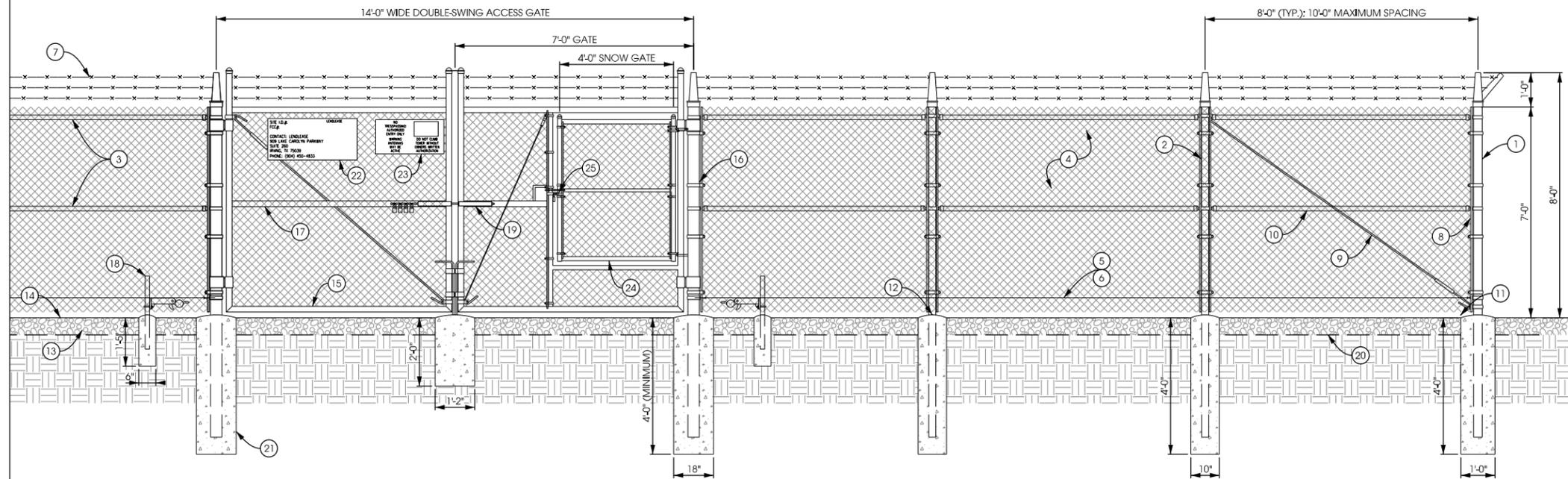
SHEET TITLE:

| PRELIMINARY DWGS: | INT: |
|--------------------------------|------|
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD'S REV.1 - 02/13/2019 | JAH |

| | |
|---------------------|-----------|
| STAMPED FINAL DWGS: | |
| CHECKED BY: | PCM |
| PLOT DATE: | 2/13/2019 |
| PROJECT #: | 15143 |
| FILE NAME: | C-1.dgn |

REFERENCE NOTES:

- 1 3.5" O.D. GALVANIZED STEEL, SCHEDULE 40 CORNER POSTS (PER ASTM-F1083).
- 2 2.375" O.D. GALVANIZED STEEL, SCHEDULE 40 INTERMEDIARY LINE POSTS (PER ASTM-F1083). LINE POSTS SHALL BE EQUALLY SPACED AT MAXIMUM 10'-0" O.C.
- 3 1.66" O.D. ROUND TOP RAIL & BRACE RAIL PIPE (PER ASTM-F1083).
- 4 9 GAUGE FABRIC CORE WIRE WITH 2" MESH (TO CONFORM TO ASTM-A392).
- 5 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.
- 6 9 GAUGE ALUMINUM TENSION WIRE.
- 7 3 STRANDS 14 GAUGE BARBED WIRE WITH 4 POINT BARBS. SPACE BARBS APPROXIMATELY 5" O.C..
- 8 3/16" x 3/4" STRETCHER BAR: TO EXTEND FULL HEIGHT OF FENCE.
- 9 3/8" DIAGONAL ROD WITH GALVANIZED STEEL TURNBUCKLE OR DIAGONAL THREADED ROD.
- 10 1.66" O.D. CORNER POST BRACE (PER ASTM-F1083).
- 11 MAINTAIN A 1" MAXIMUM CLEARANCE FROM FINISHED GRADE.
- 12 PROVIDE CROWNED / PITCHED FINISH FOR FENCE POST PIER FOUNDATIONS: TO EXTEND 1" ABOVE GRADE.
- 13 6" CRUSHED STONE (TYP.).
- 14 FINISH GRADE SHALL BE UNIFORM AND LEVEL.
- 15 1.9" O.D. GALVANIZED STEEL, SCHEDULE 40 WELDED GATE FRAME (PER ASTM-F1083).
- 16 4" O.D. GALVANIZED STEEL SCHEDULE 40 GATE POSTS (PER ASTM-F1083).
- 17 1.66" O.D. PIPE FOR GATE FRAME BRACE RAIL, PER ASTM-F1083.
- 18 DUCK BILL OPEN GATE HOLDER. CONTRACTOR TO VERIFY EXACT LOCATION PRIOR TO INSTALLATION.
- 19 STYMIE MULTITENANT LOCKING DEVICE.
- 20 PROPOSED GEOTEXTILE FABRIC.
- 21 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.). SEE DETAIL FOR PROPOSED DIAMETER.
- 22 24" x 30" PARALLEL INFRASTRUCTURE SITE INFORMATION SIGN.
- 23 18" x 24" NO TRESPASSING SIGN.
- 24 4' WIDE SNOW GATE WITH DOUBLE SWING GATE
- 25 FORK LATCH WITH COMBINATION LOCK



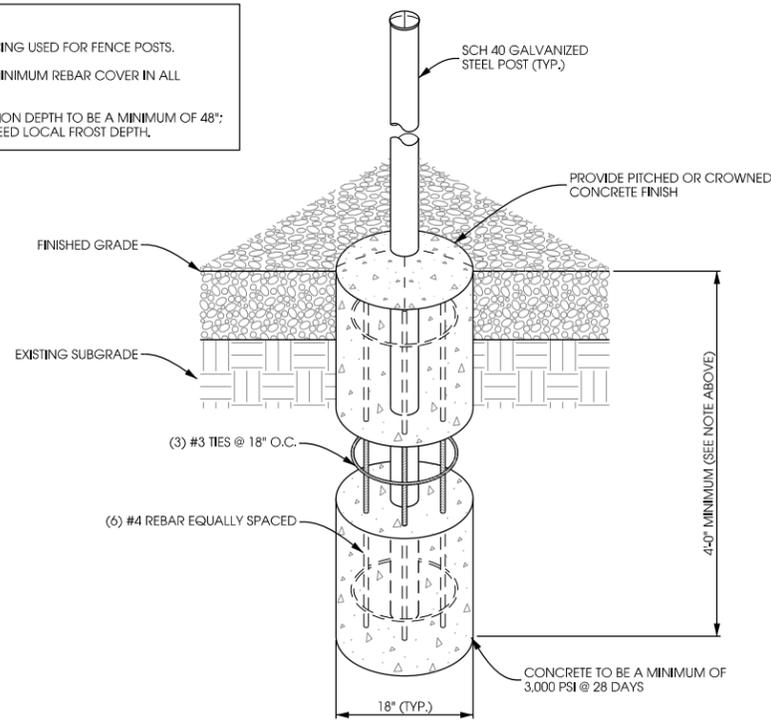
A FENCING DETAIL
SCALE: NTS

FENCING NOTES:

ALL FENCING TO BE INSTALLED PER ASTM F-567. ALL SWING GATES TO BE INSTALLED PER ASTM F-900. BARBED WIRE PERMIT REQUIREMENT SHALL BE COMPLETED IF LOCAL ORDINANCE REQUIRES. POST & GATE PIPE SIZES ARE GIVEN AS ACTUAL OUTER DIAMETERS. ALL PIPE TO BE GALVANIZED (HOT DIP, ASTM A53 GRADE "A" STEEL). ALL GATE FRAMES SHALL BE WELDED. ALL WELDING SHALL BE COATED WITH (3) COATS OF COLD GALV. (OR EQUAL). ALL OPEN POSTS SHALL HAVE END-CAPS. ALL SIGNS MUST BE MOUNTED ON INSIDE OF FENCE FABRIC USING GALVANIZED HOG-RING WIRE. MUSHROOM ANCHOR AND PLUNGER REQUIRED FOR GATE. GENERAL CONTRACTOR RESPONSIBLE FOR PARALLEL INFRASTRUCTURE GATE LOCK.

NOTES:

PIER REINFORCING USED FOR FENCE POSTS. MAINTAIN 3" MINIMUM REBAR COVER IN ALL DIRECTIONS. PIER FOUNDATION DEPTH TO BE A MINIMUM OF 48" DEPTH TO EXCEED LOCAL FROST DEPTH.



B FENCE PIER FOUNDATION DETAIL
SCALE: 11" x 17" - 1/2" = 1'-0"
22" x 34" - 1" = 1'-0"

FENCING NOTES

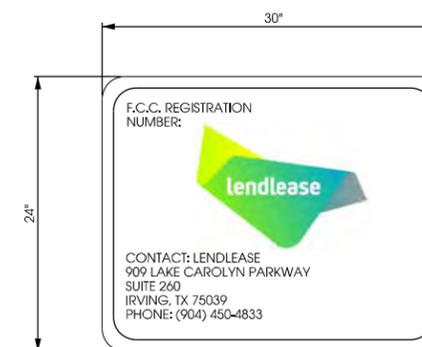
(IF DIFFERENT SPECIFICATION THAN PAGES (SP-1 AND SP-2) THESE NOTES WILL SUPERCEDE)

ALL FENCING USED BY THE GC MUST MEET OR EXCEED THE FOLLOWING:
HARDWARE SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. 9 GAUGE 2 INCH OR SMALLER MESH.
ALL POSTS AND BRACING MUST BE SCHEDULE 40
AROUND THE COMPOUND PERIMETER, THE GC SHALL INSTALL A COMMERCIAL-GRADE GALVANIZED 8" HIGH CHAIN LINK FENCE WITH A TOP RAIL, THREE STRANDS OF BARBED WIRE FACING OUT AT THE TOP, AND A CONTINUOUS STRETCH WIRE AT THE BOTTOM. THE GC SHALL REFER TO SITE PLAN FOR DIMENSIONS.
ON COLLOCATIONS THE NEW FENCING MUST MATCH EXISTING FENCING.
THE GC SHALL PROVIDE 14' WIDE ENTRANCE (REFER TO DRAWINGS FOR SITE SPECIFIC DETAILS). THE GC SHALL BOND GATE TO FENCE WITH FLEXIBLE BOND STRAPS. THE TOP RAIL OF THE FENCE WILL BE ELECTRICALLY BONDED AT ALL CORNERS (4) AND AT ALL JOINTS BY THE GC.
THE FENCE IS TO BE CADWELDED BY THE GC TO THE TOWER GROUND RING.

** IN ADDITION TO ALL OTHER NECESSARY SAFETY AND CUSTOMARY PRECAUTIONS, THE GC IS OBLIGATED TO TAKE THE GC SHALL INSTALL ORANGE TEMPORARY FENCING AROUND THE PERIMETER, WHICH IS OF SUFFICIENT HEIGHT AND STRUCTURAL INTEGRITY TO PREVENT ACCESS TO THE SITE WHEN THE GC IS NOT PRESENT AT THE PROJECT SITE.

NOTES:

- 1" BORDER - 3" RADII
COLOR:
BACKGROUND - WHITE
LEGEND & BORDER - BLACK



C SIGN DETAIL
SCALE: NTS

SHEET TITLE:

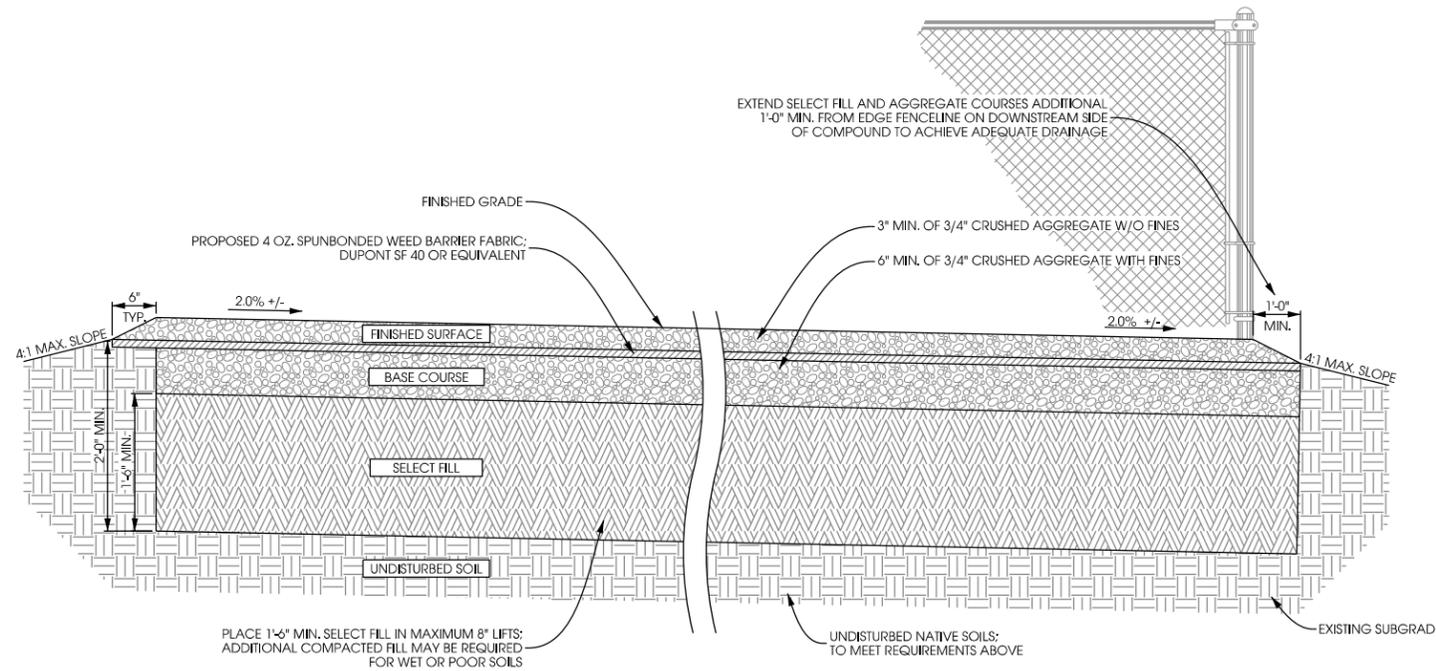
| PRELIMINARY DWGS: | INT: |
|--------------------------------|------|
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD's REV.1 - 02/13/2019 | JAH |

| | |
|---------------------|--|
| STAMPED FINAL DWGS: | |
|---------------------|--|

| | |
|-------------|-----------|
| CHECKED BY: | PCM |
| PLOT DATE: | 2/13/2019 |
| PROJECT #: | 15143 |
| FILE NAME: | C-3.dgn |

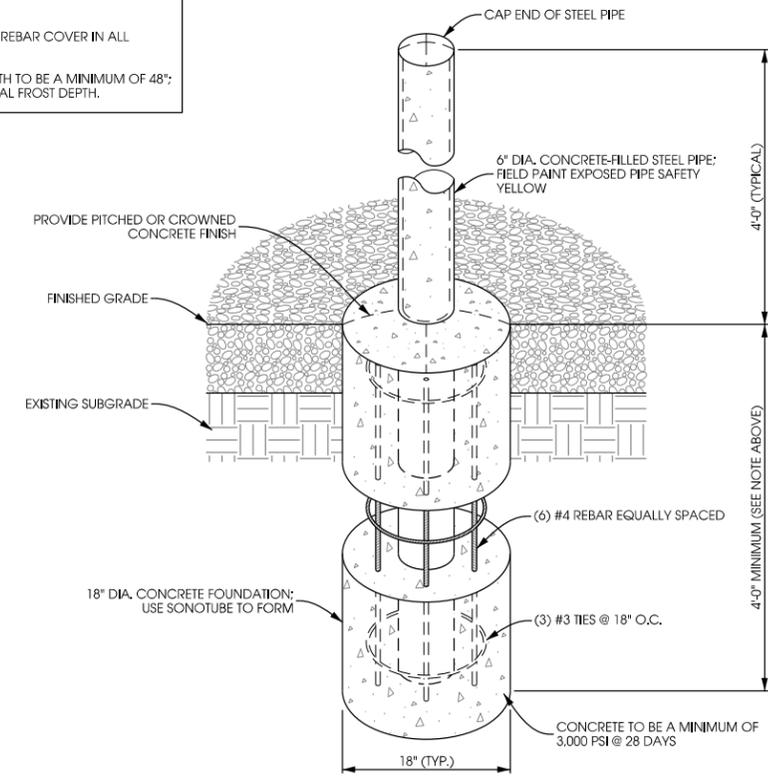
| | |
|---------------|------------|
| SHEET NUMBER: | 0-3 |
|---------------|------------|

NOTES:
 REMOVE ALL TOPSOIL, ORGANIC MATERIAL AND WET OR POOR SOILS WITHIN COMPOUND AREA. CONTRACTOR TO REVIEW SITE CONDITIONS AND CONSULT GEOTECHNICAL REPORT FOR ANTICIPATED DEPTH OF SOILS THAT WILL REQUIRE REMOVAL. IF POOR SOILS ARE ENCOUNTERED AT A DEPTH OF MORE THAN 2'-0", ADDITIONAL SELECT FILL MAY BE REQUIRED. CONTACT CONSTRUCTION MANAGER FOR GUIDANCE.
 FINAL TOWER FOUNDATION DESIGN RECOMMENDATIONS TO SUPERCEDE GRADING PLAN OR SITE PLAN ELEVATIONS.



A COMPOUND CROSS SECTION
 SCALE: NTS

NOTES:
 MAINTAIN 3" MINIMUM REBAR COVER IN ALL DIRECTIONS.
 PIER FOUNDATION DEPTH TO BE A MINIMUM OF 48"; DEPTH TO EXCEED LOCAL FROST DEPTH.



B PIPE BOLLARD DETAIL
 SCALE: NTS

THIS SPACE INTENTIONALLY LEFT BLANK

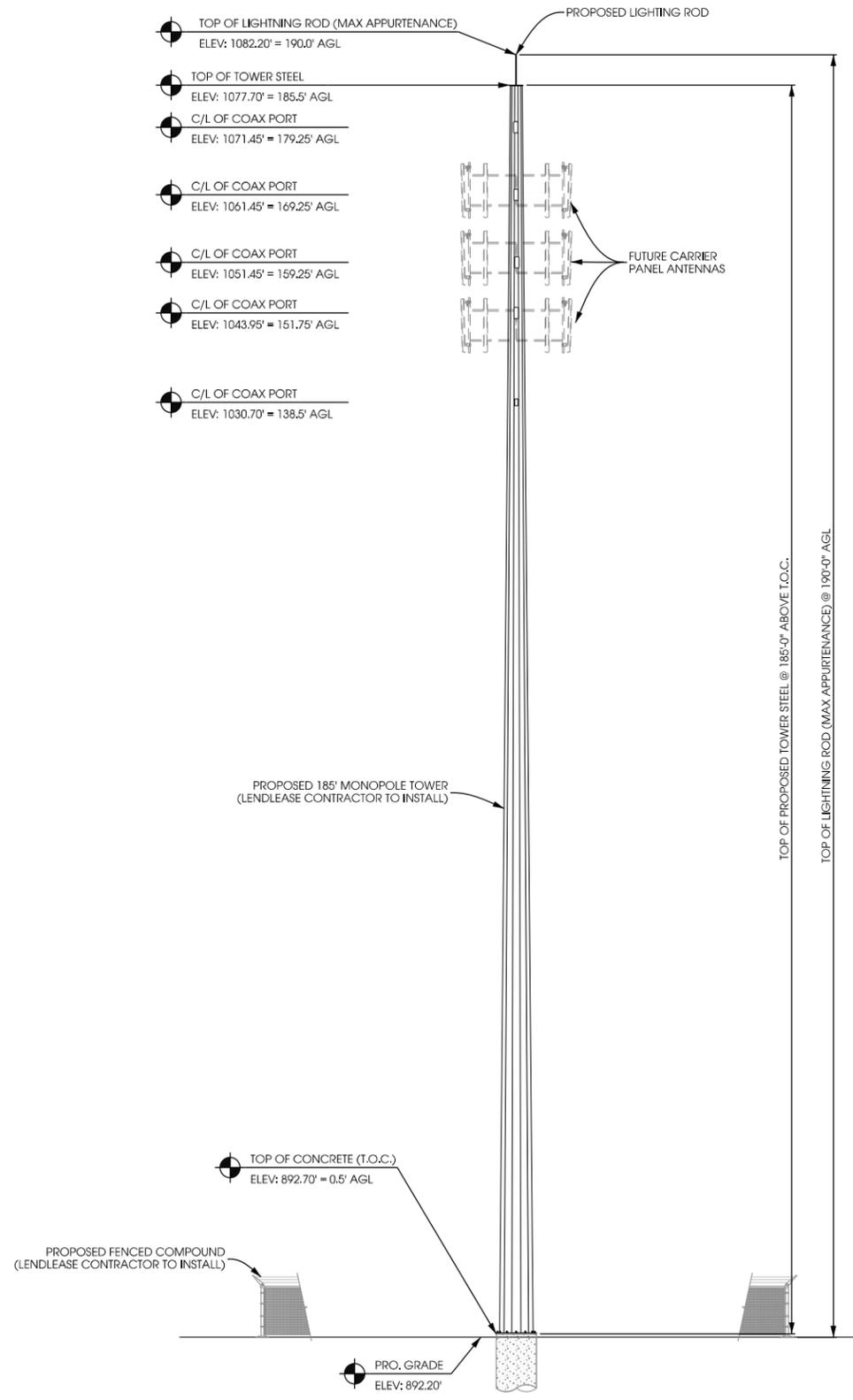
CONSTRUCTION DETAILS
ROCKFIELD [418732]
RICHFIELD, WISCONSIN

SHEET TITLE:

| | |
|--------------------------------|-----------|
| PRELIMINARY DWGS: | INI: |
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD'S REV.1 - 02/13/2019 | JAH |
| STAMPED FINAL DWGS: | |
| CHECKED BY: | PCM |
| PLOT DATE: | 2/13/2019 |
| PROJECT #: | 15143 |
| FILE NAME: | C-4.dgn |

K:\15100\15143\CAD\Print\CD\3_C-4.dgn

NOTE:
 TOWER MANUFACTURER TO INSTALL PORTS AT LESSEE ANTENNA CL. VERIFY FINAL PORT HEIGHT, SIZE AND ORIENTATION WITH TOWER PLANS.



A TOWER PROFILE [SOUTH ELEVATION]
 SCALE: 11" x 17" - 1" = 24'-0"
 22" x 34" - 1" = 12'-0"

NOTES:

- 1.) CONTRACTOR TO VERIFY HEIGHT AND DIRECTION OF ANTENNA WITH PROJECT MANAGER & FINAL RF DESIGN.
- 2.) HYBRID CABLE LENGTH NOT TO EXCEED 367'.
- 3.) HYBRID JUMPER CABLE LENGTH NOT TO EXCEED 30'.
- 4.) IF CABLING LENGTH EXCEEDS MAXIMUM ALLOWED CONTRACTOR SHALL CONTACT CLIENT AND ENGINEER TO RESOLVE PRIOR TO CONSTRUCTION.

**TOWER ELEVATION
 ROCKFIELD [418732]
 RICHFIELD, WISCONSIN**

SHEET TITLE:

| | |
|--------------------------------|-----------|
| PRELIMINARY DWGS: | INI: |
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD's REV.1 - 02/13/2019 | JAH |
| STAMPED FINAL DWGS: | |
| CHECKED BY: | PCM |
| PLOT DATE: | 2/13/2019 |
| PROJECT #: | 15143 |
| FILE NAME: | A-1.dgn |

K:\15100\15143\CAD\Plot\CD\A-1.dgn

UTILITY PROVIDER INFO:

ELECTRIC PROVIDER: WE ENERGIES
CONTACT: LAURIE FREDRICKS
PHONE: 262.253.4542
EMAIL: laurie.fredricks@we-energies.com
WORK ORDER #: MF 4027536

FIBER OPTIC PROVIDER: TIME WARNER
CONTACT: TOM HAMSKI
EMAIL: thomas.hamski@charter.com

FIBER VENDOR: MITECH
CONTACT: JOHN SCHUSTER
PHONE: 920.204.1223
EMAIL: jschuste@mittech.us
WORK ORDER #: TBD

FIBER NOTE:

THE MEET POINT SHALL BE ON THE WEST SIDE OF THE EXISTING ACCESS DRIVE LOCATED AT ROCKFIELD ROAD. MITECH HAS PROPOSED A DESIGN THAT WILL PULL EXISTING FIBER FROM THE OVERHEAD POWER POLES LOCATED SOUTH OF ROCKFIELD ROAD AND WILL BORE UNDERNEATH THE ROAD TO A NEWLY INSTALLED VAULT WITHIN THE ROW.

LENDLEASE CONTRACTOR WILL FURNISH AND INSTALL VAULTS. CHARTER/TWC WILL INSTALL CONDUITS BETWEEN THE TWO VAULTS.

LENDLEASE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR FURNISHING AND INSTALLING CONDUIT FROM THE VAULT NEXT TO THE ROW TO THE VAULT IN THE COMPOUND.

POWER NOTE:

WE ENERGIES WILL FULLY BUILD THE SERVICE UP TO THE PROPOSED METER BANK INSIDE OF THE PROPOSED COMPOUND. WE ENERGIES WILL BRING PRIMARY DOWN FROM POWER POLE #96-00236 AND WILL ROUTE CONDUCTORS UNDERGROUND ALONG THE PROPOSED 30' WIDE UTILITY & INGRESS/EGRESS EASEMENT TO THE PROPOSED COMPOUND SITE. THE UTILITY WILL FURNISH & INSTALL CONDUCTORS FROM THIS POWER POLE ALONG THE UTILITY EASEMENT TO THE PROPOSED COMPOUND LOCATION. WE ENERGIES WILL INSTALL THE PROPOSED TRANSFORMER. THE UTILITY WILL ROUTE POWER TO A NEW METER BANK TO BE INSTALLED BY LENDLEASE WITHIN THE PROPOSED COMPOUND. WE ENERGIES WILL FURNISH/INSTALL/CONNECT ALL SECONDARY CONDUCTORS BETWEEN THE TRANSFORMER AND THE SUPPLY SIDE OF THE MULTIMETER PACK.

LENDLEASE'S CONTRACTOR IS TO FURNISH AND INSTALL THIS METERING CENTER. PARALLEL IS TO INSTALL PROTECTIVE BOLLARDS.

BETWEEN THE METER PACK AND THE EQUIPMENT SKID, LESSEE'S CONTRACTOR IS TO FURNISH AND INSTALL CONDUIT AND CONDUCTORS SUITABLE FOR 200A SERVICE, WITH CONDUIT BEING A MINIMUM OF 3" DIAMETER. CONDUIT IS TO BE BURIED TO A MINIMUM DEPTH OF 42". CONDUIT IS TO BE SCH. 40 WHERE UNDERGROUND AND SCH. 80 WHERE IT PROTRUDES FROM THE GROUND. SLIPJOINTS ARE TO BE INSTALLED AT THE BOTTOM OF THE METER PACK AND AT THE EQUIPMENT SKID. AT LEAST (1) PULL ROPE IS TO REMAIN IN THE CONDUIT BETWEEN THE METER PACK AND THE EQUIPMENT SKID AFTER THE CONTRACTOR HAS FINISHED THEIR WORK. CONTRACTOR IS TO HANDLE CONNECTIONS OF CONDUCTORS AT THE LOAD SIDE OF THE METER PACK AND AT THE EQUIPMENT SKID. WE WILL SET THE METER ONCE THE CONTRACTOR'S WORK HAS BEEN PROPERLY INSPECTED.

ADDITIONAL REQUIREMENTS ARE AS FOLLOWS:

- WE ENERGIES REQUESTS THAT CUSTOMER LOCATE ALL PRIVATE UNDERGROUND FACILITIES PRIOR TO INSTALLATION.
 - WE ENERGIES WILL ONLY RESTORE ROW. CUSTOMER IS RESPONSIBLE FOR RESTORING PRIVATE PROPERTY.
 - WE ENERGIES WILL NOT HAUL SPOIL FROM PROPERTY.
 - WE ENERGIES IS NOT RESPONSIBLE FOR ROOT DAMAGE.
- ONCE WE ENERGIES HAS RECEIVED ALL SIGNED PAPERWORK AND HAVE THE NECESSARY PERMITS AND/OR EASEMENTS, THEY WILL SCHEDULE THE INSTALLATION. INSTALLATIONS OCCUR APPROXIMATELY THREE WEEKS AFTER ALL REQUIREMENTS ARE MET. PLEASE KEEP THE UTILITY INFORMED ON THE START OF CONSTRUCTION. WE ENERGIES REQUESTS THE CONTACT INFORMATION FOR LENDLEASE CONSTRUCTION MANAGER AND/OR LENDLEASE'S ELECTRICIAN TO SEND OUT THE OUTLET LOCATION LETTER.

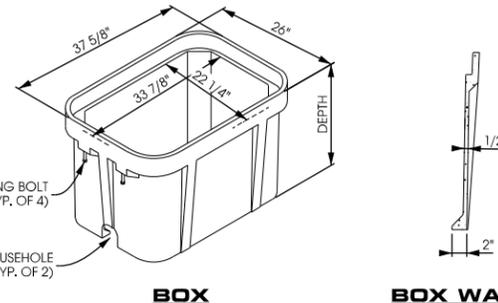
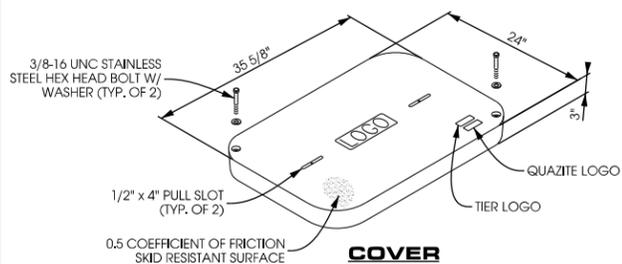
SPLICE / PULL BOX NOTES:

PG STYLE POLYMER CONCRETE (STACKABLE) ASSEMBLY

FOR SPLICE BOX LOCATIONS USE 24" x 36" x 36" DEEP BOX QUAZITE PART # PG2436BA36 OR APPROVED EQUIVALENT

FOR PULL BOX LOCATIONS USE 24" x 36" x 24" DEEP BOX QUAZITE PART # PG2436BA24 OR APPROVED EQUIVALENT

FOR COVERS FOR BOTH SPLICE AND PULL BOX LOCATIONS USE QUAZITE PART # PG2436KK00 OR APPROVED EQUIVALENT



A SPLICE/PULL BOX DETAIL

SCALE: NTS

C/L OF PROPOSED 30' WIDE UTILITY AND INGRESS/ EGRESS EASEMENT (LENDLEASE)

PROPOSED BURIED ELECTRIC TO BE INSTALLED BY WE ENERGIES: APPROX. 632' FROM POWER POLE #96-00236 TO COMPOUND.

LENDLEASE CONTRACTOR TO INSTALL (1) 4" DIA. CONDUIT TO LENDLEASE VAULT

LENDLEASE CONTRACTOR TO INSTALL (2) ORANGE 4" DIA. HDPE, SDR 13.5 SMOOTH WALL CONTINUOUS CONDUITS W/ (2) 1-1/4" INNER DUCTS PER CONDUIT FOR VZW FIBER OPTIC LINE: APPROX. 850' ± FROM SPLICE BOX AT COMPOUND TO VAULT AT PROPERTY LINE: SEE PAGE C-1 FOR VAULT LOCATION

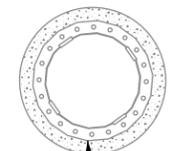
PROPOSED BURIED ELECTRIC TO BE INSTALLED BY WE ENERGIES: APPROX. 8' FROM TRANSFORMER TO UTILITY RACK

PROPOSED BOLLARD TO BE INSTALLED BY LENDLEASE'S CONTRACTOR (TYP. OF 3.); SEE PAGE C-4 FOR DETAILS

PROPOSED MULTI-CARRIER UTILITY RACK TO BE INSTALLED BY LENDLEASE'S CONTRACTOR. SEE DETAILS ON PAGE E-1

PROPOSED TRANSFORMER TO BE INSTALLED BY WE ENERGIES

LENDLEASE CONTRACTOR TO INSTALL PROPOSED FIBER FIBER VAULTS: SEE DETAIL A/E-1



PROPOSED 185' MONOPOLE TOWER

PROPOSED VZW 20' x 36' LEASE AREA

C/L OF PROPOSED 30' WIDE UTILITY AND INGRESS/ EGRESS EASEMENT (LENDLEASE)

PROPOSED LANDLORD 60' x 80' LEASE AREA (LENDLEASE)

PROPOSED 58' x 78' FENCED COMPOUND (LENDLEASE CONTRACTOR TO INSTALL)

FUTURE LEASE AREA



NORTH

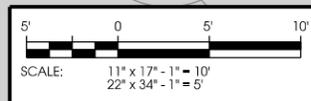
Edge Consulting Engineers, Inc.
 624 Water Street
 Profile du Soc. WI 53578
 608.644.1449 vo/pe
 608.644.1519 fax
 www.edgeconsulting.com

**UTILITY PLAN
 ROCKFIELD [418732]
 RICHFIELD, WISCONSIN**

SHEET TITLE:

| REVISION | DATE | BY |
|--------------------------------|------|------|
| PRELIMINARY DWGS | | INI: |
| CD 90's REV.2 - 10/24/2017 | | APK |
| CD 90's REV.3 - 11/17/2017 | | APK |
| CD 90's REV.4 - 04/18/2018 | | JAH |
| CD 90's REV.5 - 06/18/2018 | | CV |
| CD 90's REV.6 - 11/08/2018 | | NAT |
| CD 90's REV.7 - 01/10/2019 | | JAH |
| STAMPED PERMIT DWGS: | | |
| PERMIT CD'S REV.1 - 02/13/2019 | | JAH |
| STAMPED FINAL DWGS: | | |

CHECKED BY: PCM
 PLOT DATE: 2/13/2019
 PROJECT #: 15143
 FILE NAME: E-1.dgn



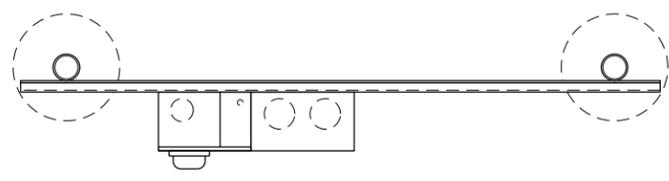
SHEET NUMBER:
E-1

K:\151000\15143\CAD\Print\CD\A_E-1.dgn

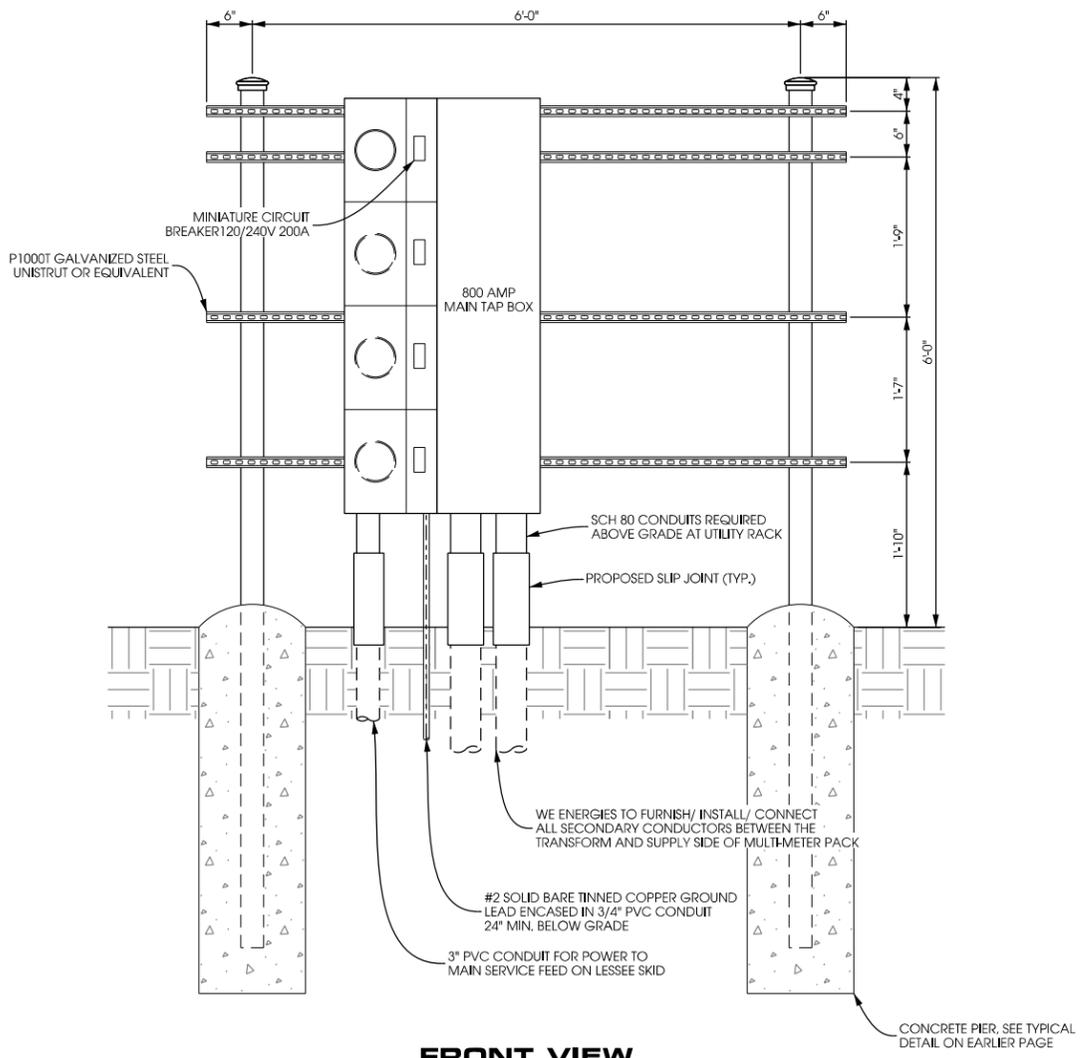
NOTE:
 - AT MULTI GANGED METER INSTALLATIONS ROUTE A 3/0 GREEN THWN STRANDED COPPER CONDUCTOR FROM THE N-G CONNECTION POINT TO JUST ABOVE THE EARTH SURFACE. THIS CONDUCTOR SHALL BE ROUTED THROUGH PVC ABOVE FINISHED GRADE TO AVOID THEFT AND BARE UPON ENTRY INTO EARTH & BONDED TO AN APPROVED DRIVEN GROUND ROD.

CABINET MOUNT NOTE:
 - ATTACH CABINETS W/ SPRING LOADED WASHERS TO UNISTRUTS

UTILITY RACK LAYOUT HAS BEEN REVIEWED BY ELECTRIC PROVIDER. ALL DEVIATIONS FROM UTILITY RACK DETAIL TO BE APPROVED BY LAURIE FREDRICKS FROM WE ENERGIES



PLAN VIEW



FRONT VIEW

A MULTI-METER UTILITY RACK
 SCALE: 11" x 17" - 1/2" = 1'-0"
 22" x 34" - 1" = 1'-0"

SHEET TITLE:

| | |
|--------------------------------|-----------|
| PRELIMINARY DWGS: | INI: |
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD's REV.1 - 02/13/2019 | JAH |
| STAMPED FINAL DWGS: | |
| CHECKED BY: | PCM |
| PLOT DATE: | 2/13/2019 |
| PROJECT #: | 15143 |
| FILE NAME: | E2.dgn |
| SHEET NUMBER: | |

K:\15100\15143\CAD\Print\CD\A_E2.dgn



**GROUNDING PLAN
 ROCKFIELD [418732]
 RICHFIELD, WISCONSIN**

SHEET TITLE:

| PRELIMINARY DWGS: | INT: |
|--------------------------------|------------|
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD'S REV.1 - 02/13/2019 | JAH |
| STAMPED FINAL DWGS: | |
| CHECKED BY: | PCM |
| PLOT DATE: | 2/13/2019 |
| PROJECT #: | 15143 |
| FILE NAME: | G-1.dgn |
| SHEET NUMBER: | G-1 |

LEGEND

- INSPECTION WELL
-
- EXOTHERMIC CONNECTION (CADWELD OR EQUIVALENT)
- MECHANICAL CONNECTION (BURNDY OR EQUIVALENT)
- GROUND LEAD
-

KEYED GROUNDING NOTES:

- TOWER GROUND RING, #2 SOLID BARE-TINNED COPPER GROUND LEAD MIN. 4'-6\"/>
- 18" x 18" x .032" THICK COPPER PLATE (MAX. 10' SEPARATION) HARGER PART # GP1818-2T OR APPROVED EQUIVALENT. SEE DETAILS ON PAGE G-2
- INSPECTION WELL (TYP.); SEE PAGE G-2 FOR DETAIL
- (4) GROUND LEADS FROM TOWER STEEL TO GROUND RING (USE GROUNDING TABS WHEN AVAILABLE)
- GATE GROUND LEAD, #2 SOLID BARE TINNED COPPER GROUND LEADS TO GATE POST, & BRAIDED STRAP CONNECTION FROM POST TO GATE
- GROUND ELECTRIC METER TO (2) INDEPENDENT GROUND RODS, SPACED 10' O.C. WITH #2 SOLID BARE TINNED COPPER
- GROUND MULTI-METER CABINETS
- PERIPHERAL GROUND RING SHOULD BE INSTALLED 1' TO 2' INSIDE THE FENCED LINE; THE TOWER GROUND RING SHOULD BE INSTALLED A MINIMUM OF 2' OFF ANY STRUCTURE
- FENCE CORNER GROUND LEAD, #2 SOLID BARE TINNED COPPER, CADWELD CONNECTION. GROUND FENCE POSTS WITHIN 6-FEET OF EQUIPMENT SKID AND 25-FEET OF TOWER
- FIBER OPTIC HAND HOLE
- 4" x 12" x 1/4" GROUND BAR INSIDE HAND HOLE; CONTRACTOR TO DRIVE 10' GROUND ROD & CLAMP TO GROUND BAR

GROUNDING NOTE:
 THIS GROUNDING PLAN WAS PREPARED PRIOR TO THE RECEIPT OF THE TOWER FOUNDATION DESIGN. THE LAYOUT OF RADIALS AND GROUND RODS ARE APPROXIMATE IN NATURE AND MAY NEED TO BE ADJUSTED IN THE FIELD. GROUND RODS SHOULD NOT EXTEND THROUGH THE TOWER FOUNDATION OR OTHER STRUCTURAL ELEMENTS WITHOUT PRIOR APPROVAL FROM THE DESIGN ENGINEER. IN ADDITION, SOME ADJUSTMENT TO THE GROUND METHOD MAY BE REQUIRED IN INSTANCES WHERE SHALLOW BEDROCK OR OTHER UNIQUE CIRCUMSTANCES ARE ENCOUNTERED. CONTRACTOR SHALL CONSULT GEOTECHNICAL REPORT FOR FURTHER DESIGN AND CONSTRUCTION RECOMMENDATIONS.

- GROUNDING ELECTRODE SYSTEM NOTES:**
- CONNECTIONS:**
ALL CONNECTIONS SHALL BE EXOTHERMICALLY CONNECTED UNLESS NOTED OTHERWISE. CONTRACTOR TO FOLLOW ALL MANUFACTURER'S GUIDELINES & RECOMMENDATIONS.
 - ALL ELECTRICAL AND MECHANICAL GROUND CONNECTIONS SHALL HAVE ANTI-OXIDANT COMPOUND APPLIED TO CONNECTION.
 - FENCE/GATE:**
GROUND FENCE POSTS WITHIN 6-FEET OF ENCLOSURE AND 25-FEET OF TOWER. GROUND EACH GATE POST AND CORNER POST. GROUND CONNECTIONS TO FENCE POSTS SHALL BE MADE BY THE EXOTHERMIC PROCESS AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND PROCEDURES.
 - CONTRACTOR SHALL SUBMIT THE GROUND RESISTANCE TEST REPORT AS FOLLOWS:
 A. ONE (1) COPY TO THE OWNER REPRESENTATIVE
 B. ONE (1) COPY TO THE ENGINEER
 C. ONE (1) COPY TO KEEP INSIDE EQUIPMENT ENCLOSURE

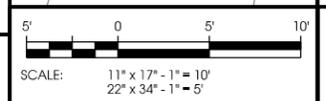
NOTE:

- THE GROUNDING SHALL BE TESTED PRIOR TO FINAL BACKFILLING. DOCUMENTATION OF 5 OHM OR LESS RESISTANCE TO BE PROVIDED TO PROJECT MANAGER.
- ALL NON-INSULATED GROUND LEADS EXTENDING ABOVE GROUND LEVEL SHALL BE ENCASED IN 3/4" PVC & SEALED WITH SILICONE. PVC SHALL BE MIN. 16" INTO EARTH & EXTEND MIN. 6" ABOVE GROUND.
- INSTALL 18" X 18" COPPER PLATES IN LIEU OF GROUND RODS WHEN INSTALLING OVER TOWER FOUNDATION OR WHERE DRIVING GROUND RODS IS NOT FEASIBLE.

NOTE:
 - TOP OF EACH GROUND ROD SHALL EXTEND NO MORE THAN 6" ABOVE BOTTOM OF TRENCH

NOTE:
 ANY CONDUCTIVE UTILITY JUNCTION BOX OR ENCLOSURE SHALL BE BONDED TO THE EARTH GROUND SYSTEM W/ A #2 SOLID BARE TINNED COPPER GROUND LEAD

SPECIAL REQUIREMENTS
 DUE TO SHALLOW BEDROCK, GROUNDING PLATES WILL BE REQUIRED AS DRIVING GROUND RODS WILL NOT BE FEASIBLE

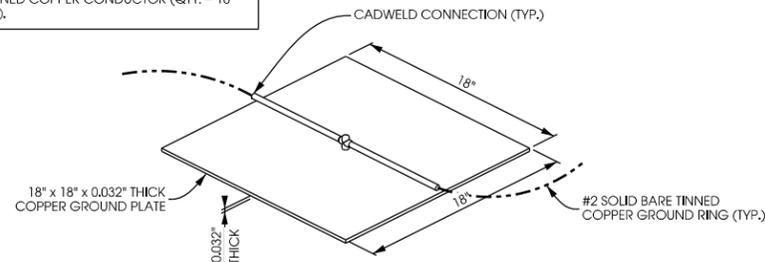


R:151000,15143,CAD,PHI(CDA),G-1.dgn

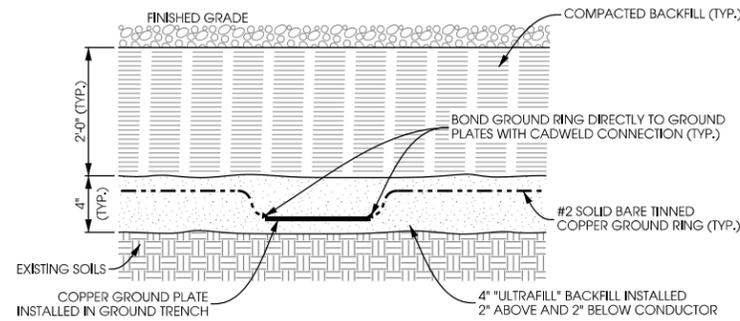
PRODUCT INFORMATION:

HARGER PART #GP1818-2T (OR EQUIVALENT):

18" x 18" COPPER GROUND PLATE WITH #2 SOLID BARE TINNED COPPER CONDUCTOR (QTY. = 10 PER BOX).

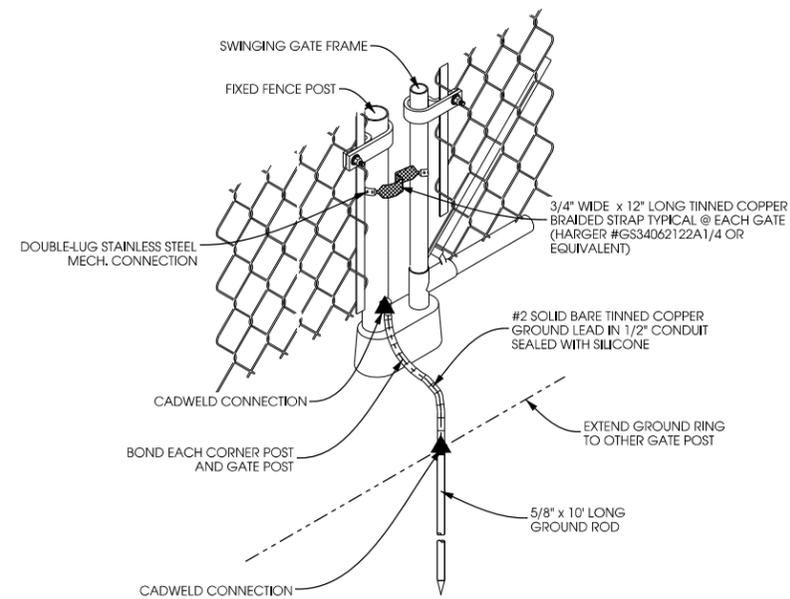


ISOMETRIC VIEW

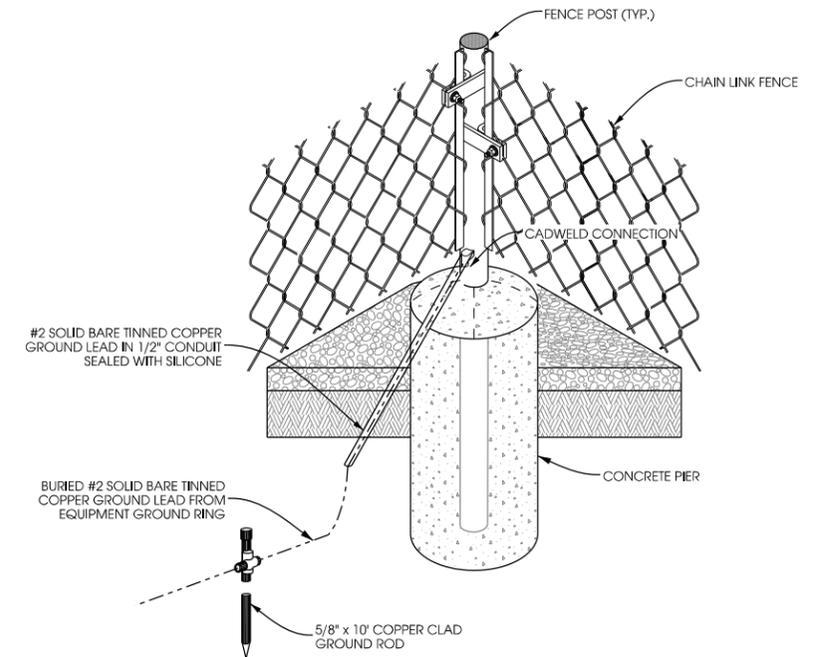


CROSS SECTION

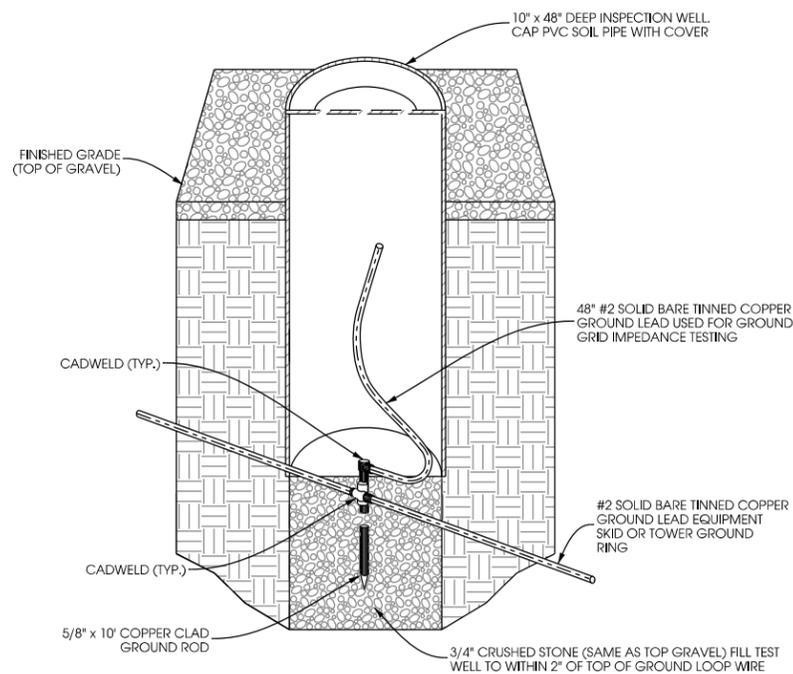
A GROUND PLATE DETAIL
SCALE: NTS



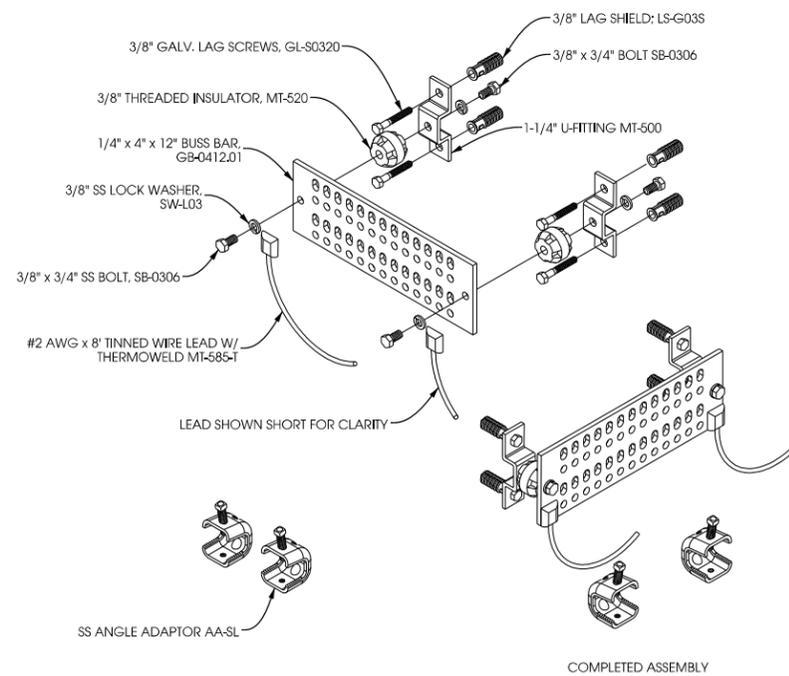
B GATE GROUNDING DETAIL
SCALE: NTS



C FENCE POST GROUNDING DETAIL
SCALE: NTS



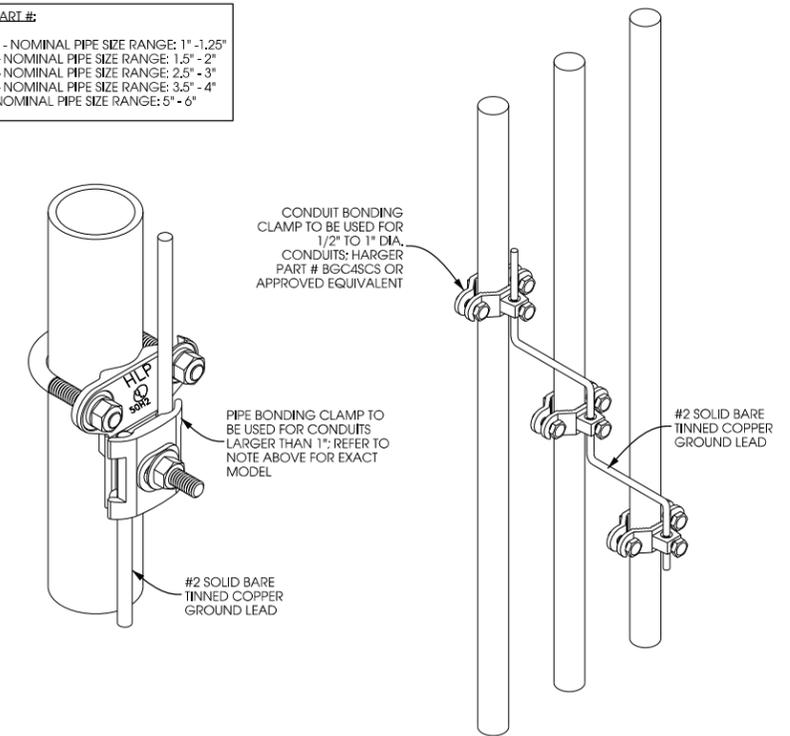
D INSPECTION WELL DETAIL
SCALE: NTS



E GROUND AND BUSS BAR DETAIL
SCALE: NTS

HARGER PART #:

- CPC1/1.25 - NOMINAL PIPE SIZE RANGE: 1" - 1.25"
- CPC1.5/2 - NOMINAL PIPE SIZE RANGE: 1.5" - 2"
- CPC2.5/3 - NOMINAL PIPE SIZE RANGE: 2.5" - 3"
- CPC3.5/4 - NOMINAL PIPE SIZE RANGE: 3.5" - 4"
- CPC5/6 - NOMINAL PIPE SIZE RANGE: 5" - 6"



F CONDUIT GROUNDING
SCALE: NTS

SHEET TITLE:

| PRELIMINARY DWGS: | INI: |
|--------------------------------|------|
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD'S REV.1 - 02/13/2019 | JAH |

| STAMPED FINAL DWGS: |
|---------------------|
| |

| | |
|-------------|-----------|
| CHECKED BY: | PCM |
| PLOT DATE: | 2/13/2019 |
| PROJECT #: | 15143 |
| FILE NAME: | G-2.dgn |

SHEET NUMBER:

GENERAL

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

DIVISION 1: GENERAL REQUIREMENTS

SECTION 01700 - PROJECT CLOSEOUT

PART 1 - GENERAL

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

PART 2 - FINAL CLEANING/PROJECT CLOSEOUT

- 1. COMPLETE THE FOLLOWING OPERATIONS BEFORE REQUESTING INSPECTION FOR CERTIFICATE OF COMPLETION:
A. CLEAN THE PROJECT SITE, YARD AND GROUNDS IN AREAS DISTURBED BY CONSTRUCTION ACTIVITIES, INCLUDING LANDSCAPE DEVELOPMENT, AREAS OF RUBBISH, WASTE MATERIALS, LITTER AND FOREIGN SUBSTANCES. SWEEP PAVED AREAS BROOM CLEAN. REMOVE PETRO-CHEMICAL SPILLS, STAINS AND OTHER FOREIGN DEPOSITS. RAKE GROUNDS THAT ARE NEITHER PLANTED NOR PAVED TO A SMOOTH, EVEN-TEXTURED SURFACE.
B. REMOVE TOOLS, CONSTRUCTION EQUIPMENT, MACHINERY, AND SURPLUS MATERIAL FROM THE SITE.
C. REMOVE SNOW AND ICE TO PROVIDE SAFE ACCESS TO THE SITE AND EQUIPMENT BUILDING.
D. CLEAN EXPOSED EXTERIOR AND INTERIOR HARDSURFACED FINISHES TO A DIRT-FREE CONDITION, FREE OF STAINS, FILMS AND SIMILAR FOREIGN SUBSTANCES. AVOID DISTURBING NATURAL WEATHERING OF EXTERIOR SURFACES.
E. REMOVE DEBRIS FROM LIMITED ACCESS SPACES, INCLUDING ROOFS, EQUIPMENT BUILDING, MANHOLES AND SIMILAR SPACES.
F. REMOVE LABELS THAT ARE NOT PERMANENT LABELS.
G. 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.
H. LEAVE THE PROJECT CLEAN AND READY FOR OCCUPANCY.
I. DUST OFF ALL EQUIPMENT, INCLUDING BATTERY PACKS, WITHIN EQUIPMENT BUILDING.
J. GENERAL CONTRACTOR TO CLEAN AND APPLY STATIC-FREE WAX TO THE FLOORS ONCE FINAL SHELTER EQUIPMENT AND ACCESSORIES ARE COMPLETED.
2. REMOVAL OF PROTECTION
REMOVE TEMPORARY PROTECTION AND FACILITIES INSTALLED DURING CONSTRUCTION TO PROTECT PREVIOUSLY COMPLETED INSTALLATIONS DURING THE REMAINDER OF THE CONSTRUCTION PERIOD.

DIVISION 2: SITE WORK

SECTION 02200 - EARTHWORK AND DRAINAGE

PART 1 - GENERAL

- 1. WORK INCLUDED - SEE SITE PLAN

2. DESCRIPTIONS

ACCESS DRIVE WITH TURN-AROUND AREA, LEASE AREA, AND IF APPLICABLE 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.

3. QUALITY ASSURANCE

- A. APPLY SOIL STERILIZER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS (AS NEEDED).
B. APPLY AND MAINTAIN GRASS SEED AS RECOMMENDED BY THE SEED PRODUCER (AS NEEDED).
C. PLACE AND MAINTAIN VEGETATION LANDSCAPING, IF INCLUDED WITHIN THE CONTRACT, AS RECOMMENDED BY NURSERY INDUSTRY STANDARDS.

4. SEQUENCING

- A. CONFIRM SURVEY STAKES AND SET ELEVATIONS STAKES PRIOR TO ANY CONSTRUCTION.
B. COMPLETELY GRUB THE ACCESS DRIVE WITH TURN-AROUND, UNDERGROUND UTILITY EASEMENTS (IF APPLICABLE), AND LEASE AREA PRIOR TO FOUNDATION CONSTRUCTION, PLACEMENT OF BACKFILL AND SUB-BASE MATERIAL.
C. CONSTRUCT TEMPORARY CONSTRUCTION AREA ALONG ACCESS DRIVE.
D. BRING THE LEASE AREA AND ACCESS DRIVE WITH TURN-AROUND TO BASE COURSE ELEVATION PRIOR TO INSTALLING FOUNDATION.
E. APPLY SOIL STERILIZER PRIOR TO PLACING BASE MATERIALS SUCH THAT THE STERILIZER ONLY COMES IN CONTACT WITH PROPOSED GRAVEL SURFACES
F. GRADE, SEED, FERTILIZE, AND MULCH ALL AREAS DISTURBED BY CONSTRUCTION (INCLUDING UNDERGROUND UTILITY EASEMENTS) IMMEDIATELY AFTER BRINGING LEASE AND ACCESS DRIVE WITH TURN-AROUND TO BASE COURSE ELEVATION, WATER TO ENSURE GROWTH.
G. REMOVE GRAVEL FROM TEMPORARY CONSTRUCTION ZONE TO AN AUTHORIZED AREA OR AS DIRECTED BY THE PROJECT MANAGER.
H. AFTER APPLICATIONS OF FINAL SURFACES, APPLY SOIL STERILIZER TO STONE SURFACES.

5. SUBMITTALS

- A. BEFORE CONSTRUCTION
IF LANDSCAPING IS APPLICABLE TO THE CONTRACT, SUBMIT TWO (2) COPIES OF THE LANDSCAPE PLAN UNDER NURSERY LETTERHEAD. IF LANDSCAPE ALLOWANCE WAS INCLUDED IN THE CONTRACT, PROVIDE AN ITEMIZED LISTING OF PROPOSED COSTS ON NURSERY LETTERHEAD, REFER TO PLANS FOR LANDSCAPING REQUIREMENTS.
G. PLACE FILL OR STONE IN SIX (6) INCH MAXIMUM LIFTS, AND COMPACT BEFORE PLACING NEXT LIFT.
B. AFTER CONSTRUCTION
1. MANUFACTURER'S DESCRIPTION OF PRODUCT AND WARRANTY STATEMENT ON SOIL STERILIZED.
2. MANUFACTURER'S DESCRIPTION OF PRODUCT ON GRASS SEED AND FERTILIZER.
3. LANDSCAPING WARRANTY STATEMENT.

6. WARRANTY

- A. IN ADDITION TO THE WARRANTY ON ALL CONSTRUCTION COVERED IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL REPAIR ALL DAMAGE AND RESTORE AREA AS CLOSE TO ORIGINAL CONDITION AS POSSIBLE AT SITE AND SURROUNDINGS.
B. SOIL STERILIZATION APPLICATION TO GUARANTEE VEGETATION FREE ROAD AND SITE AREAS FOR ONE YEAR FROM DATE OF FINAL INSPECTION.
C. DISTURBED AREAS WILL REFLECT GROWTH OF NEW GRASS PRIOR TO FINAL INSPECTION.
D. LANDSCAPING, IF INCLUDED WITHIN THE SCOPE OF THE CONTRACT, WILL BE GUARANTEED FOR ONE YEAR FROM THE DATE OF FINAL INSPECTION.

PART 2 - PRODUCTS

1. MATERIALS

- A. SOIL STERILIZER SHALL BE AN EPA REGISTERED, PRE-EMERGENCE LIQUID:
TOTAL KILL PHASAR CORPORATION
PRODUCT 910 P.O. BOX 5123
EPA 10292-7 DEARBORN, MI 48128
313.563.8000
AMBUSH HERBICIDE FRAMAR INDUSTRIAL PRODUCTS
EPA REGISTERED 1435 MORRIS AVENUE
UNION, NJ 07083
800.526.4924
B. ROAD AND SITE MATERIALS SHALL CONFORM TO DOT SPECIFICATIONS (UNLESS OTHERWISE NOTED). ACCEPTABLE SELECT FILL SHALL BE IN ACCORDANCE WITH STATE DEPARTMENT OF HIGHWAY AND TRANSPORTATION STANDARD SPECIFICATIONS.
C. SOIL STABILIZED FABRIC SHALL BE MRFR-500X.

PART 3 - EXECUTION

1. INSPECTIONS

LOCAL BUILDING INSPECTORS SHALL BE NOTIFIED NO LESS THAN 48 HOURS IN ADVANCE OF CONCRETE POURS, UNLESS OTHERWISE SPECIFIED BY THE LOCAL JURISDICTION.

2. PREPARATION

- A. CLEAR TREES, BRUSH AND DEBRIS FROM LEASE AREA. ACCESS DRIVE WITH TURN-AROUND, AND UNDERGROUND UTILITY EASEMENTS AS REQUIRED FOR CONSTRUCTION.
B. PRIOR TO OTHER EXCAVATION AND CONSTRUCTION, GRUB ORGANIC MATERIAL TO A MINIMUM OF SIX (6) INCHES BELOW GRADE.
C. UNLESS OTHERWISE INSTRUCTED BY LESSEE, TRANSPORT ALL REMOVED TREES, BRUSH AND DEBRIS FROM THE PROPERTY TO AN AUTHORIZED LANDFILL.
D. PRIOR TO PLACEMENT OF FILL OR BASE MATERIALS, ROLL THE SOIL.
E. WHERE UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED, LINE THE AREAS WITH A STABILIZED MAT PRIOR TO PLACEMENT OF FILL OR BASE MATERIAL.
F. PRIOR TO PLACEMENT OF FILL OR BASE MATERIALS, REMOVE SOFT SPOTS, PLACE SELECT FILL, AND COMPACT TO 95% MODIFIED PROCTOR.

3. INSTALLATION

- A. GRADE OR FILL THE LEASE AREA AND ACCESS DRIVE WITH TURN-AROUND 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.
B. CLEAR EXCESS SPOILS, IF ANY, FROM JOB SITE AND DO NOT SPREAD BEYOND THE LIMITS OF PROJECT AREA UNLESS AUTHORIZED BY PROJECT MANAGER AND AGREED TO BY LANDOWNER.
C. BRING THE ACCESS DRIVE WITH TURN-AROUND TO BASE COURSE ELEVATION TO FACILITATE CONSTRUCTION AND OBSERVATION DURING CONSTRUCTION OF THE SITE.
D. AVOID CREATING DEPRESSIONS WHERE WATER MAY POND.
E. THE CONTRACT SHALL INCLUDE GRADING, BANKING, AND DITCHING, UNLESS OTHERWISE NOTED.
F. WHEN IMPROVING AN EXISTING ACCESS DRIVE, GRADE THE EXISTING DRIVE TO REMOVE ANY ORGANIC MATTER AND SMOOTH THE SURFACE BEFORE PLACING FILL OR STONE.
H. 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.
I. NO SLOPES ARE TO BE GREATER THAN 3:1.
J. APPLY RIP-RAP TO THE SIDES OF DITCHES AND DRAINAGE SWALES WHERE INDICATED ON THE DRAWINGS.
K. RIP-RAP ENTIRE DITCH FOR SIX (6) FEET IN ALL DIRECTIONS AT CULVERT OPENINGS. (WHEN APPLICABLE)
L. APPLY SEED, FERTILIZER, AND STRAW COVER TO ALL OTHER DISTURBED AREAS, DITCHES, AND DRAINAGE SWALES, NOT OTHERWISE RIP-RAPPED.
M. UNDER NO CIRCUMSTANCES WILL DITCHES, SWALES, OR CULVERTS BE PLACED SO THAT THEY DIRECT WATER TOWARDS, OR PERMIT STANDING WATER IMMEDIATELY ADJACENT TO SHELTER OR EQUIPMENT. IF DESIGNS OR ELEVATIONS ARE IN CONFLICT WITH THIS, ADVISE CONSTRUCTION MANAGER IMMEDIATELY.
N. IN DITCHES WITH SLOPES GREATER THAN 10%, MOUND DIVERSIONARY HEADWALLS IN THE DITCH AT AN ANGLE NO GREATER THAN 60° OFF THE DITCH LINE. RIP-RAP THE UPSTREAM SIDE OF THE HEADWALL AS WELL AS THE DITCH FOR SIX (6) FEET ABOVE THE CULVERT ENTRANCE.
O. APPLY SEED AND FERTILIZER TO SURFACE CONDITIONS WHICH WILL ENCOURAGE ROOTING, RAKE AREAS TO BE SEEDED TO EVEN THE SURFACE AND LOOSEN THE SOIL.
P. SOW SEED IN TWO DIRECTIONS IN TWICE THE QUANTITY RECOMMENDED BY THE SEED PRODUCER.
Q. ENSURE GROWTH OF SEEDED AND LANDSCAPED AREAS BY WATERING UP TO THE POINT OF RELEASE FROM THE CONTRACT. CONTINUE TO REWORK THE BARE AREAS UNTIL COMPLETE COVERAGE IS OBTAINED.

4. FIELD QUALITY CONTROL

COMPACT SOILS TO MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D-1557. AREAS OF SETTLEMENT WILL BE EXCAVATED AND REFILLED AT CONTRACTOR'S EXPENSE. INDICATE PERCENTAGE OF COMPACTION ACHIEVED ON AS-BUILT DRAWINGS.

5. PROTECTION

- A. PROJECT 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.
B. 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.
C. PROTECT ALL EXPOSED AREAS AGAINST WASHOUTS AND SOIL EROSION. ALL EROSION CONTROL METHODS SHALL CONFORM TO APPLICABLE BUILDING CODE REQUIREMENTS.

SECTION 02830 - CHAIN-LINK FENCING AND GATE(S)

PART 1 - GENERAL

1. WORK INCLUDED

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

2. 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 TWELVE (12) OUNCES PER SQUARE FOOT OF MATERIAL COVERED. POSTS SHALL BE HOT-DIPPED IN GRADE "E" ZINC, EIGHTEEN (18) OUNCES PER SQUARE FOOT.

3. 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.

4. SUBMITTALS

- A. MANUFACTURER'S DESCRIPTIVE LITERATURE.
B. CERTIFICATE OR STATEMENT OF COMPLIANCE WITH THE SPECIFICATIONS.

PART 2 - PRODUCTS

1. FENCE MATERIAL

- A. ALL FABRIC WIRE, RAILS, HARDWARE, AND OTHER STEEL MATERIALS SHALL BE HOT-DIPPED GALVANIZED.
B. FABRIC SHALL BE 9 GAUGE. THE FABRIC SHALL HAVE A KNUCKLED FINISH FOR THE TOP SELVAGES. FABRIC SHALL CONFORM TO THE SPECIFICATIONS OF ASTM A-392 CLASS 1.
C. BARBED WIRE SHALL BE DOUBLE-STRAND, 12-1/2 GAUGE TWISTED WIRE, WITH 14-GAUGE, 4-POINT ROUND BARBS SPACED ON FIVE (5) INCH CENTERS.
D. ALL POSTS SHALL BE SCHEDULE - 40 MECHANICAL SERVICE PIPE AND SHALL BE PER ASTM-F1083 AND OF THE FOLLOWING ACTUAL OUTER DIAMETERS:
LINE: 2.375" O.D. SCHEDULE 40
CORNER: 2.875" O.D. SCHEDULE 40 (FOR FENCE FABRIC HEIGHT OF 6' OR LESS)
3.5" O.D. SCHEDULE 40 (FOR FENCE FABRIC HEIGHT OF 8' OR LESS)
GATE: 4" O.D. SCHEDULE 40
E. GATE POSTS SHALL BE EXTENDED TWELVE (12) INCHES, INCLUDING DOME CAP, TO PROVIDE FOR ATTACHMENT OF BARBED WIRE.
F. ALL TOP AND BRACE RAILS SHALL BE 1.66" O.D. SCHEDULE - 40 MECHANICAL-SERVICE PIPE.
G. GATE FRAMES AND BRACES SHALL BE 1.9" O.D. SCHEDULE 40 MECHANICAL-SERVICE PIPE, FRAMES SHALL HAVE WELDED CORNERS.
H. GATE FRAMES SHALL HAVE A FULL-HEIGHT VERTICAL BRACE AND A FULL-WIDTH HORIZONTAL BRACE, SECURED IN PLACE BY USE OF GATE BRACE CLAMPS.
I. GATE HINGES SHALL BE MERCHANTS METAL MODEL 64386 HINGE ADAPTER WITH MODEL 6409, 180-DEGREE ATTACHMENT.
J. THE GUIDE (LATCH ASSEMBLY) SHALL BE HEAVY INDUSTRIAL DOUBLE GATE LATCH. SEE DETAIL(S).
K. LATCHES AND STOPS SHALL BE PROVIDED FOR ALL GATES.
L. PLUNGER ROD COMPLETE WITH RECEPTOR TO BE PROVIDED AT THE INACTIVE LEAF OF ALL DOUBLE GATE INSTALLATIONS.
M. ALL STOPS SHALL HAVE KEEPERS CAPABLE OF HOLDING THE GATE LEAF IN THE OPEN POSITION.
N. A 9 GAUGE ALUMINUM TENSION WIRE SHALL BE USED AT THE BOTTOM OF THE FABRIC, TERMINATED WITH BAND CLIPS AT CORNER AND GATE POSTS.
O. A SIX (6) INCH BY 1/2 INCH DIAMETER EYEBOLT TO HOLD TENSION WIRE SHALL BE PLACED AT LINE POSTS. (WHEN APPLICABLE)
P. STRETCHER BARS SHALL BE 3/16 INCH BY 3/4 INCH OR HAVE EQUIVALENT CROSS-SECTIONAL AREA.
Q. ALL CORNER GATE AND PANELS SHALL HAVE A 3/8 INCH TRUSS ROD WITH TURNBUCKLES.
R. ALL POSTS EXCEPT GATE POSTS SHALL HAVE A COMBINATION CAP AND BARBED WIRE SUPPORTING ARM. GATE POSTS SHALL HAVE A DOME CAP.
S. OTHER HARDWARE INCLUDES, BUT MAY NOT BE LIMITED TO, TIE CLIPS, BAND CLIPS AND TENSION BAND CLIPS.
T. BARBED WIRE GATE GUARDS SHALL BE FITTED WITH DOME CAPS.
U. BARBED WIRE SUPPORT ARMS SHALL BE PRESSED STEEL COMPLETE WITH SET BOLT AND LOCK WIRE IN THE ARM.
V. ALL CAPS SHALL BE MALLEABLE IRON, DOME OR ACORN SHAPED AS REQUIRED BY PIPE SIZE.
W. 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.

PART 3 - EXECUTION

1. INSPECTION

TO CONFIRM PROPER DEPTH AND DIAMETER OF POST HOLE EXCAVATIONS. ALL POST HOLES WILL BE EXCAVATED AS PER CONSTRUCTION DOCUMENTS.

2. INSTALLATION

- A. FOUNDATIONS SHALL HAVE A MINIMUM SIX (6) INCH CONCRETE COVER UNDER POST.
B. ALL FENCE POSTS SHALL BE VERTICALLY PLUMB WITHIN ONE QUARTER (1/4) INCH.
C. FABRIC SHALL BE TENSIONED PER MANUFACTURER'S RECOMMENDATIONS TO PRESENT A NEAT APPEARANCE.
D. 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.
E. AT LINE POSTS, FABRIC SHALL BE ATTACHED WITH BAND-CLIPS AT FIFTEEN (15) INCH INTERVALS.
F. FABRIC SHALL BE ATTACHED TO BRACE RAILS, TENSION WIRE AND TRUSS RODS WITH TIE-CLIPS AT TWO (2) FOOT INTERVALS.
G. A MAXIMUM GAP OF ONE (1) INCH WILL BE PERMITTED BETWEEN TIE CHAIN LINE FABRIC AND THE FINAL GRADE.
H. GATE SHALL BE INSTALLED SO LOCKS ARE ACCESSIBLE FROM BOTH SIDES.
I. GATE HINGE BOLTS SHALL HAVE THEIR THREADS PEENED OR WELDED TO PREVENT UNAUTHORIZED REMOVAL.
J. GATE POSTS SHALL NOT BE SHARED AS A CORNER POST.
K. CONCRETE TO BE A MINIMUM OF 3,000 PSI AT 28 DAYS. CEMENT SHALL EXCEED ASTM C150, TYPE IIIA.

3. PROTECTION

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

APPLICABLE STANDARDS:

- ASTM-A53 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-F191-FENCING, WIRE AND POST METAL AND GATES, CHAIN LINK FENCE FABRIC, AND ACCESSORIES.
ASTM-F1083 SPECIFICATION FOR PIPE, STEEL HOT-DIPPED ZINC-COATED (GALVANIZED) WELDED, FOR FENCE STRUCTURES.

DIVISION 3: CONCRETE

SECTION 03000 - BASIC CONCRETE MATERIALS AND METHODS

PART 1 - GENERAL

1. WORK INCLUDED

FORMWORK, REINFORCEMENT, ACCESSORIES, CAST-IN-PLACE CONCRETE, FINISHING, AND CURING.

2. INSPECTIONS

- A. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING BUILDING DEPARTMENT INSPECTIONS REQUIRED FOR HIS SCOPE OF WORK.
B. ALL REINFORCING STEEL SHALL BE INSPECTED AND APPROVED BY THE LESSEE CONSTRUCTION MANAGER PRIOR TO PLACEMENT OF CONCRETE.
C. THE LESSEE CONSTRUCTION MANAGER SHALL BE NOTIFIED NO LESS THAN 48 HOURS IN ADVANCE OF CONCRETE POURS.

3. QUALITY ASSURANCE

- A. CONSTRUCT AND ERECT CONCRETE FORMWORK IN ACCORDANCE WITH ACI 301 AND 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 PRIOR TO CONCRETE INSTALLATION.

4. SUBMITTALS

SUBMIT CONCRETE MIX AND REINFORCING STEEL SHOP DRAWINGS FOR APPROVAL BY LESSEE CONSTRUCTION MANAGER/ENGINEER. THE SHOP DRAWINGS SHALL BE SUBMITTED IN THE FORM OF TWO (2) CONCRETE MIX DESIGN INFORMATION SHEETS AND TWO (2) BLUELINE DRAWINGS FOR REINFORCING STEEL.

PART 2 - PRODUCTS

1. REINFORCEMENT MATERIALS

- A. REINFORCEMENT STEEL: ASTM A615, 60 KSI YIELD GRADE, DEFORMED BILLET STEEL BARS, PLAIN FINISH.
B. WELDED STEEL WIRE FABRIC: ASTM A185 PLAIN TYPE, IN FLAT SHEETS, PLAIN FINISH.
C. CHAIRS, BOLSTERS, BAR SUPPORTS, SPACERS, SIZED AND SHAPED TO SUPPORT 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 (1/3) CLEAR DISTANCE BEHIND OR BETWEEN REINFORCING.
C. WATER: CLEAN AND NOT DETRIMENTAL TO CONCRETE.
D. AIR ENTRAINING ADMIXTURE: ASTM C260.
E. BONDING AGENT: LATEX EMULSION FOR BONDING NEW TO OLD CONCRETE AS MANUFACTURED BY DAYTON SUPERIOR.
F. NON-SHRINK GROUT: PREMIXED COMPOUND CONSISTING OF NONMETALLIC AGGREGATE, CEMENT, WATER REDUCING AND PLASTICISING AGENTS.

3. CONCRETE MIX

- A. CONCRETE MATERIALS SHALL CONFORM TO THE APPROPRIATE A.C.I. REQUIREMENTS FOR EXPOSED STRUCTURAL CONCRETE.
B. MIX AND DELIVER CONCRETE IN ACCORDANCE WITH ASTM C94, ALT. 3.
C. PROPORTIONS OF CONCRETE MATERIALS SHALL BE SUITABLE FOR THE INSTALLATION METHOD UTILIZED AND SHALL RESULT IN DURABLE CONCRETE FOR LOCAL ANTICIPATED AGGRESSIVE ACTIONS. THE DURABILITY REQUIREMENTS OF ACI 318 CHAPTER 4 SHALL BE SATISFIED BASED ON THE CONDITIONS EXPECTED AT THE SITE. PROVIDE CONCRETE AS FOLLOWS:

- 1. COMPRESSIVE STRENGTH: 3000 PSI AT 28 DAYS, (MIN. OR AS SPECIFIED IN STRUCTURAL DRAWINGS)
2. SLUMP: 4 INCHES
3. AIR ENTRAINMENT: 6%

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.



SPECIFICATIONS
ROCKFIELD [418732]
RICHFIELD, WISCONSIN

SHEET TITLE:

Table with columns: PRELIMINARY DWGS, INI, CD 90's REV.2 - 10/24/2017, APK, CD 90's REV.3 - 11/17/2017, APK, CD 90's REV.4 - 04/18/2018, JAH, CD 90's REV.5 - 06/18/2018, CV, CD 90's REV.6 - 11/08/2018, NAT, CD 90's REV.7 - 01/10/2019, JAH, STAMPED PERMIT DWGS, PERMIT CD's REV.1 - 02/13/2019, JAH, STAMPED FINAL DWGS.

Table with columns: CHECKED BY: PCM, LOT DATE: 2/13/2019, PROJECT #: 15143, FILE NAME: SP-1.dgn, SHEET NUMBER:

SP-1

K:\151000\15143\CAD\Plot\CD03.SP-1.dgn

- D. MINIMUM CONCRETE COVER FOR REINFORCING SHALL BE THREE (3) INCHES UNLESS OTHERWISE NOTED.
- E. CONCRETE COVER FROM TOP OF FOUNDATION TO ENDS OF VERTICAL REINFORCEMENT SHALL NOT EXCEED THREE (3) INCHES NOR BE LESS THAN TWO (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 FIFTEEN (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 WET 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.

DIVISION 5: METALS

SECTION 05000 - METALS

PART 1 - GENERAL

1. SECTION INCLUDES

STRUCTURAL STEEL FRAMING MEMBERS, BASE PLATES, PLATES, BARS AND GROUTING UNDER BASE PLATES.

2. SUBMITTALS

SHOP DRAWINGS: INDICATE SIZES, SPACING, AND LOCATIONS OF STRUCTURAL MEMBERS, OPENINGS, CONNECTIONS, CAMBERS.

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-SHINK TYPE, PREMIXED COMPOUND CONSISTING OF NONMETALLIC AGGREGATE, CEMENT, WATER REDUCING AND PLASTICISING ADDITIVES, CAPABLE OF DEVELOPING A MINIMUM COMPRESSIVE STRENGTH OF 7000 PSI AT 28 DAYS.
- H. SHOP AND TOUCH-UP PRIMER: SSPC 15, TYPE 1, RED OXIDE
- I. TOUCH-UP PRIMER FOR GALV. SURFACES: ZINC RICH TYPE

2. FABRICATION: CONTINUOUSLY SEAL JOINTED MEMBERS BY CONTINUOUS WELDS. GRIND EXPOSED WELDS SMOOTH.

3. FINISH

- A. PREPARE STRUCTURAL COMPONENT SURFACES IN ACCORDANCE WITH SSPC SP-1 TO SP-10 PROCEDURES.
- B. STRUCTURAL STEEL MEMBERS SHALL BE HOT DIPPED GALVANIZED.

PART 3 - EXECUTION

1. EXAMINATION AND PREPARATION

VERIFY THAT THE FIELD CONDITIONS ARE ACCEPTABLE.

2. ERECTION:

- A. ALLOW FOR ERECTION LOADS. PROVIDE TEMPORARY BRACING TO MAINTAIN FRAMING IN ALIGNMENT UNTIL COMPLETION OF ERECTION AND INSTALLATION OF PERMANENT BRIDGING AND BRACING.
- B. FIELD WELD COMPONENTS INDICATED ON SHOP DRAWINGS.
- C. DO NOT FIELD CUT OR ALTER STRUCTURAL MEMBERS WITHOUT APPROVAL OF THE ARCHITECT/ENGINEER.
- D. AFTER ERECTION, TOUCH-UP WELDS, ABRASIONS, AND SURFACES NOT SHOP PRIMED OR GALVANIZED WITH TOUCH-UP PRIMERS AS SPECIFIED UNDER SECTION 05000 - 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/ENGINEER 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, PULL BOX, JUNCTION BOX, SWITCH BOX, ETC. THE TYPE OF TAGGING METHODS SHALL BE IN COMPLIANCE WITH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA.).
4. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN GOOD WORKING CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. MATERIALS SHALL BE LISTED "J" WHERE APPLICABLE. MATERIALS SHALL MEET WITH APPROVAL OF ALL GOVERNING BODIES HAVING JURISDICTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA, NBFU AND "UL" LISTED.
5. ALL CONDUIT SHALL HAVE A PULL CORD.
6. PROVIDE PROJECT MANAGER WITH ONE SET OF COMPLETE ELECTRICAL "AS INSTALLED" DRAWINGS AT THE COMPLETION OF THE JOB, SHOWING ACTUAL DIMENSIONS, ROUTINGS, AND CIRCUITS.
7. ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED, AND A MINIMUM OF 10,000 A.I.C.
8. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY UBC, NEC AND ALL APPLICABLE CODES.
9. PATCH, REPAIR AND PAINT ANY AREA THAT HAS BEEN DAMAGED IN THE COURSE OF THE ELECTRICAL WORK.
10. PLASTIC PLATES FOR ALL SWITCHES, RECEPTACLES, TELEPHONE AND BLANKED OUTLETS SHALL HAVE ENGRAVED LETTERING WHERE INDICATED ON THE DRAWINGS. WEATHERPROOF RECEPTACLES SHALL HAVE SIERRA #WPD-8 LIFT COVERPLATES.

SECTION 16400 - SERVICE AND DISTRIBUTION

1. WIRE AND CABLE CONDUCTORS SHALL BE COPPER, 600V, TYPE THHN OR THWN, WITH A MIN. SIZE OF #12 AWG, COLOR CODED. ALL RECTIFIER DROPS SHALL BE STRANDED TO ACCEPT CRIMP CONNECTORS.
2. ALL CHEMICAL GROUND RODS SHALL BE "UL" APPROVED.
3. METER SOCKET AMPERES, VOLTAGE, NUMBER OF PHASES SHALL BE AS NOTED ON THE DRAWINGS, MANUFACTURED BY MILBANK
4. CONDUIT
- A. RIGID CONDUIT SHALL BE UL 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 1/2 LAPPED WRAPPED WITH HUNTS WRAP PROCESS NO. 3.
- B. ELECTRICAL METALLIC TUBING SHALL HAVE UL LABEL, FITTING SHALL BE GLAND RING COMPRESSION TYPE.
- C. FLEXIBLE METALLIC CONDUIT SHALL HAVE UL LISTED LABEL AND MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE "JAKE" OR "SQUEEZE" TYPE. ALL FLEXIBLE CONDUITS SHALL HAVE FULL LENGTH GROUND WIRE.
- D. ALL UNDERGROUND CONDUIT SHALL BE AS NOTED ON THE DRAWINGS AT A MINIMUM DEPTH OF 42" BELOW GRADE. IT IS REQUIRED AND WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO NOTIFY THE STATE "ONE-CALL" SYSTEM AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO DIGGING OR AS REQUIRED BY LOCATOR.
5. CONTRACTOR TO COORDINATE WITH UTILITY COMPANY FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE SITE. ALL COSTS 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. 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 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 THROUGH EMT. BOTH ENDS OF CONDUIT SHALL BE GROUNDED. SEAL BOTH ENDS OF CONDUIT WITH SILICONE CALK.
- 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 BAR SHALL OBSERVE THE FOLLOWING SEQUENCE
- A. BOLT HEAD
- B. 2-HOLE LUG
- C. TINNED COPPER BUSS BAR
- D. STAR WASHER
- E. NUT
- C. EXTERNAL CONNECTIONS
1. ALL BURIED GROUNDING CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC WELD PROCESS. CONNECTIONS SHALL INCLUDE ALL CABLE TO CABLE, SPLICES, TEES, 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.
- D. GROUND RODS ALL GROUND RODS SHALL BE 5/8-INCH DIAMETER x 10'-0" LONG "COPPERWELD" OR APPROVED EQUAL. OF THE NUMBER AND LOCATIONS INDICATED, GROUND RODS SHALL BE DRIVEN FULL LENGTH VERTICAL IN UNDISTURBED EARTH.

E. GROUND 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 OR EQUIVALENT BENDING.
- | | |
|-----------------------|---------|
| A. 535 MCM DLO | 54880BE |
| B. 262 MCM DLO | 54872BE |
| C. #1/0 DLO | 54862BE |
| D. #4/0 THWN AND BARE | 54860BE |
| E. #2/0 THWN | 54852BE |
| F. #2 THIN | 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 THE EQUIPMENT SHELTER OR PLATFORM/SKID SHALL BE MINIMUM NO. 2 A.W.G. SOLID TINNED BARE COPPER CONDUCTOR IN DIRECT CONTACT WITH THE EARTH AT THE DEPTH INDICATED ON THE DRAWINGS. CONDUCTOR BENDS SHALL HAVE A MINIMUM BENDING RADIUS OF EIGHT (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 THE DRAWINGS. 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 OHMMER 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 #25022-02, OR EQUIVALENT)
2. CONTRACTOR TO CONDUCT GROUND RESISTANCE TEST IN THE FORMAT AS FOLLOWS:

B. EQUIPMENT PAD

1. FIRST TEST - SHALL BE WITH FOUR (4) GROUND RODS INSTALLED, ONE AT EACH CORNER OF THE PAD BUT NOT CONNECTED TO THE MAIN GROUNDING BUS. FURNISH WIRE TO CONNECT TEMPORARY CLAMP ALL FOUR (4) GROUND RODS TOGETHER TO MAKE A SYSTEM TEST AFTER EACH ROD IS INDIVIDUALLY TESTED. IF ANY INDIVIDUAL ROD TESTS 25 OHMS OR MORE, THE ELECTRICAL CONTRACTOR AND OWNER'S REPRESENTATIVE SHOULD BE NOTIFIED SO THAT THE ROD CAN BE DRIVEN DEEPER UNTIL ALL FOUR (4) RODS HAVE A RESISTANCE OF 10 OHMS OR LESS ON A DRY DAY.
2. SECOND TEST - SHALL BE WITH THE GROUND RODS CONNECTED, WITH DRY SOIL AND WHEN NO STANDING WATER HAS BEEN PRESENT FOR THE PAST TEN (10) DAYS. THE MAXIMUM ALLOWABLE READING IS 5 OHMS TO GROUND. IF THE RESISTANCE OF THE ENTIRE SYSTEM EXCEEDS 5 OHMS, NOTIFY THE CONTRACTOR AND OWNER'S REPRESENTATIVE SO THAT ADDITIONAL AND/OR DEEPER RODS CAN BE INSTALLED.

C. TOWER

1. FIRST TEST - SHALL BE WITH THREE (3) GROUND RODS INSTALLED (MINIMUM), EQUALLY SPACED AROUND THE TOWER FOUNDATION, BUT NOT CONNECTED TO THE SHELTER/PLATFORM/SKID PAD EXTERNAL GROUND RING. FURNISH WIRE TO CONNECT TEMPORARY CLAMP ALL THREE (3) GROUND RODS TOGETHER TO MAKE A SYSTEM TEST AFTER EACH ROD IS INDIVIDUALLY TESTED. IF ANY INDIVIDUAL ROD TESTS 25 OHMS OR MORE, NOTIFY THE CONTRACTOR AND OWNER'S REPRESENTATIVE SO THAT THE ROD CAN BE DRIVEN DEEPER UNTIL ALL THREE (3) RODS HAVE A RESISTANCE OF 10 OHMS OR LESS ON A DRY DAY.
2. SECOND TEST - SHALL BE WITH THE GROUND RODS CONNECTED, WITH DRY SOIL AND WHEN NO STANDING WATER HAS BEEN PRESENT FOR THE PAST 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.

D. EQUIPMENT PAD AND TOWER

1. AFTER THE EQUIPMENT PAD AND TOWER GROUND RESISTANCE TEST IS COMPLETED, CONTRACTOR SHALL TIE EQUIPMENT PAD EXTERNAL GROUND RING AND TOWER EXTERNAL GROUND RING TOGETHER. AFTER FIRST AND SECOND TEST ALL CONNECTIONS MUST BE MADE USING EXOTHERMIC WELD. NO LUGS OR CLAMPS WILL BE ACCEPTED.
2. AFTER ALL THE EXTERNAL GROUND RINGS ARE TIED TOGETHER, COMPLETE A MEGGER CHECK OF THE GROUND SYSTEM. THE MAXIMUM ALLOWABLE READING 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 SETS OF TEST DOCUMENTS ARE OF THE INDEPENDENT TESTING SERVICE TO BE BOUND AND SUBMITTED WITHIN ONE (1) WEEK OF WORK COMPLETION.

SECTION 16503 - POLES, POSTS, AND STANDARDS

1. GENERAL

- A. LIGHTNING ROD AND EXTENSION PIPE INCLUDING ALL APPURTENANCES, TO BE FURNISHED BY OWNER, IF REQUIRED.
- B. PROVIDE TEMPORARY LIGHTING FOR TOWER AS PER FAA REGULATIONS DURING CONSTRUCTION, IF REQUIRED.
- C. GROUNDING
- GROUND TOWER WITH A MINIMUM OF #2 AWG TINNED SOLID BARE COPPER CONDUCTOR CADWELDED TO TABS (IF PRESENT), TWO (2) GROUNDING LEADS PER TOWER, NO EXOTHERMIC WELDS SHALL BE ATTACHED DIRECTLY TO THE TOWER STEEL.

SECTION 16745 - TELECOMMUNICATIONS WIRING COMPONENTS (COAXIAL ANTENNA CABLE)

1. GENERAL

- A. ALL MATERIALS, PRODUCTS OR PROCEDURES INCORPORATED INTO WORK SHALL BE NEW AND OF STANDARD COMMERCIAL QUALITY.
- B. CERTAIN MATERIALS AND PRODUCTS WILL BE SUPPLIED BY THE OWNER (REFER TO GENERAL CONDITIONS FOR THE LIST OF OWNER FURNISHED EQUIPMENT, MATERIALS AND SUPPLIES FOR THESE ITEMS), THE CONTRACTOR IS RESPONSIBLE FOR PICKUP AND DELIVERY OF ALL SUCH MATERIALS.
- C. ALL OTHER MATERIALS AND PRODUCTS SPECIFIED IN THE CONTRACT DOCUMENTS SHALL BE SUPPLIED BY THE CONTRACTOR.

2. MATERIALS:

- A. COAXIAL CABLE:
1. INSTALL COAXIAL CABLE AND TERMINATIONS BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS WITH COAXIAL CABLES SUPPORTED AT NO MORE THAN 3'-0" O.C. WEATHERPROOF ALL CONNECTORS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE (3) FEET IN EXCESS OF EQUIPMENT LOCATION UNLESS OTHERWISE STATED.
2. ALL COAX RUNS SHALL BE 1-5/8" UNLESS OTHERWISE INDICATED.
3. ANTENNA AND COAXIAL CABLE GROUNDING
- A. ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS)
4. COAXIAL CABLE IDENTIFICATION
- A. TO PROVIDE EASY IDENTIFICATION AND UNIFORM MARKING OF ANTENNA CABLING, MARK CABLE:
1. FIRST LOCATION IS AT THE END OF THE COAX NEAREST THE ANTENNA (WHERE THE COAXIAL CABLE AND JUMPER ARE CONNECTED).
2. SECOND LOCATION IS INSIDE THE EQUIPMENT SHELTER NEAR THE WAVEGUIDE ENTRY PORT OR BEFORE TERMINATION ON EXTERIOR SITES.
5. TESTING

IF REQUESTED BY CONSTRUCTION MANAGER, LESSEE SHALL PROVIDE AN INDEPENDENT TESTING AGENCY TO PERFORM THE COAXIAL SWEEP TEST & REPORT. THE CONTRACTOR SHALL PROVIDE ONE CLIMBER / QUALIFIED PERSONNEL TO ASSIST IN ANY REPAIRS AND WEATHERPROOFING ONCE THE TEST IS COMPLETE. THE CONTRACTOR SHALL PROVIDE LESSEE WITH A MINIMUM OF FORTY-EIGHT (48) HOURS NOTICE PRIOR TO THE TIME OF THE SWEEP TEST.



**SPECIFICATIONS
 ROCKFIELD [418732]
 RICHFIELD, WISCONSIN**

SHEET TITLE:

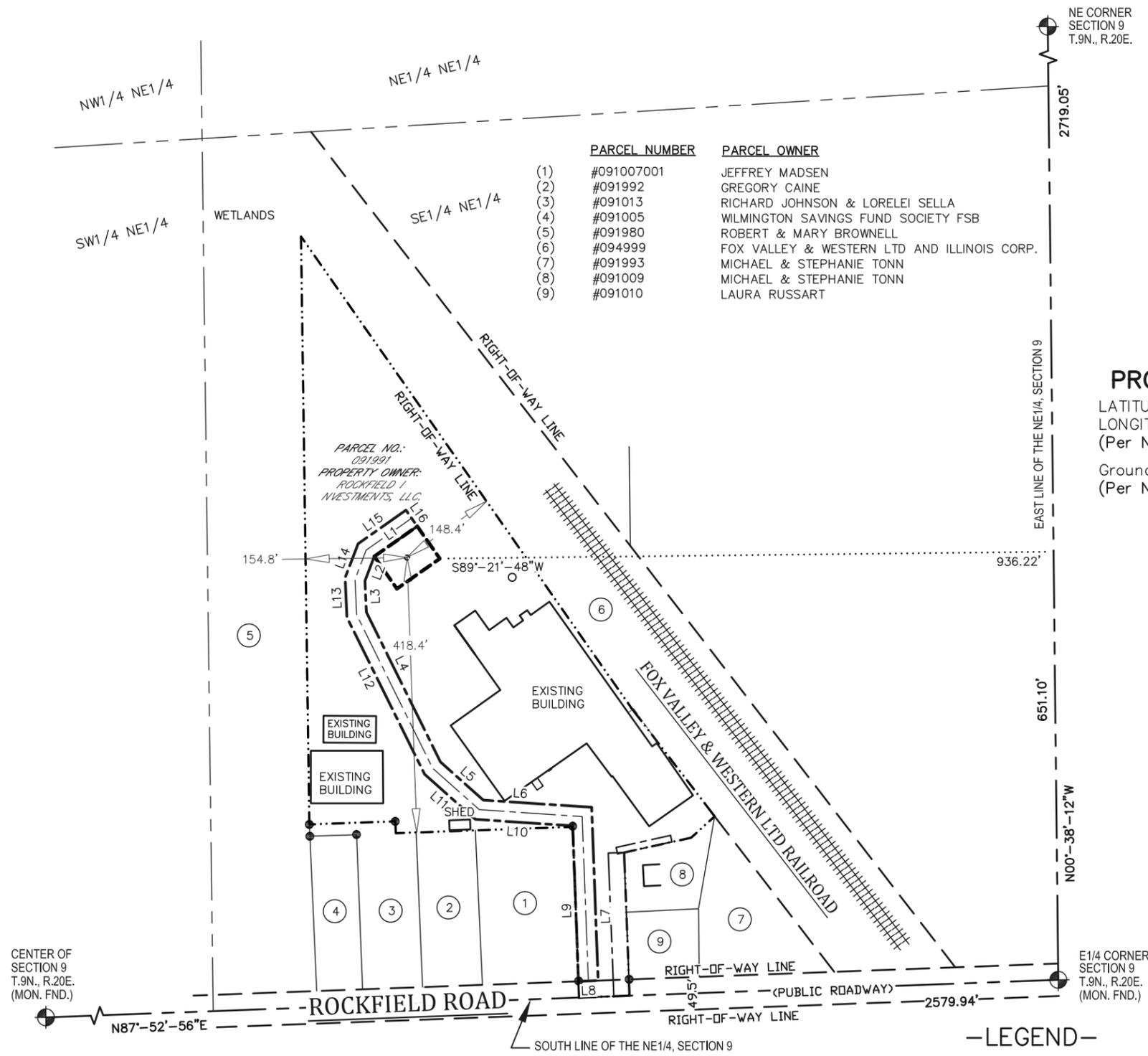
| PRELIMINARY DWGS | INT. |
|--------------------------------|------|
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD's REV.1 - 02/13/2019 | JAH |

| | |
|---------------------|--|
| STAMPED FINAL DWGS: | |
| | |
| | |

| | |
|-------------|-----------|
| CHECKED BY: | |
| PCM | |
| PLOT DATE: | 2/13/2019 |
| PROJECT #: | 15143 |
| FILE NAME: | SP-2.dgn |

SHEET NUMBER:
SP-2

K:151000\15143\15143\CAD\1 Plot\CD's\SP-2.dgn



BEARINGS REFERENCED TO THE WISCONSIN STATE PLANE COORDINATE SYSTEM (NAD27) SOUTH ZONE AND THE SOUTH LINE OF THE NE1/4, SECTION 9, T.9N., R.20E., WHICH BEARS: N87°-52'-56"E



PROPOSED TOWER BASE

LATITUDE: 43°-15'-33.47"
 LONGITUDE: 88°-07'-37.28"
 (Per North American Datum of 83/2011)
 Ground Elevation: 890.9'
 (Per North American Vertical Datum of 1988)

CALL DIGGERS HOTLINE TOLL FREE 1(800)242-8511
 OPERATES 24 HOURS A DAY 365 DAYS A YEAR
 WARNING
 CALL BEFORE YOU DIG
 48 HOURS BEFORE YOU DIG

CERTIFICATION:

I, CRAIG A. KEACH, PLS, A WISCONSIN PROFESSIONAL LAND SURVEYOR, LICENSE NO. S-2333, HEREBY CERTIFY TO PI TOWER DEVELOPMENT LLC, A DELAWARE LIMITED LIABILITY COMPANY; ITS SUCCESSORS, ASSIGNS, AND/OR DESIGNEES AND FIDELITY NATIONAL TITLE INSURANCE COMPANY THE FOLLOWING:

THIS SURVEYOR HAS RECEIVED AND REVIEWED THAT CERTAIN TITLE COMMITMENT NO. 23816415 ISSUED BY FIDELITY NATIONAL TITLE INSURANCE COMPANY WITH AN EFFECTIVE DATE OF OCTOBER 22, 2018 WHICH PROPOSES TO INSURE THE LANDS DESCRIBED UNDER ITS SCHEDULE A.

THIS SURVEYOR KNOWS OF HIS OWN KNOWLEDGE THAT THE LANDS DESCRIBED UNDER SAID SCHEDULE A OF THE TITLE COMMITMENT CONTAIN OR INCLUDE THE LANDS DESCRIBED IN AND DEPICTED ON THIS SURVEY.

THIS SURVEYOR FURTHER KNOWS OF HIS OWN KNOWLEDGE THAT THE EASEMENTS OF RECORD AND IDENTIFIED UNDER SCHEDULE B-2 OF SAID TITLE COMMITMENT ENCUMBER THE LANDS DESCRIBED ON THIS SURVEY, BUT SAID EASEMENTS WILL NOT INTERFERE WITH THE LOCATION OF THE "LEASED PREMISES" OR "EASEMENTS".

SURVEY NOTES:

-THE LOCATION OF THE EXISTING UTILITIES, AS SHOWN ON THIS PLAN, ARE APPROXIMATE ONLY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ACTUAL LOCATION AND DEPTH OF ALL EXISTING UTILITIES. THE OWNER AND THE SURVEYOR SHALL NOT BE RESPONSIBLE FOR ANY OMISSION OR VARIATION FROM THE LOCATION SHOWN.

-THIS IS NOT A BOUNDARY SURVEY OF THE PARENT PARCEL. THIS SURVEY REPRESENTS THE LEASED PREMISES AND 30' WIDE ACCESS & UTILITY EASEMENT ONLY.

-ACCORDING TO FEDERAL EMERGENCY MANAGEMENT AGENCY MAPS, THE PROPOSED TELECOMMUNICATIONS SITE IS LOCATED IN ZONE "X", COMMUNITY PANEL NO. 55131C0269D, DATED NOVEMBER 20 2013, AND IS NOT IN A SPECIAL FLOOD HAZARD AREA. ZONE "X" IS DESIGNATED AS: "AREAS DETERMINED TO BE OUTSIDE OF 500-YEAR FLOOD PLAIN".

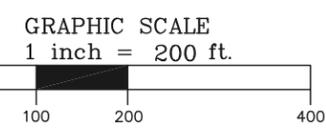
-NO WETLANDS AREAS HAVE BEEN INVESTIGATED BY THIS SURVEY.

-PRIVATE UTILITIES MARKED ON 8-31-2016.

-THE LEASED PREMISES IS CONTIGUOUS ALONG ITS COMMON BOUNDARIES TO THE 30' WIDE ACCESS & UTILITY EASEMENT, WHICH IN TURN IS CONTIGUOUS ALONG ITS COMMON BOUNDARIES TO THE ROCKFIELD ROAD RIGHT OF WAY, AND THAT THERE ARE NO GAPS, GORES, SPACES, OR OVERLAPS BETWEEN OR AMONG ANY OF SAID PARCELS OF LAND.

-LEGEND-

- = 1" X 18" IRON PIPE SET
- = 1" IRON PIPE FOUND
- ⊙ = COUNTY MONUMENT FOUND
- ⊙ = GAS METER
- ⊙ = FIBER OPTIC PEDESTAL
- ⊙ = TELEPHONE PEDESTAL
- ⊙ = EXISTING POWER POLE
- OPL- = OVERHEAD ELECTRIC
- G- = BURIED GAS
- F- = BURIED FIBER OPTIC
- T- = BURIED TELEPHONE
- E- = BURIED ELECTRIC
- = PROPERTY LINE



SURVEYOR'S CERTIFICATE

To: PI Tower Development LLC, a Delaware limited liability company; its successors, assigns and/or designees and Fidelity National Title Insurance Company.

I, Craig A. Keach, Professional Land Surveyor of Meridian Surveying, LLC., certify that under the direction of Parallel Infrastructure, I have surveyed and mapped the proposed area within the specified lands in accordance with Wisconsin administrative code chapter A-E 7 and that the map shown is a true and accurate representation thereof to the best of my knowledge and belief.

Dated this _____ day of _____, 2018.

WISCONSIN PROFESSIONAL LAND SURVEYOR
 Craig A. Keach, S-2333

SURVEYED FOR:
Edge
 Consulting Engineers, Inc.
 624 Water Street
 Prairie du Sac, WI 53578
 608.644.1449 voice
 608.644.1549 fax
 www.edgeconsult.com

SURVEYED FOR:
Parallel
 INFRASTRUCTURE
 7411 FULLERTON STREET, SUITE 110
 JACKSONVILLE, FL 32256

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

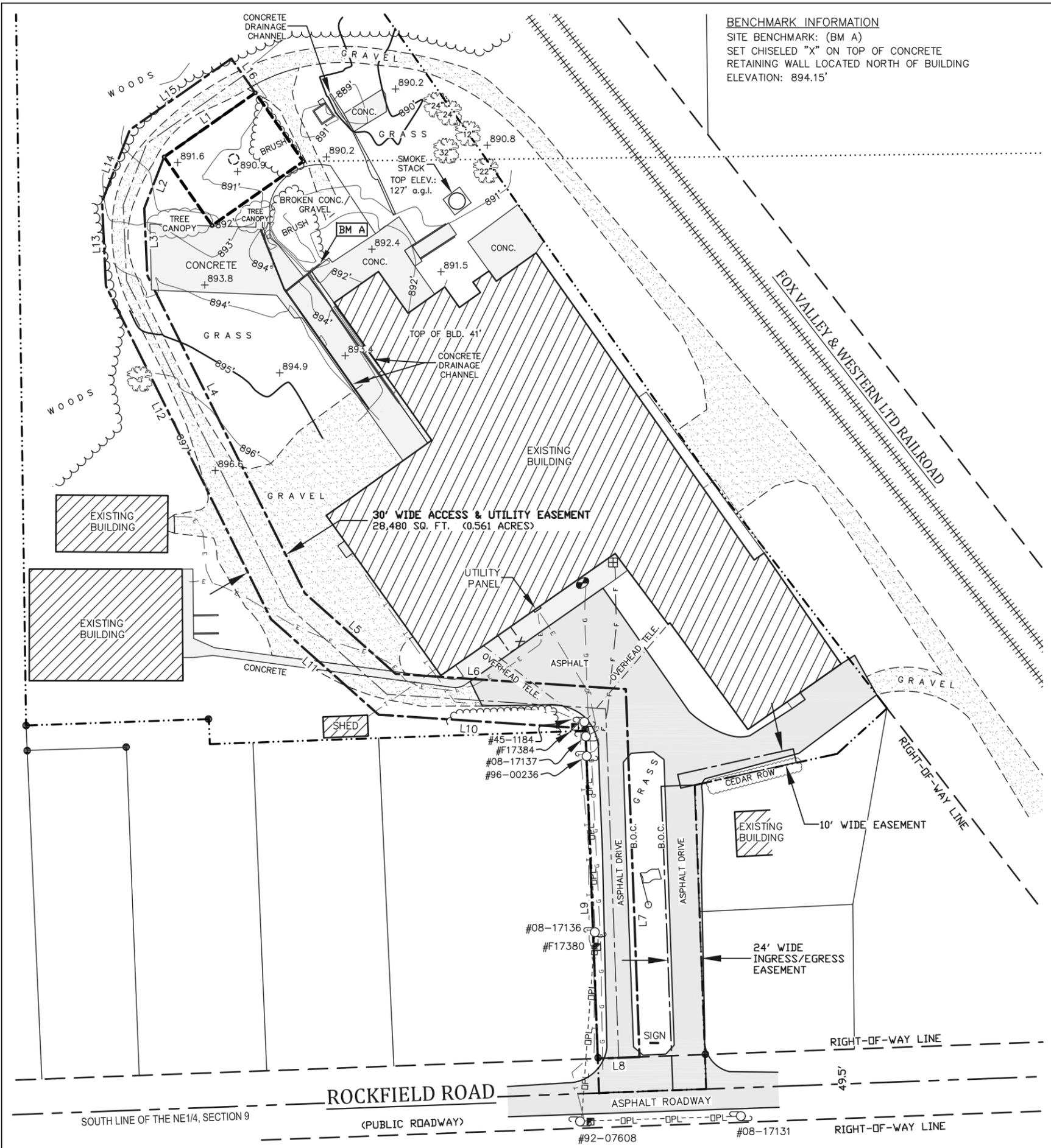
SITE NAME: **ROCKFIELD**
 SITE NUMBER: **PIW040**
 SITE ADDRESS:
N132W17400 ROCKFIELD ROAD
RICHFIELD, WI 53076

PROPERTY OWNER:
 ROCKFIELD INVESTMENTS, LLC.
 13416 WATERTOWN PLANK ROAD
 SUITE 255
 ELM GROVE, WI 53122
 PARCEL NO.: 091991
 ZONED: MANUFACTURING
 DEED REFERENCE: DOCUMENT NO. 1123519

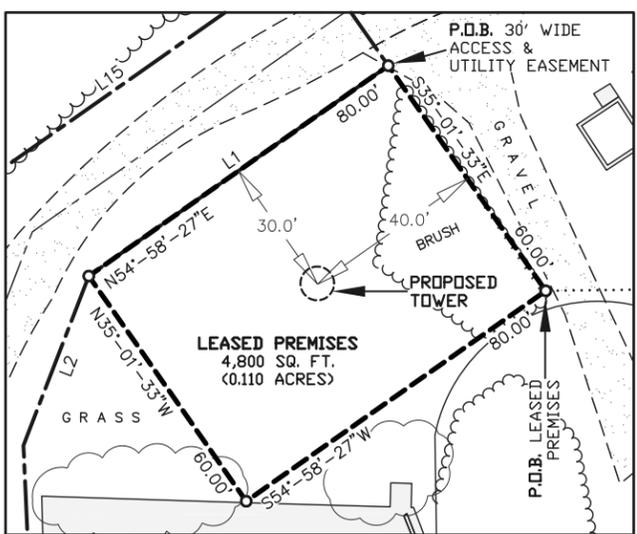
SURVEY PLAT
 FOR
PARALLEL INFRASTRUCTURE
 BEING A PART OF THE SE1/4 OF THE
 NE1/4, SECTION 9, T.9N., R.20E.,
 TOWN OF GERMANTOWN,
 WASHINGTON COUNTY, WISCONSIN

| NO. | DATE | DESCRIPTION | BY |
|-----|----------|----------------------------|------|
| 3 | 11-1-18 | Added Revised Title Report | J.B. |
| 2 | 11-17-16 | Added Lease & Easement | J.B. |
| 1 | 9-01-16 | Preliminary Survey | J.D. |

| | |
|--------------------|--------------------------|
| DRAWN BY: J.D. | FIELD WORK DATE: 8-31-16 |
| CHECKED BY: C.A.K. | FIELD BOOK: X |
| JOB NO.: 9012 | SHEET 1 OF 3 |



BENCHMARK INFORMATION
 SITE BENCHMARK: (BM A)
 SET CHISELED "X" ON TOP OF CONCRETE
 RETAINING WALL LOCATED NORTH OF BUILDING
 ELEVATION: 894.15'



SCALE: 1"=40'

SURVEYOR'S CERTIFICATE
 To: PI Tower Development LLC, a Delaware limited liability company; its successors, assigns and/or designees and Fidelity National Title Insurance Company.

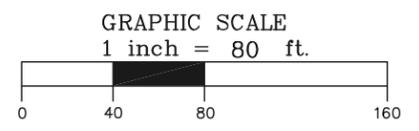
I, Craig A. Keach, Professional Land Surveyor of Meridian Surveying, LLC., certify that under the direction of Parallel Infrastructure, I have surveyed and mapped the proposed area within the specified lands in accordance with Wisconsin administrative code chapter A-E 7 and that the map shown is a true and accurate representation thereof to the best of my knowledge and belief.

Dated this _____ day of _____, 2018.

WISCONSIN PROFESSIONAL LAND SURVEYOR
 Craig A. Keach, S-2333

| Line # | Direction | Length |
|--------|-------------|---------|
| L1 | S54°58'27"W | 80.00' |
| L2 | S21°07'35"W | 39.65' |
| L3 | S02°34'35"E | 47.85' |
| L4 | S26°24'22"E | 254.39' |
| L5 | S48°25'49"E | 87.22' |
| L6 | S86°12'08"E | 165.65' |
| L7 | S02°08'46"E | 263.77' |
| L8 | S87°51'14"W | 30.00' |
| L9 | N02°08'46"W | 236.74' |
| L10 | N86°12'08"W | 148.87' |
| L11 | N48°25'49"W | 103.32' |
| L12 | N26°24'22"W | 266.55' |
| L13 | N02°34'35"W | 60.48' |
| L14 | N21°07'35"E | 55.08' |
| L15 | N54°58'27"E | 89.13' |
| L16 | S35°01'33"E | 30.00' |

- LEGEND—**
- = 1" X 18" IRON PIPE SET
 - = 1" IRON PIPE FOUND
 - ⊕ = COUNTY MONUMENT FOUND
 - ⊙ = GAS METER
 - ⊞ = FIBER OPTIC PEDESTAL
 - ⊞ = TELEPHONE PEDESTAL
 - ⊞ = EXISTING POWER POLE
 - OPL- = OVERHEAD ELECTRIC
 - G- = BURIED GAS
 - F- = BURIED FIBER OPTIC
 - T- = BURIED TELEPHONE
 - E- = BURIED ELECTRIC
 - - - = PROPERTY LINE
 - B.O.C. = BACK OF CURB
 - 🌳 = EXISTING TREE



SURVEYED FOR:

Edge
 Consulting Engineers, Inc.
 624 Water Street
 Prairie du Sac, WI 53578
 608.644.1449 voice
 608.644.1549 fax
 www.edgeconsult.com

SURVEYED FOR:

Parallel
 INFRASTRUCTURE
 7411 FULLERTON STREET, SUITE 110
 JACKSONVILLE, FL 32256

MERIDIAN
 SURVEYING, LLC

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

SITE NAME: **ROCKFIELD**

SITE NUMBER: **PIW040**

SITE ADDRESS:
N132W17400 ROCKFIELD ROAD
RICHFIELD, WI 53076

PROPERTY OWNER:
 ROCKFIELD INVESTMENTS, LLC.
 13416 WATERTOWN PLANK ROAD
 SUITE 255
 ELM GROVE, WI 53122

PARCEL NO.: 091991

ZONED: MANUFACTURING

DEED REFERENCE: DOCUMENT NO. 1123519

SURVEY PLAT
 FOR
PARALLEL INFRASTRUCTURE
 BEING A PART OF THE SE1/4 OF THE
 NE1/4, SECTION 9, T.9N., R.20E.,
 TOWN OF GERMANTOWN,
 WASHINGTON COUNTY, WISCONSIN

| NO. | DATE | DESCRIPTION | BY |
|-----|----------|----------------------------|------|
| 3 | 11-1-18 | Added Revised Title Report | J.B. |
| 2 | 11-17-16 | Added Lease & Easement | J.B. |
| 1 | 9-01-16 | Preliminary Survey | J.D. |

DRAWN BY: J.D. FIELD WORK DATE: 8-31-16

CHECKED BY: C.A.K. FIELD BOOK: X

JOB NO.: 9012 SHEET 2 OF 3

LEASED PREMISES

Part of the Southeast Quarter (SE1/4) of the Northeast Quarter (NE1/4) of Section Nine (9), Township Nine (9) North, Range Twenty (20) East, Town of Germantown, Washington County, Wisconsin containing 4,800 square feet (0.110 acres) of land and being described by:

Commencing at the East Quarter Corner of said Section 9; thence N00°-38'-12"W 651.10 feet along the east line of the NE1/4 of said Section 9; thence S89°-21'-48"W 936.22 feet to the point of beginning; thence S54°-58'-27"W 80.00 feet; thence N35°-01'-33"W 60.00 feet; thence N54°-58'-27"E 80.00 feet; thence S35°-01'-33"E 60.00 feet to the point of beginning, being subject to any and all easements and restrictions of record. Being a part of the Parent Parcel as forth in that certain Quit Claim Deed dated December 31, 2005 and recorded April 14, 2006 in Instrument No. 1123519, records of Washington County, Wisconsin.

30' WIDE ACCESS & UTILITY EASEMENT

Part of the Southeast Quarter (SE1/4) of the Northeast Quarter (NE1/4) of Section Nine (9), Township Nine (9) North, Range Twenty (20) East, Town of Germantown, Washington County, Wisconsin containing 28,480 square feet (0.654 acres) of land and being described by:

Commencing at the East Quarter Corner of said Section 9; thence N00°-38'-12"W 651.10 feet along the east line of the NE1/4 of said Section 9; thence S89°-21'-48"W 936.22 feet; thence N35°-01'-33"W 60.00 feet to the point of beginning; thence S54°-58'-27"W 80.00 feet; thence S21°-07'-35"W 39.65 feet; thence S02°-34'-35"E 47.85 feet; thence S26°-24'-22"E 254.39 feet; thence S48°-25'-49"E 87.22 feet; thence S86°-12'-08"E 165.65 feet; thence S02°-08'-46"E 263.77 feet to a point on the north line of Rockfield Road; thence S87°-51'-14"W 30.00 feet along said north line of Rockfield Road; thence N02°-08'-46"W 236.74 feet; thence N86°-12'-08"W 148.87 feet; thence N48°-25'-49"W 103.32 feet; thence N26°-24'-22"W 266.55 feet; thence N02°-34'-35"W 60.48 feet; thence N21°-07'-35"E 55.08 feet; thence N54°-58'-27"E 89.13 feet; thence S35°-01'-33"E 30.00 feet to the point of beginning, being subject to any and all easements and restrictions of record. Being a part of the Parent Parcel as forth in that certain Quit Claim Deed dated December 31, 2005 and recorded April 14, 2006 in Instrument No. 1123519, records of Washington County, Wisconsin.

PARENT PARCEL

All those parcels of land in Washington County, Wisconsin, described as follows:
That part of the Southeast Quarter of the NORTHEAST Quarter (SE¼) (NE¼) of Section Nine (9), Township Nine (9) North, Range Twenty (20) East, described as follows, viz:

Commencing at the East quarter corner of said Section 9; thence West on the East and West quarter line of said Section, 323.25 feet to the Westerly right-of-way line of the Chicago & Northwestern Railway; thence North 35 degrees 36 minutes West along said right-of-way line, 329.50 feet to the place of beginning of the lands herein described; thence continuing North 35 degrees 36 minutes West along said right-of-way line, 207.50 feet; thence North 33 degrees 04 minutes West along said right-of-way line, 876.43 feet; thence South 1 degree 13 minutes West, 894.30 feet; thence East, 131.37 feet; thence South 18.00 feet; thence East, 270.00 feet; thence South 00 degrees 07 minutes East, 260.20 feet to the East and West quarter line of said Sec. 9; thence East along said quarter line, 77.00 feet; thence North 00 degrees 07 minutes West, 218.00 feet; thence North 79 degrees 39 minutes East, 104.61 feet; thence North 49 degrees 48 minutes East 48.43 feet to the place of beginning.

Subject to the easements granted to ERWIN N. THEISEN and RITA M. THEISEN, his wife, by deed dated October 29, 1956, to-wit:

A right-of-way for purposes of ingress and egress over the following described land in the SE¼ of the NE¼ of Sec. 9, Township 9N, Range 20 East, Washington County, Wisconsin; Commencing at a point in the East and West Quarter line of said section, 654.43 feet West from the East Quarter corner of said section; thence continuing West along said quarter line 24.00 feet; thence N. 00 degrees 07 minutes W. 218.00 feet; thence East 24 feet, thence S. 00 degrees 07 minutes East 218.00 feet to the place of beginning.

Also, a right-of-way ten feet in width, the southerly line of which is described as follows: part of the SE¼ of the NE¼ of Sec. 9, Township 9N, Range 20 East, Washington County, Wisconsin; begin at the east quarter corner of said section; thence west along the east and west quarter line of said Section 550.35 feet; thence North 0 degrees 25 minutes West 236.81 feet; thence South 79 degrees 39 minutes West 29.61 feet to the place of beginning of the southerly line of said right-of-way; thence South 79 degrees 39 minutes West 85 feet to the point of terminus of the southerly line of said right-of-way.

Subject also to sidetrack agreement dated January 24, 1914 with Chicago & Northwestern Railway Company.

AND BEING the same property conveyed to William A. Liesener and Robert R. Reinders from Dart Industries Inc. (the successor and parent company of The West Band Aluminum Company), a corporation by Indenture dated December 01, 1982 and recorded December 01, 1982 in Instrument No. 449685; AND FURTHER CONVEYED to Donna M. Liesener from The Estate of William A. Liesener, deceased by Final Judgment dated May 04, 1990 and recorded May 11, 1990 in Instrument No. 559593; AND FURTHER CONVEYED to Rockfield Investments, LLC, a Wisconsin limited liability company from Donna M. Liesener and Robert R. Reinders by Quit Claim Deed dated December 31, 2005 and recorded April 14, 2006 in Instrument No. 1123519.
Tax Parcel No. 091991

TITLE REPORT REVIEW

TITLE REPORT: Fidelity National Title Insurance Company

COMMITMENT NO. 23816415

EFFECTIVE DATE: October 22, 2018

FEE SIMPLE TITLE VESTED IN: Rockfield Investments, LLC, a Wisconsin limited liability company

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

SCHEDULE B-II

(1-7) These are general statements and not specific encumbrances.

SURVEYED FOR:



SURVEYED FOR:



7411 FULLERTON STREET, SUITE 110
JACKSONVILLE, FL 32256



| | |
|---------------|--|
| SITE NAME: | ROCKFIELD |
| SITE NUMBER: | PIW040 |
| SITE ADDRESS: | N132W17400 ROCKFIELD ROAD RICHFIELD, WI 53076 |

| | |
|-----------------|---|
| PROPERTY OWNER: | ROCKFIELD INVESTMENTS, LLC. 13416 WATERTOWN PLANK ROAD SUITE 255 ELM GROVE, WI 53122 |
| PARCEL NO.: | 091991 |
| ZONED: | MANUFACTURING |
| DEED REFERENCE: | DOCUMENT NO. 1123519 |

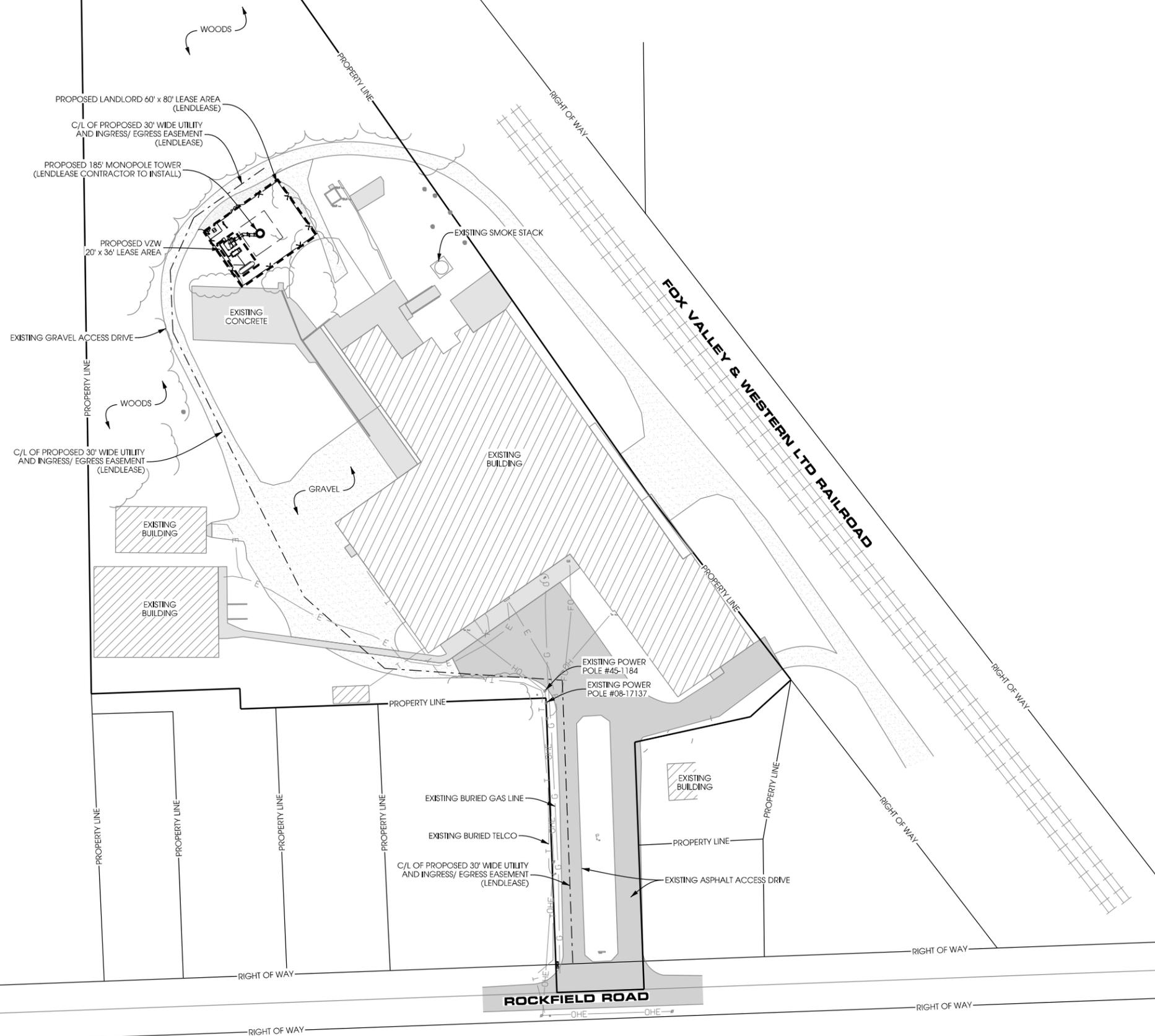
SURVEY PLAT
FOR
PARALLEL INFRASTRUCTURE
BEING A PART OF THE SE1/4 OF THE
NE1/4, SECTION 9, T.9N., R.20E.,
TOWN OF GERMANTOWN,
WASHINGTON COUNTY, WISCONSIN

| NO. | DATE | DESCRIPTION | BY |
|-----|----------|----------------------------|------|
| 3 | 11-1-18 | Added Revised Title Report | J.B. |
| 2 | 11-17-16 | Added Lease & Easement | J.B. |
| 1 | 9-01-16 | Preliminary Survey | J.D. |

| | | | |
|-------------|--------|------------------|---------|
| DRAWN BY: | J.D. | FIELD WORK DATE: | 8-31-16 |
| CHECKED BY: | C.A.K. | FIELD BOOK: | X |
| JOB NO.: | 9012 | SHEET | 3 OF 3 |



SECTION LINE



AERIAL OVERVIEW OF SITE

K:\15100\15143\CAD\PH\CD\VZW C-1.dgn

SITE PLAN
ROCKFIELD [418732]
RICHFIELD, WISCONSIN

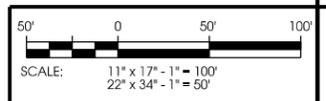
SHEET TITLE:

| | |
|--------------------------------|------|
| PRELIMINARY DWGS: | INI: |
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD'S REV.1 - 02/13/2019 | JAH |

| | |
|---------------------|--|
| STAMPED FINAL DWGS: | |
| | |

| | |
|-------------|-------------|
| CHECKED BY: | PCM |
| PLOT DATE: | 2/13/2019 |
| PROJECT #: | 15143 |
| FILE NAME: | VZW C-1.dgn |

SHEET NUMBER:
VZW C-1





PROPERTY LINE

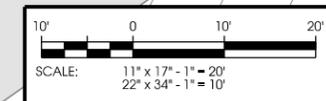


SITE OVERVIEW (LOOKING SW)



PROPOSED LEASE AREA (LOOKING NE)

K:\15100\15143\CAD\Plot\CD3\VZW_C-2.dgn



Edge Consulting Engineers, Inc.
 624 Water Street
 Profile du Soc, WI 53578
 608.644.1449 voice
 608.644.1519 fax
 www.edgeconsult.com

**COMPOUND PLAN
 ROCKFIELD [418732]
 RICHFIELD, WISCONSIN**

SHEET TITLE:

| | |
|--------------------------------|------|
| PRELIMINARY DWGS: | INI: |
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD's REV.1 - 02/13/2019 | JAH |

| |
|---------------------|
| STAMPED FINAL DWGS: |
| CHECKED BY: |
| PCM |
| PLOT DATE: |
| 2/13/2019 |
| PROJECT #: |
| 15143 |
| FILE NAME: |
| VZW C-2.dgn |

SHEET NUMBER:
VZW C-2



C/L OF PROPOSED 30' WIDE UTILITY AND INGRESS/ EGRESS EASEMENT (LENDLEASE)

EXISTING GRAVEL ACCESS DRIVE

PROPOSED LANDLORD 60' x 80' LEASE AREA (LENDLEASE)

PROPOSED VZW FIBER VAULT: INSTALLED BY LENDLEASE. SEE DETAILS ON PAGE VZW E-1

PROPOSED VZW BURIED UTILITY CONDUIT. SEE DETAILS ON PAGE VZW E-1

PROPOSED VZW BURIED UTILITY CONDUIT. SEE DETAILS ON PAGE VZW E-1

PROPOSED CHARLES CUBE 1003. SEE DETAILS ON PAGE VZW S-2

PROPOSED ILC. SEE DETAILS ON PAGE VZW S-2

PROPOSED BURIED CONDUITS FROM GENERATOR & LP TANK. SEE DETAILS ON PAGE VZW E-1

PROPOSED VZW .125" THK. ALUMINUM EQUIP. CABINETS ON 8'-0" x 9'-4" CONCRETE PAD. SEE DETAILS ON PAGES VZW S-1 THRU S-4

PROPOSED VZW EXTERIOR GENERATOR ON 4'-0" x 10' CONCRETE PAD; SEE PAGES VZW E-3 THRU E-5 FOR DETAILS

PROPOSED VZW 20' x 36' LEASE AREA

PROPOSED VZW LP TANK MOUNTED ON A 5'-0" x 12' CONCRETE PAD; SEE PAGE VZW E-6 FOR DETAILS

LP TANK 12'-5" NO SPARK RADIUS

PROPOSED 185' MONOPOLE TOWER BY LENDLEASE

PROPOSED VZW 23' ICE BRIDGE LENGTH: SEE DETAILS ON PAGE VZW A-4. VERIFY HEIGHT AND ORIENTATION OF MONOPOLE PORTS PRIOR TO INSTALLATION.

APPROX. OUTLINE OF 29' x 29' TOWER FOUNDATION PAD

GRAVEL COMPOUND

GRASS

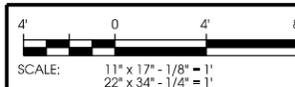
EXISTING BROKEN CONCRETE & GRAVEL

BRUSH

TREE CANOPY

EXISTING CONCRETE LOT

TREE CANOPY



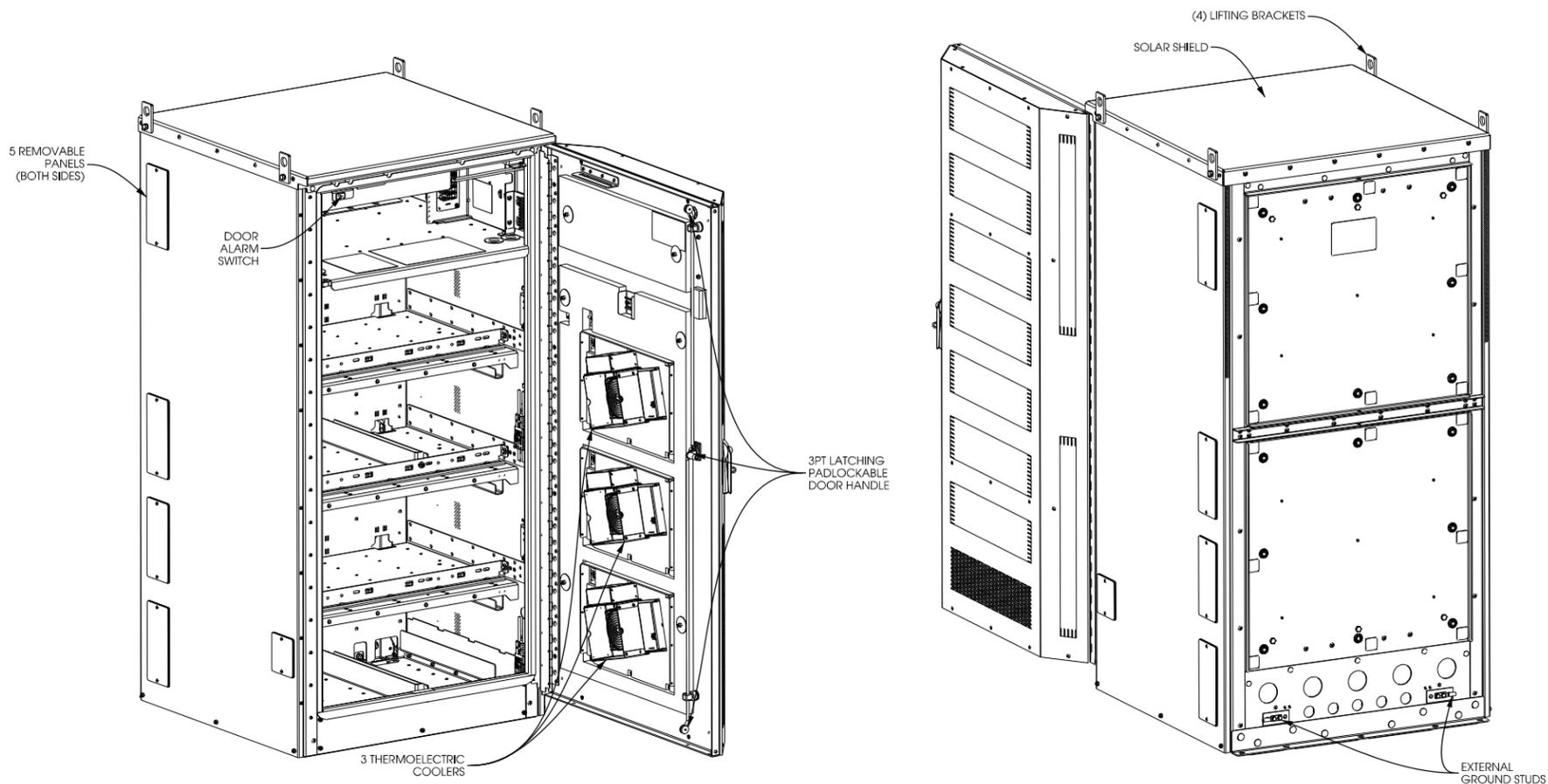
ENLARGED COMPOUND PLAN
ROCKFIELD [418732]
RICHFIELD, WISCONSIN

| PRELIMINARY DWGS: | INT: |
|--------------------------------|------|
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD'S REV.1 - 02/13/2019 | JAH |

| CHECKED BY: |
|-------------|
| PCM |
| PLOT DATE: |
| 2/13/2019 |
| PROJECT #: |
| 15143 |
| FILE NAME: |
| VZW C-3.dgn |

SHEET NUMBER:
VZW C-3

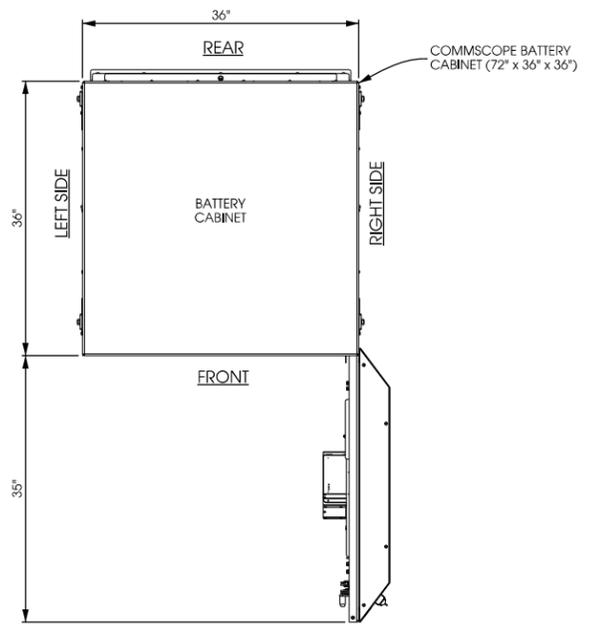
K:\15100\15143\CAD\Print\CD\3\VZW C-3.dgn



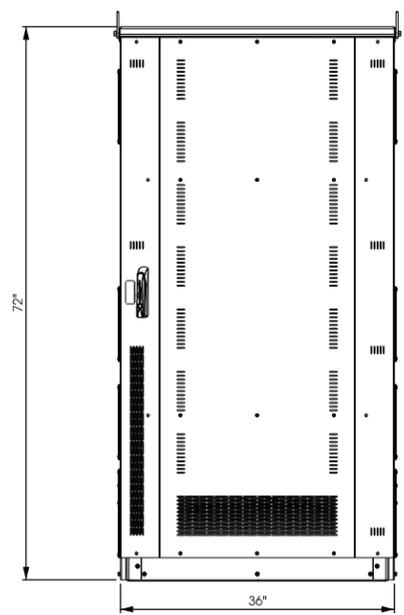
FRONT ISOMETRIC VIEW

REAR ISOMETRIC VIEW

| CHARLES CUBE-BB48E1HN1 | |
|------------------------|--|
| DIMENSIONS & WEIGHT | 72 H X 36 W X 36 D 650 LBS AS SHIPPED |
| COLOR | GRAY |
| MATERIAL | .125 WELDED ALUMINUM |
| ELECTRICAL OUTLET | ONE GFCI OUTLET |

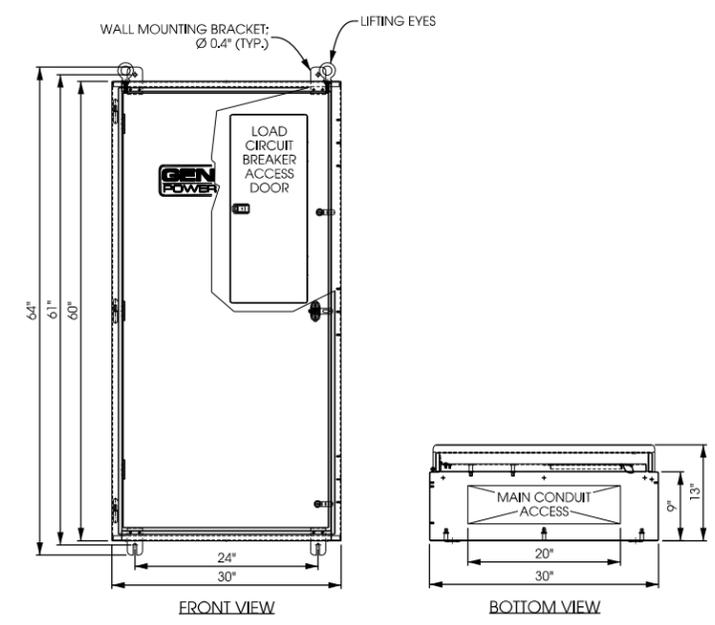


PLAN VIEW



FRONT ELEVATION VIEW

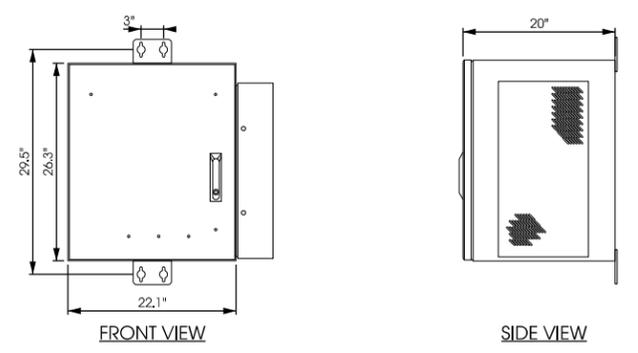
A **COMMSCOPE RBA72-36**
SCALE: NTS



| ILC RATED AMPS | VOLTAGE | PHASE | ENCLOSURE HEIGHT | ENCLOSURE WIDTH | ENCLOSURE DEPTH | WEIGHT (LBS) |
|----------------|---------|-------|------------------|-----------------|-----------------|--------------|
| 200 | 120/240 | 1 | 60" | 30" | 10" | 350 |
| 200 | 120/208 | 3 | 60" | 30" | 10" | 350 |

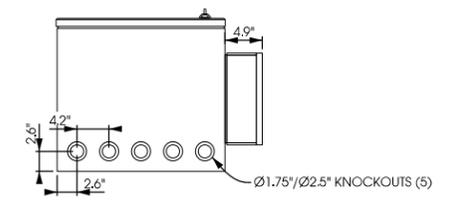
B **INTEGRATED LOAD CENTER**
SCALE: NTS

EBER ENCLOSURE
CHARLES UNIVERSAL BROADBAND ENCLOSURES (CUBE) PART # RL1003
-ACCESSORIES:
POLE MOUNT KIT, PART # 97-CABPMTKIT
H-FRAME HARDWARE KIT, PART # 97-001971-A
SLIDE OUT TRAY, PART # 97-001990-A
10\"/>



FRONT VIEW

SIDE VIEW



BOTTOM VIEW

C **CHARLES UNIVERSAL ENCLOSURE**
SCALE: NTS

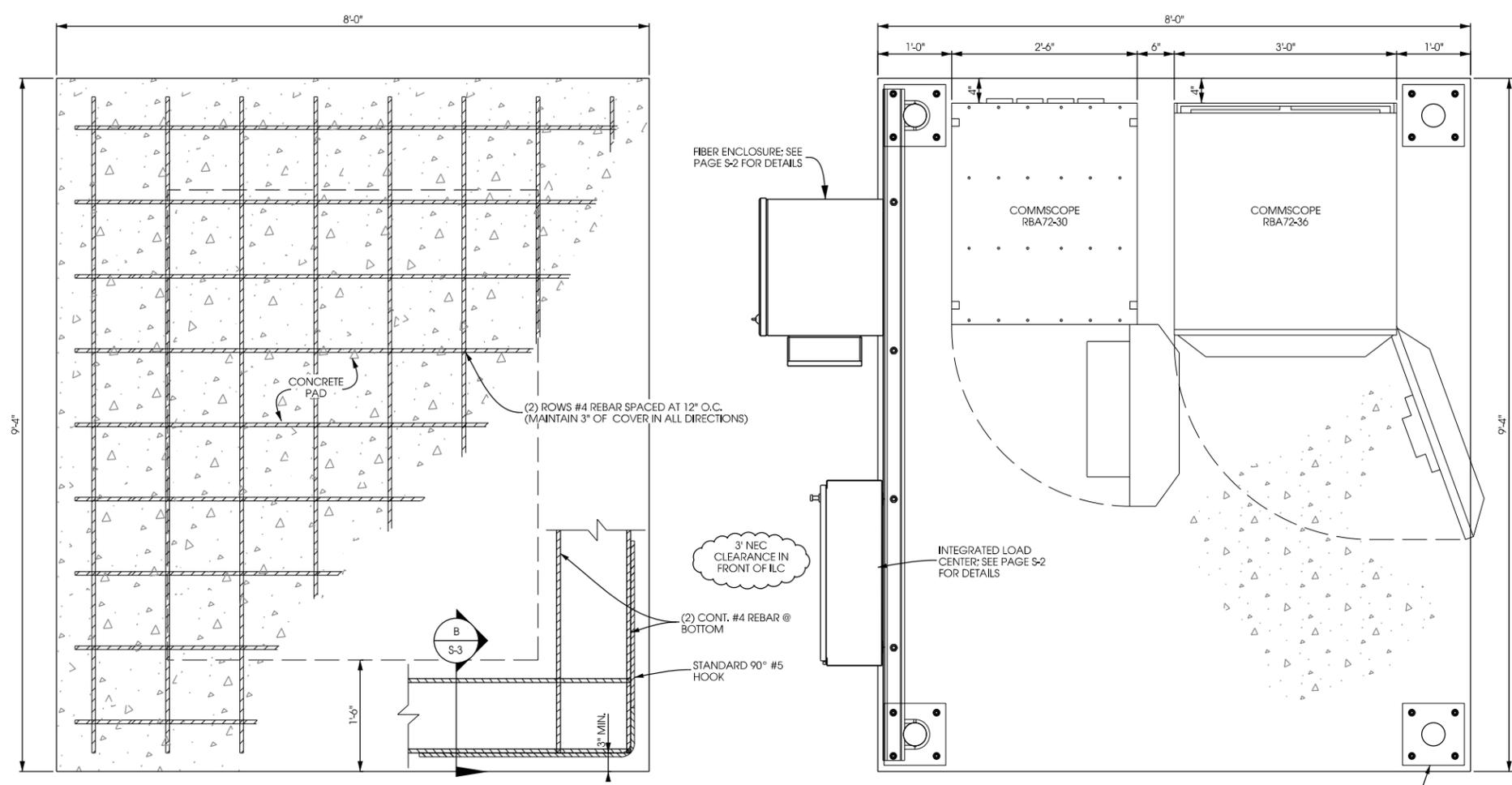
EQUIPMENT DETAILS
ROCKFIELD [418732]
RICHFIELD, WISCONSIN

SHEET TITLE:

| REVISION | DATE | BY | DESCRIPTION |
|--------------------------------|-------|----|-------------|
| PRELIMINARY DWGS | INIT: | | |
| CD 90's REV.2 - 10/24/2017 | APK | | |
| CD 90's REV.3 - 11/17/2017 | APK | | |
| CD 90's REV.4 - 04/18/2018 | JAH | | |
| CD 90's REV.5 - 06/18/2018 | CV | | |
| CD 90's REV.6 - 11/08/2018 | NAT | | |
| CD 90's REV.7 - 01/10/2019 | JAH | | |
| STAMPED PERMIT DWGS: | | | |
| PERMIT CD'S REV.1 - 02/13/2019 | JAH | | |
| STAMPED FINAL DWGS: | | | |

CHECKED BY:
PCM
PLOT DATE:
2/13/2019
PROJECT #:
15143
FILE NAME:
VZW S-2.dgn
SHEET NUMBER:

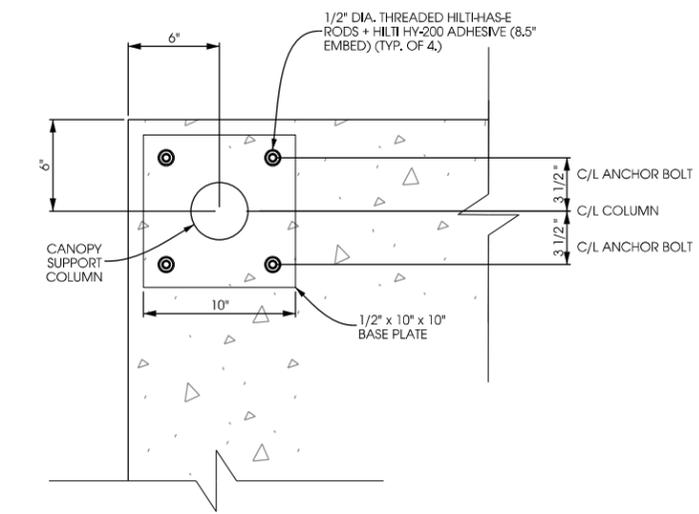
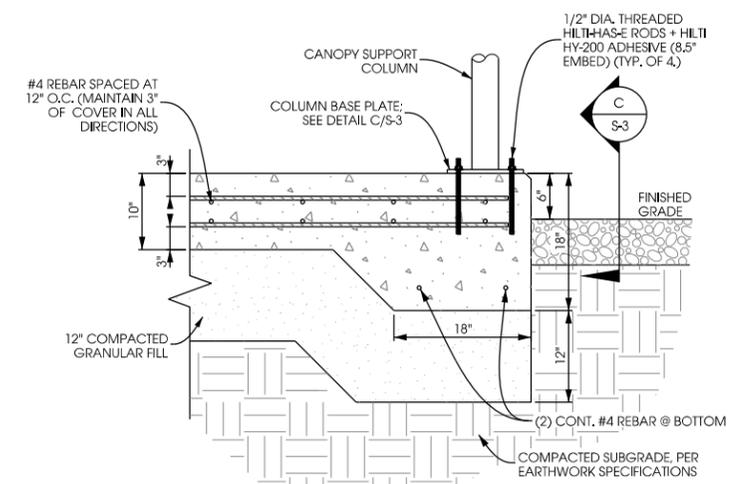
FOUNDATION DETAILS
ROCKFIELD [418732]
RICHFIELD, WISCONSIN



A EQUIPMENT PAD PLAN
 SCALE: NTS

B THICKENED SLAB FOUNDATION
 SCALE: NTS

NOTE:
 3" MINIMUM CONCRETE COVER OVER BAR AND WIRE



C COLUMN BASE PLATE DETAILS
 SCALE: NTS

THIS SPACE INTENTIONALLY LEFT BLANK

CONCRETE AND REINFORCING NOTES:

- 1.) ALL CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS AND MOST CURRENT VERSION OF ACI STANDARDS.
- 2.) ALL EXPOSED CONCRETE SURFACES EXPOSED TO VIEW SHALL HAVE A SURFACE FINISH SF-2.0 IN ACCORDANCE WITH ACI 301.
- 3.) ALL CONCRETE UNLESS SPECIFICALLY NOTED SHALL BE NORMAL WEIGHT (145 PCF) AND SHALL ACHIEVE A 28-DAY COMPRESSIVE STRENGTH (f_c) OF 3,000 PSI. EXPOSED EXTERIOR CONCRETE TO BE AIR ENTRAINED WITH 6% AIR CONTENT. CONTRACTOR TO PERFORM CONCRETE SLUMP TEST (4" MAX SLUMP). NO WATER TO BE ADDED AFTER SLUMP HAS BEEN MEASURED.
- 4.) ALL CONCRETE REINFORCING SHALL BE ASTM A615 GRADE 60 AND PLACED IN ACCORDANCE WITH ACI STANDARDS W/ 3" MIN COVERAGE IF CAST AGAINST EARTH AND 2" MIN COVERAGE OTHERWISE.
- 5.) REMOVE ALL ORGANIC MATERIAL, SOFT AREAS, AND POOR SOILS BENEATH FOUNDATION TO A DEPTH OF AT LEAST 2'-0" BELOW FOUNDATION.
- 6.) DESIGN BASED ON GEOTECHNICAL REPORT BY EDGE CONSULTING ENGINEERS, INC. DATED 08/28/17. CONTRACTOR TO REVIEW & FOLLOW RECOMMENDATIONS CONTAINED IN GEOTECHNICAL REPORT.
- 7.) SLAB NOT SUITABLE AT SITES WITH ORGANIC SOIL, UNCOMPACTED FILL, EXPANSIVE SOIL, OR SOILS SUSCEPTIBLE TO FROST HEAVE.
- 8.) CONTRACTOR TO ENSURE POSITIVE DRAINAGE FROM ALL FOUNDATIONS.
- 9.) FOUNDATION DESIGN BASED ON INFORMATION PROVIDED BY FIBREBOND DATED 10/6/16. DESIGN LOADS ARE IN ACCORDANCE WITH FIBREBOND DESIGN WITH THE EXCEPTION THAT THE SEISMIC LOAD IS REDUCED. THE FOUNDATION DESIGN IS DESIGNED FOR A SPECTRAL RESPONSE COEFFICIENT (SDS) = 0.395 AND SEISMIC IMPORTANCE FACTOR (IE) = 1.00 WHICH CORRESPONDS A REDUCED SEISMIC RESPONSE COEFFICIENT (CS) = 0.113. THE PROVIDED SEISMIC LOADS WERE MULTIPLIED BY 0.263. THE RATIO OF THE NEW CS TO ORIGINAL CS. THIS SEISMIC LOAD CORRESPONDS WITH APPROXIMATELY THE NORTHERN END OF FAYETTE COUNTY, IL. CONTRACTOR TO VERIFY EXACT PLATFORM/SKID SIZE AND TYPE.

SHEET TITLE:

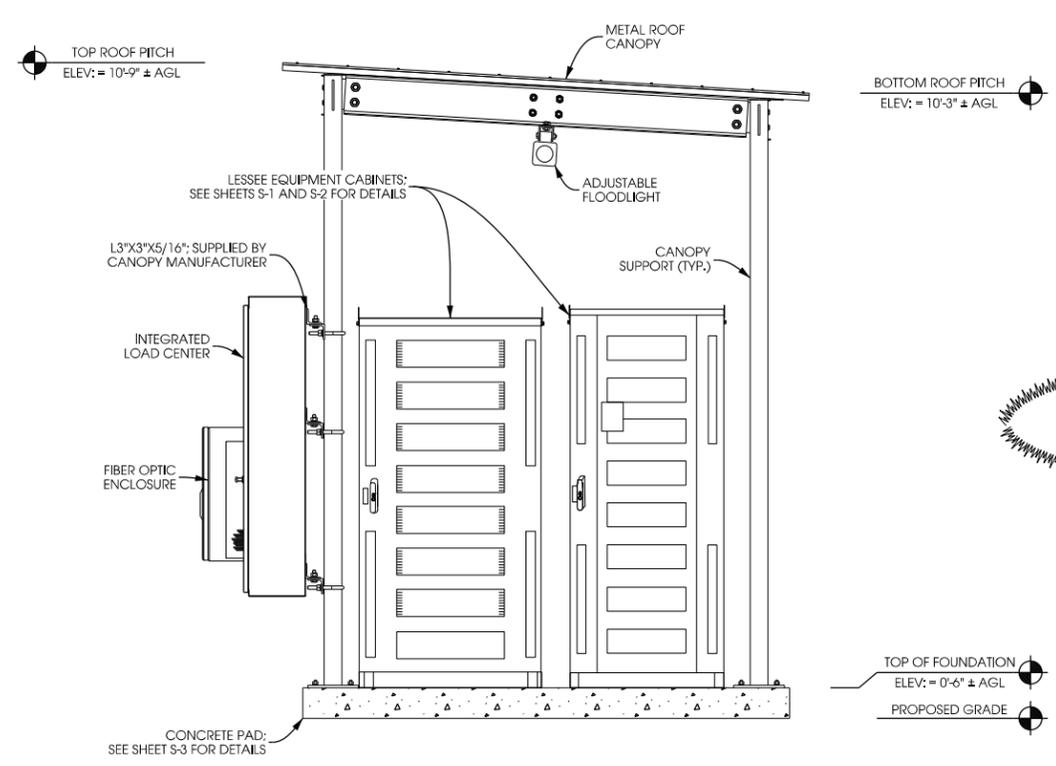
| PRELIMINARY DWGS: | INI: |
|--------------------------------|-------------|
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD'S REV.1 - 02/13/2019 | JAH |
| STAMPED FINAL DWGS: | |
| CHECKED BY: | PCM |
| PLLOT DATE: | 2/13/2019 |
| PROJECT #: | 15143 |
| FILE NAME: | VZW S-3.dgn |
| SHEET NUMBER: | |

K:\15100\15143\CAD\Plot\CD\VZW S-3.dgn

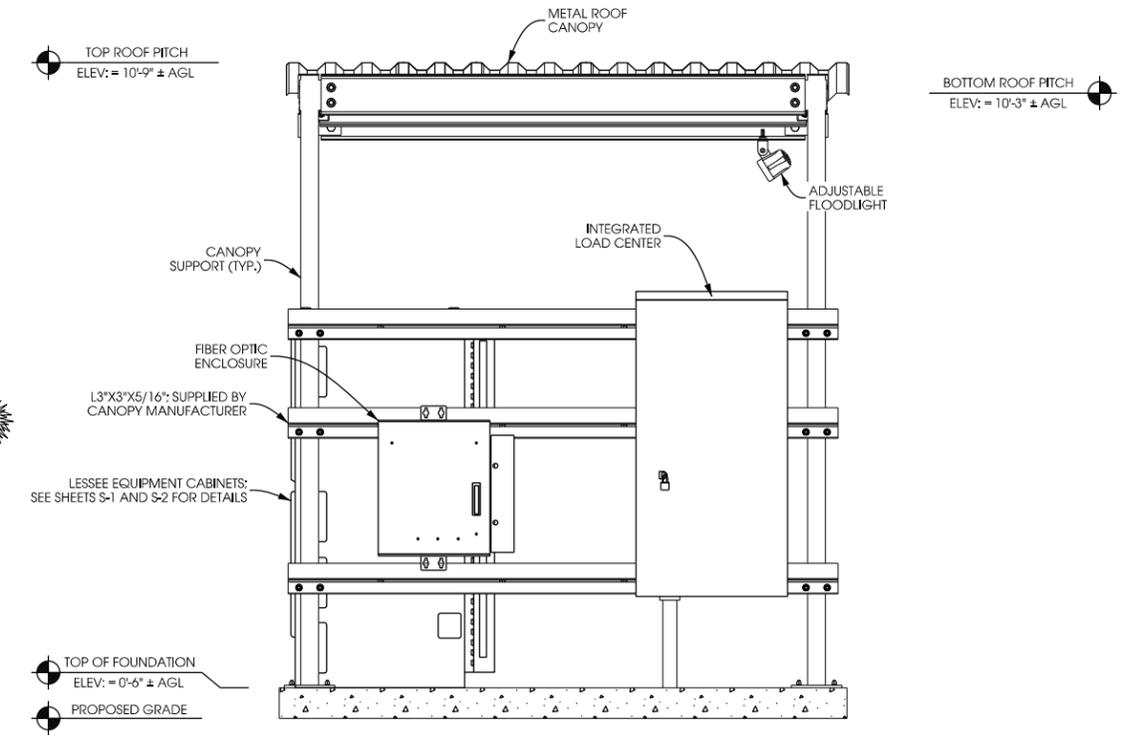
EQUIPMENT ELEVATIONS
ROCKFIELD [418732]
RICHFIELD, WISCONSIN

SHEET TITLE:

| PRELIMINARY DWGS: | INI: |
|--------------------------------|-------------|
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD'S REV.1 - 02/13/2019 | JAH |
| STAMPED FINAL DWGS: | |
| | |
| CHECKED BY: | PCM |
| PLOT DATE: | 2/13/2019 |
| PROJECT #: | 15143 |
| FILE NAME: | VZW S-4.dgn |
| SHEET NUMBER: | |

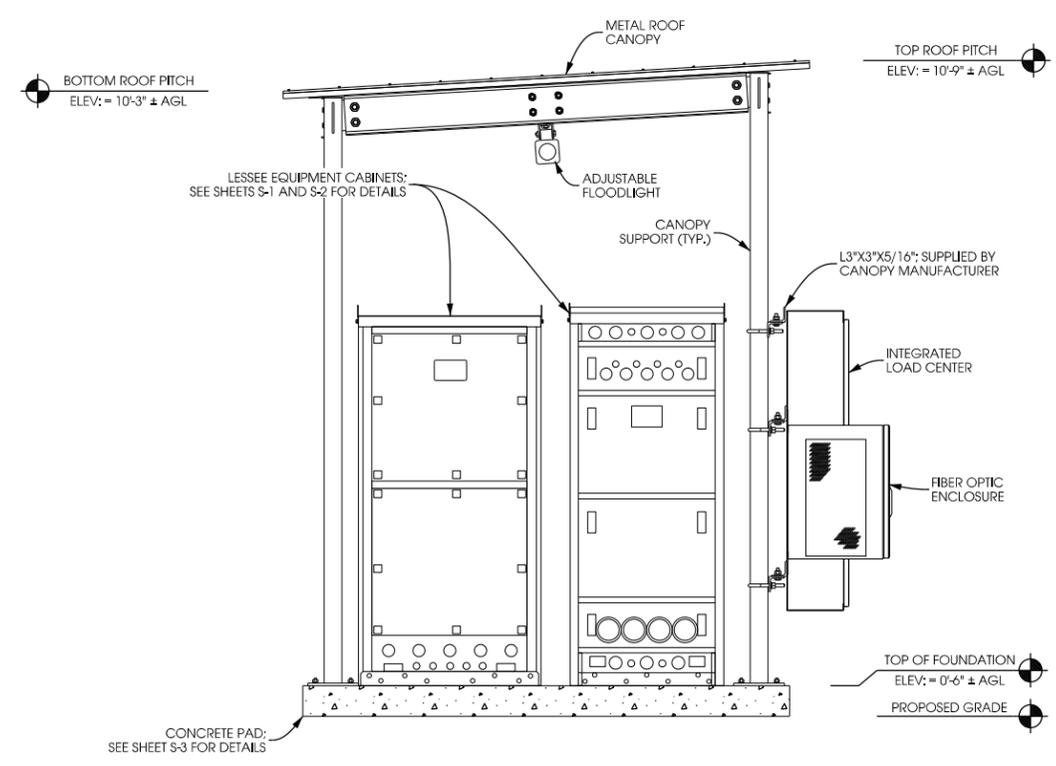
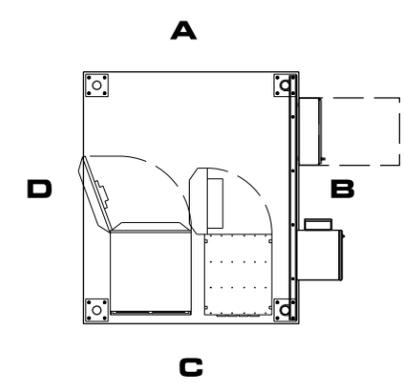


ELEVATION A

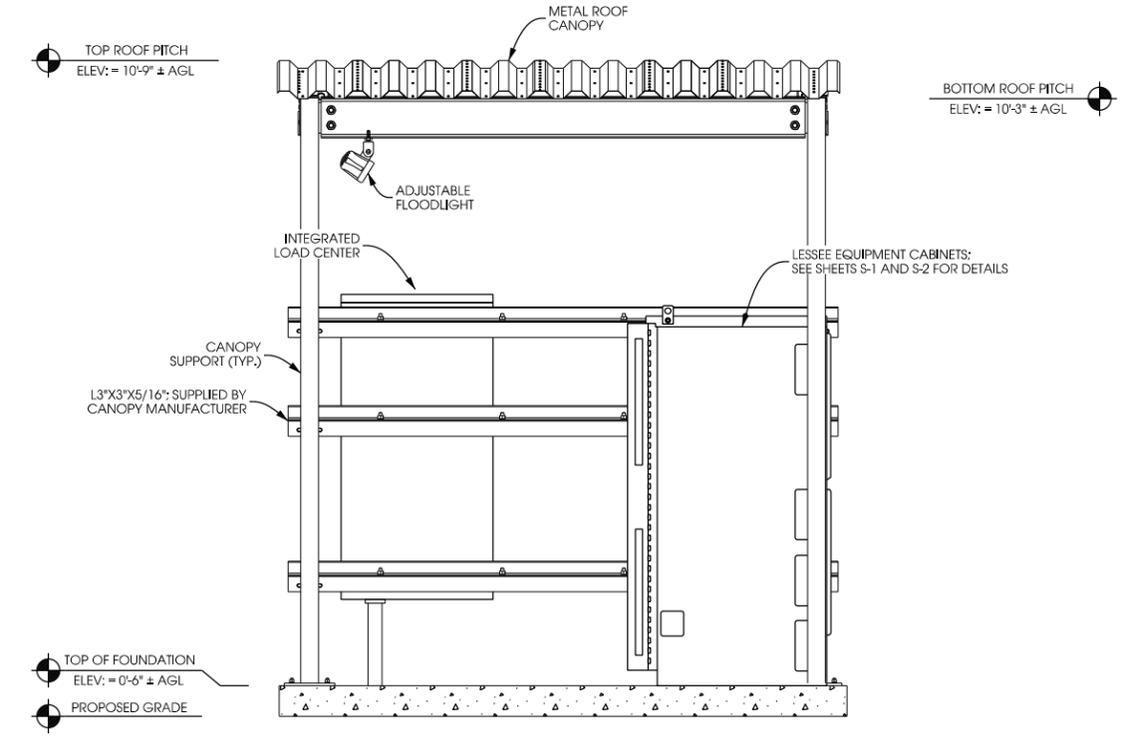


ELEVATION B

CANOPY NOTE:
 ELEVATIONS PROVIDED FOR CONVENIENCE.
 CANOPY PROVIDED AS KIT BY SABRE.
 MODEL # LISTED AT BOTTOM OF PAGE. VERIZON
 WIRELESS CONTRACTOR IS TO SUPPLY CANOPY



ELEVATION C



ELEVATION D

A EQUIPMENT CANOPY ELEVATIONS
 SCALE: 11" x 17" - 1/3" = 1'-0" 22" x 34" - 2/3" = 1'-0" SABRE DRAWING #: Z30199033

K:\15100\15143\CAD\Plot\CD\A VZW S-4.dgn

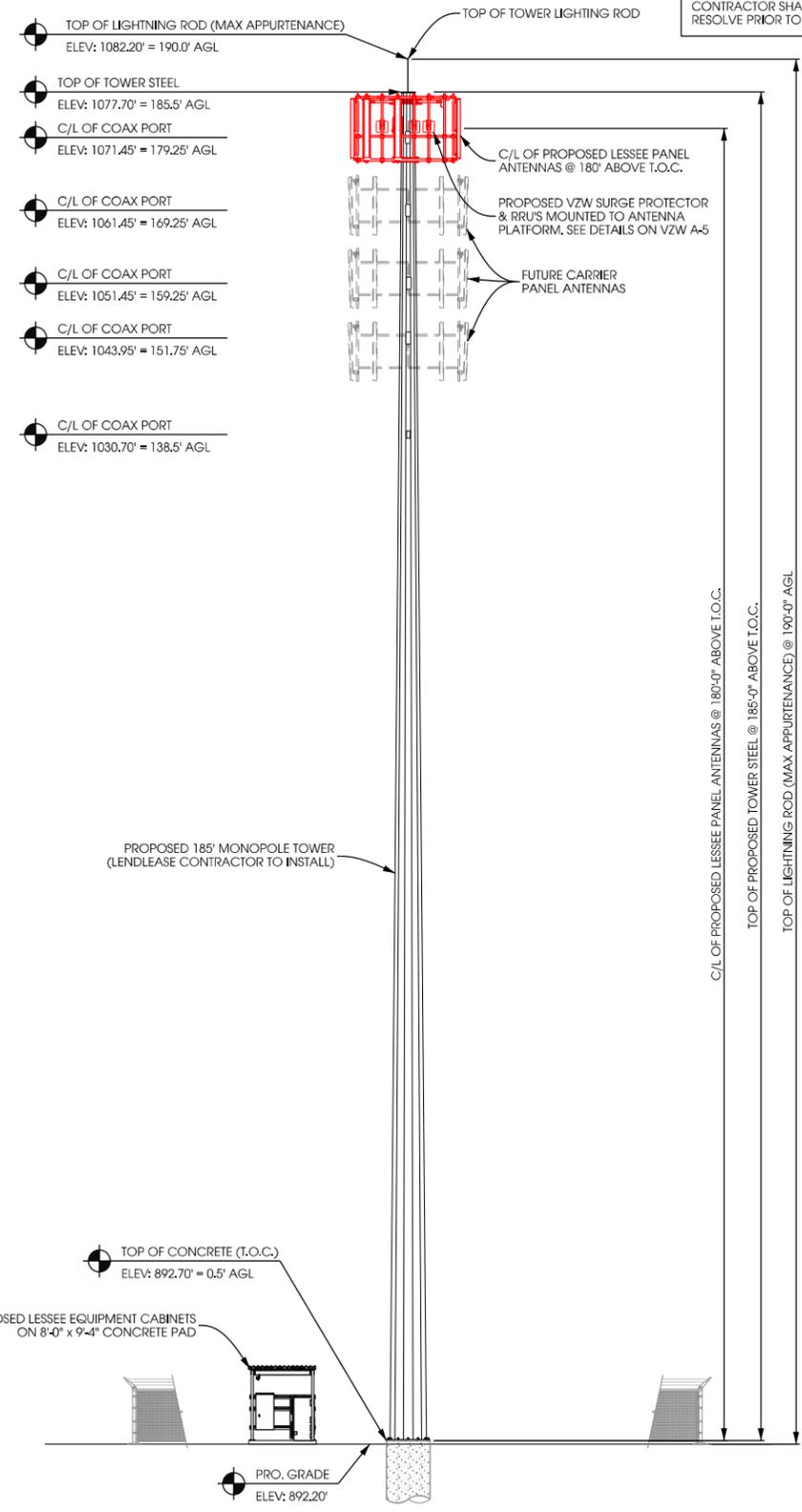
| HYBRID CABLE INFO | |
|---|------|
| QUANTITY | 3 |
| LENGTH FROM GROUND SURGE PROTECTOR TO TOWER | 30± |
| LENGTH FROM T.O.C. TO TOWER SURGE PROTECTOR C/L | 180± |
| TOTAL HYBRID CABLE LENGTH | 210± |

NOTE:
TOWER MANUFACTURER TO INSTALL PORTS AT LESSEE ANTENNA CL. VERIFY FINAL PORT HEIGHT, SIZE AND ORIENTATION WITH TOWER PLANS.

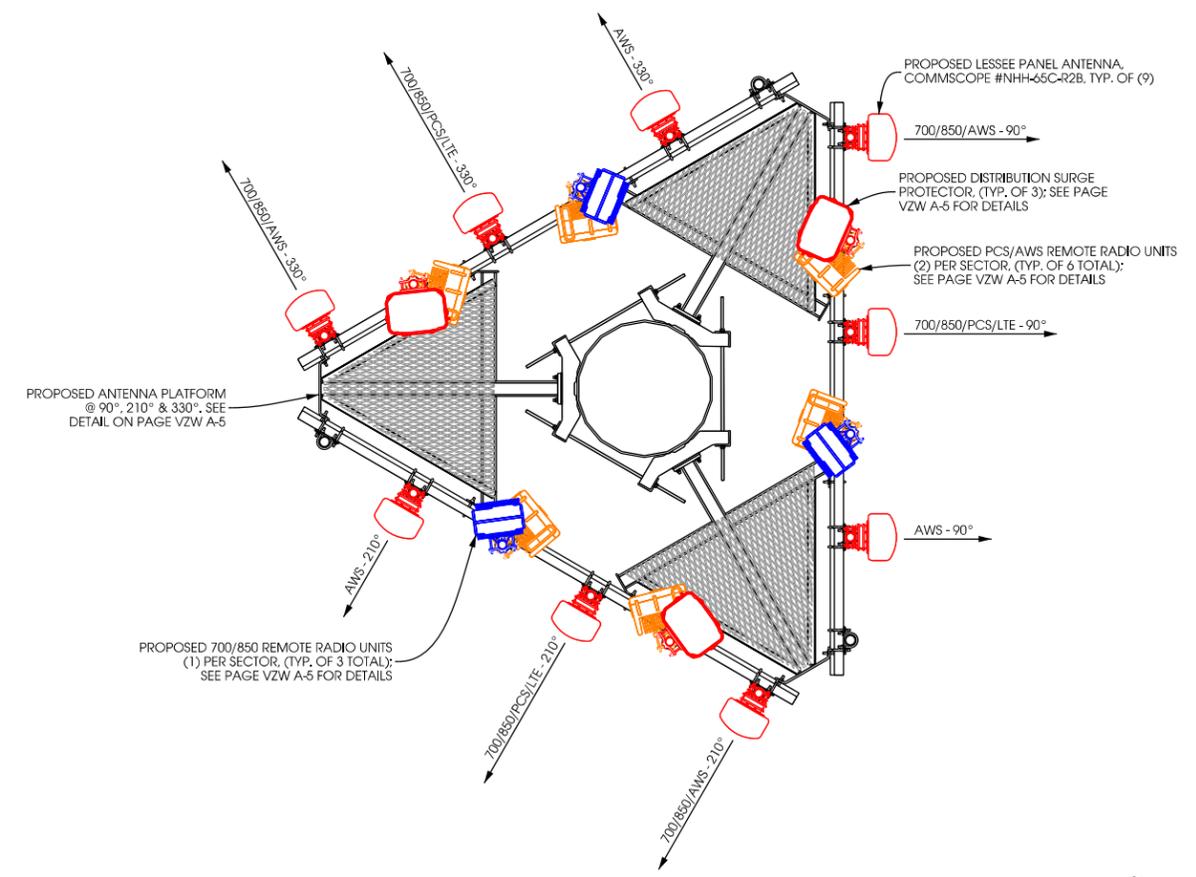
NOTES:
1.) CONTRACTOR TO VERIFY HEIGHT AND DIRECTION OF ANTENNA WITH PROJECT MANAGER & FINAL RF DESIGN.
2.) HYBRID CABLE LENGTH NOT TO EXCEED 367'.
3.) HYBRID JUMPER CABLE LENGTH NOT TO EXCEED 30'.
4.) IF CABLING LENGTH EXCEEDS MAXIMUM ALLOWED CONTRACTOR SHALL CONTACT CLIENT AND ENGINEER TO RESOLVE PRIOR TO CONSTRUCTION.

- LEGEND:**
- PROPOSED PANEL ANTENNA
 - PROPOSED DISTRIBUTION SURGE PROTECTOR
 - PROPOSED 700/850 REMOTE RADIO UNIT
 - PROPOSED PCS/AWS REMOTE RADIO UNIT

NOTES:
1.) ALL ANTENNA AZIMUTHS REFERENCED FROM TRUE NORTH.
2.) SEE PAGE A-5 FOR INSTALLATION REQUIREMENTS OF ANTENNAS AND EQUIPMENT.



A TOWER PROFILE (SOUTH ELEVATION)
SCALE: 11" x 17" - 1" = 24'-0"
22" x 34" - 1" = 12'-0"



B ANTENNA & EQUIPMENT ORIENTATION
SCALE: NTS

NOTE:
PLATFORM UPPER RAILING NOT SHOWN FOR CLARITY.

**TOWER ELEVATION
ROCKFIELD [418732]
RICHFIELD, WISCONSIN**

| SHEET TITLE: | |
|--------------------------------|-------------|
| PRELIMINARY DWGS: | INI: |
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD'S REV.1 - 02/13/2019 | JAH |
| STAMPED FINAL DWGS: | |
| CHECKED BY: | PCM |
| PLOT DATE: | 2/13/2019 |
| PROJECT #: | 15143 |
| FILE NAME: | VZW A-1.dgn |
| SHEET NUMBER: | |

EQUIPMENT CHANGE REQUEST FORM- ECR

| | | | | | |
|-----------------|-----------|-------------|-------------|----------------|--------------------------|
| Cell Name | Rockfield | RF Engineer | Shaoib Nagi | Cell ID | 657 |
| Location Number | 418732 | Market | Elgin-1 | Address | W132W17400 Rockfield Dr. |
| Date of Request | 11/9/2017 | | | City/State/Zip | Richfield, WI. 53076 |

NOTES:
RF DESIGN AND DETAIL ON THIS PAGE PROVIDED BY LESSEE AND ARE INCLUDED FOR CONVENIENCE. FINAL RF DESIGN TO BE VERIFIED WITH LESSEE. IF SIGNIFICANT CHANGES OR DISCREPANCIES ARE IDENTIFIED, CONTACT ENGINEER PRIOR TO INSTALLATION.

| | | PROPOSED CONFIGURATION | | | | Configuration | | Option-A2 | | | |
|--------|-----|------------------------|---------------------|----------------------|---------------|-----------------------|------------|-----------|---------------|-----------------|--------------|
| Sector | Pos | Port | RF Path | Antenna Manufacturer | Antenna Model | Antenna Serial Number | Centerline | Azimuth | Variable Tilt | Mechanical Tilt | Action |
| Alpha | A1 | L1 (-45) | 700/850 - RxTx0 | COMMSCOPE | NHH-65C-R2B | | 180 | 90 | 3 | | Add- Install |
| | | L2 (+45) | 700/850 - RxTx1 | | | | | | 1 | | |
| | | H1 (-45) | AWS - RxTx0 | | | | | | 1 | | |
| | | H2 (+45) | AWS - RxTx1 | | | | | | 1 | | |
| | | H3 (-45) | AWS - RxTx2 | | | | | | 1 | | |
| | A2 | L1 (-45) | 700/850 - RxTx2 | COMMSCOPE | NHH-65C-R2B | | 180 | 90 | 3 | | Add- Install |
| | | L2 (+45) | 700/850 - RxTx3 | | | | | | 3 | | |
| | | H1 (-45) | PCS LTE - RxTx0 | | | | | | 3 | | |
| | | H2 (+45) | PCS LTE - RxTx1 | | | | | | 3 | | |
| | | H3 (-45) | PCS LTE - RxTx2 | | | | | | 3 | | |
| | A3 | L1 (-45) | Unused at this time | COMMSCOPE | NHH-65C-R2B | | 180 | 90 | | | Unchanged |
| | | L2 (+45) | Unused at this time | | | | | | 3 | | |
| | | H1 (-45) | AWS-3 RxTx0 | | | | | | 3 | | |
| | | H2 (+45) | AWS-3 RxTx1 | | | | | | 3 | | |
| | | H3 (-45) | AWS-3 RxTx2 | | | | | | 3 | | |
| | A4 | L1 (-45) | Unused at this time | | | | | | | | Unchanged |
| | | L2 (+45) | Unused at this time | | | | | | | | |
| | | H1 (-45) | Unused at this time | | | | | | | | |
| | | H2 (+45) | Unused at this time | | | | | | | | |
| | | H3 (-45) | Unused at this time | | | | | | | | |
| Beta | B1 | L1 (-45) | 700/850 - RxTx0 | COMMSCOPE | NHH-65C-R2B | | 180 | 210 | 5 | | Add- Install |
| | | L2 (+45) | 700/850 - RxTx1 | | | | | | 3 | | |
| | | H1 (-45) | AWS - RxTx0 | | | | | | 3 | | |
| | | H2 (+45) | AWS - RxTx1 | | | | | | 3 | | |
| | | H3 (-45) | AWS - RxTx2 | | | | | | 3 | | |
| | B2 | L1 (-45) | 700/850 - RxTx2 | COMMSCOPE | NHH-65C-R2B | | 180 | 210 | 5 | | Add- Install |
| | | L2 (+45) | 700/850 - RxTx3 | | | | | | 5 | | |
| | | H1 (-45) | PCS LTE - RxTx0 | | | | | | 5 | | |
| | | H2 (+45) | PCS LTE - RxTx1 | | | | | | 5 | | |
| | | H3 (-45) | PCS LTE - RxTx2 | | | | | | 5 | | |
| | B3 | L1 (-45) | Unused at this time | COMMSCOPE | NHH-65C-R2B | | 180 | 210 | | | Unchanged |
| | | L2 (+45) | Unused at this time | | | | | | 5 | | |
| | | H1 (-45) | AWS-3 RxTx0 | | | | | | 5 | | |
| | | H2 (+45) | AWS-3 RxTx1 | | | | | | 5 | | |
| | | H3 (-45) | AWS-3 RxTx2 | | | | | | 5 | | |
| | B4 | L1 (-45) | Unused at this time | | | | | | | | Unchanged |
| | | L2 (+45) | Unused at this time | | | | | | | | |
| | | H1 (-45) | Unused at this time | | | | | | | | |
| | | H2 (+45) | Unused at this time | | | | | | | | |
| | | H3 (-45) | Unused at this time | | | | | | | | |
| GAMMA | G1 | L1 (-45) | 700/850 - RxTx0 | COMMSCOPE | NHH-65C-R2B | | 180 | 330 | 3 | | Add- Install |
| | | L2 (+45) | 700/850 - RxTx1 | | | | | | 1 | | |
| | | H1 (-45) | AWS - RxTx0 | | | | | | 1 | | |
| | | H2 (+45) | AWS - RxTx1 | | | | | | 1 | | |
| | | H3 (-45) | AWS - RxTx2 | | | | | | 1 | | |
| | G2 | L1 (-45) | 700/850 - RxTx2 | COMMSCOPE | NHH-65C-R2B | | 180 | 330 | 3 | | Add- Install |
| | | L2 (+45) | 700/850 - RxTx3 | | | | | | 3 | | |
| | | H1 (-45) | PCS LTE - RxTx0 | | | | | | 3 | | |
| | | H2 (+45) | PCS LTE - RxTx1 | | | | | | 3 | | |
| | | H3 (-45) | PCS LTE - RxTx2 | | | | | | 3 | | |
| | G3 | L1 (-45) | Unused at this time | COMMSCOPE | NHH-65C-R2B | | 180 | 330 | | | Unchanged |
| | | L2 (+45) | Unused at this time | | | | | | 3 | | |
| | | H1 (-45) | AWS-3 RxTx0 | | | | | | 3 | | |
| | | H2 (+45) | AWS-3 RxTx1 | | | | | | 3 | | |
| | | H3 (-45) | AWS-3 RxTx2 | | | | | | 3 | | |
| | G4 | L1 (-45) | Unused at this time | | | | | | | | Unchanged |
| | | L2 (+45) | Unused at this time | | | | | | | | |
| | | H1 (-45) | Unused at this time | | | | | | | | |
| | | H2 (+45) | Unused at this time | | | | | | | | |
| | | H3 (-45) | Unused at this time | | | | | | | | |

PROPOSED ANTENNA CONFIGURATION



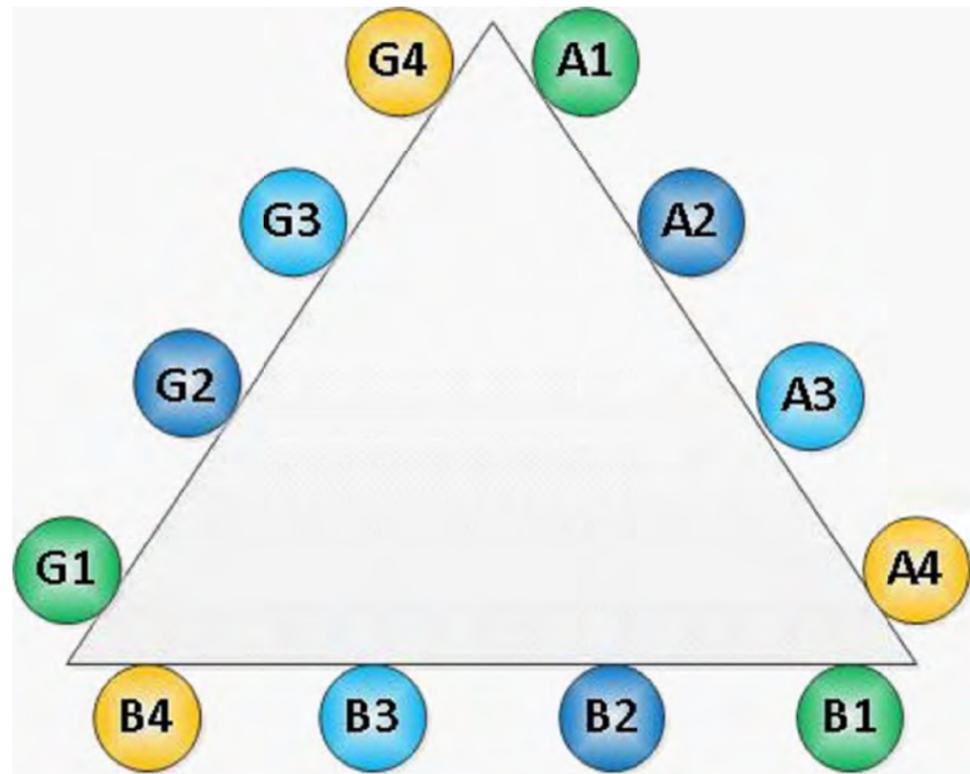
**ANTENNA CONFIGURATION
ROCKFIELD [418732]
RICHFIELD, WISCONSIN**

SHEET TITLE:

| | |
|--------------------------------|-------------|
| PRELIMINARY DWGS: | INI: |
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD's REV.1 - 02/13/2019 | JAH |
| STAMPED FINAL DWGS: | |
| CHECKED BY: | PCM |
| PLOT DATE: | 2/13/2019 |
| PROJECT #: | 15143 |
| FILE NAME: | VZW A-2.dgn |

SHEET NUMBER:
VZW A-2

K:\15100\15143\CAD\Plot\CD\A VZW A-2.dgn



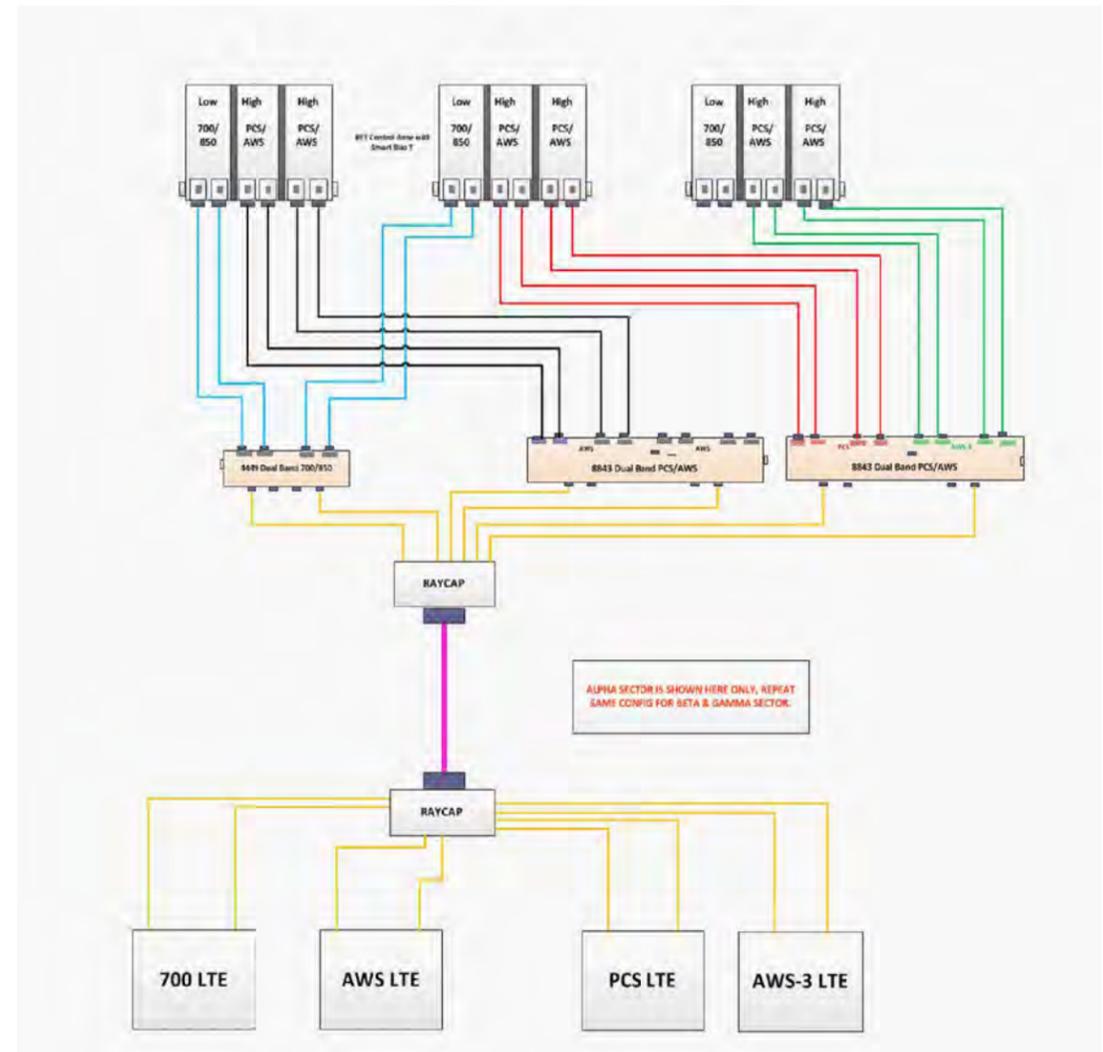
ANTENNA PLATFORM SCHEMATIC

FINAL CONFIGURATION

| FINAL CONFIGURATION | | | | | |
|---------------------|------------------|-------------------|-------------------|-------|-------|
| Passive Components | Location | Manufacturer | Component Model | Count | |
| | Top (Platform) | Ericsson | 4449 B13 | 3 | |
| | Top (Platform) | | | | |
| | Top (Platform) | Ericsson | 8843 B66/B2 | 6 | |
| | Top (Platform) | | | | |
| | Top (Platform) | Raycap | RCMDC-3315-PF-48 | 3 | |
| | Top (Platform) | | | | |
| | Bottom (Shelter) | | | | |
| | Bottom (Shelter) | Raycap | RCMDC-3315-PF-48 | 3 | |
| Bottom (Shelter) | | | | | |
| Coax | Sector | Coax Manufacturer | Type | Size | Count |
| | Alpha | | | | |
| | Beta | | | | |
| | Gamma | | | | |
| | Raycap | Andrew | HFT1206-24S49-XXX | 1 5/8 | 3 |

NOTES:
 RF DESIGN AND DETAIL ON THIS PAGE PROVIDED BY LESSEE AND ARE INCLUDED FOR CONVENIENCE. FINAL RF DESIGN TO BE VERIFIED WITH LESSEE. IF SIGNIFICANT CHANGES OR DISCREPANCIES ARE IDENTIFIED, CONTACT ENGINEER PRIOR TO INSTALLATION.

COMBINER CABLE DATA INFORMATION



NOTES:
 RF DESIGN AND DETAIL ON THIS PAGE PROVIDED BY LESSEE AND ARE INCLUDED FOR CONVENIENCE. FINAL RF DESIGN TO BE VERIFIED WITH LESSEE. IF SIGNIFICANT CHANGES OR DISCREPANCIES ARE IDENTIFIED, CONTACT ENGINEER PRIOR TO INSTALLATION.

PROPOSED ANTENNA CONFIGURATION

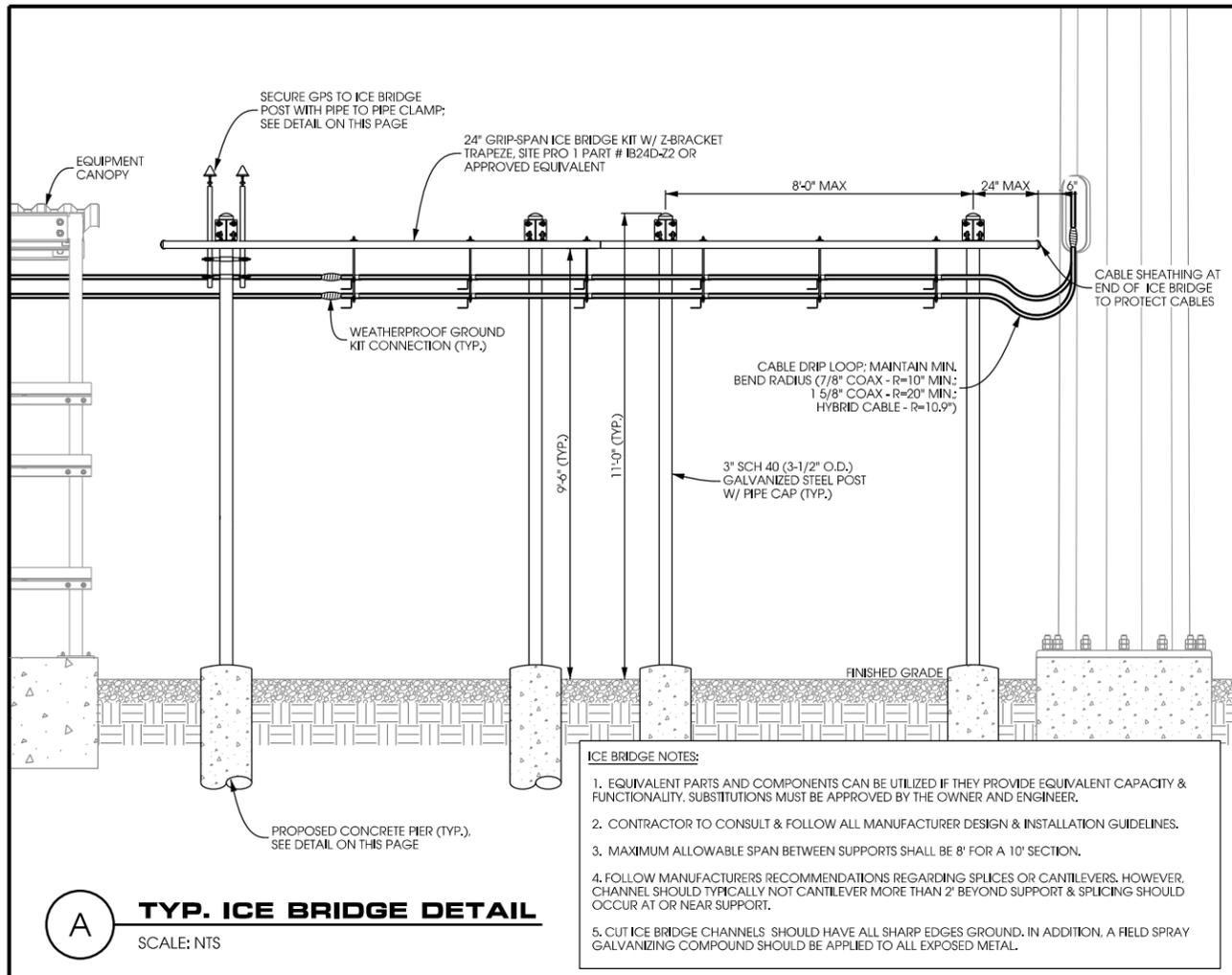
**ANTENNA CONFIGURATION
 ROCKFIELD [418732]
 RICHFIELD, WISCONSIN**

SHEET TITLE:

| | |
|--------------------------------|------|
| PRELIMINARY DWGS | INI: |
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD's REV.1 - 02/13/2019 | JAH |

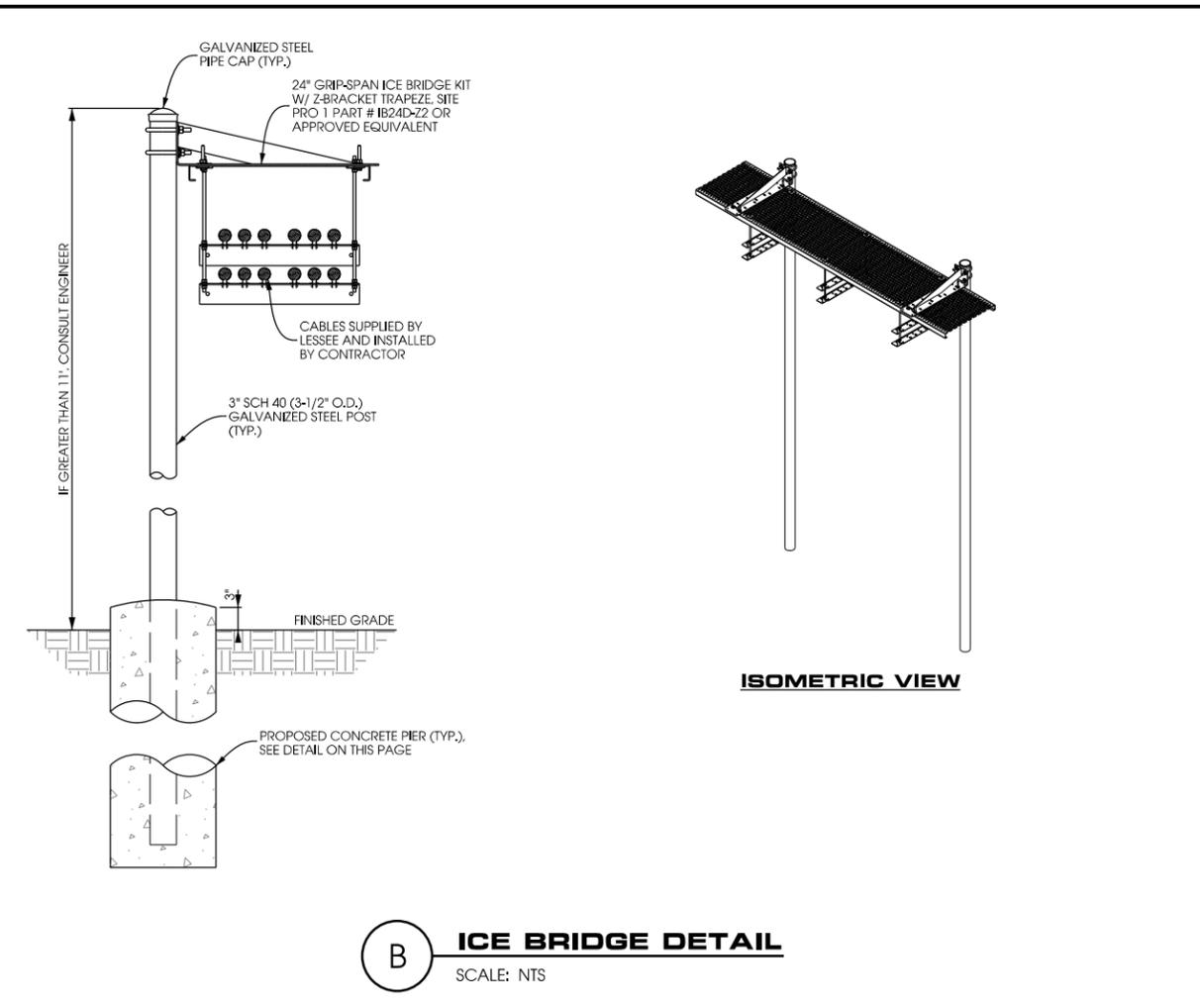
| | |
|---------------------|-------------|
| STAMPED FINAL DWGS: | |
| CHECKED BY: | PCM |
| PLOT DATE: | 2/13/2019 |
| PROJECT #: | 15143 |
| FILE NAME: | VZW A-3.dgn |

K:\15100\15143\CAD\Plot\CD\A\VZW A-3.dgn

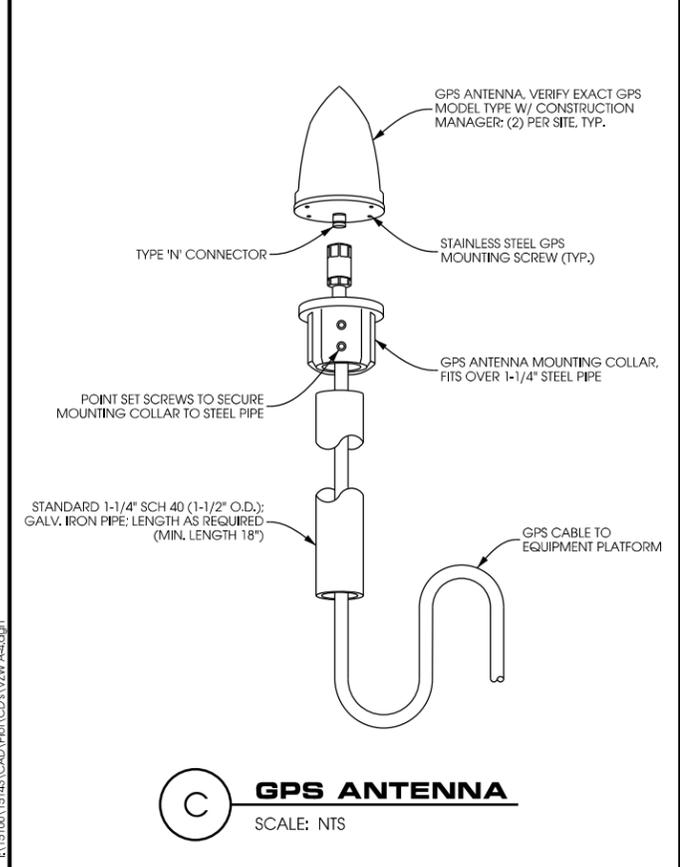


A TYP. ICE BRIDGE DETAIL
SCALE: NTS

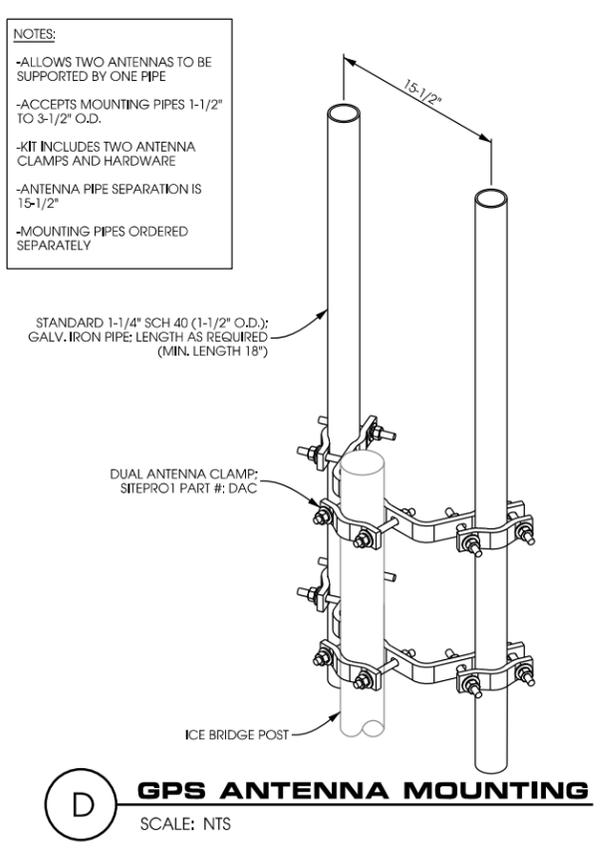
- ICE BRIDGE NOTES:**
1. EQUIVALENT PARTS AND COMPONENTS CAN BE UTILIZED IF THEY PROVIDE EQUIVALENT CAPACITY & FUNCTIONALITY. SUBSTITUTIONS MUST BE APPROVED BY THE OWNER AND ENGINEER.
 2. CONTRACTOR TO CONSULT & FOLLOW ALL MANUFACTURER DESIGN & INSTALLATION GUIDELINES.
 3. MAXIMUM ALLOWABLE SPAN BETWEEN SUPPORTS SHALL BE 8' FOR A 10' SECTION.
 4. FOLLOW MANUFACTURERS RECOMMENDATIONS REGARDING SPLICES OR CANTILEVERS. HOWEVER, CHANNEL SHOULD TYPICALLY NOT CANTILEVER MORE THAN 2' BEYOND SUPPORT & SPLICING SHOULD OCCUR AT OR NEAR SUPPORT.
 5. CUT ICE BRIDGE CHANNELS SHOULD HAVE ALL SHARP EDGES GROUND. IN ADDITION, A FIELD SPRAY GALVANIZING COMPOUND SHOULD BE APPLIED TO ALL EXPOSED METAL.



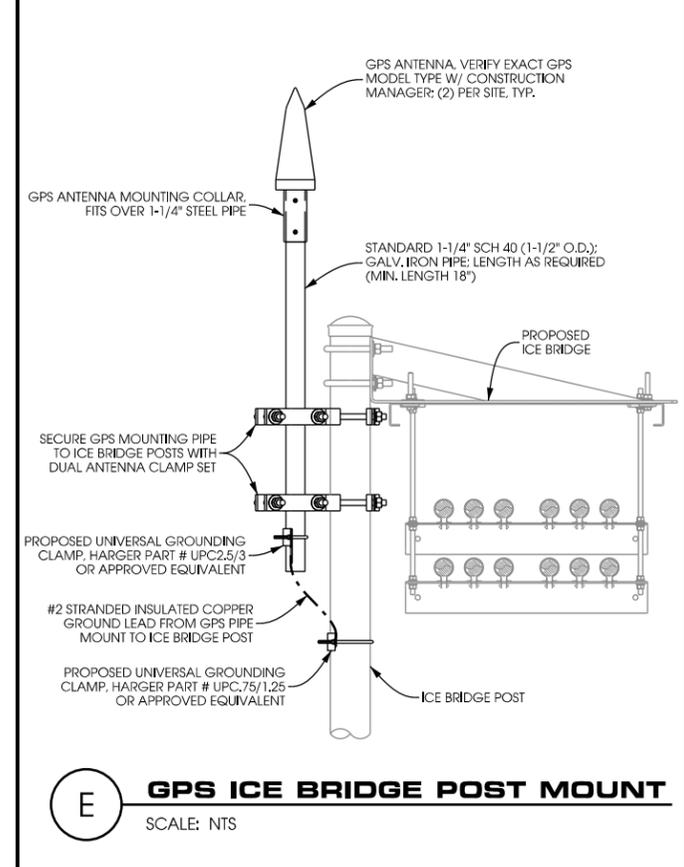
B ICE BRIDGE DETAIL
SCALE: NTS



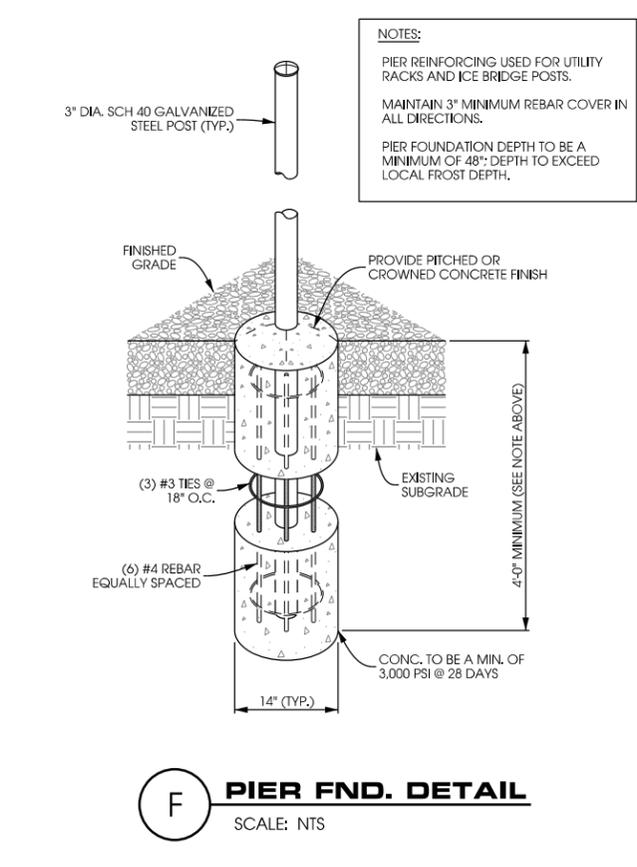
C GPS ANTENNA
SCALE: NTS



D GPS ANTENNA MOUNTING
SCALE: NTS



E GPS ICE BRIDGE POST MOUNT
SCALE: NTS



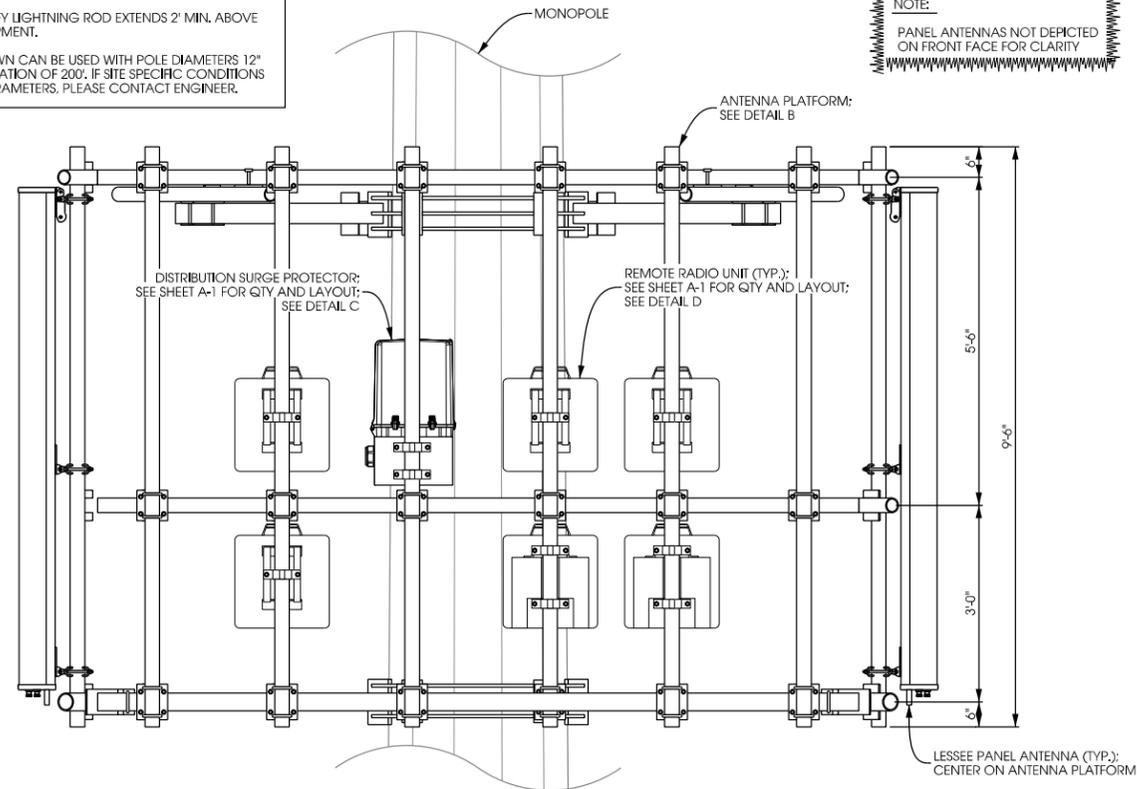
F PIER FND. DETAIL
SCALE: NTS

**ICE BRIDGE DETAILS
ROCKFIELD [418732]
RICHFIELD, WISCONSIN**

SHEET TITLE:

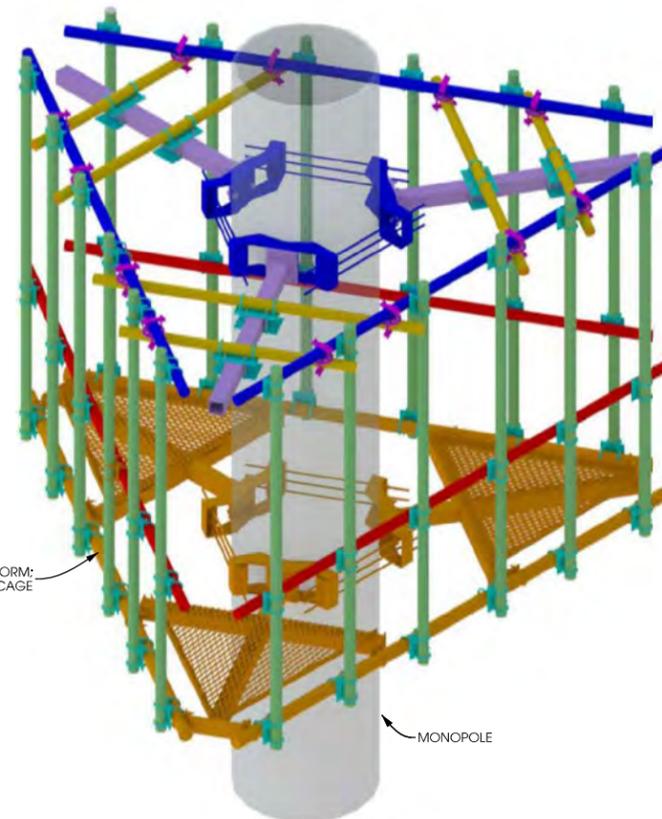
| | |
|--------------------------------|----------------|
| PRELIMINARY DWGS: | INI: |
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD's REV.1 - 02/13/2019 | JAH |
| STAMPED FINAL DWGS: | |
| CHECKED BY: | PCM |
| PLOT DATE: | 2/13/2019 |
| PROJECT #: | 15143 |
| FILE NAME: | VZW A-4.dgn |
| SHEET NUMBER: | VZW A-4 |

NOTES:
 CONTRACTOR TO VERIFY LIGHTNING ROD EXTENDS 2' MIN. ABOVE ALL ANTENNAS & EQUIPMENT.
 CAGE DESIGN AS SHOWN CAN BE USED WITH POLE DIAMETERS 12" TO 38" AND UP TO ELEVATION OF 200'. IF SITE SPECIFIC CONDITIONS ARE OUTSIDE THESE PARAMETERS, PLEASE CONTACT ENGINEER.



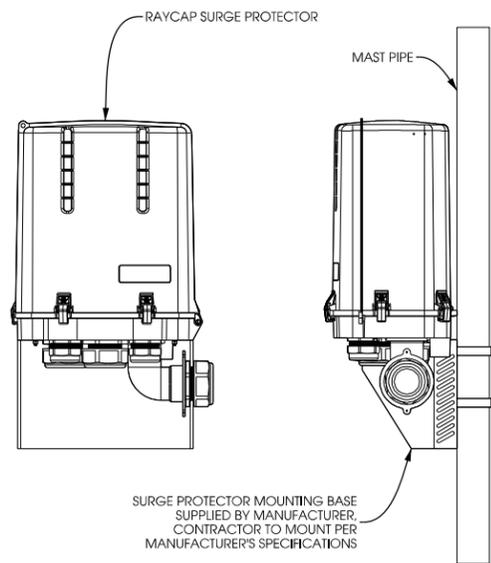
A ANTENNA & EQUIPMENT MOUNTING
 SCALE: NTS

NOTE:
 PANEL ANTENNAS NOT DEPICTED ON FRONT FACE FOR CLARITY

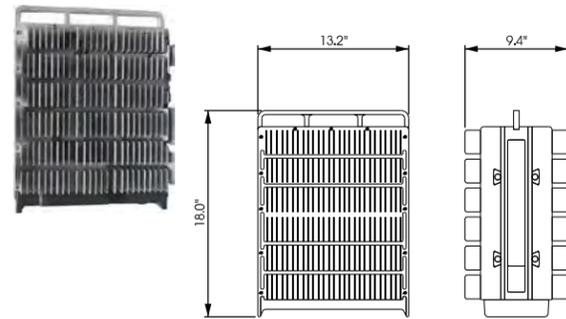


B ANTENNA PLATFORM
 SCALE: NTS

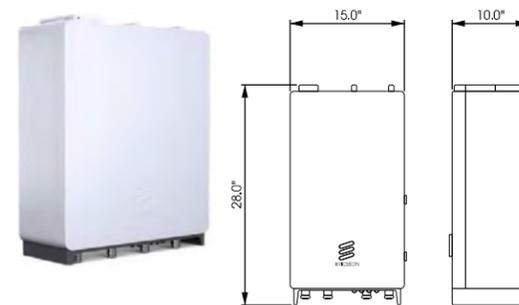
DISTRIBUTION SURGE PROTECTOR:
 RAYCAP PART # RCMDC-3315-PF-48
 DC SURGE PROTECTION FOR RRH/INTEGRATED ANTENNA RADIO HEAD TOWER, BASE, ROOFTOP, & ROOFTOP DISTRIBUTION MODELS
 DIMENSIONS: 19.18" x 15.73" x 10.25" (H x W x D)
 WEIGHT: 32 LBS (14.51 kg)



C DISTRIBUTION SURGE PROTECTOR
 SCALE: NTS



REMOTE RADIO UNIT:
 ERICSSON PART # RRU4449
 DIMENSIONS: 18.0" x 13.2" x 9.4" (H x W x D)
 WEIGHT: 70 LBS



REMOTE RADIO UNIT:
 ERICSSON PART # RRU8843
 DIMENSIONS: 28.0" x 15.0" x 10.0" (H x W x D)
 WEIGHT: 85 LBS

D REMOTE RADIO UNITS
 SCALE: NTS

THIS SPACE INTENTIONALLY LEFT BLANK

**ANTENNA/EQUIP. MOUNTING
 ROCKFIELD [418732]
 RICHFIELD, WISCONSIN**

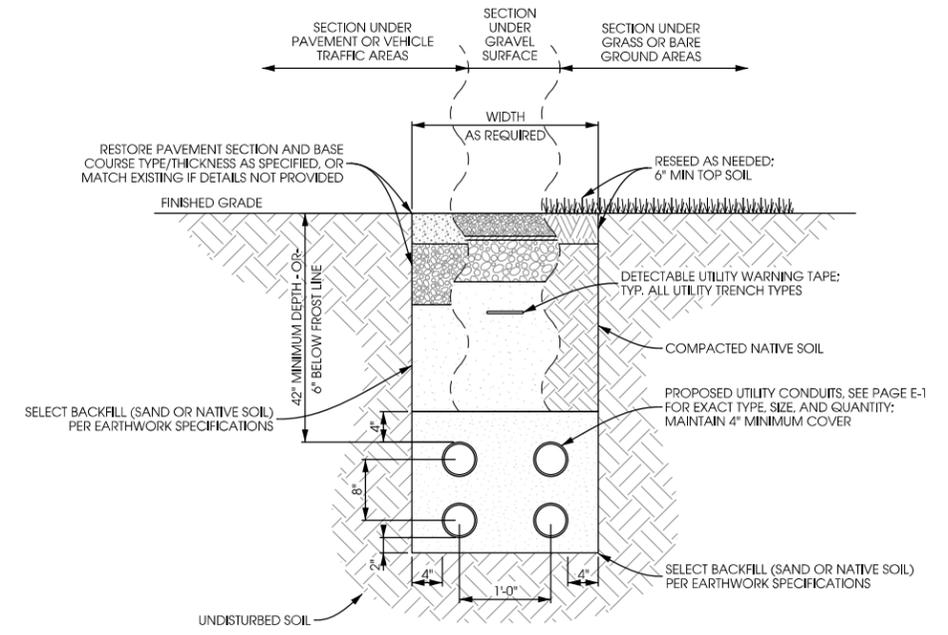
SHEET TITLE:

| PRELIMINARY DWGS: | INT: |
|--------------------------------|-------------|
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD'S REV.1 - 02/13/2019 | JAH |
| STAMPED FINAL DWGS: | |
| CHECKED BY: | PCM |
| PLOT DATE: | 2/13/2019 |
| PROJECT #: | 15143 |
| FILE NAME: | VZW A-5.dgn |
| SHEET NUMBER: | |

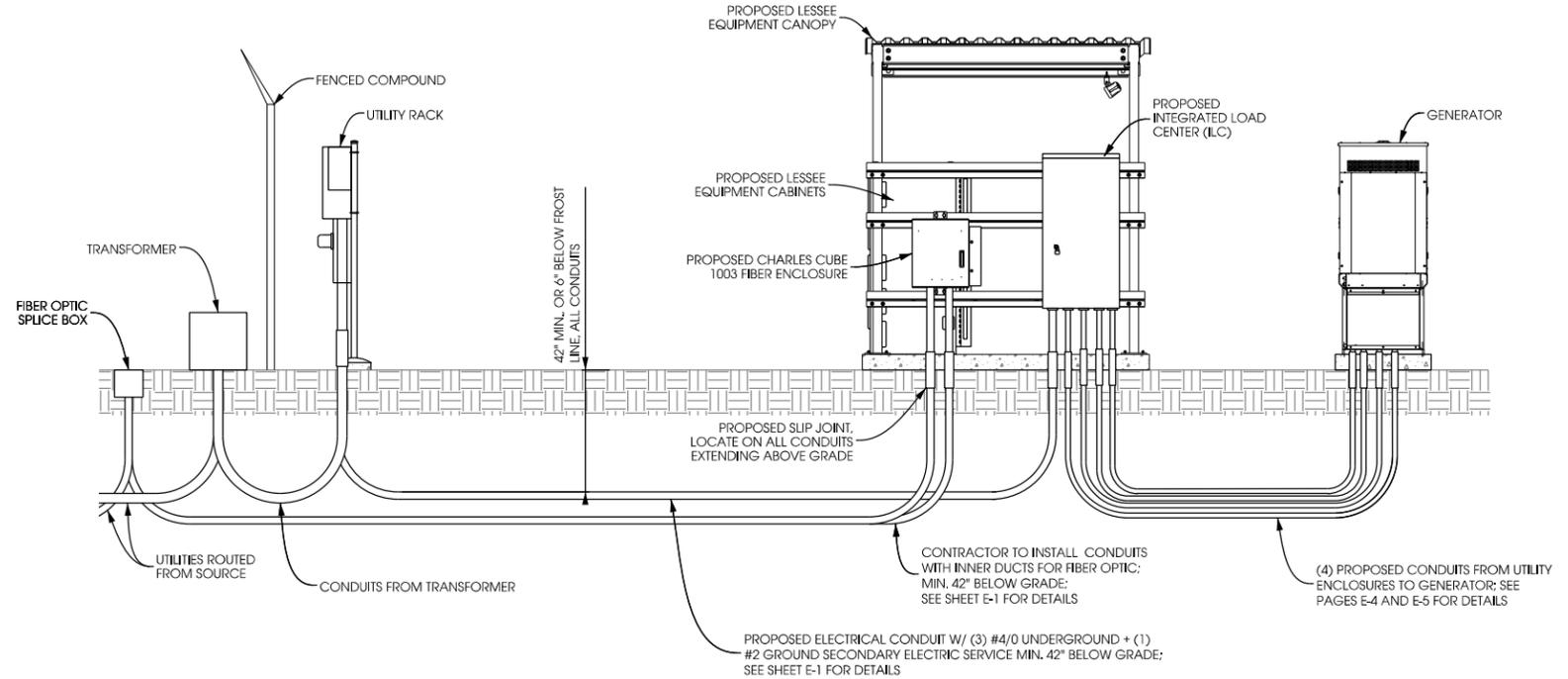
SHEET TITLE:

| | |
|--------------------------------|-------------|
| PRELIMINARY DWGS: | INI: |
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD's REV.1 - 02/13/2019 | JAH |
| STAMPED FINAL DWGS: | |
| CHECKED BY: | PCM |
| PLOT DATE: | 2/13/2019 |
| PROJECT #: | 15143 |
| FILE NAME: | VZW E-2.dgn |
| SHEET NUMBER: | |

NOTES:
 UTILITY CONDUITS TO BE BURIED A MINIMUM DEPTH OF 42" BELOW GROUND LEVEL OR 6" BELOW THE FROST LINE.
 CONDUIT TYPE, SIZE, AND QUANTITY SHOWN ON PAGE E-1.

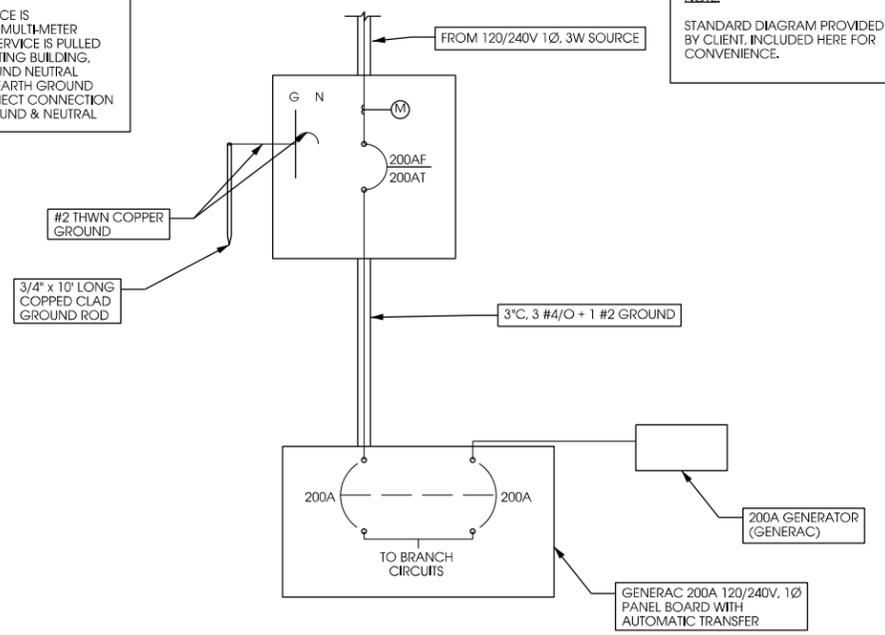


B UTILITY TRENCH DETAIL
 SCALE: NTS



A ELECTRICAL RISER DETAIL [TYPICAL]
 SCALE: NTS

IF LESSEE SERVICE IS METERED AT A MULTI-METER GANG OR IF SERVICE IS PULLED FROM AN EXISTING BUILDING, DO NOT GROUND NEUTRAL TERMINAL TO EARTH GROUND AND DISCONNECT CONNECTION BETWEEN GROUND & NEUTRAL



D ELECTRIC LINE DIAGRAM & NOTES
 SCALE: NTS

K:\15100\15143\CAD\Plot\CD\VZW E-2.dgn

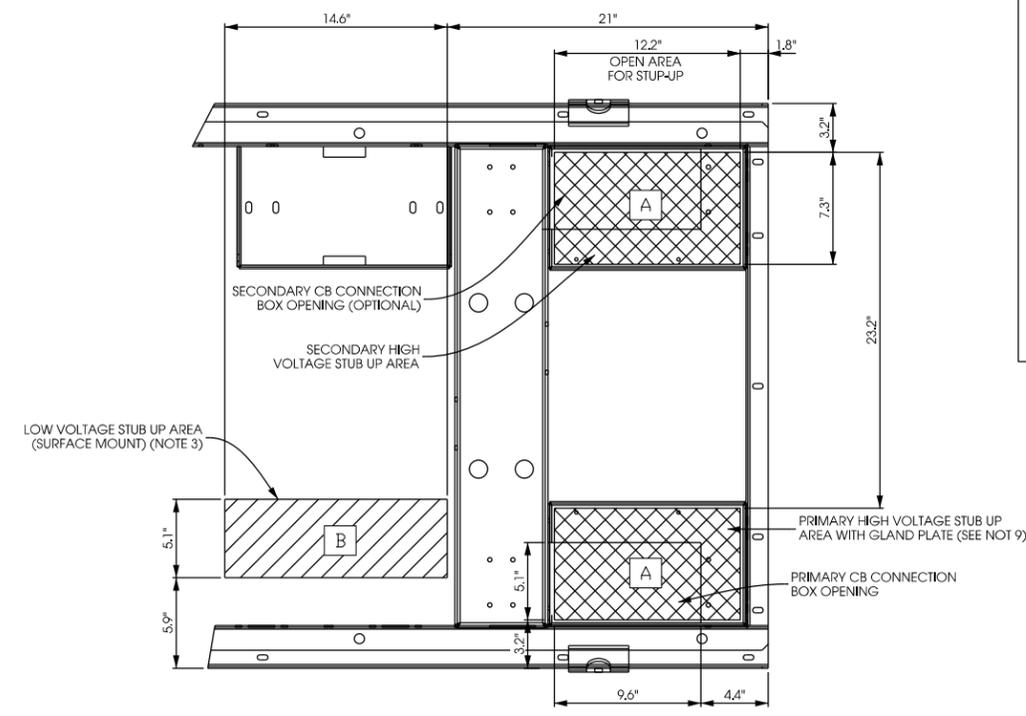
GENERATOR DETAILS
ROCKFIELD [418732]
RICHFIELD, WISCONSIN

SHEET TITLE:

| | |
|--------------------------------|-------------|
| PRELIMINARY DWGS: | INI: |
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD'S REV.1 - 02/13/2019 | JAH |
| STAMPED FINAL DWGS: | |
| CHECKED BY: | PCM |
| PLOT DATE: | 2/13/2019 |
| PROJECT #: | 15143 |
| FILE NAME: | VZW E-3.dgn |
| SHEET NUMBER: | |

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

| DESCRIPTION | INSIDE BASE |
|---|-------------|
| HIGH VOLTAGE STUB-UP AREA | A |
| AC LOAD LEAD CONDUIT FOR PERMANENT MAGNET EXCITATION CONNECTION BOX | |
| LOW VOLTAGE STUB-UP AREA (SEE NOTE 3) | B |



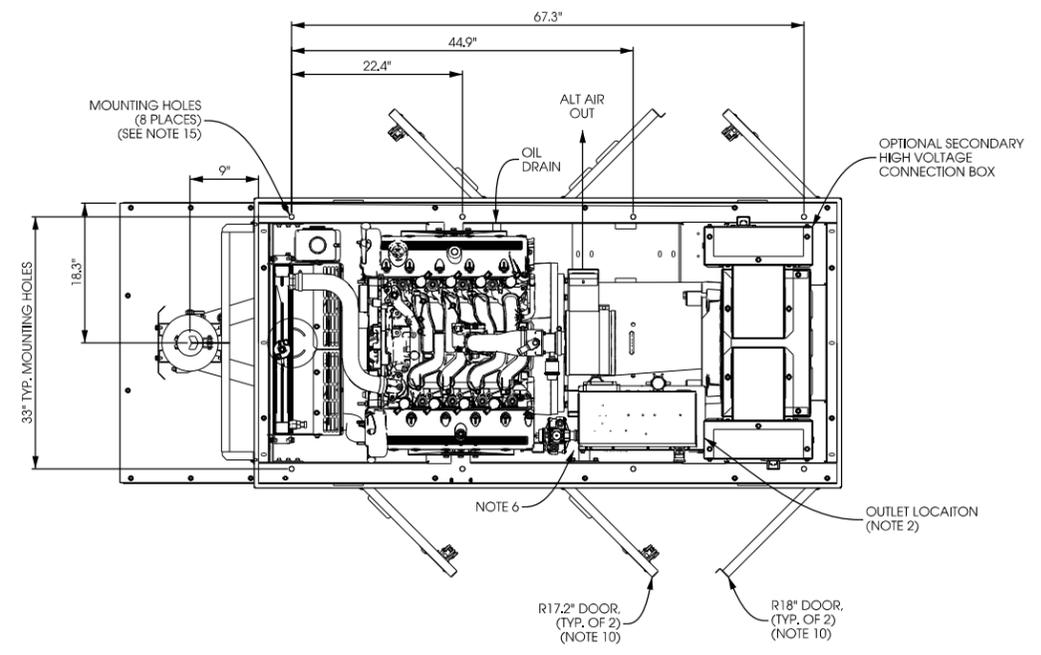
STUB-UP AREA DETAILED VIEW

WEIGHT DATA (INCLUDES EMPTY FUEL TANK):

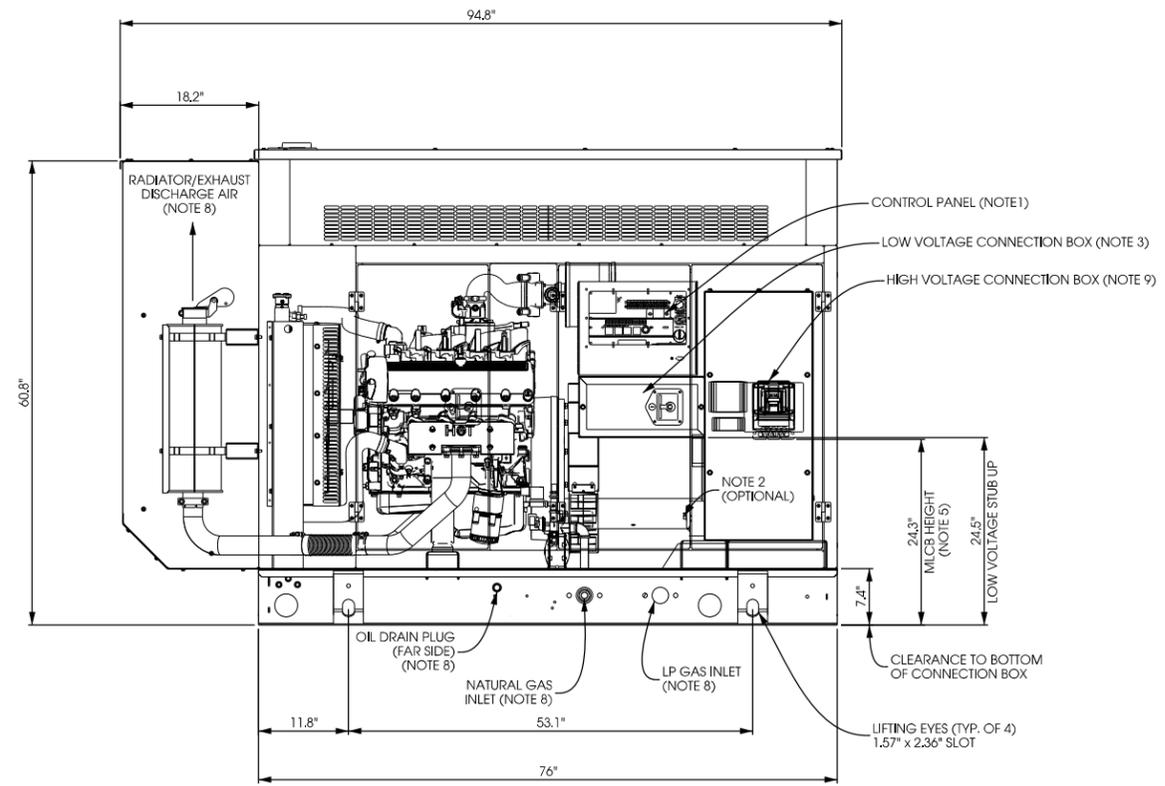
| | |
|------------------------------------|------------------|
| GENERATOR WITH STEEL ENCLOSURE: | 342 KG (753 LBS) |
| GENERATOR WITH ALUMINUM ENCLOSURE: | 116 KG (256 LBS) |

(SEE NOTE 7)

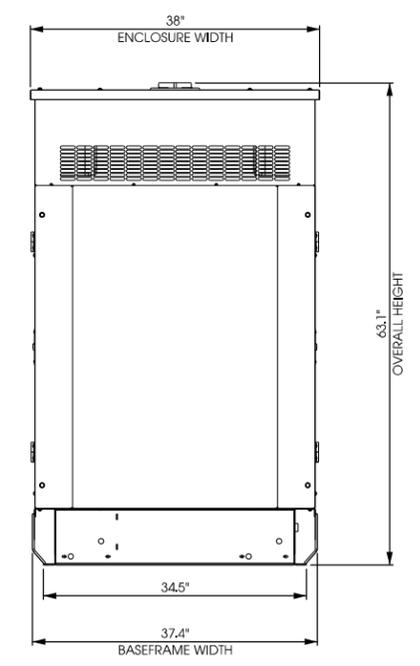
- NOTE:
- CONTROL PANEL (OPTIONAL BATTERY CHARGER INSIDE)
 - 120V, 20A GFCI & 250V, 15A OUTLET (OPTIONAL)
 - CONNECTION POINTS FOR CONTROL WIRES PROVIDED IN THE LOW VOLTAGE CONNECTION BOX (USE LOW VOLTAGE STUB UP AREA)
 - BATTERY (12 VOLT NEGATIVE GROUND SYSTEM)
 - MAIN LINE CIRCUIT BREAKER (MLCB), AC LOAD LEADS CONNECT DIRECTLY TO MLCB. (MLCB HEIGHT MAY VARY WITH CB SELECTION)
 - BLOCK HEATER
 - CENTER OF GRAVITY AND WEIGHT MAY SHIFT SLIGHTLY DUE TO UNIT OPTIONS
 - ENGINE SERVICE CONNECTIONS:
 FUEL INLET L/P GAS = 1-1/4" NPT FEMALE COUPLING
 FUEL INLET NATURAL GAS = 1-1/4" NPT FEMALE COUPLING
 OIL DRAIN = 1/2" NPT FEMALE COUPLING
 EXHAUST OUTLET = 3" O.D. MUFFLER
 - AUXILIARY AC CONNECTION FOR UNIT OPTIONS ARE LOCATED IN HIGH VOLTAGE CONNECTION BOX, UNLESS AN OPTIONAL LOAD CENTER IS INSTALLED
 - DOORS MUST BE ABLE TO OPEN AT LEAST 90° TO BE REMOVED.
 - BOTTOM OF GENERATOR SET MUST BE CLOSED TO PREVENT PEST INTRUSION AND RECIRCULATION OF DISCHARGE AIR AND/OR IMPROPER COOLING AIR FLOW.
 - GENERATOR SET MUST BE INSTALLED SUCH THAT FRESH COOLING AIR IS AVAILABLE AND THAT DISCHARGE AIR FROM THE RADIATOR IS NOT RECIRCULATED
 - CIRCUIT BREAKER
 - AC LOAD LEADS CONNECT DIRECTLY TO BOTTOM OF BREAKER
 - REFER TO LUG SIZING CHART AVAILABLE ON GEN-CONNECT
 - EPA AIR QUALITY REGULATIONS REQUIRE THE CATALYST TO REMAIN MOUNTED WITHIN THE SPECIFIED MOUNTING POSITION DETAILED ON THIS DRAWING.
 - MOUNTING BOLTS OR STUDS TO MOUNTING SURFACE SHALL BE 5/8-11 GRADE 5. (USE STANDARD SAE TORQUE SPECS.)



TOP OR PLAN VIEW



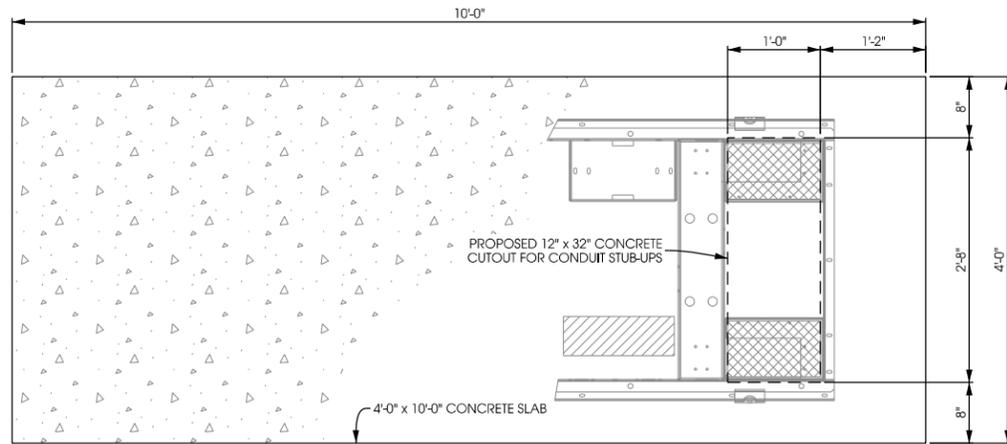
LEFT SIDE VIEW



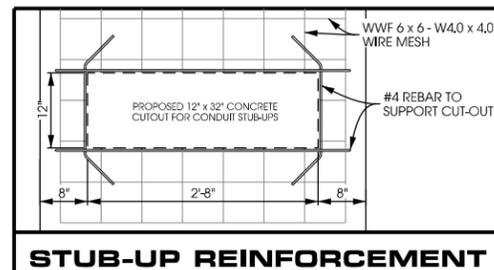
REAR VIEW

A **GENERAC LP/NATURAL GAS GENERATOR MODEL SG35**
 SCALE: NTS

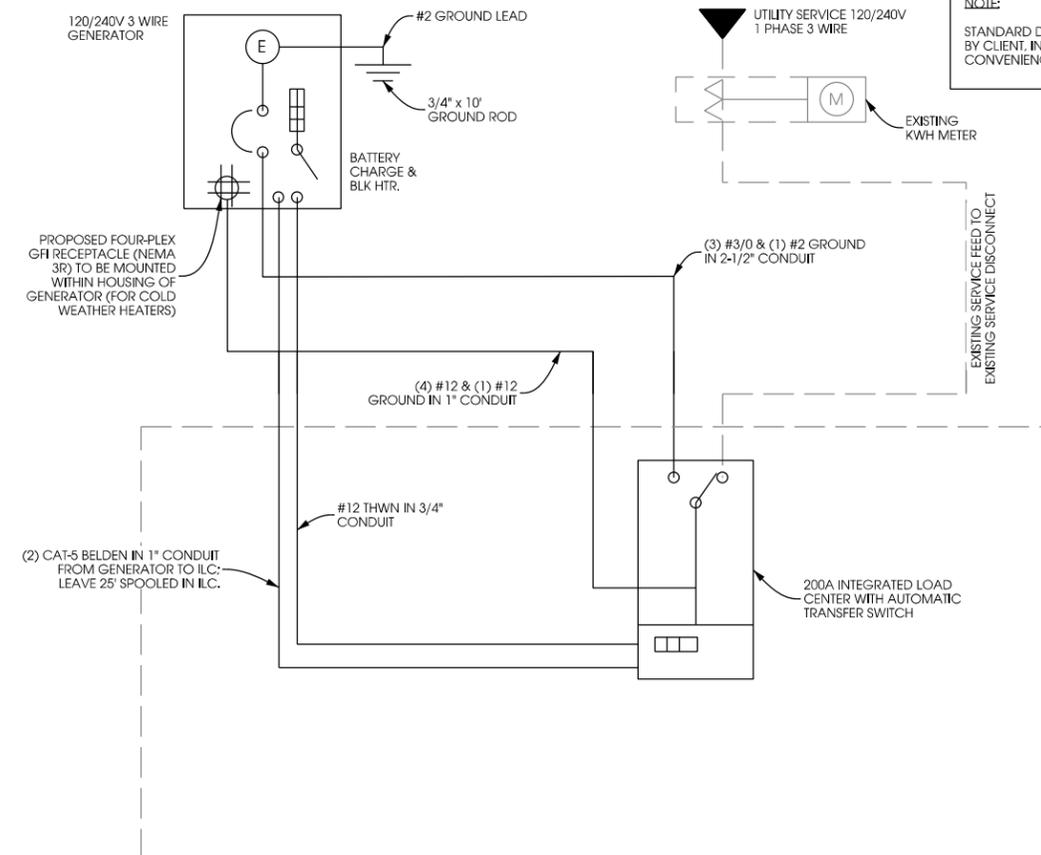
K:\15100\15143\CAD\Plot\CDA\VZW E-3.dgn



A TYPICAL GENERAC FOUNDATION LAYOUT
SCALE: NTS



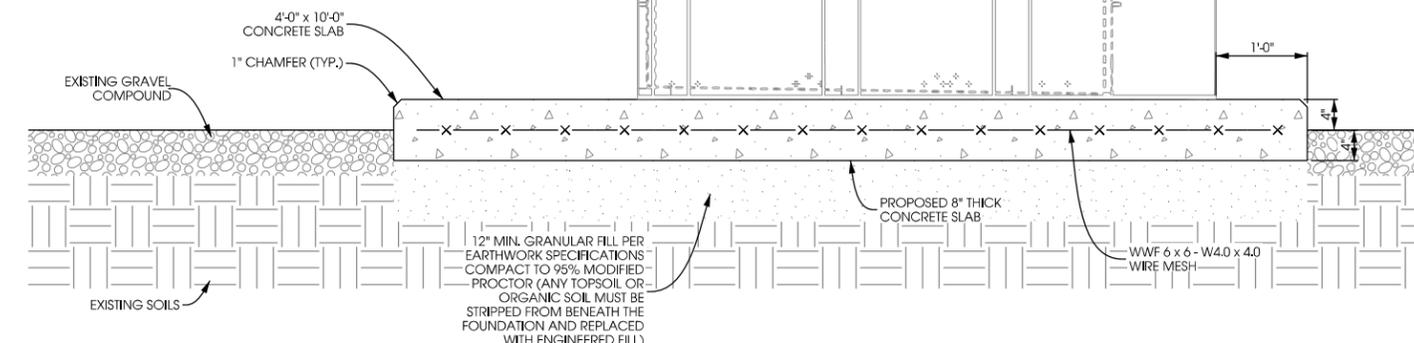
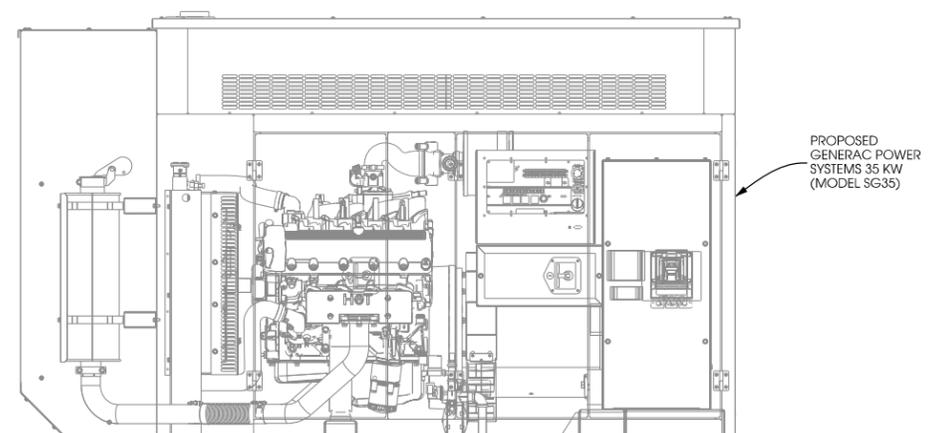
STUB-UP REINFORCEMENT



B GENERATOR SINGLE LINE DIAGRAM
SCALE: NTS

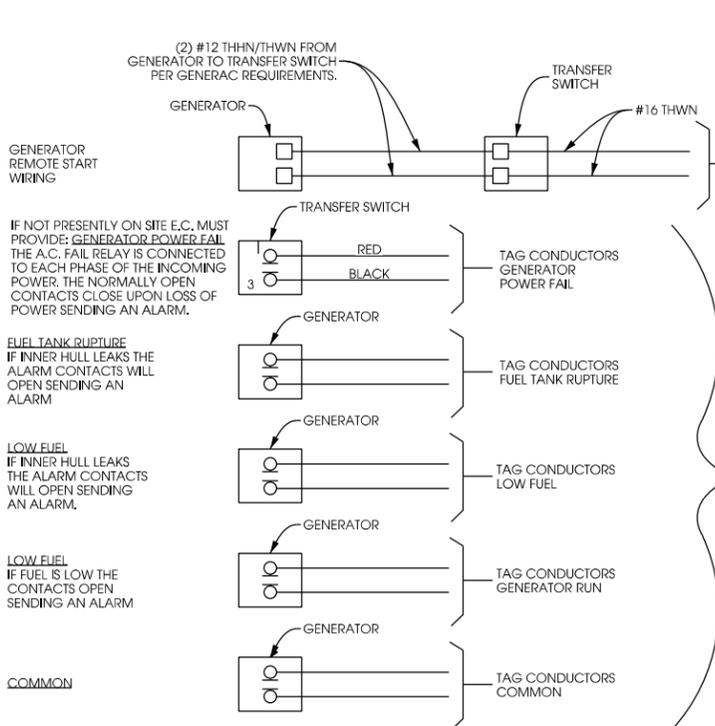
NOTE:
SEE GENERATOR MANUFACTURER'S DRAWINGS FOR PHYSICAL LOCATION OF FUEL LINES, CONTROL AND POWER INTERCONNECTIONS AND OTHER INTERFACES THAT ARE TO BE CAST INTO THE CONCRETE. THE PREFERRED METHOD IS TO BRING THE CONDUIT THROUGH THE PAD TO THE UNDERSIDE OF THE GENERATOR (MINIMIZES RODENT DAMAGE), FINISH CONNECTIONS WITH FLEXIBLE CONDUIT PER GENERATOR MANUFACTURER SPECS. RIGID CONDUITS SHALL BE SECURED TO THE EXISTING SLAB, THEN BURIED BETWEEN SLAB AND PLATFORM.

GENERATOR CLEARANCE NOTE:
-THE GENERATOR SHALL BE LOCATED A MIN. 10' AWAY FROM A COMBUSTIBLE WALL.
-THE GENERATOR SHALL BE LOCATED A MIN. OF 5' FROM A NON-COMBUSTIBLE WALL.
-THE GENERATOR SHALL BE LOCATED A MIN. OF 20' FROM AN OUTDOOR ELECTRICAL TRANSFORMER OR NORMAL POWER DISTRIBUTION EQUIPMENT.



C GENERAC GENERATOR FOUNDATION DETAIL
SCALE: NTS

NOTES:
1. ELECTRICAL CONTRACTOR TO PULL (1) #16 AWG SOLID RED AND (1) #16 AWG SOLID BLACK FROM THE TRANSFER SWITCH TO ALARM WIRING BLOCK FOR REMOTE START.
2. ELECTRICAL CONTRACTOR TO PULL ALL ALARM LEADS TO EXISTING ALARM WIRING BLOCK. LEAVE A MINIMUM OF 24" PIGTAILS AT ALARM WIRING BLOCK AND TAG CONDUCTORS AS INDICATED. TERMINATIONS ON ALARM POINT WIRING BLOCK BY OTHERS. CONDUCTORS CAN BE RUN EXPOSED, THEY SHALL BE BUNDLED NEATLY USING TIES AND SUPPORTED AT 24" INTERVALS FOR NEAT INSTALLATION.



D GENERATOR ALARM WIRING
SCALE: NTS

NOTE:
STANDARD DIAGRAM PROVIDED BY CLIENT, INCLUDED HERE FOR CONVENIENCE.

SHEET TITLE:

| | |
|--------------------------------|-------------|
| PRELIMINARY DWGS: | INI: |
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD's REV.1 - 02/13/2019 | JAH |
| STAMPED FINAL DWGS: | |
| CHECKED BY: | PCM |
| PLOT DATE: | 2/13/2019 |
| PROJECT #: | 15143 |
| FILE NAME: | VZW E-4.dgn |
| SHEET NUMBER: | |

GENERATOR RISER DETAILS
ROCKFIELD [418732]
RICHFIELD, WISCONSIN

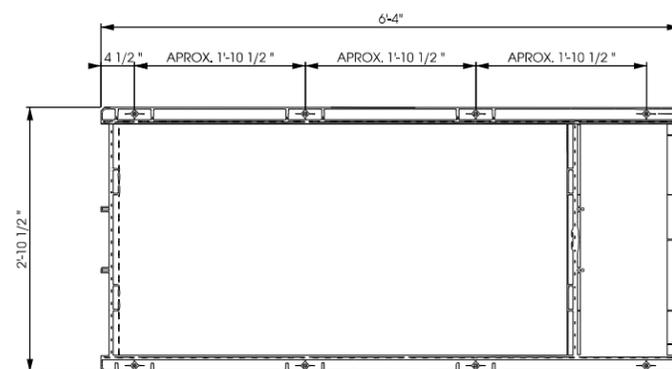
SHEET TITLE:

| | |
|--------------------------------|------|
| PRELIMINARY DWGS: | INI: |
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD's REV.1 - 02/13/2019 | JAH |

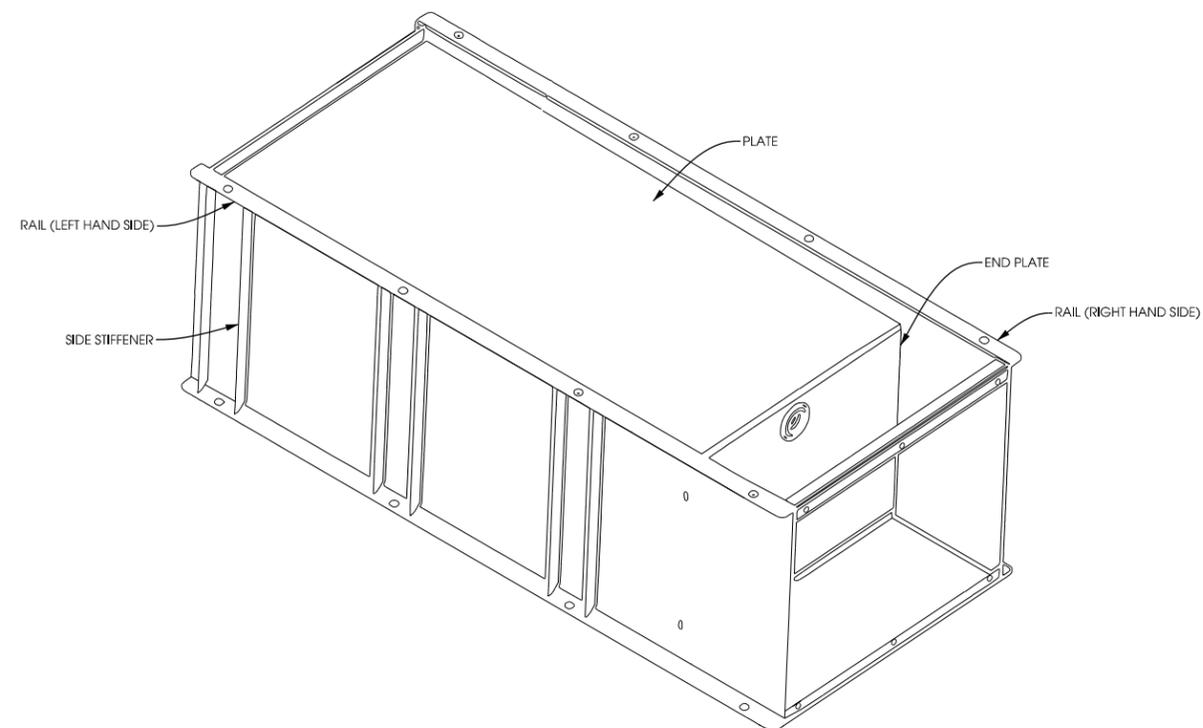
| | |
|---------------------|--|
| STAMPED FINAL DWGS: | |
| | |

| | |
|-------------|-------------|
| CHECKED BY: | |
| PCM | |
| PLOT DATE: | 2/13/2019 |
| PROJECT #: | 15143 |
| FILE NAME: | VZW E-5.dgn |

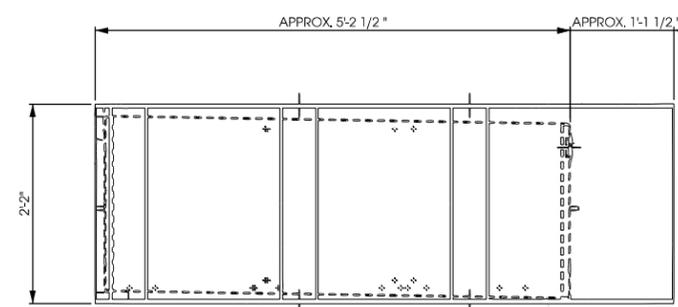
| | |
|----------------|--|
| SHEET NUMBER: | |
| VZW E-5 | |



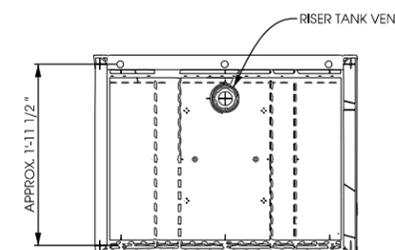
TOP OR PLAN VIEW



ISOMETRIC VIEW



LEFT SIDE VIEW

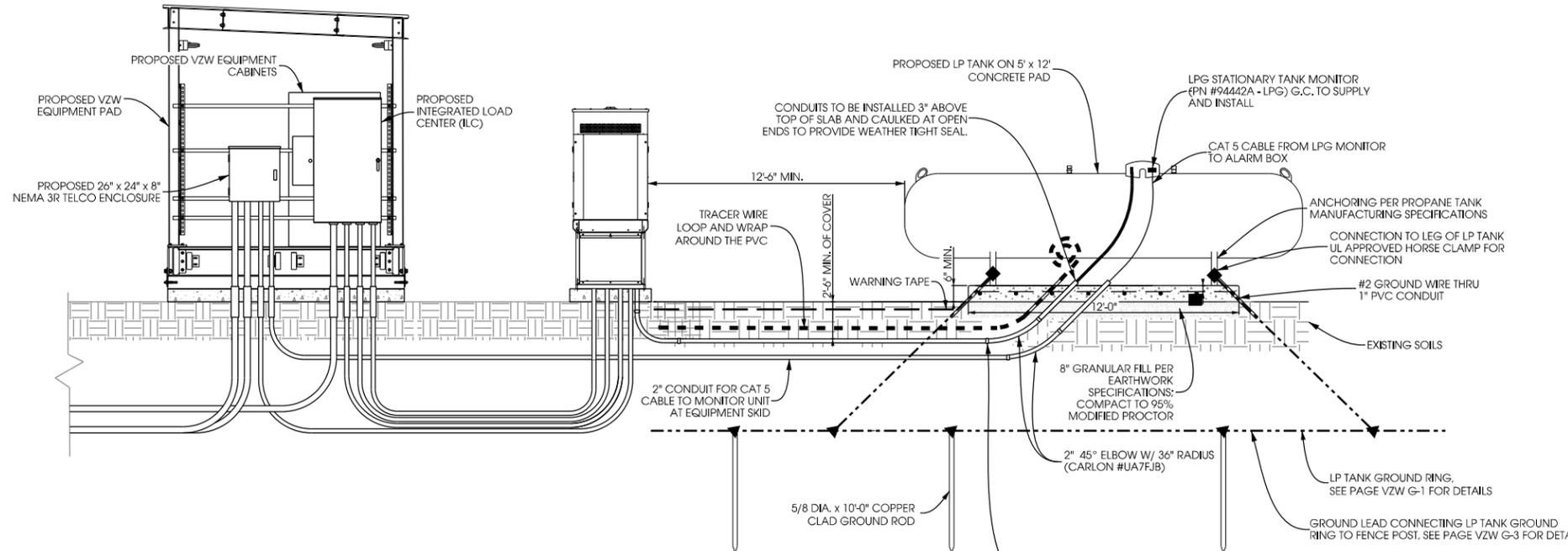


REAR VIEW



GENERAC 2FT RISER TANK - MODEL SG35

SCALE: NTS



THE CONTRACTOR IS RESPONSIBLE FOR PURCHASING AND INSTALLING A PROPANE TANK MONITOR (MICRO-DESIGN, INC. MODEL # LPG STM 94442A) WITH A BATTERY BACKUP (APC MODEL # ES 350). DETAILS FOR THE TANK MONITOR CAN BE FOUND ON THE LEVELCON WEBSITE @ <https://www.levelcon.com>

PROVIDE GAS LINE OF SUFFICIENT DIAMETER TO PROVIDE ADEQUATE PRESSURE AT THE GENERATOR TO ALLOW THE GENERATOR TO OPERATE EFFICIENTLY

LEGEND
 -WARNING TAPE - - - - -
 -14GA. TRACER WIRE - - - - -

A EQUIPMENT LAYOUT
 SCALE: NTS

CONDUIT INSTALLATION NOTES:

- ALL CONDUIT TO BE WRAPPED IN FELT
- ALL PENETRATIONS TO BE STUBBED AT 45° ANGLE
- ALL CONDUITS TO STUB UP 3" ABOVE TOP OF CONCRETE
- ALL CONDUITS TO CONSIST OF ELECTRICAL PVC
- ALL CONDUITS TO EQUIPPED W/ PULL CORDS & CAPPED FOR FUTURE LINE PULLS. NO DUCT TAPE ALLOWED

CONDUIT SWEEP NOTE:

- SCH 40, 45° & 90° SWEEPS RIGID. FOR PROPANE CONDUITS
- 90° ELBOW, 36" RADIUS, BELLED END - CARLON PART #UA9FJB
- 45° ELBOW, 36" RADIUS, BELLED END - CARLON PAR #UA7FJB
- www.carlon.com

GENERAL INSTALLATION NOTES:

A 2" SCHEDULE 40 PVC CONDUIT FOR AC ELECTRICAL CONNECTIONS BETWEEN THE GENERATOR AND THE PLATFORM IS TO BE USED. SEPARATE 1" SCHEDULE 40 PVC CONDUITS FOR DC POWER, CONTROL AND ALARMING IS ADVISED. A MINIMUM OF 5" SPACING IS SUGGESTED BETWEEN CONDUIT CENTERLINES.

FOR FUTURE LP TANK CONNECTION, IT IS RECOMMENDED TO USE 'K' COPPER, THROUGH PREVIOUSLY INSTALLED 2" PVC AND CAULKED AT ENTRANCE.

AT TIME OF LP INSTALLATION FOR VAPOR RELEASE, A RECOMMENDED 1-1/4" BLACK IRON PIPE, SCHEDULE 40, PRIMED AND WRAPPED WITH UNDERGROUND TAPE, BURIED 18" BELOW FINISHED GRADE, PLACED IN A TRENCH, ENCASED IN PVC TO PROTECT THE GAS LINE, WITH A TRACE WIRE.

FOR PROPANE TANK PLACEMENT, IT IS RECOMMENDED HAVING A MIN. OF 10' CLEARANCE TO PROPERTY LINES AND PLATFORMS ON ALL SIDES. YOU SHOULD ALSO HAVE AT LEAST 3' OF CLEARANCE AROUND THE GENERATOR FOR WORKING SPACE.

ENGINE EXHAUST MUST BE DIRECTED AWAY FROM VENTS AND PLATFORM OPENINGS. AT MIN. 5' OF CLEARANCE IS RECOMMENDED WHEN PLACING THE GENERATOR AT ANY CELL SITE PLATFORM OR OPENING.

WHEN GROUNDING THE GENERATOR, CAD WELD THE GENERATOR GROUNDING LUG TO THE GROUND RING #2 SOLID BARE TINNED COPPER WIRE, BURIED 30" BELOW GRADE.

WHEN GROUNDING THE LP TANK, USING THE COMPRESSION LUG CONNECTED TO THE TANK FRAME (PREFERABLY THE FOOT) TO THE GROUND RING.

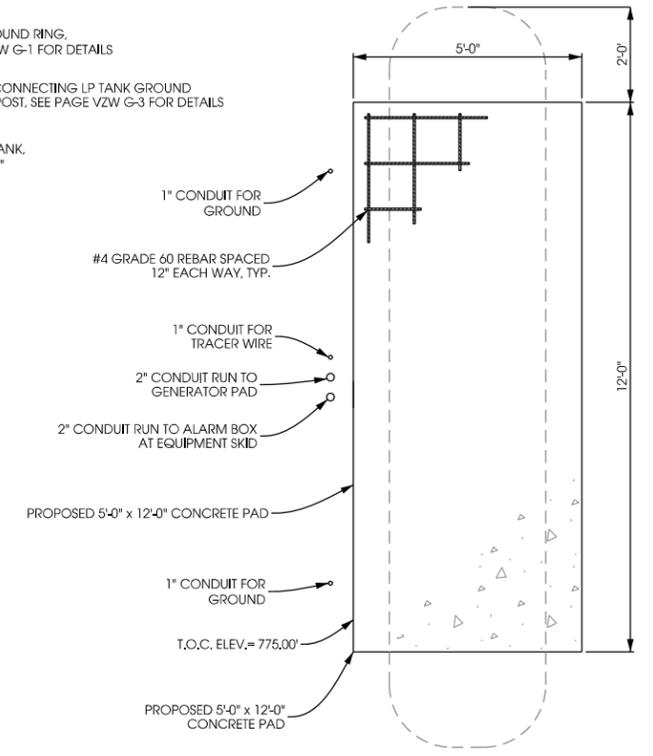
DIMENSIONS:

- WATER CAPACITY: 1000 WG
- OUTSIDE DIAMETER: 40.96"
- OVERALL LENGTH: 15'-10 13/16"
- OVERALL HEIGHT: 4'-1 3/8"
- LEG WIDTH: 1 1/4"
- LEG SPACING: 9'-0"
- WEIGHT: 1729LBS.

WARNING TAPE & TRACE WIRE NOTES:

- WARNING TAPE TO BE INSTALLED ABOVE THE ELECTRICAL RUN FROM THE GENERATOR TO THE PLATFORM AND ABOVE THE FUEL LINE BETWEEN THE GENERATOR AND FUEL SOURCE.
- WARNING TAPE SHALL BE RUN CONTINUOUSLY ALONG THE ENTIRE LENGTH AND INSTALLED 12 INCHES ABOVE THE TOP OF THE CONDUITS
- TRACER WIRE SHALL RUN CONTINUOUSLY ALONG THE ENTIRE LENGTH OF THE BURIED GAS AND ELECTRIC CONDUITS
- TRACER WIRE SHALL BE SECURED TO THE CONDUIT AND MAINTAINED ABOVE THE CONDUIT CENTERLINE DURING TRENCH BACKFILLING.
- TRACER WIRE TO EXTEND TO THE TOP OF PVC ABOVE CONCRETE ON BOTH ENDS - LOOP AND WRAP AROUND APPROPRIATE CONDUIT.
- TRACER WIRE SHALL CONSIST OF 14GA. SOLID COPPER WIRE WITH A CORROSION PROTECTIVE COATING.
- INSTALL TRACER WIRE WITH SPACER AND SECURE PER MNFG. RECOMMENDATIONS - AT A MIN. EVERY 10' AND AT ALL BENDS.
- DO NOT WRAP BURIED CONDUIT WITH TRACER WIRE TO AVOID UNNECESSARY STRESS ON TRACER.
- CONTRACTOR TO CHECK CONTINUITY OF TRACER WIRE BEFORE AND AFTER BURIAL AND DOCUMENT RESULTS. 12" ABOVE THE TOP OF THE CONDUITS.

B TYP. LP TANK FOUNDATION PLAN
 SCALE: NTS



**LP TANK DETAILS
 ROCKFIELD [418732]
 RICHFIELD, WISCONSIN**

SHEET TITLE:

| REVISION | DATE | BY | APP |
|--------------------------------|------|------|-----|
| PRELIMINARY DWGS | | INI: | |
| CD 90's REV.2 - 10/24/2017 | | APK | |
| CD 90's REV.3 - 11/17/2017 | | APK | |
| CD 90's REV.4 - 04/18/2018 | | JAH | |
| CD 90's REV.5 - 06/18/2018 | | CV | |
| CD 90's REV.6 - 11/08/2018 | | NAT | |
| CD 90's REV.7 - 01/10/2019 | | JAH | |
| STAMPED PERMIT DWGS: | | | |
| PERMIT CD'S REV.1 - 02/13/2019 | | JAH | |
| STAMPED FINAL DWGS: | | | |

CHECKED BY: PCM
 PLOT DATE: 2/13/2019
 PROJECT #: 15143
 FILE NAME: VZW E-6.dgn
 SHEET NUMBER:

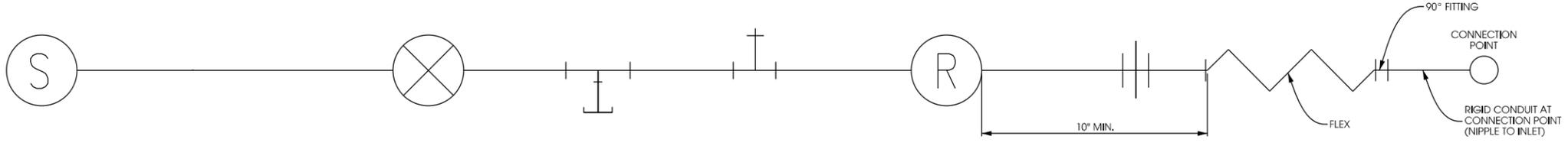
VZW E-6

LEGEND

| | |
|-----|---|
| (S) | GAS SUPPLY PER LESSEE SPEC. |
| (X) | 1 1/4" FULL PORT MANUAL SHUT OFF VALVE |
| T | DIRT LEG (1 1/4" x 4" NIPPLE W/ 1 1/4" CAP) |
| ⊥ | TEE-ACCESS FOR PRESSURE GAUGE AT INLET |
| (R) | SENSUS GAS REGULATOR #143-80-2 |
| | UNION |
| ~ | FLEX CONNECTOR |

NOTE:
 1. ALL PIPING SHALL BE 1 1/4" BLACK PIPE SCHEDULE 40.
 2. ALL FITTINGS SHALL BE 1 1/4" BLACK MALLEABLE IRON.

NOTE:
 STANDARD DIAGRAM PROVIDED BY CLIENT, INCLUDED HERE FOR CONVENIENCE.

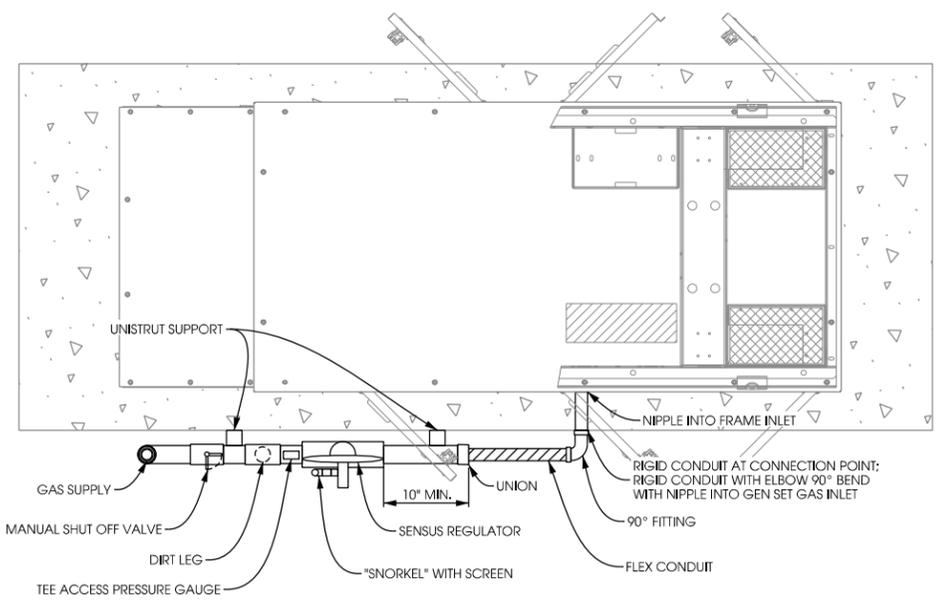


PIPE SIZING & REGULATOR MODEL CHART

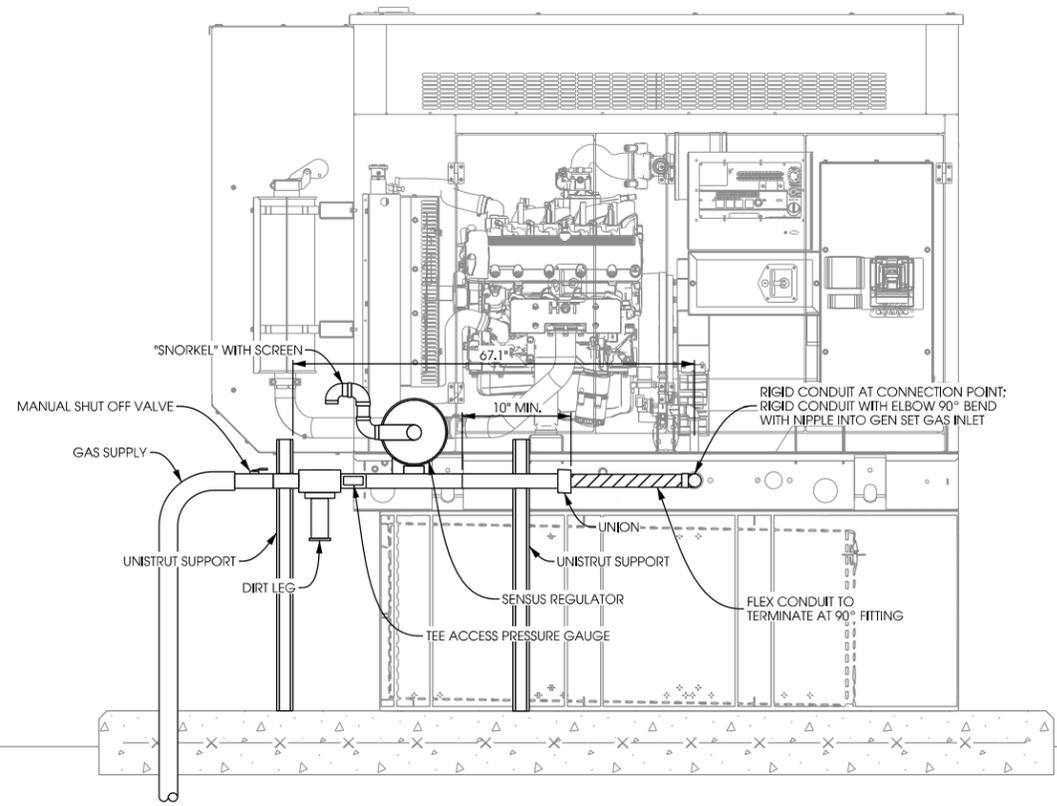
| GENERATOR MODEL | PIPE SIZE | REGULATOR MODEL |
|-----------------|-----------|--|
| SG035 (35KW) | 1-1/4" | SENSUS MODEL 143-80-2 W/ GREEN SPRING & 1/2" ORIFICE AT 10 DEGREES |
| SG050 (50KW) | 1-1/4" | SENSUS MODEL 143-80-2 W/ GREEN SPRING & 1/2" ORIFICE AT 10 DEGREES |
| SG100 (50KW)* | 1-1/4" | SENSUS MODEL 243-12-2 W/ GREEN SPRING & 3/4" ORIFICE AT 10 DEGREES |
| | 1-1/2" | SENSUS MODEL 243-12-2 W/ GREEN SPRING & 1/2" ORIFICE AT 10 DEGREES |

A GAS PIPING ARRANGEMENT
 SCALE: NTS

NOTE:
 THE GENERAL CONTRACTOR IS TO VERIFY REGULATOR SIZE BASED ON THE SIZE OF THE GENERATOR. THIS IS BASED ON HAVING A 2 PSI GAS (INLET) PRESSURE SUPPLY FROM THE GAS METER TO THE SENSUS REGULATOR & GENERATOR OUTLET PRESSURE OF 11"-14" W.C.



B GAS PIPING PLAN AT GENERATOR
 SCALE: NTS



C GAS PIPING ELEVATION AT GENERATOR
 SCALE: NTS

SHEET TITLE:

| | |
|--------------------------------|-------------|
| PRELIMINARY DWGS: | INI: |
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD'S REV.1 - 02/13/2019 | JAH |
| STAMPED FINAL DWGS: | |
| CHECKED BY: | PCM |
| PLOT DATE: | 2/13/2019 |
| PROJECT #: | 15143 |
| FILE NAME: | VZW E-7.dgn |
| SHEET NUMBER: | |

K:\15100\15143\CAD\PH\CD\90\VZW E-7.dgn



**GROUNDING PLAN
 ROCKFIELD [418732]
 RICHFIELD, WISCONSIN**

SHEET TITLE:

| | |
|--------------------------------|----------------|
| PRELIMINARY DWGS: | INI: |
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD'S REV.1 - 02/13/2019 | JAH |
| STAMPED FINAL DWGS: | |
| CHECKED BY: | PCM |
| PLOT DATE: | 2/13/2019 |
| PROJECT #: | 15143 |
| FILE NAME: | VZW G-1.dgn |
| SHEET NUMBER: | VZW G-1 |

- LEGEND**
- INSPECTION WELL
 -
 - EXOTHERMIC CONNECTION (CADWELD OR EQUIVALENT)
 - MECHANICAL CONNECTION (BURNDY OR EQUIVALENT)
 - GROUND LEAD
 -

- KEYED GROUNDING NOTES:**
1. EQUIPMENT PAD GROUND RING, #2 SOLID BARE-TINNED COPPER GROUND LEAD MIN. 4'-6" BURY (TYP.) OR 6" BELOW FROST WHICH EVER IS GREATER. GROUND RODS SPACED @ 8' O.C.
 2. MAINTAIN 2-FOOT CLEARANCE FROM ALL STRUCTURES
 3. GROUND ICE BRIDGE POSTS WITH #2 SOLID BARE TINNED COPPER LEADS
 4. 4" x 20" x 1/4" COPPER GROUND BAR FOR CABLE GROUND KITS. NON-ISOLATED WITH (2) #2 SOLID BARE TINNED COPPER GROUND LEADS TO GROUND RING
 5. GROUND CABLES TO GROUND BAR AT ANTENNA ELEVATION. GROUND ANTENNA GROUND BAR TO TOWER STEEL
 6. 18" x 18" x .032" THICK COPPER PLATE (10' MAX. SPACING); HARGER PART # GP18-18-2T OR APPROVED EQUIVALENT. SEE DETAILS ON PAGE VZW G-3
 7. BOND TOWER GROUND RING TO THE PROPOSED EQUIPMENT GROUND RING WITH (2) #2 SOLID BARE TINNED COPPER GROUND LEADS. EXOTHERMIC CONNECTION
 8. TOWER GROUND RING
 9. FENCE POST GROUND LEAD, #2 SOLID BARE TINNED COPPER, CADWELD CONNECTION. GROUND FENCE POSTS WITHIN 6-FEET OF EQUIPMENT PAD
 10. GROUND ILC, ALARM JUNCTION BOX AND FIBER JUNCTION BOX
 11. GROUND GENERATOR TO GROUND RING WITH #2 SOLID BARE TINNED COPPER LEADS
 12. GROUND CANOPY SUPPORT COLUMNS TO GROUND RING WITH #2 SOLID BARE TINNED COPPER LEADS
 13. GROUND EQUIPMENT CABINETS TO GROUND RING WITH #2 SOLID BARE TINNED COPPER LEADS
 14. MASTER GROUND BAR
 15. INSPECTION WELL (TYP.); SEE PAGE VZW G-3 FOR DETAIL
 16. GROUND GPS TO ICE BRIDGE POST; SEE PAGE VZW A-4 FOR DETAIL
 17. GROUND FOR CONCRETE FOUNDATION REBAR

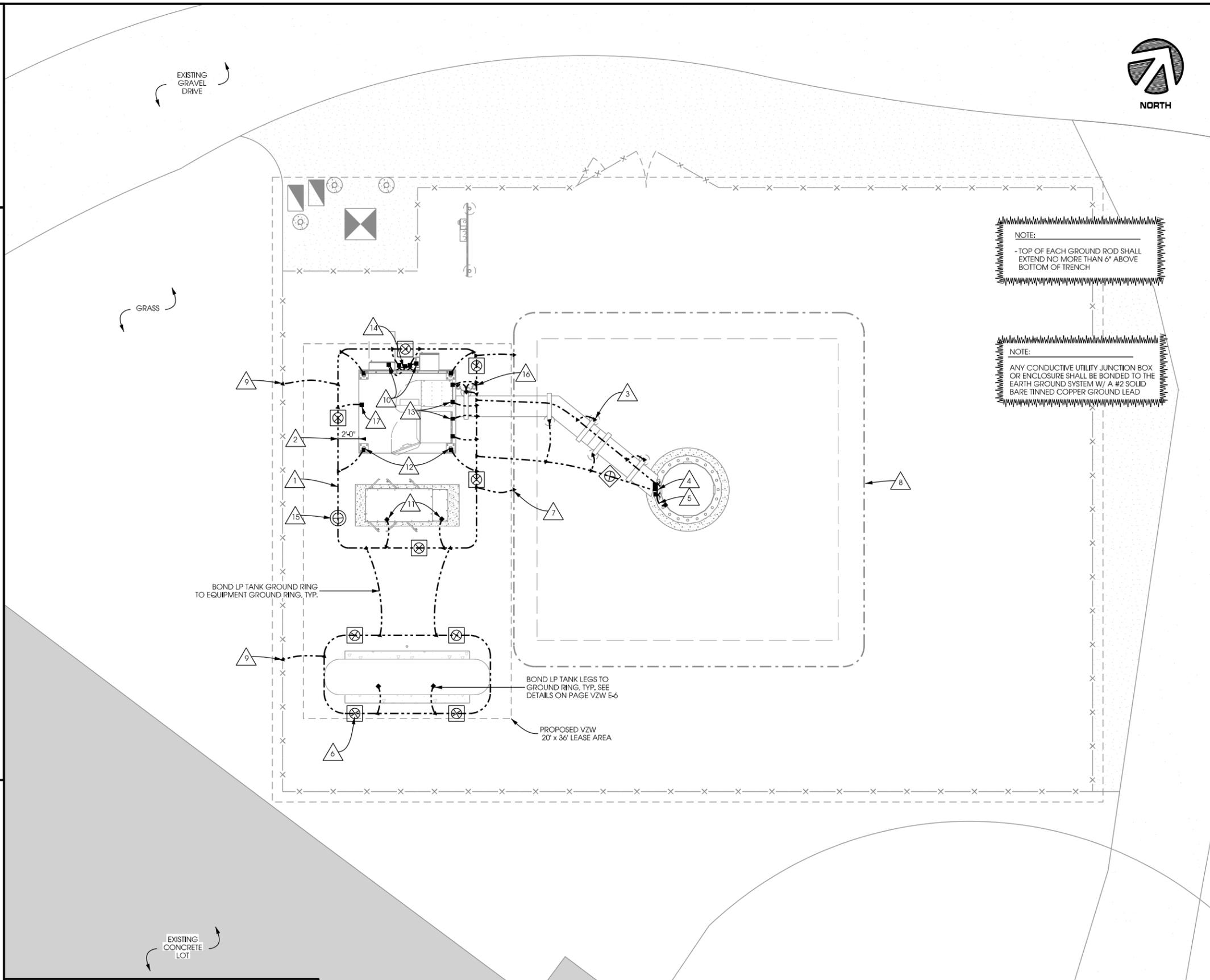
- GROUNDING ELECTRODE SYSTEM NOTES:**
1. CONNECTIONS: ALL CONNECTIONS SHALL BE EXOTHERMICALLY CONNECTED UNLESS NOTED OTHERWISE. CONTRACTOR TO FOLLOW ALL MANUFACTURER'S GUIDELINES & RECOMMENDATIONS.
 2. ALL ELECTRICAL AND MECHANICAL GROUND CONNECTIONS SHALL HAVE ANTI-OXIDANT COMPOUND APPLIED TO CONNECTION.
 3. FENCE/GATE: GROUND FENCE POSTS WITHIN 6-FEET OF ENCLOSURE AND 25-FEET OF TOWER. GROUND EACH GATE POST AND CORNER POST. GROUND CONNECTIONS TO FENCE POSTS SHALL BE MADE BY THE EXOTHERMIC PROCESS AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND PROCEDURES.
 4. CONTRACTOR SHALL SUBMIT THE GROUND RESISTANCE TEST REPORT AS FOLLOWS:
 - A. ONE (1) COPY TO THE OWNER REPRESENTATIVE
 - B. ONE (1) COPY TO THE ENGINEER
 - C. ONE (1) COPY TO KEEP INSIDE EQUIPMENT ENCLOSURE

NOTE:

- THE GROUNDING SHALL BE TESTED PRIOR TO FINAL BACKFILLING. DOCUMENTATION OF 5 OHM OR LESS RESISTANCE TO BE PROVIDED TO PROJECT MANAGER.
- ALL NON-INSULATED GROUND LEADS EXTENDING ABOVE GROUND LEVEL SHALL BE ENCASED IN 3/4" PVC & SEALED WITH SILICONE. PVC SHALL BE MIN. 16" INTO EARTH & EXTEND MIN. 6" ABOVE GROUND.
- INSTALL 18" X 18" COPPER PLATES IN LIEU OF GROUND RODS WHEN INSTALLING OVER TOWER FOUNDATION OR WHERE DRIVING GROUND RODS IS NOT FEASIBLE.

GROUNDING NOTE:

THIS GROUNDING PLAN WAS PREPARED PRIOR TO THE RECEIPT OF THE TOWER FOUNDATION DESIGN. THE LAYOUT OF RADIALS AND GROUND RODS ARE APPROXIMATE IN NATURE AND MAY NEED TO BE ADJUSTED IN THE FIELD. GROUND RODS SHOULD NOT EXTEND THROUGH THE TOWER FOUNDATION OR OTHER STRUCTURAL ELEMENTS WITHOUT PRIOR APPROVAL FROM THE DESIGN ENGINEER. IN ADDITION, SOME ADJUSTMENT TO THE GROUND METHOD MAY BE REQUIRED IN INSTANCES WHERE SHALLOW BEDROCK OR OTHER UNIQUE CIRCUMSTANCES ARE ENCOUNTERED. CONTRACTOR SHALL CONSULT GEOTECHNICAL REPORT FOR FURTHER DESIGN AND CONSTRUCTION RECOMMENDATIONS.

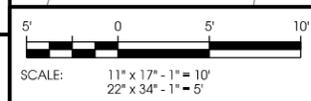


NOTE:
 -TOP OF EACH GROUND ROD SHALL EXTEND NO MORE THAN 6" ABOVE BOTTOM OF TRENCH

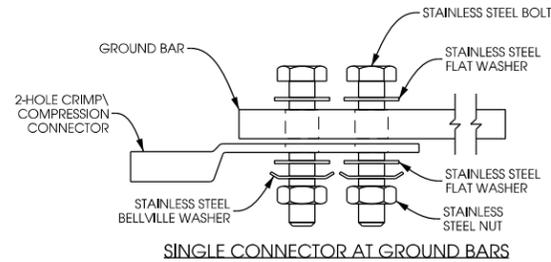
NOTE:
 ANY CONDUCTIVE UTILITY JUNCTION BOX OR ENCLOSURE SHALL BE BONDED TO THE EARTH GROUND SYSTEM W/ A #2 SOLID BARE TINNED COPPER GROUND LEAD

SPECIAL REQUIREMENTS

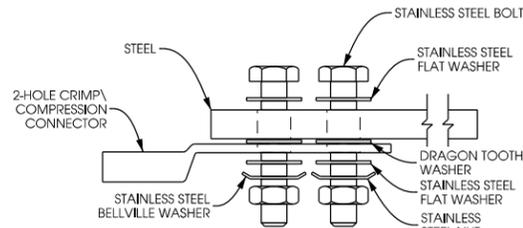
DUE TO SHALLOW BEDROCK, GROUNDING PLATES WILL BE REQUIRED AS DRIVING GROUND RODS WILL NOT BE FEASIBLE



R:\15100\15143\CAD\Print\CD9\CD9 VZW G-1.dgn



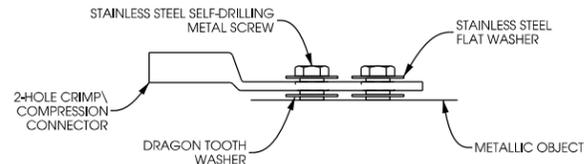
SINGLE CONNECTOR AT GROUND BARS



SINGLE CONNECTOR AT STEEL OBJECTS

NOTES

- ALL OUTDOOR HARDWARE (BOLTS, SCREWS, NUTS, WASHERS) SHALL BE 18-8 STAINLESS STEEL TYPE GRADE. INDOORS, GRADE 5 STEEL HARDWARE MAY BE USED.
- CHOOSE BOLT LENGTH TO ALLOW THE EXPOSURE OF AT LEAST TWO THREADS.
- BACK TO BACK LUG CONNECTIONS ARE AN ACCEPTABLE PRACTICE WHEN BONDED TO A GROUND BAR OR STEEL OBJECTS.
- AT CONNECTIONS MADE TO STEEL OR ANY OTHER DISSIMILAR METALS, A DRAGON TOOTH WASHER MEETING VZW PRACTICES SHALL BE USED BETWEEN THE CONNECTOR AND STEEL.
- IF NOT USING DRAGON TOOTH WASHERS, THOROUGHLY REMOVE A SECTION OF PAINT OR COATING APPROXIMATELY THE SAME SIZE AS CONNECTOR. REMOVE THE PAINT FROM SURFACE USING A DREMEL TYPE TOOL.
- USE AN APPROVED ANTI-OXIDATION COMPOUND ON ALL GROUNDING CONNECTIONS. A COPPER COSMOLINE GREASE BASED COMPOUND (NO OXID) SHALL BE USED ON ALL COPPER TO COPPER CONNECTIONS. A ZINC BASED (GREY COLORED) COMPOUND SHALL BE USED ON ALL COPPER TO STEEL CONNECTIONS.
- WHEN BONDING TO A METALLIC OBJECT WHERE ACCESS IS LIMITED TO ONLY ONE SURFACE, DRILLING & TAPPING OR SELF DRILLING SCREWS ARE THE PREFERRED AND ACCEPTABLE MEANS OF CONNECTION. SHEET METAL SCREWS SHALL NOT BE USED.

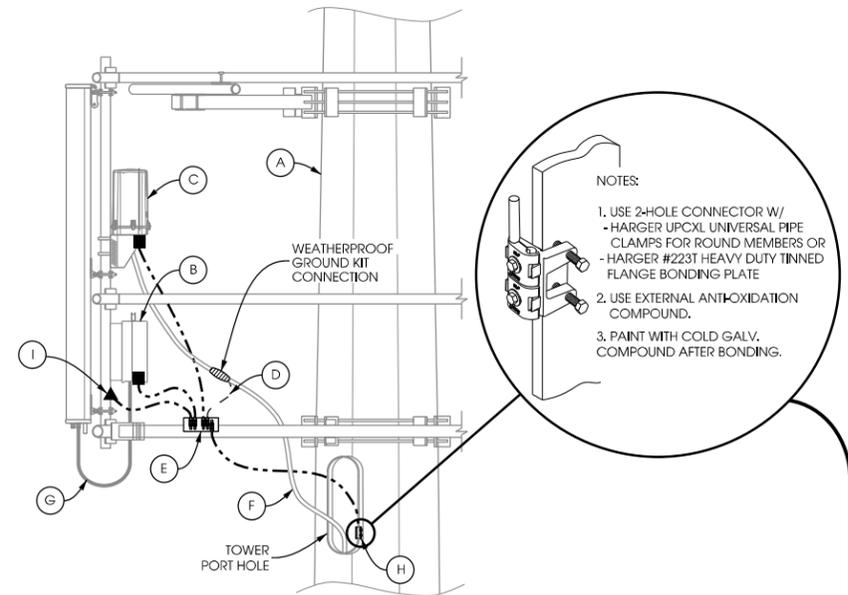


SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

A LUG DETAIL
SCALE: NTS

KEYED GROUNDING NOTES:

- (A) MONOPOLE TOWER
 - (B) REMOTE RADIO UNIT: GROUND WITH #2 STRANDED INSULATED GROUND LEAD
 - (C) DISTRIBUTION SURGE PROTECTOR: GROUND WITH #2 STRANDED INSULATED GROUND LEAD
 - (D) # 6 INSULATED TINNED COPPER CABLE GROUND KITS TO GROUND BAR; COMMSCOPE PART # UG12158-15B4T OR APPROVED EQUIVALENT
 - (E) UPPER ANTENNA GROUND BAR; MOUNT GROUND BAR DIRECTLY TO TOWER STEEL
 - (F) CABLE, MAINTAIN MINIMUM BEND RADIUS
 - (G) JUMPER, MAINTAIN MINIMUM BEND RADIUS
 - (H) CLAMP #2 STRANDED INSULATED COPPER GROUND LEAD TO TOWER STEEL W/ HARGERS HEAVY DUTY TINNED FLANGE BONDING PLANT(P/N# 223T), OR APPROVED EQUIVALENT
 - (I) CADWELD #2 STRANDED INSULATED COPPER GROUND LEAD TO ANTENNA MAST PIPE
- ** ALL GROUND LEADS TO BE ROUTED IN A DOWNWARD FASHION.



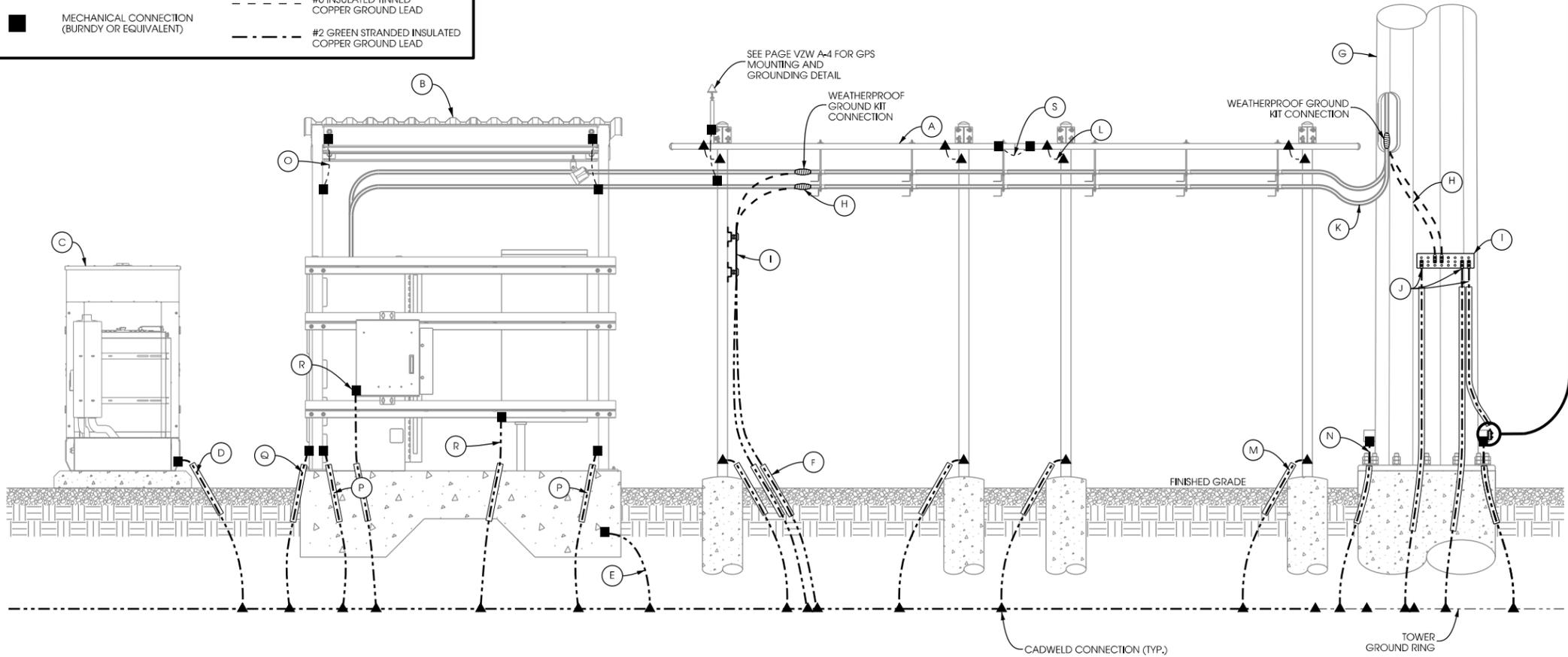
B ANTENNA LEVEL GROUNDING DETAILS
SCALE: NTS

KEYED GROUNDING NOTES:

- (A) ICE BRIDGE
- (B) EQUIPMENT CANOPY
- (C) BACKUP GENERATOR
- (D) (2) #2 SOLID BARE TINNED COPPER GROUND LEADS BETWEEN GENERATOR AND EQUIPMENT GROUND RING THROUGH SEALED 1/2" CONDUIT
- (E) GROUND FOR FOUNDATION REBAR; SEE PAGE VZW G-3 FOR DETAIL
- (F) 1/2" DIA. PVC CONDUIT; EXTEND PVC CONDUIT 24" BELOW GRADE AND FILL WITH SILICONE (TYP.)
- (G) MONOPOLE TOWER
- (H) # 6 INSULATED TINNED COPPER CABLE GROUND KITS TO GROUND BAR; COMMSCOPE PART # UG12158-15B4T OR APPROVED EQUIVALENT
- (I) 4" x 20" x 1/4" TINNED, INSULATED, NON-ISOLATED COPPER GROUND BAR FOR GROUND KITS
- (J) PROVIDE (2) #2 SOLID BARE TINNED COPPER GROUND LEADS FROM LOWER TOWER GROUND BAR TO TOWER GROUND RING AND (1) #2 SOLID BARE TINNED COPPER GROUND LEAD FROM LOWER TOWER GROUND BAR TO TOWER STEEL; ALL LEADS TO BE ENCASED IN 1/2" SEALED CONDUIT
- (K) CABLES WITH DRIPLOOP INSTALLED BY ANTENNA CONTRACTOR; MAINTAIN MINIMUM BEND RADIUS
- (L) #2 SOLID BARE TINNED COPPER GROUND JUMPER BETWEEN ICE BRIDGE AND STEEL SUPPORT POST BY ANTENNA CONTRACTOR; ORIENT WITH HIGH SIDE TOWARDS TOWER
- (M) #2 SOLID BARE TINNED COPPER GROUND LEADS TO ICE BRIDGE POSTS IN 1/2" PVC CONDUIT
- (N) IF APPLICABLE: #2 SOLID BARE TINNED COPPER GROUND LEADS (4) FROM TOWER STEEL TO GROUND RING; USE GROUNDING TABS WHEN AVAILABLE
- (O) #2 TINNED COPPER GROUND LEAD BETWEEN EQUIPMENT CANOPY AND STEEL SUPPORT POST
- (P) #2 TINNED COPPER GROUND LEAD BETWEEN SUPPORT COLUMN AND EQUIPMENT GROUND RING THROUGH SEALED 1/2" CONDUIT
- (Q) EQUIPMENT CABINET GROUNDING; EXTEND (2) #2 SOLID BARE TINNED COPPER GROUND LEADS TO GROUND RING THROUGH SEALED 1/2" PVC CONDUITS
- (R) #2 TINNED COPPER GROUND LEAD BETWEEN UTILITY ENCLOSURES AND EQUIPMENT GROUND RING THROUGH SEALED 1/2" CONDUIT
- (S) #2 GREEN STRANDED INSULATED COPPER GROUND LEAD WITH 2-HOLE LUGS BETWEEN ICE BRIDGE SECTIONS

LEGEND

- ▲ EXOTHERMIC CONNECTION (CADWELD OR EQUIVALENT)
- MECHANICAL CONNECTION (BURNDY OR EQUIVALENT)
- #2 SOLID BARE TINNED COPPER GROUND LEAD
- #6 INSULATED TINNED COPPER GROUND LEAD
- #2 GREEN STRANDED INSULATED COPPER GROUND LEAD



C GROUND LEVEL GROUNDING DETAILS
SCALE: NTS

SHEET TITLE:

| | |
|--------------------------------|------|
| PRELIMINARY DWGS: | INI: |
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD's REV.1 - 02/13/2019 | JAH |

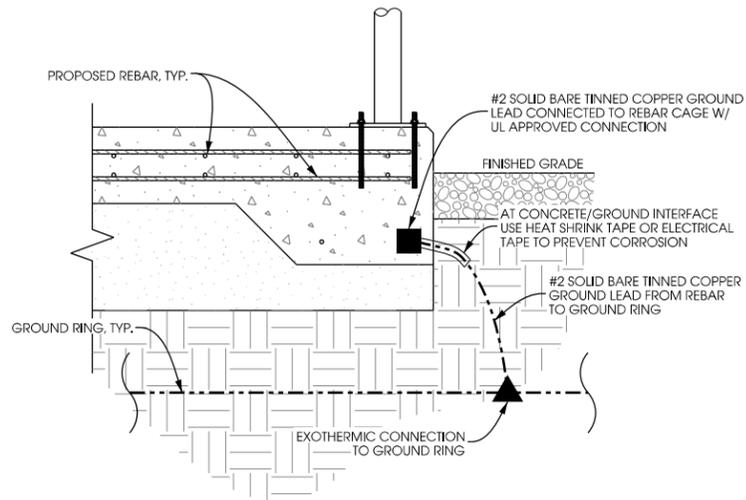
STAMPED FINAL DWGS:

CHECKED BY:
PCM
PLOT DATE:
2/13/2019
PROJECT #:
15143
FILE NAME:
VZW G-2.dgn

SHEET NUMBER:

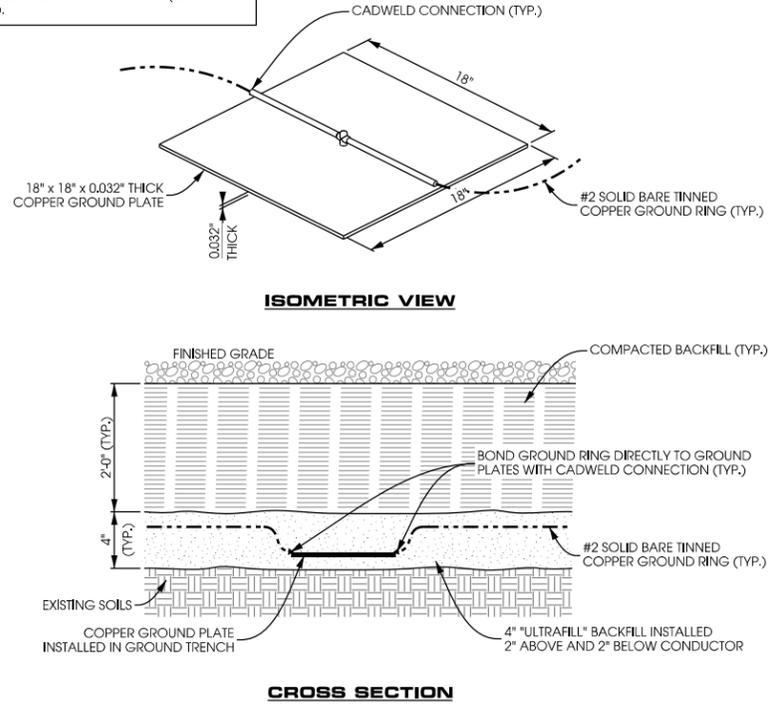
VZW G-2

NOTES:
 - FOUNDATION GROUNDING PER NEC 250.52(3)(A)
 - FOUNDATION GROUNDING CONNECTIONS TO BE COVERED BY A MINIMUM OF 3" OF CONCRETE.
 - REBAR GROUNDING SHALL BE MADE TO A MIN. 20' CONTINUOUS REBAR, IF POSSIBLE.

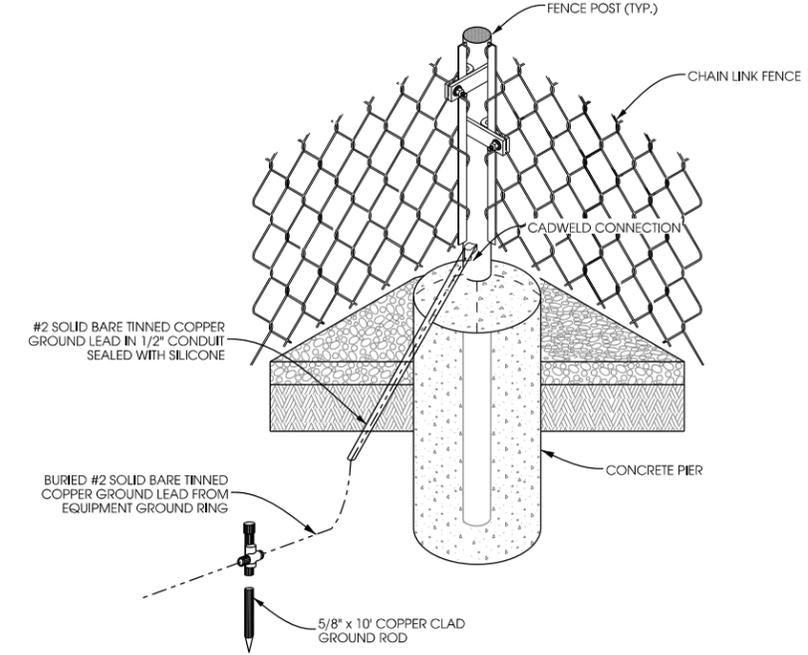


A FOUNDATION GROUNDING
 SCALE: NTS

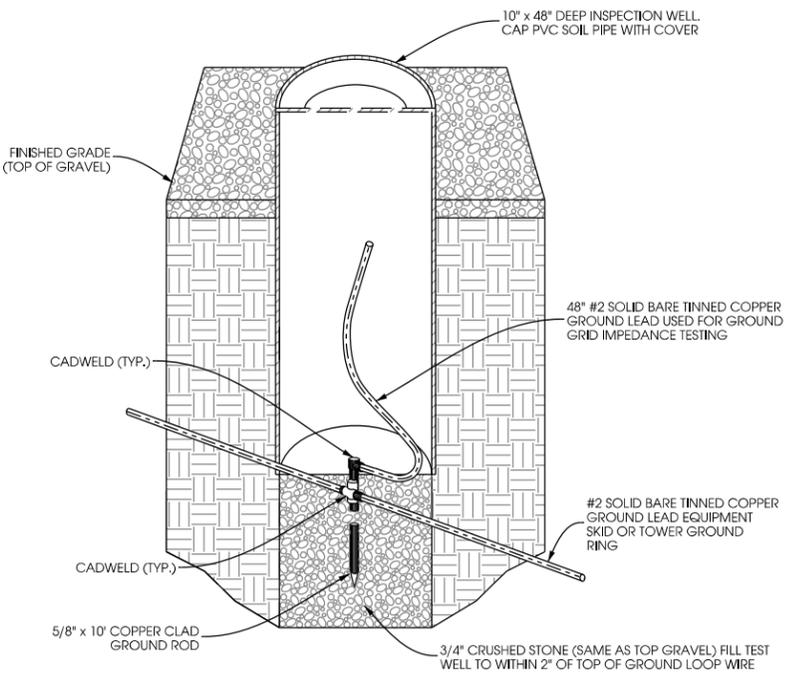
PRODUCT INFORMATION:
 HARGER PART #GP1818-2T (OR EQUIVALENT);
 18" x 18" COPPER GROUND PLATE WITH #2 SOLID BARE TINNED COPPER CONDUCTOR (QTY. = 10 PER BOX).



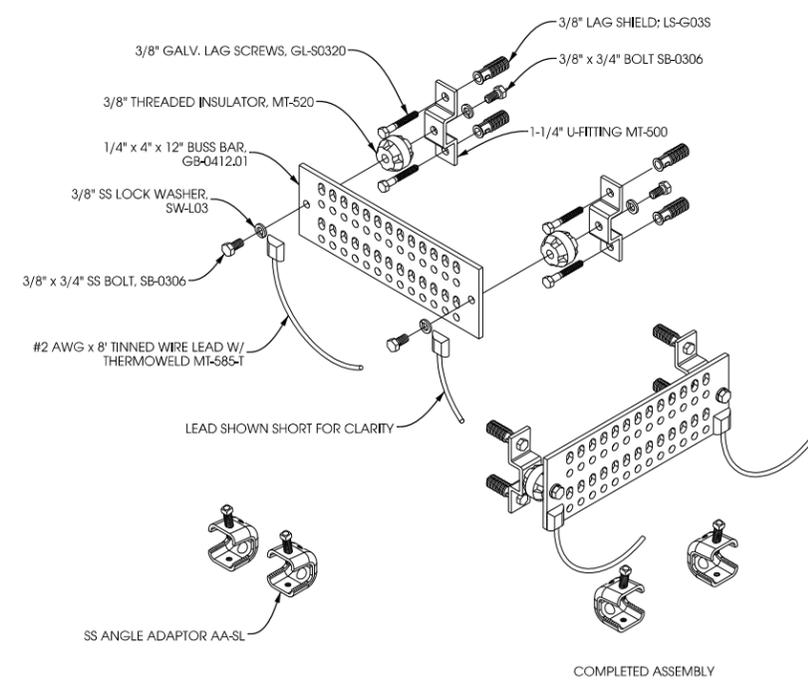
B GROUND PLATE DETAIL
 SCALE: NTS



C FENCE POST GROUNDING DETAIL
 SCALE: NTS

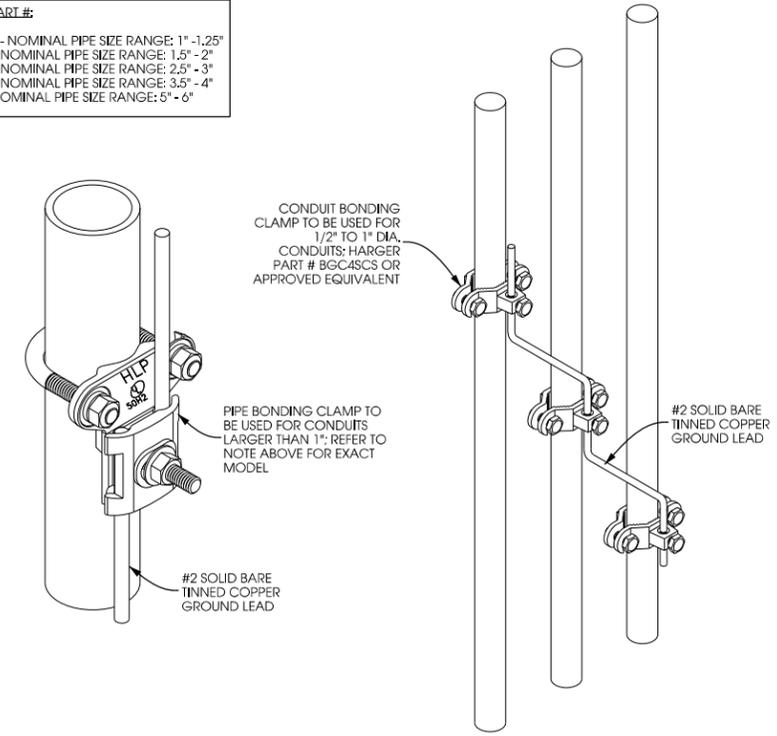


D INSPECTION WELL DETAIL
 SCALE: NTS



E GROUND AND BUSS BAR DETAIL
 SCALE: NTS

HARGER PART #:
 CPC1/1.25 - NOMINAL PIPE SIZE RANGE: 1" - 1.25"
 CPC1.5/2 - NOMINAL PIPE SIZE RANGE: 1.5" - 2"
 CPC2.5/3 - NOMINAL PIPE SIZE RANGE: 2.5" - 3"
 CPC3.5/4 - NOMINAL PIPE SIZE RANGE: 3.5" - 4"
 CPC5/6 - NOMINAL PIPE SIZE RANGE: 5" - 6"



F CONDUIT GROUNDING
 SCALE: NTS

SHEET TITLE:

| PRELIMINARY DWGS: | INT: |
|--------------------------------|------|
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD'S REV.1 - 02/13/2019 | JAH |
| STAMPED FINAL DWGS: | |
| CHECKED BY: | |
| PCM | |
| PLOT DATE: | |
| 2/13/2019 | |
| PROJECT #: | |
| 15143 | |
| FILE NAME: | |
| VZW G-3.dgn | |
| SHEET NUMBER: | |

NOTICE TO CONTRACTOR
ROCKFIELD [418732]
RICHFIELD, WISCONSIN

SHEET TITLE:

| | |
|--------------------------------|------|
| PRELIMINARY DWGS | INI: |
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD'S REV.1 - 02/13/2019 | JAH |
| STAMPED FINAL DWGS: | |
| CHECKED BY: | |
| PCM | |
| PLOT DATE: | |
| 2/13/2019 | |
| PROJECT #: | |
| 15143 | |
| FILE NAME: | |
| VZW-N-1.dgn | |
| SHEET NUMBER: | |
| VZW N-1 | |

NOTICE TO CONTRACTOR – ENVIRONMENTAL CONDITIONS/RESTRICTIONS
AT

Form Revision: 2/23/16

| | |
|------------------------|---|
| SITE NAME/IDENTIFIER | Rockfield |
| REGION NAME | WI |
| SITE LOCATION/ADDRESS: | N132 W 17400 Rockfield Road, Richfield, Wisconsin 53076 |

VZW Installation:
 Verizon Wireless proposes to attach antennas to a monopole to be constructed by PI, and lease space for the placements of its generator within PI's 80-foot by 80-foot fenced compound. Access and utilities will be provided by a proposed 30-foot wide easement extending west, then south, joining an existing easement to Rockfield Road. **Lendlease will provide the site "tenant-ready" for VZW. Lendlease or its contractor is responsible for all ground disturbance and the site, including trenching and installation of utilities and pouring the concrete pad for VZW's equipment. VZW is only responsible for installation of its antennas on the tower and installation of the platform on the concrete pad.**

Note: Verizon Wireless makes no representation or warranty as to the accuracy or completeness of the information below. Company is fully responsible for its own compliance with all applicable laws and regulations. To the extent that Company becomes aware of any additional environmental conditions, it agrees to immediately inform Verizon Wireless.

The Company's response to this construction bid shall constitute the Company's acknowledgement and acceptance of the stated conditions and restrictions at the site.

The following environmental conditions have been identified at the project site:

| Environmental Condition | Description and Location of Contaminant |
|--|---|
| <input checked="" type="checkbox"/> Check All That Apply | |
| <input checked="" type="checkbox"/> Contaminated Soil | <p>A Phase II ESA dated September 1, 2017 was performed at the site. The limited subsurface investigation included the advancement of nine soil borings designated SB-01 (proposed location of monopole), SB-02 (proposed location of VZW's equipment) and SB-03 through SB-09 (along proposed access/utility easement). Discrete soil samples were collected from SB-01 at 2 to 3 feet bgs, from SB-02 at 2 to 3 feet bgs, from SB-03 at 0.5 to 1.5 feet bgs, SB-04 at 0 to 8 inches bgs, SB-05 at 0 to 1 foot bgs, SB-06 at 1 to 2 feet bgs, SB-07 at 1 to 2 feet bgs, SB-08 at 1 to 2 feet bgs and SB-09 at 1 to 2 feet bgs. The soil was submitted for laboratory analysis for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) and RCRA Metals plus hexavalent chromium. Groundwater was not encountered.</p> <p><u>Laboratory Analysis Results for Soil:</u> The soil analytical results were compared to compared to the Wisconsin Department of Natural Resources (WDNR) Direct-Contact (DC) Residual Contaminant Levels (RCLs) for non-industrial and industrial soils in accordance with the Wisconsin State Legislature Chapter NR 720: Soil Cleanup Standards.</p> <p>SVOCs</p> <ul style="list-style-type: none"> Benzof[a]pyrene – Detected in soil samples SB-01 (7 mg/kg) in excess of Industrial DC-RCLs. Detected in soil samples SB-04 (0.16 mg/kg) and SB-05 (0.62 mg/kg) in excess of Non-Industrial DC-RCLs. Detected in soil samples SB-02, SB-07, SB-08 and SB-09 (ranging from 0.012 to 0.03 mg/kg) below the applicable DC-RCLs. Benzof[a]anthracene – Detected in soil samples SB-01 (7.5 mg/kg) in excess of Non-Industrial DC-RCLs. Detected in soil sample SB-02, SB-03, SB-04, SB-05, SB-07, SB-08 and SB-09 (ranging from 0.005 to 0.5 mg/kg) but below the applicable DC-RCLs. Benzof[b]fluoranthene - Detected in soil samples SB-01 (10 mg/kg) in excess of Non-Industrial DC-RCLs. Detected in all |

remaining soil samples (ranging from 0.009 to 0.21 mg/kg) below the applicable DC-RCLs.

- Dibenz(a,h)anthracene** - Detected in soil samples SB-01 (0.51 mg/kg) in excess of Non-Industrial DC-RCLs. Detected in soil samples SB-04 (0.023 mg/kg) and SB-05 (0.29 mg/kg) below the applicable DC-RCLs.
- Indeno[1,2,3-cd]pyrene** - Detected in soil samples SB-01 (0.19 mg/kg) in excess of Non-Industrial DC-RCLs. Detected in soil samples SB-02, SB-04, SB-05, SB-07, SB-08 and SB-09 (ranging from 0.0099 to 0.28 mg/kg) below the applicable DC-RCLs.
- 1-Methylnaphthalene** – Detected in soil samples SB-01 (1.2 mg/kg) and SB-05 (0.032 mg/kg) below the applicable DC-RCLs.
- 2-Methylnaphthalene** - Detected in soil samples SB-01, SB-04 and SB-05 (ranging from 0.0078 to 1.3 mg/kg) below the applicable DC-RCLs.
- 2-Methylphenol** - Detected in soil sample SB-01 (0.072 mg/kg) below the applicable DC-RCLs.
- Acenaphthene** - Detected in soil samples SB-01 (1.1 mg/kg) and SB-05 (0.018 mg/kg) below the applicable DC-RCLs.
- Acenaphthylene** - Detected in soil samples SB-01, SB-04 and SB-05 (ranging from 0.0055 to 1.1 mg/kg) below the applicable DC-RCLs.
- Anthracene** - Detected in soil samples SB-01, SB-04 and SB-05 (ranging from 0.015 to 4.1 mg/kg) below the applicable DC-RCLs.
- Benzof[g,h,i]perylene** - Detected in soil samples SB-01, SB-04, SB-05, SB-07 and SB-09 (ranging from 0.014 to 1.8 mg/kg) below the applicable DC-RCLs.
- Benzof[k]fluoranthene** - Detected in soil samples SB-01, SB-04, SB-05 and SB-07 (ranging from 0.016 to 3.8 mg/kg) below the applicable DC-RCLs.
- Carbazole** - Detected in soil sample SB-01 (1.9 mg/kg) below the applicable DC-RCLs.
- Chrysene** - Detected in soil samples SB-01, SB-02, SB-04, SB-05, SB-07, SB-08 and SB-09 (ranging from 0.012 to 8.3 mg/kg) below the applicable DC-RCLs.
- Dibenzofuran** - Detected in soil sample SB-01 (1.4 mg/kg) below the applicable DC-RCLs.
- Fluoranthene** - Detected in soil samples SB-01, SB-04, SB-05 and SB-07 (ranging from 0.016 to 3.8 mg/kg) below the applicable DC-RCLs.
- Fluorine** - Detected in soil samples SB-01 (2.2 mg/kg) and SB-05 (0.022 mg/kg) below the applicable DC-RCLs.
- Naphthalene** - Detected in soil samples SB-01, SB-04 and SB-05 (ranging from 0.0064 to 1.7 mg/kg) below the applicable DC-RCLs.
- Phenanthrene** - Detected in all soil samples, except SB-02, (ranging from 0.0062 to 18 mg/kg). There are no DC-RCLs for this concentration.
- Phenol** - Detected in all soil samples (ranging from 0.0069 to 15 mg/kg) below the applicable DC-RCLs.
- Pyrene** - Detected in soil samples SB-01, SB-04, SB-05 and SB-07 (ranging from 0.016 to 3.8 mg/kg) below the applicable DC-RCLs.

VOCs

- Ethylbenzene** - Detected in soil sample SB-05 (0.16 mg/kg) below the applicable DC-RCLs.
- Toluene** - Detected in soil samples SB-01 (0.4 mg/kg) and SB-05 (0.023 mg/kg) below the applicable DC-RCLs.
- Xylene** - Detected in soil sample SB-01 (0.035 mg/kg) and SB-05 (0.88 mg/kg) below the applicable DC-RCLs.

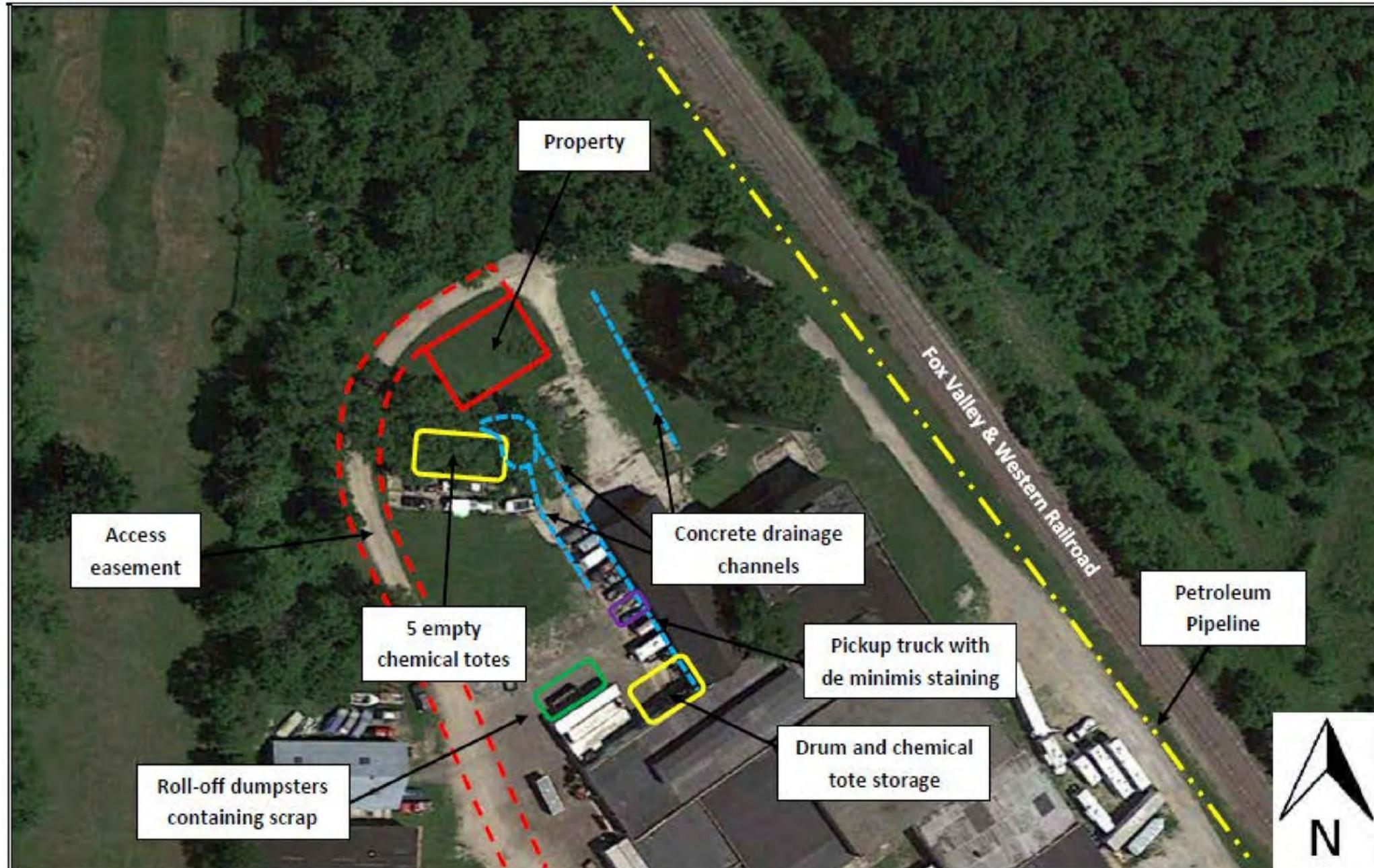
RCRA Metals and Hexavalent Chromium

- Arsenic** – Detected in soil samples SB-01, SB-02, SB-04, SB-06, SB-07, SB-08 and SB-09 (ranging from 3.1 to 8.2 mg/kg) in excess of Industrial DC-RCLs. Detected in soil samples SB-03 (2.9 mg/kg) and SB-05 (2 mg/kg) in excess of Non-Industrial DC-RCLs. The Background Threshold Value (BTV) of arsenic for Wisconsin established by the WDNR is 8.0 mg, as such, SB-01 (8.1 mg/kg) and SB-06 (8.2 mg/kg) were the only soil samples above the BTV.
- Hexavalent Chromium** - Detected in soil samples SB-02, SB-03 and SB-07 (ranging from 0.49 to 0.65 mg/kg) in excess of Industrial DC-RCLs. Not detected in the remaining samples, however, the method detection limit (MDL) was in excess of the Non-Industrial DC-RCLs.
- Barium** - Detected in all soil samples (ranging from 17 to 130 mg/kg) below the applicable DC-RCLs.
- Cadmium** - Detected in all soil samples (ranging from 0.11 to 0.53 mg/kg) below the applicable DC-RCLs.
- Chromium** - Detected in all soil samples (ranging from 5.1 to 26 mg/kg). There are no DC-RCLs for this metal.
- Lead** - Detected in all soil samples (ranging from 5.4 to 59 mg/kg) below the applicable DC-RCLs.
- Mercury** - Detected in all soil samples, except SB-06, (ranging from 0.011 to 0.059 mg/kg) below the applicable DC-RCLs.
- Selenium** - Detected in soil samples SB-01 (0.73 mg/kg) and SB-06 (1.3 mg/kg) below the applicable DC-RCLs.

The Table of Soil Exceedances, the Table of Soil Analytical Results and boring diagram are attached below.

| | |
|---|---|
| <input checked="" type="checkbox"/> Presumed Contaminated Groundwater (not sampled) | The groundwater was not sampled. Thus, the groundwater is presumed to be contaminated. |
| <input type="checkbox"/> Presence of asbestos | |
| <input type="checkbox"/> Presence of lead-based paint | |
| <input checked="" type="checkbox"/> Other | <p>Recognized Environmental Condition (REC)</p> <p>Historic Use of Property as Factory: A factory operated intermittently on the parent parcel of the property from at least 1915-1999. The factory was operated by the Rockfield Canning Company from approximately 1915 to circa 1945, and is then listed as Milwaukee Plate Co. according to the 1999 city directory. Metal fabrication facilities commonly used or produced metals, VOCs, dioxins, beryllium, degreasing agents, solvents, and waste oils.</p> <p>Vicinity Wetland: The NWI Map identifies a freshwater forested wetland approximately 275 feet northeast of the proposed tower compound. Trileaf did not observe any obligative hydrophytic vegetation within the property's boundaries. The soil beneath the property is not hydric.</p> <p>Drums and Tote: Ten 55-gallon drums and one 275-gallon chemical storage tote are located within a general storage area approximately 225 feet south of the proposed tower compound, adjacent to the factory</p> |
| Business Environmental Risks (BERs) | |

Aerial Map Depicting Site and BERs:



Site Plan

Parallel Infrastructure – Rockfield
 W132W17400 Rockfield Road
 Richfield, Wisconsin 53076



NOTICE TO CONTRACTOR
ROCKFIELD [418732]
RICHFIELD, WISCONSIN

SHEET TITLE:

| | |
|--------------------------------|-------------|
| PRELIMINARY DWGS: | INI: |
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD's REV.1 - 02/13/2019 | JAH |
| STAMPED FINAL DWGS: | |
| CHECKED BY: | PCM |
| PLOT DATE: | 2/13/2019 |
| PROJECT #: | 15143 |
| FILE NAME: | VZW-N-3.dgn |
| SHEET NUMBER: | |

K:\15100\15143\CAD\PH\CD\VZW-N-3.dgn



EXISTING ACCESS DRIVE
LOOKING NORTHEAST FROM WEST SIDE OF EXISTING BUILDING



PROPOSED COMPOUND LOCATION
LOOKING SOUTHEAST FROM NORTH SIDE OF PROPOSED COMPOUND LOCATION



PROPOSED COMPOUND LOCATION
LOOKING NORTHEAST FROM SOUTHWEST SIDE OF PROPOSED COMPOUND LOCATION



PROPOSED UTILITY ROUTE
LOOKING NORTH FROM EXISTING GRAVEL DRIVE

SITE PHOTOS
ROCKFIELD [418732]
RICHFIELD, WISCONSIN

SHEET TITLE:

| | |
|--------------------------------|------|
| PRELIMINARY DWGS: | INI: |
| CD 90's REV.2 - 10/24/2017 | APK |
| CD 90's REV.3 - 11/17/2017 | APK |
| CD 90's REV.4 - 04/18/2018 | JAH |
| CD 90's REV.5 - 06/18/2018 | CV |
| CD 90's REV.6 - 11/08/2018 | NAT |
| CD 90's REV.7 - 01/10/2019 | JAH |
| STAMPED PERMIT DWGS: | |
| PERMIT CD's REV.1 - 02/13/2019 | JAH |

| | |
|---------------------|--|
| STAMPED FINAL DWGS: | |
| | |

| | |
|-------------|-------------|
| CHECKED BY: | PCM |
| PLOT DATE: | 2/13/2019 |
| PROJECT #: | 15143 |
| FILE NAME: | VZW P-1.dgn |

SHEET NUMBER:

VZW P-1