



CITY COUNCIL REGULAR MEETING AGENDA  
TUESDAY OCTOBER 1, 2019  
**MEETING TIME: 6:30 PM**

1. Call to Order

2. Pledge of Allegiance

3. Roll Call

4. \*\*\*\*Consent Agenda\*\*\*\*

All items listed under Consent Agenda are considered to be routine by Council and will be acted on by one motion. There will be no separate discussion of these items. If discussion is desired, that item will be removed from the Consent Agenda and will be considered separately.

- a. Approval of City Council Minutes from the September 17, 2019 Regular City Council Meeting.
- b. Approval of City Council Minutes from the September 12, 2019 City Council Workshop.
- c. Approval of Accounts Payable; Checks Numbered 19133-19160 (Check 19132 was voided).
- d. Approval of Election Judges for the 2019 Election.
- e. Large Assembly Permit for an Event to be Held on the Property Located at 7075 US Highway 12 on October 12, 2019.

5. Set Agenda – Anyone Not on the Agenda can be Placed Under Open/Misc.

6. Reports of Boards and Committees by Council and Staff.

7. R. Michael and Margaret King (Applicants/Owners) request that the City consider the following actions for the property located at 2365 County Road 92 N., Independence, MN (PID No. 20-118-24-11-0002):

- a. **RESOLUTION NO. 19-1001-01** – considering a variance and minor subdivision to allow the creation of a rural view lot. The property is an original quarter, quarter section with the exception of a small piece of property that was taken by Wright Hennepin Electric for their substation. The variance would allow the subdivision of property for a rural view lot that is less than 40 acres.

8. AT&T (Applicant) requests that the City consider the following action for the property located at 3310 County Line Road, Independence, MN (PID No. 07-118-24-33-0004):

- a. **RESOLUTION NO. 19-1001-02** – considering a conditional use permit amendment to allow the colocation of new cellular antennas on the existing wireless tower located on the subject property and a variance to allow a second accessory structure on the property and the reduction of the requisite 40-foot rear yard setback.
9. Anita Volkenant (Applicant/Owner) requests that the City consider the following actions for the property located at 5835 Drake Drive, Independence, MN (PID No. 26-118-24-43-0006):
  - a. **RESOLUTION NO. 19-1001-03** – considering an amendment to the existing interim use permit previously granted on the property.
10. Open/Misc.
11. Adjourn.

MINUTES OF A REGULAR MEETING OF THE  
INDEPENDENCE CITY COUNCIL  
TUESDAY, SEPTEMBER 17, 2019 –6:30 P.M.

1. CALL TO ORDER.

Pursuant to due call and notice thereof, a regular meeting of the Independence City Council was called to order by Mayor Johnson at 6:30 p.m.

3. ROLL CALL

PRESENT: Mayor Johnson, Councilors Spencer, McCoy and Betts  
ABSENT: City Attorney Vose, Councilor Grotting  
STAFF: City Administrative Assistant Horner, City Administrator Kaltsas  
VISITORS: None

4. \*\*\*\*Consent Agenda\*\*\*\*

All items listed under Consent Agenda are considered to be routine by Council and will be acted on by one motion. There will be no separate discussion of these items. If discussion is desired, that item will be removed from the Consent Agenda and will be considered separately.

- a. Approval of City Council Minutes from the September 3, 2019 Regular City Council Meeting.
- b. Approval of Accounts Payable; Checks Numbered 19095-19131.
- c. Approval of Mayor's attendance at the National League of Cities Conference in San Antonio Nov. 19-22.

**Motion by Spencer, second by McCoy to approve the Consent Agenda. Ayes: McCoy, Betts and Spencer. Nays: None. Absent: Grotting. Abstain. Johnson. MOTION DECLARED CARRIED.**

5. SET AGENDA – ANYONE NOT ON THE AGENDA CAN BE PLACED UNDER OPEN/MISC.

6. REPORTS OF BOARDS AND COMMITTEES BY COUNCIL AND STAFF

**Spencer attended the following meetings:**

- Highway 12 Safety Coalition
- City Council Workshop

**Grotting attended the following meetings:**

**McCoy attended the following meetings:**

- Highway 12 Safety Coalition
- City Council Workshop

**Betts attended the following meetings:**

- Highway 12 Safety Coalition
- West Hennepin Chamber of Commerce Meeting
- City Council Workshop

- Fire Commission Meeting
- Police Commission Meeting

**Johnson attended the following meetings:**

- Highway 12 Safety Coalition
- Parade of Homes
- Regional Council of Mayors Meeting
- Met with Deb Taylor- Executive Director of Senior Community Services
- Orono School Board Meeting
- Northwest League of Municipalities Meeting
- City Council Workshop
- Fire Commission Meeting
- Orono School Alumni Events
- Police Commission Meeting
- Met with Commissioner Jeff Johnson

**Horner attended the following meetings:**

- City Council Workshop
- TASC meeting

**Kaltsas attended the following meetings:**

- Highway 12 Safety Coalition Meeting
- City Council Workshop
- Police Commission Meeting
- Fire Commission Meeting

7. Director Gary Kroells, West Hennepin Public Safety:

- a. Activity Report for the Month of August 2019.

\*for a complete report see the City Council packet\*

Kroells said at the end of August, WHPS handled a year-to-date total of 4,579 incident complaints. For the month of August; 361 incidents occurred in Independence and 279 incidents were in Maple Plain. He highlighted a few incidents.

8. Consider Approval of the 2020 Preliminary Budget and Tax Levy:

- a. **RESOLUTION NO. 19-0917-01** – Establishing the General and Debt Service Preliminary Tax Levy.
- b. **RESOLUTION NO. 19-0917-02** – Establishing the Pioneer Sarah Creek Watershed Management Commission Preliminary Tax Levy.

Kaltsas said Staff and Council have had several meetings to discuss and revise the preliminary budget and corresponding tax levy for 2020. Based on Council discussions, the City has established a preliminary budget which would equate to an approximately 3.83 percent increase in the overall tax levy. The City's tax rate resulting from the proposed budget and tax levy would remain flat (no increase) at just below 40



percent. The City has been working to fully fund public works capital expenditures through the general fund budget. For 2020, the proposed budget allocates approximately \$75,000 towards the public works capital improvement plan. In addition, the City has prepared a cash flow analysis of the public works capital improvement plan which is shown in more detail in the budget memo. This analysis provides further detail of how the capital funds can fully pay for the capital needs projected over 10 years. In addition to the capital equipment fund, the City is budgeting an additional \$80,000 for road tiling and road chip sealing in 2020. The attached preliminary budget memorandum further details the proposed 2020 budget.

The City Council will have the opportunity to further refine the budget prior to the requisite December 2019 adoption. At this time, the City is considering the adoption of the preliminary budget and tax levy which establishes the maximum tax levy for taxes payable in 2019. The preliminary levy is required to be set prior to September 30, 2019. The City can adopt a final levy that is less than the preliminary but cannot increase the final levy set in December from the adopted preliminary levy.

Key items include Budgeted \$75,000 in Capital Transfers, up from \$68,623 in 2019. Administration's capital fund increased \$10,000. This money is used as a contingency fund. Consulting increased \$5,000. Engineering costs increased \$5,000. Road tiling and chip sealing increased \$40,000 each. Created a new expenditure line item to break out Building Permits from Plan Review. Fire protections was only increased 3% from 2018 since we are still awaiting budget numbers from other Cities. The increase from 2018-2019 was 8% and may need to be re-evaluated once more information is given. Increased Building Inspection Conference and Travel to \$2,500 to better reflect training costs. Police contract increased 2.3% from 2019 and is reflected in the budget. Increased budget for Codification of Ordinances to \$2,500 to reflect prior year expenses. The sign budget increased by \$2,500 to bring current signage into compliance. Budgeted \$75,000 in Capital Transfers, up from \$68,623 in 2019. Administration's capital fund increased \$10,000. This money is used as a contingency fund. Consulting increased \$5,000. Engineering costs increased \$5,000. Road tiling and chip sealing increased \$40,000 each. Created a new expenditure line item to break out Building Permits from Plan Review. Fire protections was only increased 3% from 2018 since we are still awaiting budget numbers from other Cities. The increase from 2018-2019 was 8% and may need to be re-evaluated once more information is given. Increased Building Inspection Conference and Travel to \$2,500 to better reflect training costs. Police contract increased 2.3% from 2019 and is reflected in the budget. Increased budget for Codification of Ordinances to \$2,500 to reflect prior year expenses. The sign budget increased by \$2,500 to bring current signage into compliance.

The current tax capacity and historical tax capacity rates are summarized below for Independence and three relatively comparable Hennepin County Cities. The major difference between Independence and the three comparable cities is the large commercial tax base. The City has built a healthy fund balance which can contribute to a positive bond rating and mitigates the potential for needing short term borrowing. It will be important to continue to maintain reserve levels at 40 to 50 percent. A summary of the general fund balance history and 2019 budget is as follows. It should be noted that the future projections assume a 3% increase in expenses and a breakeven budget which results in the City eroding reserves levels when viewed as a present of expenditures.

Johnson said the Pioneer Sarah Creek Watershed is separate because it doesn't include everybody, only those in the district.

**Motion by McCoy, second by Spencer to approve RESOLUTION NO. 19-0917-01 – Establishing the General and Debt Service Preliminary Tax Levy. Ayes: Johnson, McCoy, Betts and Spencer. Nays: None. Absent: Grotting. MOTION DECLARED CARRIED.**

**Motion by Spencer, second by McCoy to approve RESOLUTION NO. 19-0917-02 – Establishing the Pioneer Sarah Creek Watershed Management Commission Preliminary Tax Levy. Ayes: Johnson, McCoy, Betts and Spencer. Nays: None. Absent: Grotting. MOTION DECLARED CARRIED.**

9. Approval to Change the Date of the November 5<sup>th</sup> City Council Meeting Due to the Election.

Kaltsas said the first November City Council Meeting (November 5th) falls on the same date as the 2019 Election. The City will need to reschedule the Council Meeting. The second November City Council Meeting creates a conflict for the Mayor due to the NLC Conference. As has been done in the past, the City is in a position to hold only one meeting in November. Staff is recommending that the City Council cancel both regularly scheduled meetings in November and hold one meeting. Staff is seeking direction from Council on which of two alternative dates work best?

Monday, November 4th or  
Monday, November 18th

**Motion by Betts, second by McCoy change the November City Council meeting to Monday, November 18, 2019. Ayes: Johnson, McCoy, Betts and Spencer. Nays: None. Absent: Grotting. MOTION DECLARED CARRIED.**

10. Open/Misc.

11. Adjourn.

**Motion by McCoy, second by Betts to adjourn at 7:12 p.m.**

Respectfully Submitted,

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Trish Gronstal  
Recording Secretary

MINUTES OF A WORK SESSION OF THE  
INDEPENDENCE CITY COUNCIL  
THURSDAY SEPTEMBER 12, 2019 –7:00 A.M.

1. CALL TO ORDER.

Pursuant to due call and notice thereof, a work session of the Independence City Council was called to order by Mayor Johnson at 7:00 a.m.

2. ROLL CALL

PRESENT: Mayor Johnson, Councilors Betts, Spencer, McCoy and Grotting

ABSENT: City Attorney Vose

STAFF: City Administrator Kaltsas, Administrative Assistant Beth Horner, Public Works Supervisor Bode

VISITORS: ABDO Andrea Worcester and Steve McDonald

3. General Administration

a. 2019 Budget

- o Preliminary Budget Review/Discussion
  - Police/Fire Budget Updates
  - Potential Bonding for City Hall/ Roadway Improvements

Kaltsas provided background on the budget. Council is being asked to consider and provide direction relating to the preliminary budget goals. For the past two years, Council has directed staff to prepare a budget using a flat tax rate of 40%. Abdo, Eick & Meyers and staff have prepared a draft preliminary budget which maintains no increase in tax rate and reflects an overall operating levy increase of 3.83% or \$113,824. The City has PW capital equipment cash balance of approximately \$166,000 with an additional \$51,467 being transferred by year end (~\$215,000). Based on the capital equipment plan, the City is in the process of purchasing a new tandem axel vehicle in 2020. The 2020 budget has planned for a \$75,000 transfer to PW capital fund. The City's capital equipment plan projects how the City will be able to fund capital equipment purchases moving forward using a flat budget number of \$60,000 per year after 2020 (see capital equipment plan). Once again, the capital improvement plan for City Hall shows no significant expenditures until 2020. The budget continues to contemplate the City taking on a more robust overhaul of the mechanical systems and interior and exterior needs of the building in 2020.

The budget reflects a 2% cost of living increase. It should be noted that health insurance costs are increasing by 6-8%. The City has been working on preparation of a capital road improvement plan. This plan has three primary areas: Street Seal Coating (Chip Sealing), Gravel Road Tiling, Bituminous Road Overlay/Upgrade. Staff has been working to project/prioritize needs for improving and maintaining roads for a five-year period. From the information prepared in the initial draft, it can be seen that the City would need to increase street funding by a significant amount in order to fully fund road improvement projects. It is anticipated that staff will revise this plan to show how the recommended road maintenance can be accommodated within the City's budget. As a placeholder, \$40,000 is being placed in both the seal-coating and road tiling line items for 2020. This amount, combined with some of the funds typically budgeted for gravel and bituminous road maintenance, could be used to realize the road maintenance needs moving forward.

McDonald said key items are outlined in the memo. Capital transfers were done at 75k whereas last year it was about 68k. We are keeping the tax capacity at 40 or below which will mean the general overall increase will be less than 4%. The City is starting to build reserves for future capital. McDonald said the wild card is the Fire budget. Kaltsas said he heard from Maple Plain that they will be pretty flat but he has not gotten an answer from Delano on their number. He noted they are generally our smallest percent. McDonald said the Police budget is at a 2.3% increase. The total City levy is 3.83%. Kaltsas is looking at the mutual aid charges and what percentage the City is being charged.

McDonald said the overall tax capacity increase for the City is 3.45%. County-wide that number is 10%. Residential saw a rather low increase at 2.31%. McDonald said most revenue categories will stay the same. Kaltsas said when the tax rate is kept flat it is an opportunity to true up line items. The budget does not have a fluff factor built into it. The pool of money left is used to fund capital equipment items or administration needs. Kaltsas noted two-line items added under the streets budget which are seal coating and road tiling at an amount allocated of 40k each. These may need to shift a bit, but the purpose is to fund a seven-year plan for roads. Betts asked about the aging road signs. Kaltsas said they will be replaced. He said tiling will help maintain the roads and reduce the need for gravel. Betts noted there are culverts that are not draining properly specifically citing Becker and Pagenkopf.

Grotting asked about technical security for the City. Kaltsas said two years ago we switched servers from shared with West Hennepin Public Safety to secured. He noted the City is 100% backed up to the Cloud now.

Spencer asked if there would be an increase for Pioneer Sarah Creek Watershed and Kaltsas said there was \$10,930 allocated to that fund.

Kaltsas said the road piece will be detailed out to work with the capital plan. Spencer thanked Kaltsas for working on the budget over the past few years to make it more transparent.

Kaltsas asked about another round of debt issuance. He said he reached out to Northland to take a look at what the City could do with new bonding. He wants to look at the max amount on a 15 or 20 year debt and what those payments may look like over 6 years. Kaltsas said they would look at the interest and the net present difference. 3.7 million could be under the 15-year note. Kaltsas is looking at what is the most efficient way to accomplish two projects which include the street overlays and improvements to the City Hall building. He noted one of these projects could be done in 2020 with debts coming off. Kaltsas said if there were to be a bigger bond issuance then both projects could be done. He noted City Hall needs carpeting, paint, AC/ heating units and wallpaper. He noted it would also be nice to update the Community/ Council Chambers. WHPS would like to have more garage space.

Johnson said he heard of a soybean product to spray on bituminous roads for 10-year longevity. Spencer asked about the tax abatement recall. Kaltsas said we did not have the time to wait so had to do the tax abatement. He said a 3 million debt could be structured anyway we want. Spencer noted rates are historically low and it's never been cheaper to do this. Spencer said we may never get this opportunity again. Spencer asked if it would be possible to do for the 1.2 million. Betts said the Council Chambers need to be reconfigured. Betts noted we have always been very conservative and we need to invest in roads and City Hall. She said she would like to see everything get done as we are in a good position and rates are good.

- b. National League of Cities Service Line Warranty Program
  - o Discuss Program and Potential Offering to Residents

Kaltsas said Staff has discussed the possibility of offering the National League of Cities Service Line Warranty Program to residents of the City. The program is operated by a third-party insurance group that provides insurance for sanitary sewer and water service lines that run between the City owned main line and the residence. Many homeowners are not aware that their homeowner's insurance policy does not typically cover the costs associated with leaks or breaks in the service line between the street and the home. The City is only responsible for the main line and does not cover any breaks or leaks outside of the City's right of way.

The program that is offered would cover both residents connected to sanitary sewer and also residents on septic systems. The cost for the service line program is \$7.75 per month. In addition, there is a second insurance that can be purchased that covers interior plumbing and drain tile. This program costs \$9.99 per month (see attached program cost and coverage summary). The City is involved in this offering by allowing the company to use the City's logo on marketing information that is sent to the residents. In exchange, the City would receive \$.50 per product per user per month. The City has no other involvement in the process, claims or coverages. Information pertaining to the program is attached and can be discussed further at the workshop. Staff will be seeking direction relating to the product and whether or not it should be offered to residents of the City.

Johnson said 3 or 4 years ago we sent a feeler out to residents, but he was not sure what that outcome reflected. Spencer said it would be a good thing to offer and a great public service message from the City.

- c. Zoning Discussion for Property (PID No. 0111824220010) on Lake Sarah Heights Drive
  - o Use of Existing Property

Kaltsas said the City received an inquiry about the use of an existing vacant property located on Lake Sarah Heights Road. The property is an out lot that was platted as a part of the Beamish Estates 2<sup>nd</sup> Addition plat. The property appears to have been platted to accommodate a future right of way that would provide access into the property located north of the railroad. The property owner across the street from this property is asking if the City would ever allow this out lot to be re-platted and combined with the property across the street for the purpose of constructing a detached accessory storage building. Staff will provide additional context at the meeting and is seeking the initial reaction of the Council to this concept.

Council thought the interested party should ask the neighbors first who border the property and get a feel for what their thoughts would be about it.

4. Adjourn

**Mayor Johnson adjourned the work session at 8:48 a.m.**

Respectfully submitted,

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Trish Gronstal, Recording Secretary



## City of Independence

### Approval of Election Judges for the 2019 Elections

To: City Council  
From: Beth Horner  
Meeting Date: October 1, 2019

**Discussion:**

The City Council is required to appoint election judges for the upcoming 2019 General Election. Staff has prepared a list of judges for consideration by the City Council. The following election judges can be considered for appointment by the City Council:

- Charles Hayes
- Sharon Cook
- Marilyn Hamilton
- Jerry Wise
- Judy Crosby
- Marlys Timm
- Kay Gabriel
- Darcy Ciatti
- Carol Tubesing
- Julie Grist
- Damon Kocina

**Recommendation:**

It is recommended that the City Council approve the appointment of the aforementioned election judges.



## NON-CITY ASSEMBLY PERMIT APPLICATION

### Fees & Definitions:

200+ Attendees (Large Assembly) = \$100
100+ Attendees (Medium Assembly) = \$25
50+ Attendees (Small Assembly) = \$25

(Double fee for application received less than 10 business days prior to event).

**Event Location:** 7075 Highway 12, Independence, MN 55359  
**Type of event:** Wedding Reception **Number of people** 225-250 **Date** 10.12.19  
☒ Residential ☐ Corporate ☐ Partnership ☐ Group or Association ☐ Other

**Event Holder's Name:** Kathleen Blatz **Address:** 7075 Highway 12, Independence  
**Contact Person:** Rita Swanson **Phone:** 612.309.6831  
**2<sup>nd</sup> Contact Person:** \_\_\_\_\_ **Phone:** \_\_\_\_\_

**Security Plans:** Valet Parking - Uptown Valet  
**Date West Hennepin Public Safety was notified of the event:** \_\_\_\_\_

**Severe Weather Plans** (in the event of): Evacuate into home basement and nearby Barns

**Sound Plans - amplification and sound control:** \_\_\_\_\_  
**Outdoor Music** ☐ Yes ☐ No - **Starting Time** 5:30 p.m **AM/PM**, **Ending Time** 11:30 **AM/PM**

**Food and Concessions Plans:** D'Amico Catering  
**Vendor's name, address, and license number** (*copies of vendor license, insurance and permits must be provided*) License #7452  
**Vendor Work #:** \_\_\_\_\_ **Vendor Cell #** \_\_\_\_\_

**Serving Alcohol:** Yes: X No: \_\_\_\_\_



**Selling Alcohol:** Yes: \_\_\_\_\_ No: X (If selling alcohol contact the City for a Permit)

**Restroom Provisions:** How many?

Yes \_\_\_\_\_ Location: Biff's 24' Trailer - near tent, on property

**Lighting** - Type: Will work with Decor Company How many? \_\_\_\_\_

Location of lights: to provide ample lighting

**\$1,000,000 Certificate of Liability Insurance**-provide a copy: X

**Parking Plan:** Please provide a site plan showing 1 parking space for each vehicle per 4 guests. If using adjacent property, written permission from property owners must be obtained.

Valet's service to park all cars on property

September 14, 2019  
Date

Kathleen A. Blay  
Signature of applicant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of applicant

**Office Use Only**

Application Received: 9-16-19 Application Fee: 100.00 Date Fee Paid: 9-16-19

Date \$1,000,000 certificate of liability insurance received: 9-16-19

\_\_\_\_\_  
Signature of City Official

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of West Hennepin Public Safety

\_\_\_\_\_  
Date







## City of Independence

### ***Request for a Variance and Minor Subdivision to Permit a Lot Line Rearrangement for the Property Located at 2365 County Road 92 N.***

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*To:* City Council  
*From:* Mark Kaltsas, City Planner  
*Meeting Date:* October 1, 2019  
*Applicant/Owner:* R. Michael and Margaret King  
*Location:* 2365 County Road 92. N

#### ***Request:***

R. Michael and Margaret King (Applicants/Owners) request that the City consider the following actions for the property located at 2365 County Road 92 N., Independence, MN (PID No. 20-118-24-11-0002):

- a. A variance and minor subdivision to allow the creation of a rural view lot. The property is an original quarter, quarter section with the exception of a small piece of property that was taken by Wright Hennepin Electric for their substation. The variance would allow the subdivision of property for a rural view lot that is less than 40 acres.

#### ***Property/Site Information:***

The subject property is located south of Hwy. 12 on the west side of County Road 92 N. There is an existing home and an accessory building located on the property. The property has upland pasture, mature trees and wetlands. The property has the following site characteristics:

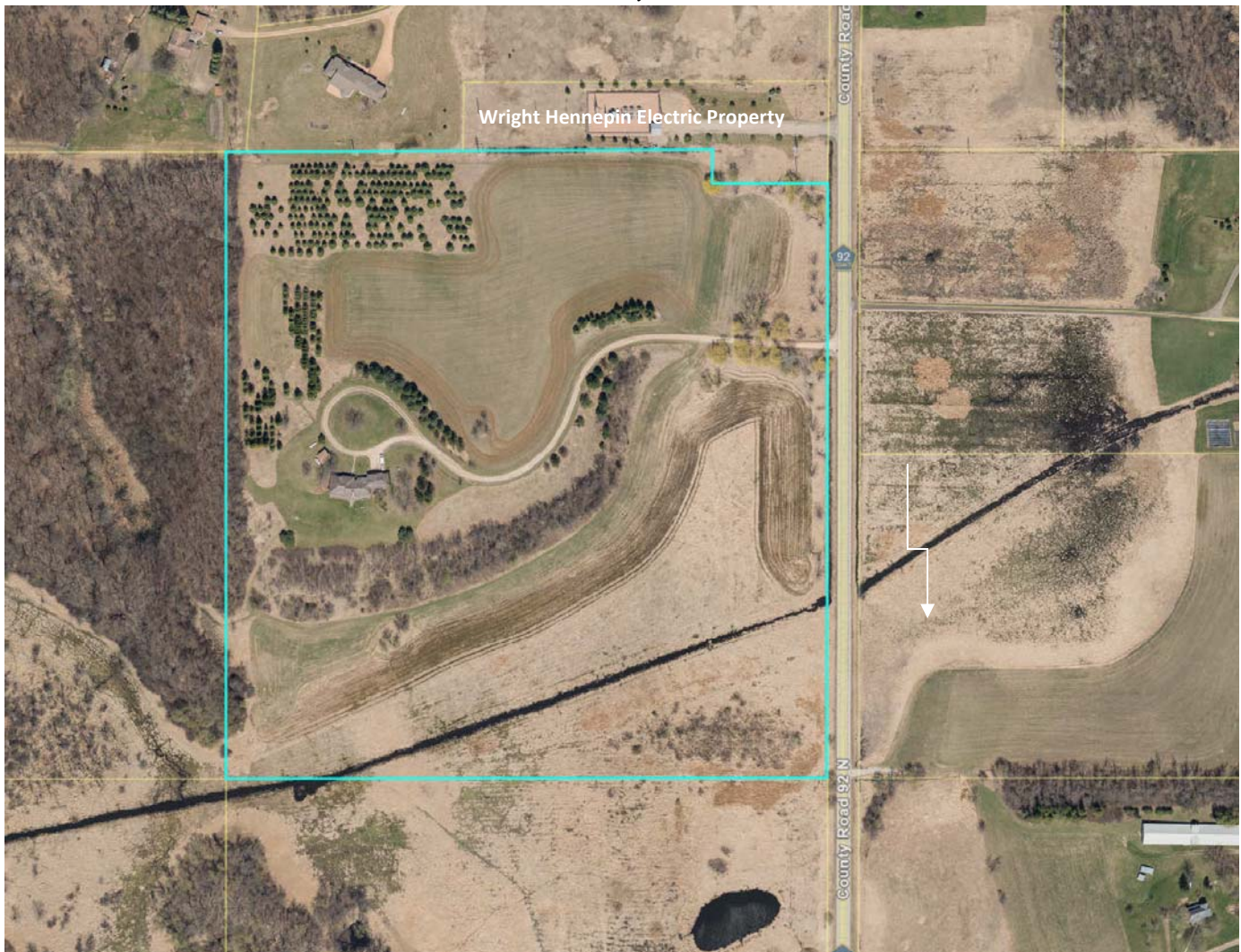
##### **Property Information: 2365 County Road 92 N.**

*Zoning: Agriculture*

*Comprehensive Plan: Agriculture*

*Acreage: (BEFORE) 38.95 acres*

*Acreage: (AFTER) 28.95 acres – Parcel 1  
10.00 acres –Parcel 2 (proposed)*



***Discussion:***

The applicants approached the City about the possibility of subdividing their property to create a rural view lot. The property is zoned Agriculture. The City does not allow the subdivision of property zoned Agriculture with the exception of lot line rearrangements and rural view lot splits. The overall property does not meet the minimum 40-acre requirement to realize a rural view lot subdivision; however, the property has not previously been subdivided for the purpose of creating any additional lots. The City has an additional provision that allows properties that were originally subdivided into a quarter-quarter section and not further subdivided to be deemed a 40-acre parcel for purposes of determining rural view lot eligibility. Wright Hennepin Electric has a substation located in the northeast corner of the property that appears to have taken a small piece of the original quarter-quarter section.

The applicant would like the City to consider granting a variance to allow the subdivision of property in the Agriculture zoning district that does not meet the minimum 40-acre lot size. The applicant is proposing to subdivide a 10-acre parcel from the overall property. The newly created lot would be located along the north property line. The newly subdivided property would be accessed via a private driveway easement that would provide access from County Road 92 N into the site on the existing driveway that serves the existing residence. Based on the information provided and a site visit, the proposed lot would appear to accommodate the development of a single-family home meeting all requisite requirements. The proposed property would have the following detail:

Min. Lot Size Required to Subdivide:	40 Acres
Existing Lot Size:	38.95 Acres (original quarter-quarter sect.)
Min. Lot Frontage Required:	300 Lineal Feet
Lot Frontage Proposed:	280 Lineal Feet
Min. Upland Acreage Required:	2.5 Acres
Upland Acreage Proposed:	8.32 Acres
Min. Lot Frontage to Lot Depth Required:	1:4
Min. Lot Frontage to Lot Depth Proposed:	1:4

The proposed Parcel 2 would meet all applicable criteria of the City's zoning ordinance with the exception of the minimum lot frontage (300 LF required/280 LF proposed). The applicant could meet the minimum lot frontage; however, the shape of the lot would become skewed rather than square. The overall width of the lot with the exception of the utility property is proposed to be 350 LF. The City can provide direction relating to whether or not the line should be adjusted to provide for the 300 LF of frontage.

The remainder property with the existing home and accessory structures would not be negatively impacted as a result of the proposed subdivision. The proposed property line for the new parcel would not create any non-conformities or reduced setbacks relating to the remainder property, the existing home or accessory buildings.

The City has standards for granting a variance which need to be considered prior to making a recommendation relating to the application. The standards established by the City require the applicant to demonstrate that the requested variance does not create a situation that is not in keeping with the character of the surrounding area. In addition, the applicant must demonstrate that the requested variance is unique to the subject property. The standards for granting a variance are as follows:

*520.21. Standards for granting variances. Subdivision 1. The City Council may grant a variance from the terms of this zoning code, including restrictions placed on nonconformities, in cases where: 1) the variance is in harmony with the general purposes and intent of this zoning code; 2) the variance is consistent with the comprehensive plan; and 3) the applicant establishes that there are practical difficulties in complying with the zoning code (Amended, Ord. 2011-08)*

*Subd. 2. An applicant for a variance must demonstrate that there are practical difficulties in complying with the zoning code. For such purposes, “practical difficulties” means:*

*(a) The property owner proposes to use the property in a reasonable manner not permitted by the zoning code;*

*(b) the plight of the property owner is due to circumstances unique to the property not created by the landowner;*

*(c) the variance, if granted, will not alter the essential character of the locality.*

*Economic considerations alone do not constitute practical difficulties. Practical difficulties include, but are not limited to, inadequate access to direct sunlight for solar energy systems. (Amended, Ord. 2011-08)*

*Subd. 3. The City Council shall not grant a variance to permit a use that is not allowed under the zoning code based on the zoning classification of the affected property. (Amended, Ord. 2011-08)*

*520.23. Conditions and restrictions. The board of adjustments may recommend and the City Council may impose conditions on a variance. Conditions must be directly related to and must bear a rough proportionality to the impact created by the variance. (Amended, Ord. 2011-08)*

Consideration of the standards for granting a variance:

- a. The applicants are proposing to use the property as residential which is consistent with the AG-Agriculture Zoning District.
- b. The properties created by the subdivision are similar in nature and character to the surrounding properties. There are existing properties located along County Road 92 N. that range between 5 and 40 acres plus.
- c. The character of the surrounding area is mixed residential/agricultural and guided for long term agriculture. The City’s current comprehensive plan guides this area for long term agriculture. The City will need to determine if the proposed subdivision is in keeping with the intent of the City’s comprehensive plan.



- d. The requested variance to allow the subdivision of the property must be found to be unique to this property. The City could find that because the parcel has not benefited from the subdivision of a rural view lot in the past, that it could consider this property to be an original quarter-quarter section. Due to the large area of the City and the number of properties, it is difficult to determine if this situation is wholly unique to this property but believes that there are very few properties impacted by a utility similar to this situation. . The City will need to determine if the unique characteristics of this property are distinctive and discernable from other conditions on similar properties.
- e. The property will be accessed via a private driveway easement utilizing the existing driveway from County Road 92 N.
- f. Proposed Parcel 2 will need to accommodate the requisite primary and secondary on-site septic system locations. The proposed subdivision does not currently provide for the requisite drainage and utility easements along all property lines. These easements would need to be provided to the City should the application be approved.
- g. The proposed Parcel 2 would be required to pay the City's park dedication fee. For this property, the park dedication fee amount is \$3,500.00. This fee will need to be paid prior to recording the subdivision.

Park dedication fee \$3,500 per lot up to 4.99 acres, plus \$750 per acre for each acre over 5.

10 acres = \$7,250

The City will need to determine if the requested variance to allow the subdivision of the property meets the requirements for granting a variance.

***Public Comments:***

The City did have two neighboring property owners attend the public hearing. Neither property owner had comments or concerns relating to the proposed subdivision.

***Planning Commission Discussion:***

Planning Commissioners reviewed the request and found that the criteria for granting a variance and minor subdivision had been met by the applicant. Planning Commissioners recommended approval to the City Council.

***Planning Commission Recommendation:***

The Planning Commission recommended approval of the requested variance and minor subdivision with

the following findings and conditions:

1. The proposed variance and minor subdivision request meet all applicable conditions and restrictions stated in Chapter V, Section 520.19, Procedures on variances, and Chapter V, Section 500, Subdivisions, in the City of Independence Zoning Ordinance.
2. The proposed subdivision meets the criteria for granting a variance due to the following findings:
  - The resulting rural view lot is in keeping with the character of the surrounding area.
  - The existing property has not realized any previous subdivision that resulted in an additional buildable lot.
3. The Applicant shall provide to the City verification that proposed Parcel 2 can accommodate a primary and secondary septic site.
4. The Applicant shall provide, execute and record the requisite drainage and utility easement with the county within six (6) months of approval.
5. The Applicant shall pay the park dedication fees in the amount of \$7,250 prior to the applicant receiving final approval to record the subdivision by the City.
6. The Applicant shall pay for all costs associated with the City's review of the requested variance and subdivision.
7. The Applicant shall record the subdivision and City Council Resolution with the county within six (6) months of approval.

**Attachments:**

1. Application/Narrative
2. Survey
3. Resolution No. 19-1001-2019



## **RESOLUTION NO. 19-1001-01**

### **A RESOLUTION APPROVING A MINOR SUBDIVISION AND VARIANCE TO ALLOW A RURAL VIEW LOT SUBDIVISION FOR THE PROPERTY LOCATED AT 2365 COUNTY ROAD 92 N**

WHEREAS, the City of Independence (the “City”) is a municipal corporation under the laws of Minnesota; and

WHEREAS, the City adopted a Comprehensive Plan in 2010 to guide the development of the community; and

WHEREAS, the City has adopted a Zoning and Subdivision Ordinance and other official controls to assist in implementing the Comprehensive Plan; and

WHEREAS, R. Michael and Margaret King (the “Applicants/Owners”) have submitted a request for a variance and minor subdivision for the property located at 2365 County Road 92 N., Independence, MN (PID No. 20-118-24-11-0002); and

WHEREAS, the Property is legally described on Exhibit A attached hereto; and

WHEREAS, the Property is zoned AG-Agriculture; and

WHEREAS the requested variance and minor subdivision meets all requirements, standards and specifications of the City of Independence subdivision and zoning ordinance for Agriculture Property; and

WHEREAS the City held a public hearing on September 17, 2019 to review the application for a variance and minor subdivision, following mailed and published noticed as required by law; and

WHEREAS, the City Council has reviewed all materials submitted by the Applicant; considered the oral and written testimony offered by the applicant and all interested parties; and has now concluded that the application is in compliance with all applicable standards and can be considered for approval.

NOW, THEREFORE BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF INDEPENDENCE, MINNESOTA, that it should and hereby does approve the application by R. Michael and Margaret King for a variance and minor subdivision to allow a rural view lot subdivision per the City’s subdivision and zoning regulations with the following conditions:



1. The proposed variance and minor subdivision request meet all applicable conditions and restrictions stated in Chapter V, Section 520.19, Procedures on variances, and Chapter V, Section 500, Subdivisions, in the City of Independence Zoning Ordinance.
2. The proposed subdivision meets the criteria for granting a variance due to the following findings:
  - The resulting rural view lot is in keeping with the character of the surrounding area.
  - The existing property has not realized any previous subdivision that resulted in an additional buildable lot.
3. The Applicant shall provide to the City verification that proposed Parcel 2 can accommodate a primary and secondary septic site.
4. The Applicant shall provide, execute and record the requisite drainage and utility easement with the county within six (6) months of approval.
5. The Applicant shall pay the park dedication fees in the amount of \$7,250 prior to the applicant receiving final approval to record the subdivision by the City.
6. The Applicant shall pay for all costs associated with the City's review of the requested variance and subdivision.
7. The Applicant shall record the subdivision and City Council Resolution with the county within six (6) months of approval.

This resolution was adopted by the City Council of the City of Independence on this 1<sup>st</sup> day of October 2019, by a vote of \_\_\_\_ ayes and \_\_\_\_ nays.

---

Marvin Johnson, Mayor

ATTEST:

---

Mark Kaltsas, City Administrator

**EXHIBIT A**  
*(Legal Description of Property)*

Date Accepted by Planner

## City of Independence

The Independence City Code was established to protect both current and future residents from the negative impacts of improper development and to ensure a positive future for the city. The land use application review is the mechanism that allows the city to examine proposed uses to ensure compatibility with the surrounding environment, natural or otherwise. It is important to understand that a proposed use may be acceptable in some circumstances, but unacceptable in others— all applications are reviewed on a case-by-case basis.

Minnesota State Statute 15.99 requires local governments to review an application within 15 days of its submission to determine if an application is complete and/ or if additional information is needed to adequately review the subject request. ***To ensure an expedited review, applicants shall schedule a pre-application meeting with the City Planner/ Administrator at least one week prior to submittal.*** Most applications have a review period of 60 days, with the City's ability to extend an additional 60 days if necessary due to insufficient information or schedule.

### ***Application for Planning Consideration Fee Statement***

The City of Independence has set forth a fee schedule for the year 2019 by City Ordinance. However, projects of large scope that include two or more requests will be required to provide a larger deposit than the resolution sets forth as set by the City Administrator. The fees collected for land use projects are collected as deposits. All invoices associated with each land employ application will be billed to the applicant within 30 days upon receipt by the City for each project. The City of Independence often utilizes consulting firms to assist in the review of projects. The consultant and City rates are noted on the current fee schedule. By signing this form, the applicant recognizes that he/ she is solely responsible for any and all fees associated with the land use application from the plan review stage to the construction monitoring stage through to the release of any financial guarantee for an approved project. If a project is denied by the City Council or withdrawn by the applicant, the fees associated for the project until such denial or withdrawal, remain the applicant's responsibility.

I UNDERSTAND THE FEE STATEMENT AND RESPONSIBILITIES ASSOCIATED WITH THIS LAND USE APPLICATION:

**Applicant Signature:** Margaret King

**Date:** August 13, 2019

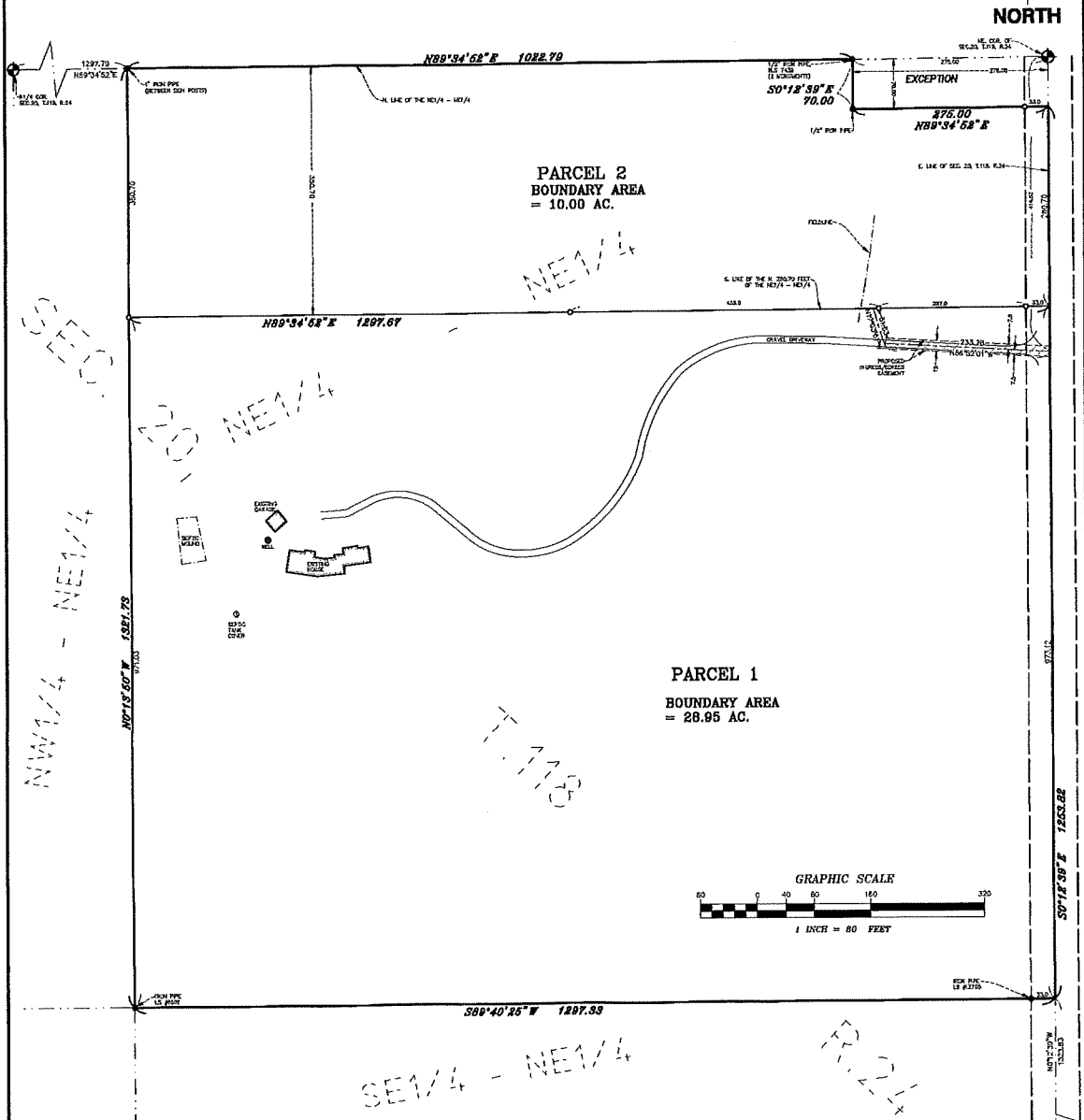
**Owner Signature (if different):** \_\_\_\_\_

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

# CERTIFICATE OF SURVEY

~for~ PEGGY KING

~part of~ NE1/4 - NE1/4, SEC.20, T.118, R 24, Hennepin County, MN  
2365 County Road 92 N, Independence, MN



## PROPOSED PARCEL 1 DESCRIPTION

The Northeast Quarter of the Northeast Quarter of Section 20, Township 118, Range 24, Hennepin County, Minnesota, except the North 350.70 feet as measured perpendicular to the north line of said Northeast Quarter of the Northeast Quarter.

## PROPOSED PARCEL 2 DESCRIPTION

The North 350.70 feet of the Northeast Quarter of the Northeast Quarter of Section 20, Township 118, Range 24, Hennepin County, Minnesota as measured perpendicular to the north line of said Northeast Quarter of the Northeast Quarter, except the North 70 feet of the East 275 feet thereof.

## PROPOSED INGRESS/ EGRESS EASEMENT DESCRIPTION

Part of the Northeast Quarter of the Northeast Quarter of Section 20, Township 118, Range 24, Hennepin County, Minnesota, lying 7.5 feet on either side of a centerline described as follows:

Commencing at the northeast corner of said Section 20, thence South 0 degrees 12 minutes 39 seconds East, assumed bearing along the East line of said Section 20 a distance of 414.52 feet to the point of beginning of the centerline to be described; thence North 66 degrees 52 minutes 01 seconds West a distance of 233.28 feet; thence North 17 degrees 03 minutes 51 seconds West a distance of 51.53 feet to the south line of the North 350.70 feet of the Northeast Quarter of the Northeast Quarter of said Section 20 and there terminating. The width of said easement is assumed to terminate at said south line of the North 350.70 feet of the Northeast Quarter of the Northeast Quarter and said east line of Section 20.

## LEGEND

- DENOTES IRON MONUMENT FOUND AS LABELED
- DENOTES IRON MONUMENT SET, MARKED RLS# 45356/52705
- ⊕ DENOTES HENNEPIN COUNTY CAST IRON MONUMENT

## NOTES

- Field survey was completed by E.G. Rud and Sons, Inc. on 08/09/18.
- Bearings shown are on the Hennepin County Coordinate System NAD83 (86 Ad).
- This survey was prepared without the benefit of title work. Additional easements, restrictions and/or encumbrances may exist other than those shown hereon. Survey subject to revision upon receipt of a current title commitment or an attorney's title opinion.

**E.G. RUD & SONS, INC.**  
Professional Land Surveyors  
990 5th Avenue SE, Suite 2  
Hutchinson, MN 55350  
Tel. (820) 567-2025 Fax (320) 587-2595

DRAWN BY: SN	JOB NO: 180805	DATE: 08/13/18
CHECK BY: KHI	SCANNED: [ ]	
1		
2		
3		
NO. DATE	DESCRIPTION	BY

I hereby certify that this survey, plan or report was prepared by me or under my direct supervision and that I am a duly Registered Land Surveyor under the laws of the State of Minnesota.

SAUEL N. NEMELA  
Date: 13AUG18 License No. 52705

## City of Independence

### ***Request for an Amendment to the Conditional Use Permit to Allow New Antennas on the Existing Telecommunications Tower, Site Plan Approval and a Variance to Permit More than One Accessory Building Per Telecommunications Tower Requirements***

---

*To:* City Council  
*From:* Mark Kaltsas, City Planner  
*Meeting Date:* October 1, 2019  
*Applicant:* AT&T Wireless  
*Owner:* Delano United Methodist Church  
*Location:* 3310 County Line Road

#### ***Request:***

1. AT&T/SAC Wireless (Applicant) and Delano United Methodist Church (Owner) request that the City consider the following actions for the property located at 3310 County Line Road (PID No. 07-118-24-33-0004):
  - a. A Conditional Use Permit Amendment to allow collocation on the existing telecommunications tower.
  - b. A Variance to allow more than one accessory building per tower site and a reduced rear yard setback.
  - c. Site plan approval for the proposed site layout.

#### ***Property/Site Information:***

The property is located on the east side of County Line Road, just north of TH 12. The property is comprised of the existing church building and parking lot, open space and wetlands. The property has the following characteristics:

Property Information for 3310 County Line Road  
Zoning: *Agriculture*  
Comprehensive Plan: *Agriculture*  
Acreage: 6.89 Acres



3310 County Line Road



*Discussion:*

The applicant is seeking an amendment to the existing conditional use permit, site plan approval and variance to allow new antennas and to be located on the existing telecommunications tower and a new accessory structure to be located at the base of the tower. There is an existing Conditional Use Permit which was granted by the City in 2001 approving the site plan to allow the tower to be installed. In 2013, the City approved an amendment to allow Verizon Wireless to locate new antennas and accessory equipment building on the property. In 2014, the City granted approval to AT&T to allow the colocation and site plan for new antennas on the existing tower. AT&T did not install the antennas that were approved.

The applicant is again proposing to install new antennas on the existing tower as well as locate the associated equipment at the base of the tower. Given the proposed improvements, an amendment to the conditional use permit is required.

*520.09 Subd. 8. If a conditional use permit holder wishes to alter or extend the operation or to change the conditions of the permit, the city will evaluate the permit holder's compliance with the existing permit conditions. Any change involving structural alterations, enlargement, intensification of use, or similar change not specifically permitted by the conditional use permit issued requires an amended conditional use permit. An amended conditional use permit application must be administered in a manner similar to that required for a new conditional use permit.*

The City has criteria relating to the location (setbacks), site improvements and landscaping for new telecommunications tower development. In this case, the tower already has a conditional use permit. The location and setbacks for the existing tower were approved by the initial conditional use permit. There are several factors that should be considered relating to the site plan approval and variance:

1. The applicant is proposing to install new base equipment that is located within a fenced area at the base of the tower. The equipment would be located within a steel cabinet and the generator would be mounted to a pad on the ground, but otherwise not enclosed. The previous proposal (2014 and approved by the City) proposed to locate the equipment within a prefabricated equipment shelter similar to that used by Verizon on this site. Verizon Wireless has an approximate 300 SF equipment shelter which houses all of the requisite base equipment and a generator already on the property. Staff would like direction from the City relating to whether or not all of the proposed equipment and generator should be located in a prefabricated building similar to that Verizon already has on the property? In either case, the proposed cabinet is considered an accessory structure that would count as a second accessory structure on the property.
2. The applicant is proposing to remove some of the existing landscaping and add additional landscaping to the site. The location of the proposed equipment does not currently impact any of the surrounding properties. In the future, the subject property and adjacent property to the east could be redeveloped. It is recommended that an additional 4 Spruce trees be added to the north and east fence lines to further screen the proposed base equipment.
3. The City will need to grant a variance from the rear property line to allow the location of the equipment cabinet within the requisite 40 foot setback. The applicant is noting the proposed equipment cabinet would be located 9'-7" from the rear property line. The location of the existing tower would likely not allow for any structure to meet the requisite setback. The City granted a



similar variance in 2013 to allow the Verizon structure to be located within the requisite 40-foot setback.

4. The plans do not indicate that there will be any exterior lighting added to the site as a result of the proposed improvements. All lighting will need to comply with the City's lighting ordinance. The applicant will need to provide the City with lighting cut sheets indicating a cut-off type fixture along with verification that the proposed lighting does not spill over the existing property lines.
5. The plans do not label the height of the proposed fence. This should be noted on the plans. It appears that the proposed fence will tie into the existing fence already located on the property.
6. The plans do not show the existing gravel driveway. It is anticipated that access to the proposed equipment will be via the existing driveway access. This should be confirmed on the plans.
7. The proposed new antennas would be located below the height of the existing Verizon antennas. The Verizon antennas are located at a height of 181 feet. The proposed AT&T antennas would be located at a height of 172 feet.

The City can grant a variance if it determines that it meets the criteria for granting a variance as established by ordinance. The criteria for granting a variance are as follows:

*520.21. Standards for granting variances. Subdivision 1. The City Council may grant a variance from the terms of this zoning code, including restrictions placed on nonconformities, in cases where: 1) the variance is in harmony with the general purposes and intent of this zoning code; 2) the variance is consistent with the comprehensive plan; and 3) the applicant establishes that there are practical difficulties in complying with the zoning code (Amended, Ord. 2011-08)*

*Subd. 2. An applicant for a variance must demonstrate that there are practical difficulties in complying with the zoning code. For such purposes, "practical difficulties" means:*

- (a) The property owner proposes to use the property in a reasonable manner not permitted by the zoning code;*
- (b) the plight of the property owner is due to circumstances unique to the property not created by the landowner;*
- (c) the variance, if granted, will not alter the essential character of the locality.*

*Economic considerations alone do not constitute practical difficulties. Practical difficulties include, but are not limited to, inadequate access to direct sunlight for solar energy systems. (Amended, Ord. 2011-08)*

*Subd. 3. The City Council shall not grant a variance to permit a use that is not allowed under the zoning code based on the zoning classification of the affected property. (Amended, Ord. 2011-08)*

*520.23. Conditions and restrictions. The board of adjustments may recommend and the City Council may impose conditions on a variance. Conditions must be directly related to and must bear a rough proportionality to the impact created by the variance. (Amended, Ord. 2011-08)*

Any amendment to an existing CUP must meet the same requirements established for granting a new CUP. The criteria for granting a conditional use permit are clearly delineated in the City's Zoning Ordinance (Section 520.11 subd. 1, a-i) as follows:

- 1. The conditional use will not adversely affect the health, safety, morals and general welfare of occupants of surrounding lands.*
- 2. The proposed use will not have a detrimental effect on the use and enjoyment of other property in the immediate vicinity for the proposes already permitted or on the normal and orderly development and improvement of surrounding vacant property for uses predominant in the area.*
- 3. Existing roads and proposed access roads will be adequate to accommodate anticipated traffic.*
- 4. Sufficient off-street parking and loading space will be provided to serve the proposed use.*
- 5. The proposed conditional use can be adequately serviced by public utilities or on-site sewage treatment, and sufficient area of suitable soils for on-site sewage treatment is available to protect the city form pollution hazards.*
- 6. The proposal includes adequate provision for protection of natural drainage systems, natural topography, tree growth, water courses, wetlands, historic sites and similar ecological and environmental features.*
- 7. The proposal includes adequate measures to prevent or control offensive odor, fumes, dust, noise, or vibration so that none of these will constitute a nuisance.*
- 8. The proposed condition use is consistent with the comprehensive plan of the City of Independence.*
- 9. The proposed use will not stimulate growth incompatible with prevailing density standards.*

The existing tower has a conditional use permit. The new antennas will be located just below those approved for Verizon Wireless. The proposed equipment cabinet and generator are not consistent with the existing enclosed equipment shelter used by Verizon on this site. Enclosing the proposed ground equipment and generator inside of a building would be consistent with the plans approved for the Verizon Wireless equipment shelter. Landscaping will further mitigate the impacts of the proposed equipment shelter. It should be noted that the existing and adjacent properties to the south, east and north are guided for Urban Commercial by the City's 2030 Comprehensive Plan.

In the existing zoning district, telecommunication towers are permitted as a conditional use. Resulting traffic, noise, and other measureable impacts should not be incrementally amplified as a result of the proposed new antennas and associated base site improvements. The City will need to determine if the requested amendment to the conditional use permit, site plan and variance meet all of the aforementioned conditions and restrictions.

***Neighbor Comments:***

The City has not received any written comments regarding the proposed amendment to the conditional use permit, site plan approval or variance.

***Planning Commission Discussion:***

Commissioners discussed the proposed request and asked questions of staff and the petitioner. Commissioners discussed the proposed plan relating to the generator and whether or not it should be enclosed. Commissioners also discussed the proposed landscape plan. Commissioners recommended approval to the City Council with several additional conditions. Commissioners recommended that the applicant add 4 additional evergreen trees to the plan. Commissioners recommended that the proposed generator be removed from the site or enclosed in a sound mitigating enclosure.

***Recommendation:***

The Planning Commission recommended approval of the request for an amendment to the conditional use permit, site plan approval and variance with the following findings and conditions:

1. The proposed conditional use permit amendment, site plan review and variance meet all applicable conditions and restrictions stated Chapter V, Section 510, Zoning, in the City of Independence Zoning Ordinance.
2. The conditional use permit will be reviewed annually by the City to ensure conformance with the conditions set forth in the resolution.
3. This amendment approves new antennas, site improvements (as indicated on the approved site plan, attached to this report) and associated base equipment.
4. Prior to consideration by the City Council, the applicant shall provide the City with the following items:
  - a. A copy of relevant portions of a lease signed by the applicant and property owner(s), requiring the applicant to remove the associated telecommunications facilities upon cessation of operations on the leased site, or, if a lease does not yet exist, a written agreement to include such a provision in the lease to be signed.
  - b. A landscape plan with the requested landscaping indicated in the staff report. The landscape plan shall include the following:
    - One (1) 2.5" cal. Freeman Maple
    - Four (4) 18' black hills spruce or equivalent.
    - Four (4) 10' black hills spruce or equivalent.

- c. A revised site plan showing the existing driveway and proposed access.
  - d. Cut sheets for the proposed lighting. All lighting shall be required to meet applicable City requirements.
  - e. Updated plans that further depict the required sound mitigating enclosure for the generator. If no enclosure is provided, the generator shall be removed from the plans.
- 5. The applicant shall pay for all costs associated with the City's review and processing of the requested amendment to the conditional use permit and site plan review.
  - 6. The City Council may revoke the conditional use permit if the applicant violates any of the conditions set forth in the conditional use permit.

***Attachments:***

- 1. Application and Project Narrative
- 2. Proposed Plan Set
- 3. Resolution No. 19-1001-2019



## **RESOLUTION NO. 19-1001-02**

### **A RESOLUTION GRANTING APPROVAL OF AN AMENDMENT TO THE CONDITIONAL USE PERMIT, VARIANCE AND SITE PLAN APPROVAL FOR THE TELECOMMUNICATIONS TOWER AND EQUIPMENT LOCATED AT 3310 COUNTY LINE ROAD**

WHEREAS, the City of Independence (the “City”) is a municipal corporation under the laws of Minnesota; and

WHEREAS, the City adopted a comprehensive plan in 2010 to guide the development of the community; and

WHEREAS, the City has adopted a zoning ordinance and other official controls to assist in implementing the comprehensive plan; and

WHEREAS, AT&T Wireless (the “Applicant”) submitted a request for an amendment to the Conditional Use Permit, Variance and Site Plan Review to allow new antennas to be installed on the existing telecommunications tower and a new equipment shelter to be placed on the property located at 3310 County Line Road (PID No. 07-118-24-33-0004) (the “Property”); and

WHEREAS, the Property is zoned Agriculture; and

WHEREAS, the Property is legally described on attached Exhibit A; and

WHEREAS the requested amendment to the Conditional Use Permit, Variance and Site Plan meets all requirements, standards and specifications of the City of Independence zoning ordinance for Agriculture property; and

WHEREAS the Planning Commission held a public hearing on September 17, 2019 to review the application for an amendment to the Conditional Use Permit, Variance and Site Plan, following mailed and published noticed as required by law; and

WHEREAS, the City Council has reviewed all materials submitted by the Applicant; considered the oral and written testimony offered by the applicant and all interested parties; and has now concluded that the application is in compliance with all applicable standards and can be considered for approval; and

WHEREAS, the initial Conditional Use Permit was issued in December 2013.

WHEREAS, this amendment adds additional provisions to the previous Conditional Use Permit for this property and all previous conditions shall remain in force.

NOW, THEREFORE BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF INDEPENDENCE, MINNESOTA, that it should and hereby does approve the application by AT&T Wireless for an amendment to the Conditional Use Permit, Variance and Site Plan Approval per the City's zoning regulations with the following conditions:

1. The proposed conditional use permit amendment, site plan review and variance meet all applicable conditions and restrictions stated Chapter V, Section 510, Zoning, in the City of Independence Zoning Ordinance.
2. The conditional use permit will be reviewed annually by the City to ensure conformance with the conditions set forth in the resolution.
3. This amendment approves new antennas, site improvements (as indicated on the approved site plan, attached hereto as Exhibit B) and associated base equipment.
4. Prior to consideration by the City Council, the applicant shall provide the City with the following items:
  - a. A copy of relevant portions of a lease signed by the applicant and property owner(s), requiring the applicant to remove the associated telecommunications facilities upon cessation of operations on the leased site, or, if a lease does not yet exist, a written agreement to include such a provision in the lease to be signed.
  - b. A landscape plan with the requested landscaping indicated in the staff report. The landscape plan shall include the following:
    - One (1) 2.5" cal. Freeman Maple
    - Four (4) 18' black hills spruce or equivalent.
    - Four (4) 10' black hills spruce or equivalent.
  - c. A revised site plan showing the existing driveway and proposed access.
  - d. Cut sheets for the proposed lighting. All lighting shall be required to meet applicable City requirements.
  - e. Updated plans that further depict the required sound mitigating enclosure for the generator. If no enclosure is provided, the generator shall be removed from the plans.
5. The applicant shall pay for all costs associated with the City's review and processing of the requested amendment to the conditional use permit and site plan review.
6. The City Council may revoke the conditional use permit if the applicant violates any of the conditions set forth in the conditional use permit.

This resolution was adopted by the City Council of the City of Independence on this 1<sup>st</sup> day of October 2019, by a vote of \_\_\_\_ ayes and \_\_\_\_ nays.

\_\_\_\_\_  
Marvin Johnson, Mayor

ATTEST:

\_\_\_\_\_  
Mark Kaltsas, City Administrator

**EXHIBIT A**  
*(Legal Description)*



**EXHIBIT B**

*(Approved Site Plan)*



**Powder River Development Services, LLC**  
2897 Lake Vista Drive NW  
Rochester, MN 55901  
(507) 951-7151 office  
(952) 314-4957 fax  
[www.powderriverdev.com](http://www.powderriverdev.com)  
[Curtis.walter@powderriverdev.com](mailto:Curtis.walter@powderriverdev.com)

July 25, 2019

City of Independence  
Attn: Mark Kaltsas  
1920 County Road 90  
Independence, MN 55359

Re: Planning Application for AT&T CUP and Variance.

Mark,

AT&T Mobility would like to collocate on an existing monopole located at 3310 County Line Road, SE. owned by Delano United Methodist Church (parcel #0711824330004). As per our discussions this installation will require a Conditional Use Permit.

We are requesting a Variance to allow a 2<sup>nd</sup> accessory structure to house AT&T's equipment. We also request a Variance from the 40' rear setback (9' 7" to equipment – 5' 5" to fence) to allow the proposed AT&T ground equipment to be located near the existing tower. The granting these Variances will be in harmony with the existing use of the property and existing tower.

This facility is needed to help with coverage and capacity in the area. Since more wireless usage is in the form of data and streaming, this facility is needed to help service in the homes and business of residents in this area. This project will provide consistent wireless phone and internet coverage for residents and emergency services in this area.

The proposed installation includes an additional antenna array on the existing monopole. We will also expand the existing compound fencing to the north to encompass a new 6' x 6' Walk-in Cabinet and external, self-contained generator. We will be planting new trees for additional screening.

Enclosed please find the following items:

- Planning Application sign by landowner and applicant;
- \$1,750 check for application fee;
- \$1,500 check for deposit fee;
- Copy of passing structural analysis;
- 1 Full set of construction drawings (letter size);
- 1 Full set of construction drawings (tabloid size);

This proposed installation should meet with the intent of the city ordinance, eliminate the need for an additional tower site and will have minimal effect on existing aesthetics. Please accept this information and application papers and place us on the next available agenda. Feel free to contact me for any additional information required.

Cordially,

*Curt Walter*

Curt Walter  
On behalf of AT&T Mobility

**On behalf of AT&T Mobility**

**Zoning Permit Proposal**

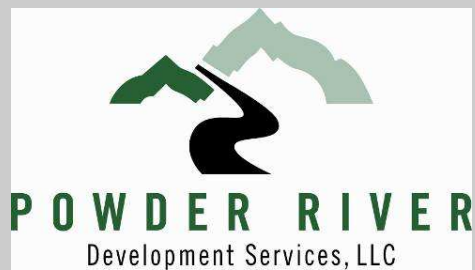
**for**

**City of Independence**

**Independence, Minnesota**

*Prepared by*

Curt Walter



July 24, 2019

**On behalf of AT&T Mobility**

**SITE PLAN**

**- TABLE OF CONTENTS -**

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- 1. OBJECTIVES AND BENEFITS**
- 2. SITE MAP**
- 3. SITE SKETCH**
- 4. ZONING MAP**
- 5. SITE SKETCH**

## **On behalf of AT&T Mobility**

### **City of Independence Independence, Minnesota**

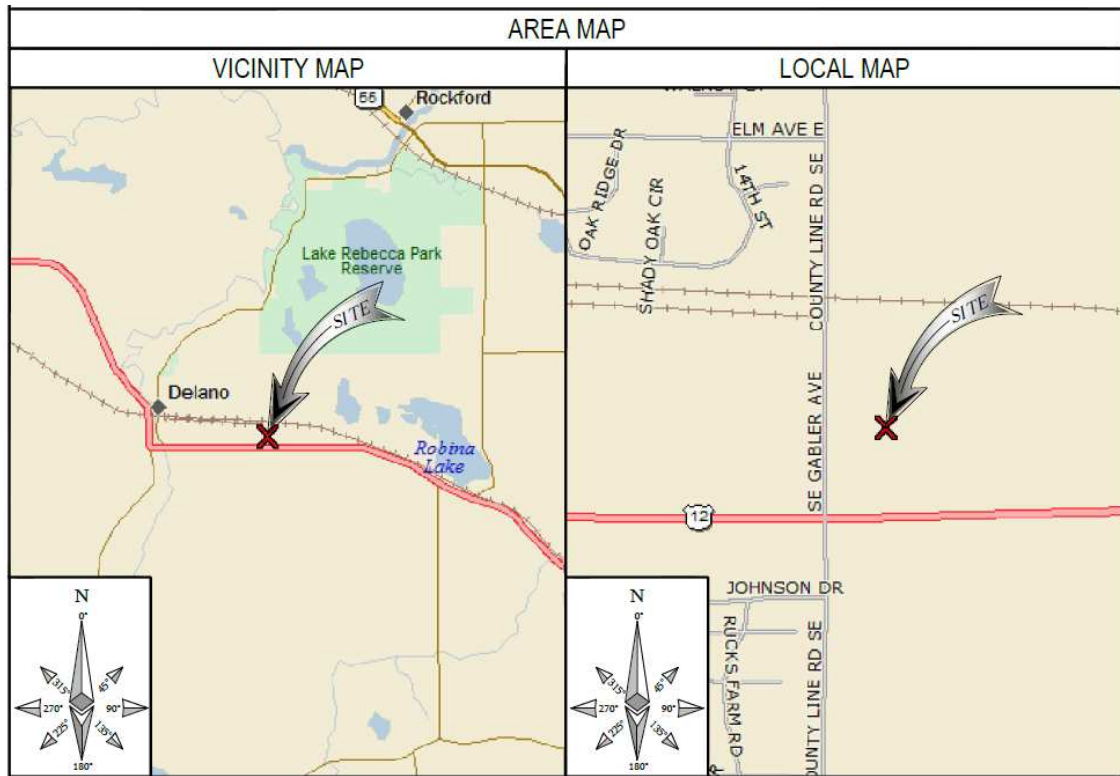
#### **OBJECTIVES:**

Improve AT&T wireless level of service in the Independence and Delano areas. This proposed cellular tower will enhance their already established network in Minnesota. This site will provide a clearer, stronger and more reliable signal for wireless residents in Independence and Delano and along Highway 12 and surrounding roads.

#### **BENEFITS TO THE COMMUNITY:**

- Improved cellular reception and expanded service area.
- Probable source of communications at time of natural disaster.
- Communications link for personal safety and roadside emergencies.
- Available for expansion into future technology with wireless communications industry & 911 interface capability.
- Site will be made available for collocation with other wireless carriers












# SITE MAP



## ZONING MAP

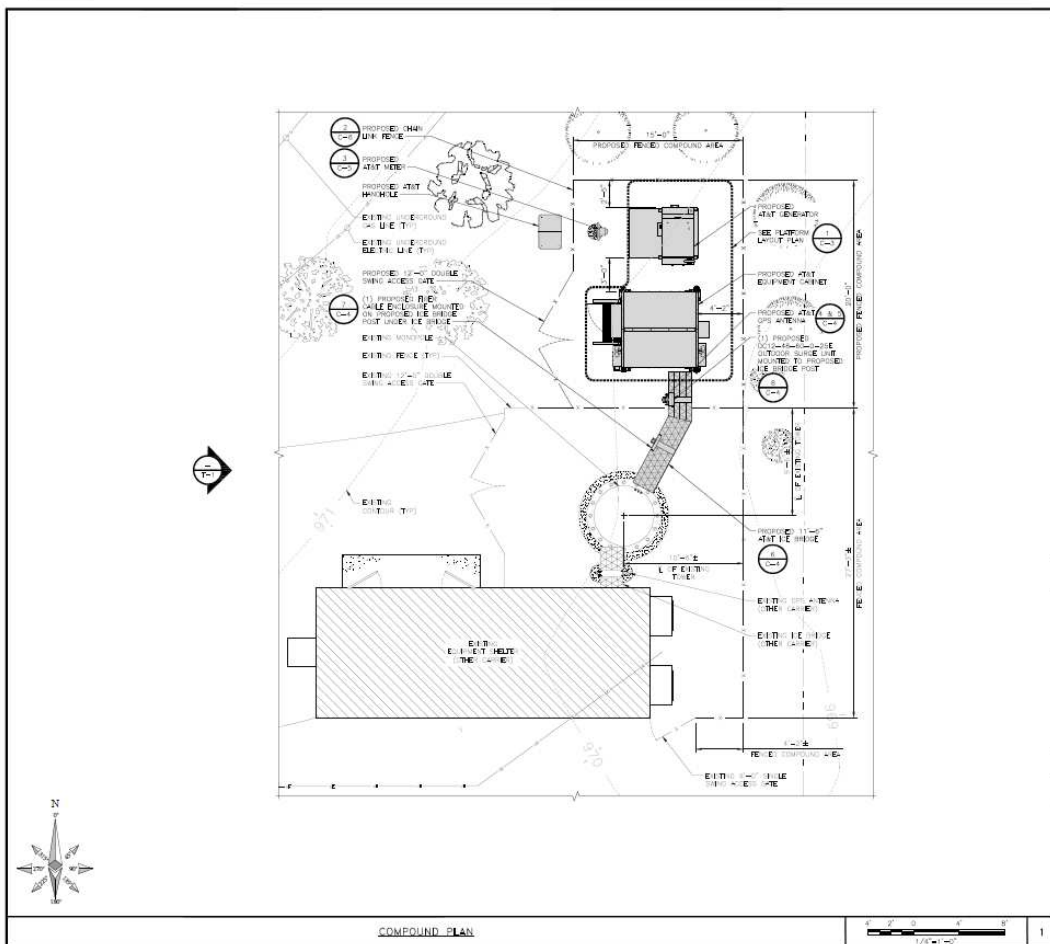
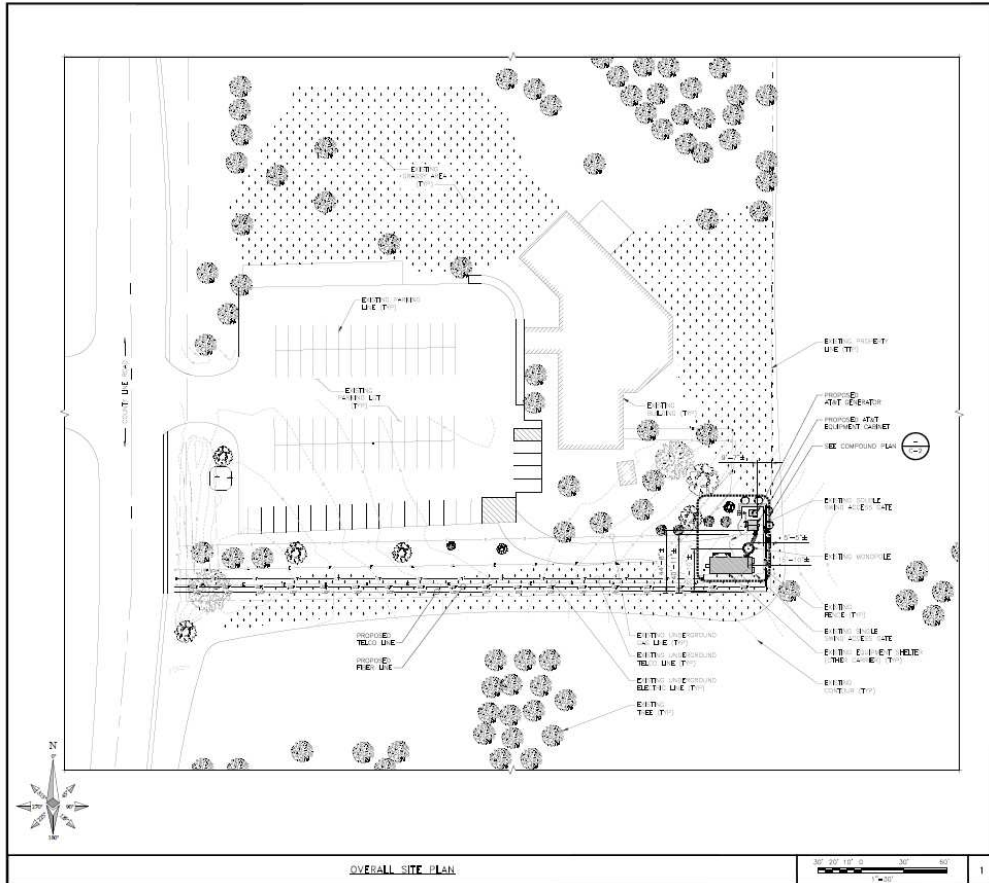


### ZONING DISTRICTS

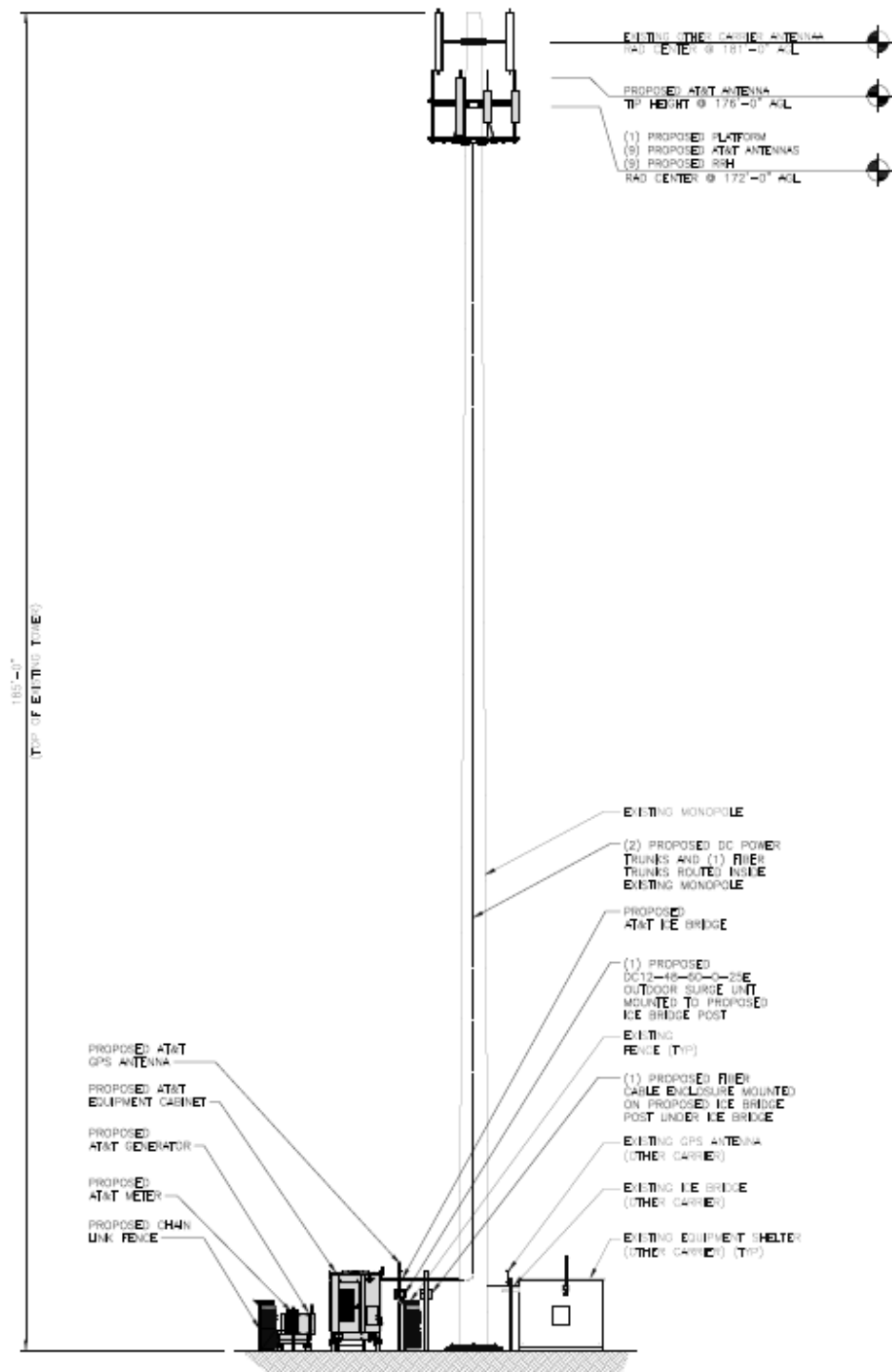
	<b>Agriculture</b>		<b>Railroad</b>
	<b>Commercial/Light Industrial</b>		<b>Waterway</b>
	<b>Rural Residential</b>		<b>Watershed</b>
	<b>Sewered Residential</b>		<b>Luce Line Trail</b>
	<b>Agriculture Preserve</b>		<b>MnDOT Section Line</b>
	<b>Conditional Use Permit</b>		



# SITE SKETCH



## SITE SKETCH





# PLANNING APPLICATION

Case No.

## Type of application

- ☐ Standard ☐ Staff Approval ☐ Plan Revision ☐ Amended ☐ Reapplication
- ☐ Rezoning ☐ Conditional Use Permit ☐ Variance ☐ Ordinance Amendment ☐ Subdivision
- ☐ Preliminary Development Plan ☐ Interim Use Permit ☐ Comprehensive Plan Amendment
- ☐ Final Development Plan ☐ Final Site & Building Plan ☐ Other \_\_\_\_\_

## Site Location— Additional addresses on back and legal description attached

Property address 3310 County Line Road SE PID 0711824330004

## Proposal -Full documentation must accompany application

AT&T to install additional antennas @ 172' center line. Add additional 6'x6' walk in cabinet on steel platform. Add generator on platform. Add fencing to surround new ground equipment

## Applicant

Name Curt Walter on behalf of AT&T Email Curtis.Walter@panderivordr.com

Address 2897 Lake Vista Dr NW Rochester, MN 55901

Phone 507-951-7151 Additional phone/contact \_\_\_\_\_

Printed Name Curt Walter Signature Curt Walter for AT&T

## Owner Information (if different from applicant)

Name DECAUD UNITED METHODIST CHURCH Email www.DECANOUMC.COM

Address 3310 COUNTY LINE RD SE

Phone 763-772-3492 Additional phone/contact \_\_\_\_\_

Printed Name MARTIN D. HOWES Signature Martin D. Howes

## Office Use Only

Date

Application Amount

Check #

Accepted By

Escrow Paid

Check #

Date Accepted by Planner

## City of Independence

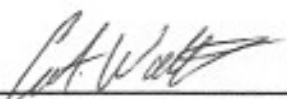
The Independence City Code was established to protect both current and future residents from the negative impacts of improper development and to ensure a positive future for the city. The land use application review is the mechanism that allows the city to examine proposed uses to ensure compatibility with the surrounding environment, natural or otherwise. It is important to understand that a proposed use may be acceptable in some circumstances, but unacceptable in others— all applications are reviewed on a case-by-case basis.

Minnesota State Statute 15.99 requires local governments to review an application within 15 days of its submission to determine if an application is complete and/ or if additional information is needed to adequately review the subject request. ***To ensure an expedited review, applicants shall schedule a pre-application meeting with the City Planner/ Administrator at least one week prior to submittal.*** Most applications have a review period of 60 days, with the City's ability to extend an additional 60 days if necessary due to insufficient information or schedule.

### ***Application for Planning Consideration Fee Statement***

The City of Independence has set forth a fee schedule for the year 2019 by City Ordinance. However, projects of large scope that include two or more requests will be required to provide a larger deposit than the resolution sets forth as set by the City Administrator. The fees collected for land use projects are collected as deposits. All invoices associated with each land employ application will be billed to the applicant within 30 days upon receipt by the City for each project. The City of Independence often utilizes consulting firms to assist in the review of projects. The consultant and City rates are noted on the current fee schedule. By signing this form, the applicant recognizes that he/ she is solely responsible for any and all fees associated with the land use application from the plan review stage to the construction monitoring stage through to the release of any financial guarantee for an approved project. If a project is denied by the City Council or withdrawn by the applicant, the fees associated for the project until such denial or withdrawal, remain the applicant's responsibility.

I UNDERSTAND THE FEE STATEMENT AND RESPONSIBILITIES ASSOCIATED WITH THIS LAND USE APPLICATION:

**Applicant Signature:**  Ex AT-T

**Date:** 5/7/19

**Owner Signature (if different):** Martin D. Howes CHURCH TRUSTEE CHAIR

**Date:** 5-8-19



SITE PHOTO

PROJECT INFORMATION

SITE ADDRESS:	3310 COUNTY LINE ROAD SE DELANO, MN 55328
COUNTY	HENNEPIN
SITE NAME:	DELANO COUNTY LINE
AT&T SITE ID	MNL01123
FA NUMBER:	11571089
PACE NUMBER:	MRUMW004702 MRUMW025729 MRUMW025728
PTN NUMBER:	3511A0DSLO 3511A0HSSG 3511A0HSSH
USID NUMBER:	229192
LATITUDE (NAD 83):	45° 02' 14.198" N 45.037277
LONGITUDE (NAD 83):	93° 45' 54.700" W -93.765194
GROUND ELEVATION:	970.1' AMSL
ZONING DISTRICT:	NA
TOWER OWNER:	DELANO UNITED METHODIST CHURCH 3310 COUNTY LINE ROAD SE INDEPENDENCE, MN 55328
OWNER SITE NAME:	DELANO COUNTY LINE
OWNER SITE NUMBER:	NA
LANDLORD CONTACT:	MARTY HOWES (763) 258-6969 HOWESMD@YAHOO.COM
GROUND OWNER:	GROUND OWNER
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	I-B
AT&T PROJECT MANAGER:	PETER MCENERY (952) 258-9629 PM753T@ATT.COM
B&V SITE ACQUISITION MANAGER:	KATE HUNTER (612) 206-7756 HUNTERK@BV.COM
B&V CONSTRUCTION MANAGER:	MITCH LONNIE (952) 896-0880 LONNEEM@OVERLANDCONTRACTING.COM
B&V LEAD ENGINEER:	CASEY TIJERINA (952) 896-0842 TIJERINACL@BV.COM

AT&T  
MOBILITY  
PROJECT: NSB - WIC  
AT&T SITE ID: MNL01123  
FA#: 11571089  
PACE#: MRUMW004702  
PTN#: 3511A0DSLO

DELANO COUNTY LINE  
DELANO, MN 55328

AREA MAP

VICINITY MAP

LOCAL MAP

DRIVING DIRECTIONS

DIRECTIONS FROM AT&T OFFICE:  
GO STRAIGHT (SOUTH SOUTHWEST) ON SOUTHTOWN DR TURN RIGHT (WEST SOUTHWEST) ONTO W 80TH ST TURN RIGHT (NORTH) ONTO CR 17 KEEP RIGHT (NORTHWEST) ONTO I-494 RAMP TAKE EXIT 19B KEEP RIGHT (WEST NORTHWEST) ONTO US 12 RAMP KEEP RIGHT (WEST NORTHWEST) ONTO BELTLINE EXPY TURN RIGHT (NORTH) ONTO SE GABLER AVE ARRIVE 3310 COUNTY LINE ROAD SE, DELANO, MN 55328.

ENGINEERING

2012 INTERNATIONAL BUILDING CODE  
2017 NATIONAL ELECTRIC CODE  
2015 MINNESOTA BUILDING CODE  
TIA/EIA-222-G OR LATEST EDITION

REFERENCE MATERIALS

THESE LTE DRAWINGS ARE BASED ON AT&T RFDS DOCUMENT DATED 11/19/18.  
CONTRACTOR SHALL USE THE LATEST VERSION OF THE RFDS WITH THE CONSTRUCTION DRAWINGS PER THE SCOPE OF WORK.

DRAWING INDEX

SHEET NO:	SHEET TITLE
COVER	TITLE SHEET
C-1	OVERALL SITE PLAN
C-2	COMPOUND PLAN
C-3	EMI-WIC PLATFORM WITH GENERATOR
C-4	SITE DETAILS
C-5	SITE DETAILS
C-6	CHAINLINK FENCE DETAILS
C-7	SIGNAGE DETAILS
C-8	SPECIAL INSPECTIONS
C-9	CONCRETE WORK NOTES
C-10	SITE WORK AND DRAINAGE NOTES
T-1	TOWER ELEVATION
T-2	ANTENNA CONFIGURATION
T-3	ANTENNA AND RRH REQUIREMENTS
T-4	TOWER EQUIPMENT DETAILS
T-5	COAX COLOR CODING
T-6	COAX COLOR CODING
T-7	TOWER SECTION NOTES
E-1	OVERALL ELECTRICAL PLAN
E-2	ELECTRICAL DETAILS
E-3	ONE-LINE GROUNDING DIAGRAM
E-4	COMPOUND GROUNDING DIAGRAM
E-5	GROUNDING DETAILS
E-6	GROUNDING DETAILS
E-7	GROUNDING DETAILS
E-8	ELECTRICAL SECTION NOTES
N-1	LEGEND AND ABBREVIATIONS
N-2	GENERAL NOTES
LS-1	LANDSCAPE PLAN

11"x17" PLOT WILL BE HALF SCALE UNLESS OTHERWISE NOTED

TO OBTAIN LOCATION OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN MINNESOTA, CALL GOPHER STATE ONE CALL  
TOLL FREE: 1-800-252-1166 OR  
FAX A LOCATE: 1-800-236-4967  
MIN. STATUTE, REQUIRES MIN OF 48 HOURS NOTICE BEFORE YOU EXCAVATE.

-THESE PLANS CONFORM TO ALL OF THE REQUIREMENTS CALLED OUT IN THE JURISDICTION PLANNING AND ZONING FOR ANTENNAS AND SUPPORT STRUCTURES WHERE SITE IS LOCATED.  
-SUBCONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING CONDITIONS ON SITE. IMMEDIATELY NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO PERFORMING ANY WORK OR BE RESPONSIBLE FOR THE SAME

AT&T  
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7900 XERXES AVE S  
3RD FLOOR  
BLOOMINGTON MN 55431

BLACK & VEATCH

BLACK & VEATCH CORPORATION  
7760 FRANCE AVENUE SOUTH  
SUITE 1200  
BLOOMINGTON, MN 55435

PROJECT NO: 129049.4004

DRAWN BY: VPB

CHECKED BY: JAT

REV	DATE	DESCRIPTION
0	07/24/19	ISSUED FOR CONSTRUCTION

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DELANO COUNTY LINE  
MNL01123  
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DELANO, MN 55328  
NSB - WIC

SHEET TITLE

TITLE SHEET

SHEET NUMBER

COVER

THIS DRAWING IS  
NOT A SITE SURVEY

THE PURPOSE OF THIS DRAWING IS  
TO SHOW HOW THE DEVELOPED SITE  
RELATES TO THE PARENT PARCEL  
AND ADJACENT PROPERTIES.

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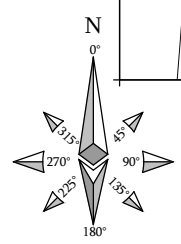
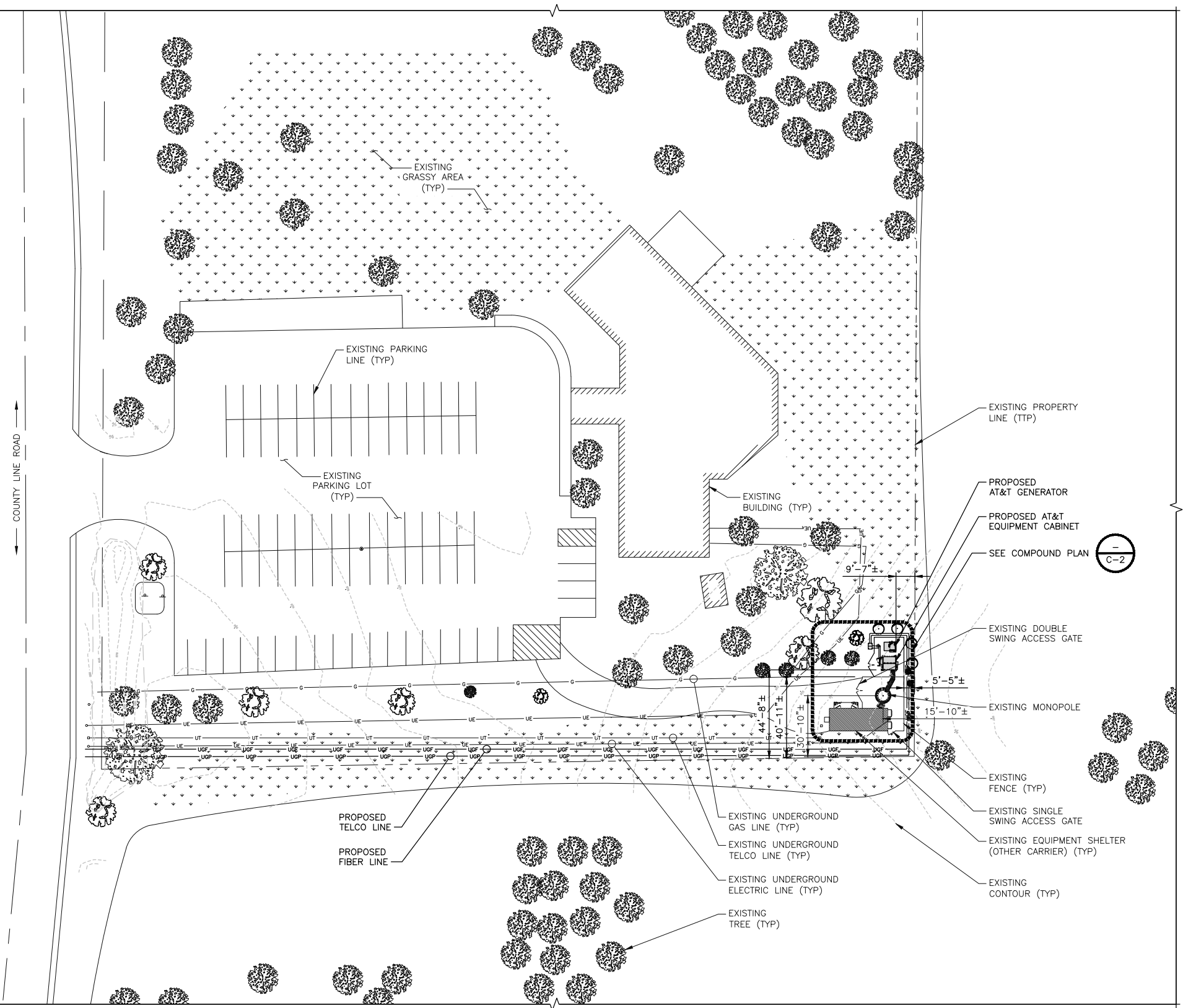
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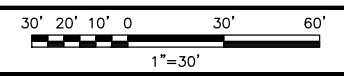
DELANO COUNTY LINE  
MNL01123  
3310 COUNTY LINE ROAD SE  
DELANO, MN 55328  
NSB - WIC

SHEET TITLE  
**OVERALL SITE PLAN**

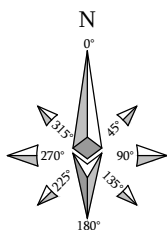
SHEET NUMBER  
**C-1**



OVERALL SITE PLAN





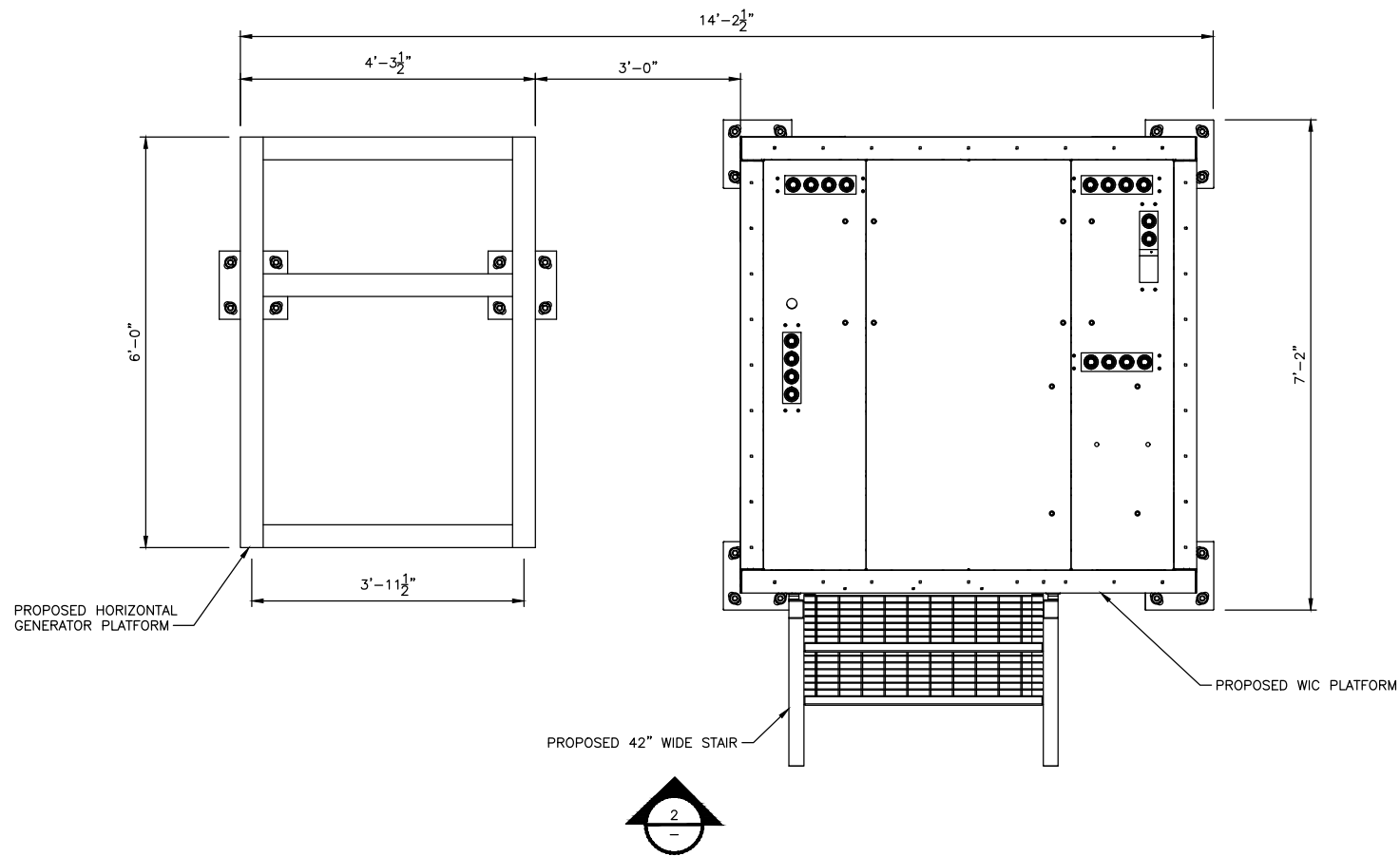


4' 2' 0 4'

$1/4" = 1'-0"$

1

**C-2**

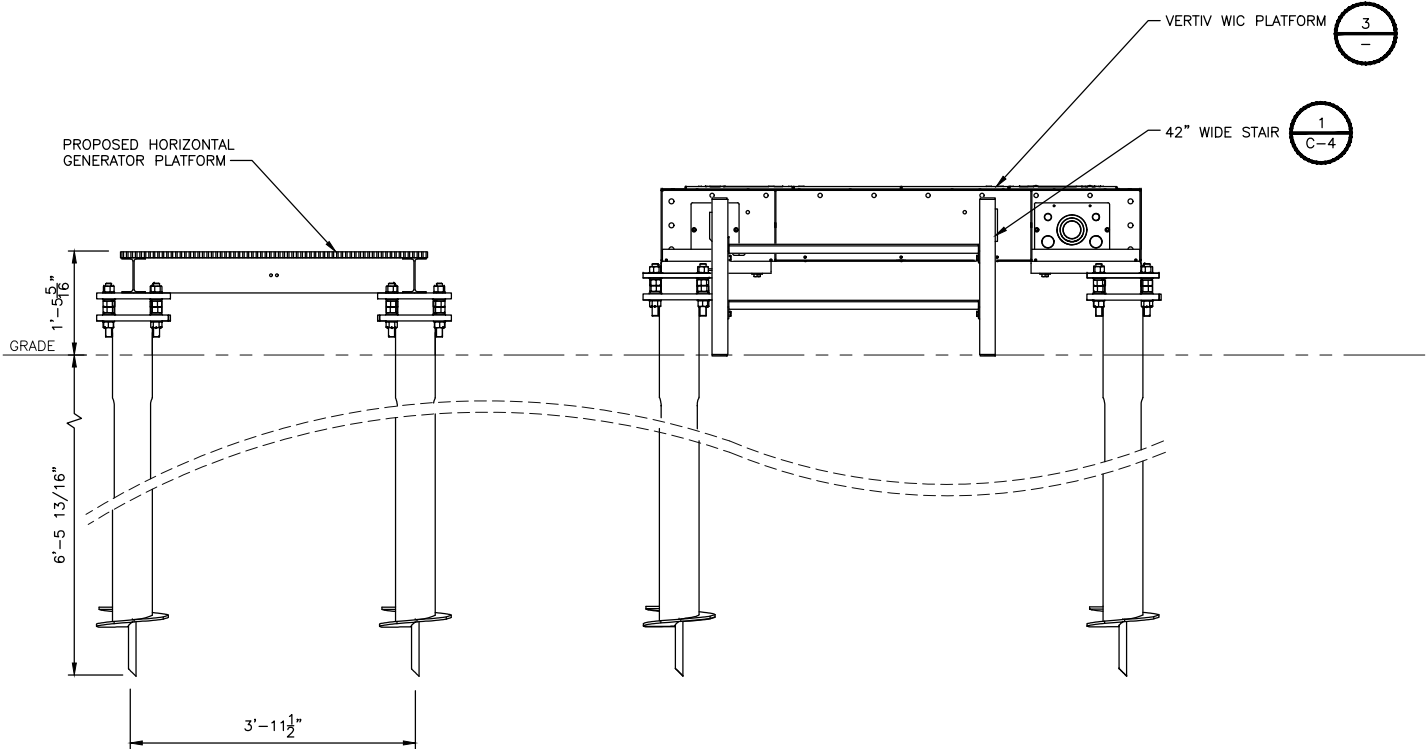


WIC PLATFORM LAYOUT PLAN

NO SCALE

1

**NOTE:**  
1. DRAWINGS ARE FOR GRAPHIC REPRESENTATION OF THE FINAL ASSEMBLY. CONTRACTOR MUST REFERENCE MANUFACTURERS DRAWINGS PRIOR TO CONSTRUCTION.

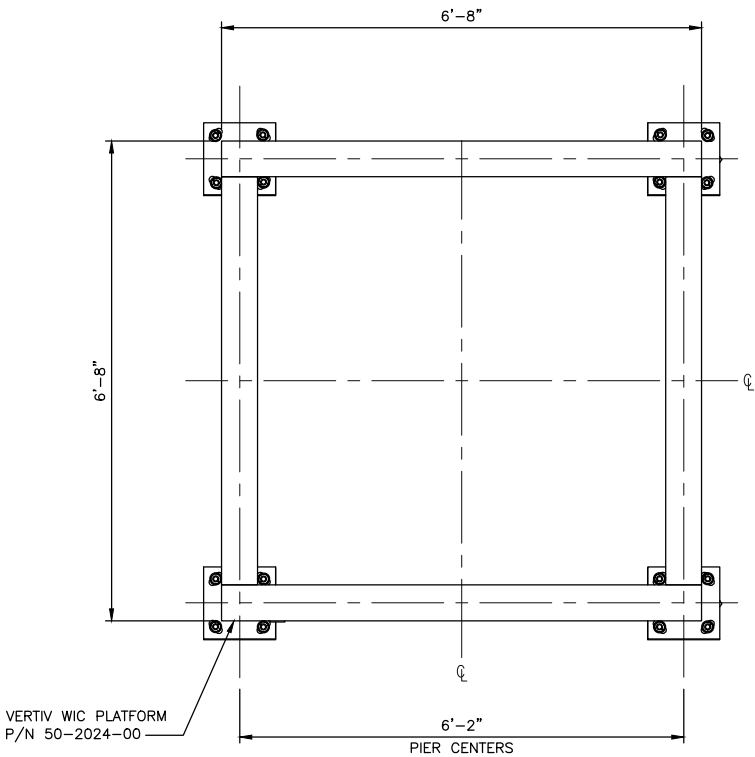


WIC PLATFORM ELEVATION

NO SCALE

2

**NOTE:**  
1. DRAWINGS ARE FOR GRAPHIC REPRESENTATION OF THE FINAL ASSEMBLY. CONTRACTOR MUST REFERENCE MANUFACTURERS DRAWINGS PRIOR TO CONSTRUCTION.  
2. PLATFORM SHOWN IS FOR THE VERTIV WALK-IN-CABINET P/N F2016017-P.FORM-FC (FULLY ASSEMBLED) OR F2016019-P.FORM-PC (BUILD ON SITE)



WIC PLATFORM PLAN

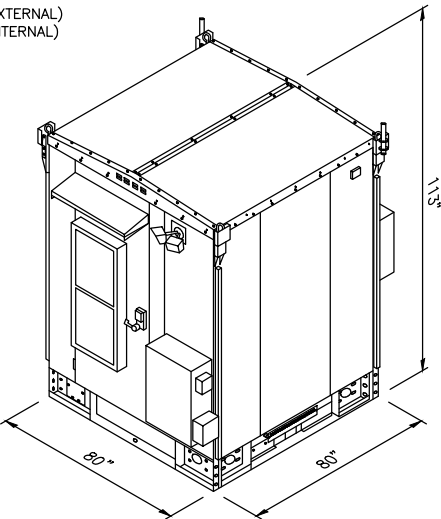
NO SCALE

3

VERTIV - XTE 801, 6'x6' WALK IN CABINET (WIC)

DIMENSIONS, HxWxD: 113.0"x80.0"x80.0" (EXTERNAL)  
105.0"x72.0"x72.0" (INTERNAL)

WEIGHT: ~4000 lbs (EMPTY)  
~7000 lbs (FULL)



WALK IN CABINET DETAIL

NO SCALE

4

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PROJECT NO: 129049.4004  
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REV	DATE	DESCRIPTION
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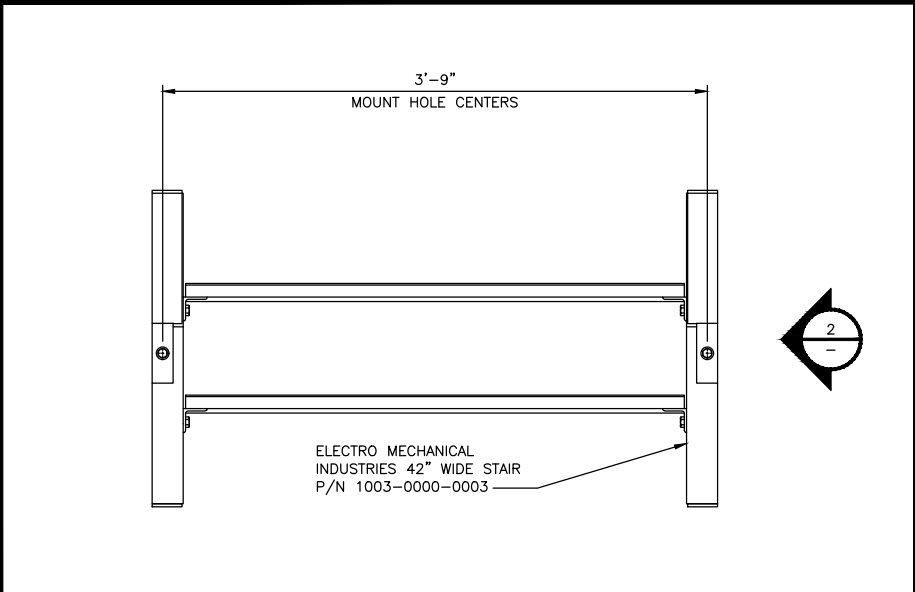
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DELANO COUNTY LINE  
MNL01123  
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NSB - WIC

SHEET TITLE  
EMI - WIC  
PLATFORM  
W/GENERATOR

SHEET NUMBER

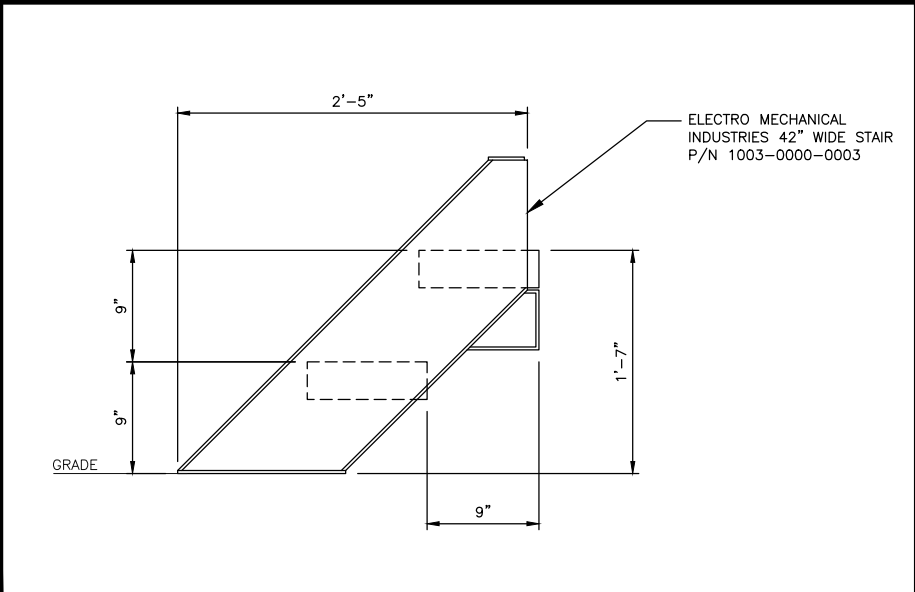
C-3



WIC STAIRS FRONT ELEVATION

NO SCALE

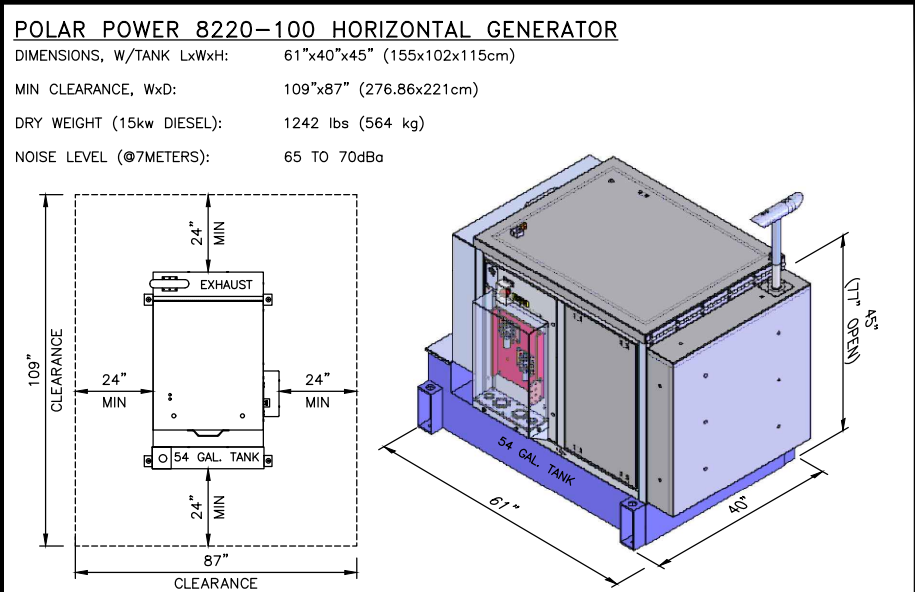
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WIC STAIRS SIDE ELEVATION

NO SCALE

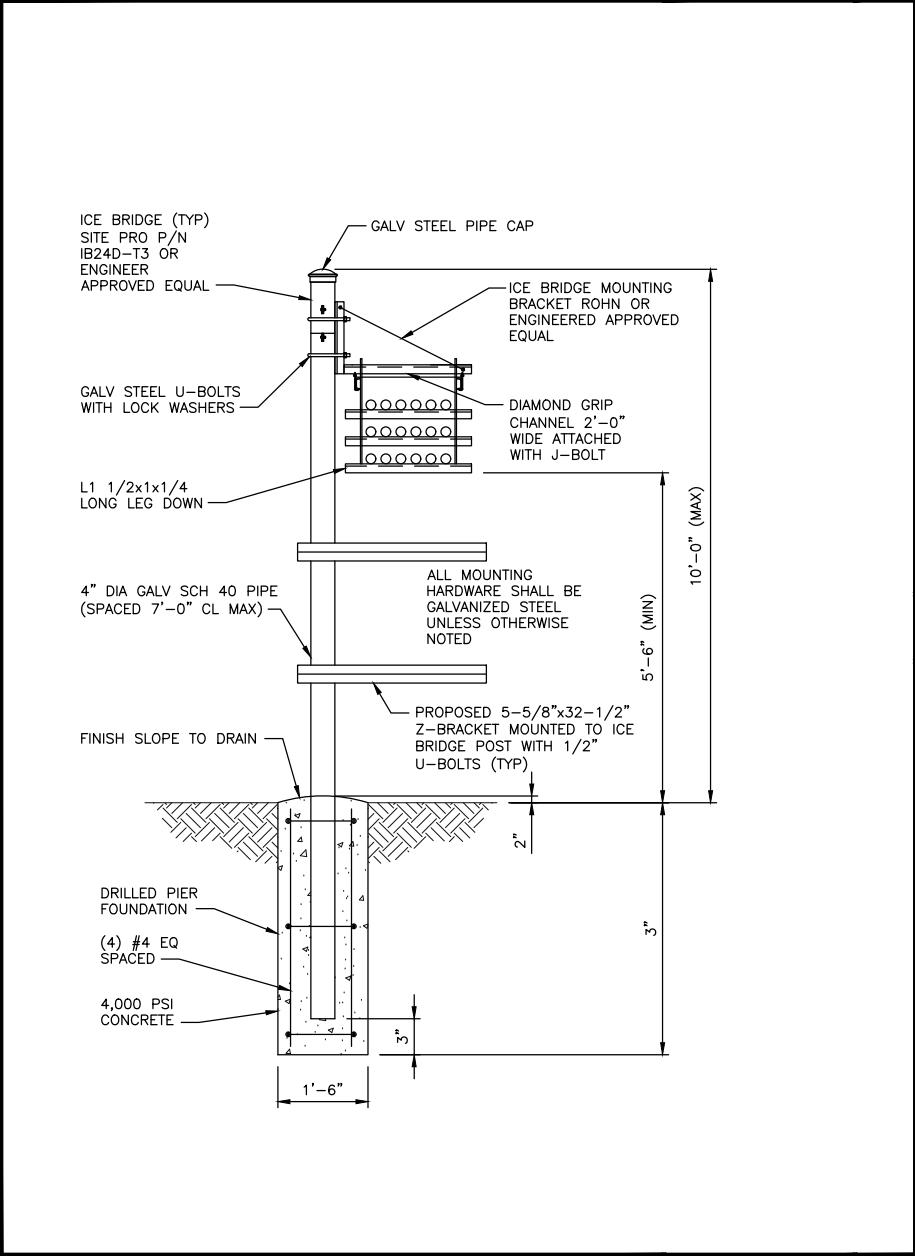
2



GENERATOR DETAIL

NO SCALE

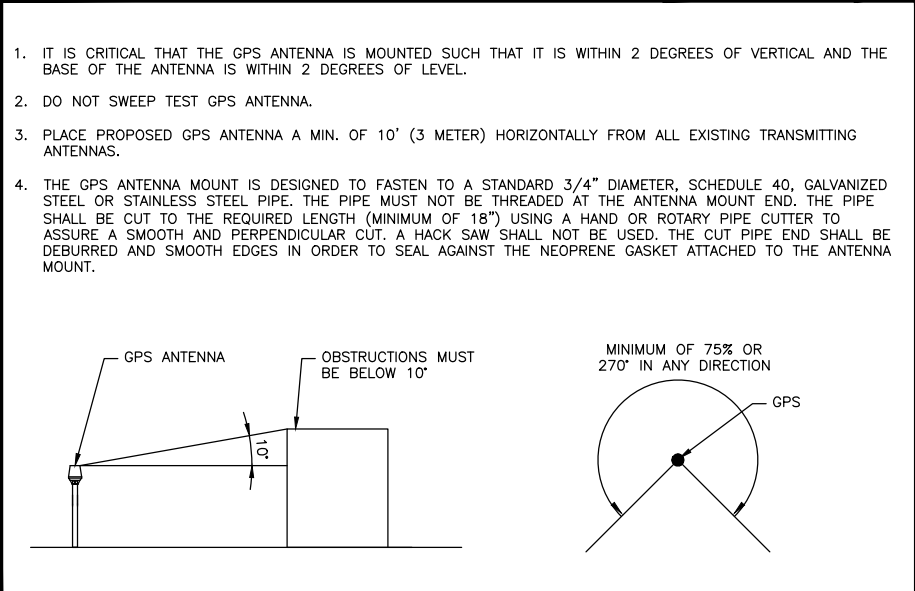
3



ICE BRIDGE DETAIL

NO SCALE

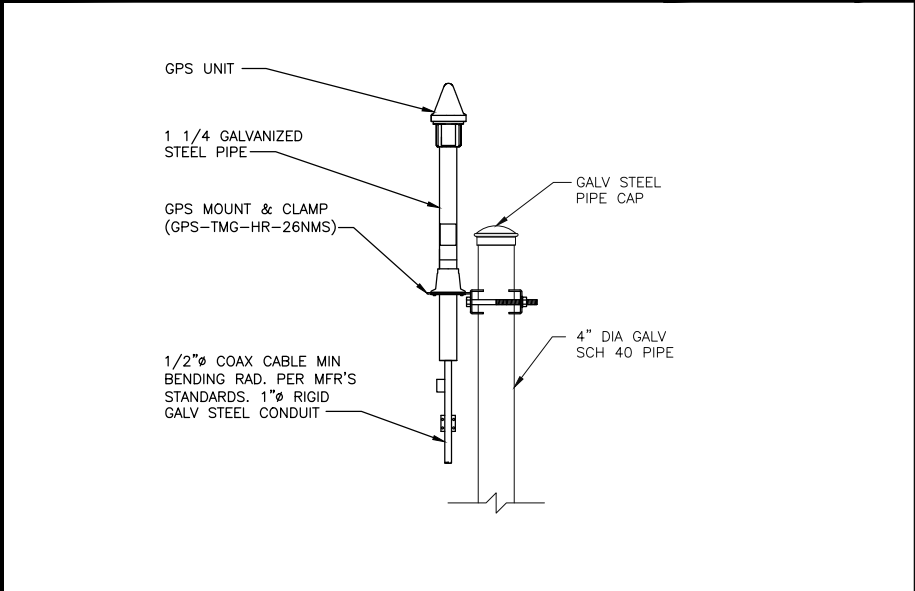
6



GPS SPECIFICATIONS

NO SCALE

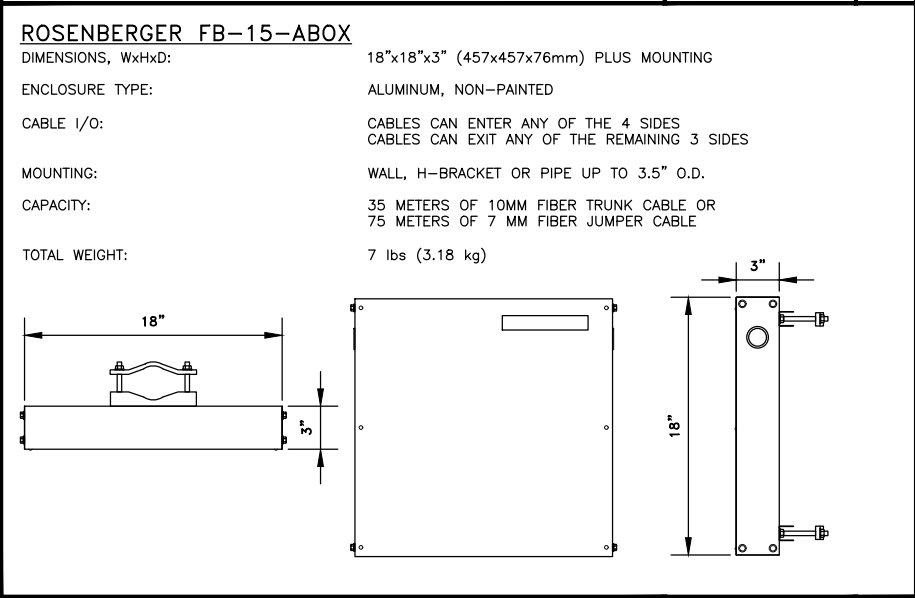
4



LTE GPS ANTENNA PIPE MOUNT DETAIL

NO SCALE

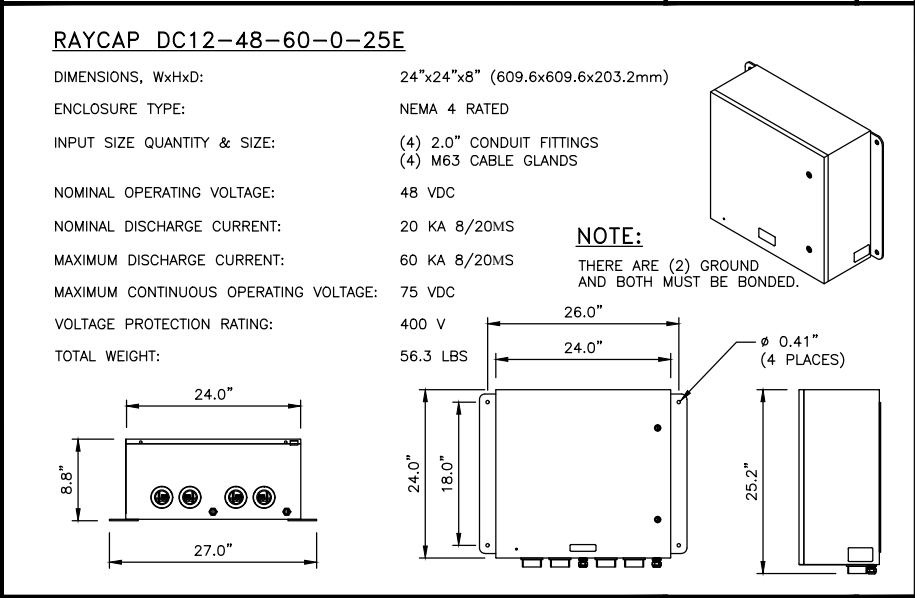
5



EXTERIOR FIBER CABLE ENCLOSURE

NO SCALE

7



OUTDOOR DC SURGE PROTECTION SOLUTION

NO SCALE

8

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BLOOMINGTON MN 55431

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SUITE 1200  
BLOOMINGTON, MN 55435

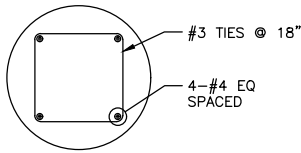
PROJECT NO:		129049.4004
DRAWN BY:		VPB
CHECKED BY:		JAT
	</	

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**DELANO COUNTY LINE**  
MNL01123  
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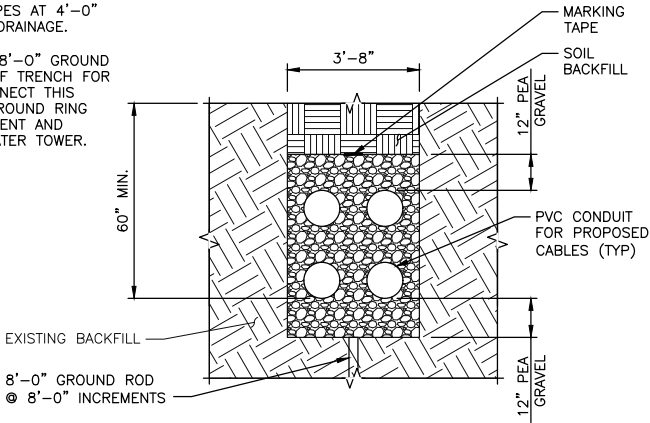
SHEET TITLE  
SITE DETAILS

SHEET NUMBER  
**C-4**



NOTES

1. A MINIMUM OF 4" MUST BE MAINTAINED BETWEEN THE PVC PIPE AND THE SIDES OF THE TRENCHES.
2. CONTRACTOR TO DRILL 2" HOLES OF BOTTOM HALF OF PVC PIPES AT 4'-0" INCREMENTS FOR WATER DRAINAGE.
3. CONTRACTOR TO INSTALL 8'-0" GROUND ROD IN ENTIRE LENGTH OF TRENCH FOR PVC PIPE AND MUST CONNECT THIS GROUND FIELD TO THE GROUND RING AROUND THE BTS EQUIPMENT AND AROUND THE EXISTING WATER TOWER.



H-FRAME FOOTING

NO SCALE

1

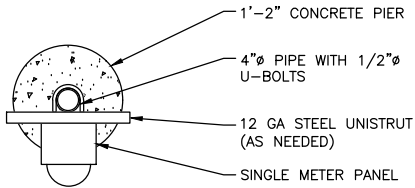
PVC & TRENCHING SECTION DETAIL

NO SCALE

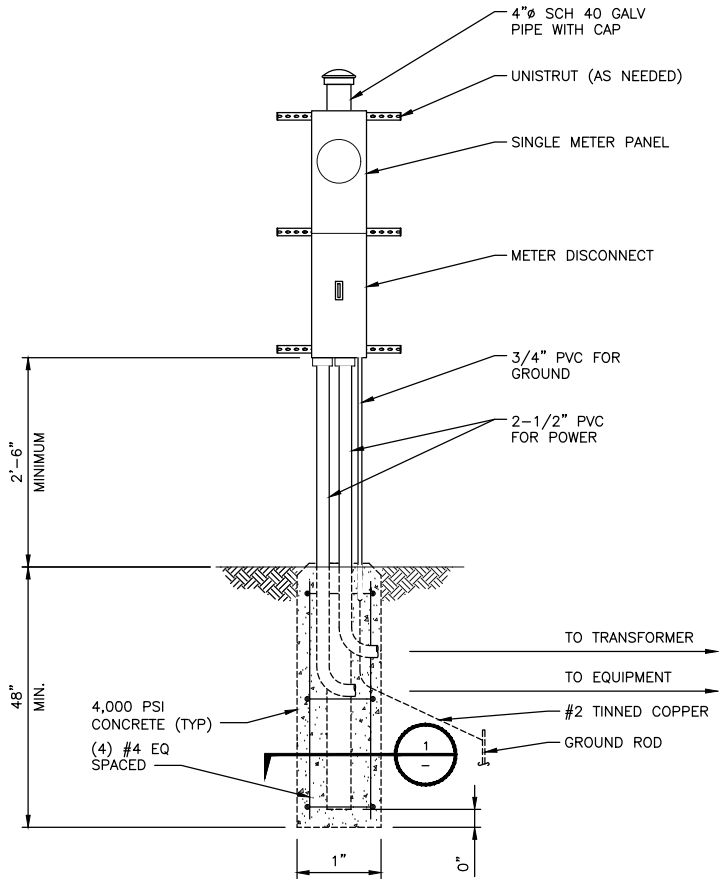
2

NOTES

1. ADDITIONAL UNISTRUT REQUIRED FOR INSTALLATION OF EQUIPMENT ON BACK OF PPC RACK.
2. LIGHTING PANEL - MAIN LUGS ONLY, WITH (6) SIX POLES. PROVIDE AND INSTALL (6) SIX SINGLE POLE 20AMP BREAKERS.



H-FRAME PLAN VIEW  
NO SCALE



H-FRAME DETAIL

NO SCALE

3

NOT USED

4

AT&T  
MOBILITY

7900 XERXES AVE S  
3RD FLOOR  
BLOOMINGTON MN 55431



BLACK & VEATCH

BLACK & VEATCH CORPORATION  
7760 FRANCE AVENUE SOUTH  
SUITE 1200  
BLOOMINGTON, MN 55435

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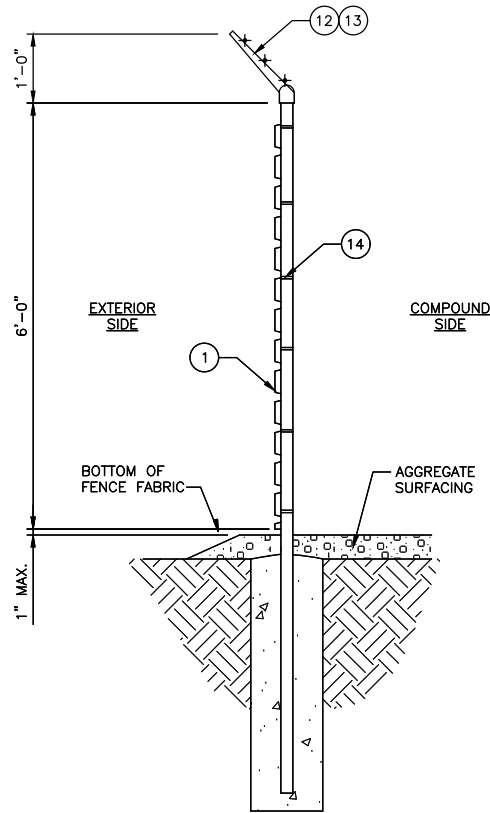
DELANO COUNTY LINE  
MNL01123  
3310 COUNTY LINE ROAD SE  
DELANO, MN 55328  
NSB - WIC

SHEET TITLE

SITE DETAILS

SHEET NUMBER

C-5



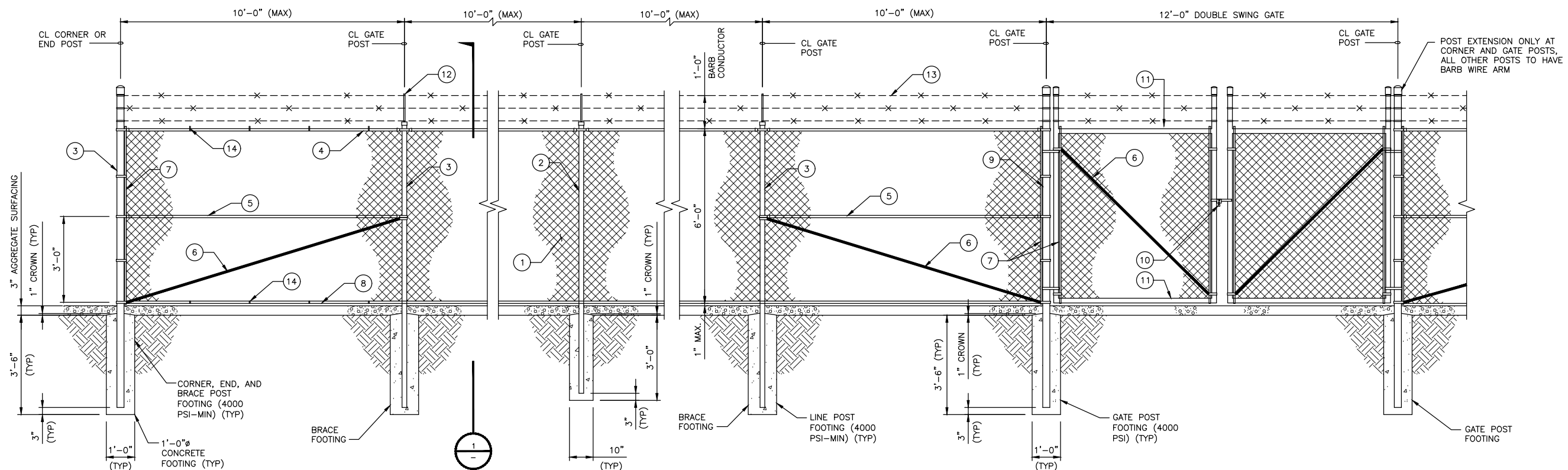
- ① CHAIN LINK RESIDENTIAL FABRIC: 11-1/2 GAUGE, 2-1/4" MESH; GALVANIZED ASTM-A392, CLASS 2; TWISTED SELVAGE ON TOP, KNUCKLED ON BOTTOM.
- ② LINE POSTS: 2-1/2" O.D. PIPE, 16 GAUGE (GALVANIZED) PER ASTM-F1083.
- ③ CORNER, END AND BRACE POSTS: 2-7/8" O.D. PIPE, SCHEDULE 40 (GALVANIZED).
- ④ TOP RAIL: 1-5/8" O.D. 17 GAUGE PIPE (GALVANIZED) PER ASTM-F1083.
- ⑤ BRACE RAIL: 1-5/8" O.D. 17 GAUGE PIPE (GALVANIZED).
- ⑥ DIAGONAL TRUSS ROD: 3/8" GALVANIZED ROD WITH TURNBUCKLE.
- ⑦ TENSION BAR: 3/16" X 3/4" GALVANIZED FLAT BAR.
- ⑧ BOTTOM TENSION WIRE: GALVANIZED OR ALUMINUM COATED COIL SPRING WIRE, 7 GAUGE.
- ⑨ GATE POSTS: 2-7/8" O.D. SCHEDULE 40 PIPE (GALVANIZED).
- ⑩ COMBINATION PADLOCK ACCORDING TO AT&T REQUIREMENTS.
- ⑪ GATE FRAMES: 1-7/8" O.D. SCHEDULE 40 PIPE (GALVANIZED).
- ⑫ BARBED WIRE SUPPORT ARM: SINGLE ARM TYPE (GALVANIZED). ARM SHALL BE INCLINED OUTWARD AT AN ANGLE OF 45 DEGREES.
- ⑬ BARBED WIRE: GALVANIZED, ASTM A121 CLASS 3; THREE 14 GAUGE MINIMUM STEEL WIRES WITH 4 POINT ROUND 14 GAUGE BARBS SPACED 4" APART.
- ⑭ FABRIC TIES: ALUMINUM BANDS OR WIRES. FABRIC SHALL BE ATTACHED TO THE TOP RAIL AND BOTTOM TENSION WIRE AT 24" CENTERS AND TO THE POSTS AT 15" CENTERS, ALL ON THE COMPOUND SIDE OF THE FENCE.
- ⑮ MISCELLANEOUS:
- A. RAIL COUPLINGS: SLEEVE TYPE, 6" LONG EXPANSION SPRING EVERY FIFTH COUPLING.
- B. POST TOPS: PRESSED STEEL, MALLEABLE IRON WITH PRESSED STEEL EXTENSION ARM, OR ONE-PIECE ALUMINUM CASTING; WITH HOLE FOR TOP, ALL DESIGNED TO FIT OVER THE OUTSIDE OF THE POSTS AND TO PREVENT ENTRY OF MOISTURE INTO TUBULAR POSTS.
- C. LATCHES SHALL BE FORKED TYPE AND SHALL BE ARRANGED FOR PADLOCKING WITH THE PADLOCK ACCESSIBLE FROM BOTH SIDES OF THE GATE.
- D. KEEPERS SHALL CONSIST OF MECHANICAL DEVICES FOR SECURING AND SUPPORTING THE FREE END OF THE GATES WHEN IN THE FULL OPEN POSITION. KEEPERS SHALL BE MOUNTED ON 2-7/8" O.D. PIPE POSTS FILLED WITH CONCRETE AND SET IN CONCRETE FOUNDATIONS.
- E. INSTALL FENCING PER ASTM-F567.
- F. INSTALL SWING GATES PER ASTM-F900.
- G. LOCAL ORDINANCE OF BARBED WIRE PERMIT REQUIREMENT SHALL BE COMPLETED IF REQUIRED.
- H. USE GALVANIZED HIG-RING WIRE TO MOUNT ALL SIGNS.
- I. ALL SIGNS MUST BE MOUNTED ON INSIDE OF FENCE.
- J. ALL POSTS SHALL HAVE "MUSHROOM" SLEEVE EMBEDDED IN CONCRETE.

CHAINLINK FENCE SECTION

NO SCALE

1

MATERIAL DESCRIPTION



CHAINLINK FENCE ELEVATION

NO SCALE

2

AT&T  
MOBILITY

7900 XERXES AVE S  
3RD FLOOR  
BLOOMINGTON MN 55431



BLACK & VEATCH

BLACK & VEATCH CORPORATION  
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PROJECT NO: 129049.4004

DRAWN BY: VPB

CHECKED BY: JAT

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DELANO COUNTY LINE  
MNL01123  
3310 COUNTY LINE ROAD SE  
DELANO, MN 55328  
NSB - WIC

SHEET TITLE  
CHAINLINK FENCE  
DETAILS

SHEET NUMBER

C-6





LIST OF SPECIAL INSPECTIONS	
	LIST OF ITEMS REQUIRING SPECIAL INSPECTIONS
	<div><div></div><div>INSPECTION OF REINFORCING STEEL, INCLUDING PRE-STRESSING TENDONS, AND PLACEMENT PER SECTION 1910.4 OF THE IBC.</div></div> <div><div></div><div>INSPECTION OF ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS PER SECTION 1909.1 OF THE IBC.</div></div> <div><div></div><div>AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATED SPECIMENS FOR STRENGTH TEXT, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE PER SECTION 1910.10 OF THE IBC.</div></div> <div><div></div><div>INSPECTIONS OF SOILS PER TABLE 1705.6 OF THE IBC.</div></div>

TABLE 1704.3					
VERIFICATION AND INSPECTION		CONTINUOUS	PERIODIC	REFERENCED STANDARD	IBC REFERENCE
1. MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS AND WASHERS:					
a. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.	—	X	ACI 360, SEC. A3.3, APPLICABLE ASTM MATERIAL STANDARDS	—	
b. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED.	—	X	—	—	
2. INSPECTION OF HIGH-STRENGTH BOLTING:					
a. SNUG-TIGHT JOINTS	—	X	ACI 360, SEC. A3.3, APPLICABLE ASTM MATERIAL STANDARDS	1704.3.3	
b. PRETENSIONED AND SLIP-CRITICAL JOINTS USING TURN-OF-NUT WITH MATCHMARKING, TWIST-OFF BOLT OR DIRECT TENSION INDICATOR METHODS OF INSTALLATION.	—	X			
c. PRETENSIONED AND SLIP-CRITICAL JOINTS USING TURN-OF-NUT WITHOUT MATCHMARKING OR CALIBRATED WRENCH METHODS OF INSTALLATION.	X	—			
3. MATERIAL VERIFICATION OF STRUCTURAL STEEL AND COLD-FORMED STEEL DECK:					
a. FOR STRUCTURAL STEEL, IDENTIFICATION MARKINGS TO CONFORM TO AISC 360.	—	X	ACI 360, SEC. M5.5		
b. FOR OTHER STEEL, IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.	—	X	APPLICABLE ASTM MATERIAL STANDARDS		
c. MANUFACTURER'S CERTIFIED TEST REPORTS.	—	X			
4. MATERIAL VERIFICATION OF WELD FILLER MATERIALS:					
a. IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATION IN THE APPROVED CONSTRUCTION DOCUMENTS.	—	X	AISC 360, SEC. A3.5 AND APPLICABLE AWS A5 DOCUMENTS	—	
b. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED.	—	X	—	—	
5. INSPECTION OF WELDING:					
a. STRUCTURAL STEEL AND COLD-FORMED STEEL DECK:					
1. COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS.	X	—	AWS D1.1	1704.3.1	
2. MULTIPASS FILLET WELDS.	X	—			
3. SINGLE-PASS FILLET WELDS > 5/16".	X	—			
4. PLUG AND SLOT WELDS.	X	—			
5. SINGLE-PASS FILLET WELDS ≤ 5/16".	—	X			
6. FLOOR AND DECK WELDS.	—	X	AWS D1.3		
b. REINFORCING STEEL:					
1. VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A 706.	—	X	AWS D1.4 ACI 318: SEC. 3.5.2	—	
2. REINFORCING STEEL RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES, AND BOUNDARY ELEMENTS OF SPECIAL STRUCTURAL WALLS OF CONCRETE AND SHEAR REINFORCEMENT.	X	—			
3. SHEAR REINFORCEMENT.	X	—			
4. OTHER REINFORCING STEEL.	—	X			
6. INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE:					
a. DETAILS SUCH AS BRACING AND STIFFENING.	—	X	—	1704.3.2	
b. MEMBER LOCATIONS.	—	X			
c. APPLICATION OF JOINT DETAILS AT EACH CONNECTION.	—	X			

TABLE 1704.7			
REQUIRED VERIFICATION AND INSPECTION OF SOILS			
VERIFICATION AND INSPECTION TASK		CONTINUOUS DURING TASK LISTED	PERIODIC DURING TASK LISTED
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.		—	X
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.		—	X
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.		—	X
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.		X	—
5. PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.		—	X

TABLE 1705.3					
REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION					
VERIFICATION AND INSPECTION		CONTINUOUS	PERIODIC	REFERENCED STANDARD	IBC REFERENCE
1. INSPECTION OF REINFORCING STEEL, INCLUDING PRE-STRESSING TENDONS, AND PLACEMENT		—	X	ACI 318: 3.5, 7.1–7.7	1910.4
2. INSPECTION OF REINFORCING STEEL WELDING ON ACCORDANCE WITH TABLE 1704.3, ITEM 5b.		—	—	AWS D1.4 ACI 318: 3.5.2	—
3. INSPECTION OF BOLTS TO BE INSTALLED IN CONCRETE PRIOR TO AND DURING PLACEMENT OF CONCRETE WHERE ALLOWABLE LOADS HAVE BEEN INCREASED WHERE STRENGTH DESIGN IS USED.		—	—	ACI 318: 8.1.3, 21.2.8	1908.5, 1909.1
4. INSPECTION OF ANCHORS INSTALLED IN HARDED CONCRETE.		—	X	ACI 318: 3.8.6, 8.1.3, 21.2.8	1909.1
5. VERIFYING USE OF REQUIRED DESIGN MIX.		—	X	ACI 318: Ch 4, 5.2–5.4	1904.2, 1910.2, 1910.3
6. AT THE TIME FRESH CONCRETE IS STAMPED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.		X	—	ASTM C 172 ASTM C 31 ACI 318: 5.6, 5.8	1910.10
7. INSPECTION OF CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.		X	—	ACI 318: 5.9, 5.10	1910.6, 1910.7, 1910.8
8. INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.		X	—	ACI 318: 5.9, 5.10	1910.9
9. INSPECTION OF PRE-STRESSED CONCRETE: a. APPLICATION OF PRE-STRESSING FORCES. b. GROUTING OF BONDED PRE-STRESSING TENDONS IN THE SEISMIC-FORCE RESISTING SYSTEM.		— —	— —	ACI 318: 18.20 ACI 318: 18.18.4	—
10. ERECTION OF PRECAST CONCRETE MEMBERS.		—	—	ACI 318: Ch. 16	—
11. VERIFICATION OF IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLAB.		—	X	ACI 318: 6.2	—
12. INSPECT FRAMEWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.		—	X	ACI 318: 6.1.1	—

TABLE 1705.6			
REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION			
VERIFICATION AND INSPECTION		CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.		—	X
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.		—	X
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.		—	X
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.		X	—
5. PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.		—	X

SPECIAL INSTRUCTIONS

AT&T  
MOBILITY

7900 XERXES AVE S  
3RD FLOOR  
BLOOMINGTON MN 55431



BLACK & VEATCH

BLACK & VEATCH CORPORATION  
7760 FRANCE AVENUE SOUTH  
SUITE 1200  
BLOOMINGTON, MN 55435

PROJECT NO:		129049.4004
DRAWN BY:		VPB
CHECKED BY:		JAT
0	07/24/19	ISSUED FOR CONSTRUCTION
REV	DATE	DESCRIPTION

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

DELANO COUNTY LINE  
MNL01123  
3310 COUNTY LINE ROAD SE  
DELANO, MN 55328  
NSB – WIC

SHEET TITLE

SPECIAL INSPECTIONS

SHEET NUMBER

C-8

PART 1 – GENERAL

- 1.1 SCOPE:
- A.

FORM WORK, REINFORCING STEEL, ACCESSORIES, CAST-IN PLACE CONCRETE, FINISHING, CURING AND TESTING FOR STRUCTURAL CONCRETE FOUNDATIONS.
- 1.2 REFERENCES:
- A.

ACI (AMERICAN CONCRETE INSTITUTE)

1.

ACI 301 SPECIFICATION FOR STRUCTURAL CONCRETE FOR BUILDINGS.

2.

ACI 304 RECOMMENDED PRACTICE FOR MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE.

3.

ACI 305 RECOMMENDED PRACTICE FOR HOT WEATHER CONCRETING.

4.

ACI 306 RECOMMENDED PRACTICE FOR COLD WEATHER CONCRETING.

5.

ACI 308 STANDARD PRACTICE FOR CURING CONCRETING.

6.

ACI 309 STANDARD PRACTICE FOR CONSOLIDATION OF CONCRETE.

7.

ACI 318 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.

8.

ACI 347 RECOMMENDED PRACTICE FOR CONCRETE FORMWORK DRILL PIERS.

B.

ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS). THE APPLICABLE STANDARDS OF THE AMERICAN SOCIETY FOR TESTING AND MATERIALS ARE LISTED IN THE ACI STANDARDS AND ARE A PART OF THIS SPECIFICATION.

PART 2 – PRODUCTS

- 2.1 REINFORCING MATERIALS:
- A.

REINFORCING BARS: ASTM A615, GRADE 60, PROPOSED DEFORMED BILLET–STEEL BARS, PLAIN FINISH.
- B.

FURNISH CHAIRS, BOLSTERS, BAR SUPPORTS, SPACERS AS REQUIRED FOR SUPPORT OF REINFORCING STEEL AND WIRE FABRIC.
- 2.2 CONCRETE MATERIALS:
- A.

PORTLAND CEMENT SHALL BE TYPE II, CONFORMING TO ASTM C–150.
- B.

AGGREGATE SHALL CONFORM TO ASTM C–33.

1.

FINE AGGREGATE SHALL BE UNIFORMLY GRADED, CLEAN SHARP, WASHED NATURAL, OR CRUSHED SAND, FREE FROM ORGANIC IMPURITIES.

2.

COARSE AGGREGATE SHALL BE NATURAL WASHED GRAVEL OR WASHED CRUSHED ROCK HAVING HARD, STRONG, DURABLE PIECES, FREE FROM ADHERENT COATINGS.

3.

MAXIMUM SIZE OF COARSE AGGREGATE SHALL BE 3/4 INCH IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM C–33 GRADATION SIZE NO. 67.

C.

WATER USED IN CONCRETE MIX SHALL BE POTABLE, CLEAN, AND FREE FROM OILS, ACIDS, SALTS, CHLORIDES, ALKALI, SUGAR, VEGETABLE, OR OTHER INJURIOUS SUBSTANCES.

D.

THE CONCRETE SHALL CONTAIN AN AIR–ENTRAINING ADMIXTURE COMPLYING WITH THE REQUIREMENTS OF ASTM C–260 AND ACI 212. 1R AND A WATER– REDUCING ADMIXTURE COMPLYING WITH THE REQUIREMENTS OF ASTM C–494 AND ACI 212. 1R. ADMIXTURES SHALL BE PURCHASED AND BATCHED IN LIQUID SOLUTION. THE USE OF CALCIUM CHLORIDE OR AN ADMIXTURE CONTAINING CALCIUM CHLORIDE IS PROHIBITED. ADMIXTURES SHALL BE OF THE SAME MANUFACTURER TO ASSURE COMPATIBILITY. ACCEPTABLE MANUFACTURERS ARE:

1.

W.R. GRACE

2.

SIKA CORP.

3.

MASTER BUILDERS

4.

EUCLID CHEMICAL CO.

5.

APPROVED EQUAL

E.

CURING COMPOUND SHALL CONFORM TO ASTM C309, TYPE I, ID, CLASS A AND B AND ASTM C171 AS APPLICABLE.

2.3 CONCRETE MIX:

A.

PROPORTION CONCRETE MIX IN ACCORDANCE WITH REQUIREMENTS OF ACI 301. THE STRENGTH OF CONCRETE SHALL BE AS INDICATED ON THE DRAWINGS. WHERE STRENGTH IS NOT CLEARLY INDICATED, CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI.

B.

THE CONCRETE MIX SHALL BE DESIGNED FOR A MAXIMUM SLUMP OF THREE INCHES (PLUS OR MINUS 1–INCH) AT THE POINT OF DISCHARGE. MIXES OF THE STIFFEST CONSISTENCY THAT CAN BE EFFICIENTLY PLACED SHALL BE USED.

C.

ALL CONCRETE SHALL BE TO SIX PERCENT (6%) AIR ENTRAINED (PLUS OR MINUS 1%).

D.

ALL STRUCTURAL CONCRETE SHALL CONTAIN A WATER–REDUCING AGENT.
- PART 3 – EXECUTION
- 3.1 GENERAL:

A.

CONSTRUCT AND ERECT THE FORM WORK IN ACCORDANCE WITH ACI 301 AND ACI 347.

B.

COLD–WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI 306.

C.

HOT–WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI 305.

3.2 INSERTS, EMBEDDED COMPONENTS AND OPENINGS:

A.

CONTRACTOR SHALL CHECK ALL CIVIL, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL DRAWINGS FOR OPENINGS, SLEEVES, ANCHOR BOLTS, INSERTS AND OTHER ITEMS TO BE BUILT INTO THE CONCRETE WORK.

B.

COORDINATE THE WORK OF OTHER SECTION IN FORMING AND SETTING OPENINGS. RECESSES, SLOTS, CHASES, ANCHORS, INSERTS AND OTHER ITEMS TO BE EMBEDDED.
- C.

EMBEDDED ITEMS SHALL BE SET ACCURATELY IN LOCATION, ALIGNMENT, ELEVATION AND PLUMBNESS. LOCATE AND MEASURE FROM ESTABLISHED SURVEYED REFERENCE BENCHMARKS.

D.

EMBEDDED ITEMS SHALL BE ANCHORED INTO PLACE IN A MANNER TO PREVENT MOVEMENT DURING CONCRETE PLACEMENT AND CONSOLIDATION. COMPONENTS FORMING A PART OF A COMPLETE ASSEMBLY SHALL BE ALIGNED BEFORE ANCHORING INTO PLACE. PROVIDE TEMPORARY BRACING, ANCHORAGE, AND TEMPLATES AS REQUIRED TO MAINTAIN THE SETTING AND ALIGNMENT.

3.3 REINFORCEMENT PLACEMENT:

A.

PLACE REINFORCEMENT ACCORDING TO CHECKED AND RELEASED DRAWINGS AND IN ACCORDANCE WITH ACI 301 AND ACI 318.

B.

ACCURATELY POSITION, SUPPORT AND SECURE REINFORCEMENT AGAINST DISPLACEMENT FROM FORM WORK CONSTRUCTION OR CONCRETE PLACEMENT AND CONSOLIDATION. SUPPORT REINFORCING ON METAL CHAIRS, RUNNERS, BOLSTERS, SPACERS AND HANGERS.

C.

SPLICES OF REINFORCING BARS SHALL BE CLASS B UNLESS SHOWN OTHERWISE ON THE DRAWINGS. SPLICES SHALL BE STAGGERED. FULL DEVELOPMENT LENGTH SHALL BE PROVIDED ACROSS JOINTS.

D.

LOCATE REINFORCING TO PROVIDE CONCRETE COVER AND SPACING SHOWN ON THE DRAWINGS. MINIMUM COVER SHALL BE AS REQUIRED BY ACI 318.

E.

WELDING OF AND TO ANY REINFORCING MATERIALS INCLUDING TACK WELDING OF CROSSING BARS IS STRICTLY PROHIBITED.
- 3.4 CONCRETE PLACEMENT:

A.

PRIOR TO PLACING CONCRETE, THE FORMS AND REINFORCEMENT SHALL BE THOROUGHLY INSPECTED; ALL TEMPORARY BRACING, TIES AND CLEATS REMOVED; ALL OPENINGS FOR UTILITIES PROPERLY BOXED; ALL FORMS PROPERLY SECURED IN THERE CORRECT POSITION AND MADE TIGHT. ALL REINFORCEMENT AND EMBEDDED ITEMS SHALL BE SECURED IN THEIR PROPER LOCATIONS. ALL OLD AND DRY CONCRETE AND DIRT SHALL BE CLEANED OFF AND ALL STANDING WATER AND OTHER FOREIGN MATERIAL REMOVED.

B.

PLACING CONCRETE SHALL BE IN ACCORDANCE WITH ACI 301 AND ACI 304 AND SHALL BE CARRIED OUT AT SUCH A RATE THAT THE CONCRETE PREVIOUSLY PLACED IS STILL PLASTIC AND INTEGRATED WITH THE FRESHLY PLACED CONCRETE. CONCRETING ONCE STARTED, SHALL BE CARRIED ON AS A CONTINUOUS OPERATION UNTIL THE SECTION IS COMPLETED. NO COLD JOINTS SHALL BE ALLOWED.

C.

ALL CONCRETE SHALL BE THOROUGHLY CONSOLIDATED AND COMPACTED BY VIBRATION SPACING, RODDING, OR FORKING DURING THE OPERATION OF PLACING AND DEPOSITING IN ACCORDANCE WITH ACI 309. THE CONCRETE SHALL BE THOROUGHLY WORKED AROUND REINFORCEMENT, EMBEDDED ITEMS, AND INTO THE CORNER OF THE FORMS SO AS TO ELIMINATE ALL AIR AND STONE POCKETS.
- 3.5 FINISHING:

A.

FINISHING OF THE FLOOR SLABS SHALL BE IN ACCORDANCE WITH ACI 302.1 SECTION 7.2 WITH A MINIMUM OF THREE TROWELINGS. THE SLAB FINISH TOLERANCE AS MEASURED IN ACCORDANCE WITH ASTM E 1155 SHALL HAVE AN OVERALL TEST NUMBER FOR FLATNESS, FF= 20 AND FOR LEVEL, FL=15. THE MINIMUM LOCAL NUMBER FOR FLATNESS, FF= 15 AND FOR LEVEL, FL=10.

B.

SURFACE OF FLOOR SLAB SHALL RECEIVE TWO COATS OF CLEAR SEALER/HARDENER.

C.

ABOVE GRADE WALL SURFACES SHALL HAVE A SMOOTH FORM FINISH AS DEFINED IN CHAPTER 10 OF ACI 301.
- 3.6 CURING:

A.

FRESHLY DEPOSITED CONCRETE SHALL BE PROTECTED FROM PREMATURE DRYING AND EXCESSIVELY HOT AND COLD TEMPERATURES AND SHALL BE MAINTAINED WITH MINIMUM MOISTURE LOSS AT A RELATIVELY CONSTANT TEMPERATURE FOR A PERIOD OF TIME NECESSARY FOR THE HYDRATION OF THE CEMENT AND PROPER HARDENING OF THE CONCRETE.

B.

CONCRETE SHALL BE KEPT CONTINUOUSLY MOIST AT LEAST OVERNIGHT, IMMEDIATELY FOLLOWING THE INITIAL CURING. BEFORE THE CONCRETE HAS DRIED, ADDITIONAL CURING SHALL BE ACCOMPLISHED BY ONE OF THE FOLLOWING MATERIALS OR METHODS:

1.

PONDING OR CONTINUOUS SPRINKLING.

2.

ABSORPTIVE MAT OR FABRIC KEPT CONTINUOUSLY WET.

3.

NON–ABSORPTIVE FILM (POLYETHYLENE) OVER PREVIOUSLY SPRINKLED SURFACE.

4.

SAND OR OTHER COVERING KEPT CONTINUOUSLY WET.

5.

CONTINUOUS STEAM (NOT EXCEEDING 150° F) OR VAPOR MIST BATH.

6.

SPRAYED–ON CURING COMPOUND APPLIED IN TWO COATS, SPRAYED IN PERPENDICULAR DIRECTION.

C.

THE FINAL CURING SHALL CONTINUE UNTIL THE CUMULATIVE NUMBER OF DAYS OR FRACTION THEREOF, NOT NECESSARILY CONSECUTIVE, DURING WHICH TEMPERATURE OF THE AIR IN CONTACT WITH CONCRETE IS ABOVE 50° F HAS TOTALED SEVEN (7) DAYS. CONCRETE SHALL NOT BE PERMITTED TO FREEZE DURING THE CURING PERIOD. RAPID DRYING AT THE END OF THE CURING PERIOD SHALL BE PREVENTED.

AT&T  
MOBILITY

7900 XERXES AVE S  
3RD FLOOR  
BLOOMINGTON MN 55431

BLACK & VEATCH

BLACK & VEATCH CORPORATION  
7760 FRANCE AVENUE SOUTH  
SUITE 1200  
BLOOMINGTON, MN 55435

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DELANO COUNTY LINE  
MNL01123  
3310 COUNTY LINE ROAD SE  
DELANO, MN 55328  
NSB – WIC

SHEET TITLE  
CONCRETE WORK  
NOTES

SHEET NUMBER

C-9

CONCRETE WORK NOTES

PART 1 – GENERAL

CLEARING, GRUBBING, STRIPPING, EROSION CONTROL, SURVEY, LAYOUT, SUBGRADE PREPARATION AND FINISH GRADING AS REQUIRED TO COMPLETE THE PROPOSED WORK SHOWN IN THESE PLANS.

1.1 REFERENCES:

- A. DOT (STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION–CURRENT EDITION).
- B. ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS).
- C. OSHA (OCCUPATION SAFETY AND HEALTH ADMINISTRATION).

1.2 INSPECTION AND TESTING:

- A. FIELD TESTING OF EARTHWORK COMPACTION AND CONCRETE CYLINDERS SHALL BE PERFORMED BY CONTRACTORS INDEPENDENT TESTING LAB. THIS WORK TO BE COORDINATED BY THE CONTRACTOR.
- B. ALL WORK SHALL BE INSPECTED AND RELEASED BY THE GENERAL CONTRACTOR WHO SHALL CARRY OUT THE GENERAL INSPECTION OF THE WORK WITH SPECIFIC CONCERN TO PROPER PERFORMANCE OF THE WORK AS SPECIFIED AND/OR CALLED FOR ON THE DRAWINGS. IT IS THE CONTRACTOR’S RESPONSIBILITY TO REQUEST TIMELY INSPECTIONS PRIOR TO PROCEEDING WITH FURTHER WORK THAT WOULD MAKE PARTS OF WORK INACCESSIBLE OR DIFFICULT TO INSPECT.

1.3 SITE MAINTENANCE AND PROTECTION:

- A. PROVIDE ALL NECESSARY JOB SITE MAINTENANCE FROM COMMENCEMENT OF WORK UNTIL COMPLETION OF THE SUBCONTRACT.
- B. AVOID DAMAGE TO THE SITE AND TO EXISTING FACILITIES, STRUCTURES, TREES, AND SHRUBS DESIGNATED TO REMAIN. TAKE PROTECTIVE MEASURES TO PREVENT EXISTING FACILITIES THAT ARE NOT DESIGNATED FOR REMOVAL FROM BEING DAMAGED BY THE WORK.
- C. KEEP SITE FREE OF ALL PONDING WATER.
- D. PROVIDE EROSION CONTROL MEASURES IN ACCORDANCE WITH STATE DOT AND EPA REQUIREMENTS.
- E. PROVIDE AND MAINTAIN ALL TEMPORARY FENCING, BARRICADES, WARNING SIGNALS AND SIMILAR DEVICES NECESSARY TO PROTECT AGAINST THEFT FROM PROPERTY DURING THE ENTIRE PERIOD OF CONSTRUCTION. REMOVE ALL SUCH DEVICES UPON COMPLETION OF THE WORK.
- F. EXISTING UTILITIES: DO NOT INTERRUPT EXISTING UTILITIES SERVING FACILITIES OCCUPIED BY THE OWNER OR OTHERS, EXCEPT WHEN PERMITTED IN WRITING BY THE ENGINEER AND THEN ONLY AFTER ACCEPTABLE TEMPORARY UTILITY SERVICES HAVE BEEN PROVIDED.
  - 1. PROVIDE A MINIMUM 48–HOUR NOTICE TO THE ENGINEER AND RECEIVE WRITTEN NOTICE TO PROCEED BEFORE INTERRUPTING ANY UTILITY SERVICE.

PART 2 – PRODUCTS

- 2.1 SUITABLE BACKFILL: ASTM D2321 (CLASS I, II, III OR IV) FREE FROM FROZEN LUMPS, REFUSE, STONES OR ROCKS LARGER THAN 3 INCHES IN ANY DIMENSION OR OTHER MATERIAL THAT MAY MAKE THE INORGANIC MATERIAL UNSUITABLE FOR BACKFILL.
- 2.2 NON–POROUS GRANULAR EMBANKMENT AND BACKFILL: ASTM D2321 (CLASS III, IVA OR IVB) COARSE AGGREGATE. FREE FROM FROZEN LUMPS, REFUSE, STONES OR ROCKS LARGER THAN 3 INCHES IN ANY DIMENSION OR OTHER MATERIAL THAT MAY MAKE THE INORGANIC MATERIAL UNSUITABLE FOR BACKFILL.
- 2.3 POROUS GRANULAR EMBANKMENT AND BACKFILL: ASTM D2321 (CLASS IA, IB OR II) COARSE AGGREGATE FREE FROM FROZEN LUMPS, REFUSE, STONES OR ROCKS LARGER THAN 3 INCHES IN ANY DIMENSION OR OTHER MATERIAL THAT MAY MAKE THE INORGANIC MATERIAL UNSUITABLE FOR BACKFILL.
- 2.4 SELECT STRUCTURAL FILL: GRANULAR FILL MATERIAL MEETING THE REQUIREMENTS OF ASTM E850–95. FOR USE AROUND AND UNDER STRUCTURES WHERE STRUCTURAL FILL MATERIAL ARE REQUIRED.
- 2.5 GRANULAR BEDDING AND TRENCH BACKFILL: WELL–GRADED SAND MEETING THE GRADATION REQUIREMENTS OF ASTM D2487 (SE OR SW–SM).
- 2.6 COARSE AGGREGATE FOR ACCESS ROAD SUBBASE COURSE SHALL CONFORM TO ASTM D2940.
- 2.7 UNSUITABLE MATERIAL: HIGH AND MODERATELY PLASTIC SILTS AND CLAYS (LL>45). MATERIAL CONTAINING REFUSE, FROZEN LUMPS, DEMOLISHED BITUMINOUS MATERIAL, VEGETATIVE MATTER, WOOD, STONES IN EXCESS OF 3 INCHES IN ANY DIMENSION, AND DEBRIS AS DETERMINED BY THE CONSTRUCTION MANAGER. TYPICALLY THESE WILL BE SOILS CLASSIFIED BY ASTM AS: PT, MH, CH, OH, ML, AND OL.
- 2.8 GEOTEXTILE FABRIC: MIRAFI 500X OR ENGINEER APPROVED EQUAL.
- 2.9 PLASTIC MARKING TAPE: SHALL BE ACID AND ALKALI RESISTANT POLYETHYLENE FILM SPECIFICALLY MANUFACTURED FOR MARKING AND LOCATING UNDERGROUND UTILITIES. 6 INCHES WIDE WITH A MINIMUM THICKNESS OF 0.004 INCH. TAPE SHALL HAVE MINIMUM STRENGTH OF 1500 PSI IN BOTH DIRECTIONS AND MANUFACTURED WITH INTEGRAL CONDUCTORS, FOIL BACKING OR OTHER MEANS TO ENABLE DETECTION BY A METAL DETECTOR WHEN BURIED UP TO 3 FEET DEEP. THE METALLIC CORE OF THE TAPE SHALL BE ENCASED IN A PROTECTIVE JACKET OR PROVIDED WITH OTHER MEANS TO PROTECT IT FROM CORROSION. TAPE COLOR SHALL BE RED FOR ELECTRIC UTILITIES AND ORANGE FOR TELECOMMUNICATION UTILITIES.

PART 3 – EXECUTION

3.1 GENERAL:

- A. BEFORE STARTING GENERAL SITE PREPARATION ACTIVITIES, INSTALL EROSION AND SEDIMENT CONTROL MEASURES. THE WORK AREA SHALL BE CONSTRUCTED AND MAINTAINED IN SUCH CONDITION THAT IN THE EVENT OF RAIN THE SITE WILL BE DRAINED AT ANY TIME.
- B. BEFORE ALL SURVEY, LAYOUT, STAKING, AND MARKING, ESTABLISH AND MAINTAIN ALL LINES, GRADES, ELEVATIONS AND BENCHMARKS NEEDED FOR EXECUTION OF THE WORK.
- C. CLEAR AND GRUB THE AREA WITHIN THE LIMITS OF THE SITE. REMOVE TREES, BRUSH, STUMPS, RUBBISH AND OTHER DEBRIS AND VEGETATION RESTING ON OR PROTRUDING THROUGH THE SURFACE OF THE SITE AREA TO BE CLEARED.
  - 1. REMOVE THE FOLLOWING MATERIALS TO A DEPTH OF NO LESS THAN 12 INCHES BELOW THE ORIGINAL GROUND SURFACE: ROOTS, STUMPS, AND OTHER DEBRIS, BRUSH, AND REFUSE EMBEDDED IN OR PROTRUDING THROUGH THE GROUND SURFACE, RAKE, DISK OR PLOW THE AREA TO A DEPTH OF NO LESS THAN 6 INCHES, AND REMOVE TO A DEPTH OF 12 INCHES ALL ROOTS AND OTHER DEBRIS THEREBY EXPOSED.
  - 2. REMOVE TOPSOIL MATERIAL COMPLETELY FROM THE SURFACE UNTIL THE SOIL NO LONGER MEETS THE DEFINITION OF TOPSOIL. AVOID MIXING TOPSOIL WITH SUBSOIL OR OTHER UNDESIRABLE MATERIALS.
  - 3. EXCEPT WHERE EXCAVATION TO GREATER DEPTH IS INDICATED, FILL DEPRESSIONS RESULTING FROM CLEARING, GRUBBING AND DEMOLITION WORK COMPLETELY WITH SUITABLE FILL.
- A. REMOVE FROM THE SITE AND DISPOSE IN AN AUTHORIZED LANDFILL ALL DEBRIS RESULTING FROM CLEARING AND GRUBBING OPERATIONS. BURNING WILL NOT BE PERMITTED.

- B. PRIOR TO EXCAVATING, THOROUGHLY EXAMINE THE AREA TO BE EXCAVATED AND/OR TRENCHED TO VERIFY THE LOCATIONS OF FEATURES INDICATED ON THE DRAWINGS AND TO ASCERTAIN THE EXISTENCE AND LOCATION OF ANY STRUCTURE, UNDERGROUND STRUCTURE, OR OTHER ITEM NOT SHOWN THAT MIGHT INTERFERE WITH THE PROPOSED CONSTRUCTION. NOTIFY THE CONSTRUCTION MANAGER OF ANY OBSTRUCTIONS THAT WILL PREVENT ACCOMPLISHMENT OF THE WORK AS INDICATED ON THE DRAWINGS.
- C. SEPARATE AND STOCK PILE ALL EXCAVATED MATERIALS SUITABLE FOR BACKFILL. ALL EXCESS EXCAVATED AND UNSUITABLE MATERIALS SHALL BE DISPOSED OF OFF–SITE IN A LEGAL MANNER.

3.2 BACKFILL:

- A. AS SOON AS PRACTICAL, AFTER COMPLETING CONSTRUCTION OF THE RELATED STRUCTURE, INCLUDING EXPIRATION OF THE SPECIFIED MINIMUM CURING PERIOD FOR CAST–IN–PLACE CONCRETE, BACKFILL THE EXCAVATION WITH APPROVED MATERIAL TO RESTORE THE REQUIRED FINISHED GRADE.
  - 1. PRIOR TO PLACING BACKFILL AROUND STRUCTURES, ALL FORMS SHALL BE REMOVED AND THE EXCAVATION CLEANED OF ALL TRASH, DEBRIS, AND UNSUITABLE MATERIALS.
  - 2. BACKFILL BY PLACING AND COMPACTING SUITABLE BACKFILL MATERIAL OR SELECT GRANULAR BACKFILL MATERIAL WHEN REQUIRED IN UNIFORM HORIZONTAL LAYERS OF NO GREATER THAN 8–INCHES LOOSE THICKNESS AND COMPACTED. WHERE HAND OPERATED COMPACTORS ARE USED, THE FILL MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 4 INCHES IN LOOSE DEPTH AND COMPACTED.
  - 3. WHENEVER THE DENSITY TESTING INDICATES THAT THE CONTRACTOR HAS NOT OBTAINED THE SPECIFIED DENSITY, THE SUCCEEDING LAYER SHALL NOT BE PLACED UNTIL THE SPECIFICATION REQUIREMENTS ARE MET UNLESS OTHERWISE AUTHORIZED BY THE GEOTECHNICAL ENGINEER. THE CONTRACTOR SHALL TAKE WHATEVER APPROPRIATE ACTION IS NECESSARY, SUCH AS DISKING AND DRYING, ADDING WATER, OR INCREASING THE COMPACTIVE EFFORT TO MEET THE MINIMUM COMPACTION REQUIREMENTS.
- B. THOROUGHLY COMPACT EACH LAYER OF BACKFILL TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE STANDARD PROCTOR TEST, ASTM D 698.

3.3 TRENCH EXCAVATION:

- A. UTILITY TRENCHES SHALL BE EXCAVATED TO THE LINES AND GRADES SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE GENERAL CONTRACTOR. PROVIDE SHORING, SHEETING AND BRACING AS REQUIRED TO PREVENT CAVING OR SLOUGHING OF THE TRENCH WALLS.
- B. EXTEND THE TRENCH WIDTH A MINIMUM OF 6 INCHES BEYOND THE OUTSIDE EDGE OF THE OUTERMOST CONDUIT.
- C. WHEN SOFT YIELDING, OR OTHERWISE UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED, BACKFILL AT THE REQUIRED TRENCH TO A DEPTH OF NO LESS THAN 12 INCHES BELOW THE REQUIRED ELEVATION AND BACKFILL WITH GRANULAR BEDDING MATERIAL.

3.4 TRENCH BACKFILL:

- A. PROVIDE GRANULAR BEDDING MATERIAL IN ACCORDANCE WITH THE DRAWINGS AND THE UTILITY REQUIREMENTS.
- B. NOTIFY THE GENERAL CONTRACTOR 24 HOURS IN ADVANCE OF BACKFILLING.
- C. CONDUCT UTILITY CHECK TESTS BEFORE BACKFILLING. BACKFILL AND COMPACT TRENCH BEFORE ACCEPTANCE TESTING.
- D. PLACE GRANULAR TRENCH BACKFILL UNIFORMLY ON BOTH SIDES OF THE CONDUITS IN 6–INCH UNCOMPACTED LIFTS UNTIL 12 INCHES OVER THE CONDUITS. SOLIDLY RAM AND TAMP BACKFILL INTO SPACE AROUND CONDUITS.
- E. PROTECT CONDUIT FROM LATERAL MOVEMENT, IMPACT DAMAGE, OR UNBALANCED LOADING.
- F. ABOVE THE CONDUIT EMBEDMENT ZONE, PLACE AND COMPACT SATISFACTORY BACKFILL MATERIAL IN 8–INCH MAXIMUM LOOSE THICKNESS LIFTS TO RESTORE THE REQUIRED FINISHED SURFACE GRADE.
- G. COMPACT FINAL TRENCH BACKFILL TO A DENSITY EQUAL TO OR GREATER THAN THAT OF THE EXISTING UNDISTURBED MATERIAL IMMEDIATELY ADJACENT TO THE TRENCH BUT NO LESS THAN A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE STANDARD PROCTOR TEST, ASTM D 698.

3.5 AGGREGATE ACCESS ROAD:

- A. CLEAR, GRUB, STRIP AND EXCAVATE FOR THE ACCESS ROAD TO THE LINES AND GRADES INDICATED ON THE DRAWINGS. SCARIFY TO A DEPTH OF 6 INCHES AND PROOF–ROLL. ALL HOLES, RUTS, SOFT PLACES AND OTHER DEFECTS SHALL BE CORRECTED.
- B. THE ENTIRE SUBGRADE SHALL BE COMPACTED TO NOT LESS THAN 95 PERCENT OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE MODIFIED PROCTOR TEST, ASTM D 1557.
- C. AFTER PREPARATION OF THE SUBGRADE IS COMPLETE THE GEOTEXTILE FABRIC (MIRAFI 500X) SHALL BE INSTALLED TO THE LIMITS INDICATED ON THE DRAWINGS BY ROLLING THE FABRIC OUT LONGITUDINALLY ALONG THE ROADWAY. THE FABRIC SHALL NOT BE DRAGGED ACROSS THE SUBGRADE. PLACE THE ENTIRE ROLL IN A SINGLE OPERATION, ROLLING OUT AS SMOOTHLY AS POSSIBLE.
  - 1. OVERLAPS PARALLEL TO THE ROADWAY WILL BE PERMITTED AT THE CENTERLINE AND AT LOCATIONS BEYOND THE ROADWAY SURFACE WIDTH (I.E. WITHIN THE SHOULDER WIDTH) ONLY. NO LONGITUDINAL OVERLAPS SHALL BE LOCATED BETWEEN THE CENTERLINE AND THE SHOULDER. PARALLEL OVERLAPS SHALL BE A MINIMUM OF 3 FEET WIDE.
  - 2. TRANSVERSE (PERPENDICULAR TO THE ROADWAY) OVERLAPS AT THE END OF A ROLL SHALL OVERLAP IN THE DIRECTION OF THE AGGREGATE PLACEMENT (PREVIOUS ROLL ON TOP) AND SHALL HAVE A MINIMUM LENGTH OF 3 FEET.
  - 3. ALL OVERLAPS SHALL BE PINNED WITH STAPLES OR NAILS A MINIMUM OF 10 INCHES LONG TO INSURE POSITIONING DURING PLACEMENT OF AGGREGATE. PIN LONGITUDINAL SEAMS AT 25 FOOT CENTERS AND TRANSVERSE SEAMS EVERY 5 FEET.
- D. THE AGGREGATE BASE AND SURFACE COURSES SHALL BE CONSTRUCTED IN LAYERS NOT MORE THAN 4 INCH (COMPACTED) THICKNESS. AGGREGATE TO BE PLACED ON GEOTEXTILE FABRIC SHALL BE END–DUMPED ON THE FABRIC FROM THE FREE END OF THE FABRIC OR OVER PREVIOUSLY PLACED AGGREGATE. THE FIRST LIFT SHALL BE BLADED DOWN TO A THICKNESS OF 8 INCHES PRIOR TO COMPACTION. AT NO TIME SHALL EQUIPMENT, EITHER TRANSPORTING THE AGGREGATE OR GRADING THE AGGREGATE, BE PERMITTED ON THE ROADWAY WITH LESS THAN 4 INCHES OF MATERIAL COVERING THE FABRIC.
- E. THE AGGREGATE SHALL BE IMMEDIATELY COMPACTED TO NOT LESS THAN 95 PERCENT OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE MODIFIED PROCTOR TEST, ASTM D 1557 WITH A TAMPING ROLLER, OR WITH A PNEUMATIC–TIRED ROLLER, OR WITH A VIBRATORY MACHINE OR ANY COMBINATION OF THE ABOVE. THE TOP LAYER SHALL BE GIVEN A FINAL ROLLING WITH A THREE–WHEEL OR TANDEM ROLLER.

3.6 FINISH GRADING:

- A. PERFORM ALL GRADING TO PROVIDE POSITIVE DRAINAGE AWAY FROM STRUCTURES AND SMOOTH, EVEN SURFACE DRAINAGE OF THE ENTIRE AREA WITHIN THE LIMITS OF CONSTRUCTION. GRADING SHALL BE COMPATIBLE WITH ALL SURROUNDING TOPOGRAPHY AND STRUCTURES.
- B. UTILIZE SATISFACTORY FILL MATERIAL RESULTING FROM THE EXCAVATION WORK IN THE CONSTRUCTION OF FILLS, EMBANKMENTS AND FOR REPLACEMENT OF REMOVED UNSUITABLE MATERIALS.

- C. ACHIEVE FINISHED GRADE BY PLACING A MINIMUM OF 4 INCHES OF 1/2” – 3/4” CRUSHED STONE ON TOP SOIL STABILIZER FABRIC.
- D. REPAIR ALL ACCESS ROADS AND SURROUNDING AREAS USED DURING THE COURSE OF THIS WORK TO THEIR ORIGINAL CONDITION.

3.7 ASPHALT PAVING ROAD:

- MINNESOTA:
  - A. SECTION 2321 – MN/DOT ROAD–MIXED BITUMINOUS SURFACE.
  - B. SECTION 2360 – MN/DOT PLANT MIXED ASPHALT PAVEMENT.

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PROJECT NO: 129049.4004

DRAWN BY: VPB

CHECKED BY: JAT

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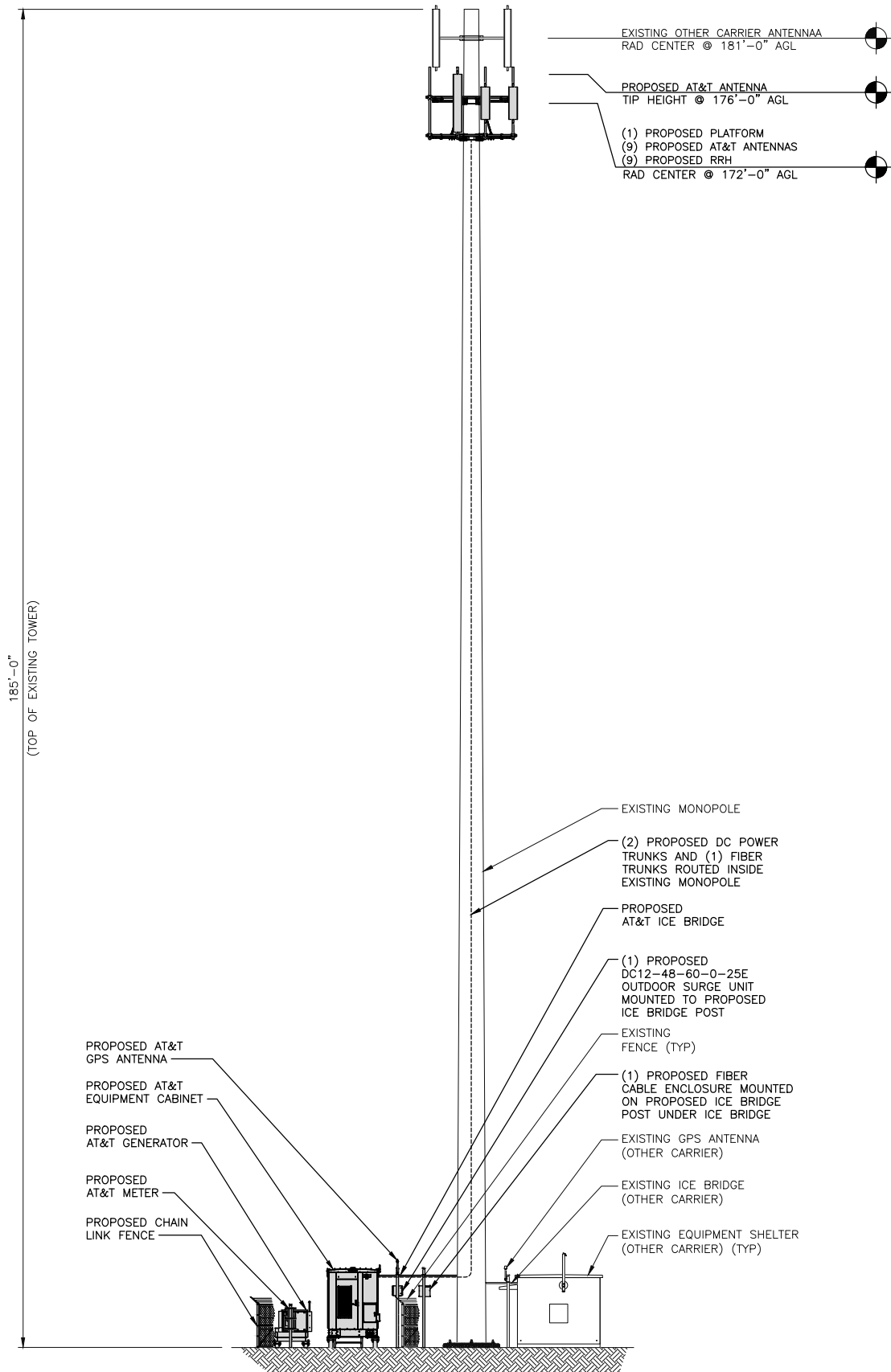
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3310 COUNTY LINE ROAD SE  
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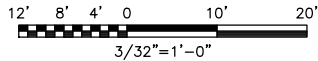
SHEET TITLE  
SITE WORK AND  
DRAINAGE NOTES

SHEET NUMBER

C-10



PROPOSED TOWER WEST ELEVATION



THIS IS NOT AN ALL INCLUSIVE LIST. CONTRACTOR SHALL UTILIZE SPECIFIED EQUIPMENT PART OR ENGINEER APPROVED EQUIVALENT. CONTRACTOR SHALL VERIFY ALL NEEDED EQUIPMENT TO PROVIDE A FUNCTIONAL SITE.

THE PROJECT GENERALLY CONSISTS OF THE FOLLOWING:

- PROPOSED-TOWER:  
INSTALL (1) SABRE C10855721C MONOPOLE PLATFORM (OR ENGINEER APPROVED EQUAL)  
INSTALL (3) KMW EPBQ-654L8H8-L2 ANTENNAS  
INSTALL (6) KMW ET-X-UW-70-17-IR-AT ANTENNAS  
INSTALL (9) LTE RRH UNITS  
INSTALL (2) RAYCAP DC6-48-60-18-8C-EV SURGE UNITS  
INSTALL (2) DC POWER TRUNK  
INSTALL (1) FIBER TRUNK

- PROPOSED-PLATFORM:  
INSTALL (1) VERTIV XTE 801 CABINET, W/EQUIPMENT (NEQ200060)  
INSTALL (1) GPS KIT  
INSTALL (1) POLAR POWER GENERATOR WITH PLATFORM

- PROPOSED-SITE:  
INSTALL (1) ROSENBERGER FB-15-ABOX FIBER ENCLOSURE  
INSTALL (1) RAYCAP DC12-48-60-0-25E OUTDOOR SURGE  
INSTALL APPROXIMATELY 11'-6" OF ICE BRIDGE

AT&T TO VERIFY  
REQUIRED PLATFORM  
EQUIPMENT.

PROJECT DESCRIPTION

- FENCE NOT ENTIRELY SHOWN FOR CLARITY.
- WHEN STACKING CABLES 3 OR MORE DEEP, USE STACKABLE SNAP-INS, TALLEY PART NUMBER SSH-158-3 (OR ENGINEER APPROVED EQUAL)

NOTES

A MOUNT ANALYSIS WAS NOT PERFORMED AS A PART OF THE SCOPE OF WORK INCLUDED IN THESE CONSTRUCTION DRAWINGS.

MOUNT ANALYSIS NOTE

THE PROPOSED TOWER IS BEING DESIGNED BY OTHERS TO CARRY THE PROPOSED AND FUTURE ANTENNAS, CABLES, AND EQUIPMENT. THESE DRAWINGS HAVE BEEN CREATED BASED ON THE ASSUMPTION THAT THE TOWER HAS SUFFICIENT CAPACITY TO SUPPORT THE PROPOSED AND FUTURE LOADS.

IF REQUIRED, THE PROPOSED TOWER SHALL INCLUDE FAA LIGHTING PER THE REQUIREMENTS INDICATED BY AT&T AND THE FAA. THE TOP LIGHT SHALL BE INSTALLED SUCH THAT THE BASE OF THE LIGHT IS A MINIMUM OF 1'-0" ABOVE THE TOP OF THE HIGHEST ANTENNA AND/OR TOWER STEEL. LIGHTNING ROD TO BE INSTALLED BY OTHERS.

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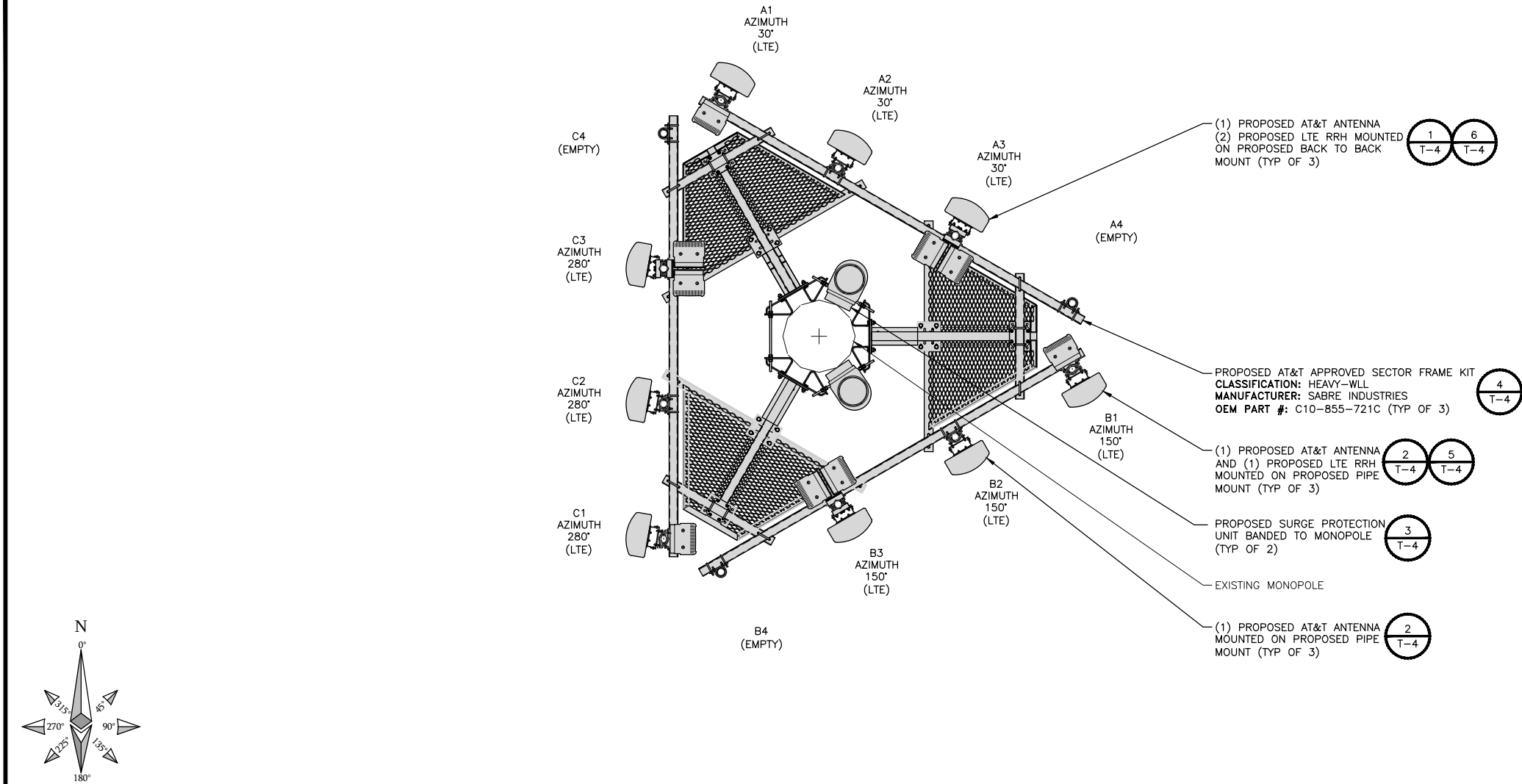
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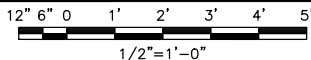
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SHEET TITLE  
TOWER ELEVATION

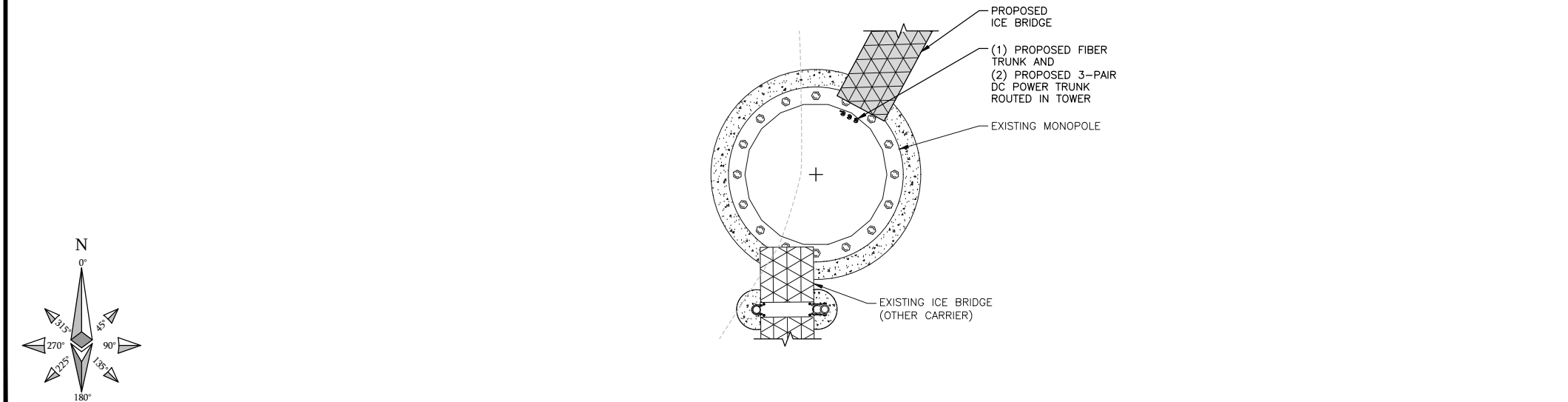
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T-1



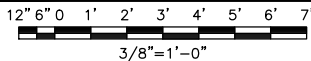
ANTENNA LAYOUT PLAN



1



COAX ROUTING DIAGRAM



2

A MOUNT ANALYSIS WAS NOT PERFORMED AS A PART OF THE SCOPE OF WORK INCLUDED IN THESE CONSTRUCTION DRAWINGS.

MOUNT ANALYSIS NOTE

1. RAYCAP DC6-48-60-18-8C-EV SURGE SUPPRESSOR WILL ROUTE POWER AND FIBER TO EACH SECTORS TOWER MOUNTED RRHS.

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SHEET TITLE  
ANTENNA  
CONFIGURATION

SHEET NUMBER

T-2

NOTES

FINAL ANTENNA AND TRANSMISSION EQUIPMENT REQUIREMENTS (VERIFY WITH LATEST RFDS)												
SECTOR	RAD CENTER	POSITION	ANTENNA TILT		AZIMUTH	ANTENNA MODEL	TECHNOLOGY	RRH / TMA	SURGE & DISTRIBUTION			
			MECH	ELEC					MODEL	CABLE (QTY) TYPES		
A	172'	1			30°	KMW ET-X-UW-70-13-70-17-iR-AT	LTE	RRH	(2) RAYCAP DC6-48-60-18-8C-EV	(2) 3-PAIR DC POWER (1) 18-PAIR FIBER		
		2			30°	KMW ET-X-UW-70-13-70-17-iR-AT	LTE					
		3			30°	KMW EPBQ-654L8H8-L2	LTE	RRH RRH				
		4										
B	172'	1			150°	KMW ET-X-UW-70-13-70-17-iR-AT	LTE	RRH				
		2			150°	KMW ET-X-UW-70-13-70-17-iR-AT	LTE					
		3			150°	KMW EPBQ-654L8H8-L2	LTE	RRH RRH				
		4										
C	172'	1			280°	KMW ET-X-UW-70-13-70-17-iR-AT	LTE	RRH				
		2			280°	KMW ET-X-UW-70-13-70-17-iR-AT	LTE					
		3			280°	KMW EPBQ-654L8H8-L2	LTE	RRH RRH				
		4										

1. CONTRACTOR IS TO REFER TO AT&T'S MOST CURRENT RADIO FREQUENCY DATA SHEET (RFDS) PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO USE ROSENBERGER FIBER LINE HANGER COMPONENTS (OR ENGINEER APPROVED EQUAL).

NOTES

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SHEET TITLE  
ANTENNA AND RRH  
REQUIREMENTS

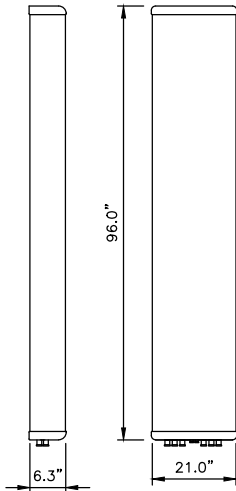
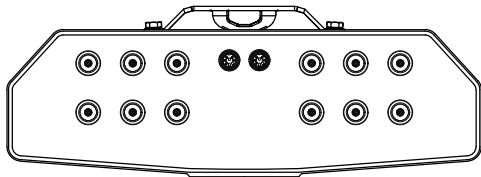
SHEET NUMBER

T-3



KMW EPBQ-654L8H8-L2

RADOME MATERIAL: ASA  
RADOME COLOR: LIGHT GRAY  
DIMENSIONS, HxWxD.in(mm): 96.0"x21.0"x6.3" (2438x533x160mm)  
WEIGHT: 86.0 lbs (39.0 kg)  
CONNECTOR: (12) 4.3-10 DIN FEMALE LONG NECK



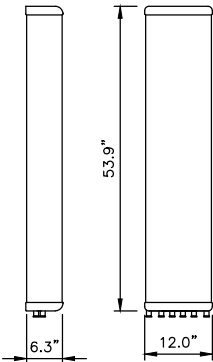
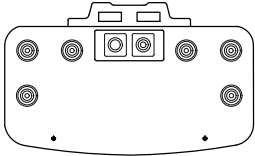
ANTENNA SPECIFICATIONS

NO SCALE

1

ET-X-UW-70-13-70-17-IR-AT

RADOME MATERIAL: ASA  
RADOME COLOR: LIGHT GRAY  
DIMENSIONS, HxWxD.in(mm): 53.9"x12.0"x6.3" (1368x305x160mm)  
WEIGHT: 37.7 lbs (17.1 kg)  
CONNECTOR: (6) 7/16 DIN FEMALE



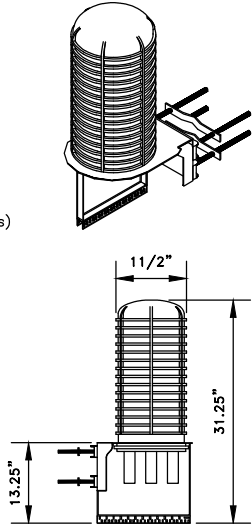
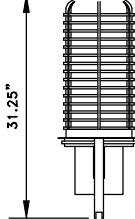
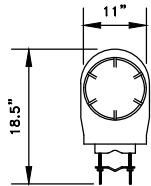
ANTENNA SPECIFICATIONS

NO SCALE

2

RAYCAP DC6-48-60-18-8C-EV

DIMENSIONS, DxH: 280x794mm (11"x31.25")  
NOMINAL OPERATING VOLTAGE: 48 VDC  
NOMINAL DISCHARGE CURRENT: 20 kA 8/20µs  
MAXIMUM DISCHARGE CURRENT: 60 kA 8/20µs  
MAXIMUM CONTINUOUS OPERATING VOLTAGE: 75 VDC  
VOLTAGE PROTECTION RATING: 400 V  
WIND LOADING: 150 MPH SUSTAINED (105.7 lbs)  
195 MPH GUST (213.6 lbs)  
TOTAL WEIGHT: 32.8 lbs



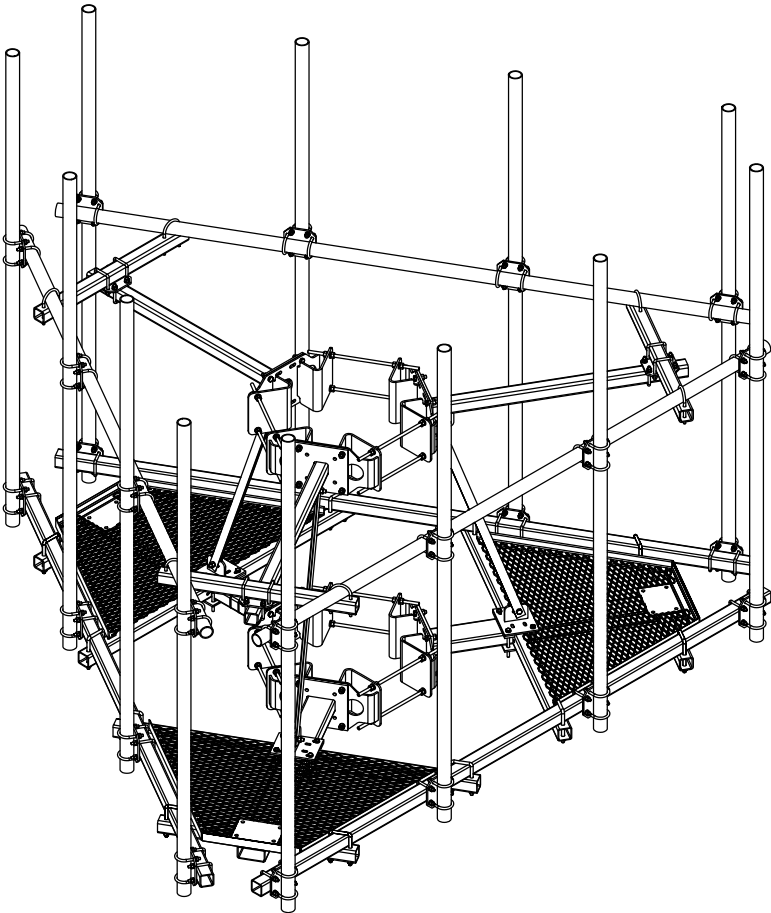
CONTRACTOR TO USE "THREAD LUBRICANT"  
ON MOUNTING BOLTS DURING INSTALLATION

DC SURGE SUPPRESSOR DETAIL

NO SCALE

3

MANUFACTURER PART NO.	DESCRIPTION	WEIGHT (lbs)
SABRE C10-855-721C	12'-0" HD TENSION PLATFORM W/(12) 2-7/8" O.D. x 10'-0" MTG PIPES	2959



NOTES

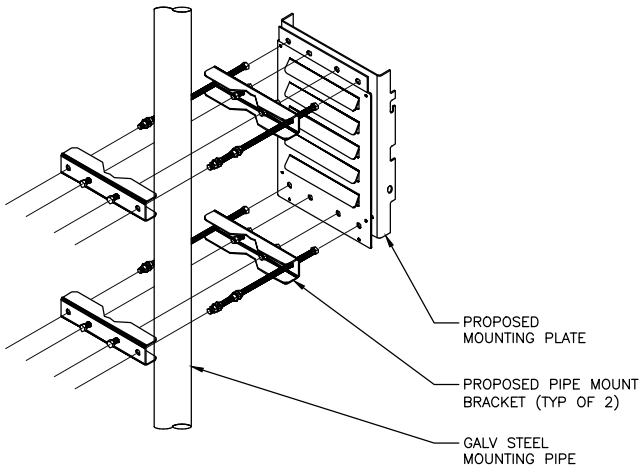
1. THIS DETAIL IS INCLUDED FOR INFORMATIONAL  
PURPOSES ONLY. CONTRACTOR SHALL REFER TO  
MANUFACTURER DETAILS FOR SPECIFIC PART  
ORDERING AND INSTALLATION.

SABRE 12'-0" HD M.O.V.E. PLATFORM

NO SCALE

4

NOTE:  
ANTENNA NOT SHOWN FOR  
CLARITY

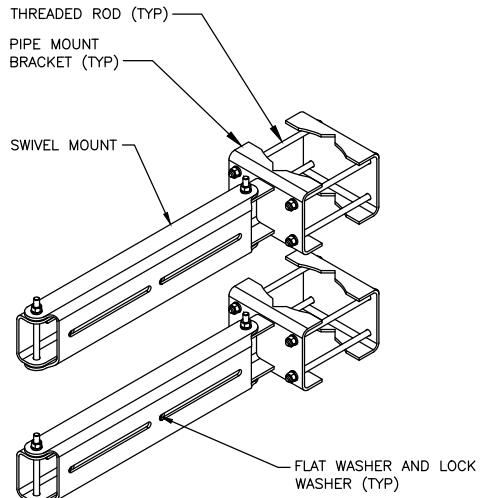


RRH MOUNTING PLATE DETAIL

NO SCALE

5

ROSENBERGER D218RRUDSM



DUAL RRH MOUNTING DETAIL

NO SCALE

6

NOT USED

NO SCALE

7

NOT USED

NO SCALE

8

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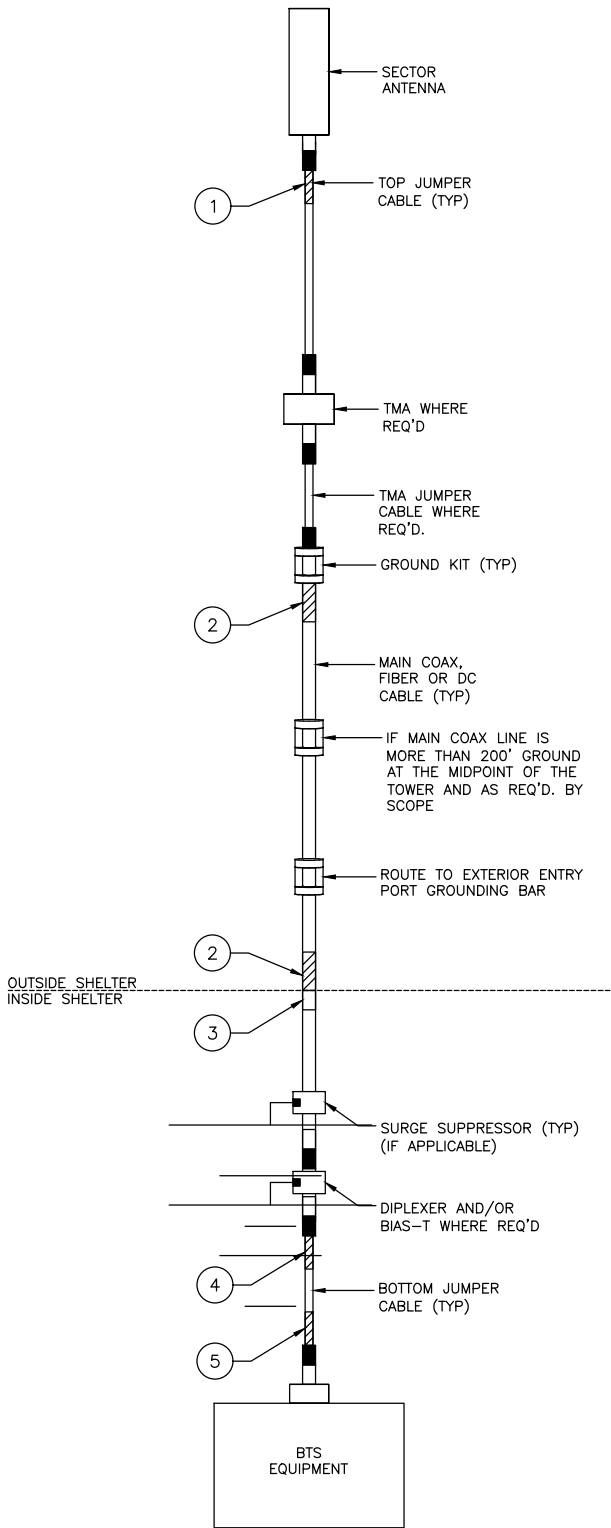
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SHEET TITLE  
TOWER EQUIPMENT  
DETAILS

SHEET NUMBER

T-4

AT&T Main Line Coax and Jumper Color Code Chart for MNP					
Sector	Technology	Frequency	TX / RX	Sector Color/ Main Line	Freq Color
Alpha (X)	GSM	850	TXM / RXM	1 Red	1 Orange
Alpha (X)	GSM	850	TXD / RXD	3 Red	1 Orange
Alpha (X)	GSM	1900	TXM / RXM	1 Red	1 Violet
Alpha (X)	GSM	1900	TXD / RXD	3 Red	1 Violet
Alpha (X)	UMTS	850	TXM / RXM	2 Red	1 Orange
Alpha (X)	UMTS	850	TXD / RXD	4 Red	1 Orange
Alpha (X)	UMTS	1900	TXM / RXM	2 Red	1 Violet
Alpha (X)	UMTS	1900	RXD / RXD	4 Red	1 Violet
AT&T LTE/UMTS RRH at top of tower Jumper Color Code Chart for MNP					
Sector	Technology	Frequency	TX / RX	Freq Color	Sector Color
Alpha (X)	LTE	700 B/C	TXM / RXM	1 Green	2 Red
Alpha (X)	LTE	700 B/C	TXD / RXD	2 Green	2 Red
Alpha (X)	LTE	700 D/E	TXM / RXM	3 Green	2 Red
Alpha (X)	LTE	700 D/E	TXD / RXD	4 Green	2 Red
Alpha (X)	LTE	850	TXM / RXM	3 Orange	2 Red
Alpha (X)	LTE	850	TXD / RXD	4 Orange	2 Red
Alpha (X)	UMTS	850	RXD / RXD	2 Orange	2 Red
Alpha (X)	LTE	1900 PCS	TXM / TXM	1 Violet	2 Red
Alpha (X)	LTE	1900 PCS	TXD / TXD	2 Violet	2 Red
Alpha (X)	LTE	1900 PCS	RXM / RXM	3 Violet	2 Red
Alpha (X)	LTE	1900 PCS	RXD / RXD	4 Violet	2 Red
Alpha (X)	UMTS	1900	TXM / RXM	1 Violet	3 Red
Alpha (X)	UMTS	1900	RXD / RXD	2 Violet	3 Red
Alpha (X)	LTE	2100 AWS	TXM / TXM	1 Gray	2 Red
Alpha (X)	LTE	2100 AWS	TXD / TXD	2 Gray	2 Red
Alpha (X)	LTE	2100 AWS	RXM / RXM	3 Gray	2 Red
Alpha (X)	LTE	2100 AWS	RXD / RXD	4 Gray	2 Red
Alpha (X)	LTE	2300 WCS	TXM / RXM	1 Yellow	2 Red
Alpha (X)	LTE	2300 WCS	TXD / RXD	2 Yellow	2 Red
Alpha (X)	LTE	2300 WCS	TXM / RXM	3 Yellow	2 Red
Alpha (X)	LTE	2300 WCS	TXD / RXD	4 Yellow	2 Red
AT&T Main Line Coax and Jumper Color Code Chart for MNP					
Sector	Technology	Frequency	TX / RX	Sector Color/ Main Line	Freq Color
Beta (Y)	GSM	850	TXM / RXM	1 White	1 Orange
Beta (Y)	GSM	850	TXD / RXD	3 White	1 Orange
Beta (Y)	GSM	1900	TXM / RXM	1 White	1 Violet
Beta (Y)	GSM	1900	TXD / RXD	3 White	1 Violet
Beta (Y)	UMTS	850	TXM / RXM	2 White	1 Orange
Beta (Y)	UMTS	850	TXD / RXD	4 White	1 Orange
Beta (Y)	UMTS	1900	TXM / RXM	2 White	1 Violet
Beta (Y)	UMTS	1900	RXD / RXD	4 White	1 Violet
AT&T LTE/UMTS RRH at top of tower Jumper Color Code Chart for MNP					
Sector	Technology	Frequency	TX / RX	Freq Color	Sector Color
Beta (Y)	LTE	700 B/C	TXM / RXM	1 Green	2 White
Beta (Y)	LTE	700 B/C	TXD / RXD	2 Green	2 White
Beta (Y)	LTE	700 D/E	TXM / RXM	3 Green	2 White
Beta (Y)	LTE	700 D/E	TXD / RXD	4 Green	2 White
Beta (Y)	LTE	850	TXM / RXM	3 Orange	2 White
Beta (Y)	LTE	850	TXD / RXD	4 Orange	2 White
Beta (Y)	UMTS	850	TXM / RXM	1 Orange	2 White
Beta (Y)	UMTS	850	RXD / RXD	2 Orange	2 White
Beta (Y)	LTE	1900 PCS	TXM / TXM	1 Violet	2 White
Beta (Y)	LTE	1900 PCS	TXD / TXD	2 Violet	2 White
Beta (Y)	LTE	1900 PCS	RXM / RXM	3 Violet	2 White
Beta (Y)	LTE	1900 PCS	RXD / RXD	4 Violet	2 White
Beta (Y)	UMTS	1900	TXM / RXM	1 Violet	3 White
Beta (Y)	UMTS	1900	RXD / RXD	1 Violet	4 White
Beta (Y)	LTE	2100 AWS	TXM / TXM	1 Gray	2 White
Beta (Y)	LTE	2100 AWS	TXD / TXD	2 Gray	2 White
Beta (Y)	LTE	2100 AWS	RXM / RXM	3 Gray	2 White
Beta (Y)	LTE	2100 AWS	RXD / RXD	4 Gray	2 White
Beta (Y)	LTE	2300 WCS	TXM / RXM	1 Yellow	2 White
Beta (Y)	LTE	2300 WCS	TXD / RXD	2 Yellow	2 White
Beta (Y)	LTE	2300 WCS	TXM / RXM	3 Yellow	2 White
Beta (Y)	LTE	2300 WCS	TXD / RXD	4 Yellow	2 White
AT&T Main Line Coax and Jumper Color Code Chart for MNP					
Sector	Technology	Frequency	TX / RX	Sector Color/ Main Line	Freq Color
Gamma (Z)	GSM	850	TXM / RXM	1 Blue	1 Orange
Gamma (Z)	GSM	850	TXD / RXD	3 Blue	1 Orange
Gamma (Z)	GSM	1900	TXM / RXM	1 Blue	1 Violet
Gamma (Z)	GSM	1900	TXD / RXD	3 Blue	1 Violet
Gamma (Z)	UMTS	850	TXM / RXM	2 Blue	1 Orange
Gamma (Z)	UMTS	850	TXD / RXD	4 Blue	1 Orange
Gamma (Z)	UMTS	1900	TXM / RXM	2 Blue	1 Violet
Gamma (Z)	UMTS	1900	RXD / RXD	4 Blue	1 Violet
AT&T LTE/UMTS RRH at top of tower Jumper Color Code Chart for MNP					
Sector	Technology	Frequency	TX / RX	Freq Color	Sector Color
Gamma (Z)	LTE	700 B/C	TXM / RXM	1 Green	2 Blue
Gamma (Z)	LTE	700 B/C	TXD / RXD	2 Green	2 Blue
Gamma (Z)	LTE	700 D/E	TXM / RXM	3 Green	2 Blue
Gamma (Z)	LTE	700 D/E	TXD / RXD	4 Green	2 Blue
Gamma (Z)	LTE	850	TXM / RXM	3 Orange	2 Blue
Gamma (Z)	LTE	850	TXD / RXD	4 Orange	2 Blue
Gamma (Z)	UMTS	850	TXM / RXM	1 Orange	2 Blue
Gamma (Z)	UMTS	850	RXD / RXD	2 Orange	2 Blue
Gamma (Z)	LTE	1900 PCS	TXM / TXM	1 Violet	2 Blue
Gamma (Z)	LTE	1900 PCS	TXD / TXD	2 Violet	2 Blue
Gamma (Z)	LTE	1900 PCS	RXM / RXM	3 Violet	2 Blue
Gamma (Z)	LTE	1900 PCS	RXD / RXD	4 Violet	2 Blue
Gamma (Z)	UMTS	1900	TXM / RXM	1 Violet	3 Blue
Gamma (Z)	UMTS	1900	RXD / RXD	1 Violet	4 Blue
Gamma (Z)	LTE	2100 AWS	TXM / TXM	1 Gray	2 Blue
Gamma (Z)	LTE	2100 AWS	TXD / TXD	2 Gray	2 Blue
Gamma (Z)	LTE	2100 AWS	RXM / RXM	3 Gray	2 Blue
Gamma (Z)	LTE	2100 AWS	RXD / RXD	4 Gray	2 Blue
Gamma (Z)	LTE	2300 WCS	TXM / RXM	1 Yellow	2 Blue
Gamma (Z)	LTE	2300 WCS	TXD / RXD	2 Yellow	2 Blue
Gamma (Z)	LTE	2300 WCS	TXM / RXM	3 Yellow	2 Blue
Gamma (Z)	LTE	2300 WCS	TXD / RXD	4 Yellow	2 Blue



1. THE ANTENNA SYSTEM COAX SHALL BE LABELED WITH VINYL TAPE.
2. THE STANDARD IS BASED ON EIGHT COLORED TAPES—RED, BLUE, GREEN, YELLOW, ORANGE, BROWN, WHITE, AND VIOLET. THESE TAPES MUST BE 3/4" WIDE & UV RESISTANT SUCH AS SCOTCH 35 VINYL ELECTRICAL COLOR CODING TAPE AND SHOULD BE READILY AVAILABLE TO THE ELECTRICIAN OR CONTRACTOR ON SITE.
3. USING COLOR BANDS ON THE CABLES, MARK ALL RF CABLE BY SECTOR AND CABLE NUMBER AS SHOWN ON "CABLE COLOR CHART".
4. WHEN AN EXISTING COAXIAL LINE THAT IS INTENDED TO BE A SHARED LINE BETWEEN TECHNOLOGIES IS ENCOUNTERED, THE CONTRACTOR SHALL REMOVE THE EXISTING COLOR CODING SCHEME AND REPLACE IT WITH THE COLOR CODING STANDARD. IN THE ABSENCE OF AN EXISTING COLOR CODING AND TAGGING SCHEME, OR WHEN INSTALLING PROPOSED COAXIAL CABLES, THIS GUIDELINE SHALL BE IMPLEMENTED AT THAT SITE REGARDLESS OF TECHNOLOGY.
5. ALL COLOR CODE TAPE SHALL BE 3M–35 AND SHALL BE INSTALLED USING A MINIMUM OF (3) THREE WRAPS OF TAPE AND SHALL BE NEATLY TRIMMED AND SMOOTHED OUT SO AS TO AVOID UNRAVELING.
6. ALL COLOR BANDS INSTALLED AT THE TOP OF THE TOWER SHALL BE A MINIMUM OF 3" WIDE, AND SHALL HAVE A MINIMUM OF 3/4" OF SPACE BETWEEN EACH COLOR.
7. ALL COLOR CODES SHALL BE INSTALLED SO AS TO ALIGN NEATLY WITH ONE ANOTHER FROM SIDE-TO-SIDE.
8. IF EXISTING CABLES AT THE SITE ALREADY HAVE A COLOR CODING SCHEME AND THEY ARE NOT INTENDED TO BE REUSED OR SHARED WITH THE NEW TECHNOLOGY, THE EXISTING COLOR CODING SCHEME SHALL REMAIN UNTOUCHED.

#### CABLE COLOR CODING & IDENTIFICATION NOTES

ALL RF AND DC CABLE SHALL BE MARKED AS PER CABLE MARKING LOCATIONS TABLE BELOW:

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

#### AT&T MOBILITY

7900 XERXES AVE S  
3RD FLOOR  
BLOOMINGTON MN 55431



#### BLACK & VEATCH

BLACK & VEATCH CORPORATION  
7760 FRANCE AVENUE SOUTH  
SUITE 1200  
BLOOMINGTON, MN 55435

PROJECT NO: 129049.4004

DRAWN BY: VPB

CHECKED BY: JAT

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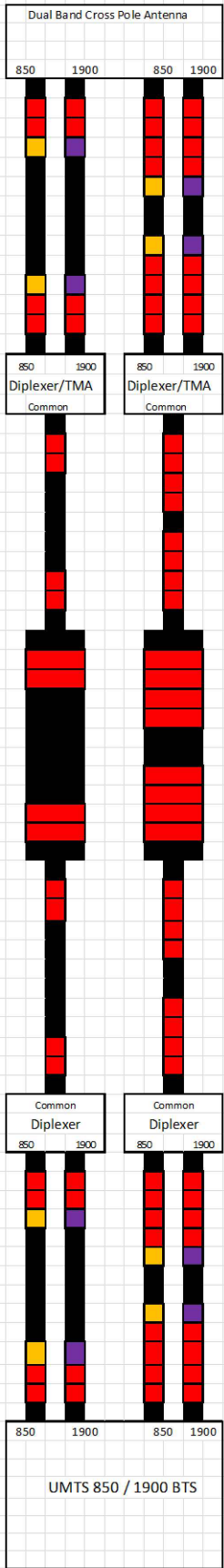
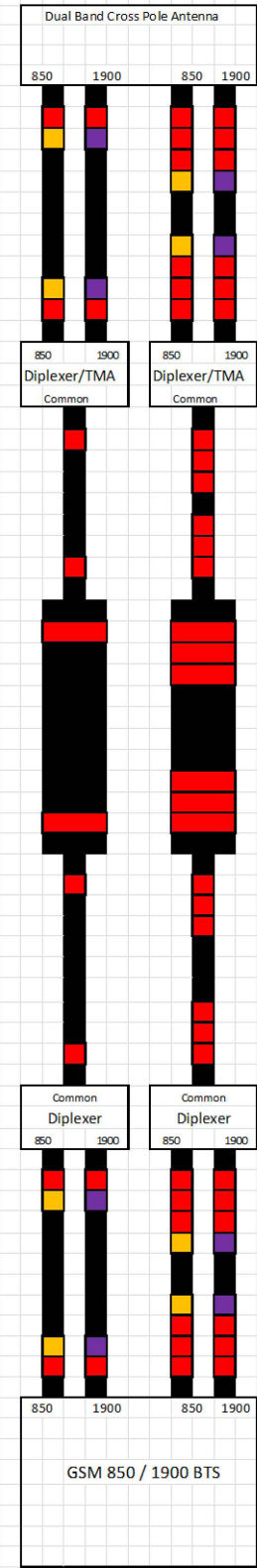
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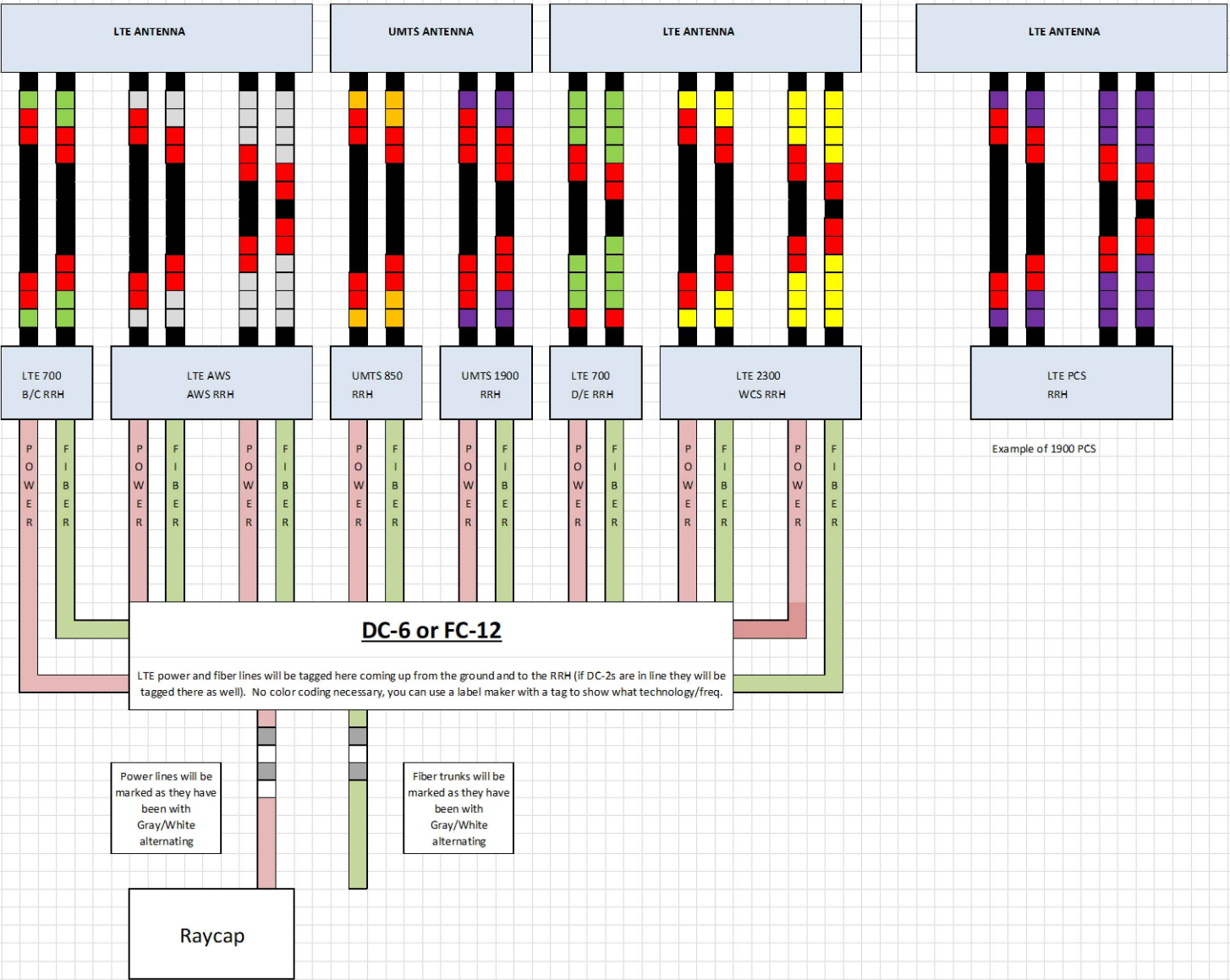
COAX COLOR CODING

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ALPHA SECTOR COAX COLORS



ALPHA SECTOR LTE/UMTS RRHS AT THE TOP

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COAX COLOR CODING

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PART 1 – GENERAL

- 1.1SCOPE:
- A. PROVIDE FABRICATION AND ERECTION OF STRUCTURAL STEEL AND OTHER ITEMS AS SHOWN ON THE DRAWINGS OR REQUIRED BY OTHER SECTIONS OF THESE SPECIFICATIONS.
- 1.2REFERENCES:
- A. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC). MANUAL OF STEEL CONSTRUCTION (13TH EDITION), ALLOWABLE STRESS DESIGN (ASD).
- B. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM).  
ASTM A36: STRUCTURAL STEEL  
ASTM A53: PIPE, STEEL BLACK AND HOT DIPPED, ZINC–COATED WELDED AND SEAMLESS.  
ASTM A108: STEEL BARS, CARBON, COLD FINISHED, STANDARD QUALITY.  
ASTM A123: ZINC (HOT–DIPPED GALVANIZED) COATING ON IRON AND STEEL PRODUCTS.  
ASTM A307: CARBON STEEL BOLTS AND STUDS, 60,000 PSI TENSILE STRENGTH.  
ASTM A325: HIGH–STRENGTH BOLT FOR STRUCTURAL STEEL JOINTS.  
ASTM A490: HEAT–TREATED, STRUCTURAL STEEL BOLTS, 150 (KSI) (1035MPA) TENSILE STRENGTH.  
ASTM A500: COLD–FORMED WELDED AND SEAMLESS CARBON STEEL STRUCTURAL TUBING IN ROUNDS AND SHAPES.  
ASTM A563: CARBON AND ALLOY STEEL NUTS.  
ASTM B695: COATINGS OF ZINC MECHANICALLY DEPOSITED ON IRON AND STEEL.  
ASTM F436: HARDENED STEEL WASHERS.  
ASTM F959: COMPRESSIBLE–WASHER–TYPE DIRECT TENSION INDICATOR FOR USE WITH STRUCTURAL FASTENERS.
- C. AMERICAN WELDING SOCIETY (AWS):  
AWS A5.1: COVERED CARBON STEEL ARC WELDING ELECTRODES.  
AWS A5.5: LOW ALLOY STEEL COVERED ARC WELDING ELECTRODES.  
AWS D1.1: STRUCTURAL WELDING CODE – STEEL.
- D. RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC): "SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 BOLTS OR ASTM A490 BOLTS" AS ENDORSED BY AISC.
- E. STEEL STRUCTURES PAINTING COUNCIL (SSPC):  
SSPC–SP3: POWER TOOL CLEANING.  
SSPC–PAINT 11: RED IRON OXIDE, ZINC CHROME, RAW LINSEED OIL OR ALKYD PAINT.
- 1.3SUBMITTALS:
- A. SUBMIT THE FOLLOWING FOR APPROVAL:
1. FABRICATION AND ERECTION DRAWINGS SHOWING ALL DETAILS, CONNECTIONS, MATERIAL DESIGNATIONS, AND ALL TOP STEEL ELEVATIONS.
- B. WELDERS SHALL BE QUALIFIED AS PRESCRIBED IN AWS D1.1.

PART 2 – PRODUCTS

- 2.1STRUCTURAL STEEL:
- A. SHAPES, PLATES AND BARS SHALL CONFORM TO ASTM A36 AND ASTM A992.
- B. STRUCTURAL TUBING SHALL CONFORM TO ASTM A500, GRADE B. STEEL PIPE SHALL CONFORM TO ASTM A53, TYPE E OR S, GRADE B.
- 2.2ANCHOR BOLTS:
- A. ANCHOR BOLTS SHALL CONFORM TO ASTM A307 WITH HEAVY HEXAGONAL NUTS.
- 2.3BOLTS:
- A. COMMON (MACHINE) BOLTS SHALL CONFORM TO ASTM A307 GRADE A AND NUTS TO ASTM A563. ONE COMMON BOLT ASSEMBLY SHALL CONSIST OF A BOLT, A HEAVY HEX NUT, AND A HARDENED WASHER.
- B. HIGH STRENGTH BOLT SHALL CONFORM TO ASTM A325, ONE HIGH STRENGTH BOLT ASSEMBLY SHALL CONSIST OF A HEAVY HEX STRUCTURAL BOLT, A HEAVY HEX NUT, A HARDENED WASHER CONFIRMING WITH ASTM F436 AND A DIRECT TENSION INDICATOR CONFORMING WITH STM F959. THE HARDENED WASHER SHALL BE INSTALLED AGAINST THE ELEMENT TURNED IN TIGHTENING.UNLESS NOTED OTHERWISE ON THE DRAWINGS, ALL CONNECTIONS SHALL BE BEARING TYPE CONNECTIONS.
- 2.4WELDING ELECTRODES:
- A. WELDING ELECTRODES SHALL COMPLY WITH AWS D1.1 USING A5.1 OR A5.5 E70XX AND SHALL BE COMPATIBLE WITH THE WELDING PROCESS SELECTED.
- 2.5PRIMER:
- A. PRIMER SHALL BE RED OXIDE–CHROMATE PRIMER COMPLYING WITH SSPC PAINT SPECIFICATION NO. 11.

PART 3 – EXECUTION

- 3.1FABRICATION:
- A. SHOP FABRICATE AND ASSEMBLY MATERIALS AS SPECIFIED HEREIN.
1. FABRICATE ITEMS OF STRUCTURAL STEEL IN ACCORDANCE WITH THE AISC–ASD SPECIFICATION, AND AS INDICATED ON THE APPROVED SHOP DRAWINGS.
2. ALL EXPOSED STRUCTURAL STEEL SHALL BE HOT DIP GALVANIZED PER ASTM.
3. PROPERLY MARK AND MATCH–MARK MATERIALS FOR FIELD ASSEMBLY AND FOR IDENTIFICATION AS TO LOCATION FOR WHICH INTENDED.
4. FABRICATE AND DELIVER IN A SEQUENCE WHICH WILL EXPEDITE ERECTION AND MINIMIZE FIELD HANDLING OF MATERIALS.
5. WHERE FINISHING IS REQUIRED, COMPLETE THE ASSEMBLY, INCLUDING THE WELDING OF UNITS, BEFORE START OF FINISHING OPERATIONS.
6. PROVIDE FINISH SURFACE OF MEMBERS EXPOSED IN THE FINAL STRUCTURE FREE FROM MARKINGS, BURNS, AND OTHER DEFECTS.
- B. PROVIDE CONNECTIONS AS SPECIFIED HEREIN:
1. PROVIDE BOLTS AND WASHERS OF TYPES AND SIZE REQUIRED FOR COMPLETION OF FIELD ERECTION. USE 3/4 INCH DIAMETER A325 BOLTS UNLESS NOTED OTHERWISE.
2. INSTALL HIGH STRENGTH THREADED FASTENERS IN ACCORDANCE WITH RCSC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR ASTM A490 BOLTS."

3. WELDED CONSTRUCTION SHALL COMPLY WITH AWS D1.1 FOR PROCEDURES, APPEARANCE, QUALITY OF WELD, AND METHODS USED IN CORRECTING WELDED WORK.
4. THE FABRICATOR SHALL FURNISH AND INSTALL ERECTION CLIPS FOR FIT–UP OF WELDED CONNECTIONS.
5. DOUBLE ANGLE MEMBERS SHALL HAVE WELDED FILLERS SPACED IN ACCORDANCE WITH CHAPTER E4 OF THE AISC–ASD SPECIFICATION.
6. GUSSET AND STIFFENER PLATES SHALL BE 3/8 INCH THICK MINIMUM.
- 3.2PRIMING:
- A. STRUCTURAL STEEL SHALL BE PRIMED AS SPECIFIED HEREIN, UNLESS SHOWN OTHERWISE ON THE DRAWINGS.
- B. STRUCTURAL STEEL SURFACE PREPARATION SHALL CONFORM TO SSPC–SP3, "POWER TOOL CLEANING."
- C. SURFACE PREPARATION AND PRIMER SHALL BE IN ACCORDANCE WITH AISC CODE OF STANDARD PRACTICE AS INCLUDED IN THE ASD MANUAL OF STEEL CONSTRUCTION.
- D. MATERIALS SHALL REMAIN CLOSED UNTIL REQUIRED FOR USE, MANUFACTURER’S POT–LIFE REQUIREMENTS SHALL BE STRICTLY ADHERED TO.
- E. PRIMER SHALL BE APPLIED TO DRY, CLEAN, PREPARED SURFACE AND UNDER FAVORABLE CONDITIONS IN ACCORDANCE WITH MANUFACTURER’S INSTRUCTIONS. UNLESS OTHERWISE RECOMMENDED BY THE MANUFACTURER PRIMING SHALL NOT BE DONE WHEN AMBIENT TEMPERATURE IS LESS THAN 50 DEGREES F. THE RELATIVE HUMIDITY IS MORE THAN 90 PERCENT, OR THE SURFACE TEMPERATURE IS LESS THAN 5 DEGREES F ABOVE THE DEW POINT.
- F. GENERALLY ALL PRIMER SHALL BE SPRAY APPLIED. BRUSH OR ROLLER APPLICATION SHALL BE RESTRICTED TO TOUCHUP AND TO AREAS NOT ACCESSIBLE BY SPRAY GUN.
- G. PRIMER SHALL BE UNIFORMLY APPLIED WITHOUT RUNS, SAGS, SOLVENT BLISTERS, DRY SPRAY OR OTHER BLEMISHES. ALL BLEMISHES AND OTHER IRREGULARITIES SHALL BE REPAIRED OR REMOVED AND THE AREA RE–COATED. SPECIAL ATTENTION SHALL BE PAID TO CREVICES, WELD LINES, BOLT HEADS, CORNERS, EDGES, ETC., TO OBTAIN THE REQUIRED NOMINAL FILM THICKNESS.
- H. THE DRY FILM THICKNESS OF THE PRIMER SHALL BE 2.0 MILS.
- I. IF THE PRIMER IS DAMAGED BY WELDING OR PHYSICAL ABUSE, THE AREA SHALL BE TOUCHED–UP AND REPAIRED. THE TOUCHUP PAINT SHALL BE COMPATIBLE WITH THE APPLIED PRIMER WITH MINIMUM DRY FILM THICKNESS OF 1.5 MILS.
- 3.3INSTALLATION:
- A. INSTALLATION OF STRUCTURAL STEEL SHALL COMPLY WITH AISC "CODE OF STANDARD PRACTICE."
- B. STRUCTURAL FIELD WELDING SHALL BE DONE BY THE ELECTRIC SUBMERGED OR SHIELDED METAL ARC PROCESS. WELDED CONSTRUCTION SHALL COMPLY WITH AWS D1.1.
- C. PROVIDE ANCHOR BOLTS AND OTHER CONNECTORS REQUIRED FOR SECURING STRUCTURAL STEEL TO ELEVATOR SHAFT WALLS AND OTHER IN–PLACE WORK. PROVIDE TEMPLATES AND OTHER DEVICES NECESSARY FOR PRESETTING BOLTS AND ANCHORS TO ACCURATE LOCATIONS.
- D. SPLICE MEMBERS ONLY WHERE INDICATED ON THE DRAWINGS.
- E. ANY GAS CUTTING TORCHES HAVE TO BE APPROVED IN WRITING BY THE PROJECT STRUCTURAL ENGINEER.
- F. PROVIDE TEMPORARY SHORING BRACING WITH CONNECTIONS OF SUFFICIENT STRENGTH TO BEAR IMPOSED LOADS. REMOVE TEMPORARY CONNECTIONS AND MEMBERS WHEN PERMANENT MEMBERS ARE IN PLACE AND THE FINAL CONNECTIONS HAVE BEEN MADE.
- G. ALIGN AND ADJUST MEMBERS, AND OTHER SURFACES WHICH WILL BE IN PERMANENT CONTACT, BEFORE ASSEMBLY.
- H. HIGH–STRENGTH BOLTS AS A MINIMUM, SHALL BE TIGHTENED TO A "SNUG TIGHT" CONDITION AS DEFINED IN THE LATEST AISC SPECIFICATION. ALL HIGH–STRENGTH BOLTS SPECIFIED ON THE DESIGN DRAWINGS TO BE USED IN PRETENSIONED OR SLIP–CRITICAL JOINTS SHALL BE TIGHTENED TO A BOLT TENSION NOT LESS THAN THAT GIVEN IN AISC TABLE J3.1. INSTALLATION SHALL BE BY ANY OF THE FOLLOWING METHODS: TURN–OF NUT METHOD, A DIRECT–TENSION–INDICATOR, TWIST–OFF–TYPE TENSION–CONTROL BOLT, CALIBRATED WRENCH, OR ALTERNATIVE DESIGN BOLT.

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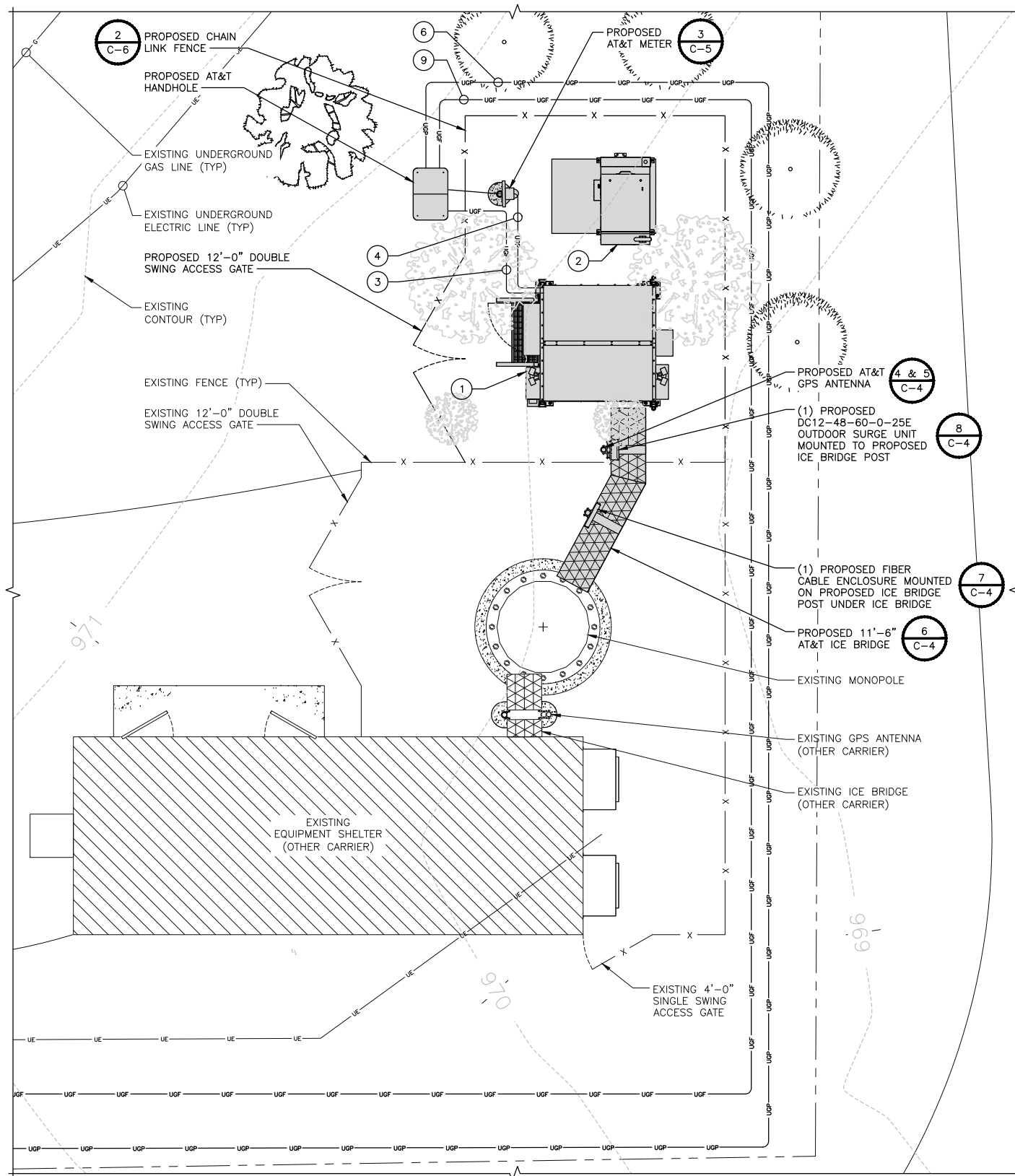
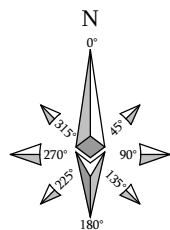
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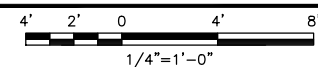
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TOWER SECTION  
NOTES

SHEET NUMBER

T-7



OVERALL ELECTRICAL PLAN



1

NOTE:  
CONTRACTOR AND FCM TO VERIFY DESIGN SHOWN ON DRAWINGS WITH DESIGN PROVIDED BY LEC AND EXISTING SITE CONDITIONS PRIOR TO THE START OF CONSTRUCTION. IF DISCREPANCIES ARE NOTED, CONTRACTOR OR FCM TO NOTIFY BLACK & VEATCH OF DISCREPANCIES PRIOR TO CONSTRUCTION START.

- 1 PROPOSED AT&T EQUIPMENT CABINET ON PLATFORM.
- 2 PROPOSED GENERATOR ON PLATFORM.
- 3 PROVIDE AND INSTALL (3) 1-1/4" HDPE CONDUIT WITH LONG SWEEPS FOR FIBER FROM PROPOSED HAND HOLE TO PROPOSED PLATFORM.
- 4 PROPOSED POWER IN PROPOSED 2-1/2" SCH 40 HDPE CONDUIT, FROM PROPOSED METER TO PROPOSED FUSIBLE DISCONNECT AT CABINET. (FIELD VERIFY LOCATION)
- 5 METER AT UTILITY H-FRAME.
- 6 CONTRACTOR TO COORDINATE POWER FEED, CONDUIT SIZE AND UTILITY LOCATIONS OF POWER ENTERING METER WITH LOCAL UTILITY PROVIDER.
- 7 PROPOSED HOFFMAN BOX ADDED TO UTILITY H-FRAME.
- 8 PROVIDE AND INSTALL (3) 1-1/4" HDPE CONDUIT WITH LONG SWEEPS FOR FIBER FROM PROPOSED HAND HOLE TO PROPOSED HOFFMAN BOX.
- 9 PROVIDE AND INSTALL (3) 1-1/4" HDPE CONDUIT WITH LONG SWEEPS FOR FIBER FROM PROPOSED HAND HOLE AT COMPOUND TO PROPOSED HAND HOLE IN RIGHT-OF-WAY.
- 10 PROPOSED HAND HOLE.
- 11 PROPOSED FIBER IN SINGLE 1-1/4" HDPE CONDUIT FROM PROPOSED HAND HOLE IN RIGHT-OF-WAY TO PROPOSED MEET-ME-POINT.
- 12 EDGE OF ACCESS DRIVE.
- 13 APPROXIMATE RIGHT-OF-WAY LOCATION. (CONTRACTOR TO VERIFY)
- 14 PROPOSED HAND HOLE AT RIGHT-OF-WAY FOR FIBER.
- 15 PROPOSED MEET-ME-POINT

1. ALL CONDUIT IN COMPOUND TO SWITCH TO SCH 80 WHEN CROSSING AN ACCESS POINT OR AREA FOR VEHICLE TRAFFIC (FIELD VERIFY LOCATION)
2. PULL STRING TO BE INSTALLED IN ALL PROPOSED CONDUIT.
3. WHEN BORING, CHANGE CONDUIT TO 4" HDPE CONDUIT.
4. THE CONDUIT ROUTING IS DIAGRAMMATICALLY SHOWN ON THE PLANS AND ARE ONLY APPROXIMATIONS. THE EXACT LOCATION AND ROUTING SHALL BE FIELD VERIFIED.
5. ALL ELECTRICAL EQUIPMENT AND CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED LAMICOID NAMEPLATES, INDICATING THE CIRCUITS ORIGIN AND ALL EQUIPMENT TERMINATIONS.
6. CONTRACTOR SHALL PROVIDE STRAIN-RELIEF AND CABLE SUPPORTS FOR ALL CABLE ASSEMBLIES, COAX CABLES, AND RET CONTROL CABLES. CABLE STRAIN-RELIEFS, CABLE SUPPORTS SHALL BE APPROVED FOR THE PURPOSE. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
7. ALL CONDUITS SHALL BE INSTALLED IN COMPLIANCE WITH THE 2017 NATIONAL ELECTRIC CODE (NEC) OR AS REQUIRED BY THE LOCAL JURISDICTION, WHICHEVER IS THE MOST STRINGENT.
8. EXISTING UTILITIES MUST BE PROTECTED DURING CONSTRUCTION OF THE PROPOSED IMPROVEMENTS

#### NOTES

FENCE	— X — X —
LEASE AREA	— — — — —
PROPOSED ICE BRIDGE	
EXISTING ICE BRIDGE	
OVERHEAD POWER	— OHP — OHP —
UNDERGROUND POWER	— UGP — UGP —
OVERHEAD UTILITIES	— OHU — OHU —
UNDERGROUND FIBER AND POWER	— UGF/P — UGF/P —
UNDERGROUND FIBER	— UGF — UGF —

#### LEGEND

#### AT&T MOBILITY

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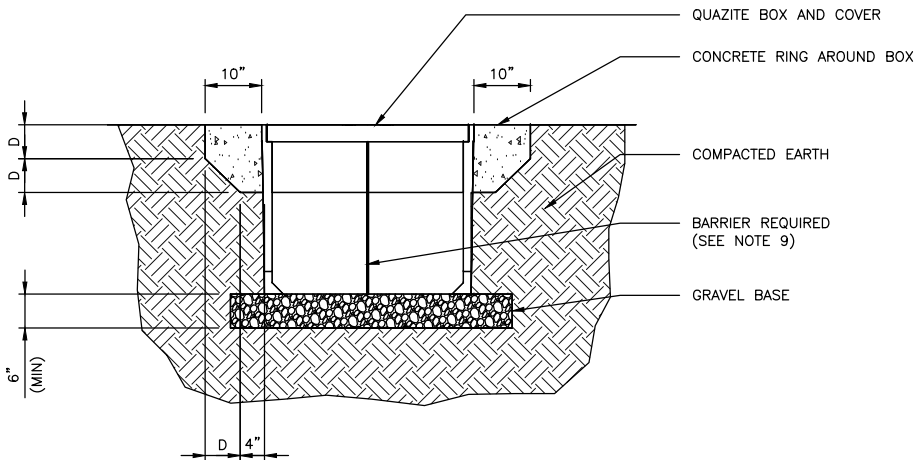
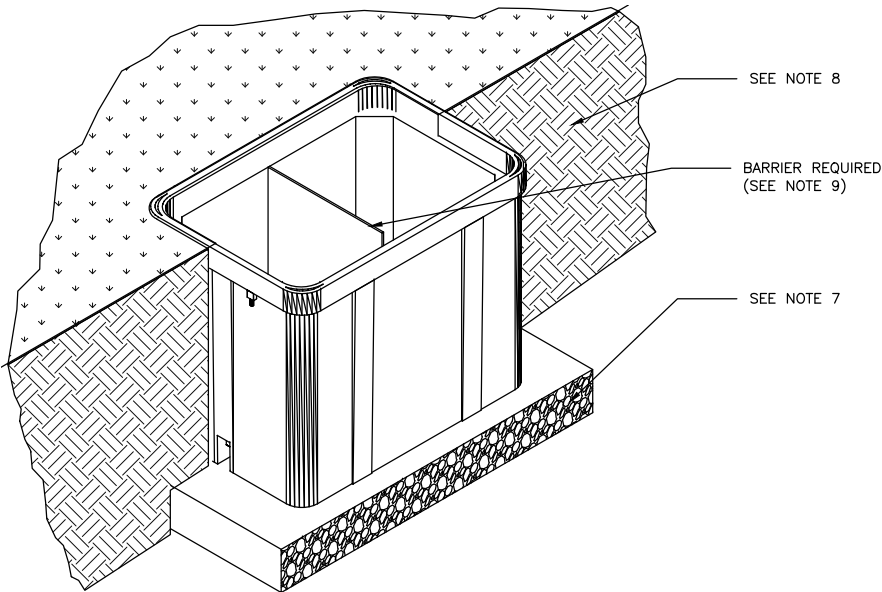
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ELECTRICAL PLAN

SHEET NUMBER

E-1



1. CONCRETE COLLARS MAY BE DESIRED FOR INSTALLATIONS IN DRIVEWAYS, PARKING LOTS AND OFF-ROADWAY APPLICATIONS WHERE SUBJECT TO OCCASIONAL NON-DELIBERATE TRAFFIC. THIS APPLIES TO BOXES MADE FROM ANY MATERIAL TO PROVIDE ADDED PROTECTION FOR THE TOP LID. THIS IS NOT NECESSARY IN GRASSY AREAS OR AREAS SUBJECT TO PEDESTRIAN TRAFFIC.
2. CONCRETE ENCASEMENT TO BE 3,000 PSI MIN.
3. CONCRETE ENCASEMENT COLLAR DIMENSION "D" TO BE EQUAL TO DESIGN PAVEMENT DEPTH.
4. PAVEMENT AND SUBGRADE TO BE SHOWN ON THE ENGINEERING PLANS.
5. EXCAVATE THE HOLE APPROXIMATELY 6 TO 8" DEEPER THAN SUGGESTED HAND HOLE BURIAL DEPTH.
6. COMPACT THE SUBSOIL WITH A BACK-HOE OR A HYDRAULIC TAMPER. ADD APPROXIMATELY 6 TO 8" OF GRAVEL TO THE BOTTOM OF HOLE.
7. PLACE THE HAND HOLE ON THE LEVELED GRAVEL BED. LEVEL THE HAND HOLE.
8. BACK-FILL WITH LOOSE EARTH MATERIAL UP TO THE TOP SURFACE OF THE HAND HOLE. DO NOT BACK-FILL WITH CHUNKS OF FROZEN MATERIAL OR LARGE ROCKS NEXT TO THE GROUND SLEEVE. PACK THE BACK-FILL MATERIAL BY FOOT TAMPING, NO MACHINE TAMPING.
9. PROVIDE BARRIER HUBBELL QUAZITE # PG 2436BC30 OR APPROVED 24"x36"x30" UL TIER 22 HAND HOLE.

CONCRETE COLLAR APPLICATION  
MOUNTED IN COMPACTED SOIL

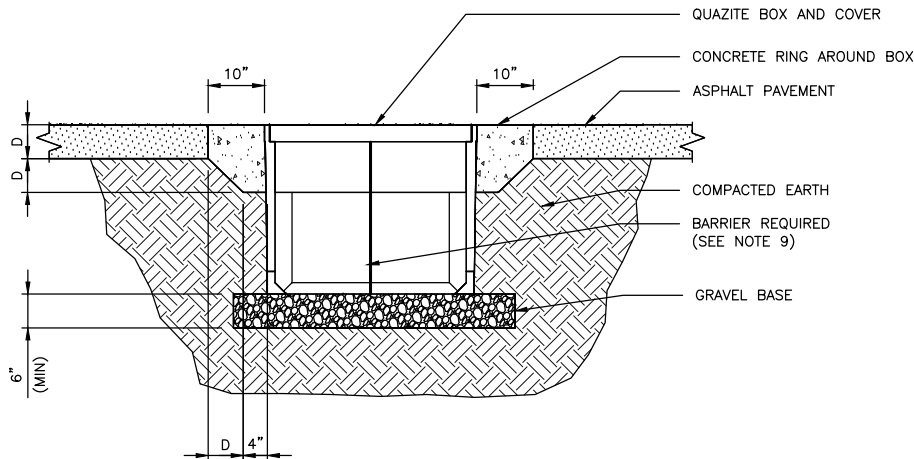
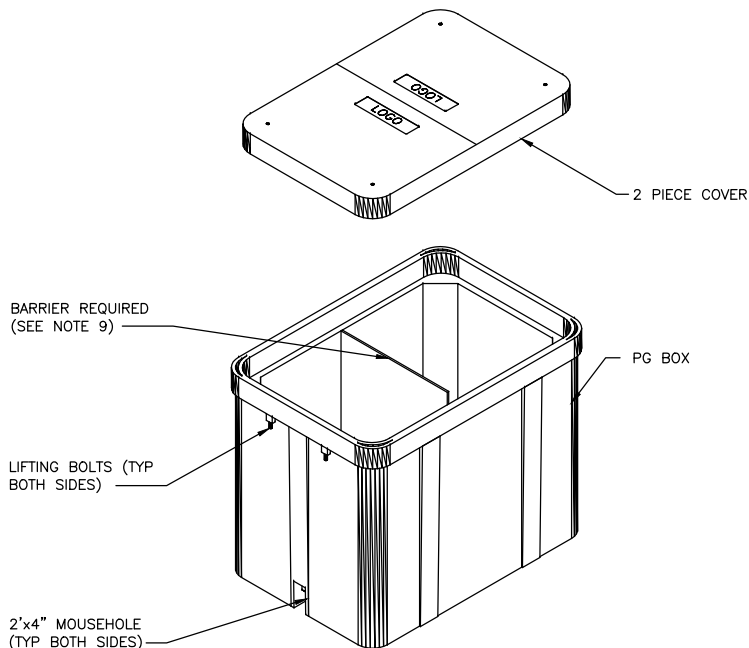
NO SCALE

1

CONCRETE COLLAR APPLICATION MOUNTED IN COMPACTED SOIL

NO SCALE

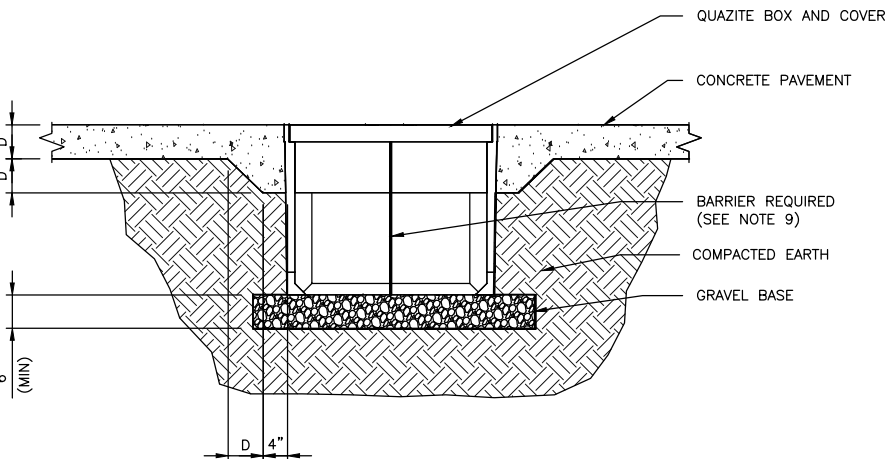
2



CONCRETE COLLAR APPLICATION MOUNTED IN ASPHALT PAVEMENT

NO SCALE

4



PG BOX WITH NO CONCRETE COLLAR MOUNTED IN CONCRETE PAVEMENTS

NO SCALE

5

QUAZITE PG BOX WITH 2 PIECE COVER

NO SCALE

3

NOTES

AT&T  
MOBILITY

7900 XERXES AVE S  
3RD FLOOR  
BLOOMINGTON MN 55431



BLACK & VEATCH

BLACK & VEATCH CORPORATION  
7760 FRANCE AVENUE SOUTH  
SUITE 1200  
BLOOMINGTON, MN 55435

PROJECT NO:	129049.4004
DRAWN BY:	VPB
CHECKED BY:	JAT

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REV	DATE	DESCRIPTION

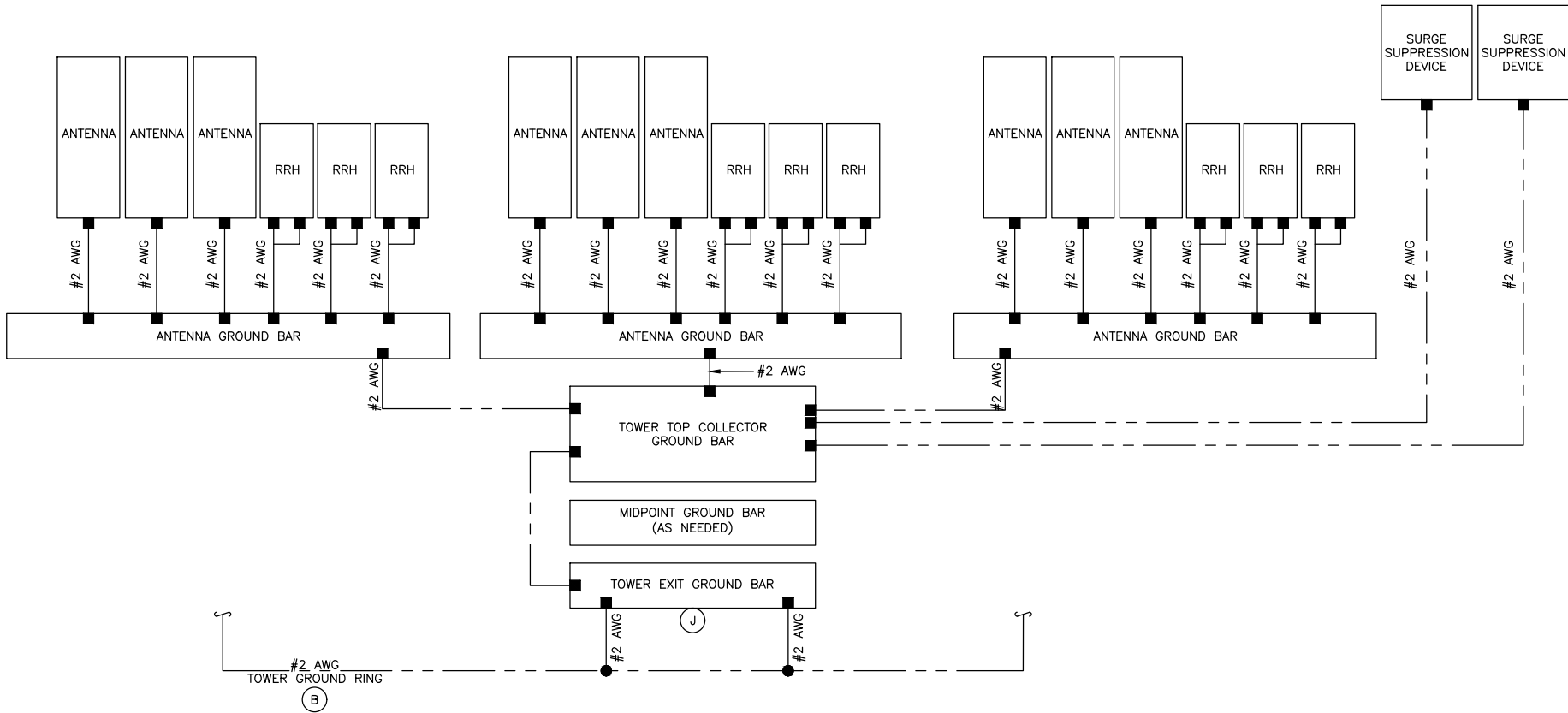
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DELANO COUNTY LINE  
MNL01123  
3310 COUNTY LINE ROAD SE  
DELANO, MN 55328  
NSB - WIC

SHEET TITLE  
ELECTRICAL DETAILS

SHEET NUMBER

E-2



- EXOTHERMIC CONNECTION
- MECHANICAL CONNECTION
- ⬮ GROUND ROD
- ⬮ TEST GROUND ROD WITH INSPECTION SLEEVE

LEGEND

1. GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY. FOR GROUNDING DETAILS SEE DRAWINGS E-5 THROUGH E-7.
2. CONTRACTOR SHALL GROUND ALL EQUIPMENT AS A COMPLETE SYSTEM. GROUNDING SHALL BE IN COMPLIANCE WITH NEC SECTION 250 AND AT&T GROUNDING AND BONDING REQUIREMENTS (ATT-TP-76416) AND MANUFACTURER'S SPECIFICATIONS.
3. ALL GROUND CONDUCTORS SHALL BE COPPER; NO ALUMINUM CONDUCTORS SHALL BE USED.
4. FOR ALCATEL-LUCENT 850 AND 1900 RRH's, TWO GROUNDS ARE REQUIRED (TOP AND BOTTOM).

NOTES

- (A) EXTERIOR GROUND RING: #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING. (ATT-TP-76416 2.2.3.5/7.5.1)
- (B) TOWER GROUND RING: THE GROUND RING SYSTEM SHALL BE INSTALLED AROUND AN ANTENNA TOWER'S LEGS, AND/OR GUY ANCHORS. WHERE SEPARATE SYSTEMS HAVE BEEN PROVIDED FOR THE TOWER AND THE BUILDING, AT LEAST TWO BONDS SHALL BE MADE BETWEEN THE TOWER RING GROUND SYSTEM AND THE BUILDING RING GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS. (ATT-TP-76416 7.5.1)
- (C) INTERIOR GROUND RING: #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTOR EXTENDED AROUND THE PERIMETER OF THE EQUIPMENT AREA. ALL NON-TELECOMMUNICATIONS RELATED METALLIC OBJECTS FOUND WITHIN A SITE SHALL BE GROUNDED TO THE INTERIOR GROUND RING WITH #6 AWG STRANDED GREEN INSULATED CONDUCTOR. (ATT-TP-76416 7.6.4)
- (D) BOND TO INTERIOR GROUND RING: #2 AWG SOLID TINNED COPPER WIRE PRIMARY BONDS SHALL BE PROVIDED AT LEAST AT FOUR POINTS ON THE INTERIOR GROUND RING, LOCATED AT THE CORNERS OF THE BUILDING. (ATT-TP-76416 7.5.2.2)
- (E) GROUND ROD: UL LISTED COPPER CLAD STEEL, MINIMUM 5/8" DIAMETER BY EIGHT FEET LONG. ALL GROUND RODS MAY BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR. (ATT-TP-76416 1.4 / 2.2.3.10)
- (F) CELL REFERENCE GROUND BAR: POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUCTORS. (ATT-TP-76416 7.6.7)
- (G) HATCH PLATE GROUND BAR: BOND TO THE INTERIOR GROUND RING WITH TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CRGB MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS.
- (H) EXTERIOR CABLE ENTRY PORT GROUND BARS: LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE. (ATT-TP-76416 7.6.7.2)
- (J) TOWER EXIT GROUND BAR: #2 AWG SOLID TINNED COPPER BOND TO THE TOWER GROUND RING. (ATT-TP-76416 7.5.5)
- (K) TELCO GROUND BAR: BOND TO BOTH CELL REFERENCE GROUND BAR AND EXTERIOR GROUND RING. (ATT-TP-76416 7.6.8)
- (L) FRAME BONDING: THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK. BOND THE FRAME GROUND BUS TO THE "I" SECTION OF THE CELL REFERENCE GROUND BAR. (ATT-TP-76416 7.8)
- (M) INTERIOR UNIT BONDS: METAL FRAMES, CABINETS AND INDIVIDUAL METALLIC UNITS LOCATED WITHIN THE AREA OF THE INTERIOR GROUND RING REQUIRE A #6 AWG STRANDED GREEN INSULATED COPPER BOND TO THE INTERIOR GROUND RING. (ATT-TP-76416 7.12.3.1)
- (N) FENCE AND GATE GROUNDING: METAL FENCES WITHIN 7 FEET OF THE EXTERIOR GROUND RING OR OBJECTS BONDED TO THE EXTERIOR GROUND RING SHALL BE BONDED TO THE GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTOR AT AN INTERVAL NOT EXCEEDING 25 FEET. BONDS SHALL BE MADE AT EACH GATE POST AND ACROSS GATE OPENINGS. (ATT-TP-76416 7.12.2.2)
- (P) EXTERIOR UNIT BONDS: METALLIC OBJECTS, EXTERNAL TO OR MOUNTED TO THE BUILDING, SHALL BE BONDED TO THE EXTERIOR GROUND RING. (ATT-TP-76416 7.12.2)
- (Q) ICE BRIDGE SUPPORTS: EACH ICE BRIDGE LEG SHALL BE BONDED TO THE GROUND RING WITH #2 AWG BARE TINNED COPPER CONDUCTOR. PROVIDE EXOTHERMIC WELDS AT BOTH THE ICE BRIDGE LEG AND BURIED GROUND RING. (ATT-TP-76416 7.4.2.6)
- (R) DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICES CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH A MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR (CRGB) PER TP76300 SECTION H 6 AND TP76416 FIGURE 7-11 REQUIREMENTS.

AT&T  
MOBILITY

7900 XERXES AVE S  
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BLOOMINGTON MN 55431



BLACK & VEATCH

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PROJECT NO: 129049.4004

DRAWN BY: VPB

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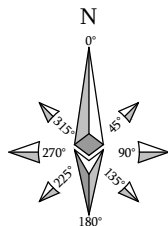
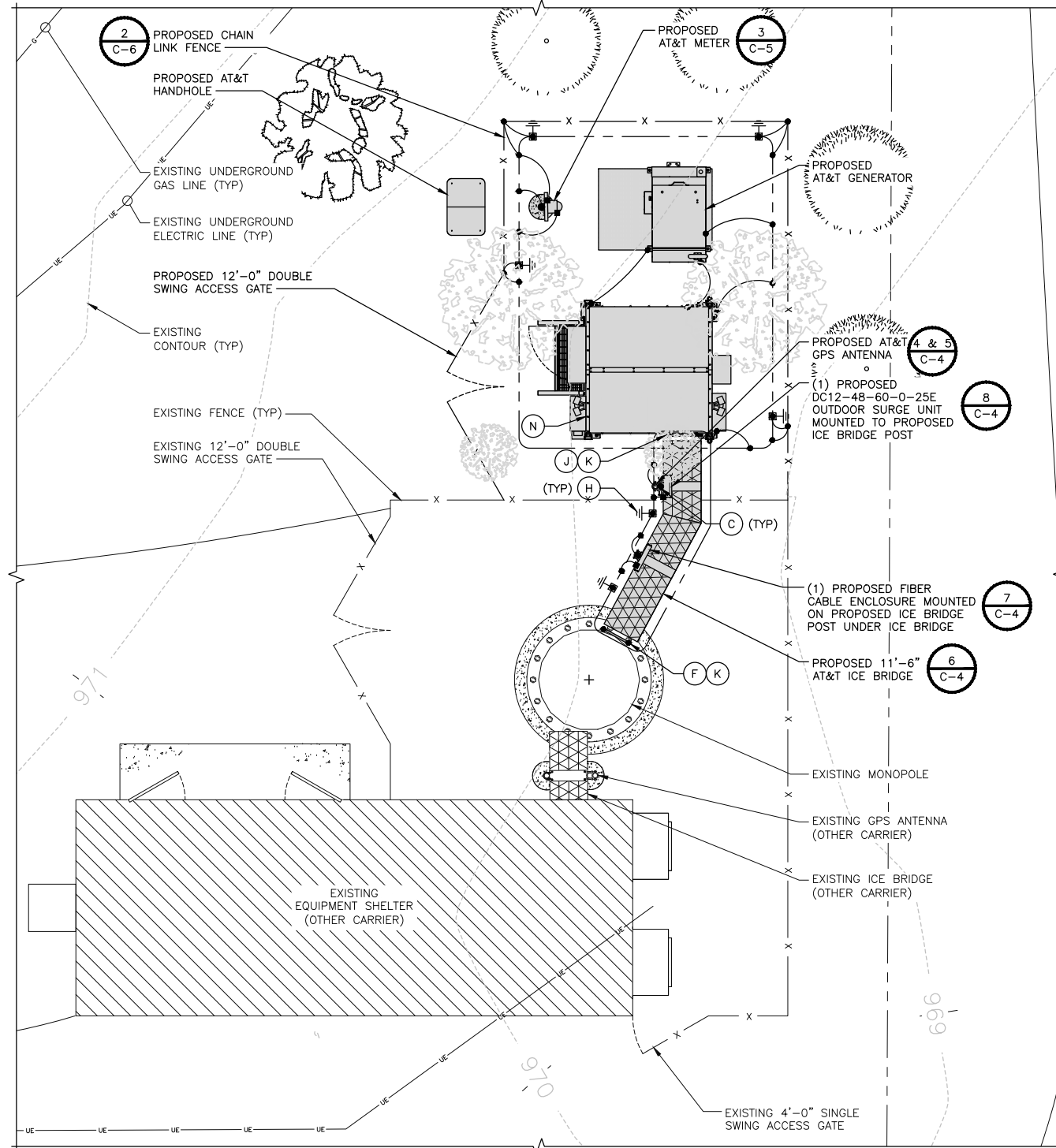
DELANO COUNTY LINE  
MNL01123  
3310 COUNTY LINE ROAD SE  
DELANO, MN 55328  
NSB - WIC

SHEET TITLE  
ONE-LINE  
GROUNDING DIAGRAM

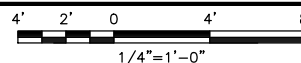
SHEET NUMBER

E-3





COMPOUND GROUNDING PLAN



1

KEYNOTES

- (A) GROUNDING BAR: EXTEND TWO (2) #2 AWG TINNED CU CONDUCTOR FROM BURIED GROUNDING RING UP TO THE HATCHPLATE GROUNDING BAR AND MAKE A MECHANICAL CONNECTION.
- (B) GROUND ROD: COPPER CLAD STEEL 5/8" (10) TEN FEET LONG. ALL GROUNDING RODS MAY BE INSTALLED WITH INSPECTION SLEEVES.
- (C) ICE BRIDGE SUPPORT POST GROUNDING: EXTEND #2 AWG TINNED CU CONDUCTOR FROM BURIED GROUNDING RING TO ALL ICE BRIDGE SUPPORT POSTS AND EXOTHERMICALLY WELD.
- (D) FENCE GROUNDING: IF FENCE IS WITHIN 6' OF GROUNDING RING, EXTEND #2 AWG TINNED CU CONDUCTOR FROM BURIED GROUNDING RING TO FENCE POSTS EXOTHERMICALLY WELDED. FENCING FABRIC SHALL BE GROUNDED AT ADJACENT CORNER POST. (2) REQ'D. GROUND INTERMEDIATE POST TO MAINTAIN 25'-0" MAX SPACING.
- (E) PROPOSED TOWER GROUNDING: EXTEND TWO (2) #2 AWG TINNED CU CONDUCTOR FROM BURIED GROUNDING RING AND CONNECT TO THE PROPOSED TOWER. FOLLOW MANUFACTURERS RECOMMENDATIONS FOR GROUNDING CONNECTIONS TO THE TOWER. (APPLICABLE TO NEW TOWERS ONLY.)
- (F) ANTENNA GROUNDING BAR: EXTEND TWO (2) #2 AWG TINNED CU CONDUCTOR FROM BURIED GROUNDING RING AND CONNECT TO THE PROPOSED ANTENNA GROUNDING BAR. MOUNT GROUNDING BAR DIRECTLY TO TOWER. SECURE TO TOWER WITH STAINLESS STEEL MOUNTING MATERIAL.
- (G) GATE GROUNDING: EXTEND #2 AWG TINNED CU CONDUCTOR FROM BURIED GROUNDING RING TO GATE POSTS AND EXOTHERMICALLY WELD. SEE DETAIL G-6.
- (H) TEST GROUND ROD WITH INSPECTION SLEEVE: COPPER CLAD STEEL 5/8" DIA. TEN (10) FEET LONG WITH INSPECTION SLEEVE.
- (J) MASTER GROUNDING BAR: EXTEND TWO (2) #2 AWG TINNED CU CONDUCTORS FROM BURIED GROUNDING RING UP TO MASTER GROUNDING BAR & MAKE A EXOTHERMIC CONNECTIONS.
- (K) GROUNDING BAR LOCK BOX: TESCO PART # 351546: INSTALL PER MANUFACTURER REQUIREMENTS.
- (L) TIE INTO EXISTING GROUNDING RING: (2) REQ'D
- (M) ANTENNA GROUNDING BAR: EXTEND TWO (2) #2 AWG TINNED CU CONDUCTOR FROM BURIED GROUNDING RING AND CONNECT TO THE PROPOSED ANTENNA GROUNDING BAR. MOUNT GROUNDING BAR DIRECTLY TO TOWER. SECURE TO TOWER WITH STAINLESS STEEL MOUNTING MATERIAL.
- (N) PROPOSED EQUIPMENT CABINET: SEE MANUFACTURER SPECIFICATIONS FOR ALL INTERIOR EQUIPMENT GROUNDING.

1. GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY. FOR GROUNDING DETAILS SEE DRAWINGS E-4 THROUGH E-6.
2. TESTING SHALL BE PERFORMED AT ALL SITES WHERE MODIFICATIONS OR ADDITIONS ARE MADE TO THE EXISTING GROUNDING SYSTEM AND SHALL BE IN ACCORDANCE WITH AT&T GROUNDING AND BONDING STANDARDS TP-76416. THE CONTRACTOR SHALL SUPPLY AT&T WITH RESULTS FROM PRE-CONSTRUCTION AND POST-CONSTRUCTION OHM TESTING (GROUNDING) RESULTS AND BE IN COMPLIANCE WITH AT&T GROUNDING AND BONDING STANDARDS TP-76416.
3. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE A "FALL OF POTENTIAL" TEST ON THE PROPOSED SUPPLEMENTAL GROUNDING FIELD PRIOR TO FINAL CONNECTION OF THE GROUNDING SYSTEM TO EQUIPMENT. THE TEST SHALL BE PERFORMED BY A QUALIFIED AND CERTIFIED TESTING AGENT. PROVIDE INDEPENDENT TEST RESULTS TO THE PROJECT MANAGER FOR REVIEW. THE GROUNDING SYSTEM RESISTANCE TO EARTH GROUNDING SHALL NOT EXCEED (5) OHMS. IF THE GROUNDING TEST EXCEEDS THE MAXIMUM OF (5) OHMS, THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ADDITIONAL GROUNDING RODS AND CONNECTIONS AS REQUIRED TO MEET THE (5) OHMS' MAXIMUM.
4. THE INSPECTOR HAVING JURISDICTION SHALL INSPECT ALL GROUNDING CONNECTIONS FOR TIGHTNESS. EXOTHERMIC WELDED CONNECTIONS SHALL BE APPROVED BEFORE BEING PERMANENTLY CONCEALED.
5. FOR ALL CONNECTIONS TO THE GROUNDING RING, SEE THE SHELTER MANUFACTURER'S DRAWINGS.
6. WHEN AN EXISTING METER RACK IS UTILIZED AND A NEW METER IS INSTALLED IN THE EXISTING METER RACK, THE GROUNDING RODS, AND GROUNDING CONDUCTORS OF THE EXISTING GROUNDING RING, SHALL BE EXTENDED TO THE PROPOSED GROUNDING RING AND BECOME A COMPLETE GROUNDING SYSTEM.
7. CONTRACTOR SHALL GROUND ALL EQUIPMENT INCLUDING ANTENNAS, RET MOTORS, TMA'S, COAX CABLES AND RET CONTROL CABLES AS A COMPLETE SYSTEM. GROUNDING SHALL BE EXECUTED BY QUALIFIED WIREMEN IN COMPLIANCE WITH MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
8. FOR GROUNDING INSTALLATIONS WHICH HAVE A LIMITED AREA AND IS BEING REQUIRED TO BE INSTALLED WITHIN THE LEASE AREA ONLY, THE GROUNDING RING CONDUCTORS CAN BE INSTALLED UNDER THE SHELTER'S FOOTINGS.
8. MAIN GROUNDING CONDUCTORS SHALL BE ROUTED AND BONDED TO ALL EFFECTIVE GROUNDING PATHS IN ACCORDANCE WITH AT&T GROUNDING AND BONDING SPECIFICATION 6.8.2 STATED IN TP-76416. THE NEW GROUNDING SYSTEM SHALL BE BONDED (2 PLACES) TO ALL EXISTING GROUNDING SYSTEMS, INCLUDING BUT NOT LIMITED TO BUILDING STEEL STRUCTURE, LIGHTNING PROTECTION SYSTEMS, BUILDING MAIN GROUNDING SYSTEM AND/OR MAIN WATER SUPPLY IF APPLICABLE.
9. BUILDINGS AND/OR NEW TOWERS GREATER THAN 75 FEET IN HEIGHT AND THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE. THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 AWG COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). SEE AT&T GROUNDING AND BONDING STANDARDS TP-76416 SPECIFICATION 6.3.2.2.

NOTES

- EXOTHERMIC TYPE CONNECTIONS
- COMPRESSION TYPE CONNECTIONS
- ⦿ CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
- ⦿ GROUND ROD WITH INSPECTION SLEEVE
- ⦿ TEST GROUND ROD WITH INSPECTION SLEEVE
- ⦿ EXOTHERMIC WITH INSPECTION SLEEVE
- GROUNDING CONDUCTOR
- GROUNDING BAR

LEGEND

AT&T  
MOBILITY

7900 XERXES AVE S  
3RD FLOOR  
BLOOMINGTON MN 55431



BLACK & VEATCH

BLACK & VEATCH CORPORATION  
7760 FRANCE AVENUE SOUTH  
SUITE 1200  
BLOOMINGTON, MN 55435

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DELANO COUNTY LINE  
MNL01123  
3310 COUNTY LINE ROAD SE  
DELANO, MN 55328  
NSB - WIC

SHEET TITLE  
COMPOUND  
GROUNDING PLAN

SHEET NUMBER

E-4

1. EXOTHERMIC WELD (2) TWO, #2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUND BAR. ROUTE CONDUCTORS TO BURIED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
2. ALL GROUND BARS SHALL BE STAMPED IN TO THE METAL "IF STOLEN DO NOT RECYCLE." THE CONTRACTOR SHALL USE PERMANENT MARKER TO DRAW THE LINES BETWEEN EACH SECTION AND LABEL EACH SECTION ("P", "A", "I") WITH 1" HIGH LETTERS.
3. ALL HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
4. FOR GROUND BOND TO STEEL ONLY: INSERT A CADMIUM FLAT WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
5. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND CONDUCTOR DOWN TO GROUND BUS.
6. NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUND BAR AND BOLTED ON THE BACK SIDE. INSTALL BLACK HEAT-SHRINKING TUBE, 600 VOLT INSULATION, ON ALL GROUND TERMINATIONS. THE INTENT IS TO WEATHERPROOF THE COMPRESSION CONNECTION.
7. SUPPLIED AND INSTALLED BY CONTRACTOR.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUND BAR AS REQUIRED, PROVIDING 50% SPARE CONNECTION POINTS.
9. ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).
10. BOLTS SHALL BE MADE "SNUG-TIGHT" PLUS 1/4 TURN.

1. EXOTHERMIC WELD (2) TWO, #2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUND BAR. ROUTE CONDUCTORS TO BURIED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
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10. BOLTS SHALL BE MADE "SNUG-TIGHT" PLUS 1/4 TURN.

INTERIOR TWO HOLE LUG DETAIL

NO SCALE

1

EXTERIOR TWO HOLE LUG DETAIL

NO SCALE

2

NEWTON INSTRUMENT COMPANY, INC. BUTNER, N.C.			
NO	REQUIRED	PART NUMBER	DESCRIPTION
①	1	HAGAR TGBI-14420C OR A.L.T. 382227	GALVANIZED STEEL GROUND BAR * (1/4" x 4" x 20)
②	2	A-6056	WALL MOUNTING BRACKET
③	2	3061-4	INSULATORS
④	2	3012-1	5/8"-11x1" H.H.C.S. BOLTS
⑤	4	3015-8	5/8" LOCKWASHER

\* HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.

EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION

## SECTION "P" – SURGE PROTECTORS

(EC) CELL REFERENCE GROUND BAR (IF COLLOCATED)  
(EC) GENERATOR FRAMEWORK (IF AVAILABLE) (#2 AWG)  
(EC) TELCO GROUND BAR (#2 AWG)  
(EC) COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (3/0)  
(EC) FIBER GROUND BAR (#2 AWG)  
(EC) POWER ROOM REFERENCE GROUND BAR (#2 AWG)  
(AT&T) RECTIFIER FRAMES

### SECTION "A" - SURGE ABSORBERS

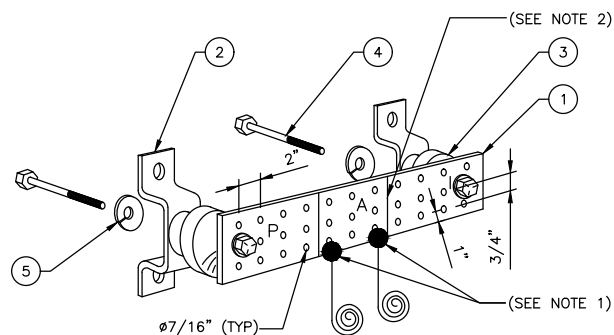
(EC) INTERIOR GROUND RING (#2 AWG)  
(EC) EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2 AWG)  
(EC) METALLIC COLD WATER PIPE (IF AVAILABLE) (1/0 AWG)  
(EC) BUILDING STEEL (IF AVAILABLE) (1/0 AWG)

SECTION "I" – ISOLATED GROUND ZONE

(AT&T) ALL ISOLATED GROUND REFERENCE  
(AT&T) GROUND WINDOW BAR

DETAIL NOTES

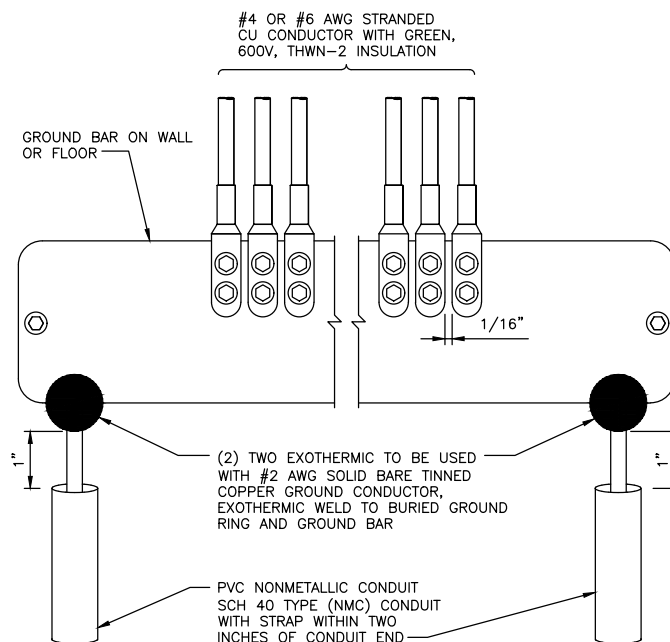
1. EXOTHERMICALLY WELD #2 AWG BARE TINNED SOLID COPPER CONDUCTOR TO GROUND BAR. ROUTE CONDUCTOR TO BURIED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
2. THE INSTALLER SHALL USE PERMANENT MARKER TO DRAW THE LIKE BETWEEN SECTION AND LABEL EACH SECTION ("P", "A", "I" WITH 1" HIGH LETTERS



### REFERENCE GROUNDING BAR DETAIL

NO SCALE

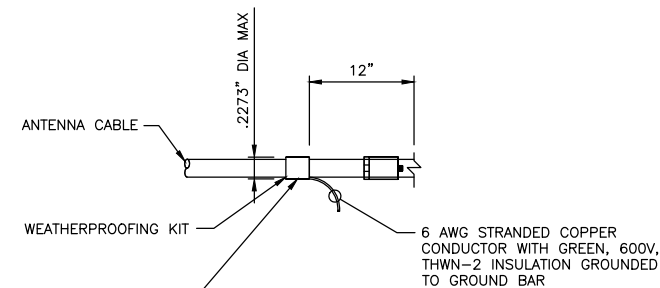
3



### GROUNDING BAR DETAIL

NO SCALE

4



### CONNECTION OF CABLE GROUNDING KIT TO ANTENNA CABLE

NO SCALE

5

**AT&T  
MOBILITY**

7900 XERXES AVE S  
3RD FLOOR  
BLOOMINGTON MN 55431



**BLACK & VEATCH**

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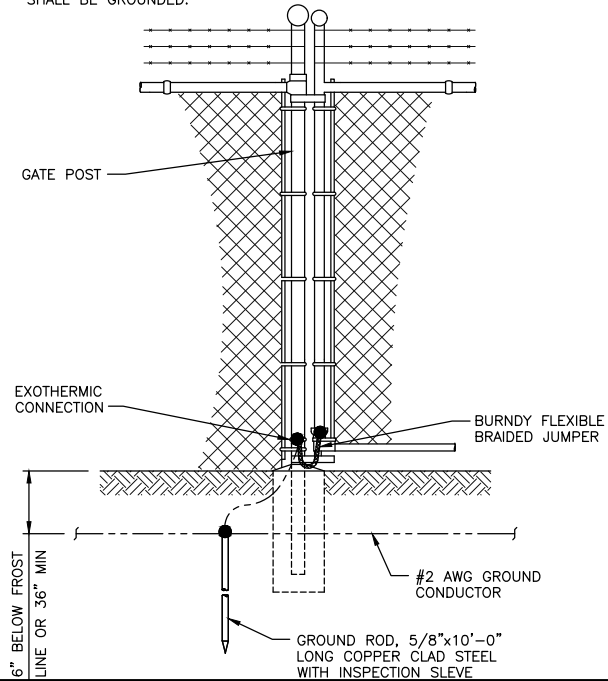
SHEET TITLE

## GROUNDING DETAILS

SHEET NUMBER

**E-5**

- 1. ALL METAL FENCE POSTS SHALL BE GROUNDED.
- 2. GROUND LINE POSTS ADJACENT TO CORNER POSTS, THEN, GROUND LINE POSTS OR FENCE FABRIC AT 25' INTERVALS. (NO GROUNDS ON CORNER POSTS REQ'D)
- 3. WHEN A FENCE IS EXISTING AND FENCE POSTS HAVE BEEN VERIFIED TO BE GROUNDED, BUT REQUIRE FENCE TO BE GROUNDED FOR AT&T SPECIFICATION THE FENCING FABRIC SHALL BE GROUNDED.

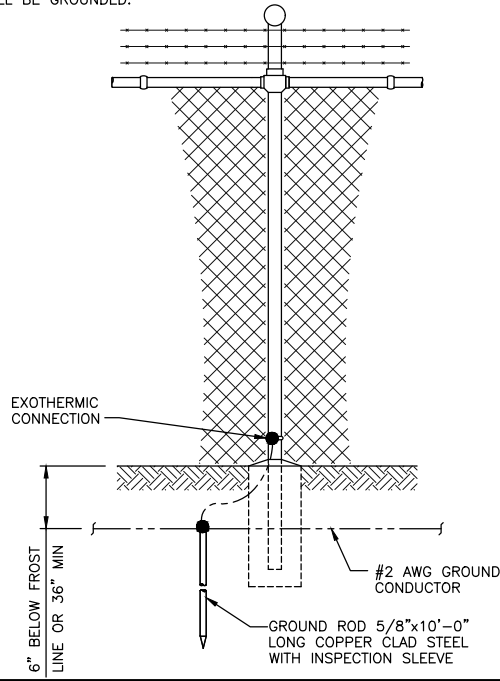


GATE AND GATE POST FENCE  
GROUNDING DETAIL

NO SCALE

1

- 1. ALL METAL FENCE POSTS SHALL BE GROUNDED.
- 2. GROUND LINE POSTS ADJACENT TO CORNER POSTS, THEN, GROUND LINE POSTS OR FENCE FABRIC AT 25' INTERVALS. (NO GROUNDS ON CORNER POSTS REQ'D)
- 3. WHEN A FENCE IS EXISTING AND FENCE POSTS HAVE BEEN VERIFIED TO BE GROUNDED, BUT REQUIRE FENCE TO BE GROUNDED FOR AT&T SPECIFICATION THE FENCING FABRIC SHALL BE GROUNDED.



TANGENT POST FENCE  
GROUNDING DETAIL

NO SCALE

2

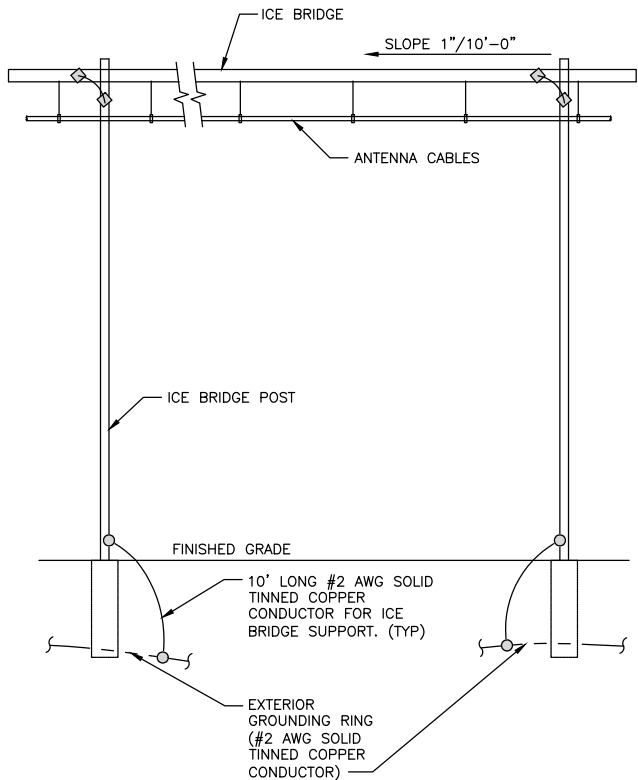
NOT USED

NO SCALE

3

NOTES

- 1. NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATION, AND CONNECTION ORIENTATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUND BAR AS REQUIRED, PROVIDING 50% SPARE CONNECTION POINTS.
- 2. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND CONDUCTOR DOWN TO GROUND BAR.
- 3. GROUND KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
- 4. WEATHER PROOFING SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
- 5. PROVIDE GROUND KIT 6" BEFORE TURN TRANSITION FROM TOWER TO ICE BRIDGE.
- 6. WHEN THE SCOPE OF WORK REQUIRES THE ADDITION OF A GROUND BAR TO AN EXISTING TOWER, THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE TOWER OWNER PRIOR TO MOUNTING THE GROUND BARS TO THE TOWER.
- 7. EXTEND TWO (2) #2 AWG TINNED CU CONDUCTOR FROM BURIED GROUND RING AND CONNECT TO THE PROPOSED TOWER. FOLLOW MANUFACTURERS RECOMMENDATIONS FOR GROUND CONNECTIONS TO THE TOWER. (APPLICABLE TO NEW TOWERS ONLY.)



ICE BRIDGE DETAIL

NO SCALE

4

NOT USED

NO SCALE

5

AT&T  
MOBILITY

7900 XERXES AVE S  
3RD FLOOR  
BLOOMINGTON MN 55431



BLACK & VEATCH

BLACK & VEATCH CORPORATION  
7760 FRANCE AVENUE SOUTH  
SUITE 1200  
BLOOMINGTON, MN 55435

PROJECT NO:	129049.4004
DRAWN BY:	VPB
CHECKED BY:	JAT

0	07/24/19	ISSUED FOR CONSTRUCTION
REV	DATE	DESCRIPTION

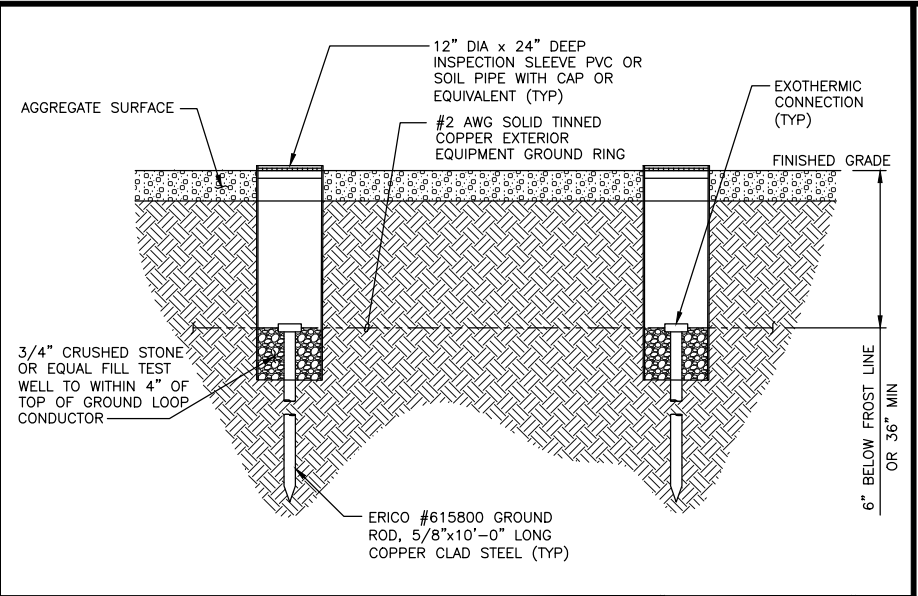
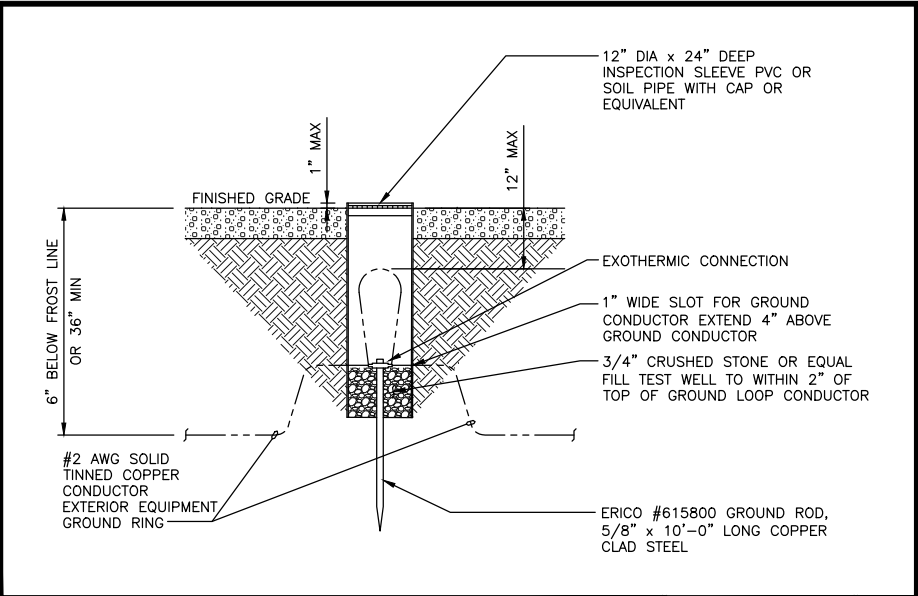
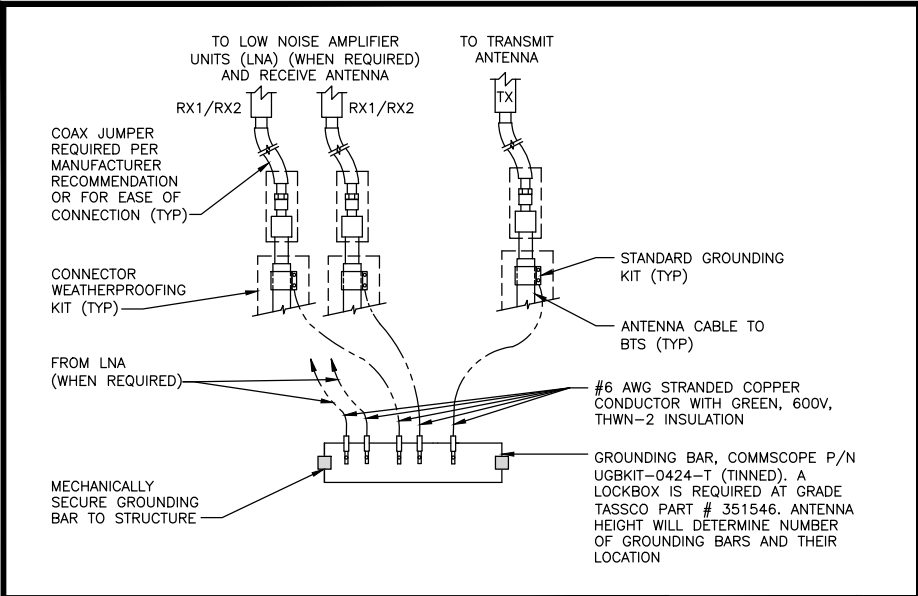
IT IS A VIOLATION OF LAW FOR ANY PERSON,  
UNLESS THEY ARE ACTING UNDER THE DIRECTION  
OF A LICENSED PROFESSIONAL ENGINEER,  
TO ALTER THIS DOCUMENT.

DELANO COUNTY LINE  
MNL01123  
3310 COUNTY LINE ROAD SE  
DELANO, MN 55328  
NSB - WIC

SHEET TITLE  
GROUNDING DETAILS

SHEET NUMBER

E-6



ANTENNA GROUNDING BAR DETAIL

NO SCALE

1

TEST GROUND ROD WITH INSPECTION SLEEVE DETAIL

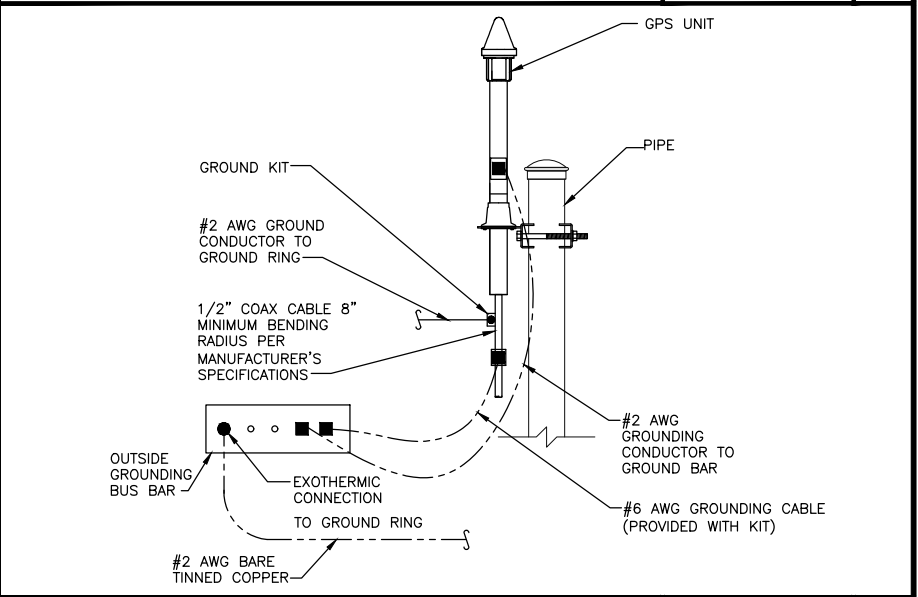
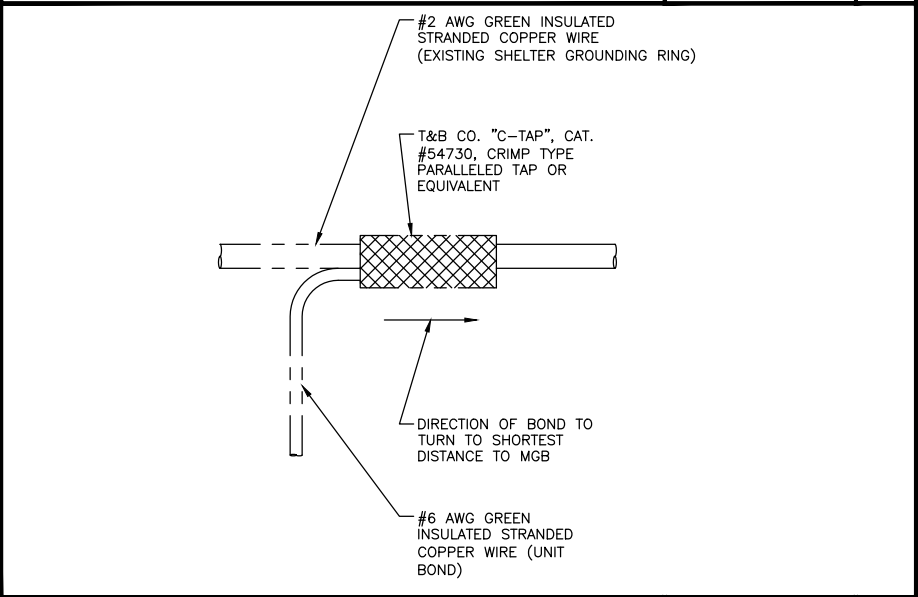
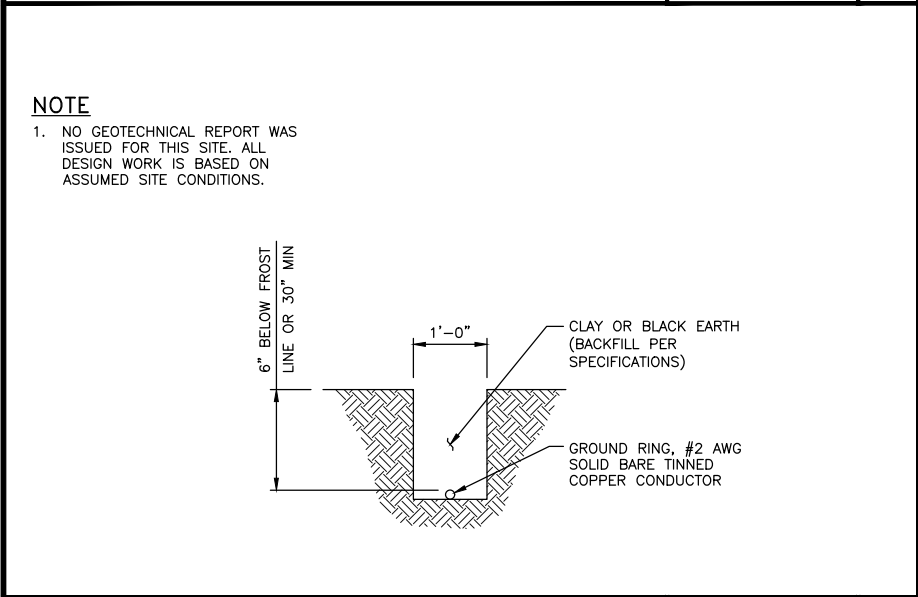
NO SCALE

2

GROUNDING ROD WITH INSPECTION SLEEVE DETAIL

NO SCALE

3



GROUNDING RING TRENCH DETAIL

NO SCALE

4

GROUNDING WIRE CONNECTION DETAIL

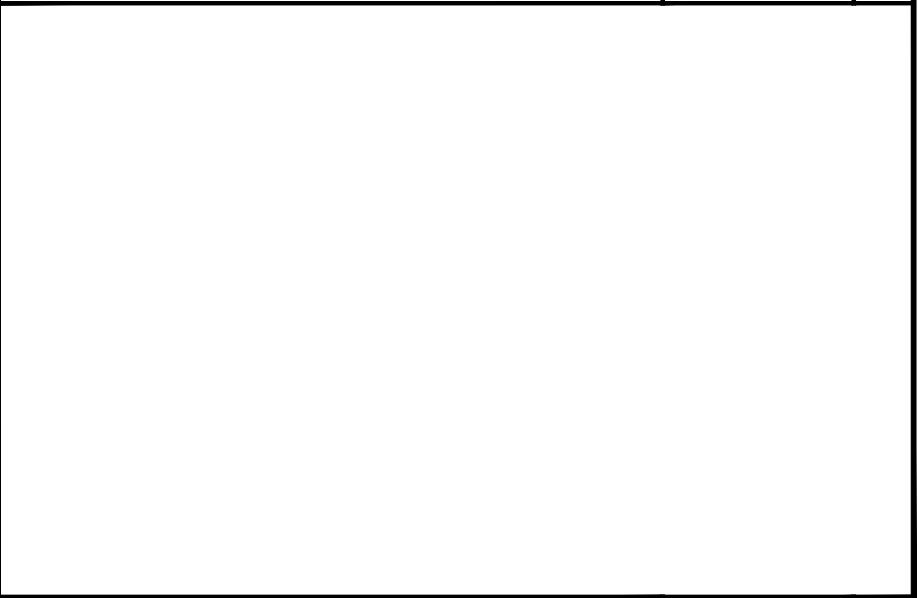
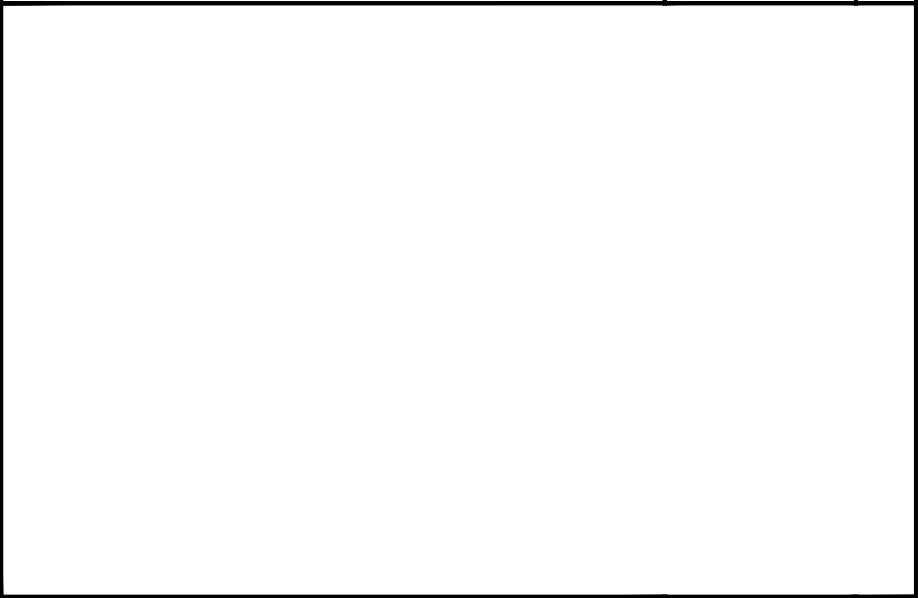
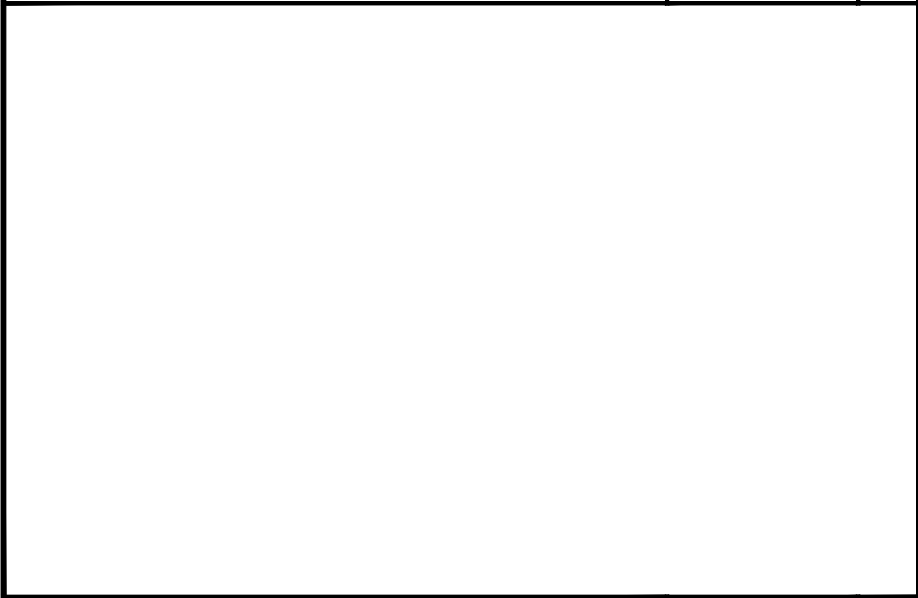
NO SCALE

5

LTE GPS ANTENNA GROUNDING DETAIL

NO SCALE

6



NOT USED

NO SCALE

7

NOT USED

NO SCALE

8

NOT USED

NO SCALE

9

**AT&T  
MOBILITY**

7900 XERXES AVE S  
3RD FLOOR  
BLOOMINGTON MN 55431

**BLACK & VEATCH**

BLACK & VEATCH CORPORATION  
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DELANO COUNTY LINE  
MNL01123  
3310 COUNTY LINE ROAD SE  
DELANO, MN 55328  
NSB - WIC

SHEET TITLE

GROUNDING DETAILS

SHEET NUMBER

E-7

PART 1 – GENERAL

- 1.1GENERAL CONDITIONS:
- A.

CONTRACTOR SHALL INSPECT THE EXISTING SITE CONDITIONS PRIOR TO SUBMITTING BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTORS FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE PROJECT MANAGER FOR CLARIFICATION, NOT AFTER THE CONTRACT HAS BEEN AWARDED.
- B.

THE CONTRACTOR SHALL OBTAIN PERMITS, LICENSES, MAKE ALL DEPOSITS, AND PAY ALL FEES REQUIRED FOR THE CONSTRUCTION PERFORMANCE FOR THE WORK UNDER THIS SECTION.
- C.

DRAWINGS SHOW THE GENERAL ARRANGEMENT OF ALL SYSTEMS AND COMPONENTS COVERED UNDER THIS SECTION. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS. DRAWING SHALL NOT BE SCALED TO DETERMINE DIMENSIONS.
- 1.2LAWS, REGULATIONS, ORDINANCES, STATUTES AND CODES.
- A.

ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE, AND ALL APPLICABLE LOCAL LAWS, REGULATIONS, ORDINANCES, STATUTES AND CODES. CONDUIT BENDS SHALL BE THE RADIUS BEND FOR THE TRADE SIZE OF CONDUIT IN COMPLIANCE WITH THE LATEST EDITIONS OF NEC.
- 1.3REFERENCES:
- A.

THE PUBLICATIONS LISTED BELOW ARE PART OF THIS SPECIFICATION. EACH PUBLICATION SHALL BE THE LATEST REVISION AND ADDENDUM IN EFFECT ON THE DATE. THIS SPECIFICATION IS ISSUED FOR CONSTRUCTION UNLESS OTHERWISE NOTED. EXCEPT AS MODIFIED BY THE REQUIREMENT SPECIFIED HEREIN OR THE DETAILS OF THE DRAWINGS, WORK INCLUDED IN THIS SPECIFICATION SHALL CONFORM TO THE APPLICABLE PROVISION OF THESE PUBLICATIONS.

1.

ANSI/IEEE (AMERICAN NATIONAL STANDARDS INSTITUTE)

2.

ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS)

3.

ICEA (INSULATED CABLE ENGINEERS ASSOCIATION)

4.

NEMA (NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION)

5.

NFPA (NATIONAL FIRE PROTECTION ASSOCIATION)

6.

OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION)

7.

UL (UNDERWRITERS LABORATORIES INC.)

8.

AT&T GROUNDING AND BONDING STANDARDS TP-76416
- 1.4SCOPE OF WORK
- A.

WORK UNDER THIS SECTION SHALL CONSIST OF FURNISHING ALL LABOR, MATERIAL, AND ASSOCIATED SERVICES REQUIRED TO COMPLETE REQUIRED CONSTRUCTION AND BE OPERATIONAL.
- B.

ALL ELECTRICAL EQUIPMENT UNDER THIS CONTRACT SHALL BE PROPERLY TESTED, ADJUSTED, AND ALIGNED BY THE CONTRACTOR.
- C.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATING, DRAINING, TRENCHES, BACKFILLING, AND REMOVAL OF EXCESS DIRT.
- D.

THE CONTRACTOR SHALL FURNISH TO THE OWNER WITH CERTIFICATES OF A FINAL INSPECTION AND APPROVAL FROM THE INSPECTION AUTHORITIES HAVING JURISDICTION.
- E.

THE CONTRACTOR SHALL PREPARE A COMPLETE SET OF AS-BUILT DRAWINGS, DOCUMENT ALL WIRING EQUIPMENT CONDITIONS, AND CHANGES WHILE COMPLETING THIS CONTRACT. THE AS-BUILT DRAWINGS SHALL BE SUBMITTED AT COMPLETION OF THE PROJECT.

PART 2 – PRODUCTS

- 2.1GENERAL:
- A.

ALL MATERIALS AND EQUIPMENT SHALL BE UL LISTED, NEW, AND FREE FROM DEFECTS.
- B.

ALL ITEMS OF MATERIALS AND EQUIPMENT SHALL BE ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION AS SUITABLE FOR THE USE INTENDED.
- C.

ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
- D.

ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED. 10,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PER THE GOVERNING JURISDICTION.
- 2.2MATERIALS AND EQUIPMENT:
- A.

CONDUIT:

1.

RIGID METAL CONDUIT (RMC) SHALL BE HOT-DIPPED GALVANIZED INSIDE AND OUTSIDE INCLUDING ENDS AND THREADS AND ENAMELED OR LACQUERED INSIDE IN ADDITION TO GALVANIZING.

2.

LIQUIDTIGHT FLEXIBLE METAL CONDUIT SHALL BE UL LISTED.

3.

CONDUIT CLAMPS, STRAPS AND SUPPORTS SHALL BE STEEL OR MALLEABLE IRON. ALL FITTINGS SHALL BE COMPRESSION AND CONCRETE TIGHT TYPE. GROUNDING BUSHINGS WITH INSULATED THROATS SHALL BE INSTALLED ON ALL CONDUIT TERMINATIONS.

4.

NONMETALLIC CONDUIT AND FITTINGS SHALL BE SCHEDULE 40 PVC. INSTALL USING SOLVENT-CEMENT-TYPE JOINTS AS RECOMMENDED BY THE MANUFACTURER.
- B.

CONDUCTORS AND CABLE:

1.

CONDUCTORS AND CABLE SHALL BE FLAME-RETARDANT, MOISTURE AND HEAT RESISTANT THERMOPLASTIC, SINGLE CONDUCTOR, COPPER, TYPE THHN/THWN-2, 600 VOLT, SIZE AS INDICATED, #12 AWG SHALL BE THE MINIMUM SIZE CONDUCTOR USED.

2.

#10 AWG AND SMALLER CONDUCTOR SHALL BE SOLID OR STRANDED AND #8 AWG AND LARGER CONDUCTORS SHALL BE STRANDED.

3.

SOLDERLESS, COMPRESSION-TYPE CONNECTORS SHALL BE USED FOR TERMINATION OF ALL STRANDED CONDUCTORS.

4.

STRAIN-RELIEF SUPPORTS GRIPS SHALL BE HUBBELL KELLEMS OR APPROVED EQUAL. CABLES SHALL BE SUPPORTED IN ACCORDANCE WITH THE NEC AND CABLE MANUFACTURER'S RECOMMENDATIONS.

5.

ALL CONDUCTORS SHALL BE TAGGED AT BOTH ENDS OF THE CONDUCTOR, AT ALL PULL BOXES, J-BOXES, EQUIPMENT AND CABINETS AND SHALL BE IDENTIFIED WITH APPROVED PLASTIC TAGS (ACTION CRAFT, BRADY, OR APPROVED EQUAL).
- C.

DISCONNECT SWITCHES:

1.

DISCONNECT SWITCHES SHALL BE HEAVY DUTY, DEAD-FRONT, QUICK-MAKE, QUICK-BREAK, EXTERNALLY OPERABLE, HANDLE LOCKABLE AND INTERLOCK WITH COVER IN CLOSED POSITION, RATING AS INDICATED, UL LABELED FURNISHED IN NEMA 3R ENCLOSURE, SQUARE-D OR ENGINEER APPROVED EQUAL.
- D.

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM:

1.

INSTALL CHEMICAL GROUNDING AS REQUIRED. THE SYSTEM SHALL BE ELECTROLYTIC MAINTENANCE FREE ELECTRODE CONSISTING OF RODS WITH A MINIMUM #2 AWG CU EXOTHERMICALLY WELDED PIGTAIL, PROTECTIVE BOXES, AND BACKFILL MATERIAL. MANUFACTURER SHALL BE LYNCOLE XIT GROUNDING ROD TYPES K2-(\*)CS OR K2L-(\*)CS (\*) LENGTH AS REQUIRED.

2.

GROUND ACCESS BOX SHALL BE A POLYPLASTIC BOX FOR NON-TRAFFIC APPLICATIONS, INCLUDING BOLT DOWN FLUSH COVER WITH "BREATHER" HOLES, XIT MODEL #XB-22. ALL DISCONNECT SWITCHES AND CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED LAMICOID NAMEPLATES INDICATING EQUIPMENT CONTROLLED, BRANCH CIRCUITS ID NUMBERING, AND THE ELECTRICAL POWER SOURCE.

3.

BACKFILL MATERIAL SHALL BE LYNCONITE AND LYNCOLE GROUNDING GRAVEL.

- E.
- SYSTEM GROUNDING:
1.

ALL GROUNDING COMPONENTS SHALL BE TINNED AND GROUNDING CONDUCTOR SHALL BE #2 AWG BARE, SOLID, TINNED, COPPER. ABOVE GRADE GROUNDING CONDUCTORS SHALL BE INSULATED WHERE NOTED.
2.

GROUNDING BUSSES SHALL BE BARE, TINNED, ANNEALED COPPER BARS OF RECTANGULAR CROSS SECTION. STANDARD BUS BARS MGB, SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. THEY SHALL NOT BE FABRICATED OR MODIFIED IN THE FIELD. ALL GROUNDING BUSES SHALL BE IDENTIFIED WITH MINIMUM 3/4" LETTERS BY WAY OF STENCILING OR DESIGNATION PLATE.
3.

CONNECTORS SHALL BE HIGH-CONDUCTIVITY, HEAVY DUTY, LISTED AND LABELED AS GROUNDING CONNECTORS FOR THE MATERIALS USED, USE TWO-HOLE COMPRESSION LUGS WITH HEAT SHRINK FOR MECHANICAL CONNECTIONS. INTERIOR CONNECTIONS USE TWO-HOLE COMPRESSION LUGS WITH INSPECTION WINDOW AND CLEAR HEAT SHRINK.
4.

EXOTHERMIC WELDED CONNECTIONS SHALL BE PROVIDED IN KIT FORM AND SELECTED FOR THE SPECIFIC TYPES, SIZES, AND COMBINATIONS OF CONDUCTORS AND OTHER ITEMS TO BE CONNECTED.
5.

GROUND RODS SHALL BE COPPER-CLAD STEEL WITH HIGH-STRENGTH STEEL CORE AND ELECTROLYTIC-GRADE COPPER OUTER SHEATH, MOLTEN WELDED TO CORE, 5/8"x10'-0". ALL GROUNDING RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES.
6.

INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS IN COMPLIANCE WITH THE AT&T SPECIFICATIONS AND NEC. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULLBOXES, DISCONNECT SWITCHES, STARTERS, AND EQUIPMENT CABINETS.
- F.
- OTHER MATERIALS:
1.

THE CONTRACTOR SHALL PROVIDE OTHER MATERIALS, THOUGH NOT SPECIFICALLY DESCRIBED, WHICH ARE REQUIRED FOR A COMPLETELY OPERATIONAL SYSTEM AND PROPER INSTALLATION OF THE WORK.
2.

PROVIDE PULL BOXES AND JUNCTION BOXES WHERE SHOWN OR REQUIRED BY NEC.
- G.
- PANELS AND LOAD CENTERS:
1.

ALL PANEL DIRECTORIES SHALL BE TYPEWRITTEN.

PART 3 – EXECUTION

- 3.1GENERAL:
- A.

ALL MATERIAL AND EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- B.

EQUIPMENT SHALL BE TIGHTLY COVERED AND PROTECTED AGAINST DIRT OR WATER, AND AGAINST CHEMICAL OR MECHANICAL INJURY DURING INSTALLATION AND CONSTRUCTION PERIODS.
- 3.2LABOR AND WORKMANSHIP:
- A.

ALL LABOR FOR THE INSTALLATION OF MATERIALS AND EQUIPMENT FURNISHED FOR THE ELECTRICAL SYSTEM SHALL BE INSTALLED BY EXPERIENCED WIREMEN, IN A NEAT AND WORKMAN-LIKE MANNER.
- B.

ALL ELECTRICAL EQUIPMENT SHALL BE ADJUSTED, ALIGNED AND TESTED BY THE CONTRACTOR AS REQUIRED TO PRODUCE THE INTENDED PERFORMANCE.
- C.

UPON COMPLETION OF WORK, THE CONTRACTOR SHALL THOROUGHLY CLEAN ALL EXPOSED EQUIPMENT, REMOVE ALL LABELS AND ANY DEBRIS, CRATING OR CARTONS AND LEAVE THE INSTALLATION FINISHED AND READY FOR OPERATION.
- 3.3COORDINATION:
- A.

THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ELECTRICAL ITEMS WITH THE OWNER-FURNISHED EQUIPMENT DELIVERY SCHEDULE TO PREVENT UNNECESSARY DELAYS IN THE TOTAL WORK.
- 3.4INSTALLATION:
- A.

CONDUIT:

1.

ALL ELECTRICAL WIRING SHALL BE INSTALLED IN CONDUIT AS SPECIFIED. NO CONDUIT OR TUBING OF LESS THAN 3/4 INCH TRADE SIZE.

2.

PROVIDE RIGID PVC SCHEDULE 80 CONDUITS FOR ALL RISERS, RMC OTHERWISE NOTED. EMT MAY BE INSTALLED FOR EXTERIOR CONDUITS WHERE NOT SUBJECT TO PHYSICAL DAMAGE.

3.

INSTALL SCHEDULE 40 PVC CONDUIT WITH A MINIMUM COVER OF 24" UNDER ROADWAYS, PARKING LOTS, STREETS, AND ALLEYS. CONDUIT SHALL HAVE A MINIMUM COVER OF 18" IN ALL OTHER NON-TRAFFIC APPLICATIONS (REFER TO 2008 NEC, TABLE 300.5).

4.

USE GALVANIZED FLEXIBLE STEEL CONDUIT WHERE DIRECT CONNECTION TO EQUIPMENT WITH MOVEMENT, VIBRATION, OR FOR EASE OF MAINTENANCE. USE LIQUID TIGHT, FLEXIBLE METAL CONDUIT FOR OUTDOOR APPLICATIONS. INSTALL GALVANIZED FLEXIBLE STEEL CONDUIT AT ALL POINTS OF CONNECTION TO EQUIPMENT MOUNTED ON SUPPORT TO ALLOW FOR EXPANSION AND CONTRACTION.

5.

A RUN OF CONDUIT BETWEEN BOXES OR EQUIPMENT SHALL NOT CONTAIN MORE THAN THE EQUIVALENT OF THREE QUARTER-BENDS. CONDUIT BEND SHALL BE MADE WITH THE UL LISTED BENDER OR FACTORY 90 DEGREE ELBOWS MAY BE USED.

6.

FIELD FABRICATED CONDUITS SHALL BE CUT SQUARE WITH A CONDUIT CUTTING TOOL AND REAMED TO PROVIDE A SMOOTH INSIDE SURFACE.

7.

PROVIDE INSULATED GROUNDING BUSHING FOR ALL CONDUITS.

8.

CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL CONDUITS DURING CONSTRUCTION. TEMPORARY OPENINGS IN THE CONDUIT SYSTEM SHALL BE PLUGGED OR CAPPED TO PREVENT ENTRANCE OF MOISTURE OR FOREIGN MATTER. CONTRACTOR SHALL REPLACE ANY CONDUITS CONTAINING FOREIGN MATERIALS THAT CANNOT BE REMOVED.

9.

ALL CONDUITS SHALL BE SWABBED CLEAN BY PULLING AN APPROPRIATE SIZE MANDREL THROUGH THE CONDUIT BEFORE INSTALLATION OF CONDUCTORS OR CABLES. CONDUIT SHALL BE FREE OF DIRT AND DEBRIS.

10.

INSTALL PULL STRINGS IN ALL CLEAN EMPTY CONDUITS. IDENTIFY PULL STRINGS AT EACH END.

11.

INSTALL 2" HIGHLY VISIBLE AND DETECTABLE TAPE 12" ABOVE ALL UNDERGROUND CONDUITS AND CONDUCTORS.

12.

CONDUITS SHALL BE INSTALLED IN SUCH A MANNER AS TO INSURE AGAINST COLLECTION OF TRAPPED CONDENSATION.

13.

PROVIDE CORE DRILLING AS NECESSARY FOR PENETRATIONS TO ALLOW FOR RACEWAYS AND CABLES TO BE ROUTED THROUGH THE BUILDING. DO NOT PENETRATE STRUCTURAL MEMBERS. SLEEVES AND/OR PENETRATIONS IN FIRE RATED CONSTRUCTION SHALL BE EFFECTIVELY SEALED WITH FIRE RATED MATERIAL WHICH SHALL MAINTAIN THE FIRE RATING OF THE WALL OR STRUCTURE. FIRE STOPS AT FLOOR PENETRATIONS SHALL PREVENT PASSAGE OF WATER, SMOKE, FIRE, AND FUMES. ALL MATERIAL SHALL BE UL APPROVED FOR THIS PURPOSE.
- B.

CONDUCTORS AND CABLE:

1.

ALL POWER WIRING SHALL BE COLOR CODED AS FOLLOWS:

DESCRIPTION

208/240/120 VOLT SYSTEMS

PHASE A

BLACK

PHASE B

RED

PHASE C

BLUE

NEUTRAL

WHITE

GROUNDING

GREEN

2.

SPICES SHALL BE MADE ONLY AT OUTLETS, JUNCTION BOXES, OR ACCESSIBLE RACEWAY CONDUITS APPROVED FOR THIS PURPOSE.

3.

PULLING LUBRICANTS SHALL BE UL APPROVED. CONTRACTOR SHALL USE NYLON OR HEMP ROPE FOR PULLING CONDUCTOR OR CABLES INTO THE CONDUIT.

4.

CABLES SHALL BE NEATLY TRAINED, WITHOUT INTERLACING, AND BE OF SUFFICIENT LENGTH IN ALL BOXES & EQUIPMENT TO PERMIT MAKING A NEAT ARRANGEMENT. CABLES SHALL BE SECURED IN A MANNER TO AVOID TENSION ON CONDUCTORS OR TERMINALS. CONDUCTORS SHALL BE PROTECTED FROM MECHANICAL INJURY AND MOISTURE. SHARP BENDS OVER CONDUIT BUSHINGS IS PROHIBITED. DAMAGED CABLES SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.

- C.
- DISCONNECT SWITCHES:
1.

INSTALL DISCONNECT SWITCHES LEVEL AND PLUMB. CONNECT TO WIRING SYSTEM AND GROUNDING SYSTEM AS INDICATED.
- D.
- GROUNDING:
1.

ALL METALLIC PARTS OF ELECTRICAL EQUIPMENT WHICH DO NOT CARRY CURRENT SHALL BE GROUNDED IN ACCORDANCE WITH THE REQUIREMENTS OF THE BUILDING MANUFACTURER, AT&T GROUNDING AND BONDING STANDARDS TP-76416, ND-00135, AND THE NATIONAL ELECTRICAL CODE.
2.

PROVIDE ELECTRICAL GROUNDING AND BONDING SYSTEM INDICATED WITH ASSEMBLY OF MATERIALS, INCLUDING GROUNDING ELECTRODES, BONDING JUMPERS AND ADDITIONAL ACCESSORIES AS REQUIRED FOR A COMPLETE INSTALLATION.
3.

ALL GROUNDING CONDUCTORS SHALL PROVIDE A STRAIGHT DOWNWARD PATH TO GROUND WITH GRADUAL BEND AS REQUIRED. GROUNDING CONDUCTORS SHALL NOT BE LOOPED OR SHARPLY BENT. ROUTE GROUNDING CONNECTIONS AND CONDUCTORS TO GROUND IN THE SHORTEST AND STRAIGHTEST PATHS POSSIBLE TO MINIMIZE TRANSIENT VOLTAGE RISES.
4.

BUILDINGS AND/OR NEW TOWERS GREATER THAN 75 FEET IN HEIGHT AND WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 AWG COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). SEE STANDARD 6.3.2.2.
5.

TIGHTEN GROUNDING AND BONDING CONNECTORS, INCLUDING SCREWS AND BOLTS, IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED TORQUE TIGHTENING VALUES FOR CONNECTORS AND BOLTS. WHERE MANUFACTURER'S TORQUING REQUIREMENTS ARE NOT AVAILABLE, TIGHTEN CONNECTIONS TO COMPLY WITH TIGHTENING TORQUE VALUES SPECIFIED IN UL TO ASSURE PERMANENT AND EFFECTIVE GROUNDING.
6.

CONTRACTOR SHALL VERIFY THE LOCATIONS OF GROUNDING TIE-IN-POINTS TO THE EXISTING GROUNDING SYSTEM. ALL UNDERGROUND GROUNDING CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC WELD PROCESS AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
7.

ALL GROUNDING CONNECTIONS SHALL BE INSPECTED FOR TIGHTNESS. EXOTHERMIC WELDED CONNECTIONS SHALL BE APPROVED BY THE INSPECTOR HAVING JURISDICTION BEFORE BEING PERMANENTLY CONCEALED.
8.

APPLY CORROSION-RESISTANT FINISH TO FIELD CONNECTIONS AND PLACES WHERE FACTORY APPLIED PROTECTIVE COATINGS HAVE BEEN DESTROYED. USE KOPR-SHIELD ANTI-OXIDATION COMPOUND ON ALL COMPRESSION GROUNDING CONNECTIONS.
9.

A SEPARATE, CONTINUOUS, INSULATED EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED IN ALL FEEDER AND BRANCH CIRCUITS.
10.

BOND ALL INSULATED GROUNDING BUSHINGS WITH A BARE #6 AWG GROUNDING CONDUCTOR TO A GROUND BUS.
11.

DIRECT BURIED GROUNDING CONDUCTORS SHALL BE INSTALLED AT A NOMINAL DEPTH OF 36" MINIMUM BELOW GRADE, OR 6" BELOW THE FROST LINE, USE THE GREATER OF THE TWO DISTANCES.
12.

ALL GROUNDING CONDUCTORS EMBEDDED IN OR PENETRATING CONCRETE SHALL BE INSTALLED IN SCHEDULE 40 PVC CONDUIT.
13.

THE INSTALLATION OF CHEMICAL ELECTROLYTIC GROUNDING SYSTEM IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. REMOVE SEALING TAPE FROM LEACHING AND BREATHER HOLES. INSTALL PROTECTIVE BOX FLUSH WITH GRADE.
14.

DRIVE GROUND RODS UNTIL TOPS ARE A MINIMUM DISTANCE OF 36" DEPTH OR 6" BELOW FROST LINE, USING THE GREATER OF THE TWO DISTANCES.
15.

IF COAX ON THE ICE BRIDGE IS MORE THAN 6 FT. FROM THE GROUNDING BAR AT THE BASE OF THE TOWER, A SECOND GROUNDING BAR WILL BE NEEDED AT THE END OF THE ICE BRIDGE, TO GROUND THE COAX CABLE GROUNDING KITS AND IN-LINE ARRESTORS.
16.

CONTRACTOR SHALL REPAIR, AND/OR REPLACE, EXISTING GROUNDING SYSTEM COMPONENTS DAMAGED DURING CONSTRUCTION AT THE CONTRACTORS EXPENSE.
- 3.5ACCEPTANCE TESTING:
- A.

CERTIFIED PERSONNEL USING CERTIFIED EQUIPMENT SHALL PERFORM REQUIRED TESTS AND SUBMIT WRITTEN TEST REPORTS UPON COMPLETION.
- B.

WHEN MATERIAL AND/OR WORKMANSHIP IS FOUND NOT TO COMPLY WITH THE SPECIFIED REQUIREMENTS, THE NON-COMPLYING ITEMS SHALL BE REMOVED FROM THE PROJECT SITE AND REPLACED WITH ITEMS COMPLYING WITH THE SPECIFIED REQUIREMENTS PROMPTLY AFTER RECEIPT OF NOTICE FOR NON-COMPLIANCE.
- C.

TEST PROCEDURES:

1.

ALL FEEDERS SHALL HAVE INSULATION TESTED AFTER INSTALLATION, BEFORE CONNECTION TO DEVICES. THE CONDUCTORS SHALL TEST FREE FROM SHORT CIRCUITS AND GROUNDS. TESTING SHALL BE FOR ONE MINUTE USING 1000V DC. PROVIDE WRITTEN DOCUMENTATION FOR ALL TEST RESULTS.

2.

PRIOR TO ENERGIZING CIRCUITRY, TEST WIRING DEVICES FOR ELECTRICAL CONTINUITY AND PROPER POLARITY CONNECTIONS.

3.

MEASURE AND RECORD VOLTAGES BETWEEN PHASES AND BETWEEN PHASE CONDUCTORS AND NEUTRALS. SUBMIT A REPORT OF MAXIMUM AND MINIMUM VOLTAGES.

4.

PERFORM GROUNDING TEST TO MEASURE GROUNDING RESISTANCE OF GROUNDING SYSTEM USING THE IEEE STANDARD 3-POINT "FALL-OF-POTENTIAL" METHOD. PROVIDE PLOTTED TEST VALUES AND LOCATION SKETCH. NOTIFY THE ENGINEER IMMEDIATELY IF MEASURED VALUE IS OVER 5 OHMS.

AT&T  
MOBILITY

7900 XERXES AVE S  
3RD FLOOR  
BLOOMINGTON MN 55431



BLACK & VEATCH

BLACK & VEATCH CORPORATION  
7760 FRANCE AVENUE SOUTH  
SUITE 1200  
BLOOMINGTON, MN 55435

PROJECT NO: 129049.4004

DRAWN BY: VPB

CHECKED BY: JAT

0	07/24/19	ISSUED FOR CONSTRUCTION
REV	DATE	DESCRIPTION

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DELANO COUNTY LINE  
MNL01123  
3310 COUNTY LINE ROAD SE  
DELANO, MN 55328  
NSB – WIC

SHEET TITLE  
ELECTRICAL SECTION  
NOTES

SHEET NUMBER

E-8



GENERAL CONSTRUCTION

- FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:  
GENERAL CONTRACTOR – OVERLAND CONTRACTING INC. (B&V)  
CONTRACTOR: (CONSTRUCTION)  
OWNER – AT&T
- ALL SITE WORK SHALL BE COMPLETED AS INDICATED ON THE DRAWINGS AND AT&T PROJECT SPECIFICATIONS.
- GENERAL CONTRACTOR SHALL VISIT THE SITE AND SHALL FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS, DIMENSIONS, AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. GENERAL CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF WORK.
- ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES, AND APPLICABLE REGULATIONS.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY UNLESS OTHERWISE NOTED. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS THE MINIMUM REQUIRED CLEARANCE. THEREFORE, IT IS CRITICAL TO FIELD VERIFY DIMENSIONS, SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF WORK AND PREPARED BY THE ENGINEER PRIOR TO PROCEEDING WITH WORK.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER’S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE ENGINEER PRIOR TO PROCEEDING.
- GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF WORK AREA, ADJACENT AREAS AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER THIS CONTRACT. WORK SHALL CONFIRM TO ALL OSHA REQUIREMENTS AND THE LOCAL JURISDICTION.
- GENERAL CONTRACTOR SHALL COORDINATE WORK AND SCHEDULE WORK ACTIVITIES WITH OTHER DISCIPLINES.
- ERECTION SHALL BE DONE IN A WORKMANLIKE MANNER BY COMPETENT EXPERIENCED WORKMAN IN ACCORDANCE WITH APPLICABLE CODES AND THE BEST ACCEPTED PRACTICE. ALL MEMBERS SHALL BE LAID PLUMB AND TRUE AS INDICATED ON THE DRAWINGS.
- SEAL PENETRATIONS THROUGH FIRE RATED AREAS WITH UL LISTED MATERIALS APPROVED BY LOCAL JURISDICTION. CONTRACTOR SHALL KEEP AREA CLEAN, HAZARD FREE, AND DISPOSE OF ALL DEBRIS.
- WORK PREVIOUSLY COMPLETED IS REPRESENTED BY LIGHT SHADED LINES AND NOTES. THE SCOPE OF WORK FOR THIS PROJECT IS REPRESENTED BY DARK SHADED LINES AND NOTES. CONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR OF ANY EXISTING CONDITIONS THAT DEVIATE FROM THE DRAWINGS PRIOR TO BEGINNING CONSTRUCTION.
- CONTRACTOR SHALL PROVIDE WRITTEN NOTICE TO THE CONSTRUCTION MANAGER 48 HOURS PRIOR TO COMMENCEMENT OF WORK.
- THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR’S EXPENSE TO THE SATISFACTION OF THE OWNER.
- THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
- GENERAL CONTRACTOR SHALL COORDINATE AND MAINTAIN ACCESS FOR ALL TRADES AND CONTRACTORS TO THE SITE AND/OR BUILDING.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SECURITY OF THE SITE FOR THE DURATION OF CONSTRUCTION UNTIL JOB COMPLETION.
- THE GENERAL CONTRACTOR SHALL MAINTAIN IN GOOD CONDITION ONE COMPLETE SET OF PLANS WITH ALL REVISIONS, ADDENDA, AND CHANGE ORDERS ON THE PREMISES AT ALL TIMES.
- THE GENERAL CONTRACTOR SHALL PROVIDE PORTABLE FIRE EXTINGUISHERS WITH A RATING OF NOT LESS THAN 2-A OT 2-A-10-B-C AND SHALL BE WITHIN 25 FEET OF TRAVEL DISTANCE TO ALL PORTIONS OF WHERE THE WORK IS BEING COMPLETED DURING CONSTRUCTION.
- ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS SHALL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION, B) CONFINED SPACE, C) ELECTRICAL SAFETY, AND D) TRENCHING & EXCAVATION.
- ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED, CAPPED, PLUGGED OR OTHERWISE DISCONNECTED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE RESPONSIBLE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE OWNER AND/OR LOCAL UTILITIES.
- THE AREAS OF THE OWNER’S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION.
- CONTRACTOR SHALL MINIMIZE DISTURBANCE TO THE EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE FEDERAL AND LOCAL JURISDICTION FOR EROSION AND SEDIMENT CONTROL.
- NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUNDING. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
- THE SUBGRADE SHALL BE BROUGHT TO A SMOOTH UNIFORM GRADE AND COMPACTED TO 95 PERCENT STANDARD PROCTOR DENSITY UNDER PAVEMENT AND STRUCTURES AND 80 PERCENT STANDARD PROCTOR DENSITY IN OPEN SPACE. ALL TRENCHES IN PUBLIC RIGHT OF WAY SHALL BE BACKFILLED WITH FLOWABLE FILL OR OTHER MATERIAL PRE-APPROVED BY THE LOCAL JURISDICTION.
- ALL NECESSARY RUBBISH, STUMPS, DEBRIS, STICKS, STONES, AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LAWFUL MANNER.
- ALL BROCHURES, OPERATING AND MAINTENANCE MANUALS, CATALOGS, SHOP DRAWINGS, AND OTHER DOCUMENTS SHALL BE TURNED OVER TO THE GENERAL CONTRACTOR AT COMPLETION OF CONSTRUCTION AND PRIOR TO PAYMENT.
- CONTRACTOR SHALL SUBMIT A COMPLETE SET OF AS-BUILT REDLINES TO THE GENERAL CONTRACTOR UPON COMPLETION OF PROJECT AND PRIOR TO FINAL PAYMENT.
- CONTRACTOR SHALL LEAVE PREMISES IN A CLEAN CONDITION.
- THE PROPOSED FACILITY WILL BE UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SEWER SERVICE, AND IS NOT FOR HUMAN HABITAT (NO HANDICAP ACCESS REQUIRED).
- OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION, APPROXIMATELY 2 TIMES PER MONTH, BY AT&T TECHNICIANS.
- NO OUTDOOR STORAGE OR SOLID WASTE CONTAINERS ARE PROPOSED.
- ALL MATERIAL SHALL BE FURNISHED AND WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST REVISION AT&T MOBILITY GROUNDING STANDARD "TECHNICAL SPECIFICATION FOR CONSTRUCTION OF GSM/GPRS WIRELESS SITES" AND "TECHNICAL SPECIFICATION FOR FACILITY GROUNDING". IN CASE OF A CONFLICT BETWEEN THE CONSTRUCTION SPECIFICATION AND THE DRAWINGS, THE DRAWINGS SHALL GOVERN.

- CONTRACTORS SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS REQUIRED FOR CONSTRUCTION. IF CONTRACTOR CANNOT OBTAIN A PERMIT, THEY MUST NOTIFY THE GENERAL CONTRACTOR IMMEDIATELY.
- CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE ON A DAILY BASIS.
- INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FROM SITE VISITS AND/OR DRAWINGS PROVIDED BY THE SITE OWNER. CONTRACTORS SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
- NO WHITE STROBE LIGHTS ARE PERMITTED. LIGHTING IF REQUIRED, WILL MEET FAA STANDARDS AND REQUIREMENTS.
- ALL COAXIAL CABLE INSTALLATIONS TO FOLLOW MANUFACTURER’S INSTRUCTIONS AND RECOMMENDATIONS.

ANTENNA MOUNTING

- DESIGN AND CONSTRUCTION OF ANTENNA SUPPORTS SHALL CONFORM TO CURRENT ANSI/TIA-222 OR APPLICABLE LOCAL CODES.
- ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS NOTED OTHERWISE.
- ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS NOTED OTHERWISE.
- DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780.
- ALL ANTENNA MOUNTS SHALL BE INSTALLED WITH LOCK NUTS, DOUBLE NUTS AND SHALL BE TORQUED TO MANUFACTURER’S RECOMMENDATIONS.
- CONTRACTOR SHALL INSTALL ANTENNA PER MANUFACTURER’S RECOMMENDATION FOR INSTALLATION AND GROUNDING.
- ALL UNUSED PORTS ON ANY ANTENNAS SHALL BE TERMINATED WITH A 50-OHM LOAD TO ENSURE ANTENNAS PERFORM AS DESIGNED.
- PRIOR TO SETTING ANTENNA AZIMUTHS AND DOWNTILTS, ANTENNA CONTRACTOR SHALL CHECK THE ANTENNA MOUNT FOR TIGHTNESS AND ENSURE THAT THEY ARE PLUMB. ANTENNA AZIMUTHS SHALL BE SET FROM TRUE NORTH AND BE ORIENTED WITHIN +/- 5% AS DEFINED BY THE RFDS. ANTENNA DOWNTILTS SHALL BE WITHIN +/- 0.5% AS DEFINED BY THE RFDS. REFER TO ND-00246.
- JUMPERS FROM THE TMA<sub>s</sub> MUST TERMINATE TO OPPOSITE POLARIZATION’S IN EACH SECTOR.
- CONTRACTOR SHALL RECORD THE SERIAL #, SECTOR, AND POSITION OF EACH ACTUATOR INSTALLED AT THE ANTENNAS AND PROVIDE THE INFORMATION TO AT&T.
- TMA<sub>s</sub> SHALL BE MOUNTED ON PIPE DIRECTLY BEHIND ANTENNAS AS CLOSE TO ANTENNA AS FEASIBLE IN A VERTICAL POSITION.

TORQUE REQUIREMENTS

- ALL RF CONNECTIONS SHALL BE TIGHTENED BY A TORQUE WRENCH.
- ALL RF CONNECTIONS, GROUNDING HARDWARE AND ANTENNA HARDWARE SHALL HAVE A TORQUE MARK INSTALLED IN A CONTINUOUS STRAIGHT LINE FROM BOTH SIDES OF THE CONNECTION.
  - RF CONNECTION BOTH SIDES OF THE CONNECTOR.
  - GROUNDING AND ANTENNA HARDWARE ON THE NUT SIDE STARTING FROM THE THREADS TO THE SOLID SURFACE. EXAMPLE OF SOLID SURFACE: GROUND BAR, ANTENNA BRACKET METAL.
- ALL 8M ANTENNA HARDWARE SHALL BE TIGHTENED TO 9 LB-FT (12 NM).
- ALL 12M ANTENNA HARDWARE SHALL BE TIGHTENED TO 43 LB-FT (58 NM).
- ALL GROUNDING HARDWARE SHALL BE TIGHTENED UNTIL THE LOCK WASHER COLLAPSES AND THE GROUNDING HARDWARE IS NO LONGER LOOSE.
- ALL DIN TYPE CONNECTIONS SHALL BE TIGHTENED TO 18-22 LB-FT (24.4 – 29.8 NM).
- ALL N TYPE CONNECTIONS SHALL BE TIGHTENED TO 15-20 LB-IN (1.7 – 2.3 NM).

FIBER & POWER CABLE MOUNTING

- THE FIBER OPTIC TRUNK CABLES SHALL BE INSTALLED INTO CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY. WHEN INSTALLING FIBER OPTIC TRUNK CABLES INTO A CABLE TRAY SYSTEM, THEY SHALL BE INSTALLED INTO AN INTER DUCT AND A PARTITION BARRIER SHALL BE INSTALLED BETWEEN THE 600 VOLT CABLES AND THE INTER DUCT IN ORDER TO SEGREGATE CABLE TYPES. OPTIC FIBER TRUNK CABLES SHALL HAVE APPROVED CABLE RESTRAINTS EVERY (60) SIXTY FEET AND SECURELY FASTENED TO THE CABLE TRAY SYSTEM. NFPA 70 (NEC) ARTICLE 770 RULES SHALL APPLY.
- THE TYPE TC-ER CABLES SHALL BE INSTALLED INTO CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY AND SHALL BE SECURED AT INTERVALS NOT EXCEEDING (6) SIX FEET. AN EXCEPTION; WHERE TYPE TC-ER CABLES ARE NOT SUBJECT TO PHYSICAL DAMAGE, CABLES SHALL BE PERMITTED TO MAKE A TRANSITION BETWEEN CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY WHICH ARE SERVING UTILIZATION EQUIPMENT OR DEVICES, A DISTANCE OF (6) SIX FEET SHALL NOT BE EXCEEDED WITHOUT CONTINUOUS SUPPORTING. NFPA 70 (NEC) ARTICLES 336 AND 392 RULES SHALL APPLY.
- WHEN INSTALLING OPTIC FIBER TRUNK CABLES OR TYPE TC-ER CABLES INTO CONDUITS, NFPA 70 (NEC) ARTICLE 300 RULES SHALL APPLY.

COAXIAL CABLE NOTES

- TYPES AND SIZES OF THE ANTENNA CABLE ARE BASED ON ESTIMATED LENGTHS. PRIOR TO ORDERING CABLE, CONTRACTOR SHALL VERIFY ACTUAL LENGTH BASED ON CONSTRUCTION LAYOUT AND NOTIFY THE PROJECT MANAGER IF ACTUAL LENGTHS EXCEED ESTIMATED LENGTHS.
- CONTRACTOR SHALL VERIFY THE DOWN-TILT OF EACH ANTENNA WITH A DIGITAL LEVEL.
- CONTRACTOR SHALL CONFIRM COAX COLOR CODING PRIOR TO CONSTRUCTION. REFER TO "ANTENNA SYSTEM LABELING STANDARD" ND-00027 LATEST VERSION.
- ALL JUMPERS TO THE ANTENNAS FROM THE MAIN TRANSMISSION LINE SHALL BE 1/2" DIA. LDF AND SHALL NOT EXCEED 6’-0”.
- ALL COAXIAL CABLE SHALL BE SECURED TO THE DESIGNED SUPPORT STRUCTURE, IN AN APPROVED MANNER, AT DISTANCES NOT TO EXCEED 4’-0” OC.
- CONTRACTOR SHALL FOLLOW ALL MANUFACTURER’S RECOMMENDATIONS REGARDING BOTH THE INSTALLATION AND GROUNDING OF ALL COAXIAL CABLES, CONNECTORS, ANTENNAS, AND ALL OTHER EQUIPMENT.
- CONTRACTOR SHALL WEATHERPROOF ALL ANTENNA CONNECTORS WITH SELF AMALGAMATING TAPE. WEATHERPROOFING SHALL BE COMPLETED IN STRICT ACCORDANCE WITH AT&T STANDARDS.
- CONTRACTOR SHALL GROUND ALL EQUIPMENT. INCLUDING ANTENNAS, RET MOTORS, TMA<sub>s</sub>, COAX CABLES, AND RET CONTROL CABLES AS A COMPLETE SYSTEM. GROUNDING SHALL BE EXECUTED BY QUALIFIED WIREMEN IN COMPLIANCE WITH MANUFACTURER’S SPECIFICATION AND RECOMMENDATION.

- CONTRACTOR SHALL PROVIDE STRAIN-RELIEF AND CABLE SUPPORTS FOR ALL CABLE ASSEMBLIES, COAX CABLES, AND RET CONTROL CABLES. CABLE STRAIN-RELIEFS AND CABLE SUPPORTS SHALL BE APPROVED FOR THE PURPOSE. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER’S SPECIFICATIONS AND RECOMMENDATIONS.
- CONTRACTOR TO VERIFY THAT EXISTING COAX HANGERS ARE STACKABLE SNAP IN HANGERS. IF EXISTING HANGERS ARE NOT STACKABLE SNAP IN HANGERS THE CONTRACTOR SHALL REPLACE EXISTING HANGERS WITH NEW SNAP IN HANGERS IF APPLICABLE.

GENERAL CABLE AND EQUIPMENT NOTES

- CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ANTENNA, TMA<sub>s</sub>, DIPLEXERS, AND COAX CONFIGURATION, MAKE AND MODELS PRIOR TO INSTALLATION.
- ALL CONNECTIONS FOR HANGERS, SUPPORTS, BRACING, ETC. SHALL BE INSTALLED PER TOWER MANUFACTURER’S RECOMMENDATIONS.
- CONTRACTOR SHALL REFERENCE THE TOWER STRUCTURAL ANALYSIS/DESIGN DRAWINGS FOR DIRECTIONS ON CABLE DISTRIBUTION/ROUTING.
- ALL OUTDOOR RF CONNECTORS/CONNECTIONS SHALL BE WEATHERPROOFED, EXCEPT THE RET CONNECTORS, USING BUTYL TAPE AFTER INSTALLATION AND FINAL CONNECTIONS ARE MADE. BUTYL TAPE SHALL HAVE A MINIMUM OF ONE-HALF TAPE WIDTH OVERLAP ON EACH TURN AND EACH LAYER SHALL BE WRAPPED THREE TIMES. WEATHERPROOFING SHALL BE SMOOTH WITHOUT BUCKLING. BUTYL BLEEDING IS NOT ALLOWED.
- IF REQUIRED TO PAINT ANTENNAS AND/OR COAX:
  - TEMPERATURE SHALL BE ABOVE 50° F.
  - PAINT COLOR MUST BE APPROVED BY BUILDING OWNER/LANDLORD.
  - FOR REGULATED TOWERS, FAA/FCC APPROVED PAINT IS REQUIRED.
  - DO NOT PAINT OVER COLOR CODING OR ON EQUIPMENT MODEL NUMBERS.
- ALL CABLES SHALL BE GROUNDIED WITH COAXIAL CABLE GROUND KITS. FOLLOW THE MANUFACTURER’S RECOMMENDATIONS.
  - GROUNDING AT THE ANTENNA LEVEL.
  - GROUNDING AT MID LEVEL, TOWERS WHICH ARE OVER 200’-0”, ADDITIONAL CABLE GROUNDING REQUIRED.
  - GROUNDING AT BASE OF TOWER PRIOR TO TURNING HORIZONTAL.
  - GROUNDING OUTSIDE THE EQUIPMENT SHELTER AT ENTRY PORT.
  - GROUNDING INSIDE THE EQUIPMENT SHELTER AT THE ENTRY PORT.
- ALL PROPOSED GROUND BAR DOWNLEADS ARE TO BE TERMINATED TO THE EXISTING ADJACENT GROUND BAR DOWNLEADS A MINIMUM DISTANCE OF 4’-0” BELOW GROUND BAR. TERMINATIONS MAY BE EXOTHERMIC OR COMPRESSION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ANTENNA AND THE COAX CONFIGURATION IS THE CORRECT MAKE AND MODELS, PRIOR TO INSTALLATION.
- ALL CONNECTIONS FOR HANGERS, SUPPORTS, BRACING, ETC. SHALL BE INSTALLED PER TOWER MANUFACTURER’S SPECIFICATION & RECOMMENDATIONS.
- ANTENNA CONTRACTOR SHALL FURNISH AND INSTALL A 12’-0” STAND-OFF SECTOR ANTENNA MOUNT, OR 14’-16” PLATFORM WITH HANDRAIL, INCLUDING ALL HARDWARE AS REQUIRED AND NOTED ON DRAWINGS.

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BLACK & VEATCH

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MNL01123  
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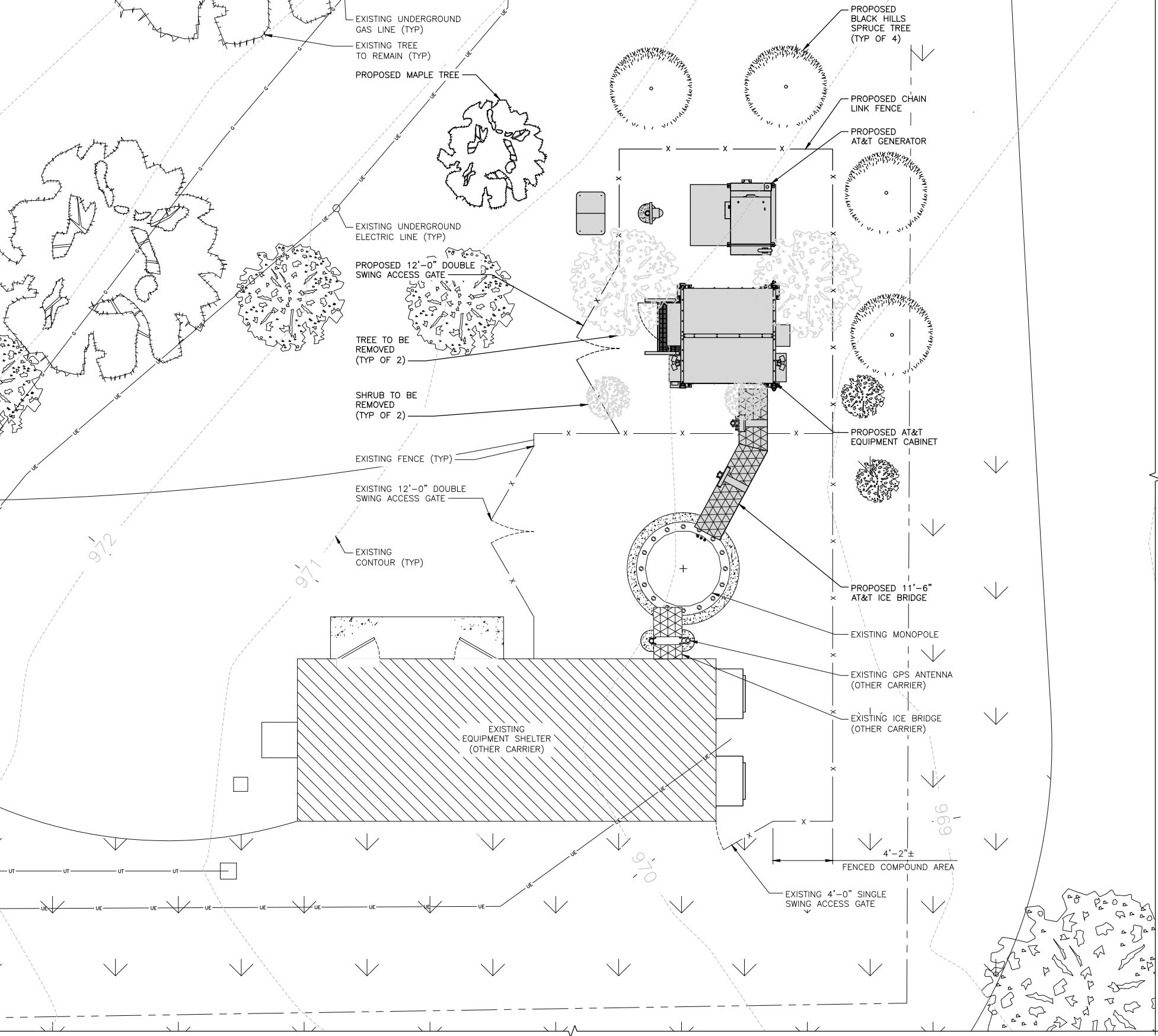
SHEET TITLE  
  
GENERAL NOTES

SHEET NUMBER  
  
N-2

GENERAL NOTES

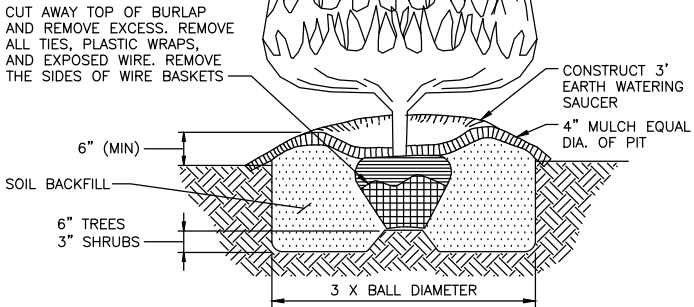


NOTE:  
EXISTING UTILITIES MUST BE PROTECTED DURING CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.



LANDSCAPE PLAN

NOTE  
FOR CONTAINER GROWN PLANTS:  
ALL ROOT BALLS SHALL BE  
REMOVED FROM CANS AND SHALL  
BE SCARIFIED PRIOR TO PLANTING.



PLANTING DETAIL

NO SCALE

2

1. IF TRANSFORMERS, GROUND-MOUNTED HVAC UNITS, UTILITY PEDESTALS, ETC. ARE NOT SHOWN ON THE SITE PLAN, ADDITIONAL LANDSCAPING/SCREENING MAY BE REQUIRED BASED UPON FIELD CONDITIONS DISCOVERED VIA THE SITE INSPECTION MADE BY STAFF PRIOR TO ISSUANCE OF THE CO, OR FINAL INSPECTION, AS APPLICABLE.
2. ALL PLANTS MUST BE HEALTHY, VIGOROUS MATERIAL, FREE OF PEST AND DISEASE.
3. ALL PLANTS MUST BE CONTAINER-GROWN OR BALLED AND BURLAPPED AS SPECIFIED.
4. ALL TREES MUST BE STRAIGHT TRUNKED, FULL HEADED AND MEET ALL REQUIREMENTS SPECIFIED.
5. ALL PLANTS ARE SUBJECT TO THE APPROVAL OF THE OWNER'S REPRESENTATIVE BEFORE, DURING AND AFTER INSTALLATION.
6. ALL TREES MUST BE GUYED OR STAKED.
7. ALL PLANTS AND PLANTING AREAS MUST BE COMPLETELY MULCHED AS SPECIFIED.
8. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL AVOID DAMAGE TO ALL UTILITIES DURING COURSE OF WORK. EXISTING UTILITIES MUST BE PROTECTED DURING CONSTRUCTION OF THE PROPOSED IMPROVEMENTS. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL DAMAGE TO UTILITIES.
9. THE CONTRACTOR IS RESPONSIBLE FOR FULLY MAINTAINING ALL PLANTING AREAS (INCLUDING, BUT NOT LIMITED TO: WATERING, SPRAYING, MULCHING, FERTILIZATION, ETC.) UNTIL THE WORK IS FULLY ACCEPTED.
10. THE CONTRACTOR SHALL COMPLETELY GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF (1) ONE YEAR BEGINNING AT THE DATE OF TOTAL ACCEPTANCE. THE CONTRACTOR SHALL PROMPTLY MAKE ALL REPLACEMENTS BEFORE OR AT THE END OF THE GUARANTEE PERIOD.
11. THE OWNER'S REPRESENTATIVE WILL APPROVE THE STAKED LOCATION OF ALL PLANT MATERIAL PRIOR TO INSTALLATION.
12. AFTER BEING DUG AT THE NURSERY SOURCE, ALL TREES IN LEAF SHALL BE ACCUMULATED FOR TWO (2) WEEKS UNDER A MIST SYSTEM PRIOR TO INSTALLATION.
13. ANY PLANT MATERIAL THAT DIES, TURNS BROWN OR DEFOLIATES (PRIOR TO TOTAL ACCEPTANCE OF THE WORK SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY, SIZE AND MEETING ALL SPECIFICATIONS.
14. STANDARDS SET FORTH IN "AMERICAN STANDARD FOR NURSERY STOCK". LATEST EDITION REPRESENTS GUIDELINE SPECIFICATIONS ONLY AND SHALL CONSTITUTE MINIMUM QUALITY REQUIREMENTS FOR PLANT MATERIAL.
15. ALL REQUIRED TREE PROTECTION MEASURES SHALL BE INSTALLED PRIOR TO GRADING OR EXCAVATING.
16. UNDISTURBED BUFFERS SHALL BE REPLANTED TO BUFFER STANDARDS WHERE SPARSELY VEGETATED OR WHERE DISTURBED AT APPROVED UTILITY CROSSINGS. REPLANTING IS SUBJECT COUNTY ARBORIST APPROVAL.

PLANTING NOTES

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SHEET TITLE  
LANDSCAPE PLAN

SHEET NUMBER  
LS-1

## City of Independence

### *Request for an Amendment to the Interim Use Permit for the Property located at 5835 Drake Drive*

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<i>To:</i>	City Council
<i>From:</i>	Mark Kaltsas, City Planner
<i>Meeting Date:</i>	October 1, 2019
<i>Applicant:</i>	Anita Volkenant
<i>Owner:</i>	Anita Volkenant
<i>Location:</i>	5835 Drake Drive

#### ***Request:***

Anita Volkenant (Applicant/Owner) requests that the City consider the following actions for the property located at 5835 Drake Drive, Independence, MN (PID No. 26-118-24-43-0006):

- a. An amendment to the interim use permit allowing horticulture use of the subject property.

#### ***Property/Site Information:***

The property is located at 5835 Drake Drive which is on the south side of Drake Drive between County Road 83 and County Road 90. There is an existing home located on the property along with 5 detached permanent accessory structures and 2 detached temporary hoop houses. The property has the additional following characteristics.

Property Information: 5835 Drake Drive

Zoning: *Rural Residential*

Comprehensive Plan: *Rural Residential*

Acreage: 3.8 *acres*

5835 Drake Drive: Aerial View



**Discussion:**

The City granted an interim use permit (IUP) in April of 2019 to allow the continued use of horticulture on the subject property. The IUP was approved subject to a settlement and stipulation agreement which further detailed the conditions of the IUP approval. One of the conditions related to the two hoop houses located on the property. The agreement included the following provisions relating to the hoop houses on the property:

*There are currently two temporary hoop houses situated on the Property (the "Hoop Houses"). Volkenant and PVG agree that the Hoop Houses will be utilized for Horticultural Purposes, and the City consents to the continued use of the Hoop Houses on the Property for Horticultural Purposes. Volkenant and the City further agree as follows:*

- (i) Volkenant shall be allowed to maintain the temporary plastic covering on the 30X1 00 Hoop House year-round.*
- (ii) Between November 1 and December 1 of each calendar year, Volkenant shall be allowed to install the temporary plastic covering*

*on the 20X80 Hoop House that is currently situated on the Property;*

*(iii) Between July 1 and July 30 of each calendar year, Volkenant shall remove the temporary plastic covering from the 20X80 Hoop House that is currently situated on the Property; and*

*(iv) Volkenant shall not install any additional temporary hoop house structures on the Property without prior City review and approval.*

The current agreement requires the applicant to remove the temporary plastic covering from the 20 x 80 hoop house between the dates of July 1 and July 30. The applicant is now asking the City to consider allowing the temporary plastic covering to remain on the 20 X 80 hoop house year-round.

There are several key considerations relating to the proposed amendment to the interim use permit that should be noted and further considered by the City.

1. The City regulates the total square footage of detached accessory structures on a property. The subject property would allow for a total of 3,306 SF (165,315 SF x 2%). The applicant currently has the following detached accessory structures on the property totaling 3,457 SF:
  - a. Garage: 600 SF
  - b. Garage #1: 270 SF
  - c. Garage #2: 420 SF
  - d. Barn & Lean-to: 881 SF
  - e. Shed: 736 SF
  - f. Lean-to: 550 SF

In addition, the applicant has the following hoop houses totaling 4,600 SF:

- a. Hoop House #1: 3,000 SF (300' x 100')
- b. Hoop House #2: 1,600 SF (20' x 80')

The total square footage of detached accessory structures on the property is 8,057 SF. This total is more than twice the allowable square footage of 3,306 SF.

The square footage of detached accessory structure exceeds the allowable amount permitted on the property. All of the permanent detached buildings are existing and considered legal-non-conforming. The two hoop houses (greenhouses) on the property were constructed in the last 5 years without approval from the City. The applicant noted that they believe the structures to be temporary and considered agricultural buildings which would not require a building permit. The City does not differentiate between temporary and permanent structures in the zoning ordinance and the hoop houses are considered permanent accessory structures.

The City will need to find that it should permit more than double the allowable square footage on the property and the buildings are adequately mitigated so as to not take away from the reasonable use and enjoyment of the surrounding properties.

The City has criteria relating to interim use permits. One of the criteria of an interim use permit is that it meets the standards for granting a conditional use permit. The following criteria have been established for both an interim use permit and conditional use permit:

1. *The use is deemed temporary and the use conforms to the development and performance standards of the zoning regulations.*
2. *The date or event that will terminate the use can be identified with certainty.*
3. *Allowing the use will not impose additional costs on the public if it is necessary for the public to take the property in the future.*
4. *The user agrees to any conditions that the city council deems appropriate for allowing the use.*
5. *The use meets the standards set forth in subsection 520.11 governing conditional use permits.*

The criteria for granting a conditional use permit are clearly delineated in the City's Zoning Ordinance (Section 520.11 subd. 1, a-i) as follows:

1. *The conditional use will not adversely affect the health, safety, morals and general welfare of occupants of surrounding lands.*
2. *The proposed use will not have a detrimental effect on the use and enjoyment of other property in the immediate vicinity for the proposes already permitted or on the normal and orderly development and improvement of surrounding vacant property for uses predominant in the area.*
3. *Existing roads and proposed access roads will be adequate to accommodate anticipated traffic.*
4. *Sufficient off-street parking and loading space will be provided to serve the proposed use.*
5. *The proposed conditional use can be adequately serviced by public utilities or on-site sewage treatment, and sufficient area of suitable soils for on-site sewage treatment is available to protect the city form pollution hazards.*
6. *The proposal includes adequate provision for protection of natural drainage systems, natural topography, tree growth, water courses, wetlands, historic sites and similar ecological and environmental features.*
7. *The proposal includes adequate measures to prevent or control offensive odor, fumes, dust, noise, or vibration so that none of these will constitute a nuisance.*
8. *The proposed condition use is consistent with the comprehensive plan of the City of Independence.*
9. *The proposed use will not stimulate growth incompatible with prevailing density standards.*

The City will need to determine if the requested interim use permit amendment meets all of the aforementioned conditions and restrictions. Along with the initial IUP approval, the applicant did prepare a site plan which proposed screening of the property from Drake Drive. A copy of the site plan is attached to this report.



***Neighbor Comments:***

The City has not received any written comments prior to the time of this writing.

***Recommendation:***

The Planning Commission is considering the request just prior to the Council Meeting on October 1<sup>st</sup>. A recommendation will be presented to the Council based on the outcome of the Planning Commission Meeting. Two resolutions are included in the packet; one recommending denial and one recommending approval. The Council will be able to approve or deny the requested amendment using the correct resolution. Should the Council approve the request for an amendment to the interim use permit, the following findings and conditions:

1. The proposed interim use permit request meets all applicable conditions and restrictions stated in Chapter V, Section 510, Zoning, in the City of Independence Zoning Ordinance.
2. The horticulture use of the property shall be subject to all conditions provided for and further detailed in the attached **Exhibit A** (Settlement and Stipulation Agreement) with the following amendment:
  - a. Volkenant shall be allowed to maintain the temporary plastic covering on the 30X1 00 Hoop House year-round.
  - b. Volkenant shall be allowed to maintain the temporary plastic covering on the 20 X 80 Hoop House year-round.
  - ~~b. Between November 1 and December 1 of each calendar year, Volkenant shall be allowed to install the temporary plastic covering on the 20X80 Hoop House that is currently situated on the Property;~~
  - ~~c. Between July 1 and July 30 of each calendar year, Volkenant shall remove the temporary plastic covering from the 20X80 Hoop House that is currently situated on the Property; and~~
3. The applicant shall pay for all costs associated with the City's review and processing of the requested amendment to the interim use permit.

***Attachments:*** Application  
Site Plan  
Exhibit A - Settlement and Stipulation Agreement  
Resolution No. 19-1001-03 (two options)



## RESOLUTION NO. 19-1001-03

### A RESOLUTION GRANTING APPROVAL OF AN AMENDMENT TO THE EXISTING INTERIM USE PERMIT FOR THE PROPERTY LOCATED AT 5835 DRAKE DRIVE

WHEREAS, the City of Independence (the “City”) is a municipal corporation under the laws of Minnesota; and

WHEREAS, the City adopted a comprehensive plan in 2010 to guide the development of the community; and

WHEREAS, the City has adopted a zoning ordinance and other official controls to assist in implementing the comprehensive plan; and

WHEREAS, Anita Volkenant (the “Applicant”) submitted a request for an amendment to the existing Interim Use Permit for the property located at 5835 Drake Drive (PID No. 26-118-24-43-0006) (the “Property”); and

WHEREAS, the Property is legally described on **Exhibit A** attached hereto; and

WHEREAS, the Property is zoned RR-Rural Residential; and

WHEREAS the requested Interim Use Permit amendment meets all requirements, standards and specifications of the City of Independence zoning ordinance for RR-Rural Residential lots; and

WHEREAS the Planning Commission held a public hearing on October 1, 2019 to review the application for an Interim Use Permit amendment, following mailed and published noticed as required by law; and

WHEREAS, the City Council has reviewed all materials submitted by the Applicant; considered the oral and written testimony offered by the applicant and all interested parties; and has now concluded that the application is in compliance with all applicable standards and can be considered for approval.

NOW, THEREFORE BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF INDEPENDENCE, MINNESOTA, that it should and hereby does approve the application by Anita Volkenant for an amendment to the Interim Use Permit per the City’s subdivision and zoning regulations with the following conditions:



1. The proposed interim use permit request meets all applicable conditions and restrictions stated in Chapter V, Section 510, Zoning, in the City of Independence Zoning Ordinance.
2. All conditions stated in **Resolution No. 19-0402-01** shall remain in full force with the following exception:
  - a. The horticulture use of the property shall be subject to all conditions provided for and further detailed in the attached **Exhibit B** (Settlement and Stipulation Agreement) with the following amendment:
    - a. Volkenant shall be allowed to maintain the temporary plastic covering on the 30 X 100 Hoop House year-round.
    - b. Volkenant shall be allowed to maintain the temporary plastic covering on the 20 X 80 Hoop House year-round.
    - ~~b. Between November 1 and December 1 of each calendar year, Volkenant shall be allowed to install the temporary plastic covering on the 20X80 Hoop House that is currently situated on the Property;~~
    - ~~c. Between July 1 and July 30 of each calendar year, Volkenant shall remove the temporary plastic covering from the 20X80 Hoop House that is currently situated on the Property; and~~
3. The applicant shall pay for all costs associated with the City's review and processing of the requested amendment to the interim use permit.
4. The City Council may revoke the interim use permit if the applicant violates any of the conditions set forth in the conditional use permit.

This resolution was adopted by the City Council of the City of Independence on this 1<sup>st</sup> day of October 2019, by a vote of \_\_\_\_ ayes and \_\_\_\_ nays.

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Marvin Johnson, Mayor

ATTEST:

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Mark Kaltsas, City Administrator

**EXHIBIT A**  
*(Legal Description)*

**EXHIBIT B**

*(Settlement and Stipulation Agreement)*



## RESOLUTION NO. 19-1001-03

### A RESOLUTION DENYING APPROVAL OF AN AMENDMENT TO THE EXISTING INTERIM USE PERMIT FOR THE PROPERTY LOCATED AT 5835 DRAKE DRIVE

WHEREAS, the City of Independence (the “City”) is a municipal corporation under the laws of Minnesota; and

WHEREAS, the City adopted a comprehensive plan in 2010 to guide the development of the community; and

WHEREAS, the City has adopted a zoning ordinance and other official controls to assist in implementing the comprehensive plan; and

WHEREAS, Anita Volkenant (the “Applicant”) submitted a request for an amendment to the existing Interim Use Permit for the property located at 5835 Drake Drive (PID No. 26-118-24-43-0006) (the “Property”); and

WHEREAS, the Property is legally described on **Exhibit A** attached hereto; and

WHEREAS, the Property is zoned RR-Rural Residential; and

WHEREAS the requested Interim Use Permit amendment has been found to not meet all requirements, standards and specifications of the City of Independence zoning ordinance for RR-Rural Residential lots; and

WHEREAS the Planning Commission held a public hearing on October 1, 2019 to review the application for an Interim Use Permit amendment, following mailed and published noticed as required by law; and

WHEREAS, the City Council has reviewed all materials submitted by the Applicant; considered the oral and written testimony offered by the applicant and all interested parties; and has now concluded that the application is in compliance with all applicable standards and can be considered for approval.

NOW, THEREFORE BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF INDEPENDENCE, MINNESOTA, that it hereby denies approval of the application by Anita Volkenant for an amendment to the Interim Use Permit per the City’s subdivision and zoning regulations with the following findings and conditions:

1. The proposed interim use permit request has been found to not meet all applicable conditions and restrictions stated in Chapter V, Section 510, Zoning, in the City of Independence Zoning Ordinance.
2. The requested amendment to the interim use permit to allow the plastic covering to remain in place year-round on the second accessory structure would be increase the permanent detached accessory structure square footage to more than double that which is allowable on the subject property. The additional permanent square footage is not in keeping with the intent of the accessory structure ordinance; would impact the reasonable use and enjoyment of the surrounding properties and contrast the essential character of the neighboring properties.
3. The applicant shall pay for all costs associated with the City's review and processing of the requested amendment to the interim use permit.
4. The City Council may revoke the interim use permit if the applicant violates any of the conditions set forth in the conditional use permit.

This resolution was adopted by the City Council of the City of Independence on this 1<sup>st</sup> day of October 2019, by a vote of \_\_\_\_ ayes and \_\_\_\_ nays.

\_\_\_\_\_  
Marvin Johnson, Mayor

ATTEST:

\_\_\_\_\_  
Mark Kaltsas, City Administrator

**EXHIBIT A**  
*(Legal Description)*

**EXHIBIT B**

*(Settlement and Stipulation Agreement)*